STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

December 1, 2022

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28805

NC Division of Water Resources
Transportation Permitting Branch
1617 Mail Service Center
Raleigh NC 27699-1617

ATTN: Ms. Lori Beckwith,
NCDOT Coordinator

Mr. Kevin Mitchell
NCDOT Coordinator

Subject: **Application for Section 404 Regional General Permit 50, and Section 401 Water Quality Certification and Application for Catawba Riparian Buffer Certification** for the Proposed Replacement of Bridge 110010 (Castle Bridge) on SR 1001 (Malcolm Blvd/Connelly Springs Rd) over Lake Rhodhiss (Catawba River) in Burke and Caldwell County, Division 13 and 11, TIP No. R-3430B, Debit $240 from WBS 34544.1.4.

Dear Madam and Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace bridge number 110010 on SR 1001 (Malcolm Blvd/Connelly Springs Rd) with a new bridge just west of the existing location. Traffic will utilize the existing bridge during construction.

As a result of construction access needed to construct the new bridge and demolish the old bridge, there will be a total of 0.27 acre of temporary open water impacts.

Proposed buffer impacts include Bridge and Road Crossing impacts totaling 20,759 square ft. in Zone 1 and 15,429 square ft. in Zone 2. All of the proposed buffer impacts are allowable.

Please see enclosed copies of the Pre-Construction Notification (PCN), Stormwater Management Plan, Permit Drawings, Buffer Drawings, Roadway Plans, Biological Assessment, Archaeology and Historic Properties Information, Tribal Coordination Documents, Minimum Criteria Determination Checklist (MCDC), and Navigational Safety Plan.

This project calls for a letting date of January 16, 2024 and a review date of November 28, 2023.

A copy of this permit application has been posted on the NCDOT Website at: http://connect.ncdot.gov/resources/Environmental. If you have any questions or need additional information, please contact Erin Cheely at ekcheely@ncdot.gov or (919) 707-6108.

Sincerely,

Michael A. Turchy
Environmental Coordination and Permitting Group Leader

ec: NCDOT Permit Application Standard Distribution List

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

Pre-Construction Notification (PCN) Form

For Nationwide Permits and Regional General Permits

(along with corresponding Water Quality Certifications)

April 13, 2022 Ver 4.3

*Please note: fields marked with a red asterisk * below are required. You will not be able to submit the form until all mandatory questions are answered.*

Also, if at any point you wish to print a copy of the E-PCN, all you need to do is right-click on the document and you can print a copy of the form.

Below is a link to the online help file.

https://edocs.deq.nc.gov/WaterResources/0/edoc/624704/PCN%20Help%20File%202018-1-30.pdf

A. Processing Information

Pre-Filing Meeting Date Request was submitted on: *

4/20/2022

If this is a courtesy copy, please fill in this with the submission date.

County (or Counties) where the project is located: *

Burke

Caldwell

Is this a NCDMS Project *

○ Yes ◉ No

Click Yes, only if NCDMS is the applicant or co-applicant.

Is this project a public transportation project? *

◉ Yes ○ No

This is any publicly funded by municipal,state or federal funds road, rail, airport transportation project.

Is this a NCDOT Project? *

◉ Yes ○ No

(NCDOT only) T.I.P. or state project number:

R-3430B

WBS # *

34544.1.4

(for NCDOT use only)

1a. Type(s) of approval sought from the Corps: *

☑ Section 404 Permit (wetlands, streams and waters, Clean Water Act)

☐ Section 10 Permit (navigable waters, tidal waters, Rivers and Harbors Act)

Has this PCN previously been submitted? *

○ Yes

◉ No

1b. What type(s) of permit(s) do you wish to seek authorization? *

☐ Nationwide Permit (NWP)

☑ Regional General Permit (RGP)

☐ Standard (IP)

1c. Has the NWP or GP number been verified by the Corps? *

○ Yes ◉ No

Regional General Permit (RGP) Number: 201902350 - Work associated with bridge construction, widening, replacement, and interchanges

RGP Numbers (for multiple RGPS):

List all RGP numbers you are applying for not on the drop down list.

1d. Type(s) of approval sought from the DWR: *

check all that apply

- [x] 401 Water Quality Certification - Regular
- [ ] 401 Water Quality Certification - Express
- [ ] Non-404 Jurisdictional General Permit
- [x] Riparian Buffer Authorization
- [ ] Individual 401 Water Quality Certification

1e. Is this notification solely for the record because written approval is not required?

*

For the record only for DWR 401 Certification: ○ Yes ◉ No

For the record only for Corps Permit: ○ Yes ◉ No

1f. Is this an after-the-fact permit application? *

○ Yes ◉ No

1g. Is payment into a mitigation bank or in-lieu fee program proposed for mitigation of impacts?

If so, attach the acceptance letter from mitigation bank or in-lieu fee program.

○ Yes ◉ No

Acceptance Letter Attachment

Click the upload button or drag and drop files here to attach document

FILE TYPE MUST BE PDF

1h. Is the project located in any of NC's twenty coastal counties? *

○ Yes ◉ No

1j. Is the project located in a designated trout watershed? *

○ Yes ◉ No

Link to trout information: http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Agency-Coordination/Trout.aspx

B. Applicant Information

1a. Who is the Primary Contact? *

Erin Cheely

1b. Primary Contact Email: *

ekcheely@ncdot.gov

1c. Primary Contact Phone: *

(xxx)xxx-xxxx

(919)707-6108

1d. Who is applying for the permit? *

- [x] Owner
- [ ] Applicant (other than owner)

(Check all that apply)

1e. Is there an Agent/Consultant for this project? *

○ Yes ◉ No

2. Owner Information

2a. Name(s) on recorded deed: *

NC Department of Transportation

2b. Deed book and page no.:

2c. Contact Person:

(for Corporations)

2d. Address *

Street Address

1598 Mail Service Center

Address Line 2

City

Raleigh

State / Province / Region

NC

Postal / Zip Code

27699

Country

USA

2e. Telephone Number: *

(xxx)xxx-xxxx

(919)707-6000

2f. Fax Number:

(xxx)xxx-xxxx

2g. Email Address: *

maturchy@ncdot.gov

C. Project Information and Prior Project History

1. Project Information

1a. Name of project: *

R-3430B: Replace Bridge 110010 over Lake Rhodhiss (Catawba River) on Malcolm Blvd/Connelly Springs Rd (SR 1001)

1b. Subdivision name:

(if appropriate)

1c. Nearest municipality / town: *

Valdese

2. Project Identification

2a. Property Identification Number:

(tax PIN or parcel ID)

2b. Property size:

(in acres)

2c. Project Address

Street Address

Address Line 2

City

State / Province / Region

Postal / Zip Code

Country

2d. Site coordinates in decimal degrees

Please collect site coordinates in decimal degrees. Use between 4-6 digits (unless you are using a survey-grade GPS device) after the decimal place as appropriate, based on how the location was determined. (For example, most mobile phones with GPS provide locational precision in decimal degrees to map coordinates to 5 or 6 digits after the decimal place.)

Latitude: *

35.77993

ex: 34.208504

Longitude: *

-81.52460

-77.796371

3. Surface Waters

3a. Name of the nearest body of water to proposed project: *

Lake Rhodhiss (Catawba River)

3b. Water Resources Classification of nearest receiving water: *

WS-IV; B; CA

Surface Water Lookup

3c. What river basin(s) is your project located in? *

Catawba

3d. Please provide the 12-digit HUC in which the project is located. *

03050101

River Basin Lookup

4. Project Description and History

4a. Describe the existing conditions on the site and the general land use in the vicinity of the project at the time of this application: *

Surrounding land use is a mix of forested, residential, and recreational.

4b. Have Corps permits or DWR certifications been obtained for this project (including all prior phases) in the past? *

○ Yes ◉ No ○ Unknown

4f. List the total estimated acreage of all existing wetlands on the property:

0.02

4g. List the total estimated linear feet of all existing streams on the property:

(intermittent and perennial)

2771

4h. Explain the purpose of the proposed project: *

The purpose of the project is to replace the structurally deficient Bridge No. 110010 over the Catawba River. Prior to approximately $5 million in bridge maintenance improvements between 2018 and 2019, the bridge had a sufficiency rating of 8 out of 100. The 2020 NCDOT Bridge Management Unit records indicate the bridge currently has a sufficiency rating of 37.55
out of a possible 100.

R-3430B was previously part of a larger improvement project, R-3430, but was split out as a separate project in early 2022 with its own Minimum Criteria Determination Checklist (MCDC) and its own purpose and need separate from the A and C sections. R-3430B has logical termini (as it is just replacing the bridge with roadway tie-ins on either side), is a usable and reasonable expenditure if the remainder of Malcolm Blvd/Connelly Springs road is not improved (as the bridge is structurally deficient), and does not restrict any alternatives to the potential future roadway improvements north or south of the bridge.

4i. Describe the overall project in detail, including indirect impacts and the type of equipment to be used: *

This project is the replacement of NCDOT Structure Bridge #110010. The existing bridge has one 11-foot travel lane in each direction with roadway ditches on both sides. The replacement bridge will have one 12-foot travel lane in each direction and 5-foot paved shoulders with roadway ditches on both sides. The proposed bridge will be approximately 1,075 feet in length and will be approximately 6.5 feet higher than the existing bridge. The bridge will be replaced just west of the existing alignment with traffic utilizing the existing bridge during construction. Standard road building equipment such as trucks, dozers, and cranes will be used.

5. Jurisdictional Determinations

5a. Have the wetlands or streams been delineated on the property or proposed impact areas? *

(●) Yes ( ) No ( ) Unknown

Comments:

5b. If the Corps made a jurisdictional determination, what type of determination was made? *

(●) Preliminary ( ) Approved ( ) Not Verified ( ) Unknown ( ) N/A

Corps AID Number:

Example: SAW-2017-99999

SAW-2019-01368

5c. If 5a is yes, who delineated the jurisdictional areas?

Name (if known): Nathan Howell and Cody Parks

Agency/Consultant Company: Three Oaks Engineering

Other:

5d. List the dates of the Corp jurisdiction determination or State determination if a determination was made by the Corps or DWR.

PJD issued by USACE 8/22/19 after site visit 4/23/19. PJD is for the entire R-3430 corridor (sections A, B, and C).

6. Future Project Plans

6a. Is this a phased project? *

( ) Yes (●) No

Are any other NWP(s), regional general permit(s), or individual permits(s) used, or intended to be used, to authorize any part of the proposed project or related activity? This includes other separate and distant crossing for linear projects that require Department of the Army authorization but don't require pre-construction notification.

D. Proposed Impacts Inventory

1. Impacts Summary

1a. Where are the impacts associated with your project? (check all that apply):

( ) Wetlands ( ) Streams-tributaries (☑) Buffers
(☑) Open Waters ( ) Pond Construction

4. Open Water Impacts

If there are proposed impacts to lakes, ponds, estuaries, tributaries, sounds, the Atlantic Ocean, or any other open water of the U.S. then individually list all open water impacts below.

4a. Site # * (?)	4a1. Impact Reason	4b. Impact type * (?)	4c. Name of waterbody (?)	4d. Activity type *	4e. Waterbody type *	4f. Impact area *
1	Temporary Rock Causeway	T	Catawba River (Lake Rhodhiss)	Causeway	Lake	0.06 (acres)
2	Temporary Rock Causeway	T	Catawba River (Lake Rhodhiss)	Causeway	Lake	0.19 (acres)
2	Excavation	T	Catawba River (Lake Rhodhiss)	Excavation	Lake	0.02 (acres)

4g. Total temporary open water Impacts:

0.27

4g. Total permanent open water impacts:

0.00

4g. Total open water impacts:

0.27

4h. Comments:

All temporary impacts are associated with access to construct new bridge and remove existing. Barges will be used for the majority of this work.
Proposed area of new piers in water is 264 sq ft.

6. Buffer Impacts (for DWR)

If project will impact a protected riparian buffer, then complete the chart below. Individually list all buffer impacts below.

6a. Project is in which protect basin(s)? *

Check all that apply.

- [ ] Neuse
- [x] Catawba
- [ ] Goose Creek
- [ ] Other
- [ ] Tar-Pamlico
- [ ] Randleman
- [ ] Jordan Lake

6b. Impact Type * (?)	6c. Per or Temp * (?)	6d. Stream name *	6e. Buffer mitigation required? *	6f. Zone 1 impact *	6g. Zone 2 impact *
Site 1: Allowable Roadway Fill	P	Catawba River (Lake Rhodhiss)	No	0 (square feet)	924 (square feet)
Site 1: Allowable Bridge	P	Catawba River (Lake Rhodhiss)	No	7,955 (square feet)	4,453 (square feet)
Site 2: Allowable Bridge	P	Catawba River (Lake Rhodhiss)	No	11,721 (square feet)	6,877 (square feet)
Site 2: Allowable Roadway Fill near bridge	P	Catawba River (Lake Rhodhiss)	No	1,083 (square feet)	1,798 (square feet)
Site 2: Allowable Roadway Fill near DRW1	P	Catawba River (Lake Rhodhiss)	No	0 (square feet)	1,377 (square feet)

6h. Total buffer impacts:

	Zone 1	Zone 2
Total Temporary impacts:	0.00	0.00

	Zone 1	Zone 2
Total Permanent impacts:	20,759.00	15,429.00

	Zone 1	Zone 2
Total combined buffer impacts:	20,759.00	15,429.00

6i. Comments:

E. Impact Justification and Mitigation

1. Avoidance and Minimization

1a. Specifically describe measures taken to avoid or minimize the proposed impacts in designing the project: *

Eastern alignments that would have severely affected the nearby Castle Bridge Boat Access ramp were eliminated from consideration. Utilizing the existing bridge during construction eliminated potential additional temporary impacts from a temporary detour bridge or phased construction. Roadway slopes to the south were pulled in as much as possible to avoid and minimize impacts to dwarf-flowered heartleaf populations. Additional avoidance and minimization measures are outlined in the attached October 2022 Biological Assessment.

1b. Specifically describe measures taken to avoid or minimize the proposed impacts through construction techniques: *

NCDOT will adhere to Best Management Practices for Construction and Maintenance Activities. The utilization of barges for construction and demolition minimizes the need for extensive causeways.
Numerous other proposed measures to protect federally listed species during construction are outlined in the October 2022 Biological Assessment.

2. Compensatory Mitigation for Impacts to Waters of the U.S. or Waters of the State

2a. Does the project require Compensatory Mitigation for impacts to Waters of the U.S. or Waters of the State?

- ( ) Yes
- (•) No

2b. If this project DOES NOT require Compensatory Mitigation, explain why:

The NCDOT does not propose mitigation for the temporary open water impacts associated with this project. These impacts do not require permanent fill in the river bed, therefore, under Section 404 of the Clean Water Act, do not constitute Loss of Waters of the U.S., and are not subject to compensatory mitigation. All buffer impacts are allowable.

NC Stream Temperature Classification Maps can be found under the Mitigation Concepts tab on the Wilmington District's RIBITS website.

F. Stormwater Management and Diffuse Flow Plan (required by DWR)

*** Recent changes to the stormwater rules have required updates to this section .***

1. Diffuse Flow Plan

1a. Does the project include or is it adjacent to protected riparian buffers identified within one of the NC Riparian Buffer Protection Rules?

(•) Yes ( ) No

1b. All buffer impacts and high ground impacts require diffuse flow or other form of stormwater treatment. If the project is subject to a state implemented riparian buffer protection program, include a plan that fully documents how diffuse flow will be maintained.

All Stormwater Control Measures (SCM)s must be designed in accordance with the NC Stormwater Design Manual. Associated supplement forms and other documentation shall be provided.

What type of SCM are you providing?

- [ ] Level Spreader
- [x] Vegetated Conveyance (lower SHWT)
- [ ] Wetland Swale (higher SHWT)
- [ ] Other SCM that removes minimum 30% nitrogen
- [ ] Proposed project will not create concentrated stormwater flow through the buffer

(check all that apply)

For a list of options to meet the diffuse flow requirements, click here.

2. Stormwater Management Plan

2a. Is this a NCDOT project subject to compliance with NCDOT's Individual NPDES permit NCS000250? *

(•) Yes ( ) No

Comments:

G. Supplementary Information

1. Environmental Documentation

1a. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? *

(•) Yes ( ) No

1b. If you answered "yes" to the above, does the project require preparation of an environmental document pursuant to the requirements of the National or State (North Carolina) Environmental Policy Act (NEPA/SEPA)? *

(•) Yes ( ) No

1c. If you answered "yes" to the above, has the document review been finalized by the State Clearing House? (If so, attach a copy of the NEPA or SEPA final approval letter.) *

(•) Yes ( ) No

2. Violations (DWR Requirement)

2a. Is the site in violation of DWR Water Quality Certification Rules (15A NCAC 2H .0500), Isolated Wetland Rules (15A NCAC 2H .1300), or DWR Surface Water or Wetland Standards or Riparian Buffer Rules (15A NCAC 2B .0200)? *

( ) Yes (•) No

3. Cumulative Impacts (DWR Requirement)

3a. Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? *

( ) Yes (•) No

3b. If you answered "no," provide a short narrative description.

Due to the minimal transportation impact resulting from this bridge replacement, this project will neither influence nearby land uses nor stimulate growth. Therefore, a detailed indirect or cumulative effects study will not be necessary.

4. Sewage Disposal (DWR Requirement)

4a. Is sewage disposal required by DWR for this project? *

( ) Yes ( ) No (•) N/A

5. Endangered Species and Designated Critical Habitat (Corps Requirement)

5a. Will this project occur in or near an area with federally protected species or habitat? *

(•) Yes ( ) No

5b. Have you checked with the USFWS concerning Endangered Species Act impacts? *

(•) Yes ( ) No

5c. If yes, indicate the USFWS Field Office you have contacted.

Asheville

5d. Is another Federal agency involved? *

(•) Yes ( ) No ( ) Unknown

What Federal Agency is involved?

USACE

5e. Is this a DOT project located within Division's 1-8? *

( ) Yes (•) No

5f. Will you cut any trees in order to conduct the work in waters of the U.S.? *

(•) Yes ( ) No

5g. Does this project involve bridge maintenance or removal? *

(•) Yes ( ) No

5g(1). If yes, have you inspected the bridge for signs of bat use such as staining, guano, bats, etc.? Representative photos of signs of bat use can be found in the NLEB SLOPES, Appendix F, pages 3-7.

(•) Yes ( ) No

Link to the NLEB SLOPES document: http://saw-reg.usace.army.mil/NLEB/1-30-17-signed_NLEB-SLOPES&apps.pdf

If you answered "Yes" to 5g(1), did you discover any signs of bat use? *

( ) Yes (•) No ( ) Unknown

***** If yes, please show the location of the bridge on the permit drawings/project plans.**

5h. Does this project involve the construction/installation of a wind turbine(s)?* *

( ) Yes (•) No

5i. Does this project involve (1) blasting, and/or (2) other percussive activities that will be conducted by machines, such as jackhammers, mechanized pile drivers, etc.? *

(•) Yes ( ) No

5j. What data sources did you use to determine whether your site would impact Endangered Species or Designated Critical Habitat? *

As of 11/30/22, IPaC lists 7 federally protected species and one proposed endangered species within the R-3430B project area. There is no habitat for bog turtle or rock gnome lichen within the project area. Surveys for small whorled pogonia were conducted in spring 2021 and 2022, and no individuals were found.

There are populations of dwarf-flowered heartleaf within the project area that will be impacted. This species as well as the three listed bats (gray, northern long-eared, and Virginia big-eared), proposed bat (tricolored), and an ARS bat (little brown) are addressed in the attached November 2022 Biological Assessment (BA).

Proposed Biological Conclusions for all species are included in the BA. The USACE is the lead federal agency for this project and will coordinate with the USFWS to resolve Section 7 for this project.

6. Essential Fish Habitat (Corps Requirement)

6a. Will this project occur in or near an area designated as an Essential Fish Habitat? *

( ) Yes (•) No

6b. What data sources did you use to determine whether your site would impact an Essential Fish Habitat? *

NMFS County Index

7. Historic or Prehistoric Cultural Resources (Corps Requirement)

Link to the State Historic Preservation Office Historic Properties Map (does not include archaeological data: http://gis.ncdcr.gov/hpoweb/

7a. Will this project occur in or near an area that the state, federal or tribal governments have designated as having historic or cultural preservation status (e.g., National Historic Trust designation or properties significant in North Carolina history and archaeology)? *

( ) Yes (•) No

7b. What data sources did you use to determine whether your site would impact historic or archeological resources? *

Historic Architecture and Archaeology reviews and Tribal coordination (attached).

8. Flood Zone Designation (Corps Requirement)

Link to the FEMA Floodplain Maps: https://msc.fema.gov/portal/search

8a. Will this project occur in a FEMA-designated 100-year floodplain? *

(•) Yes ( ) No

8b. If yes, explain how project meets FEMA requirements:

8c. What source(s) did you use to make the floodplain determination? *

FEMA Maps

Miscellaneous

Comments

Please use the space below to attach all required documentation or any additional information you feel is helpful for application review. Documents should be combined into one file when possible, with a Cover Letter, Table of Contents, and a Cover Sheet for each Section preferred.

Click the upload button or drag and drop files here to attach document

R-3430 B Burke Caldwell December 2022.pdf 67.19MB

File must be PDF or KMZ

Signature

*

☑ By checking the box and signing below, I certify that:

- The project proponent hereby certifies that all information contained herein is true, accurate, and complete to the best of my knowledge and belief'; and
- The project proponent hereby requests that the certifying authority review and take action on this CWA 401 certification request within the applicable reasonable period of time.
- I have given true, accurate, and complete information on this form;
- I agree that submission of this PCN form is a "transaction" subject to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I agree to conduct this transaction by electronic means pursuant to Chapter 66, Article 40 of the NC General Statutes (the "Uniform Electronic Transactions Act");
- I understand that an electronic signature has the same legal effect and can be enforced in the same way as a written signature; AND
- I intend to electronically sign and submit the PCN form.

Full Name: *

Michael Turchy

Signature *

Michael Turchy

Date

12/1/2022

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

(Version 3.00; Released August 2021) FOR NCDOT PROJECTS

WBS Element: 34544.1.4 **TIP/Proj No:** R-3430B **County(ies):** Burke Caldwell

General Project Information

WBS Element:	34544.1.4	**TIP Number:**	R-3430B	**Project Type:**	Bridge Replacement	**Date:**	08/17/2022
NCDOT Contact:	Theresa T. Ellerby, CPM			**Contractor / Designer:**	DRMP NC, Inc. / Ryan P. Mitchell, PE		
	Address: 1000 Birch Ridge Drive Raleigh, NC 27610				**Address:** 8000 Regency Parkway Suite 110 Cary, NC 27518		
	Phone: (919) 707-6020				**Phone:** (919) 650-1038		
	Email: tellerby@ncdot.gov				**Email:** rmitchell@drmp.com		
City/Town:	Town of Valdese / Town of Rutherford College			**County(ies):**	Burke	Caldwell	
River Basin(s):	Catawba			**CAMA County?**	No	No	
Wetlands within Project Limits?	No						

Project Description

Project Length (lin. miles or feet):	0.587 miles	**Surrounding Land Use:**	Light Residential / Recreational				
	Proposed Project			**Existing Site**			
Project Built-Upon Area (ac.)	2.1	ac.		1.5	ac.		
Typical Cross Section Description:	One (1) 12-foot travel lane each direction. 5-foot paved shoulders with roadway ditches on both sides. Guardrail and 2'-6" curb and gutter where applicable.			One (1) 11-foot travel lane each direction with roadway ditches on both sides.			
Annual Avg Daily Traffic (veh/hr/day):	Design/Future:	12100	Year: 2045	Existing:	10481	Year:	2022

General Project Narrative: (Description of Minimization of Water Quality Impacts)

R-3430B proposes to replace the Castle Bridge over the Catawba River (Lake Rhodhiss) with additional roadway and drainage improvements upstation/downstation of the proposed bridge. Riprap/bank stabilization at pipe outlets, ditches, and the surface water bank has been incorporated to minimize erosion on slopes where vegetation will not be adequate. NCDOT standards for ground cover, vegetation, and slope stabilization will be adhered to during the life of this project, and will be specified in the NCDOT Erosion and Sediment Control Plan for the project.

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

(Version 3.00; Released August 2021) FOR NCDOT PROJECTS

WBS Element:	34544.1.4	TIP/Proj No.:	R-3430B	County(ies):	Burke Caldwell	Page	2	of	3

General Project Information

Waterbody Information ######

Surface Water Body (1):	Catawba River		**NCDWR Stream Index No.:**	DRMP NC, Inc. / Ryan P. Mitchell, PE		
NCDWR Surface Water Classification for Water Body		**Primary Classification:**	Water Supply IV (WS-IV)	Class B	Critical Area (CA)	
		Supplemental Classification:	None			
Other Stream Classification:	None					
Impairments:	None					
Aquatic T&E Species?	No	Comments:				
NRTR Stream ID:	Town of Valdese / Town of Rutherford College			**Buffer Rules in Effect:**	Catawba	
Project Includes Bridge Spanning Water Body?	Yes	**Deck Drains Discharge Over Buffer?**	No	**Dissipator Pads Provided in Buffer?**	No	
Deck Drains Discharge Over Water Body?	No	(If yes, provide justification in the General Project Narrative)		(If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative)		
(If yes, provide justification in the General Project Narrative)						

North Carolina Department of Transportation

Highway Stormwater Program

STORMWATER MANAGEMENT PLAN

FOR NCDOT PROJECTS

(Version 3.00; Released August 2021)

WBS Element: 34544.1.4 **TIP/Proj No.:** R-3430B **County(ies):** Burke Caldwell

Swale

Sheet No.	Line	Station	Location (LT,RT,CL)	Latitude	Longitude	Surface Water Body	Base Width (ft)	Front Slope (H:1)	Back Slope (H:1)	Drainage Area (ac)	Recommended Treatm't Length (ft)	Actual Length (ft)	Longitudinal Slope (%)	Q2 (cfs)	V2 (fps)	Q10 (cfs)	V10 (fps)	Rock Checks Used	BMP Associated w/ Buffer Rules?
5	-L-	40+50	LT	35.78130	-81.52585	(1)Catawba River	5	3	3	0.08	8	50	0.30%	12.56	1.47	16.65	1.60	Yes	Yes
6	-L-	41+00	LT	35.78142	-81.52591	(1)Catawba River	5	3	3	0.13	13	50	1.70%	12.46	2.72	16.52	2.96	Yes	Yes
6	-L-	42+00	LT	35.78167	-81.52602	(1)Catawba River	5	3	3	1.81	181	50	4.00%	12.30	3.65	16.31	3.98	Yes	Yes
6	-L-	42+50	LT	35.78177	-81.52610	(1)Catawba River	5	3	3	4.25	425	50	4.00%	5.57	2.82	7.38	3.10	Yes	Yes
5	-L-	28+50	RT	35.77850	-81.52360	(1)Catawba River	6	5.5	3	3.92	392	50	4.00%	6.62	2.77	8.77	3.03	Yes	Yes
5	-L-	29+00	RT	35.77863	-81.52363	(1)Catawba River	6	4.5	3	0.19	19	50	4.00%	6.89	2.85	9.14	3.12	Yes	Yes

Additional Comments

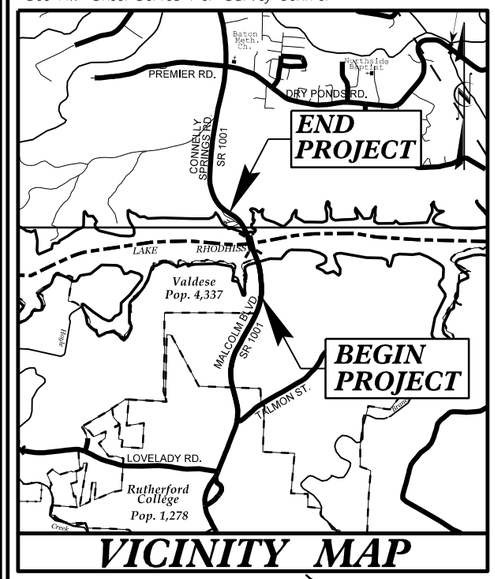
Swales were designed at each end of the proposed bridge for as long as the topography allowed to promote diffuse flow into the buffer zone. Rock checks are proposed for all swales to account for not meeting recommended treatment length and V2 requirements. Swales at a minimum provide roughly 100 feet of treatment length per acre of impervious area draining to them in the post-construction condition. The proposed swale from -L- 40+50 to 43+00 LT has a total length of 200 feet that meets swale criteria and 2.18 acres of impervious area drained. The proposed swale from -L- 28+00 to 29+00 RT has a total length of 100 feet that meets swale criteria and 0.88 acres of impervious area drained.

05/30/17

TIP PROJECT: R-3430B

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See RW Sheet Series For Survey Control



VICINITY MAP

NOT TO SCALE

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

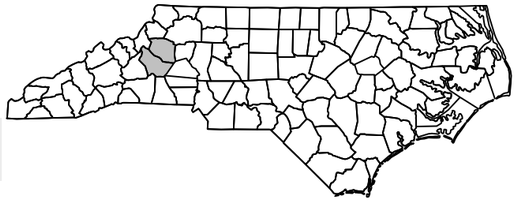
BURKE/CALDWELL COUNTY

LOCATION: SR 1001 (CONNELLY SPRINGS ROAD), BURKE COUNTY CONSTRUCT NEW PARALLEL BRIDGE OVER CATAWBA RIVER
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3430B	1	

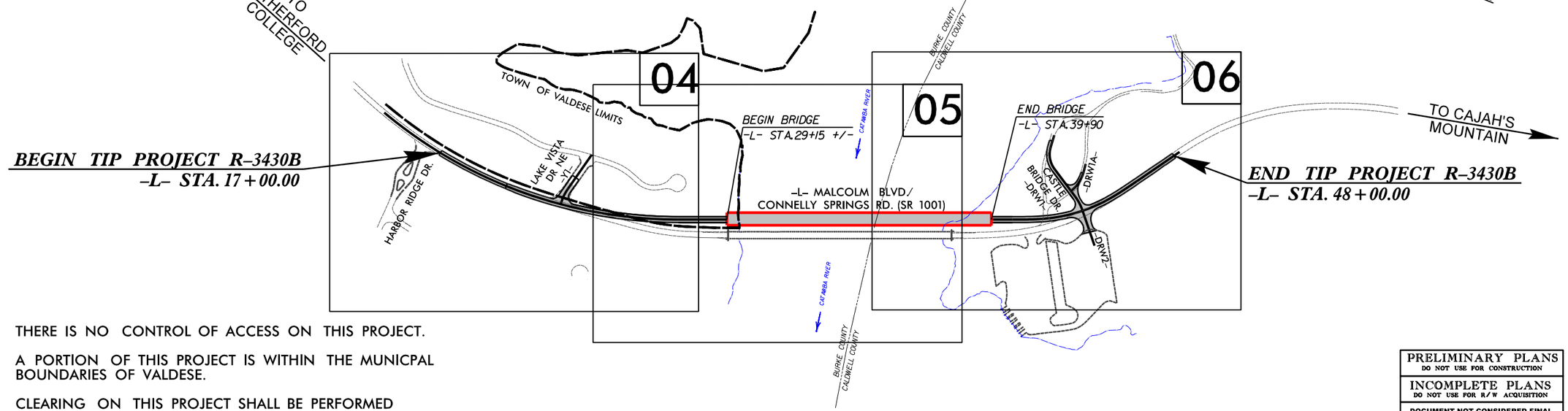
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34544.1.4	N/A	P.E.
34544.2.3	N/A	R/W
34544.2.5	N/A	UTILITIES

PERMIT DRAWING SHEET 1 OF 8



WETLAND AND SURFACE WATER IMPACTS PERMIT

NAD 83/2011



BEGIN TIP PROJECT R-3430B
-L- STA. 17+00.00

END TIP PROJECT R-3430B
-L- STA. 48+00.00

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICPAL BOUNDARIES OF VALDESE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS
50 25 0 50 100
PROFILE (HORIZONTAL)
10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 10,481
ADT 2045 = 12,100
K = 9 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =1% DUAL 4%
FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3430B = 0.383 MILES
LENGTH STRUCTURE TIP PROJECT R-3430B = 0.204 MILES
TOTAL LENGTH TIP PROJECT R-3430B = 0.587 MILES

PLANS PREPARED BY:

DRMP
ENGINEERS SURVEYORS PLANNERS SCIENTISTS
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NORTH CAROLINA 28217
(704) 332-2289
NC LICENSE NO. C-4923

FOR PROJECT MANAGEMENT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 21, 2022

LETTING DATE:
JANUARY 16, 2024

CHRISTOPHER K. HAIRE, P.E.
PROJECT ENGINEER
MICHAEL D. HAGE, P.E.
PROJECT DESIGN ENGINEER
NCDOT CONTACT:
THERESA T. ELLERBY, CPM
PROJECT MANAGER - DIVISIONS 11-14

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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ZMeng

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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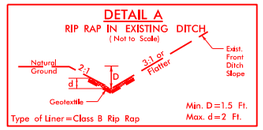
PERMIT DRAWING SHEET 2 OF 8

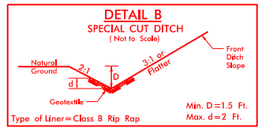
DETAIL A
RIP RAP IN EXISTING DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 17+00 TO STA. 18+50 –L– RT

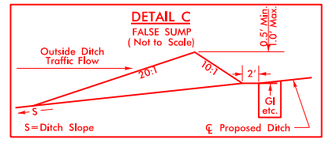
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap

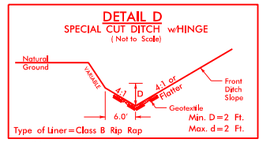
FROM STA. 18+50 TO STA. 20+00 –L– RT

DETAIL C
FALSE SUMP
(Not to Scale)



AT STA. 20+00 –L– LT

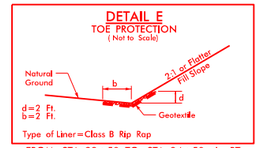
DETAIL D
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 23+00 TO STA. 23+50 –L– RT

DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner=Class B Rip Rap

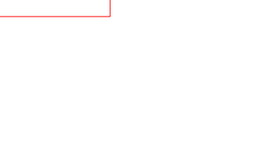
FROM STA. 23+50 TO STA. 24+50 –L– RT

DETAIL F
RIP RAP IN EXISTING DITCH
(Not to Scale)

Type of Liner=Class B Rip Rap

FROM STA. 24+50 TO STA. 27+50 –L– RT

DETAIL G
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)



FROM STA. 27+50 TO STA. 29+00 –L– RT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL H
LATERAL GRASSED SWALE
(Not to Scale)

FROM STA. 40+50 TO STA. 41+50 –L– LT
EST. 67 CY DDE
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL I
LATERAL BASE DITCH
(Not to Scale)

Type of Liner=Class B Rip-Rap

FROM STA. 41+50 TO STA. 42+00 –L– LT
EST. 76 CY DDE
CL. B RIP RAP: EST. 28 TONS, EST. 66 SY GT, EST. 21 CY DDE

DETAIL J
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)

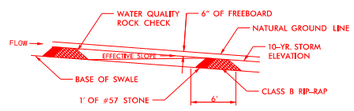
FROM STA. 42+00 TO STA. 43+00 –L– LT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL K
SPECIAL CUT DITCH
(Not to Scale)

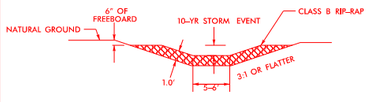
Type of Liner=Class B Rip Rap

FROM STA. 44+00 LT TO STA. 44+50 –L– LT
CL. B RIP RAP: EST. 24 TONS, EST. 55 SY GT, EST. 18 CY DDE

DETAIL L
TRAPEZOIDAL GRASSED SWALE
wROCK CHECK DAM
(Not to Scale)



PROFILE



TYPICAL SECTION

NOTES:

1) DO NOT USE INSIDE CLEAR RECOVERY AREA.
2) NOT PRACTICAL TO USE ON SLOPES > 5%.
3) TO BE USED AS PERMANENT STRUCTURES IN GRASS SWALES.
4) CHECK DAMS SHOULD BE SPACED SUCH THAT THE BASE OF THE UPSTREAM CHECK IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK.

8/17/99

TEMPORARY SURFACE WATER IMPACTS

NAD 83/2011

50' 0' 50'
DRAWING SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-4923 (704) 332-2289

PERMIT DRAWING SHEET 3 OF 8

TRAIAN CIUCA
CLAUDIA CIUCA
DB 2022 PG 177
PB 41PG 24

MICHAEL V. CARTER
DENISE N. CARTER
DB 2053 PG 488
PB 41PG 24

ARCHON PROFESSIONAL SERVICES, LLC
DB 2367 PG 58
PB 41PG 24

JAMES R. REECE, JR.
DB 2470 PG 976
PB 41PG 24

LOHR E. LOVELAND, JR.
DB 930 PG 1654
PB 12 PG 216

DATUS COLE GORDON
JANE A. GORDON
DB 911 PG 1863
PB 12 PG 216

-L- PT Sta. 27+17.49

-L- MATCH LINE STA. 26+00 SEE SHEET 4

-L- MATCH LINE STA. 35+50 SEE SHEET 6

30+00

35+00

CATAWBA RIVER

FULL POND ELEV. = 995.1' (NWS)

-L-
MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001)

SR 1001 MALCOLM BLVD BST

EXISTING R/W

15" RCP IV

15" RCP III

SPEC. LAT. GRASSED SWALE
SEE DETAIL G

TEMP. ROCK CAUSEWAY
TOP OF PAD ELEV. = 997.1'

SEAT=1018.87'
SEAT=1012.97'
SEAT=1013.04'
SEAT=1018.88'
SEAT=1019.27'
SEAT=1012.12'
SEAT=1012.17'
SEAT=1011.22'
SEAT=1011.25'
SEAT=1010.38'
SEAT=1010.41'

BURKE COUNTY
CALDWELL COUNTY

SITE 1

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8/17/99

TEMPORARY SURFACE WATER IMPACTS

NAD 83/2011

50' 0' 50'
DRAWING SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO: C-4923 (704) 332-2289

PERMIT DRAWING SHEET 4 OF 8

TRAIAN CIUCA
CLAUDIA CIUCA
DB 2022 PG 177
PB 41 PG 24

MICHAEL V. CARTER
DENISE N. CARTER
DB 2053 PG 488
PB 41 PG 24

ARCHON PROFESSIONAL SERVICES, LLC
DB 2367 PG 58
PB 41 PG 24

JAMES R. REECE, JR.
DB 2470 PG 976
PB 41 PG 24

LOHR E. LOVELAND, JR.
DB 930 PG 1654
PB 12 PG 216

DATUS COLE GORDON
JANE A. GORDON
DB 91 PG 1863
PB 12 PG 216

-L- PT Sta. 27+17.49

-L- MATCH LINE STA. 26+00 SEE SHEET 4

-L- MATCH LINE STA. 35+50 SEE SHEET 6

MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001)

SR 1001 MALCOLM BLVD BST

EXISTING R/W

FULL POND ELEV.=995.1' (NWS)

CATAWBA RIVER

BURKE COUNTY

CALDWELL COUNTY

15" RCP IV

SPEC. LAT. GRASSED SWALE
SEE DETAIL G

TEMP. ROCK CAUSEWAY
TOP OF PAD ELEV.=967.1'

SITE 1

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO: C-4923 (704) 332-2289

PERMIT DRAWING SHEET 5 OF 8

TS TS TEMPORARY SURFACE WATER IMPACTS

SITE 2

50' 0' 50'
DRAWING SCALE

NAD 83/2011

-L- MATCH LINE STA. 35+50 SEE SHEET 5

BURKE COUNTY
CALDWELL COUNTY

MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001)

-L- (SR 1001)

15" RCP-IV

18" RCP-IV

SEAT=1015.0'
SEAT=1014.80'
SEAT=1009.66'
SEAT=1009.31'
SEAT=1009.64'
SEAT=1009.26'
SEAT=1015.0'

BZ 1
BZ 2
MTL
TS
PDE
E
F
C
JS
ST
LT
BST
EIP
CONC
ISFD
DOCK
FOUND
INV=1037
INV=1021.57'
CONNELLY SPRING RD 24" BST

-DRW1- POT Sta.10+94.30 =
-DRW1A- PC Sta. 10+00.00

-DRW1- POT Sta.13+50.00
S 85°26'36.6"W

END CONSTRUCTION
-DRW1- POT Sta.13+25.00
-DRW1- PT Sta. 12+99.50

-DRW1- PC
Sta.12+05.53

-DRW1A- POT Sta. 11+27.94
S 82°50'46.3"W

-DRW1A-
PT Sta. 10+94.69

-DRW1- PT Sta. 10+66.05

-L- PC Sta. 48+27.47

END CONSTRUCTION
-DRW1A- POC Sta.10+90.00

-L- ST Sta. 46+17.45

-L- CS Sta. 44+67.45

-L- POC Sta.43+65.00 =
-DRW1- PC Sta. 10+00.00
-DRW2- POT Sta. 10+00.00

-DRW2- POT
Sta. 11+50.00

-L- TS Sta. 40+76.66

-L- SC Sta. 42+26.66

END CONSTRUCTION
-DRW2- POT Sta.10+92.05

40+00

00+51

LAT. GRASSED SWALE SEE DETAIL H

TEMP. ROCK CAUSEWAY TOP OF PAD ELEV.=997.1'

UNCLAS. STRUC. EXCAVATION (STR. PAY ITEM)

FULL POND ELEV.=995.1' (NWS)

REMOVE EXIST. PIPE (TYPE/SIZE UNK.)

SPEC. LAT. GRASSED SWALE SEE DETAIL J

LAT. BASE DITCH W/RIP RAP SEE DETAIL I

REMOVE 58 LF OF EXIST. 12" HDPE

GRADE TO DRAIN

RETAIN 12" HDPE

SPEC. CUT DITCH W/ RIP RAP C SEE DETAIL C

FLOWABLE FILL

PLUG

FUTURO LLC
DB 1799 PG 401
PB 31 PG 197
9

DUKE ENERGY CORPORATION
DB 1244 PG 1452
PB 17 PG 290
8

LOCATED BY HYDRO SURVEY (APPROX.)

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mlewis

8/17/99

TS TS TEMPORARY SURFACE WATER IMPACTS

SITE 2

50' 0' 50'
DRAWING SCALE

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
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DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO: C-4923 (704) 332-2289

PERMIT DRAWING
SHEET 6 OF 8

-L- MATCH LINE STA. 35+50 SEE SHEET 5

BURKE COUNTY
CALDWELL COUNTY

MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1002)

-L- (SR 1001)

-DRW1- POT Sta.13+50.00
S 85°26'36.6"W

-DRW1- POT Sta.10+94.30 =
-DRW1A- PC Sta.10+00.00

END CONSTRUCTION
-DRW1- POT Sta.13+25.00
-DRW1- PT Sta.12+99.50

END CONSTRUCTION
-DRW1A- POC Sta.10+90.00

-DRW1- PC Sta.12+05.53

-DRW1A- POT Sta.11+27.94
S 82°50'46.3"W

-DRW1A- PT Sta.10+94.69

-L- ST Sta.46+17.45

-DRW1- PT Sta.10+66.05

-DRW1- PT Sta.38+27.47

-L- CS Sta.44+67.45

-DRW2- POT Sta.11+50.00

-L- POC Sta.43+65.00 =
-DRW1- PC Sta.10+00.00
-DRW2- POT Sta.10+00.00

-L- TS Sta.40+76.66

-L- SC Sta.42+26.66

END CONSTRUCTION
-DRW2- POT Sta.10+92.05

LAT. GRASSED SWALE SEE DETAIL H

18" RCP-IV

FULL POND ELEV.=995.1' (NWS)

TEMP. ROCK CAUSEWAY TOP OF PAD ELEV.=997.1'

UNCLAS. STRUC. EXCAVATION (STR. PAY ITEM)

REMOVE EXIST. PIPE (TYPE/SIZE UNK.)

SPEC. LAT. GRASSED SWALE SEE DETAIL J

LAT. BASE DITCH W/RIP RAP SEE DETAIL J

REMOVE 58 LF OF EXIST. 12" HDPE

GRADE TO DRAIN

SPEC. CUT DITCH W/RIP RAP SEE DETAIL K

RETAIN 12" HDPE

PLUG

RCP-III

15" RCP-IV

24" RCP-IV

FUTURO LLC
DB 1795 PG 401
PB 31PG 197

DUKE ENERGY CORPORATION
DB 1244 PG 1452
PB 17 PG 290

SEAT=1014.80'
SEAT=1009.66'
SEAT=1009.31'
SEAT=1009.64'
SEAT=1009.26'
SEAT=1015.0'

BZ 1
BZ 2
MTL
BST
PDE
EXISTING R/W
LOCATED BY HYDRO SURVEY (APPROX.)

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Vega

5/14/99

PLANS PREPARED BY:
DRMP
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-4923 (704) 332-2289

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	08
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 7 OF 8

PI = 26+60.00
EL = 1,032.73'
VC = 460'
K = 80
V = 45 MPH

BEGIN BRIDGE
-L- STA. 29+15.00
ELEV.= 1,030.84'

(-)0.7400%

CLASS II RIP-RAP
EST. 189 TONS
EST. 208 SY GT
TYPE 2

TEMP. ROCK CAUSEWAY
TOP OF PAD ELEV. = 997.1'

(-)1.4000%

PI=28+90.00
EL=1,015.00'

END SPEC. LAT. GRASSED SWALE
STA.29+90.00 -L- RT
EL=1,011.00'

FULL POND ELEV.= 995.1' (NWS)

PROP. 25-YR. ELEV.= 1,000.2'

PROP. 100 YR. ELEV.= 1,004.6'

EXIST. BRIDGE PIERS TO BE REMOVED

(-)0.7400%

EXIST. BRIDGE TO BE REMOVED

TEMP. ROCK CAUSEWAY
TOP OF PAD ELEV.= 997.1'

END BRIDGE
-L- STA. 39+90.00
ELEV.= 1,022.89'

PI = 42+45.00
EL = 1,021.00'
VC = 420'
K = 81
V = 45 MPH

(-)0.7400%

LOW POINT
-L- STA. 40+94.63
ELEV.= 1,022.33'

(+)1.5000%

CLASS II RIP-RAP
EST. 328 TONS
EST. 364 SY GT TYPE 2
KEY-IN 3.5'

BEG. LAT. GRASSED SWALE
STA. 40+50.00 -L- LT
EL=1,021.00'

EXISTING GROUND

(+)0.3000%

PI =41+00.00
EL =1,023.15'

(+)1.7000%

END LAT. GRASSED SWALE
BEG. LAT. BASE DITCH
STA. 41+50.00 -L- LT
EL=1,003.00'

END LAT. BASE DITCH
BEG. SPEC. LAT. GRASSED SWALE
STA. 42+00.00 -L- LT
EL=1,008.00'

(+)1.9000%

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 51,000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1,000.2	FT
BASE DISCHARGE	= 81,500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1,004.6	FT
OVERTOPPING DISCHARGE	= >87,800	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 1022.5	FT
DATE OF SURVEY	= MAY 2020	
W.S. ELEVATION AT DATE OF SURVEY	= 995.1	FT

FOR -L- PLAN SEE SHEETS 05 & 06

1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900

28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00

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User:mead

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	29+64/30+02 -L- RT	TEMP. ROCK CAUSEWAY							0.06			
2	37+79/39+69 -L-	TEMP. ROCK CAUSEWAY							0.19			
2	37+87/38+40 -L- RT	EXCAVATION							0.02			
TOTALS*:									0.27	0	0	0

*Rounded totals are sum of actual impacts

NOTES:
Proposed area of new piers in water (using the normal pond elevation of 995.1') is 264 sq. ft.
Pier footings are 4' in diameter. There are seven interior bents falling within the water and three piers per interior bent.

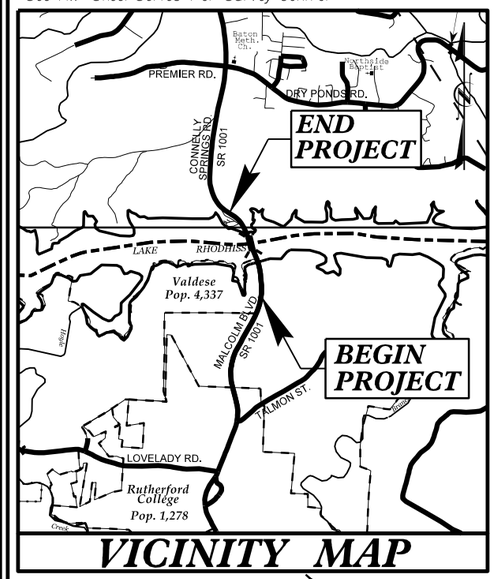
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
08/17/2022
BURKE / CALDWELL
R-3430B
34544.1.4
SHEET 8 OF 8

05/30/17

TIP PROJECT: R-3430B

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See RW Sheet Series For Survey Control



VICINITY MAP

NOT TO SCALE

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BURKE/CALDWELL COUNTY

LOCATION: SR 1001 (CONNELLY SPRINGS ROAD), BURKE COUNTY CONSTRUCT NEW PARALLEL BRIDGE OVER CATAWBA RIVER

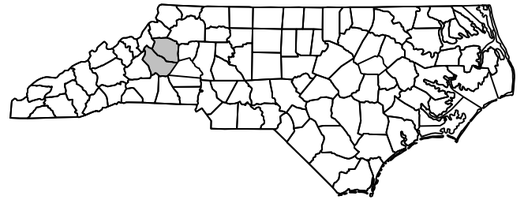
TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURES

BUFFER IMPACTS PERMIT

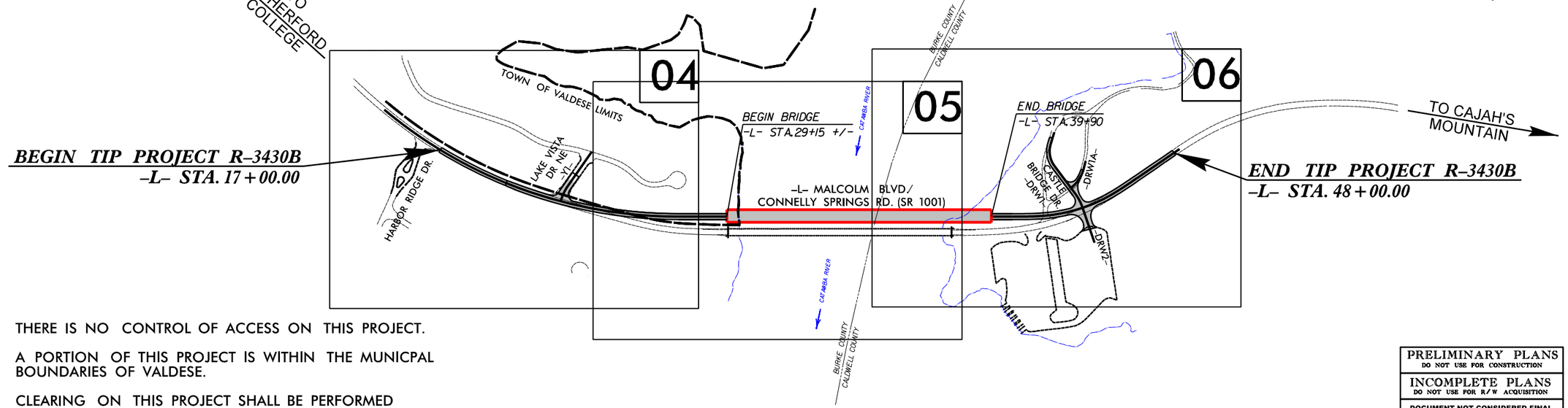
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3430B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34544.1.4	N/A	P.E.
34544.2.3	N/A	R/W
34544.2.5	N/A	UTILITIES

BUFFER DRAWING SHEET 1 OF 5



NAD 83/2011



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICPAL BOUNDARIES OF VALDESE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 10,481
ADT 2045 = 12,100
K = 9 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =1% DUAL 4%
FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3430B = 0.383 MILES
LENGTH STRUCTURE TIP PROJECT R-3430B = 0.204 MILES
TOTAL LENGTH TIP PROJECT R-3430B = 0.587 MILES

PLANS PREPARED BY:

DRMP
ENGINEERS SURVEYORS PLANNERS SCIENTISTS

DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NORTH CAROLINA 28217
(704) 332-2289
NC LICENSE NO. C-4923

FOR PROJECT MANAGEMENT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 21, 2022

LETTING DATE: JANUARY 16, 2024

CHRISTOPHER K. HAIRE, P.E.
PROJECT ENGINEER

MICHAEL D. HAGE, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
THERESA T. ELLERBY, CPM
PROJECT MANAGER - DIVISIONS 11-14

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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ZMego

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

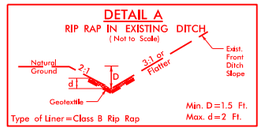
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

DRMP
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-4923 (704) 332-2289

BUFFER DRAWING SHEET 2 OF 5

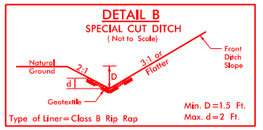
DETAIL A
RIP RAP IN EXISTING DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap
Min. D=1.5 Ft.
Max. d=2 Ft.

FROM STA. 17+00 TO STA. 18+50 –L– RT

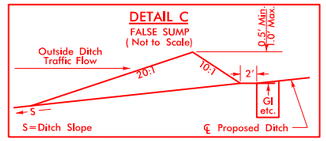
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap
Min. D=1.5 Ft.
Max. d=2 Ft.

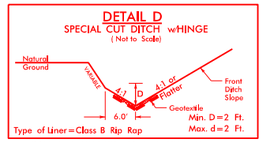
FROM STA. 18+50 TO STA. 20+00 –L– RT

DETAIL C
FALSE SUMP
(Not to Scale)



AT STA. 20+00 –L– LT

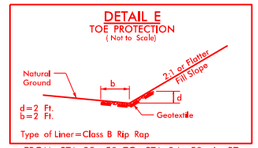
DETAIL D
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Type of Liner=Class B Rip Rap
Min. D=2 Ft.
Max. d=2 Ft.

FROM STA. 23+00 TO STA. 23+50 –L– RT

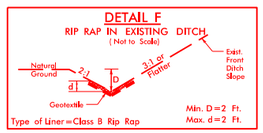
DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 23+50 TO STA. 24+50 –L– RT

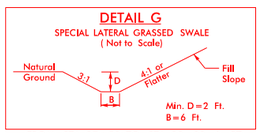
DETAIL F
RIP RAP IN EXISTING DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap
Min. D=2 Ft.
Max. d=2 Ft.

FROM STA. 24+50 TO STA. 27+50 –L– RT

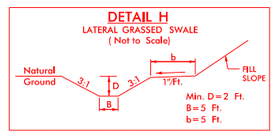
DETAIL G
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)



Min. D=2 Ft.
B=6 Ft.

FROM STA. 27+50 TO STA. 29+00 –L– RT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

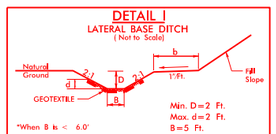
DETAIL H
LATERAL GRASSED SWALE
(Not to Scale)



Min. D=2 Ft.
B=5 Ft.
b=5 Ft.

FROM STA. 40+50 TO STA. 41+50 –L– LT
EST. 67 CY DDE
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

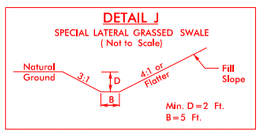
DETAIL I
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Type of Liner=Class B Rip-Rap
Min. D=2 Ft.
Max. d=2 Ft.
B=5 Ft.
b=5 Ft.

FROM STA. 41+50 TO STA. 42+00 –L– LT
EST. 76 CY DDE
CL. B RIP RAP: EST. 28 TONS, EST. 66 SY GT, EST. 21 CY DDE

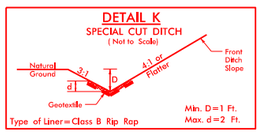
DETAIL J
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)



Min. D=2 Ft.
B=5 Ft.

FROM STA. 42+00 TO STA. 43+00 –L– LT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

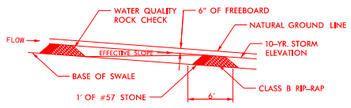
DETAIL K
SPECIAL CUT DITCH
(Not to Scale)



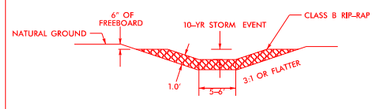
Type of Liner=Class B Rip Rap
Min. D=1 Ft.
Max. d=2 Ft.

FROM STA. 44+00 LT TO STA. 44+50 –L– LT
CL. B RIP RAP: EST. 24 TONS, EST. 55 SY GT, EST. 18 CY DDE

DETAIL L
TRAPEZOIDAL GRASSED SWALE
wROCK CHECK DAM
(Not to Scale)



PROFILE



TYPICAL SECTION

NOTES:

1) DO NOT USE INSIDE CLEAR RECOVERY AREA.
2) NOT PRACTICAL TO USE ON SLOPES > 5%.
3) TO BE USED AS PERMANENT STRUCTURES IN GRASS SWALES.
4) CHECK DAMS SHOULD BE SPACED SUCH THAT THE BASE OF THE UPSTREAM CHECK IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK.

8/17/99

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

NAD 83/2011

50' 0' 50'
DRAWING SCALE

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-4923 (704) 332-2289

BUFFER DRAWING SHEET 3 OF 5

TRAIAN CIUCA
CLAUDIA CIUCA
DB 2022 PG 177
PB 41PG 24

MICHAEL V. CARTER
DENISE N. CARTER
DB 2053 PG 488
PB 41PG 24

ISLAND

-L- PT Sta. 27+17.49

30+00

35+00

BZ

ARCHON PROFESSIONAL SERVICES, LLC
DB 2367 PG 58
PB 41PG 24

6

BOAT HOUSE

CATAWBA RIVER

FULL POND ELEV. = 995.1' (NWS)

JAMES R. REECE, JR.
DB 2470 PG 976
PB 41PG 24

5B

RW

E E E

C

-L- MATCH LINE STA. 26+00 SEE SHEET 4

15" RCP IV

15" RCP III

SR 1001 MALCOLM BLVD BST

-L-

MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001) N 21° 34' 27.7" W

SEAT=1018.87'
SEAT=1012.97'
SEAT=1012.12'
EXISTING R/W
SEAT=1011.22'
SEAT=1010.38'
SEAT=1013.04'
SEAT=1018.88'
SEAT=1019.27'
SEAT=1012.17'
SEAT=1011.25'
EXISTING R/W
SEAT=1010.41'

MTL

PDE

F

SPEC. LAT. GRASSED SWALE
SEE DETAIL G

BZ 1

BZ 2

JS

GRASS SWALE DATA
DA= 4.11 ACRES
SLOPE= 0.04 FT/FT
L REQ.= 411 FT.
L PRO.= 100 FT
Q2= 6.89 CFS
V2= 2.85 FPS
D2= 0.33 FT
Q10= 9.74 CFS
V10= 3.12 FPS
D10= 0.39 FT

STA. 29+00 -L- RT

LOHR E. LOVELAND, JR.
DB 930 PG 1654
PB 12 PG 216

7

CONC

2SBWD

WD

DOCK

DATUS COLE GORDON
JANE A. GORDON
DB 911 PG 1863
PB 12 PG 216

BURKE COUNTY
CALDWELL COUNTY

-L- MATCH LINE STA. 35+50 SEE SHEET 6

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8/17/99

ALLOWABLE IMPACTS ZONE 1

ALLOWABLE IMPACTS ZONE 2

BURKE COUNTY

CALDWELL COUNTY

-L- MATCH LINE STA. 35+50 SEE SHEET 5

50' 0' 50'
DRAWING SCALE

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP NC, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-4923 (704) 332-2289

BUFFER DRAWING
SHEET 4 OF 5

GRASS SWALE DATA
DA= 6.27 ACRES
SLOPE= 0.003 FT/FT
L REQ.= 627 FT
L PRO.= 200 FT
Q2= 12.56 CFS
V2= 1.47 FPS
D2= 1.05 FT
Q10= 16.65 CFS
V10= 1.60 FPS
D10= 1.21 FT

STA. 40+50 -L- LT

-DRW1- POT Sta.13+50.00
S 85°26'36.6"W

-DRW1- POT Sta.10+94.30 =
-DRW1A- PC Sta.10+00.00

END CONSTRUCTION
-DRW1- POT Sta.13+25.00
-DRW1- PT Sta.12+99.50

END CONSTRUCTION
-DRW1A- POC Sta.10+90.00

-L- PC Sta.48+27.47

-L- ST Sta.46+17.45

-DRW1- PC Sta.12+05.53

-DRW1A- POT Sta.11+27.94
S 82°50'46.3"W

-DRW1A- PT Sta.10+94.69

-DRW1- PT Sta.10+66.05

-L- TS Sta.40+76.66

-L- SC Sta.42+26.66

END CONSTRUCTION
-DRW2- POT Sta.10+92.05

-DRW2- POT Sta.11+50.00

-L- CS Sta.44+67.45

-L- POC Sta.43+65.00 =
-DRW1- PC Sta.10+00.00
-DRW2- POT Sta.10+00.00

-L- (SR 1001)

MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001)

CONNELLY SPRING RD 24' BST

FUTURO LLC
DB 1799 PG 401
PB 31 PG 197
9

DUKE ENERGY CORPORATION
DB 1244 PG 1452
PB 17 PG 290
8

LAT. GRASSED SWALE SEE DETAIL H

18" RCP-IV

FULL POND ELEV.=995.1' (NWS)

REMOVE EXIST. PIPE (TYP.SIZE UNK.)

SPEC. LAT. GRASSED SWALE SEE DETAIL J

LAT. BASE DITCH W/RIP RAP SEE DETAIL I

15" RCP-IV

18" RCP-IV

REMOVE 58 LF OF EXIST. 12" HDPE

GRADE TO DRAIN

SPEC. CUT DITCH W/RIP RAP SEE DETAIL K

RETAIN 12" HDPE

UNCLAS. STRUC. EXCAVATION (STR. PAY ITEM)

SEAT=1009.66'
SEAT=1009.64'
SEAT=1009.31'
SEAT=1009.26'
SEAT=1015.08'
SEAT=1015.08'
SEAT=1014.83'

INV=1037 CONC

INV=1021.57' CONC

PLUG

CONVERT EXIST. 18" RCP TO DRAIN

EXISTING R/W

LOCATED BY HYDRO SURVEY (APPROX.)

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mlegg

RIPARIAN BUFFER IMPACTS SUMMARY

Site No.	Station (From/To)	Structure Size / Type	IMPACTS									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
			ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	29+08/29+15 -L-	ROADWAY FILL	X				924	924					
1	29+15/29+59 -L-	BRIDGE		X		7955	4453	12408					
2	37+94/39+90 -L-	BRIDGE		X		11721	6877	18598					
2	39+90/40+63 -L- LT	ROADWAY FILL	X			1083	1798	2881					
2	12+71/13+35 -DRW1- LT	ROADWAY FILL	X				1377	1377					
TOTALS*:						**20759**	**15429**	**36188**	**0**	**0**	**0**	**0**	**0**

NOTES:

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
08/17/2022
BURKE / CALDWELL
R-3430B
34544.1.4
SHEET 5 OF 5

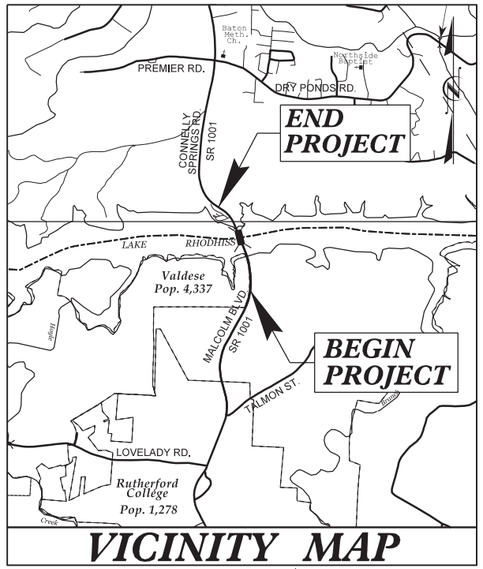
Revised 2018 Feb

05/30/17

TIP PROJECT: R-3430B

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See RW Sheet Series For Survey Control



VICINITY MAP

NOT TO SCALE

TO RUTHERFORD COLLEGE

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

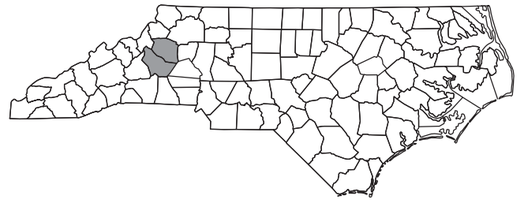
BURKE/CALDWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3430B	1	

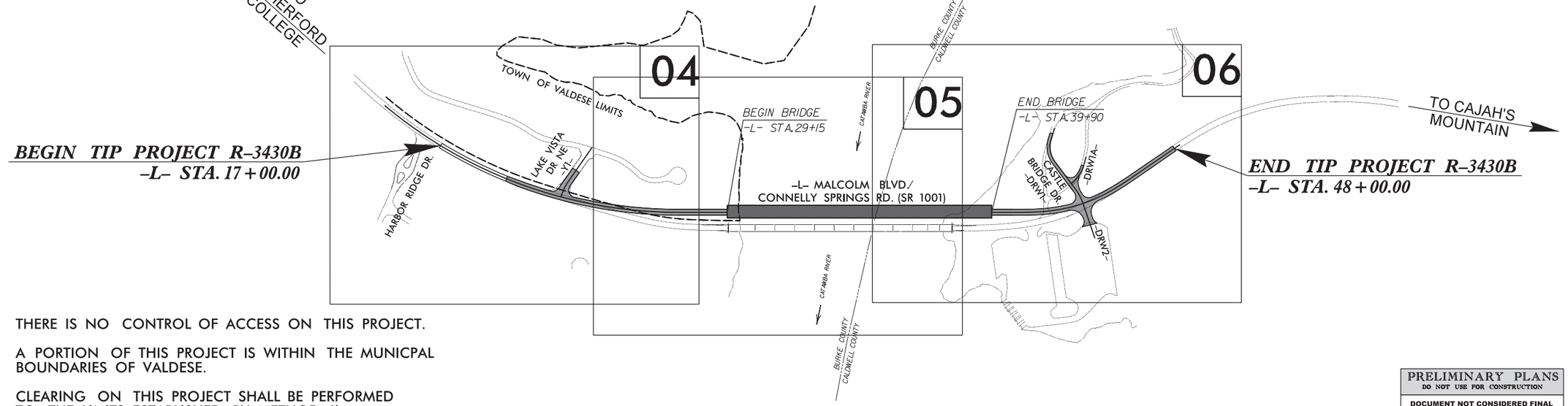
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34544.1.4	N/A	P.E.
34544.2.3	N/A	R/W
34544.2.5	N/A	UTILITIES

LOCATION: SR 1001 (CONNELLY SPRINGS ROAD), BURKE COUNTY CONSTRUCT NEW PARALLEL BRIDGE OVER CATAWBA RIVER

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURES



NAD 83/2011



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICPAL BOUNDARIES OF VALDESE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 10,481
ADT 2045 = 12,100
K = 9 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =1% DUAL 4%
FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3430B = 0.383 MILES
LENGTH STRUCTURE TIP PROJECT R-3430B = 0.204 MILES
TOTAL LENGTH TIP PROJECT R-3430B = 0.587 MILES

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NORTH CAROLINA 28217
(704) 332-2289
NC LICENSE NO. C-2213

FOR PROJECT MANAGEMENT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 21, 2022

LETTING DATE:
MAY 16, 2023

CHRISTOPHER K. HAIRE, P.E.
PROJECT ENGINEER
MICHAEL D. HAGE, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
THERESA T. ELLERBY, CPM
PROJECT MANAGER - DIVISIONS 11-14

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

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SShuman

9/10/2021

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	1B

STATE OF NORTH CAROLINA, DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

Note: Not to Scale

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin (EIP)
- Computed Property Corner
- Existing Concrete Monument (ECM)
- Parcel/Sequence Number
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary
- Proposed Wetland Boundary
- Existing Endangered Animal Boundary
- Existing Endangered Plant Boundary
- Existing Historic Property Boundary
- Known Contamination Area: Soil
- Potential Contamination Area: Soil
- Known Contamination Area: Water
- Potential Contamination Area: Water
- Contaminated Site: Known or Potential

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign
- Well
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream
- Buffer Zone 1
- Buffer Zone 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch
- False Sump

RAILROADS:

- Standard Gauge
- RR Signal Milepost
- Switch
- RR Abandoned
- RR Dismantled

RIGHT OF WAY & PROJECT CONTROL:

- Primary Horiz Control Point
- Primary Horiz and Vert Control Point
- Secondary Horiz and Vert Control Point
- Vertical Benchmark
- Existing Right of Way Monument
- Proposed Right of Way Monument (Rebar and Cap)
- Proposed Right of Way Monument (Concrete)
- Existing Permanent Easement Monument
- Proposed Permanent Easement Monument (Rebar and Cap)
- Existing C/A Monument
- Proposed C/A Monument (Rebar and Cap)
- Proposed C/A Monument (Concrete)
- Existing Right of Way Line
- Proposed Right of Way Line
- Existing Control of Access Line
- Proposed Control of Access Line
- Proposed ROW and CA Line
- Existing Easement Line
- Proposed Temporary Construction Easement
- Proposed Temporary Drainage Easement
- Proposed Permanent Drainage Easement
- Proposed Permanent Drainage/Utility Easement
- Proposed Permanent Utility Easement
- Proposed Temporary Utility Easement
- Proposed Aerial Utility Easement

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut
- Proposed Slope Stakes Fill
- Proposed Curb Ramp
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

- Single Tree
- Single Shrub
- Hedge
- Woods Line
- Orchard
- Vineyard

EXISTING STRUCTURES:

MAJOR:

- Bridge, Tunnel or Box Culvert
- Bridge Wing Wall, Head Wall and End Wall

MINOR:

- Head and End Wall
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB
- Paved Ditch Gutter
- Storm Sewer Manhole
- Storm Sewer

UTILITIES:

** SUE – Subsurface Utility Engineering*
LOS – Level of Service – A,B,C or D (Accuracy)

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole
- H–Frame Pole
- U/G Power Line Test Hole (SUE – LOS A)*
- U/G Power Line (SUE – LOS B)*
- U/G Power Line (SUE – LOS C)*
- U/G Power Line (SUE – LOS D)*

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole
- Telephone Pedestal
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole
- U/G Telephone Test Hole (SUE – LOS A)*
- U/G Telephone Cable (SUE – LOS B)*
- U/G Telephone Cable (SUE – LOS C)*
- U/G Telephone Cable (SUE – LOS D)*
- U/G Telephone Conduit (SUE – LOS B)*
- U/G Telephone Conduit (SUE – LOS C)*
- U/G Telephone Conduit (SUE – LOS D)*
- U/G Fiber Optics Cable (SUE – LOS B)*
- U/G Fiber Optics Cable (SUE – LOS C)*
- U/G Fiber Optics Cable (SUE – LOS D)*

WATER:

- Water Manhole
- Water Meter
- Water Valve
- Water Hydrant
- U/G Water Line Test Hole (SUE – LOS A)*
- U/G Water Line (SUE – LOS B)*
- U/G Water Line (SUE – LOS C)*
- U/G Water Line (SUE – LOS D)*
- Above Ground Water Line

TV:

- TV Pedestal
- TV Tower
- U/G TV Cable Hand Hole
- U/G TV Test Hole (SUE – LOS A)*
- U/G TV Cable (SUE – LOS B)*
- U/G TV Cable (SUE – LOS C)*
- U/G TV Cable (SUE – LOS D)*
- U/G Fiber Optic Cable (SUE – LOS B)*
- U/G Fiber Optic Cable (SUE – LOS C)*
- U/G Fiber Optic Cable (SUE – LOS D)*

GAS:

- Gas Valve
- Gas Meter
- U/G Gas Line Test Hole (SUE – LOS A)*
- U/G Gas Line (SUE – LOS B)*
- U/G Gas Line (SUE – LOS C)*
- U/G Gas Line (SUE – LOS D)*
- Above Ground Gas Line

SANITARY SEWER:

- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line
- Above Ground Sanitary Sewer
- SS Force Main Line Test Hole (SUE – LOS A)*
- SS Force Main Line (SUE – LOS B)*
- SS Force Main Line (SUE – LOS C)*
- SS Force Main Line (SUE – LOS D)*

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box
- Utility Unknown U/G Line (SUE – LOS B)*
- U/G Tank; Water, Gas, Oil
- Underground Storage Tank, Approx. Loc.
- A/G Tank; Water, Gas, Oil
- Geoenvironmental Boring
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

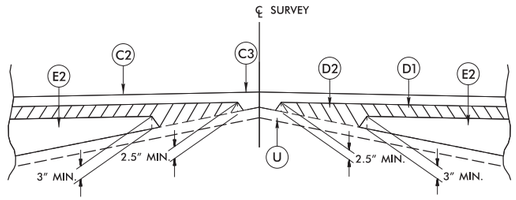
6/2/99

PAVEMENT SCHEDULE

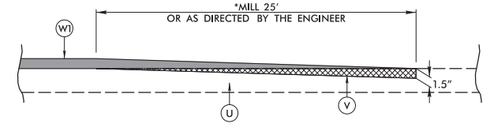
(FINAL PAVEMENT DESIGN)

C1	PROP. APPROX. 1.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD.	E1	PROP. APPROX. 4″ ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	S1	6″ CONCRETE SHARED-USE PATH
C2	PROP. APPROX. 3″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 165 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 3″ IN DEPTH OR GREATER THAN 5.5″ IN DEPTH.	T	EARTH MATERIAL.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT TO EXCEED 1.5″ IN DEPTH.	J1	PROP. 6″ AGGREGATE BASE COURSE.	U	EXISTING PAVEMENT.
C4	PROP. APPROX. 2.5″ ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	P1	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YD.	V	VARIABLE DEPTH MILLING PAVEMENT (SEE DETAIL SHEET 2A-1)
D1	PROP. APPROX. 4″ ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R1	2′-6″ CONCRETE CURB AND GUTTER.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL SHEET 2A-1).
D2	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1″ DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2.5″ IN DEPTH OR GREATER THAN 4″ IN DEPTH.	R2	1′-6″ CONCRETE CURB AND GUTTER.		

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

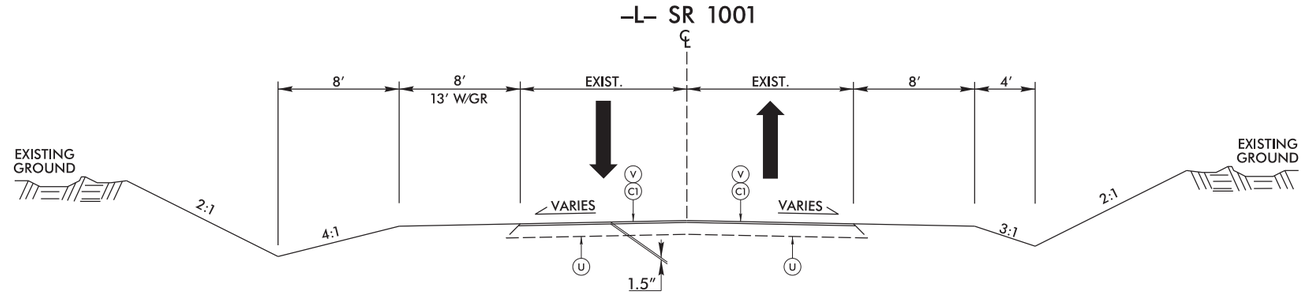


Detail Showing Method of Wedging (W1)



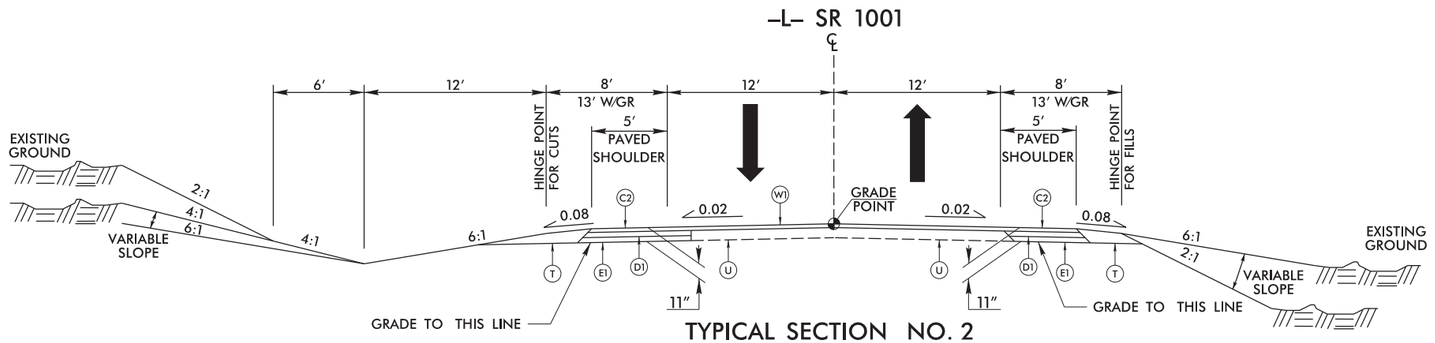
TIE-IN MILLING DETAIL (NOT TO SCALE)

For Profile Connections Tying Proposed Pavements to Existing Pavements



TYPICAL SECTION NO. 1

–L– STA. 17+00.00 TO –L– STA. 19+50.00
–L– STA. 47+50.00 TO –L– STA. 48+00.00



TYPICAL SECTION NO. 2

–L– STA. 19+50.00 TO –L– STA. 22+34.00
–L– STA. 43+50.00 TO –L– STA. 47+50.00

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2A-1

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:

DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

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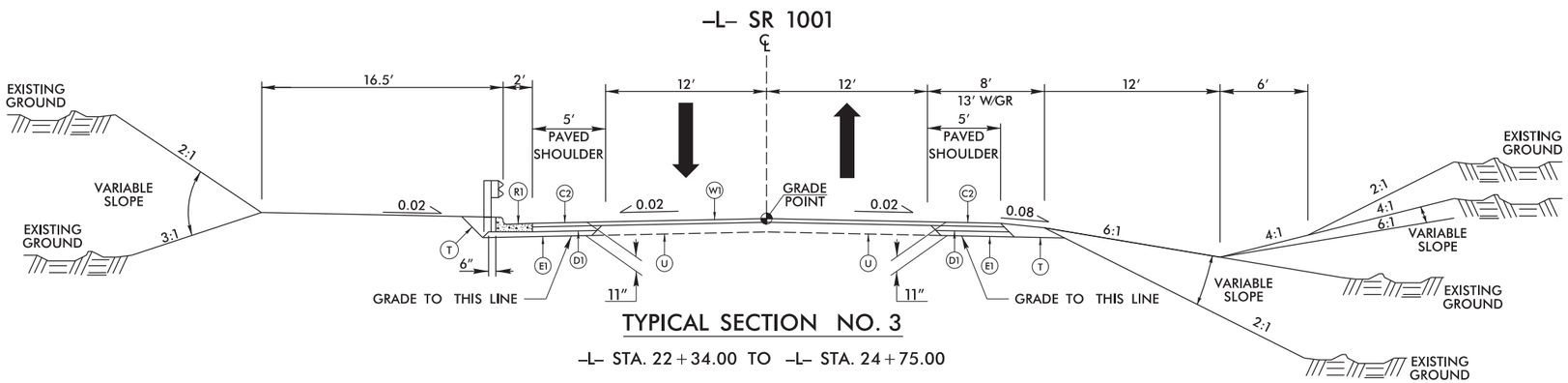
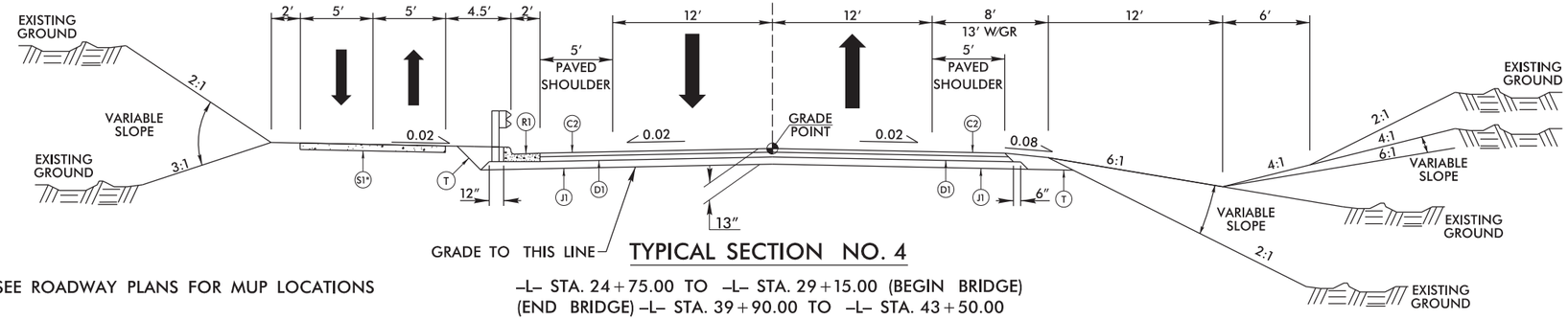


TYPICAL SECTION NO. 3

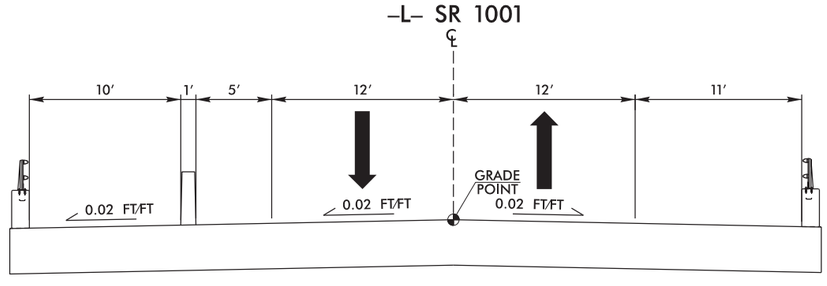
–L– STA. 22+34.00 TO –L– STA. 24+75.00



TYPICAL SECTION NO. 4

*NOTE SEE ROADWAY PLANS FOR MUP LOCATIONS

–L– STA. 24+75.00 TO –L– STA. 29+15.00 (BEGIN BRIDGE)
(END BRIDGE) –L– STA. 39+90.00 TO –L– STA. 43+50.00



TYPICAL SECTION NO. 5

–L– STA. 29+15.00 TO –L– STA. 39+90.00

* – THE BRIDGE RAILS AND BRIDGE TYPE WILL BE DETERMINED AFTER THE 25% STAGE

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2A-2

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

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CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5″ S9.5B
C2	3″ S9.5B
C3	VAR. DEPTH S9.5B
C4	2.5″ S9.5B
D1	4″ I19.0C
D2	VAR. DEPTH I19.0C
E1	4″ B25.0C
E2	VAR. DEPTH B25.0C
J1	6″ ABC
P1	.35 PRIME COAT
R1	2′-6″ C&G
R2	1′-6″ C&G
S1	6″ CONC. SUP
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	VAR. DEPTH MILLING
W1	WEDGING

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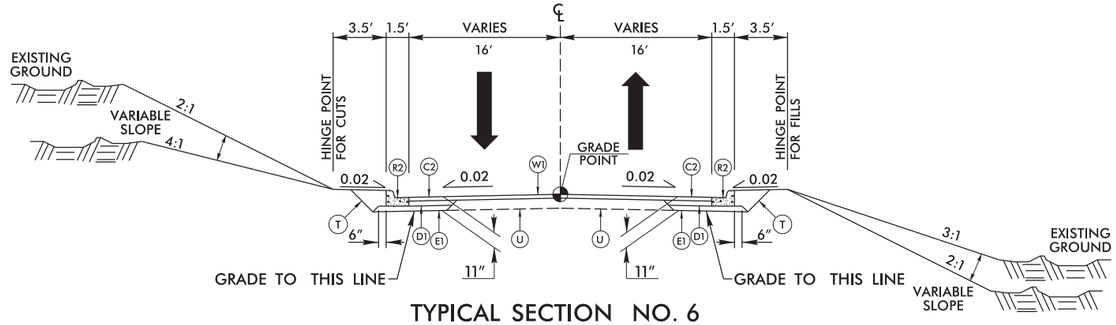
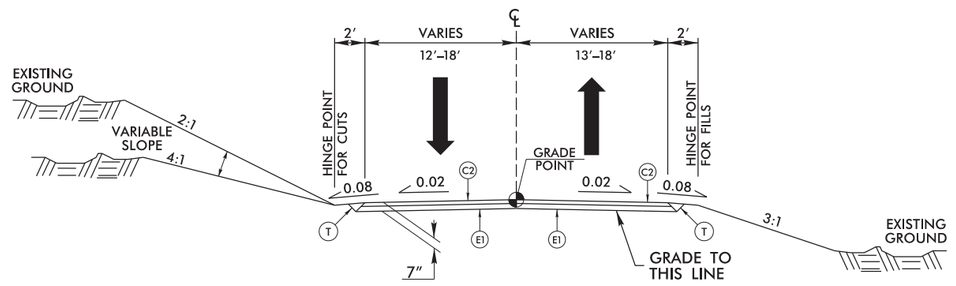
–Y1– LAKE VISTA DR. NE



TYPICAL SECTION NO. 6

–Y1– STA. 10+30.00 TO –Y1– STA. 11+25.00

–DRW1– CASTLE BRIDGE DR.
–DRW2–

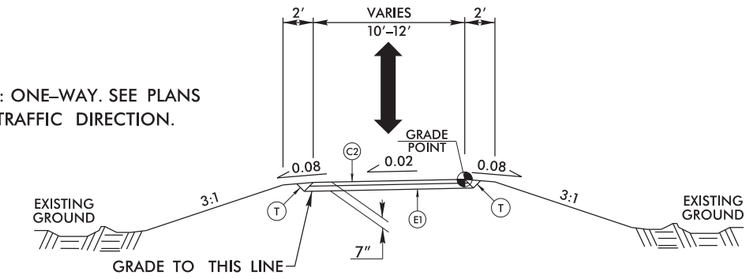


TYPICAL SECTION NO. 7

–DRW1– STA. 10+17.00 TO –DRW1– STA. 10+94.30
–DRW2– STA. 10+17.00 TO –DRW2– STA. 10+92.05

–DRW1– CASTLE BRIDGE DR.
–DRW1A–

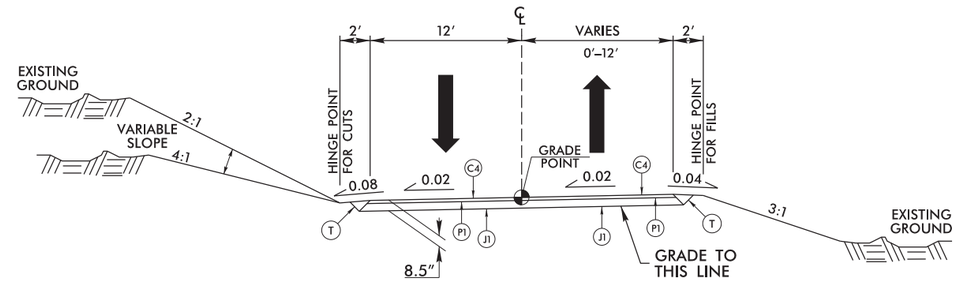
NOTE: ONE–WAY. SEE PLANS FOR TRAFFIC DIRECTION.



TYPICAL SECTION NO. 8

–DRW1– STA. 10+94.30 TO –DRW1– STA. 13+25.00
–DRW1A– STA. 10+00.00 TO –DRW1A– STA. 10+90.00

–DET_DRW1–



TYPICAL SECTION NO. 9

–DET_DRW1– STA. 10+10.00 TO –DET_DRW1– STA. 13+80.00

PROJECT REFERENCE NO.	SHEET NO.
R–3430B	2A–3

ROADWAY DESIGN ENGINEER

PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PAVEMENT SCHEDULE (FINAL PAVEMENT DESIGN)	
C1	1.5″ S9.5B
C2	3″ S9.5B
C3	VAR. DEPTH S9.5B
C4	2.5″ S9.5B
D1	4″ I19.0C
D2	VAR. DEPTH I19.0C
E1	4″ B25.0C
E2	VAR. DEPTH B25.0C
J1	6″ ABC
P1	.35 PRIME COAT
R1	2′-6″ C&G
R2	1′-6″ C&G
S1	6″ CONC. SUP
T	EARTH MATERIAL
U	EXIST. PAVEMENT
V	VAR. DEPTH MILLING
W1	WEDGING

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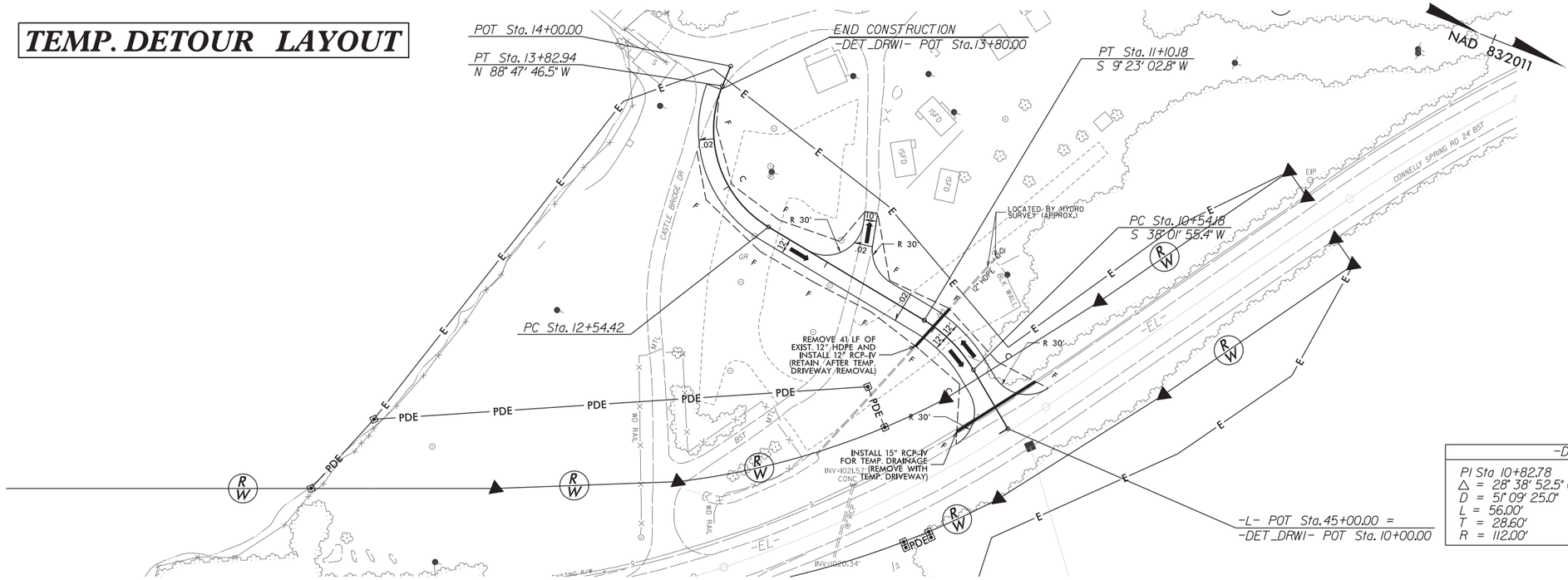
8/17/99

REVISIONS

TEMP. DETOUR LAYOUT



-DET_DRW1-	
PI Sta 10+82.78	PI Sta 13+32.40
△ = 28° 38' 52.5" (LT)	△ = 81° 49' 10.7" (RT)
D = 51° 09' 25.0"	D = 63° 39' 43.1"
L = 56.00'	L = 128.52'
T = 28.60'	T = 77.99'
R = 112.00'	R = 90.00'

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2B-1
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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PLANS PREPARED BY:
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DRMP, INC.
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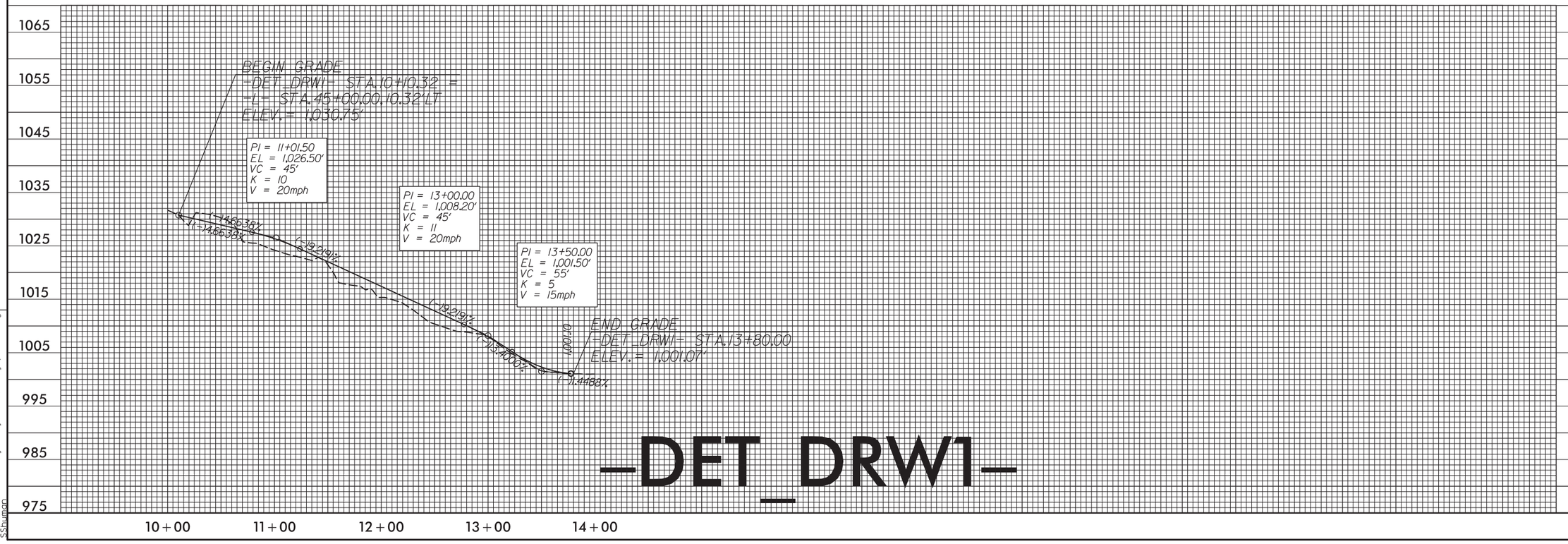

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	2D-1
R/W SHEET NO.	

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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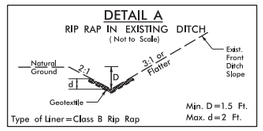
PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

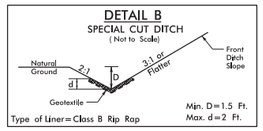
DETAIL A
RIP RAP IN EXISTING DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 17+00 TO STA. 18+50 –L– RT

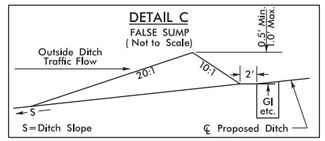
DETAIL B
SPECIAL CUT DITCH
(Not to Scale)



Type of Liner=Class B Rip Rap

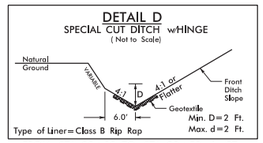
FROM STA. 18+50 TO STA. 20+00 –L– RT

DETAIL C
FALSE SUMP
(Not to Scale)



AT STA. 20+00 –L– LT

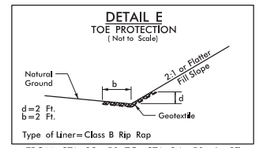
DETAIL D
SPECIAL CUT DITCH wHINGE
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 23+00 TO STA. 23+50 –L– RT

DETAIL E
TOE PROTECTION
(Not to Scale)



Type of Liner=Class B Rip Rap

FROM STA. 23+50 TO STA. 24+50 –L– RT

DETAIL F
RIP RAP IN EXISTING DITCH
(Not to Scale)

Type of Liner=Class B Rip Rap

FROM STA. 24+50 TO STA. 27+50 –L– RT

DETAIL G
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)

FROM STA. 27+50 TO STA. 29+00 –L– RT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL H
LATERAL GRASSED SWALE
(Not to Scale)

FROM STA. 40+50 TO STA. 41+50 –L– LT
EST. 67 CY DDE
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL I
LATERAL BASE DITCH
(Not to Scale)

*When B is < 6.0'

Type of Liner=Class B Rip-Rap

FROM STA. 41+50 TO STA. 42+00 –L– LT
EST. 76 CY DDE
CL. B RIP RAP: EST. 28 TONS, EST. 66 SY GT, EST. 21 CY DDE

DETAIL J
SPECIAL LATERAL GRASSED SWALE
(Not to Scale)

FROM STA. 42+00 TO STA. 43+00 –L– LT
*SEE DETAIL L FOR ADDITIONAL SPECIFICATIONS

DETAIL K
SPECIAL CUT DITCH
(Not to Scale)

Type of Liner=Class B Rip Rap

FROM STA. 44+00 LT TO STA. 44+50 –L– LT
CL. B RIP RAP: EST. 24 TONS, EST. 55 SY GT, EST. 18 CY DDE

DETAIL L
TRAPEZOIDAL GRASSED SWALE
wROCK CHECK DAM
(Not to Scale)

PROFILE

TYPICAL SECTION

NOTES:

1) DO NOT USE INSIDE CLEAR RECOVERY AREA.
2) NOT PRACTICAL TO USE ON SLOPES > 5%.
3) TO BE USED AS PERMANENT STRUCTURES IN GRASS SWALES.
4) CHECK DAMS SHOULD BE SPACED SUCH THAT THE BASE OF THE UPSTREAM CHECK IS AT THE SAME ELEVATION AS THE TOP OF THE DOWNSTREAM CHECK.

3/24/2022 3:18:50 PM
R-3430B\Drainage\R3430B_hyd_psh_2D1.dgn
sshuman

CAR-ZMEGA

COMPUTED BY: ZACHARY J. MEGA, E.I. DATE: 03/21/2022
CHECKED BY: RYAN P. MITCHELL, P.E. DATE: 03/21/2022

PROJECT NO.	SHEET NO.
R-3430B	3D-1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout. See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

ABBREVIATIONS

C.A.A.	CORRUGATED ALUMINIUM ALLOY
C.B.	CATCH BASIN
C.S.	CORRUGATED STEEL
D.I.	DROP INLET
G.D.I.	GRATED DROP INLET
H.D.P.E.	HIGH DENSITY POLYETHYLENE
J.B.	JUNCTION BOX
M.H.	MANHOLE
N.S.	NARROW SLOT
P.V.C.	POLYVINYL CHLORIDE
R.C.	REINFORCED CONCRETE
T.B.D.I.	TRAFFIC BEARING DROP INLET
T.B.J.B.	TRAFFIC BEARING JUNCTION BOX
W.S.	WIDE SLOT

LINE & STATION	OFFSET	STRUCTURE NUMBER		TOP ELEVATION	INVERT ELEVATION	INVERT ELEVATION	MINIMUM REQUIRED SLOPE	Drainage Pipe (RCP, CSP, CAAP, HDPE, PVC, or PP PIPE)														C. S. PIPE								R. C. PIPE CLASS III								R. C. PIPE CLASS IV								R. C. PIPE CLASS V								ENDWALLS STD. 838.01 OR STD. 838.11 (UNLESS NOTED OTHERWISE)	REINFORCED ENDWALLS	DRAINAGE STRUCTURE	QUANTITIES FOR DRAINAGE STRUCTURES NOTE: TOTAL LIN. FT. FOR PAY QUANTITY SHALL BE A + (1.3 X B)			C.B. STD. 840.01 OR STD. 840.02	FRAME, GRATES, AND HOOD STD. 840.03				CONCRETE TRANSITIONAL SECTION		OPEN THROAT C.B. STD. 840.04 OR STD. 840.05	D.I. STD. 840.14 OR STD. 840.15	D.I. FRAME AND GRATES STD. 840.16	G.D.I. TYPE "B" STD. 840.18 OR STD. 840.27	G.D.I. TYPE "D" STD. 840.19 OR STD. 840.28	G.D.I. (W.S. FLAT) FRAME WITH GRATE STD. 840.20	G.D.I. (W.S. FLAT) FRAME W/ 2 GRATES STD. 840.20	G.D.I. (W.S. SAG) FRAME W/ GRATE STD. 840.22	G.D.I. (W.S. SAG) FRAME W/ 2 GRATES STD. 840.22	G.D.I. (N.S. SAG) FRAME W/ GRATE STD. 840.24	G.D.I. (N.S. SAG) FRAME W/ 2 GRATES STD. 840.24	G.D.I. (N.S. FLAT) FRAME W/ 2 GRATES STD. 840.29		M.H. STD. 840.51, STD. 840.52, OR STD. 840.53	M.H. FRAME AND COVER STD. 840.54		24" C.S. ELBOW	FLOWABLE FILL	CONCRETE AND BRICK PIPE PLUG STD. 840.71	PIPE REMOVAL	REMARKS
SIZE		FROM	TO	FT.	FT.	FT.	%	12	15	18	24	30	36	42	48	DO NOT USE RCP	DO NOT USE CSP	DO NOT USE CAAP	DO NOT USE HDPE	DO NOT USE PVC	DO NOT USE PP PIPE	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	12	15	18	24	30	36	42	48	CY	CY	MASONRY CY	0' THRU 5' EACH	A 5' THRU 10' LIN. FT.	B 10' AND ABOVE LIN. FT.		GRATE TYPE E	F	G		D.I. STD. 852.04 OR STD. 852.06	C.B. STD. 852.05																		CY	CY	LIN. FT.	
THICKNESS OR GAUGE																						.064	.064	.064	.064	.079	.079	.109	.109																																																									
L 20+00	37 LT	0401		1071.6																																																					1														1				1													
		0401	0404		1069.7	1059.6			116																																																																														
L 21+17	46 RT	0403		1062.1																																																					1										1																					
		0403	0404		1059.2	1058.8																											76																																																								
L 21+17	31 LT	0404		1063.7																																																					1																								1	1						
		0404	0405		1058.8	1044.1	0.4																		40																																																												1				
L 27+00	19 LT	0501		1033.8																																																				1	1.6		1			1																									
		0501	0502		1027.2	1024.3	0.3																								108																																																											
L 28+32	19 LT	0503		1031.2																																																					1			1			1																									
		0503	0501		1027.9	1027.2																																	132																																																		
L 28+64	18 LT	0504		1030.9																																																				1													1								1										
		0504	0503		1028.1	1027.9																																	32																																																		
L 40+19	31 LT	0601		1022.0																																																				1													1								1										
		0601	0602		1019.2	1019.0	0.4																																8																																																				
L 40+29	31 LT	0602		1022.0																																																				1													1								1										
		0602	0605		1018.8	1018.7																																		16																																																	
L 40+19	22 RT	0603		1022.2																																																				1													1								1										
		0603	0604		1019.4	1019.3																																	8																																																		
L 40+29	22 RT	0604		1022.1																																																				1													1								1										
		0604	0605		1019.3	1018.9																																	40																																																		
L 40+41	18 LT	0605		1022.1																																																				1													1								1										
		0605	0606		1018.7	1018.2	0.5																																	52																																																	
L 40+95	19 LT	0606		1021.9																																																				1			1	1																												
		0606	0607		1018.2	1018.0	0.6																																	20																																																	
L 41+15	19 LT	0607		1021.9																																																				1			1		1																										
		0607	0608		1018.0	1016.6	0.8																																	136																																																	
L 42+50	19 LT	0608		1022.6																																																				1	1.0		1		1																										
		0608	0609		1016.6	1010.0	3.4			60																																																																																
L 44+00	41 RT	0611		1027.7																																																				1														1				1													
		0611	0612		1025.7	1020.2																									76																																																									
L 44+00	38 LT	0612		1023.2																																																				1														1				1													
		0612	0613		1020.2	1015.8	0.4		28																																																																																	
L 44+00	69 LT	0613		1020.0																																																				1											1	1																				
		0613	0610		1015.8	1012.0	0.4																								88																																																							
L 43+52	14 RT	0000																																																																																	4			
DRW1 10+54	16 RT	0000																																																																																				58	
L 43+37	39 RT	0000																																																																																			0.065		
L 43+69	11 LT	0000																																																																																			0.065		
L 20+98	45 RT	0000																																																																																			0.116		
L 21+16	50 LT	0000																																																																																			0.116		
L 21+07	3 LT	0000																																																																																		11			
DET_DRW1 11+02	1 LT	0000																																																																																				41	SEE SHEET 2B-1 AND WZTC PLANS
DET_DRW1 11+02	1 LT	0000																																				44																																																							SEE SHEET 2B-1 AND WZTC PLANS
DET_DRW1 10+20	1 RT	0000																																					76																																																					SEE SHEET 2B-1 AND WZTC PLANS
DET_DRW1 10+20	1 RT	0000																																																																																						76	SEE SHEET 2B-1 AND WZTC PLANS
SHEET TOTALS									144	60															40						272		76					44	296	224																	17	2.6		5	1	2	2				1	1	1	6	3				3			6		1	1		1	15	0.362	175	
PROJECT TOTALS									144	60															40						272		76					44	296	224																	17	2.6		5	1	2	2				1	1	1	6	3				3			6		1	1		1	15	0.362	175	

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

NAD 83/2011

8/17/99

REVISIONS

BEGIN TIP PROJECT R-3430B
-L- POC STA. 17+00.00
BEGIN OVERLAY

BEGIN GRADE
END OVERLAY/WEDGING
-L- POC STA. 20+00.00

END CONSTRUCTION
-Y1- POT Sta. 11+25.00

-Y1- POT Sta. 12+39.83

-L- POC Sta. 22+34.00 =
-Y1- PC Sta. 10+00.00

-L- MATCH LINE STA. 26+00 SEE SHEET 5

RICHARD G. ROBINSON
DB 2137 PG 044

TOMARCUS GILL
WENDY SIMMONS
DB 2375 PG 559
PB 42 PG 5

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

LAKE VISTAS HOMEOWNERS ASSOCIATION, INC.
DB 2230 PG 473
PB 41PG 24
PB 42 PG 5

DAVID N. BOOTH
ALEXANDRA F. BOOTH
DB 2022 PG 171
PB 41PG 24

JOHN W. CROSS
SHERRIE C. CROSS
DB 2317 PG 229
PB 41PG 24
PB 46 PG 192

DAYTON HOYT COOK
DONNA SUE COOK
DB 913 PG 149

NORTH CAROLINA LAKEFRONT PROPERTIES, LLC
DB 1808 PG 734
PB 42 PG 5

JOY ELANIE ZIEGLER
PAUL ZIEGLER
DB 2394 PG 765
PB 42 PG 5

JAMES MICHAEL HUFFMAN
LEIGH ANN HUFFMAN
DB 2317 PG 223
PB 41PG 24
PB 46 PG 192

LAKE VISTAS HOMEOWNERS ASSOCIATION INC.
PB 0042 PG 0005-0006

TRAIAN CIUCA
CLAUDIA CIUCA
DB 2022 PG 177
PB 41PG 24

CHARLES C. COLLINS
CYNTHIA L. COLLINS
DB 2285 PG 210
PB 12 PG 216
PB 13 PG 180

MICHAEL A. PARRISH
CYNTHIA N. PARRISH
DB 1417 PG 270
PB 13 PG 180

WAYNE E. WHISENANT
JEANA ABEE WHISENANT
DB 2269 PG 477
DB 2386 PG 630
PB 13 PG 180

LOHR E. LOVELAND, JR.
KATHY F. LOVELAND
DB 975 PG 933
PB 13 PG 179

LOHR LOVELAND
KATHY LOVELAND
DB 1617 PG 696
PB 13 PG 181

CRYSTAL ANN DAVIS
DB 2093 PG 945
PB 13 PG 180

JAMES R. REECE, JR.
DB 2470 PG 976
PB 42 PG 5

DATUS COLE GORDON
JANE A. GORDON
DB 911PG 1863
PB 12 PG 216

LOHR E. LOVELAND, JR.
DB 930 PG 1654
PB 12 PG 216

INSTALL CL B RIP RAP IN EXIST. DITCH FROM STA. 17+00 TO STA. 18+50 -L- RT SEE DETAIL A

CL B RIP RAP
EST. 181 TONS
EST. 416 SY GT
EST. 134 CY DDE

SPEC. CUT DITCH W/ RIP RAP SEE DETAIL B

FALSE SUMP SEE DETAIL C

CL I RIP RAP
EST. 7 TONS
EST. 15 SY GT

PROP. 1'-6" C&G

TOE PROTECTION SEE DETAIL E

PROP. 2'-6" C&G

SPEC. CUT DITCH W/ HINGE AND RIP RAP SEE DETAIL D

INSTALL CL B RIP RAP IN EXIST. DITCH FROM STA. 24+50 TO STA. 27+50 -L- RT SEE DETAIL F

CL B RIP RAP
EST. 210 TONS
EST. 510 SY GT
EST. 156 CY DDE

FUTURE SHARED-USE PATH GRADE ONLY

MALCOLM BLVD. (SR 1001)

-L-
PI Sta 20+95.86
Δ = 40° 00' 23.0" (LT)
D = 3° 04' 49.5"
L = 1,298.73'
T = 677.10'
R = 1,860.00'
SE = 0.05
R0 = 120'

-Y1-
PI Sta 10+35.28
Δ = 20° 00' 19.5" (RT)
D = 28° 38' 52.4"
L = 69.83'
T = 35.28'
R = 200.00'

FOR -L- PROFILE SEE SHEET 07
FOR -Y1- PROFILE SEE SHEET 10

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R-3430B (Roadway Proj)\R3430B_Rdy_psh4.dgn
Shuman

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

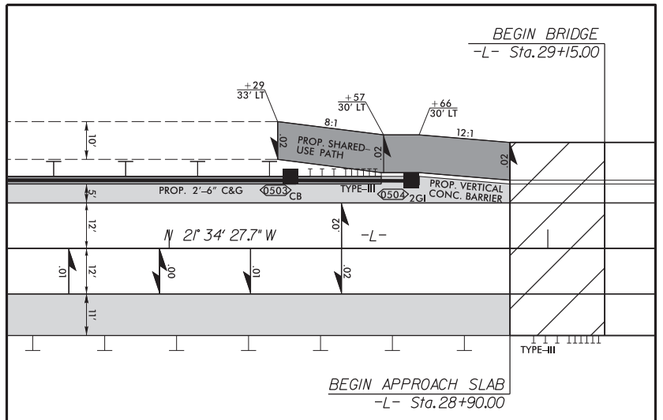
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

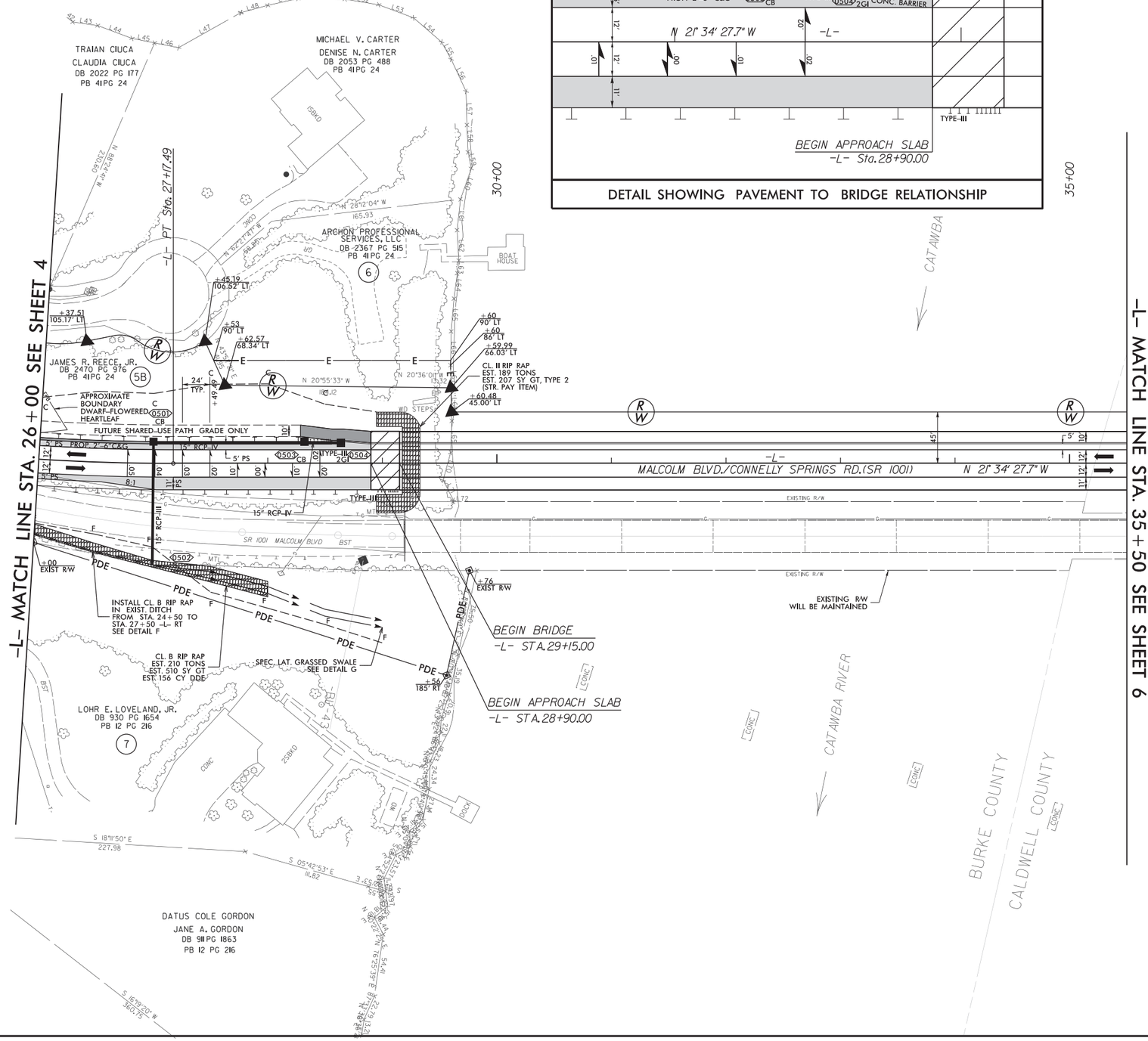
NAD 83/2011

8/17/99

REVISIONS



DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP



FOR -L- PROFILE SEE SHEETS 07 & 08

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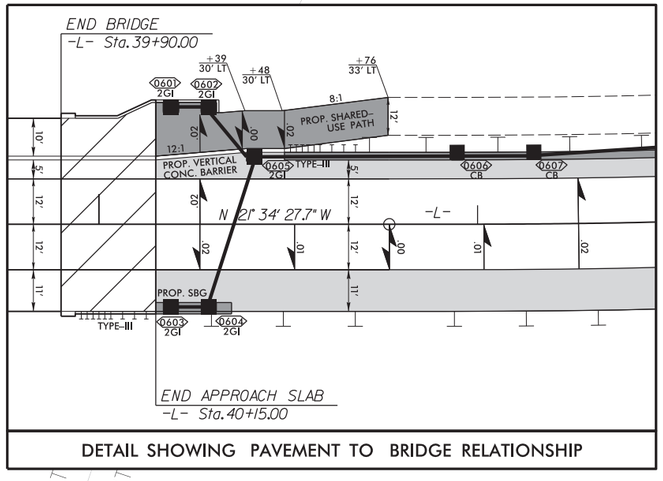
sshuman

8/17/99

REVISIONS

-L- MATCH LINE STA. 35+50 SEE SHEET 5



DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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PLANS PREPARED BY:
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DRMP INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

NAD 83/2011

BURKE COUNTY / CALDWELL COUNTY

-DRW1- POT Sta. 13+50.00
S 85° 26' 56.6" W
+10 / 350 LT

-DRW1- POT Sta. 10+94.30 =
-DRW1A- PC Sta. 10+00.00

END CONSTRUCTION
-DRW1- POT Sta. 13+25.00
-DRW1- PT Sta. 12+99.50

END CONSTRUCTION
-DRW1A- POC Sta. 10+90.00

-DRW1- PC Sta. 12+05.53

-DRW1A- POT Sta. 11+27.94
S 82° 50' 46.3" W

-DRW1A- PT Sta. 10+94.69

-DRW1- PT Sta. 10+66.05

-L- ST Sta. 46+17.45

END TIP PROJECT R-3430B
-L- POT STA. 48+00.00

END GRADE
BEGIN OVERLAY/RESURFACE
-L- POT STA. 47+00.00

-L- PC Sta. 48+27.47

END APPROACH SLAB
-L- STA. 40+15.00

END BRIDGE
-L- STA. 39+90.00

N 21° 34' 27.7" W -L-
MALCOLM BLVD./CONNELLY SPRINGS RD. (SR 1001)

EXISTING R/W WILL BE MAINTAINED

CL I RIP RAP
EST. 3 TONS
EST. 7 SY GT
CL I RIP RAP
EST. 4 TONS
EST. 10 SY GT

REMOVE GATE AND FENCE
REMOVE EXIST. PIPE (TYPE/SIZE UNK.)
SPEC. LAT. GRASSED SWALE SEE DETAIL J
LAT. BASE DITCH W/RIP RAP SEE DETAIL I
LAT. GRASSED SWALE SEE DETAIL H
REMOVE 58 LF OF EXIST. 12" HDPE
REMOVE GATE
GRADE TO DRAIN
SPEC. CUT DITCH W/ RIP RAP SEE DETAIL K
PROP. 2'-6" C&G
PROTECT BILLBOARD
GRADE ONLY GREU TY-3
GREU TY-3
PLUG
FUTURE SHARED-USE PATH

18" RCP-IV
15" RCP-IV
15" RCP III
PDE
DI
CB
TYPE-III

FUTURO LLC
DB 1799 PG 401
PB 31PG 197
9

DUKE ENERGY CORPORATION
DB 1244 PG 1452
PB 17 PG 290
8

EST. 8770 CY UNCLAS. STRUC. EXCAVATION (STR. PAY ITEM)

CL II RIP RAP
EST. 328 TONS
EST. 364 SY GT, TYPE 2
(STRUC. PAY ITEM)

-L- TS Sta. 40+76.66

-L- SC Sta. 42+26.66

END CONSTRUCTION
-DRW2- POT Sta. 10+92.05

-L- CS Sta. 44+67.45

-L- POC Sta. 43+65.00 =
-DRW1- PC Sta. 10+00.00
-DRW2- POT Sta. 10+00.00

-DRW2- POT Sta. 11+50.00
N 48° 37' 14.6" E

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

-L-		
PIs Sta 41+76.73	PI Sta 43+48.46	PIs Sta 45+17.52
Θs = 6° 36' 39.8"	Δ = 21° 13' 29.9" (LT)	Θs = 6° 36' 39.8"
Ls = 150.00'	D = 8° 48' 53.0"	Ls = 150.00'
LT = 100.07'	L = 240.79'	LT = 100.07'
ST = 50.06'	T = 121.79'	ST = 50.06'
	R = 650.00'	
	SE = 0.06	
	R0 = 150'	

-DRW1-	
PI Sta 10+33.30	PI Sta 12+56.31
Δ = 18° 01' 18.6" (LT)	Δ = 53° 50' 40.6" (RT)
D = 27° 17' 01.3"	D = 57° 17' 44.8"
L = 66.05'	L = 93.98'
T = 33.30'	T = 50.78'
R = 210.00'	R = 100.00'

-DRW1A-
PI Sta 10+49.24
Δ = 38° 45' 09.6" (LT)
D = 40° 55' 32.0"
L = 94.69'
T = 49.24'
R = 140.00'

FOR -L- PROFILE SEE SHEET 08 & 09
FOR -DRW1-, -DRW1A- AND -DRW2- PROFILE SEE SHEET 10

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SShuman

5/14/99

PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	07

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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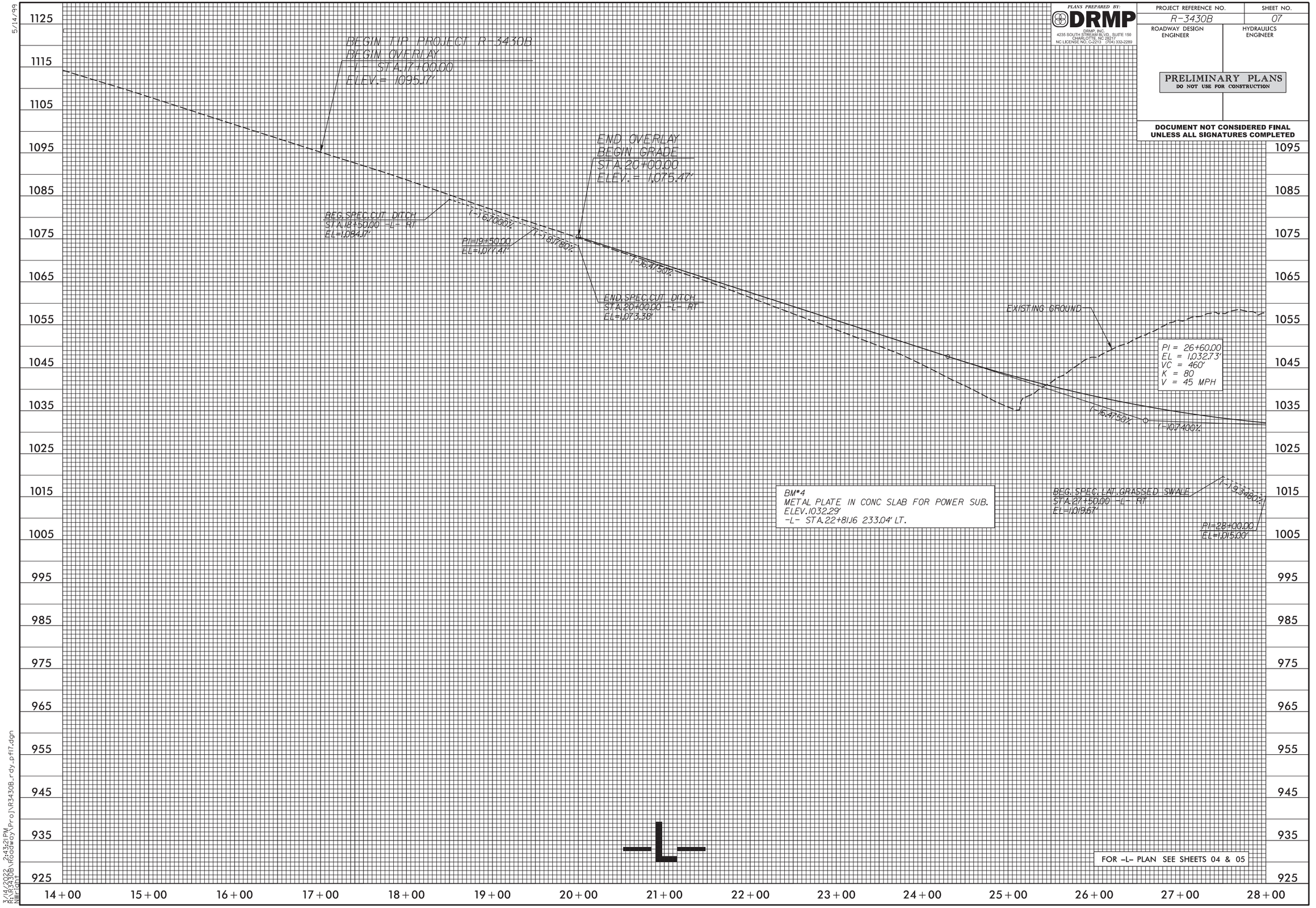

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NWright

5/14/99

PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	08

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PI = 26+60.00
EL = 1,032.73'
VC = 460'
K = 80
V = 45 MPH

BEGIN BRIDGE
-L- STA. 29+15.00
ELEV.= 1,030.84'

(-)10.7400%

(-)10.7400%

CLASS II RIP-RAP
EST. 189 TONS
EST. 209 SY GT
TYPE 2

(-) 4.0006%

PI = 28+00.00
EL=1,015.00'

END SPEC. LAT. GRASSED SWALE
STA.29+00.00 -L- RT
EL=1011.00'

PROP. 25' YR. ELEV.= 1,000.2

PROP. 100 YR. ELEV.= 1,004.6

(+) 10.7400%

END BRIDGE
-L- STA. 39+90.00
ELEV.= 1,022.89'

PI = 42+45.00
EL = 1,021.00'
VC = 420'
K = 81
V = 45 MPH

(-)10.7400%

LOW POINT
-L- STA. 40+94.63
ELEV.= 1,022.33'

7.57'

(+) 0.3000% (+) 1.7000% (+) 10.9000%

CLASS II RIP-RAP
EST. 328 TONS
EST. 364 SY GT TYPE 2
KEY-IN 3.5'

BEG. LAT. GRASSED SWALE
STA 40+50.00 -L- LT
EL=1002.00'

EXISTING GROUND

PI = 41+00.000
ET = 1,002.15'

END LAT. GRASSED SWALE
BEG. LAT. BASE DITCH
STA 41+50.00 -L- LT
EL=1003.00'

END LAT. BASE DITCH
BEG. SPEC. LAT. GRASSED SWALE
STA 42+00.00 -L- LT
EL=1008.00'

BRIDGE HYDRAULIC DATA

DESIGN DISCHARGE	= 51,000	CFS
DESIGN FREQUENCY	= 25	YRS
DESIGN HW ELEVATION	= 1,000.2	FT
BASE DISCHARGE	= 81,500	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 1,004.6	FT
OVERTOPPING DISCHARGE	= >87,800	CFS
OVERTOPPING FREQUENCY	= 500+	YRS
OVERTOPPING ELEVATION	= 1022.5	FT
DATE OF SURVEY	= MAY 2020	
W.S. ELEVATION AT DATE OF SURVEY	= 995.1	FT

FOR -L- PLAN SEE SHEETS 05 & 06

1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910 900

28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00 40+00 41+00 42+00

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PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	09

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

END GRADE
BEGIN OVERLAY
STA. 47+00.00
ELEV. = 1,041.35'

END TIP PROJECT R-3430B
-L- STA. 48+00.00
ELEV. = 1045.40'

PI = 42+45.00
EL = 1,021.00'
VC = 420'
K = 81
V = 45 MPH

(+)1.44422%

(-)0.74400%

(+)1.44422%

END SPEC. CUT DITCH
STA. 44+50.00 -L- LT
EL=1026.91'

(+)4.50000%

BEG. SPEC. CUT DITCH
STA. 44+00.00 -L- LT
EL=1025.19'

END SPEC. LAT. GRASSED SWALE
STA. 43+00.00 -L- LT
EL=1012.00'

END LAT. BASE DITCH
BEG. SPEC. LAT. GRASSED SWALE
STA. 42+00.00 -L- LT
EL=1008.00'

FOR -L- PLAN SEE SHEET 06

1110 1100 1090 1080 1070 1060 1050 1040 1030 1020 1010 1000 990 980 970 960 950 940 930 920 910

42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00

5/28/99

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DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

–Y1–

PI = 10+30.00
EL = 1,058.71'
VC = 25'
K = 3
V = 15mph

BEGIN GRADE
–Y1– STA. 10+17.00 =
–L– STA. 22+34.00, 17'LT
ELEV. = 1,059.36'

END GRADE
–Y1– STA. 11+25.00
ELEV. = 1,045.98'

–L– (SR 1001) ℄
(-)15.000%
(-)13.400%
PROPOSED GRADE
EXISTING GROUND

FOR –Y1– PLAN SEE SHEET 04

–DRW1–

PI = 10+50.00
EL = 1,023.87'
VC = 65'
K = 22
V = 30mph

BEGIN GRADE
–DRW1– STA. 10+17.00 =
–L– STA. 43+65.00, 17'LT
ELEV. = 1,025.85'

PI = 12+90.00
EL = 1,002.31'
VC = 70'
K = 11
V = 15mph

END GRADE
–DRW1– STA. 13+25.00
ELEV. = 1,001.44'

–L– (SR 1001) ℄
(-)16.000%
(-)8.983%
(-)12.489%
PROPOSED GRADE
EXISTING GROUND

FOR –DRW1– PLAN SEE SHEET 06

–DRW1A–

PI = 10+65.00
EL = 1,018.92'

BEGIN GRADE
–DRW1A– STA. 10+00.00 =
–DRW1– STA. 10+94.30
ELEV. = 1,019.89'

END GRADE
–DRW1A– STA. 10+90.00
ELEV. = 1,018.41'

–DRW1– ℄
(-)1.500%
(-)2.192%
PROPOSED GRADE
EXISTING GROUND

FOR –DRW1A– PLAN SEE SHEET 06

–DRW2–

PI = 10+30.00
EL = 1,028.84'
VC = 25'
K = 3
V = 15mph

BEGIN GRADE
–DRW2– STA. 10+17.00 =
–L– STA. 43+65.00, 17'RT
ELEV. = 1,027.99'

END GRADE
–DRW2– STA. 10+92.05
ELEV. = 1,027.38'

–L– (SR 1001) ℄
(+)16.500%
(+)2.350%
PROPOSED GRADE
EXISTING GROUND

FOR –DRW2– PLAN SEE SHEET 06

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Biological Assessment

For the Proposed Replacement of Malcolm Boulevard/Connelly Springs Road (SR 1001)

Bridge (#110010) over the Catawba River

in Burke and Caldwell Counties, NC

STIP No. R-3430B, WBS Element No. 34544.1.2

November 2022

North Carolina Department of Transportation

Division of Highways

Environmental Analysis Unit

Contact: Tim Bassette
tpbassette@ncdot.gov
Biological Surveys Group
1598 Mail Service Center
Raleigh, North Carolina 27699-1598
(919) 707-6104

Biological Assessment

For the Proposed Replacement of Connelly Springs Road (SR 1001) Bridge (#110010)

over the Catawba River

in Burke and Caldwell Counties, NC

STIP No. R-3430B, WBS Element No. 34544.1.2

November 2022

Prepared by:

Three Oaks Engineering
324 Blackwell Street, Suite 1200
Durham, NC 27701
Mary Frazer
mary.frazer@threeoaksengineering.com
919-732-1300

Executive Summary

The purpose of this Biological Assessment (BA) is to review the proposed project, State Transportation Improvement Program (STIP) Project No. R-3430B, in sufficient detail to determine whether the proposed action may affect any of the threatened, endangered, or proposed species listed below (Table E-1).

The federally threatened dwarf-flowered heartleaf (*Hexastylis naniflora;* DFHL), protected under the Endangered Species Act (ESA) of 1973, as amended, is documented to occur within the project action area of the proposed replacement of the Castle Bridge (Bridge #110010) over the Catawba River/Lake Rhodhiss in Burke and Caldwell Counties, North Carolina (Appendix A, Figure 1). This BA is required due to potential effects to DFHL within the R-3430B project footprint.

Eight federally protected species are known or have potential to occur in the R-3430B Action Area (Appendix B). One at-risk species is considered in this BA as well. Only the DFHL has a determination of May Affect, Likely to Adversely Affect for R-3430B. The biological conclusions of the remaining species are listed in Section 6.0.

Four previously surveyed DFHL sites were assessed during a 2021 resurvey for R-3430B, and two new DFHL sites were discovered within the project study area. In total, of the six sites assessed, four DFHL sites and approximately 319 plants are anticipated to incur adverse effects as a result of the action (Table E-1). The effects have been calculated based on the assumption that plant density is uniform within each DFHL site. Construction effects were determined using slope stake (SS) lines + 25 feet, or easement lines, whichever was greater. Biological pollution, resulting from invasive non-native plant species growth associated with the project, was calculated using an additional buffer ranging from 0 to 150 feet with caveats based on invasive non-native plant species prevalence at each DFHL site. No cumulative effects are reasonably certain to occur within the action area.

Table E-1: Dwarf-flowered Heartleaf Adverse and Cumulative Effects in the Action Area

Site	Construction Effects (ac)	Construction (# plants)	Drainage Effects (ac)	Drainage (# plants)	Utilities Effects (ac)	Utilities (# plants)	Biological Pollution Effects (ac)	Biological Pollution (# plants)	Cumulative Effects (ac)	Cumulative Effects (# plants)	Area Total Adverse Effects (ac)	Plant #s Total Adverse Effects
F	0.40	141	0	0	0	0	0	0	0	0	0.40	141
G	0.03	17	0.06	34	0	0	0.20	56	0	0	0.29	107
H	0.01	7	0	0	0	0	0.08	23	0	0	0.09	30
I	0.01	3	0	0	0.01	2	0	0	0	0	0.02	5
***TOTAL**	**0.45**	**168**	**0.06**	**34**	**0.01**	**2**	**0.28**	**79**	**0**	**0**	**0.80**	**283**

*Rounding errors may cause some discrepancies

DFHL sites are located on both sides of the road in the vicinity of the bridge. As such, complete avoidance of DFHL is not possible.

Avoidance and Minimization Measures for DFHL

1. The R-3430B alignment was shifted approximately three feet closer to the existing bridge to reduce adverse effects to two DFHL sites (F and G) on the west side of Malcolm Blvd. This saved approximately 13 plants and 0.023 ac of occupied DFHL habitat.
2. A segment of the project footprint on the east side of Malcolm Blvd was shifted further inward and away from DFHL to minimize adverse effects. This saved approximately 10 plants and 0.018 ac of occupied DFHL habitat (Site H).
3. Invasive plants, such as *Lespedeza cuneata*, will not be used in erosion control seed mixes.
4. Native seed mixes for erosion control will be used to the extent practicable.
5. High-visibility fencing will be placed around DFHL sites within 25 feet of slope stakes (or at easement lines, whichever extends further out) to ensure there will be no accidental encroachment.
6. No access or staging areas will be permitted within DFHL sites.
7. NCDOT will conduct a preconstruction meeting and discuss with the contractor and relevant NCDOT staff the known DFHL sites, their locations, and prescribed minimization measures, including the high-visibility exclusionary fencing.

Measures to Offset DFHL Adverse Effects

1. NCDOT will conduct on-site preservation of DFHL plants in perpetuity through a ROW extension. NCDOT will obtain parcel 5 (north of Lake Vista Drive) and a portion of parcel 2 (the sub-parcel immediately south of Lake Vista Drive). DFHL Site F is located on parcel 5 and a portion of Site G is in the area to be protected in parcel 2 (Appendix A, Figure 6). The plants and occupied habitat to be protected will offset the plants and occupied habitat incurring adverse effects within the project footprint from activities associated with project construction.
2. Monitoring will be conducted to ensure the protection of DFHL to be preserved at Sites F and G. Monitoring efforts will consist of a pre-construction environmental baseline survey as well as post-construction surveys that will take place once every year over a period of five years.
3. Invasive non-native plant control will be conducted as needed during the monitoring period in the protected area at Site G to further minimize existing threat from such species. A combination of methods will be used to control the existing periwinkle. Herbicides may be used; if any herbicide is used within five feet of any DFHL, a sheet of cardboard will be used to prevent herbicide drift onto DFHL. Herbicides will not be used on days with high winds. Periwinkle will be hand-pulled in any areas less than three feet from any DFHL.

Avoidance and Minimization Measures for Bats

1. Tree-clearing will be conducted in winter to avoid potential effects to protected bats (October 16-March 31).
2. If night work is conducted, any construction-related lighting will be directed toward the deck of the bridge and will not project into adjacent wooded areas or over the surface of the river as much as practicable. Night work will not exceed 12 nights.
3. For temporary causeways, clean, washed rock (free of debris and pollutants) will be used for the causeway material to minimize sediment input into the river. It will be free of invasive plant seeds to the extent practicable.
4. Every effort will be made to avoid dropping pieces of the existing bridges into the water during demolition. If bridge material does inadvertently go into the water, it will be removed promptly.
5. The causeway footprints will be the minimum necessary to construct the bridge. The causeway will not constrict more than 50% of the existing channel flow of the Catawba River at this location at a given time.
6. Causeway material will be removed to the extent practicable and either disposed of off-site or used in areas that require permanent stone protection after project completion.
7. There will be no deck drains on the new bridge, which will help protect water quality.
8. To protect water quality, construction fabric will not be used under the causeway material, as it has a tendency to tear into pieces and float downstream during removal.

General Safety Measures

Because the Catawba River is regularly used for recreation, it cannot be closed to navigation for the duration of construction. NCDOT will commit to providing safe passage for river users by employing safety measures, including a catchment device or other appropriate measures on the overhead bridge structure to prevent construction material or debris from falling on river users or in the water. In addition, navigational aids will be installed to guide river users away from the causeways/construction zone. The construction of the R-3430B project may affect and is likely to adversely affect DFHL. The proposed conservation measures will offset the adverse effects of the action and maintain the general integrity and survivorship of DFHL in the R-3430B action area.

Table of Contents

1.0 Project Overview

The purpose of this Biological Assessment is to review the proposed project, State Transportation Improvement Program (STIP) Project R-3430B, in sufficient detail to determine whether the proposed action may affect any of the threatened, endangered, or proposed species listed below in Table 1. This Biological Assessment (BA) is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (ESA) (16 U.S.C. 1536 (c)).

The North Carolina Department of Transportation (NCDOT) is proposing to replace the Connelly Springs Road (State Route 1001) bridge over the Catawba River/Lake Rhodhiss (Castle Bridge #110010) in Burke and Caldwell Counties, North Carolina (Appendix A, Figure 1). The project is STIP No. R-3430B (WBS No. 34544.1.2). Federally protected species potentially occurring in the R-3430B action area are listed in Table 1 (the United States Fish & Wildlife Service [Service, USFWS] Information for Planning and Consultation database [IPaC] Official Species List is provided in Appendix B, Project Code: 2022-0088834). In addition to the federally protected species, the little brown bat (*Myotis lucifugus*) is also considered in this BA, in case it becomes federally listed in the future. The federally threatened dwarf-flowered heartleaf (DFHL) (*Hexastylis naniflora*), protected under the ESA of 1973, as amended, has been documented to occur within the project footprint.

Table 1. Federally Listed Species Listed for R-3430B Action Area

Scientific Name	Common Name	Federal Status*	Presence in Action Area
Glyptemys muhlenbergii	Southern bog turtle	T(S/A)	No
Corynorhinus townsendii virginianus	Virginia big-eared bat	E	No
Myotis grisescens	Gray bat	E	No
Myotis lucifugus	Little brown bat	ARS	Assumed present
Myotis septentrionalis	Northern long-eared bat	T	Assumed present
Perimyotis subflavus	Tricolored bat	PE	Assumed present
Gymnoderma lineare	Rock gnome lichen	E	No
Hexastylis naniflora	Dwarf-flowered heartleaf	T	Yes
Isotria medeoloides	Small whorled pogonia	T	No

*E = Endangered, T = Threatened, T (S/A) = Threatened due to similarity of appearance, ARS = At-risk species, PE = Proposed Endangered

1.1 Federal Nexus

NCDOT projects must comply with federal environmental laws and regulations when a federal nexus occurs. When NCDOT activities involve discharges to waters of the United States, a permit from the US Army Corps of Engineers (USACE) is required. Such permitting is a federal action requiring compliance with federal laws and regulations. When there is no Federal

Highway Administration (FHWA) funding, the USACE serves as the lead federal agency for those projects that require authorization (i.e., a Department of the Army permit) under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. R-3430B is state, not federally, funded. Because of the need to obtain permits from USACE for impacts to aquatic resources, a federal nexus is present and the USACE is the lead agency.

1.2 Project Description

Project R-3430 consists of roadway modernization for about 10 miles of SR 1001 (Connelly Springs Road/Malcolm Boulevard) from US 70 to SR 1933 (Southwest Boulevard) in Burke and Caldwell Counties, North Carolina. R-3430 consists of three sections (Table 2 and Appendix A, Figure 2): R-3430C to the north (Catawba River north to SR 1933), R-3430B in the center (including Bridge #110010 over the Catawba River) and R-3430A to the south (Catawba River south to US 70).

The R-3430 project purpose is based on the need to address operational, safety, and access management needs along the corridor. Proposed improvements include adding bicycle and pedestrian accommodations and other improvements such as two-way left-turn lanes and intersection improvements where needed. The project would also replace Bridge #110010 (Castle Bridge; Bridge #110010) over the Catawba River.

Table 2. R-3430 STIP Sections

Section	Location Description	Length (mi)	Section Right-of-way and Let Dates
A	US 70 north to Catawba River	2.3	Unfunded
B	Bridge No. 10 over Catawba River from 75 feet north of Harbor Ridge Drive to approximately 585 feet north of Castle Bridge Drive	0.7	ROW: 3-2022 Let: 1-2024
C	Catawba River north to SR 1933 (Southwest Boulevard)	6.9	ROW: 2026 Let: 2029

A standalone SEPA document, a Minimum Criteria Determination Checklist, was prepared for R-3430B in February 2022, as it has its own purpose and need independent of the rest of the R-3430 corridor. Construction of the B section will not force the construction of the other two sections at any time. The replacement of Bridge #110010 (Section R-3430B) was determined to have independent utility for the following reasons:

- The bridge has a sufficiency rating of 8 out of 100. Due to the condition of Bridge #110010 (which was built in 1961), the replacement is a reasonable expenditure even if no additional improvements are made in the project area.
- The bridge replacement can function as a stand-alone project, tying into the existing roadway near Harbor Ridge Drive and ending north of Castle Bridge Drive (NCDOT 2022a).

This Biological Assessment will focus on the proposed R-3430B for the following reasons:

- R-3430B was determined to have independent utility with its own and purpose and need and has its own environmental documentation (NCDOT 2022a).
- The A section of R-3430 is currently unfunded.
- The C section of R-3430 is not scheduled to go to Let until Fiscal Year 2029.
- Conducting ESA Section 7 formal consultation only for the B section of R-3430 will allow the replacement of Bridge #110010 in a timely manner, which is needed due to its age and sufficiency rating.

The Catawba River serves as the boundary between Burke County and Caldwell County. The road corridor leading to the bridge has a local name of Malcolm Boulevard (SR 1001) in Burke County, while crossing into Caldwell County, the local name of the project corridor changes to Connelly Springs Road (SR 1001).

The R-3430B bridge replacement ties into the existing roadway approximately 1,600 ft south of the proposed bridge (around Harbor Ridge Drive) and ends approximately 900 ft north of the proposed bridge (north of Castle Bridge Drive). A multi-use path will be included on the new bridge, extending to the closest logical termini on both sides of the new bridge, connecting to Lake Vista Drive NE on the south side and Castle Bridge Drive on the north side. The proposed 5-foot paved shoulders will taper to match the existing conditions at the project limits.

The new bridge will be built parallel to and west of the existing bridge. Bridge alternatives were evaluated in terms of constructability, impacts to utilities, environmental impacts, maintenance of traffic during construction, and cost. NCDOT evaluated bridge alignments located as close as possible to the existing structure. Three initial alternatives were evaluated, each employing an on-site detour to maintain traffic during construction. (Appendix A, Figures 3a-3c). Eastern alignments were not studied in detail due to potential impacts to the Castle Bridge Boat Access ramp.

Alternative 1

Alternative 1 consists of building a new 51-foot-wide bridge on new alignment approximately 67 feet west from the center of the existing bridge to the center of the new bridge. Traffic would remain on the existing bridge until the completion of the new bridge, at which point the current bridge would be demolished.

Alternative 1 would require about 3.35 acres of right-of-way (ROW). About 0.36 acres of DFHL occupied habitat would be adversely affected, calculated from slope stakes based on functional level design with no buffer.

Alternative 2

Alternative 2 is similar to Alternative 1 and consists of building a new parallel 51-foot-wide bridge west of the existing bridge on new alignment approximately 46 feet west from the center of the existing bridge to the center of the new bridge. Traffic would remain on the existing bridge until completion of the new bridge, at which point the current bridge would be demolished.

The narrow distance between the proposed bridge and existing bridge would require temporary shoring, creating construction challenges for this alternative. Alternative 2 would require about 3.20 acres of ROW and about 0.31 acres of DFHL occupied habitat would be adversely affected, calculated from slope stakes based on functional level design with no buffer.

Alternative 3

Alternative 3 would widen the existing structure; the existing bridge foundations would be used to build a 65-foot-wide bridge. The bridge would be constructed in phases to maintain traffic during construction.

To maintain two-lane traffic during construction, Alternative 3 requires a minimum width of 65 feet and the bridge would need to be extended north of the existing end bent. The alternative would reuse the existing foundations, connecting two bridge decks together (new foundations for stage 1 and existing foundations for stage 2). This alternative would add construction risks and higher costs. Alternative 3 would require about 3.34 acres of ROW and about 0.26 acres of DFHL occupied habitat would be adversely affected, calculated from slope stakes based on functional level design with no buffer.

Alternative 1 was selected as the Preferred Alternative since it has fewer constructability issues; the longer tie-in improves traffic control and allows for an easier transition to a normal crown leading up to the bridge. The increased distance of 67 feet from the center of the existing bridge to the center of the new bridge allows enough room to build a separate structure should a four-lane roadway be needed in the future.

1.2.1 Existing and Proposed Bridges

The existing bridge structure is 28 feet wide (curb to curb) and consists of two approximately 10.5-foot-wide travel lanes with shoulders along each side (about 3.5 feet wide), and a length of 910 ft. The posted speed limit is 45 miles per hour in each direction approaching the bridge. There are scuppers (deck drains) along both sides of the bridge draining water directly into the Catawba River.

The R-3430B preferred alternative involves building a new 51-foot-wide bridge, consisting of (left to right): a 10-foot shared use path, 1-foot protected barrier, 5-foot shoulder, two 12-foot travel lanes, and 11-foot shoulder. The new bridge will be offset 67 feet (centerline to centerline) west of the existing bridge and will be approximately 6.5 feet higher in elevation than the existing bridge. Once the new bridge is completed, the existing bridge will be demolished. The remnant bents to the east of the existing bridge will also be demolished and removed during this stage. Traffic will be maintained on the existing bridge during the construction phase; no off-site detour is needed. A catchment device or other appropriate measures on the overhead bridge structure will be used to prevent construction material or debris from falling on river users or in the water. In addition, navigational aids will be installed to guide river users away from the causeways/construction zone.

To delineate safe access for boaters, green solar light buoys will be installed on each side of the approved safe boat access channel upstream and downstream of the project construction areas; white solar light "Slow No Wake" buoys will be installed across the width of the safe open recreational boating channel, approximately 50 ft. upstream and downstream of either end of the safe open recreational boating channel; and red solar light "boats keep out" buoys will be installed to delineate the limits of the construction work area(s) and to identify navigation hazard bents located within the safe boat access channel. The lights will be placed a minimum of two feet above the water line to provide a visual barrier both day and night. All lights will be solar-powered LED strobe lights.

The proposed bridge supports will require the use of causeways in the river; one on the north end of the proposed bridge to construct a bent and one on the south end to remove an existing bent. Barges can be used for the remaining bents. The project is estimated to last approximately two years.

1.3 Project Area and Setting

The project is located near the western boundary of the Piedmont Physiographic Province of North Carolina. The topography in the project study area is generally characterized as rolling hills with steeply sloping, deeply cut drainageways. R-3430B is located within the United States Geological Survey (USGS) Hydrologic Unit Code (HUC) 03050101 and the primary water resource is the Catawba River/Lake Rhodhiss.

Elevations in the project study area range from 1,000 to 1,200 feet above mean sea level. Much of the land use along Connelly Springs Road is low density residential. The project area consists of existing maintained right-of-way including fill slopes, the Catawba River, residential and forested areas, and a boat landing with a parking lot north of the river.

1.4 Action Area

A project action area is defined as all areas to be affected, directly or indirectly, by the federal action and not just the immediate area involved in the action [50 CFR § 402.02]. Project-related threats to the DFHL can be separated into the action, consequences of the action, and conservation measures. Consequences of the R-3430B bridge replacement are directly attributed to the construction of the project, such as fill, excavation, or mechanized clearing; hydrological effects involving stormwater drainage; biological pollution from non-native invasive plant species; and utility relocation effects. Conservation measures to protect occupied DFHL habitat are also included in the action area.

The limits of the action area have been established using the actions described above and the potential consequences of that action. The action area covers:

- R-3430B limits of disturbance (project footprint), including the project slope stakes (cut/fill line; SS) plus a 25-foot buffer, *or* any construction, utility, or drainage easements, whichever is greater. This will account for tree-clearing areas, access, and erosion control maintenance.

- A buffer was added to the project footprint at DFHL sites where ground-disturbance will occur to account for possible effects of biological pollution, ranging from 0-150 feet, depending on the degree of threat from non-native invasive plants and other caveats (see Section 5.1.4 for details).
- The action area does not include two DFHL sites (E and L) on the north side the river, as they will not be affected by any ground-disturbing activity associated with R-3430B. Project construction activities will not break any ground in occupied DFHL habitat at either site. The lack of ground disturbance will not create any sort of bare soil conditions to allow invasive, non-native plants the opportunity to encroach upon or outcompete the native DFHL plant specimens at, or within the sites' occupied DFHL habitat. Consequently, no adverse effects from biological pollution – or any other consequences of the action - are anticipated to occur at the two sites (E and L), and they are thereby excluded from the project's action area.
- NCDOT will be extending the ROW to protect DFHL and occupied habitat in perpetuity at two parcels of land adjacent to R-3430B construction. The areas to be protected are included in the action area: parcel 5 (north of Lake Vista Drive), protecting a portion of DFHL Site F, and a section of parcel 2 (the sub-parcel immediately south of Lake Vista Drive), protecting a portion of Site G.
- The portion of the Catawba River where new bridge construction will occur, plus the existing bridge to be demolished. Remnant bents to the east of the existing bridge will also be removed, concurrent with bridge demolition. The action area has been expanded to include the remnant bents plus a buffer (approximately 30 ft) to accommodate a barge, if needed.
- A Duke Energy gas line currently attached to Bridge #110010 will be relocated as a result of the project. The action area includes all areas of the gas line relocation, which will be built to the east of the existing bridge. As a worst-case scenario, approximately 350 feet of the project footprint has been extended roughly 25 ft further east to incorporate the relocated gas line. It is anticipated that this work will be completed by November 2024.
- In addition to the relocated gas line, the action area also includes the distribution gas main to be built along Deep Water Lane.

The action area is shown on Figure 4 (Appendix A).

1.5 Consultation History

A timeline of NCDOT/USFWS coordination and consultation history is summarized below:

- January 27, 2021 - NCDOT sent a scoping information packet to agencies.
- January 29, 2021 - USFWS sent comments back to the scoping request.
- August 16, 2021 - NCDOT coordination with USFWS regarding Information for Planning and Consultation (IPaC) and BA species list.
- February 8, 2022 – NCDOT sent Minimum Criteria Determination Checklist to USFWS.
- February 23, 2022–March 1, 2022 - NCDOT and USFWS corresponded via email regarding DFHL effects analysis and offsetting. FWS Log# 21-392.

- March 14-29, 2022 – NCDOT and USFWS exchanged email correspondence about the action area with regard to a gas pipeline relocation and commitments to conduct rare plant surveys. NCDOT provided information about construction dates.

1.6 Survey History and Results

2008 R-3430 Dwarf-flowered Heartleaf Survey

Initial surveys for R-3430 by Mulkey Engineers and Consultants (now NV5) conducted in 2008 (Brady 2008) did not extend far enough south to reach the R-3430B project footprint, as the southern project terminus was approximately 0.5 mile south of Premier Road (NCDOT 2009a).

2018 R-3430 Federally Listed Plant Survey

In April of 2018, Three Oaks Engineering (Three Oaks) biologists conducted a DFHL survey for R-3430. The study area was the same as that used for the R-3430 Natural Resources Technical Report (NRTR) (NCDOT 2019a), extending along Connelly Springs Road from U.S. 70 north to Southwest Boulevard for approximately 10 miles. Nine DFHL sites were found along the entire length of the study area, including three sites in the R-3430B project footprint (Three Oaks Engineering 2018). The majority of the study area corridor was 500 feet wide, centered on the existing roadway, and expanding to 1,000 feet in the area of the existing bridge.

2021 R-3430 DFHL Survey

In the spring of 2021, Three Oaks biologists conducted a survey to enumerate and map DFHL for R-3430 (NCDOT 2022b). The project study area surveyed was the same as in the project's NRTR (NCDOT 2019a) as described above, with the inclusion of additional areas at three intersections plus a small area immediately south of the Catawba River that was outside of the NRTR-defined study area but within the study area depicted on the project's Environmental Features Map (NCDOT 2021a). For DFHL sites that extended outside the project study area, surveys were continued to approximately twice the width of the project study area as measured from the roadway centerline.

During the 2021 survey, six DFHL sites (E, F, G, H, I, and L) were found entirely within, or within and extending immediately beyond the project study area for R-3430B. Two of the sites (I and L) were new since the 2018 survey (Appendix A, Figure 4). A summary of each site found in the R-3430B project study area follows.

Site E is on the west side of Connelly Springs Road, north of the Catawba River, adjacent to a small waterfront resort. Observers counted 125 DFHL plants within 1.80 acres. A portion (perhaps 50%) of the site was surveyed, based on slopes/aspect in the area; occupied north-facing slopes continued well outside the project study area. Invasive non-native plant species were present near old resort buildings and along a gravel road cut along the ridgetop.

Site F is west of Malcolm Boulevard, south of the Catawba River, and adjacent to a gated residential community along Lake Vista Drive. Observers counted 228 DFHL plants within a 0.64-acre area. This site is bordered by roads to the east (Malcolm Boulevard), south (Lake Vista Dr), and west (Castle Vista Court). No invasive non-native plant species were observed. All DFHL plants were inside the project study area.

Site G is south of Site F. Observers counted 234 DFHL plants within a 0.42-acre area. All DFHL plants were inside the project study area. This site is bordered by roads to the east (Malcolm Boulevard), north (Lake Vista Dr), and west (Lake Vista Dr). Greater periwinkle (*Vinca major*) has colonized a portion of this site.

Site H is east of Malcolm Boulevard and Site G and north of Harbor Ridge Drive. Observers counted 51 DFHL plants within a 0.09-acre area. All DFHL plants were inside the project study area. There was evidence of old land disturbance within the site. This site had limited north-facing slopes and invasive plant species were present. The size of this population had shrunk since the 2018 survey.

Site I is north of Site H, between Deep Water Lane and the road embankment for Malcolm Boulevard. Observers counted five *Hexastylis* plants within a 0.02-acre area, with all plants inside the project study area. None of the plants were in flower. They all had variegated leaves and were assumed to be *H. naniflora*.

Site L is east of Connelly Springs Road and north of the Catawba River at the northeast edge of the Castle Bridge Boat Access parking lot. Observers counted 61 DFHL plants within a 0.89-acre area. The northern extent of the population was not surveyed; it continued well outside the project study area. Portions of the site appeared subject to disturbance from angler's foot traffic, which was creating minor erosion along steeper slopes.

The North Carolina Natural Heritage Program (NCNHP) indicates three known DFHL Element Occurrence (EO) identifiers (IDs) within one mile of the action area: 14504, 39089, and 39088 (NCNHP 2022). Two of these EO IDs are associated with sites located in the project study area: EO ID 39089 (Sites F, G, H) and EO ID 39088 (Site E). Two new sites found during the survey, Sites I and L, do not yet have EO numbers. Presumably Site I is part of EO ID 39089 and L is part of EO ID 39088 due to proximity to the respective EO IDs. Detailed information on each of the DFHL sites is provided in the DFHL survey report (NCDOT 2022b).

It is likely that DFHL populations in the action area have historically been altered by road construction and development. Connelly Springs Road/Malcolm Blvd may have divided Sites F and I, as well as G and H. Development on the south side of the Catawba River may have affected Sites F and G with the construction of Lake Vista Drive. Site I may have been further reduced by the installation of a lawn along Deep Water Lane. Development and road construction have presumably affected DFHL sites by fragmenting them, reducing available habitat, and introducing invasive plant species to the area. Biological pollution, especially in the form of invasive plants such as periwinkle and English ivy (*Hedera helix*), can be found in Sites G and H, respectively.

Table 3 below summarizes all DFHL sites surveyed as part of the R-3430B project study area (Appendix A, Figure 4). Note that all of Sites E and L occur outside the action area as defined in Section 1.4. There were 704 DFHL plants surveyed over 3.86 acres, with an average density of 182 plants/acre, assuming that plant density is constant at each site. Viability was determined qualitatively based on factors used by NCNHP, including size and condition of surrounding

habitat, habitat fragmentation, number of DFHL present, amount of DFHL reproduction observed, and invasive non-native plant species threat.

Table 3. DFHL Sites Surveyed in R-3430B Project Study Area

Site	NCNHP EO	Plant Count	Area of Occupied Habitat (acre)	Density #/ac	Estimated Viability	Existing Non-native Invasive Species Threat	Soil Series
E*	331	125	1.80	69	Fair	Medium-low	Hibriten-Woolwine complex
F	332	228	0.64	356	Fair	None	Meadowfield-Rhodhiss/ Woolwine-Fairview complex
G	332	234	0.42	557	Fair	High	Meadowfield-Rhodhiss/ Woolwine-Fairview complex
H	332	51	0.09	567	Poor	Medium	Woolwine-Fairview complex
I**	Presumed 332 (new site)	5	0.02	250	Poor	None	Woolwine-Fairview complex
L*	Presumed 331 (new site)	61	0.89	69	Good/fair	Low	Hibriten-Woolwine complex
TOTALS		**704**	**3.86**	**182**			

* Entire site not surveyed, extended beyond project study area
** No flowers present, assumed to be *H. naniflora*

Other R-3430 survey work included the following:

2021 R-3430 Federally Listed Plant Survey

In June of 2021, Three Oaks biologists conducted a survey in the R-3430 project study area for the federally protected plants small whorled pogonia and white irisette (*Sisyrinchium dichototum*), based on IPaC county listings. Neither plant species was found (NCDOT 2022c). Note that subsequent IPaC listings, which were constrained to the R-3430B study area, did not include white irisette, so the species is not reviewed as part of this BA.

2022 R-3430B DFHL Survey for Gas Line Relocation

On April 19, 2022, Three Oaks biologists conducted a follow-up survey for DFHL in an expanded study area for the Duke Energy gas line to be relocated in association with the R-3430B bridge replacement (Appendix A, Figure 4). The study area was west of Malcolm Blvd, extending east to Ridge Top Drive. The gas distribution line to be built along Deep Water Lane was contained within the expanded study area. No DFHL were found (NCDOT 2022d).

2022 R-3430B Federally Listed Survey

On June 19, 2022, Three Oaks biologists conducted a small whorled pogonia survey for the R-3430B project study area and proposed Duke Energy gas line relocation area (Appendix A, Figure 4). Since IPaC did not list small whorled pogonia in Caldwell County, only the Burke

County portion of the project study area was surveyed. No small-whorled pogonia was found (NCDOT 2022e).

2.0 Federally Proposed and Listed Species and Designated Critical Habitat

Species with the federal classification of Endangered (E), Threatened (T), or officially Proposed (P) for such listing, are protected under the ESA of 1973, as (16 U.S.C. 1531 *et seq.*). As shown above in Table 1 (Section 1.0), there are eight federally protected species listed for the R-3430B action area, based on the USFWS IPaC Official Species List (Appendix B, Project Code: 2022-0088834). In addition, one at-risk species is considered in this BA. No designated Critical Habitat is present within the action area.

Information regarding the natural history of each listed species in Table 1 is provided below. The federally threatened DFHL has been documented to occur within the action area of the proposed Connelly Springs Road improvements in Burke and Caldwell Counties.

2.1 Southern Bog Turtle (Glyptemys muhlenbergii)

The wetlands preferred by bog turtles are spring-fed with saturated soils and modest amounts of running water. The sites do not have standing water of significant depth. Viable bog turtle populations occur in seepage slopes or terraces along headwaters of small to moderate size streams that are infrequently flooded. Bog turtle habitat is characterized as sedge-dominated, wet meadows with little or no canopy, essentially acidic fens located over granite or metamorphic gneisses (Project Bog Turtle 2021).

Most records are known from the Blue Ridge Intermountain Plateau, but many have been found in the upper Piedmont along the base of the Blue Ridge Escarpment. Elevations of bog turtle sites range from 710 to 4,500 feet, with the majority known from 2,000 to 3,000 feet elevation (Project Bog Turtle 2021). There is no designated Critical Habitat for this species. Suitable habitat for southern bog turtle is not present in the R-3430B action area.

2.2 Virginia Big-eared Bat (Corynorhinus townsendii virginianus)

The Virginia big-eared bat has been recorded in the Appalachian Mountains of North Carolina. They occupy caves in the summer and winter. Hibernating colonies are typically located in deep cave passageways that have stable temperatures and air movement; the temperature in these hibernacula may be lower than that tolerated by other bats. Roost sites are generally located in mines or caves in oak-hickory forests (NC Wildlife Resources Commission 2016). They will use alternate roost sites but there is no record of long migrations. They are nocturnal and leave their roost to forage on moths, beetles, and other insects. This species feeds mostly over open pasture, corn and alfalfa fields, and around the crowns of trees (Virginia Department of Wildlife Resources 2020). There is no Critical Habitat for this species within the action area or vicinity. Suitable roosting habitat for Virginia big-eared bat is present in the project action area within the bridge structure; however, there are no known roosts for this species in bridges North Carolina (NCDOT 2022f). There are no caves or mines present in the project study area. Foraging habitat is present in wooded areas.

2.3 Gray Bat (Myotis grisescens)

Gray bats (MYGR) are known mainly from the cave regions of the Southeast. They live in colonies in caves, utilizing different caves for summer roosting and winter hibernating (USFWS 2019a). During the winter, gray bats hibernate in deep, vertical caves. In the summer, they tend to roost in caves that are scattered along rivers. Gray bats are highly selective in choosing suitable caves, and a dozen or so deep, vertical caves are thought to provide hibernation space for most of the population (USFWS 2019a, LeGrand et at 2021). In North Carolina, the species has been found roosting under bridges (LeGrand et al. 2021) and in culverts (Hays and Bingham 1964) in warmer months. There is no designated Critical Habitat for the gray bat. Suitable roosting habitat for gray bats is present in the project action area within the bridge structure. Foraging habitat is present along the Catawba River.

2.4 Little Brown Bat (Myotis lucifugus)

The little brown bat is not currently listed but has been included in this BA in case its status changes while the proposed project is under construction. In North Carolina, little brown bats occur mainly in the mountains, though there are records from a few localities in the Piedmont and Coastal Plain (LeGrand et al. 2021). In summer, this species often uses human-made structures (e.g., attics) for roosting and maternity sites; they also use caves and hollow trees. Foraging occurs over water, along the margins of lakes and streams, or in woodlands near water (NatureServe 2021). In winter, the species tends to roost in caves and mines (LeGrand et al. 2021). Suitable roosting habitat for little brown bats is present in the project action area within the bridge structure. Foraging habitat is present in wooded areas and along the Catawba River.

2.5 Northern Long-eared Bat (Myotis septentrionalis)

In North Carolina, the northern long-eared bat (NLEB) has a distinctly bimodal distribution; it essentially occurs only in the mountains and Coastal Plain. The only Piedmont records are for the foothills. NLEB records occur for Burke County, but not for Caldwell (LeGrand et al. 2021).

In western North Carolina, NLEB spend the winter hibernating in caves and mines. In eastern North Carolina, the species seems to use trees for winter roosting/hibernation (LeGrand et al. 2021). During the summer, NLEB roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines (USFWS 2020a). This bat also has been found, rarely, roosting in structures like barns and sheds, under eaves of buildings, behind window shutters, in bridges, and in bat houses. Foraging occurs on forested hillsides and ridges, and occasionally over forest clearings, over water, and along tree-lined corridors. Mature forests may be an important habitat type for foraging (USFWS 2015).

Currently, no other threat to this species is as severe as the disease white-nose syndrome (*Pseudogymnoascus destructans;* WNS). Numbers of NLEB (from hibernacula counts) have declined by up to 99 percent as a result of WNS (USFWS 2020a). There are other factors that cause mortality and harm to the NLEB, including: wind energy development, habitat destruction or disturbance (e.g., vandalism to hibernacula, roost tree removal), and environmental

contaminants such as pesticides and fracking wastewater (USFWS 2015). There is no designated Critical Habitat for NLEB. Suitable roosting habitat for NLEB is present in the project action area within the bridge structure and in wooded habitat. Suitable foraging habitat is also present in wooded areas.

2.6 Tricolored Bat (Perimyotis subflavus)

The term "tricolored" refers to the bat's yellowish-brown coat that is dark at the base, yellowish-brown in the middle, and dark at the tips. Tricolored bats have been found state-wide in North Carolina (LeGrand et. al 2021). They are generally associated with forested landscapes, but they can also be found over water and adjacent to water edges (USFWS 2019b). In summer, they are known to roost in tree foliage or sometimes in buildings (LeGrand et. al 2021). In the winter, they are often found in places where the temperature stays constant, such as caves, rock crevices, and mines (North Carolina Bat Working Group 2013). This species will readily roost in bridges and culverts (Newman et al. 2021). Suitable roosting habitat for tricolored bats is present in the project action area within the bridge structure and in wooded areas. Suitable foraging habitat is present in wooded areas and along the Catawba River.

2.7 Rock Gnome Lichen (Gymnoderma lineare)

Rock gnome lichen primarily grows on vertical rock faces where seepage water from forest soils above flows at (and only at) very wet times. It appears the species needs a moderate amount of light, but that it cannot tolerate high-intensity solar radiation. The lichen only grows in areas with a great deal of humidity, such as high elevations where there is often fog, or on boulders and large outcrops in deep river gorges at lower elevations. The lichen does well on moist, generally open sites with northern exposures, but requires at least partial canopy coverage on southern or western aspects because of its intolerance to high solar radiation (USFWS 2011). There is no designated Critical Habitat for this species. Suitable habitat for rock gnome lichen is not present in the R-3430B action area.

2.8 Dwarf-flowered Heartleaf (Hexastylis naniflora)

Dwarf-flowered heartleaf (*Hexastylis naniflora;* DFHL) was described as a new species in 1957 and was placed in the *virginica* subgroup of this genus (Blomquist 1957). Leaves are cordate to orbicular-cordate (heart-shaped), supported by long thin petioles that grow from a subsurface rhizome. The leaves are variegated, dark green in color, evergreen, and leathery. The inconspicuous flowers are found near the base of the petioles. The cylindrical calyx tube is less than 11 millimeters (mm) long. Flower color is usually beige to dark brown in color. Flowering occurs from late March to early June, with fruits maturing from mid-May to early July (USFWS 2020b). The narrow opening (4 - 8 mm) of the calyx is the most definitive characteristic distinguishing *naniflora* from other members of the *virginica* subgroup (Blomquist 1957, Gaddy 1981, Gaddy 1987, Weakley 2020). Research funded by NCDOT (Murrell et al. 2007) has found pollen surfaces to be the most reliable species indicator.

DFHL is endemic to the western Piedmont and foothills of North and South Carolina. This herbaceous evergreen is found in moist to rather dry forests along bluffs; boggy areas next to

streams and creek heads; and adjacent hillsides, slopes, and ravines. Requiring acidic, sandy loam soils, the species is found in soil series such as Pacolet, Madison, and Musella, among others (Gaddy 1981, 1987). Occurrences are generally found on a north facing slope. Undisturbed natural communities such as Piedmont/Coastal Plain Heath Bluff, Dry-Mesic Oak Hickory Forest, and Mesic Mixed Hardwood Forest hold the most viable populations; however, less viable remnant populations are found in disturbed habitats, including logged, grazed, mown, and residential/commercial developed lands; areas converted to pasture, orchards, and tree plantations; roadside rights-of-way; and on upland slopes surrounding man-made ponds or lakes (NCNHP 2022, Padgett 2004, USFWS 1989). There is no Critical Habitat designated for DFHL. Suitable habitat for DFHL is present in the project action area.

DFHL was formally listed as federally protected with a threatened status on April 14, 1989 (*Hexastylis naniflora*, Final Rule, 54 FR 14964-14967). The listing rule described 24 extant and one extirpated population. Threats to DFHL include human population change, woody encroachment, and climate change, as well as habitat loss due to the conversion of land to residential, commercial, industrial, and agricultural use, timber harvest, hydrological alterations from damming of ponds, cattle grazing, off-road vehicle damage, trampling, invasive non-native plant species, highway and road improvements, and erosion or siltation (USFWS 2019c).

The USFWS proposes to remove DFHL from the Federal List of Endangered and Threatened Plants. This determination is based on a thorough review of the best available scientific and commercial data, which indicate that the threats to the species have been eliminated or reduced to the point that the species no longer meets the definition of a threatened species and does not meet the definition of an endangered species, under the Endangered Species Act of 1973, as amended (USFWS 2021, 86 FR 21994).

2.9 Small Whorled Pogonia (Isotria medeoloides)

Small whorled pogonia grows in older hardwood stands of beech, birch, maple, oak, and hickory that have an open understory. Sometimes it grows in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams (USFWS 2019d). This perennial orchid can be limited by shade. The species seems to require small light gaps or canopy breaks, and generally grows in areas with sparse to moderate ground cover. Too many other plants in an area can be harmful to this plant. It typically grows under canopies that are relatively open or near features that create long-persisting breaks in the forest canopy such as a road or a stream. It grows in mixed-deciduous or mixed-deciduous/coniferous forests that are generally in second- or third-growth successional stages. The soils in which it occurs are usually acidic, moist, and have very few nutrients (USFWS 2020c). There is no designated Critical Habitat for this species. Suitable habitat for small whorled pogonia is present in the project action area.

3.0 Environmental Baseline

Environmental baseline refers to the condition of the listed species or its designated Critical Habitat in the action area, without the consequences to the listed species or designated Critical Habitat caused by the proposed action. The environmental baseline includes the past and present

impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process. The consequences to listed species or designated Critical Habitat from ongoing agency activities or existing agency facilities that are not within the agency's discretion to modify are part of the environmental baseline (50 CFR Section 402.02).

Occupied and unoccupied DFHL habitat is present in multiple locations within the action area, as well as along the project study area. A total of four DFHL sites are present in the action area (Appendix A, Figure 4), summarized in Table 4.

Table 4. Environmental Baseline for Dwarf-flowered Heartleaf in Action Area

Site	NCNHP EO ID	Plant Count	Area of Occupied Habitat (acre)	Density #/ac
F	39089	228	0.64	356
G	39089	234	0.42	557
H	39089	51	0.09	567
I*	presumed 39089 (new site)	5	0.02	250
TOTALS		**518**	**1.17**	**443**

* No flowers, assumed to be *H. naniflora*
Note: rounding may cause minor discrepancies.

As noted above, the NCNHP database for DFHL (NCNHP 2022) indicates three known DFHL EO IDs within one mile of the action area. One of these EO IDs is associated with sites located in the action area: EO ID 39089 (Sites F, G, H). One new site, Site I, does not yet have an EO number; presumably it is part of EO 39089 due to its proximity.

Natural communities within the action area in which DFHL was found were Dry Oak-Hickory Forest (Piedmont Subtype) and Maintained/Disturbed. Within these community types, north-facing slopes in acidic soils with a wooded overstory were the primary habitat for DFHL. Natural community details can be found in the DFHL 2021 survey report (NCDOT 2022b).

Maintained/disturbed areas included roadsides, driveways, a boat landing parking lot, a small marina/resort on the west side of Connelly Springs Road, a few homes along Deep Water Lane, and small patches of vegetated habitat that were subject to earthwork in the past. Canopy gaps have allowed for dense undergrowth, and invasive non-native plant species have contributed to the undergrowth in areas. It is likely that the construction of Connelly Springs Road and other development in the action area have historically altered DFHL occurrences in the area by fragmenting sites and reducing available habitat.

4.0 Project Details

4.1 Project Construction

R-3430B bridge construction will take approximately two years, with 16 months for construction and 6 months for demolition.

4.1.1 Site Preparation

Site preparation will include land clearing, grubbing, and earthwork. Clearing of trees and other vegetation will prepare the project area for construction activities. Clearing will likely consist of cutting and removing above-ground vegetation such as brush and trees, removing downed timber and other vegetative debris, and salvaging marketable timber. Grubbing will follow clearing operations to remove any remaining surface vegetation, roots, and buried debris. Trees, stumps, and large roots will be removed from excavation areas to a depth sufficient to prevent such undesirable material from becoming mixed with the material being incorporated in the embankment. All extraneous matter will be removed and disposed of in fill or designated waste areas on or off-site by chipping, burying, or other methods of disposal, including burning.

Clearing and grubbing will take place within right-of-way (ROW) limits but may also occur in drainage easements and temporary construction easements, which may be used to store construction vehicles that are too large to travel on the road in one piece (e.g., haul trucks, earthmovers, large dozers, large excavators, backhoes, etc.). These areas are also used to store supplies (erosion control materials, steel rebar and mesh, small diameter culverts, traffic signs and posts, office trailers, etc.).

Earthwork includes all earth moving activities that occur for bridge replacements, including associated activities such as preparation of staging areas, bridge approaches, alignments, embankments, fill, foundations, toe trenches, waste areas, borrow areas, temporary access road construction, utility relocation, stormwater treatment, ditch construction and stabilization, and landscaping. Specific earthwork practices can include excavating (cutting), filling, ditching, backfilling, grading, embankment construction, augering, disking, ripping, grading, leveling, and borrowing and wasting of materials. Typical earthmoving equipment used includes haul trucks, dozers, excavators, scrapers, backhoes, and tractors. Approach work to the bridge will include cut and fill for a future 10-ft wide shared-use path on the west side of Malcolm Blvd, extending from the bridge south to Lake Vista Drive.

4.1.2 Construction Access and Staging

Construction access and staging areas will be ultimately determined by the selected contractor after letting. Project specifications and contracts will require that access and staging areas be located in upland areas and an environmental review of any areas outside the proposed project footprint will be performed. This review would include wetland and stream delineation as well as evaluation of the area for potential habitat and presence of any listed species, including DFHL. No access or staging area will be permitted within DFHL sites.

The contractor may use locations outside the action area for borrow pits or spoil areas to dispose of or obtain materials for earthwork. Most borrow and waste areas are sited in upland areas of previously disturbed habitat where vegetation removal is minimal. Construction contractors are responsible for addressing federally listed threatened and endangered species issues per NCDOT standard specifications, including the use of borrow/waste sites.

Contractors must submit plans for borrow pits/staging sites to NCDOT's Resident Engineer. The plans are reviewed by the Roadside Environmental Field Operations Engineer and Division Environmental Officer prior to approval. Details can be found at: https://connect.ncdot.gov/resources/roadside/FieldOperationsDocuments/Contract%20Reclamation%20Procedures.pdf.

4.1.3 Bridge Construction/Demolition

There will be a new bridge structure constructed parallel to the existing bridge with an offset of 67 feet to the west. Construction of the new bridge will require the use of temporary causeways for the construction of a bent and the removal of an existing bent. Barges will be used for the remaining bents.

Percussive activities such as pile-driving will occur for the new bridge substructure. Drilling for interior bents may also occur. It is not known what time of year percussive activities will take place, but they may occur while bats are active on the landscape (approximately April 1 – October 15). The length of time for pile-driving should be one week, since only one bent (end bent #2, north end of bridge) will be on piles.

End bent #1 (southern end of bridge) is anticipated to be a spread footing. Depending on the rock quality, equipment-mounted demolition hammers or limited blasting (one to two blasts) may be needed at this location to remove rock to the required elevation for bent construction. This work is estimated to take two to three weeks, at most.

Additional construction work will include concrete and girder delivery, girder placement, and concrete pours. Nighttime concrete pouring may be required if it coincides with hot weather during summer months. Up to 12 nights of work may be necessary. Guardrail installation will also take place along bridge approaches. These activities may occur during the bat active season (approximately April 1 – October 15).

Once traffic flow has been moved to the new bridge, the old one will be demolished using a tractor trailer, cranes, and possibly a track hoe. The deck will be removed first, followed by the girders, then bridge supports. Remnant bents to the east of the existing bridge will also be demolished and removed during this stage.

4.1.4 Drainage

The R-3430B bridge replacement will include some drainage work on both sides of Malcolm Blvd. A 24-inch diameter corrugated metal pipe under Malcolm Blvd will be replaced. At the western end of the pipe, riprap will be placed to prevent erosion at the outlet. Work will take

place in DFHL Site G, see Section 5.1.2 for effects analysis. Other drainage work just outside of Site G is the construction of a 15-inch pipe parallel to the road, which will carry stormwater to the 24-inch pipe. See Plan Sheet 4 in Appendix C for details, station numbers 20+00 to 21+00, approximately. No drainage work will occur in DFHL Site F. On the east side of Malcolm Blvd, some of the existing roadside ditch will be realigned just outside Site H from station numbers 19+50 to 21+00, approximately (Plan Sheet 4 in Appendix C). Riprap will be used to prevent ditch erosion.

4.1.5 Utilities

There was a four-inch Charter-Spectrum line on the east side of the existing bridge. The line was abandoned and removed in 2022. No further utility work is anticipated for this line in the action area.

A short 8-inch diameter section of buried gas line just west of Malcolm Blvd and south of Lake Vista Drive will be relocated to avoid a conflict with a proposed section of guardrail. Duke Energy is scheduled to construct this "drop section" in May 2023 and have work completed prior to the current R-3430B Let Date of 1/16/2024. This work will occur adjacent to, but outside of DFHL Site G (see Appendix A, Figure 5 for details).

A Duke Energy gas line is currently attached to Bridge #110010 over the Catawba River; it will be relocated as result of the project. Although the gas line work will have its own federal permit from the Federal Energy Regulatory Commission (FERC), it is included in the R-3430B action area and effects analysis, since it would not occur but for the bridge replacement. The gas line relocation area starts north of the river, continues under the river 90-140 ft east of the existing bridge, and is anticipated to run primarily within the project footprint on the east side of Malcolm Blvd south of the river (Appendix A, Figure 4). Approximately 350 feet of the relocated gas line may run outside the construction footprint for the bridge (the exact gas line location has not been determined yet), so as a worst-case scenario, the project footprint has been extended 25 ft further east to allow for additional room for the gas line. The exact schedule for the gas line relocation has not yet been determined.

In conjunction with the relocated gas line, the action area also includes a Duke Energy distribution gas main to be built along Deep Water Lane (Appendix A, Figure 4). The exact schedule for this work has not yet been determined. All gas line work will be funded by Duke Energy.

4.1.6 Post-Project Site Restoration

Upon conclusion of the construction of the new roadway, disturbed areas will be re-vegetated. Typically, this will involve reseeding with grasses suitable for stabilization and maintenance of roadway side slopes. Non-invasive species will be used in erosion control seed mixes. Borrow areas will be graded to drain and re-seeded. Temporary Best Management Practices (BMPs) such as silt fencing, check dams, and sediment basins will be removed.

4.2 Operations and Maintenance

Once traffic is released to the project, typical operations and maintenance activities will occur. This may include pre-treatment of roads prior to winter weather events, and snow plowing and ice removal after the events. Mowing of side slopes will be performed at regular intervals. In addition, bridge cleaning and painting, and ditch maintenance will be conducted as the need for these arise.

5.0 Effects Analysis

The effects of the proposed action include both adverse and beneficial effects. Adverse effects to DFHL are summarized in Table 5 below and are described in Section 5.1. Beneficial effects of the action are described in Section 5.3 and shown in Table 6.

Table 5. Dwarf-flowered Heartleaf Adverse and Cumulative Effects in the Action Area

Site	Construction Effects (ac)	Construction (# plants)	Drainage Effects (ac)	Drainage (# plants)	Utilities Effects (ac)	Utilities (# plants)	Biological Pollution Effects (ac)	Biological Pollution (# plants)	Cumulative Effects (ac)	Cumulative Effects (# plants)	Area Total Adverse Effects (ac)	Plant #s Total Adverse Effects
F	0.40	141	0	0	0	0	0	0	0	0	0.40	141
G	0.03	17	0.06	34	0	0	0.20	56	0	0	0.29	107
H	0.01	7	0	0	0	0	0.08	23	0	0	0.09	30
I	0.01	3	0	0	0.01	2	0	0	0	0	0.02	5
***TOTAL**	**0.45**	**168**	**0.06**	**34**	**0.01**	**2**	**0.28**	**79**	**0**	**0**	**0.80**	**283**

*Rounding errors may cause some discrepancies

5.1 Adverse Effects to Dwarf-flowered Heartleaf

Activities occurring as a result of the bridge construction, including new bridge approaches, will adversely affect DFHL. Plans for R-3430B indicate that portions of four DFHL sites located along the project corridor will be affected by ground-disturbing construction work: Sites F, G, H, and I. One site (G) will also be affected by drainage work, and another (I) may be affected by utility work. Land disturbance will occur from construction of bridge approaches, drainage work, and utility relocation work, and could cause potential biological pollution of DFHL sites with the spread of invasive non-native plant species. Each of these adverse effects is described below.

Effects are computed under the assumption that DFHL plants are spatially distributed in an equidistant manner throughout the area of a site's occupied DFHL habitat. Actual spatial distribution of DFHL plants within each site will not exactly equal the conditions defined in this assumption. Given the size and scope of the project, this assumption allows for an approximation of effects, while greatly reducing the amount of time involved in determining such actual effects in the field.

5.1.1 Bridge and Road Construction

To determine the worst-case scenario for effects from the new bridge approaches, slope stakes were buffered by 25 feet to allow for activities such as construction access, mechanized clearing, and erosion control maintenance. Areas within the SS + 25 ft line, or within construction easements, whichever was greater, were then used to calculate direct effects to DFHL sites. A total of 168 plants will be lost due to construction along with 0.45 acre of occupied DFHL habitat from Sites F, G, H, and I. (Appendix A, Figure 5).

The project was designed so that no cut and fill work will be conducted in Site H (see Section 5.3.1), but since a portion of Site H falls within the SS + 25 ft limit, it is assumed that 7 plants and 0.01 acre of occupied habitat will be affected as a worst-case scenario due to construction access or mechanized clearing. It may be that no plants will be affected in Site H.

5.1.2 Hydrologic/Drainage Effects

The 24-inch pipe to be replaced under Malcom Blvd and the relocated ditch leading to it will not affect Site H, but the pipe will cause disturbance in Site G. See Plan Sheet 4 in Appendix C for details. Note that the plan sheet does not show a drainage easement in Site G, since the ROW will be extended to include the whole sub-parcel (see Section 5.3.2 for more information). A total of 34 plants will be lost due to drainage work along with 0.06 acre of occupied DFHL habitat, all in Site G (Appendix A, Figure 5). No other drainage effects will occur; all other drainage work will occur outside occupied DFHL habitat.

5.1.3 Utility Effects

A segment of the relocated Duke Energy gas line may run east of DFHL Site I (Appendix A, Figure 5), in which case half of Site I will be considered taken as a worst-case scenario: 2 plants in 0.01 acre. No other DFHL effects are anticipated from utilities. The exact gas line location has not yet been determined; it may be the plants can be avoided. The distribution gas main to be located along Deep Water Lane and the “drop section” to be relocated near Site G will not affect any DFHL.

5.1.4 Biological Pollution

Adverse effects of the action could include species composition change in the understory, increased light penetration from clearing, and the potential for invasive non-native plant species to occupy DFHL habitat. Based on multiple NCDOT projects where DFHL occur, healthy viable clusters of DFHL are often found right up to the clearing/construction limits, as well as disturbed habitats such as pasture lands; logged, grazed, or clear-cut areas; commercially developed lands; roadside ROW; upland slopes surrounding manmade ponds; and remnants of former surface mines and prospects. DFHL has also been found to grow in cleared, disturbed, early successional, and maintained powerline easements where light is able to penetrate (NCDOT 2009b, 2012). Therefore, light regime changes are not anticipated to have a predictable effect on DFHL for this project. Similar results have been seen with understory density changes along roadway projects, where DFHL persist despite increased shading (NCDOT 2021b). Therefore,

adverse effects of the action from biological pollution due to changes in light regime from clearing and understory are not anticipated.

Biological pollution through the encroachment of non-native invasive species is a likely consequence of R-3430B construction. Construction of the new bridge approaches could serve as potential areas for the spread of invasive plants, as ground disturbance may increase the amount of area suitable for invasive plant species (Trombulak and Frissell 2000). In addition, construction equipment and vehicles can contribute to the spread of invasive plants (von der Lippe and Kowarik 2006).

Once R-3430B construction is complete, road maintenance may also influence the spread of invasive plants. Mowing and hazardous tree removal will maintain a continuous light gap along the roadside, allowing invasive plants the opportunity to thrive, propagate, and spread, allowing easier access to adjacent forested habitat (Mortensen et al. 2009).

Roadsides generally provide excellent opportunities for the establishment of invasive non-native plant species (Rentch et al. 2005), often because frequent disturbances make resources such as light and bare soil more available. The extent of invasive plants spreading into forested habitat may vary greatly. The frequency of an invasive bedstraw (*Galium*) in fields increased within 410 feet of a paved road (Meunier and Lavoie 2012). The distance that planted roadside species invaded wooded habitat ranged from 33 feet to 400 feet in one study (Forman and Deblinger 2000). Another study found the frequency of non-native species in forested habitats along roads and rail lines was higher relative to forested control sites up to 33 feet from the corridor edge (Hansen and Clevenger 2005), while patches of *Microstegium vimineum* were found as far as 148 feet into forested interiors from roadsides (Huebner 2010).

Invasive non-native species in the DFHL sites include Japanese honeysuckle (*Lonicera japonica),* periwinkle, Japanese Stilt Grass *(Microstegium vimineum),* and Chinese privet (*Ligustrum sinense)*. The extent of non-native invasive plant growth in the above studies were considered subjectively in evaluating the effect of biological pollution on DFHL. DFHL sites with the greatest amount of invasives plant species are assumed to incur effects from biological pollution to a further extent than those with minimal invasives. It is anticipated that Site G, with a high threat from invasive non-native plants, may be affected from R-3430B project construction all the way to Lake Vista Drive, a distance of approximately 150 ft. Non-native invasive plants are not anticipated to cross Lake Vista Drive, as the road will act as a barrier.

Based on the above studies, it was subjectively determined that under a worst-case scenario, biological pollution could occur from the furthest extent of disturbance (project footprint) out 75 feet for sites with a medium threat from non-native invasive plants, namely, Site H. With previously discussed research indicating that invasive plant species can reach varying distances of anywhere from 33 to 410 feet out from road construction limits, the 75-foot adverse effects area for biological pollution at this site was subjectively chosen as a mid-point compromise of adverse effects from invasive plant species because the existing threat at this population was determined to be medium. Buffers of 150 ft and 75 feet were added to Sites G and H, respectively, to calculate the effects of invasive non-native plant species (Appendix A, Figure 5). As a result, the portion of Site H unaffected by ground-disturbing activities and the portion of

Site G not protected in perpetuity that is unaffected by ground-disturbing activities will be potentially affected by biological pollution.

Road construction activities at Site F will break ground in occupied DFHL habitat and create some bare soil conditions along the site's construction zone/occupied habitat interface. However, the population currently has no invasive non-native plant species, thereby providing no biomass or seed source for invasives to further encroach upon or outcompete the native DFHL plant specimens. Consequently, it is anticipated that no adverse effects from biological pollution will occur at Site F. As a worst-case scenario, it was assumed that all five DFHL plants at Site I will be lost due to construction and utility relocation activities, so no effects from biological pollution are anticipated.

North of the river at DFHL Site E (existing medium-low threat from non-native invasives), and Site L (existing low threat), bridge replacement and gas line relocation activities will not break ground in any occupied DFHL habitat. The lack of ground disturbance will not create any sort of bare soil conditions to allow invasive non-native plants the opportunity to encroach upon or outcompete the native DFHL plant specimens at or within the sites' occupied DFHL habitat. Consequently, no adverse effects from biological pollution – or any other consequences of the action – are anticipated to occur at Sites E or L. Those sites are thereby excluded from the project's action area.

Despite the potential for encroachment of non-native invasive species from R-3430B activities, data indicate that DFHL populations can persist and increase in the presence of such species. In spite of the long-term presence of invasive, exotic plants, there were no changes in the severity of threats observed in the field that were significant enough to elevate the threat ranks of DFHL populations evaluated from 2012 to 2016. Dwarf-flowered heartleaf has the ability to withstand the presence of invasive exotic species and, therefore, competition from such species is not believed to be a significant threat to DFHL populations in the foreseeable future (USFWS 2021).

Based on information from the USFWS (2021), it is unlikely that 100% of DFHL will be lost from biological pollution following ground-disturbing activities, even those with a high or medium threat level from invasive non-native plants. Using a subjective estimate that only 50% of the DFHL would be lost, the number of plants affected from biological pollution would be 56 plants and 0.20 acre of occupied DFHL habitat for Site G, and 23 plants and 0.08 acre for Site H, with a total of 79 plants and 0.28 acre. Since non-native invasive species control will occur at the portion of Site G protected in perpetuity (details in Section 5.3.2), the loss of DFHL from this protected area due to biological pollution is not anticipated to occur.

Based on the above assessment, only Sites G and H will be affected by biological pollution, due to their proximity to R-3430B construction and the existing threat of invasive non-native plant species. (Appendix A, Figure 5).

5.1.5 Operations and Maintenance

Operations such as mowing and thinning, conducted to enhance visibility, safety and drainage, create a continuous light gap along roadsides (Mortensen et al. 2009). Potential effects of these actions were discussed under section 5.1.4.

5.2 Cumulative Effects

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area. Future Federal actions that are unrelated to the proposed action are not considered under these effects because they require separate consultation pursuant to ESA §7. This biological assessment considers future land use patterns and development as part of cumulative effects associated with the proposed project.

Since the R-3430B project will not increase traffic capacity and will not provide access to previously inaccessible land, increased development is unlikely in the Malcolm Boulevard corridor as a result of R-3430B. Websites and planning documents from local and regional economic development and planning agencies were searched for development plans along the Connelly Springs Road corridor, including county economic development websites (Caldwell County 2021), the Western Piedmont Council of Governments 2045 Metropolitan Transportation Plan (2018), the Burke County Land Use Plan (Burke County Land Use Plan Committee 2016), and the Caldwell County Comprehensive Plan (Caldwell County 2020). None of them indicate any industrial focus areas or economic development focus areas in the vicinity of R-3430B.

The northern portion of DFHL Site G will be preserved by NCDOT (see Section 5.3.2 for more information). The parcel with the southern portion of Site G may undergo residential development in the future. While such development has the potential to cause adverse effects to DFHL, it is not reasonably certain to occur at this point in time. As such, there will be no cumulative effects.

5.3 Conservation Measures

5.3.1 Avoidance and Minimization for DFHL

On the south side of the existing and proposed bridge structures, DFHL sites are located on both sides of Malcolm Blvd in the area needed for the bridge approach/roadway tie-ins. As such, complete avoidance of DFHL in the bridge area was unavoidable. Constructing the new bridge to the east of the existing bridge, which would have reduced some adverse effects to DFHL, was not possible due to potential recreational disruptions to the Castle Bridge Boat Access on the north side of the river.

Avoidance and minimization measures for the project include the following:

1. In the 25% design of the preferred alternative, the R-3430B alignment was shifted approximately three feet closer to the existing bridge to reduce adverse effects to DFHL on the west side of Malcolm Blvd. This saved approximately 5 plants and 0.015 ac of occupied DFHL habitat in Site F, and 8 plants and 0.008 ac of occupied DFHL habitat in

Site G (sites are shown in Appendix A, Figure 5; and Appendix C, plan sheet 4, approximate station numbers 19+00 to 26+00).
2. Late in the design process, a segment of the project footprint on the east side of Malcolm Blvd was shifted further inward and away from DFHL Site H to minimize adverse effects. This saved approximately 10 plants and 0.018 ac of occupied DFHL habitat in Site H (Site H is shown in Appendix A, Figure 5; and Appendix C, plan sheet 4, station numbers 20+00 to 21+00).
3. Invasive plants, such as *Lespedeza cuneata*, will not be used in erosion control seed mixes.
4. Native seed mixes for erosion control will be used to the extent practicable.
5. High-visibility fencing will be placed around DFHL sites within 25 feet of slope stakes (or at easement lines, whichever extends further out) to ensure there will be no accidental encroachment.
6. No access or staging areas will be permitted within DFHL sites.
7. NCDOT will conduct a preconstruction meeting and discuss with the contractor and relevant NCDOT staff the known DFHL sites, their locations, and prescribed minimization measures, including the high-visibility exclusionary fencing.

5.3.2 Measures to Offset DFHL Adverse Effects

To offset the loss of DFHL plants/sites, NCDOT will conduct the following conservation measures:

1. NCDOT will conduct on-site preservation of DFHL plants in perpetuity through a ROW extension. NCDOT will obtain parcel 5 (north of Lake Vista Drive) and a portion of parcel 2 (the sub-parcel immediately south of Lake Vista Drive). DFHL Site F is located on parcel 5 and a portion of Site G is in the area to be protected in parcel 2 (Appendix A, Figure 6). The plants and occupied habitat to be protected will offset the plants and occupied habitat incurring adverse effects within the project footprint from activities associated with project construction.
2. Monitoring will be conducted to ensure the protection of DFHL to be preserved at Site F and G. Monitoring efforts will consist of a pre-construction environmental baseline survey as well as post-construction surveys that will take place once every year over a period of five years.
3. Invasive non-native plant control will be conducted as needed during the monitoring period in the protected area at Site G to further minimize existing threat from such species. A combination of methods will be used to control the existing periwinkle. Herbicides may be used; if any herbicide is used within five feet of any DFHL, a sheet of cardboard will be used to prevent herbicide drift onto DFHL. Herbicides will not be used on days with high winds. Periwinkle will be hand-pulled in any areas less than three feet from any DFHL.

Table 6. R-3430B Beneficial Effects

Site	Parcel ID	Occupied DFHL Habitat Preserved	DFHL Plants Preserved
Site F	Parcel 5	0.242 acre	86
Site G	Sub-parcel of parcel 2	0.131 acre	74*
Totals		0.373 acre	160

* Under the presumption that invasive non-native plant control will be conducted as needed to minimize the existing threat from such species.

Only the farthest northern sub-parcel of parcel 2 will be obtained to protect DFHL left intact after project construction. If both the sub-parcels containing Site G were obtained, there was concern that it would inhibit the future development of the residential properties along Lake Vista Drive. To protect the remaining portion of parcel 2 for future development, a compromise was made that only the northern sub-parcel of parcel 2 would be acquired as additional ROW to protect DFHL.

In order to ensure the protection of DFHL in Sites F and G, NCDOT will quantitatively and qualitatively monitor the DFHL specimens and the occupied habitat that are protected through the ROW extension. Monitoring efforts will incorporate a pre-construction baseline survey and post-construction surveys as detailed above. Monitoring will include a direct plant count, completion of a NCNHP Rare Plant Form for each site, location of the sites by GPS, and mapping that depicts the protected areas. Reports detailing all monitoring results and any appropriate management activities undertaken to help preserve and protect the occupied habitat will be submitted to the USFWS at the end of each monitoring period. Field surveys for all monitoring will occur during the optimal survey window for DFHL.

Parcel 5 (north of the Lake Vista Drive entrance) is situated on a north to northwest-facing slope and is bordered by roads to the east, south and west. The natural community type is a Dry Oak-Hickory Forest (Piedmont Subtype). Parcel 5 soils consist primarily of Woolwine-Fairview complex, typically with 15 to 25 percent slopes, moderately eroded and well-drained. The DFHL site ranges from mesic to dry.

In parcel 2 (south of the Lake Vista Drive entrance), the soils grade into a Meadowfield-Rhodhiss complex, typically with 25-60 percent slopes and very stony. The natural community type is characterized as a mature, Dry Oak-Hickory Forest (Piedmont Subtype). Greater periwinkle has colonized a portion of this parcel. The DFHL site ranges from mesic to dry with northwest-facing slopes. The soils in parcel 2 and parcel 5 are both considered mineral soils with a loamy surface layer and a clayey subsoil.

5.4 Adverse Effects to Bats

5.4.1 Percussive Activities

Percussive activities such as pile-driving will occur for the new bridge substructure. It is not known what time of year percussive activities will take place, but they may occur while bats are active on the landscape (approximately April 1 – October 15). The length of time for pile-driving should be one week, since only one bent (end bent #2, north end of bridge) will be on piles. Pile-

driving will be conducted during the day and will be temporary in nature. Noise levels from pile-driving can reach 115 decibels (Nuclear Regulatory Commission 2012).

End bent #1 (southern end of bridge) is anticipated to be a spread footing. Equipment mounted demolition hammers or limited blasting (one to two blasts) may be needed at this location to remove rock to the required elevation for bent construction. This work is estimated to take two to three weeks at most. Noise levels from demolition hammers (hoe rams) can reach 90 decibels at a distance of 50 feet (Nuclear Regulatory Commission 2012). Noise levels from blasting can reach 126 decibels, depending on substrate, size of charge, detonation system, and directivity (Nuclear Regulatory Commission 2012). Blasting will be avoided if possible.

Percussive activities have the potential to adversely affect any protected bats that might be roosting in the area. Animal response to sound and vibration depends on a number of factors, including level and frequency, distance and event duration, equipment type, frequency of disruptive events over time, topography, weather conditions, previous exposure to similar events, hearing sensitivity, reproductive status, time of day, behavior during the event, and the animal's location relative to the source (Delaney and Grubb 2003).

If conducted during the bat active season, percussive activities could cause bats, if present nearby, to abandon their roosts, which could expose them to additional stressors, such as increased energy expenditure, increased risk of predation, and increased competition for resources. If bats temporarily avoid areas that are noisier than they are accustomed to, this may lead to increased travel time/distance for foraging and daily movements, potentially resulting in diminished fitness of adults and/or reduced survivorship of pups. Any bats roosting immediately adjacent to the pile-driving could incur potential hearing damage; however, there was no evidence of bats roosting on the existing bridge, pipes in the project footprint are less than three feet in diameter, and tree-clearing in the project footprint will take place in winter, so it is unlikely that any bats will be roosting near the areas where percussive activities may occur.

5.4.2 Tree-Removal

Tree-clearing for R-3430B will be 3.14 acres. Tree-clearing will take place in winter when bats will be hibernating elsewhere. No direct mortality is expected as a result of tree clearing. Due to the availability of trees in the project vicinity, it is anticipated that any bats seeking trees for roosting will still find roosting sites available post-project, although they may have to travel further to reach areas used for foraging, potentially expending more energy and/or increasing the exposure of individual bats to predators.

Cleared areas may serve as ecological barriers for bats. There is no contiguous tree canopy along Connelly Springs Road north of the Catawba River in the R-3430B project footprint. South of the river, trees are fairly contiguous along both sides of the road. In areas where there is contiguous forest, R-3430B improvements will increase the width of the canopy gap over the road from approximately 50 feet to approximately 175 feet. It is unclear how removal of woody vegetation associated with the project will affect federally protected tree-roosting bats. NLEB generally prefer intact forests with small canopy gaps (i.e., forest trails, small roads, or forest-covered creeks) for foraging and travel rather than areas of fragmented habitat (USFWS 2015). If

bats avoid areas where additional clearing will occur as a result of R-3430B, this may lead to increased travel time/distance between their roosts and foraging areas and could potentially result in diminished fitness of adults.

5.4.3 Lighting

Nighttime concrete pouring may be required if it coincides with hot weather, typically in July or August. Due to the size of the bridge, up to 12 nights of work may be necessary.

Studies have consistently shown that bat species richness decreases with the presence of artificial lighting in foraging and roosting areas, with *Myotis* species being particularly vulnerable (Spoelstra et al. 2017; Stone et al. 2012; Linley 2017). Additional studies (e.g., Rydell 1992; Blake et al. 1994; Stone et al. 2009, 2012) have shown that road lighting deters many bat species, notably slow-flying, woodland-adapted species, such as members of the genus *Myotis*, from approaching roads. Therefore, it is possible that artificial lighting may cause avoidance behavior in protected bat species, if any are in the area. If bats avoid the bridge construction area, this may lead to increased travel time/distance between their roosts and foraging areas and could potentially result in diminished fitness of bats. To minimize effects, temporary night lighting will be directed to illuminate the bridge deck and not the river or riparian area. Any lighting that shines down toward the river or adjacent woods will be indirect and minimal.

Navigational aids will be installed to guide river users while bridge work is taking place. Generators will not be used to provide power. To delineate safe access for boaters, green solar light buoys will be installed on each side of the approved safe boat access channel upstream and downstream of the project construction areas; white solar light “Slow No Wake” buoys will be installed across the width of the safe open recreational boating channel, approximately 50 ft. upstream and downstream of either end of the safe open recreational boating channel; and red solar light “boats keep out” buoys will be installed to delineate the limits of the construction work area(s) and to identify navigation hazard bents located within the safe boat access channel. The lights will be placed a minimum of two feet above the water line to provide a visual barrier both day and night. All lights will be solar-powered LED strobe lights. The lights will be in place up to two years while bridge construction and demolition area taking place.

Red lights are unlikely to interfere with the normal activity of bat species foraging in this area (Spoelstra et al. 2017). White and green lights may discourage bats from feeding or commuting in the vicinity of the project, requiring them expend more energy to travel further for these activities or potentially exposing them to a greater risk of predation.

5.4.4 Water Quality

Land disturbance, the removal of woody vegetation, and in-water work can lead to increased sedimentation in waterways. Construction of the new bridge will require the use of temporary causeways for the construction of a bent and the removal of an existing bent. The addition and removal of fill material for causeways may cause temporary increases in turbidity in the river. Construction fabric will not be used under the causeway material, as it has a tendency to tear into pieces and float downstream during removal. Water quality can also be impaired from accidental

spills of petrochemicals, hydraulic fluid, uncured concrete, etc. All of the above activities have the ability to temporarily decrease water quality, which may reduce the availability of aquatic insect prey and reduce the availability or quality of suitable drinking sources.

If there is a reduction of the aquatic insect base in localized areas, adverse effects are likely to be undetectable due to the availability of alternative prey in the surrounding landscape. Due to the dilution effect of the volume of water carried by the Catawba River and the implementation of standard sediment and erosion control measures, water quality effects associated with construction should be short-term, primarily during causeway installation and removal. Any bats that use the river for drinking may have to temporarily travel further for drinking water if this effect occurs during the bat active season. Avoidance and minimization measures listed below (Section 5.4.6) include measures to protect water quality. Overall, we do not anticipate any measurable effect on protected bat species as a result of diminished water quality.

5.4.5 Cumulative Effects

On the south side of the river, tree removal for home construction along Lake Vista Drive is possible within the action area. If tree-clearing is conducted during the bat active season, bats could be affected. While such development has the potential to cause adverse effects to bats in the action area, it is not reasonably certain to occur at this point in time. Therefore, no cumulative effects are anticipated for protected bat species.

5.4.6 Avoidance and Minimization - Bats

1. Tree-clearing will be conducted in winter to avoid potential effects to protected bats (October 16-March 31).
2. If night work is conducted, any construction-related lighting will be directed toward the deck of the bridge and will not project into adjacent wooded areas or over the surface of the river as much as practicable. Night work will not exceed 12 nights.
3. For temporary causeways, clean, washed rock (free of debris and pollutants) will be used for the causeway material to minimize sediment input into the river. It will be free of invasive plant seeds to the extent practicable.
4. Every effort will be made to avoid dropping pieces of the existing bridge into the water during demolition. If bridge material does inadvertently go into the water, it will be removed promptly.
5. The causeway footprints will be the minimum necessary to construct the bridge. The causeway will not constrict more than 50% of the existing channel flow of the Catawba River at this location at a given time.
6. Causeway material will be removed to the extent practicable and either disposed of off-site or used in areas that require permanent stone protection after project completion.
7. There will be no deck drains on the new bridge, which will help protect water quality.
8. To protect water quality, construction fabric will not be used under the causeway material, as it has a tendency to tear into pieces and float downstream during removal.

Avoidance and minimization measures discussed in Section 5.3.1 will also benefit bats: avoiding the use of invasive non-native plants for erosion control and using native plants where feasible can benefit bats' insect prey base.

5.4.7 General Safety Measures

Because the Catawba River is regularly used for recreation, it cannot be closed to navigation during construction. NCDOT will commit to providing safe passage for river users by employing safety measures, including a catchment device or other appropriate measures on the overhead bridge structure to prevent construction material or debris from falling on river users or in the water. In addition, navigational aids will be installed to guide river users away from the causeways/construction zone (as discussed in Section 5.4.3).

6.0 Effect Determinations

Table 7 below presents the federally listed species along with their status and a Biological Conclusion. According to the NCNHP online database (NCNHP 2022), no federally protected species were listed as occurring within a mile of the action area, aside from DFHL.

Table 7. R-3430B Biological Conclusions

Scientific Name	Common Name	Federal Status*	Suitable Habitat Present	Species Present in Action Area	Biological Conclusion	Conservation Measures
Glyptemys muhlenbergii	Bog turtle	T(S/A)/ARS	No	No	No Effect	-
Corynorhinus townsendii virginianus	Virginia big-eared bat	E	Yes (no winter habitat)	No	No Effect	-
Myotis grisescens	Gray bat	E	Yes (no winter habitat)	No	No Effect	-
Myotis lucifugus	Little brown bat	ARS	Yes (no winter habitat)	Assumed present	MANLAA	Winter tree-clearing; night work limited to 12 nights
Myotis septentrionalis	Northern long-eared bat	T	Yes (no winter habitat)	Assumed present	MANLAA	Winter tree-clearing; night work limited to 12 nights
Perimyotis subflavus	Tricolored bat	PE	Yes (no winter habitat)	Assumed present	MANLAA	Winter tree-clearing; night work limited to 12 nights
Gymnoderma lineare	Rock gnome lichen	E	No	No	No Effect	-
Hexastylis naniflora	Dwarf-flowered heartleaf	T	Yes	Yes	MALAA	Design mods to minimize effects; ROW extension to preserve DFHL with monitoring & invasive spp control;
Isotria medeoloides	Small whorled pogonia	T	Yes	No	MANLAA	-

*E = Endangered, T = Threatened, PE = Proposed endangered, T (S/A) = Threatened due to similarity of appearance, ARS = At-risk species
MALAA – May Affect, Likely to Adversely Affect; MANLAA – May Affect, Not Likely to Adversely Affect

6.1 Bog Turtle

The bog turtle is federally listed as threatened due to similarity of appearance (T/SA); it was petitioned for federal listing, resulting in an at-risk species (ARS) designation, on January 13, 2022. Suitable habitat in the form of open, spring-fed, emergent wetlands is not present within the R-3430B project study area (NCDOT 2019a). No known occurrence of bog turtle has been reported by the NCNHP within a mile radius of the action area (2022). The Biological Conclusion for R-3430B is **No Effect** for the bog turtle.

6.2 Virginia Big-eared Bat

According to the NCNHP Biotics Database (NCNHP 2022), Virginia big-eared bats have not been documented in Burke County. The closest known occurrence is approximately 30 miles northwest of R-3430B.

In June of 2019, NCDOT biologists assessed existing Bridge #110010 (R-3430B) for potential bat habitat. No evidence of bats (bats, staining, and guano) was observed (NCDOT 2019b). As a follow-up, on June 9, 2021, NV5 biologists re-assessed Bridge #110010; no evidence of bats was observed (NCDOT 2021c). There are no known roosts for this species in bridges in North Carolina (NCDOT Combined Bridge Inspection Database, 2022). No caves or mines were observed within the project study area. There are no records of mines within a half mile of the R-3430B action area (USGS 2021). Pipes in the R-3430B action area all less than three feet in diameter. Due to the lack of bat evidence and the limited potential for Virginia big-eared bat roosts in the action area, the Biological Conclusion for R-3430B is **No Effect** for the Virginia big-eared bat.

6.3 Gray Bat

According to the NCNHP Biotics Database, most recently updated in July 2022, MYGR have not been documented in Burke or Caldwell County. The closest known occurrence of gray bat is approximately 23 miles west of the project site.

In June of 2019, NCDOT biologists assessed existing Bridge #110010 (R-3430B) for potential bat habitat. No evidence of bats (bats, staining, and guano) was observed (NCDOT 2019b). As a follow-up, on June 9, 2021, NV5 biologists re-assessed Bridge #110010; no evidence of bats was observed (NCDOT 2021c). No caves or mines were observed within the project study area. There are no records of mines within a half mile of the R-3430B action area (USGS 2021). Culverts in the R-3430B action area all less than three feet in diameter. Due to the lack of bat evidence and the limited potential for gray bat roosts in the action area, the Biological Conclusion for R-3430B is **No Effect** for the gray bat.

6.4 Little Brown Bat

The nearest little brown bat EO record is at least 11.7 mi from R-3430B, however the record location has low accuracy; it occurs somewhere in South Mountain State Park. The distance from the project was measured to the closest park boundary so the actual distance could be somewhat

further. One bat was captured in 2001. As stated above, no evidence of bats was observed at existing Bridge #110010 (R-3430B), and no mines were located within the project study area. Pipes in the action area are all less than three feet in diameter.

The availability of trees elsewhere in the vicinity is anticipated to be sufficient to support any bats seeking roost trees after tree-clearing has occurred. Since trees will be cleared in winter, culverts in the action area are presumably too small for roosting, and no bats were observed in Bridge #110010, it is unlikely that any roosting bats will be present in the action area during the bridge construction. Therefore, effects from percussive activities like pile-driving or blasting should be discountable.

Up to 12 nights of work may be necessary during July or August for bridge construction. Lights will be directed to illuminate the bridge deck and not the river or riparian area. Any lighting that shines down toward the river or adjacent woods will be indirect and minimal. Due to the temporary, limited nature of the construction lighting, any effects to little brown bats that could be flying through the area at night are anticipated to be insignificant. However, green, white, and red solar-powered navigational lights will be in place for up to two years to guide river users while bridge work is taking place. Red lights are unlikely to interfere with the normal activity of bats (Spoelstra et al. 2017), but white and green lights may discourage bats from feeding or commuting in the vicinity of the project, requiring them expend more energy to travel further for these activities or potentially exposing them to a greater risk of predation.

As such, a Biological Conclusion of **May Affect, Not Likely to Adversely Affect** is recommended for the Little Brown Bat, should it become federally listed.

6.5 Northern Long-eared Bat

The R-3430B action area is not within a red HUC where NLEB hibernacula are known to occur (http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html, last updated in 2018). According to the NCNHP Biotics Database (2022), the nearest NLEB hibernaculum record is approximately 21 miles northwest of the R-3430B project limits0. The closest 12-digit red HUC (030501010502) is approximately 20 miles away (Upper Wilson Creek).

The nearest NLEB EO record is from South Mountain State Park, at least 11.7 mi from R-3430B; however, the record location has low accuracy and occurs somewhere within the park; the actual distance could be somewhat further. The record represents multiple captures. NLEB are assumed to be present within the project vicinity.

As stated above, no evidence of bats was observed at existing Bridge #110010 (R-3430B), and no mines are located within a half mile of the R-3430B action area. Pipes in the action area are all less than three feet in diameter. Tree-clearing will not take place between April 1 – October 15 to minimize effects to NLEB and other tree-roosting bats.

Night work will only occur if deck pouring needs to occur during warm months (July-August), with a total of 12 nights as a worst-case scenario. Any night work will minimize the amount of light shining onto the river and adjacent woods. Due to the temporary, limited amount of the

construction lighting, adverse effects to any bats that may be in the area at night should be insignificant. However, green, white, and red solar-powered navigational lights will be in place for up to two years to guide river users while bridge work is taking place. Red lights are unlikely to interfere with the normal activity of bats (Spoelstra et al. 2017), but white and green lights may discourage bats from feeding or commuting in the vicinity of the project, requiring them expend more energy to travel further for these activities or potentially exposing them to a greater risk of predation.

Since trees will be cleared in winter, culverts in the action area are presumably too small for roosting, and no bats were observed in Bridge #110010, it is unlikely that any roosting bats will be present in the action area during the bridge construction. Therefore, effects from percussive activities like pile-driving or blasting should be discountable.

NLEB roosting and foraging habitat occurs within the action area in the form of wooded habitat. Habitat along the river has become somewhat fragmented, with riverfront homes and connecting roadways/driveways cutting through forested areas on the south side of the river, and a boat ramp, parking lot and resort on the north side. Since NLEB generally prefer intact forests and only forage occasionally along rivers, their exposure to R-3430B construction may be limited.

As such, effects to NLEB are not anticipated to be significant and a Biological Conclusion of **May Affect, Not Likely to Adversely Affect** is recommended for the NLEB. Other measures which will minimize effects to bats include using native seed mixes where practicable and avoiding the use of invasive non-native plant species for erosion control.

6.6 Tricolored Bat

The nearest EO is 21 mi southeast of R-3430B (NCNHP 2022) from May 2021 in Catawba County at West Maiden Road and Pinch Gut Creek. As stated above, no evidence of bats was observed at existing Bridge #110010 (R-3430B), no mines are located within a half mile of the action area, and pipes in the action area are all less than three feet in diameter.

Since trees will be cleared in winter, culverts in the action area are presumably too small for roosting, and no bats were observed in Bridge #110010, it is unlikely that any roosting bats will be present in the action area during the bridge construction. Therefore, effects from percussive activities like pile-driving or blasting should be discountable, should they be conducted during the bat active season.

Night work will only occur if deck pouring needs to occur during warm months (July-August), with a total of 12 nights as a worst-case scenario. Any night work will minimize the amount of light shining onto the river and adjacent woods. Due to the temporary, limited amount of the construction lighting, adverse effects to any bats that may be in the area at night should be insignificant. However, green, white, and red solar-powered navigational lights will be in place for up to two years to guide river users while bridge work is taking place. Red lights are unlikely to interfere with the normal activity of bats (Spoelstra et al. 2017), but white and green lights may discourage bats from feeding or commuting in the vicinity of the project, requiring them

expend more energy to travel further for these activities or potentially exposing them to a greater risk of predation.

As such, a Biological Conclusion of **May Affect, Not Likely to Adversely Affect** is recommended for the tricolored bat. Other measures which will minimize effects to bats include using native seed mixes where practicable and avoiding the use of invasive non-native plant species for erosion control.

6.7 Rock Gnome Lichen

No known occurrence of rock-gnome lichen has been reported by the NCNHP within a mile radius of the action area (NCNHP 2022). Suitable habitat is not present within the action area for the rock-gnome lichen, as elevations only reach a maximum of 1,200 feet. The action of the proposed project will have **No Effect** on this federally endangered species.

6.8 Dwarf-flowered Heartleaf

NCDOT acknowledges that the proposed replacement of the Connelly Springs Road Bridge #110010 over the Catawba River will adversely affect DFHL. Portions of four DFHL sites (F, G, H, and I) are located within the construction footprint (SS + 25 feet or easements, whichever is greater) as depicted in Appendix A, Figure 5, affecting approximately 0.45 acre of DFHL habitat and 168 DFHL plants. Approximately 0.06 acre of DFHL habitat and 34 DFHL plants may be affected by drainage, and 0.01 acre of DFHL habitat and two plants may be affected by utility relocations. Another 0.28 acre of DFHL habitat and 79 plants may potentially be affected by biological pollution caused by invasive plant growth. Overall adverse effects of the action are estimated to be 0.80 acre of habitat and 283 plants.

NCDOT is required by Section 7 of the ESA to sequentially evaluate mitigative measures that avoid, minimize, and offset impacts to DFHL as a result of project construction. Changes in project alignment avoided direct adverse effects to 23 plants and 0.041 acre of occupied habitat in total (Section 5.3.1).

In order to offset adverse effects of the action to occupied DFHL habitat and DFHL plants, NCDOT will conduct on-site preservation of 160 DFHL plants and 0.373 acre of occupied habitat in perpetuity through a ROW extension, preserving 30% of the DFHL plants and 32% of the occupied habitat in the action area.

By incurring adverse effects of the action on approximately 0.80 acre of occupied DFHL habitat and 283 plants, the actions associated with the R-3430B bridge replacement will result in the loss of 54% of the 518 DFHL plants and 68% of the 1.17 ac of occupied DFHL habitat in the action area.

Based on the adverse effects of the action, the R-3430B Biological Conclusion is **May Affect, Likely to Adversely Affect** for DFHL. The proposed on-site protection of DFHL plants will help offset these adverse effects of the action and maintain the general integrity and survivorship of DFHL in the R-3430B action area.

6.9 Small Whorled Pogonia

Surveys for small whorled pogonia were conducted in 2018 for R-3430 (NCDOT 2019a). Surveys were conducted again in the slightly expanded project study area in 2021 (NCDOT 2022c), and the gas line relocation area was surveyed in 2022 (NCDOT 2022e). Appropriate habitat was found in several areas within the action area; however, no individuals of this species were located. Although there is a lack of known occurrences within a mile of the project action area (NCNHP 2022), and surveys resulted in negative results, the Biological Conclusion for this species is **May Affect, Not Likely to Adversely Affect**, due to the presence of appropriate habitat and potential difficulty in detecting this species when it is dormant.

6.10 Candidate Species

The monarch butterfly (*Danaus plexippus*) is listed as a Candidate species; it is not currently afforded protection under Section 7 of the ESA, and a Biological Conclusion is not required. NCNHP (2022) currently does not track this species, so its status relative to the project study area is unknown; however, there are 30 documented records of the species in Burke County and six records from Caldwell County (LeGrand and Howard 2022).

6.11 Designated Critical Habitat

There are no designated Critical Habitat areas within or near the R-3430B action area.

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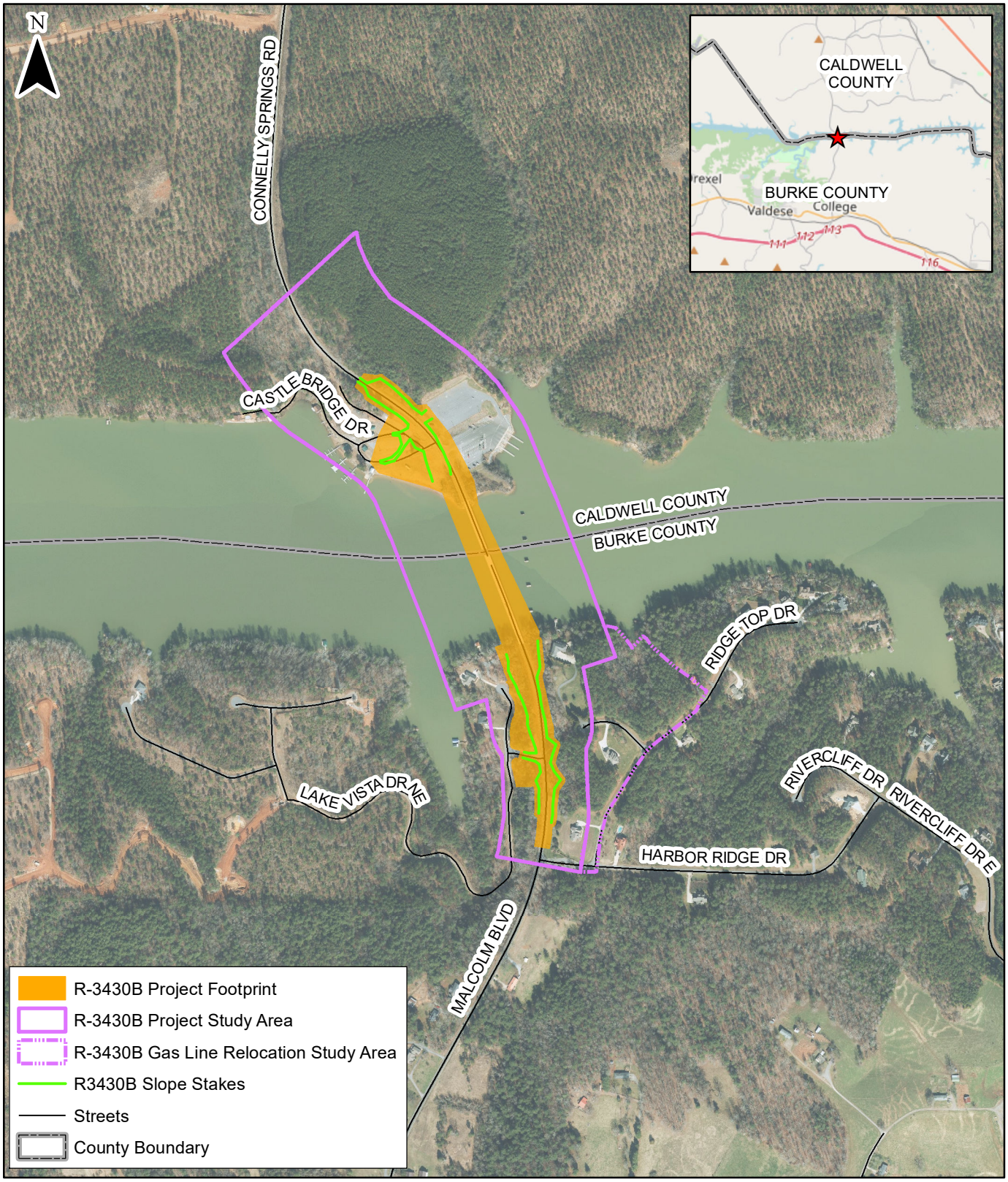
Appendix A

Figures



THREE OAKS ENGINEERING

Prepared For: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Replacement of Connelly Springs Road (SR 1001) Bridge (#110010) over the Catawba River TIP R-3430B

R-3430B Vicinity Map

Burke & Caldwell Counties, North Carolina

Date: November 2022

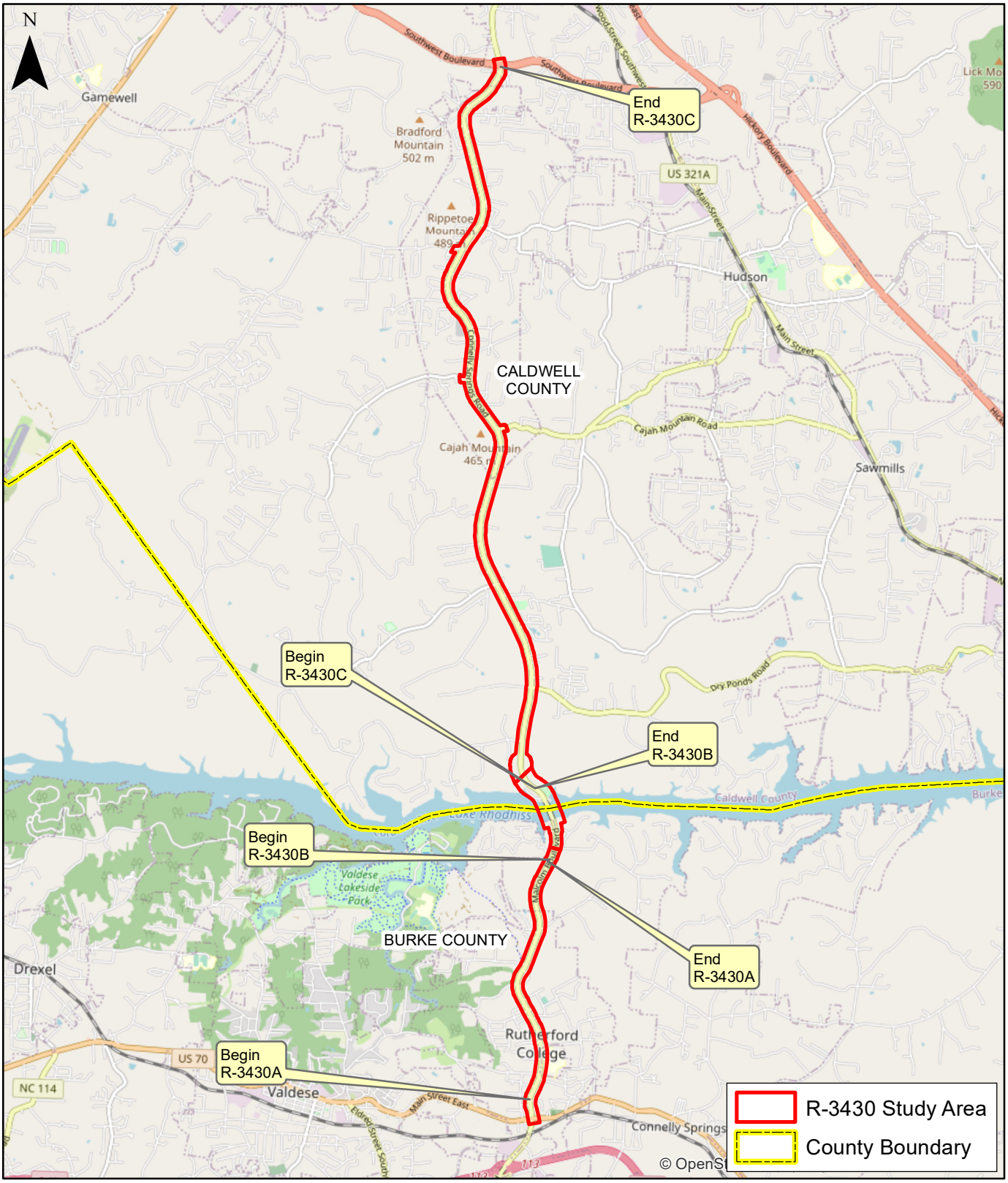
Scale: 0 200 400 Feet

Job No.: 21-311

Drawn By: KEMS

Checked By: MF

Figure 1



THREE OAKS ENGINEERING

Prepared For: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Replacement of Connelly Springs Road
(SR 1001) Bridge (#110010)
over the Catawba River
TIP R-3430B

R-3430 Project Vicinity Map

Burke & Caldwell Counties, North Carolina

Date: November 2022

Scale: 0 2,000 4,000 Feet

Job No.: 21-311

Drawn By: NMSO

Checked By: MF

Figure

2

R-3430B Bridge Alternative 1
Figure 3A

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

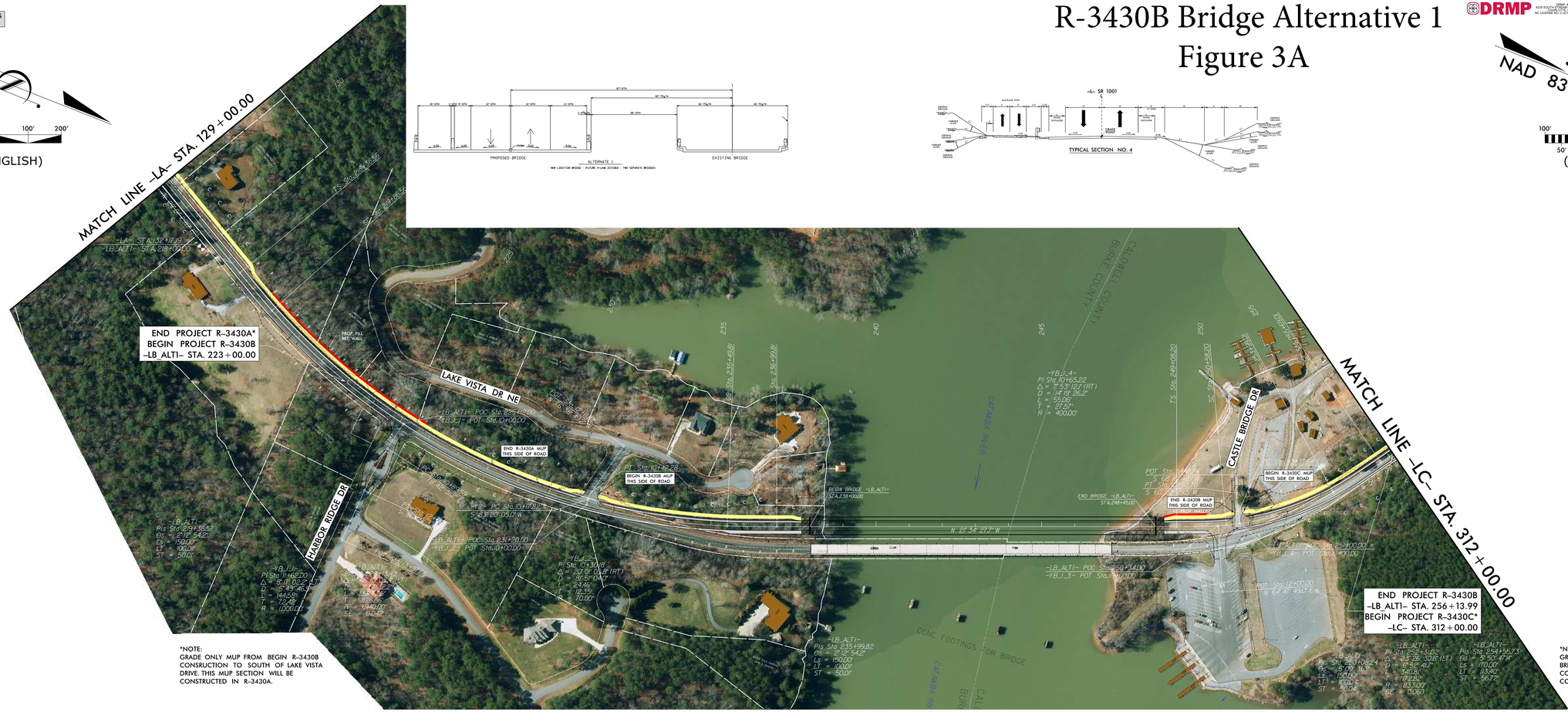
NAD 83

100' 0' 100' 200'
50'
(ENGLISH)

PLANS PREPARED BY: DRMP — 4208 SIX FORKS ROAD, SUITE 1000, RALEIGH, NC 27609, NC LICENSURE NO: C-0570, PHONE: (919) 420-1696

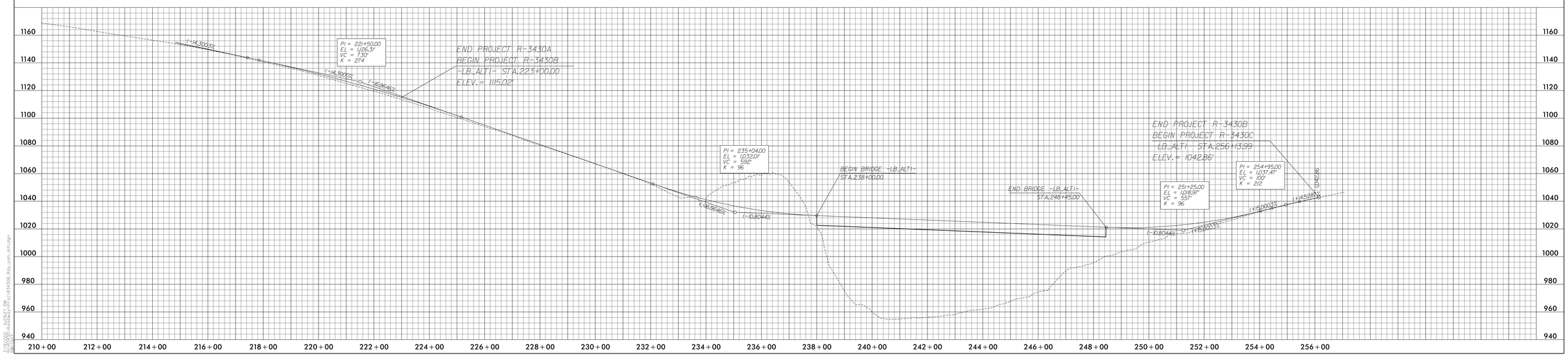
PROJECT REFERENCE NO.	SHEET NO.
R-3430B	ALT 1

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



*NOTE:
GRADE ONLY MUP FROM BEGIN R-3430B CONSRUCTION TO SOUTH OF LAKE VISTA DRIVE. THIS MUP SECTION WILL BE CONSTRUCTED IN R-3430A.

*NOTE:
GRADE ONLY MUP FROM NORTH OF CASTLE BRIDGE DRIVE TO END OF R-3430B CONSRUCTION. THIS MUP SECTION WILL BE CONSTRUCTED IN R-3430C.



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

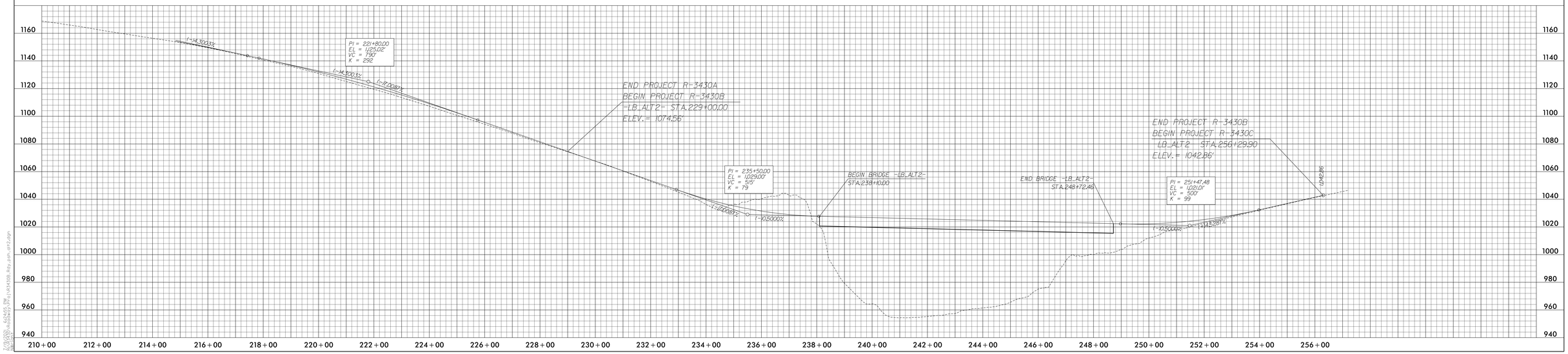
NAD 83

100' 0' 100' 200'
50'
(ENGLISH)

R-3430B Bridge Alternative 2
Figure 3B

*NOTE:
GRADE ONLY MUP FROM BEGIN R-3430B CONSRUCTION TO SOUTH OF LAKE VISTA DRIVE. THIS MUP SECTION WILL BE CONSTRUCTED IN R-3430A.

*NOTE:
GRADE ONLY MUP FROM NORTH OF CASTLE BRIDGE DRIVE TO END OF R-3430B CONSRUCTION. THIS MUP SECTION WILL BE CONSTRUCTED IN R-3430C.



PLANS PREPARED BY:
DRMP
4208 SIX FORKS ROAD SUITE 1000
RALEIGH, NC 27609
NC LICENSE NO. C-0279 PHONE 919.783.9299

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	ALT 2

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

100' 0' 100' 200'
50'
(ENGLISH)

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83

100' 0' 100' 200'
50'
(ENGLISH)

R-3430B Bridge Alternative 3
Figure 3C

PLANS PREPARED BY: DRMP

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	ALT 3

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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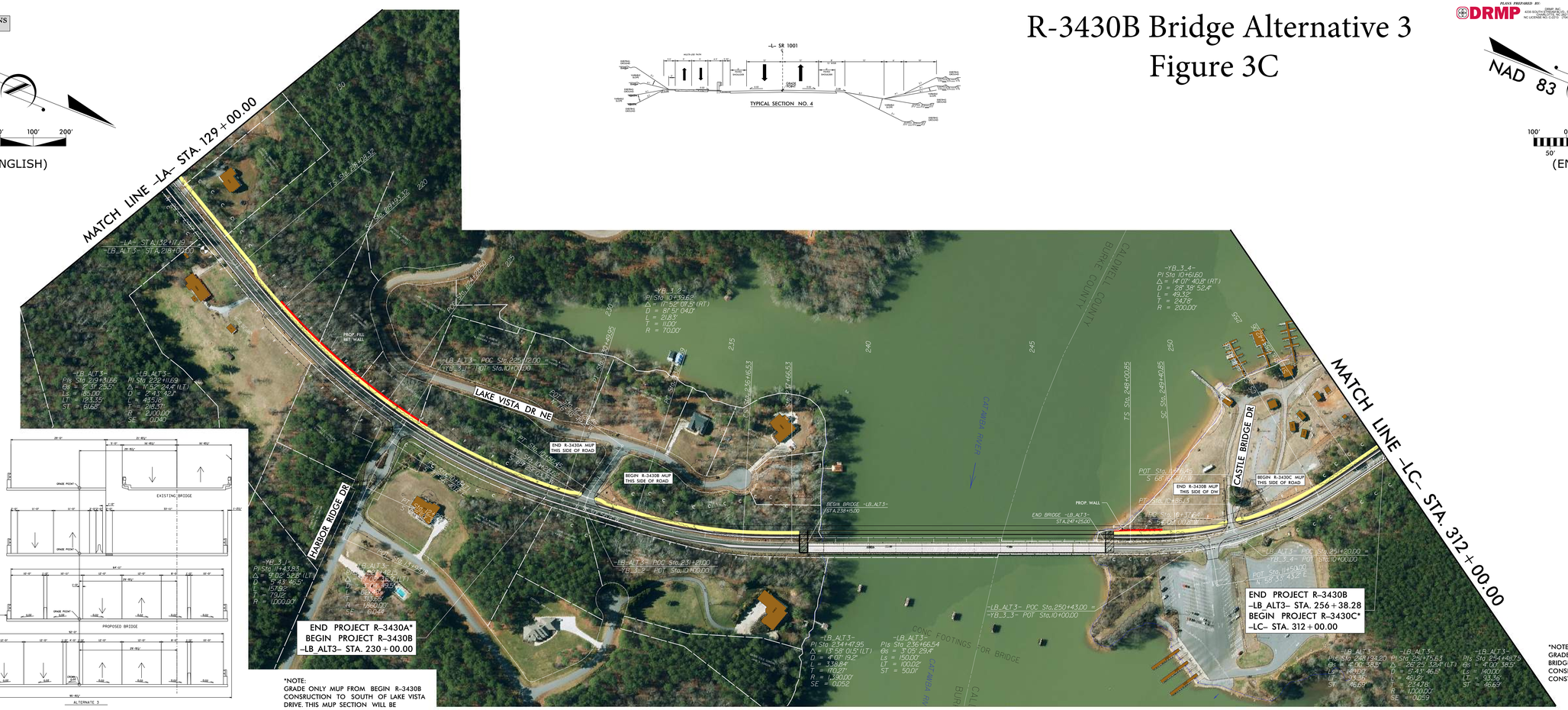
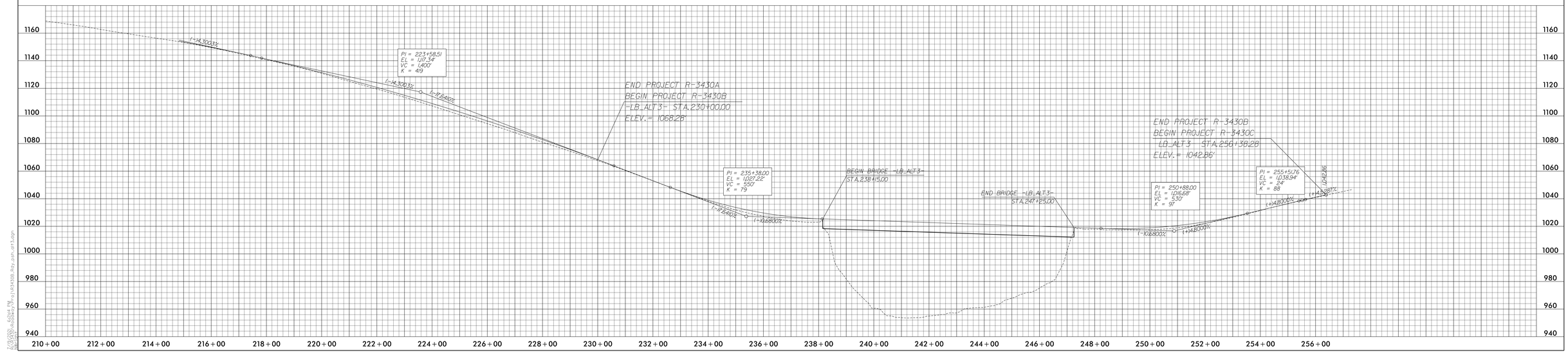
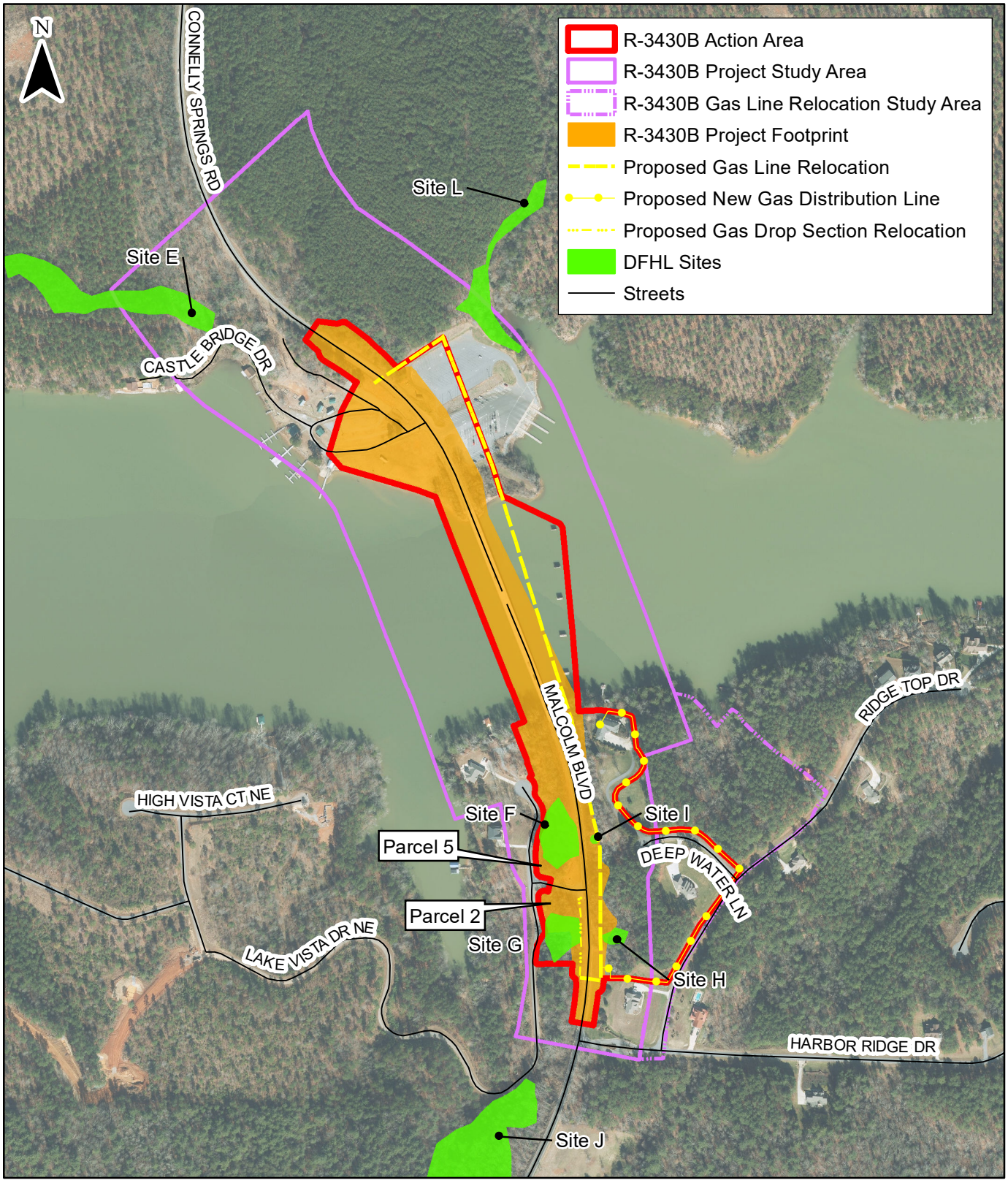
50'
(ENGLISH)







THREE OAKS ENGINEERING

Prepared For: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Replacement of Connelly Springs Road
(SR 1001) Bridge (#110010)
over the Catawba River
TIP R-3430B

R-3430B Action Area

Burke & Caldwell Counties, North Carolina

Date: November 2022

Scale: 0 200 400 Feet

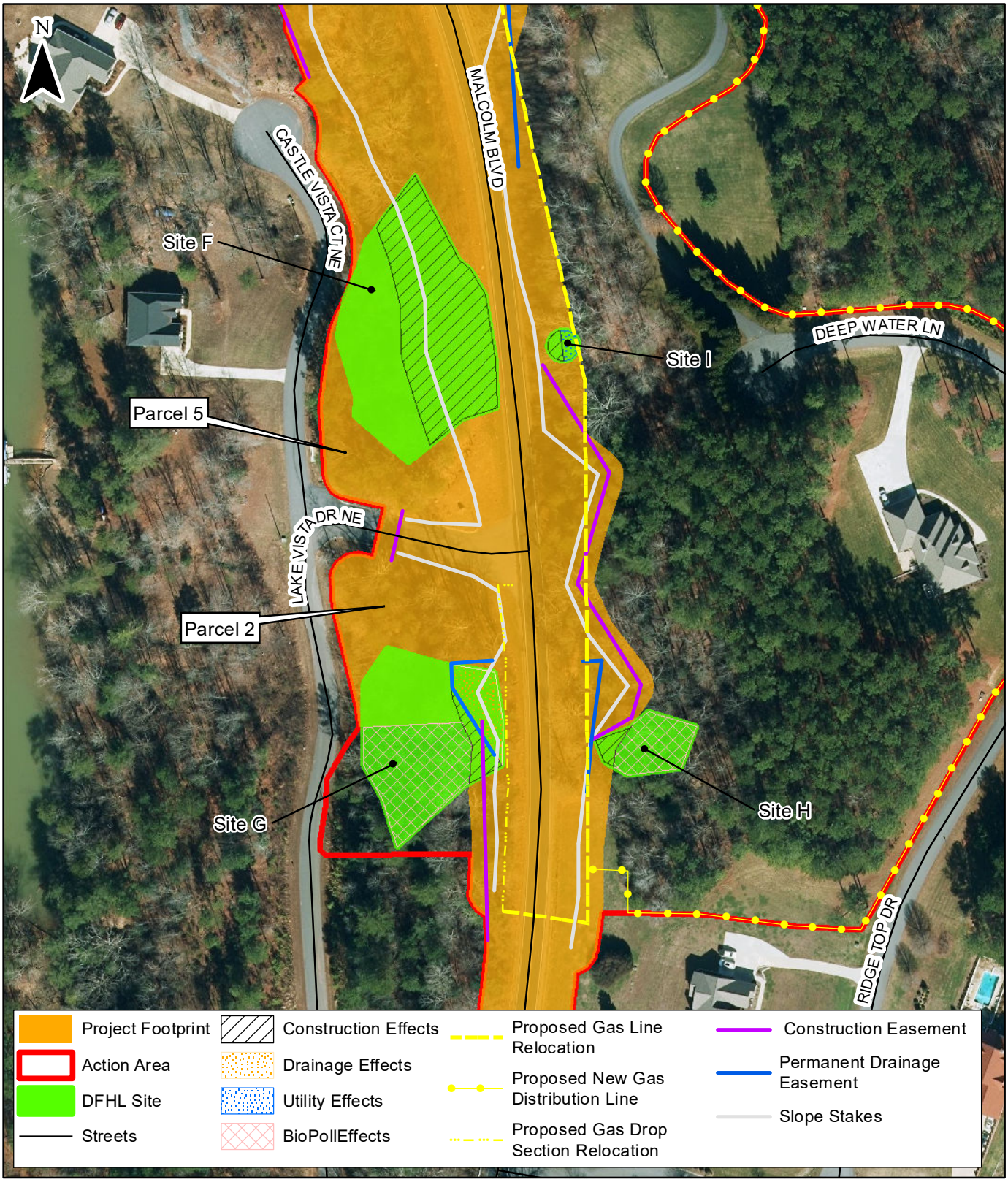
Job No.: 21-311

Drawn By: KEMS

Checked By: MF

Figure

4



THREE OAKS ENGINEERING

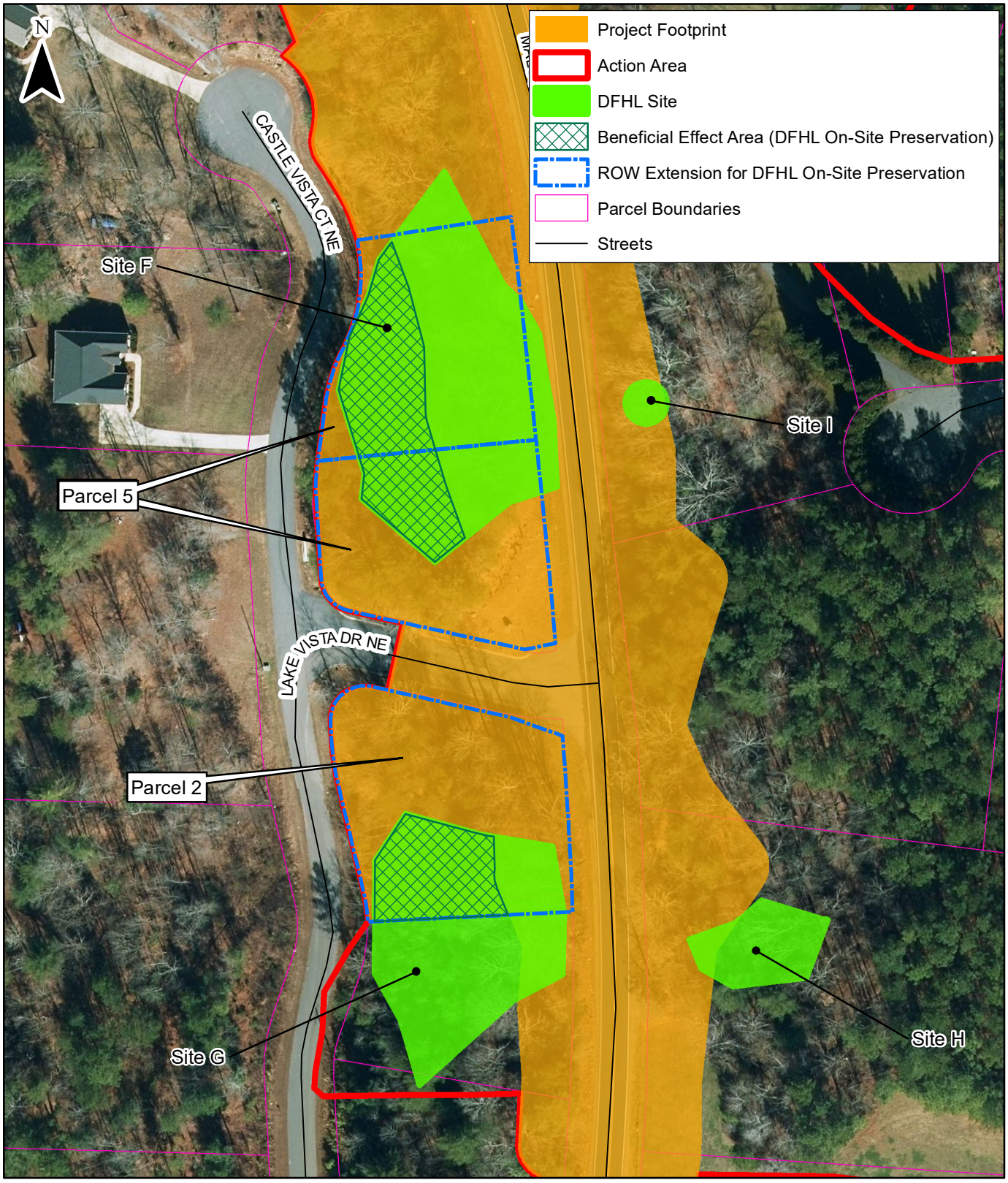
Prepared For: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Replacement of Connelly Springs Road
(SR 1001) Bridge (#110010)
over the Catawba River
TIP R-3430B

Dwarf Flowered Heartleaf Adverse Effects Area - Sites F, G, H, &I
Burke & Caldwell Counties, North Carolina

Date: November 2022
Scale: 0 25 50 Feet
Job No.: 21-311
Drawn By: NMSO
Checked By: MF

Figure
5



Prepared For:

Replacement of Connelly Springs Road
(SR 1001) Bridge (#110010)
over the Catawba River
TIP R-3430B
Dwarf Flowered Heartleaf Beneficial Effects Area
(On-Site Preservation)
Burke & Caldwell Counties, North Carolina

Date: November 2022

Scale: 0 25 50 Feet

Job No.: 21-311

Drawn By: NMSO

Checked By: MF

Figure

6

Appendix B
IPaC Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330

In Reply Refer To:
Project Code: 2022-0088834
Project Name: R-3430B

September 26, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The enclosed species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please note that new species information can change your official species list. Under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends you visit the ECOS-IPaC website at regular intervals during project planning and implementation to ensure your species list is accurate or obtain an updated species list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A biological assessment (BA) or biological evaluation (BE) should be completed for your project. A BA is required for major construction activities (or other undertakings having similar physical impacts) considered to be Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)) (NEPA). For projects other than major construction activities, the Service suggests that a BE be prepared to determine effects of the action and whether those effects may affect listed species and/or designated critical habitat. E?ects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other

activities that are caused by the proposed action. A consequence is caused by the proposed action if it is reasonably certain to occur and would not occur “but for” the proposed action.. Recommended contents of a BA/BE are described at 50 CFR 402.12. More information and resources about project review and preparing a BA/BE can be found at the following web link: https://www.fws.gov/office/asheville-ecological-services/asheville-field-office-online-review-process-overview.

If a Federal agency determines listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. The Service is not required to concur with "no effect" determinations from Federal action agencies. If consultation is required, the Service recommends that candidate species, proposed species, proposed critical habitat, and at-risk species be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or licensed applicants, can be found in the "Endangered Species Consultation Handbook" at the following web link: https://www.fws.gov/media/endangered-species-consultation-handbook.

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Act, there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). More information about MBTA and BGEPA can be found at the following web link: https://www.fws.gov/program/migratory-birds.

We appreciate your consideration of Federally listed species. The Service encourages Federal agencies to include conservation of threatened and endangered species in their project planning to further the purposes of the Act. Please contact our staff at 828-258-3939, if you have any questions. In any future correspondence concerning this project, please reference the Consultation Code which can be found in the header of this letter.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
(828) 258-3939

Project Summary

Project Code: 2022-0088834
Project Name: R-3430B
Project Type: Bridge - Replacement
Project Description: Replacement of Connelly Springs Road (SR 1001) Bridge (#110010) over the Catawba River in Burke and Caldwell Counties, North Carolina

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.7790489,-81.52412971715351,14z

Counties: Burke and Caldwell counties, North Carolina

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Bat *Myotis grisescens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6329	Endangered
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered
Virginia Big-eared Bat *Corynorhinus (=Plecotus) townsendii virginianus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8369	Endangered

Reptiles

NAME	STATUS
Bog Turtle *Glyptemys muhlenbergii* Population: U.S.A. (GA, NC, SC, TN, VA) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6962	Similarity of Appearance (Threatened)

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Dwarf-flowered Heartleaf *Hexastylis naniflora* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2458	Threatened
Small Whorled Pogonia *Isotria medeoloides* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1890	Threatened

Lichens

NAME	STATUS
Rock Gnome Lichen *Gymnoderma lineare* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3933	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25

NAME	BREEDING SEASON
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

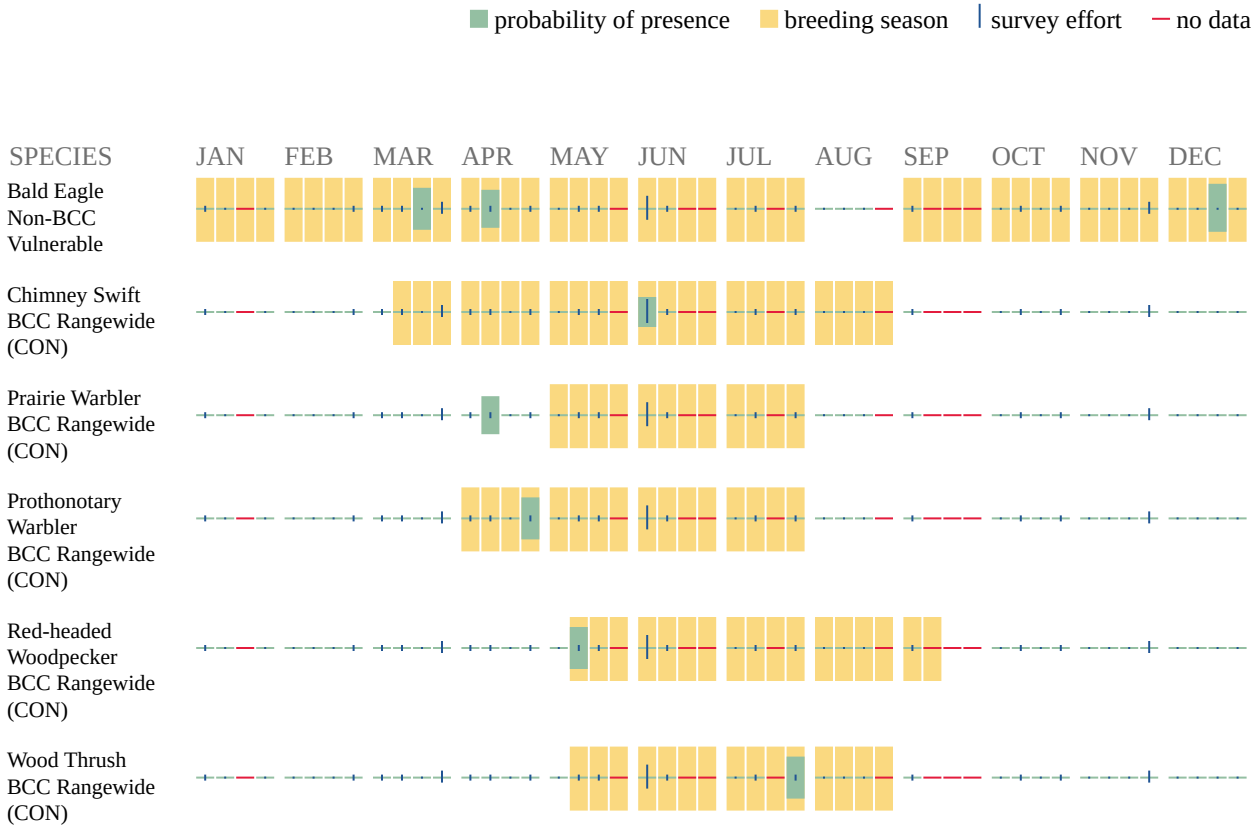
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?
To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the RAIL Tool and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?
Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects
For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED. PLEASE VISIT HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: Three Oaks Engineering
Name: Nancy Oberle
Address: 324 Blackwell Street, Suite 1200
City: Durham
State: NC
Zip: 27701
Email nancy.oberle@threeoaksengineering.com
Phone: 9197321300

Appendix C

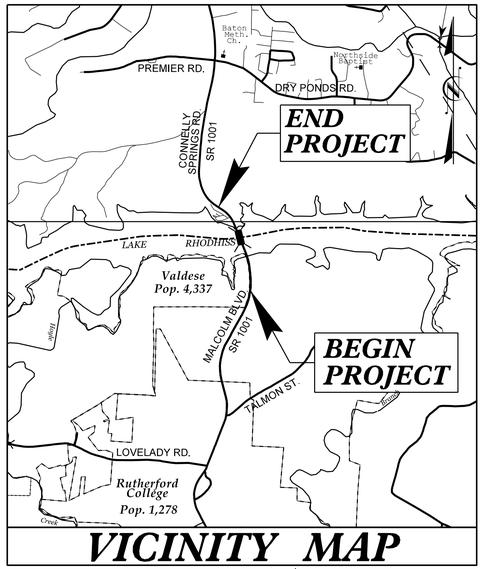
Plan Sheets

05/30/17

TIP PROJECT: R-3430B

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols
See RW Sheet Series For Survey Control



VICINITY MAP

NOT TO SCALE

TO RUTHERFORD COLLEGE

75% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

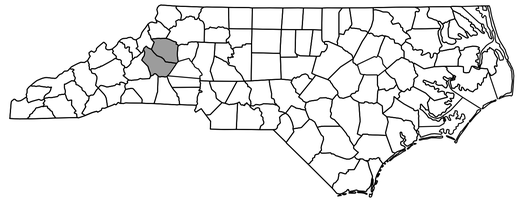
BURKE/CALDWELL COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3430B	1	

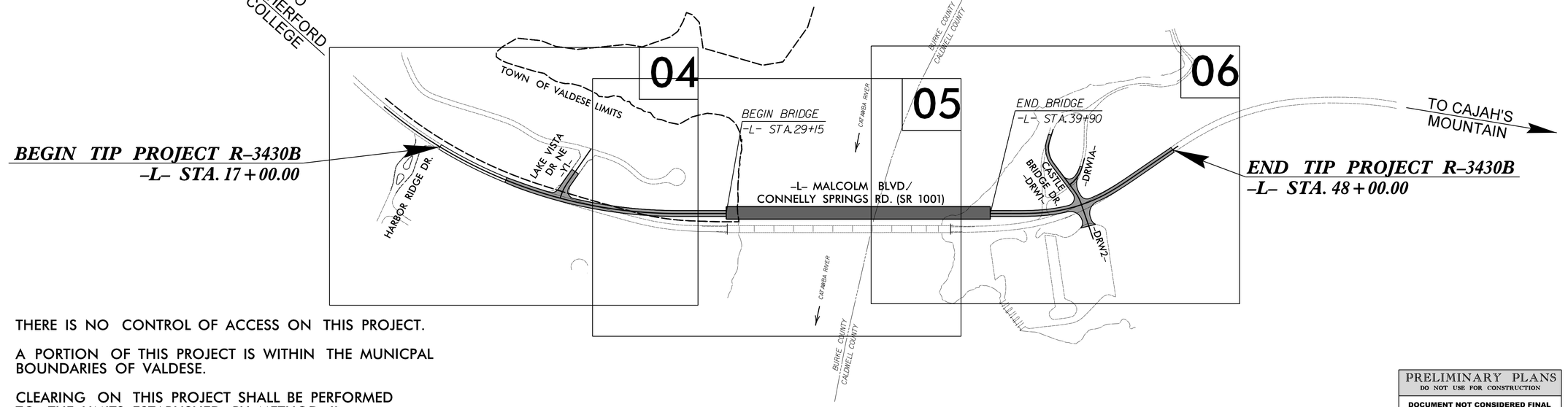
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34544.1.4	N/A	P.E.
34544.2.3	N/A	R/W
34544.2.5	N/A	UTILITIES

LOCATION: SR 1001 (CONNELLY SPRINGS ROAD), BURKE COUNTY CONSTRUCT NEW PARALLEL BRIDGE OVER CATAWBA RIVER

TYPE OF WORK: GRADING, PAVING, DRAINAGE & STRUCTURES



NAD 83/2011



THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.

A PORTION OF THIS PROJECT IS WITHIN THE MUNICPAL BOUNDARIES OF VALDESE.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2022 = 10,481
ADT 2045 = 12,100
K = 9 %
D = 60 %
T = 5 % *
V = 50 MPH
* TTST =1% DUAL 4%
FUNC CLASS =
MINOR ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3430B = 0.383 MILES
LENGTH STRUCTURE TIP PROJECT R-3430B = 0.204 MILES
TOTAL LENGTH TIP PROJECT R-3430B = 0.587 MILES

PLANS PREPARED BY:

DRMP
ENGINEERS • SURVEYORS • PLANNERS • SCIENTISTS

DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NORTH CAROLINA 28217
(704) 332-2289
NC LICENSE NO. C-2213

FOR PROJECT MANAGEMENT UNIT

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MARCH 21, 2022

LETTING DATE:
MAY 16, 2023

CHRISTOPHER K. HAIRE, P.E.
PROJECT ENGINEER
MICHAEL D. HAGE, P.E.
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
THERESA T. ELLERBY, CPM
PROJECT MANAGER - DIVISIONS 11-14

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

3/24/2022 11:58:36 AM
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SShuman

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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PLANS PREPARED BY:
DRMP
DRMP INC.
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CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

NAD 83/2011

REVISIONS
8/17/99

RICHARD G. ROBINSON
DB 2137 PG 044

TOMARCUS GILL
WENDY SIMMONS
DB 2375 PG 559
PB 42 PG 5

-L- POC Sta. 14+18.76

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

15+00

LAKE VISTAS HOMEOWNERS ASSOCIATION, INC.
DB 2230 PG 473
PB 41PG 24
PB 42 PG 5

DAVID N. BOOTH
ALEXANDRA F. BOOTH
DB 2022 PG 171
PB 41PG 24

JOHN W. CROSS
SHERRIE C. CROSS
DB 2317 PG 229
PB 41PG 24
PB 46 PG 192

N 05°46'23" W 204.96

DAYTON HOYT COOK
DONNA SUE COOK
DB 913 PG 149

NORTH CAROLINA LAKEFRONT PROPERTIES, LLC
DB 1808 PG 734
PB 42 PG 5

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

-Y1- POT Sta. 12+39.83

JAMES MICHAEL HUFFMAN
LEIGH ANN HUFFMAN
DB 2317 PG 223
PB 41PG 24
PB 46 PG 192

BEGIN TIP PROJECT R-3430B
-L- POC STA. 17+00.00
BEGIN OVERLAY

JOY ELANIE ZIEGLER
PAUL ZIEGLER
DB 2394 PG 765
PB 42 PG 5

2

2A

2B

2C

BEGIN GRADE
END OVERLAY/WEDGING
-L- POC STA. 20+00.00

20+00

END CONSTRUCTION
-Y1- POT Sta. 11+25.00

10

LAKE VISTAS HOMEOWNERS ASSOCIATION INC.
PB 0042 PG 0005-0006

TRAIAN CIUCA
CLAUDIA CIUCA
DB 2022 PG 177
PB 41PG 24

25+00

CHARLES C. COLLINS
CYNTHIA L. COLLINS
DB 2285 PG 210
PB 12 PG 216
PB 13 PG 180

N 04°24'49" E 266.25

GRADE TO DRAIN

FALSE SUMP SEE DETAIL C

-Y1- PT Sta. 10+69.83

CL I RIP RAP
EST. 7 TONS
EST. 15 SY GT

PROP. 1'-6" C&G

INSTALL CL B RIP RAP IN EXIST. DITCH FROM STA. 17+00 TO STA. 18+50 -L- RT SEE DETAIL A

CL B RIP RAP
EST. 181 TONS
EST. 416 SY GT
EST. 134 CY DDE

SPEC. CUT DITCH W/ RIP RAP SEE DETAIL B

SR 1001 MALCOLM BLVD. 2% BST

S 16°38'49" W

JAMES R. REECE, JR.
DB 2470 PG 976
PB 42 PG 5

5

5A

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

TOE PROTECTION SEE DETAIL E

PROP. 2'-6" C&G

SUP FUTURE SHARED-USE PATH GRADE ONLY

-L- MALCOLM BLVD.(SR 1001)

MICHAEL A. PARRISH
CYNTHIA N. PARRISH
DB 1417 PG 270
PB 13 PG 180

WAYNE E. WHISENANT
JEANA ABEE WHISENANT
DB 2269 PG 477
DB 2386 PG 630
PB 13 PG 180

1

-L- POC Sta. 22+34.00 =
-Y1- PC Sta. 10+00.00

SPEC. CUT DITCH W/ HINGE AND RIP RAP SEE DETAIL D

INSTALL CL B RIP RAP IN EXIST. DITCH FROM STA. 24+50 TO STA. 27+50 -L- RT SEE DETAIL F

CL B RIP RAP
EST. 210 TONS
EST. 510 SY GT
EST. 156 CY DDE

LOHR E. LOVELAND, JR.
KATHY F. LOVELAND
DB 975 PG 933
PB 13 PG 179

4

LOHR LOVELAND
KATHY LOVELAND
DB 1617 PG 696
PB 13 PG 181

3

CRYSTAL ANN DAVIS
DB 2093 PG 945
PB 13 PG 180

S 06°41'16" W 300.27

DATUS COLE GORDON
JANE A. GORDON
DB 911PG 1863
PB 12 PG 216

LOHR E. LOVELAND, JR.
DB 930 PG 1654
PB 12 PG 216

7

S 06°07'21" E 200.30

-L- MATCH LINE STA. 26+00 SEE SHEET 5

-L-
PI Sta 20+95.86
△ = 40° 00' 23.0" (LT)
D = 3° 04' 49.5"
L = 1,298.73'
T = 677.10'
R = 1,860.00'
SE = 0.05
R0 = 120'

-Y1-
PI Sta 10+35.28
△ = 20° 00' 19.5" (RT)
D = 28° 38' 52.4"
L = 69.83'
T = 35.28'
R = 200.00'

FOR -L- PROFILE SEE SHEET 07
FOR -Y1- PROFILE SEE SHEET 10

3/24/2022 11:51:38 AM
R-3430B_RoadwayPro1\R3430B_Rdy_psh4.dgn
Shuman

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

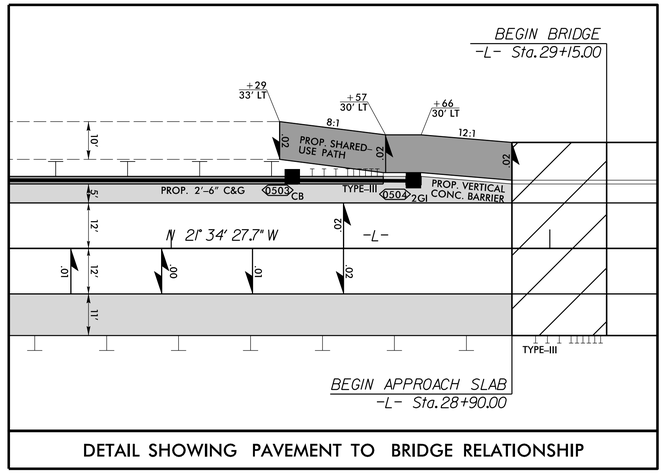
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

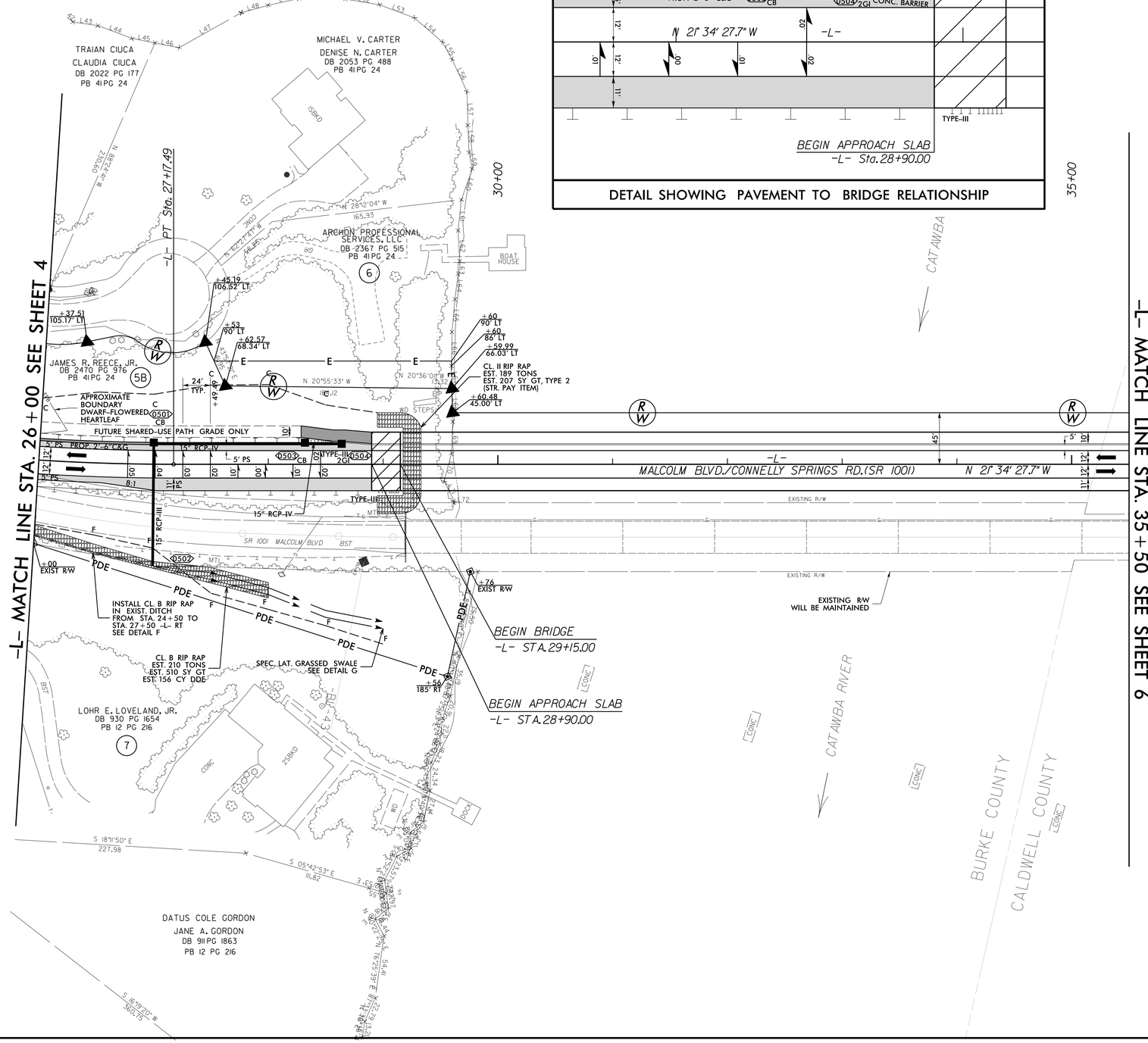
PLANS PREPARED BY:

DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

NAD 83/2011



DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP



FOR -L- PROFILE SEE SHEETS 07 & 08

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SShuman

PROJECT REFERENCE NO.	SHEET NO.
R-3430B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

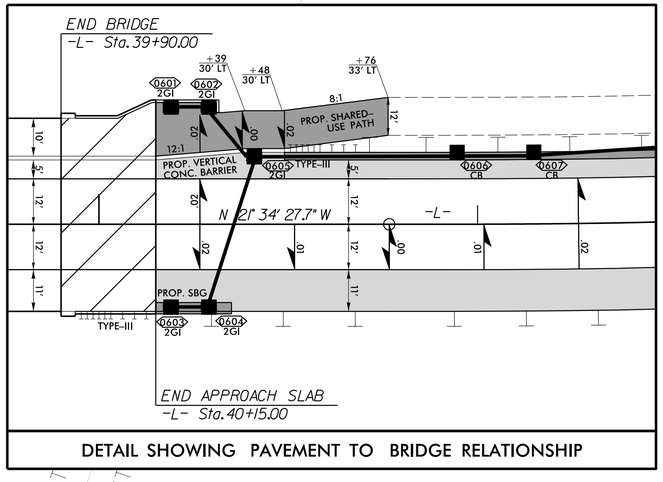
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PLANS PREPARED BY:
DRMP
DRMP, INC.
4235 SOUTH STREAM BLVD., SUITE 150
CHARLOTTE, NC 28217
NC LICENSE NO. C-2213 (704) 332-2289

REVISIONS
8/17/99

-L- MATCH LINE STA. 35+50 SEE SHEET 5

BURKE COUNTY
CALDWELL COUNTY



DETAIL SHOWING PAVEMENT TO BRIDGE RELATIONSHIP

NAD 83/2011

-DRW1- POT Sta. 13+50.00
S 85° 26' 36.6" W

-DRW1- POT Sta. 10+94.30 =
-DRW1A- PC Sta. 10+00.00

END CONSTRUCTION
-DRW1- POT Sta. 13+25.00
-DRW1- PT Sta. 12+99.50

END CONSTRUCTION
-DRW1A- POC Sta. 10+90.00

-DRW1- PC Sta. 12+05.53

-DRW1A- POT Sta. 11+27.94
S 82° 50' 46.3" W

-DRW1A- PT Sta. 10+94.69

-DRW1- PT Sta. 10+66.05

-L- ST Sta. 46+17.45

-L- PC Sta. 48+27.47

FUTURO LLC
DB 1799 PG 401
PB 31 PG 197
(9)

END TIP PROJECT R-3430B
-L- POT STA. 48+00.00

END GRADE
BEGIN OVERLAY/RESURFACE
-L- POT STA. 47+00.00

END APPROACH SLAB
-L- STA. 40+15.00

END BRIDGE
-L- STA. 39+90.00

-L- TS Sta. 40+76.66

-L- SC Sta. 42+26.66

END CONSTRUCTION
-DRW2- POT Sta. 10+92.05

-L- CS Sta. 44+67.45

-L- POC Sta. 43+65.00 =
-DRW1- PC Sta. 10+00.00
-DRW2- POT Sta. 10+00.00

-DRW2- POT Sta. 11+50.00
N 82° 37' 14.6" E

N 21° 34' 27.7" W -L-
MALCOLM BLVD./CONNELLY SPRINGS RD.(SR 1001)

CONNELLY SPRING RD (SR 1001)
N 56° 01' 17.1" W

DUKE ENERGY CORPORATION
DB 1244 PG 1452
PB 17 PG 290
(8)

FUTURE SHARED-USE PATH GRADE ONLY

EXISTING R/W WILL BE MAINTAINED

APPROXIMATE BOUNDARY DWARF-FLOWERED HEARTLEAF

PROTECT BILLBOARD

EST. 8770 CY UNCLAS. STRUC. EXCAVATION (STR. PAY ITEM)

CL II RIP RAP EST. 328 TONS EST. 364 SY GT, TYPE 2 (STRUC. PAY ITEM)

CL I RIP RAP EST. 3 TONS EST. 7 SY GT
CL I RIP RAP EST. 4 TONS EST. 10 SY GT

REMOVE GATE AND FENCE
REMOVE EXIST. PIPE (TYPE/SIZE UNK.)
REMOVE 58 LF OF EXIST. 12" HDPE
REMOVE GATE

SPEC. LAT. GRASSED SWALE SEE DETAIL J
LAT. GRASSED SWALE SEE DETAIL H
LAT. BASE DITCH W/RIP RAP SEE DETAIL I
SPEC. CUT DITCH W/ RIP RAP SEE DETAIL K

GRADE TO DRAIN

-L-		
PIs Sta 41+76.73	PI Sta 43+48.46	PIs Sta 45+17.52
Θs = 6° 36' 39.8"	Δ = 21° 13' 29.9" (LT)	Θs = 6° 36' 39.8"
Ls = 150.00'	D = 8° 48' 53.0"	Ls = 150.00'
LT = 100.07'	L = 240.79'	LT = 100.07'
ST = 50.06'	T = 121.79'	ST = 50.06'
	R = 650.00'	
	SE = 0.06	
	R0 = 150'	

-DRW1-	
PI Sta 10+33.30	PI Sta 12+56.31
Δ = 18° 01' 18.6" (LT)	Δ = 53° 50' 40.6" (RT)
D = 27° 17' 01.3"	D = 57° 17' 44.8"
L = 66.05'	L = 93.98'
T = 33.30'	T = 50.78'
R = 210.00'	R = 100.00'

-DRW1A-
PI Sta 10+49.24
Δ = 38° 45' 09.6" (LT)
D = 40° 55' 32.0"
L = 94.69'
T = 49.24'
R = 140.00'

FOR -L- PROFILE SEE SHEET 08 & 09
FOR -DRW1-, -DRW1A- AND -DRW2- PROFILE SEE SHEET 10

7/21/2022 11:51:44 AM
R:\R-3430B\Roadway\Proj\R3430B_Rdy_psh6.dgn
SShuman

Appendix D List of Preparers

Investigator:	Mary Frazer
Education:	M.E.M., Resource Ecology, Duke University B.S. Zoology, University of Wisconsin
Experience:	Environmental Specialist, Three Oaks Engineering, 2015-present Environmental Program Consultant, NCDOT, 2000-2015 Environmental Specialist, Wisc. Coastal Mgt Program, 1996-2000 Water Regulation Specialist, Wisc. Dept Natural Resources, 1994-1996 Biologist, Soil and Environmental Consultants, 1992-1994
Responsibilities:	Document preparation
Investigator:	James Mason
Education:	B.A. Biology, Colby College, 2000 M.S. Biology/Ecology, UNC-Charlotte, 2004
Experience:	Environmental Senior Scientist, Three Oaks Engineering, April 2018-Present Environmental Program Consultant, NCDOT, 2006-2018
Responsibilities:	Document review
Investigator:	Nancy M.S. Oberle
Education:	M.E.M. Water Resources, Duke University, 2011 B.S. Environmental Science, University of Delaware, 2006
Experience:	Environmental Scientist, Three Oaks Engineering, 2015-Present Environmental Scientist, The Catena Group, 2012-2015
Responsibilities:	Document preparation, mapping
Investigator:	Byron Levan
Education:	B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2011 M.FW. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2019
Experience:	Environmental Scientist, Three Oaks Engineering, 2021-present Junior Environmental Scientist, NV5 Global Inc., 2019-2021
Responsibilities:	Document review
Investigator:	Kate Sevick
Education:	M.S. Environmental Sciences, University of Rhode Island, 2004 B.A. Biology, Reed College, 2000
Experience:	Environmental Scientist, Three Oaks Engineering, June 2015-present Environmental Scientist, The Catena Group, November 2004-June 2015
Responsibilities:	Mapping, document preparation

NO ARCHAEOLOGICAL SURVEY REQUIRED FORM

This form only pertains to ARCHAEOLOGICAL RESOURCES for this project. It is not valid for Historic Architecture and Landscapes. You must consult separately with the Historic Architecture and Landscapes Group.

PROJECT INFORMATION

Project No:	R-3430	*County:*	Burke/Caldwell
WBS No:	34544	*Document:*	State Environmental Assessment/Finding of No Significant Impact
Federal Aid No:		*Funding:*	☒ State ☐ Federal
Federal Permit Required?	☒ Yes ☐ No	*Permit Type:*	USACE/ FERC

Project Description:
Widen SR 1001 (Connelly Springs Rd./Malcolm Blvd.) to muliple lanes from SR 1933 (Southwest Blvd.) in Lenoir south to US 70 (Main St. East) in Rutherford College in Burke and Caldwell Counties. The Area of Potential Effects (A.P.E.) is approximately 16 kilometers (9.9 miles) long and 45 meters (150 ft.) wide. The project is State-funded and will require Federal permits. Easements will be required.

SUMMARY OF CULTURAL RESOURCES REVIEW

Brief description of review activities, results of review, and conclusions:

The review included an examination of topographic maps, an aerial photograph, and a review of information about previously recorded sites, previous archaeological surveys, and previous environmental reviews at the Office of State Archaeology (OSA). SR 1001 is oriented approximately north-south.

The topographic maps (Drexel and Valdese) show that SR 1001 is located mostly on ridges. The road crosses two streams, an unnamed tributary to Gunpowder Creek, and the Catawba River (Lake Rhodiss). In this region, ridges have a low to moderate potential for prehistoric archaeological sites. Level ridges overlooking streams can have a higher potential. The maps show that SR 1001 is located within developed parts of Lenoir, Granite Falls, and Rutherford College. These areas are shaded purple (to indicate incorporated areas?) and generally show less topographic and cultural detail.

The aerial photograph shows that the landuse along SR 1001 is a mix of wooded, cleared and developed. The cleared areas appear to be pasture or residential yards. The development appears to be mostly residential house lots. The northern half of the A.P.E. is heavily developed. The area along the north side of Lake Rhodiss is wooded with what appears to be planted "row" pine trees. The A.P.E. south of the lake is developed for residential houses. There are some wooded lots.

Information at the OSA indicates that the northern 2/3 of the A.P.E. has already been surveyed for archaeological sites. Seibel et. al (2004) conducted a survey for an earlier version of this project (ER 03-0639). That survey included a narrow strip along both sides of SR 1001 from SR 1933 south to the Catawba River (Lake Rhodiss). It identified five archaeological sites, including three cemeteries. All were recommended ineligible for the National Register of Historic Places (NRHP). It did not include the A.P.E. from the river south to US 70 in Burke County. A large tract along the west side of SR 1001 along the north side of Lake Rhodiss has been surveyed, also (ER 90-8125; ER 91-7125). The project was for the Caldwell County solid waste landfill.

There are several projects within or adjacent to SR 1001 that have been reviewed by the State Historic Preservation Office (HPO) south of the lake. One appears to be a utility line that runs west from SR 1001 (ER 93-0987?). The map symbol indicates that no archaeological survey was recommended for that project. Several appear to be part of a sewer system project along SR 1001 (ER 85-0336). A project along SR 1546 (ER 92-0280? ER 95-7888? ER 09-0497?) did require an archaeological survey. The map symbol indicates that the survey has not yet been conducted.

REFERENCES

Seibel, Scott, Terri A. Russ, and Greg C. Smith\
2004 Archaeological Survey and Evaluation of Proposed Improvements to SR 1001 (Connelly Springs Rd.), Caldwell County, North Carolina (NCDOT TIP R-3430). Submitted to the North Carolina Department of Transportation, Raleigh. Environmental Services, Inc., Raleigh, North Carolina.

Brief Explanation of why the available information provides a reliable basis for reasonably predicting that there are no unidentified historic properties in the APE:

The road is located mostly on ridges, a landform with a low to moderate potential for archaeological sites. Landuse along the road is a mix of wooded, cleared (agricultural/pasture), and residential house lots. The northern 2/3 of the A.P.E. was included in an archaeological survey for an earlier version of this project.

SUPPORT DOCUMENTATION

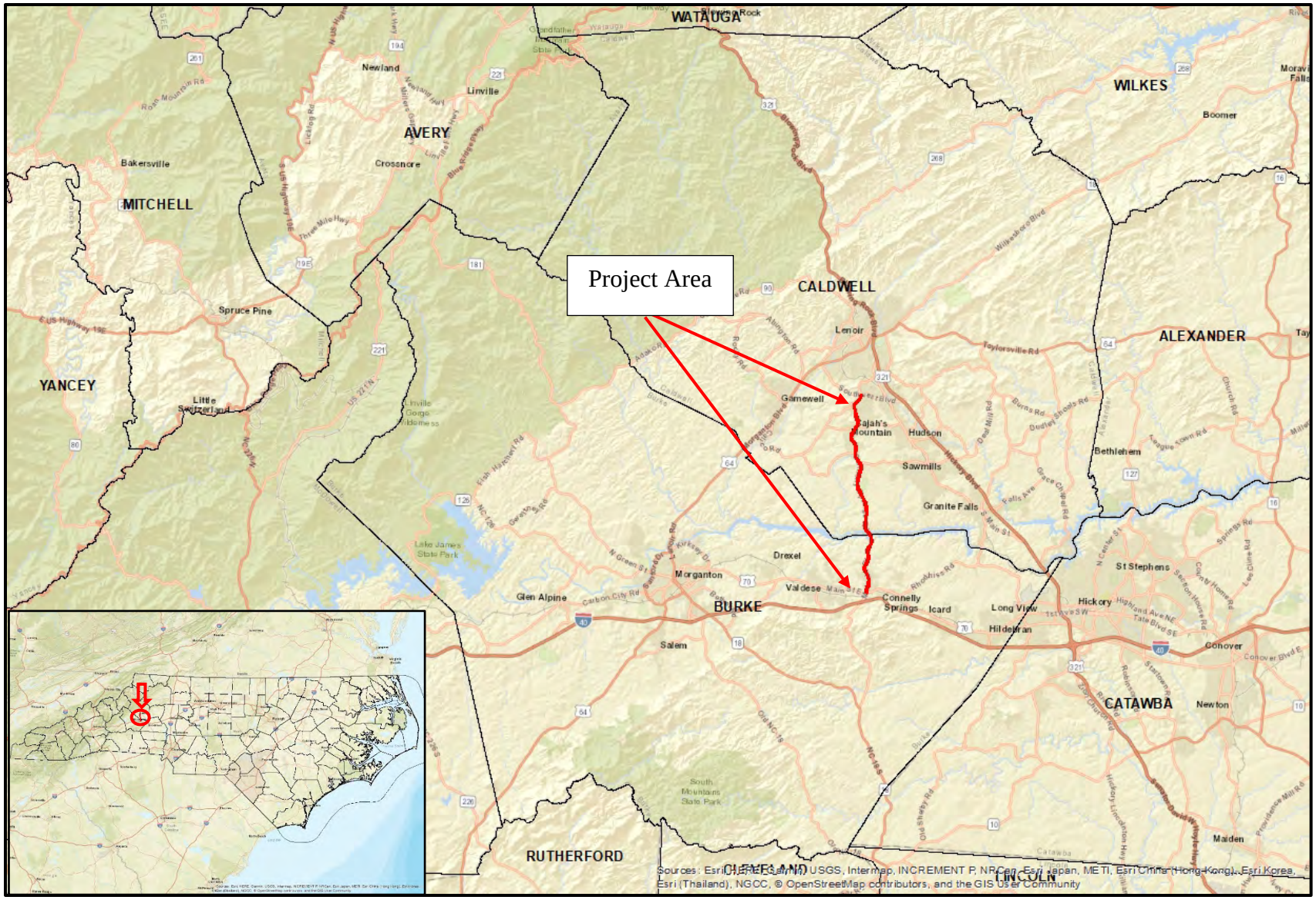
See attached: ☒ Map(s) ☒ Previous Survey Info ☐ Photos ☐ Correspondence
☐ Photocopy of County Survey Notes Other:

FINDING BY NCDOT ARCHAEOLOGIST

NO ARCHAEOLOGY SURVEY REQUIRED

Caleb Smith 11/7/2018

NCDOT ARCHAEOLOGIST II Date


Project Area
WATAUGA
WILKES
AVERY
MITCHELL
YANCEY
CALDWELL
ALEXANDER
BURKE
CATAWBA
RUTHERFORD
CLEVELAND
LINCOLN
Newland
Linville
Bakersville
Crossnore
Spruce Pine
Little Switzerland
Lenoir
Gamewell
Hudson
Sawmills
Granite Falls
Drexel
Morganton
Valdese
Glen Alpine
Connelly Springs
Icard
Hickory
Long View
Hildebran
Conover
Newton
Salem
Bethlehem
St Stephens
Maiden
Boomer
Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community


Collettsville
Lenoir
Kings Creek
Project Area
Seibel et al.
(2004) survey
Morganton North
Drexel
Granite Falls
Valdese
Longview
Morganton South
Gamewell
Hartland
Joyceton
Hudson
Saw Mills
Baton
Amherst
Rutherford College
Connelly Springs
Rhodhiss
Icard
Penelope
CATAWBA RIVER
LAKE
RHODHISS
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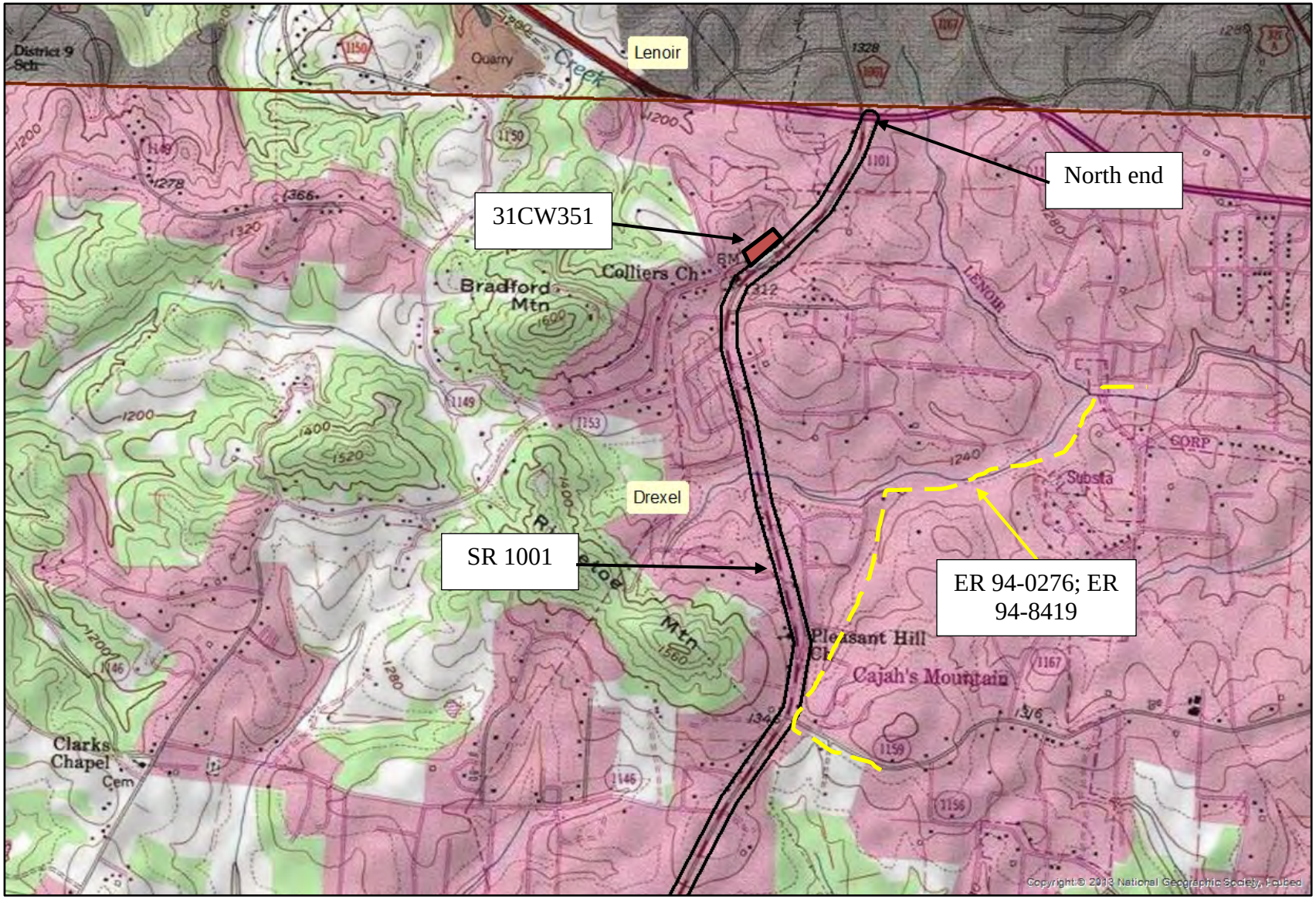
Lenoir
North end
31CW351
Colliers Ch
Bradford Mtn
Drexel
SR 1001
ER 94-0276; ER 94-8419
Cajah's Mountain
Clarks Chapel Cem
Quarry
Creek
Substa
CORP
LENOIR
Copyright © 2013 National Geographic Society, Tailbed


SR 1001
ER 17-1673
Drexel
Union Grove Ch.
Cem
Cajah Mtn
Smoky
Little
Creek
BM
1323
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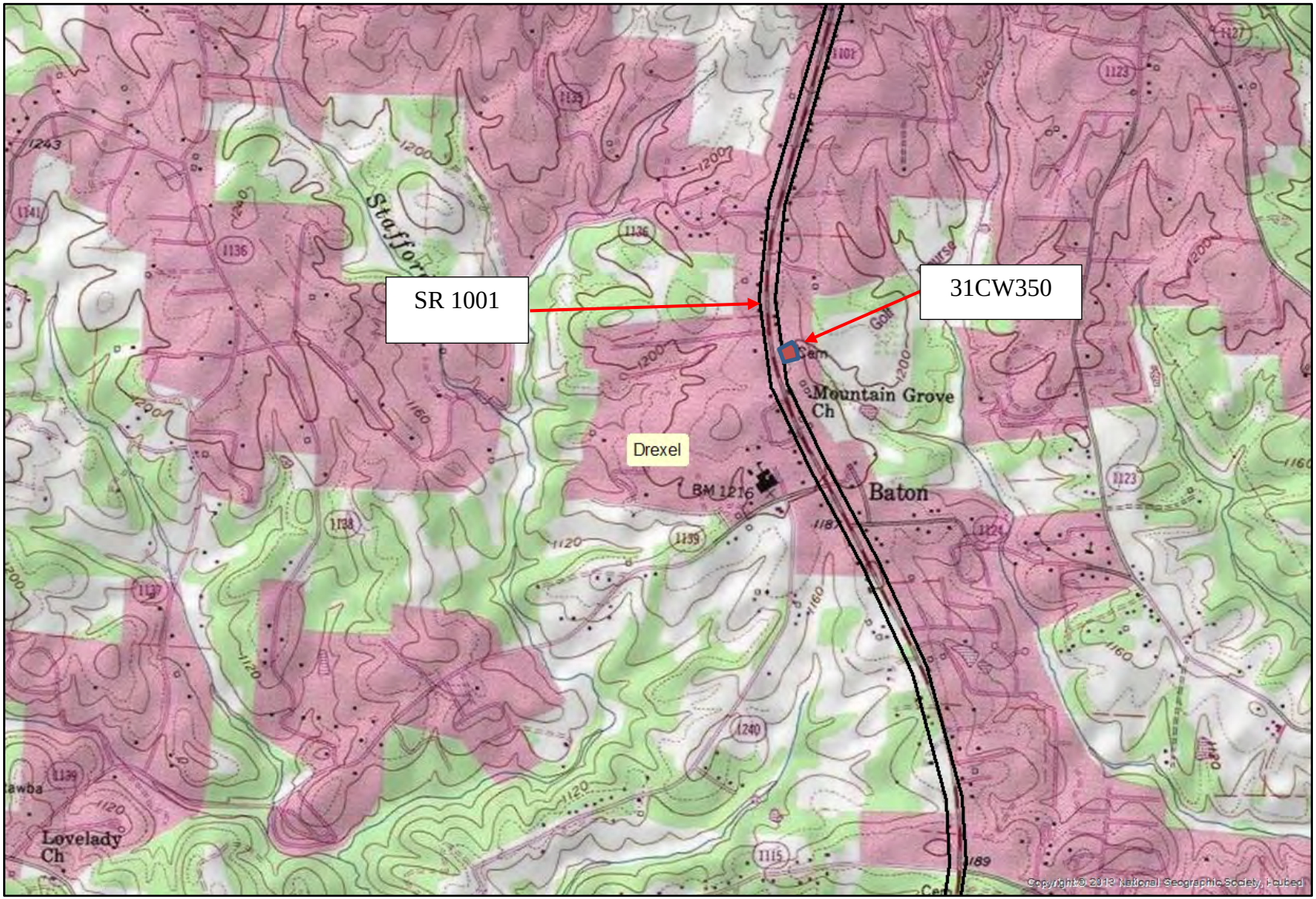
SR 1001
31CW350
Drexel
Mountain Grove Ch
Baton
BM 1216
Lovelady Ch
Stafford
Golf
Cem
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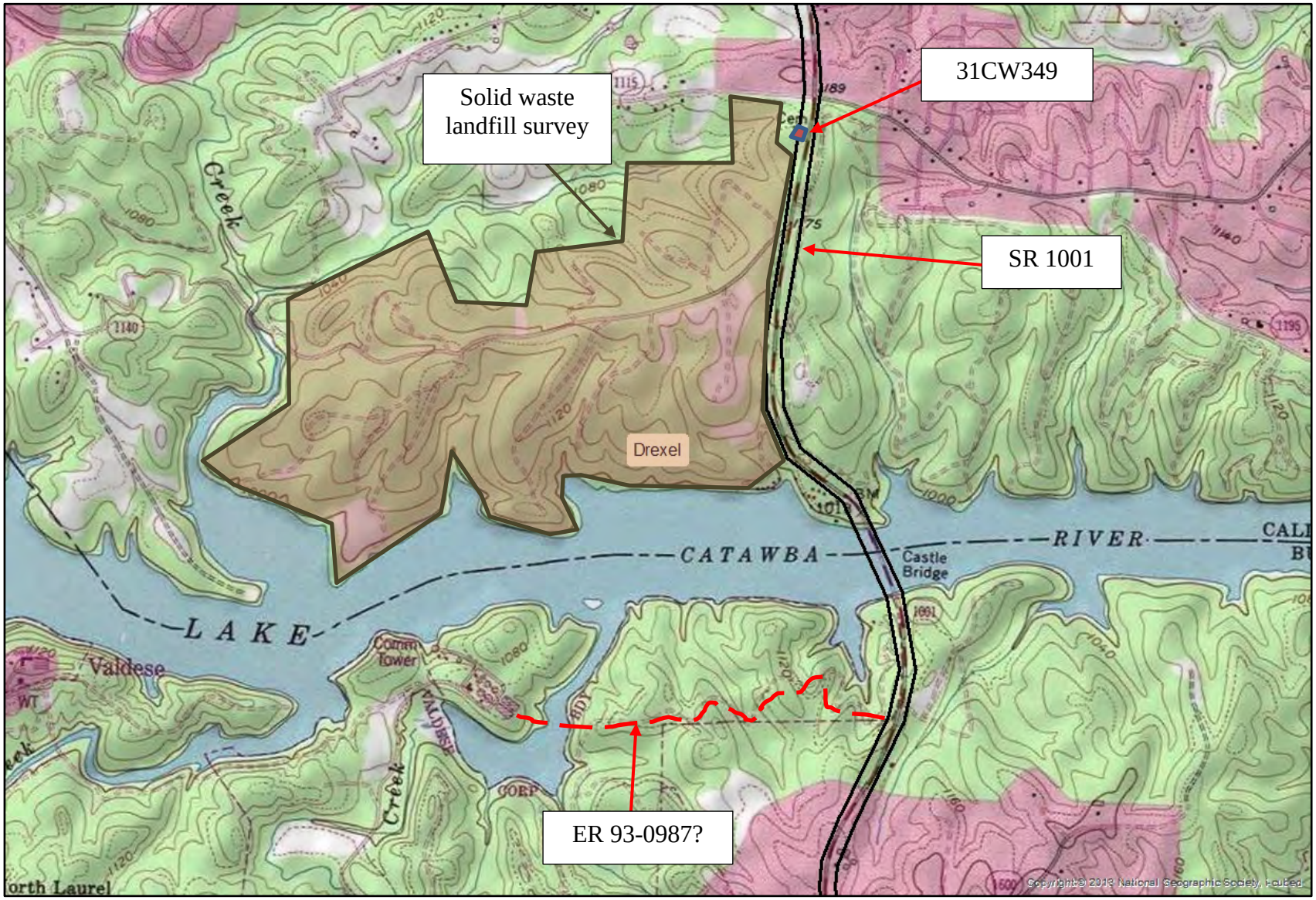
Solid waste landfill survey
31CW349
SR 1001
ER 93-0987?
Drexel
CATAWBA
RIVER
LAKE
Castle Bridge
Valdese
Creek
Comm tower
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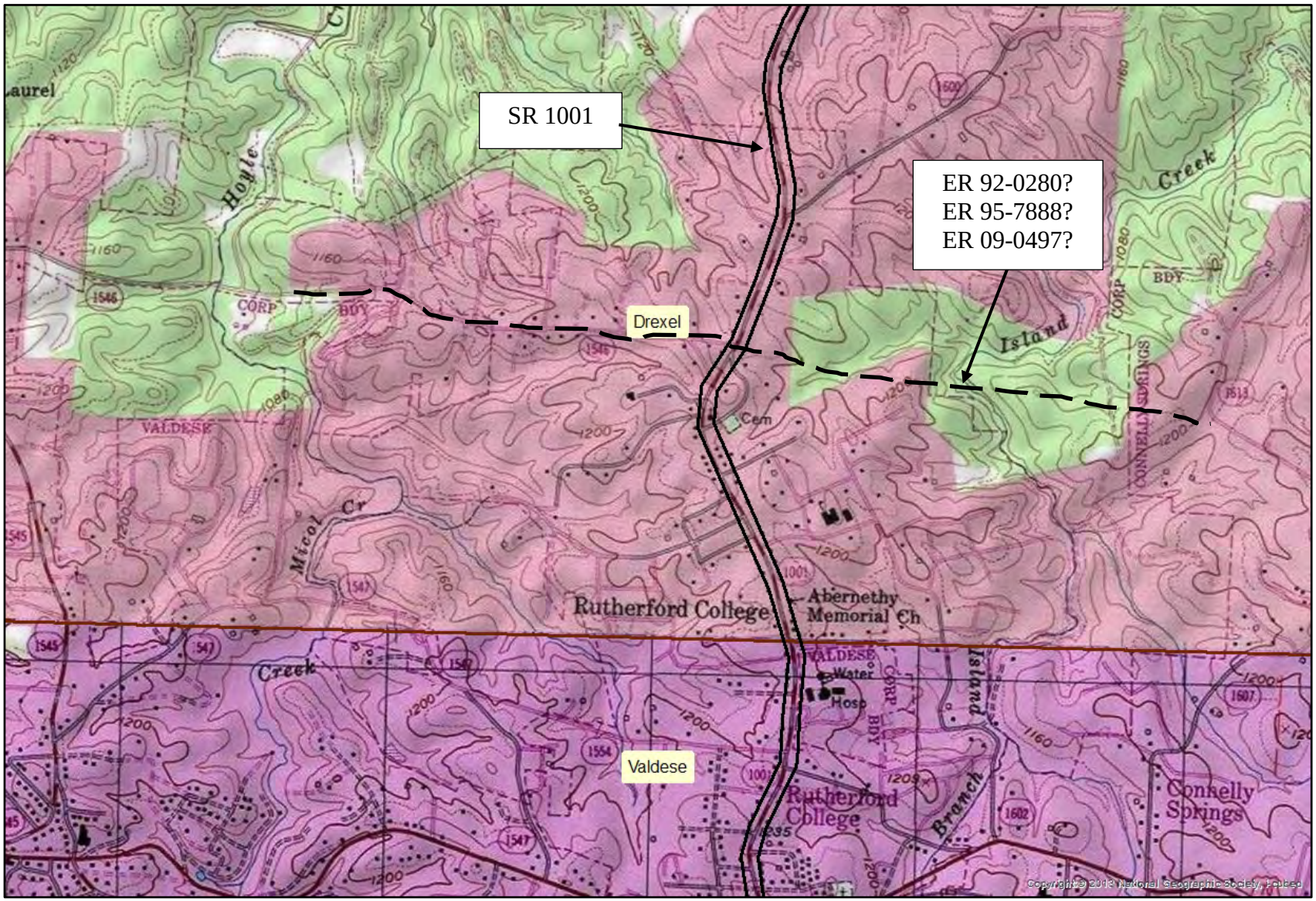
SR 1001
ER 92-0280?
ER 95-7888?
ER 09-0497?
Drexel
Valdese
Rutherford College
Abernethy Memorial Ch
Cem
Hoyle Creek
Island Creek
Micol Cr
Branch
Connelly Springs
VALDESE
Water
Hose
CORP BDY
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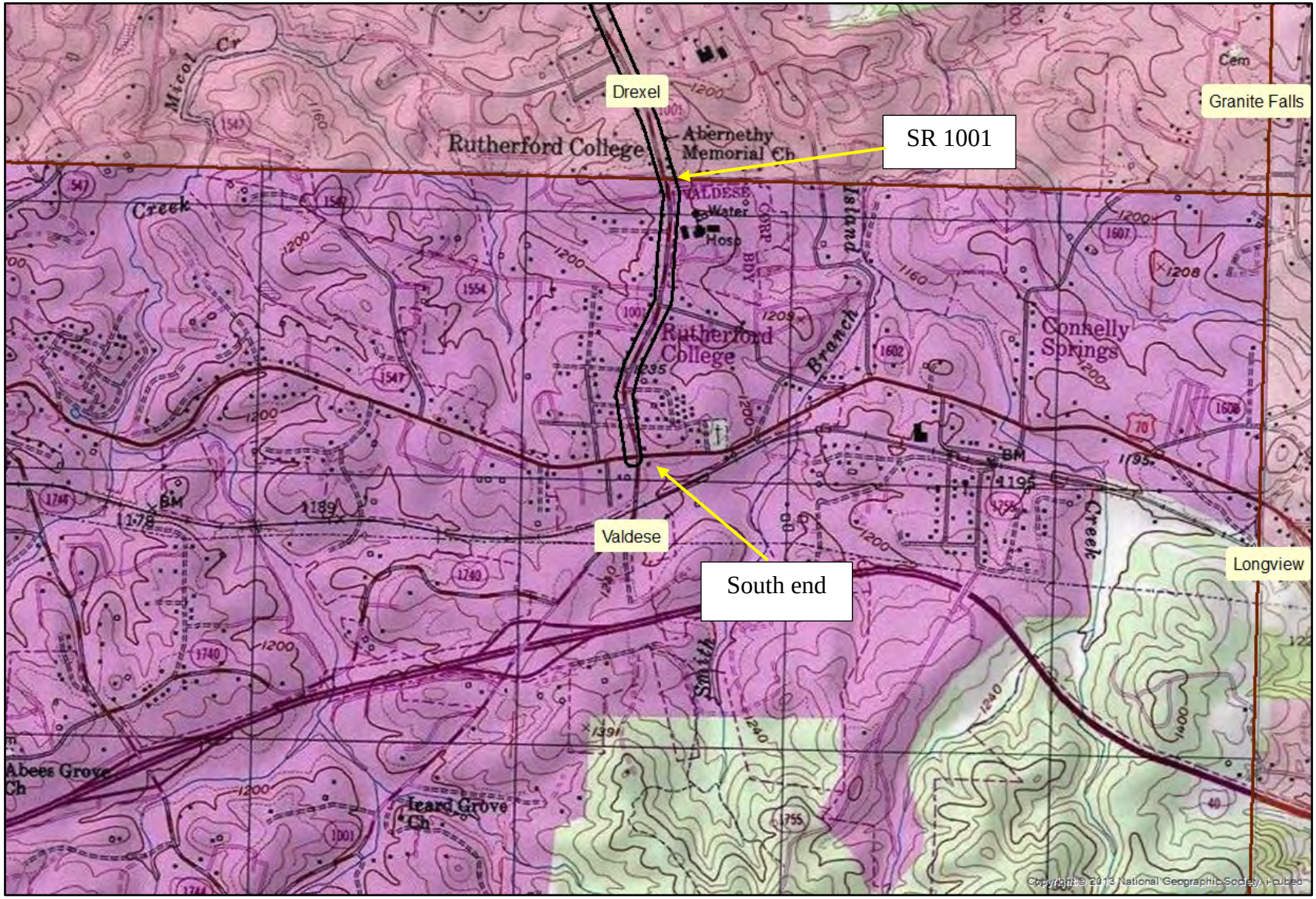
Drexel
SR 1001
Granite Falls
Valdese
South end
Longview
Rutherford College
Abernethy Memorial Ch
Connelly Springs
Abees Grove Ch
Icard Grove Ch
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HISTORIC ARCHITECTURE AND LANDSCAPES
SURVEY REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	R-3430	***County***:	Burke/Caldwell
WBS No.:	34544.1.1	***Document Type:***	SEA
Fed. Aid No:		***Funding***:	☒ State ☐ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	USACE, FERC

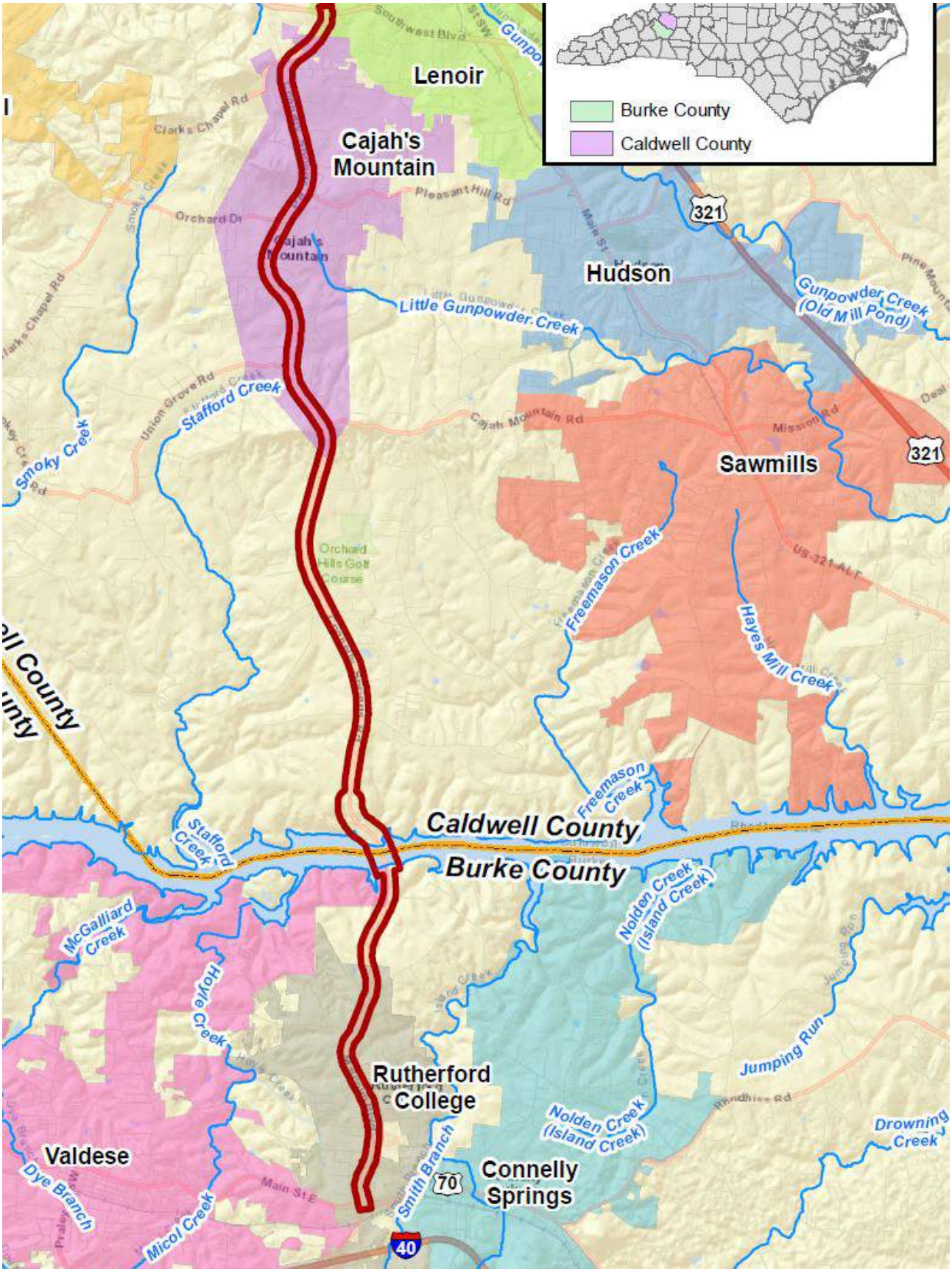
Project Description:
The Area of Potential Effects (APE) for the project follows the project area study limits submitted by the project engineer and delineated on the map included below. The project area corridor is approximately 1,000 in width for approximately 10 miles.

SUMMARY OF HISTORIC ARCHITECTURE AND LANDSCAPES REVIEW

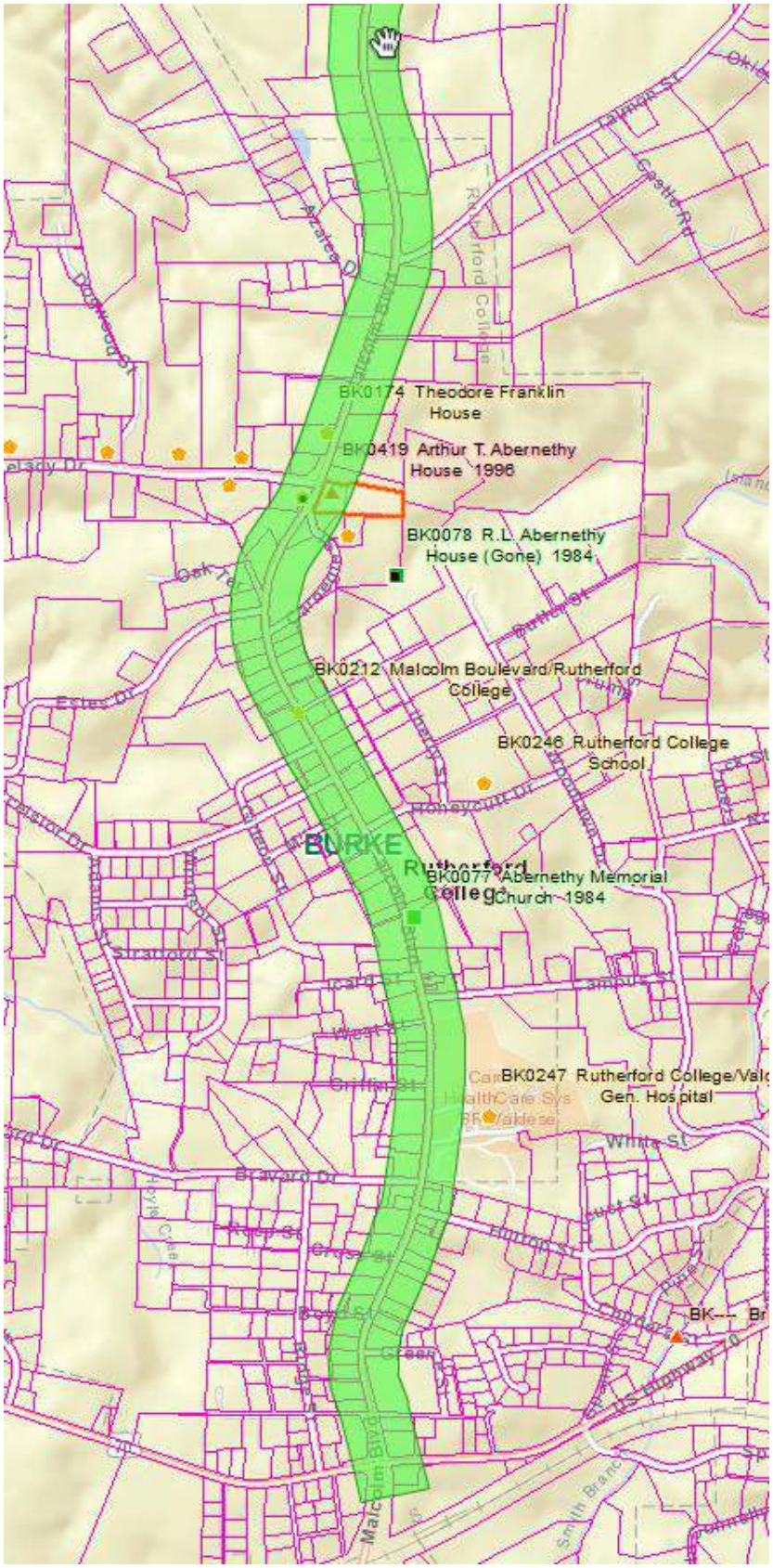
Description of review activities, results, and conclusions:
The project was previously surveyed by NCDOT architectural historians in June 2003 and two properties were determined eligible: Elizabeth Bush House and Waitsel-Monroe Smith House. Since that time the project area has extended in Burke County and the Waitsel-Monroe Smith House may have been demolished. Review of the APE on HPOWeb and preliminary deed research was concluded in November 2018. Within the project area, there are numerous surveyed sites and several study-listed and determined eligible sites. There are no National Register listed properties. Further survey is required for several reasons: the original survey is 15 years old, the abundance of sites on HPOWeb, and the number of properties over 50 years of age in the project corridor. A building inventory of all sites over 50 years of age is recommended as a first step, with in-depth evaluations to follow.

SUPPORT DOCUMENTATION

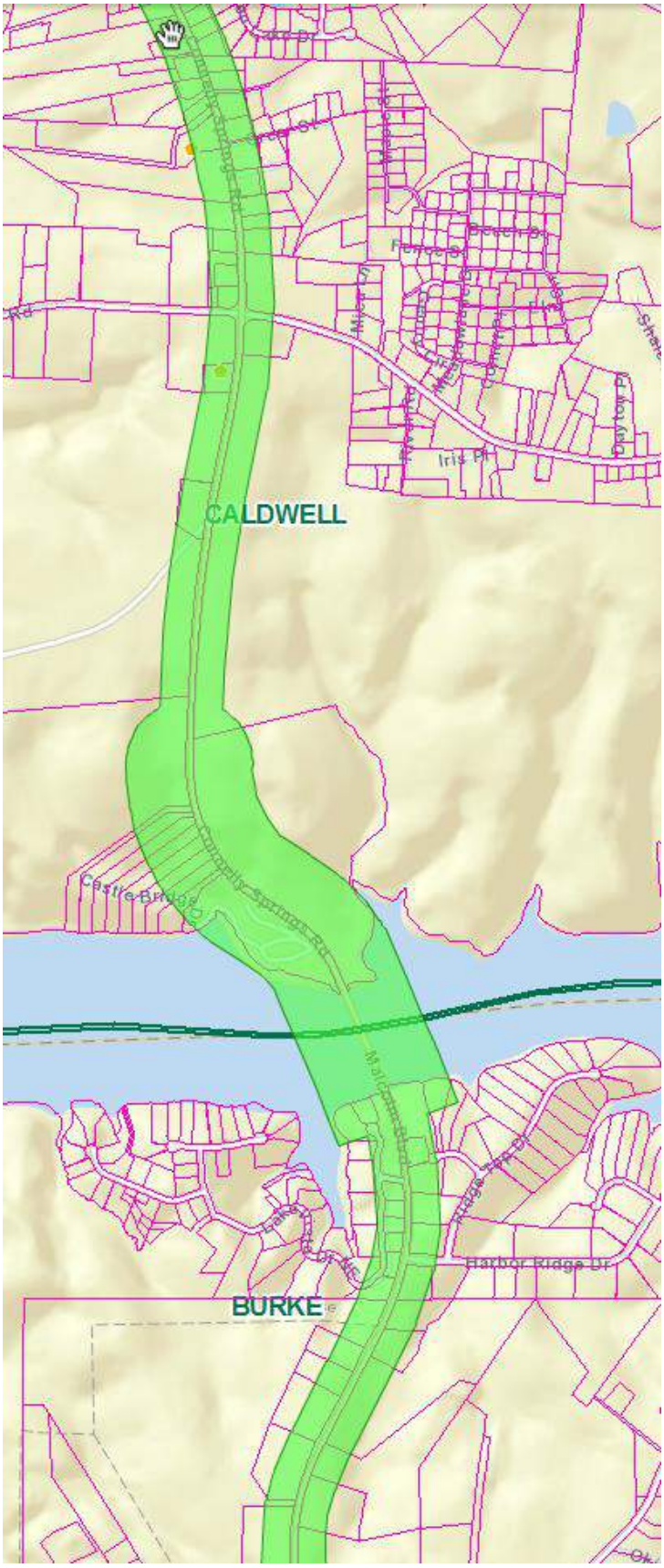
☒Map(s) ☐Previous Survey Info. ☐Photos ☐Correspondence ☐Design Plans



Project Area submitted with request



HPOWeb Map #1 (includes project corridor limits)



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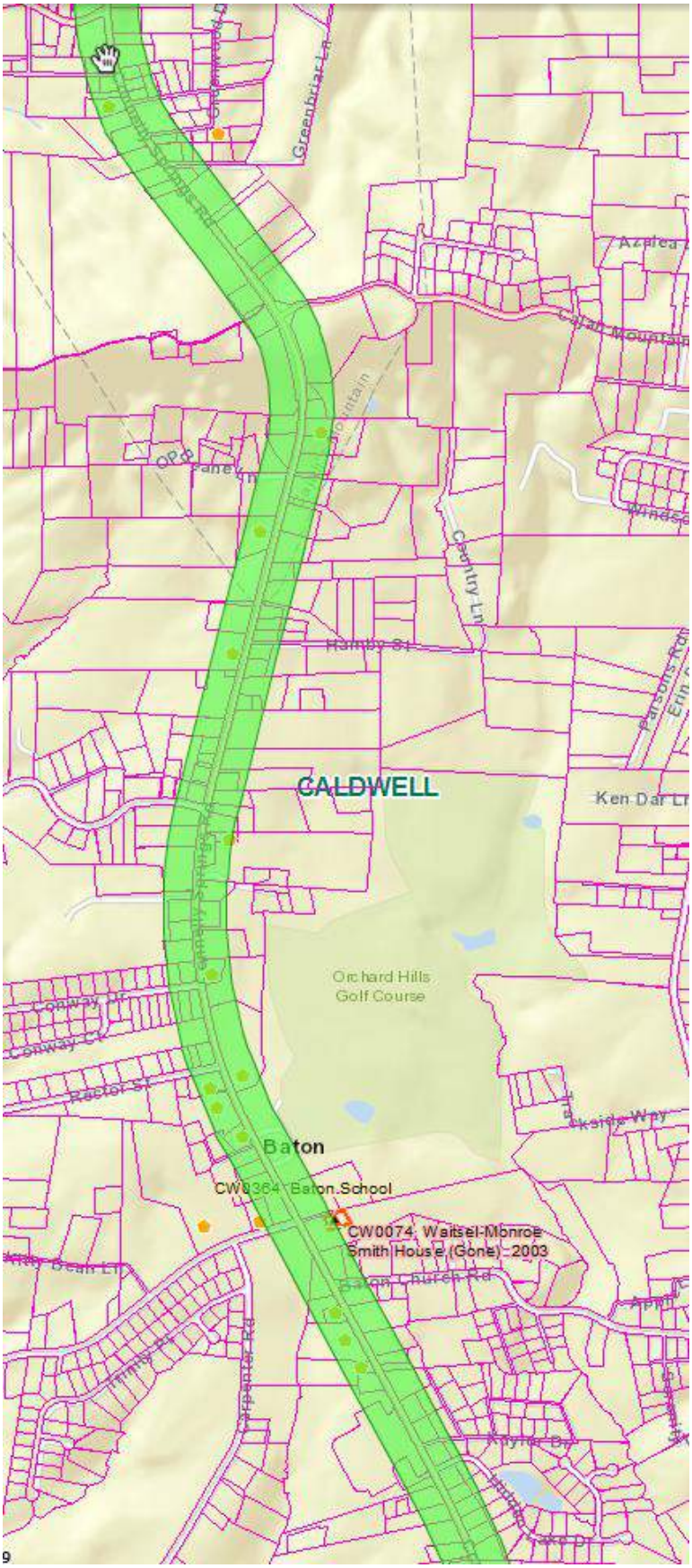

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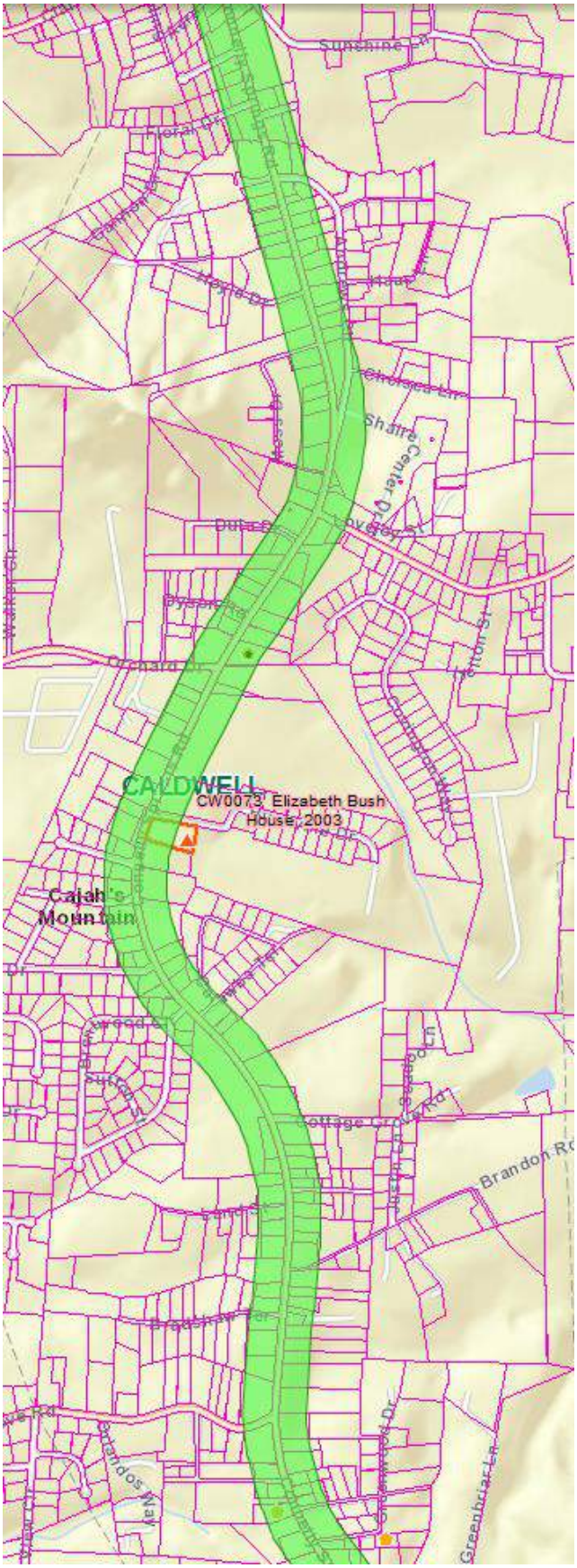

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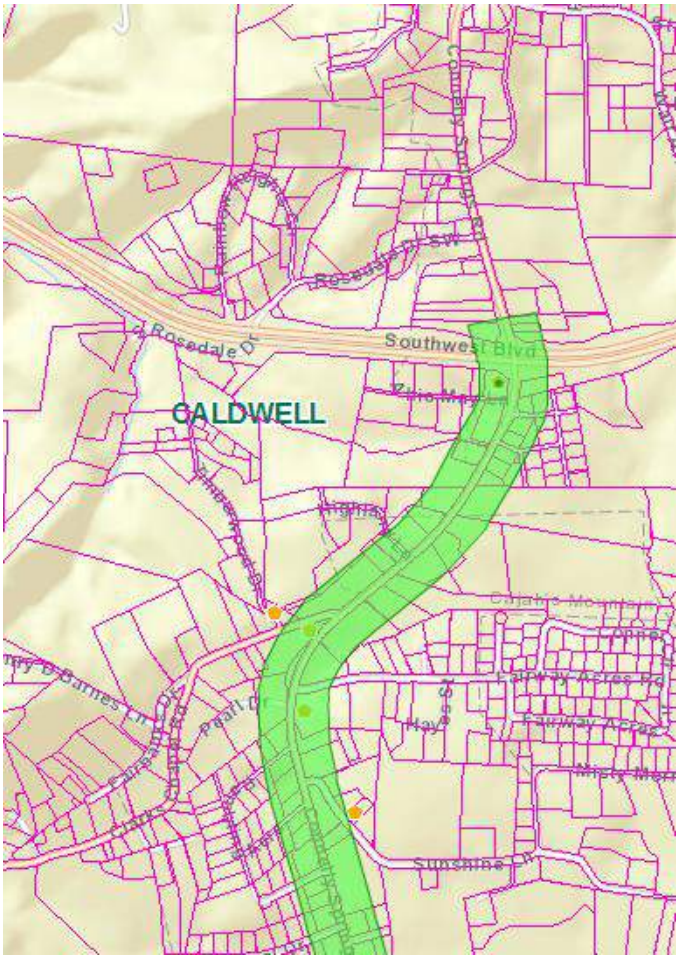

HPOWeb Map #5 (includes project corridor limits)

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes -- **SURVEY REQUIRED**

Mary Pope Furr **11/6/2018**

NCDOT Architectural Historian Date

Anticipated Fieldwork Completion Date: We can complete these investigations using one of the Historic Architecture Team's on-call firms of if the submitter would like to manage and complete the survey they can use a NCDOT prequalified architectural historian under their own contract. I'm happy to provide a scope of work for the submitter to use, but I do need to know within 7 days which path you plan to follow. All products produced by the submitter's consultant will need to be submitted to the Historic Architecture Team for review, acceptance, and submittal to the HPO as per the Programmatic Agreement.

Historic Structures Survey Report
Improve SR 1001 (Connelly Springs Road/ Malcom Boulevard) from U.S. Route 70 to SR 1933 (Southwest Boulevard)

Caldwell and Burke Counties, North Carolina

TIP No. R-3430 / WBS No. 34544.1.1 / PA No. 18-09-0009

Prepared for:

North Carolina Department of Transportation
Environmental Analysis Unit
Raleigh, North Carolina 27699-1598

Prepared by:

WSP USA Inc.
1001 Wade Avenue, Suite 400
Raleigh, North Carolina 27605

December 13, 2021

Historic Structures Survey Report Improve SR 1001 (Connelly Springs Road/ Malcom Boulevard) from U.S. Route 70 to SR 1933 (Southwest Boulevard)

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TIP No. R-3430
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PA No. 18-09-0009

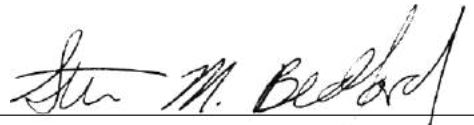
Prepared for:

North Carolina Department of Transportation
Environmental Analysis Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Prepared by:

Megan Privett and Katharine Mather

WSP USA Inc.
1001 Wade Avenue, Suite 400
Raleigh, North Carolina 27605
919.866.4400



December 13, 2021

Steven M. Bedford, Principal Investigator — Date
WSP USA Inc.

Mary Pope Furr, Supervisor — Date
Historic Architecture Section
North Carolina Department of Transportation

December 13, 2021

MANAGEMENT SUMMARY

On behalf of the North Carolina Department of Transportation (NCDOT), WSP USA Inc. (WSP) conducted an architectural survey and evaluation in preparation to improve SR 1001 (Connelly Springs Road/Malcolm Boulevard) in Caldwell and Burke Counties, North Carolina. The State Transportation Improvement Program (STIP) No. is R-3430, the state project number is WBS No. 34544.1.1, and the PA No. is 18-09-0009. The project consists of roadway modernization, including bike and pedestrian accommodations and improvements, along about 10 miles of SR 1001 (Malcolm Boulevard/Connelly Springs Road) from SR 1933 (Southwest Boulevard) in Caldwell County south to U.S. Route 70 in Burke County. The scope of the current evaluation included the survey and National Register of Historic Places (NRHP) evaluation of 14 properties.

The project is located in southern Caldwell County and northern Burke County and crosses the Catawba River/Rhodhiss Lake, running through or near the communities of Connelly Springs, Granite Falls, Baton, Rutherford College, and Valdese. The project Area of Potential Effects (APE) follows the study area for the project delineated by NCDOT. Following a linear path along SR 1001, the APE includes the area extending approximately 150 feet from either side of the centerline from U.S. Route 70 to Southwest Boulevard, including additional buffer areas for intersections along SR 1001.

In July 2021 NCDOT requested that WSP complete an architectural survey and NRHP eligibility evaluation for 14 resources that fell within the APE (Table MS-1). Two of the resources, the Elizabeth Bush House (CW0073) and the Arthur T. Abernethy House (BK0419), have been previously surveyed and determined NRHP-eligible, in 2003 and 1995, respectively; the current survey re-evaluates eligibility and confirms NRHP boundaries. Another resource, the Abernethy Memorial United Methodist Church (BK0077), was placed on the North Carolina State Study List in 1984. The majority of the properties are located near the Town of Rutherford College, and several are also included for consideration as "contributing" status within the Malcolm Boulevard Historic District (BK0212), which was also evaluated. Caldwell County received its last county-wide architectural survey in 1986-1987, and Burke County's last survey was conducted in 1983 by Randy Cotton.

As a result of the current survey and evaluation, WSP recommends five of the 14 evaluated resources as eligible for the NRHP (see Table MS-1). The Elizabeth Bush House and the Arthur T. Abernethy House had previously been determined eligible, and the remaining three have been determined eligible as a result of the current evaluation. These three are the Jacumin-Bronson House, eligible under Criterion C for architecture; the Abernethy Memorial United Methodist Church, eligible under Criteria Consideration A for historic persons and Criterion C for architecture; and the Clifton Spinx House, eligible under Criterion C for architecture.

TABLE MS-1: SURVEYED PROPERTIES AND HISTORIC DISTRICT,
SR 1001 IMPROVEMENTS, CALDWELL AND BURKE COUNTIES, NORTH CAROLINA

RESOURCE NAME	SITE NUMBER	NRHP ELIGIBILITY RECOMMENDATION	SITE ADDRESS/PIN No.
Elizabeth Bush House	CW0073	Eligible, Criterion C	1490 Bushville Drive Lenoir, NC 28645/ 2747820501
Baton United Methodist Church	CW0838	Not Eligible	1034 Dry Ponds Road Granite Falls, NC, 28630/ 2755048116
Edwards-Weeden House	BK0805	Not Eligible	1340 Malcolm Blvd., Connelly Springs, NC 28612/ 2754016787
Arthur T. Abernethy House	BK0419	Eligible, Criterion B & C	1300 Malcolm Blvd., Connelly Springs, NC 28612/ 2754013023
First Baptist Church of Rutherford College	BK0806	Not Eligible	1200 Malcolm Boulevard, Rutherford College, NC 28671/ 2754000498
Bronson House	BK0807	Eligible, Criterion C	101 Oak Terrace, Connelly Springs, NC 28612/ 2744904401
Lowder House	BK0808	Not eligible	1201 Malcolm Blvd., Connelly Springs, NC 28612/ 2744906279
Lankford House	BK0809	Not Eligible	1171 Malcolm Blvd., Connelly Springs, NC 28612/ 2744906037
Farris House	BK0810	Not eligible	1161 Malcolm Blvd., Connelly Springs, NC 28612/ 2743997914
Abernethy Memorial United Methodist Church and Cemetery	BK0077, BK0811	Eligible, Criterion B & C	968 Malcolm Blvd., Connelly Springs, NC 28612/ 2753170808
Clifton Spinx House	BK0812	Eligible, Criterion C	901 Malcolm Blvd., Connelly Springs, NC 28612/2753076620
Lovelady Fire Department	BK0813	Not Eligible	748 Malcolm Blvd., Rutherford College, NC 28671/2753166449
Zeb Malcolm House	BK0814	Not Eligible	811 Malcolm Blvd., Rutherford College, NC 28671/2753067983
Malcolm Boulevard Historic District	BK0212	Not eligible	Malcolm Boulevard/various

1.0 INTRODUCTION

1.1 Project Description

On behalf of the North Carolina Department of Transportation (NCDOT), WSP USA Inc. (WSP) conducted an architectural survey and evaluation in preparation to improve SR 1001 (Connelly Springs Road/Malcolm Boulevard) in Caldwell and Burke Counties, North Carolina. The State Transportation Improvement Program (STIP) No. is R-3430, the state project number is WBS No. 34544.1.1, and the PA No. is 18-09-0009. The scope of the current evaluation included the survey and National Register of Historic Places (NRHP) evaluation of 14 properties.

The proposed project consists of roadway modernization, including bike and pedestrian accommodations and improvements along about 10 miles of SR 1001 (Malcolm Boulevard/Connelly Springs Road) from SR 1933 (Southwest Boulevard) in Caldwell County south to U.S. Route 70 in Burke County. Improvements along the corridor may include the addition of two-way left turn lanes, addition of turn lanes at major intersections, and access management enhancements (e.g., channelizing and/or combining driveways). The project also includes the replacement of Castle Bridge over the Catawba River/Rhodhiss Lake. The project Area of Potential Effects (APE) follows the study area for the project delineated by NCDOT. Following a linear path along SR 1001, the APE includes the area extending approximately 150 feet from either side of the centerline from Southwest Boulevard south to U.S. Route 70, including additional buffer areas for intersections along SR 1001 (Figure 1).

NCDOT has studied the project (with varying project limits) for approximately 20 years. Mattson, Alexander & Associates surveyed the project APE intensively in 2003, during which two properties were determined eligible for the NRHP: the Waitsel Monroe Smith House (CW0074), no longer extant, and the Elizabeth Bush House (CW0073) (Mattson 2003:1-4). Some portions of the southern end of the project study area in Burke County were previously surveyed in 1995 for NCDOT Project R-2824B, during which only one property was found to be eligible for the NRHP: the Arthur T. Abernethy House (BK0419) (Griffith 1996:3). In 2009 NCDOT prepared an Environmental Assessment (EA) for improvements on SR 1001 from SR 1115 (Dry Ponds Road) to Southwest Boulevard. The Federal Highway Administration signed the EA but the project did not advance and was ultimately removed from the STIP. In 2018 the project was added to the STIP (2018-2027) and reinitiated as a state-funded project with the current project limits. Finally, in the spring of 2021, WSP conducted a Building Inventory reconnaissance-level survey for the project, which identified a total of 14 resources for further study in consideration for NRHP eligibility.

The project's APE is characterized by primarily residential, light commercial, and light industrial development extending through woodlands, modest rolling hills, mountainous areas, and small crossroads communities with several churches and a vast amount of postwar housing lining the route, reflecting soaring development in the region during the early and mid-twentieth century. Major geographical features in the immediate area include the Catawba River/Rhodhiss Lake in the center of the APE, Cajah Mountain, Bradford Mountain, and Rippetoe Mountain near the APE's northern end. A portion of the R-3430 project initiated in 2003 extended to only Castle Bridge at Rhodhiss Lake (formed from the Catawba River at the Burke County border); currently the project has been extended south into the Town of Rutherford College to U.S. Route 70. The APE around the bridge is also wider to account for approach and bridge alternative options under consideration. Residential development in the APE is largely over the age of 40 years. During the Building Inventory phase of the project, 318 resources over the age of 40 years were identified in the APE for reconnaissance survey and documentation. Fourteen of the aforementioned resources were determined to warrant further study and NRHP eligibility evaluation (Figure 2; see Table MS-1).

FIGURE 1: R-3430 Project Vicinity Map with APE (Area of Potential Effects), Caldwell and Burke Counties, North Carolina (ESRI USA Topo Maps, 2018)

FIGURE 2: R-3430 Project APE with Evaluated Properties Identified in Red (Esri World Imagery 2020)

1.2 Methodology

The survey included background research and fieldwork. Prior to the fieldwork, WSP Architectural Historian Megan Privett consulted the North Carolina Historic Preservation Office's (NCHPO) online GIS mapping system, HPOweb, as well as the project survey files for previously recorded resources located at the NCHPO. The most recent Caldwell and Burke County architectural surveys, completed in 1987 and 1983, were consulted for basic contextual information of the project APE in addition to generating architectural contexts for the surveyed resources. Background research also included primary and secondary source investigation at various libraries and archival repositories, including the Caldwell County Public Library, the Morganton Public Library, and the Burke County Historical Museum. Online sources such as the UNC Maps Collection, Ancestry.com, Newspapers.com, and U.S. Census records were consulted for information on the history of the properties and the families who owned them. Ms. Privett also interviewed local Rutherford College historian Lillian Rutherford Coffey. WSP Architectural Historian Heather McMahon acquired property information online through Caldwell and Burke County's Register of Deeds office and from interviews with local residents.

Ms. Privett conducted the fieldwork on September 8-9 and September 13-15, 2021, which included surveying on foot, photographing the exteriors and interiors, when accessible, of resources, and interviewing local residents. On September 14, 2021, Ms. Privett attended an onsite field visit with NCDOT Historic Architecture Supervisor Mary Pope Furr and NCHPO representatives Sarah Woodard and Audrey Thomas in Rutherford College to discuss project details, concerns, and the potential for a historic district within the project APE. Ms. Privett conducted a windshield survey of nearby comparable resources in the area on September 13-15, 2021, and October 13, 2021, and photographed the resources for architectural context. Ms. Privett wrote the report.

This report was prepared in accordance with the National Historic Preservation Act of 1966, as amended; the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation of 1983 (48 *Federal Register* 44716), as amended; *Architectural Survey Manual: Practical Advice for Recording Historic Resources* (North Carolina Department of Cultural Resources [NC DCR] 2008); the NCDOT (2015) *Historic Architecture Group Procedures and Work Products*; and the NCHPO's *Report Standards for Historic Structure Survey Reports/Determinations of Eligibility/Section 106/110 Compliance Reports in North Carolina* (NC HPO 2019) The architectural historians who performed the assessments meet or exceed the Professional Qualifications Standards specified in 36 CFR 61.

1.3 General Historical Background

Located in the northwestern corner of the Piedmont region of North Carolina on the eastern slope of the Blue Ridge Mountains, the Town of Rutherford College lies just south of the Catawba River in Burke County, along SR 1001. Prior to the industrialization that took place in the nineteenth century, Caldwell and Burke counties, both mountainous and isolated geographically, were largely agriculture-based, consisting of small planter societies supporting a yeoman farmer population that depended on subsistence farming. Because it was difficult to navigate the Catawba River, trade did not flourish in the region; however, the rapid waters of the tributaries provided an excellent opportunity for early water power, which fueled grist- and sawmills in the region, and later textile mills. The area's economy drastically transitioned during the late nineteenth century from agriculture to industry and manufacturing because of the available water power, plentiful and cheap labor, new transportation networks, and abundant timberlands that aided the textile, lumber, and furniture industries (Mason 1987:1-31; Mattson 2003:10-14).

After the Civil War many planters in Caldwell and Burke counties subdivided their holdings and began to transition to a system of tenant farming. Between 1860 and 1880 in Caldwell County, the number of farms rose from 560 to over 1,400, while the average farm size decreased to less than 100 acres by 1910. Perhaps

the greatest contributing factor to the dawn of industrialization in the region was the arrival of the railroad, transforming small rural communities into manufacturing centers and affording farmers the opportunity to engage in cash-crop agriculture. Constructed in 1884, the Chester and Lenoir Railroad connected Lenoir with South Carolina ports as well as to various major regional rail routes connecting to the North Carolina Railroad. Large-scale timber and logging operations in the region began in earnest around 1880, further reducing agricultural holdings and encouraging landowners to break up and sell off of large tracts of land to outside industrialists (Mason 1987:17-19; Mattson 2003:12-13). Numerous industries blossomed, including cotton mills, textile manufacturing, and furniture factories, taking advantage of the railroad's proximity. By 1902 some 12 cotton mills and seven hosiery mills were in operation in Caldwell County. The largest of these was the Rhodhiss Manufacturing Company, established by John Rhodes as a 1,500-spindle cotton mill on the banks of the Catawba River near the southern end of the project APE. Later, during the 1920s, Rhodhiss Lake was formed as a result of the construction of a dam and hydroelectric power plant by the Southern Power Company.

In Burke County farming dominated the economy well into the late nineteenth century; however, new industries such as furniture manufacturing were beginning to take hold, as in Caldwell County. In 1899 the number of farms in Burke County totaled 2,222, a significant increase from the mid-nineteenth century. In 1925 the average Burke County farm contained 67.5 acres with 22.9 percent operated by tenant farmers. The coming of the Western North Carolina Railroad in 1869 facilitated developments in industrialization and the growth of tourism. Textile manufacturing and furniture making, specifically the Drexel Furniture Company, were two of the county's primary industries (Sharpe 1958:654-655).

Located at the southern end of the project APE, the Town of Rutherford College, originally known as Excelsior, developed around the former school, which operated until 1933 and whose predecessor was the Owl Hollow School. In 1853 Rev. R.L. Abernethy assumed leadership of the school and expanded it with the financial assistance of John T. Rutherford, for whom the school was renamed. In 1857, 40 students attended the school. The school closed during the Civil War, but by 1888 the school had reopened as Rutherford Seminary with 10 professors and 200 students. In 1891 a fire destroyed the college at is original site, and in 1893 it was rebuilt where the present Valdese General Hospital stands. Will Abernethy sold the college to the Western North Carolina Conference of the Methodist/Episcopal Church South in 1899. The school closed when Methodist colleges were consolidated during the Great Depression of the 1930s (Sharpe 1958:659).

Other nearby communities in the northern Burke County area include Valdese and Connelly Springs. Protestant Waldensians emigrated from Italy to avoid religious persecution and overcrowding in their homeland, arriving in Burke County during the 1890s from the Northern Italian Cottian Alps. These skilled stone masons brought with them their Waldensian masonry building traditions and often worked as masons in their new home. Most Waldensians engaged in textile manufacturing by the twentieth century and the majority were of the Presbyterian faith. The architecture of the area reflects Waldensian building traditions in fieldstone construction techniques and siting; two prime examples are the 1896-1899 Waldensian Church and the ca. 1922 Valdese Elementary School. Other properties that exhibit the handsome stone Waldensian craftsmanship include the Abernethy Memorial United Methodist Church (BK0077) and the stone period cottage at 901 Malcolm Boulevard near Valdese, both in the project APE (Griffith 1996:4-5; Sharpe 1958:660-662).

During the early twentieth century small communities similar to the Town of Rutherford College blossomed in Burke and Caldwell counties as crossroads sites or rural hamlets, encouraged by industrial development nearby. SR 1001 was built in the late 1940s to connect Lenoir with the Southern Railway and U.S. Route 64 south of the Catawba River. Small towns near this connector route, such as Granite Falls, Rhodhiss, Baton, and Cajah Mountain, developed primarily as furniture and textile manufacturing centers oriented to the Catawba River, the Southern Railway, or crossroads communities convenient to these transportation

outlets (Mattson 2003:10). The paving of major roads and improvements in transportation led to the further development of smaller, formerly rural areas, transforming them into towns complete with churches, schools, stores, and recreational spaces, such as the 1942 Baton School constructed immediately west of SR 1001. The State Hospital and the School for the Deaf, both in Burke County, were further economic assets that served the county.

According to United States Geological Survey (USGS) maps, modest houses began emerging along Connelly Springs Road and Malcolm Boulevard during the 1930s and 1940s, with many more filling in during the 1950s. Most were modest frame cottages, Ranch houses, Bungalows, or restrained period cottage types, with the more "high-style" residences located near the Town of Rutherford College. Families that moved to more rural areas outside Lenoir with the help of the automobile were able to escape the town for a more agrarian setting typified by the postwar single-family Ranch or Minimal Traditional house surrounded by a yard and trees. As these small hamlets and rural communities grew, churches were often the first large, major institutional building constructed in the area. In the project APE the Baptists and Methodists were the main denominations, and the current survey documented a total of 10 churches in the project APE (Sharpe 1958:653-657).

Furniture manufacturing dominated the economy of the region during the twentieth century. In Burke County, by the mid-twentieth century, 23 hosiery mills and six furniture plants employed a vast majority of the county's working class. In addition to textiles and furniture, Burke County had sawmills and woodworking plants, which were especially attractive to generations of artisans such as the Waldensians (Sharpe 1958:654). With manufacturing jobs plentiful and widespread, population growth soared during the mid-twentieth century in Burke County, reaching 45,518 in 1957. By the 1960s the agrarian setting of surrounding the Town of Rutherford College was quickly vanishing, with only 9 percent of Burke County's population engaged in agriculture in 1957 (Sharpe 1958:673). The construction of I-40 and the four-lane U.S. Route 321 later in the twentieth century has led to greater mobility and further development of Burke County, allowing the spread of residential construction well into the countryside serving as homes for Lenoir and Hickory commuters.

2.0 ELIGIBILITY EVALUATIONS

2.1 Elizabeth Bush House

Resource Name	Elizabeth Bush House
HPO Survey Site No.	CW0073
Location	1490 Bushville Drive
PIN	2747820501
Date(s) of Construction	1929, 1974
NRHP Recommendation	Eligible, Criterion C

2.1.1 Setting and Description

Situated on a flat parcel on the south side of Bushville Drive, which runs perpendicular to the west side of Connelly Springs Road, the Elizabeth Bush House stands among mature trees on a 32-acre parcel. A paved driveway extends from Bushville Drive, adjacent to the east side of the house, and a gravel drive travels to the west side of the house in a meandering pattern to the fields behind. A Rustic log garage stands just northeast of the house, and a more modern frame pole barn is southeast of the house. A 1974 Ranch house owned by the family stands directly south of the Bush House, built by Joe and Wadene Roberts. Surrounding the Bush House are cleared fields and split log fencing along with mature nut and fruit trees (Figure 3).

2.1.1.1 Elizabeth Bush House, 1929

The Elizabeth Bush House is a one-and-one-half-story log dwelling featuring a side-gable roof punctuated with a shed dormer. Constructed in 1929, the house features a recessed central entrance, saddle-notched log walls with chinking, six-over-six wood-sash windows, and bracketed eaves sheltering wood shingles that cover the house's gable ends (Plate 1). The house's front (west) elevation is marked by a recessed entrance featuring a central batten door flanked by windows; directly above is a shed dormer pierced with four six-over-six window bays in a continuous band. Double windows of six-over-six sash pierce each side of the remainder of the façade; walls are sheltered slightly by overhanging eaves with exposed rafter tails (Plate 2). The house's south elevation contains two six-over-six sash window bays on the first story with one window bay of the same configuration on the upper half-story; gable ends are sheathed with wood shingles and sheltered by bracketed, overhanging eaves. The east elevation of the house features a shed-roofed wing extending outward, pierced by a double window and containing an engaged, screened porch in the northeast corner (Plate 3). The remaining portion of the elevation is pierced by a single window bay on its south end. One large, centrally located stone chimney rises from the roofline visible from this rear (east) elevation. The north elevation is pierced by two window bays on its first story, and one centrally located window bay in the upper half-story of the gable end, sheltered by overhanging, bracketed eaves. A wide frieze board visually divides the two stories. The elevation's far east end contains the screened porch (Plate 4). The house rests on a stone foundation.

The highly intact interior features exposed log walls, hardwood floors, original two-paneled interior doors, and exposed ceilings left unpainted with log floor joists and overlaid heart pine boards (Plate 5). The architectural centerpiece of the interior is the massive fieldstone fireplace that serves two rooms, a living room upon entering the front door and a den on the opposite side. A Rustic log mantel is attached to each fireplace, and the east one held a woodstove at one time (Plate 6). The core of these chimney is brick, finished with a stone veneer. These two central rooms are flanked by pairs of rooms on each side. The north

pair consists of the kitchen and dining room and the south pair are bedrooms. A narrow stair in the southeast bedroom leads to an open loft in the upper half-story of the house (Plates 7 and 8). The house is currently used for storage by the Joe Roberts family, who live next door and own the property.

Log Garage. A one-story, one-bay, small log garage stands northeast of the house. Saddle-notched like the house and featuring a front-gabled roof filled with wood shingles in its gable end, it too contains overhanging eaves supported by log rafters (Plate 9). Also identical to the house, it rests on a stone foundation and has an asphalt-shingle roof.

2.1.2 Historical Background

Built for local schoolteacher Elizabeth Bush in 1929 on land owned by her family, the house has remained in the Bush family. The Bush property was previously part of a sizable farm, 30 acres of which was deeded to Rebecca R. Bush and her two daughters, Elizabeth and Genelia, in 1929, and later subdivided among various family members during the 1960s through the 1980s. Elizabeth Bush (1891-1976) came from a family that included several generations of teachers, many of whom taught at a small rural school known as Bush School. The Bush family owned sizable acreage and farmed in addition to teaching. When Elizabeth Bush married Wade C. Hartley and had children, she kept her maiden name informally. Elizabeth and Wade Hartley's daughter, Wadene, married Joe Roberts and the Roberts family constructed the mid-twentieth century Ranch house, where they currently reside, just south of the log Bush House (Plate 10). (Mattson 2003:29, Roberts 2021; United States Census Bureau [U.S. Census] 1920, 1940a-b).

The earliest education records for Caldwell County date to the 1880s and indicate the existence of 58 school districts in the county, consisting of primarily small, one- or two-room local community schools with at most one or two teachers. After the turn of the twentieth century, as funding and interest in public education surged, county and state assistance helped establish new public schools in Caldwell County, although many private and church-led schools still thrived. By the 1920s public education had vastly improved in Caldwell County and throughout the state. Elizabeth Bush taught at the small Bush School nearby, and later in her career likely transferred to a slightly larger, consolidated school (Anderson 1983:50-60).

2.1.3 Architectural Context and NRHP Evaluation

Log construction persisted into the twentieth century in Caldwell County, but more so for farm outbuildings rather than for residences. Very few early log-built houses in Caldwell County survive. The first documented Bungalow in Caldwell County appeared in 1913 and quickly gained favor in both urban and rural areas of the county, breaking ties with traditional building practices as it and other nationally popular styles outpaced older, vernacular forms. Economical, functional, and practical for modern living, the Bungalow form and the period cottage dominated rural Caldwell County's new construction patterns from the 1920s through the 1940s. These house types appealed to the county's burgeoning middle and working classes as a result of the booming furniture and textile manufacturing industries. The Elizabeth Bush House, although Rustic in its design and materials, employs characteristics of the Bungalow and Craftsman styles, with its long shed dormer, deep recessed porch, bracketed eaves, and interior floor plan (Plate 11) (Bishir 1990:498-505; Mason 1987:34; Mattson 2003:15-16).

The Rustic Revival style, loosely inspired by the Arts and Crafts movement, harkened back to a more primitive time, appealing to those desiring a more casual atmosphere with a visible connection to nature and the great outdoors through use of local, native materials. With the growing interest in regional architecture and its widespread dissemination, Rustic designs also soared even more in popularity both for middling residential architecture as well as for mountain resorts of the wealthy (Mattson 2003:29). Rustic designs in western North Carolina were especially common for resort architecture in the early twentieth century, as exemplified in Asheville's Grove Park Inn (BN0010) and also in community and institutional

architecture such as Avery County's Lees-McRae College (AV0110) and the Penland School Historic District (ML0014) in Mitchell County (Bishir 1990:444-453). One exceptional western North Carolina residential contractor who built many log cabins from the 1920s to 1940s, Joe Webb, creatively executed Rustic Revival cabins for out-of-state clients with a high concentration particularly in the Highlands area of North Carolina. Webb's work likely influenced other builders who emulated the practice throughout the state. Although the architect or builder of the Elizabeth Bush House is unknown, it is possible that the family was influenced by the popularity of Rustic cabins in the region during the 1920s and 1930s (Bishir and Foard Hood 2021:1).

Very few previously recorded log houses survive in Caldwell County, and many that were previously documented, such as the Community House in Lenoir, are now gone. An even smaller number of those are of similar style and period as the Elizabeth Bush House. Perhaps the most comparable to the Elizabeth Bush House, the Community House in Lenoir, was a ca. 1933-1935 Rustic Revival log building built in a U-shaped form for the Rotary Club in Lenoir with labor provide by the Civil Works Administration, a branch of President Franklin D. Roosevelt's New Deal-era relief programs. The logs used for the walls, as in the Bush House, were left round, held together by a mortared chinking, and chimneys and other architectural elements used native stone.

One log example surviving in the county, although its log exterior is now sheathed in wood siding, is the Rev. Jesse Rankin House, known as Heartsease (CW107), which was moved from Main Street in Lenoir to Ridge Street. An early nineteenth-century, two-story log dwelling now hidden beneath weatherboard, the house is an early example of a traditional house in Caldwell County, particularly of log construction (Plate 12). However, the conservative two-story form with full-width shed porch and exterior end brick chimneys contrast sharply with the Rustic design and Craftsman Bungalow character of the Bush House, built over one-hundred years after Heartsease and whose log construction was meant to be just as visually pleasing as it was functional. These differences make it difficult to compare the two properties and cement the conclusion that the Elizabeth Bush House is an extremely rare example of its style and type in Caldwell County.

Another example of a small, log dwelling is the early log house included within Stony Hill (BK0258), located in Burke County. The one-and-one-half-story, one-room cabin dates to an earlier period than that of the Bush House and features half-dovetail notching, a single-leaf entrance bay on the main elevation, and one window bay each on side elevations as well as in the upper half-story's gable ends, which are sheathed in weatherboard. The cabin rests on a stone pier foundation (Plate 13). Most other documented log examples in the vicinity of the Bush House are vernacular rather than indicative of a particular style such as the Rustic Revival, making the Bush House even more of an anomaly (BK0258 Survey File, NCHPO 2021).

The Elizabeth Bush House retains a high degree of integrity, with very few alterations to the exterior and interior. It retains integrity of location and setting, surrounded by pasture and mature trees behind the house and buffering the property from SR 1001 (Plate 14). The only major change is the addition of the 1970s Ranch house, constructed by the family next to the log dwelling in which the Elizabeth Bush family resided. Integrity of materials, design, and workmanship are all intact, as the house retains its original log exterior, windows, wood shingles, brackets, trim, stone chimneys, interior floor plan, and architectural features. The single bathroom appears to be the only modification made in the mid-twentieth century, constructed in the screened porch on the northeast corner of the house. The property retains its feeling and association as a residence remaining with the Bush family, although now primarily used for storage.

The Elizabeth Bush House is recommended as not eligible for the NRHP under Criterion A for association with significant events or the broader patterns of history in Caldwell County. Although the Bush family engaged in agriculture, it was not the focus or primary occupation of the family. Because the school is no

longer extant and not standing on or near the property, significance for education cannot be claimed. No other historically significant events are known to have occurred in association with the house, nor does it have an association with important historical trends in Caldwell County.

The Elizabeth Bush House is found not eligible under Criterion B for association with significant individuals in history. Elizabeth Bush was a teacher in Caldwell County and in nearby local communities, but neither she nor later family members were found to contribute significantly to the history of Caldwell County in a documented, outstanding way.

The Burch-Mathis House is found eligible under Criterion C for architecture, as a strong and rare example of early to mid-twentieth-century Rustic Revival log residential architecture in Caldwell County. Inspired loosely by the Arts and Crafts movement, Rustic Revival architecture became fashionable in western North Carolina with the regional boom of resort mountain towns, with both middle-class and wealthy residents employing log construction techniques. Bountiful timber in the region allowed easy and cheap access to materials for log construction, and the designs expressed an informality harkening back to pioneer days often desired in early twentieth-century summer mountain communities. The house retains a high degree of integrity and is one of the strongest examples of its type in Caldwell County; very few if any other examples could be found in the county. Likewise, the interior with exposed log walls is highly intact, further boosting its significance.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Elizabeth Bush House is not likely to have this type of information and does not meet Criterion D.

2.1.4 Recommended NRHP Boundaries

The recommended NRHP boundaries for the Elizabeth Bush House are drawn to include the surveyed house and its associated landscape features, setting, and outbuildings (Figure 4). The boundaries loosely follow the tax parcel boundary lines, which encompass approximately 6.8 acres and include the cleared and wooded areas to the east composing the setting for the property. Beginning adjacent to SR1001, the west boundary runs north, where it turns at the intersection with Bushville Drive, running east along the south edge of Bushville Drive, then follows the tree line around the east boundary. The boundary then turns west to follow the south edge of the parcel, meeting the south end of the western boundary to complete the polygon. The boundaries have been drawn to exclude the 1970s Ranch house because it lacks historical and architectural significance. The NRHP boundaries follow NCDOT ROW and tax parcel lines to the edge of pavement and include boundary features such as trees, fencing, and landscape features.

FIGURE 3: Site Plan, Elizabeth Bush House (CW0073), Caldwell County, North Carolina (ESRI World Imagery 2021)

FIGURE 4: Recommended NRHP Boundaries (in blue) for Elizabeth Bush House (CW0073), Caldwell County, North Carolina (Esri World Imagery 2021)

PLATE 1: Oblique View of Elizabeth Bush House (CW0073), West and South Elevations, Caldwell County, North Carolina

PLATE 2: Elizabeth Bush House (CW0073), Detail of West Elevation, Caldwell County, North Carolina

PLATE 3: Elizabeth Bush House (CW0073), Oblique View of South and East Elevations, Caldwell County, North Carolina

PLATE 4: Elizabeth Bush House (CW0073), Oblique View of East and North Elevations, Caldwell County, North Carolina

PLATE 5: Elizabeth Bush House (CW0073), Interior of Living Room, Facing Southwest, Caldwell County, North Carolina

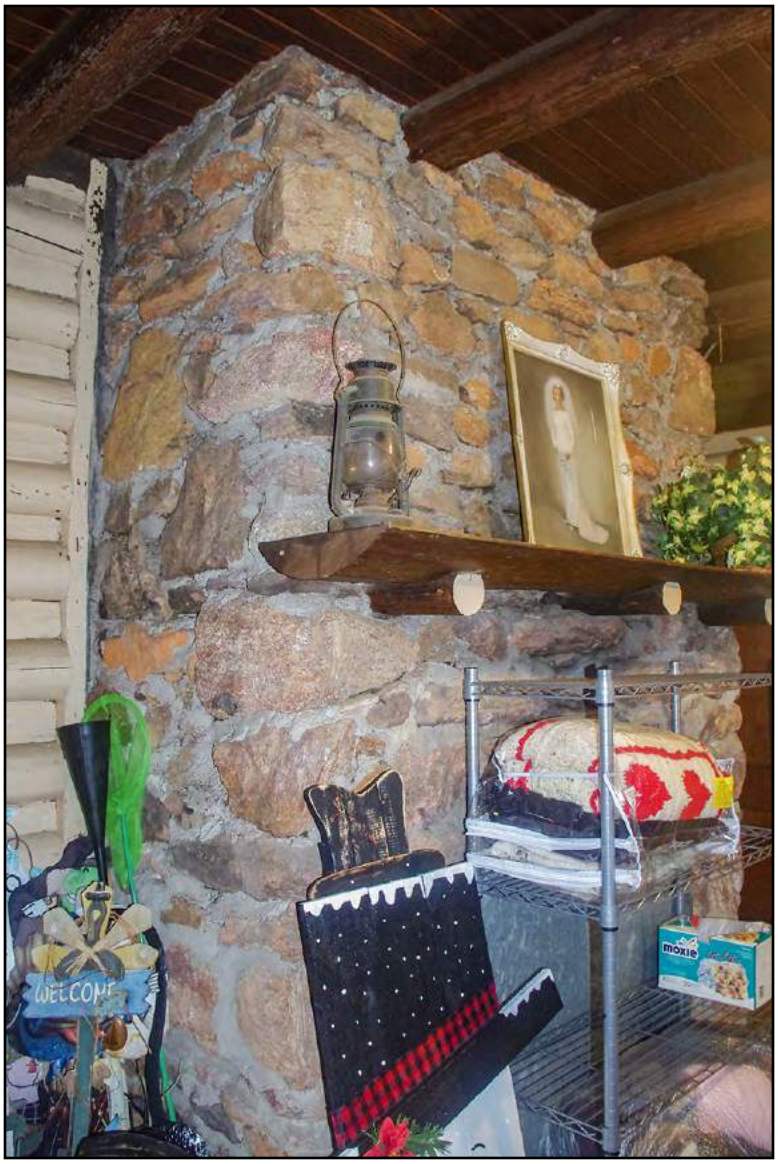


PLATE 6: Elizabeth Bush House (CW0073), Interior of Den with Detail of Fireplace, Facing Northwest, Caldwell County, North Carolina

PLATE 7: Elizabeth Bush House (CW0073), Interior Detail of Stair, Facing Northwest, Caldwell County, North Carolina

PLATE 8: Elizabeth Bush House (CW0073), Interior Detail of loft/Upper Half-story, Facing North, Caldwell County, North Carolina

PLATE 9: Elizabeth Bush House (CW0073), Log Garage, Oblique of West and North Elevations, Caldwell County, North Carolina

PLATE 10: Joe and Wadene Roberts House, South of Elizabeth Bush House (CW0073), West Elevation, Caldwell County, North Carolina

PLATE 11: Elizabeth Bush House (CW0073), Detail of South Elevation, Caldwell County, North Carolina

PLATE 12: Jesse Rankin House (Heartsease) (CW0107), East Elevation, Lenoir, Caldwell County, North Carolina

PLATE 13: Log Dwelling at Stony Hill (BK0258), West Elevation, Burke County, North Carolina

PLATE 14: Elizabeth Bush House (CW0073), Facing Southeast from Bushville Drive, Caldwell County, North Carolina

2.2 Baton United Methodist Church

Resource Name	Baton United Methodist Church
HPO Survey Site No.	CW0838
Location	1034 Dry Ponds Road
PIN	2755048116
Date(s) of Construction	1961, 1996
NRHP Recommendation	Not Eligible

2.2.1 Setting and Description

Facing south toward Dry Ponds Road, Baton United Methodist Church stands on a partially cleared parcel adjacent to Connelly Springs Road on its west edge. The north and east portions of the parcel are wooded. The church and paved parking lot are centrally located within the parcel. A small cemetery bounded on three sides by a paved sidewalk is the east of the church. North of the church building are a picnic shelter and storage buildings (Figure 5).

2.2.1.1 Baton United Methodist Church, 1961, ca. 1996

Consisting of two sections containing an original, 1961 church building on the east and a 1996 church building on the west, Baton United Methodist Church faces south, accessed by a parking lot east of the church (Plate 15). The original 1961 Modernist church building is clad in a brick veneer with a six-to-one common bond and features a prominent central gable—a popular "A-Frame" style of chapel for the postwar period—rising between the remaining flat-roofed wings on its main (south) elevation, its wide eaves forming a porch sheltering paired entrance doors. The gabled porch is supported by vertical members, now wrapped in vinyl, reaching the top of the underside of the ridge, filled with a large, prominent cross (Plate 16). This recessed portion formed by the gable is filled with large, divided-light, glazed fixed windows, with vertical bands of smaller multi-light bays filling the central portion of the façade. Double-leaf entrances placed centrally within the recessed, gabled porch are flanked by undivided sidelights and transoms. Eaves and architectural trim have been covered in a vinyl wrap. A flat-roofed porch supported by brick square columns shelters a walkway along the west side of the church's façade, leading to an third, double-leaf entrance. The east elevation of the 1961 original church is pierced by three three-light, metal, awning, sash window bays and one two-light, metal, awning, sash double-window bay (Plate 17). The north (rear) elevation features vertical bands of stained-glass, leaded windows set within vinyl-covered walls placed at diagonal angles to each other, sheltered by the prominent, front-gabled roof. Original stained-glass windows are protected by metal-sash storm windows. Side and rear single-leaf entrances also pierce this elevation (Plate 18).

In 1996 Baton United Methodist constructed a new sanctuary connected to the west side of the original church. The new sanctuary features a pyramidal roof crowned with a steeple, brick walls, and slender, stained-glass, oblong window bays characterized by a mosaic tile pattern (Plate 19). Double windows are sheltered by small gabled porticos, supported by round concrete columns, and filled with vertical wood sheathing and the United Methodist Church logo. Soldier courses define the top and bottom of the brick-veneered walls, and stained-glass window bays are grounded with an infilled light underneath each stained-glass bay. A one-story, flat-roofed wing extends north from the 1996 church building, containing offices and Sunday school classrooms. This north elevation is pierced with dingle and double fixed window bays (Plate 20).

The interior of the 1961 original church has been transformed into a fellowship hall, with a kitchen and additional rooms on the east side, separated by movable accordion doors. The former sanctuary has new, engineered wood flooring. The pulpit and anything resembling a former chancel has been removed, but the wood ceiling purlins exposing its structural elements as well as original stained-glass and paneled walls are intact (Plate 21). It appears that original, three-light pendant fixtures also survive. The colorful stained glass is laid in an irregular, geometric pattern composed of squares and rectangles (Plate 22).

The 1996 church sanctuary interior consists of an auditorium-style church interior plan, with pews arranged in a circular pattern around an elevated stage (Plate 23). Behind the stage and altar, which are surrounded by a wood octagonal railing, are paneled walls that form a scalloped edge at the top before reaching the ceiling, and a prominently placed, two-light, stained-glass window bay. Another railing provides a buffer to the choir loft section. To the west located on the stage is the freestanding pulpit. Floors are carpeted in red, and the pew cushions are also red (Plate 24).

Picnic Shelter. A one-story, frame picnic shelter topped with a gabled roof stands northeast of the church, supported by bracketed wood posts and filled with vertical wood sheathing in the gable ends. The picnic shelter contains a concrete floor and is covered with corrugated metal roofing (Plate 25).

Outbuildings. Two storage buildings stand northeast of the church near the picnic shelter. The first is a one-story, concrete-block storage building with a front-gabled roof. Its south elevation contains a double-leaf metal entrance. The second is a prefabricated, gabled storage shed sheathed in vinyl siding with a garage bay on its south elevation. An open metal carport also stands among the cluster of storage buildings (Plate 26).

Cemetery. A small cemetery is northeast of the church, within a rectangular plot surrounded on three sides by paved sidewalks. Approximately 25 to 30 flush grave markers, mark the burials, all of which date to after the construction of the church in 1961. A frame pergola structure containing an angel statue marks the cemetery's entrance (Plate 27).

2.2.2 Historical Background

The formal organization of the Methodist Church in the United States did not occur until 1784 in Baltimore, with most services preached by "circuit rider" ministers who traveled preaching the gospel throughout various regions at tent revivals and regular congregational meetings. The earliest circuit near Baton United Methodist Church was likely the Morganton circuit, established in 1804. Early churches began erecting permanent buildings in the nineteenth century, and by the early twentieth century most Methodist churches had obtained regular pastors, who only served at each post for a few years (Phifer 1979:37-38). Many churches commonly organized from an outgrowth or a division of an already established church as a "plant," but Baton Methodist Church evolved organically and became the first Methodist church in Caldwell County to be founded in over 40 years (Chester 2011:3-5).

Over the course of the twentieth century, Baton flourished from a tiny farming community with one store and three churches to a small town of 5,000. Growth began accelerating in the 1920s and 1930s and rapidly increased by the mid-twentieth century, when many new churches organized and families moved to the suburbs and countryside to build affordable homes, such as Ranch houses or modest Bungalows. The rise in commuting to nearby manufacturing jobs fueled the development of Baton, as workers were no longer bound by distance to and from their place of employment thanks to the automobile. Early churches in the area consisted of the Mountain Grove and Union Grove Baptist churches, both established in the late nineteenth century. By the middle of the twentieth century, Baton boasted a total of eight churches spanning four denominations. Baton United Methodist was historically and continues to be the only Methodist church in the Baton community, although Methodism in the region continued to be prevalent and widespread,

among the more common church denominations in the western part of North Carolina (Anderson 1983:200-205).

Baton Methodist officially organized in December 1960 and met in the Marshall Cook store building. The group's first pastor was Rev. Tom McLean, who also filled the Rhodhiss-Ebenezer charge position, alternating between the two posts. In 1961 the Trustees from the First Methodist Church of Granite Falls acquired a $12,000 loan from Granite Falls Savings & Loan Association to purchase and convey a 5-acre tract of land for the building of a new church to the trustees of Baton Methodist Church. In 1962 the trustees of Baton Methodist Church purchased an additional parcel of land from A.W. and Ernestine P. Kaylor for $2,000. Both properties stem from a 1918 conveyance between G.D. Lutz and the Western Carolina Power Company (Caldwell County Deed Book [CCDB] 93/270, 408/271, 414/97, 447/134, 482/256). Funds to help cover costs and loan payments were obtained from the Statesville District Mission Society, the Duke Endowment, and the General Missions Board of the Methodist Church. Nearly one year after initially organizing, Baton Methodist Church worshiped in their new sanctuary with Rev. Harold Strader appointed as its pastor. When the new church building was officially dedicated in 1966, Baton Methodist had 56 members, and in 1968 the church became Baton United Methodist Church when a number of Methodist-derived smaller denominations merged together to form the United Methodist Church (Chester 2011:3-7).

The congregation outgrew their 1960 church, and in 1996 a new sanctuary, offices, and classrooms were added to the former sanctuary, which then functioned as the fellowship hall. Designed by architect Fred L. Williams of Lexington, North Carolina, and constructed by Lail Builders, Inc. of Hickory, the new sanctuary, postmodern in its design while casual and contemporary in feel, featured a "gathered" or auditorium-style interior plan rather than a traditional nave, with pews arranged in a semi-circular fashion around a central, slightly raised, rounded stage. Also in 1996, Caldwell County's first female Methodist pastor, Rev. Cathy Cook, was appointed to serve concurrently at Baton and Collier's United Methodist (Chester 2011:4-7). Baton United Methodist has continued to serve the community through a variety of ministries and community events, celebrating its 50th anniversary in 2011.

2.2.3 Architectural Context and NRHP Evaluation

Caldwell County's population expanded rapidly during the mid-twentieth century as a result of the growing and prosperous furniture manufacturing industry. Like many cities across the nation, Lenoir and its surrounding rural areas experienced a housing boom as new suburbs sprang up in outlying areas of the city and in smaller crossroad communities such as Baton and Cajah Mountain. Advances in building technology with prefabricated and cutting-edge materials as well as low-cost, long-term mortgages facilitated affordable home ownership, and the automobile allowed easy commuting and transportation to employment. Churches, likewise, began locating new congregations in suburban areas to serve an expanding middle class and meet the needs of young, growing families who desired modern places of worship and safe, community-centered social centers. A growing number of church congregations throughout North Carolina opted for Modernist principles and designs for their postwar church buildings over Classical forms, following the stylistic trends of mid-century modern architecture executed in commercial, civic, and residential buildings. Some historians claim that the international movement toward a Modernist aesthetic in church architecture stems from an emphasis in liturgical reform and ecumenism:

> In many ways, the tenants of Modernism as an architectural movement coincided with ecclesiastical epistemology. If Modernism negated the physical (such as detail, clutter, ornament) and elevated the abstract (space, light, geometry, texture, color), this dovetailed with spiritualism's idea of sacred space as divine, other-worldly, and aesthetically uplifting.…Modern materials—such as concrete, glass, and glued laminated timber—allowed architects to design lofty open spaces, provide natural daylighting, and create systems that produced avant-garde, enticing forms [McMahon 2021:9].

The affordability of modern materials employed in contemporary designs in comparison with traditional materials cannot be overlooked as another driving factor in the preference of Modernist church plans, as most congregations raised much of the funds of new construction themselves through congregants' donations. As was the case with Baton United Methodist, churches would often erect a more modest structure only to later embark on a plan for a larger, more ambitious church building and transforming the first into another space, such as a fellowship hall or other social space.

In addition to the appeal of the Modernist aesthetic in church design during the mid-twentieth century, congregations used churches as not only a meetinghouse for preaching but as a social community center complete with classrooms for Bible study, fellowship halls, kitchens, office spaces, nurseries, and recreational facilities. The church's role transitioned from not only a strictly religious one but also to an organized, educational, and social one in postwar America, with an emphasis on the nuclear family and children. Suburban postwar churches became extensions of the home, a safe place for social, community, and educational events as well as for worship (McMahon 2021:7-12).

One exceptionally popular postwar modern church type is the A-Frame sanctuary, possessing a steeply pitched gabled roof with eaves extending low, often with a front-gabled elevation glazed with fenestration emphasizing verticality or geometry, at times recessed, minimalist in detail and modern in its use of materials. Often these Modernist A-Frame sanctuaries contain side or rear, flat-roofed wings holding classroom, office, and fellowship hall spaces, or they might be connected via a hyphen or a covered walkway. The A-Frame church, executed by Baton United Methodist in 1961, is also found in downtown Lenoir's Central Advent Christian Church, and in Burke County at Longview Church of God (BK0438) and First Baptist Church of Icard. Lenoir's Central Advent Christian Church at 104 Willow Street NW features a front elevation, flush with the roof's eaves, with a central, recessed glass portion featuring a concrete cross forming the division for the fenestration pattern, below which is the recessed entry (Plate 28). Brick-veneered walls with minimal detail compose the remainder of the main elevation, and side elevations are pierced with vertical bands of horizontal-light windows. The most pronounced and "high-style" A-Frame church documented in the surrounding area is the Longview Church of God (BK0438) in Burke County, built in the late 1970s. The steeply pitched gabled roof's structural members extend to the ground level, uncovered at their base. The only other detail defining the church's main elevation is a central, vertically oriented, multi-pane glazed panel with a geometric stained-glass design (Plate 29). Low-profile, flat-roofed wings extend from the sides and rear of the church, creating courtyard areas between the various building segments. Baton United Methodist Church's one-story flat-roofed wings are attached to its gable-roofed sanctuary, perhaps a more economical design that still gave the impression of an A-Frame structure but with the practicality of connected classroom and kitchen spaces.

Interiors of sanctuaries also transitioned from a traditional nave with center aisle leading to an altar or chancel to an auditorium-style seating arrangement, with the pulpit, sometimes raised, placed in the center. More informal, smaller congregations sometimes opted for shorter or even non-existent stages and less formally defined pulpits, surrounded two-thirds of the way around by rows of pews. Roof structures sometimes emulated the seating arrangements, crowned with a central modern steeple. Still, usually a statement symbol such as a large stained-glass window in a modern geometric pattern or a giant modern cross behind the altar or chancel linked former church design hallmarks with the new. This pattern is evident in Baton United Methodist's 1996 church sanctuary (McMahon 2021:7-11).

Mid-century modern churches are relatively rare in Caldwell County, with only a sprinkling throughout the county and neighboring areas, and very few if any have been previously recorded in architectural surveys. However, the county was no stranger to Modernist architecture for public buildings. Two of the more prominent public Modernist buildings in Caldwell County are the Caldwell County Sherriff's Department (1958-63) and the Lenoir Fire Station No. 1 (1969). Both structures use modern materials and forms with

flat roofs, geometric detail in fenestration patterns, concrete or cast stone, and buff-colored brick veneers (Plate 30) (Robinson & Associates 2018:54).

Another example of a more restrained Modernist church design with a nod to its Classical roots is that of North Catawba Baptist Church (BK0421) in rural Burke County. The late 1960s church replaced an older, late nineteenth-century frame structure; its traditional brick, gable-front temple form with cornice returns features a projecting gabled wing featuring a large, glazed, multi-light panel, recessed within the main elevation. A flat awning shelters a series of three double-leaf, glass and metal doors topped with transoms (Plate 31). A traditional steeple crowns the church roof. Vertical bands of multi-light window bays articulate the sides of the sanctuary walls. The two-story brick educational wing completed in 1967 is attached to the sanctuary at its rear elevation. Likewise, First Baptist Church Icard exhibits the brick A-Frame form with a central, glazed panel above the entrance. The two-story, brick education wing extends perpendicular to the church sanctuary. In the Caldwell and Burke County area, brick appears to be the preferred material for Modernist churches, especially for rural, modest versions of the style, with more understated statement architectural elements.

The Baton United Methodist Church possesses a medium degree of integrity; both integrity of location and setting are intact. Integrity of materials, design, and workmanship are somewhat intact with few alterations made to original windows and doors, interior floor plan, and architectural elements. Major exceptions include replacement vinyl siding that covers the rear elevation, new interior flooring in the original sanctuary, and the removal of the pulpit and stage. The resource also retains integrity of feeling and association, functioning in its original purpose as a church with its original congregation; however, its original sanctuary no longer functions as a sanctuary, having been altered and converted into a fellowship hall.

Baton United Methodist Church is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Caldwell County, North Carolina. No known historically significant events occurred in connection with the church.

Baton United Methodist Church is also not eligible under Criterion B for association with significant individuals in history. No single individual could be identified in connection to the church who contributed to the history of Caldwell County in an outstanding way that has been documented.

Churches are not typically eligible for the NRHP but can be eligible under Criterion C; however, the Baton United Methodist Church is not eligible under Criterion C for architecture because it lacks significance. The church exhibits Modernist design in its original 1960s sanctuary, but the structure is not a strong or particularly architecturally significant example of its style in comparison to others in Caldwell County and surrounding areas, such as Central Advent Christian Church and Longview Church of God, among others. The 1996 sanctuary attached to the 1961 church further detracts from its original appearance and historic integrity, and the interior of the 1961 sanctuary also lacks integrity.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Baton United Methodist Church is not likely to have this type of information and does not meet Criterion D.

FIGURE 5: Site Plan, Baton United Methodist Church (CW0838), Caldwell County, North Carolina (Esri World Imagery 2021)

PLATE 15: Baton United Methodist Church (CW0838), South Elevation, Caldwell County, North Carolina

PLATE 16: Baton United Methodist Church (CW0838), South Elevation, East Original Block, Caldwell County, North Carolina

PLATE 17: Baton United Methodist Church (CW0838), East Elevation, Caldwell County, North Carolina

PLATE 18: Baton United Methodist Church (CW0838), North Elevation, Original 1961 Block, Caldwell County, North Carolina

PLATE 19: Baton United Methodist Church (CW0838), Oblique View of West and South Elevations, Caldwell County, North Carolina

PLATE 20: Baton United Methodist Church (CW0838), Oblique View of North Elevation, Caldwell County, North Carolina

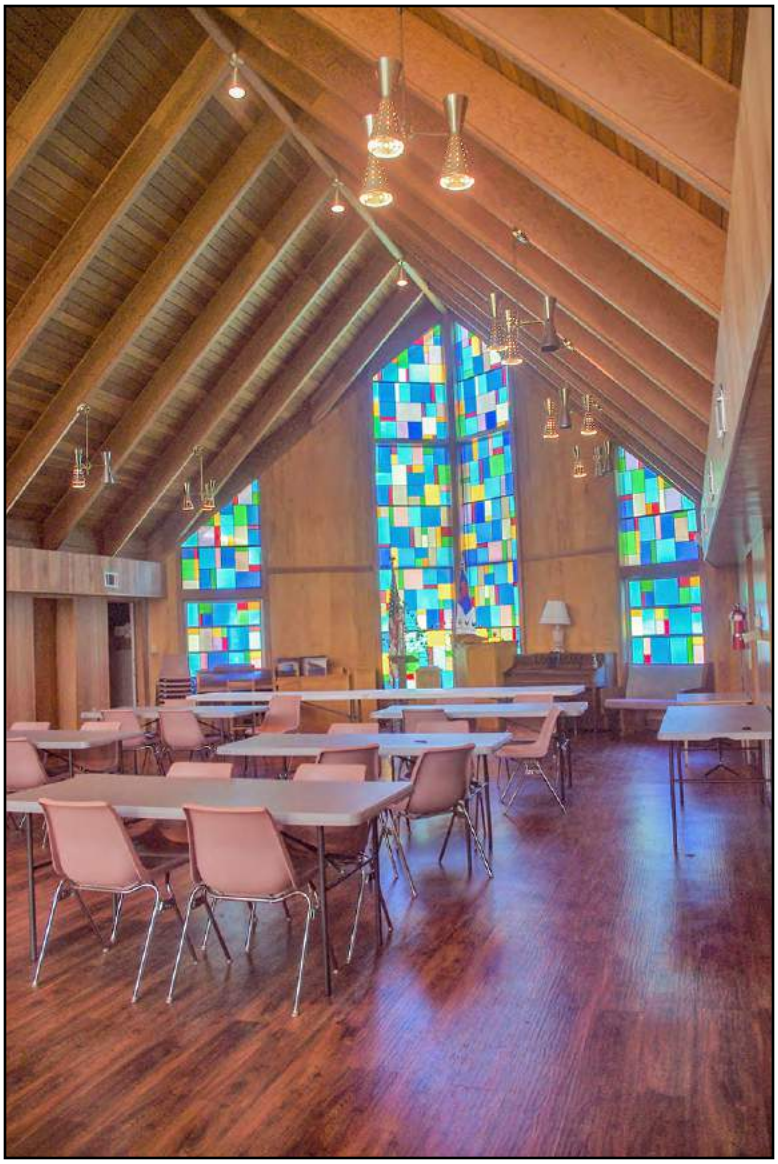


PLATE 21: Baton United Methodist Church (CW0838), Interior of Current Fellowship Hall, Facing North, Caldwell County, North Carolina

PLATE 22: Baton United Methodist Church (CW0838), Interior of Current Fellowship Hall, Facing East, Caldwell County, North Carolina

PLATE 23: Baton United Methodist Church (CW0838), Interior of Sanctuary, Facing Northeast, Caldwell County, North Carolina

PLATE 24: Baton United Methodist Church (CW0838), Interior of Sanctuary, Facing South, Caldwell County, North Carolina

PLATE 25: Baton United Methodist Church (CW0838), Picnic Shelter, Facing North, Caldwell County, North Carolina

PLATE 26: Baton United Methodist Church (CW0838), Storage Buildings, Facing North, Caldwell County, North Carolina

PLATE 27: Baton United Methodist Church (CW0838), Cemetery, Facing East, Caldwell County, North Carolina

PLATE 28: Central Advent Christian Church, 104 Willow Street NW, Lenoir, Caldwell County, North Carolina

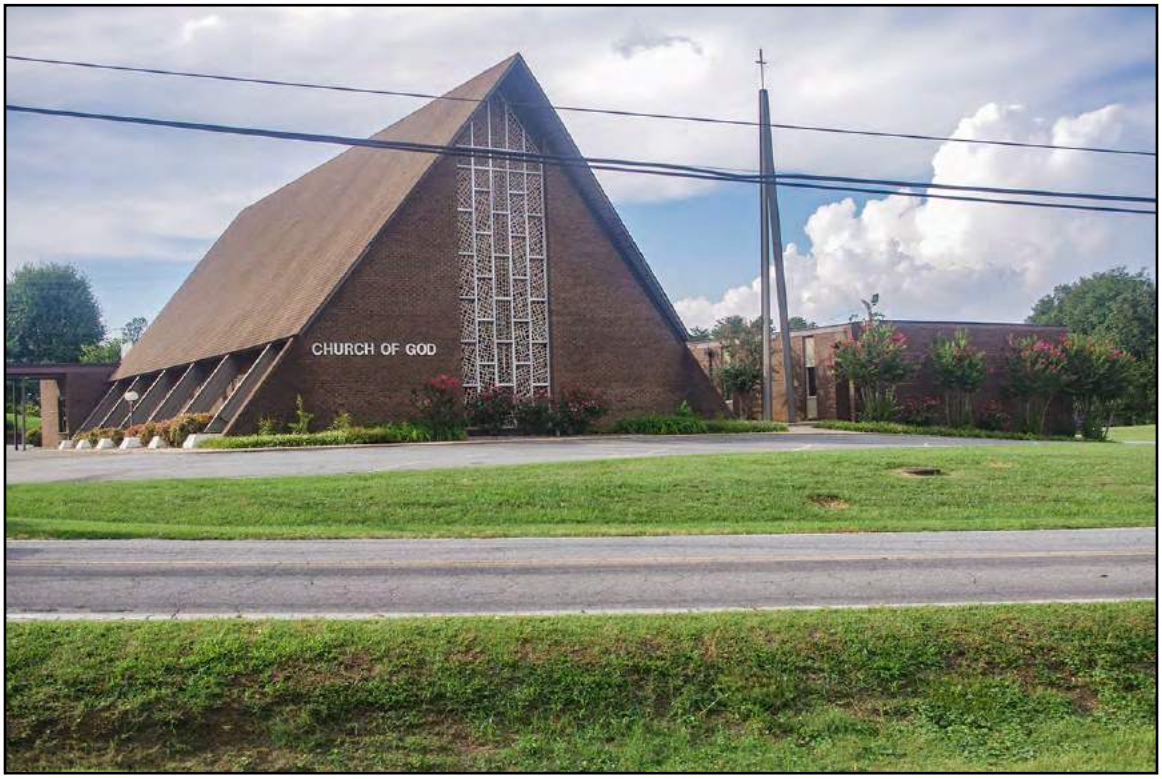


PLATE 29: Longview Church of God (BK0438), Oblique View of South and East Elevations, Burke County, North Carolina

PLATE 30: Lenoir Fire Station No. 1, (CW0563), 1969, North and East Elevations, Lenoir, Caldwell County, North Carolina

PLATE 31: North Catawba Baptist Church (BK0421), North Elevation, Burke County, North Carolina

2.3 Edwards-Weeden House

Resource Name	Edwards-Weeden House
HPO Survey Site No.	BK0805
Location	1340 Malcolm Boulevard
PIN	2754016787
Date(s) of Construction	ca. 1861, 1998
NRHP Recommendation	Not Eligible

2.3.1 Setting and Description

Situated on an incline on the east side of Malcolm Boulevard, the 1.9-acre parcel consists of two houses: a mid-to late nineteenth-century frame dwelling and a 1998 log house. Both face Malcolm Boulevard, set back generously from the roadway among mature trees and screened from view. A gravel drive leads to the houses, the older dwelling situated slightly northwest of the log house. A former drive leading from the older frame dwelling westward to the roadway is no longer present. Outbuildings that previously occupied the space to the rear (east) of the houses no longer survive (Figure 6).

2.3.1.1 Edwards-Weeden House, 1861, 1950

With an estimated original construction date in the mid- to late nineteenth century, the two-story, frame dwelling features a side-gable roof, a three-bay main elevation, and a two-story rear ell. Window bays are primarily six-over-six wood sash with exterior storms. Walls are clad in weatherboard, and side elevations have stone and brick exterior end chimneys, and the house rests on a brick foundation (Plate 32). The main (west) elevation is pierced by a single-leaf entrance bay sheltered by a one-story, gabled portico supported by paired wood posts on a brick and concrete porch floor (Plate 33). According to the property owner, the previous porch extended the full width of the house. The porch is flanked by windows on each side, and three window bays pierce the second story. The north elevation contains a main block with window bays flanking the central chimney on each story (Plate 34). The rear ell is pierced by a double window of six-over-six wood sash and a secondary, single-leaf entrance sheltered by an awning on the first story; the second story contains a standard-size double window and a single window bay, all six-over-six wood sash. The east (rear) elevation has a single-leaf entrance door on the far south side on the first story of the rear ell, and two window bays pierce the second story (Plate 35). The main block's east elevation contains a one-story, shed-roof addition, likely a former open porch, featuring a band of six-over-six sash windows on each side. Above the addition is a single-window bay. The south elevation's main block is identical to the north elevation, and the rear ell is pierced with a double window on the first story and two window bays on the second story (Plate 36). Interior access was not granted by the property owner at the time of the survey; however, the house is reported to have a center passage plan and hardwood floors.

Satterwhite Log House, 1998. A one-and-one-half-story, log, gambrel-roofed house stands southeast of the earlier dwelling. The house is pierced with one-over-one, single and double window bays and features a full-width front porch extending from the roofline to shelter the main elevation, supported by stripped logs. A large shed dormer extends across the main elevation's second story, pierced by window bays and clad in wood siding. The upper half-story of the house's side elevations are likewise clad in wood siding. The house's south elevation contains a large, stone chimney centered on the elevation. The house rests on a concrete foundation (Plate 37).

2.3.2 Historical Background

The Edwards-Weeden House is said to have been built as early as 1861 by the Thomas Edwards family. According to census records, Thomas Edwards was a Methodist circuit preacher, the son of Henry Edward[s] of Orange County. Census records do not list Edwards living in Burke County until 1900, but he may have been in the area sometime after 1870. A grave marker for H.H. Edward leans up against the house, reportedly recovered from somewhere on the property (Plate 38); H.H. Edward may have been the father of Thomas Edward or another family member. Cotton (1987:88) names the house as the "Tirrell House," and the Terrell family indeed lived immediately north of the property. It is possible they owned the land for a time, and oral accounts indicate that the Satterwhites purchased it from a family connected to the Terrell family, but deed records could not be found to corroborate this. Rutherford College historian Lynne Galvin confirms that the house was known as the Weeden House (Cotton 1987:88; Galvin 2008:111; Satterwhite 2021; U.S. Census 1870, 1900).

Methodist circuit preachers traveled in North Carolina as early as the late eighteenth century, where the rural, agriculture-based population was particularly receptive to Methodism (Clark 1966:14-16): "The frontier spirit of Methodism spread by itinerant preachers at open-air camp meetings that were religious revival and part social gatherings attracted many followers, particularly among people living in isolated rural areas" (Chiat 1997:246). Western North Carolina especially experienced a strong surge in Methodism, with congregations throughout the mid- to late nineteenth century established in both urban and rural areas along particular circuit routes.

Not much is known about the owners of the property in the first quarter of the twentieth century, which include the Robert Garland family and the Connellys of South Carolina. The Satterwhite family allegedly acquired the property in 1944 from a member of the Terrell family who lived next door just north of the property, although deed records indicate a slightly later date. The earliest recorded deed found for the property dates to 1939, whereby the parcel was conveyed from Robert C. Garland of Cherokee County, South Carolina, and Louise J. and Marvin A. Connelly of Spartanburg County, South Carolina, to Elaine Fisher Cook, a widow. Cook then conveyed the property to Reginald and Marie Turner in 1945, who then conveyed the property to Thomas Arthur and Lillian M. Satterwhite in 1950. Thomas Arthur Satterwhite is listed as a "foreman of finishing room" in the 1940 U.S. Census. The Satterwhite family continues to own the property, now owned by Bill Satterwhite, the son of Thomas Satterwhite (Burke County Deed Book [BCDB] E-4/425, G-5/27, 28/545, 33/355, 71/229, 111/626, 518/418; Satterwhite 2021).

The current property owner estimates that the house underwent considerable changes in the 1940s and 1950s, and interior renovations also took place during that time. It is possible that this date range covers the porch reconstruction, changes made to the rear ell, and the small rear porch enclosed. One of the oldest surviving houses along Malcolm Boulevard, the Edwards-Weeden House is in considerable disrepair and is threatened by deterioration (Satterwhite 2021).

2.3.3 Architectural Context and NRHP Evaluation

During the mid-nineteenth century Burke County's population was largely agrarian, with a small planter class and a sizable number of yeoman farmers who likely owned few if any slaves. Primitive frame dwellings or log houses built with hall-parlor or Quaker plans were common among middling farm families in nineteenth-century Burke County, but by the Civil War, the Greek Revival style began to visibly influence the county's architectural fashion, as evidenced by the proliferation of the center hall plan. As a result of the war, farm size decreased while the number of farms correspondingly increased, as over 2,300 enslaved individuals were emancipated and many established their own agricultural ventures or became tenant farmers. The most popular mid- to late nineteenth-century form in rural Burke County, like much of the Piedmont, was the two-story, frame "I-House," which persisted well into the late nineteenth and early

twentieth century. Earlier I-Houses were often built of heavy timber frame construction, but as the number of sawmills increased in the county, more houses began to be constructed with a light frame method with lumber nailed together. I-House interiors were simple in decoration, sheathed with wide wood boards and containing modest architectural detail, typically confined to door or window surrounds and mantels (Cotton 1987:20-27).

Burke County retains a number of mid- to late nineteenth-century, two-story, vernacular I-Houses that constitute solid examples of the type with a solid degree of integrity; however, only a surviving few have been documented in architectural surveys. Nearby in Rutherford College, at 120 Lovelady Road, is the Annis House, a previously documented I-House (BK0404) that exhibits the standard form with original materials. Its one-story porch shelters a three-bay main elevation and brick exterior end chimneys define each side elevation (Plate 39). Like the Edwards-Weeden House, it possesses a two-story rear ell and retains its agricultural outbuildings and corresponding fields. The Annis House appears to retain a higher degree of integrity and is in much better condition than the Edwards-Weeden House. Although the 1996 NCDOT survey determined that it was not eligible, a later examination considering the rarity and integrity of workmanship of the resource type in the county may determine otherwise (Griffith 1996:44).

Immediately north of the Edwards-Weeden House on Malcolm Boulevard is the Terrell House, a two-story, vernacular, frame "L-shaped" form retaining traditional architectural details, such as a wide frieze board, cornice returns, a central pent gable, weatherboard siding, and two-over-two as well as four-over-four wood-sash window bays (Plate 40). A one-story rear ell extends from the east elevation, along with an attached, partially enclosed shed porch. Documented as part of Randall Cotton's architectural survey of Burke County in the 1980s, the Terrell House is comparable to the Edwards-Weeden House both in architectural significance and integrity (Cotton 1987:88).

The Rhoney-Sain House (BK0397), located at 6967 Rhoney Road, exhibits the two-story, I-House form with a one-story, hipped, wraparound porch; however, its second-story windows are recent replacements and the wavy-edge siding does not appear to be original, compromising its integrity (BK0397 Survey File, Rhoney-Sain House, NCHPO 2021) (Plate 41). Another previously recorded I-House is the Franklin-Penland House (BK0061), near Linville Falls. An excellent example of its type built by local builder William MacLamore, the 1883 Franklin-Penland House is a strong example of the I-House form in Burke County, with a two-story portico added in the early twentieth century. The house features a symmetrical, three-bay main elevation and exterior end chimneys. A two-story rear ell with a two-tier, full-width porch extends from the main block (Plate 42). The Franklin-Penland House was listed in the NRHP in 2005 (Griffith 2005:4-11).

The Edwards-Weeden House possesses integrity of location, as it has not been moved from its original site, and its integrity of setting is relatively intact. Integrity of materials, design, and workmanship have been compromised somewhat with the removal of the original porch. The resource retains a fair degree of integrity of feeling and association, functioning in its original purpose as a residence, and it retains the connection with the Satterwhite family. The overall condition is poor as the house is in a deteriorated state.

The Edwards-Weeden House is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Burke County, North Carolina. No known historically significant events occurred in connection with the house, and the property does not represent a good example of historical trends in Burke County.

The Edwards-Weeden House is also not eligible under Criterion B for association with significant individuals in history. Although the families who lived in the house may have been prominent community members of Rutherford College, no single individual could be identified as contributing significantly to the history of Burke County in an outstanding way that has been documented in direct connection with the house.

Likewise, the Edwards-Weeden House is found not eligible under Criterion C for architecture because it lacks integrity and architectural significance. To qualify under Criterion C, a property must also possess the NRHP's seven aspects of integrity, and these have been compromised at the Edwards-Weeden House because of alterations and poor condition. Furthermore, it is an unremarkable example of a common, two-story, frame vernacular type and other, better examples survive in Burke County, such as the Franklin-Penland House (BK0061) and even the Annis House (BK0404).

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Edwards-Weeden House is not likely to have this type of information and does not meet Criterion D.

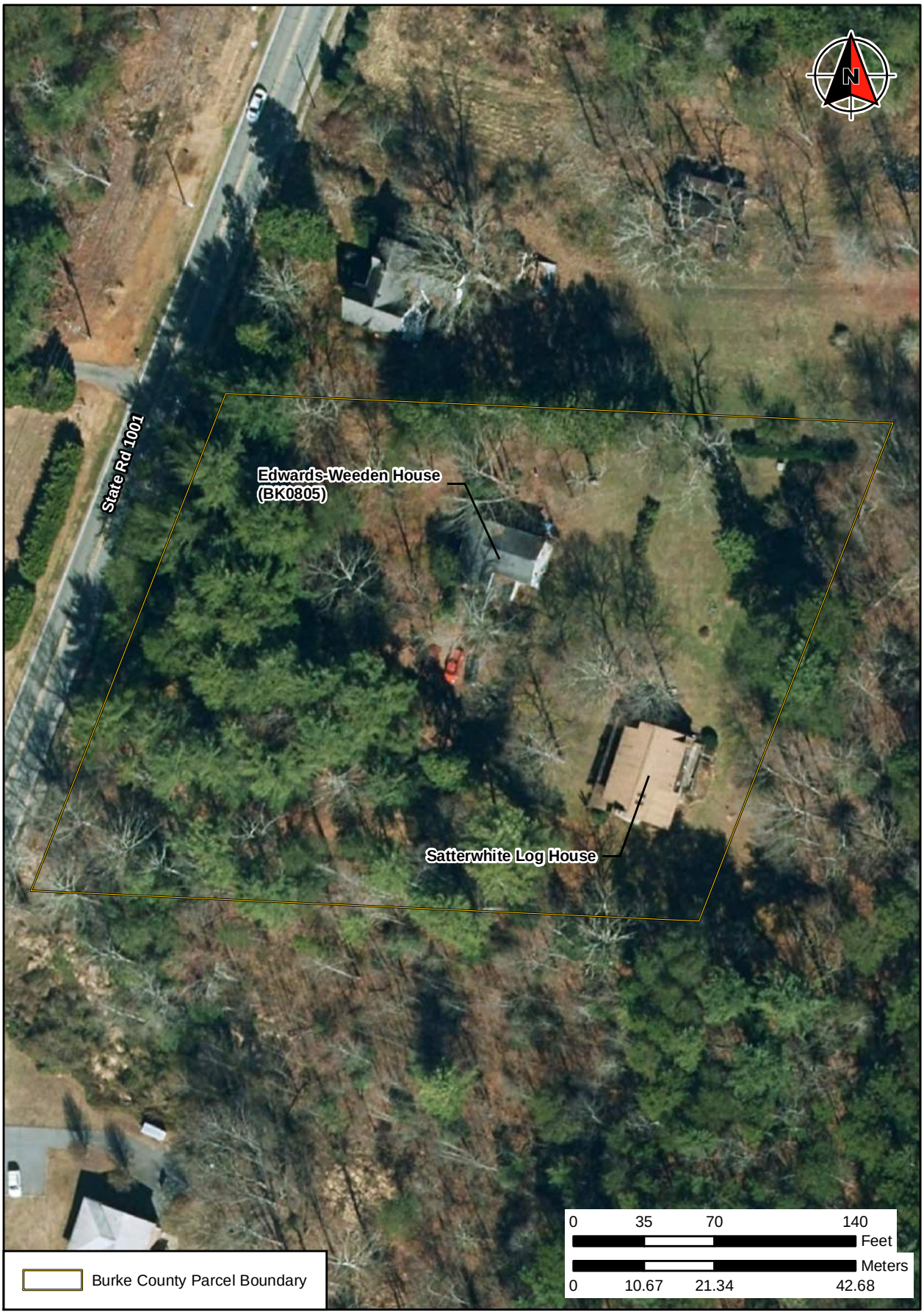


FIGURE 6: Site Plan, Edwards-Weeden House (BK0805), Burke County, North Carolina (Esri World Imagery [Clarity] 2021)

PLATE 32: Edwards-Weeden House (BK0805), West Elevation, Burke County, North Carolina

PLATE 33: Edwards-Weeden House (BK0805), Detail of Porch, West Elevation, Burke County, North Carolina

PLATE 34: Edwards-Weeden House (BK0805), North Elevation, Burke County, North Carolina

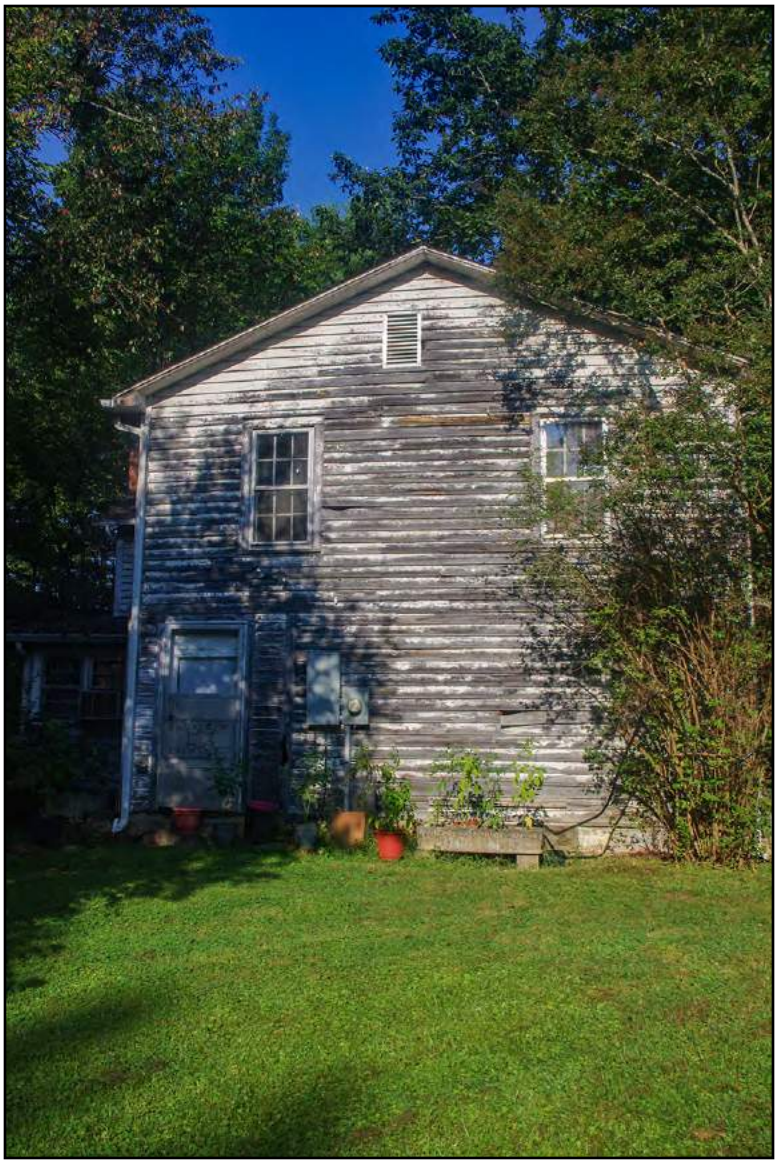


PLATE 35: Edwards-Weeden House (BK0805), East Elevation, Burke County, North Carolina

PLATE 36: Edwards-Weeden House (BK0805), Oblique View of South Elevation, Burke County, North Carolina

PLATE 37: Satterwhite Log House South of Edwards-Weeden House (BK0805), Oblique View of West and North Elevations, Burke County, North Carolina

PLATE 38: Grave Marker for H.H. Edwards at Edwards-Weeden House (BK0805), Caldwell County, North Carolina

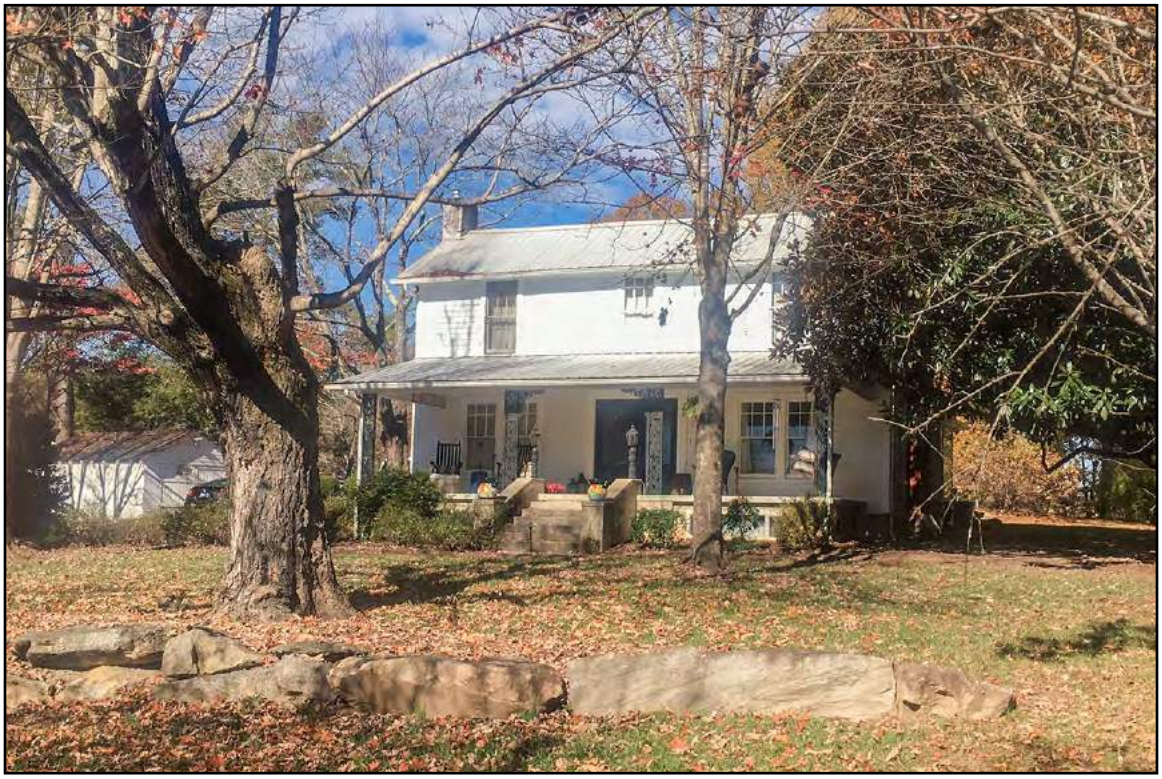


PLATE 39: Annis House (BK0404), South Elevation, Burke County, North Carolina

PLATE 40: Terrell House, 1320 Malcolm Boulevard, North Elevation, Burke County, North Carolina

PLATE 41: Rhoney-Sain House (BK0397), East Elevation, Burke County, North Carolina

PLATE 42: Franklin-Penland House (BK0061), West Elevation, Burke County, North Carolina

2.4 Arthur T. Abernethy House

Resource Name	Arthur T. Abernethy House and Study
HPO Survey Site No.	BK0419
Location	1300 Malcolm Boulevard
PIN	2754013023
Date(s) of Construction	ca. 1900, 1930
NRHP Recommendation	Eligible, Criteria B and C

2.4.1 Setting and Description

Occupying two parcels directly east of the intersection of Malcolm Boulevard with Lovelady Drive, the Arthur T. Abernethy House and Study are situated toward the west edge of the parcel, behind a circular drive that contains a fork leading to the study east of and behind the house. The study is now used as a full residence. A garage and stone spring house stand just northeast of the house. The parcel is heavily wooded. Stone piers mark each entrance to the circular drive near the sidewalks parallel to the roadway and date to the house's construction. A traffic light at the intersection of Lovelady Drive and Malcolm Boulevard is located directly west of the property (Figure 7).

2.4.1.1 Arthur T. Abernethy House and Study, ca. 1900

The two-story, double-pile, frame Arthur T. Abernethy House stands facing Malcolm Boulevard behind a gravel, circular drive (Plate 43). Topped with a side-gable roof, clad in weatherboard siding, and pierced by single and double, four-over-four, wood-sash window bays, the house features a small, one-story portico on its main (west) elevation sheltering the single-leaf entrance flanked by four-light-over-one-panel divided sidelights. Supported by boxed posts resting atop small stone piers forming the stone porch steps, the portico features exposed rafters and is filled with hexagonal shingles in its pediment (Plate 44). Other architectural details include corner boards, exposed rafter tails underneath overhanging eaves, and simple window surrounds. A one-story shed porch extends along the south elevation of the house, supported by square wood posts and connected by a turned balustrade. Porch ceilings are beadboard, and porch floors are painted tongue-and-groove. The porch shelters additional window bays and a secondary, single-leaf entrance. Two window bays pierce the second story of the south elevation. The porch as well as the entire house rest on an impressive stone foundation, much like the stonework indicative of the Waldensian stone masons that were used to build Abernethy's "study" behind the house (Plate 45). Along the east (rear) elevation of the house is a one-story shed porch that has been screened and partially enclosed, accessed from the north side. Three window bays pierce both stories of this elevation (Plate 46). The north elevation features two window bays on each story, evenly spaced (Plate 47). A lone brick chimney rises from the roofline toward the south portion of the house; the house contains two interior chimneys, but only one flue remains.

The interior was not accessible at the time of the survey, and any future access was denied by the tenants. According to former property owner Richard Waggoner, the house featured a central stair, four bedrooms on the second story, and a kitchen in the rear of the house (Waggoner 2021).

Study. Separated from the Abernethy House by a three-rail wood fence, the "Italian Rock" study constructed for Abernethy by Waldensian stone masons stands east of the house, accessed by a gravel drive (Plate 48). The building underwent a renovation in 1953, during which the study was enlarged on its east side with a

frame addition to become a residence. Topped with a side-gabled roof, the walls are stacked, lightly mortared stone, and the addition is clad in vinyl siding. A shed-roof screened porch extends from the north elevation, and a small shed-roof porch, now enclosed, extends off the rear (south) elevation (Plate 49). A single-leaf paneled entrance is the only visible bay on the original 1930s portion of the main elevation, and two-over-two windows pierce the remaining elevations of the original stone study. A stone chimney rises through the center of the roofline. The addition, resting on a concrete-block foundation, features metal casement windows and more modern, vinyl-sash windows. A walkout basement on the building's east elevation is accessed by a single-leaf entrance (Plate 50). The yard to the east is cleared and contains garden space and ornamental plantings.

The interior of the study, although not accessible at the time of the survey, is reported by former property owner Richard Waggoner to be largely intact, with the original stone portion consisting of two rooms.

Storage Building. A one-story, concrete-block storage building topped with a shed roof stands north of the study. It is accessed by batten doors on its south and east elevations (Plate 51).

Storage Shed/Garage. A one-story, front-gabled, single-bay, frame garage stands behind the house to the east. Clad in weatherboard siding, the roof is sheathed in metal V-crimp sheathing and exposed rafters peak out from beneath the eaves. A four-over-four wood--sash window bay pierces its east elevation (Plate 52).

Spring House. A stone, gable-roofed spring house stands northeast of the Abernethy House. Its steeply pitched roof is covered with asphalt shingles and sheathed with wood siding in the gable ends, and exposed rafter tails are visible beneath the eaves. The spring house is accessed by a five-paneled wood door. A four-light window pierces the gable end on the well house's north elevation (Plate 53).

2.4.2 Historical Background

Although an exact construction date for the A.T. Abernethy House is not known, it is thought to have been constructed around the turn of the twentieth century for the Arthur T. Abernethy family, who resided there until the 1960s. The son of Rutherford College founder R.L. Abernethy, Arthur T. (1872-1956) was a theologian, an accomplished academic, and a well-known literary figure of his time, becoming North Carolina's First Poet Laureate in 1948 (Plate 54). He likely purchased or inherited the land upon which he built this home for his family. Below is an excerpt from a survey report prepared for NCDOT Project R-2824B, which originally determined the Abernethy House NRHP-eligible in 1995.

> Arthur Talmage Abernethy (1872-1956), author, minister, and educator, was born in Excelsior (now the town of Rutherford College) in Burke County, one of fourteen children of Robert Laban and Mary Ann Hayes Abernethy, and raised in the R.L. Abernethy House (destroyed). A. T. Abernethy attended Rutherford College and received a degree at the age of fourteen. After pursuing graduate studies at Trinity College, he returned to Rutherford College at age eighteen as a professor of Greek and Latin, purportedly the youngest professor in the nation at that time. He received a doctorate degree from Johns Hopkins University. Desiring a break from teaching, Abernethy began working for the *Philadelphia Record* newspaper. He also contributed to the *Pittsburgh Post, New York Tribune,* and *Milwaukee Sentinel,* and later wrote a regular column for the *Charlotte Observer.* He was married to his seventh wife, Edna V. Beatty Lachot, a young widow from Philadelphia with two children, for over thirty years. A.T. Abernethy "retired" with his bride to Rutherford College in the 1920s *(Heritage,* p. 63, and Powell, p. 4). In one of his columns for the *Charlotte Observer* (July 15, 1928), Abernethy summed up his return: "Here, around 2,000 feet above sea level, too low for heart trouble and too high for mosquitos, a mile from the raucous railroad, I landed on the very spot where I was born."
>
> Abernethy is perhaps best known for his writings, "which ranged from novels and poems to collections of sermons and factual works of a speculative nature" (Powell, p. 4). He authored more

than fifty books, many of which strongly reflect his sense of humor and southern heritage. Through the personal efforts of Abernethy a library, with funds donated by the Carnegie Foundation, was built in Rutherford College in 1907 adjoining the college campus. The Rutherford College Library was the only free public library in the county until 1923, when the Morganton Public Library was established. Abernethy was poet laureate of North Carolina, 1948-1953, under Governors R. Gregg Cherry and W. Kerr Scott. In 1938, the colorful Abernethy received correspondence from President Franklin D. Roosevelt naming him "American Ambassador of Sunshine." In the same year Governor Clyde Hoey named Abernethy the "Ambassador of Sunshine" for North Carolina *(Heritage,* p. 63; Phifer 1977, pp. 302-3, 305; and Powell, p. 4).

While residing in Rutherford College from the 1920s until his death in 1956, Abernethy continued to write, serve as minister at various churches, and even held public office. Abernethy served as magistrate, justice of the peace, and mayor. Of the latter office, Abernethy wrote that "one term was enough for me and more than enough for the citizens." In a number of his articles for the *Charlotte Observer,* Abernethy frequently wrote of his experiences in Rutherford College. The following passage was excerpted from an article in which Abernethy reflects on his decision to "retire" to Rutherford College:

> I think I have merited my quantum of the simple life....Now, at age fifty-seven, I feel that I have as much right to go out in the open and discover all those comforts, quietudes, sombre shades, and other things offered by the world's gardens, as any man in this over-taxed and under-governed republic. And here is what happened: Finding that I had around $10,000 or $15,000 I could do as I merry pleased with, I drew it out of a bank and decided that I would put it into a home. The minute I mentioned home, pictures came to me of ease, comfort, open fireplaces, looking towards the hills, sighing spruces, lolling, lowering clouds, cattle grazing on green summits hard by. And nights for sleep....So I found a spot in the mountains just remote enough from the clash and clang of the city to make life, as I was told, one sweet song. Here I erected my castle, costing me, incidentally, far more than the contractors had figured on, and leaving me fistbusted in a fine mansion... ("Not Truly Rural," n.p.).

In the later years of his life, Abernethy was a regular presence about town and always ready with a story. Abernethy sold the study in 1953 to James McKeenan, who enlarged the structure. The study was sold to Richard Wagoner, whose property adjoins the Abernethy House on the north, in 1967. Following Abernethy's death, the house eventually passed to Willis H. Lachot, the son of Abernethy's widow, and ultimately, the house was sold out of the family in the 1970s or 1980s. The house is unoccupied at present (Rutherford, Wagoner, and White interviews) [Griffith 1996:10-13].

In the 1970s and 1980s, after the Abernethy family's ownership, neighbor Richard Wagonner owned the A.T. Abernethy House and Study for around 20 years, using it as a rental property and only recently having sold it to Brandon Reitzel, who currently owns the property (Wagonner 2021).

2.4.3 Architectural Context and NRHP Evaluation

Traditional forms as seen in the double-pile, symmetrical exterior of the Arthur T. Abernethy House persisted in Burke County well into the late nineteenth and early twentieth centuries, especially in more rural areas like Rutherford College. The Arthur T. Abernethy House is unusual in that it still retains vernacular craftsmanship and a traditional feel during an era when nationally popular Victorian styles were among the most fashionable house style choices. Most other houses built in Rutherford College during the same period were either modest Queen Anne or vernacular dwellings with occasional applied ornamentation referring to the latest architectural trends. Furthermore, as with many other houses in Rutherford College, the Waldensian-built stone foundation may suggest that Waldensian builders constructed the entire house without reference to a particular pattern book design or nationally popular style. Still, the house's front portico vaguely references Craftsman elements, and its massing and window

placement evoke the growing popularity of the Colonial Revival style, which reached Burke County in the 1910s (Cotton 1987:26-35).

In many ways the Colonial Revival style was a backlash against the ornate, busy, and asymmetrical designs of the Queen Anne and other Victorian styles. Often based on historical prototypes alluding to earlier Colonial and Georgian-inspired architecture, Colonial Revival houses prevailed in Burke County during the 1920s, primarily selected by the county's upper professional class of merchants, businessmen, lawyers, and entrepreneurs who sought the latest architectural trends for their homes. The building industry in the early twentieth century changed dramatically as professionalization of the trade ensued, and for the first time, particularly in the Morganton area, some homes began to be designed professionally by architects. Most, however, remained dependent on local builders who replicated designs published in architectural pattern books of the day or mimicked the latest styles of the wealthy in urban areas (Cotton 1987:46-47).

The "Italian Rock Study" located behind the house to the east, now functioning as a residence after a 1953 frame addition, was indeed built by Waldensian builders commissioned by Abernethy, who, as referenced above, may have also constructed the Abernethy House. The stone masons of Valdese built in the native custom of their Italian homeland, which consisted of tightly laid rock or stone structures, at times built into earthen embankments not unlike those in their homeland of the mountainous Cottian Alps. The study is exceptionally significant in the Rutherford College's architectural collection in that it is the only surviving Waldensian-built stone building other than the Abernethy Memorial United Methodist Church. Several other residences with rock foundations may well have been constructed by Waldensian builders, such as the Pons-Farris House and the Pons-Lankford House, but none remain in the town that are exclusively crafted of native rock as seen in the small study. The John H. Pascal House (BK0094) in Valdese retains a number of stone outbuildings comparable to the study, exhibiting the hallmark dry-stone construction techniques using native rock (Cotton 1987:32-34). The reconstructed Waldensian Village on Church Street Northwest in Valdese, established in the late 1990s, harbors the relocated Tron House (BK0274), another fine example of the Waldensian stone craftsmanship (Plate 55).

Similar properties in the Rutherford College area, at least in some aspects, include houses at 109 Lovelady Road, the Annis House (BK0404), and the Jensen House (BK0415). The frame, two-story house at 109 Lovelady Road is more of a four-square form with Craftsman details such as its hipped, central dormer and front porch (Plate 56). Retaining a good degree of integrity, the house, surveyed in 1995 but unrecorded in HPOweb, is another prime example of a house type in Rutherford College infrequently seen among the more ubiquitous modest Queen Annes and period cottages. The Annis House, a frame I-House at 120 Lovelady Road (BK0404), like the Abernethy House, was also built with a traditional form and few architectural elements indicative of a particular, nationally popular style. The Jensen House (BK0415), built in 1938, is a Colonial Revival residence also in Rutherford College, although it may be a renovation of an older I-House. The two-story, single-pile, brick house with rear ell features a full-height Colonial Revival porch and three-bay main elevation, located behind the former Rutherford College campus and north of the now demolished Robert L. Abernethy homeplace (Plate 57). None of the houses described above is quite like the Arthur T. Abernethy House and Study, making comparisons in the vicinity difficult.

The Arthur T. Abernethy House and Study possesses integrity of location, having not been moved from its original site. Its integrity of setting is relatively intact, with the exception of the traffic light installed directly in front of the house at the intersection of Lovelady Road and Malcolm Boulevard. Likewise, integrity of design, materials, and workmanship is high with the survival of original materials and finishes like windows, doors, porch elements, siding, and interior plan. The only exception is the rock study's integrity of design and materials as a result of the mid-twentieth-century addition onto its east end, which converted the study into a residence. The resource retains a fair degree integrity of feeling and association, functioning in its original purpose as residence, although it lacks the direct connection to the Abernethy family and the rock study no longer functions as a study but as a separate residence located on a separate parcel. The Arthur

T. Abernethy House and Study previously qualified for NRHP eligibility under Criteria B and C in 1995, and the resource remains NRHP-eligible as outlined below.

The Arthur T. Abernethy House and Study is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Burke County, North Carolina. No known historically significant events that could be documented occurred in connection with the house.

The Arthur T. Abernethy House is eligible under Criterion B for association with the productive life of Arthur T. Abernethy, a well-known writer, minister, educator, and benefactor in North Carolina. Determined eligible under Criterion B in 1995, that evaluation makes the case with the following description, which still holds true today:

> A.T. Abernethy, a native of Rutherford College, spent the last thirty or more years of his illustrious and colorful life in the small town centered around the college founded by his father. He was both a student and professor at the college, gaining notoriety as the youngest professor in the nation at age eighteen. After a time working outside North Carolina and traveling widely, Abernethy returned to Rutherford College and built his house and study at the north end of town.…Abernethy served as a minister to various churches and held public office in Rutherford College. Through his personal efforts, the first free public library in Burke County was built at Rutherford College in 1907 with funds from the Carnegie Foundation [Griffith 1996:12].

The house is the only standing structure known to have a connection with Arthur T. Abernethy, and only one of a few left in Rutherford College associated with the family.

Retaining a high degree of integrity, the Arthur T. Abernethy House is found eligible under Criterion C for architecture, as a strong example of a two-story, double-pile form and for its vernacular craftsmanship evident in both the house and the study. Properties holding the high degree of integrity such as the Abernethy House should be considered for architectural significance as they become more of a rarity, even if not an exceptional example of a particular architectural style. The study is exceptionally significant in Rutherford College as one of only two surviving Waldensian-built stone buildings.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Arthur T. Abernethy House is not likely to have this type of information and does not meet Criterion D.

2.4.4 NRHP Recommended Boundaries

The proposed NRHP-eligible boundaries, delineated in Figure 8, for the A.T. Abernethy House and Study include the entirety of the roughly 1.0-acre parcel, which consists of the house, garage, spring house, semi-circular driveway, and landscape features, as well as the parcel upon which the study stands. The boundaries follow the north and south tax parcel lines; however, the west boundary is drawn to reach to the edge of the sidewalk to include the stone piers that mark the entrance to the driveway, an original landscape feature. Also within the parcel contributing to the property's setting are small wooded areas and part of the clearing east of the study, along with the study's concrete-block outbuilding. The total boundary contains approximately 2.8 acres across the two parcels (see Figure 8).

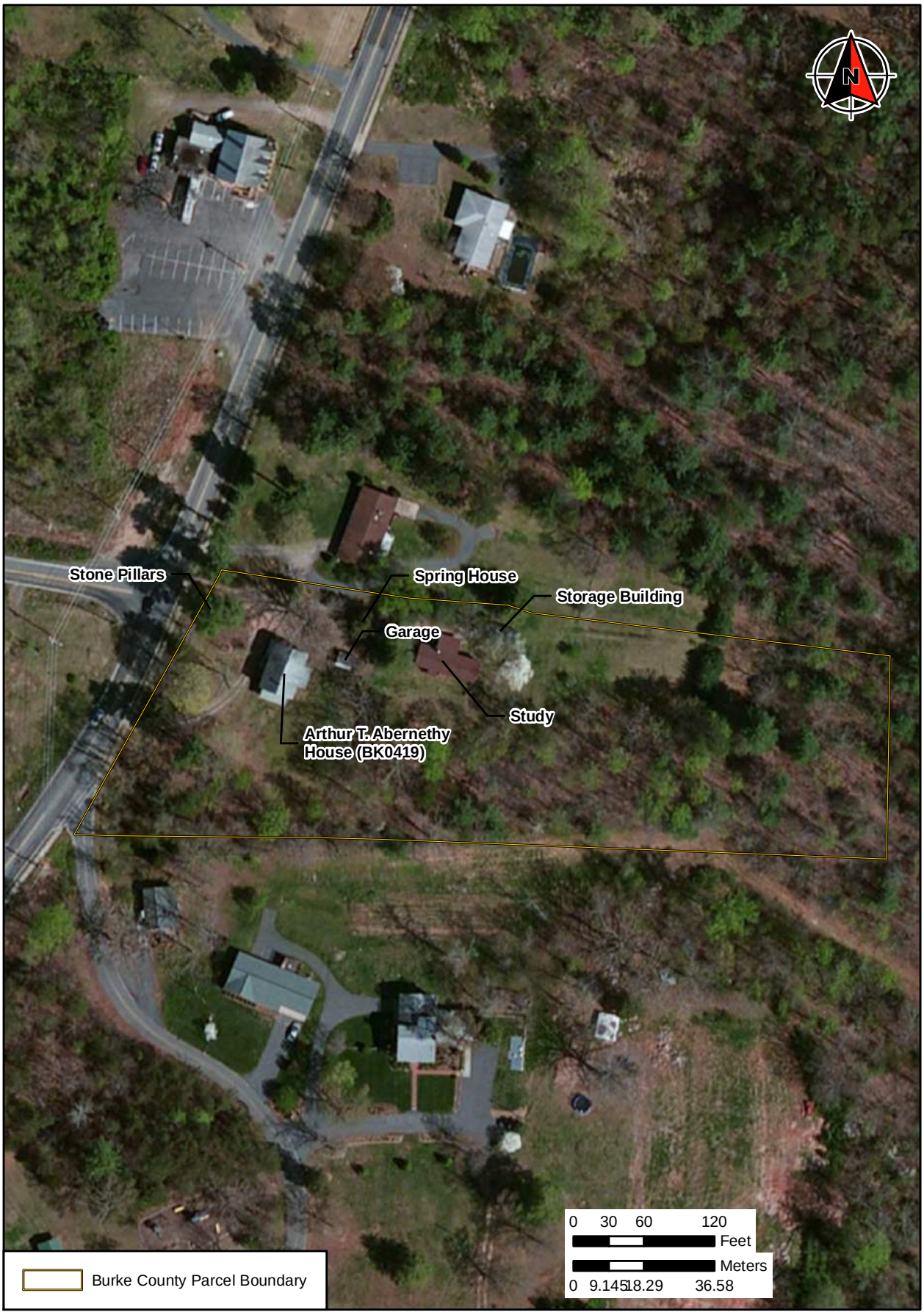


FIGURE 7: Site Plan, Arthur T. Abernethy House and Study (BK0419), Burke County, North Carolina (ESRI World Imagery [Clarity] 2021)

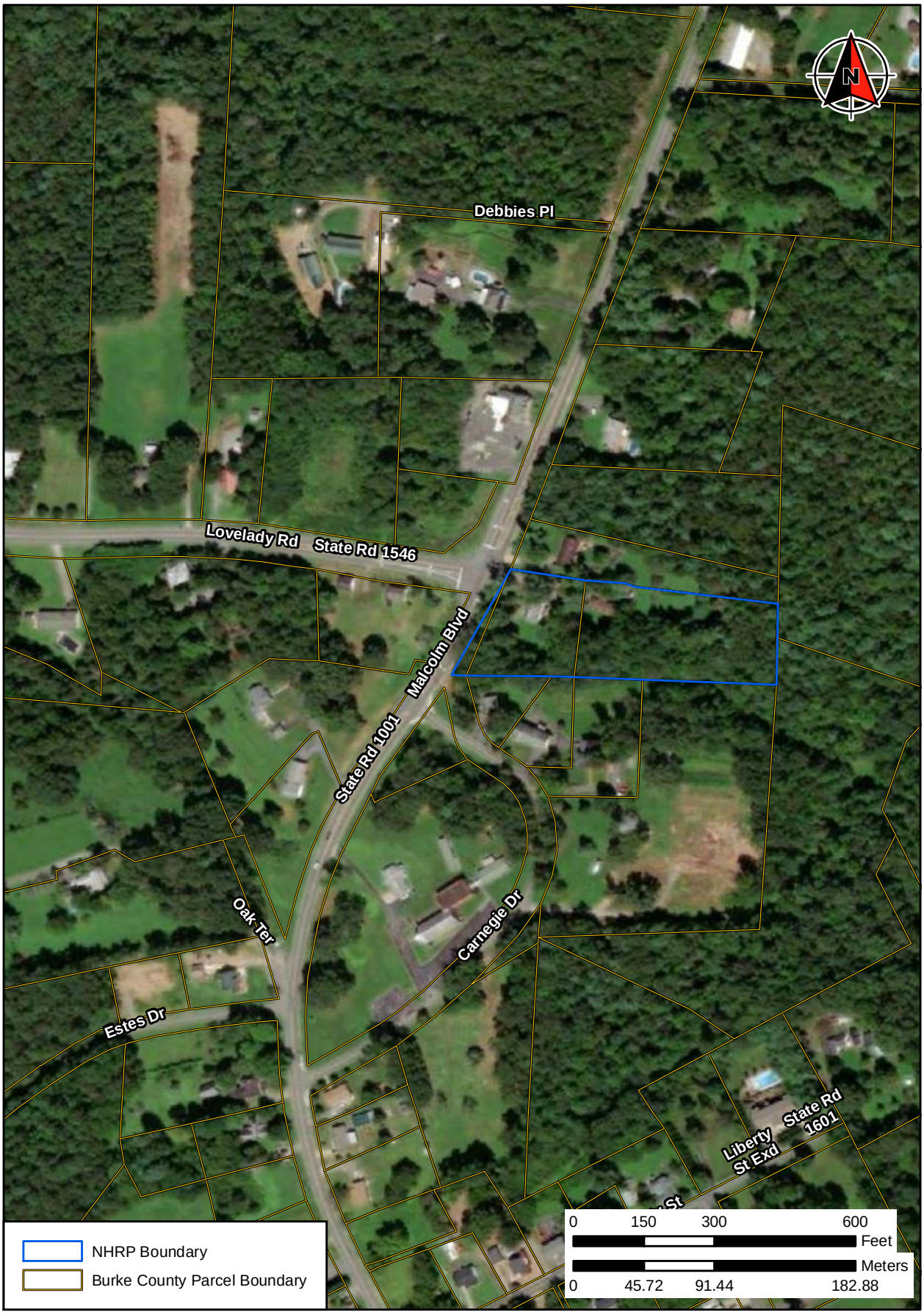


FIGURE 8: Recommended NRHP Boundaries (in blue) for Arthur T. Abernethy House (BK0419), Burke County, North Carolina (Esri World Imagery 2021)

PLATE 43: Arthur T. Abernethy House (BK0419), Oblique View of North and West Elevations, Burke County, North Carolina

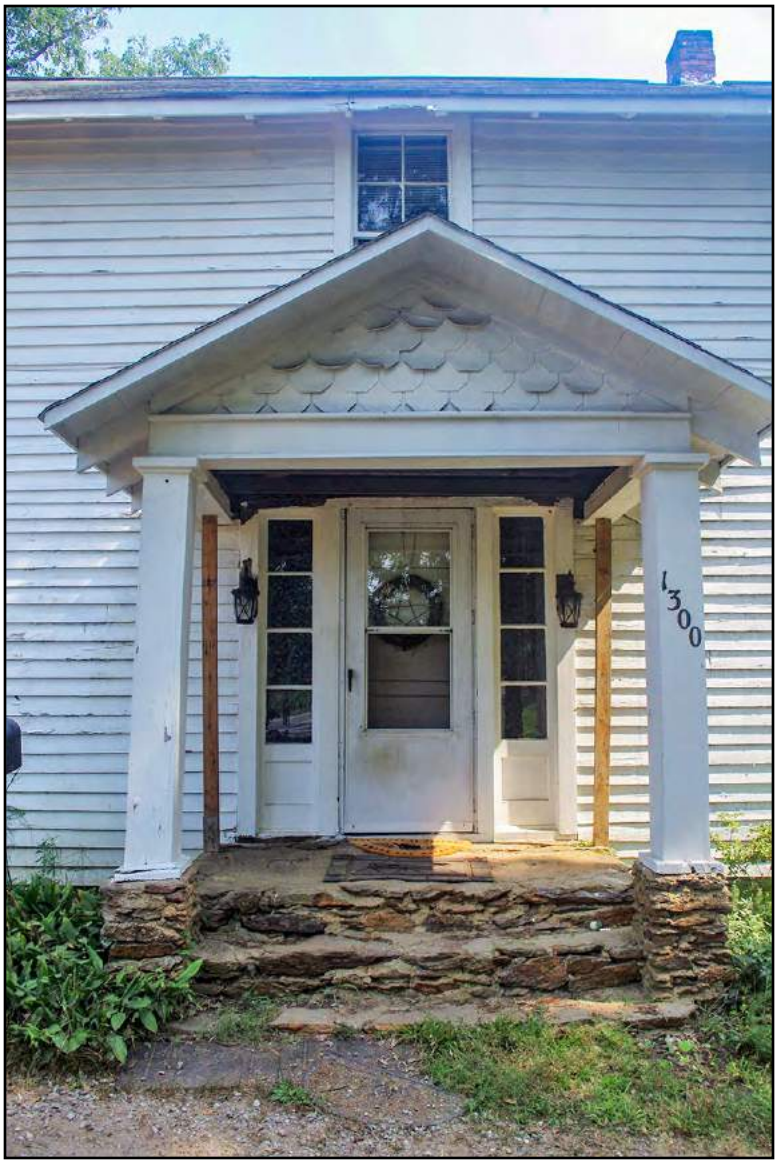


PLATE 44: Arthur T. Abernethy House (BK0419), Detail of Porch, West Elevations, Burke County, North Carolina

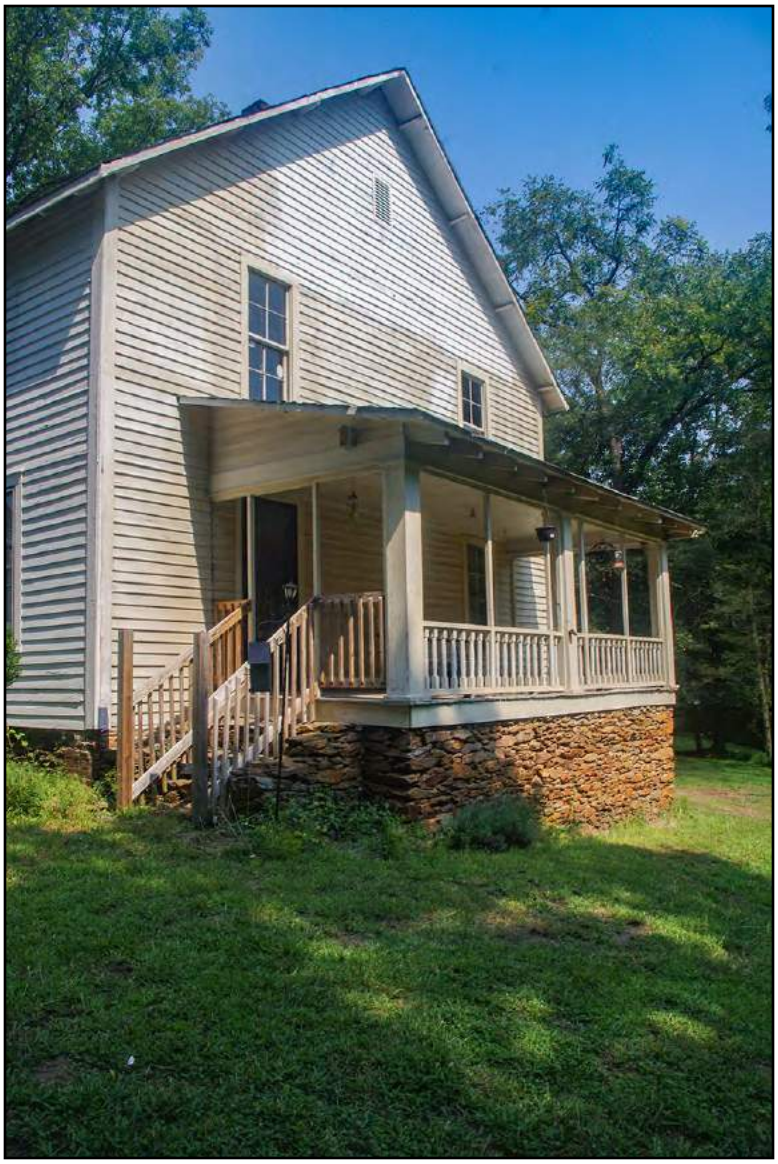


PLATE 45: Arthur T. Abernethy House (BK0419), Detail of South Porch, Oblique View of South Elevation, Burke County, North Carolina

PLATE 46: Arthur T. Abernethy House (BK0419), East Elevation, Burke County, North Carolina

PLATE 47: Arthur T. Abernethy House (BK0419), Oblique View of East and North Elevations, Burke County, North Carolina

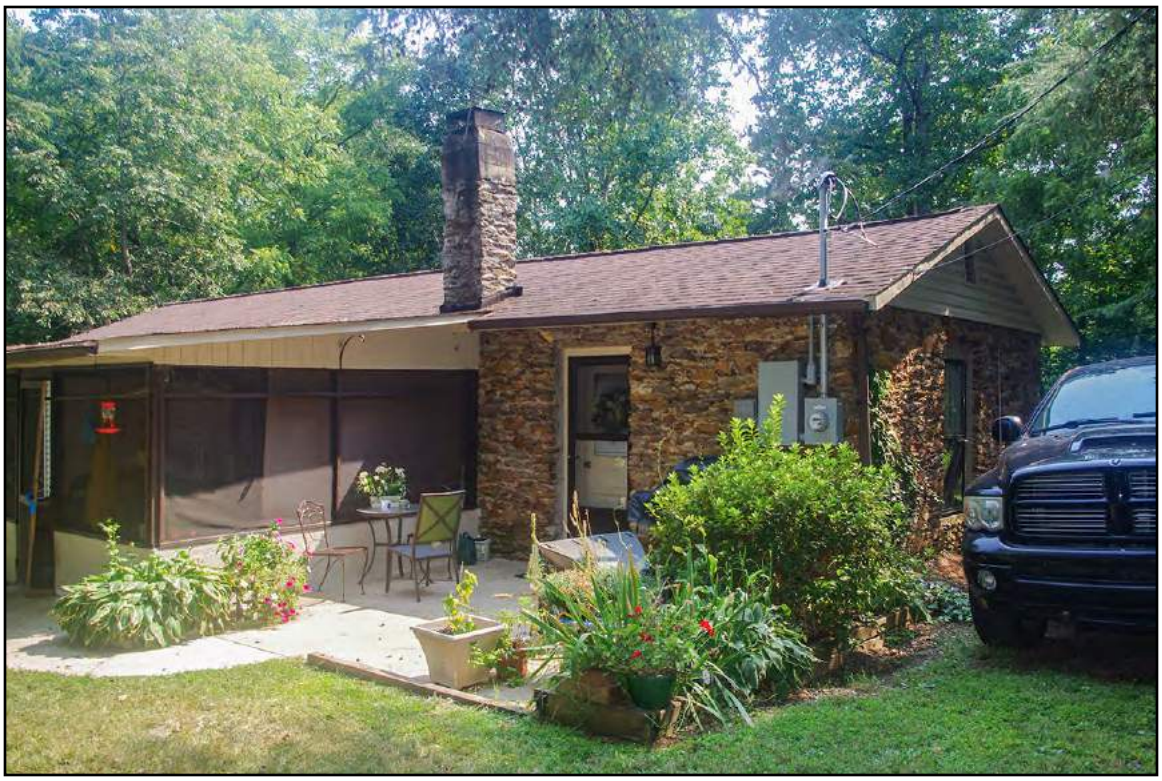


PLATE 48: Arthur T. Abernethy House (BK0419), Study, Oblique View of West and North Elevations, Burke County, North Carolina

PLATE 49: Arthur T. Abernethy House (BK0419), Study, Oblique View of South Elevation, Burke County, North Carolina

PLATE 50: Arthur T. Abernethy House (BK0419), Study, Oblique View of East and North Elevations, Burke County, North Carolina

PLATE 51: Storage Building North of Study, Arthur T. Abernethy House (BK0419), South Elevation, Burke County, North Carolina

PLATE 52: Garage, Arthur T. Abernethy House (BK0419), West and North Elevations, Burke County, North Carolina

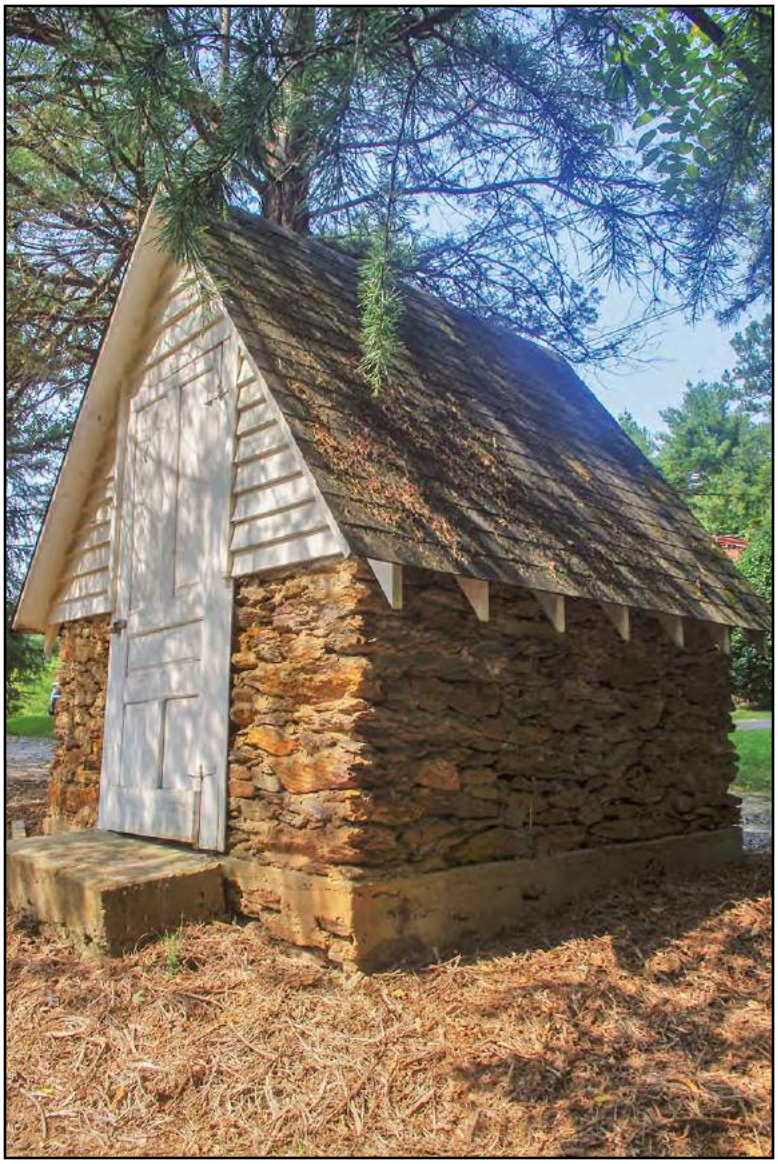


PLATE 53: Spring House, Arthur T. Abernethy House (BK0419), East and South Elevations, Burke County, North Carolina

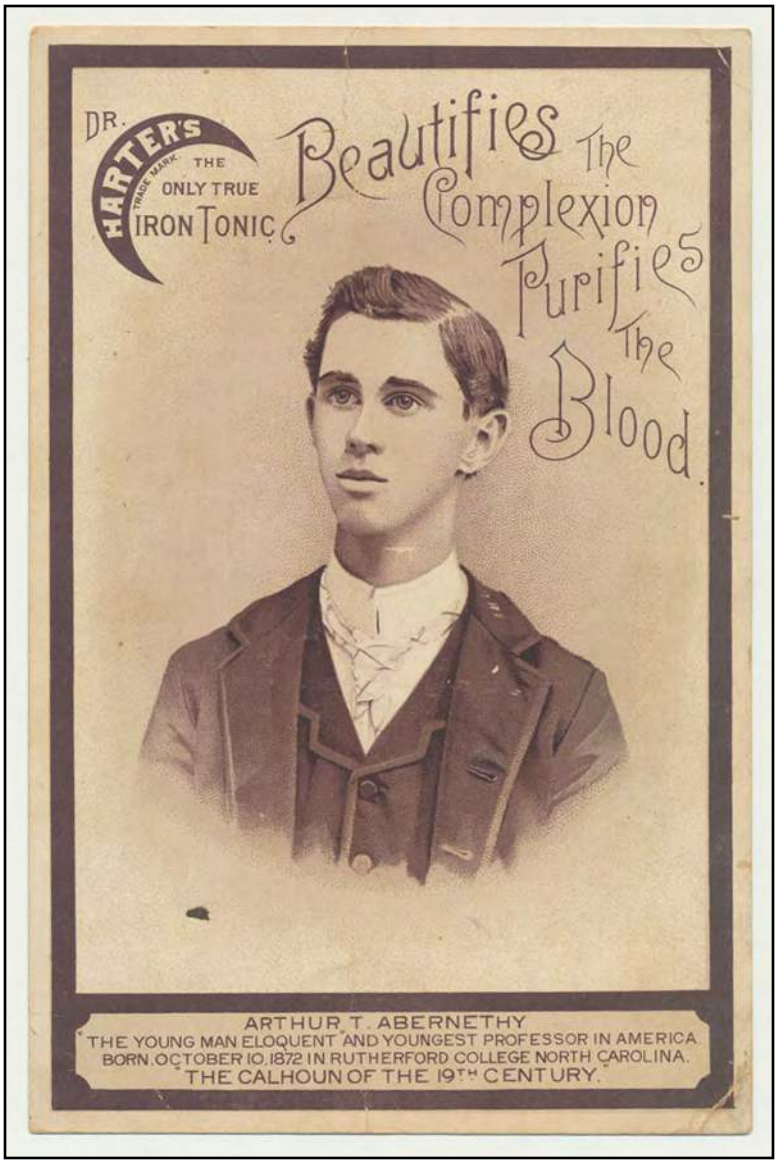


PLATE 54: Arthur T. Abernethy (1872-1956) (North Carolina Department of Natural and Cultural Resources)

PLATE 55: Tron House Among Other Structures in the Reconstructed Waldensian Village, Facing East, Valdese, Burke County, North Carolina

PLATE 56: House at 109 Lovelady Road in Rutherford College, Facing West, Burke County, North Carolina

PLATE 57: Jensen House (BK0415), Facing Northeast, Burke County, North Carolina

2.5 First Baptist Church of Rutherford College

Resource Name	First Baptist Church of Rutherford College
HPO Survey Site No.	BK0806
Location	1200 Malcolm Boulevard
PIN	2754000498
Date(s) of Construction	1949, 1958, 1973
NRHP Recommendation	Not Eligible

2.5.1 Setting and Description

Located on the former site of the original Rutherford College campus, the First Baptist Church of Rutherford College occupies an almond-shaped, roughly 5-acre parcel, situated in the center of the parcel set back generously from Malcolm Boulevard. To the northeast, behind the main church building, are the education wing, fellowship hall, parsonage, and picnic shelter. A parking lot borders the far east edge of the parcel, adjacent to Carnegie Street. The north edge of the parcel is wooded, and the south portion is mostly cleared; a driveway from Malcolm Boulevard divides the two. A cemetery belonging to Abernethy Memorial United Methodist Church stands directly south of the property. Carnegie Street, part of the original Rutherford College campus plan, circles around the rear boundary of the property (Figure 9).

2.5.1.1 First Baptist Church of Rutherford College, 1958

Designed with a Classical, front-gabled "temple" form, the First Baptist Church of Rutherford College is clad in a running-bond brick veneer and features a central tower on its main elevation, dividing the roof's ridge, crowned with a conical steeple (Plate 58). The tower's four elevations are pierced with arched vents. Its gabled, frame portico, supported by Ionic columns and sheathed with vinyl siding, shelters a double-leaf entrance with a Classical surround and a stained-glass transom that reads "First Baptist Church Welcome" (Plate 59). A stone ADA ramp leads to the entrance from the church building's north side. Sidewalks with sets of stairs lead to the entrance from the parking lot directly in front of the church. Side elevations of the church building are pierced by six arched, stained-glass window bays, evenly spaced, and are accented by segmental arched lintels and rowlock sills. Three-part storm windows protect the stained glass. The church's south elevation also contains two two-light horizontal-sash metal window bays, one on each story (Plate 60). The east (rear) elevation of the church building contains two window bays on the second story, both two-light horizontal sash, and a single-leaf entrance on the first story sheltered by a flat metal awning (Plate 61).

The interior of the church is presently closed to the public, as the congregation currently lacks a pastor, and all attempts at contact through email, phone, and in person were not successful. Phone numbers of members were provided to the surveyor, but calls were not returned. It appears that the church website has not been updated since 2015.

Education Wing, 1973. A two-story, brick-veneered education wing was constructed on the northeast side of the church in the early 1970s, topped with a flat roof. Its main (west) elevation contains three bays on each story, one a double-leaf entrance sheltered by a gabled portico and the others one-over-one sash replacement windows. The wing's north elevation is pierced by five window bays on each story as well as a central, single-leaf entrance on the first story (Plate 62). The rear (east) elevation of the education wing

contains a single-leaf entrance. which is connected via a metal, flat-roofed sidewalk canopy to the fellowship hall building. The remainder of the east elevation is pierced by a single window bay on the first story and two window bays on the second story. The wing's south elevation has four window bays on its first story and five window bays on its second story, with a brick smoke stack at the junction of the church and education wing building.

Fellowship Hall, ca. 1980-1995. A one-story, frame fellowship hall building clad in vinyl siding has a side-gabled roof covered in metal and rests on a stone-veneered foundation. Two two-over-two horizontal-light sash window bays pierce each side of the south elevation on either side of the single-leaf entrance. The building's west elevation contains a central, single-leaf entrance and another window bay; the north elevation has one single-leaf entrance at the far eastern end. A metal carport sits directly north of the north elevation (Plate 63).

Picnic Shelter, ca. 1960. A one-story, gabled, concrete-block and frame picnic shelter stands north of the church building. Topped with a metal, gabled roof, the south portion of the picnic shelter is constructed of concrete-block walls with weatherboard filling the gable ends. Its south elevation features a double-leaf, six-light-over-three-panel entrance, flanked by four-light metal fixed-sash window bays. Additional two-light fixed window bays pierce the east and west elevations of the structure. A single-leaf, six-light-over-three-panel entrance is also located on the north elevation of the concrete-block portion, and the remainder of the shelter extends northward, constructed with a frame roof and wood posts resting on a concrete floor (Plate 64).

Parsonage/Rental House, 1950. A one-story, frame Ranch house formerly serving as the church parsonage stands north of the church building. Featuring a side-gabled roof and a front-gabled small portico sheltering the single-leaf entrance, the house is clad in vinyl siding. Replacement single and three-part "picture" windows pierce the main elevation on either side of the entrance. An engaged, partially open carport is located at the south end of the house, supported by metal posts. The house rests on a concrete-block foundation (Plate 65).

2.5.2 Historical Background

Prior to the First Baptist Church of Rutherford College's organization, the site was home to the Rutherford College campus and the Carnegie Library, built in 1907 with the help of funds from the Andrew Carnegie Foundation. A fire destroyed a majority of these buildings during the late nineteenth century, which were later rebuilt at a new site located near the present Valdese General Hospital. The church congregation, formed from a revival led by local Burke County pastor and evangelist Rev. Luther Snipes, initially held its first services in 1948 in a tent meeting, and later in the vacant Carnegie Library before its demolition.

Baptists were active in Burke County beginning in 1785, and by 1827 most were part of the Catawba River Association. By 1900 around 31 Baptist churches operated in Burke County (Phifer 1979:38-39). Founding congregation members remember the library building as "…having the assembly room and one class room available. The building also featured a hall and front porch [Plate 66]. In that building we reached for Sunday school an enrollment of 62 with an average attendance of 39" (Galvin 2008:194). Equipment purchased from the Church of God in Drexel, such as pews, a piano, and tables, served the church during its early years (Galvin 2008:194). In February 1949 Rev. M.I. Harris led the formal organization of the First Baptist Church of Rutherford College, although the church property did not legally belong to First Baptist Church of Rutherford College until 1953. The 1953 deed describes the conveyance of the present church lands to the Trustees of the First Baptist Church of Rutherford College from several Pitts family members, including O.H. and Mary G. Pitts, R.S. and Gladys A. Pitts, P.H. and Vivian Pitts, and N.O., Jr. and Lillian R. Pitts (BCDB 132/371, 2275/753).

In March 1957 the congregation voted to build a new sanctuary, and the new building was dedicated in February 1958. The newly erected church did not have running water or a modern heating system until later in the twentieth century. The church eventually purchased and acquired the Carnegie Library property, described as follows:

> According to a church member, in August 1951, the First Baptist Church was given the opportunity to buy the Carnegie Library that had served the college. Mr. A.T. Abernethy was paid $300.00 for the lot. However, in January, 1952, lawyers from the University of North Carolina advised that the abandoned library property had been claimed by the University of North Carolina and in order to receive a clear title to the building and property, the church must pay $2,000. The congregation paid the designated amount in order to obtain the title [Galvin 2008:194-196].

In 1973 the church constructed a two-story addition that housed a fellowship hall, classrooms, and office space, with a picnic shelter and kitchen erected slightly earlier. It was at that time the church decided to raze the Carnegie Library as the building no longer served the needs of the church. Built with funds from the Andrew Carnegie Foundation, local interest arose in saving the threatened library, but lack of funds prohibited its preservation; the library's cupola was removed and saved by Dr. Emmett White for $500, first sitting atop the town hall, and later preserved as a memorial in the town's public park, where it currently stands (Hall 1977b).

2.5.3 Architectural Context and NRHP Evaluation

Postwar church architecture in Burke County followed a traditional temple form, most often brick, with applied elements expressing the Colonial or Classical Revival styles, such as large porticos supported by commanding columns and a symmetrical façade with Classical architectural elements. Side elevations of sanctuaries were frequently lined with regularly spaced, stained-glass windows. The trend toward a conservative, less ornate Classicism followed on the heels of the proliferation of Gothic-inspired Victorian-era churches in the late nineteenth century. The level of refinement in church design in Burke County can be split by countryside versus urban center rather than by denomination, with cities most often possessing the high-style, architect-designed ornate church buildings in comparison with the simple and modest, traditional church architecture in rural areas (Bishir 1990:459-461; Cotton 1987:42-44).

Small, rural Baptist churches in Burke County were most often architecturally restrained, even primitive. Congregation members provided the funding to build their church structures entirely themselves, and thus church design mirrored the building practices of the working- and middle-class families living in the area. Historian Edward Phifer (1979:39) notes of the Baptist movement in Burke County, "Many of these followed an identical pattern of development, progressing from a brush arbor meeting to a one-room log church, later to a frame building, and finally to a red-brick structure." The First Baptist Church of Rutherford College followed this progression somewhat, growing at first out of a tent revival, then progressing to the frame Carnegie Library building, and finally building its present church during the 1950s.

Although some congregations in North Carolina during the mid-twentieth century chose to employ Modernist designs for their new sanctuaries, many still selected conservative, classically inspired church buildings that evoked the Colonial and Classical Revival styles. Architect Hobart Upjohn of New York designed several distinguished examples in North Carolina of these churches in the early twentieth century, and other congregations emulated these in a more restrained fashion over the following decades (Bishir 1990:460-462).

A plethora of strong examples of the type and style expressed in First Baptist Church of Rutherford College exist in Burke County and in surrounding nearby areas. One such example is the First Baptist Church in Valdese, a handsome, brick, Classical Revival church dedicated in 1965 with an impressive, freestanding bell tower along with brick wings for Sunday school classrooms, a fellowship hall, chapel, offices, and

other supporting spaces (Jolly-Deakle 2020:1; Valdese First Baptist Church 2021) (Plate 67). Another example located in Caldwell County, Pooveys Grove Baptist Church (CW0197), possesses the brick temple form with a Classical frame steeple and a gabled portico with arched pediment sheltering the entrance. Poovey's Grove Baptist Church was determined not eligible for the NRHP in 2011 and retains better integrity than First Baptist Church of Rutherford College (Plate 68). Another prime comparable to First Baptist Church of Rutherford College in Burke County is Antioch Baptist Church outside Morganton. The brick edifice features a commanding gabled, pedimented portico supported by Doric columns, sheltering the double-leaf entrance topped with a broken pediment and Classical surround (Plate 69). Nearly all of these mid-twentieth-century brick churches have a two-story education wing attached to the rear, which may also house a fellowship hall.

The First Baptist Church of Rutherford College possesses integrity of location, having not been moved from its original site. Its integrity of setting is relatively intact. The church retains a medium degree of integrity of materials, design, and workmanship, retaining some original architectural elements while having replacement vinyl siding, doors, and windows on other portions of the complex. The resource's integrity of feeling and association is good, functioning in its original purpose as a church with the original congregation. Overall, the First Baptist Church of Rutherford College possesses a medium degree of the seven aspects of integrity that are required for a property to be eligible for the NRHP.

The First Baptist Church of Rutherford College is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Burke County, North Carolina. The church is not particularly significant in the history of Burke County, and no known historically significant events occurred in connection with the church.

The First Baptist Church of Rutherford College is also not eligible under Criterion B for association with significant individuals in history. No single individual or pastor could be identified who contributed significantly to the history of Burke County in an outstanding way that has been documented in direct connection with the church.

Likewise, the First Baptist Church of Rutherford College is not eligible under Criterion C for architecture because it lacks significance and integrity. The church is an unremarkable example of its style, and other Neoclassical Revival and Colonial Revival mid-twentieth-century churches survive in Burke County and surrounding areas that are better examples of the type, such as Antioch Baptist Church near Morganton and First Baptist Church of Valdese, which also retain a higher degree of integrity.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The First Baptist Church of Rutherford College is not likely to have this type of information and does not meet Criterion D.

FIGURE 9: Site Plan, First Baptist Church of Rutherford College (BK0806), Burke County, North Carolina (Esri World Imagery [Clarity] 2021)

PLATE 58: First Baptist Church of Rutherford College (BK0806), Oblique View of West and South Elevations, Burke County, North Carolina

PLATE 59: First Baptist Church of Rutherford College (BK0806), Detail of Entry, West Elevation, Burke County, North Carolina

PLATE 60: First Baptist Church of Rutherford College (BK0806), South Elevation, Burke County, North Carolina

PLATE 61: First Baptist Church of Rutherford College (BK0806), Interior of Sanctuary, Facing East, Burke County, North Carolina

PLATE 62: Education Wing (1973), First Baptist Church of Rutherford College (BK0806), West and North Elevations, Burke County, North Carolina

PLATE 63: Fellowship Hall (1980-1995), First Baptist Church of Rutherford College (BK0806), West and South Elevations, Burke County, North Carolina

PLATE 64: Picnic Shelter (ca. 1960), First Baptist Church of Rutherford College (BK0806), South and East Elevations, Burke County, North Carolina

PLATE 65: Parsonage (ca. 1950), First Baptist Church of Rutherford College (BK0806), Oblique of West and South Elevations, Burke County, North Carolina

PLATE 66: Carnegie Library of Rutherford College Used by First Baptist Church of Rutherford College During the 1950s, Demolished in the 1970s (Galvin 2008:195)

PLATE 67: First Baptist Church of Valdese, 1965, Valdese, Burke County, North Carolina

PLATE 68: Poovey's Grove Baptist Church (CW0197), Oblique of East and South Elevations, Caldwell County, North Carolina

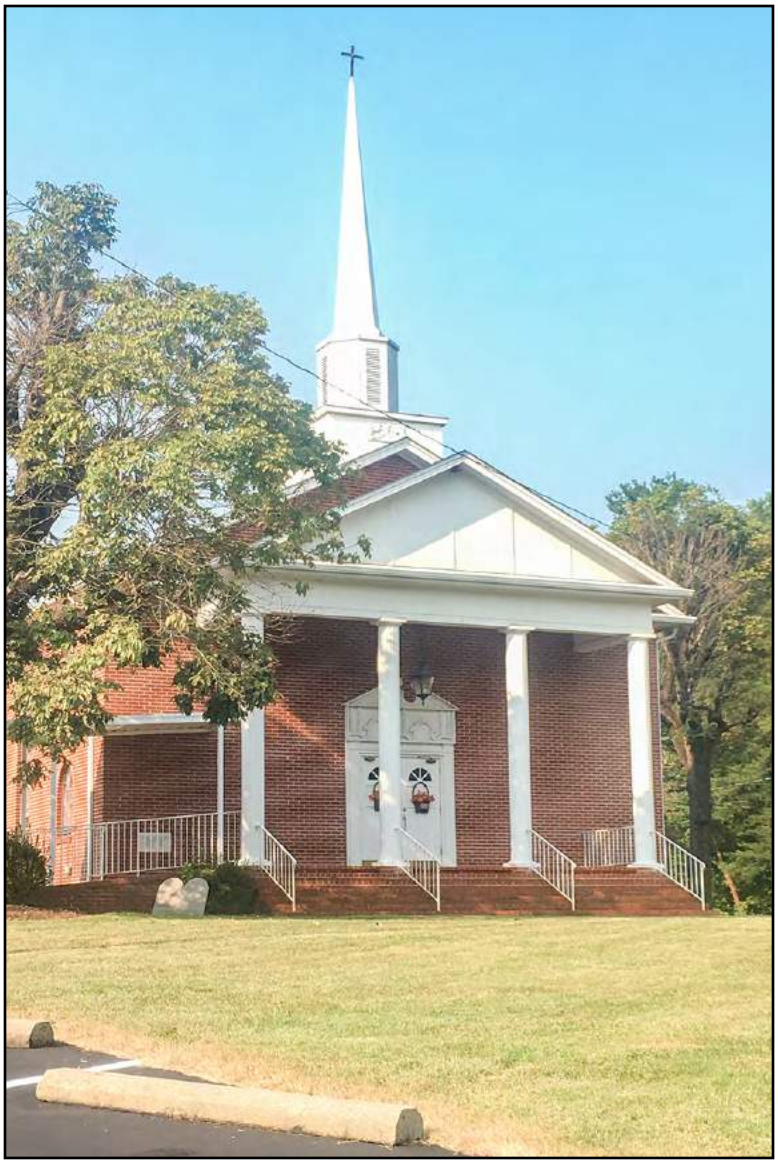


PLATE 69: Antioch Baptist Church, Oblique View of South Elevation, Burke County, North Carolina

2.6 Jacumin-Bronson House

Resource Name	Jacumin-Bronson House
HPO Survey Site No.	BK0807
Location	101 Oak Terrace
PIN	2744904401
Date(s) of Construction	ca. 1900
NRHP Recommendation	Eligible, Criterion C

2.6.1 Setting and Description

Sited on the north edge of a rectangular parcel west of Malcolm Boulevard, the Jacumin-Bronson House is accessed by Oak Terrace, which winds and curves upward to the west to where it reaches the house, its elevation raised significantly above the level of Malcolm Boulevard. A frame garage stands to the house's immediate southwest, and a frame barn building occupies the far west end of the parcel. Most of the parcel is cleared or lightly dotted with mature trees (Figure 10).

2.6.1.1 House, ca. 1900

Facing east on an incline screened by trees from Malcolm Boulevard, the one-and-one-half-story, or "story-and-a-jump," frame dwelling is highly intact with few alterations to original materials. The side-gable roof, covered in asphalt shingles, contains slightly overhanging eaves sheltering walls sheathed in asbestos shingles and pierced with two-over-two and six-over-six wood-sash window bays (Plate 70). The architectural highlight of the house is its shed porch, with its rafters and ceiling exposed, supported by bracketed, tapered, wood porch posts (Plate 71). The decorative, ogee-shaped sawn brackets are especially noticeable and rare in the area (Plate 72). A central, single-leaf, paneled entrance door features a wide surround of four-light divided sidelights and a five-light divided transom (Plate 73), Window bays of six-over-six wood sash flank the central entrance, evenly spaced. The main, single-pile block of the house has a one-story gabled rear ell attached to the rear elevation. The north elevation of the main block is pierced by a two-over-two wood-sash window bay on each story, and the rear ell contains pairs of two-over-two wood-sash windows (Plate 74). The west elevation of the house consists of a shed porch, now enclosed with windows, and a shed addition built onto the rear of the main block. The porch features a band of one-over-one sash window bays that spans all elevations, with a single-leaf entrance on the west elevation. The shed addition contains two small, three-over-one light window bays. The south elevation clearly shows two shed additions constructed onto the gabled main block of the house (Plate 75). This elevation contains a two-over-two wood sash window in the upper story of the main block, with a more modern, multi-light square-shaped bay window projecting from the elevation on the first story (Plate 76). An additional two-over-two wood-sash window pierces the addition, and a similar window pierces the south elevation of the rear ell. Two brick chimneys rise from the roofline of the house, evenly spaced, and another brick chimney rises from the rear ell. The house rests on a brick foundation.

The interior of the Bronson House was not accessible during the time of the survey; however, looking in the windows revealed a hall-parlor interior plan and many interior modifications, including a brick, stepped fireplace mantel, carpeting, and modified interior doors and trim.

Garage/Storage Shed. A one-story, concrete-block and frame storage building and garage stands west of the house, in the rear yard and accessed by a driveway. Topped with a side-gabled roof sheathed in metal, the storage building has a three-bay main (east) elevation consisting of a four-over-four wood-sash window

bay, a central batten door, and a four-light fixed window bay (Plate 77). The garage's north elevation contains a modern garage door/bay, and its gable ends are filled with asbestos shingles. A frame shed porch extends from the west elevation, supported by round metal posts resting on a concrete floor. This elevation of the garage is pierced by one four-light window bay. The garage's south elevation contains a four-over-four wood-sash window bay and a six-over-six wood-sash double window, sheltered by a shed porch extension supported by decorative metal brackets (Plate 78).

Barn. A frame barn with shed extensions resting on a stone foundation stands in the far west portion of the parcel, topped with a front-gabled roof. Sheathed in vertical wood siding, a double-leaf batten door accesses the hay loft. An open bay provides access to the barn's main storage chamber, and a shed porch extends off its south elevation to provide additional covered but open storage, supported by wood posts. The deep, mortared stone foundation, repaired with bricks over the years, contains a small door accessing additional storage space (Plate 79).

2.6.2 Historical Background

The earliest deed recorded for the property records the conveyance from Sallie M. Marshall White to Leroy and Evelyn Bronson in 1943. The deed describes adjacent lands to the roughly 3-acre parcel as owned by the Marvin Lowder, Jacumin, and Estes families. According to neighboring property owners, "Frisky" (Leroy) Bronson was recruited from Texas to play football at Rutherford College, eventually marrying Evelyn Pons and making his home in the area. Bronson's wife Evelyn was the daughter of the Rev. John Pons, an Italian immigrant and minister of the Valdese Presbyterian Church as well as a professor at Rutherford College. Evelyn's mother was a member of the Jacumin family, who were landowners in the local community. It is likely that Bronson purchased the property via his wife, who may have acquired the property through her mother's family. Leroy Bronson is listed in the U.S. Census (1940) as working in a nearby hosiery mill. In 2002 the Bronsons sold the property to Walter Joe and Sharon Christie Jacumin, who continue to own the property (BCDB 62/86, 1104/452, 1104/455; Satterwhite 2021; U.S. Census 1940).

The Jacumin-Bronson House was likely part of a farm during the late nineteenth century, as evidenced by the survival of the barn and surrounding cleared fields. Burke County farmers during the Colonial and Antebellum periods largely practiced subsistence farming until the market revolution and cash crops became commonplace, with common Burke County products such as corn, tobacco, and livestock. However, only small numbers of plantation-based and yeoman farmers resided in Burke County in comparison with other areas throughout North Carolina, partly because of the rocky terrain and poor soil conditions and also because of the strong manufacturing sector that came to fuel much of the county's economy (Phifer 1979:75-85). When the Waldensians arrived in Burke County during the 1890s, farms were on average much smaller and valued at a lower cost; many families were engaged in other occupations in addition to farming in order to earn a living. Early twentieth-century cash crops in Burke County included fresh produce, corn, fruits, and dairy and poultry products; grapes from Waldensian vineyards were also a local commodity. Farm tenancy and sharecropping became commonplace during the early twentieth century years and continued throughout the Great Depression (Phifer 1979:80-83) .

2.6.3 Architectural Context and NRHP Evaluation

The Jacumin-Bronson House is a prime example of a nineteenth-century vernacular type commonly found in rural Burke County with applied, nationally popular Victorian architectural details. Burke County vernacular architecture in the mid- to late nineteenth century consisted of simple frame, single- and double-pile forms, often with three-bay main elevations with rear appendages and ells, in addition to the I-House form and L-shaped dwellings. In more rural areas, such as Rutherford College, common forms familiar to local builders were often embellished with the latest architectural fashion, a more economical choice than

the full execution of a Queen Anne residence. Still, the one-and-one-half-story form with rear ell is rather unconventional in Burke County in comparison with the two-story I-House.

The arrival of the railroad in Burke County by 1870 helped to usher in Victorian architectural fashion, by making advancements in building technology readily available, such as sawn and machine-made millwork creating scrolled, intricate, decorative elements easily applied to buildings. These products took the form of porch posts, shingles, doors, balusters, molding, and in the case of the Jacumin-Bronson House, decorative brackets, among other ornate architectural elements (Cotton 1987:28-31). Burke County's first high-style Victorian building, designed by Philadelphia architect Samuel Sloan in the 1870s, was the Western North Carolina Insane Asylum (Broughton Hospital) (BK0002), introducing Morganton residents to the latest in architectural trends. Not surprisingly, Morganton residences were the first to adopt Victorian styles and aesthetics, but "The impact of Victorian-era architecture was far less in the rural areas. There was an ingrained conservatism in building traditions, and the center-hall frame I-House remained as the predominant housing type. While resisting the new picturesque and irregular massing of the Victorian houses, some rural people, did, however, apply a "veneer" of Victorian ornament to their I-house forms" (Cotton 1987:30). Few if any other Queen Anne or Victorian-era houses in Rutherford College retain original, exuberant brackets in a scrolled motif applied to original turned porch posts. The Jacumin-Bronson House is also notable for its handsome front entry surround of divided sidelights and five-light transom, again epitomizing conservative, traditional preferences in more rural areas. Although the interior was not accessible, the Jacumin-Bronson House appears to follow a modified Quaker plan arrangement, as no formal center hall could be discerned unless the floor plan has been heavily modified.

Few previously recorded one-and-one-half-story forms comparable to the Jacumin-Bronson House could be found in Burke County; however, the nearby Annis House at 120 Lovelady Road embodies a two-story, frame I-House vernacular dwelling with exterior end brick chimneys and traditional craftsmanship (Plate 80; see Plate 39). Likewise, the Edwards-Weeden House (BK0805), also in Rutherford College, possesses the I-House form but lacks any other architectural detailing linking it with late nineteenth-century Victorian or Queen Anne styles (Plate 81).

The Terrell House in Rutherford College is another example of a frame, vernacular form with applied detailing evoking a modest Queen Anne feel with its central, pent gable, wide frieze and pronounced cornice, decorative rear porch posts, and applied decorative shingles (Plate 82).

The Jacumin-Bronson House possesses integrity of location, having not been moved from its original site. Its integrity of setting is relatively intact with surviving outbuildings, trees, and fields, although a new residence has been built to the northwest. The Jacumin-Bronson House retains a good degree of integrity of design, materials, and workmanship, with original features like porches, windows, architectural trim, and porch brackets, as well as intact outbuildings. Although the dwelling is covered in asbestos shingles, it likely retains original weatherboard siding underneath. The rear enclosures and additions do not detract from the original architectural character of the house and may themselves likely be older than 50 years. The Jacumin-Bronson House retains a good degree of integrity of feeling and association, functioning in its original purpose as a residence still connected to the Jacumin family of Rutherford College.

The Jacumin-Bronson House is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Burke County, North Carolina. Although it may have at one time functioned as a family farm, the house does not retain the acreage to be able to convey this agricultural connection, nor does it possess the range of agricultural outbuildings or the farmscape to be considered particularly agriculturally significant. No known historically significant events occurred in connection with the Jacumin-Bronson House.

The Jacumin-Bronson House is also not eligible under Criterion B for association with significant individuals in history. Although the Jacumin and Bronson families were prominent community members

of Rutherford College, no single individual could be identified who contributed significantly to the history of Burke County in an outstanding way that has been documented in direct connection with the house.

The Jacumin-Bronson House is eligible under Criterion C for architecture as a strong example of a late nineteenth-century vernacular dwelling in Rutherford College with applied or updated stylistic architectural features. The "story-and-a-jump" Jacumin-Bronson House is particularly noteworthy for its intact porch with original posts, brackets, and front door and surround, indicating its construction date as older than many of the surrounding properties along Malcolm Boulevard.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Jacumin-Bronson House is not likely to have this type of information and does not meet Criterion D.

2.6.4 Recommended NRHP Boundaries

The recommended NRHP boundaries for the Jacumin-Bronson House are drawn to include the house surveyed and its associated landscape features, setting, and outbuildings as delineated in Figure 11. The boundaries loosely follow tax parcel boundary lines, which encompass approximately 3.3 acres and include the cleared and wooded areas to the east and south that form the setting for the property, the frame barn, and the wood signage at the property's entrance from Malcolm Boulevard. The proposed boundaries form more or less a rectangle and follow NCDOT ROW and tax parcel lines to the edge of pavement with Oak Terrace.

FIGURE 10: Site Plan, Jacumin-Bronson House (BK0807), Burke County, North Carolina (ESRI World Imagery 2021)

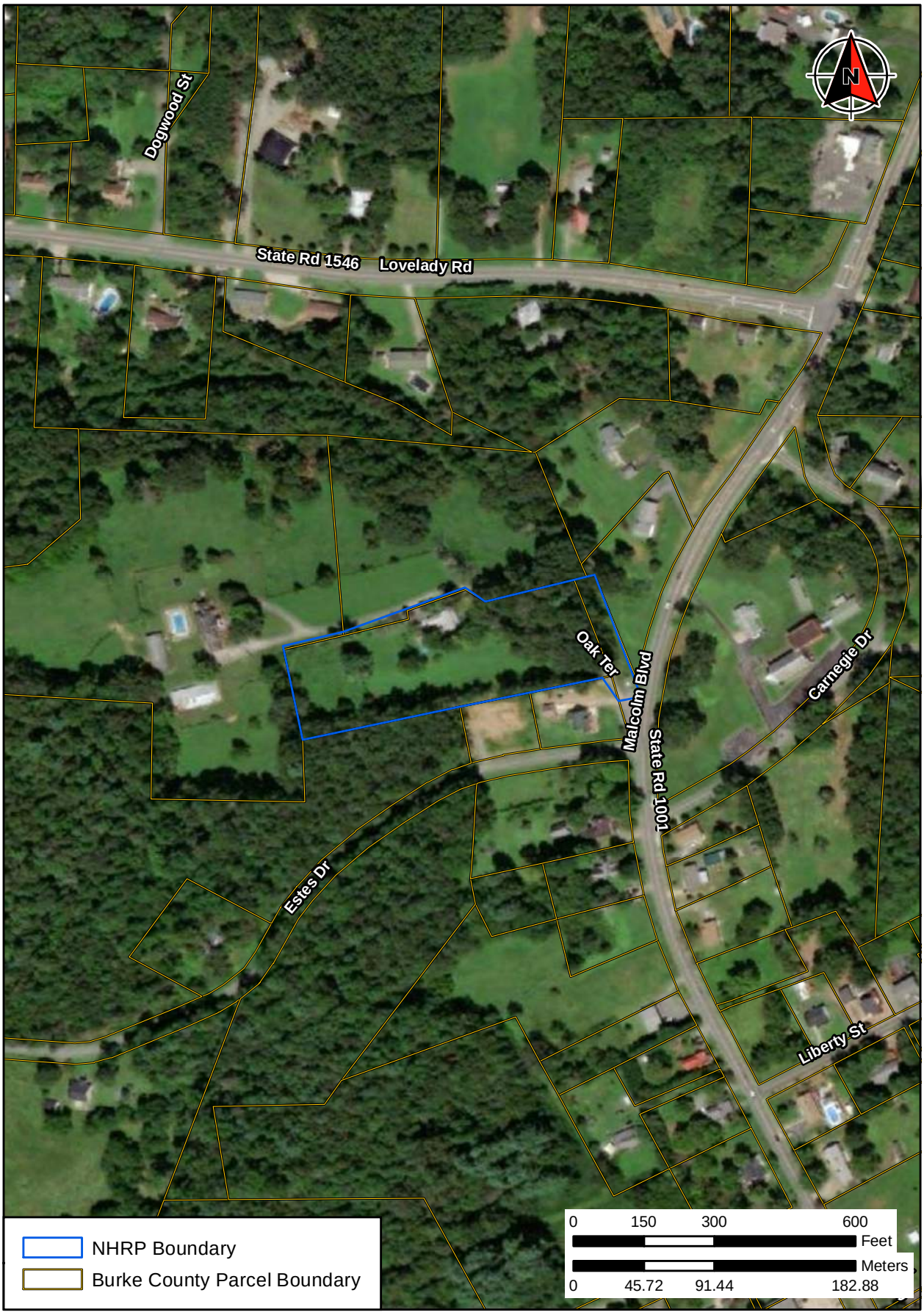


FIGURE 11: Recommended NRHP Boundaries (in blue) for Jacumin-Bronson House (BK0807), Burke County, North Carolina (ESRI World Imagery 2021)

PLATE 70: Jacumin-Bronson House (BK0807), East Elevation, Burke County, North Carolina

PLATE 71: Jacumin-Bronson House (BK0807), Porch Detail, East Elevation, Facing South, Burke County, North Carolina

PLATE 72: Jacumin-Bronson House (BK0807), Porch Detail, East Elevation, Burke County, North Carolina

PLATE 73: Jacumin-Bronson House (BK0807), Entrance Detail, East Elevation, Burke County, North Carolina

PLATE 74: Jacumin-Bronson House (BK0807), North Elevation, Burke County, North Carolina

PLATE 75: Jacumin-Bronson House (BK0807), West Elevation, Burke County, North Carolina

PLATE 76: Jacumin-Bronson House (BK0807), South Elevation, Burke County, North Carolina

PLATE 77: Garage, Jacumin-Bronson House (BK0807), East Elevation, Burke County, North Carolina

PLATE 78: Garage, Jacumin-Bronson House (BK0807), Oblique View of West and South Elevations, Burke County, North Carolina

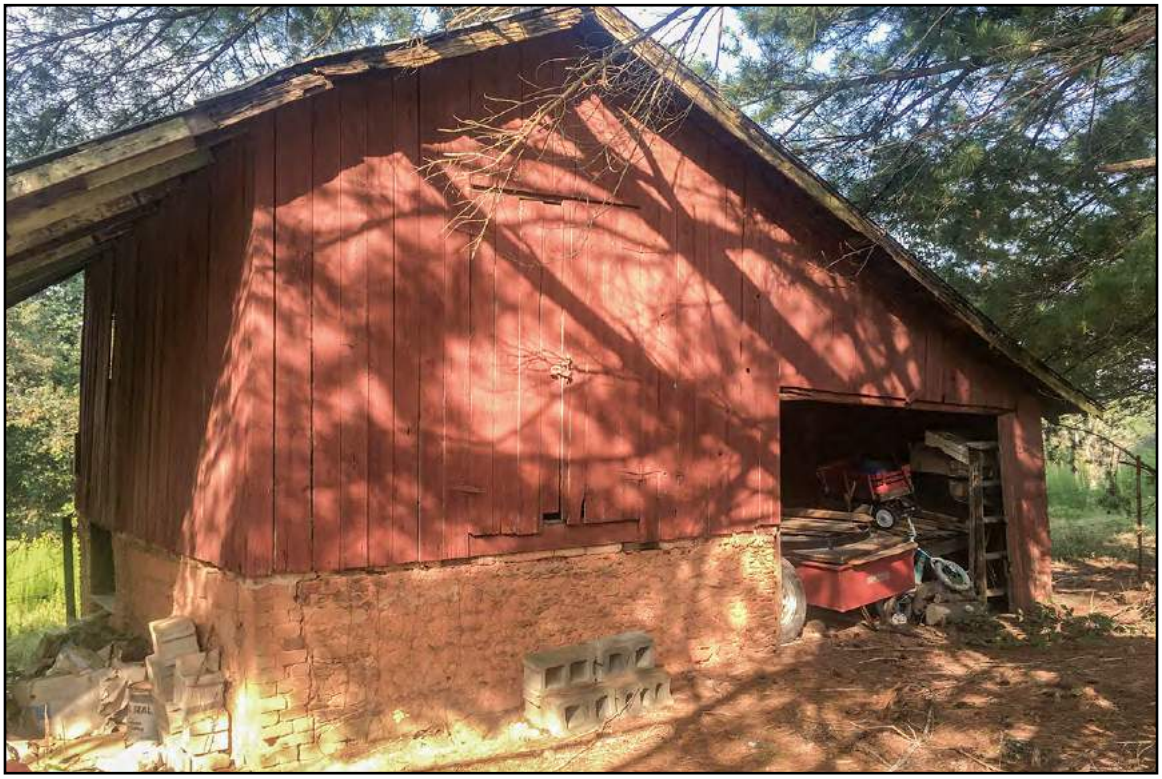


PLATE 79: Barn, Jacumin-Bronson House (BK0807), East Elevation, Burke County, North Carolina

PLATE 80: Annis House (BK0404), South Elevation, Burke County, North Carolina

PLATE 81: Edwards-Weeden House (BK0805), West Elevation, Burke County, North Carolina

PLATE 82: Terrell House, 1320 Malcolm Boulevard, West Elevation, Burke County, North Carolina

2.7 Lowder House

Resource Name	Lowder House
HPO Survey Site No.	BK0808
Location	1201 Malcolm Boulevard
PIN	2744906279
Date(s) of Construction	1929
NRHP Recommendation	Not Eligible

2.7.1 Setting and Description

Occupying a 0.54-acre boxy parcel west of the fork formed by Malcolm Boulevard and Oak Terrace, the house is centrally located facing Malcolm Boulevard, with a wide setback from the roadway on its east edge. The parcel is adjacent to Estes Drive on its south boundary, and Oak Terrace borders a corner of the northern boundary. Standing to the rear and west of the house is a masonry garage built in 1965. Moderately wooded, the parcel has recently been cleared and the house renovated, with a fence added around the rear and backyard of the house and a gravel drive in the front (Figure 12).

2.7.1.1 Lowder House, 1929

The one-and-one-half-story brick period cottage is clad in a running-bond brick veneer and features a cross-gabled roofline (Plate 83). As a result of the recent renovation, all windows appear to be modern one-over-one vinyl replacements; they are topped with soldier course lintels and underlined with rowlock sills. An engaged porch extends from the south elevation of the house, supported by square brick columns resting on a brick porch floor faced with tile. The porch extends around to the front entry, gated with a decorative metal railing. A centrally placed, projecting gabled entry wing extends from the main, sidle-gabled block. The entrance wing has an asymmetrical roofline sloping low on one side, characteristic of many Tudor Revival homes. This entry wing contains a single-leaf, arched, batten entrance door, highlighted by an arched surround of two rows of headers, as well as a smaller, one-over-one replacement window (Plate 84). The remainder of the main (east) elevation is pierced by a double window and a single window, one on either side of the entry. The north elevation of the house features three sets of double windows on the first story, with one double window piercing the upper half-story. A soldier course visually divides the two stories and an additional soldier course sits at the foundation level near the ground. A one-story, frame, shed addition extends from the rear of the house, stuccoed with frame paneling, and is accessed by a secondary six-light-over-three-panel wood single-leaf entrance (Plate 85). The house's south elevation is dominated by the gabled, engaged porch, filled with wood shingles in its gable end. The porch shelters a set of French doors, and a single window bay and double window define the remainder of the elevation's first story. A double window pierces the center of the upper half-story of the south elevation (Plate 86). The west elevation was not visible because of the newly installed fence. A brick chimney rises from the roofline toward the rear of the house. The interior of the house was not accessible at the time of the survey; however, it is said to have been heavily modified during its most recent interior renovation.

Garage, 1965. A one-story, concrete-block, two-bay garage faced in a running-bond brick veneer stands northwest of the house, topped with a front-gabled roof covered in metal. Garage doors are currently open and appear to be in the process of replacement. A metal, pendant light fixture extends from the center of the gable end (Plate 87).

2.7.2 Historical Background

Locally, the house has always been known as the "Lowder House," a family active in the community of Rutherford College during the twentieth century. In 1949 five tracts totaling 16.5 acres were conveyed from Durham Bank & Trust Company as the Executor of the Will of Jimmie Ann Cole to Marvin S. and Bettie Evelyn Lowder, including the parcel upon which the house stands. These lands may have been connected to a 1923 deed from E.T. Estes conveyed to the Lowders. The Marvin Lowder family constructed their 1929 house and retained ownership until 2018, when a portion of the estate of Bettie Jo Lowder was sold to Kenneth Boyd and Kimberly Byrd (BCDB 7/390, 102/76, 796/1928, 2349/18). Marvin S. Lowder is listed as a merchant in 1940 and 1920, and he and wife Bettie Evelyn had two children (U.S. Census 1920, 1940). Marvin Lowder was active in the Lions Club and the Rutherford College Development Corporation, which in the 1960s raised over $1,500 for the paving of the town's sidewalks (*Valdese News* 1968b). According to property records, the house was remodeled in 1950, and it has undergone a recent renovation in 2021, with replacement of windows, major interior renovations, construction of a fence to enclose the backyard, and heavy clearing of trees from the parcel.

2.7.3 Architectural Context and NRHP Evaluation

The period cottage and the Tudor Revival entered the Burke County architectural vocabulary during the 1920s and 1930s, quickly rising in prominence as a premier home style choice for the middle class. Typically constructed of brick or a masonry combination emphasizing front gables, a large chimney sometimes placed on the main elevation, and exterior masonry walls occasionally with half-timbering, period cottages with Tudor influences emphasized details harkening back to the medieval period. Tudor Revival period cottages are widespread and plentiful in Burke County and surrounding areas, especially in cities, small towns, and outlying areas. Although the earliest, finest versions were often built in upscale, early suburbs, the type slowly began to make its way out to a broader base of consumers. The period cottage styles could be replicated from a pattern book design by a local builder, who could also make adjustments based on budget, allowing the homeowner to adopt a nationally popular style without necessarily needing a skilled architect. The Lowder House exemplifies a modest version of the Tudor Revival period cottage with only a couple of architectural details identifying it as such. The house's prominent, steep gables, uneven eave lines in the front-gabled projecting entry wing, and arched entry doors place it within the period cottage architype with Tudor-inspired detailing (Bishir 1990:517-519; McAlester 1984:355-358).

More substantial towns near Rutherford College such as Morganton, Valdese, and Lenoir offer strong examples of period cottages that retain a higher degree of integrity. Several fine Tudor period cottages are located in the Maehill Park Historic District (CW0614) in Lenoir, along Highland Avenue. One especially strong Maehill Park example at 430 Highland Avenue Southwest highlights steep, multiple gables along its stone and brick-veneered façade, arched wing walls, arched batten entry doors, and a prominent stone chimney (Plate 88). The Maehill Park Historic District was placed on the North Carolina State Study List as a result of the comprehensive 2018 architectural survey of Lenoir (Robinson & Associates 2018). Other Caldwell County examples are located on Lower Creek Drive, and on McLean Street in Lenoir, both modest, brick Tudor period cottages similar to the Lowder House. Again, steep front gables, arched entries, and prominent chimneys are the architectural highlights of these brick cottages (Plate 89).

In Burke County high-style period cottages are again found most often in upscale, early twentieth-century suburbs, but more modest examples are sprinkled throughout the county in the countryside, such as the stone Tudor period cottage located at 813 Lenoir Road. Determined not eligible for the NRHP in 2000, this stone period cottage is less distinctive in its connection to the Tudor Revival, yet still possesses a handful of the style's hallmarks, with an engaged, gabled porch extending from its south wing on the main elevation. Likewise, the stone-veneered Martin House (BK0214) also exhibits standard Tudor Revival features on a modest scale. The 1939 Martin House retains its original windows and possesses stronger integrity than the

Lowder House; it remains unevaluated for the NRHP as part of project ER 21-0104 (Plate 90). A bit closer to the Lowder House is a brick period cottage at 2698 Old 70 Loop in Connelly Springs, featuring an engaged porch on one end with arched openings, pent gables, a prominent brick chimney, and arched entry, all hallmarks of the Tudor Revival style in a smaller, period cottage form. Like the Lowder House, the Old 70 Loop House contains replacement windows but otherwise possesses a good degree of integrity (Plate 91).

The Lowder House possesses integrity of location, and its integrity of setting is relatively intact with the exception of recent heavy tree removal from the parcel. Integrity of materials and workmanship has been slightly compromised with the application of replacement materials, such as windows and interior renovations. Integrity of design, however, appears to be intact. The resource retains a fair degree of integrity of feeling and association, functioning in its original purpose as a residence. Overall, the Lowder House possesses a medium degree of the seven aspects of integrity that are required for a property to be eligible for the NRHP.

The Lowder House is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in Burke County, North Carolina. No known historically significant events occurred in connection with the house.

The Lowder House is also not eligible under Criterion B for association with significant individuals in history. Although members of the Marvin Lowder family who constructed the house were prominent citizens of Rutherford College, no single individual could be identified who contributed significantly to the history of Burke County in an outstanding way that has been documented in direct connection with the house.

Likewise, the Lowder House is found not eligible under Criterion C for architecture because it lacks significance. The Lowder House exemplifies a period cottage with Tudor Revival features, a fairly common form and style during the 1920s and 1930s in North Carolina. Many other, better examples of masonry period cottages referencing the Tudor Revival style survive in Burke County and in surrounding areas that retain a higher degree of integrity.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Lowder House is not likely to have this type of information and does not meet Criterion D.

FIGURE 12: Site Plan, Lowder House (BK0808), Burke County, North Carolina (Esri World Imagery 2021)

PLATE 83: Lowder House (BK0808), East Elevation, Burke County, North Carolina

PLATE 84: Lowder House (BK0808), Entry Detail, East Elevation, Burke County, North Carolina

PLATE 85: Lowder House (BK0808), North Elevation, Burke County, North Carolina

PLATE 86: Lowder House (BK0808), Oblique View of South Elevation, Burke County, North Carolina

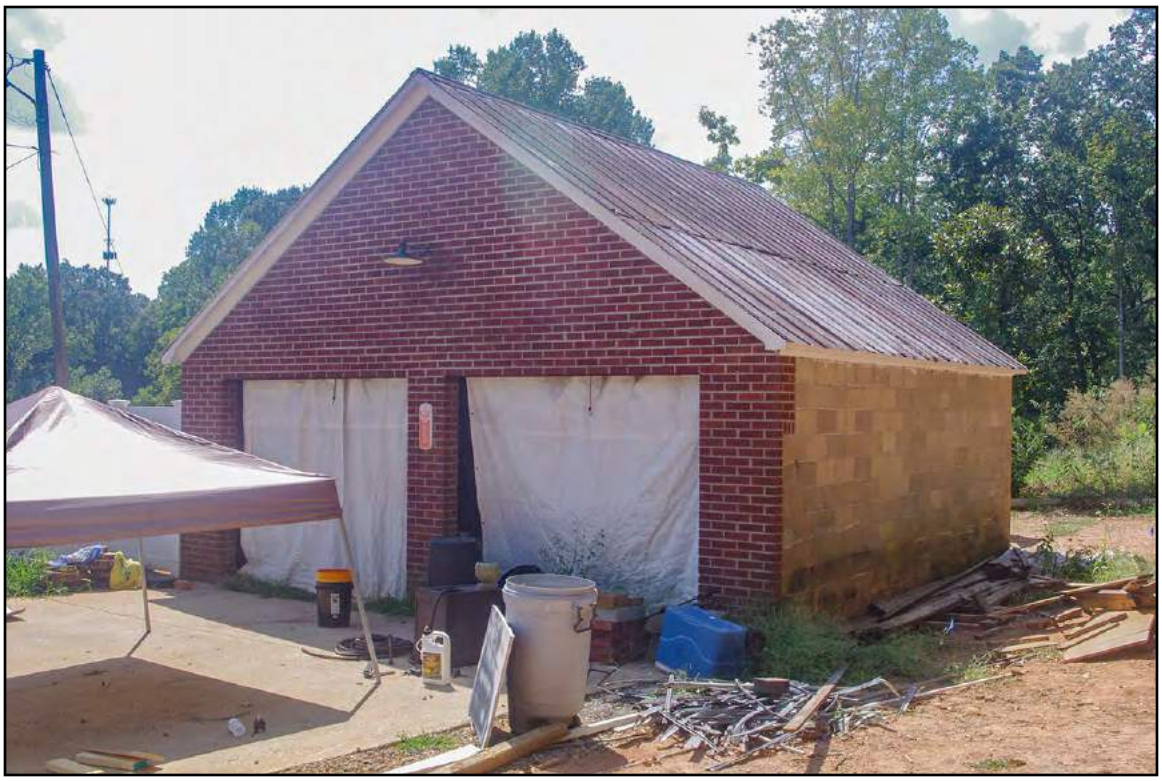


PLATE 87: Garage, Lowder House (BK0808), East Elevation, Burke County, North Carolina

PLATE 88: House at 430 Highland Avenue Southwest in Maehill Park Historic District (CW0614), Lenoir, Caldwell County, North Carolina

PLATE 89: House on Lower Creek Drive in Lenoir, Caldwell County, North Carolina

PLATE 90: Martin House (BK0214), Burke County, North Carolina

PLATE 91: House at 2698 Old US 70 Loop, Connelly Springs, Burke County, North Carolina

2.8 Pons-Lankford House

Resource Name	Pons-Lankford House
HPO Survey Site No.	BK0809
Location	1171 Malcolm Boulevard
PIN	2744906037
Date(s) of Construction	ca. 1900
NRHP Recommendation	Not Eligible

2.8.1 Setting and Description

The house occupies a 2-acre parcel on the west side of Malcolm Boulevard at the intersection with Carnegie Street, facing east standing in the southeast corner of the parcel. Estes Drive runs adjacent to the north boundary of the parcel. A gravel drive runs directly south of the house, leading to a garage and storage building in the rear yard to the west. Farther west stands an additional outbuilding. The parcel is mostly cleared, lightly dotted with mature trees and a small orchard (Figure 13).

2.8.1.1 Pons-Lankford House, ca. 1900

The two-story, frame Pons-Lankford House is a double-pile dwelling featuring a hipped roof and front-gabled wing on its north end (Plate 92). The house rests on a stone foundation with a partial basement. Walls are clad in Masonite or other type of synthetic siding, and one-over-one replacement sash window bays pierce all elevations. A hipped porch supported by chamfered wood posts resting on a stone porch floor spans almost the full width of the main elevation, sheltering a single-leaf entrance and two window bays (Plate 93). The north elevation of the house features two window bays on each story, evenly spaced, and another window bay piercing a hipped rear wing extending from the west elevation (Plate 94). Smaller double and single windows with concrete sills are located at the stone foundation basement level. A two-story, front-gabled projecting wing extends from the house's west elevation, and a one-story, hip-roofed wing protrudes from the northwest corner. This wing has a single window bay and a smaller double window, as well as an additional small, shed-roof addition that appears to be a sunroom, accessed by a five-panel wood door. The second story of the elevation contains two window bays on the main block, and a single window bay on the gabled wing. A small gabled breezeway, partially enclosed, leads to a brick and frame open carport that is attached to the rear of the house (Plate 95). The gabled carport is supported by square brick piers connected by brick half-walls resting on a concrete floor; gable ends are filled with Masonite. The south elevation of the house contains a single and a triple window on its first story and two single window bays on its second story (Plate 96). Two brick chimneys rise from the house's roof, which is covered in asphalt shingles.

The interior of the house follows a center passage plan (center hall now closed). There are a turned newel post with a plain stair, beadboard walls and ceilings, original trim and door surrounds, and ornate, Victorian fireplace mantels (Plate 97). Floors have been carpeted and several other modern interior modifications have been made to the house over the years.

Garage, ca. 1970. A one-and-one-half story, frame garage stands in the rear yard of the house to the west. Topped with a side-gable roof, the garage contains a double-bay, paneled garage door and a double-leaf entrance on its main elevation, which faces north. Its east elevation is pierced by one-over-one, modern,

sash double windows on each level. The garage's west elevation contains a single window bay, and its south elevation has a single-leaf, three-light-over-three-panel wood door (Plate 98).

2.8.2 Historical Background

Constructed in the early twentieth century, the earliest recorded owner of the property was A.C. Gunter of Cook County, Illinois, who in 1900 conveyed the 2-acre lot to John Pons (listed in the U.S. Census [1900] as John Jones) of Burke County. According to property owner W. Dean Lankford, Jr., the house originally had only one story and was a parsonage relocated from Connelly Springs. The second story was added after it was moved sometime in the early twentieth century. Built initially by the Rev. John Pons family of Valdese, the house functioned at least partially as a boarding house for students at Rutherford College. Rev. John Pons (1877-1944) served as the minister of Valdese Presbyterian Church in the early twentieth century for two terms, and also worked as a professor at Rutherford College. In 1925 he became a full-time professor at the college, and in 1933 he founded the Pons Insurance Agency, managed by his son Arnaldo A. Pons after accepting a position as Secretary-Treasurer of the Valdese Savings and Loan Association (Watts 1965:101, 113, 131). Pons married Margaurite Lydia Jacumin, and they had four children. Their daughter Evelyn Pons married Leroy Bronson and occupied the White-Bronson House on Oak Terrace just north of the Pons-Lankford House. Although the Pons family owned the house, it is unclear what members of the family actually resided there, as oral history accounts claim that the family also lived next door at 1161 Malcolm Boulevard. The Pons family sold the house to the Samuel and Ida Lankford family in 1939 (BCDB K-2/511, 37/546, 351/649). Samuel and Ida's son W. Dean Lankford inherited the property, which remains in the possession of his wife Auda L. Lankford's family. Property records indicate that the house was remodeled in 1984.

2.8.3 Architectural Context and NRHP Evaluation

Considering its earlier one-story form and history, the Pons-Lankford House was not built with adherence to the latest architectural fashion as its priority, but, its massing and hipped porches along the main elevation indicate a nod to the Queen Anne style. Traditional architecture, especially L- and T-shaped plans in the late nineteenth century, reigned supreme in rural North Carolina. These forms may have received modest, stylistic updates, such as scrolled millwork along eaves, decorative brackets and porch members, new wraparound porches, or new bay windows, as middle-class families strove to keep up with changing tastes. The North Carolina School for the Deaf in Morganton, designed by architect Adolphus Gustavus Bauer in 1891, introduced the county to the Queen Anne style. Shortly thereafter, the first Queen Anne houses appeared in Morganton. A majority of the county's Queen Anne residences are found in more populous towns and cities like Morganton and were largely built by the county's newly rising professional class of businessmen, bankers, lawyers, doctors, and manufacturers: "Despite all their apparent intricacy however, nearly all of the county's Queen Anne residences are large, hip-roofed, central masses which are made more complex by projecting bays and applied ornament" (Cotton 1987:41-43).

Resting on a Waldensian-built stone foundation, the house's L-shaped form with hipped roof and porches exudes little other architectural refinement and is unremarkable as a strong example of a particular style or vernacular dwelling. Moreover, the application of the synthetic-type siding and replacement of windows further detracts from the house's integrity and architectural significance.

A handful of similar properties were identified from which to judge the Pons-Lankford House's architectural rarity in a comparative context. Nearby, in Rutherford College, both the Honeycutt House and the Terrell House on Malcolm Boulevard exemplify conservative forms and styles comparable to the Pons-Lankford House, exhibited through an L-shaped footprint with a few ornamental accents through porch millwork, accent gables, and trim. Both houses were surveyed as a part of Randall Cotton's architectural inventory during the 1980s but are not documented with numbers on HPOweb. The Terrell House still

retains a higher degree of integrity than both the Pons-Lankford and Honeycutt House, retaining its windows, siding, and trim (Plate 99).

Another Burke County example is the house at 920 U.S. Route 70 in Connelly Springs, which possesses an L-shaped footprint topped with a cross-gabled roof. The wraparound, hipped, one-story porch is the only other significant architectural characteristic other than the six-over-six sash windows; the siding appears to be covered in vinyl. Like the Pons-Lankford House, the U.S. Route 70 property is a rather unremarkable example of a vernacular form with unexceptional and plain stylistic detailing dating to around the turn of the twentieth century in Burke County (Plate 100).

In Caldwell County the Elijah Estes House (CW0422) provides a strong comparable to the Pons-Lankford House in a rural area. Determined eligible for the NRHP in 2016 under Criterion C, the Elijah Estes House displays a traditional form with applied Queen Anne details such as an L-shaped, two-tier porch featuring central, pent gables and decorative shingles filling gable ends, retaining a high degree of integrity (Plate 101). The Pons-Lankford House, by contrast, lacks its original windows, siding, and does not possess an adequate amount of architectural significance.

The Pons-Lankford House possesses integrity of location, having not been moved from its original site. Its integrity of setting has been altered somewhat as the Rutherford College campus that formerly sat across the street from the house is no longer extant. Although integrity of design is fairly intact, the integrity of materials and workmanship has been compromised with the application of replacement materials, such as windows, doors, and a Masonite-type siding. The resource retains a fair degree integrity of feeling and association, functioning in its original purpose as a residence and remaining in the hands of the Lankford family.

The Pons-Lankford House is found not eligible for the NRHP under Criterion A for association with significant with events or the broad patterns of history in Burke County, North Carolina. No known locally historically significant events occurred in connection with the house, and in any case the house lacks the integrity needed for qualification.

The Pons-Lankford House is also not eligible under Criterion B for association with significant individuals in history. Although owned in the early twentieth century by Rev. John Pons, a pastor at the Valdese Presbyterian Church and a faculty member at Rutherford College, Pons is associated with more significant properties located in Valdese that retain a higher degree of integrity than the Pons-Lankford House, such as the Valdese Presbyterian Church and the John Pons House in Valdese.

Likewise, the Pons-Lankford House is not eligible under Criterion C for architecture because it lacks integrity. To qualify under Criterion C, a property must also possess the seven aspects of integrity, which, in the case of the Pons-Lankford House, have been compromised with replacement of original materials. The Pons-Lankford House also lacks architectural significance and is a common example of its form and style in Burke County.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Pons-Lankford House is not likely to have this type of information and does not meet Criterion D.

FIGURE 13: Site Plan, Pons-Lankford House (BK0809), Burke County, North Carolina (ESRI World Imagery 2021)

PLATE 92: Pons-Lankford House (BK0809), East Elevation, Burke County, North Carolina

PLATE 93: Pons-Lankford House (BK0809), Porch Detail, East Elevation, Burke County, North Carolina

PLATE 94: Pons-Lankford House (BK0809), North Elevation, Burke County, North Carolina

PLATE 95: Pons-Lankford House (BK0809), West Elevation, Burke County, North Carolina

PLATE 96: Pons-Lankford House (BK0809), South Elevation, Burke County, North Carolina

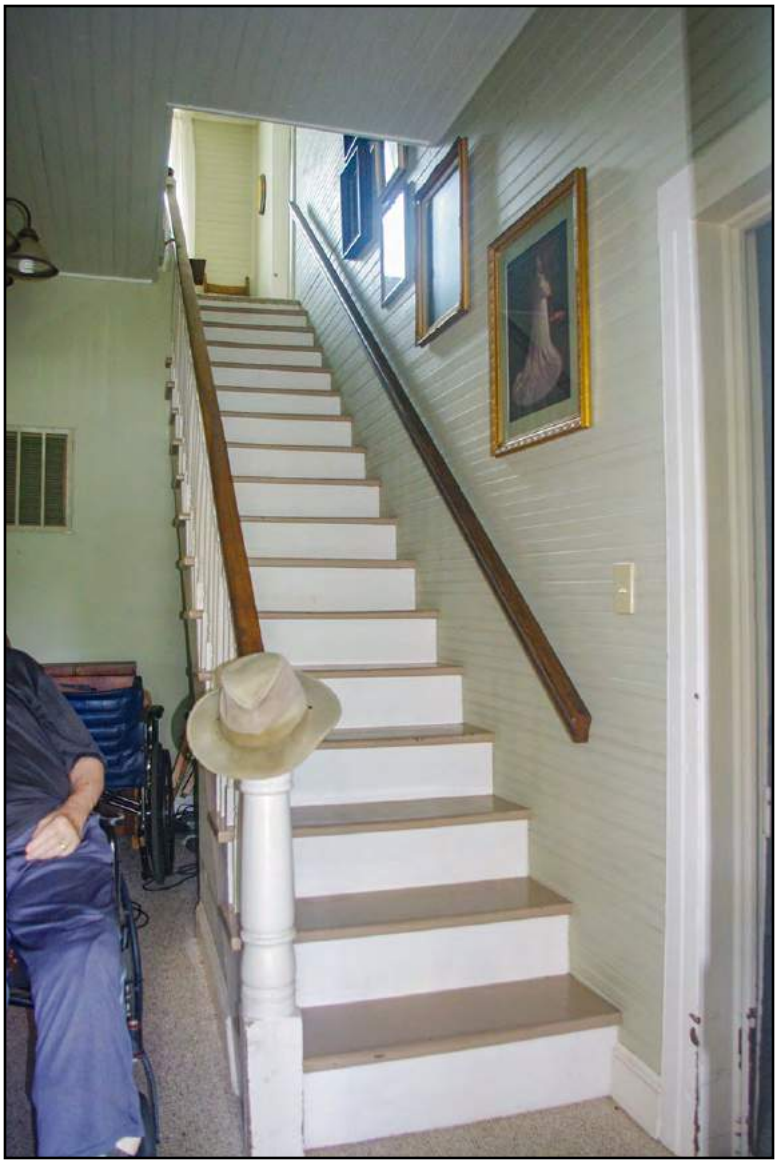


PLATE 97: Pons-Lankford House (BK0809), Interior, Looking West, Burke County, North Carolina

PLATE 98: Garage, Pons-Lankford House (BK0809), North and West Elevations, Burke County, North Carolina

PLATE 99: Terrell House, 1320 Malcolm Boulevard, East (rear) Elevation, Burke County, North Carolina

PLATE 100: House located at 920 U.S. Route 70, Connelly Springs, Burke County, North Carolina

PLATE 101: Elijah Estes House (CW0422), East Elevation, Caldwell County, North Carolina

2.9 Pons-Farris House

Resource Name	Pons-Farris House
HPO Survey Site No.	BK0810
Location	1161 Malcolm Boulevard
PIN	2743997914
Date(s) of Construction	ca. 1910-1920
NRHP Recommendation	Not Eligible

2.9.1 Setting and Description

Facing east toward Malcolm Boulevard on a rectangular, 0.53-acre parcel, the house is sited near the roadway, accessed by a driveway located at the southeast corner of the parcel (Figure 14). A small storage shed is also on the property.

2.9.1.1 Pons-Farris House

The Pons-Farris House is a one-and-one-half-story, frame, hip-roofed, modest Queen Anne dwelling with a varied roofline of projecting gables. It has been modified with vinyl siding, replacement windows, and replacement doors. The main (east) elevation is characterized by a projecting, gabled wing on the south side with full cornice returns and a recessed porch defined by a gabled portico supported by tapered boxed columns upon brick piers (Plate 102). A double window, a single window, and a single-leaf entrance bay pierce the main elevation, all replacement sash. Walls and trim are clad in vinyl siding. The north elevation of the house features a pent gable in the upper half-story, and a single- and double-window bay pierce the first level (Plate 103). A gabled rear ell extends from the rear (west) elevation, with a shed addition on its north side, which features a block of three six-over-six, sash windows and a small, fixed window bay. The west elevation of the rear ell has a single-leaf, secondary entrance flanked by narrow, four-over-four, sash window bays, and a single, standard-size window bay (Plate 104). The remainder of the elevation contains a single window bay and a gabled dormer projecting from the roof. The south elevation of the house features a projecting, three-sided bay topped with a pent gable with full cornice returns, pierced by a window bay. Six window bays pierce this elevation, both single and double windows (Plate 105). The house rests on a brick pier foundation infilled with stone, and brick interior chimneys rise through the roofline. Interior access was not granted by the property owner at the time of the survey.

2.9.2 Historical Background

Built ca. 1910-1920, the earliest known owner of the property appears to be the Rev. Johns Pons family, Italian Waldensian immigrants who settled in Burke County during the late nineteenth and early twentieth centuries. Rev. John Pons (1877-1944) served as the minister of Valdese Presbyterian Church in the early twentieth century for two terms, and also worked as a professor at Rutherford College. In 1925 he became a full-time professor at the college, and in 1933 he founded the Pons Insurance Agency, managed by his son Arnaldo A. Pons, after accepting a position as Secretary-Treasurer of the Valdese Savings and Loan Association (Watts 1965:101, 113). Pons married Margaurite Lydia Jacumin, and they had four children. Their daughter Evelyn Pons married Leroy Bronson and occupied the White-Bronson House on Oak Terrace just north of the Pons-Lankford House.

A 1946 deed conveys the property, then covering 1 acre, from the Pons family heirs to Lydia Pons, the widow of Reverend Pons. The Pons family retained ownership until 1986, when the property was divided in half and conveyed to Michael and Tina Farris (BCDB 75/584, 704/69; U.S. Census 1900, 1940). According to neighbor Mr. Lankford, the grandson of Rev. John Pons currently owns and lives in the house, but this is not confirmed.

2.9.3 Architectural Context and NRHP Evaluation

The Pons-Farris House may be one of the most Queen Anne-influenced houses in Rutherford College, and even then, its rendition is restrained and unimposing. As discussed above under the Pons-Lankford House, the Queen Anne style first appeared in Burke County with the construction of the North Carolina School for the Deaf in Morganton, designed by architect Adolphus Gustavus Bauer in 1891. Shortly thereafter, the first Queen Anne houses appeared in Morganton. A majority of the county's Queen Anne residences are found in more populous towns and cities like Morganton, and were largely built by the county's newly rising professional class of businessmen, bankers, lawyers, doctors, and manufacturers (Bishir 1990:343; Cotton 1987): "Despite all their apparent intricacy however, nearly all of the county's Queen Anne residences are large, hip-roofed, central masses which are made more complex by projecting bays and applied ornament" (Cotton 1987:41-43). This conclusion rings true for the Pons-Farris House, which is more easily identified as a Queen Anne cottage by its central hipped roof with gabled-roofed wings and extensions, bay windows, and gabled accents located in dormers and porches. The Pons-Farris House porch appears to have been replaced over the first quarter or so of the twentieth century, taking the form of tapered wood columns atop brick piers more often seen with Craftsman-style Bungalows. Moreover, vinyl siding and replacement windows detract from its integrity.

Modest Queen Anne houses survive throughout Morganton, Valdese, and other small towns in Burke County. Located in Morganton in the National Register-Listed Avery Avenue Historic District (BK0040) is the Samuel Ervin House (BK0099), which embodies the Queen Anne style through its form of a central, hipped mass with projecting gables, bay windows, Victorian detail, and porches (Plate 106). The house was placed on the State Study List in 1984. More exuberant Queen Anne houses also in Morganton are the Burleson House (BK0100) in Avery Avenue Historic District and the Taylor-Scroggs House (BK0343) located on S. Sterling Street (Plate 107). Designated a Burke County Local Landmark, the 1890 Burleson House showcases not only the hallmark Queen Anne form but also a central tower with bracketed cornice, stickwork, and a handsome wraparound porch. Located within the National Register-Listed Broughton Hospital Historic District, the Taylor-Scroggs House though possessing an underlying traditional form appears to have been embellished with multiple architectural characteristics of the Queen Anne style (Wylie 1986b: 7-2–7-4).

The Hogan House (BK0054), within the NRHP-listed White Street-Valdese Avenue Historic District in Morganton (BK0052), provides another compelling example of the style and type and maintains both architectural significance and integrity (Wylie 1986b:7-2–8-1).

Not far away in Caldwell County, plainer and more restrained versions of Queen Anne cottages exist throughout downtown Lenoir from the late nineteenth and early twentieth centuries. The example located at 208 Willow Street (Plate 108) is similar to the Pons-Farris House in that its undulating roofline, accented with gabled wings and cornice returns, identifies the house loosely within the Queen Anne style, as it lacks much other architectural ornament or detail.

The Pons-Farris House possesses integrity of location, having not been moved from its original site. Its integrity of setting is also relatively intact. Integrity of materials, workmanship, and design have been compromised with the application of replacement materials, including windows, doors, siding, trim, and later additions onto the rear as well as minor porch modifications. The resource retains a good degree of

integrity of feeling and association, functioning in its original purpose as a residence and remaining in the Pons family.

The Pons-Farris House is found to be not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in North Carolina. Built during a period of growth for Rutherford College and owned by the Pons family, who emigrated from Italy to settle in Valdese, the Pons-Farris House is not known to be associated with any historically significant events in connection with Rutherford College or the town. Furthermore, it lacks integrity necessary for qualification.

The Pons-Farris House is also not eligible under Criterion B for association with significant individuals in history. Although Rev. Johns Pons, who constructed the house, was well known in Rutherford College and in Valdese, having served as the minister of the Valdese Presbyterian Church and a faculty member at the college, other buildings, including the Presbyterian church in Valdese, survive that can better convey the significance of the Pons family and their contribution to local history under Criterion B. Furthermore, the house lacks the integrity needed for qualification.

Likewise, the Pons-Farris House is not eligible under Criterion C for architecture because it lacks integrity. To qualify under Criterion C, a property must also possess the seven aspects of integrity, which, in the case of the Pons-Farris House, have been compromised with replacement of original materials, such as doors, windows, and trim among other alterations. Furthermore, the house is a common example of a late Queen Anne-style house lacking outstanding architectural significance.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Pons-Farris House is not likely to have this type of information and does not meet Criterion D.

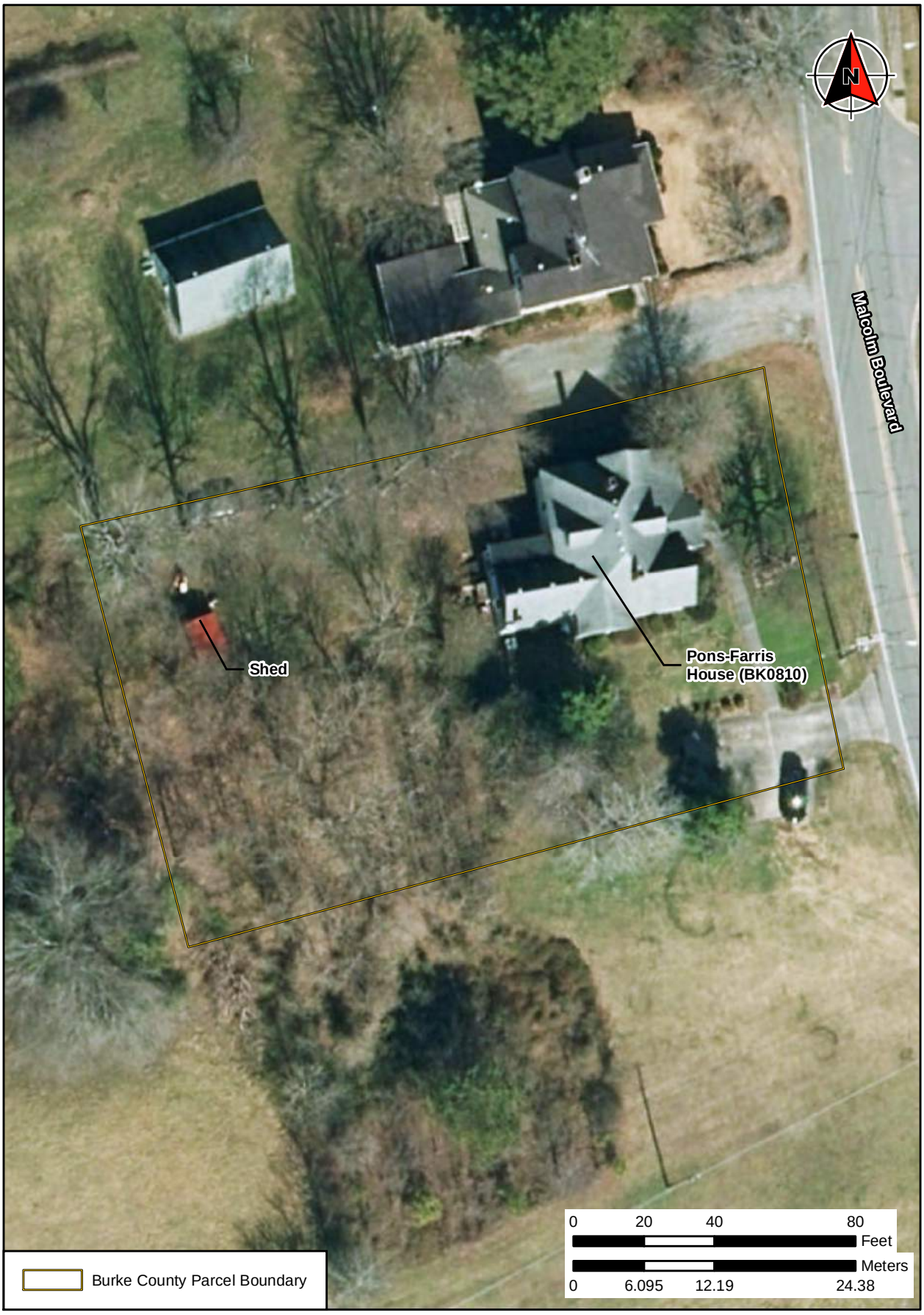


FIGURE 14: Site Plan, Pons-Farris House (BK0810), Burke County, North Carolina (ESRI World Imagery 2021)

PLATE 102: Pons-Farris House (BK0810), East Elevation, Burke County, North Carolina

PLATE 103: Pons-Farris House (BK0810), North Elevation, Burke County, North Carolina

PLATE 104: Pons-Farris House (BK0810), West Elevation, Burke County, North Carolina

PLATE 105: Pons-Farris House (BK0810), South Elevation, Burke County, North Carolina

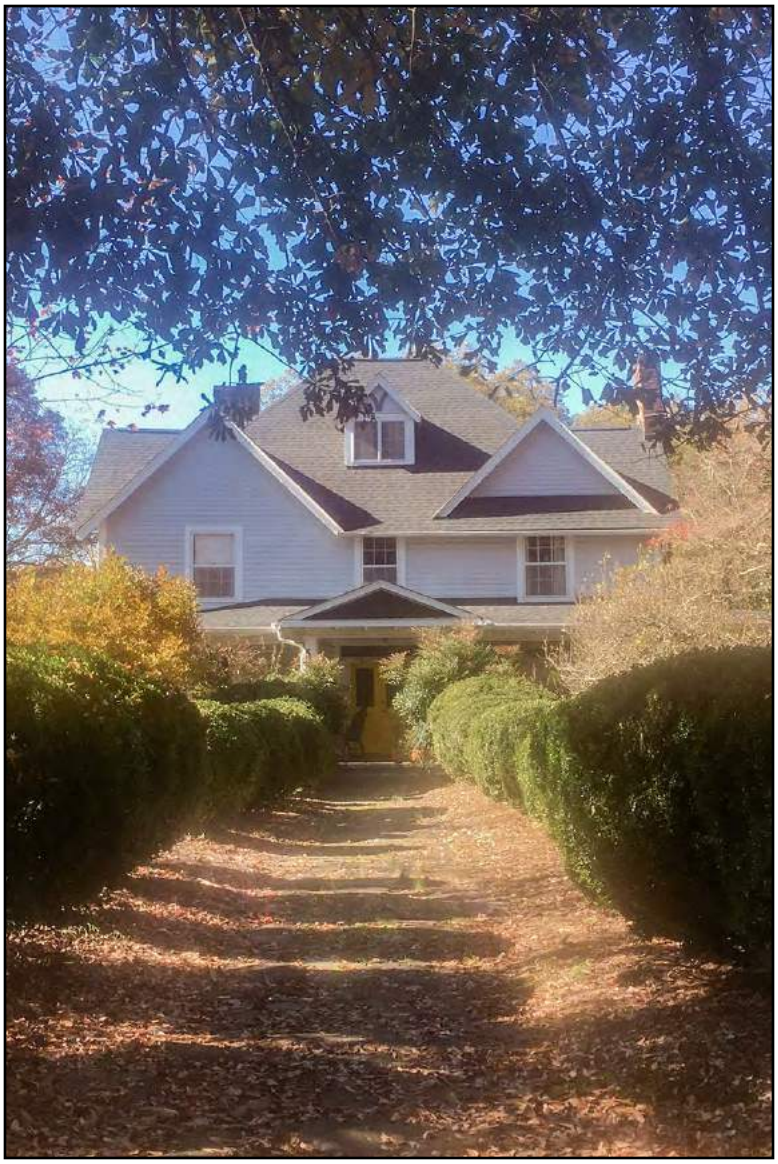


PLATE 106: Samuel Ervin House (BK0099), Morganton, Burke County, North Carolina

PLATE 107: Taylor-Scroggs House (BK0343), Morganton, Burke County, North Carolina (Google Street View)

PLATE 108: House at 208 Willow Street, Lenoir, North Carolina

2.10 Abernethy Memorial United Methodist Church

Resource Name	Abernethy Memorial United Methodist Church and Cemetery
HPO Survey Site No.	BK0077, BK0811
Location	968 Malcolm Boulevard
PIN	2753170808
Date(s) of Construction	ca. 1930, 1960
NRHP Recommendation	Eligible, Criteria B and C

2.10.1 Setting and Description

Sited directly facing Malcolm Boulevard with little setback, the Abernethy Memorial United Methodist Church complex consists of the church, a later addition containing a fellowship hall and classrooms, gardens, a sports court, a former "Boy Scout hut," a parsonage, and parking areas within a 2.7-acre parcel (Figure 15). The southeast portion of the parcel is covered in shade trees, forming the rear yard of the parsonage building. South of the church building facing Malcolm Boulevard are the gardens and a parking lot. An additional oblong parking area is adjacent to the north boundary of the parcel but is a separate parcel unto itself. To the rear (east) of the church building stand the former Boy Scout hut that now houses the Lions Club and a sports court. The church cemetery is located farther north on Malcolm Boulevard, just south of Carnegie Street near the former site of Rutherford College (Figure 16).

2.10.1.1 Abernethy Memorial United Methodist Church, 1927-1930

Completed in 1930, the stone, Gothic Revival Abernethy Memorial United Methodist Church stands as one of the few buildings left in Rutherford College strongly associated with the school yet also rooted in the local community. Although its form and style are traditional for churches of the era in western North Carolina, its exterior stone walls pay tribute to the craft of nearby Waldensian stone masons, executed with tightly laid field tone and river rock, stone arches accenting windows and doorways, and fine interior woodwork (Plate 109). The cross-gabled main block of the church features a crenelated stone bell tower on one corner, stained-glass windows with heavy stone or concrete lintels, partial-height pilaster-like buttresses with stone caps, and a ca. 1960 brick, gabled addition on the rear of the church building connected via a small hyphen. Facing Malcolm Boulevard, the church's main elevation is dominated by the rectangular tower pierced with a lancet-arched, double-leaf entrance with stained-glass transom. A square-shaped stained-glass window pierces the center of the tower, and a lancet-arched vent for the bell tower pierces all sides of the tower's upper portion, finished with concrete courses and a crenelated parapet (Plate 110). The remainder of the elevation is pierced by a massive, multi-light, stained-glass window accented with stone, lancet-arch surround and concrete keystone, flanked by half-height stone pilasters (Plate 111). A small, rectangular, narrow vent with concrete lintels pierces the center of the gable above the window. A secondary entrance, identical to the one on the tower, pierces the north end of the elevation. Modern blond brick covers the steps to each entrance from the sidewalk below. The north elevation features a projecting gabled wing, and walls are pierced with single and double one-over-one, stained-glass windows depicting various Biblical themes and stories (Plate 112). A wide, concrete course at the water table level, visually separating the foundation, spans all elevations of the original portion of the church. The east elevation of the original stone church features a brick end chimney; to either side of the chimney are window bays on each story consisting of one-over-one sash, stained-glass windows and four-light bays (Plate 113). The south elevation is nearly identical to the north, with six-light casement windows illuminating the basement level of the

church. A two-story, frame, side-gabled hyphen with bands of one-over-one sash windows and modern glass doors connects the original church to a two-story, brick addition containing a fellowship hall and classroom space (Plate 114).

Upon entering the church into a small narthex or entry with blond brick floor and plaster walls, the sanctuary is accessed by doors to the north. The sanctuary is defined by a nave with a single aisle down the middle of the pews and aisles down the sides, styled with heavy, impressive Gothic buttresses, cross-bracing, and arched ceiling beams; lancet-arched, stained-glass decorative windows, and red carpeting (Plate 115). At the east end of the sanctuary is the stage, gated by a wood kneeling rail with a lancet-arch motif and altar, above which is an oversized mantel with fluted pilasters and a wide frieze repeating the lancet-arch motif (Plate 116). A choir loft is situated at the north end of the stage with the pulpit at the south end. Another massive, stained-glass window acts as the focal point above the altar, depicting Jesus and the little children and inscribed with the name of the Daniel P. Johnson family. A series of paintings depicting varying Biblical stories and imagery decorates the sanctuary's walls, created by local artist James H. Burris, who lived across the street from the church (Plate 117). Modern, pendant light fixtures hang from the ceiling to further illuminate the sanctuary, which contains stained-glass windows only on two sides. The paintings are set within Gothic-style, lancet-arched wood frames. Two doors at the east end of the sanctuary on each side provide access to the choir and music room directly behind to the east, and additional doorways on the north side lead to the library/study and history room of the church (Plate 118). To the east of the entry is a small room with hardwood floors, beadboard ceilings, a one-over-one, stained-glass double window and plaster walls. This rooms leads to another small room with similar features and carpeting. These rooms were likely Sunday school rooms or offices for the original church (Plate 119). The second story of the hyphen, with wood-paneled walls, bands of replacement window sash, and carpeting, leads to the fellowship hall addition.

Fellowship Hall and Classroom Addition, 1966. The brick, two-story, Modernist fellowship hall is defined by steep gables, both in its front-gabled roofline and a shorter, projecting gable containing an entryway on its main elevation (Plate 120). Applied to the main (north) elevation are vertical concrete beams reaching to the top of the gable's peak, creating a recessed, double-leaf entrance, filled above with bands of fixed, metal-sash window bays all the way to the gable's peak. In the center of this architectural element and dividing the two doors is a concrete cross (Plate 121). Walls are clad in a brick running-bond and pierced by single and double, one-over-one, sash replacement window bays, set within slightly recessed panels that run from the ground to the roofline. Five sets of double windows pierce the east elevation on each level, and six single windows on each level pierce the south elevation (Plate 122). The interior of the fellowship hall features a vaulted ceiling, with buttresses and wood beams curving down to the ground creating one open, lancet-arched space. Within the ceiling structure are acoustical-tile panels and pendant light fixtures hanging from the ceiling (Plate 123). The fellowship hall is accessed via a stairway from the first floor leading to a set of wood double doors, opposite a stage featuring flush wood paneling and a green-painted panel reaching to the gable's peak accented by a wood cross (Plate 124). Flooring consists of vinyl tile. The addition also contains a full kitchen, and below the fellowship hall is a double-loaded corridor of classrooms, offices, nursery space, restrooms, and storage. The first floor interior has concrete-block walls, carpeting, dropped ceilings, and solid wood, single-leaf doors topped with transoms.

Boy Scout Hut, 1968. A one-story, frame, side-gabled, rectangular building stands east of the church. Featuring a recessed corner porch with a single-leaf entrance, this former Boy Scout hut is clad in wavy-edge wood siding (Plate 125). Extending from its south side is a gabled picnic shelter. One-over-one, replacement sash windows pierce the side (east and west) elevations. A large brick chimney rests against the east elevation of the building, which rests on a concrete-block foundation. A secondary, single-leaf entrance is located on the building's south elevation, accessing the frame picnic shelter. The former Boy Scout hut is now used for meetings of the local Lions Club chapter.

Gardens/Columbarium. A landscaped columbarium stands south of the church, facing toward Malcolm Boulevard and accessed via a sidewalk. Constructed of brick and stone walls with piers marking the entrance, the columbarium memorializes the names etched on bronze plates of various church members, with some niches for the purpose of holding ashes of the deceased. The center is marked with an ornamental tree and granite benches. It is well landscaped with ornamental trees and shrubbery (Plate 126).

Sports Courts. A paved basketball court enclosed by a chain-link fence occupies the space directly east of the church building. The yard is also dotted with playground equipment.

Parsonage, 1971. A one-story, brick Ranch house previously served as the church parsonage, facing west toward the church parking lot on the east side of Malcolm Boulevard. The Ranch house featuring Colonial Revival elements is defined by a side-gable on side-gable roofline, the central portion extending to form an engaged porch supported by four columns sheltering a three-bay main block. A single-leaf entrance topped with a broken pediment is flanked on each side by one-over-one, replacement window sash. These windows pierce the remainder of the façade on all its side wings (Plate 127).

Church Signage. Two church signs mark the Abernethy Memorial United Methodist Church. One, made of stone in the Waldensian building tradition, contains a marble etched sign with the church's name and underneath a plaque dedicated to Eubert T. Rutherford (1905-1971). A second church sign, directly between the church and Malcolm Boulevard on the west side, is also stone but holds a modern metal and glass sign in which the letters and wording can be manually changed (Plate 128).

Cemetery (BK0811). The Abernethy Memorial United Methodist Church (UMC) Cemetery, previously known as the Jones Grove Cemetery, stands on the east side of Malcolm Boulevard, separated from the church, on the south side of Carnegie Street near the site of the former Rutherford College. Dating to 1852 according to signage, the cemetery holds the graves of well-known, prominent Rutherford College families and community members, such as the Abernethy, Sides, Cassel, Jacumin, Johnson, Estes, and Koone families (Plate 129). A monument dedicated to R.L. Abernethy stands in the center of the cemetery, a tall, granite obelisk (Plate 130). Containing over 400 documented graves, markers date from the mid-nineteenth century through recent years and exhibit a wide array of funerary motifs and forms. These include obelisks, standard tablet-on-base markers, flush gravestones, rounded headstones, and pillars. Artistic motifs range from floral, Rustic designs to urns, religious motifs, and common funerary gravestone images (Plate 131). The cemetery is surrounded with mature trees and moderate vegetation, and a cluster of cedar trees marks the entrance and the shades the stone signage. Formerly associated with the Jones Grove Methodist Church (no longer extant), the cemetery is also known locally as the Rutherford College cemetery (Find a Grave 2021).

2.10.2 Historical Background

The history of the Abernethy Memorial UMC has long been associated with Rutherford College and the Abernethy family, almost inseparable from the two after the late nineteenth century. The current Abernethy UMC evolved from the former Jones Grove Methodist Church, which prior to Rutherford College's establishment served the Happy Home and later Excelsior communities. A log structure housed the Jones Grove church where the Abernethy UMC Cemetery stands now, supported and attended by Methodist families such as those of Col. William L. Connelly, Daniel P. Johnson, Jacob Sides, and others. Robert Laban Abernethy, who moved to the community in 1853 to teach at the Owl Hollow School, served as the church's minister when other circuit riding preachers could not fill the pulpit. The first recorded pastor was S.M. Davis, with new pastors serving terms every few years. In 1875 a one-room frame building replaced the log church, but it was destroyed by fire in 1902. The congregation then held services in the auditorium of Rutherford College, and later at the new campus after it was rebuilt in 1916 at the present site of Valdese General Hospital.

During this period many college students and professors attended and became involved in the life of the church, which often hosted well-known preachers and well-known Methodist leaders. During the 1920s congregation members made plans to construct their own church building, and David and Carrie Shields donated a plot of land while fundraising efforts were underway. Although an exact start date on the stone foundation is not known, work was halted owing to material and funding shortages, the college's financial troubles, and a host of other difficulties culminating in the beginning of the Great Depression after 1929. Church builders had originally intended to build in brick, with a stone foundation already laid by brothers Theo and Joe Griffin, but a shortage of adequate clay for brick made rendering a brick design impossible. During the late 1920s, under the leadership of Rev. W. L. Scott, the college's students and male community members began hauling rocks from the Catawba River and surrounding areas for the construction of the church, which was completed in 1930 with the help of Waldensian stone masons and faithful donations from church members already undergoing serious economic hardship. The church's building committee consisted of members M.T. Hinshaw, president of the college, S.J. Shrum, J.D. Cassels, John Roderick, and the Rev. E.P. Billups, along with Pastor Scott. Waldensian stone masons Albert Bleynat, John Henry Pascal, John Pons, and Henry Perrou are credited with the church's stone construction work. The cost of the building is recorded as totaling $20,000, with $800 paying for the stained-glass windows honoring the saints of the church (Abernethy UMC 2020:1).

The completion of the church was a huge milestone for the Rutherford College community, who celebrated the occasion with an elaborate picnic luncheon and outdoor service. The church adopted R.L. Abernethy's name in honor of the man that founded the college and trained numerous pupils in the ministry, thereby growing and establishing the town that blossomed from the institution.

In 1940 the church built a parsonage, which was replaced with the present structure in 1971. During the tenure of Rev. A.C. Kennedy, Jr. during the mid-1950s, plans were initiated for an educational wing addition with a fellowship hall and stage for theatrical productions. Completed in 1966, the new brick addition designed by Coffey and Olsen Architects of Lenoir housed a fellowship hall and stage, complete with a kitchen and featuring vaulted ceilings on its second story, with classrooms and office space filling the first story. It was also during this era that local artist James H. Burris, who resided in the house directly across from the church, completed six paintings to be installed inside of the sanctuary, depicting various Biblical themes. These paintings still hang along the sanctuary's interior walls today (Abernethy UMC 2020:1).

Scouting has traditionally been an important outreach ministry of the Methodist Church in North Carolina. In 1948 the church constructed a Scout hut on the property for the purposes of Boy Scout meetings and activities for Troop #195, which was replaced with the current structure in 1968. Methodist Women circles at Abernethy Memorial have actively supported and dedicated efforts to foreign and home mission projects since their organization during the 1930s and 1940s; the Rosa Lowder and Sarah Lowder circles of the Women's Society of Christian Service are the two most historically notable (Abernethy UMC 2020:1).

2.10.3 Architectural Context and NRHP Evaluation

Although local builders initially led construction efforts for Abernethy Memorial UMC, after a pause in the late 1920s driven by the financial hardships of the Great Depression, Waldensian stone masons completed the remainder of the building project in 1930 with assistance from locals and Rutherford College students. Current church members are quick to point out the difference in the quality of the stonework laid by the Waldensian builders, with the portion above the foundation and basement level markedly more precise with far less mortar used. With rock and fieldstone gathered from the Catawba River beds and surrounding woodlands in Rutherford College, church builders commenced on the Gothic-inspired structure, which included not only a handsome, vaulted sanctuary with fine interior woodwork and imported stained glass, but also classrooms and offices, a choir room with storage, and a basement below. The church's builders

include notable Waldensian stone masons Albert Pons as well as John Albert Bleynat of Valdese, along with local builders, including brothers Theo and John Griffin (McCall and Kays 1993:103). Other notable Waldensian rock masons included John Henry Long, John Pons, Etienne Bouchard, Daniel B. Bounous,, Sr., John Henry Pascal, Henry Perrou, Henry P. Perrou, and J.P. Dalmas. Their work survives throughout Burke County, particularly in Valdese, and in select stone buildings and structures across North Carolina (Abernethy Memorial UMC 2020:1; Cotton 1987:43).

Enticed by a cheap land offer in Burke County sponsored by investor and industrialist Marvin Scaife and Waldensian pastor Revered Buffa, Italian immigrants from the Cottian Alps desired to escape the overcrowded, harsh conditions of their homeland where they had once been a persecuted sect. They named their new North Carolina settlement Valdese, which means, "Valley of the Lord." The first group arrived in 1893, with more traveling to Valdese in the years shortly thereafter. The Waldensians adhered to their native customs in North Carolina for some time, including the building tradition of dry-stone masonry, which they employed in the rocky Appalachian foothills upon arrival to construct houses, bake ovens, outbuildings, and churches, often applying their craft to popular American forms and styles of the period. The earliest Waldensian houses manifesting the native Italian model were built into an earthen embankment, often only one or two rooms, with the bottom level used for animal keeping, utilitarian tasks, and agricultural implements. Buildings were of stone masonry with gabled roofs, oriented with the gable front facing out with a balcony extending from the second story, accessed by stairs or the hillside from the first level. Vineyards typically accompanied gardens and agricultural fields, but few remnants of original landscape features survive. Architectural historian Catherine Bishir notes that Waldensian architecture, "…forms a unique chapter in North Carolina's heritage—traditional immigrant architecture that replicated the age-old customs of the land left behind, and buildings that combined traditional techniques with popular building forms of the early twentieth century, all within a single generation" (Bishir 1990:364-365; see also Cotton 1987:31-34).

Although the Waldensian influence in the masonry's craftsmanship is clear, the form and style of Abernethy Memorial UMC reflect the American Gothic style that prevailed in religious structures of the period. Gothic-inspired designs reigned supreme in church architecture during the late nineteenth and early twentieth centuries in North Carolina. This was true despite whether the building was a plain, frame structure or a more elaborate, stone or brick edifice. Daniels Evangelical Reformed Church (LN0160) in in nearby Lincoln County, determined NRHP-eligible in 2019, is an excellent example of Gothic Revival ecclesiastical architecture built during the 1930s in a more rural area, much like Abernethy Memorial UMC (Plate 132). The last in a long line of churches on the property, the 1937 stone church features a deeply recessed entry with a pointed-arch, stained-glass transom, its cruciform plan defined on side elevations by lancet-arched window bays and buttresses. Daniels Evangelical Reformed Church, like Abernethy UMC, is also of stone, but its fieldstone is not laid in a stacked fashion and features a prominent, clean mortar joint. St. Francis of Assisi Church in Lenoir (CW0183) also highlights the use of stone in religious structures during the 1930s, and although this church certainly retains Gothic characteristics such as a steeply pitched front gable façade, buttresses and lancet-arched window bays, its parapet roofline and concealed exterior stairways accessing the entry are unique to the type (Plate 133) (Carpini 2019:61-64; CW0183, Survey File, NCHPO 2021).

In Burke County perhaps one of the strongest examples of religious architecture executed in stone exhibiting Gothic elements is that of Grace Episcopal Church in Morganton (BK0098), attributed to Scottish builder William Milne. Placed on the North Carolina Study List in 1984, Grace Episcopal Church is located within the NRHP-listed South King Street Historic District (BK0046) and includes a 1923 stone, Gothic-inspired parish house, rectory, and cemetery. Abernethy Memorial UMC echoes the form of Grace Episcopal's 1893 stone sanctuary building, with its steeply pitched, front-gabled nave featuring a large, multi-light, lancet-arched, stained-glass window and crenelated stone tower at its front corner, accented with lancet-arched vents and doorways (Plate 134). Partial-height buttresses and stone window and door

surrounds emphasizing the familiar pointed arch of Gothic architecture further highlight the similarities of the two churches and the universal preference of Gothic-style elements in church architecture spanning decades in the late nineteenth and twentieth centuries (Cotton 1987:42-43; Wylie 1986c:7-2–8-1). Other Waldenisan-built stone churches include St. Peter's United Methodist Church (CL380) in Lawndale and St. Francis Episcopal Church in Rutherfordton (RF0254), both strong examples of Gothic-inspired religious buildings. Staying within the framework of a local context, however, the Waldensian Presbyterian Church (BK0018), although not executed in stone, is an important example to highlight in this comparative analysis. The Waldensians erected their handsome, stuccoed masonry church resembling the Northern Italian church variations of their homeland from 1896 to 1899, which featured largely unadorned, stuccoed walls, an engaged bell tower, and slight references to the Gothic Revival style so prevalent in American churches of the period (Plate 135). Using plans prepared by an architect, the Presbyterian church in Valdese was entirely built by skilled Waldensian stone masons and builders. The Presbyterian Church and the Abernethy Memorial UMC, despite exhibiting Waldensian craftsmanship, favor each other only in basic form and reference to Gothic-inspired style elements, with bell towers and lancet-arched openings, buttresses, and other medieval-influenced characteristics (Mintzer 1984:7-1–8-4).

During the mid-twentieth century many church congregations began to prefer minimalist, modern designs for their newly constructed sanctuaries and additions to older church structures. The flexibility of Modernist design and its affordable materials of the latest building technology were especially suitable and appealing to church congregations. Mid-century churches sought to add multi-purpose and fellowship hall spaces, educational and nursery wings, and office spaces for growing numbers of employees that consisted of not only pastors but children's coordinators, music ministers, and youth leaders. The streamlined, A-Frame, brick Modernist addition constructed onto the Abernethy Memorial UMC, although in stark contrast stylistically with minimal ornamentation, mimics the original sanctuary's vaulted interior and gabled roofline yet with updated, modern materials like concrete block, glass, and paneled wood through minimalist design. The church addition, completed in 1966, was designed by Lenoir architects Coffey and Olsen and also included a small hyphen connecting the two structures. Its minimal interior with wood-paneled stage is illuminated by bands of windows at the base of the vaulted, coffered ceiling filled with acoustical tile between the wood panels (McMahon 2021:7-12).

Coffey and Olsen's firm also completed the mid-twentieth-century addition for First Baptist Church in Lenoir (CW0106), a commanding 1924 Classical Revival building with a later addition also echoing the Classical and Colonial Revival styles rather than embodying the Modernist aesthetic (Plate 136). Other Modernist Burke County examples include North Catawba Baptist Church (BK0421) (see Section 2.2.3), and the more pronounced and "high-style" A-Frame Longview Church of God (BK0438), built in the late 1970s. The Longview Church of God's steeply pitched gabled roof's structural members extend down to the ground level, uncovered at their base (see Plate 29). The only other detail defining the church façade is a central, vertically oriented, multi-pane glazed panel with a geometric stained-glass design, not unlike the central, multi-pane window feature of the Abernethy UMC addition.

The Abernethy Memorial UMC possess integrity of location, having not been moved from its original site. Its integrity of setting is intact as well as integrity of design, materials, and workmanship, retaining original stone architectural features, windows, and interior plans of both the older 1930 church and the 1960s addition. The only notable replacement materials consist of the church's front entry doors, windows in the 1960s addition, and minor, cosmetic updates to the interior. The resource retains a high degree integrity of feeling and association, functioning in its original purpose as the Abernethy Memorial UMC strongly connected with Rutherford College, and retains associations with the Abernethy family and other founding members' families within the community. Overall, the Abernethy Memorial UMC possesses a high degree of the seven aspects of integrity that are required for NRHP eligibility.

According to National Park Service Guidance in applying the National Register Criteria for Evaluation, churches are typically excluded from NRHP eligibility unless qualifying under a specific Criteria Consideration or under Criterion C for architecture. Abernethy Memorial UMC is not eligible for the NRHP under the standard Criteria A, B, and D; however, it is found eligible under Criteria Consideration A for eligibility for historic persons and under Criterion C for architectural significance. The Abernethy Memorial UMC is significant for its association with Robert Laban Abernethy, founder of Rutherford College, as the only surviving building in the town associated with the former educator and minister. As all Rutherford College buildings have been demolished and the R.L. Abernethy homeplace no longer extant, the church is the last structure possessing a compelling connection with the man who dedicated his life to operating the school that formed the Town of Rutherford College, and is also strongly associated with Rutherford College and its faculty, students, and the remaining Abernethy family. Dedicated to Robert Laban Abernethy, the Abernethy Memorial UMC physically honors him in name and through the prominent, massive, stained-glass windows piercing the sanctuary's façade and cornerstone, both inscribed with his name. The church cemetery also honors Robert L. Abernethy with a monument placed at his gravesite (National Park Service [NPS] 1990:26-28).

The Abernethy Memorial UMC is also eligible under Criterion C for architecture. Possessing a high degree of integrity, the Abernethy Memorial UMC is an excellent example of a Gothic Revival stone church constructed in the Waldensian building tradition led by local Italian immigrants from Valdese. The stone craftsmanship of the exterior is a testament to the culture of the local immigrant builders who volunteered their time and talents to construct the edifice during the midst of the Great Depression. Although a number of stone churches dating to the early twentieth century survive in Burke County, the Abernethy Memorial UMC is the only Waldensian-built church made of native rock, much like the traditional Waldensian houses, in Burke County. Its intact interior with buttressed, vaulted ceiling, attractive stained-glass memorial windows, original woodwork, and original artwork is also important to its architectural significance. The 1960s addition constructed at the east (rear) of the original church building is architecturally noteworthy in its own right as a strong example of Modernist religious architecture retaining integrity, built by architects Coffey and Olsen of Lenoir. Constructed of concrete block and brick veneer, the addition mimics the interior of the church sanctuary's vaulted ceiling but with a modern aesthetic and utilizing modern materials.

2.10.4 Recommended NRHP Boundaries

The recommended NRHP boundaries for the Abernethy Memorial UMC and Cemetery are drawn to include the church building and associated landscape features, setting, and outbuildings as delineated in Figure 17. The Abernethy Memorial UMC Cemetery, located roughly 0.4 mile north of the church, is included with the property, forming a discontiguous resource. National Register Bulletin 15 notes that boundaries can be drawn appropriately as discontiguous districts if "elements are spatially discrete, space between the elements is not related to the significance of the district..." and "…visual continuity is not a factor in the significance" (NPS 1990:6) The boundaries loosely follow tax parcel boundary lines, consisting of approximately 2.7 and 2.86 acres, and include the church, parking areas, Boy Scout hut, parsonage, stone signage, trees, cemetery, and cleared and wooded areas surrounding both the church and cemetery properties. The proposed boundaries as shown in follow NCDOT ROW lines to the edge of pavement with Malcolm Boulevard and Carnegie Street and tax parcel lines according to the parcels shown on the Burke County GIS website (see Figure 17).

FIGURE 15: Site Plan, Abernethy Memorial United Methodist Church (BK0077), Burke County, North Carolina (ESRI World Imagery 2021)

FIGURE 16: Site Plan, Abernethy Memorial United Methodist Church Cemetery (BK0811), Burke County, North Carolina (ESRI World Imagery [Clarity] 2021)

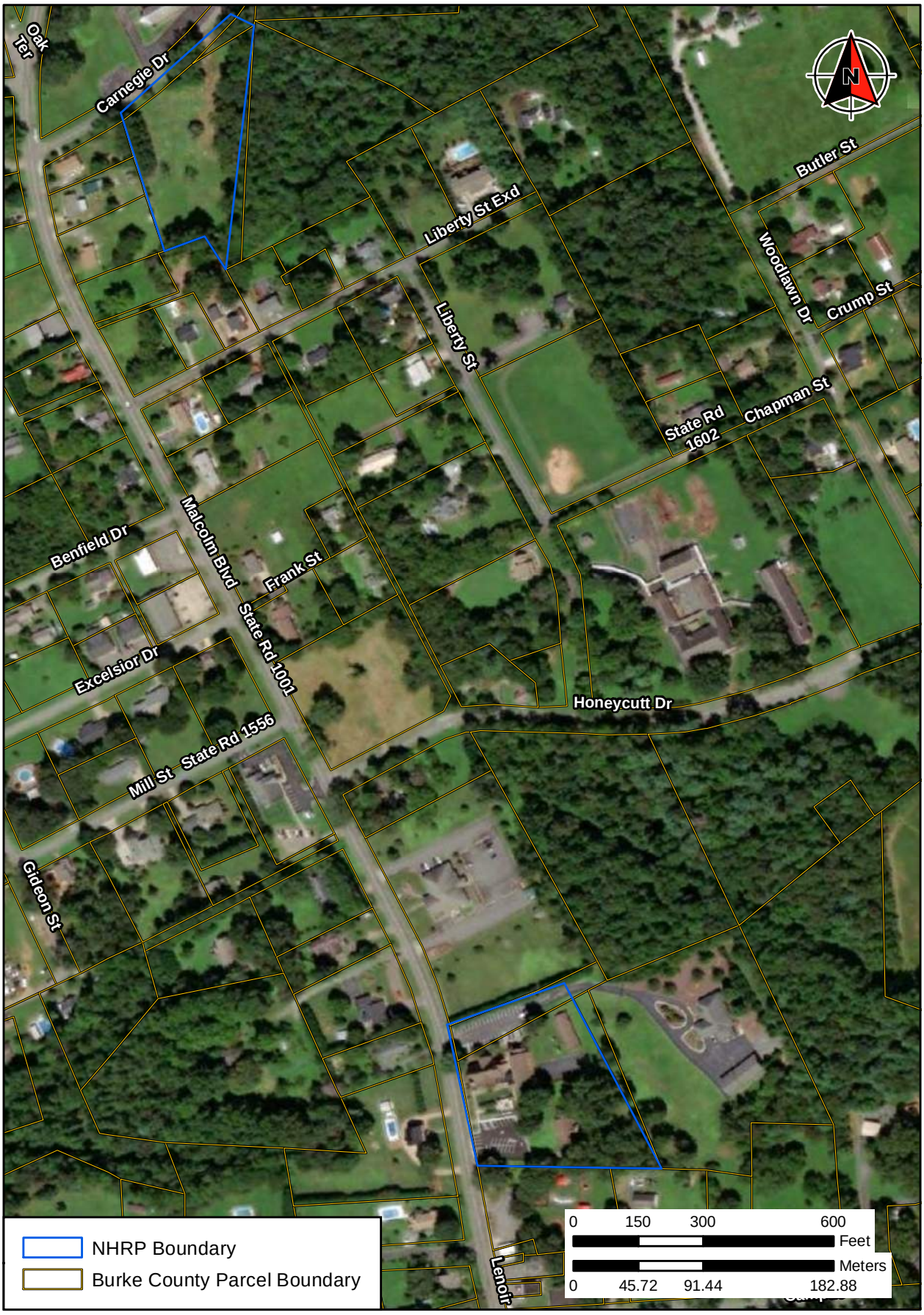


FIGURE 17: Recommended NRHP Boundaries (in blue) for Abernethy Memorial United Methodist Church (BK0077) and Cemetery (BK0811), Burke County, North Carolina (Esri World Imagery 2021)

PLATE 109: Abernethy Memorial United Methodist Church (BK0077), Oblique View of West and South Elevations, Burke County, North Carolina

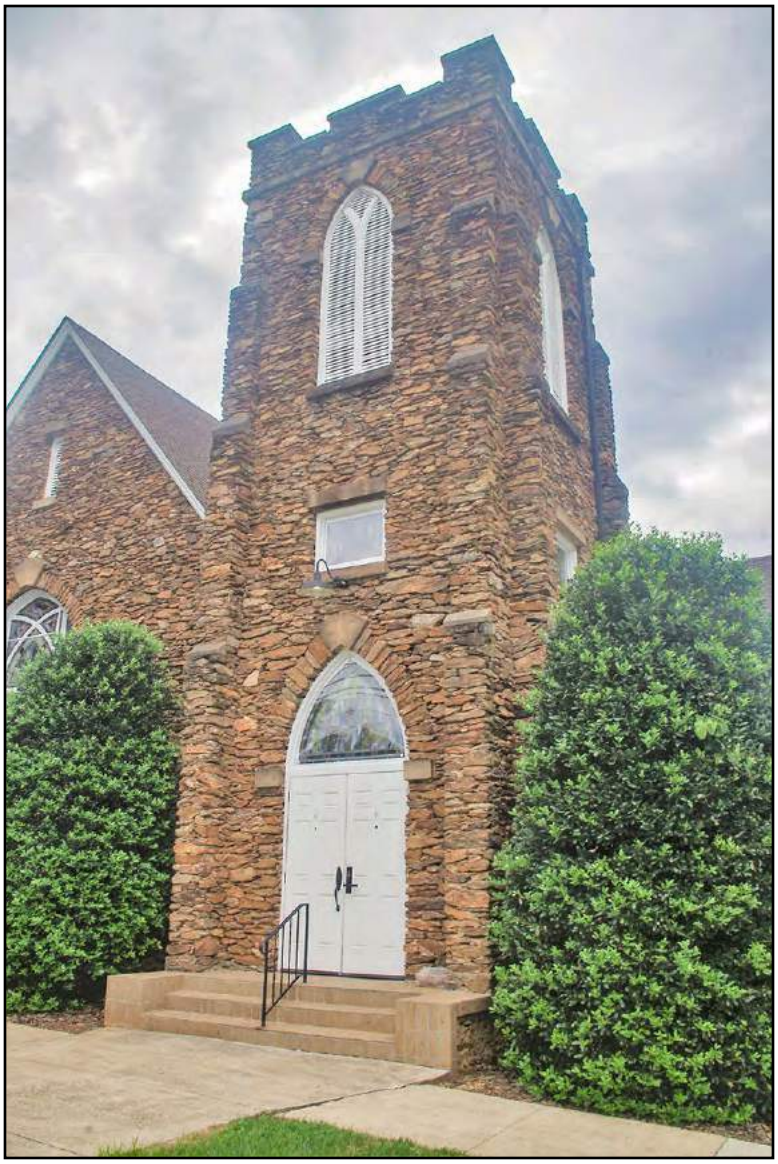


PLATE 110: Abernethy Memorial United Methodist Church (BK0077), Tower Detail, West Elevation, Burke County, North Carolina

PLATE 111: Abernethy Memorial United Methodist Church (BK0077), Window Detail, West Elevation, Burke County, North Carolina

PLATE 112: Abernethy Memorial United Methodist Church (BK0077), North Elevation, Burke County, North Carolina

PLATE 113: Abernethy Memorial United Methodist Church (BK0077), East Elevation, Burke County, North Carolina

PLATE 114: Abernethy Memorial United Methodist Church (BK0077), South Elevation, Burke County, North Carolina

PLATE 115: Abernethy Memorial United Methodist Church (BK0077), Interior of Sanctuary, Facing West, Burke County, North Carolina

PLATE 116: Abernethy Memorial United Methodist Church (BK0077), Interior of Sanctuary, Facing East, Burke County, North Carolina

PLATE 117: Abernethy Memorial United Methodist Church (BK0077), Interior of Sanctuary, Facing East, Burke County, North Carolina

PLATE 118: Abernethy Memorial United Methodist Church (BK0077), Interior of Study, Facing Northwest, Burke County, North Carolina

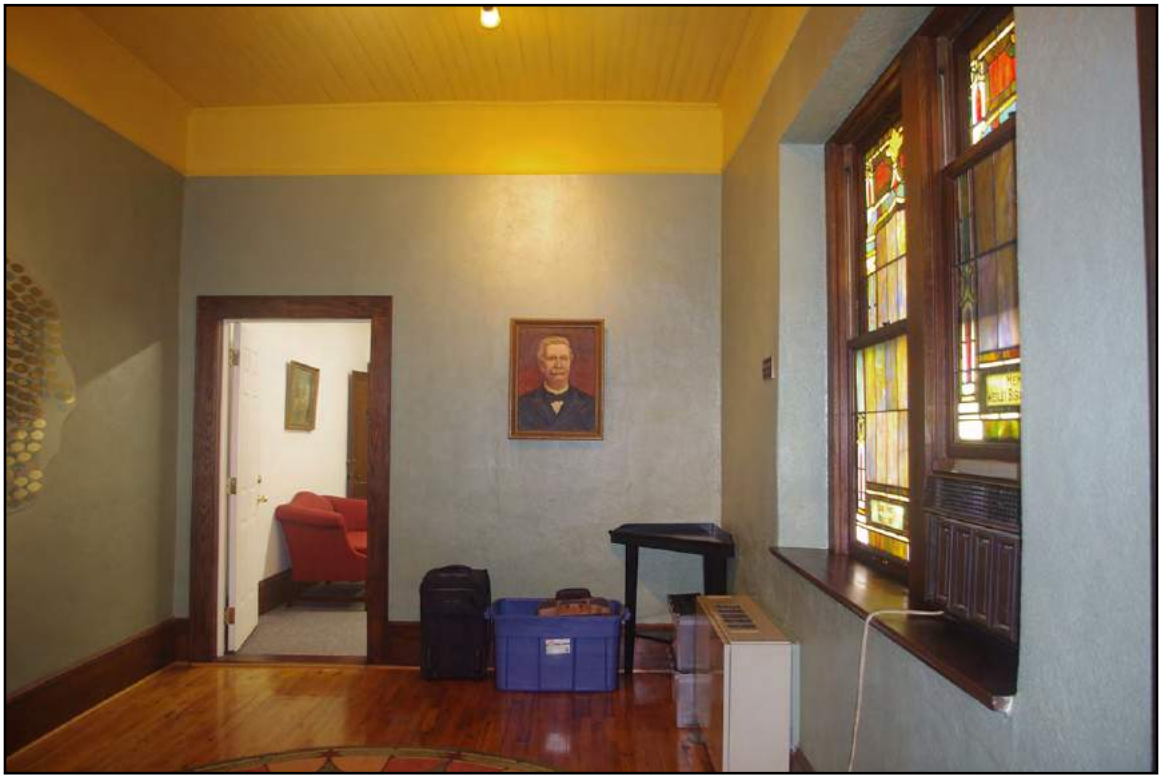


PLATE 119: Abernethy Memorial United Methodist Church (BK0077), Interior, Facing East, Burke County, North Carolina

PLATE 120: Abernethy Memorial United Methodist Church (BK0077), 1966 addition, Oblique of North and West Elevations, Burke County, North Carolina

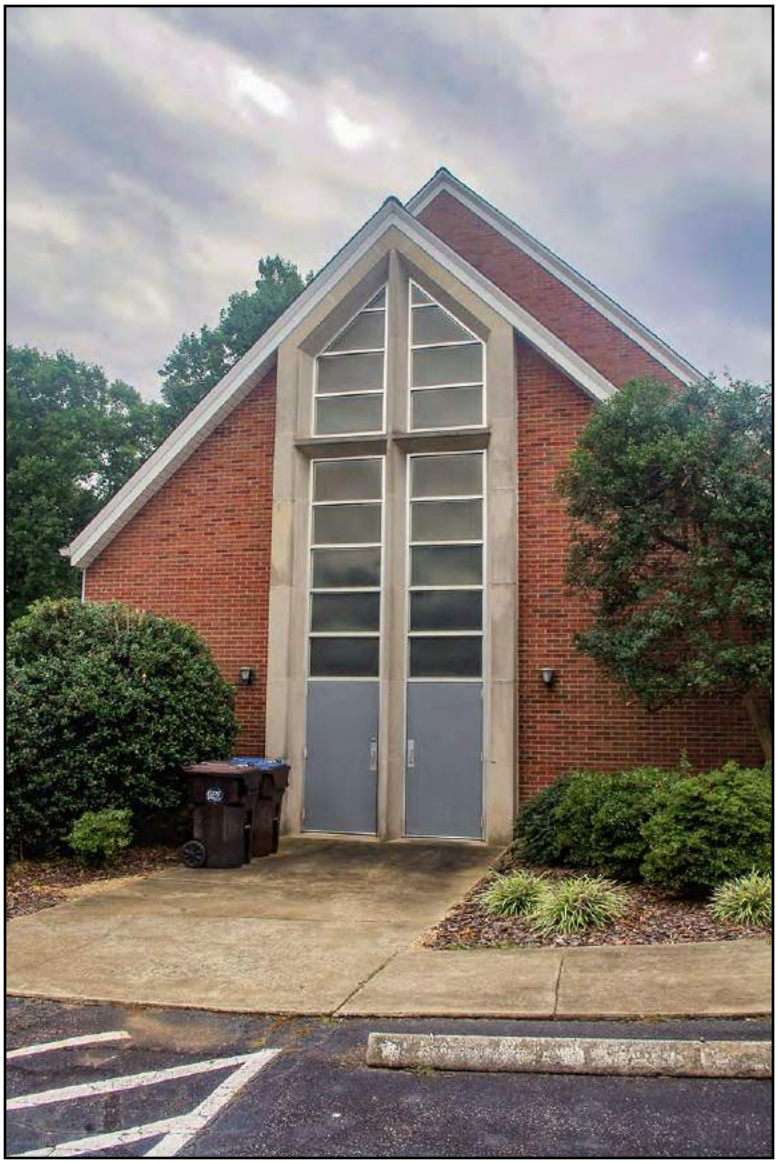


PLATE 121: Abernethy Memorial United Methodist Church (BK0077), 1966 Addition, North Elevation, Burke County, North Carolina

PLATE 122: Abernethy Memorial United Methodist Church (BK0077), 1966 Addition, Oblique View of East Elevation, Burke County, North Carolina

PLATE 123: Abernethy Memorial United Methodist Church (BK0077), 1966 Addition, Interior, Facing North, Burke County, North Carolina

PLATE 124: Abernethy Memorial United Methodist Church (BK0077), 1966 Addition, Interior, Facing South, Burke County, North Carolina

PLATE 125: Abernethy Memorial United Methodist Church (BK0077), Boy Scout Hut, 1968, West Elevation, Burke County, North Carolina

PLATE 126: Abernethy Memorial United Methodist Church (BK0077), Gardens/Columbarium, Facing East, Burke County, North Carolina

PLATE 127: Abernethy Memorial United Methodist Church (BK0077), Parsonage, 1971, West Elevation, Burke County, North Carolina

PLATE 128: Abernethy Memorial United Methodist Church (BK0077), Detail of Church Signage, Facing East, Burke County, North Carolina

PLATE 129: Abernethy Memorial United Methodist Church Cemetery (BK0811), Detail of Signage, Facing South, Burke County, North Carolina

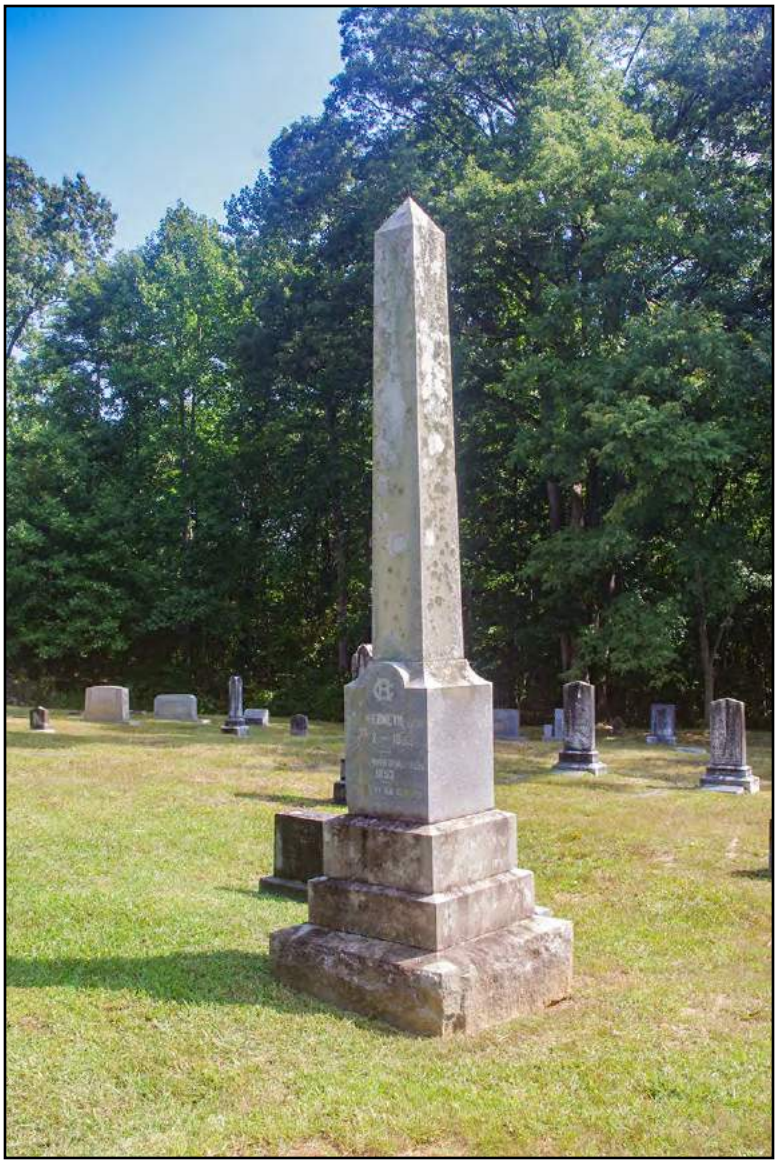


PLATE 130: Abernethy Memorial United Methodist Church Cemetery (BK0811), Monument Dedicated to Robert L. Abernethy, Moved to Cemetery at His Grave Site after Demolition of Last Remaining Rutherford College Buildings, Facing East, Burke County, North Carolina

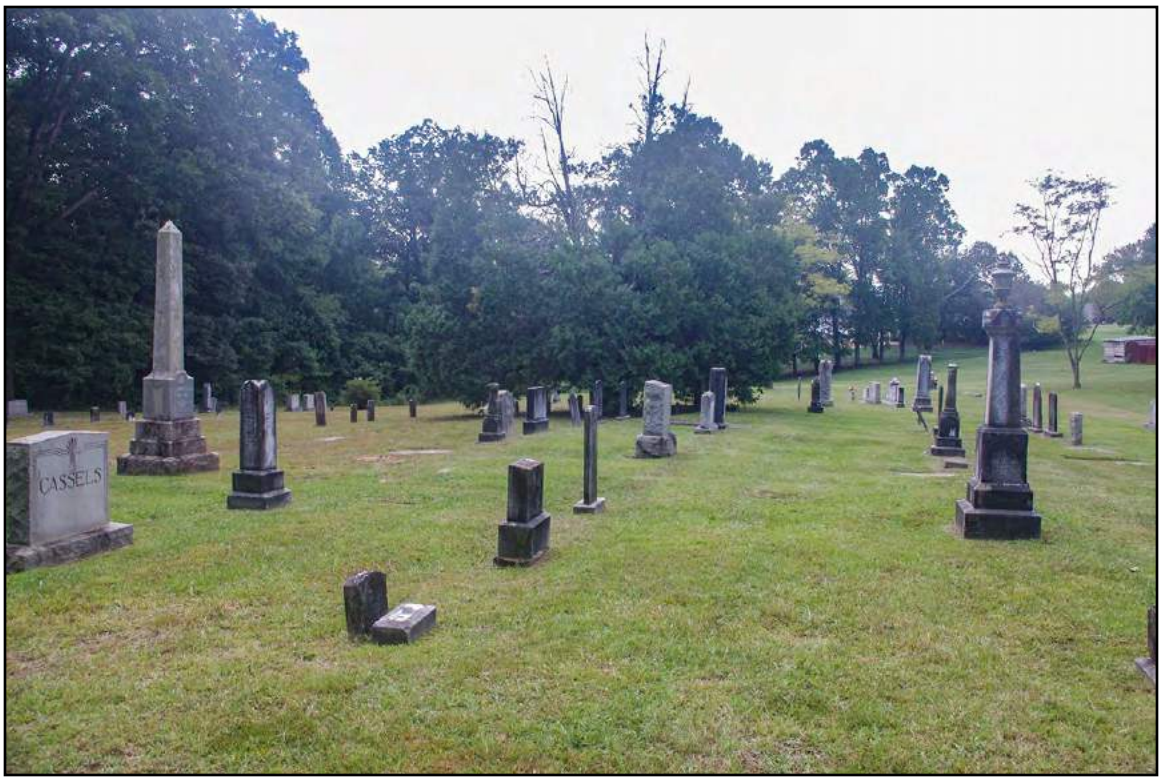


PLATE 131: Abernethy Memorial United Methodist Church Cemetery (BK0811), Facing South, Burke County, North Carolina

PLATE 132: Daniels Evangelical Reformed Church (LN0160), 1937, Oblique View of West and North Elevations, Lincoln County, North Carolina

PLATE 133: St. Francis of Assisi Church (CW0183), East Elevation, Lenoir, Caldwell County, North Carolina

PLATE 134: Grace Episcopal Church (BK0098), South Elevation, Morganton, Burke County, North Carolina

PLATE 135: Waldensian Presbyterian Church (BK0018), Valdese, Burke County, North Carolina

PLATE 136: First Baptist Church (CW106) of Lenoir, ca. 1960 Addition, East Elevation, Caldwell County, North Carolina

2.11 Clifton Spinx House

Resource Name	Clifton Spinx House
HPO Survey Site No.	BK0812
Location	901 Malcolm Boulevard
PIN	2753076620
Date(s) of Construction	1940
NRHP Recommendation	Eligible, Criterion C

2.11.1 Setting and Description

Facing east on Malcolm Boulevard, the house stands on the east portion of a narrow, rectangular, 0.87-acre parcel bordered by Icard Street on the south. A driveway accessed from Icard Street leads to the house's south elevation, and a pool lies directly to the northwest in the rear yard. Mature trees and plantings dot the front yard, and a long row of hedges borders the north and west parcel boundaries (Figure 18).

2.11.1.1 Clifton Spinx House, 1940

The one-story with basement, well-executed stone period cottage built of cut rose granite features multiple gables in its roofline, stone archways, heavy stone lintels, and a form consisting of a side-gabled main block with a large, hip-roofed rear wing extending to the west. Its handsome main elevation features an engaged porch at the southeast corner of the house, with flat-arched stonework forming its supporting structure (Plate 137). A single-leaf, arched door with an arched stone surround marks the entry, consisting of a wood batten door with a small, four-light window in the upper half (Plate 138). A large, prominent stone chimney, tapered at the top, rests against the main elevation, accented with a diamond-shaped stone in its center (Plate 139). A block of three window bays of six-over-six wood sash pierce the center of the elevation, above which is a pent gable pierced with an arched, four-light, wood window bay and fanlight; all windows are topped with heavy stone lintels and underlined with heavy stone sills. The south elevation is dominated by the projecting, flat-arched open porch, which contains a stone porch floor and cornice returns (Plate 140). A triangular vent pierces the center of the gable wing forming the porch, surrounded by stone courses on two sides and a lintel on the bottom. Four bays pierce the remainder of the south elevation (the large rear wing), including two double windows, a single window, and a smaller single window; all windows are six-over-six wood sash (Plate 141). Basement-level openings sit below the foundation level, marked visually with a wide stone course that extends the entire perimeter of the house's footprint. The house's west (rear) elevation contains a double and a replacement triple window bay, as well as a single-leaf exterior entrance. A wood deck extends to the west from the elevation. The north elevation features a double window piercing its gabled wing and another triangular vent, with two additional double windows along the remainder of the elevation (Plate 142). Two interior stone chimneys rise from the house's roofline; the roof is covered in asphalt shingle. Upon close inspection one can see the vertical marks in the solid, single-piece, stone lintels that were caused by equipment used to retrieve the heavy stone from the quarry.

Although the property owner did not grant the surveyor interior access, he provided descriptive information about the interior, which includes granite fireplaces and mantels, solid fir doors, and hardwood floors. The floor plan contains three bedrooms and one bath, which are located in the rear, hipped wing of the house along with a kitchen.

Pool, 1972. An in-ground, rectangular-shaped pool lies west of the house in the rear yard. It is unfenced and bordered with landscaping and a few hedges, with a paved concrete floor surrounding it.

Shed, 2020. A one-story, prefabricated, front-gabled storage shed also stands in the rear yard to the west. The shed has a three-bay main elevation and a single-leaf central entrance flanked by window bays on each side, accessed by a set of wood steps (Plate 143).

2.11.2 Historical Background

A 1939 deed records the conveyance of the property from L. Georgie Goode, a widow, to Clifton G. and Nora Spinks (Spinx) (Plate 144). L. Georgie had been married to Dr. T.V. Goode, a physician who practiced in Morganton, and together they had nine children. Dr. Goode began working at a hospital in Statesville in 1918 (*Charlotte Medical Journal* 1918).

In 1940 the Spinx family began construction on the house, mining pink rose granite from a quarry near Salisbury to form the precisely cut stonework that composes the exterior walls. Although the house had no formal architect, Clifton Spinx along with Waldensian master stone mason Albert Pons and one other unidentified laborer constructed the home with the help of a kit or pattern book plan, which mimics the form and style of a period cottage. Pons was renowned as a master stone mason, having worked on buildings at Duke University in Durham as well as the stonework forming bridges along the Blue Ridge Parkway. He is also said to have completed the stonework for the Memorial Bridge in Washington, D.C. as well as for Arlington National Cemetery (McCall and Kays 1993:103).

Members of the Albert Pons family of Valdese and the Rev. John Pons family of Rutherford College were numerous and well known in the local community. Having had experience building with stone in their native Italian homeland in the Cottian Alps, many of the Waldensian immigrants turned to masonry and other skilled building arts when farming proved not to be as successful as they had initially hoped. Clifton Spinx is recorded in census records as a laborer in the lumber industry, and in 1946 the property transferred to Mrs. Martha and Corrie Bridgers, the sisters of Howard Bridgers. The Bridgers sisters owned the property until 1976, when it was sold to Preston and Judy Cannon, who continue to own it today (BCDB 37/524, 66/467, 67/526, 503/657, 656/958; Cannon 2021; U.S. Census 1940).

2.11.3 Architectural Context and NRHP Evaluation

The Spinx House represents the growing economic status of middle and working class families who were interested in building stylish and modern homes in Burke County.

Although the stone period cottage is frequently found throughout Burke County, the use of granite as the house's sole exterior material is extremely rare, even more so the pink granite seen on the Clifton Spinx House. Precisely laid cut granite symbolized a finer, more upscale masonry treatment than that of a native fieldstone veneer (Plate 145). A popular exterior material for period cottages, most mortared stonework laid in a random fashion rather than in a geometric pattern embodies a casual feeling alluding to nature and the natural building materials of the rocky Appalachian foothills. The cut granite of the Spinx House, however, presents a more formal, dignified feel, and even more rare is its application to an informal period cottage. The basic Tudor period cottage form and architectural elements are clearly identified through the engaged, arched porch, front-gabled accents along the roofline, arched entry, and large stone chimney along the main elevation. Builders Spinx and Pons highlighted their skill in stone craftsmanship with segmental arched lintels over windows, doors, and vents with keystones.

Buildings of granite construction such as the Lyerly Building for Boys (RW0626) and the Granite Quarry School (RW0927) are more commonly found in Rowan County or near large sources of granite quarries. The only other property identified constructed of cut granite similar to the Spinx House in Burke County is the rectory for Grace Episcopal Church in Morganton (BK0098). Built of precisely cut granite like the Spinx House, the Colonial Revival-style rectory is a two-story, double-pile house built in 1947 (Plate 146). A handsome frame portico supported by paired columns shelters the central, single-leaf entry. Stone

chimneys stand against side elevations, and window bays are evenly spaced throughout. Constructed for use by Grace Episcopal Church, the rectory is a contributing property north of the Parish House within the NRHP-listed South King Street Historic District (BK0046), which qualifies for the NRHP under Criteria A and C (Wylie 1986c:7-1–8-2).

Another strong example of a stone period cottage in Burke County is found at 2881 U.S. Route 70 in Connelly Springs. Steeply pitched projecting gables accentuate the roofline, and arched entranceways and a wide chimney define the main elevation. Openings are finished with segmental arched lintels and courses of stonework (Plate 147). A raised mortar joint holds the fieldstone of a variety of shapes and sizes in place, as opposed to the Spinx House's understated, thin mortar joints in the square or rectangular cut granite. Windows do appear to be replaced on the Connelly Springs house, however, compromising the degree of integrity of the house in comparison with the superior integrity of the Spinx House.

Previously recorded stone period cottages found at 809 and 812 Lenoir Road near Morganton are additional notable examples, but neither exhibits the caliber of stone workmanship seen in the Spinx House. Both properties were determined not eligible for the NRHP in 2000.

The Clifton Spinx House possesses a high degree of integrity, retaining integrity of location and a medium degree of setting as surrounding buildings have changed and newer development has appeared along Malcolm Boulevard. However, the general geographical features and street setbacks are intact. Integrity of materials, design, and workmanship are present, evident in the house's original plan, windows, doors, stonework, and interior features. The resource retains a good degree integrity of feeling and association, functioning in its original purpose as a residence; however, it lacks a current connection with the Spinx family. Overall, the Spinx House possesses a high degree of the seven aspects of integrity that are required for NRHP eligibility.

The Clifton Spinx House is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in North Carolina. It was built during a time of steady growth for Rutherford College and the corresponding town, but no known historically significant events occurred in direct connection with the house.

The Clifton Spinx House is found not eligible under Criterion B for association with significant individuals in history. Although the Spinx family who constructed the house and the Bridges family who later resided there may have been active community members of Rutherford College, no single individual could be identified to contribute significantly to the history of Burke County in an outstanding way that has been documented to qualify for Criterion B.

The Clifton Spinx House is found eligible under Criterion C for architecture as a rare example of a period cottage in Burke County well executed in precisely cut pink rose granite quarried from Salisbury and as an example of the work of master Waldensian stone mason Albert Pons. The house's stone exterior displays fine craftsmanship and detail not commonly seen on other stone period cottages throughout Burke County, which were more often built of local rough or rounded fieldstone or applied as a stone veneer. The Spinx House's handsome arches, heavy lintels, and tightly laid and carefully patterned cut stone are a testament to its local builders, who contributed significantly to the region's architectural collection, particularly in the Valdese area.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Clifton Spinx House is not likely to have this type of information and does not meet Criterion D.

2.11.4 Recommended NRHP Boundaries

The recommended NRHP boundaries for the Clifton Spinx House are drawn to include the house surveyed and its associated landscape features, setting, and outbuildings as delineated in Figure 19. The boundaries loosely follow tax parcel boundary lines, which encompass roughly 1 acre and include the cleared and wooded areas to the west, and the rear and front yard. The proposed boundaries form more or less a rectangle and follow NCDOT ROW and tax parcel lines to the edge of pavement with Malcolm Boulevard and Icard Street (see Figure 19).

FIGURE 18: Site Plan, Clifton Spinx House (BK0812), Burke County, North Carolina (Esri World Imagery 2021)

FIGURE 19: Recommended NRHP Boundaries (in blue) for Clifton Spinx House (BK0812), Burke County, North Carolina (Esri World Imagery 2021)

PLATE 137: Clifton Spinx House (BK0812), East Elevation, Burke County, North Carolina

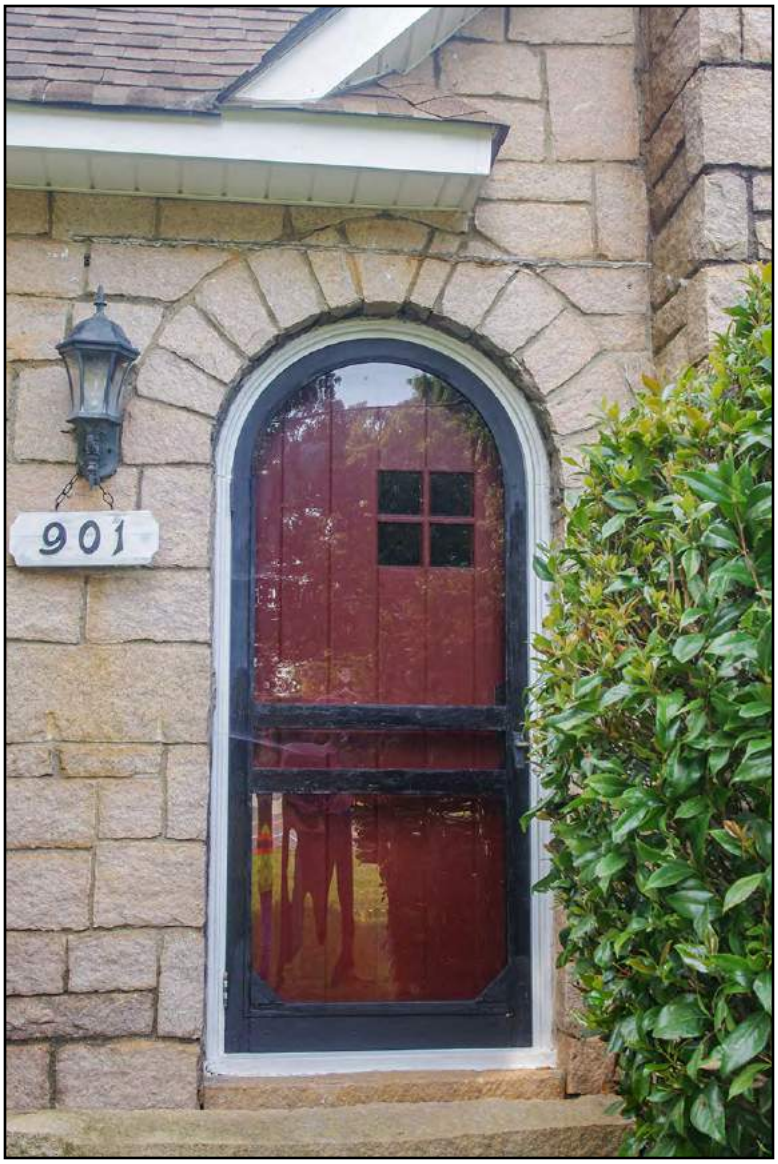


PLATE 138: Clifton Spinx House (BK0812), Entry Detail, East Elevation, Burke County, North Carolina

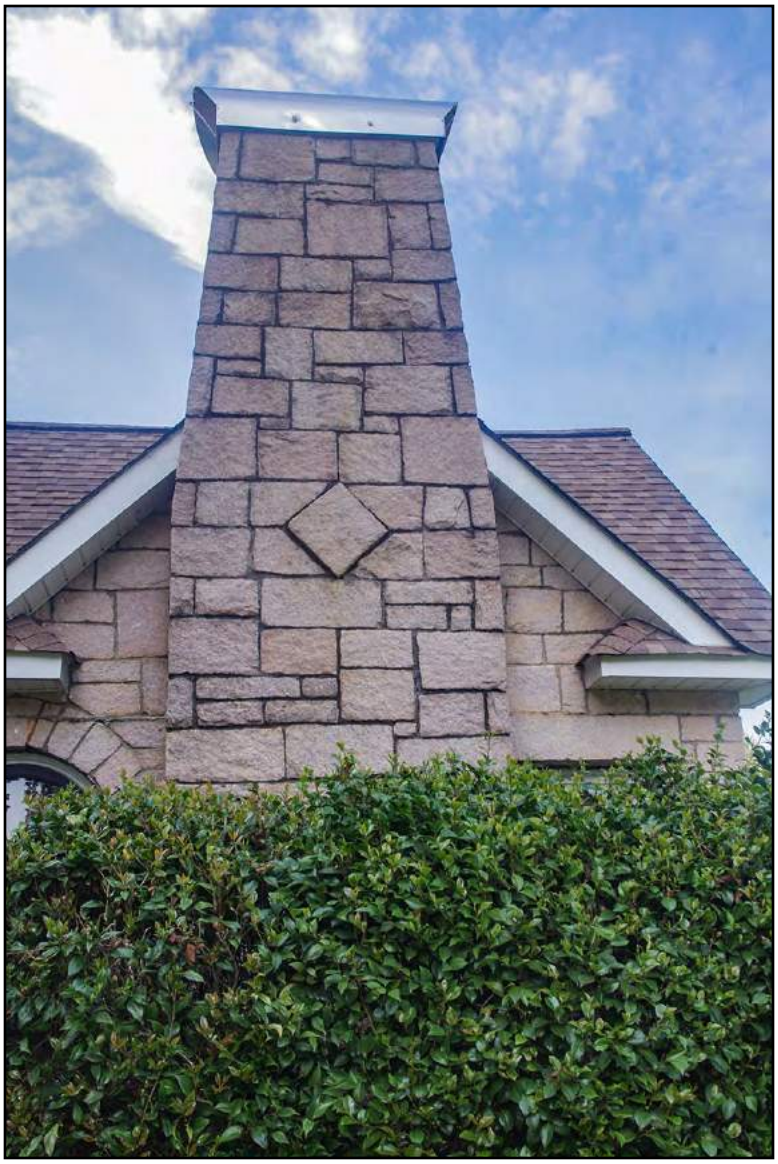


PLATE 139: Clifton Spinx House (BK0812), Chimney Detail, East Elevation, Burke County, North Carolina

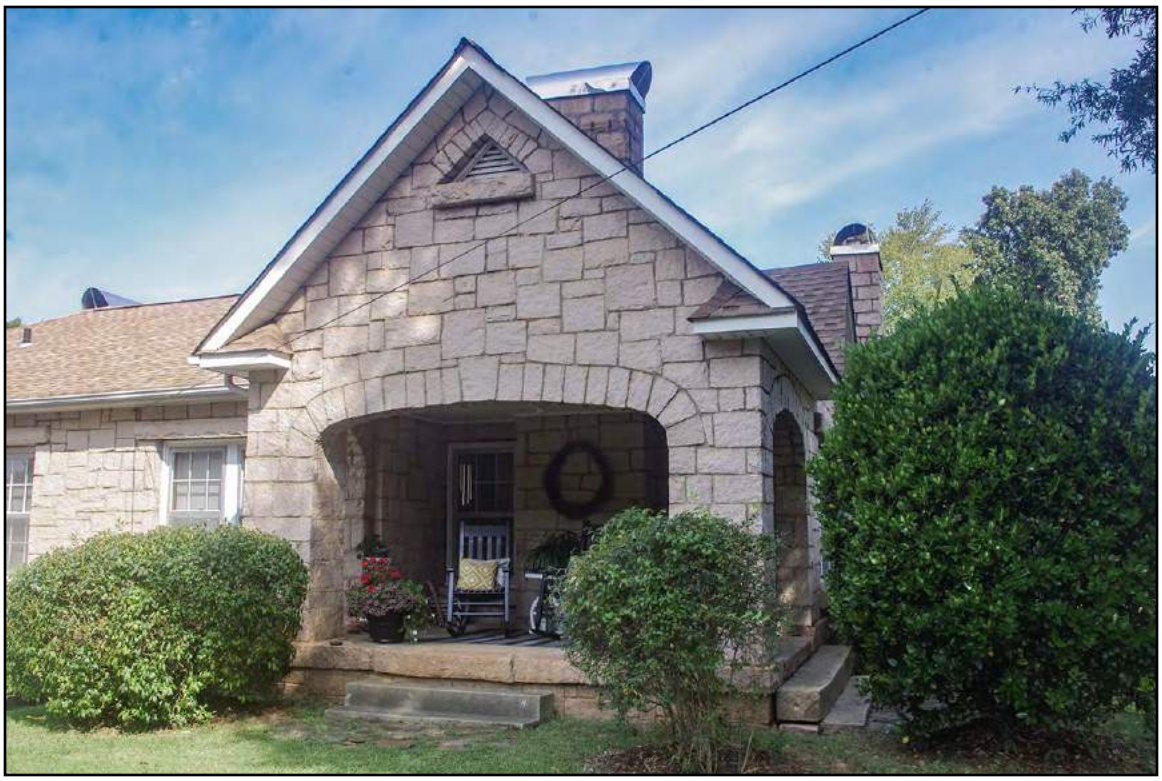


PLATE 140: Clifton Spinx House (BK0812), South Elevation, Burke County, North Carolina

PLATE 141: Clifton Spinx House (BK0812), South Elevation, Burke County, North Carolina

PLATE 142: Clifton Spinx House (BK0812), North Elevation, Burke County, North Carolina

PLATE 143: Clifton Spinx House (BK0812), Backyard with Shed and Pool, Facing West, Burke County, North Carolina

PLATE 144: Clifton and Jimmy Spinx, ca. 1945, Standing in Front of Spinx House (BK0812) (ancestry.com, Spinx Family Tree)

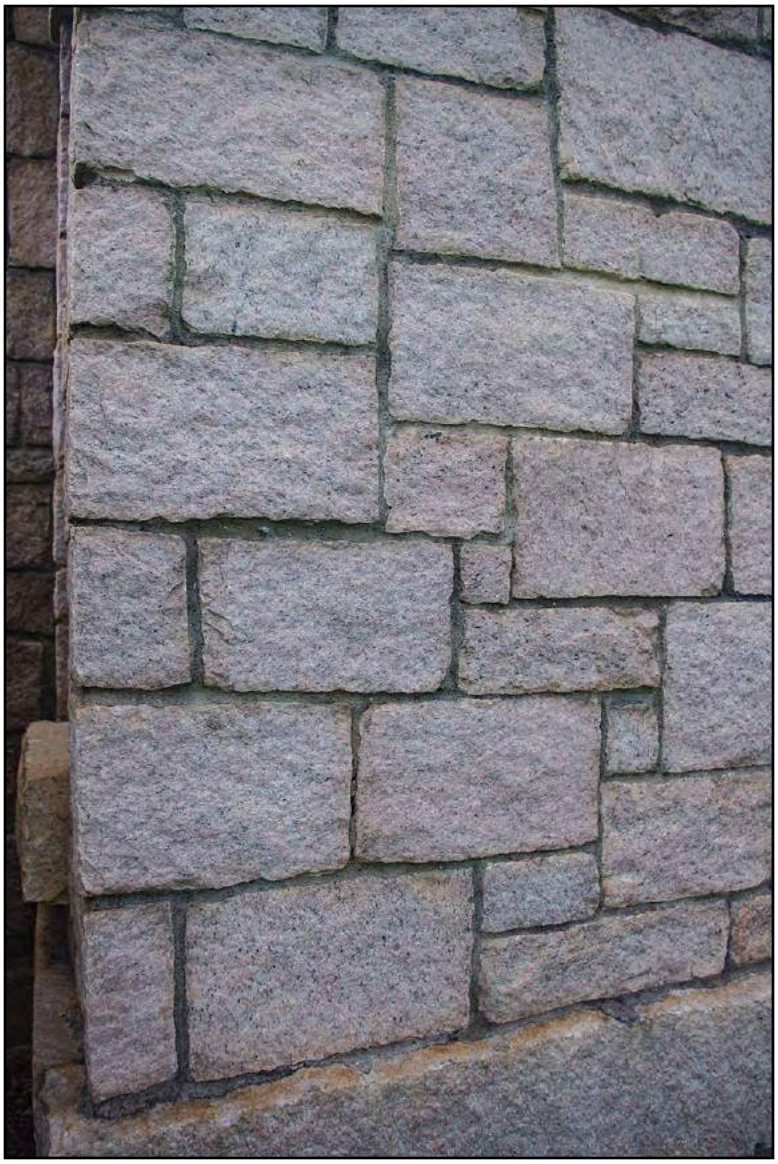


PLATE 145: Detail of Pink Cut Granite, Clifton Spinx House (BK0812), North Elevation, Burke County, North Carolina

PLATE 146: Rectory, West Elevation, Grace Episcopal Church (BK0098), Morganton, Burke County, North Carolina

PLATE 147: House at 2881 U.S. Route 70 in Connelly Springs, South Elevation, Burke County, North Carolina

2.12 Lovelady Fire Department

Resource Name	Lovelady Fire Department
HPO Survey Site No.	BK0813
Location	748 Malcolm Boulevard
PIN	2753076620
Date(s) of Construction	1960, ca. 1975
NRHP Recommendation	Not Eligible

2.12.1 Setting and Description

Facing west along Malcolm Boulevard, separated from the road by a narrow, paved parking area, the Lovelady Fire Department shares a parcel with the Valdese General Hospital. It stands at the far northwest corner of the 37.83-acre property, bordered on the north by Campus Street. The lot slopes downward at the rear (east) of the building, which contains a walkout basement, to an additional parking area. The southwest corner of the parcel contains a mulched section with exposed piping/utility equipment surrounded by bollards acting as protective barriers. A metal flagpole stands along the building's main elevation (Figure 20).

2.12.1.1 Lovelady Fire Department, ca. 1960

The one-story with basement, brick-veneered building houses the Lovelady Fire Department, topped with a flat roof and slight parapet. The building's main elevation contains five metal and glass, multi-light garage bays; three of the bays possess 20 lights each and two smaller bays 16 lights each, and all feature a band of metal, infilled lights at the bottom of each garage door (Plate 148). A single-leaf, glass and metal, modern entrance door pierces the center of the main (west) elevation. White lettering of an unknown material spell out "Lovelady Fire Dept.," slightly raised from the running-bond brick exterior. A metal, conical bell or alarm rises from the center of the roofline. The north elevation features a single-leaf, modern glass and metal entrance sheltered by a flat metal awning on its far western end, and is pierced with square, one-over-one, metal-sash window bays. Its far east end has a metal garage bay at the basement level (Plate 149). The east (rear) elevation, is two stories and contains two window bays and two single-leaf entrances on its basement level, with four window bays and one entrance on its first floor level, metal stairs provide access to the upper entrance from the parking area below. The building is clearly sectioned into three parts, visible from this rear elevation, and following suit on the interior (Plate 150). The south elevation features four single-light, narrow, oblong, fixed window bays (Plate 151).

The Fire Department's interior is functional and utilitarian for the purpose of storing fire trucks and equipment, with concrete-block and brick walls, concrete floors, exposed metal ceiling structures, and metal-sash windows and doors (Plate 152).

2.12.2 Historical Background

Property records show that he Lovelady Fire Department building was built in 1960, shortly after or around the time of the construction of the hospital on the same property. A 1942 deed records the conveyance of the former Rutherford College campus site to Valdese General Hospital, a corporation. Prior to the Lovelady Fire Department's official establishment in 1958, the parcel upon which the building was constructed served as the site of the Stump Institute, Rutherford College's first formal elementary school.

With so many buildings in Rutherford College destroyed by fire, the community achieved its goal of establishing a fire department with the creation of the Rutherford College Sanitary Water District. Indebted to the Rutherford College Lions Club for its organization, the department provided fire protection for the community of Rutherford College and surrounding areas, with J.C. Humphries, Jr. serving as its first chief from 1958 to 1971. Its next chief, Clyde Lowman, held the position from 1971 to 1990, and approximately 30 to 40 volunteers served as volunteer firefighters. During the 1970s and 1980s, the fire department expanded and built an addition to its main building, which appears to have been made to the south end of the structure. The original south elevation of the main building is now a brick interior wall separating the older building from the addition, and garage bays are of smaller size than the original block (see Figure 20) (BCDB 52/443; Galvin 2008:209).

2.12.3 Architectural Context and NRHP Evaluation

As cities and towns throughout North Carolina began to expand their publics works services during the early twentieth century in the forms of sewer systems, electricity, water corporations, and road improvements, the need for publicly and town funded buildings to house employees and equipment for necessary services grew exponentially. Town halls, municipal buildings, and industrial facilities were erected along with fire houses to house fire trucks, equipment, and storage and training needs for firefighters. Fire houses as a building type in North Carolina originated in the late nineteenth century, when fire equipment was horse-drawn until the invention of the automobile. As departments were able to acquire state-of-the-art fire trucks, hoses, and training equipment, the need for adequate structures for storage propelled municipalities to construct heavy-duty fire houses to provide fire protection and rapid response to emergencies. Firefighting practice, policy, and professionalization greatly affected fire house architecture over the course of the twentieth century. Only 10 fire houses are either individually listed or determined eligible for the NRHP in North Carolina according to HPOweb, with an additional handful of fire houses listed as contributing resources within NRHP-listed or eligible districts (Vivian 1999:8-8–8-14).

Early fire houses frequently mimicked the architectural patterns and styles implemented in town halls and other public facilities common to city centers or main streets during the first quarter of the twentieth century. Classical- and Revival-style buildings were popular choices for this type, along with late Victorian-influenced styles seen more often in industrial mills or factory buildings. In the following decades Art Deco-influenced fire houses appeared in addition to more commonly executed mainstream commercial architecture, nearly always constructed in brick. Asheville's Fire Station No. 4 (BN0537), built in 1927, exhibits modest Art Deco elements in its story-story, brick form pierced by arched garage bays with corresponding fire tower. These buildings incorporated more spaces for storage of heavy equipment, larger garage bays, and sleeping and dining quarters for firefighters as changing technology and increased fire protection needs led to cities hiring full-time firefighter employees. Beginning in the mid-twentieth century, however, following suit with commercial and civic buildings of the period, fire house began to adopt Modernist design principals, opting for utility and functionality with streamlined, modern features. And, although earlier fire houses almost universally stood within downtown areas of towns and cities, more fire houses located to the suburbs following housing trends of the 1940s through 1960s or to the outskirts of cities as the need arose for multiple fire houses to serve growing populations. This in turn affected the aesthetic character of stations as departments adopted the architectural scale and nature of the residential areas surrounding them. For volunteer fire departments in small towns and rural communities like Rutherford College, economy and affordable materials were of utmost importance to the design of buildings, as limited funds without the aid of a larger city tax base limited size and design of fire house facilities (Phillips 2016:8:7–8-17; Vivian 1999:8-8–8-14).

No previously recorded fire houses or departments in Burke County have been documented or evaluated for NRHP eligibility according to HPOweb analysis, and it is therefore necessary to look at other surveyed examples in nearby counties, such as Caldwell and Catawba. The Lenoir Fire Department Station No. 1 on

Harper Street (CW0563) is an outstanding example of a Modernist fire station, built in 1969 and offering modern amenities such as heating and cooling, administrative offices and lodging quarters for fire department employees, and drive-through engine bays (Plate 153). Topped with a flat roof, the two-story, brick-veneered fire house commands attention with its sections of top-to-bottom cast stone pilasters, the voids of which are filled with narrow window bays. An emphasis on verticality and geometric form, lack of ornament, and clean lines make the resource one of Lenoir's best examples of Modernist architecture (Robinson & Associates 2018:2).

Also in Lenoir is the Lenoir Fire Department No. 1 at 122 Mulberry Street (CW0130), an earlier brick fire house situated in downtown Lenoir. Lenoir's first fire department house, established in 1913, features a basement-level garage bay entrance on its rear elevation. The standard commercial brick storefront building, with a façade altered in the 1940s, is bordered by brick pilasters on its edges, a corbelled brick cornice at its top, and features recessed brick panels above replacement double windows and a typical recessed, plate-glass, storefront design sheltered by a metal awning on its first story (Fearnbach 2006:28-29).

In Catawba County downtown Hickory's Fire Station (CT0889), now altered, features large, prominent arched bays, a parapet roofline, and brick walls accented by brick pilasters and large window openings, now infilled, on side elevations. The Hickory Fire Station no longer retains sufficient integrity or functions as a fire station (Plate 154). Like the other examples described above, its location in the heart of downtown with corresponding size and scale make it less of an appropriate comparative resource to the Lovelady Fire Department in Rutherford College.

Strikingly similar to the Lovelady Fire Department building but not previously recorded is the Oak Hill Fire Station No. 1 in Burke County. Located on NC 181 near Morganton, the Oak Hill Fire Station is a one-story, brick fire house with a flat roof and four garage bays (Plate 155). Like the Loveday Fire Department, it retains its siren bell atop the roof (Oak Hill Fire & Rescue Protection Association, Inc. 2021). Both Oak Hill and Lovelady's brick fire house buildings are simple, one-story, flat-roof utilitarian structures with function, economy, and practicality informing design choices.

Retaining a medium degree of the seven aspects of integrity required for NRHP eligibility, the Lovelady Fire Department possesses integrity of location, having not been moved from its original location. Its integrity of setting is relatively intact with the exception of the development of the Valdese General Hospital to its south and former Malcolm Boulevard buildings and stores now demolished. However, its geographical surroundings and general feeling remain intact. Integrity of materials and workmanship are present with the exception of replacement doors and windows on portions of the building, including the five main garage bays. Integrity of design has been compromised with a later addition, although the changes made were careful to match the pattern of original construction. The resource retains a good degree of the integrity of feeling and association, functioning in its original purpose as the fire house for the community of Rutherford College.

The Lovelady Fire Department is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in North Carolina. The development of fire protection proved to be an important development in municipal services offered in rapidly growing cities and towns during the twentieth century. Rutherford College's desire for a volunteer fire department understandably followed strongly on the heels of several devastating fires to the community, including those to the college during the 1890s and the destruction of Weaver Hall in 1927. No known historically significant events occurred in direct connection with the Lovelady Fire Department building, however, even though the department's creation was born from a need for local fire protection. Furthermore, the building lacks sufficient integrity.

The Lovelady Fire Department is found not eligible under Criterion B for association with significant individuals in history. Although a number of former fire chiefs who served as volunteers at the department were prominent community members of Rutherford College, no single individual could be identified who contributed significantly to the history of Burke County in an outstanding way that has been documented to qualify for Criterion B.

Likewise, the Lovelady Fire Department is found not eligible under Criterion C for architecture because it lacks architectural significance and integrity. The Lovelady Fire Department is an unremarkable example of utilitarian, mid-twentieth-century, standard commercial and miscellaneous Modernist architecture. Its doors and garage bays have been replaced and it contains an addition built during the 1970s and 1980s.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Lovelady Fire Department is not likely to have this type of information and does not meet Criterion D.

FIGURE 20: Site Plan, Lovelady Fire Department (BK0813), Burke County, North Carolina (ESRI World Imagery 2021)

PLATE 148: Lovelady Fire Department (BK0813), Oblique View of West Elevation, Burke County, North Carolina

PLATE 149: Lovelady Fire Department (BK0813), North Elevation, Burke County, North Carolina

PLATE 150: Lovelady Fire Department (BK0813), Oblique View of East Elevation, Burke County, North Carolina

PLATE 151: Lovelady Fire Department (BK0813), Oblique View of South Elevation, Burke County, North Carolina

PLATE 152: Lovelady Fire Department (BK0813), Interior, Facing East, Burke County, North Carolina

PLATE 153: Lenoir Fire Station No. 1, (CW0563), 1969, North and East Elevations, Lenoir, Caldwell County, North Carolina

PLATE 154: Fire Station (CT0889), West Elevation, Hickory, Catawba County, North Carolina

PLATE 155: Oak Hill Fire Station, West Elevation, Morganton, Burke County, North Carolina (Oak Hill Fire Department)

2.13 Zeb Malcolm House

Resource Name	Zeb Malcolm House
HPO Survey Site No.	BK0814
Location	811 Malcolm Boulevard
PIN	2753067983
Date(s) of Construction	ca. 1900, 1939
NRHP Recommendation	Not Eligible

2.13.1 Setting and Description

Facing east on Malcolm Boulevard on a rectangular parcel across from the Valdese General Hospital, the Zeb Malcolm House has a narrow setback from the roadway and is accessed by a gravel drive along the north edge of the parcel leading to a paved rear driveway and garage that stands behind (west of) the house. The side and rear yards are fenced and contain a few mature trees but are mostly cleared (Figure 21).

2.13.1.1 Zeb Malcolm House, ca. 1900, 1939

The one-and-one-half story, side-gabled, brick and stucco combination Zeb Malcolm House has undergone several stages of alterations over the course of its history. Window bays and doors are modern replacements, the front porch has been altered, and the masonry painted. It is unclear exactly when the house received its period cottage cosmetic exterior renovation, but it likely was sometime in the 1920s or 1930s. Its main elevation features a pent gable, sheathed in vinyl siding and pierced with a small replacement window bay above the small gabled portico supported by wood posts that terminate in rounded masonry piers, sheltering a single-leaf entrance (Plate 156). Walls are clad in a combination of brick with brick and stucco crenelated courses, running from the roofline to a header course at the water table level. One double window and a single window bay pierce the walls to either side of the entrance. A prominent brick chimney rests against the main elevation next to the entry porch. The house's north elevation is clad in brick in an 8-1 common bond, pierced by a single and a double window on the first level and another double window on the upper half-story (Plate 157). A portion of the far west end of the elevation, likely an enclosed porch, is sheathed in siding. The south elevation of the house contains three window bays and a single-leaf entrance leading to a gated, concrete patio on the first story and a double window in the upper half-story. Underneath the patio, which is raised owing to the slope of the parcel, is a stone foundation (Plate 158). A brick chimney rises through the center of the roofline.

Garage. A modern, side-gable-roofed, two-bay garage clad in vinyl siding resting on a concrete foundation stands behind the house.

2.13.2 Historical Background

An exact build date for the Zeb Malcolm House is not known; however, oral history accounts date the house to the early twentieth century. The dwelling stood across from Rutherford College during the 1920s and 1930s after the college was rebuilt following the devastating fire of 1891, functioning as the Black Lantern Tea Room.

Deed records indicate that Rutherford College alumnus Zeb Malcolm purchased the house in 1943; however, family oral history accounts claim he bought the property in 1939. Zeb Malcolm, who is most well-known as a notable Rutherford College football player, served as captain of the football team in 1930, the year the school won the state championship against well-known colleges and small universities. Employed by Carnation for much of his working life, upon retirement Malcolm became an extremely influential leader in the Town of Rutherford College and a catalyst for its growth, eventually serving as its first mayor in the 1970s (Plate 159). Malcolm was instrumental in the town's chartering and reorganization in 1977, and Malcolm Boulevard was named for his efforts. Also highly active in the Lions Club, Malcolm often led the organization of Rutherford College alumni reunions along with major town functions and projects such as street beautification and sewer improvements (Malcolm 2021; Roark 1978:8; Hall 1977a:1).

The house clearly received updates to its façade during the 1930s or 1940s, and has more recently undergone renovations that include window and door replacement, interior renovations, and exterior painting. The small front portico is likely also a later addition. Malcolm's son Darel Malcolm owns and occupies the house currently along with this wife Carol Dalton Malcolm. The house's connection to Rutherford College as a former student hangout spot and its strong link to the town's mayor, who was a highly significant figure in the life of the school and the town, make it among the most historically significant houses surviving in Rutherford College.

2.13.3 Architectural Context and NRHP Evaluation

Modest brick period cottages of the early to mid-twentieth century survive throughout Burke County and the surrounding region, in both urban and outlying areas. Period cottages, like Bungalows, were an attractive alternative to a two-story frame dwelling in rural areas. Their stylish and durable exteriors, often constructed in brick or stone with cross-gabled rooflines, were built by families from approximately the 1920s through the 1940s in Burke County and throughout North Carolina. They were influenced by nationally popular styles like Tudor Revival, Classical Revival, and Dutch Colonial Revival. Most often found in small towns and cities, such as Morganton, Lenoir, and Valdese, period cottages emphasized modern living for nuclear families, often with integrated screened-in or open porches often built as side wings, and practical interior floor plans that emphasized more open layouts with few if any formal hallways (Bishir 1990:498-507). The Zeb Malcolm House subtly references the Tudor Revival style in its architectural elements, including the prominent chimney along the main elevation, the gable-accented roofline at the entrance, and the exterior wall treatment of combination brick and stucco with brick crenelated courses.

Surviving examples include both stone and brick cottages. One in particular is located in Connelly Springs at 2698 Old 70 Loop, featuring an engaged porch on one end with arched openings, pent gables, a prominent brick chimney, and arched entry, all hallmarks of the Tudor Revival style in a smaller, period cottage form (see Plate 91) Another example is found at 2295 Antioch Road near Morganton (BK0447). This house integrates both stone and brick into its exterior, and possesses the characteristic Tudor-period cottage elements similar to the Malcolm House. The side-gabled roof with accented steep gables over the entry, the prominently placed chimney, the engaged side porch, and the arched entry easily identify the house type (Plate 160). Despite its replacement windows, like the Malcolm House, it appears to retain an adequate degree of integrity.

Lenoir in Caldwell County boasts several strong examples of Tudor-period cottages, particularly in the Maehill Park Historic District (CW0614). One example at 430 Highland Avenue SW (CW0718) embodies a more elaborate version of the Tudor-period cottage type, featuring a stone and brick combination on its main elevation, arched wing walls and arched entries, gabled roofline accents, and a large stone chimney (Plate 161). Other examples are found on Lower Creek Drive and McLean Street in Lenoir. Alluding to the

English countryside with slight medieval-period architectural elements in a less imposing, cottage form, both houses adhere to the American pattern of a period cottage with Tudor-style influences. Both also appear to retain original windows and character-defining architectural features.

The Zeb Malcolm House possess integrity of location, having not been moved from its original site. It retains only a medium degree of integrity of setting because the former Rutherford College campus has been demolished and the more recent Valdese General Hospital has been developed directly across Malcolm Boulevard east of the house. Integrity of materials and workmanship has been compromised with the application of replacement materials, such as windows and doors, and the integrity of design has been somewhat affected by later porch modifications and small additions. The resource retains a good degree integrity of feeling and association, functioning in its original purpose as residence remaining within the Malcolm family. Overall, the Zeb Malcolm House possess a medium degree of the seven aspects of integrity that is required for NRHP eligibility.

The Zeb Malcolm House is found to be not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in North Carolina. No known historically significant events occurred in connection with the house, although it is somewhat historically associated with Rutherford College while it functioned as a tea room during the early twentieth century.

The Zeb Malcolm House does possess the significance needed for eligibility under Criterion B for its association with former Rutherford College mayor Zeb Malcolm; however, it lacks the integrity needed for qualification. An alumnus of Rutherford College, Malcolm was highly instrumental in the town's reorganization and charter during 1977 and served as the first mayor, leading community projects and Rutherford College alumni reunion events. Malcolm oversaw the annexation process and growth during the 1970s and 1980s, and was vital in restoring interest and pride in the community that no longer possessed the school from which it was founded. To qualify under Criterion B, however, a property must also possess the seven aspects of integrity, which are lacking in the Zeb Malcolm House because of alterations and replacement materials.

The Zeb Malcolm House is not eligible under Criterion C for architecture. The Zeb Malcolm House is an example of a common, unremarkable house type similar to a period cottage but lacking the outstanding architectural character needed to warrant NRHP eligibility under Criterion C. Furthermore, the house has undergone renovations such as replacement windows and doors and porch modifications that have compromised its integrity.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Zeb Malcolm House is not likely to have this type of information and does not meet Criterion D.

FIGURE 21: Site Plan, Zeb Malcolm House (BK0814) (Esri World Imagery 2021)

PLATE 156: Zeb Malcolm House (BK0814), East Elevation, Burke County, North Carolina

PLATE 157: Zeb Malcolm House (BK0814), North Elevation, Burke County, North Carolina

PLATE 158: Zeb Malcolm House (BK0814), South Elevation, Burke County, North Carolina

PLATE 159: Zeb Malcolm at Rutherford College Town Hall, 1978 (*Morganton News-Herald*)

PLATE 160: House at 2295 Antioch Road (BK0447), Morganton, Burke County, North Carolina (Google Street View)

PLATE 161: House at 430 Highland Avenue in Maehill Park Historic District (CW0718), Oblique View of East and South Elevations, Lenoir, Caldwell County, North Carolina

2.14 Malcolm Boulevard Historic District

Resource Name	Malcolm Boulevard Historic District
HPO Survey Site No.	BK0212
Location	Malcolm Boulevard, Lovelady Drive to Brevard Drive
PIN	various
Date(s) of Construction	ca. 1890s-1971
NRHP Recommendation	Not Eligible

2.14.1 Setting and Description

2.14.1.1 Malcolm Boulevard Historic District

Beginning at the intersection of Malcolm Boulevard with Lovelady Road (Figure 22), the potential linear historic district of Malcom Boulevard travels along SR 1001 and consists of between 50 and 75 resources, most of which would be considered non-contributing. The district continues south along Malcolm Boulevard, capturing primarily the resources bordering the roadway, ending at the intersection of Malcolm Boulevard with West Street.

The character of the district is heavily defined by its slightly rural, mountainous setting, curving main thoroughfare, and generous, wooded lots. Primarily residential in character, the district also contains religious, civic, and commercial resources, some of which contribute to the district's historical and architectural significance (Plate 162). The former home of Rutherford College, the Malcolm Boulevard Historic District developed in large part from the school itself, the residences of students and professors, churches, and supporting businesses of those residing and working at Rutherford College. Only a few commercial storefront buildings with minimal setbacks from the roadway survive in Rutherford College, with the result that the town lacks a "town square" or central business district typically found lining many small town main streets. Instead, churches, houses, civic buildings, and other significant resources are distanced from each other, set back generously from Malcolm Boulevard, lending a casual feel and building pattern more often seen in small mountain communities (Plate 163). Later during the mid- to late twentieth century, residential and light commercial infill development continued, and most resources that are over 50 years of age lack historic integrity.

Key resources within the boundaries of the potential Malcolm Boulevard Historic District include the Abernethy Memorial UMC, the Lovelady Fire Department, and residential properties along Malcolm Boulevard such as the Arthur T. Abernethy House, the Jacumin-Bronson House, and Clifton Spinx House, among others. Housing types and styles range from frame, vernacular structures to Colonial Revival and period cottage residences. Non-contributing properties in the proposed historic district include those that have not yet reached 50 years of age and those that do not retain a sufficient amount of historic integrity, including houses, the First Baptist Church of Rutherford College, and commercial properties. No former buildings or landscape features related to Rutherford College survive, which operated from the 1860s to the 1930s, originally located on the present site of First Baptist Church of Rutherford College and later on the present site of the Valdese General Hospital (Plate 164).

2.14.2 Historical Background

The history of the Town of Rutherford College is nearly inseparable from the institution and man who founded it, Robert Laban Abernethy (1822-1894), who came to the area in 1853, then known as the small community of Excelsior, upon request from Daniel Johnson to teach at the Owl Hollow School (Plate 165). Born on a farm in Lincoln County to Turner and Fannie Abernethy, Abernethy was an avid learner and became a Methodist minister at the age of 18, traveling throughout western North Carolina on the circuit as a guest preacher. Abernethy married Mary Ann Hayes from Caldwell County in 1847 and together they would raise 12 children. At first, the teaching position was meant to be temporary, but Abernethy so impressed the school administrators that his position was made permanent. The school committee also offered Abernethy a home nearby in the one-room cabin serving the Owl Hollow School property, which today is situated just east of the First Baptist Church of Rutherford College. Near the school was the Jones Grove Methodist Church, at which Abernethy preached on Sundays when other circuit preachers were not available. The school grew in addition to Abernethy's fame as a skilled instructor, and by 1858 the school was granted a charter and renamed Rutherford Academy after John Rutherford of Bridgewater, North Carolina, who donated funds and 200 acres of land. The Civil War interrupted the school's progress, and it briefly closed during the conflict, with Abernethy taking a position of tax collector for the Confederacy (Barrett 1959; Callahan 1997:1E).

Abernethy returned to Excelsior in 1868 at the pleading of a committee led by community leader Daniel Johnson. The school, then known as Rutherford Seminary, received full accreditation as a four-year institution in 1870 and was renamed Rutherford College. Abernethy taught English, grammar, foreign languages, logic, history, theology, and Bible, among other subjects (Plate 166). Abernethy's wife Mary Ann taught classes on domestic topics and "ornamentals" for female students. A strong supporter of the temperance movement, Abernethy managed to ban whiskey within a 5-mile radius of the school. Also at this time, the small village of Excelsior was incorporated and in 1881 it became the officially chartered Town of Rutherford College. Town leaders laid out streets, established a post office, and elected local officials (Barrett 1959; Bridges 1962:1; Callahan 1997:1E-4E; Galvin 2008:20-51).

The college is exceptionally significant for the fact that it is one of the earliest, if not the earliest, institutions of higher education in the South to accept and instruct both male and female students together, with no distinction or separation in class instruction. Although Rutherford College was a Christian school with a strong Methodist influence, it was not officially affiliated with one denomination over another as were many colleges of the same era. Furthermore, classes were not divided into years such as freshman, sophomore, junior, or senior but instead were arranged according to students' individual advancement. Prior to the construction of dormitories on the campus, students lodged in various boarding houses, most of them situated along Malcolm Boulevard (Galvin 2008:20-51).

Financial difficulties constantly plagued the fledgling institution, and numerous sources recall Abernethy's generous and almsgiving spirit almost to a fault, for he never turned away a student for lack of tuition payment, according to the school's catalog. Instead, he would hire students to work on various projects at the college to pay their way through school. Estimates place the number of students who took advantage of the free tuition at approximately 2,200 over the course of Abernethy's career. The central figure of the college's existence and mission, Abernethy served not only as president and instructor but also dean, business manager, and essentially the board of trustees. Abernethy's reputation grew well beyond North Carolina, as he was offered a cabinet position under President Rutherford B. Hayes and was also invited by Queen Victoria of England to celebrate her Grand Jubilee; both figures were related to Abernethy by marriage (Barret 1959; Bridges 1962:1; Callahan 1997:1E-4E; Galvin 2008:20-51).

In addition to financial woes, disasters and tragedies seemed to strike the college regularly. In 1879 a tornado destroyed a new school building still under construction, forcing the board of trustees to borrow

money and mortgage the school as collateral. Abernethy was determined to continue pursuing his dream in operating Rutherford College and managed to borrow enough money to purchase the school outright. Still, he eventually had to sell off portions of the college property for the college to operate without being steeped in debt. A devastating fire occurred in 1891, destroying the entire campus and leaving the school at a critical juncture, as it had no insurance to cover any damages. Offers were made to Abernethy to help rebuild if he agreed to move the school to a new location, but Abernethy refused. In 1893, after campaigning and fundraising for the school's survival while traveling, Abernethy's connections served him well and he was able to reopen Rutherford College with new facilities erected for students and teaching. In 1884 the school opened a new building with 315 students enrolled at the college (Plate 167). Tragedy struck once again, however, as Abernethy was thrown from a horse while hunting in November 1894, and he died four days later. Abernethy's son William immediately became president of Rutherford College (Barrett 1959; Bridges 1962:1; Callahan 1997:1E-4E; Galvin 2008:20-51).

In 1899 the Western North Carolina conference of the Methodist Episcopal Church purchased Rutherford College, and William Abernethy left his duties at the college to begin a short-lived career in the publishing industry, purchasing the *Morganton Herald* newspaper. Between 1899 and 1933, 10 presidents served Rutherford College, beginning with C.C. Weaver. Weaver altered the ability of the school to confer degrees, transforming it into a secondary school that allowed students to complete a high school and two-year college education. The move was not well received by all, especially by some alumni, but, nevertheless, Rutherford College continued to construct new buildings and dormitories during this era in addition to the introduction of sports teams and school clubs. In 1907 the school received funding from Andrew Carnegie's foundation for the construction of a new library, spearheaded by Abernethy's son Arthur T. Abernethy, himself a well-educated writer and theologian (Plate 168).

Rutherford College had always possessed strong ties to the Methodist church and to the ministry in North Carolina, and was often referred to as the "School of Prophets." It was fitting, then, that the Methodist church sustained the college, for the Western North Carolina conference boasted large numbers of ministers that had received their training at Rutherford College (Cannon 1984). Passages from the 1914-1915 Rutherford College yearbook report:

> Under the management of the Methodist Church, the school has not only taken high rank among the secondary schools of the State, but has also become self-supporting, and is each year sending out many students, who teach in other schools, enter the regular ministry, or go to some of our best colleges, for the purpose of securing a higher education or preparing for some profession [*Valdese News* 1967].

Perhaps only second to Robert L. Abernethy's presidency, the most influential term in the college's leadership was that of Melvin T. Hinshaw, who served from 1911 to 1925. Under Hinshaw's administration, the college pursued expansion and rebuilt its campus at a new location in town, on the present site of the Valdese General Hospital, an 8-acre sit shaded by native oaks. Much of the land was donated by local residents Ellis Coulter and Dr. T. Goode, and by 1920 Rutherford College had been re-chartered from a secondary school to a two-year junior college. The school's facilities, which included the relocation of buildings from the college's former site to the new site, included a 600-seat auditorium with study hall, recitation rooms, and society halls on the second floor, two dormitories each containing 20 rooms, an administration building, and athletic fields (*Valdese News* 1967).

In 1927 yet another fire ravaged the campus, destroying Weaver Hall, and the following year the president's house burned. Friends of the college pledged money to rebuild Weaver Hall, but when the time came to collect the funds to repay bonds, only about a quarter could pay, in part because of the financial losses of the Great Depression.

Football became one of the school's highlights during the 1920s and 1930s, with its newly built athletic fields reportedly hosting the first evening game illuminated by electric lights in North Carolina. The team won the state championship in 1930 against Campbell College, led by Zeb Malcolm as its team captain (Galvin 2008:133-140).

In 1933 the Western North Carolina Conference made the decision to close Rutherford College, merging the institution with Weaver College in Buncombe County and the Brevard Institute in Brevard. Together the schools became known as Brevard College. Consequently, the same year the Town of Rutherford College lost its charter. The former campus was briefly used by the Burke County School system and by the National Youth Administration as a camp known as Camp Eleanor, a program of the Roosevelt-era Civilian Conservation Corps. By 1940, however, a group of doctors led by Dr. Yates Palmer took ownership of the buildings and created what would grow into the Valdese General Hospital (Bridges 1962).

It is estimated that over 10,000 students attended the college, many of whom have traveled back regularly for alumni reunions. Graduates have gone on to become ministers, teachers, doctors, lawyers, and a host of other professions. Senator B. Everett Jordan, Isaac Emerson, Frank Sherrill, and George Belk are among the institution's notable alumni (Callahan 1997:1E-4E). Today, all that stands in remembrance of Robert Laban Abernethy are a handful of historical plaques around town and a monument and his gravesite in the Abernethy Memorial UMC Cemetery, near the site of the former Rutherford College that is now occupied by First Baptist Church of Rutherford College.

With the center of the community gone, the remains of the town that grew up around Rutherford College, re-incorporated in 1901, were still largely influenced by what was left of the school, but the years during the 1940s and 1950s were quiet ones with the exception of the growth of the Valdese General Hospital. When the hospital began, the clinics operated out of old college buildings until new facilities could be constructed in the 1950s. The organization's growth helped the town to survive, along with the families and alumni of the college that had made the town their home and were determined to see it thrive. In the 1960s and 1970s, the hospital employed 440 individuals, many of whom lived in Rutherford College (Fitz 1976:7).

The 1960s proved to be a time of revitalization for Rutherford College, and interest in the town's development grew. A new post office was dedicated in 1968, and new industries moved into town, most connected with nearby textile and furniture industry companies (Bayliff 1968). Established in 1962, the Rutherford College Water Corporation treated the town's surface water instead of using well water, which was plagued with large iron deposits, and became the first rural community in North Carolina to do so. By the 1970s the non-profit organization served 300 customers. On June 1, 1977, the Town of Rutherford College celebrated "Charter Day" as it was officially reorganized into a town. After the re-chartering in 1977 and incorporation of Rutherford College not long after, enthusiasm for local businesses and growth fueled new projects, including the installation of sidewalks partially led by the Lions Club, a renovated town hall, the recruitment of larger Burke County industries such as Valdese Manufacturing and Brinkley Lumber Company, and the steady growth of the Valdese General Hospital complex. Proximity to Interstate 40 also lured new industry and business to the town, which officially became Burke County's sixth municipality in the late 1970s (Fitz 1976:7; *Morganton News-Herald* 1972). In 1983 the town's boundaries expanded through the annexation of 40 acres of land (Hall 1977; Parkhurst 1983). With a population of only approximately 800 people, the additional boundary increase was significant.

Since the late twentieth century slow but steady growth has continued but at the expense of the loss of original town buildings, a heavy increase in traffic along SR 1001, and a loss of native Rutherford College families who remember the historically significant days of the former school.

2.14.3 Architectural Context and NRHP Evaluation

The architectural character of Rutherford College evolved not unlike other small communities in rural Burke County, from primitive, vernacular forms to nationally popular styles as architectural fashions changed in the late nineteenth and early twentieth centuries. The growing college brought with it an air of formality and institutional architecture not routinely witnessed in the Burke County foothills, yet homes built by college professors and staff, ministers, manufacturers, and professionals tended to be modest in design, not unlike their neighboring farmers in the community. Rutherford College's built environment was also informed by the Waldensian building traditions practiced by Italian immigrants who settled in nearby Valdese, with Waldensian-built stone structures occurring alongside forms influenced by American architectural styles of the time. The latest building trends tended to emerge in Morganton and were later replicated elsewhere in the county (Cotton 1987:25-40).

Rutherford College during its operating years displayed standard examples of mid- to late nineteenth-century institutional architecture generally used in educational, civic, and other public buildings. Campus structures embodied Classical styles and familiar forms with restrained detail of nationally popular architectural styles. Both the 1920s administration building and the Carnegie Library embodied the Classical Revival style, topped with cupolas and featuring impressive porticos, whereas dormitory buildings were plainer, frame structures with cross-gabled rooflines and long side wings punctuated by regularly spaced window bays. These commanding Classical buildings evoked the rise in the professionalization of education, as students went from instruction in primitive log buildings to large, multi-function, permanent structures emanating optimism for a brighter future (Plate 169). Although the campus lacked any kind of formal, landscaped plan, campus buildings were clustered together, connected by sidewalks and accessed by driveways from the main road.

Appropriate comparable buildings to those at Rutherford College consist of other small communities in Burke County as well as other towns evolving from educational institutions, the latter of which are located outside Burke County. Brevard College in Transylvania County is one such example, a Methodist-supported institution that merged with Rutherford College and Weaver College in 1934. Brevard College, formerly Brevard Institute, originally blossomed in the 1890s, and after the merger the college retrofitted the older, late nineteenth-century buildings and upgraded facilities to meet the modern needs of the school. Brevard College Stone Fence and Gate (TV0232), erected by the Works Progress Administration during the 1930s, is the only resource listed in the NRHP in connection with the college, although a few dormitories and other former college buildings survive and have been previously recorded. Like Rutherford College, the Town of Brevard grew as a response to its college, but its development far outpaced Rutherford College, as it developed a commercial main street and traditional downtown laid out in a grid pattern, with several pockets of residential neighborhoods bordering downtown. The county courthouse was located in Brevard, and tourism and other industries thrived, making it Transylvania County's largest town. Brevard College retains structures and remnants of its original college campus, visually preserving the link that helped to drive the town's early development and conveying the institution's significance in the area of education (Hood 1993:8-1–8-8).

Nestled into the mountains of Avery County, Lees-McRae College (AV0110) provides an intact and architecturally significant collection of higher educational architecture in western North Carolina, which grew up alongside the small town of Banner Elk. The 1920s-1960s campus buildings, many constructed of native stone employing the popular Rustic style seen throughout the region, are situated among a planned landscape of rolling, mountainous terrain that radiates a cohesive campus character (Plate 170). Lees-McRae College retains a good degree of integrity and, unlike Rutherford College, is able to convey its significance in the areas of education and architecture while still retaining a visual and historical connection to the development of Banner Elk through the construction of Grace Hospital, designed by the same

architect, and the Banner Elk School. Lees-McRae College was recently determined NRHP-eligible in 2021 under Criteria A and C in the areas of education and architecture (Griffith 2021:79-86).

Perhaps most comparable to Rutherford College is Weaver College, which also merged to form Brevard College in the 1930s. Situated in the Town of Weaverville north of Asheville in Buncombe County, the Weaverville College buildings (BN0743) have been surveyed but not yet evaluated for the NRHP.

Small towns in Burke County, such as Valdese (BK0278) and Connelly Springs (BK0083), maintain a higher concentration of key resources central to their significance than Rutherford College, retaining a stronger degree of integrity. Valdese and Connelly Springs developed as a result of economic and cultural forces wholly different from those in Rutherford College. Connelly Springs emerged as a booming resort town in the mid-nineteenth century, and later evolved into a small commercial district as the railroad came through town. Mostly linear in form, standing along or near Main Circle Street, the Connelly Springs business district faces the railroad, consisting of frame and brick storefronts and former commercial properties (Plate 171) (BK0083 Survey File, NCHPO 2021; Cotton 1987:1-8). Valdese, on the other hand, developed in response to the immigration of the Italian-born Waldensian population who settled in the community, building farmsteads, churches, industrial enterprises, and commercial businesses (Plate 172). The architecture styles of Valdese and Connelly Springs are reflective of their cultural and economic dynamics, whereas Rutherford College seems to be more of an amalgamation of building types, styles, and periods (BK0278 Survey File, NCHPO 2021; Cotton 1987:4-27).

The Malcolm Boulevard Historic District possesses integrity of location, as the resources have not been moved from their original sites and the location of major streets remains unchanged. Its integrity of setting is relatively intact in terms of natural geographical features, vegetation, and vistas; however, a large concentration of the structures that defined the town during its heyday are now gone, greatly altering its visual character. The 1920s-1930s campus along with athletic fields is now occupied by the Valdese General Hospital complex, and former commercial stores, important residential properties, and schools have also been demolished. Likewise, new commercial development and the continued expansion of the hospital complex further jeopardize integrity. Integrity of materials and workmanship have been compromised with the application of replacement materials on a majority of the properties, and the integrity of design has also been somewhat affected by later additions, the razing of significant structures and all the former college buildings, and new traffic lights and patterns. The resources retain a fair degree integrity of feeling and association, functioning in their original purpose as residences, churches, and civic organizations, and businesses; however, the lack of a visual connection to the former college makes it difficult for the buildings to convey their significance. Instead they give the impression of a collection of resources without ties to a significant historical event, pattern, or leader tying them altogether (Figure 23). Without Rutherford College, there would not have been a town, and with the more recent demolition of many of its significant structures or college-related resources, a majority of the district's resources would be considered "non-contributing." Local resident Darel Malcolm, son of former mayor Zeb Malcolm, recently noted that unfortunately Rutherford College appears to be losing its sense of place as a community, instead becoming merely a busy highway of traffic and semi-trucks connecting Lenoir with I-40. A field visit on September 14, 2021, attended by the surveyor, Ms. Privett, and NCDOT and NCHPO representatives further confirmed the integrity concerns and lack of remaining significant structures to maek an adequate case for NRHP eligibility.

The Malcolm Boulevard Historic District is found not eligible for the NRHP under Criterion A for association with significant events or the broad patterns of history in North Carolina. Although the town certainly retains a significant history in its derivation from Rutherford College under the area of Education, its direct visual and spatial relationship with the now razed college campus is weak, with no campus structures surviving. A property must both possess significance and integrity to qualify for the NRHP, and integrity is lacking for the Malcolm Boulevard Historic District. With the exception of Abernethy Memorial UMC, only a few houses that served partially as former boarding houses for students remain in connection with the school.

The Malcolm Boulevard Historic District is also not eligible under Criterion B for association with significant individuals in history. The district is highly connected historically with Rutherford College founder Robert Laban Abernethy and also with former mayor Zeb Malcolm; however, it lacks the necessary integrity to qualify for NRHP eligibility.

Likewise, the Malcolm Boulevard Historic District is found not eligible under Criterion C for architecture because it lacks integrity and significance. To qualify under Criterion C, a property must also possess the seven aspects of integrity, which, in the case of the Malcolm Boulevard Historic District, have been compromised with the loss of significant resources, replacement of original materials, changes to porch designs and additions, and later infill. A cohesive design from the district's period of historical significance is also lacking, despite the fact that some resources retain individual architectural significance. A majority of the resources considered for inclusion in the district are classified as "non-contributing," and either do not possess architectural significance or integrity or do not meet the 50-year age requirement.

A property may be eligible under Criterion D if the buildings and/or structures have the potential to yield important information pertaining to undocumented or rare local building traditions. The Malcolm Boulevard Historic District is not likely to have this type of information and does not meet Criterion D.

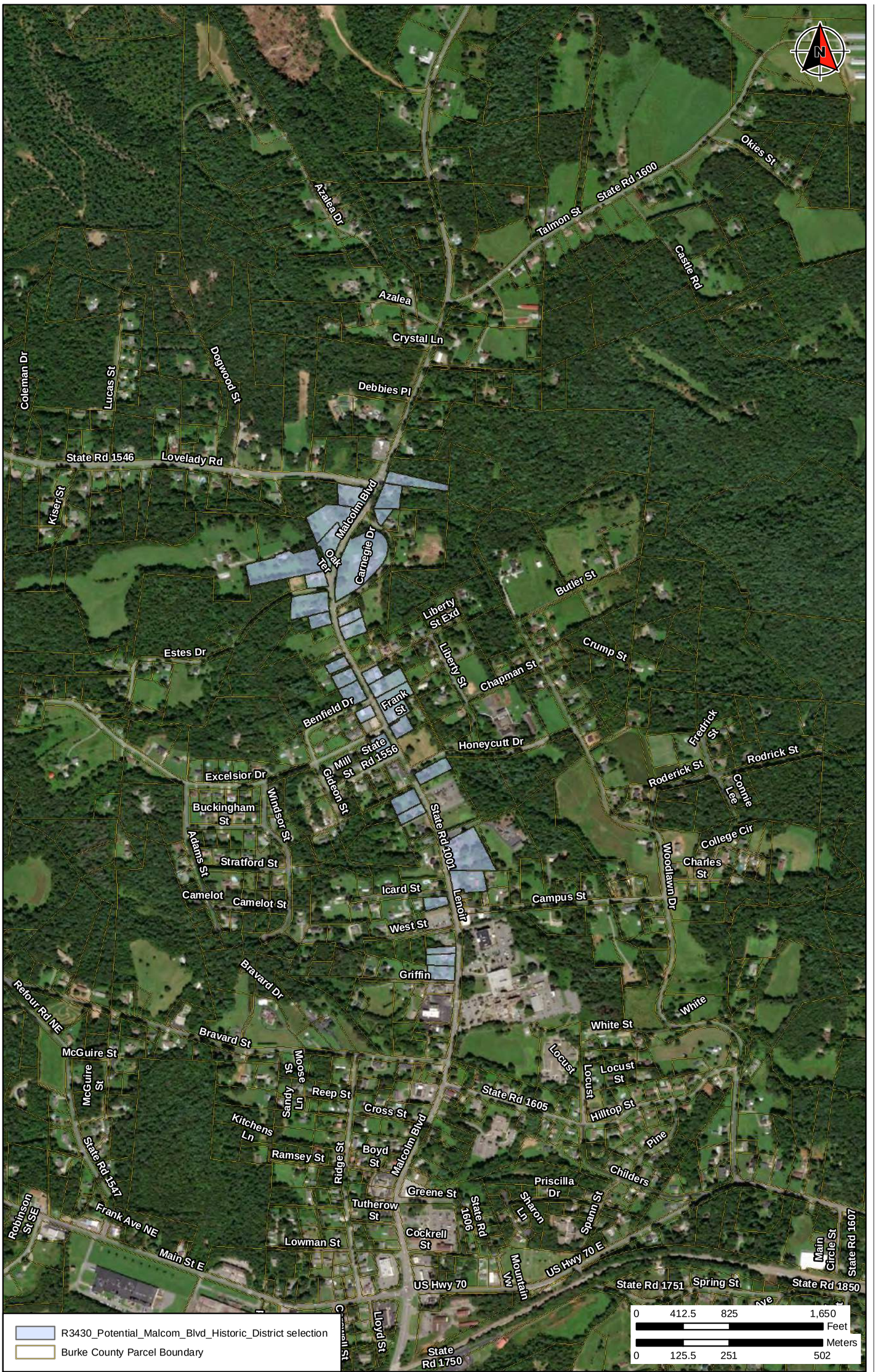


FIGURE 22: Aerial Map of Potential Malcolm Boulevard Historic District, Rutherford College, Burke County, North Carolina (Esri World Imagery 2021)

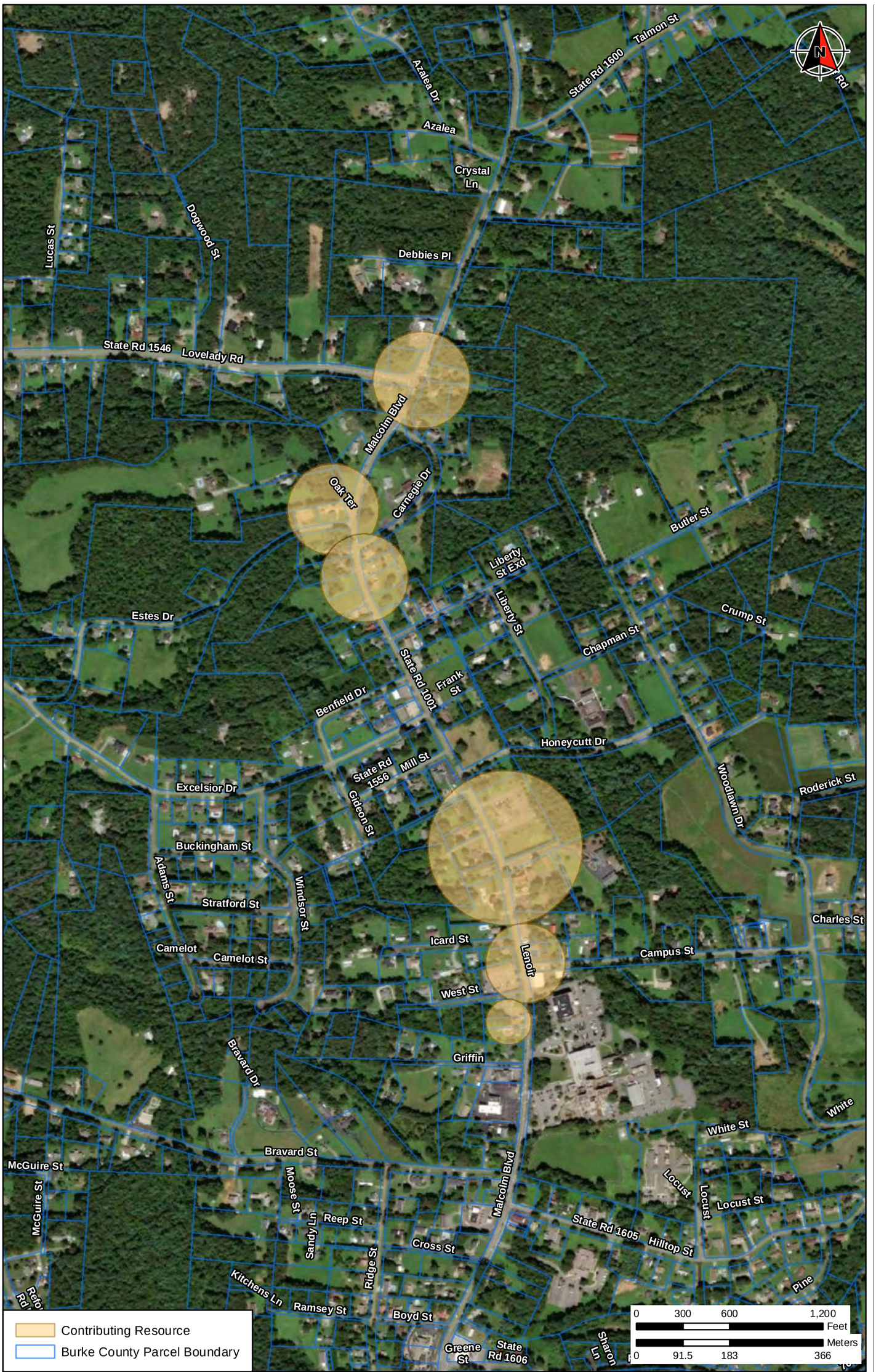


FIGURE 23: Aerial Map of Potential Malcolm Boulevard Historic District, Showing Pockets of Contributing vs. Non-contributing Resources, Burke County, North Carolina (Esri World Imagery 2021)

PLATE 162: Potential Malcolm Boulevard Historic District (BK0212), Facing South on Malcolm Boulevard, Burke County, North Carolina

PLATE 163: Potential Malcolm Boulevard Historic District (BK0212), Facing North on Malcolm Boulevard, Burke County, North Carolina

PLATE 164: Former Site of Rutherford College and Present Site of First Baptist Church of Rutherford College, Facing East, Burke County, North Carolina

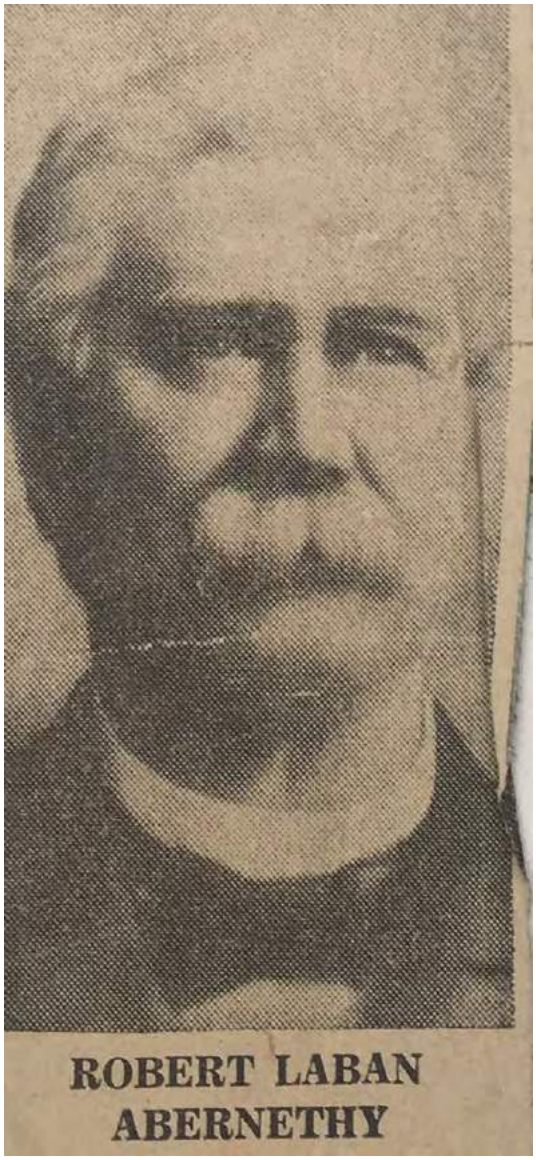


PLATE 165: Robert Laban Abernethy (1822-1894) (Barrett 1959)

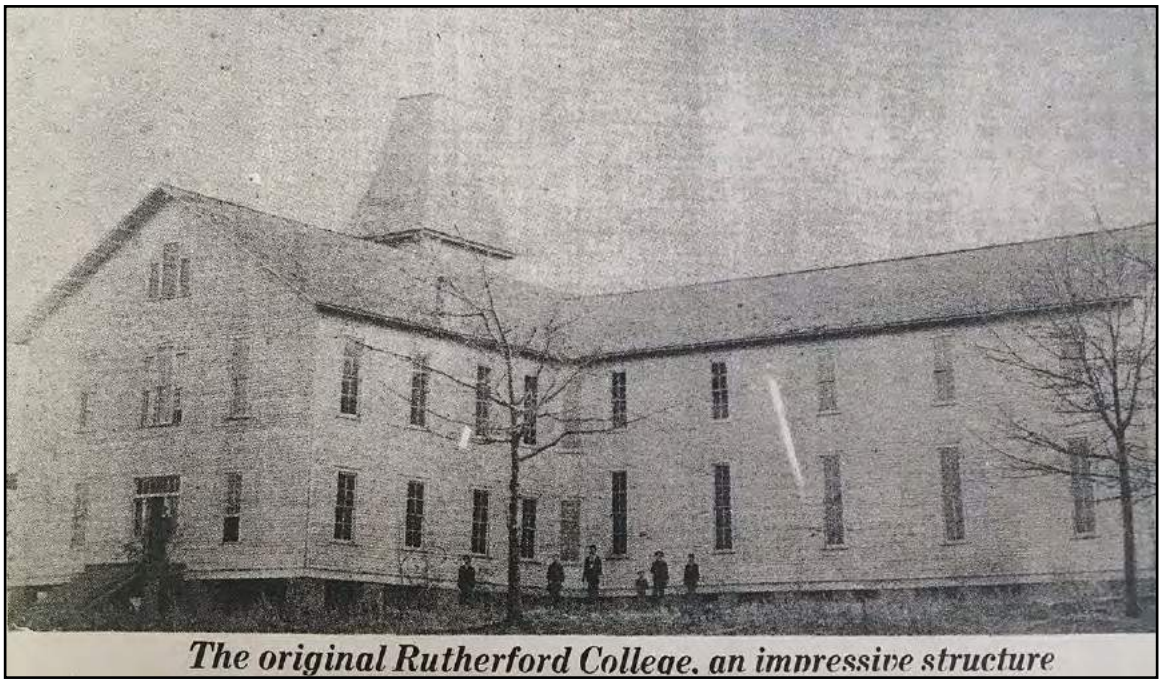


PLATE 166: Original Rutherford College Building, ca. 1870-1885, Burke County, North Carolina (Burke County Public Library)

PLATE 167: Early Rutherford College Campus Building, ca. 1880-1895 (Bridges 1962)

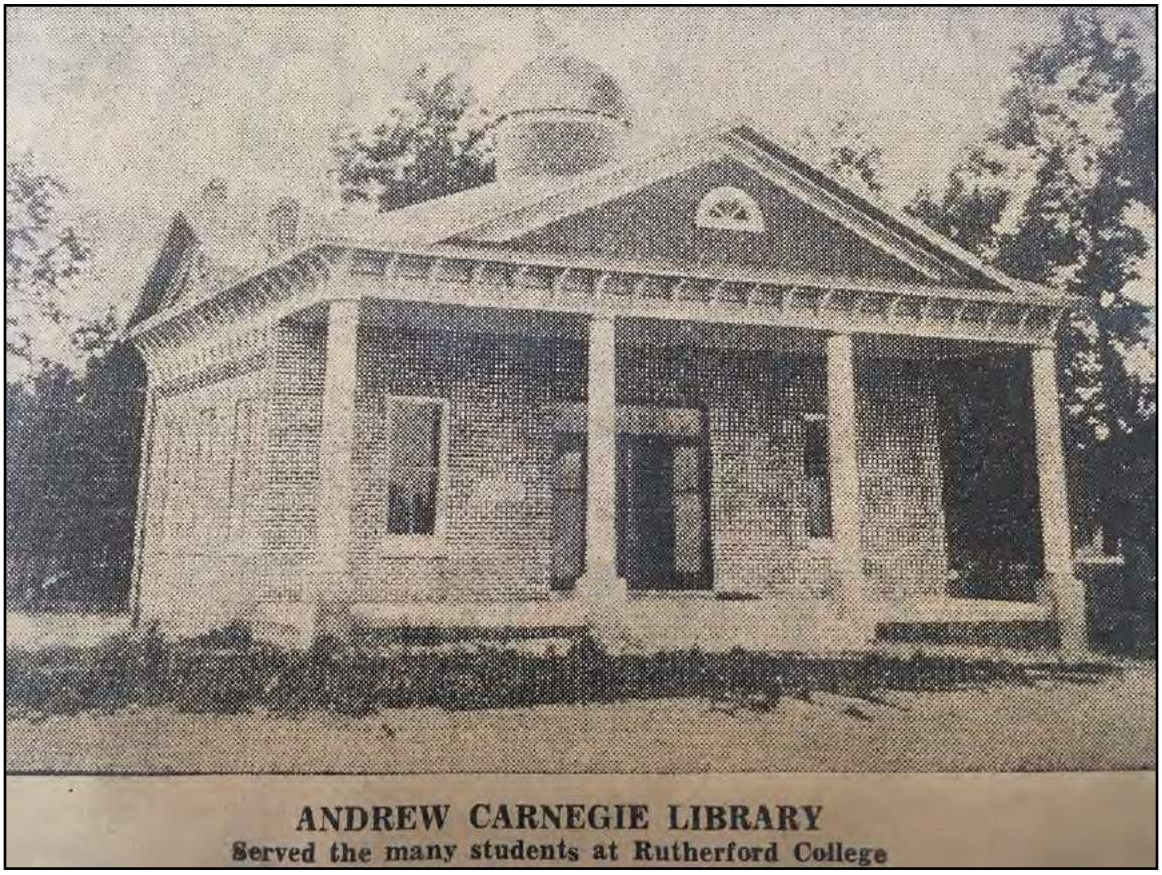


PLATE 168: The Carnegie Library at Rutherford College, Built in 1907, Funded by the Andrew Carnegie Foundation, Sponsored by Arthur T. Abernethy, Demolished in the 1970s (Bridges 1962)

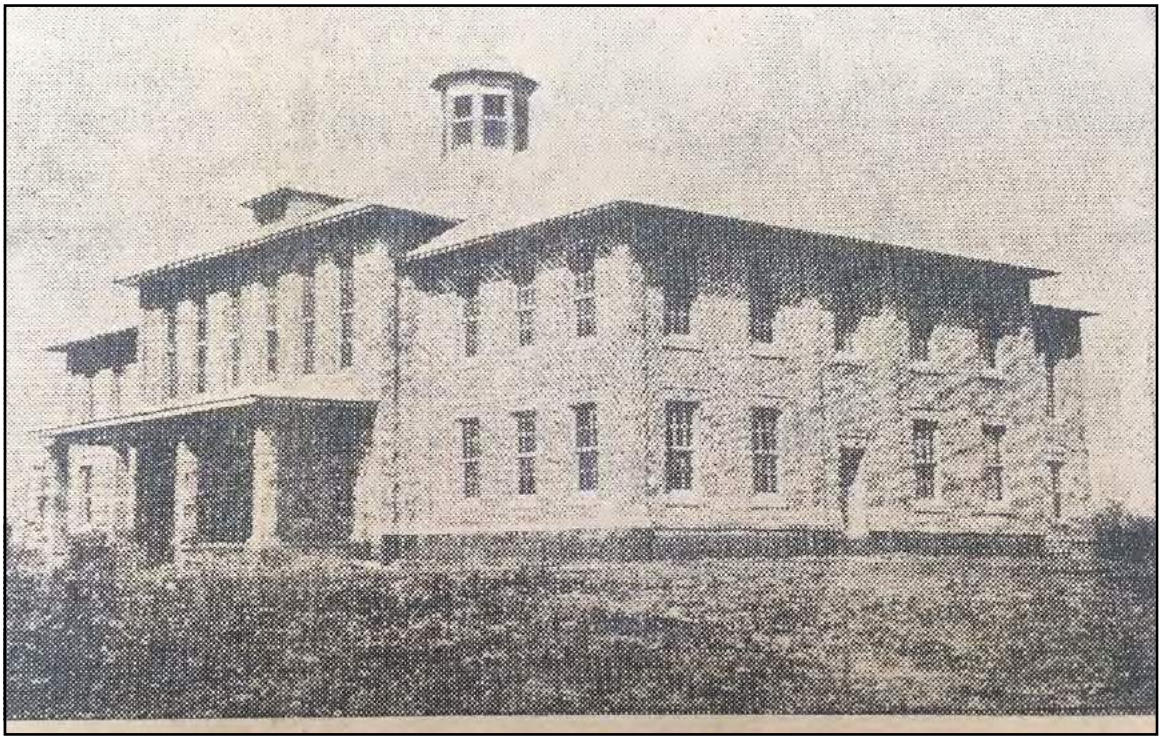


PLATE 169: Former Administration Building at Rutherford College, on Site of Present Valdese General Hospital, Prior to Demolition, ca. 1960 (Bridges 1962)

PLATE 170: Lees-McRae College, (AV0110), Avery County, North Carolina

PLATE 171: William Connelly House (BK0149), Hudson Store (BK0063), and McGalliard Building (BK0062) in Connelly Springs, Facing West, Burke County, North Carolina

PLATE 172: Valdese Business District (BK0278), Facing West, Burke County, North Carolina

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Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
1		2748828644	1967	House	1308 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
2		2748922623	1962	House	1303 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
3		2748922533	1962	House	1305 WINDY ACRES DR SW	Caldwell County		Not eligible for the NRHP
4		2748921406	1962	House	1309 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
5		2748828326	1977	Convenience Store (Connelly Springs Quality Plus)	1320 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
6		2748920363	1962	House	1315 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
7		2748920214	1962	House	1319 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
8		2748829143	1964	House	1323 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
9		2748828095	1964	House	1327 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
10		2748818935	1962	House	1331 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
11		2748823036	1960	House and Barn	1336 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
12		2748814882	1965	House	1340 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
13		2748914730	1947	House	1339 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
14		2748813343	1977	House	1361 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
15		2748814130	1947	House	1369 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
16		2748811024	1950	House	1373 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
17		2748708953	ca. 1960	Commercial Buildings (1 a former house)	1379 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
18	CW0365	2748703840	1948, 1966, 1972	Colliers United Methodist Church and parsonage	2625 CLARK CHAPEL RD	Caldwell County	Surveyed Site, Determined Not Eligible (2003), ER 03-0639. Lack of significance and distinction in comparison with others in county.	Remains Not Eligible for NRHP
19	CW----	2748706335	1928	House (NOT ACCESSIBLE)	1581 FAIRWAY ACRES RD	Caldwell County	Surveyed Site, Determined Not Eligible (2003), ER 03-0639. Lack of significance.	NOT ACCESSIBLE
20		2748702154	1958	House	1100 RAMBLING ACRES CR	Caldwell County		Not eligible for the NRHP
21		2748701047	1962	House	1102 RAMBLING ACRES CR	Caldwell County		Not eligible for the NRHP
22		2748705019	1954	House	1431 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
23		2747792951	1961	House	1434 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
24		2747795971	1957	House	1496 SUNSHINE LN	Caldwell County		Not eligible for the NRHP
25		2747792797	1959	Houses	1440 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
26		2747797891	ca. 1960	House	1492 SUNSHINE LN	Caldwell County		Not eligible for the NRHP
27		2747793634	1958	House	1446 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
28		2747793561	1958	House	1454 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
29		2747793490	1959	House (NOT ACCESSIBLE)	1460 CONNELLY SPRINGS RD	Caldwell County		NOT ACCESSIBLE
30		2747796430	1913	House	1469 SUNSHINE LN	Caldwell County		Not eligible for the NRHP
31		2747794139	1978	House	2602 WESTERN CT	Caldwell County		Not eligible for the NRHP
32		2747794084	1978	House	2601 WESTERN CT	Caldwell County		Not eligible for the NRHP
33		2747785914	1978	House	1484 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
34		2747787776	1971	House	1404 ROBBINS DR	Caldwell County		Not eligible for the NRHP
35		2747786517	1968	House	1101 FLORAL PL	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
36		2747788532	1975	House	1405 ROBBINS DR	Caldwell County		Not eligible for the NRHP
37		2747788279	1965	House	2552 ANDREWS CR	Caldwell County		Not eligible for the NRHP
38		2747880207	1964	House	2558 ANDREWS CR	Caldwell County		Not eligible for the NRHP
39		2747786084	1955	House	1528 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
40		2747789024	1965	House	1533 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
41		2747880052	1972	House	2559 ANDREWS CR	Caldwell County		Not eligible for the NRHP
42		2747779957	1940	House	1539 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
43		2747776943	1947	House	1534 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
44		2747777774	1971	Apartment Complex	1550 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
45		2747870962	ca. 1960	House	1543 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
46		2747870820	1962	House	1551 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
47		2747777843	1955	Houses	1538 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
48		2747777685	1950	House	1556 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
49		2747871722	1964	House	1557 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
50		2747778536	1952	House	1562 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
51		2747871459	1972	House	2595 ANDREWS CR	Caldwell County		Not eligible for the NRHP
52		2747777374	1957	House	1572 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
53		2747871395	1959	House	1575 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
54		2747872200	1938	House	1581 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
55		2747872120	1956	House	1587 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
56		2747778072	1946	Automotive Garage	1586 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
57		2747872030	1955	House and Barn	1591 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
58		2747765722	1945	House	1596 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
59		2747862859	1935	House	1597 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
60		2747860730	1963	House	1604 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
61		2747862676	1969	Mobile Home	2627 ANDREWS CR	Caldwell County		Not eligible for the NRHP
62		2747860494	1946	House	1618 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
63		2747861303	1979	House	1622 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
64		2747860194	1940	House and Outbuildings	1634 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
65		2747850991	1960	House	1644 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
66		2747852733	1965	Commercial Building	1655 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
67		2747852542	1969	Convenience Store	1661 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
68		2747758203	1952	Rolling Saints Riding Club Building	1680 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
69		2747752151	1949	House	1686 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
70		2747746947	1958	House	1694 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
71		2747745932	1945	House	1698 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
72		2747744881	1954	House	1510 DYSON RD	Caldwell County		Not eligible for the NRHP
73		2747747641	1978/1945	Houses	1707-1711 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
74		2747744619	1956	House	1505 DYSON RD	Caldwell County		Not eligible for the NRHP
75		2747649462	1954	House	1520 Orchard Drive	Caldwell County		Not eligible for the NRHP
76		2747647772	1953	House	1532 Orchard Drive	Caldwell County		Not eligible for the NRHP
77		2747746184	1981/2000/2018	Medical Facility (Southfork Medical Park)	1731 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
78		2747740188	1981	Convenience Store (Holiday To-Go)	1732 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
79		2747647019	1980	Industrial Building	3206 Factory Street	Caldwell County		Not eligible for the NRHP
80		2747737614	1982/ca. 1990/ca. 2002	Industrial Building (Bernhardt Furniture Company)	1755 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
81		2747637782	1979	Commercial/Industrial Building (Northwestern Piping Supply)	1756 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
82		2747730272	1980/ca. 1990/ca. 2012	The Church of Jesus Christ of Latter Day Saints	1775 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
83		2747636323	1965	House	1774 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
84		2747635158	1966	House	1782 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
85		2747634085	1966	House	1790 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
86	CW0073	2747820501	1929	Elizabeth Bush House	1490 BUSHVILLE DR	Caldwell County	Determined NRHP-eligible, Crit. C, 2003 (ER 03-0639)	Remains NRHP eligible
87		2747628820	ca. 1970	House	1490 BUSHVILLE DR	Caldwell County		Not eligible for the NRHP
88		2747624366	1960	House	1820 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
89		2747627389	1958	House	1823 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
90		2747624263	1961	House	1826 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
91		2747625111	1960	House	1832 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
92		2747615949	1959	House	1838 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
93		2747628034	1965	House	1839 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
94		2747616850	1959	House	1844 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
95		2747618963	1961	House	1845 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
96		2747617732	1972	House	1850 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
97		2747619811	1963	House	1851 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
98		2747618621	1978	House	2502 BRENTWOOD CR	Caldwell County		Not eligible for the NRHP
99		2747617600	1940, ca. 2005	House	2504 BRENTWOOD CR	Caldwell County		Not eligible for the NRHP
100		2747710638	1964	House	1861 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
101		2747619447	1978	House	2501 BRENTWOOD CR	Caldwell County		Not eligible for the NRHP
102		2747619326	1978	House	2568 BRENTWOOD CR	Caldwell County		Not eligible for the NRHP
103		2747711594	1964	House	1869 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
104		2747706894	1948	House	1396 COTTAGE GROVE RD	Caldwell County		Not eligible for the NRHP
105		2747703154	ca. 1951	House (NOT ACCESSIBLE)	1950 CONNELLY SPRINGS RD	Caldwell County		(NOT ACCESSIBLE)
106		2747706303	1965	House	1936 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
107		2747708558	1957	House	1929 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
108		2747708464	1945	House	1933 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
109		2747708344	1945	House	1939 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
110		2747708206	1956	House	1945 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
111		2747709226	1945	House	2104 BROWN PL	Caldwell County		Not eligible for the NRHP
112		2747708149	1940	House	1949 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
113		2747706018	1979	House	1456 LAND ST	Caldwell County		Not eligible for the NRHP
114		2747708047	1968	House	1955 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
115		2746795995	1950	House	1960 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
116		2746795893	1946	House	1966 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
117		2746890728	1947	House	1965 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
118		2746795677	1961	House	1972 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
119		2746798632	1950/ca. 1970	Houses	1975 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
120		2746794580	1959	House	1980 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
121		2746890460	1951	House	1989 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
122		2746799380	1945	House	1995 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
123		2746795237	1973	Restaurant (Frosty Frez)	1998 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
124		2746797150	1955	House (containing 2 apartments)	2003 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
125		2746789979	1945	House	2009 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
126		2746789879	1945	House	2015 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
127		2746789820	1945	House	2021 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
128		2746789644	1945	House	2027 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
129		2746789434	1945	House	2037 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
130		2746784029	1940/1948	House and Commercial Building	2050/2044 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
131		2746782039	1956	House	1495 Union Grove Road	Caldwell County		Not eligible for the NRHP
132		2746782550	1956	House	1498 Union Grove Road	Caldwell County		Not eligible for the NRHP
133		2746781126	1955	House	1499 Union Grove Road	Caldwell County		Not eligible for the NRHP
134		2746781574	1955	House	1502 Union Grove Road	caldwell County		Not eligible for the NRHP
135		2746787171	1954	House	2055 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
136		2746774980	1974	Commercial Building (Former car wash structure)	2062 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
137		2746777844	1952	House	2067 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
138		2746775765	1964	House	2068 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
139		2746777765	1948	House	2073 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
140		2746778607	1960	House	1496 BERRY K DR	Caldwell County		Not eligible for the NRHP
141		2746771437	1940	House	2076 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
142		2746779530	1956	House	2089 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
143		2746777185	1954	House	2100 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
144		2746870261	ca. 1951/ca. 2006	Commercial Building (Salon)	2099 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
145		2746872004	1950	Automotive Shop (Jerez Paint and Body)	2111 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
146		2746769961	1955	House	2114 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
147		2746864943	1958	House	2121 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
148		2746868501	1950/1986	Cajah's Mountain Baptist Church	2145 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
149		2746868397	1958	Cajah's Mountain Baptist Church Parsonage	2151 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
150		2746866013	1961	House and Outbuildings/Garage	2172 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
151		2746857835	1972	Commercial Building	2180 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
152		2746951217	1942	House	2209 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
153		2746951145	1940	House	2221 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
154		2746858065	1962	House	2242 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
155	CW----	2746943899	1939	House	2225 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003, (ER 03-0639). Lack of significance.	Remains not eligible for NRHP
156		2746941856	1969	House	2235 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
157		2746941713	1968	House	2241 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
158		2746847850	1938	House	1358 O P BEANE LN	Caldwell County		Not eligible for the NRHP
159		2746846498	1957	House	2247 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
160		2746940581	1925	House	2249 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
161		2746849294	1960	House	2261 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
162		2746849036	1960	House	2271 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
163		2746838847	1952	House	2281 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
164		2746839720	1935	House	2289 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
165		2746837536	1964	House	2297 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
166		2746834512	1978	House	2310 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
167		2746837416	1956	House	2303 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
168		2746836397	1950	House	2307 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
169		2746836254	1947	House	2311 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
170	CW----	2746739501	1915	Houses	2314 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for the NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligible for the NRHP
171		2746838125	1947	House	2323 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
172		2746827938	1958	House	2331 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
173		2746725917	1945	House	2328 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
174		2746825815	1957	House	2343 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
175		2746821628	1968	House	2344 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
176		2746829633	1931	House	2353 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
177		2746822531	1947	House	2350 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
178		2746820458	1971	Four Points Church	1410 DUSTIN LN	Caldwell County		Not eligible for the NRHP
179		2746822402	1970	House	2360 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
180		2746921375	1945	House and Agricultural Buildings	2363-A CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
181		2746827224	1976	House and Barn	2365 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
182		2746821350	1969	Commercial Building (Gun Tech)	2368 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
183		2746823262	1945	House	2369 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
184		2746821125	1948	House	1422 LEE PEARSON RD	Caldwell County		Not eligible for the NRHP
185		2746815906	1940	House	2377 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
186		2746718967	1974	Covenant Baptist Church	1425 LEE PEARSON RD	Caldwell County		Not eligible for the NRHP
187		2746718851	1951	Covenant Baptist Church Parsonage	2396 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
188		2746813850	1932	House	2393 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
189		2746719630	ca. 1950	House	2408 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
190		2746719076	1962	House	2424 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
191		2746812108	1970	House	2419 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
192		2746802936	1979	House	2439 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
193		2746802723	1940	House	2441 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
194		2746619250	1956	House	2434 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
195		2746800477	1978	House	1401 CONWAY DR	Caldwell County		Not eligible for the NRHP
196		2746709496	1977	House	1405 CONWAY DR	Caldwell County		Not eligible for the NRHP
197		2746704135	1960	House	2470 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
198		2746801017	1973	Commercial Building	2474 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
199		2746800056	1968	House	1508 RECTOR ST	Caldwell County		Not eligible for the NRHP
200	CW----	2746803287	1951, 1960, ca. 1979	Mountain Grove Baptist Church	2485 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligible for NRHP
201		2745891834	1946	House	2490 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
202	CW----	2745892509	1946	House	2494 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003, (ER 03-0639). Lack of significance.	Remains not eligible for NRHP
203	CW0366	2745893461	1940	Store	2506 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003, (ER 03-0639). Lack of integrity.	Remains not eligible for NRHP
204		2746903722	ca. 1963/1974	Orchard Hills Golf Course Club House, Outbuildings	2515 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
205		2745893199	1940	House	2524 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
206		2745894040	1940	House	2528 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
207		2745990073	1945	House	1350 SAVIOUR LN	Caldwell County		Not eligible for the NRHP
208		2745886874	1958	House	2542 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
209	CW----	2745885840	1950	House	1380 BATON SCHOOL RD	Caldwell County	Determined not eligible for NRHP in 2003, (ER 03-0639). Lack of significance.	Remains not eligible for NRHP
210		2745876937	ca. 1970	Barn, agricultural outbuildings	1375 BATON SCHOOL RD	Caldwell County		Not eligible for the NRHP
211		2745889292	1969	House	2572 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
212		2745981420	1968	House	2573 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
213		2745982461	1960, 1974	House and mobile home	1476 BATON CHURCH RD	Caldwell County		Not eligible for the NRHP
214		2745983134	1944	House	1481 BATON CHURCH RD	Caldwell County		Not eligible for the NRHP
215	CW----	2745971919	1941	House	2594 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligbile for NRHP
216		2745974989	1940	House	2597 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
217	CW----	2745970757	1940	House	2600 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligbile for NRHP
218		2745975769	1943	House	2607 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
219	CW----	2745970565	1946	House	2612 CONNELLY SPRINGS RD	Caldwell County	Determined not eligible for NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligbile for NRHP
220		2745973465	1958	Automotive Garage (Baton Tire and Auto)	2614 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
221		2745976485	1959	House	2615 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
222		2745977279	1964	House	2635 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP

Inv. No.	Survey Site No.	Parcel No.	YEAR BUILT	Property Name	Site Address	Site County	HPO Status	Recommendation
223		2745977097	1960	House	2639 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
224		2745967572	1938	House	2660 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
225		2745968079	1950	House	2686 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
226		2745957976	1954	House (NOT ACCESSIBLE)	2696 CONNELLY SPRINGS RD	Caldwell County		NOT ACCESSIBLE
227		2755050990	1957	House	2700 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
228		2755051831	1950	House	2706 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
229		2755053991	1940	House	2703 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
230		2745959516	1978	House (NOT ACCESSIBLE)	2710 CONNELLY SPRINGS RD	Caldwell County		NOT ACCESSIBLE
231		2755054635	1950	House	2721 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
232		2755054476	1958	House	1004 GREER ST	Caldwell County		Not eligible for the NRHP
233		2755046876	1957	Restaurant (Hog Wild Bar B Que)	2757 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
234		2755047722	1966	House	2763 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
235		2755043547	1955	House	2766 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
236	CW0838	2755048116	1969	Baton United Methodist Church	1034 DRY PONDS RD	Caldwell County		Not eligible for the NRHP
237		2755043163	1963	Convenience Store (Jack B Quick)	2790 CONNELLY SPRINGS RD	Caldwell County		Not eligible for the NRHP
238	CW0367	2755031880	ca. 1880	Baton Baptist Church Cemetery	1203 PREMIER RD	Caldwell County	Determined not eligible for NRHP in 2003 (ER 03-0639). Lack of significance.	Remains not eligbile for NRHP
239		2744998216	1966-2017	Houses (NOT ACCESSIBLE)	6067 CASTLE BRIDGE DR	Caldwell County		NOT ACCESSIBLE
240		2754095049	1979-2017	Houses (NOT ACCESSIBLE)	6069 CASTLE BRIDGE DR	Caldwell County		NOT ACCESSIBLE
241		2754154852	1967	House	1450 MALCOLM BLVD	Burke County		Not eligible for the NRHP
242		2754045963	1964	House	1461 MALCOLM BLVD	Burke County		Not eligible for the NRHP
243		2754049329	1974	House	1432 MALCOLM BLVD	Burke County		Not eligible for the NRHP
244		2754044334	1966	House	1451 MALCOLM BLVD	Burke County		Not eligible for the NRHP
245		2754033974	1942	House	1441 MALCOLM BLVD	Burke County		Not eligible for the NRHP
246		2754038945	1930	House	1420 MALCOLM BLVD	Burke County		Not eligible for the NRHP
247		2754036376	1960	House	1421 MALCOLM BLVD	Burke County		Not eligible for the NRHP
248		2754039550	1961	House	1402 MALCOLM BLVD	Burke County		Not eligible for the NRHP
249		2754036153	1974	House	1411 MALCOLM BLVD	Burke County		Not eligible for the NRHP
250		2754132351	1946	House	1400 MALCOLM BLVD	Burke County		Not eligible for the NRHP
251		2754123783	1964	House	100 TALMON ST	Burke County		Not eligible for the NRHP
252		2754120621	1947	House	1380 MALCOLM BLVD	Burke County		Not eligible for the NRHP
253		2754025478	1950	House	1391 MALCOLM BLVD	Burke County		Not eligible for the NRHP
254		2754029317	1948, 1975	House	1370 MALCOLM BLVD	Burke County		Not eligible for the NRHP
255		2754028033	ca. 1900	House	1350 MALCOLM BLVD	Burke County		Not eligible for the NRHP
256	BK0805	2754016787	ca. 1900/1938, ca. 1970	Edwards-Weeden House	1340 MALCOLM BLVD	Burke County		Not eligible for the NRHP
257		2754012713	ca. 1900	House	1321 MALCOLM BLVD	Burke County		Not eligible for the NRHP
258	BK0174	2754011496	1895	Theodore Franklin House	1311 MALCOLM BLVD	Burke County	Determined not eligible for NRHP in 1995 (ER 95-7888). Lack of integrity.	Remains not eligible for NRHP
259		2754015592	1972	House	1320 MALCOLM BLVD	Burke County		Not eligible for the NRHP

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260		2754015146	1963	House	1310 MALCOLM BLVD	Burke County		Not eligible for the NRHP
261		2744919094	1957	Houses	103 LOVELADY RD	Burke County		Not eligible for the NRHP
262	BK0419	2754013023	ca. 1900	Arthur T. Abernethy House	1300 MALCOLM BLVD	Burke County	Determined NRHP-eligible, 1996, Crit. B and C (ER 95-7888), R-2824	Remains NRHP eligible (Crit. B &C)
263		2754002867	1950	House	151 CARNEGIE ST	Burke County		Not eligible for the NRHP
264		2744908867	1937	House (NOT ACCESSIBLE)	1221 MALCOLM BLVD	Burke County		NOT ACCESSIBLE
265		2744908611	1969	House	1211 MALCOLM BLVD	Burke County		not eligible for the NRHP
266	BK0806	2754000498	1949	First Baptist Church of Rutherford College	1200 MALCOLM BLVD	Burke County		Not eligible for the NRHP
267	BK0807	2744904401	ca. 1900	Bronson House	101 OAK TER	Burke County		Eligible for NRHP (Crit. C)
268	BK0808	2744906279	1929	Lowder House	1201 MALCOLM BLVD	Burke County		Not eligible for the NRHP
269	BK0809	2744906037	ca. 1900	Lankford House	1171 MALCOLM BLVD	Burke County		Not eligible for the NRHP
270	BK0810	2743997914	ca. 1910-1920	Farris House	1161 MALCOLM BLVD	Burke County		Not eligible for the NRHP
271		2743999977	1981	House	1130 MALCOLM BLVD	Burke County		Not eligible for the NRHP
272		2753090817	1960	House	1120 MALCOLM BLVD	Burke County		Not eligible for the NRHP
273		2743998564	1920	House	1121 MALCOLM BLVD	Burke County		Not eligible for the NRHP
274		2743999422	1907	House	1111 MALCOLM BLVD	Burke County		Not eligible for the NRHP
275		2753091486	1960	House	1040 MALCOLM BLVD	Burke County		Not eligible for the NRHP
276		2753090209	ca. 1900	House	1101 MALCOLM BLVD	Burke County		Not eligible for the NRHP
277		2753093309	1953	House	1030 MALCOLM BLVD	Burke County		Not eligible for the NRHP
278		2753093271	1950	House	1020 MALCOLM BLVD	Burke County		Not eligible for the NRHP
279		2753091110	1972	Commercial Building (National Seating & Mobility)	1031 MALCOLM BLVD	Burke County		Not eligible for the NRHP
280		2753094030	1976	House	1010 MALCOLM BLVD	Burke County		Not eligible for the NRHP
281		2753082863	1972	House	1011 MALCOLM BLVD	Burke County		Not eligible for the NRHP
282		2753087612	ca. 1900	House	101 HONEYCUTT DR	Burke County		Not eligible for the NRHP
283		2753084373	1970	House	951 MALCOLM BLVD	Burke County		Not eligible for the NRHP
284		2753085222	1978	House	941 MALCOLM BLVD	Burke County		Not eligible for the NRHP
285		2753076927	1965	House	921 MALCOLM BLVD	Burke County		Not eligible for the NRHP
286	BK0077	2753170808	ca. 1930	Abernathy Memorial United Methodist Church	968 MALCOLM BLVD	Burke County	Placed on NC State Study List in 1984	Eligible for NRHP (Crit. B & C)
N/A	BK0811	2753170808		Abernathy Memorial United Methodist Church Cemetery	113 Carnegie Street	Burke County		Eligible for NRHP (Crit. B &C)
287		2753170808	ca. 1960	Lions Club Building	968 MALCOLM BLVD	Burke County		Recommended for further study
288		2753076737	1933	House	911 MALCOLM BLVD	Burke County		Not eligible for the NRHP
289		2753170643	ca. 1950	Rutherford College Municipal Park	950 MALCOLM BLVD	Burke County		Not eligible for the NRHP
290	BK0812	2753076620	1940	Spinx House	901 MALCOLM BLVD	Burke County		Eligible for NRHP (Crit. C)
291		2753079543	1944	Commercial Building (Foothills Service Project)	930-940 MALCOLM BLVD	Burke County		Not eligible for the NRHP
292		2753079454	1960	Commercial Building (Burke County Sheriff's Office)	910 MALCOLM BLVD	Burke County		Not eligible for the NRHP
293		2753077425	ca. 1920	House	851 MALCOLM BLVD	Burke County		Not eligible for the NRHP
294	BK0813	2753166449	ca. 1960/ca. 1975	Lovelady Fire Department	748 Malcolm Blvd	Burke County		Not eligible for the NRHP
295	BK0247	2753166449	1959, ca. 2005	Valdese General Hospital	724 MALCOLM BLVD	Burke County		Not eligible for the NRHP
296		2753077082	ca. 1920	House	821 MALCOLM BLVD	Burke County		Not eligible for the NRHP
297	BK0814	2753067983	1940	Zeb Malcolm House	811 MALCOLM BLVD	Burke County		Not eligible for the NRHP
298		2753067862	1954	House	801 MALCOLM BLVD	Burke County		Not eligible for the NRHP

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299		2753067551	1966	Store/Medical Facility	721 MALCOLM BLVD	Burke County		Not eligible for the NRHP
300		2753067313	1977	Commercial Building (North Carolina Farm Bureau Insurance)	711 MALCOLM BLVD	Burke County		Not eligible for the NRHP
301		2753067139	1930	House	701 MALCOLM BLVD	Burke County		Not eligible for the NRHP
302		2753056997	1949	Debbie's Daycare & Preschool	631 A/B MALCOLM BLVD	Burke County		Not eligible for the NRHP
303		2753057818	1952	House	621 MALCOLM BLVD	Burke County		Not eligible for the NRHP
304		2753055756	1976	Convenience Store/Restaurant	611 MALCOLM BLVD	Burke County		Not eligible for the NRHP
305		2753058658	ca. 1930	Commercial Building	570 MALCOLM BLVD	Burke County		Not eligible for the NRHP
306		2753055568	ca. 1951	House	601 MALCOLM BLVD	Burke County		Not eligible for the NRHP
307		2753058344	1947	House	540 MALCOLM BLVD	Burke County		Not eligible for the NRHP
308		2753054424	1940	House	521 MALCOLM BLVD	Burke County		Not eligible for the NRHP
309		2753057282	1966	House	530 MALCOLM BLVD	Burke County		Not eligible for the NRHP
310		2753053330	1931	House	511 MALCOLM BLVD	Burke County		Not eligible for the NRHP
311		2753057017	1956	House	520 MALCOLM BLVD	Burke County		Not eligible for the NRHP
312		2753053146	1920	House	501 MALCOLM BLVD	Burke County		Not eligible for the NRHP
313		2753045876	1961	Restaurant (JD's Smokehouse)	500 MALCOLM BLVD	Burke County		Not eligible for the NRHP
314		2753046587	ca. 1947/1972/1974/ ca. 1990/ca. 2014	Crosslink Church and Parsonage	400 MALCOLM BLVD	Burke County		Not eligible for the NRHP
315		2753042553	1931/1974	Houses	301 MALCOLM BLVD	Burke County		Not eligible for the NRHP
316		2753046238	1974	Restaurant (Subway)	302 MALCOLM BLVD	Burke County		Not eligible for the NRHP
317		2753046154	1966	Convenience Store (Family Food Mart)	300 MALCOLM BLVD	Burke County		Not eligible for the NRHP
318		2753036981	1954	Automotive Garage (Hamby's Service Center & Wrecker Service)	401 US 70	Burke County		Not eligible for the NRHP
243-318	BK0212	Varies	Varies	Malcom Boulevard Historic District		Burke County	Not eligible for the NRHP	Not eligible for the NRHP

HISTORIC ARCHICTECTURE AND LANDSCAPES
EFFECTS REQUIRED FORM

This form only pertains to Historic Architecture and Landscapes for this project. It is not valid for Archaeological Resources. You must consult separately with the Archaeology Group.

PROJECT INFORMATION

Project No:	R-3430	***County***:	Caldwell & Burke
WBS No.:	34544.1.1	***Document Type***:	SEA
Fed. Aid No:		***Funding***:	☒ State ☐ Federal
Federal Permit(s):	☒ Yes ☐ No	***Permit Type(s)***:	USACE, FERC

Project Description:
Improve SR 1001 (Connelly Springs Rd/Malcolm Blvd) from US 70 to SR 1933 (Southwest Blvd)

SUMMARY OF HISTORIC ARCHICTECTURE AND LANDSCAPES REVIEW

Description of review activities, results, and conclusions:
Project area reviewed on HPOWeb and in the field in November 2018 and numerous properties required evaluation for eligibility in the National Register of Historic Places. A report was prepared and sent to the State Historic Preservation Office. As a result of the consultation, there are 2 properties either listed in or eligible for the National Register within the APE. They are:

1. Abernathy Memorial United Methodist Church (BK0077, BK0811)– Criteria B and C
2. Elizabeth Bush House (CW0073) -- Criterion C

Therefore, the historic boundaries for these 2 properties listed above need to be placed on the design plans and the potential impacts of the project need to be discussed in an effects assessment with the State and Federal agencies. Boundaries for the properties can be found on HPOWeb.

SUPPORT DOCUMENTATION

☐Map(s) ☐Previous Survey Info. ☐Photos ☒Correspondence ☐Design Plans

FINDING BY NCDOT ARCHITECTURAL HISTORIAN

Historic Architecture and Landscapes -- **EFFECTS REQUIRED**

Mary Pope Furr	**6/3/2022**
NCDOT Architectural Historian	Date

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

February 21, 2022

MEMORANDUM

TO: Mary Pope Furr mpfurr@ncdot.gov
Environmental Analysis Unit
NCDOT Division of Highways

FROM: Renee Gledhill-Earley
Environmental Review Coordinator

SUBJECT: Historic Structures Report, SR 1001 from SR 1115 to SR 1933, R-3430, PA 18-09-0009, Cleveland and Burke Counties, ER 03-0639

Thank you for your January 7, 2022, letter transmitting the above-referenced report. We have reviewed the report and offer the following comments.

We concur that CW0838, BK0212, BK0805, BK0806, BK0808, BK0809, BK0810, BK0813, and BK0814 are not eligible for listing in the National Register of Historic Places under any criteria.

We also concur that CW0073, the Elizabeth Bush House, is eligible for listing in the National Register under Criterion C.

We do not concur that BK0807, the Jacumin-Bronson House, and BK0812, the Clifton Spinx House, are eligible for listing in the National Register under Criterion C. The Jacumin-Bronson House is clad in later asbestos shingle siding and appears to have a replacement main roof and porch roof, as well as additions to and enclosures of the rear elevation; furthermore, the interior of the house was not accessed. We find that BK0807, the Jacumin-Bronson House, is not eligible for listing in the National Register of Historic Places under any criteria. While BK0812, the Clifton Spinx House, appears to retain integrity on its exterior, the interior of the house was not accessed, and thus it must remain unevaluated under Criterion C. The Spinx House does not appear to be eligible under any other criteria.

BK0419, the Arthur T. Abernethy House and Study, was determined eligible in 1995 under Criteria B and C; however, the house does not appear to possess significance under Criterion C. Furthermore, the interior of the house has never been accessed. We do not find the Arthur T. Abernethy House eligible under Criterion C. The house has also been determined eligible under Criterion B; however, pending documentation of the interior, we are unable to evaluate its integrity. Because the house seems likely to possess significance under Criterion B, we recommend investigation of the interior to determine whether or not it retains integrity to Abernethy's period of use. Without historic interiors, the house remains

unevaluated. The nearby study was also determined eligible under Criteria B and C in 1995; however, the study has been incorporated into, and totally overwhelmed by, a 1970s Ranch house. For this reason, the study does not retain adequate integrity to be eligible for the National Register under any criteria. We find that the study is not eligible.

The report contains contradictory information about BK0077/BK0811 Abernethy Memorial United Methodist Church and Cemetery. On page 135, the author states that the church is not eligible under Criterion B; however, on page ii, Criterion B is listed. The author must search the report thoroughly to eliminate contradictory information about eligibility findings before we can concur or not concur with a finding for BK0077/BK0811. Please note, if the author intends to find the church eligible under Criterion B, this argument must be developed, as sufficient information is currently lacking. Furthermore, the author has used Criteria Consideration A incorrectly at least twice in the report (page i and 135) and should search the report carefully for other potential misuses. The author states that Criteria Consideration A can be used for "historic persons"; however, this is not allowable according to Bulletin 15 (page 2). The author should instead state that the church derives its primary significance from architectural distinction. We are unable to concur or not concur pending a clear statement of eligibility.

Additionally, there are two other errors in the report that should be addressed. On page 10 (third paragraph), the author makes a statement of eligibility for the "Burch-Mathis House" when the property in question is the "Elizabeth Bush House." On page 184, the author states that the Zeb Malcolm House possesses significance under Criterion B but lacks integrity. The author has not established significance under Criterion B, so this statement should be removed. Among other concerns, the author has not considered whether the personal residence of Zeb Malcolm is the best site to represent his productive life in civic affairs rather than any municipal buildings that may survive.

Please submit an updated/revised report that addresses our concerns.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

March 31, 2022

Ms. Renee Gledhill-Earley
Environmental Review Coordinator, State Historic Preservation Office
North Carolina Department of Natural & Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Dear Renee:

RE: Historic Structures Survey Report, Improve SR 1001 from SR 1115 to SR 1933, Cleveland and Burke Counties, North Carolina TIP R-3430, WBS 34544.1.1, PA 1-09-0009, ER 03-0639

Thank you for your February 21, 2022, letter regarding the above referenced survey report compiled by the consulting firm WSP. This letter serves as a response to your questions and comments regarding the eligibility recommendations within the report. Most of your office's concerns about our evaluations revolve around the lack of access to the interiors of the dwellings which led to the assertion that under such circumstances a property must considered unevaluated under National Register criteria. As stated in the report, a good faith effort was made by our surveyor to access the interior of each property, but in some instances, access was denied. North Carolina state law authorizes NCDOT or their designee to conduct environmental studies on private property to comply with state and federal regulations. Prior to fieldwork, our surveyors provide property owners with letters explaining the purpose of the field investigations but ultimately, they are limited to writing field notes and taking exterior photos of historic properties unless owners allow additional access outside the designated study area.

As noted in the report, documentation of the hall-parlor interior of the Jacumin-Bronson House (BK0807) was limited to recording what was seen through the windows on the front porch. There was no response to our survey letter, and no one responded to knocking at the door during several site visits. Therefore, we confirm your assessment that the application of asbestos shingles, replacement of the main roof and porch roof, and enclosure of the rear elevation render this nineteenth century dwelling not eligible for the National Register. We will not list it as a property to be considered during the assessment of effects.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH, NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 250-4224
Customer Service: 1-877-368-4968

Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH, NC 27610

Our surveyor did interview the owner of the Clifton Spinx House (BK0812), but access to the interior was not granted. Despite our recommendation that the house is a rare example of a pink granite period cottage constructed by a Waldensian master stone mason, we confirm your finding that the property is not eligible for the National Register and will not list it as a property to be considered during the assessment of effects.

The Arthur T. Abernathy House and Study (BK0419) were determined eligible under Criteria B and C in 1995 and in this report recommended that they remained eligible due to lack of changes in the years since. The surveyor did interview the former owner of the dwelling, but the current tenants denied access to the interior. Therefore, we confirm your assessment that the property is not eligible under either criterion due to lack of access to the interior and the 1950s frame additions to the study. We will not list it as a property to be considered during the assessment of effects.

We apologize for the typographic error in the eligibility evaluation of Abernathy Memorial United Methodist Church (BK0077, BK0811), we reconfirm the recommendation that the church is eligible under Criteria B and C for the reasons stated in the report. The church is the only extant structure associated with Robert L. Abernathy, the founder of Rutherford College, and is an intact example of stone Gothic Revival ecclesiastical architecture constructed in the Waldensian building tradition. The eligibility recommendation meets Criterion Consideration A as it derives its significance from architectural distinction, not religious doctrine. We look forward to your comments on this eligibility evaluation, so we know whether or not to include it during the assessment of effects.

Again, thank you for the comments on the December 2021 Historic Structures Survey Report for R-3430, ER 03-0639. This letter serves as an addendum to the report and is a part of the administrative record for the project. If you have any additional questions regarding these evaluations or this project I can be reached at (919) 707-6068 or by email at mpfurr@ncdot.gov.

Sincerely,

Mary Pope Furr

Mary Pope Furr
Historic Architecture Team

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

May 13, 2022

MEMORANDUM

TO: Mary Pope Furr, Group Leader mpfurr@ncdot.gov
NCDOT/EAU/Historic Architecture Group

FROM: Ramona M. Bartos, Deputy
State Historic Preservation Officer RMB for Ramona M. Bartos

SUBJECT: Follow up to HSSR comments, SR 1001 from SR 1115 to SR 1933, R-3430, PA 18-09-0009, Caldwell and Burke Counties, ER 03-0639

Thank you for your March 31, 2022, letter responding to our comments on the Historic Structures Survey Report for the above-reference undertaking. Please accept our apology for the delay in the following comments.

We appreciate your providing additional information on the efforts made by your consultants to access the interiors of the following properties, and having failed to view them, NCDOT's agreeing that the following properties are not eligible for listing in the National Register, minus additional interior information/photographs.

- Jacumin-Bronson House (BK0807)
- Clifton Spinx House (BK0812)
- Arthur T. Abernathy House and Study (BK0419)

We also concur that the Abernathy Memorial United Methodist Church (BK0077, BK0811) is eligible for listing in the National Register under Criteria B and C; and meets Criterion Consideration A.

Please note that while our agencies concur on the eligibility determinations and will not assess effects of the undertaking on the non-historic properties, we are prepared to reconsider these determinations should the owners make the interiors available for viewing/evaluation

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Sarah David, SHPO/Survey-NR sarah.woodard@ncdcr.gov

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

March 31, 2022

Ms. Renee Gledhill-Earley
Environmental Review Coordinator, State Historic Preservation Office
North Carolina Department of Natural & Cultural Resources
4617 Mail Service Center
Raleigh, North Carolina 27699-4617

Dear Renee:

RE: Historic Structures Survey Report, Improve SR 1001 from SR 1115 to SR 1933, Cleveland and Burke Counties, North Carolina TIP R-3430, WBS 34544.1.1, PA 1-09-0009, ER 03-0639

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Again, thank you for the comments on the December 2021 Historic Structures Survey Report for R-3430, ER 03-0639. This letter serves as an addendum to the report and is a part of the administrative record for the project. If you have any additional questions regarding these evaluations or this project I can be reached at (919) 707-6068 or by email at mpfurr@ncdot.gov.

Sincerely,

Mary Pope Furr
Historic Architecture Team

North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office
Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

May 13, 2022

MEMORANDUM

TO: Mary Pope Furr, Group Leader mpfurr@ncdot.gov
NCDOT/EAU/Historic Architecture Group

FROM: Ramona M. Bartos, Deputy
State Historic Preservation Officer RSL for Ramona M. Bartos

SUBJECT: Follow up to HSSR comments, SR 1001 from SR 1115 to SR 1933, R-3430, PA 18-09-0009, Caldwell and Burke Counties, ER 03-0639

Thank you for your March 31, 2022, letter responding to our comments on the Historic Structures Survey Report for the above-reference undertaking. Please accept our apology for the delay in the following comments.

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- Jacumin-Bronson House (BK0807)
- Clifton Spinx House (BK0812)
- Arthur T. Abernathy House and Study (BK0419)

We also concur that the Abernathy Memorial United Methodist Church (BK0077, BK0811) is eligible for listing in the National Register under Criteria B and C; and meets Criterion Consideration A.

Please note that while our agencies concur on the eligibility determinations and will not assess effects of the undertaking on the non-historic properties, we are prepared to reconsider these determinations should the owners make the interiors available for viewing/evaluation

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

cc: Sarah David, SHPO/Survey-NR sarah.woodard@ncdcr.gov

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

January 28, 2021
Dr. Wenonah Haire
Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, SC 29730

Dear Dr. Wenonah Haire,

The North Carolina Department of Transportation is starting the project development, environmental, and engineering studies for the improvements to SR 1001 (Malcolm Boulevard/Connelly Spring Road) from US 70 in Burke County to SR 1933 (Southwest Boulevard) in Lenoir, Caldwell County as project R-3430. The US Army Corps of Engineers (USACE) is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) and a Permit is anticipated under the Section 404 Process with the USACE. Project vicinity and environmental features maps are attached. The coordinates of this project are approximately 35.77975833, -81.52444444.

We would appreciate any information you might have that would be helpful in evaluating potential environmental impacts of the project including recommendation of alternates to be studied. Your comments may be used in the preparation of a NEPA/State Environmental Policy Act (SEPA) Environmental Document.

In accordance with Section 106 of the NHPA, we also request that you inform us of any historic properties of traditional religious or cultural importance that you are aware of that may be affected by the proposed project. Be assured that, in accordance with confidentiality and disclosure stipulations in Section 304 of the NHPA, we will maintain strict confidentiality about certain types of information regarding historic properties.

Please respond by Friday, February 26th so that your comments can be used in the scoping of this project. If you have any questions concerning this project, or would like any additional information, please contact me at tellerby@ncdot.gov or (919) 707-6020.

Thank you,

DocuSigned by:
Theresa Ellerby
9876C06756C9407...
Theresa T. Ellerby, CPM
NCDOT Project Manager – Division 11-14

cc: Matt Wilkerson, NCDOT Archaeology Team Leader
Lori Beckwith, USACE Project Manager

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
PROJECT MANAGEMENT UNIT
1582 MAIL SERVICE CENTER
RALEIGH NC 27699-1582

Telephone: (919) 707-6400
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

January 27, 2021
Elizabeth Toombs
Cherokee Nation
Tribal Historic Preservation Office
PO Box 948
Tahlequah, OK 74465

Dear Ms. Toombs,

The North Carolina Department of Transportation is starting the project development, environmental, and engineering studies for the improvements to SR 1001 (Malcolm Boulevard/Connelly Spring Road) from US 70 in Burke County to SR 1933 (Southwest Boulevard) in Lenoir, Caldwell County as project R-3430. The US Army Corps of Engineers (USACE) is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) and a Permit is anticipated under the Section 404 Process with the USACE. Project vicinity and environmental features maps are attached. The coordinates of this project are approximately 35.77975833, -81.52444444.

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Thank you,

DocuSigned by:
Theresa Ellerby
9876C06756C9407...

Theresa T. Ellerby, CPM
NCDOT Project Manager – Division 11-14

cc: Matt Wilkerson, NCDOT Archaeology Team Leader
Lori Beckwith, USACE Project Manager

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

January 27, 2021
Russell Townsend
Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
2077 Governors Island Road
Bryson City, NC 28713

Dear Mr. Townsend,

The North Carolina Department of Transportation is starting the project development, environmental, and engineering studies for the improvements to SR 1001 (Malcolm Boulevard/Connelly Spring Road) from US 70 in Burke County to SR 1933 (Southwest Boulevard) in Lenoir, Caldwell County as project R-3430. The US Army Corps of Engineers (USACE) is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) and a Permit is anticipated under the Section 404 Process with the USACE. Project vicinity and environmental features maps are attached. The coordinates of this project are approximately 35.77975833, -81.52444444.

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Thank you,

DocuSigned by:
Theresa Ellerby
9876C06756C9407...

Theresa T. Ellerby, CPM
NCDOT Project Manager – Division 11-14

cc: Matt Wilkerson, NCDOT Archaeology Team Leader
Lori Beckwith, USACE Project Manager

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STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

January 27, 2021
James Hartley
United Keetoowah Band of Cherokee Indians
Tribal Historic Preservation Office
PO Box 1245
Tahlequah, OK 74465

Dear Mr. Hartley,

The North Carolina Department of Transportation is starting the project development, environmental, and engineering studies for the improvements to SR 1001 (Malcolm Boulevard/Connelly Spring Road) from US 70 in Burke County to SR 1933 (Southwest Boulevard) in Lenoir, Caldwell County as project R-3430. The US Army Corps of Engineers (USACE) is the lead federal agency for compliance with the National Environmental Policy Act (NEPA) and Section 106 of the National Historic Preservation Act (NHPA) and a Permit is anticipated under the Section 404 Process with the USACE. Project vicinity and environmental features maps are attached. The coordinates of this project are approximately 35.77975833, -81.52444444.

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Thank you,

DocuSigned by:
Theresa Ellerby
9876C06756C9407...
Theresa T. Ellerby, CPM
NCDOT Project Manager – Division 11-14

cc: Matt Wilkerson, NCDOT Archaeology Team Leader
Lori Beckwith, USACE Project Manager

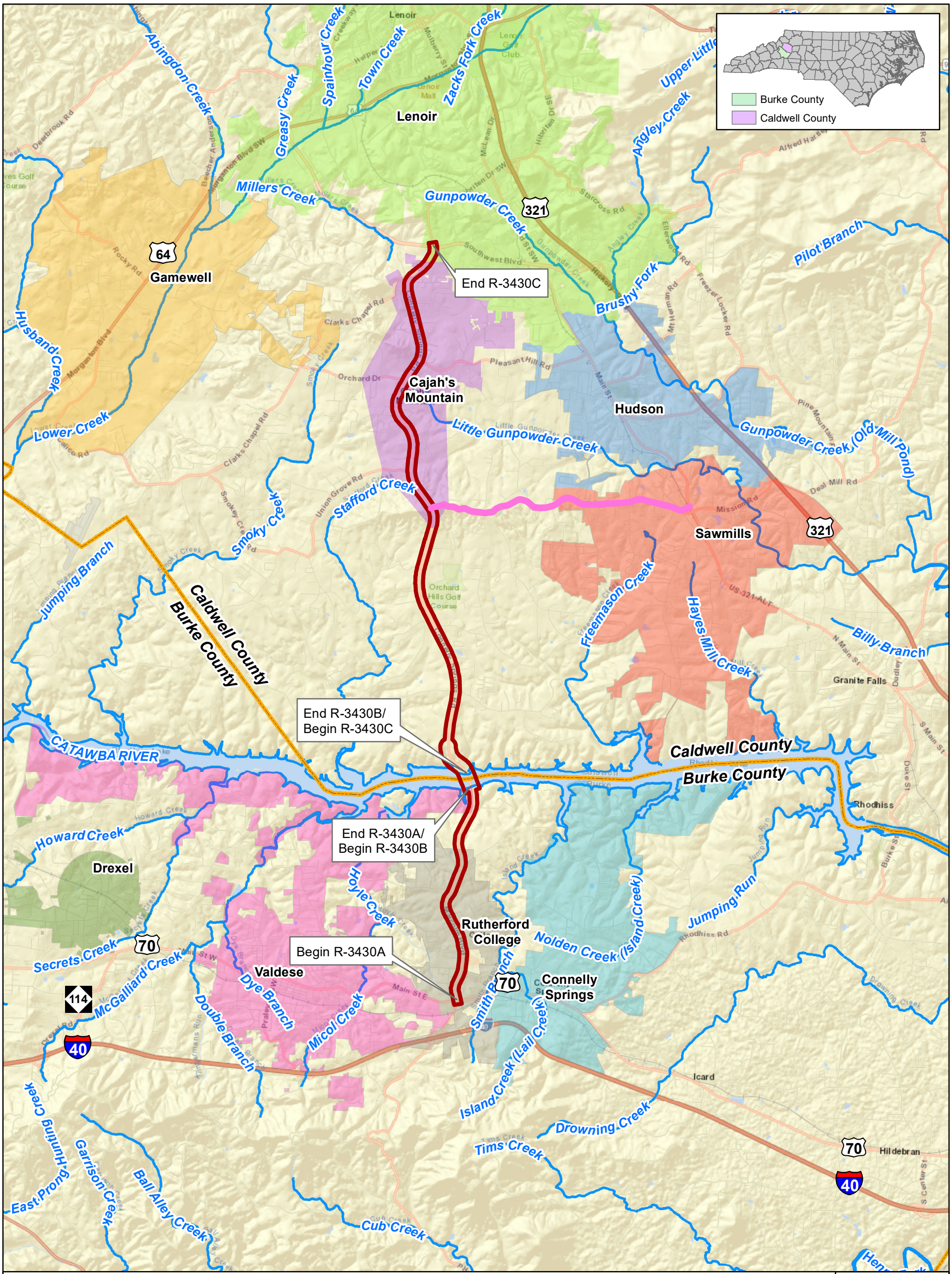
Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
PROJECT MANAGEMENT UNIT
1582 MAIL SERVICE CENTER
RALEIGH NC 27699-1582

Telephone: (919) 707-6400
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

North Carolina
Department of Transportation

Malcolm Blvd/Connelly Springs Rd (SR 1001)
STIP No. R-3430
Burke & Caldwell Counties, North Carolina
Project Vicinity Map



STIP No. U-6157
Rivers & Streams
R-3430 Study Area
County Line

Cajah's Mountain
Connelly Springs
Drexel
Gamewell
Hudson
Lenoir
Rutherford College
Sawmills
Valdese

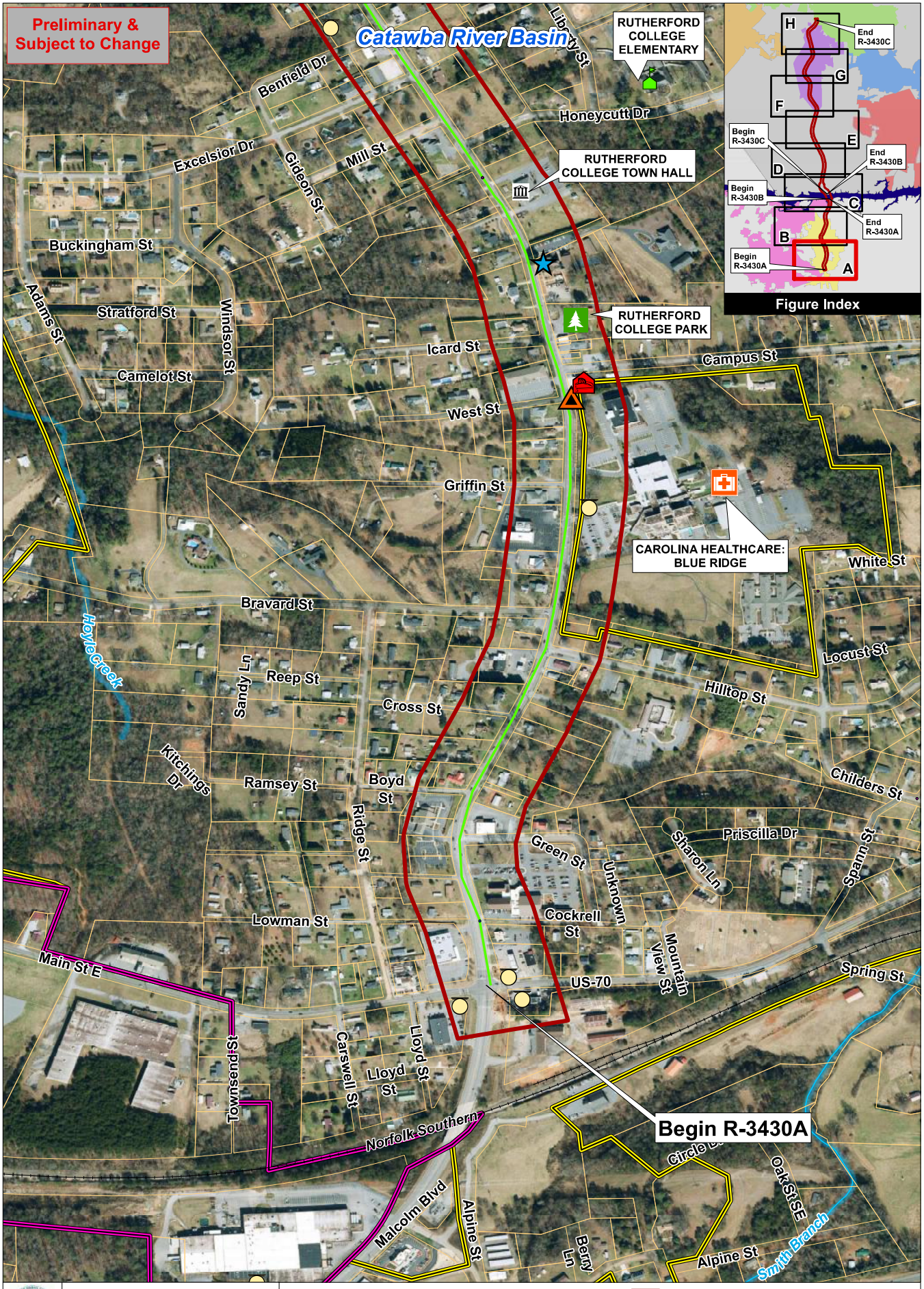
January 2021

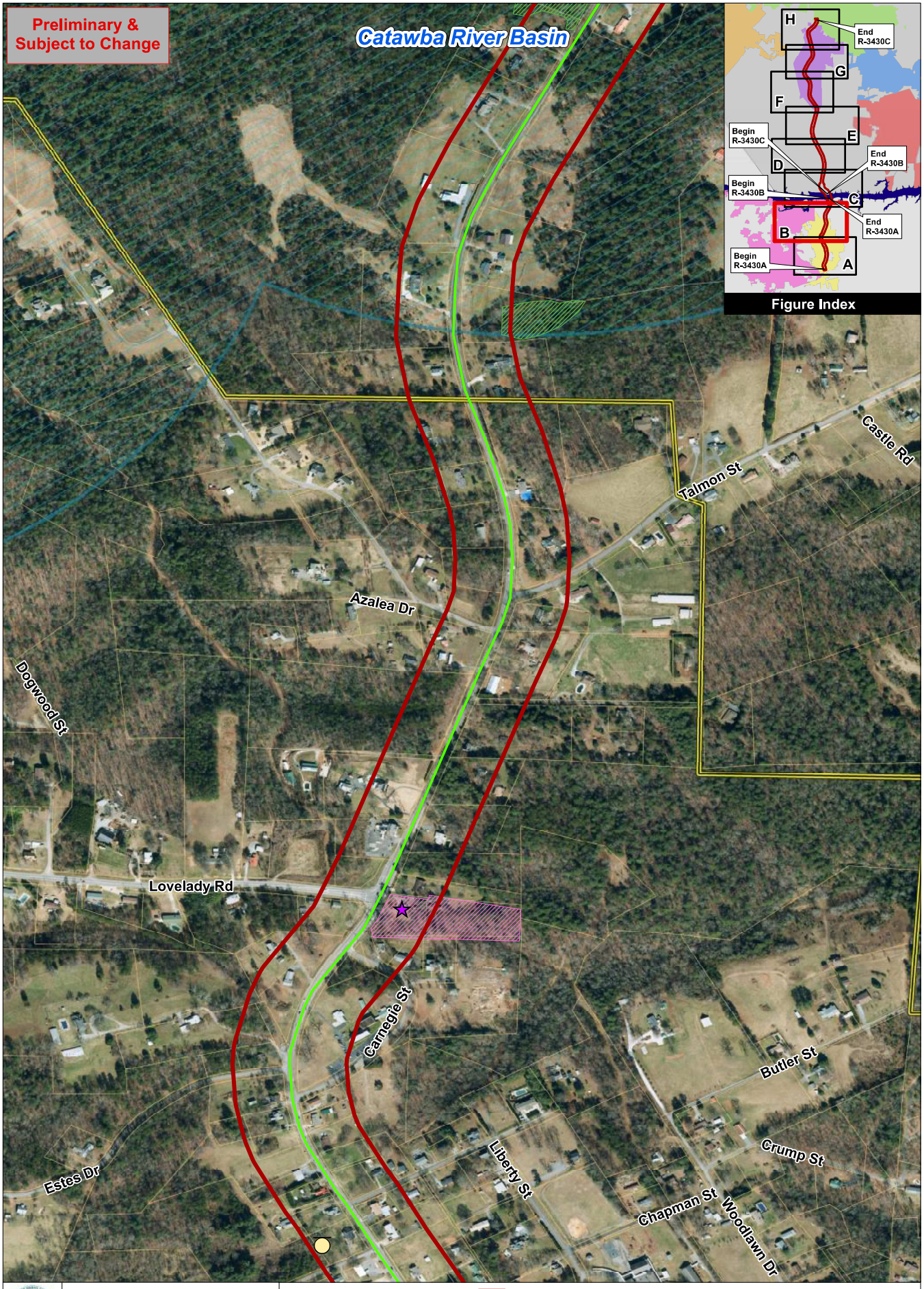
N

Source: Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

0 0.5 1 2 3 Miles

FIGURE 1


Preliminary & Subject to Change
Catawba River Basin
RUTHERFORD COLLEGE ELEMENTARY
RUTHERFORD COLLEGE TOWN HALL
RUTHERFORD COLLEGE PARK
CAROLINA HEALTHCARE: BLUE RIDGE
Figure Index
Begin R-3430A
Begin R-3430B
Begin R-3430C
End R-3430A
End R-3430B
End R-3430C
Benfield Dr
Honeycutt Dr
Excelsior Dr
Gideon St
Mill St
Liberty St
Buckingham St
Adams St
Stratford St
Windsor St
Camelot St
Icard St
West St
Griffin St
Campus St
White St
Locust St
Hilltop St
Bravard St
Hoyle Creek
Sandy Ln
Reep St
Cross St
Kitchings Dr
Ramsey St
Boyd St
Ridge St
Childers St
Priscilla Dr
Sharon Ln
Spann St
Green St
Unknown
Cockrell St
Mountain View St
Lowman St
Main St E
US-70
Spring St
Carswell St
Lloyd St
Townsend St
Norfolk Southern
Malcolm Blvd
Alpine St
Berry Ln
Oak St SE
Smith Branch
North Carolina Department of Transportation
Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021
0 250 500 1,000 Feet
Fire Station
Public School
SHPO - Study List
Town Hall
Park
Medical
Hazardous Waste Sites
Underground Storage Tanks
Railroad Track
Rivers & Streams
R-3430 Project Limits
R-3430 Study Area
Town of Rutherford College
Town of Valdese
Parcels
N
W
E
S
Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board
Sheet A



North Carolina Department of Transportation

Malcolm Blvd/Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

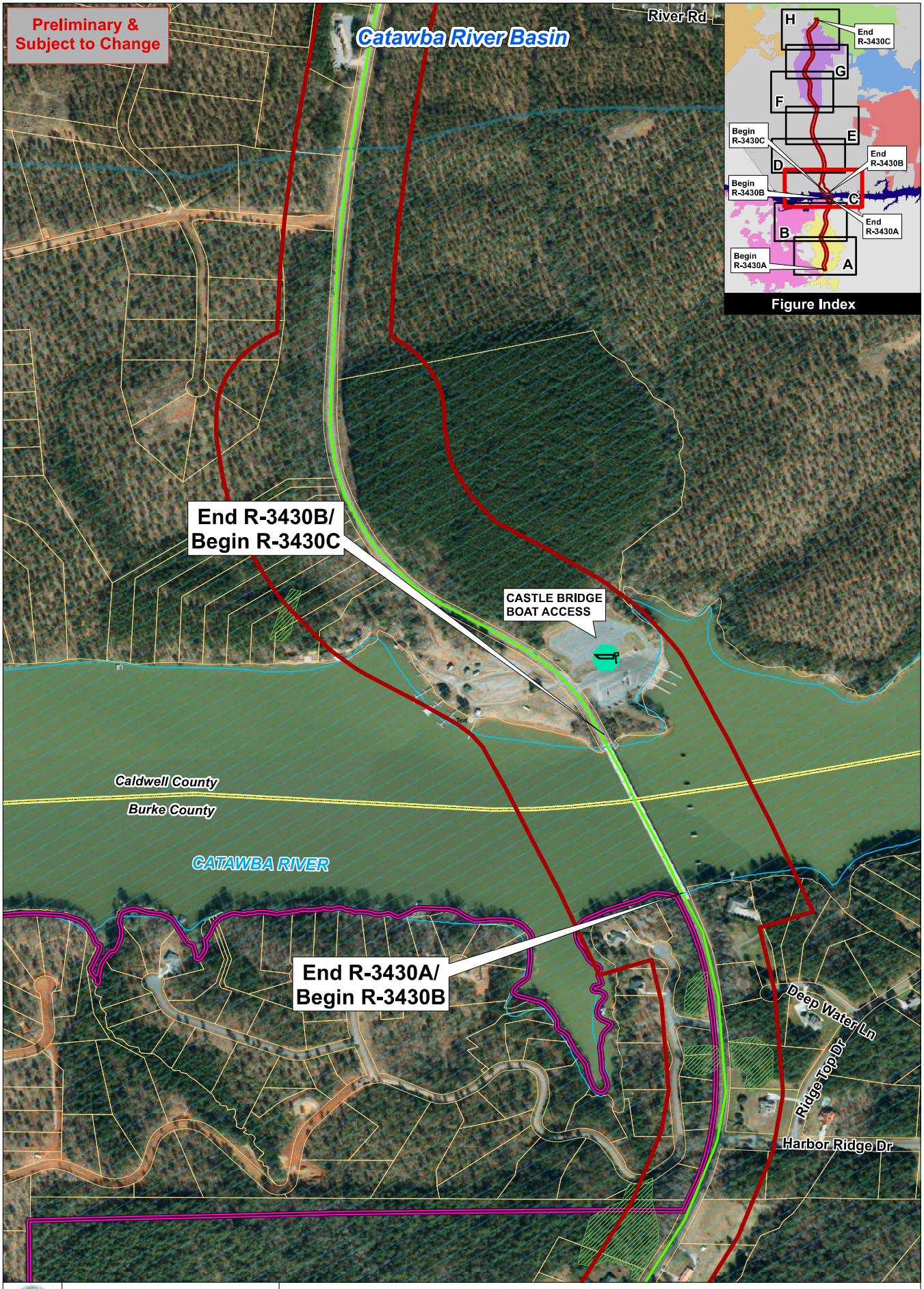
0 250 500 1,000 Feet

- SHPO - Determined Eligible
- Underground Storage Tanks
- Rivers & Streams
- R-3430 Project Limits
- R-3430 Study Area
- Dwarf-flowered Heartleaf Pops. (Field Surveys April 2018)
- SHPO - DOE Boundary District
- Critical Watershed Area
- Parcels
- Town of Rutherford College

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet B



North Carolina Department of Transportation

Malcolm Blvd/Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

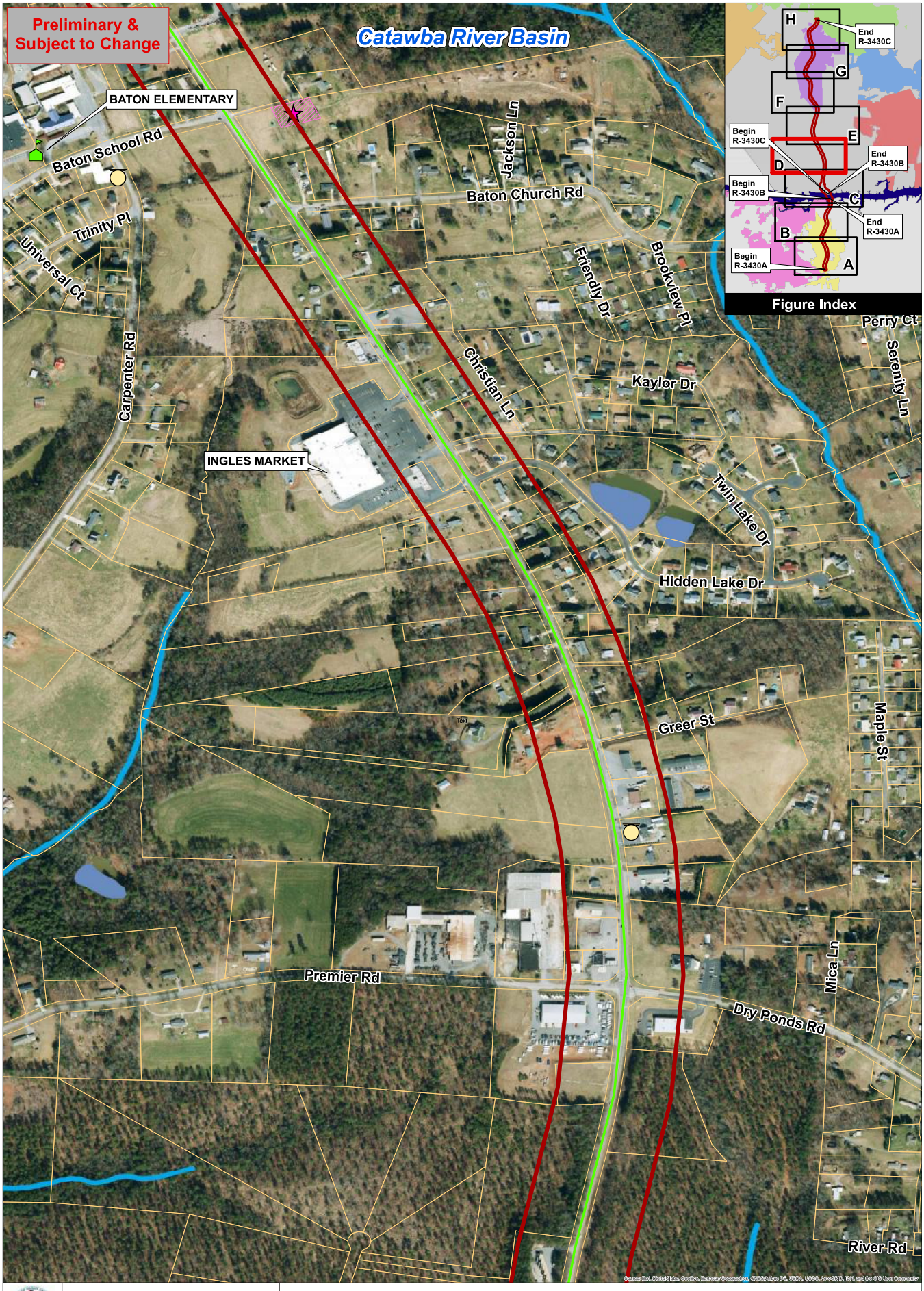
0 250 500 1,000 Feet

Boat Access
R-3430 Project Limits
Rivers & Streams
R-3430 Study Area
County Boundary
Dwarf-flowered Heartleaf Pops. (Field Surveys April 2018)
Critical Watershed Area
Parcels
Town of Valdese

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet C



North Carolina Department of Transportation

Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

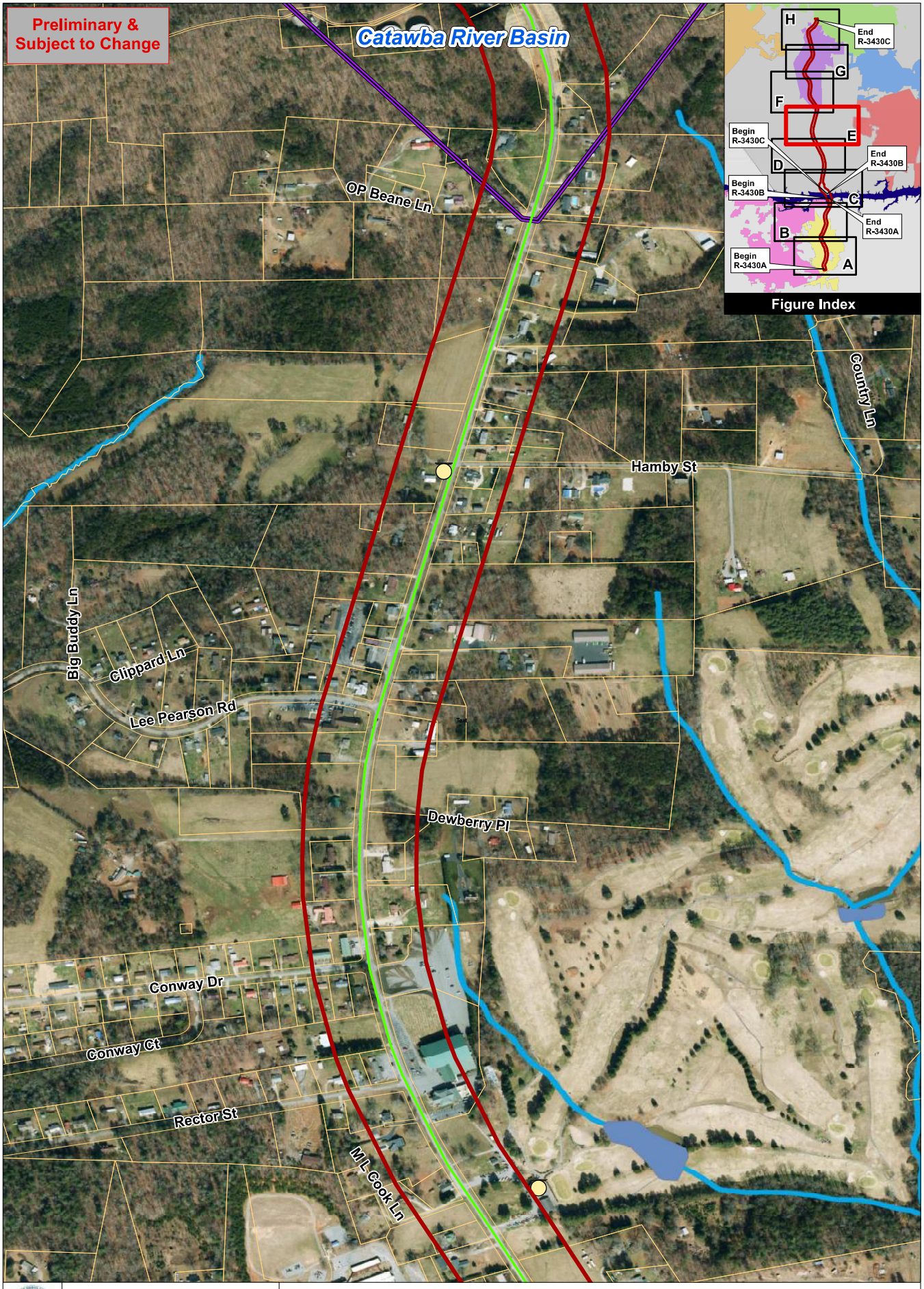
0 250 500 1,000 Feet

- SHPO - Determined Eligible, Vacant
- Public School
- Underground Storage Tanks
- R-3430 Project Limits
- Rivers & Streams
- R-3430 Study Area
- SHPO - DOE Boundary District
- Freshwater Pond
- Parcels

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet D



North Carolina Department of Transportation

Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

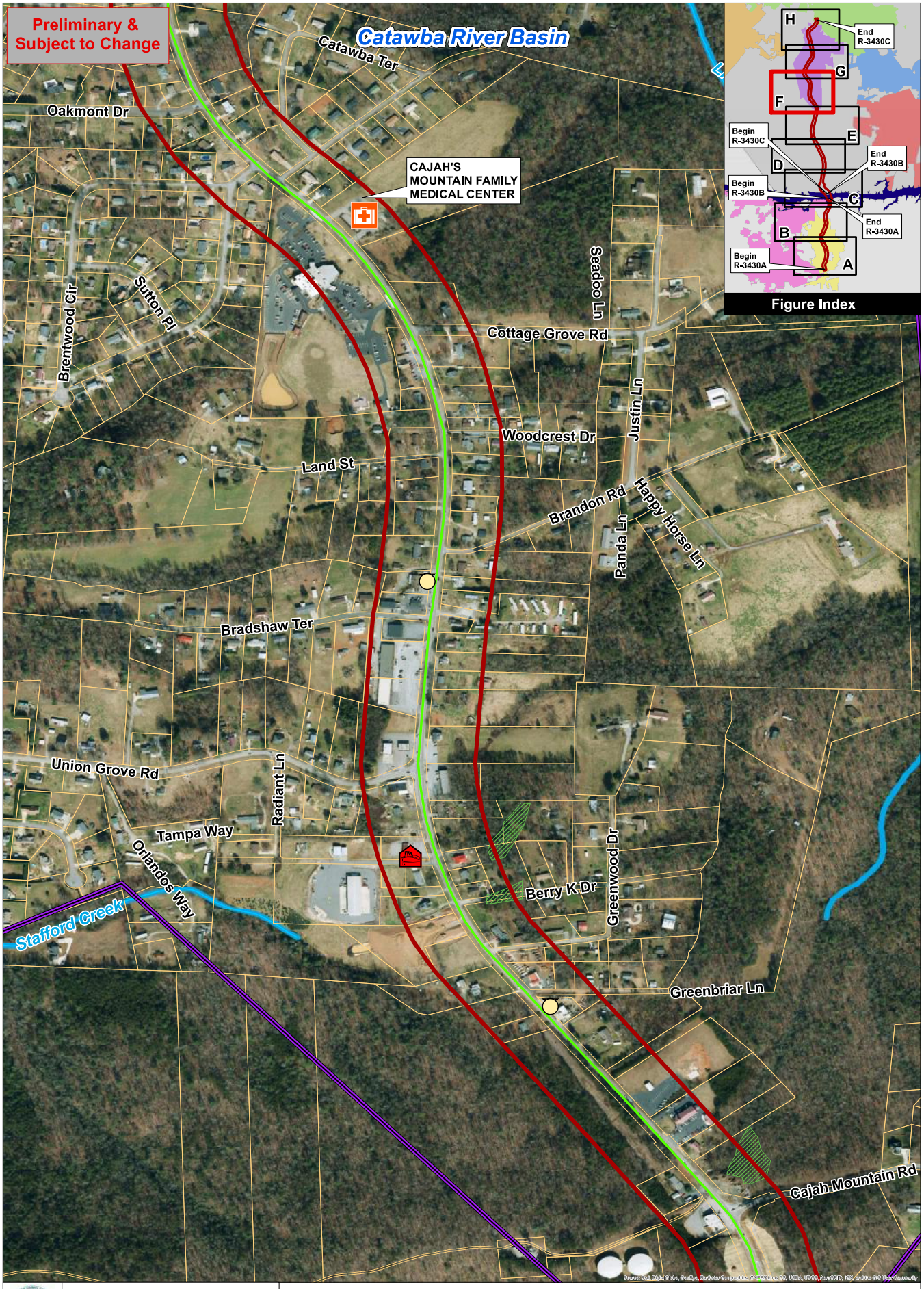
0 250 500 1,000 Feet

Underground Storage Tanks
R-3430 Project Limits
Rivers & Streams
R-3430 Study Area
Town of Cajah's Mountain
Freshwater Pond
Parcels

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet E



North Carolina Department of Transportation

Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

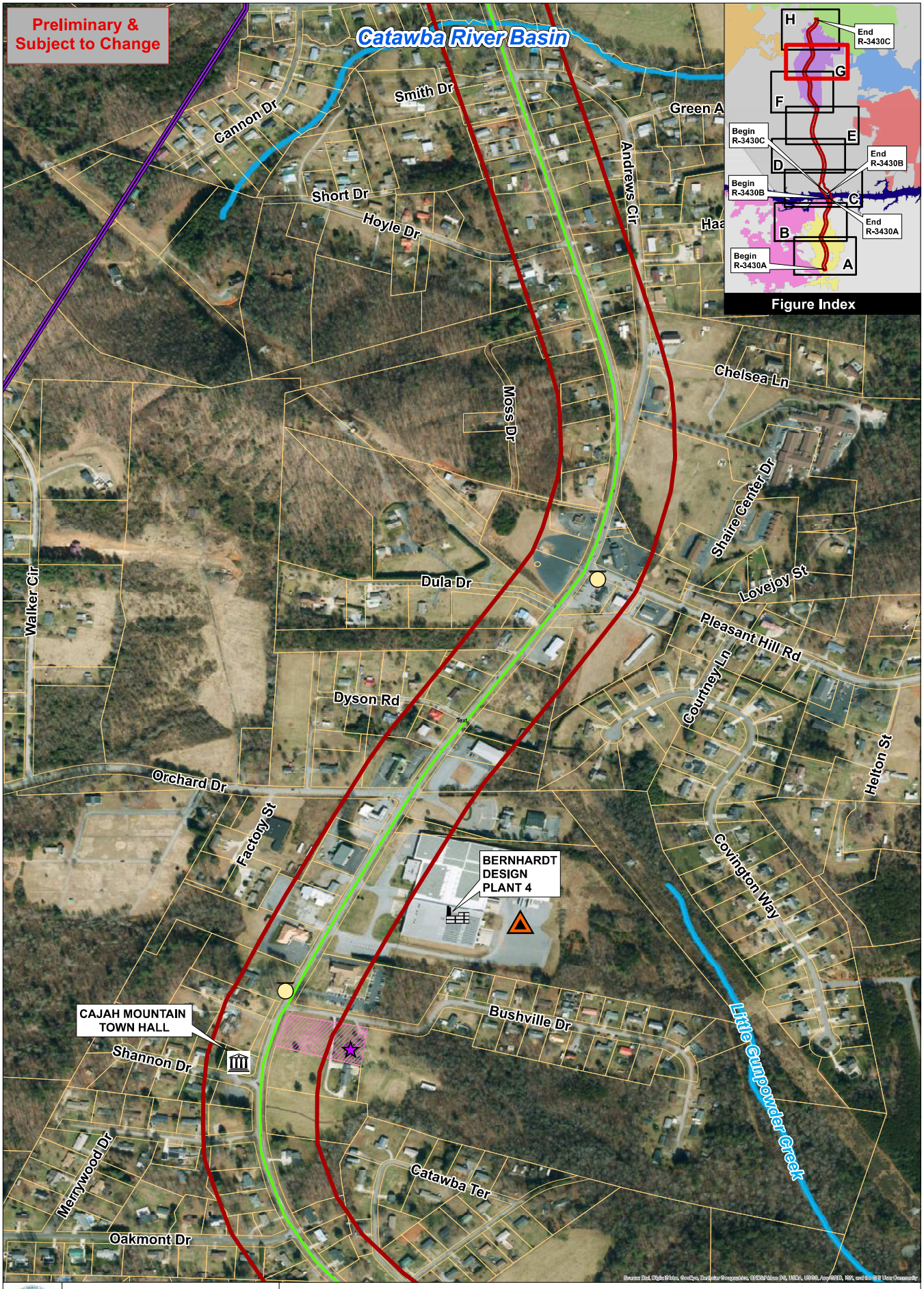
0 250 500 1,000 Feet

- Fire Station
- Medical
- Underground Storage Tanks
- R-3430 Project Limits
- Rivers & Streams
- R-3430 Study Area
- Town of Cajah's Mountain
- Parcels
- Dwarf-flowered Heartleaf Pops. (Field Surveys April 2018)

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet F



North Carolina Department of Transportation

Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

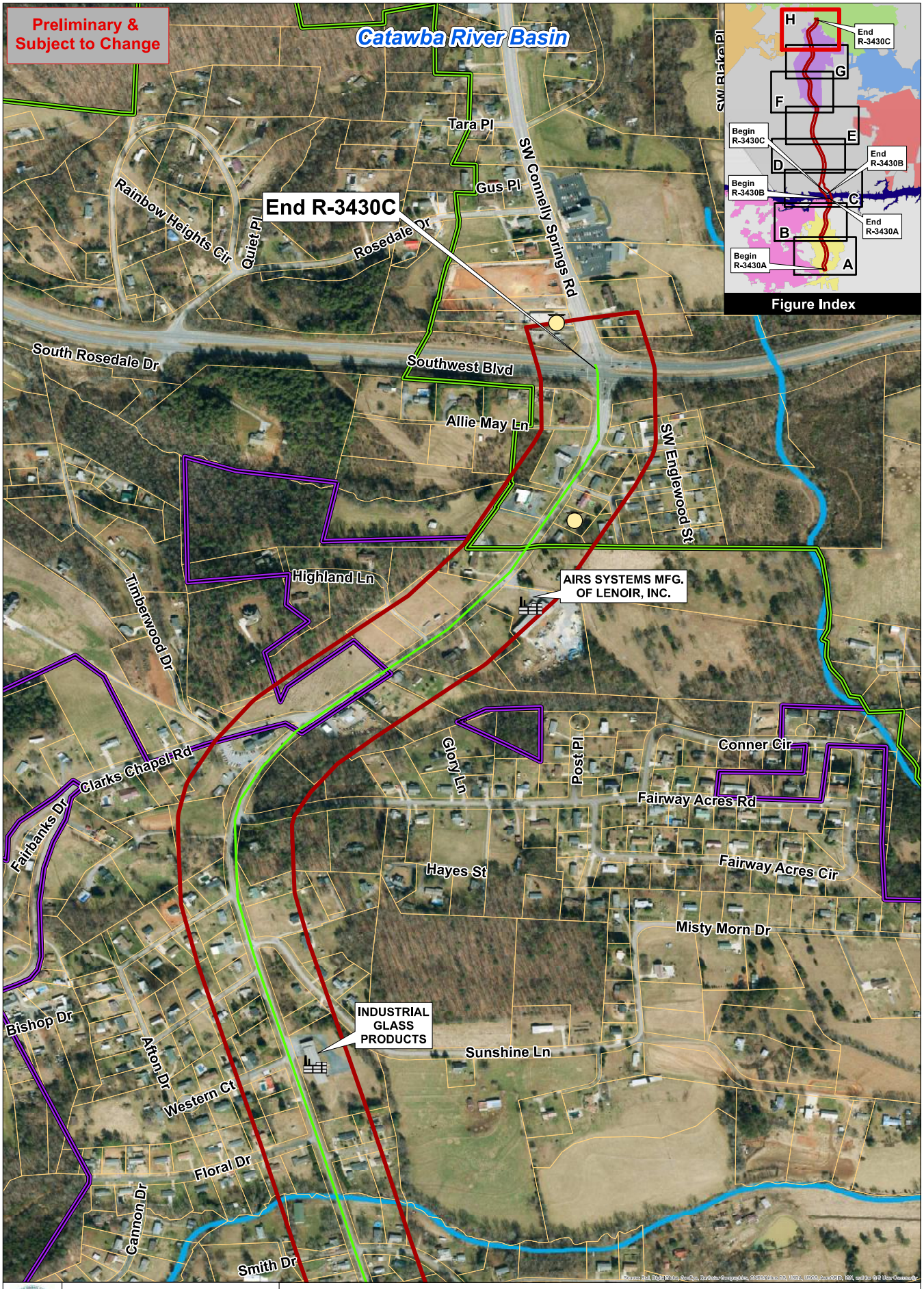
0 250 500 1,000 Feet

- SHPO - Determined Eligible
- Industrial
- Town Hall
- Hazardous Waste Sites
- Underground Storage Tanks
- R-3430 Project Limits
- Rivers & Streams
- R-3430 Study Area
- SHPO - DOE Boundary District
- Town of Cajah's Mountain
- Parcels

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet G



North Carolina Department of Transportation

Connelly Springs Rd (SR 1001)
STIP No. R-3430
Environmental Features Map
January 2021

0 250 500 1,000 Feet

Industrial
Underground Storage Tanks
Rivers & Streams
R-3430 Project Limits
R-3430 Study Area
Town of Cajah's Mountain
City of Lenoir
Parcels

N W E S

Source: NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

Sheet H

NCDOT MINIMUM CRITERIA DETERMINATION CHECKLIST

STIP Project No.: R-3430B

State Project No.: 34544.1.4

Project Location:

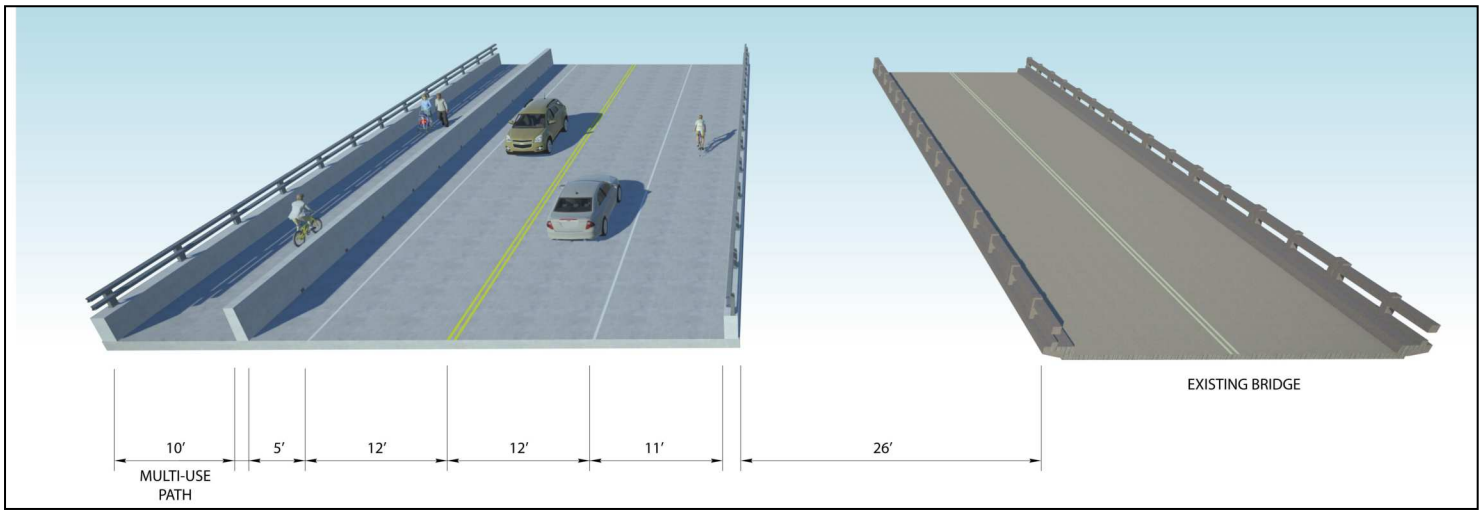
Bridge No. 110010 (Castle Bridge) over the Catawba River (Lake Rhodhiss) is located on SR 1001 (Malcolm Boulevard/Connelly Springs Road) in Burke County and Caldwell County. The design limits are from approximately 75 feet north of Harbor Ridge Drive to approximately 585 feet north of Castle Bridge Drive.

Project Description:

The proposed project (R-3430B) involves replacing Bridge No. 110010 over the Catawba River. NCDOT evaluated three alternatives, each with two design alignment options (see **SPECIAL PROJECT INFORMATION**). The new location replacement structure will be approximately 1,075 feet in length, with a minimum clear roadway width of 40 feet, and on new alignment west of the existing bridge. The new bridge will be approximately 6.5 feet higher in elevation than the existing bridge.

The project is listed in the current *NCDOT 2020-2029 State Transportation Improvement Program (STIP)* along with two adjacent projects: R-3430C to the north and R-3430A to the south. R-3430B is scheduled for right-of-way acquisition to begin in fiscal year 2022 and construction in fiscal year 2023. R-3430C is scheduled for right-of-way acquisition to begin in fiscal year 2026 and construction in fiscal year 2029. Right-of-way acquisition and construction for R-3430A are currently unfunded in the STIP.

The proposed bridge would accommodate the following typical section: 51-foot total bridge width (40-foot clear roadway width) from left to right, consisting of a 10-foot shared-use path (SUP), 1-foot protected barrier, 5-foot shoulder, two 12-foot travel lanes, and 11-foot shoulder. In accordance with the *NC Bicycle Facilities Planning and Design Guidelines*, a minimum bicycle-safe railing height of 54” will be required where bicyclists will be riding next to the handrail.



Construction activity on SR 1001 (Malcolm Boulevard and Connelly Springs Road) will extend approximately 1,215 feet south of the proposed bridge and approximately 810 feet north of the proposed bridge, respectively. SR 1001 has a functional classification of a minor arterial with a design speed of 50 mph and a posted speed of 45 mph.

Traffic will be maintained on-site using the existing bridge and roadway alignment during construction. Once construction is complete, traffic will be shifted to the new bridge, then demolition of the existing bridge will begin.

Anticipated Permit or Consultation Requirements:

It is anticipated that a US Army Corps of Engineers (USACE) Section 404 permit will be required for this single and complete project; the USACE is NCDOT's lead federal agency for the project. A corresponding Section 401 Water Quality Certification (WQC) from the North Carolina Department of Water Resources (NCDWR) will be required prior to the issuance of a Section 404 Permit. The USACE holds the final discretion as to what permit will be required to authorize project construction.

On behalf of the USACE, NCDOT is in consultation with the United States Fish and Wildlife Service (USFWS) to satisfy Section 7 of the Endangered Species Act (ESA).

Duke Energy FERC coordination and approval are anticipated for the proposed project following 404/401 permitting completion.

SPECIAL PROJECT INFORMATION

Purpose and Need

The purpose of the project is to replace the structurally deficient Bridge No. 110010 over the Catawba River. Prior to approximately $5 million in bridge maintenance improvements between 2018 and 2019, the bridge had a sufficiency rating of 8 out of 100. The 2020 NCDOT Bridge Management Unit records indicate the bridge currently has a sufficiency rating of 37.55 out of a possible 100.

Initial Preliminary Bridge Study Alternatives

Three initial alternatives were evaluated, each with two design alignment options (west or east), and all employing an on-site detour to maintain traffic during construction. Alternatives 1 and 2 would maintain traffic on the existing structure until completion of the new bridge and for Alternative 3, maintenance of traffic would be staged during construction.

Alternative 1 - Replace the existing bridge on new alignment approximately 67 feet from the center of the existing bridge to the center of the new bridge.

Alternative 2 - Replace the existing bridge on new alignment approximately 46 feet from the center of the existing bridge to the center of the new bridge.

Alternative 3 - Widen the existing structure; original bridge foundations would remain in use.

Eastern Alignment Alternatives Overview

Eastern alignments were not further studied due to potential impacts to the Castle Bridge Boat Access ramp. The three western alignments for Alternates 1, 2 and 3 were carried forward for additional design and study.

Western Alignment Alternatives Overview

Alternative 1

Alternative 1 consists of building a new 51-foot wide bridge. Traffic would remain on the existing bridge until the completion of the new bridge, at which point the current bridge would be demolished. This alternative would not preclude future widening of the bridge.

Alternative 1 would require about 3.35 acres of right-of-way (and other applicable roadway items). About 0.36 acres of dwarf-flowered heartleaf (DFHL) habitat would be impacted.

Alternative 2

Alternative 2 is similar to Alternative 1 and consists of building a new parallel 51-foot wide bridge west of the existing bridge. Traffic would remain on the existing bridge until completion of the new bridge, at which point the current bridge would be demolished. The proposed design does not preclude future widening of the bridge.

The narrow distance between the proposed bridge and existing bridge would require temporary shoring, creating construction challenges for this alternative. Alternative 2 would require about 3.20 acres of right-of-way and would impact about 0.31 acres of DFHL habitat.

Alternative 3

Alternative 3 consists of using the existing bridge foundations to build an approximately 65-foot wide bridge. The bridge would be constructed in phases to maintain traffic during construction.

To maintain two-lane traffic during construction, Alternative 3 requires a minimum width of 65 feet and the bridge would need to be extended north of the existing end bent by two additional spans. This alternative would add construction risks and higher costs. The alternative would reuse the existing foundations, connecting two bridge decks together (new foundations for stage 1 and existing foundations for stage 2).

Preferred Alternative

Alternative 1 was selected as the Preferred Alternative. Alternative 1 has fewer constructability issues; the longer tie-in improves traffic control and allows for an easier transition to a normal crown leading up to the bridge. The increased distance of 67 feet from the center of the existing bridge to the center of the new bridge allows enough room to build a separate structure should a four-lane roadway be needed in the future. There is no temporary shoring anticipated next to the bridge for this alternative.

The estimated R-3430B project cost is $19,927,951, including $496,091 for Right-of-Way, $431,860 for Utilities, and $19,000,000 for Construction.

No relocations are anticipated with this project.

There are no anticipated impacts to historic resources.

Pedestrian/Bicycle Accommodations: NCDOT Integrated Mobility Division (IMD) recommended that the project team coordinate with municipalities to determine the most appropriate type and location of pedestrian and bicycle facilities. Input from local coordination meetings and the *FHWA Bikeway Selection Guide* tool was used to identify a minimum typical section that could safely accommodate bicyclists and pedestrians in the community context.

Bridge Demolition: Bridge No. 110010 is constructed of a reinforced concrete bridge deck, steel girders, and reinforced concrete piers. The existing bridge will be removed with proper protection measures to avoid any debris falling into the water.

Public Involvement: A Virtual Public Comment Period was held from September 29 to October 15, 2021. NCDOT sent about 2,772 postcards to property owners directing them to the R-3430 PublicInput.com project site for project information and feedback.

There were 1,024 views of the project website and 93 comments received during the comment period, with 58 comments based off the poll questions and 35 independent comments. About 33% of comments were on the topic of bicyclists/pedestrians. Regarding the bridge replacement portion (R-3430B), 70% of respondents (of 43 responses) supported the recommendations shown on the project site.

Environmental Commitments: The list of project commitments (Green Sheet) is located at the end of the checklist.

PART A: MINIMUM CRITERIA

Item 1 to be completed by the Project Manager.	YES	NO
1 Is the proposed project listed as a type and class of activity allowed under the Minimum Criteria Rule in which environmental documentation is not required?	☒	☐

If the answer to number 1 is "no", then the project does not qualify as a minimum criteria project. A state Environmental Assessment is required.

If yes, under which category? **#9**

If either category #8, #12(i) or #15 is used complete Part D of this checklist.

PART B: MINIMUM CRITERIA EXCEPTIONS

Items 2 – 4 to be completed by the Project Manager.	YES	NO
2 Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse air quality impacts?	☐	☒
3 Will the proposed activity have secondary impacts or cumulative impacts that may result in a significant adverse impact to human health or the environment?	☐	☒
4 Is the proposed activity of such an unusual nature or does the proposed activity have such widespread implications, that an uncommon concern for its environmental effects has been expressed to the Department?	☐	☒
Item 5-8 to be completed by Division Environmental Officer.		
5 Does the proposed activity have a significant adverse effect on wetlands; surface waters such as rivers, streams, and estuaries; parklands; prime or unique agricultural lands; or areas of recognized scenic, recreational, archaeological, or historical value?	☐	☒
6 Will the proposed activity endanger the existence of a species on the Department of Interior's threatened and endangered species list?	☐	☒
7 Could the proposed activity cause significant changes in land use concentrations that would be expected to create adverse water quality or ground water impacts?	☐	☒
8 Is the proposed activity expected to have a significant adverse effect on long-term recreational benefits or shellfish, finfish, wildlife, or their natural habitats?	☐	☒

If any questions 2 through 8 are answered "yes", the proposed project may not qualify as a Minimum Criteria project. A state Environmental Assessment (EA) may be required. For assistance, contact the Environmental Policy Unit at (919) 707–6253 or EPU@ncdot.gov.

PART C: COMPLIANCE WITH STATE AND FEDERAL REGULATIONS

Items 9- 12 to be completed by Division Environmental Officer.	**YES**	**NO**
9. Is a federally protected threatened or endangered species, or its habitat, likely to be impacted by the proposed action?	☒	☐
10. Does the action require the placement of temporary or permanent fill in waters of the United States?	☒	☐
11. Does the project require the placement of a significant amount of fill in high quality or relatively rare wetland ecosystems, such as mountain bogs or pine savannahs?	☐	☒
12. Is the proposed action located in an Area of Environmental Concern, as defined in the coastal Area Management Act?	☐	☒
Items 13 – 15 to be completed by the Project Manager.		
13. Does the project require stream relocation or channel changes?	☐	☒
Cultural Resources		
14. Will the project have an "effect" on a property or site listed on the National Register of Historic Places?	☐	☒
15. Will the proposed action require acquisition of additional right of way from publicly owned parkland or recreational areas?	☐	☒

Questions in Part "C" are designed to assist the Project Manager and the Division Environmental Officer in determining whether a permit or consultation with a state or federal resource agency may be required. If any questions in Part "C" are answered "yes," follow the appropriate permitting procedures prior to beginning project construction.

Response to Question 9: Threatened and Endangered Species

NCDOT prepared a *Natural Resources Technical Report (NRTR)* (May 2019) for R-3430. Since the completion of the *NRTR* (2019), the USFWS lists nine federally protected species in the project study area:

Federally protected species listed in the project study area

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Glyptemys muhlenbergii	Bog Turtle	T(S/A)	No	Not Required
Myotis grisescens	Gray Bat	E	Yes	No Effect
Myotis septentrionalis	Northern Long-eared bat	T	Yes	MANLAA*
Corynorhinus townsendii virginianus	Virginia Big-eared bat	E	Yes	No Effect
Gymnoderma lineare	Rock Gnome Lichen	E	No	No Effect
Hexastylis naniflora	Dwarf-flowered Heartleaf	T	Yes	MALAA*
Isotria medeoloides	Small Whorled Pogonia	T	Yes	No Effect
Liatris helleri	Heller's Blazingstar	T	No	No Effect
Sisyrinchium dichotomum	White irisette	E	Yes	No Effect

E – Endangered, T – Threatened, T(S/A) – threatened due to similarity of appearance, MALAA – May Affect Likely to Adversely Affect, MANLAA – May Affect Not Likely to Adversely Affect
* – Formal Section 7 consultation will confirm Note: IPaC data checked 11/30/21

A letter (July 9, 2021) documenting Section 7 survey results for the Northern Long-eared Bat, Virginia Big-eared Bat, and Gray Bat is included in Appendix A.

Dwarf-flowered Heartleaf (DFHL) - DFHL is documented to occur in the project study area. Field surveys were conducted in April 2018 and in Spring of 2021. There are five DFHL populations within the R-3430B study area located south of the existing and proposed replacement structure in the area incorporated into R-3430B for the bridge approach roadway tie-ins. As such, complete avoidance of the DFHL populations in the bridge area is unavoidable. NCDOT is preparing a Biological Assessment (BA) in accordance with ESA Section 7 and a plan will be developed with USFWS to offset the loss of plants.

Section 7 survey results concluded that NCDOT recommends a Biological Conclusion of *May Affect Not Likely to Adversely Affect* for the northern long-eared bat. The 2018 DFHL survey conducted within the study area found the Biological Conclusion for the DFHL as *Unresolved/May Affect Likely to Adversely Affect*. As noted above, a Biological Assessment (BA) is being prepared in accordance with the Endangered Species (ESA) Section 7, as amended, and a plan will be developed with USFWS to offset the loss of plants.

Response to Question 10

The preferred alternative will require a USACE Section 404 permit. Temporary barges (and other temporary measures) may be used for removal of the existing bridge and construction of the new bridge and will be documented in NCDOT's 404 permit application.

PART D: (To be completed when either category #8, 12(i) or #15 of the rules are used.)

Items 16- 22 to be completed by Division Environmental Officer.

16. Project length: _____

17. Right of Way width: _____

18. Project completion date: _____

19. Total acres of newly disturbed ground surface: _____

20. Total acres of wetland impacts: _____

21. Total linear feet of stream impacts: _____

22. Project purpose: _____

Reviewed by:

Theresa T. Ellerby
_____
Theresa T. Ellerby, CPM – Project Manager Date: 2/4/2022
PMU – Divisions 11-14

Kevin E. Moore
_____
Kevin Moore, P.E. – Sr. Project Manager Date: 2/4/2022
PMU – Divisions 11-14

Kimberly Bereis
_____
Kim Bereis, AICP – Project Manager Date: 2/3/2022
DRMP, Inc.

NCDOT PROJECT COMMITMENTS

STIP Project No. R-3430B
Bridge No. 110010 over the Catawba River on SR 1001
Burke and Caldwell Counties
WBS Element 34544.1.4

NCDOT Environmental Analysis Unit:

Dwarf-flowered Heartleaf

- NCDOT will offset the loss of DFHL in accordance with conservation measures developed with the U.S. Fish and Wildlife Service during the Endangered Species Act (ESA) Section 7 Consultation.

Federal Energy Regulatory Commission (FERC)

- ECAP will coordinate with Duke Energy and obtain FERC approval following the 404/401 permitting process.

NCDOT Division 11 and Division 13:

Maintenance Agreement

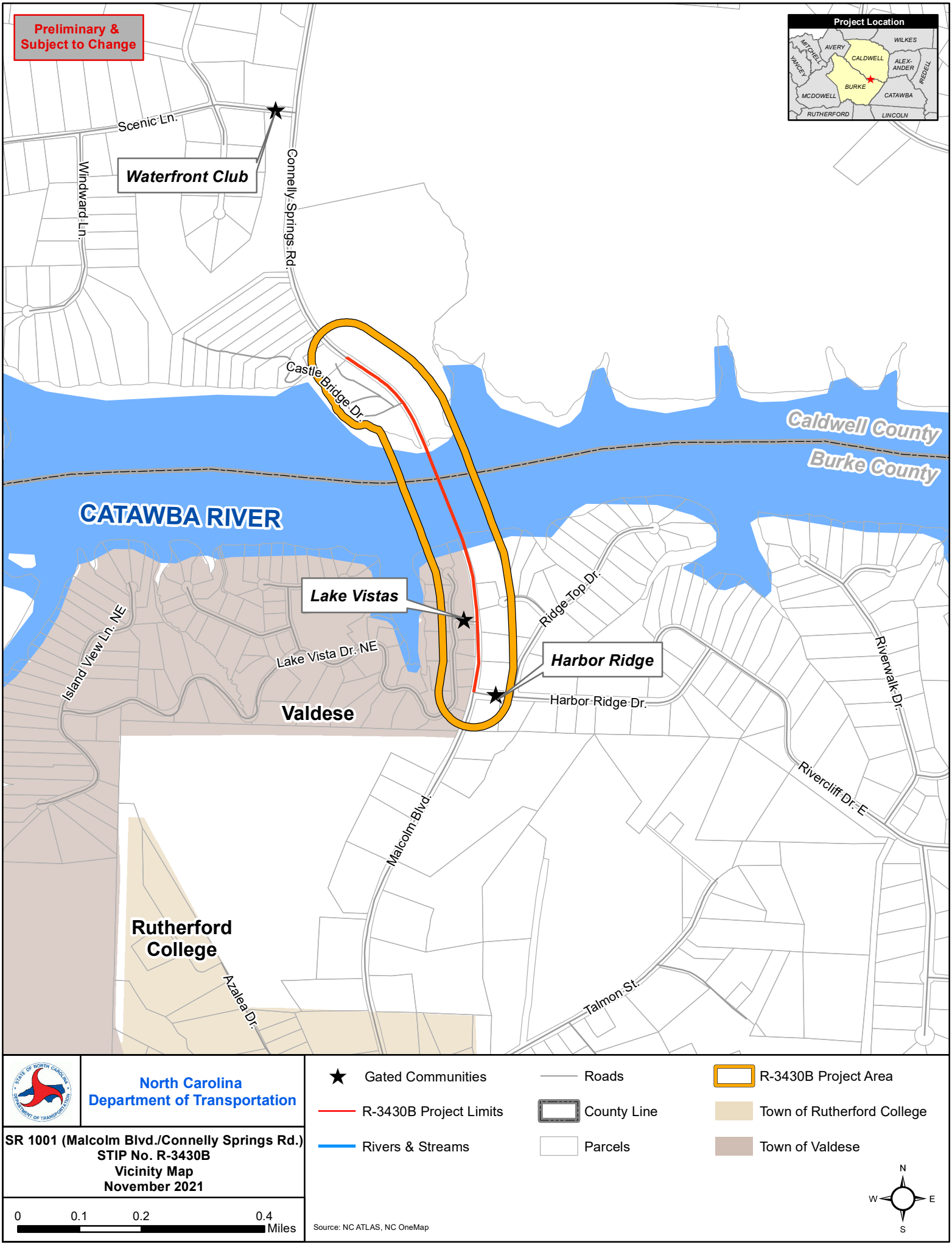
- NCDOT, if applicable, will develop a formal maintenance agreement with the Town of Valdese (south of bridge) and Caldwell County (north of bridge) for maintenance of the small sections of shared-use pathway (SUP) within the R-3430B design limits. The construction of the SUP will be contingent upon the town entering into an agreement.

NCDOT Structures Management Unit

- The existing bridge will be demolished/removed with proper protection measures to avoid any debris falling into the Catawba River.

River Safety Plan

- NCDOT SMU will prepare a *River Safety Plan* in support of the Duke Energy FERC coordination and for submittal with the 404/401 permit application.


Preliminary & Subject to Change
Project Location
WILKES
MITCHELL
AVERY
CALDWELL
ALEX-ANDER
YANCEY
IREDELL
BURKE
MCDOWELL
CATAWBA
RUTHERFORD
LINCOLN
Scenic Ln.
Windward Ln.
Waterfront Club
Connelly Springs Rd.
Castle Bridge Dr.
Caldwell County
Burke County
CATAWBA RIVER
Lake Vistas
Island View Ln. NE
Lake Vista Dr. NE
Valdese
Ridge Top Dr.
Harbor Ridge
Harbor Ridge Dr.
Riverwalk Dr.
Rivercliff Dr. E
Malcolm Blvd.
Rutherford College
Azalea Dr.
Talmon St.
North Carolina Department of Transportation
SR 1001 (Malcolm Blvd./Connelly Springs Rd.)
STIP No. R-3430B
Vicinity Map
November 2021
0 0.1 0.2 0.4 Miles
Gated Communities
Roads
R-3430B Project Area
R-3430B Project Limits
County Line
Town of Rutherford College
Rivers & Streams
Parcels
Town of Valdese
N
W
E
S
Source: NC ATLAS, NC OneMap

Preliminary & Subject to Change

Catawba River Basin

Connelly Springs Rd.

CASTLE BRIDGE BOAT ACCESS

Castle Bridge Dr.

Caldwell County

Burke County

CATAWBA RIVER

Deep Water Ln.

Ridge Top Dr.

Harbor Ridge Dr.

Malcolm Blvd.

North Carolina Department of Transportation

SR 1001 (Malcolm Blvd./Connelly Springs Rd.)
STIP No. R-3430B
Environmental Features Map
November 2021

0 250 500 1,000 Feet

Boat Access

R-3430B Project Limits

Rivers & Streams

County Boundary

Critical Watershed Area

R-3430B Project Area

Parcels

Town of Valdese

N W E S

Source: NC ATLAS, NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

July 9, 2021

TO: Erin Cheely, Environmental Program Consultant
Environmental Coordination & Permitting Group, EAU

FROM: Melissa Miller, Environmental Program Consultant
Biological Surveys Group, EAU

SUBJECT: Section 7 survey results for the northern long-eared bat *(Myotis septentrionalis),* Virginia big-eared bat *(Corynorhinus townsendii virginianus)* and gray bat *(Myotis grisescens)* associated with the replacement of Bridge No. 110010 over Catawba River/Rhodhiss Lake on SR 1001 in Burke and Caldwell Counties , **TIP No. R-3430B**.

The North Carolina Department of Transportation (NCDOT, Divisions 11, 13) proposes to replace Bridge No. 110010 over Catawba River/Rhodhiss Lake on SR 1001 in Burke and Caldwell Counties, TIP No. R-3430B.

Northern long-eared Bat

The project to replace Bridge No. 110010 has been reviewed for effects on the northern long-eared bat (NLEB). As of May 4, 2015, NLEB is listed by the U.S. Fish and Wildlife Service (USFWS) as "Threatened" under the Endangered Species Act of 1973. As of July 9, 2021, NLEB is listed in IPaC https://ecos.fws.gov/ipac/location as occurring in Burke and Caldwell Counties.

According to the North Carolina Natural Heritage Program (NHP) Biotics Database, most recently updated April 2021, **the nearest NLEB hibernacula record is approximately 20 miles northwest of the project and no known NLEB roost trees occur within 150 feet of the project area**. NCDOT has also reviewed the USFWS Asheville Field office website (http://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html) for consistency with NHP records. This project is located entirely outside of the red highlighted areas (12-digit HUC) that the USFWS Asheville Field Office has determined to be representative of an area that may require consultation. The closest 12 digit (030501010202) red HUC is approximately 22 miles away (North Fork Catawba River).

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1000 BIRCH RIDGE DRIVE
RALEIGH NC 27610

On June 9, 2021, NV5 biologists assessed Bridge No. 110010 for potential northern long-eared bat habitat. The bridge is constructed of steel beams and concrete guard rails with a concrete deck and concrete end walls and a clearance of 50 feet over the water surface. Vertical top-sealed shallow crevices and deep vertical unsealed crevices suitable for roosting were present, along with sheltered vertical surfaces for night roosting. No evidence of bats (bats, staining, and guano) was observed. No mines or caves were detected in the project area or within line of sight of the bridge. Trees greater than 3" dbh were noted in the project area. Based on the presence of suitable roost trees, NCDOT recommends a Biological Conclusion of ***May Affect Not Likely To Adversely Affect*** for the northern long-eared bat. In order to minimize impacts to potential roosting habitat, a tree clearing moratorium may be required between April 15 and August 15 of any year.

Virginia big-eared bat

The project to replace Bridge No. 110010 has also been reviewed for effects on the Virginia big-eared bat (COTO). As of November 30, 1979, the Virginia big-eared bat was listed by the U.S. Fish and Wildlife Service (USFWS) as "Endangered" under the Endangered Species Act of 1973. As of July 9, 2021, the Virginia big-eared bat is listed in IPaC (https://ecos.fws.gov/ipac/location) as occurring in Caldwell County.

According to the North Carolina Natural Heritage Program (NHP) Biotics Database, most recently updated in April 2021, COTO have not been documented in Caldwell County. USFWS, North Carolina Wildlife Resources Commission (WRC) and NHP data indicate **that the closest known occurrence of COTO is approximately 26 miles northwest of the project site.**

On June 9, 2021, NV5 biologists assessed Bridge No. 110010 for potential Virginia big-eared bat habitat. As stated above, no evidence of bats was observed on the bridge. No caves or mines were located within the project study area. NCDOT recommends a Biological Conclusion of ***No Effect*** for the Virginia big-eared bat.

Gray Bat

The project to replace Bridge No. 110010 has also been reviewed for effects on the gray bat, *Myotis grisescens* (MYGR). As of April 28, 1976, the MYGR was listed by the U.S. Fish and Wildlife Service (USFWS) as "Endangered" under the Endangered Species Act of 1973. As of July 9, 2021 MYGR is listed in IPaC https://ecos.fws.gov/ipac/location as occurring in Burke and Caldwell Counties.

According to the North Carolina Natural Heritage Program (NHP) Biotics Database, most recently updated in April 2021, MYGR have not been documented in Burke or Caldwell County. USFWS, North Carolina Wildlife Resources Commission (WRC) and NHP data indicate **that the closest known occurrence of MYGR is approximately 22.8 miles west of the project site.**

As previously stated, on June 9, 2021, NV5 biologists assessed Bridge No. 110010 for potential gray bat habitat. As stated above, no evidence of bats was observed on the bridge. No caves or mines were located within the project study area. NCDOT recommends a Biological Conclusion of ***No Effect*** for the gray bat.

Final design, tree clearing, and percussive activities information will be provided in the permit application.

If you need any additional information, please contact Melissa Miller at 919-707-6127.

SR 1001 BRIDGE OVER

CATAWBA RIVER

BURKE AND CALDWELL

COUNTIES

DIVISION 13

STIP Project No.: R-3430B
State Project No.: 34544.1.4

Navigational Safety Plan

REPLACE BURKE BRIDGE 10 WITH A NEW PARALLEL BRIDGE OVER CATAWBA RIVER

GANNETT FLEMING

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Introduction

NCDOT Bridge 110010 (Castle Bridge) consists of two travel lanes on Connelly Springs Road/Malcolm Boulevard (SR 1001) over the Catawba River (Lake Rhodhiss) crossing the Burke County – Caldwell County lines located north of Rutherford College, North Carolina.

The proposed project (R-3430B) involves replacing Bridge No. 110010 over the Catawba River. The new location replacement structure will be approximately 1,075 feet in length, with a minimum clear roadway width of 40 feet, and on new alignment approximately 26 feet west of the existing bridge. The proposed project is listed in the current NCDOT 2020-2929 Transportation Improvement Program (STIP) along with two adjacent roadway improvement projects: R-3430C to the north and R-3430A to the south. R-3430B is scheduled for right-of-way acquisition to begin in fiscal year 2022 and construction to begin in fiscal year 2023. The proposed bridge would accommodate the following typical section: 51-foot total bridge width (40-foot clear roadway width) consisting of, from left (west) to right (east), a 10-foot shared-use path (SUP), 1-foot protected barrier, 5-foot shoulder, two 12-foot travel lanes, and 11-foot shoulder. In accordance with the *NC Bicycle Facilities Planning and Design Guidelines*, a minimum bicycle-safe railing height of 54" will be required.

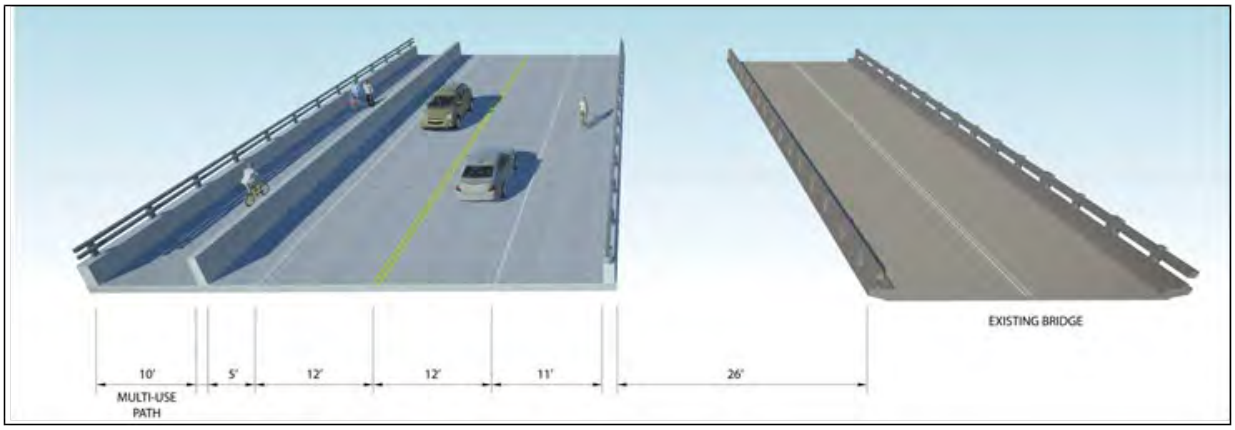


Figure 1. Typical sections, proposed new bridge on left and existing Burke Bridge 10 on right. (R-3430B MCDC, 2/4/2022)

Construction activity on SR 1001 will extend approximately 1,215 feet south of the proposed bridge (approximately 75 feet north of Harbor Ridge Drive) and approximately 810 feet north (approximately 585 feet north of Castle Bridge Drive) of the proposed bridge, respectively. SR 1001 has a functional classification of a minor arterial with a design speed of 50 mph and a posted speed of 45 mph. Traffic will be maintained on-site using the existing bridge and roadway alignment during construction. Once construction is complete, traffic will be shifted to the new bridge and demolition of the existing bridge will begin.

The new bridge will be approximately 6.5 feet higher in elevation than the existing bridge. The proposed work will not reduce navigational vertical clearance (i.e., recreational boat traffic on Lake Rhodhiss) once completed, but there will be likely temporary impacts during construction activities to recreational boating on Lake Rhodhiss. A public access boat ramp is located in the northeast quadrant (i.e., Caldwell County) of the existing bridge. This boat ramp is owned and operated by the North Carolina Wildlife Resources Commission (WRC). Lake Rhodhiss is a hydropower lake operated by Duke Energy. Because of its easy public access off of SR 1001, recreational boating traffic associated with this public access boat ramp is expected to be moderate to high at various times of the year. At no point during construction will recreational boat traffic access be eliminated or minimum vertical clearances be reduced.

Scope of Maintenance and Construction Activities

The scope of maintenance and construction activities on NCDOT Bridge 110010 likely to affect recreational boater access and safety are:

- Relocation of gas pipeline (Piedmont Natural Gas) located east of existing bridge;
- Construction of new 1,075 bridge located 26 feet west of existing bridge; and
- Demolition and removal of existing bridge and abandoned bridge bents located east of exiting bridge.

Access

Access to NCDOT Bridge 110010 for construction workers, equipment, and construction activity will be from the existing bridge and from work barges on Lake Rhodhiss. All barge activity will be reviewed by NCDOT and must be approved prior to beginning construction. Barge access to Lake Rhodhiss will be made via a temporary boat launch on the northwest bank within the existing transportation right-of-way or a temporary construction easement. Work skiffs will shuttle construction workers as needed from the work pad to barges.

Construction that impacts the open waterway will occur in a way to preserve a safe, open recreational boating channel through the project construction area.

Construction that can be performed entirely from the top of the bridge deck or from the shoreline shall be considered to have no impact to boater safety or boater traffic and may be performed at any time. Necessary measures shall be taken to prevent debris from falling through deck drains or over bridge rails.

Bridge Construction Items

Gas pipeline relocation, new bridge construction, abandoned bridge bent removal and existing bridge demolition associated with the proposed project will be performed in a manner that prevents debris from falling into Lake Rhodhiss. The Contractor will submit a Demolition Management Plan to NCDOT for approval.

Operational Safety Methods

The operational safety methods to be implemented as related to the project's construction activities are as follows:

- Daily Activities: Contractor will ensure debris is secured and contained at the end of each shift in an approved containment system.
- Containment Plan: No coating work or wire-saw concrete demolition will begin until NCDOT has approved a Contractor-furnished Containment Plan.
- Wash Water Sampling and Disposal Plan: Wash water will be disposed of in accordance with current state and federal regulations. Since the Catawba River (Lake Rhodhiss) is classified as WS-IV, B; CA (Critical Area) waters, plans will have to adhere to the Design Standards in Sensitive Watersheds (15A NCAC 04B.0124).

- Topside Construction and Demolition Work: For construction activities occurring entirely on the top of the deck, necessary measures shall be taken to ensure that debris does not leave the bridge deck. These measures shall be identified in the Containment Plan.

Mooring Requirements

When utilizing barges or other vessels, the Contractor will take all necessary precautions to ensure that such vessels are securely anchored or moored when not in active operation and to contain the vessels within the defined construction work area. The Contractor will also take all necessary measures to ensure that the vessels are operated in a manner that avoids damage to, or unnecessary contact with, the existing bridge, boaters, and other highway structures within the safe boat access area. If severe weather conditions are anticipated through reasonable monitoring of weather forecasts, the Contractor shall take appropriate measures to adequately moor the work vessels within the defined construction work area during the extreme conditions.

Boater Notifications

Recreational boaters will be notified of construction activities via placards at public access boat ramps on Lake Rhodhiss. At each boat launch, placards shall be displayed at the loading areas informing boaters of the construction impacts to waterway access under the NCDOT Bridge 110010. The placards will clearly communicate what the boater should expect in the vicinity of the subject bridges and appropriate safety precautions to be taken through text and graphics. The placards will be displayed a minimum of two weeks prior to the installation of any floating barricade system and the associated work to be performed on the structure. The information placards will provide contact information for the Contractor, NCDOT, WRC, and Duke Energy so that the public can make inquires or report damage, vandalism, or operational problems with the construction activities including any floating barricade system. The placards shall remain in-place and maintained for the duration of the project construction period. A minimum of two placards shall be posted at each of the following locations:

- Lake Rhodhiss Boat Inlet, 1706 Weaver Lane, Connelly Springs (Coordinates: 35.77162 -81.44251)
- Conley Creek Boating Access Area, 5485 Waterworks Road, Sawmills (Coordinates: 35.78392 -81.48476)
- Castle Bridge Boat Access, Connelly Springs Road, Granite Falls (Coordinates: 35.78192 -81.5243)

Prior to installing placards, the Contractor shall coordinate with the boat ramp access owner.

Boater Safety System – Lighting

Solar powered LED marine safety lights will be placed atop the “Slow No Wake” buoys and “Keep Out” buoys (Graphic 1). The lights will be placed a minimum of two feet above the water line to provide a visual barrier both day and night. These solar marine lights help protect boaters during the early morning and late afternoon/evening hours or when cloud cover reduces visibility for boaters. The marine safety lights should provide visibility in flashing mode up to one nautical mile. They should be set for “flash” mode at a rate of one flash per second. They should be seen no matter the boater’s position; if not mounted perfectly level; or if the buoy is bobbing or swaying. All routine maintenance activity for the

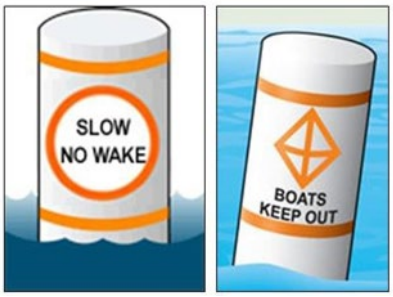
buoy barricade boat safety system is restricted to occur only during day light hours. Emergency repairs will be made as needed and at any time.

Graphic 1. LED Marine Safety Light (White Strobe Light/Slow No Wake Buoy)

Navigational Buoys for Boaters

No buoys currently exist upstream or downstream of the NCDOT Bridge 110010. At least two "Slow No Wake" buoys both upstream and downstream of the bridge (i.e., at least four buoys total) shall be installed across the width of the safe boat access channel, approximately 50 ft. upstream and downstream of the safe open recreational boating channel through the project construction area. The placement of these buoys is shown in Figures3 through 6 as colored circles to the east and west of the project construction areas.

Coast Guard-approved "Keep-Out" buoys shall be installed approximately 50 ft. upstream and downstream of the project construction areas. "Slow No Wake" buoys will be equipped with white strobe light solar-powered LED marine safety lights and "Keep-Out" buoys will be equipped with red strobe light solar-powered LED marine safety lights. The safe boat access channel will be marked by buoys with green strobe light solar-powered LED marine safety lights. Buoys shall conform to US Coast Guard "U.S. Aids to Navigation Systems" regulations. (https://www.uscgboating.org/images/420.PDF) The locations shown in the attached figures are approximate and not to scale.



Graphic 2 Navigations Bouys

Deployment of Boater Safety System

The lighted buoys will be put into place prior to the commencement of any work on the structure and moved periodically, as needed and in conformance with the "Staging Plan" outlined below, to protect boaters from exposure to the construction activities. Due to the wide channel of the navigational area, law enforcement is not anticipated to be required during the deployment of the boater safety floating barricade system. Deployment and redeployment will occur during daylight hours. The deployment and redeployment operation(s) will occur from a barge and/or a work skiff. The lights will be inspected daily and non-functioning lights will be repaired immediately.

Staging Plan

The Contractor will maintain one of two safe open recreational boating channels open at all times.

The Contractor will perform all work within one of two staging phases (Table 1). Phase 1 to Phase 2 are for work that requires access for equipment and/or construction activities within the limits of the open waterway. The Contractor will keep the safe open recreational boating channels open to boater traffic and will be responsible for shifting of floating barricades prior to commencing work within a construction area.

To delineate safe access, green solar lights buoys will be installed on each side of the approved safe boat access channel for boaters upstream and downstream of the project construction areas; white solar lights "Slow No Wake" buoys will be installed across the width of the safe open recreational boating channel, approximately 50 ft. upstream and downstream of either end of the safe open recreational boating channel; and red solar lights "boats keep out" buoys will be installed to delineate the limits of the construction work area(s) and to identify navigation hazard bents located within the safe boat access channel.

Table 1. Schedule of Waterway-Impacting Activities

Construction Phase (Figure)	**Anticipated Begin and End Date**	**Construction Activity and Phasing Option**	**Safe Open Recreational Boating Channel Description**
Phase 1: Construct new bridge (Figures 3 & 4)		A. - Construction of new bridge from southern shoreline to new bridge bent three B. - Construction of new bridge from new bridge bent three to northern shoreline	A. - Safe open recreational boating channel from existing bridge bent four to existing bridge bent five; No boat access from southern shoreline to existing bridge bent four and from existing bridge bent five to northern shoreline. B. - Safe open recreational boating channel from existing bridge bent two to existing bridge bent three; No boat access from southern shoreline to existing bridge bent two

			and from existing bridge bent three to northern shoreline.
Phase 2: Demolish existing bridge and abandoned bridge bents (Figures 5 & 6)		A. - Demolition of existing bridge from existing bridge bent three to northern shoreline including demolition of abandoned bents three, four, and five. B. - Demolition of existing bridge from existing bridge bent three to southern shoreline including demolition of abandoned bents one and two.	A. - Safe open recreational boating channel from existing bridge bent two to existing bridge bent three; No boat access from southern shoreline to existing bridge bent two and from existing bridge bent three to northern shoreline. B. - Safe open recreational boating channel from new bridge bent four to bridge bent five; No boat access from southern shoreline to new bridge bent four and from new bridge bent five to northern shoreline.
* The Phase 1B (construction) and Phase 2A(demolition) are the same Safe Open Boat Channel. The Safe Open Boat Channel will shift to the northern location with the Phase 2B (demolition) construction activity.			

Time restrictions:

The Contractor will facilitate the following coordination of construction activities with required time sensitive restrictions associated with implementation of the Navigation (i.e., recreational boating) Safety Plan:

- Construction Operations: none (operations can occur 24 hours per day, 7 days per week)
- Boater Safety System: operational throughout the project construction operations
- Repairs: as needed (anytime 24 hours per day, 7 days per week)

Staging Area for Contractor's Equipment & Materials

The Contractor is responsible for procuring offsite staging locations and meeting all requirements of the respective property owner(s).

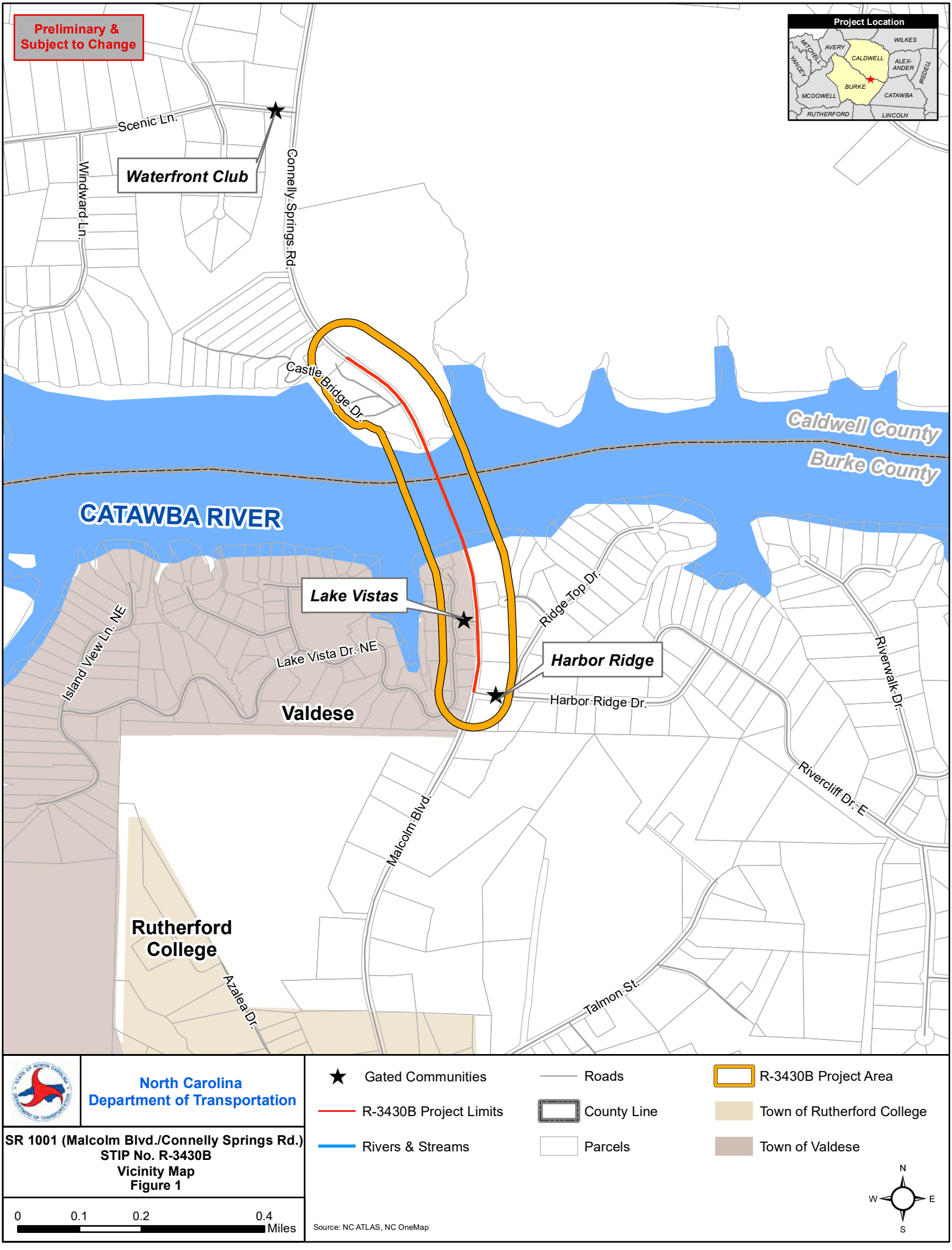
Standards

- NCDOT Standard Specification for Roads and Structures, January 2018
- AASHTO Guide Design Specification for Bridge Temporary Works
- NCDOT Guidelines for Managing Bridge Wash Water
- Resource Conservation and Recovery Act (RCRA-40 CFR 261-265)

- Occupational Safety and Health Act (OSHA 29-CFR 1910-1926)
- NC Department of Environmental Quality (NCDEQ) Hazardous Waste Compliance
- Manual of Generators of Hazardous Waste, published by the Compliance Branch of the Division of Waste Management at NCDEQ http://deq.nc.gov/about/divisions/waste-management/hw
- NC Hazardous Waste Management Rules (15A NCAC 13A)

Conclusion

The proposed project (R-3430B, WBS 3430.1.4) will replace the existing Bridge 110010 carrying SR 1001 over the Catawba River (Lake Rhodhiss) with a new bridge on new alignment, approximately 26 feet west of the existing bridge. The proposed new bridge will meet current NCDOT bridge design standards. The proposed project's construction activities will have an impact on recreational boater traffic on Lake Rhodhiss. This document outlines the requirements for notification and protection of boaters and the general scope of work that will impact Lake Rhodhiss. A system of buoys and marine safety lights will be employed to protect recreational boater traffic from the work area construction activities. At all times, a safe open recreational boating channel will be maintained, and the vertical clearance will not be reduced below those present in the existing conditions. Notification placards describing construction activities and this Navigation Safety Plan will be placed, in duplicate, at three public boat access ramps to Lake Rhodhiss.


Preliminary & Subject to Change
Project Location
WILKES
MITCHELL
AVERY
CALDWELL
ALEX-ANDER
IREDELL
YANCEY
BURKE
MCDOWELL
CATAWBA
RUTHERFORD
LINCOLN
Scenic Ln.
Windward Ln.
Waterfront Club
Connelly Springs Rd.
Castle Bridge Dr.
Caldwell County
Burke County
CATAWBA RIVER
Lake Vistas
Ridge Top Dr.
Island View Ln. NE
Lake Vista Dr. NE
Harbor Ridge
Harbor Ridge Dr.
Riverwalk Dr.
Valdese
Rivercliff Dr. E
Malcolm Blvd.
Rutherford College
Azalea Dr.
Talmon St.
North Carolina Department of Transportation
SR 1001 (Malcolm Blvd./Connelly Springs Rd.)
STIP No. R-3430B
Vicinity Map
Figure 1
0 0.1 0.2 0.4 Miles
Gated Communities
Roads
R-3430B Project Area
R-3430B Project Limits
County Line
Town of Rutherford College
Rivers & Streams
Parcels
Town of Valdese
N
W
E
S
Source: NC ATLAS, NC OneMap

Preliminary & Subject to Change

Catawba River Basin

Connelly Springs Rd.

CASTLE BRIDGE BOAT ACCESS

Castle Bridge Dr.

Existing Bridge

New Bridge

Abandoned Bents

Caldwell County

Burke County

CATAWBA RIVER

Deep Water Ln.

Ridge Top Dr.

Harbor Ridge Dr.

Malcolm Blvd.

North Carolina Department of Transportation

SR 1001 (Malcolm Blvd./Connelly Springs Rd.)
STIP No. R-3430B
Environmental Features Map
Figure 2

0 250 500 1,000 Feet

Boat Access

R-3430B Project Limits

Rivers & Streams

County Boundary

Critical Watershed Area

R-3430B Project Area

Parcels

Town of Valdese

N W E S

Source: NC ATLAS, NC OneMap, NC Center for Geographic Information & Analysis, NC 911 Board

PROJECT REFERENCE NO. SHEET NO.

FIGURE 3
CONSTRUCTION PHASE 1A.

PHASE 1A. PROP. BRIDGE CONSTRUCTION

Span 1 (Prop.)
Span 2 (Prop.)
Span 3 (Prop.)
Span 4 (Prop.)
Span 5 (Prop.)
Span 6 (Prop.)
Span 7 (Prop.)

℄ BENT 1
℄ BENT 2
℄ BENT 3
℄ BENT 4
℄ BENT 5
℄ BENT 6
℄ BENT 7

BENT 1
BENT 2
BENT 3
BENT 4
BENT 5
BENT 6
BENT 7

50'

CATAWBA RIVER

CALDWELL COUNTY
BURKE COUNTY

EXISTING R/W

DOCK

LEGEND

BOATING CHANNEL
SLOW NO WAKE
BOAT KEEP OUT
BOAT KEEP OUT

PROJECT REFERENCE NO. SHEET NO.

FIGURE 4 CONSTRUCTION PHASE 1B.

PHASE 1B. PROP. BRIDGE CONSTRUCTION

Span 1 (Prop.)
Span 2 (Prop.)
Span 3 (Prop.)
Span 4 (Prop.)
Span 5 (Prop.)
Span 6 (Prop.)
Span 7 (Prop.)

BENT 1
BENT 2
BENT 3
BENT 4
BENT 5
BENT 6
BENT 7

50'

CATAWBA RIVER

CALDWELL COUNTY
BURKE COUNTY

LEGEND

BOATING CHANNEL
SLOW NO WAKE
BOAT KEEP OUT
BOAT KEEP OUT

PROJECT REFERENCE NO. SHEET NO.

FIGURE 5
DEMOLITION
PHASE 2A.

PHASE 2A.EXIST.BRIDGE DEMOLITION

Span 1 (Prop.)
Span 2 (Prop.)
Span 3 (Prop.)
Span 4 (Prop.)
Span 5 (Prop.)
Span 6 (Prop.)
Span 7 (Prop.)

BENT 1
BENT 2
BENT 3
BENT 4
BENT 5
BENT 6
BENT 7

50'

CATAWBA RIVER

CALDWELL COUNTY
BURKE COUNTY

LEGEND

BOATING CHANNEL
SLOW NO WAKE
BOAT KEEP OUT
BOAT KEEP OUT

PROJECT REFERENCE NO. SHEET NO.

FIGURE 6
DEMOLITION
PHASE 2B.

PHASE 2B.EXIST.BRIDGE DEMOLITION

Span 1 (Prop.)
Span 2 (Prop.)
Span 3 (Prop.)
Span 4 (Prop.)
Span 5 (Prop.)
Span 6 (Prop.)
Span 7 (Prop.)

BENT 1
BENT 2
BENT 3
BENT 4
BENT 5
BENT 6
BENT 7

50'

CATAWBA RIVER

CALDWELL COUNTY
BURKE COUNTY

LEGEND

BOATING CHANNEL
SLOW NO WAKE
BOAT KEEP OUT
BOAT KEEP OUT