

November 18, 2015

Chatham County Department of Environmental Quality
PO Box 1550
Pittsboro, NC 27312

**RE: Environmental Impact Assessment
(Proposed) Sunset Grove Residential Development
Pittsboro, Chatham County, NC**

To Whom It May Concern:

On behalf of Bryan Properties, Inc., Timmons Group has prepared an Environmental Impact Assessment (EIA) for the Sunset Grove residential development project which is proposed for construction on Mount Gilead Road. This EIA was prepared in accordance with Chatham County Subdivision Ordinance and North Carolina General Statute §113A-4(2) in conjunction with United States Code (USC) §4332(C). As a guide to assist in review, this cover presents the recommended outline from the Chatham County Subdivision Ordinance with corresponding page references to the required document specifications.

Proposed Project Description and Need

- 1) Describe the overall project in detail, including all proposed phases – **SECTION 3.0/PAGE 4**
- 2) Provide a project location map showing surrounding areas - **APPENDIX 1**
- 3) Provide a project site plan showing existing and proposed facilities – **APPENDIX 2**
- 4) Describe how this project fits into larger plans or connects with adjacent projects – **SECTION 4.0/PAGE 6**
- 5) List and describe any public facilities or public benefits provided by the project – **SECTION 4.0/PAGE 6**
- 6) Discuss the land acreage to be disturbed during each phase – **SECTION 3.2/PAGE 4**
- 7) List square footage and height (in stories) of new buildings – **SECTION 3.3/PAGE 4**
- 8) Describe proposed uses of all buildings and proposed facilities – **SECTION 3.3/PAGE 4**
- 9) Show number of parking spaces in parking lots and decks – **N/A**
- 10) Show areas to be cleared, graded, filled, paved, and landscaped - **APPENDIX 2**
- 11) Show connections to existing utility and sewer lines or new utilities – **APPENDIX 2**
- 12) Show wastewater management systems on a map – **N/A**
- 13) Show proposed areas of impervious and semi-pervious surfaces – **APPENDIX 2 (also see SECTION 3.3.3/PAGE 5)**
- 14) Show and describe any proposed stormwater control devices – **APPENDIX 2**

Alternatives Analysis

- 1) Discuss and compare all reasonable development alternatives (site selection, facility layout, utilities, stormwater management, construction methods, open space preservation, any other pertinent alternative considerations) – **SECTION 4.0/PAGE 6**
- 2) Discuss how the preferred alternative was selected and its benefits relative to other alternatives (including a no-build alternative, if applicable) – **SECTION 4.0/PAGE 6**

Existing Environment and Project Impacts For each resource topic below, describe:

- 1) Existing resources and conditions – **SECTION 5.0/PAGE 7**
- 2) Anticipated impacts (short-term construction impacts, long-term operation impacts, and indirect or secondary impacts) – **SECTION 6.0/PAGE 13**

- 3) Discuss how potential impacts to the resource will be avoided and minimized through alternative selection, design strategies, construction methods, and long-term maintenance procedures – **SECTION 7.0/PAGE 14**
- 4) For unavoidable impacts, describe whether any compensatory mitigation is planned or required – **SECTION 8.0/PAGE 15 and SECTION 9.0/PAGE 16**

A. Geography

- Discuss the geographic setting, geology, and topography of the project area and adjacent areas – **SECTION 5.1/PAGE 7**
- Provide a topographic map of the property and surrounding area, use the county GIS website topography (2' contour interval) data at a scale appropriate for the project size, i.e., 1" = 100', etc.) – **APPENDIX 1**
- Identify any 100-year floodplains (FEMA Special Flood Hazard Areas) on or adjacent to the property. If present, provide an appropriate-scale map of these flood-prone areas defined by the NC Flood Mapping Program. Show areas that will be graded or filled, and provide estimated cut/fill volumes - **APPENDIX 3**
- If the project includes pond or dam work, show areas that will be flooded – **N/A**

B. Soils and Prime Farmlands

- Identify dominant soils in the project area (County GIS or NRCS website) and show on a map – **APPENDIX 4**
- Discuss any soil constraints (fill, wetland soils, septic suitability, slopes, etc.), and indicate those areas on a map – **SECTION 5.2/PAGE 7; APPENDIX 4**
- Describe any soil disturbance or contamination expected as a result of this project – **SECTION 5.13/PAGE 12**
- If contamination is expected, discuss containment plans and procedures – **N/A**
- If soil will be relocated, specify the number of square yards/feet to be moved, and its relocation site – **SECTION 5.3/PAGE 4**
- Describe runoff management plans for the project – **SECTION 3.3.4/PAGE 5; SECTION 5.10.1/PAGE 10**
- If soil disturbance is proposed, describe the off-site impacts expected from this activity – **SECTION 7.0, #3/PAGE 14**
- Provide a map of any prime or unique farmland soils in the project or service areas, and include references used to make this determination – **APPENDIX 4**
- Describe impacts to prime or unique farmland soils, including acreage estimates of lost farmland soils and retained farmland soils – **SECTION 5.2/PAGE 7**

C. Land Use

- Provide a map showing current use of land on the site and surrounding properties – **APPENDIX 5**
- Discuss how the current land use fits into the surrounding area (conservation, development, ecological function, etc.) – **SECTION 1.0/PAGE 1**
- Provide the current zoning of the project site and the surrounding area - **SECTION 5.3/PAGE 9; APPENDIX 5**
- Discuss how the proposed uses fit into the intended land use of the area (conservation, development, ecological function, quality of life) – **SECTION 5.3/PAGE 9**
- Indicate whether zoning or local land use plans will need to be changed after project completion - **SECTION 5.3/PAGE 9; APPENDIX 5**

D. Existing and Natural Resources

- Show on a map riparian buffers (locations and widths), wetlands, and ponds and watercourses (with name and direction of flow). Also show the special flood hazard areas – **APPENDIX 2**


- Provide a copy of the State and Federal reports regarding wetlands and stream delineations – **SECTION 5.4.1/PAGE 9; APPENDIX 6**
 - Provide a copy of the County report regarding riparian buffer delineations - **SECTION 5.4.1/PAGE 9**
 - Provide a table of all anticipated temporary and permanent impacts to existing natural water resources and riparian buffers and discuss how the potential impacts will be avoided and minimized through alternative selection design strategies, construction methods, and long-term maintenance procedures. For unavoidable impacts, describe proposed mitigation - **SECTION 5.4.2/PAGE 9**
- E. Public Lands and Scenic, Recreational, and State Natural Areas
- Provide a map of County or municipal parks, scenic, recreational, or state natural areas (SNHAs, State or Federal Forests, etc.) on or adjacent to the site/project area – **SECTION 5.5/PAGE 9; APPENDIX 8**
- F. Areas of Archaeological or Historical Value
- Discuss any archaeological or historical studies of the project location; provide relevant references – **SECTION 5.6/PAGE 10**
 - Describe and identify on a map any structures (i.e., walls, buildings, etc.) on the site and provide estimated ages of those structures – **APPENDIX 9**
 - Describe all impacts to any archaeological or historical resources in the proposed project area – **SECTION 6.0/PAGE 13**
 - Describe plans for demolishing or rebuilding any structures – **N/A**
 - Provide photographs of any significant resources, including all structures older than 50-years – **N/A**
 - Provide relevant correspondence with the Chatham County Historical Association and NC SHPO – **N/A**
- G. Air Quality
- Describe the project's impacts on ambient air quality – **SECTION 5.7/PAGE 10**
 - Describe plans for any open burning during or after construction - **SECTION 5.7/PAGE 10**
 - Indicate the number of proposed parking spaces, if applicable – **N/A**
 - Describe whether the project will increase odor levels, or the likelihood of odor complaints - **SECTION 5.7/PAGE 10**
 - Provide a copy of any required traffic studies – **N/A**
- H. Noise Levels
- Discuss current noise levels; use a benchmark, if possible – **SECTION 5.8/PAGE 10**
 - Describe any increases in noise levels expected from this project - **SECTION 5.8/PAGE 10**
 - Specify the distance at which the increased noise will be heard - **SECTION 5.8/PAGE 10**
 - Discuss whether surrounding properties will be affected by noise levels - **SECTION 5.8/PAGE 10**
 - If commercial uses are proposed, specify the hours of operation – **N/A**
- I. Light Levels
- Describe lighting plans for the project, including how lighting will impact adjacent residents and wildlife – **SECTION 5.9/PAGE 10; SECTION 7.0, #6/PAGE 14**
- J. Surface and Groundwater Resources and Watershed Area
- Describe groundwater (aquifers) in the project area – **SECTION 5.10.2/PAGE 11**
 - Discuss any known groundwater quality issues – **N/A**

- Specify and show on a map the river basin in which the project is located – **SECTION 5.10.3/PAGE 11; APPENDIX 6**
 - List the type(s) of Watershed Area(s) on the property and show a map – **APPENDIX 6**
 - Discuss drinking water sources – **SECTION 5.10.2/PAGE 11**
- K. Fish and Aquatic Habitats
- Describe fish and aquatic habitats in and adjacent to the site/project area – **SECTION 5.11/PAGE 11**
 - Discuss impacts to fish and aquatic life and their habitats, including a map showing those habitats – **SECTION 5.12.1/PAGE 11; APPENDIX 1**
- L. Wildlife and Natural Vegetation
- Describe and provide a map of natural community types on and adjacent to the site/project area – **SECTION 5.12.2/PAGE 12**
 - List the species of dominant plants and animals observed on the site that typify those communities – **SECTION 5.1.3/PAGE 12**
 - Evaluate and discuss whether suitable habitat exists for rare, threatened, and/or endangered species, as described by the NC Natural Heritage Program - **SECTION 5.12.5/PAGE 12**
 - If wildlife will be displaced, discuss any limitations of adjacent areas to support them – **SECTION 5.12.5/PAGE 12**
 - Identify, list, and describe the distribution of the invasive species present on the site. Consult the NC Botanical Garden's Web page, "Plants to Avoid in the Southeast US" for a list of invasive species common to the region – **SECTION 5.12.4/PAGE 12**
 - If forests will be cleared, discuss the extent of planned deforestation and specify the forestry methods to be used, including BMPs – **SECTION 5.12.5/[PAGE 12**
- M. Hazardous Materials
- List all hazardous materials to be stored or introduced during construction or operation – **SECTION 5.13/PAGE 12**
 - For each hazardous material, other than in *de minimis* quantities or for routine housekeeping purposes, describe the procedures to be used to ensure their proper management, storage, and disposal - **SECTION 5.13/PAGE 12**

If you have any questions or comments or require additional information, please contact Scott Mitchell at 919.866.4952 or at scott.mitchell@timmons.com.

Respectfully,

TIMMONS GROUP



John T. Russell, LG
Senior Environmental Project Manager

C: Scott Mitchell/Timmons Group

Enclosed

CHATHAM COUNTY, NORTH CAROLINA



ENVIRONMENTAL IMPACT REPORT SUNSET GROVE

Prepared For:

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Submitted To:

Chatham County, North Carolina
Department of Environmental Quality
P.O. Box 1550
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LIST of ACRONYMS

DWQ	North Carolina Department of Water Quality
E&S	erosion and sedimentation
EIA	Environmental Impact Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FWS	United States Fish and Wildlife Service
GIS	Geographic Information System
HUC	Hydrologic Unit Code
LID	low-impact development
MSL	mean sea level
Mt	mount
NAAQS	National Ambient Air Quality Standards
NCDENR	North Carolina Department of Environment and Natural Resources
NCSHPO	North Carolina State Historic Preservation Office
NHD	National Hydrography Dataset
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
ppm	parts per million
T&E	threatened and endangered
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WUS	Waters of the United States

1.0 EXECUTIVE SUMMARY

Pursuant to Chatham County Subdivision Ordinance (dated July 1980, revised December 2008, and most recently amended December 2014) and North Carolina General Statute §113A-4(2) in conjunction with United States Code (USC) §4332(C), and on behalf of Bryan Properties, Inc., Timmons Group has prepared an Environmental Impact Assessment (EIA) for the proposed Sunset Grove (previously named "Copper Ridge") subdivision located on Mount (Mt.) Gilead Church Road in Pittsboro, Chatham County, North Carolina (hereafter the "subject property", "project site", or "proposed project").

Currently, the project site is comprised of undeveloped woodlands. The proposed project will encompass three (3) contiguous parcels totaling approximately 107.85 acres and will consist of a subdivision containing single-family residences on 55 lots, with varying lot sizes, and 7,200 linear feet of public roadway. The subject property is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

Based on the undeveloped/unimproved nature and accommodating acreage of the Subject Property, no alternative sites were considered.

The direct and indirect environmental impact findings of the EIA are detailed as follows.

As a result of implementation, the proposed project may:

- result in extensive tree removal and loss of open green space;
- present potential risks to threatened and/or endangered species through a loss of terrestrial habitat and/or impacts to aquatic habitat associated with increases in stormwater runoff;
- increase the potential for increased stormwater runoff and depletion of groundwater recharge resulting from the associated construction of impervious surfaces;
- present potential impacts to documented cultural resources;
- affect approximately 56.8 acres of designated prime farmland and 32.6 acres of farmland of statewide importance;
- have the potential to generate fugitive dust as a result of site grading and the general operation of construction equipment. Similarly, the operation of diesel-powered construction equipment may have the potential to release particulate matter associated with fugitive emissions;
- have the potential to introduce sources of light pollution to the surrounding area;
- present a potential cumulative impact to the surrounding environment from lawn care and stormwater runoff from impervious surfaces with specific focus on affecting downstream aquatic species.

Based on the above, appropriate mitigation measures should be executed in conjunction with project implementation as discussed herein.

2.0 INTRODUCTION

2.1 Scope of Work

Timmons Group was contracted by Bryan Properties, Inc. to prepare an EIA in association with the development and construction of the proposed Sunset Grove subdivision (Appendix 1 and Appendix 2). The requirement for an EIA is pursuant to Chatham County Subdivision Ordinance (dated July 1980, revised December 2008, and most recently amended December 2014) and North Carolina General Statute §113A-4(2) or U.S.C. §4332(C). An EIA is required for: “any proposed non-residential development project of two (2) contiguous acres or more in extent that disturbs two (2) or more acres” or “any proposed residential development project of two (2) contiguous acres or more in extent that will include fifty (50) or more dwelling units, whether detached single family residences or in a multifamily structure or structures.”

Based on the results of the EIA, additional studies may be required, including but not limited to: an architectural or historic structures survey and detailed surveys for habitats of threatened, rare or endangered animal or plant species.

2.2 Objectives and Procedures

The purpose of the EIA is to:

- identify and discuss the potential environmental impacts of the proposed project so that the project design can be amended to avoid or mitigate significant adverse environmental impacts;
- represent a commitment by the proponent(s) to complete a reasonable and comprehensive review of the potential environmental impacts stemming from project development and a further commitment to implement design and mitigation actions specified in the document; and
- identify permitting requirements for the project to assist the proponents in the timely preparation of permit applications.

As required, the EIA includes the following subjects:

- Proposed project description and need.
- Descriptions of existing conditions and potential impacts to existing conditions (including geology, soils and prime farmland, land use, wetlands, public lands and scenic, recreational, and State Natural Areas, areas of archaeological and historical value, air quality, noise levels, surface and groundwater resources, fish and aquatic habitats, wildlife and natural vegetation, and hazardous materials).
- Analysis of potential environmental impacts and a discussion of impacts being avoided, minimized, or mitigated.
- Permits, maps, and plans being obtained for the proposed project including topographic maps, soils evaluations, stormwater and erosion control plans, utility plans, U.S. Army Corps of Engineers (USACE), and N.C. Department of Water Quality (DWQ).

2.3 Limitations

This EIA involved a reconnaissance of the project site, a review of preliminary design information, and a review of regulatory and historical information to identify potential environmental resources in the vicinity of the project site. Timmons Group will be contacted regarding potential changes if the site plans or design details are significantly altered following preparation of this EIA so that appropriate amendments can be made.

Detailed cultural resource and/or threatened and endangered (T&E) surveys were beyond the scope of this project. Furthermore, no soil, water, and/or air sampling/testing or contaminant screening was conducted during the completion of this report. The conclusions and recommendations presented within this EIA are based upon a reasonable level of inquiry in accordance with the standards and limits of

professional practice for a site of this particular geographic setting. All observations, conclusions and recommendations pertaining to the environmental conditions of the project site are limited to the conditions observed and/or materials reviewed at the time that the study was undertaken. No other warranty, expressed or implied, is made with regard to the conclusions and recommendations presented within this report.

This report is provided for the exclusive use of Bryan Properties, Inc. in their submittal to Chatham County. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties. The use of this report by any undesignated third party or parties will be at the sole risk of the third party or parties, and Timmons Group disclaims liability for any such third party use or reliance.

3.0 PROPOSED PROJECT DESCRIPTION AND NEED

3.1 Project Identification

Project Name:	Sunset Grove
Jurisdiction:	Chatham County
Developer:	Bryan Properties, Inc.
Contact:	Sarah O'Brien
Contact Address:	Bryan Properties, Inc. 400 Market Street, Suite 115 Chapel Hill, North Carolina 27516
Contact Phone:	919-933-4422

3.2 Proposed Site Features

The proposed project includes the construction of a residential subdivision containing single-family residences on 55 variably-sized lots and several public roadways through the project site. The entirety of the proposed construction will be performed within the parcel limits and no demolition of any structures is planned prior to construction of the proposed project. The subject property will be located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina on approximately 107.85 acres (Appendix 1).

The project site is currently comprised of undeveloped woodlands bordered by single-family residences and Valley Lane to the north; undeveloped woodlands to the east; single-family residences and Bartlett Drive to the south; and single-family residences and Mt. Gilead Church Road to the west (Appendix 1).

The project site drains primarily to the east toward Parkers Creek and grades from a topographic low of approximately 400 feet to approximately 530 feet above mean sea level (MSL) with areas to the north and west topographically upgradient of the project site (Appendix 1). Waters of the United States (WUS) and wetlands are present within the proposed project limits with Parkers Creek transecting the northern region of the project site.

Project construction will result in substantial tree removal and loss of open green space. Furthermore, increases in impervious areas will occur; although at this time, only preliminary design and siting plans have been completed.

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

3.3 Site Plans

The following sections are based on the preliminary/conceptual site plan (i.e. Sunset Grove, Formerly Copper Ridge, First Plat Exhibit) for the single-family subdivision which is presented as Appendix 2. No final design or siting plans have been developed for presentation to Chatham County to evaluate conformance with existing ordinances/codes. Accordingly, the structural design details of the single family residences have not been identified. However, parking will assuredly be limited to residential driveways and roadways with no proposed community parking lots or parking decks.

3.3.1 Utility Plans

A water line connection will occur between Lot 13 and Lot 14 to an existing water line easement to the north of the project site with the new water lines to be constructed beneath the proposed roadways (Appendix 2).

3.3.2 Wastewater Management Systems

Each individual residential lot will have a septic system for wastewater management.

3.3.3 Impervious and Semi-pervious Surfaces

The impervious surface calculations for the proposed project are detailed below and in Appendix 2. Clearing on the project site will only occur for the roadways, utilities, building pads, and driveways.

- Roadway impervious = approximately (approx.) 159,500 square feet (sq ft)
 - Residential impervious = approx. 412,500 sq ft (approx. 7,500 sq ft per lot)
 - Miscellaneous impervious = approximately 10,000 sq ft
-
- Total impervious surfaces = approximately 582,000 sq ft or 13.36 acres
 - Overall project impervious percentage = 12.4%

Based on the low percentage of the overall area of impervious surfaces and the proposed minimal clearing of woodlands, the introduction of impervious surfaces to the project site may marginally impact the surrounding properties.

3.3.4 Stormwater Control Devices

Curbing will not be included in roadway design so stormwater runoff will be controlled by overland flow. Drainage ditches will flank the roadways as needed to intercept stormwater runoff which will be directed to either of three (3) proposed water quality ponds that will be designed to retain up to 90% of total suspended solids.

4.0 ALTERNATIVES ANALYSIS

The need for the proposed project stems from an 8.2% increase in the population of Chatham County between 2010 and 2014 which is nearly double the overall population increase for the state of North Carolina for the same period (4.3%). Statistics further indicate that for nearly the same period, approximately 88.2% of the Chatham County population resided the same house for at least one (1) year. As a result, the population increase and low housing turnover has created a demand for the construction of additional single-family residential housing.

Furthermore, the project site is zoned as "One Family Residential District (R-1)" as are the majority of the surrounding properties (Appendix 5). Therefore, the project site is appropriately zoned for the proposed development.

Based on the described need and zoning for the proposed project, no alternative project sites were proposed for consideration. Likewise, the "No Action" alternative was not weighed as a consideration.

5.0 EXISTING ENVIRONMENT AND PROJECT IMPACTS

5.1 Geography

5.1.1 Geographic Setting

The proposed Sunset Grove (previously named “Copper Ridge”) subdivision is located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina. The project site is located in the central region of North Carolina and the northeastern quadrant of Chatham County approximately six (6) miles from the Town of Pittsboro. U.S. Highway 64 is located to the south and Chapel Hill Road is to the north and west of the proposed project site.

5.1.2 Geology

The project site is located in the central region of the Piedmont Physiographic Province of North Carolina. Overall, the Piedmont Physiographic Province is underlain by crystalline bedrock formations that exhibit a high degree of geologic complexity; in addition, the region is characterized by the bedrock being overlain by a mantle of residual soil and saprolite. Saprolite is the product of in-situ chemical weathering of the crystalline bedrock that often retains the fabric, texture and structure of the parent bedrock. Saprolite is typically thickest on hilltops and in stream valleys and thinnest or absent altogether on hillsides (Legrand, 1988).

The 1991 Geologic Map of North Carolina indicates that the project site is underlain by felsic metavolcanic rock (map label CZfv) which is described below.

Felsic metavolcanic rock – metamorphosed dacitic to rhyolitic flows and tuffs, light gray to greenish gray; interbedded with mafic and intermediate metavolcanic rock, meta-argillite, and metamudstone.

Furthermore, based on the review of the Geologic Map of North Carolina (1991), the Subject Property is not recognized as being located in an area underlain by a geologic formation of scientific or economic significance.

5.1.3 Topography

The 1999 U.S. Geological Survey (USGS) 7.5 minute topographic map of the Farrington, North Carolina Quadrangle indicates that site elevations range from approximately 400 feet to 530 feet above MSL and surface drainage flows primarily to the east (Appendix 1). A grading plan has not yet been developed for this project.

5.1.4 Floodplain

Flood Insurance Rate Maps (FIRM) #3710977300J and #3710977200J published by the Federal Emergency Management Agency (FEMA) for Chatham County, North Carolina was reviewed to determine if the Subject Property is located within a floodplain. According to the FIRM, the Subject Property is located in Zone X which is outside of the 0.2% annual chance floodplain (Appendix 3).

5.2 Soils and Prime Farmlands

According to the U.S. Department of Agriculture (USDA) Web Soil Survey, soils beneath the project site are identified as approximately 39% Georgeville silt loam (2-6% slopes), 18% Badin-Nanford complex (15-30% slopes), 16% Nanford-Badin complex (6-10% slopes), 13% Nanford-Badin complex (2-6% slopes), 7% Nanford-Badin complex (10-15% slopes), 7% Cid-Lignum complex (2-6% slopes), and less than 1% Georgeville-Badin complex (10-15% slopes).

Of the units identified above, the USDA identified approximately 56.8 acres of the subject property as “prime farmland” and approximately 32.6 acres of the subject property as “farmland of statewide importance” (Appendix 4). Brief descriptions of the soil units are presented below:

Soil beneath the subject property	
Soil Unit	Description
(GaB) Georgeville silt loam, 2 to 6 percent slopes	This unit consists of well-drained soil that typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. All areas are prime farmland.
(BaE) Badin-Nanford complex, 15 to 30 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is not prime farmland.
(NaC) Nanford-Badin complex, 6 to 10 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is considered farmland of statewide importance.
(NaB) Nanford-Badin complex, 2 to 6 percent slopes	This unit is well drained soil that typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. All areas are prime farmland.
(NaD) Nanford-Badin complex, 10 to 15 percent slopes	This unit consists of well-drained soil that typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is considered farmland of statewide importance.
(CmB) Cid-Lignum complex, 2 to 6 percent slopes	This unit is moderately well-drained and typically occurs on interfluves and summits. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is farmland of statewide importance.
(GkD) Georgeville-Badin complex, 10 to 15 percent slopes	This unit is well-drained and typically occurs on hillslopes on ridges. The parent material consists of residuum weathered from metavolcanics and/or argillite. This soil is farmland of statewide importance.

Timmons Group also completed a soil survey for the project site which is included in Appendix 4.

5.2.1 Agricultural Land

The project site and the adjoining properties are not currently utilized for agricultural purposes. The USDA Web Soil Survey Farmland Classification map indicates that approximately 82.3% of the project site is designated as prime farmland/farmland of statewide importance (Appendix 4).

5.3 Land Use

The project site is presently comprised of three (3) parcels of undeveloped woodlands. The project site is zoned as "One Family Residential District (R-1)" as are the majority of the surrounding properties (Appendix 5).

5.4 Existing and Natural Resources

5.4.1 Wetlands

A review of the United States Fish and Wildlife Service (FWS) National Wetland Inventory (NWI) mapping for the site depicts an absence of wetland habitats within the boundaries of the subject property (Appendix 6). However, a wetland delineation completed by Timmons Group's Scott Mitchell identified approximately 0.25 acres of wetlands onsite and approximately 9,200 linear feet of intermittent and perennial streams. These features have been confirmed by Chatham County and the USACE. Accordingly, appropriate erosion and sedimentation (E&S) controls will be implemented during construction to mitigate any potential wetland impacts on the project site (Appendix 6).

5.4.2 Temporary and Permanent Wetland Impacts

Temporary and permanent wetland impacts on the project site have been confirmed by the USACE (Appendix 4 and 6). Based on the current wetlands and streams delineated within the limits of the project site, appropriate E&S controls will address potential impacts.

5.5 Public Lands and Scenic, Recreational, and State Natural Areas

5.5.1 Parks and Recreation Areas

Per correspondence from North Carolina Department of Environment and Natural Resources (NCDENR) dated April 14, 2015, property owned by the USACE as part of the B. Everett Jordan Dam and Lake Project is located just over one (1) mile to the east and downstream from the subject property (Appendix 7). Furthermore, a portion of the USACE property is a Jordan Lake State Recreation Area which is managed by the North Carolina Division of Parks and Recreation and includes the Parkers Creek Campground and swimming area. Based on the preliminary site plan, no negative impacts are anticipated.

5.5.2 Scenic Resources

Based on reviewed data, scenic resources are not present within and/or within close proximity to the project site (Appendix 8).

5.5.3 Natural Areas

Based on reviewed resources and correspondence from NCDENR dated April 14, 2015, the northern portion of the project site is within the Big Woods Road Upland Forests natural area (Appendix 7). However, based on the scope of the proposed project, NCDENR does anticipate potential negative impacts.

5.5.4 Forest Land

According to the USDA Forest Service and the North Carolina Forest Service, the subject property is not located in the vicinity of a national or state forest. The nearest such resources is the Uwharrie National Forest located over 52 miles away. Implementation of the proposed project may locally result in extensive tree removal with some re-vegetation associated with site development.

5.6 Areas of Archaeological or Historical Value

A review of the North Carolina State Historic Preservation Office (NCSHPO) Geographic Information System (GIS) identified no cultural/historic resources in the vicinity of the project site that are listed on the state register or on the National Register of Historic Places (NRHP). However, during site reconnaissance, a cemetery of twelve (12) graves was observed near the eastern boundary of the project site in proximity to the ruins of a house (Appendix 9). In accordance with state and federal regulations, the cemetery should either be protected or relocated in conjunction with project development under supervision of a licensed archaeologist to ensure the preservation of integrity.

5.7 Air Quality

On March 12, 2008, the Environmental Protection Agency (EPA) promulgated to tighten the 1997 National Ambient Air Quality Standards (NAAQS) for ground level ozone from 0.08 parts per million (ppm) to 0.075 ppm. On May 21, 2012, U.S. EPA published the final designations for the ozone air quality standards that were promulgated in 2008 for all areas in the United States; shortly thereafter, on May 31, 2012, U.S. EPA completed the designations for the 2008 ozone standards when the U.S. EPA Administrator signed the final rule. According to the EPA's Mid-Atlantic Air Protection 8-Hour Ozone Maintenance Areas website, the Raleigh-Durham-Chapel Hill area (in which the project site resides) is identified as an area of attainment/maintenance for the 8-hour ozone standard (Appendix 10).

Air pollution emissions are expected to be very minimal from the proposed project and limited to periodic exhaust from construction equipment, which is neither anticipated nor expected to produce long term detrimental effects. Regardless, appropriate measures will be pursued to control fugitive dust and exhaust emissions during construction. Furthermore, vegetation cleared from the project site will not be burned.

5.8 Noise Levels

Currently, the overall noise levels across the project site are expected to be low and limited to air traffic and roadway noise with temporary impacts originating from NCDOT road maintenance.

Construction activity may temporarily increase noise levels as a result of logging, grading, utility work, and project construction. However, noise impacts via project construction will be minimized by only working during daytime hours and only on weekdays. After construction is completed, potentially impacting noise levels will cease.

5.9 Light Levels

The proposed project will increase residential density and associated home lighting in this area of Chatham County per the 55 lots proposed for construction. Overall impact is suspected to be minimal and all lighting from the proposed residences will meet the requirements of the Chatham County Zoning Ordinance.

5.10 Surface and Groundwater Resources and Watershed Area

5.10.1 Surface Waters

The National Hydrography Dataset (NHD) depicts Parkers Creek transecting the northern portion on the project site (Appendix 6). The NC Division of Water Resources identifies Parker Creek as Stream Index #16-41-8-(1) and the segment is measured from the source to Chatham County State Route 1716. The water is classified as WS-IV, B and NSW. The stream segment has not been rated for use support by NCDWR. Appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.10.2 Groundwater Resources

The project site is within the North Chatham Water System and receives potable water from the Jordan Lake Water Treatment Plant. Chatham County does not utilize groundwater from Chatham County for consumption but purchases water from other suppliers. The Chatham County Utilities & Water Division collects water samples continuously to ensure the water leaving the Jordan Lake Water Treatment Plant meets EPA standards (Appendix 11).

5.10.3 Watersheds

The subject property is located within the Haw Watershed (Hydrologic Unit Code [HUC]: 03030002). Accordingly, appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.11 Fish and Aquatic Habitats

Parkers Creek flows through the northern area of the project site and drains into Jordan Lake. Accordingly, Parkers Creek possesses the correct habitat for specific aquatic life (Appendix 6). Appropriate E&S controls will be implemented during construction to minimize any potential adverse effects to surface water associated with sedimentation and suspended solids.

5.12 Wildlife and Natural Vegetation

5.12.1 Threatened and Endangered Species

A search of the NCDENR Natural Heritage Program database was performed to identify T&E species within Chatham County (Appendix 12). The results indicate that the surrounding habitat is conducive to the presence of two (2) federal endangered/state endangered (FESE), five (5) state endangered (SE) species, and six (6) state threatened (ST) species as detailed below:

1. Cape Fear Shiner – FESE,
2. Harperella – FESE,
3. Brook Floater – SE,
4. Atlantic Pigtoe – SE,
5. Yellow Lampmussel – SE,
6. Savannah Lilliput – SE,
7. Carolina Creekshell – SE,
8. Triangle Floater – ST,
9. Roanoke Slabshell – ST,
10. Bald Eagle – ST,
11. Eastern Lampmussel – ST,
12. Carolina Redhorse – ST,
13. Creeper – ST.

Per NCDENR correspondence dated April 14, 2015, the project site is within the known range of a significantly rare (SR) species, the Carolina Ladle Crayfish (Appendix 7). The Carolina Ladle Crayfish has been documented within the reach of Parkers Creek that flows through the northern portion of the project site and is also documented within other nearby tributaries of Jordan Lake. Significantly rare species, per the North Carolina Natural Heritage Program, are those “which are not listed as Endangered, Threatened, or Special Concern species, but exists in NC in small numbers and have been determined to require monitoring.” Also, Significantly Rare species include “peripheral species, whereby North Carolina lies at the edge of the species’ range.” Accordingly, development of the project site has the potential to negatively impact the Carolina Ladle Crayfish. Appropriate E&S controls will be implemented during construction to mitigate any potential impacts.

5.12.2 Significant Habitats

Through a review of available resources, and supported by correspondence from NCDENR dated April 14, 2015, the subject property is not a designated area of significant habitat for designated federal and/or state threatened and/or endangered species (Appendix 7).

Twenty-four natural plant community types occur in Chatham County and 21 high quality plant community types have been documented as by element occurrences by the NCNHP. Most of these occur within Significant Natural Heritage Areas (SNHA). The project site is not within a SNHA. Natural plant communities and habitat types on the site include mesic mixed hardwoods, dry-mesic oak-hickory and bottomland hardwoods.

5.12.3 Unique/Important Terrestrial Vegetation

Per correspondence from NCDENR dated April 14, 2015, no unique/important/rare (i.e. federal/state threatened and/or endangered) terrestrial vegetation is located in the vicinity of the project site (Appendix 7).

5.12.4 Invasive Species

The clearing, grading, and development of the project site will have the potential to eliminate a wide array of vegetation on the Subject Property including various invasive species. Only Native plant species will be replanted for landscaping purposes along with the development of the project site.

5.12.5 Deforestation

Given that the project site is almost completely undeveloped woodlands, extensive tree removal will occur as a result of project development. The resulting potential displacement of species will be accommodated by the wooded and wetland areas to the east which maintain substantial habitat(s). Any potential increases in surficial erosion resulting from tree removal will be accommodated by appropriate E&S measures including temporary to permanent structures such as BMPs.

5.12.6 Wildlife

The site supports many species of mammals, birds, reptiles, and amphibians, as well as fish and aquatic and terrestrial invertebrates. During site visits, White-tailed Deer (*Odocoileus virginianus*) were observed. Anticipated impacts to wildlife habitat include the conversion of forest for residential development. Smaller species of wildlife and species such as terrestrial amphibians which require specific habitats will be directly affected the most.

5.13 Hazardous Materials

Construction equipment and vehicles will use diesel fuel throughout the proposed project phases. If a spill or leakage were to occur, maintenance and cleanup must be performed according to local, state, and/or federal standards with appropriate reporting, as necessary. Likewise, construction materials will require appropriate storage in accordance with local/state guidelines.

Various volumes of solid waste material may be temporarily stored in containers onsite during construction activities pending disposal at appropriate and permitted solid waste disposal facility(ies). Post construction wastes will be maintained by Chatham County Solid Waste and Recycling (a division of the Chatham County Department of Environmental Quality) in accordance with local and state guidelines.

5.14 State and Federal Permits Required

The following permits will be required for this project:

- North Carolina Department of Transportation (NCDOT) Driveway Permit,
- NCDOT Roadway Review (Public Roads),
- Stormwater Permit via Chatham County,
- Erosion and Sediment Control Permitting via Chatham County,
- Nationwide Permit via the USACE,
- 401 Water Quality Certification via NC Division of Water Resources
- North Carolina and Chatham County Potable Water,
- Chatham County Environmental Health (for individual septic fields).

6.0 ANTICIPATED IMPACTS OF THE PROJECT

The purpose of the proposed project is to provide Chatham County with increased single family housing for an expanding population.

The project site is located on Mt. Gilead Church Road on approximately 107.85 acres consisting of undeveloped woodlands. The proposed project is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

Following a review of the project details, the subsequent potential impacts have been identified:

1. Project implementation may result in extensive tree removal and loss of open green space; however, the site development and associated tree clearing plans have not yet been finalized.
2. Project implementation may present potential risks to local populations of threatened and/or endangered species due to either a loss of terrestrial habitat through deforestation and/or impacts to aquatic habitat associated with increased stormwater runoff.
3. The proposed project may have the potential to impact surficial and groundwater resources both during construction and upon completion as a result of clearing vegetation and the construction of impervious surfaces. Project construction may present the potential for increased sedimentation into existing surficial drainage patterns in addition to increased stormwater runoff. The latter may likewise have the potential to promote a reduction of stormwater infiltration and groundwater recharge as will the increased area of impervious surfaces following construction.
4. Development of the proposed project will not impact historic/cultural resources registered with the state or listed on the NRHP; nonetheless, cultural resources have been documented on the project site that may be impacted as a result of site development. Accordingly, the identified resources will require management in compliance with state and federal statutes.
5. Project implementation would eliminate 56.8 acres of designated prime farmland and an additional 32.6 acres of farmland of statewide importance.
6. Construction activity may temporarily create an environment that is conducive to the generation of fugitive dust as a result of site grading and the general operation of construction equipment. Similarly, the operation of diesel-powered construction equipment may have the potential to release particulate matter associated with fugitive emissions.
7. Nighttime illumination of the completed subdivision may potentially serve as a source of light pollution to the surrounding area. However, the lighting schedule has yet to be finalized in conjunction with the facility design options.
8. Following construction, homeowners will likely use of fertilizers, pesticides and/or herbicides. The use of such maintenance chemicals presents a potential cumulative impact to the surrounding environment with specific focus on affecting downstream aquatic species.

7.0 MITIGATION

Previously mentioned, the project will produce a series of direct, indirect, and cumulative impacts. Measures to minimize the potential adverse effects will be considered by Chatham County to include the following:

1. Tree removal will be mitigated by designating tree preservation areas and repopulating disturbed areas with native species in landscape plantings. The loss of open green space will be mitigated through landscape design and the incorporation of open green space into the site plan.
2. As determined to be necessary by NCDENR, specific T&E species surveys may be conducted to ensure an absence of populations or a minimal potential for impact. Aquatic species will be offered further protection through the implementation of appropriate mitigation procedures to minimize potential impacts to peripheral streams and/or wetlands as discussed below.
3. Surface water resources will be protected during project construction through the maintenance and protection of buffers in accordance with local, state and federal requirements. Likewise, project construction activity will require the development and implementation of applicable E&S controls including silt fencing and temporary seeding. Specifications may further require contractors to clean mud and dust from the roadways during construction activity. Accordingly, an E&S control and a Stormwater Management Plan will be prepared and submitted to NCDENR for review once final design plans have been developed.

Potential groundwater impacts may be mitigated through the incorporation of stormwater retention ponds, bioswales, and stormwater low-impact development (LID) features into the final design plans which allow for the permeation of stormwater into the subsurface.

4. Potential impact(s) to the cultural resources identified onsite will be mitigated through either in-situ preservation/protection or relocation in accordance with local, state and/or federal statutes.
5. Airborne particulate matter resulting from the potential generation of fugitive dust during construction will be managed by the effective use of water or chemical based dust palliatives in addition to limiting the number and/or speed of vehicles onsite. Furthermore, and as necessary, earth moving/removal activities will be suspended during periods of high winds. Onsite machinery shall be regularly maintained during construction to ensure optimal operating conditions and limit fugitive exhaust emissions, including the use of low sulfur diesel fuel.
6. The potential for light pollution in public areas will be mitigated through the use of directional lighting in conjunction with timers or automatic dimmers to reduce or deactivate lighting during periods of inactivity.

8.0 IRREVERSIBLE ENVIRONMENTAL IMPACTS

The proposed project will likely result in the irreversible loss of the following: prime farmland, farmland of statewide importance, open green space, and forestlands although mitigation procedures are intended to minimize the extent of impact.

9.0 SUMMARY AND CONCLUSIONS

Timmons Group has prepared this EIA for the proposed Sunset Grove subdivision located on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina.

The project site will consist of a subdivision containing single-family residences on 55 lots, with varying lot sizes, and 7,200 linear feet of public roadway.

Currently, the project site is comprised of undeveloped woodlands located on three (3) contiguous parcels totaling approximately 107.85 acres and is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

The purpose of the proposed project is to provide Chatham County with increased numbers of single family housing.

As a result of the undeveloped nature of the project site, no alternative project sites were proposed for consideration. Likewise, the "No Action" alternative was not a consideration.

Based on a review of available resources, project implementation will produce potential direct, indirect, and cumulative impacts. Accordingly, appropriate mitigation measures have been proposed as applicable to offset recognized adverse effects.

10.0 LIST OF PREPARERS

Timmons Group – Environmental Services

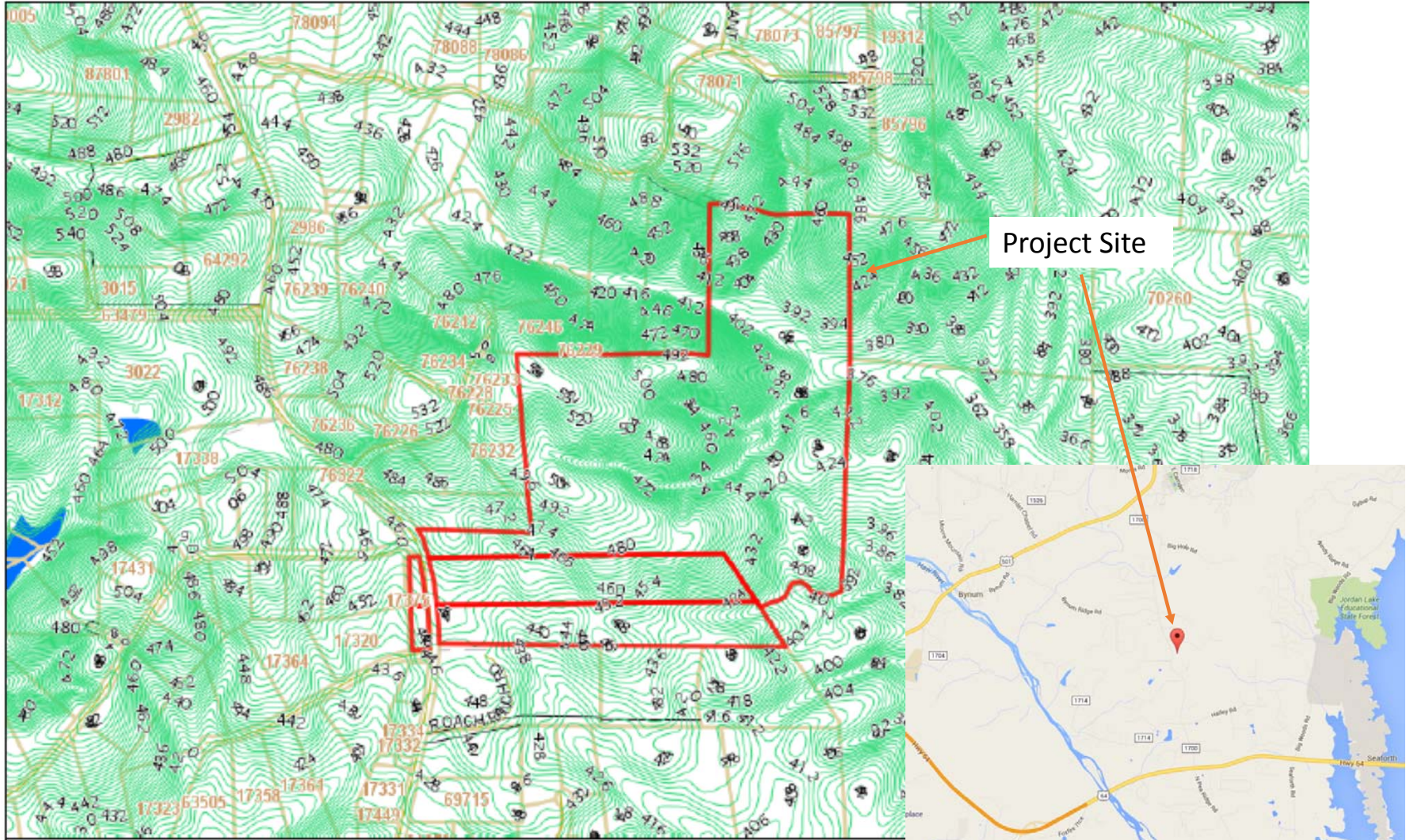
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Years Professional Experience: 24
- **Chase Farnsworth IV – Environmental Scientist I**
B.S. Environmental Science, 2013, Virginia Commonwealth University
Years Professional Experience: 2

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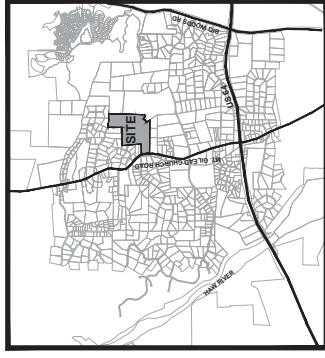
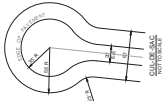
APPENDICES

APPENDIX 1
SITE VICINITY MAP



Sunset Grove, Pittsboro, NC Chatham County GIS Topography (2' Contours) & Vicinity Map

APPENDIX 2
PRELIMINARY SITE PLANS



VICINITY MAP
N.T.S.
NORTH

SUNSET GROVE FORMERLY COPPER RIDGE FIRST PLAT EXHIBIT

CHATHAM COUNTY, NC
6/5/2015
AKPAR: 17425, 17440, 17441

SITE DATA:	
PIN:	9773-60-6882 9772-59-2771 9772-59-4420
SITE AREA:	± 107.82 AC.
TOTAL LOTS:	± 55 LOTS
AVERAGE LOT SIZE:	± 1.7 AC.
LENGTH OF ROADS:	± 7,200 LF
* COUNTY WATER TO BE PROVIDED	

- DAW — EXISTING WATERLINE
- PROPOSED WATERLINE
- APPROXIMATE STREAM BUFFERS
- CONVENTIONAL SOILS (GREATER THAN 24')
- SURFACE DRIP SOILS (12' TO 24')
- EXISTING CEMETERY
- PROPOSED WATER QUALITY POND
- CONVENTIONAL SOILS (LESS THAN 12')
- SUB-SURFACE DRIP SOILS (LESS THAN 12')



GENERAL NOTE:

1. A BOUNDARY SURVEY HAS NOT BEEN PERFORMED.



IMPERVIOUS CALCULATIONS

Roadway	159,500 sf	
Residential	412,500 sf	7500 sf/lot
Misc	10,000 sf	
	<hr/>	
	582,000 sf	
	or	
	13.36 ac	

Total Impervious Area =

13.36 ac.

Total Project Area =

107.80 ac.

Overall Project Impervious % =

12.4%

LD

APPENDIX 3

FEMA FIRM

Details | Basemap

About Content Legend

Legend

NFHL (click to expand)

FIRM Panels



Cross-Sections



Flood Hazard Boundaries

— Other Boundaries

— Limit Lines

— SFHA / Flood Zone Boundary

Flood Hazard Zones

■ 1% Annual Chance Flood Hazard

■ Regulatory Floodway

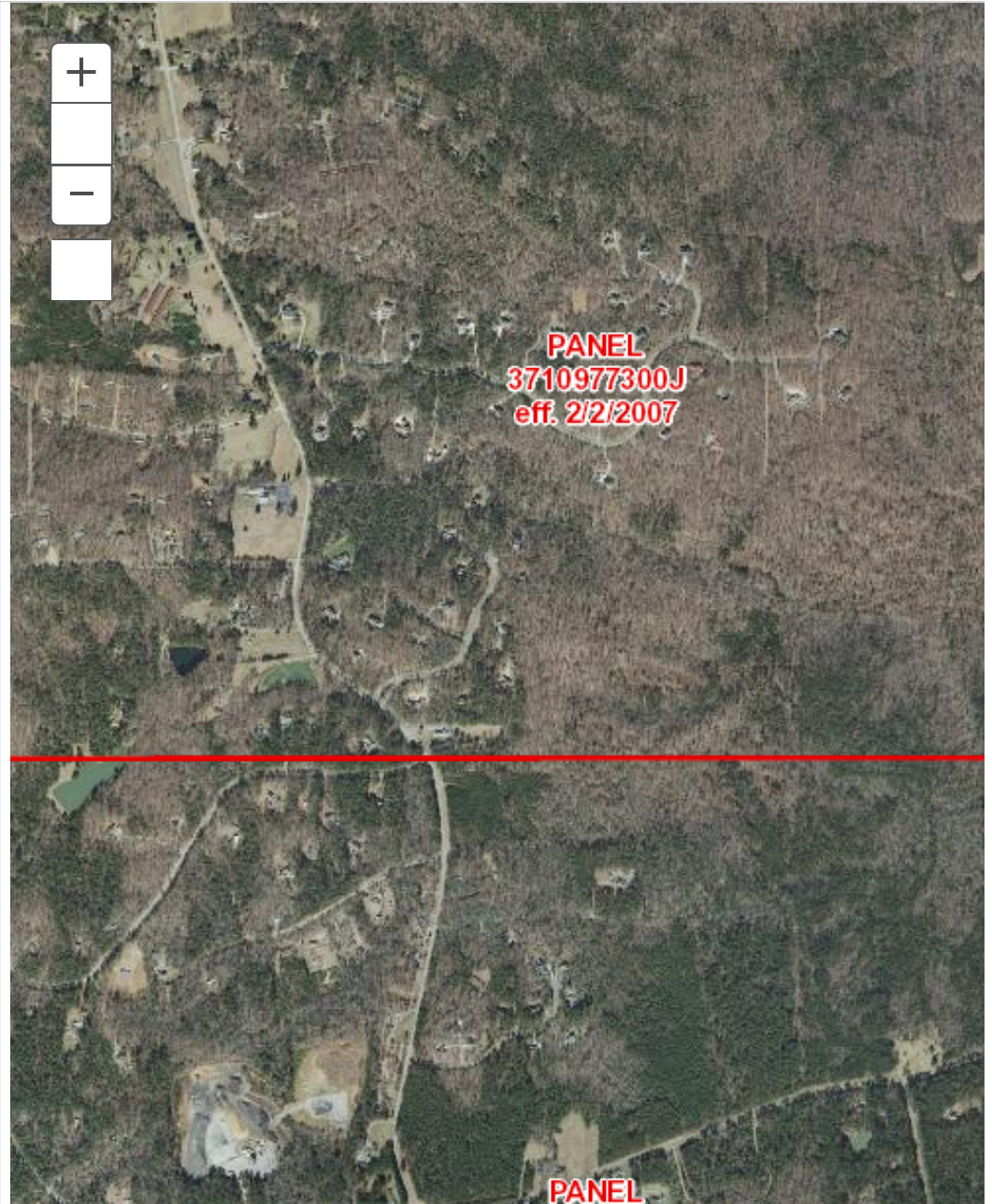
■ Special Floodway

■ Area of Undetermined Flood Hazard

■ 0.2% Annual Chance Flood Hazard

■ Future Conditions 1% Annual Chance Flood Hazard

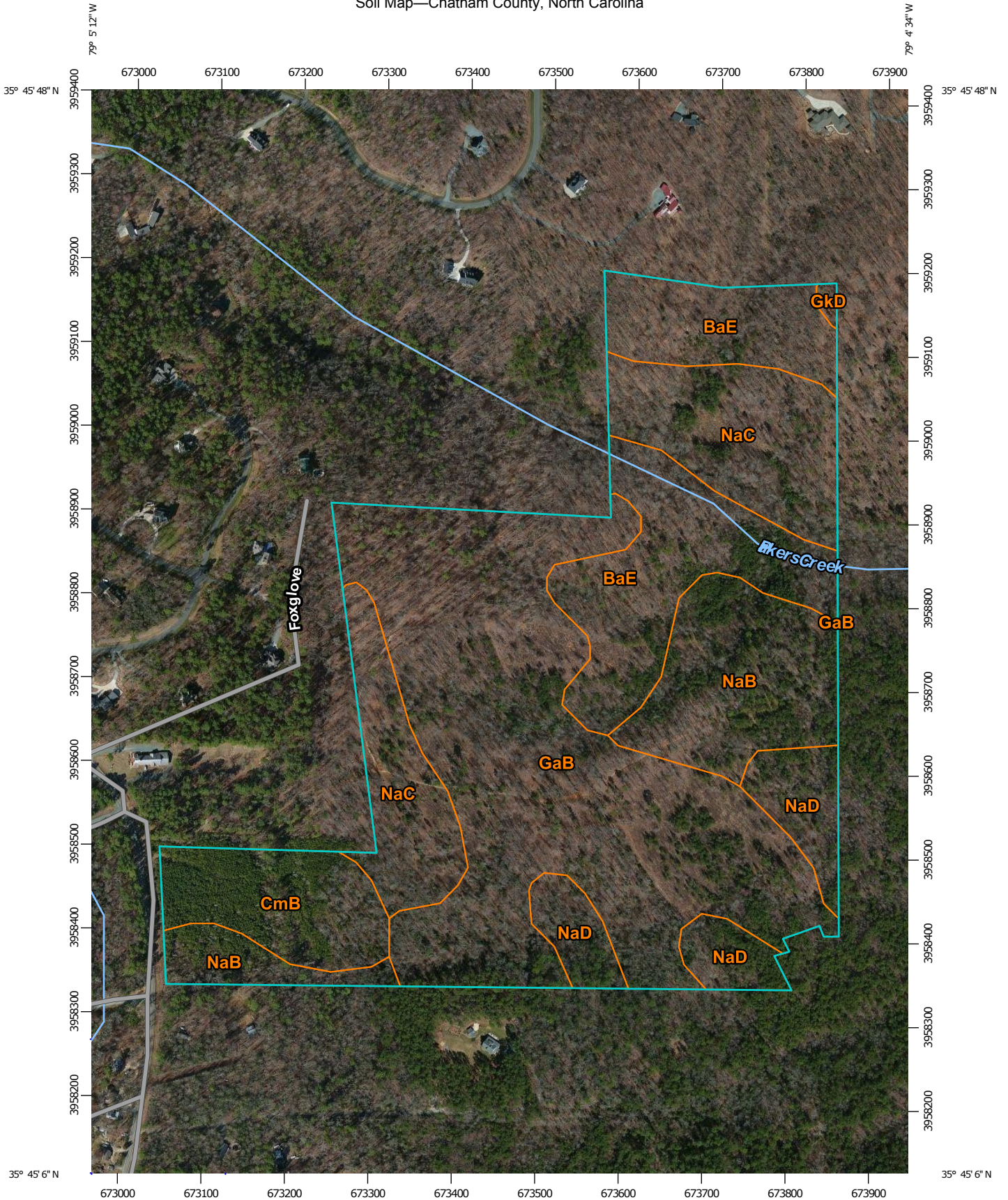
■ Area with Reduced Risk Due to Levee



APPENDIX 4

**USDA SOILS MAPPING AND FARMLAND CLASSIFICATION AND TIMMONS
GROUP SOIL SURVEY**

Soil Map—Chatham County, North Carolina



Map Scale: 1:6,310 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 300 600 1200 1800 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84




Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/2/2015
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MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chatham County, North Carolina
 Survey Area Data: Version 17, Sep 9, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

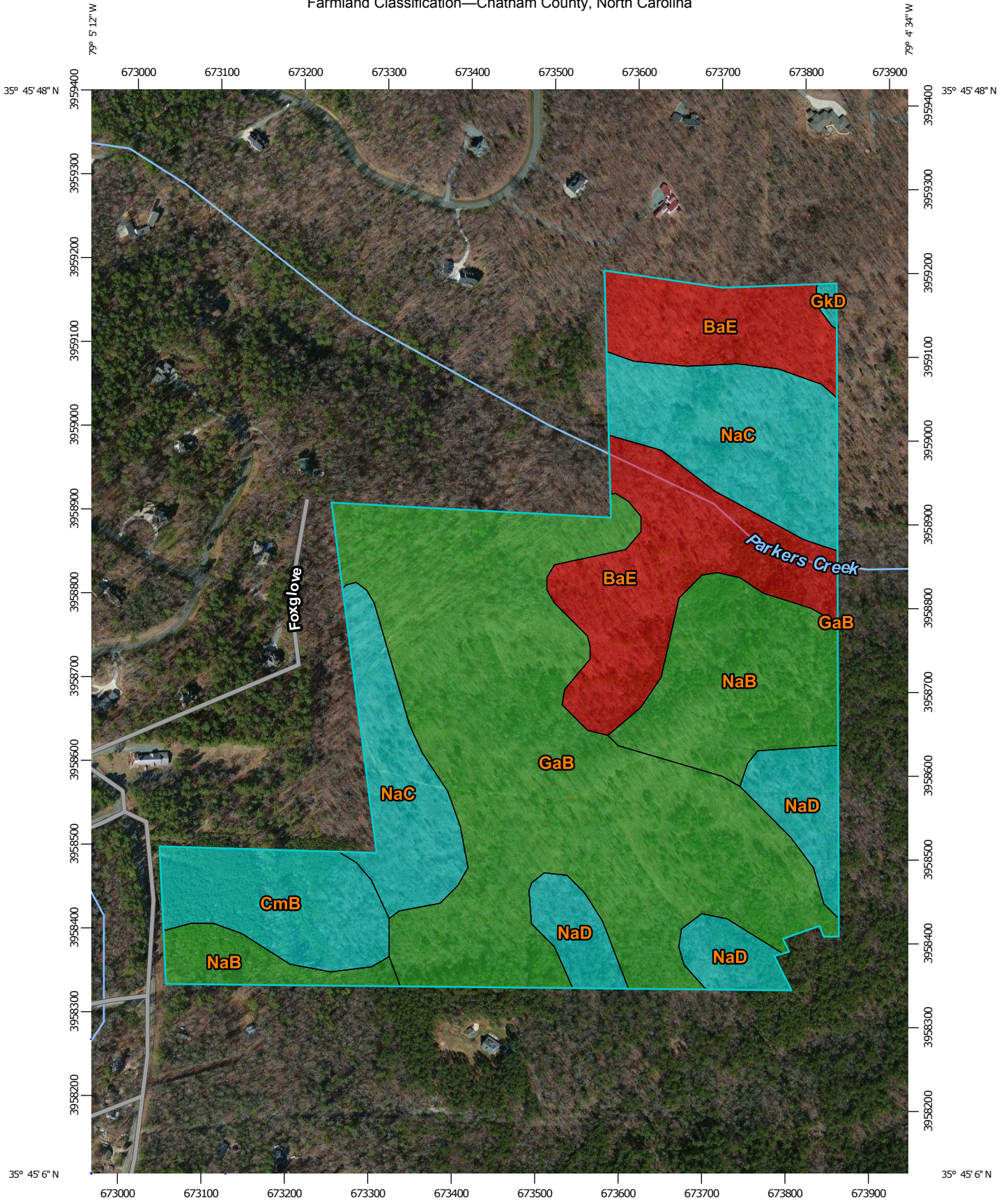
Date(s) aerial images were photographed: Feb 11, 2011—Mar 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Chatham County, North Carolina (NC037)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BaE	Badin-Nanford complex, 15 to 30 percent slopes	19.2	17.7%
CmB	Cid-Lignum complex, 2 to 6 percent slopes	7.6	7.0%
GaB	Georgeville silt loam, 2 to 6 percent slopes	43.0	39.5%
GkD	Georgeville-Badin complex, 10 to 15 percent slopes	0.2	0.2%
NaB	Nanford-Badin complex, 2 to 6 percent slopes	13.8	12.7%
NaC	Nanford-Badin complex, 6 to 10 percent slopes	17.1	15.7%
NaD	Nanford-Badin complex, 10 to 15 percent slopes	7.7	7.1%
Totals for Area of Interest		108.7	100.0%

Farmland Classification—Chatham County, North Carolina



Map Scale: 1:6,310 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84




Natural Resources
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National Cooperative Soil Survey

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







MAP LEGEND








Area of Interest (AOI)

 Area of Interest (AOI)




Soils








Soil Rating Polygons






-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available







Soil Rating Lines










-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained

-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60

-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available


Soil Rating Points

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season

-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of local importance
-  Farmland of unique importance
-  Not rated or not available

Water Features

MAP INFORMATION

 Streams and Canals

Transportation

 Rails


 Interstate Highways

 US Routes

 Major Roads

 Local Roads

Background

 Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chatham County, North Carolina
Survey Area Data: Version 17, Sep 9, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 11, 2011—Mar 3, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Chatham County, North Carolina (NC037)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BaE	Badin-Nanford complex, 15 to 30 percent slopes	Not prime farmland	19.2	17.7%
CmB	Cid-Lignum complex, 2 to 6 percent slopes	Farmland of statewide importance	7.6	7.0%
GaB	Georgeville silt loam, 2 to 6 percent slopes	All areas are prime farmland	43.0	39.5%
GkD	Georgeville-Badin complex, 10 to 15 percent slopes	Farmland of statewide importance	0.2	0.2%
NaB	Nanford-Badin complex, 2 to 6 percent slopes	All areas are prime farmland	13.8	12.7%
NaC	Nanford-Badin complex, 6 to 10 percent slopes	Farmland of statewide importance	17.1	15.7%
NaD	Nanford-Badin complex, 10 to 15 percent slopes	Farmland of statewide importance	7.7	7.1%
Totals for Area of Interest			108.7	100.0%

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

PREPARED FOR:
MS. SARAH O'BRIEN
BRYAN PROPERTIES, INC.
400 MARKET STREET, SUITE 115
CHAPEL HILL, NORTH CAROLINA 27516

SUNSET GROVE SUBDIVISION
SITE EVALUATION FOR USE OF ON-SITE SEWAGE
DISPOSAL SYSTEMS
OCTOBER 2015



PREPARED BY:
TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

5410 TRINITY ROAD, SUITE 102
RALEIGH, NORTH CAROLINA 27607
PHONE: 919.866.4951
FAX: 919.859.5663
WWW.TIMMONS.COM
TIMMONS GROUP PROJECT NO. 36673



5410 Trinity Road
Suite 112
Raleigh, NC 27607

P 919.866.4951
F 919.859.5663
www.timmons.com

October 23, 2015

Ms. Sarah O'Brien
Bryan Properties, Inc.
400 Market Street, Suite 115
Chapel Hill, North Carolina 27516

Re: Site Evaluation for Use of On-Site Sewage Disposal Systems for Sunset Grove Subdivision
East of Mt. Gilead Church Road, Pittsboro, Orange County, North Carolina

Ms. O'Brien:

At your request, Timmons Group, Inc., has completed a site evaluation for use of on-site sewage disposal systems for Sunset Grove Subdivision. The 107.82 acre site is located east of Mount Gilead Church Road in Pittsboro, Chatham County and will contain portions of the listed properties (*PIN 9773-60-6982.000, 9772-59-2771.000, 9772-59-4420.000*). The "Preliminary Septic Soil Suitability Unit Delineation Map" illustrates lots contained in Sunset Grove Subdivision and delineated units of suitable soil areas. The site evaluation was completed on various dates in 2006, 2007, 2014 and 2015.

Status of Site Improvements and Vegetative Cover

The entire tract is covered with forest vegetation of various ages and degrees of maturity. The only improvements observed on the site include remnants of an abandoned structure and cemetery near the east boundary of the site. A road leads to the observed improvements. Other improvements may be present but were not observed.

Method of Evaluation and Soil Moisture Conditions

Soils on the site were evaluated using a combination of hand auger borings and soil pits installed using a tracked excavator. Portions of the detailed evaluation were completed during drought conditions (2007), hence observed soil moisture was minimal during those periods. Outside of jurisdictional streams and wetlands, no standing water was observed at any location on the site.

Soils Analysis

According to the Chatham County Soil Survey, the site is covered by soils of the Badin-Nanford Complex, Cid-Lignum Complex, Georgeville Series, Georgeville-Badin Complex and Nanford-Badin Complex. Each of these soils has moderate limitations for septic system nitrification fields

due to slow percolation rates. Provisionally suitable soils represented by the above listed series have formed in Carolina Slate Belt rocks and other fine grained rocks.

Floodprone areas of the site were not evaluated due to their unsuitable landscape position. Additionally, several areas on the property were found to be unsuitable or potentially unsuitable for conventional nitrification fields due to improvements listed above, shallow depth to expansive or mixed-mineralogy clays, saprolite or bedrock, landscape position, compaction, gullies, remnant ditches from past land use activities and/or evidence of a shallow seasonal high water table. Soil suitability observations for each auger boring and soil pit are detailed on high visibility flagging. Former Mitchell Environmental staff utilized a color coding system to indicate the provisionally suitable soil depth ranges as follows:

- Red: 36"+
- Pink and Black stripe: 30" to < 36"
- Blue and White stripe: 24" to < 30"
- Yellow: 18" to <24"
- Orange and Yellow combination: 12" to < 18"
- Orange: < 12"

The attached map indicates the approximate boundary of provisionally suitable soil depth ranges on the site. Observed soils on this site exhibit various controlling textures including clay loam, silty clay loam, silty clay and clay. Conventional sewage systems for proposed lots should be designed for a long-term acceptance rate of 0.3 to 0.275 gpd/ft² for conventional trench systems and 0.15-0.075 gpd/ft² for nitrification fields that utilize pressure distribution and LPP or subsurface drip dispersal. Lots with insufficient area of soils useable for currently permissible subsurface septic systems will utilize surface application systems permitted through the DWR Non-Discharge Permitting Unit.

Proposed Use and Source of Water Supply

Upon approval, the site will be subdivided into 56 lots for 3 to 5 bedroom, single-family homes. Individual septic systems will be installed on each lot. Potable water will be supplied by a connection to the Chatham County public water supply system.

VI. Certification Statements

CERTIFICATION OF REVIEW BY LICENSED SOIL SCIENTIST

I HEREBY CERTIFY THAT LOTS 1 – 55A SHOWN ON THIS CONCEPT PLAN FOR Sunset Grove Subdivision HAVE BEEN REVIEWED AS APPROPRIATE AND WITH RESPECT TO MINIMUM LOT REQUIREMENTS SET FORTH IN 15A NCAC 18A .1900 – SEWAGE TREATMENT AND DISPOSAL SYSTEMS, 15A NCAC 02T – WASTE NOT DISCHARGED TO SURFACE WATERS AND 15A NCAC 02U – RECLAIMED WATER. AS OF THIS DATE, AND BASED ON THIS REVIEW OF EXISTING SITE CONDITIONS THE LOTS NUMBERED ABOVE ON THIS PLAT WILL PRESUMABLY MEET THESE REGULATIONS.

PRELIMINARY CERTIFICATION DOES NOT REPRESENT APPROVAL OR A PERMIT FOR ANY SITE WORK, NOR DOES IT GUARANTEE ISSUANCE OF AN IMPROVEMENT PERMIT FOR ANY LOT. FINAL SITE APPROVAL FOR ISSUANCE OF IMPROVEMENT PERMITS IS BASED ON REGULATIONS IN FORCE AT THE TIME OF PERMITTING AND IS DEPENDENT ON SATISFACTORY COMPLETION OF INDIVIDUAL SITE EVALUATIONS FOLLOWING APPLICATION FOR AN IMPROVEMENT PERMIT DETAILING A SPECIFIC USE AND SITING.


ANY CHANGE IN USE OR ANY SITE ALTERATION MAY RESULT IN SUSPENSION OR REVOCATION OF CERTIFICATION.

10-23-2015
DATE

Sincerely,



Scott Mitchell, PE, LSS
NC Environmental Practice Group Leader


Justin Milstein, SSIT
Environmental Scientist

This map illustrates soil suitability observations made by Timmons Group staff. This map is a representation of our professional opinions regarding soil suitability on this site and is based on North Carolina laws, rules, and regulations in effect as of the date listed hereon. Soils are formed by the forces of nature and are inherently variable. Hence, some inclusions of soil that are suited for different septic system types than those labeled should be expected.

This map does not represent approval or a permit for any site work, nor does it guarantee issuance of an improvement permit for any lot. Final site approval for issuance of improvement permits is based on regulations in force at the time of permitting and is dependent on satisfactory completion of individual site evaluations following application for an improvement permit detailing a specific use and siting. This soil suitability evaluation has not been approved by any regulatory body as of the date listed hereon; hence, it is suitable for preliminary planning purposes only until and unless it is formally approved by the appropriate regulatory body.

Property boundaries provided by Chatham County GIS.

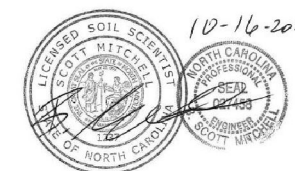
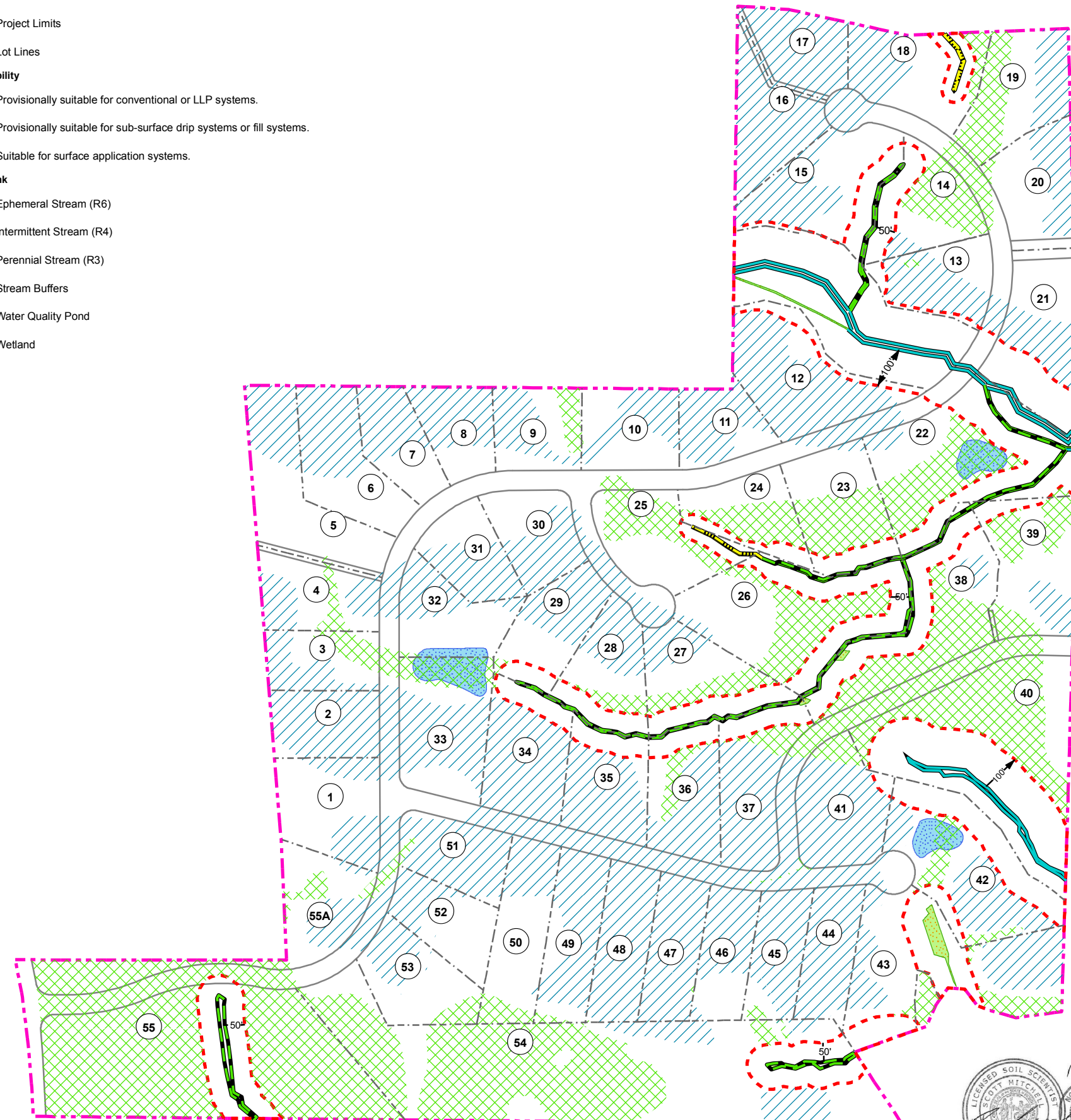
Topographic data provided by NCDOT.

All components of this drawing are approximate.

NOT A SURVEY.

Septic Soil Classification				
Lot #	Lot Total Acres	Suitable for surface application systems (ac.)	Provisionally suitable for conventional or LLP systems (ac.)	Provisionally suitable for sub-surface drip systems or fill systems (ac.)
1	1.50		0.51	0.99
2	1.10		1.03	0.07
3	1.00	0.21	0.45	0.34
4	1.10	0.14	0.45	0.51
5	1.80		0.56	1.24
6	1.50		0.82	0.68
7	1.00		0.61	0.39
8	0.90		0.67	0.23
9	1.00	0.18	0.49	0.33
10	1.10	0.01	0.52	0.57
11	0.90		0.74	0.16
12	2.00		1.60	0.14
13	1.20		0.68	0.40
14	1.00	0.56	0.08	0.26
15	1.90		0.77	0.71
16	1.30		1.18	0.12
17	1.10		0.98	0.12
18	1.40		0.60	0.54
19	1.50	0.61	0.47	0.42
20	1.30	0.03	0.54	0.73
21	1.90		0.56	0.67
22	3.20	1.03	0.10	0.51
23	1.60	0.74	0.04	0.56
24	1.10	0.50		0.38
25	1.50	0.60		0.72
26	3.00	0.96	0.06	0.84
27	1.50	0.34	0.34	0.36
28	1.30	0.16	0.51	0.31
29	1.10	0.00	0.67	0.27
30	1.10		0.63	0.47
31	1.00		0.62	0.38
32	1.20	0.01	0.43	0.76
33	1.80	0.39	0.95	0.46
34	1.50		1.27	
35	1.30		0.98	0.06
36	1.40	0.19	0.81	0.17
37	1.60	0.19	1.07	0.05
38	2.50	1.05	0.12	0.37
39	1.70	0.59	0.25	0.72
40	4.20	1.69		0.42
41	1.50	0.16	1.28	0.01
42	2.50	0.30	0.68	0.72
43	3.00	0.02	0.35	2.40
44	1.00		0.99	0.01
45	1.00	0.04	0.80	0.16
46	1.00	0.22	0.60	0.18
47	1.10	0.01	0.75	0.34
48	1.20	0.01	1.16	0.03
49	1.30	0.04	0.72	0.54
50	1.40	0.17	0.42	0.81
51	1.10	0.03	0.98	0.09
52	1.10	0.44	0.36	0.30
53	1.30	0.14	0.38	0.78
54	7.90	3.85	0.79	2.56
55	7.50	2.15		4.41

- Legend**
- Project Limits
 - Lot Lines
 - Soil Suitability**
 - Provisionally suitable for conventional or LLP systems.
 - Provisionally suitable for sub-surface drip systems or fill systems.
 - Suitable for surface application systems.
 - Top of Bank**
 - Ephemeral Stream (R6)
 - Intermittent Stream (R4)
 - Perennial Stream (R3)
 - Stream Buffers
 - Water Quality Pond
 - Wetland



TIMMONS GROUP

SUNSET GROVE
CHATHAM COUNTY, NORTH CAROLINA
PRELIMINARY SEPTIC SOIL SUITABILITY UNIT DELINEATION MAP

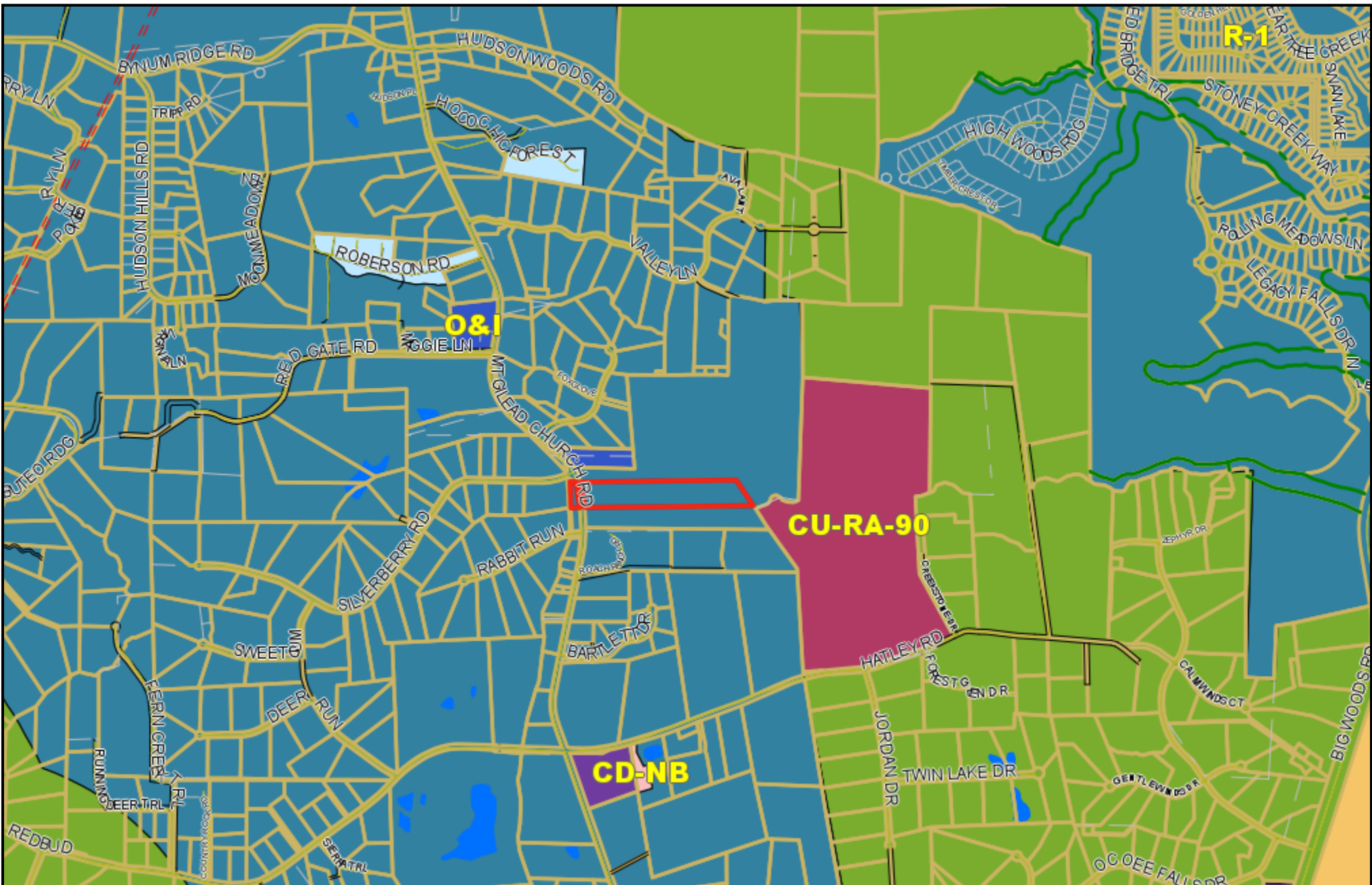
JOB NUMBER
36673
SHEET NO.
1 OF 1

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.7648 www.timmons.com

DATE	REVISION DESCRIPTION
10/15/2015	

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APPENDIX 5
CHATHAM COUNTY ZONING MAP



CHATHAM COUNTY, NC



Chatham County Zoning Map

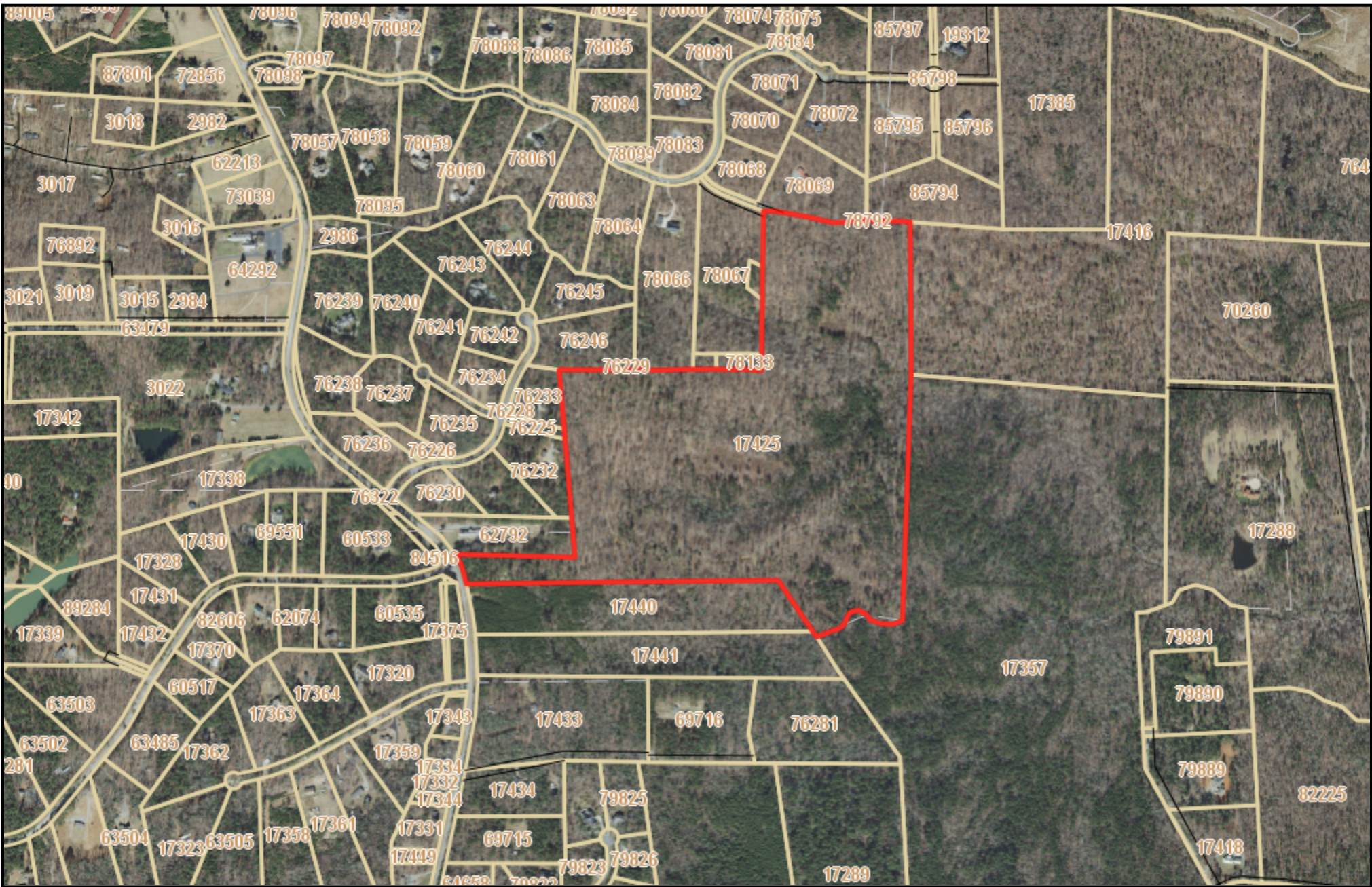
Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17440
 Map Number: 9772-59-2771.000
 Owner Name: HAW RIVER BAPTIST CHURCH INC
 Owner Address: 1099 MT GILEAD CHURCH RD
 Owner City: PITTSBORO
 Owner State: NC
 Owner Zip: 27312
 Tax Year:
 Description: N5-55

Deed Book: 765
 Deed Page: 0244
 Plat Book: 98
 Plat Page: 0336
 Deed Acres: 15.361
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 230392
 Fire District: 107
 Township Code: 11

One Inch = 1600 Feet





CHATHAM COUNTY, NC



9773-60-6982

Disclaimer:
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Parcel Number: 17425
Map Number: 9773-60-6982.000
Owner Name: CHATHAM CAPITAL LLC
Owner Address: 400 MARKET ST, ST 115
Owner City: CHAPEL HILL
Owner State: NC
Owner Zip: 27516
Tax Year:
Description: N5-50

Deed Book: 1676
Deed Page: 0506
Plat Book: 95
Plat Page: 0484
Deed Acres: 86.744
Physical Address: MT GILEAD CHURCH RD
Improvement Value: 0
Land Value: 652050
Fire District: 107
Township Code: 11

One Inch = 800 Feet





CHATHAM COUNTY
PROPERTY REPORT - PRINT

Property Owner CHATHAM CAPITAL LLC	Owner's Mailing Address 400 MARKET ST,ST 115 CHAPEL HILL, NC 27516	Property Location Address MT GILEAD CHURCH RD
--	---	---

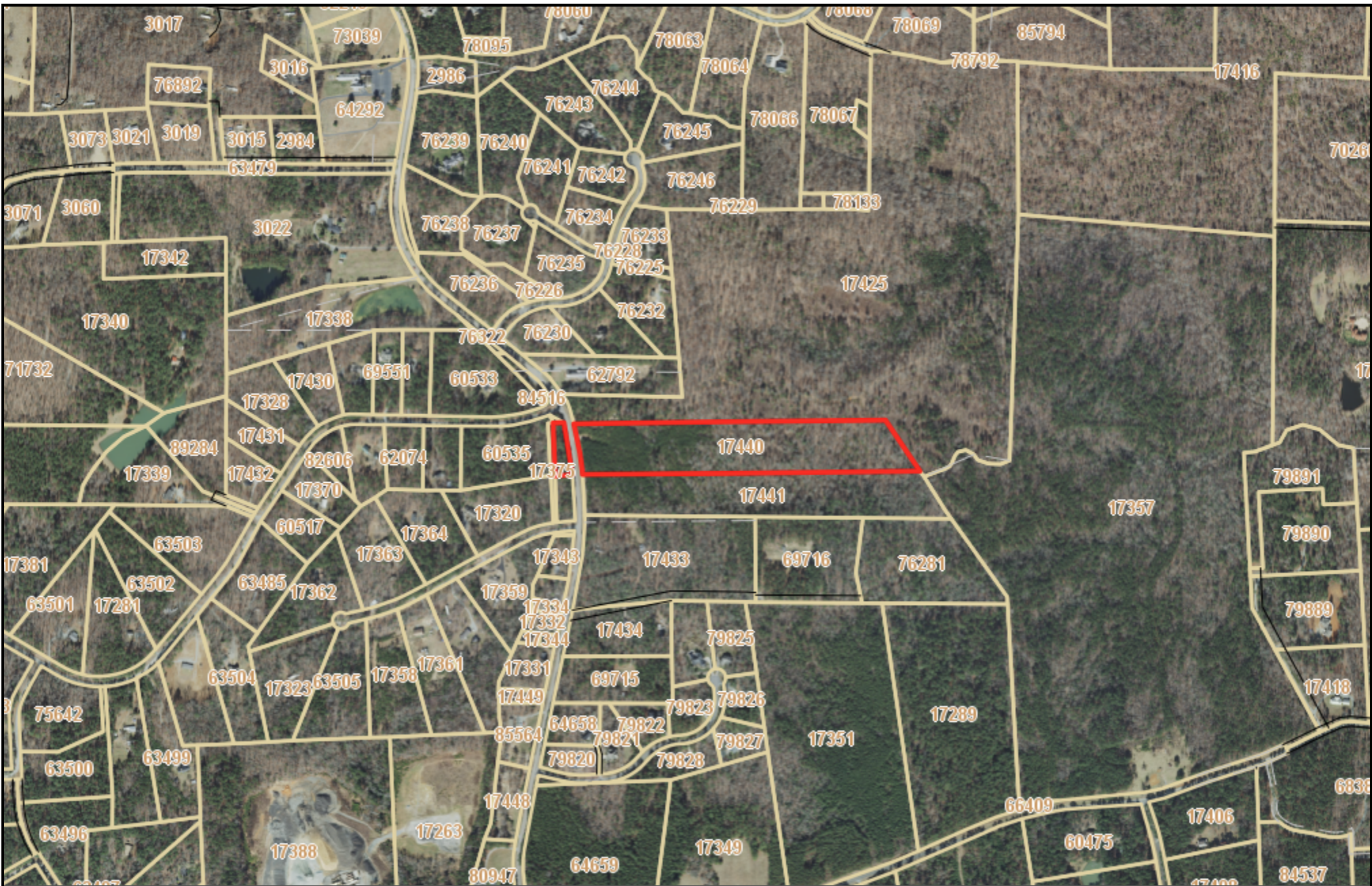
Administrative Data Parcel ID No. 0017425 PIN 9773 00 50 7432 Owner ID 1344117 Tax District 107 - NORTH CHATHAM FIRE DIST Land Use Code Land Use Desc Neighborhood 1171	Administrative Data Legal Desc N5-50 Deed Year Bk/Pg 2013 - 1676/0506 Plat Bk / Pg 95 / 0484 Sales Information Grantor MAYBERRY REAL ESTATE HOLDINGS Sold Date 2013-03-28 Sold Amount \$ 694,000	Valuation Information Market Value \$ 652,050 Market Value - Land and all permanent improvements, if any, effective January 1, 2009, date of County's most recent General Reappraisal Assessed Value \$ 652,050 If Assessed Value not equal Market Value then subject parcel designated as a special class -agricultural, horticultural, or forestland and thereby eligible for taxation on basis of Present-Use.
--	---	--

Improvement Detail <i>(1st Major Improvement on Subject Parcel)</i>	
Year Built	0
Built Use/Style	
Current Use	/
* Percent Complete	0
Heated Area (S/F)	0
Fireplace (Y / N)	N
Basement (Y / N)	N
Attached Garage (Y/N)	N
*** Multiple Improvements	000
<small>* Note - As of January 1 ** Note - Bathroom(s), Bedroom(s), shown for description only *** Note - If multiple improvements equal "MLT" then parcel includes additional major improvements</small>	

Land Supplemental	
Map Acres	86.744
Tax District Note	107 - NORTH CHATHAM FIRE DIST
Present-Use Info	

Improvement Valuation (1st Major Improvement on Subject Parcel)	
* Improvement Market Value \$	** Improvement Assessed Value \$
0	0
<small>* Note - Market Value effective Date equal January 1, 2009, date of County's most recent General Reappraisal ** Note - If Assessed Value not equal Market Value then variance resulting from formal appeal procedure</small>	

Land Value Detail (Effective Date January 1, 2009, date of County's most recent General Reappraisal)		
Land Full Value (LFV) \$	Land Present-Use Value (PUV) \$ **	Land Total Assessed Value \$
652,050	652,050	652,050
<small>** Note: If PUV is not equal to LFV then parcel is taxed at present use value and is subject to rollback taxes, if disqualified.</small>		



CHATHAM COUNTY, NC



9772-59-2771

Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17440
 Map Number: 9772-59-2771.000
 Owner Name: HAW RIVER BAPTIST CHURCH INC
 Owner Address: 1099 MT GILEAD CHURCH RD
 Owner City: PITTSBORO
 Owner State: NC
 Owner Zip: 27312
 Tax Year:
 Description: N5-55

Deed Book: 765
 Deed Page: 0244
 Plat Book: 98
 Plat Page: 0336
 Deed Acres: 15.361
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 230392
 Fire District: 107
 Township Code: 11

One Inch = 800 Feet





CHATHAM COUNTY

PROPERTY REPORT - PRINT

Property Owner HAW RIVER BAPTIST CHURCH INC	Owner's Mailing Address 1099 MT GILEAD CHURCH RD PITTSBORO, NC 27312	Property Location Address MT GILEAD CHURCH RD
---	---	---

Administrative Data Parcel ID No. 0017440 PIN 9772 00 59 2484 Owner ID 1177132 Tax District 107 - NORTH CHATHAM FIRE DIST Land Use Code Land Use Desc Neighborhood 1171	Administrative Data Legal Desc N5-55 Deed Year Bk/Pg 1998 - 765 / 0244 Plat Bk/Pg 98 / 0336 Sales Information Grantor Sold Date 1998-09-23 Sold Amount \$ 199,000	Valuation Information Market Value \$ 230,392 Market Value - Land and all permanent improvements, if any, effective January 1, 2009, date of County's most recent General Reappraisal Assessed Value \$230,392 If Assessed Value not equal Market Value then subject parcel designated as a special class -agricultural, horticultural, or forestland and thereby eligible for taxation on basis of Present-Use.
--	---	---

Improvement Detail (1st Major Improvement on Subject Parcel)	
Year Built	0
Built Use/Style	
Current Use	/
* Percent Complete	0
Heated Area (S/F)	0
Fireplace (Y/N)	N
Basement (Y/N)	N
Attached Garage (Y/N)	N
*** Multiple Improvements	000
<small>* Note - As of January 1 ** Note - Bathroom(s), Bedroom(s), shown for description only *** Note - If multiple improvements equal "MLT" then parcel includes additional major improvements</small>	

Land Supplemental	
Map Acres	15.361
Tax District Note	107 - NORTH CHATHAM FIRE DIST
Present-Use Info	

Improvement Valuation (1st Major Improvement on Subject Parcel)	
* Improvement Market Value \$	** Improvement Assessed Value \$
0	0
<small>* Note - Market Value effective Date equal January 1, 2009, date of County's most recent General Reappraisal ** Note - If Assessed Value not equal Market Value then variance resulting from formal appeal procedure</small>	

Land Value Detail (Effective Date January 1, 2009, date of County's most recent General Reappraisal)		
Land Full Value (LFV) \$	Land Present-Use Value (PUV) \$ **	Land Total Assessed Value \$
230,392	230,392	230,392
<small>** Note: If PUV is not equal to LFV then parcel is taxed at present use value and is subject to rollback taxes, if disqualified.</small>		



CHATHAM COUNTY, NC



9772-59-4420

Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17441
 Map Number: 9772-59-4420.000
 Owner Name: HAW RIVER BAPTIST CHURCH INC
 Owner Address: 1099 MT GILEAD CHURCH RD
 Owner City: PITTSBORO
 Owner State: NC
 Owner Zip: 27312
 Tax Year:
 Description: N5-55-2

Deed Book: 765
 Deed Page: 0244
 Plat Book: 98
 Plat Page: 0336
 Deed Acres: 13.983
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 220402
 Fire District: 107
 Township Code: 11

One Inch = 800 Feet





CHATHAM COUNTY

PROPERTY REPORT - PRINT

Property Owner HAW RIVER BAPTIST CHURCH INC	Owner's Mailing Address 1099 MT GILEAD CHURCH RD PITTSBORO, NC 27312	Property Location Address MT GILEAD CHURCH RD
---	---	---

Administrative Data Parcel ID No. 0017441 PIN 9772 00 59 2484 Owner ID 1177132 Tax District 107 - NORTH CHATHAM FIRE DIST Land Use Code Land Use Desc Neighborhood 1171	Administrative Data Legal Desc N5-55-2 Deed Year Bk/Pg 1998 - 765 / 0244 Plat Bk/Pg 98 / 0336 Sales Information Grantor Sold Date 1998-09-23 Sold Amount \$ 199,000	Valuation Information Market Value \$ 220,402 Market Value - Land and all permanent improvements, if any, effective January 1, 2009, date of County's most recent General Reappraisal Assessed Value \$ 220,402 If Assessed Value not equal Market Value then subject parcel designated as a special class -agricultural, horticultural, or forestland and thereby eligible for taxation on basis of Present-Use.
--	---	--

Improvement Detail (1st Major Improvement on Subject Parcel)	
Year Built	0
Built Use/Style	
Current Use	/
* Percent Complete	0
Heated Area (S/F)	0
Fireplace (Y/N)	N
Basement (Y/N)	N
Attached Garage (Y/N)	N
*** Multiple Improvements	000
<small>* Note - As of January 1 ** Note - Bathroom(s), Bedroom(s), shown for description only *** Note - If multiple improvements equal "MLT" then parcel includes additional major improvements</small>	

Land Supplemental	
Map Acres	13.983
Tax District Note	107 - NORTH CHATHAM FIRE DIST
Present-Use Info	

Improvement Valuation (1st Major Improvement on Subject Parcel)	
* Improvement Market Value \$	** Improvement Assessed Value \$
0	0
<small>* Note - Market Value effective Date equal January 1, 2009, date of County's most recent General Reappraisal ** Note - If Assessed Value not equal Market Value then variance resulting from formal appeal procedure</small>	

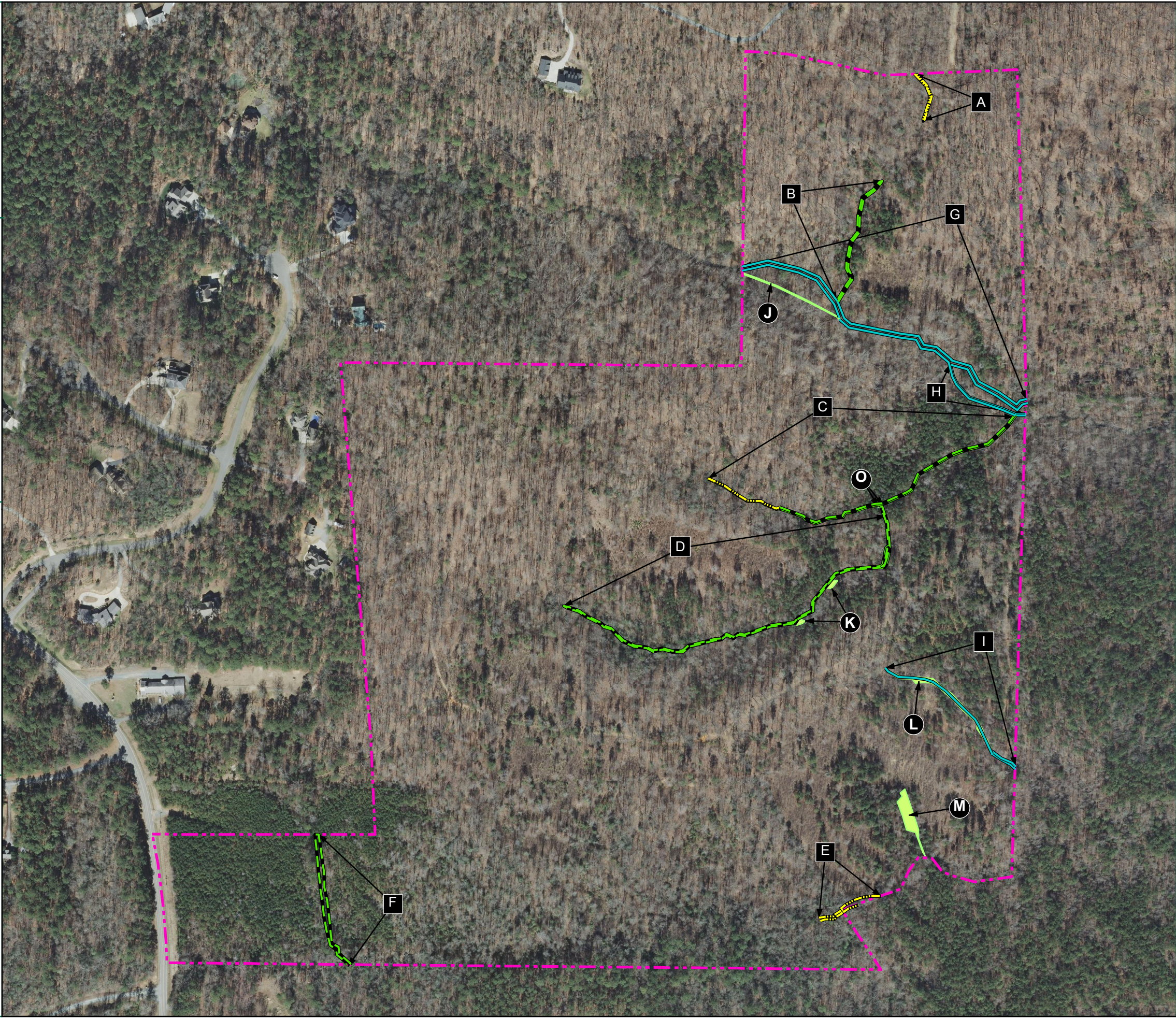
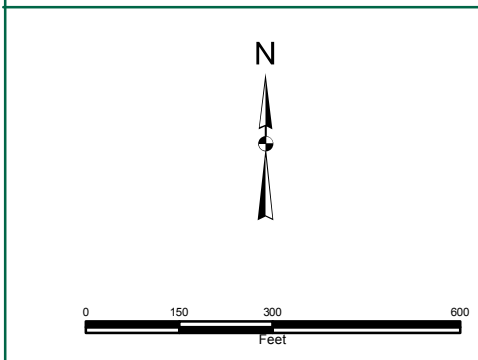
Land Value Detail (Effective Date January 1, 2009, date of County's most recent General Reappraisal)		
Land Full Value (LFV) \$	Land Present-Use Value (PUV) \$ **	Land Total Assessed Value \$
220,402	220,402	220,402
<small>** Note: If PUV is not equal to LFV then parcel is taxed at present use value and is subject to rollback taxes, if disqualified.</small>		

APPENDIX 6
SURFACE WATER RESOURCE MAPS

Resource Identification	Classification								Resource Description Notes*
	PFO (ft²)	PSS (ft²)	PEM (ft²)	POW (ft²)	R3 (L.F.)	R4 (L.F.)	R6 (L.F.)	JD (L.F.)	
A								166	NT/NV
B						426			NT/NV
C						855	245		NT/NV
D						1,400			NT/NV
E								166	NT/NV
F						429			NT/NV
G									NT/NV
H						1,048			NT/NV
I						291			NT/NV
J						536			NT/NV
K	1,336								NT/V
L	858								NT/V
M	4,194								NT/V
N	4,394								NT/V
O	106								NT/V
Total	10,890	0	0	0	1,875	3,110	576	0	
Total Wetland Area =	10,890		ft²		0.25 Acres				
Total Stream Length =	5,561		L.F.						

- Legend**
- Parcel Limits - 107.8 acres
 - Perennial Stream (R3)
 - Intermittent Stream (R4)
 - Ephemeral Stream (R6)
 - Wetlands

- NOTES:**
1. WATERS OF THE U.S. WITHIN THE PROJECT STUDY LIMITS HAVE BEEN GPS LOCATED BY TIMMONS GROUP.
 2. WATERS OF THE U.S. HAVE NOT BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS.
 3. PROJECT STUDY LIMITS ARE APPROXIMATE.
 4. IMAGERY FROM ESRI ONLINE.
 5. COWARDIN STREAM CLASSIFICATIONS ARE BASED SOLELY ON FIELD OBSERVATIONS. NO FORMAL STREAM ASSESSMENT METHODOLOGY WAS COMPLETED TO DETERMINE THESE COWARDIN CLASSIFICATIONS.



TIMMONS GROUP

SUNSET GROVE
CHATHAM COUNTY, NORTH CAROLINA

FIGURE 4: DRAFT PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. DELINEATION MAP

THIS DRAWING PREPARED AT THE
CORPORATE OFFICE
1001 Boulders Parkway, Suite 300 | Richmond, VA 23225
TEL 804.200.6500 FAX 804.560.7648 www.timmons.com

YOUR VISION ACHIEVED THROUGH OURS

DATE	REVISION DESCRIPTION
11/16/2015	

Site Development | Residential | Infrastructure | Technology | Environmental

DESIGNED BY
B. NORRIS

CHECKED BY
S. MITCHELL

SCALE
1" = 300'

JOB NUMBER
36673

SHEET NO.
1 OF 1

Path: Y:\804\36673-Sunset_Grove\GIS\Wetland Delineation\Wetland Delineation Map.mxd

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U.S. Fish and Wildlife Service National Wetlands Inventory

Copper Ridge
Subdivision

Apr 6, 2015



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

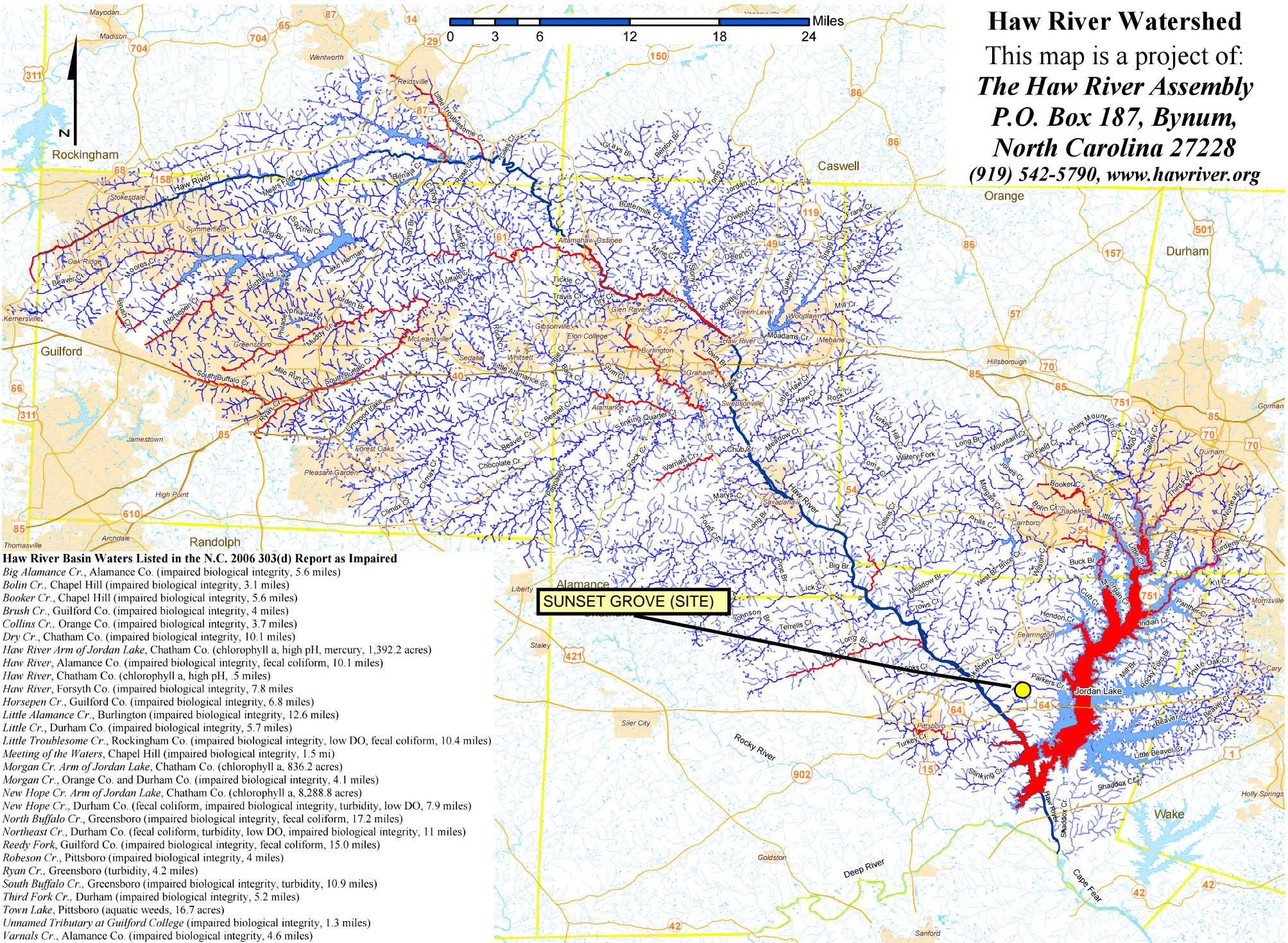
User Remarks:

Copper Ridge Subdivision

NOTES: Data available from U.S. Geological Survey, National Geospatial Program.



Haw River Watershed
 This map is a project of:
The Haw River Assembly
P.O. Box 187, Bynum,
North Carolina 27228
(919) 542-5790, www.hawriver.org



- Haw River Basin Waters Listed in the N.C. 2006 303(d) Report as Impaired**
- Big Alamance Cr.*, Alamance Co. (impaired biological integrity, 5.6 miles)
 - Bolin Cr.*, Chapel Hill (impaired biological integrity, 3.1 miles)
 - Booker Cr.*, Chapel Hill (impaired biological integrity, 5.6 miles)
 - Brush Cr.*, Guilford Co. (impaired biological integrity, 4 miles)
 - Collins Cr.*, Orange Co. (impaired biological integrity, 3.7 miles)
 - Dry Cr.*, Chatham Co. (impaired biological integrity, 10.1 miles)
 - Haw River Arm of Jordan Lake*, Chatham Co. (chlorophyll a, high pH, mercury, 1,392.2 acres)
 - Haw River*, Alamance Co. (impaired biological integrity, fecal coliform, 10.1 miles)
 - Haw River*, Chatham Co. (chlorophyll a, high pH, 5 miles)
 - Haw River*, Forsyth Co. (impaired biological integrity, 7.8 miles)
 - Horsepen Cr.*, Guilford Co. (impaired biological integrity, 6.8 miles)
 - Little Alamance Cr.*, Burlington (impaired biological integrity, 12.6 miles)
 - Little Cr.*, Durham Co. (impaired biological integrity, 5.7 miles)
 - Little Troublesome Cr.*, Rockingham Co. (impaired biological integrity, low DO, fecal coliform, 10.4 miles)
 - Meeting of the Waters*, Chapel Hill (impaired biological integrity, 1.5 mi)
 - Morgan Cr. Arm of Jordan Lake*, Chatham Co. (chlorophyll a, 836.2 acres)
 - Morgan Cr.*, Orange Co. and Durham Co. (impaired biological integrity, 4.1 miles)
 - New Hope Cr. Arm of Jordan Lake*, Chatham Co. (chlorophyll a, 8,288.8 acres)
 - New Hope Cr.*, Durham Co. (fecal coliform, impaired biological integrity, turbidity, low DO, 7.9 miles)
 - North Buffalo Cr.*, Greensboro (impaired biological integrity, fecal coliform, 17.2 miles)
 - Northeast Cr.*, Durham Co. (fecal coliform, turbidity, low DO, impaired biological integrity, 11 miles)
 - Reedy Fork*, Guilford Co. (impaired biological integrity, fecal coliform, 15.0 miles)
 - Robeson Cr.*, Pittsboro (impaired biological integrity, 4 miles)
 - Ryan Cr.*, Greensboro (turbidity, 4.2 miles)
 - South Buffalo Cr.*, Greensboro (impaired biological integrity, turbidity, 10.9 miles)
 - Third Fork Cr.*, Durham (impaired biological integrity, 5.2 miles)
 - Town Lake*, Pittsboro (aquatic weeds, 16.7 acres)
 - Unnamed Tributary at Guilford College* (impaired biological integrity, 1.3 miles)
 - Varnals Cr.*, Alamance Co. (impaired biological integrity, 4.6 miles)

APPENDIX 7
NCDENR CORRESPONDENCE



North Carolina Department of Environment and Natural Resources
Office of Land and Water Stewardship

Pat McCrory
Governor

Bryan Gossage
Director

Donald R. van der Vaart
Secretary

April 14, 2015

Mr. Chase Farnsworth
Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, Virginia 23225
Chase.farnsworth@timmons.com

RE: Copper Ridge Subdivision, Mt. Gilead Church Road, Pittsboro, Chatham County, North Carolina
Timmons Group Project No. 36673

Dear Mr. Farnsworth:

Thank you for the opportunity to provide information from the North Carolina Natural Heritage Program (NCNHP) database for the proposed project referenced above. The NCNHP database shows that the northern portion of the project area is within the Big Woods Road Upland Forests natural area, and that an occurrence of Carolina Ladle Crayfish (*Cambarus davidi*) is documented within the reach of Parkers Creek that runs through the northern portion of the project area.

Within one mile of the proposed project area, the NCNHP database shows element occurrence records for the following rare species:

SCIENTIFIC NAME	COMMON NAME	ELEMENT OCCURRENCE STATUS	ACCURACY	STATE STATUS*	FEDERAL STATUS*
<i>Cambarus davidi</i>	Carolina Ladle Crayfish	Current	Medium	SR	---

*For status and accuracy definitions, please see the Rare Species Status Definitions and Element Occurrences documents at <https://ncnhde.natureserve.org/content/help>.

As noted above, Carolina Ladle Crayfish has been documented within the reach of Parkers Creek that flows through the northern portion of the project area; this species is also documented within other nearby tributaries of Jordan Lake.

In addition, the NCNHP database shows that property owned by the U.S. Army Corps of Engineers as part of the B. Everett Jordan Dam and Lake project is located just over a mile east of and downstream from the project area; a portion of this property is a Jordan Lake State Recreation Area managed by the North Carolina Division of Parks and Recreation, and includes the Parkers Creek Campground and swimming area.

The locations of natural areas, including the Big Woods Road Upland Forests natural area, and conservation/managed areas near the project area may be viewed by accessing the [Natural Heritage Data Explorer](#) online map viewer, or by downloading and using Geographic Information System (GIS) data; both options are available from the NCNHP Data Services webpage (see www.ncnhp.org).

1601 Mail Service Center, Raleigh, North Carolina 27699-1601
Phone: 919-707-8600 \ Internet: www.ncdenr.gov

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Please note that the use of Natural Heritage Program data should not be substituted for actual field surveys if needed, particularly if the project area contains an element occurrence of a rare species and suitable habitat for rare species. If rare species are found during field surveys, the NCNHP would appreciate receiving this information so that we may update our database.

Thank you for your inquiry. Please feel free to contact me at Allison.Weakley@ncdenr.gov or 919-707-8629 if you have questions or more information is needed.

Sincerely,



Allison Schwarz Weakley, Conservation Planner
NC Natural Heritage Program

April 6, 2015

North Carolina Natural Heritage Program
1601 Mail Service Center
Raleigh, North Carolina 27699-1601

**RE: Natural Heritage Program Review
Copper Ridge Subdivision
Chatham County, North Carolina**

Dear Project Review Team:

On behalf of Chatham County, and in accordance with Chatham County Subdivision Ordinance (dated 1980 and updated in 2008) and North Carolina General Statute §113A-4(2) or U.S.C. §4332(C), Timmons Group is completing an Environmental Impact Assessment for the proposed construction and development of the Copper Ridge Subdivision on approximately 107.82 acres on Mt. Gilead Church Road in Pittsboro, Chatham County, North Carolina. Currently, the project site is comprised of undeveloped woodlands. The proposed project will consist of 43 single-family residence lots and 7,200 linear feet of public roadway. The subject property is bordered by single-family residences and Valley Lane to the north, undeveloped woodlands to the east, single-family residences and Bartlett Drive to the south, and single-family residences and Mt. Gilead Church Road to the west.

Timmons Group is submitting property information for your review to evaluate any apparent risk to federally and/or state listed endangered and/or threatened species. A property location map is attached with the corresponding results of a North Carolina Department of Environment and Natural Resources, Natural Heritage Program database search results within Chatham County.

Please review the enclosed material and send any comments or information you may have relating to this proposed project. Also, please contact me at (804) 200-6450 or at chase.farnsworth@timmons.com if you have any questions or require additional information.

Sincerely,

Timmons Group



Chase Farnsworth
Environmental Scientist

Attachments

1. Request Form
2. Vicinity Map
3. Parcel Information
4. NCDENR Natural Heritage Program database results



Please submit this form by email: allison.weakley@ncdenr.gov
Or mail:
 N.C. Natural Heritage Program
 Information Request
 1601 Mail Service Center
 Raleigh NC 27699-1601

Information Request DATE SUBMITTED 4/6/15 DATE RECEIVED

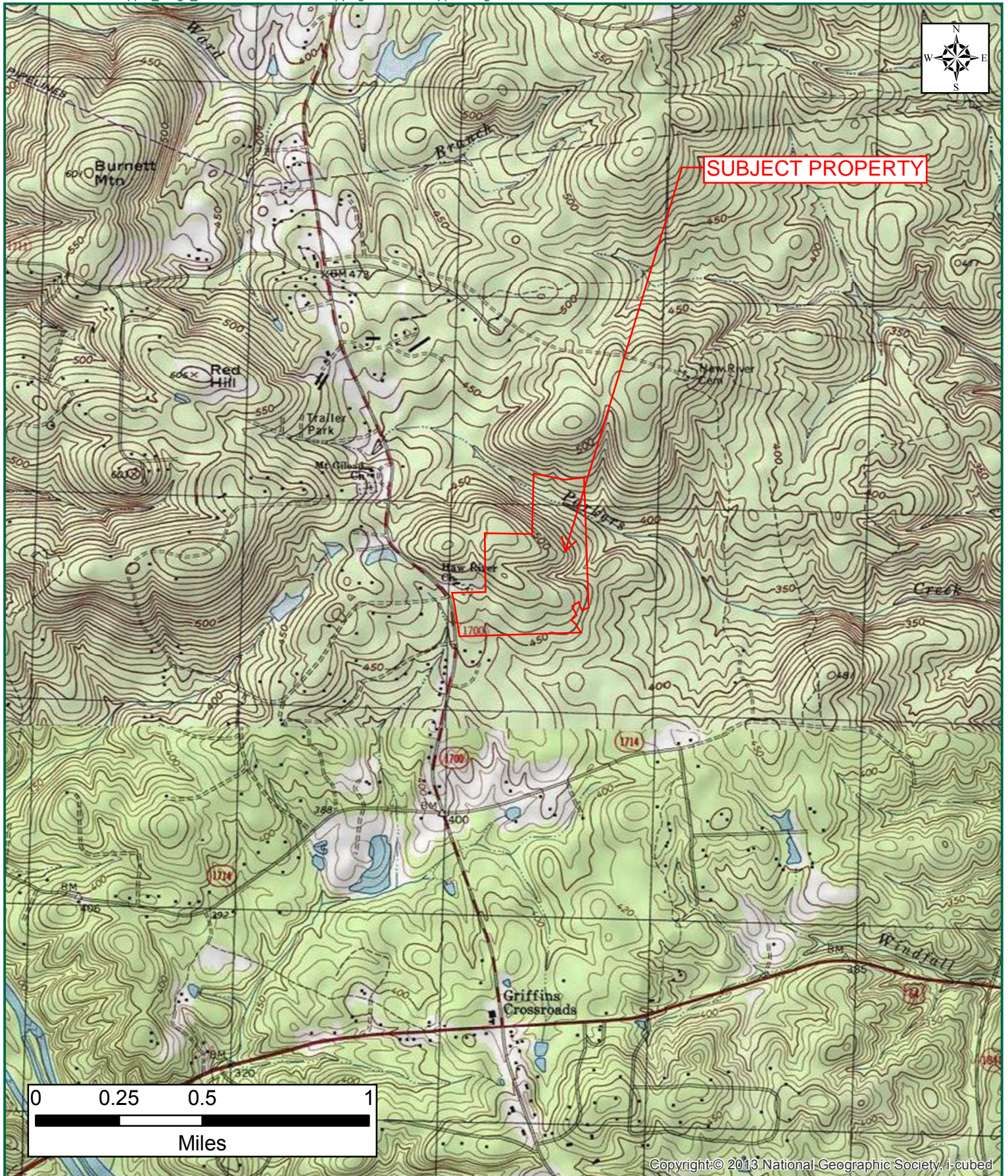
The North Carolina Natural Heritage Program provides information on the distribution of rare animals, rare plants, natural communities, Significant Natural Heritage Areas, Dedicated State Nature Preserves, and Registered Heritage Areas. To request information, please complete this form and submit to NC NHP. Response to information requests will typically be provided in two weeks; however, complex requests or requests received during periods of heavy workload may require additional time.

Contact Information	
Name	Chase Farnsworth
Company	Timmons Group
Street Address	1001 Boulders Parkway, Suite 300
City ST Zip Code	Richmond, VA 23225
Phone	804.200.6450
Fax	804.560.1016
E-Mail Address	Chase.farnsworth@timmons.com
Project Information	
Project Number	36673
Project Location	Latitude <u>35°45'23.79" N</u> Longitude <u>79°04'52.22" W</u> (in decimal degrees)
	County <u>Chatham</u> Topographic Quad <u>Farrington</u>
Project Type: Sensitive Environment <input type="checkbox"/> Transportation <input type="checkbox"/> Forestry <input type="checkbox"/> Energy <input type="checkbox"/> Other <input checked="" type="checkbox"/>	

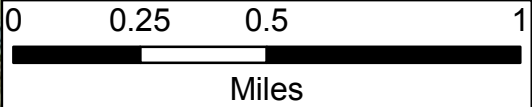
Project Description: **Please provide all of these * items with your request.**

- *1. This completed **information request form**.
- *2. A **cover letter describing the proposed activity**, including existing vegetation cover, structures at the site, and the type of data requested. Additional pages may be provided by email attachment or through the mail.
- *3. A copy of appropriate USGS topographic map with the **project area clearly outlined**.

- Additional information that would be useful:
- a. GIS shape files of the project area.
 - b. A county map with major highways, rivers, creeks, and towns labeled is acceptable if accompanied by a project site map.
 - c. Project boundary overlaid on a recent aerial photo
 - d. Parcel identification number(s) for the project area



SUBJECT PROPERTY



Copyright © 2013 National Geographic Society, I-cubed

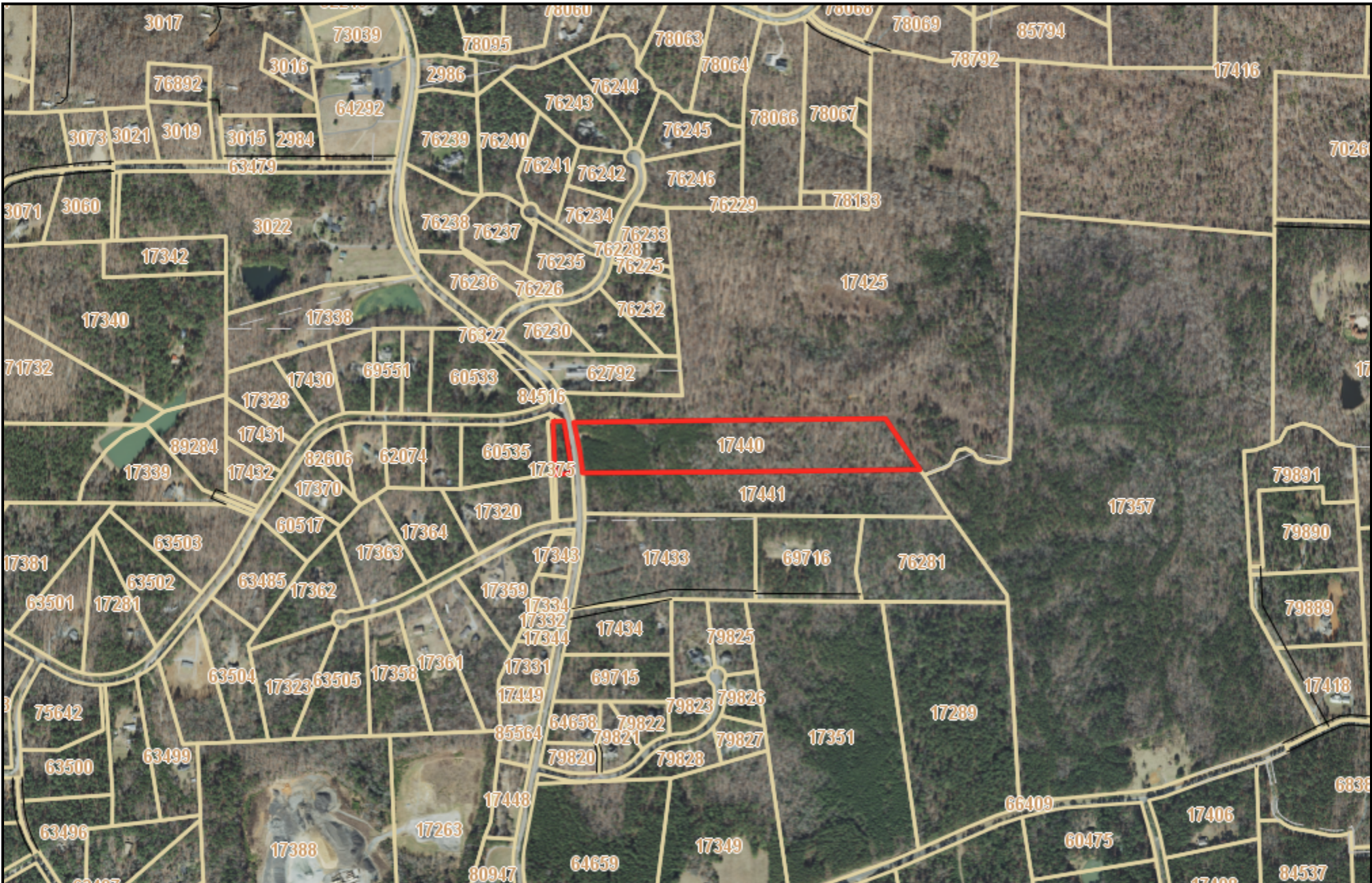
COPPER RIDGE SUBDIVISION
 CHATHAM COUNTY, NORTH CAROLINA
 VICINITY MAP

TIMMONS GROUP
 YOUR VISION ACHIEVED THROUGH OURS.

TIMMONS GROUP JOB NUMBER: 36673
 PROJECT STUDY LIMITS: 107.82 ACRES
 LATITUDE: 35° 45' 23.79" N
 LONGITUDE: 79° 04' 52.22" W

U.S.G.S. QUADRANGLE(S): FARRINGTON
 DATE(S): 1999
 WATERSHED(S): HAW
 HYDROLOGIC UNIT CODE(S): 03030002

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CHATHAM COUNTY, NC



9772-59-2771

Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17440
 Map Number: 9772-59-2771.000
 Owner Name: HAW RIVER BAPTIST CHURCH INC
 Owner Address: 1099 MT GILEAD CHURCH RD
 Owner City: PITTSBORO
 Owner State: NC
 Owner Zip: 27312
 Tax Year:
 Description: N5-55

Deed Book: 765
 Deed Page: 0244
 Plat Book: 98
 Plat Page: 0336
 Deed Acres: 15.361
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 230392
 Fire District: 107
 Township Code: 11

One Inch = 800 Feet





CHATHAM COUNTY, NC



9772-59-4420

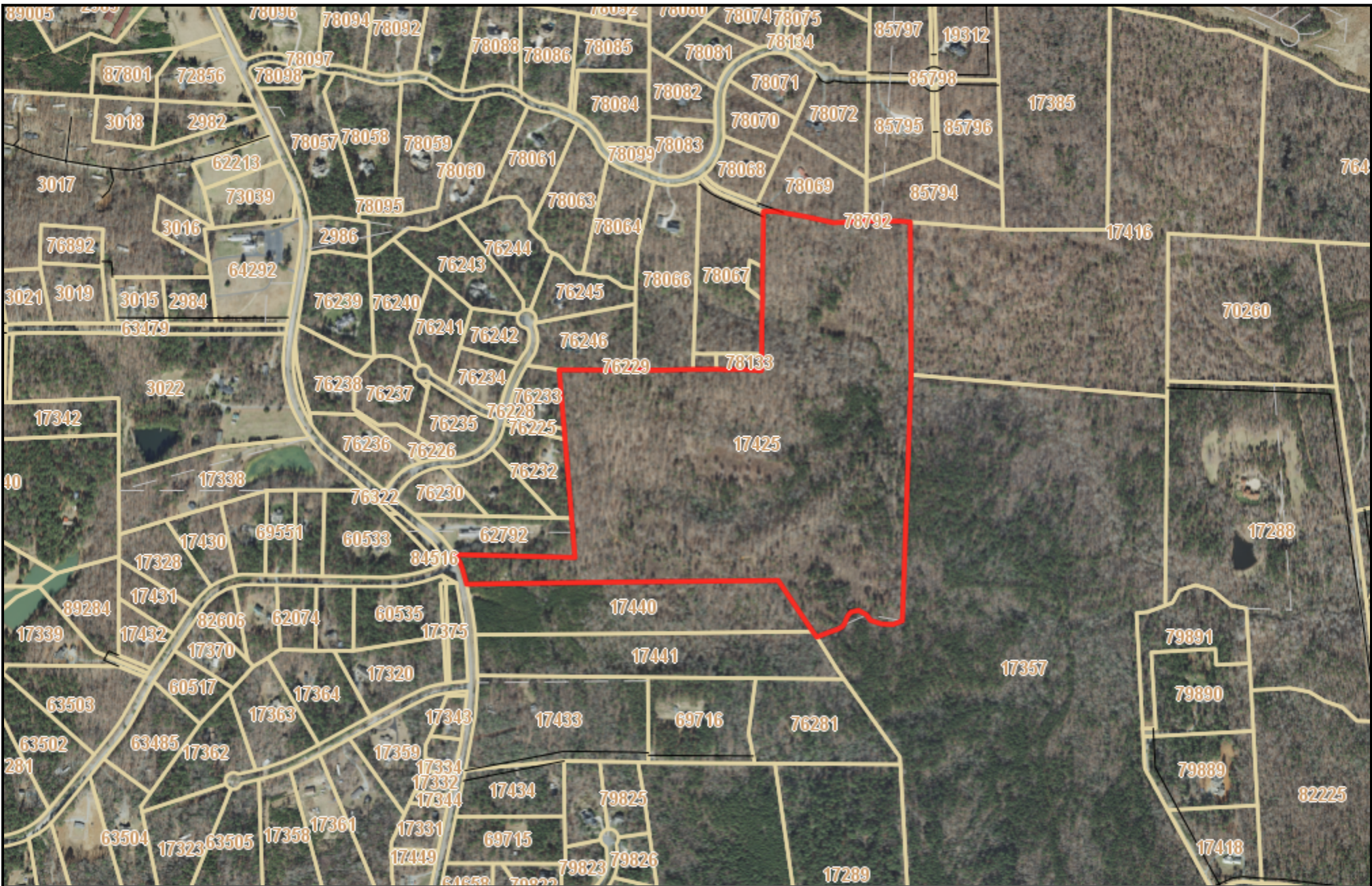
Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17441
 Map Number: 9772-59-4420.000
 Owner Name: HAW RIVER BAPTIST CHURCH INC
 Owner Address: 1099 MT GILEAD CHURCH RD
 Owner City: PITTSBORO
 Owner State: NC
 Owner Zip: 27312
 Tax Year:
 Description: N5-55-2

Deed Book: 765
 Deed Page: 0244
 Plat Book: 98
 Plat Page: 0336
 Deed Acres: 13.983
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 220402
 Fire District: 107
 Township Code: 11

One Inch = 800 Feet





CHATHAM COUNTY, NC



9773-60-6982

Disclaimer:
The data provided on this map are prepared for the inventory of real property found within Chatham County, NC and are compiled from recorded plats, deeds, and other public records and data. This data is for informational purposes only and should not be substituted for a true title search, property appraisal, survey, or for zoning verification.

Parcel Number: 17425
 Map Number: 9773-60-6982.000
 Owner Name: CHATHAM CAPITAL LLC
 Owner Address: 400 MARKET ST, ST 115
 Owner City: CHAPEL HILL
 Owner State: NC
 Owner Zip: 27516
 Tax Year:
 Description: N5-50

Deed Book: 1676
 Deed Page: 0506
 Plat Book: 95
 Plat Page: 0484
 Deed Acres: 86.744
 Physical Address: MT GILEAD CHURCH RD
 Improvement Value: 0
 Land Value: 652050
 Fire District: 107
 Township Code: 11

One Inch = 800 Feet



Natural Heritage Program - Database Search

Heritage Data Search

(Data updated on January 12, 2015)

[Help](http://portal.ncdenr.org/c/document_library/get_file?uuid=b1541a3c-8404-4f72-8b5b-4a8de6e9eae4&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=b1541a3c-8404-4f72-8b5b-4a8de6e9eae4&groupId=61587) and [Definitions](http://portal.ncdenr.org/c/document_library/get_file?uuid=ee43f7be-12fa-48e0-a1c2-b353c22c4828&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=ee43f7be-12fa-48e0-a1c2-b353c22c4828&groupId=61587)

[County Reference Map](http://portal.ncdenr.org/c/document_library/get_file?uuid=fe6d30a7-6a4a-4256-adaa-1603a0be79ff&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=fe6d30a7-6a4a-4256-adaa-1603a0be79ff&groupId=61587) [Topo Reference Map](http://portal.ncdenr.org/c/document_library/get_file?uuid=4a0091c6-3e38-4087-ae6c-317e145cc276&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=4a0091c6-3e38-4087-ae6c-317e145cc276&groupId=61587)

Search Parameters: County like 'Chatham', Protection Status is 'NC Listed' or 'Federally Listed'

(Searched on Mon Apr 06 2015)

[Do another search](#)

[Download Results](#)

Show entries per page

Filter search results:

Taxonomic Group	Scientific Name	Common Name	NC Status	Federal Status	State Rank	Global Rank	County	County Status
Freshwater Bivalve	Alasmidonta undulata	Triangle Floater	T		S2	G4	Chatham	Current
Freshwater Bivalve	Alasmidonta varicosa	Brook Floater	E	FSC	S1	G3	Chatham	Current
Freshwater Fish	Ambloplites cavifrons	Roanoke Bass	SR	FSC	S2	G3	Chatham	Current
Vascular Plant	Collinsonia tuberosa	Piedmont Horsebalm	SC-V		S1	G3G4	Chatham	Current
Freshwater Bivalve	Elliptio roanokensis	Roanoke Slabshell	T		S1	G3	Chatham	Current
Freshwater Fish	Etheostoma collis	Carolina Darter	SC	FSC	S3	G3	Chatham	Current
Freshwater Bivalve	Fusconaia masoni	Atlantic Pigtoe	E	FSC	S1	G2	Chatham	Current
Dragonfly or Damselfly	Gomphus septima	Septima's Clubtail	SR	FSC	S2	G2	Chatham	Current
Bird	Haliaeetus leucocephalus	Bald Eagle	T	BGPA	S3B,S3N	G5	Chatham	Current
Amphibian	Hemidactylum scutatum	Four-toed Salamander	SC		S3	G5	Chatham	Current
Freshwater Bivalve	Lampsilis cariosa	Yellow Lampmussel	E	FSC	S1	G3G4	Chatham	Current
Freshwater Bivalve	Lampsilis radiata	Eastern Lampmussel	T		S1S2	G5	Chatham	Current
Vascular Plant	Lindera subcoriacea	Bog Spicebush	SR-T	FSC	S2S3	G2G3	Chatham	Current
Vascular Plant	Monotropsis odorata	Sweet Pinesap	SC-V	FSC	S3	G3	Chatham	Current
Freshwater Fish	Moxostoma sp. 3	Carolina Redhorse	T	FSC	S1	G1G2Q	Chatham	Current
Freshwater Fish	Notropis mekistocholas	Cape Fear Shiner	E	E	S1	G1	Chatham	Current
Bird	Peucaea aestivalis	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	Chatham	Current
Vascular Plant	Phacelia covillei	Buttercup Phacelia	SR-T	FSC	S3	G3	Chatham	Current
Vascular Plant	Ptilimnium nodosum	Harperella	E	E	S1	G2	Chatham	Current
Freshwater or Terrestrial Gastropod	Somatogyrus virginicus	Panhandle Pebblesnail	SR	FSC	S2S3	G2G3	Chatham	Current
Freshwater Bivalve	Strophitus undulatus	Creeper	T		S2	G5	Chatham	Current
Freshwater Bivalve	Toxolasma pullus	Savannah Lilliput	E	FSC	S1	G2	Chatham	Current

Freshwater Bivalve	Villosa constricta	Notched Rainbow	SC		S3	G3	Chatham	Current
Freshwater Bivalve	Villosa vaughaniana	Carolina Creekshell	E	FSC	S2	G2	Chatham	Current
Vascular Plant	Carex vestita	Velvet Sedge	SC-H		SH	G5	Chatham	Historical
Vascular Plant	Enemion biternatum	Eastern Isopyrum	SC-V		S2	G5	Chatham	Historical
Vascular Plant	Gillenia stipulata	Indian Physic	T		S2	G5	Chatham	Historical
Vascular Plant	Isoetes virginica	Virginia Quillwort	SR-L	FSC	S1	G1	Chatham	Historical
Bird	Picoides borealis	Red-cockaded Woodpecker	E	E	S2	G3	Chatham	Historical
Vascular Plant	Scutellaria nervosa	Veined Skullcap	E		S1	G5	Chatham	Historical
Vascular Plant	Thermopsis mollis	Appalachian Golden-banner	SC-V		S2	G3G4	Chatham	Historical
Vascular Plant	Trifolium reflexum	Buffalo Clover	T		S1S2	G3G4	Chatham	Historical

Showing 1 to 32 of 32 entries

First Previous ① Next Last

The Natural Heritage Database Search provides lists of rare plants and animals, exemplary or unique natural communities, and important animal assemblages (e.g., heronries and colonial waterbird nesting sites) known to the North Carolina Natural Heritage Program. By default, records are summarized by county, but you also have the option to summarize the records by 7.5-minute (1:24,000 scale) USGS topographic maps or simple statewide summaries. Below are brief notes on use of the database search. For more information on use of the database search or for an explanation of the values returned by the search, see the "Help and Definitions" link above.

- Partial search terms are acceptable. For example, if you are unsure of the correct spelling for *Brachyelytrum septentrionale*, you could enter the beginning letters of either the genus or species in the Scientific Name field; either "brac" or "sept" would return the correct records. "b" or "s" would also return the correct species, however the search would also return all records whose scientific name contained a "b" or "s".
- For distribution maps, click on the scientific or common name of an element in the table of results from a county or topo database search. Note that there are no maps for the statewide summary.
- The results can be further refined by entering a text string in the "Filter search results" field. Entries not containing the text string will be removed from the table of results.
- Clicking the "Download Results" button will give you the option of saving the results table to a comma-separated-values file. This type of file can be opened with most spreadsheet programs, including Microsoft Excel.
- If you have any questions regarding the data contained on the map viewer, contact [Natural Heritage Program staff \(http://portal.ncdenr.org/web/nhp/contact\)](http://portal.ncdenr.org/web/nhp/contact). For technical issues regarding the application, contact the [Conservation Information Manager](#).

Use of North Carolina Natural Heritage Program data should not be substituted for actual field surveys, particularly if the project area contains suitable habitat for rare species. If a database search lists no records for a project area, it does not necessarily mean that they are not present. The area may not have been surveyed by biologists, or the data may not have been reported to the Natural Heritage Program.

Information obtained from the North Carolina Natural Heritage Program Map Viewer should be cited as follows: North Carolina Natural Heritage Program Online Database Search. [search date]. Department of Environment and Natural Resources, Office of Land and Water Stewardship, Raleigh, NC. Available at: www.ncnhp.org.



(<http://portal.ncdenr.org/web/nhp>) **North Carolina Natural Heritage Program** • 1601 Mail Service Center • Raleigh, NC 27699-1601

N.C. Department of Environment and Natural Resources

1601 Mail Service Center, Raleigh, NC 27699-1601

Headquarters (Environment and Natural Resources Building): 217 W. Jones St.

Archdale Building: 512 N. Salisbury St.

Toll Free: (877) 623-6748



APPENDIX 8

NORTH CAROLINA SCENIC RESOURCES

LINK TO FULL NC SCENIC BYWAYS DOCUMENT

http://www.ncdot.gov/download/travel/scenic_byways.pdf



NORTH CAROLINA

North Carolina has approximately 37,853 miles of river, of which 144.5 miles are designated as wild & scenic—less than 4/10ths of 1% of the state's river miles.

- Chattooga River**
- Horsepasture River**
- Lumber River**
- New River**
- Wilson Creek**

Choose a State ▼ Go

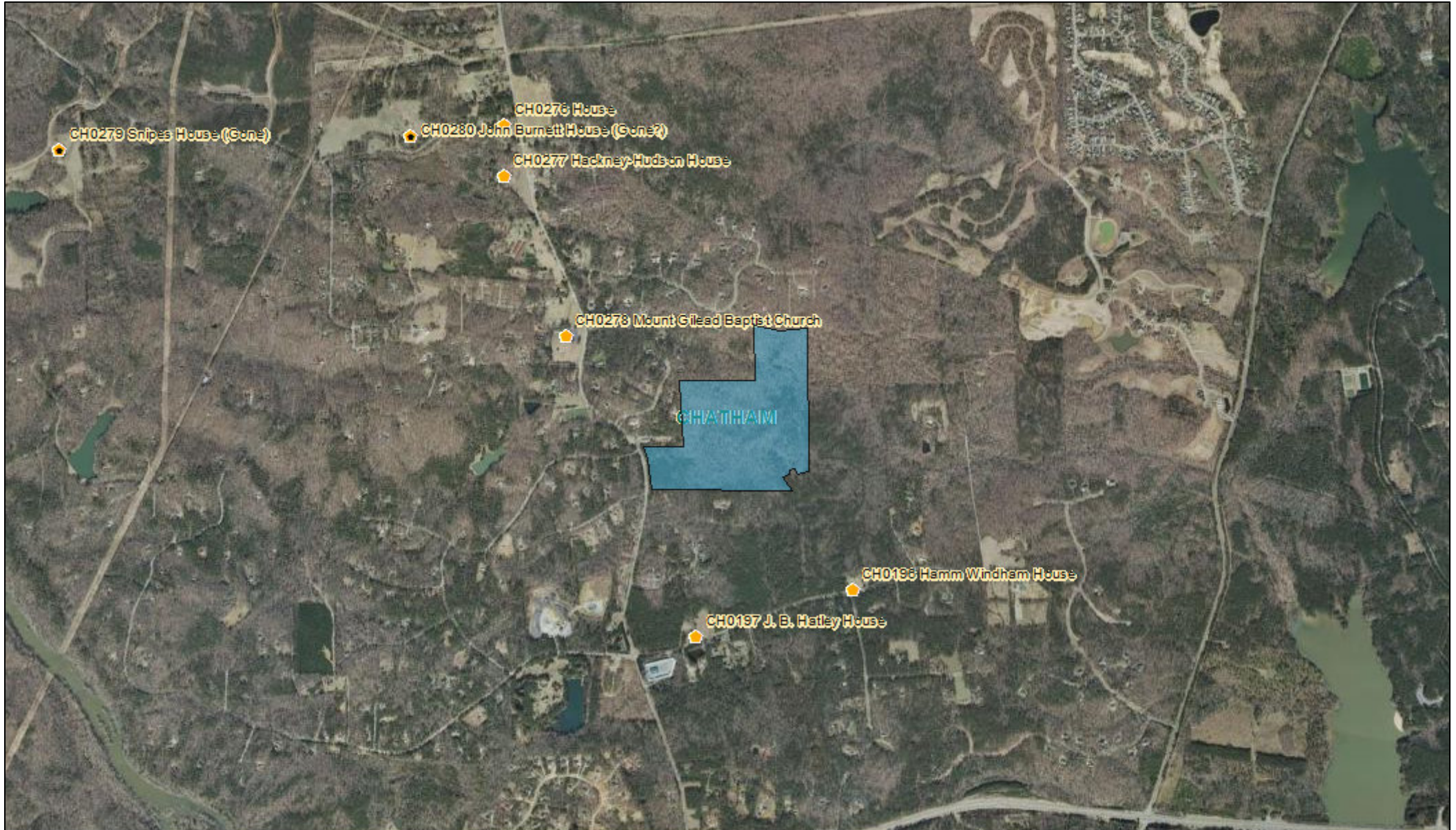
Choose a River ▼ Go

Rivers of the Southeast define diversity, from bayous and rivers pushed by the tides to clear mountain streams with world-class whitewater.

APPENDIX 9

CULTURAL AND HISTORIC RESOURCE DOCUMENTATION

Copper Ridge Subdivision



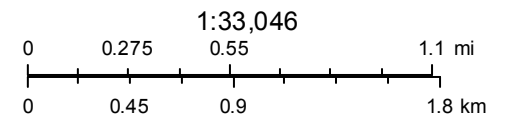
April 6, 2015

NR Points

● NR Individual Listing

● NR Listing, Gone

★ NHPD Control Point



Cemetery Census

Cemetery Records on the Web

■ [HOME](#) ■ [ABOUT US](#) ■ [CEMETERY LAW](#) ■ [HOW TO HELP](#)



CemeteryCensus.com

Chatham County North Carolina Cemeteries

[Other NC County Cemeteries](#)



Brought to you in partnership with

Chatham County Historical Association

<http://www.chathamhistory.org>

[Index of All Cemeteries](#) [Alphabetical Index of All Burials](#) [Previous Page](#)

Use the following to search across all the cemeteries listed.

Example: "Smith, Roger" (yes, use the quotes)

Search for:

147 ELLINGTON, FIELDING F. [E93.2]



Location - In New Hope Township, east of Haw River Baptist Church on Mt. Gilead Church Road, about 3,000 feet on old logging road, now closed with cable and posted.

Coordinates: 35d 45m 26.0s N; 79d 04m 40.0s W Click here for [Google maps](#)

In October 2005 Jane Pyle and Nancy Simons recorded 6 gravestone inscriptions and noted four depressions marked with fieldstones. The site is an abandoned farmstead in logged-over tract. Jim and Bev Wiggins visited the site with Dennis Brooks on 4 Oct 2008. A huge boxwood covers part of the cemetery. Nearby are the ruins of a house with part of the [chimney still standing](#). On 29 Aug 2013, Jim and Bev Wiggins revisited the site accompanied by Fred Ward, the developer's representative, and Charles Eliason, surveyor. All of the grave markers were photographed on this visit. [View #2](#) of the cemetery. [View #3](#) of the cemetery.

Cemetery Census

This contact information is Not for any cemetery. This is contact information for the owner of this web site.

Allen Dew
3230 Walters Rd
Creedmoor, NC 27522

Click to E-mail us at:
AllenDew@CemeteryCensus.com

Contact us with updates, corrections, additions.
When sending data, please specify the County where the cemetery is located.



Owner: Parker Springs LLC.
 Legal Description: Parcel 17425. Deed book 1320/108. Plat 95-484. Deed book AD/538, 1837 George Ellington from Johnson Busbee, 321 acres on south side of Parkers Creek; AM/60 and AM/308 F.F. Ellington from George W. Ellington, 1860 (executed 1844). Also see old plats AM-61, 1837 and BR-142, 1886.
 Topo Quadrant: Farrington.
 Family owned: Yes.
 Abandoned: Yes.
 Number of graves: 12.
 Cemetery size: 25' x 35'.
 White: Yes.
 Restricted access: Yes. Posted Land
 Overgrown and easy to identify: Yes.
 Enclosed: No.
 Markers: Yes.
 Markers with inscriptions: Yes.
 Number of readable markers: 6.
 Last burial: 1893.
 First burial: 1862.
 Unusual situation: Yes.
 Markers damaged: Yes.
 Other damage explanation: two broken, possibly ravages of time.
 Hazards: neglect.
 Listed: Yes.

Miscellaneous information: One Civil War soldier (George Farrington Ellington); 1850 Census lists Fielding Ellington, 37; wife Nancy, 37; Ferrington, 15; William, 13; Jane, 11; Crosley, 7; Walter, 4; and Elizabeth, 2. 1860 Census lists FF Ellington, 47; Nancy, 46; GF, 25; WP, 22; Jane, 21; Walter, 12. 1870 Census lists Jno J. Knight, 38; Sarah J, 30; Fred, 4; William, 2; Carrie, 1; Lugenia Poe, 10; John Petty, 14; Epey Ellington, 16 (domestic servant).

Last canvassed by: Jane Pyle. Date: 30 Oct 2005. Jim and Bev Wiggins, Oct 2008; Jim and Bev Wiggins, 31 Aug 2013.

1. **PHOTO** Ellington, Fielding F. (b. 29 Jan 1813 - d. 19 Jan 1885)
 Husband of Nancy (Lewis) Ellington. Marker material Marble. [Condition broken](#). Oak leaf motif. Footstone: FFE. [Top half](#) of marker. [Bottom half](#) of marker. [Footstone](#) F.F.E.
2. **PHOTO** Ellington, George Farrington (b. 4 Dec 1834 - d. 10 Mar 1862)
 26 N. C. Regiment. At rest. Marker material Marble. Condition good. Footstone beginning G, other letters illegible. North Carolina Troops, Vol. VII, p. 524, lists a G. Farrington Ellington, 1834-1862, giving date of death 23 Mar 1862, of disease in Goldsboro. George is buried at Willowsdale Cemetery, 306 E. Elm Street, Goldsboro, Wayne County, NC. The family cemetery grave marker is a tribute to George. [Closeup](#) of inscription. [Footstone](#): G.F.E.
3. **PHOTO** Ellington, Nancy Gray (b. 25 Aug 1813 - d. 6 Dec 1893)
 Wife of Fielding F. Ellington. "Asleep in Jesus". Marker material Marble. Condition good. [Footstone](#): N.G.E. [Another view](#).
4. **PHOTO** Knight, Babie (b. 1 Jul 1873 - d. 16 Sep 1878)
 Infant of J. J. and S. J. Knight. [John J. and Sarah Jane Ellington Knight]. Marker material Marble. Condition good. [Another view](#).
5. **PHOTO** Knight, Carrie Lea (b. 22 Dec 1869 - d. 21 Sep 1877)
 Daughter of J. J. and S. J. Knight. [John J. and Sarah Jane Ellington Knight]. Marker material Marble. Condition fair. Footstone. Grave is outlined with white quartz rocks. [Footstone](#): C.L.K. [Another view](#).
6. **PHOTO** Knight, Joana (b. 1 Feb 1871 - d. 17 Sep 1877)
 Daughter of J. J. and S. J. Knight. [John J. and Sarah Jane Ellington Knight]. Marker material Marble. Condition fair. [Another view](#).
7. **PHOTO** Unknown, ?? (b. - d.)
 Fieldstone.
8. **PHOTO** Unknown, ?? (b. - d.)
 Fieldstone. [Another view](#).
9. **PHOTO** Unknown, ?? (b. - d.)
 Fieldstone.
10. **PHOTO** Unknown, ?? (b. - d.)
 Fieldstone.
11. **PHOTO** Unknown, ?? (b. - d.)

- Fieldstone.[Another view.](#)
12. **PHOTO** Unknown, ?? (b. - d.)
Fieldstone.

Web page created 6 May 2014

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[Alphabetical Index of All Burials](#)

[Previous Page](#)

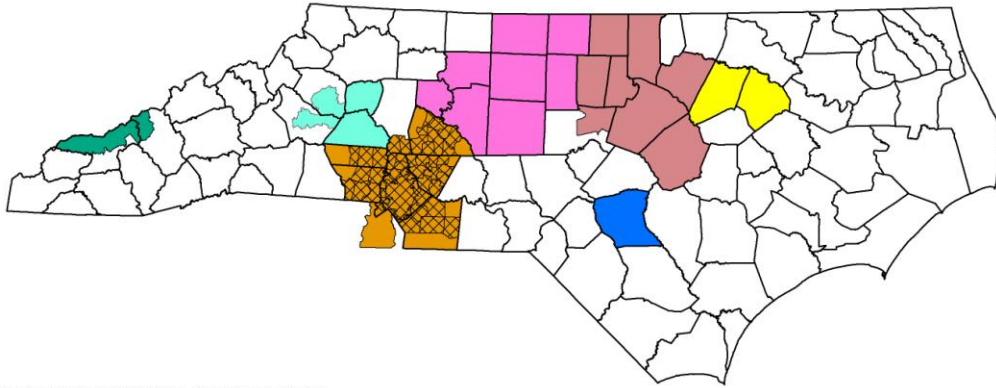
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website by Allen Dew


APPENDIX 10

NORTH CAROLINA CURRENT OZONE DESIGNATION

North Carolina's Current Ozone Designation Status



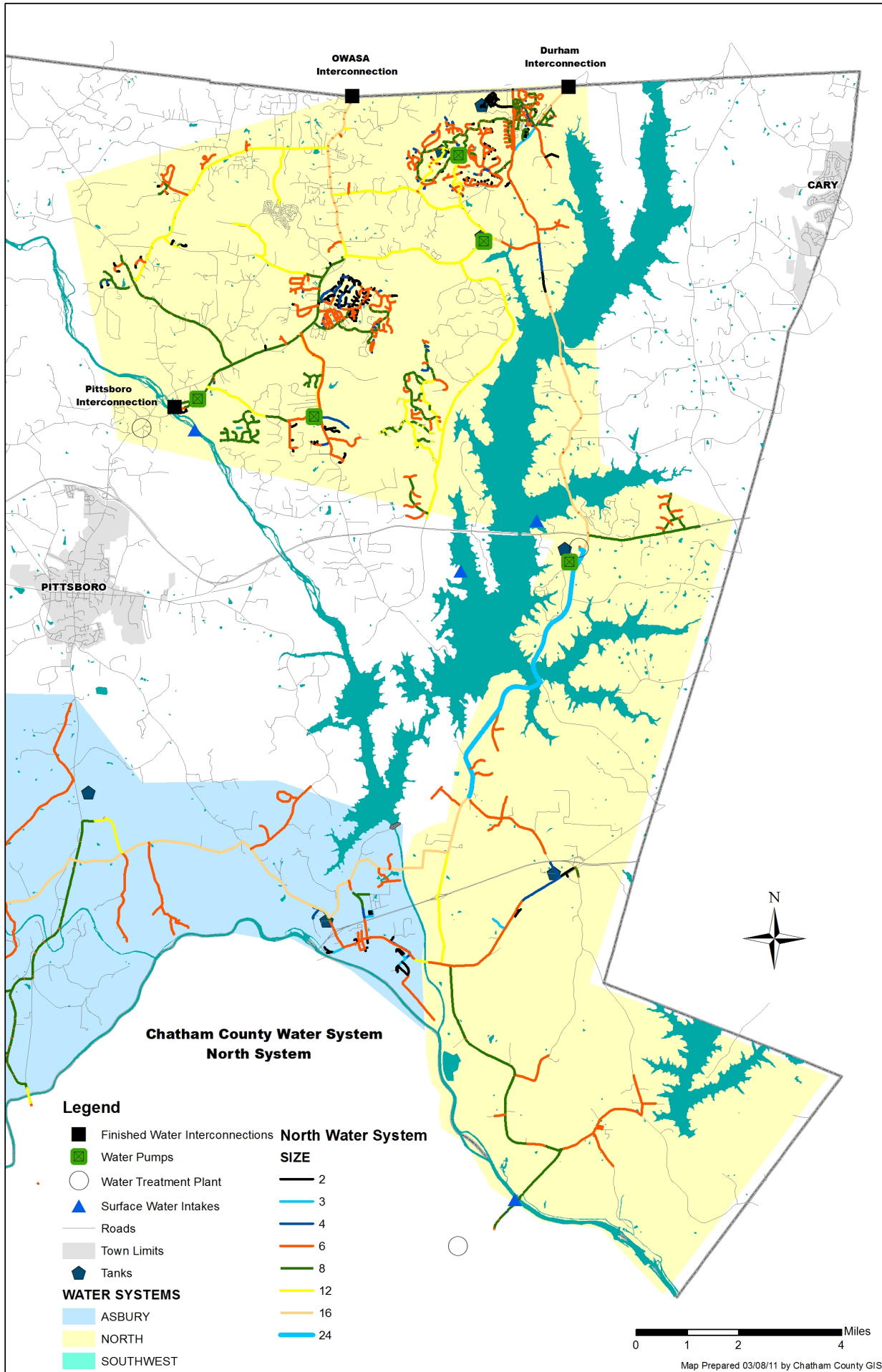
Legend

-  Charlotte-Gastonia-Rock Hill 2008 Ozone Nonattainment, Marginal
-  Charlotte-Gastonia-Rock Hill, NC-SC; 1997 Ozone Attainment/Maintenance January 2, 2014
-  Fayetteville, NC; EAC, Designated as 1997 Ozone Attainment April 15, 2008
-  Greensboro-Winston Salem-High Point, NC; EAC, Designated as 1997 Ozone Attainment April 15, 2008
-  Haywood and Swain Counties (Great Smokey Mountain NP); Designated as 1997 Ozone Attainment/Maintenance January 6, 2010
-  Hickory-Morganton-Lenoir, NC; EAC, Designated as 1997 Ozone Attainment April 15, 2008
-  Raleigh-Durham-Chapel Hill, NC; Designated as 1997 Ozone Attainment/Maintenance December 26, 2007
-  Rocky Mount, NC; Redesignated as 1997 Ozone Attainment/Maintenance January 5, 2007
-  Attainment/Unclassified

NC DENR - DAQ
Map valid: 29 April 2014
Not to Scale (KO)

APPENDIX 11

NORTH CHATHAM WATER SYSTEM MAP



APPENDIX 12

NCDENR NATURAL HERITAGE PROGRAM REVIEW

Natural Heritage Program - Database Search

Heritage Data Search

(Data updated on January 12, 2015)

[Help](http://portal.ncdenr.org/c/document_library/get_file?uuid=b1541a3c-8404-4f72-8b5b-4a8de6e9eae4&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=b1541a3c-8404-4f72-8b5b-4a8de6e9eae4&groupId=61587) and [Definitions](http://portal.ncdenr.org/c/document_library/get_file?uuid=ee43f7be-12fa-48e0-a1c2-b353c22c4828&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=ee43f7be-12fa-48e0-a1c2-b353c22c4828&groupId=61587)

[County Reference Map](http://portal.ncdenr.org/c/document_library/get_file?uuid=fe6d30a7-6a4a-4256-adaa-1603a0be79ff&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=fe6d30a7-6a4a-4256-adaa-1603a0be79ff&groupId=61587) [Topo Reference Map](http://portal.ncdenr.org/c/document_library/get_file?uuid=4a0091c6-3e38-4087-ae6c-317e145cc276&groupId=61587) (http://portal.ncdenr.org/c/document_library/get_file?uuid=4a0091c6-3e38-4087-ae6c-317e145cc276&groupId=61587)

Search Parameters: County like 'Chatham', Protection Status is 'NC Listed' or 'Federally Listed'

(Searched on Mon Apr 06 2015)

[Do another search](#)

[Download Results](#)

Show entries per page

Filter search results:

Taxonomic Group	Scientific Name	Common Name	NC Status	Federal Status	State Rank	Global Rank	County	County Status
Freshwater Bivalve	Alasmidonta undulata	Triangle Floater	T		S2	G4	Chatham	Current
Freshwater Bivalve	Alasmidonta varicosa	Brook Floater	E	FSC	S1	G3	Chatham	Current
Freshwater Fish	Ambloplites cavifrons	Roanoke Bass	SR	FSC	S2	G3	Chatham	Current
Vascular Plant	Collinsonia tuberosa	Piedmont Horsebalm	SC-V		S1	G3G4	Chatham	Current
Freshwater Bivalve	Elliptio roanokensis	Roanoke Slabshell	T		S1	G3	Chatham	Current
Freshwater Fish	Etheostoma collis	Carolina Darter	SC	FSC	S3	G3	Chatham	Current
Freshwater Bivalve	Fusconaia masoni	Atlantic Pigtoe	E	FSC	S1	G2	Chatham	Current
Dragonfly or Damselfly	Gomphus septima	Septima's Clubtail	SR	FSC	S2	G2	Chatham	Current
Bird	Haliaeetus leucocephalus	Bald Eagle	T	BGPA	S3B,S3N	G5	Chatham	Current
Amphibian	Hemidactylium scutatum	Four-toed Salamander	SC		S3	G5	Chatham	Current
Freshwater Bivalve	Lampsilis cariosa	Yellow Lampmussel	E	FSC	S1	G3G4	Chatham	Current
Freshwater Bivalve	Lampsilis radiata	Eastern Lampmussel	T		S1S2	G5	Chatham	Current
Vascular Plant	Lindera subcoriacea	Bog Spicebush	SR-T	FSC	S2S3	G2G3	Chatham	Current
Vascular Plant	Monotropsis odorata	Sweet Pinesap	SC-V	FSC	S3	G3	Chatham	Current
Freshwater Fish	Moxostoma sp. 3	Carolina Redhorse	T	FSC	S1	G1G2Q	Chatham	Current
Freshwater Fish	Notropis mekistocholas	Cape Fear Shiner	E	E	S1	G1	Chatham	Current
Bird	Peucaea aestivalis	Bachman's Sparrow	SC	FSC	S3B,S2N	G3	Chatham	Current
Vascular Plant	Phacelia covillei	Buttercup Phacelia	SR-T	FSC	S3	G3	Chatham	Current
Vascular Plant	Ptilimnium nodosum	Harperella	E	E	S1	G2	Chatham	Current
Freshwater or Terrestrial Gastropod	Somatogyrus virginicus	Panhandle Pebblesnail	SR	FSC	S2S3	G2G3	Chatham	Current
Freshwater Bivalve	Strophitus undulatus	Creeper	T		S2	G5	Chatham	Current
Freshwater Bivalve	Toxolasma pullus	Savannah Lilliput	E	FSC	S1	G2	Chatham	Current

Freshwater Bivalve	Villosa constricta	Notched Rainbow	SC		S3	G3	Chatham	Current
Freshwater Bivalve	Villosa vaughaniana	Carolina Creekshell	E	FSC	S2	G2	Chatham	Current
Vascular Plant	Carex vestita	Velvet Sedge	SC-H		SH	G5	Chatham	Historical
Vascular Plant	Enemion biternatum	Eastern Isopyrum	SC-V		S2	G5	Chatham	Historical
Vascular Plant	Gillenia stipulata	Indian Physic	T		S2	G5	Chatham	Historical
Vascular Plant	Isoetes virginica	Virginia Quillwort	SR-L	FSC	S1	G1	Chatham	Historical
Bird	Picoides borealis	Red-cockaded Woodpecker	E	E	S2	G3	Chatham	Historical
Vascular Plant	Scutellaria nervosa	Veined Skullcap	E		S1	G5	Chatham	Historical
Vascular Plant	Thermopsis mollis	Appalachian Golden-banner	SC-V		S2	G3G4	Chatham	Historical
Vascular Plant	Trifolium reflexum	Buffalo Clover	T		S1S2	G3G4	Chatham	Historical

Showing 1 to 32 of 32 entries

First Previous ① Next Last

The Natural Heritage Database Search provides lists of rare plants and animals, exemplary or unique natural communities, and important animal assemblages (e.g., heronries and colonial waterbird nesting sites) known to the North Carolina Natural Heritage Program. By default, records are summarized by county, but you also have the option to summarize the records by 7.5-minute (1:24,000 scale) USGS topographic maps or simple statewide summaries. Below are brief notes on use of the database search. For more information on use of the database search or for an explanation of the values returned by the search, see the "Help and Definitions" link above.

- Partial search terms are acceptable. For example, if you are unsure of the correct spelling for *Brachyelytrum septentrionale*, you could enter the beginning letters of either the genus or species in the Scientific Name field; either "brac" or "sept" would return the correct records. "b" or "s" would also return the correct species, however the search would also return all records whose scientific name contained a "b" or "s".
- For distribution maps, click on the scientific or common name of an element in the table of results from a county or topo database search. Note that there are no maps for the statewide summary.
- The results can be further refined by entering a text string in the "Filter search results" field. Entries not containing the text string will be removed from the table of results.
- Clicking the "Download Results" button will give you the option of saving the results table to a comma-separated-values file. This type of file can be opened with most spreadsheet programs, including Microsoft Excel.
- If you have any questions regarding the data contained on the map viewer, contact [Natural Heritage Program staff \(http://portal.ncdenr.org/web/nhp/contact\)](http://portal.ncdenr.org/web/nhp/contact). For technical issues regarding the application, contact the [Conservation Information Manager](#).

Use of North Carolina Natural Heritage Program data should not be substituted for actual field surveys, particularly if the project area contains suitable habitat for rare species. If a database search lists no records for a project area, it does not necessarily mean that they are not present. The area may not have been surveyed by biologists, or the data may not have been reported to the Natural Heritage Program.

Information obtained from the North Carolina Natural Heritage Program Map Viewer should be cited as follows: North Carolina Natural Heritage Program Online Database Search. [search date]. Department of Environment and Natural Resources, Office of Land and Water Stewardship, Raleigh, NC. Available at: www.ncnhp.org.



(<http://portal.ncdenr.org/web/nhp>) **North Carolina Natural Heritage Program** • 1601 Mail Service Center • Raleigh, NC 27699-1601

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