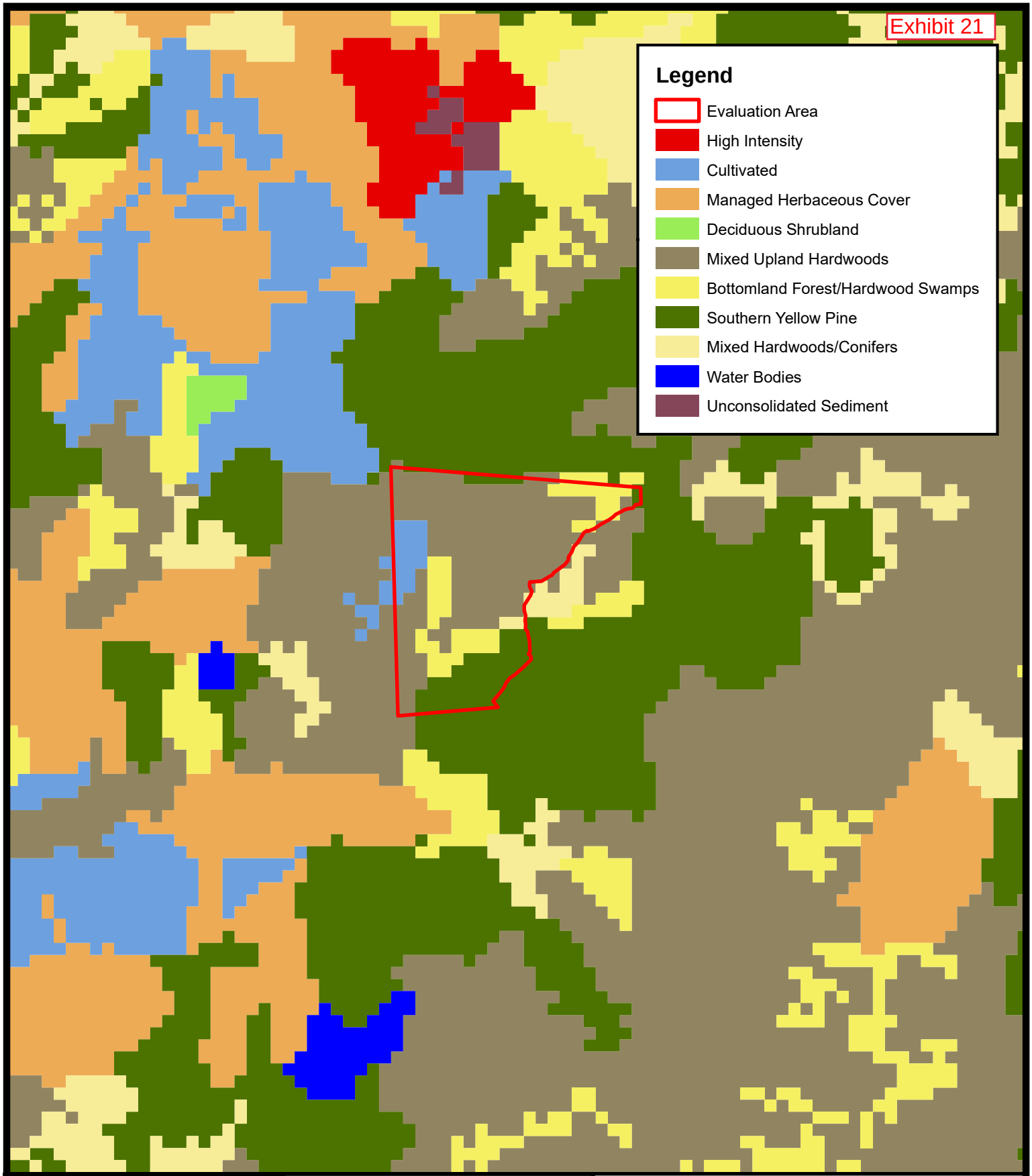


Project Number:	15120.W6
Project Manager:	SB
Scale:	1" = 1000'
Date:	09/26/2022

Map Title:

Vegetative Land Cover Map

Granville
Chatham County, NC

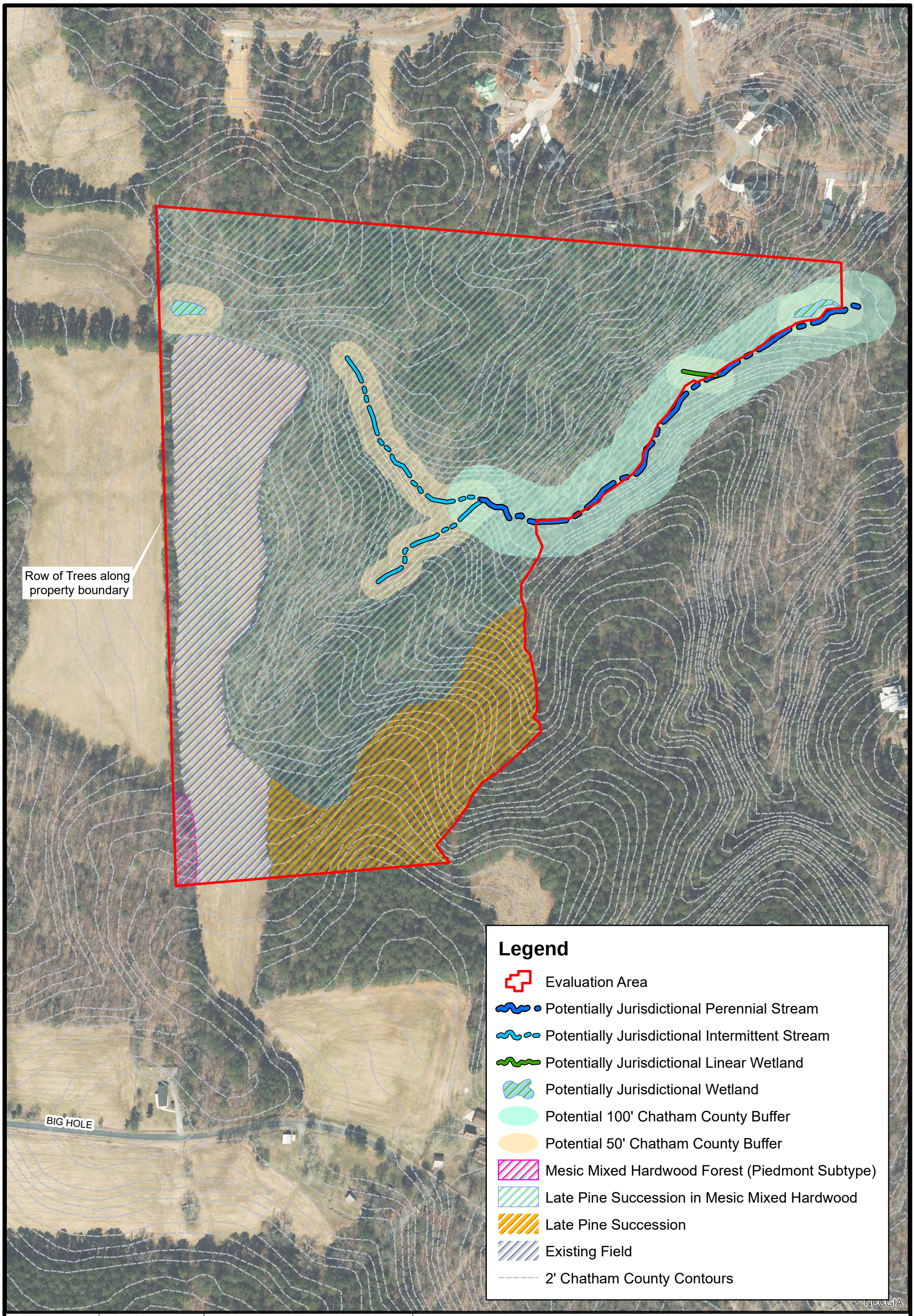
Source: NC One Map Landcover

0 1,000 2,000
Feet

N

S&EC
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com

Exhibit 22



Project No. 15120.W6	**Scale: 1" = 250'**	**Forest Stand Types** **Granville** Aerials from NC One Map	0 250 500 1,000 Feet N
Project Mgr.: SB	**10/20/2022**	**Prepared by: KM**	

S&EC Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com

Exhibit 23

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

November 10, 2022

Mason L. Montgomery mmontgomery@sandec.com
Soil And Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615

Re: Construct "The Granville" residential development, Big Hole Road, Farrington, Chatham County, ER 22-2506

Thank you for your letter dated October 10, 2022, concerning the above-referenced project. We have reviewed the information provided and offer the following comments.

No archaeological resources have been previously recorded within the project area; however, the project area has not been systematically surveyed for the presence of archaeological resources. The project area contains several landforms with a high potential for archaeological sites adjacent to unnamed tributaries of Bush Creek. Our records also indicate there are numerous previously recorded archaeological sites located in the vicinity. We expect the project area may contain intact, significant archaeological sites.

Prior to the initiation of any ground disturbing activities within the project area, we recommend that a comprehensive archaeological survey be conducted by an experienced archaeologist in areas of high archaeological potential. The purpose of this survey will be to identify any archaeological sites that may be damaged or destroyed by the proposed project and make recommendations regarding their eligibility status in terms of the National Register of Historic Places. Potential effects on unknown resources must be assessed prior to the initiation of construction activities. This work should be conducted by an experienced archaeologist, who meets the *Secretary of the Interior Professional Qualifications*. A list of archaeological consultants who have conducted or expressed an interest in contract work in North Carolina is available at https://archaeology.ncdcr.gov/programs/environmental-review/archaeological-consultant-list.

Please note that our office requests consultation with the Office of State Archaeology Review Archaeologist to discuss appropriate field methodologies prior to the archaeological field investigation. One paper copy and one digital copy (PDF) of all resulting archaeological reports, as well as a digital copy (PDF) of the North Carolina site form for each site recorded, should be forwarded to the Office of State Archaeology (OSA) through this office for review and comment as soon as they are available and in advance of any construction or ground disturbance activities. OSA's *Archaeological Standards and Guidelines for Background Research, Field Methodologies, Technical Reports, and Curation* can be found online at: https://archaeology.ncdcr.gov/osa-guidelines.

Starting October 1, 2022, the Office of State Archaeology (OSA), along with the State Historic Preservation Office, will no longer accept compliance reports without a previously assigned Environmental

Review (ER) tracking number and without the archaeological investigation having been recommended by the OSA. We will continue to welcome courtesy reports into our report library, but please note that any unsolicited/courtesy report will not be reviewed for compliance purposes.

We have determined that the project as proposed will not have an effect on any historic structures.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

Exhibit 24

Fitch Parcel 95264

(Draft: 4/13/22)

Prepared by: Sy F. Robbins, Chatham Co. Historical Association

Narrative

The subject parcel was once part of an extensive tract assembled by Francis Jones during the period 1790 to 1820. Totaling around 2,000 acres, the plantation was located in the area of Brush Creek and Pokeberry Creek, and became what is known as "Jones Grove." Upon Jones' death in 1844, ownership passed to his only child Delia, wife of Dr. James S. Smith (of Hillsboro), then to grandchildren Francis J. Smith, James Sidney Smith, and Mary R. Smith. Dr. Francis ('Frank') Jones Smith died in 1877, and his sister Mary Ruffin Smith left most of the property to the University of North Carolina to sell off and to use the proceeds to establish a student scholarship fund in her brother's name.

Zebulon J. Johnson purchased Lot No. 12 from the University in 1899, paying $1,000 for 129 acres. Johnson maintained ownership of the land until his death in 1944, when his heirs sold off the tract (and a 115-acre tract just south of the subject lot which had been Jones Grove Lot No. 11, which appears to have been Johnson's home place). The purchasers in 1944—Theodore and Grace Lingerfeldt – held the property until 2018.

There is nothing in the deed record to indicate that any special structures (e.g., houses, barns, walls) were ever erected on the site. There are no mentions of graveyards or burial sites in the deed record, although the burial of slaves is a possibility (Jones was a slaveholder). Two small structures are indicated on a 1971 map of the parcel (Plat 92-75) along a private road crossing the southwest portion of the tract, but these are located outside the subject parcel boundaries. The same map also indicates an old road running along the north side of the subject parcel, and this may be the location of some items of potential interest. A timber deed for much of the subject parcel was signed by Lingerfeldt in 1986, so considerable recent disturbance of the area probably occurred.

95264 (318 Big Hole Road) (51.765 acres) (Plat 2021-397, Tract A)

2021 MRLD LLC to Fitch Creations Inc. (Tract A) (51.765ac) (12/14/21) 2271/352
MRLD of Hillsborough, Fitch of Pittsboro; Tract A. of Plat 2021-397 prepared for POSP by Van R. Finch 10/27/2021; signed by Michael Strowd, Manager, and Roger C. Nutter, Manager (2271/352)

2018 MRLD LLC to James L. King (D-T) (129ac) ($1,352,000) (12/7/18) 2020/999
The Bank of Monroe, WV (POTP) (2020/999)

2018 Theodore H. Lingerfeldt Jr. et al. to MRLD LLC (129ac) (11/30/18) 2020/989
T.H. Jr. & Beverly H. Lingerfeldt, Theodore H. III & Elizabeth Lingerfeldt, and Jonathan & Lynda Christin Cummings; MRLD of Hillsborough; part of Jones Grove tract formerly belonging to Frank Smith, see Plat 92-75 (2020/989)

2010 Theodore Howard Lingerfeldt (8/27/09-8/7/10) File 11-E-14
wife Grace Ward Lingerfeldt, son Theodore Howard Lingerfeldt, and grandchildren Christin Lingerfeldt Cummings and Theodore Howard Lingerfeldt III (File 11-E-14)

(2002 T.H. & G.W. Lingerfeldt to Shirley C. & John Wayne Strowd (3/30/02) 922/216)
refiling of 866/205 on 4/26/02 to include reference to Plat 2002-90 (922/216)

(2001 T.H. & Grace W. Lingerfeldt to Shirley C. & John Wayne Strowd (3/30/01) 866/205)
Lot 1 (6.037ac) & Lot 2 (0.409ac) of "Map for Wayne Strowd" by Stout Surveying Services 3/5/01 Plat 2001-? (866/205)

1986 T.H. & Grace W. Lingerfeldt to Mebane Lumber Company Inc. (Timber Deed) 493/34

dated 4/7/86; all merchantable timber marked for cutting on land in Williams Township described in J-E/245; tax stamp $97.50 (493/34) ((map on page 37))

(1981 T.H. & Grace W. Lingerfeldt to Michael Crawford Strowd (2ac) (2/9/81) 469/564)
survey prepared by Freehold Land Surveys of Pittsboro Inc. 5/29/80 (469/564)

(1980 T.H. Lingerfeldt to American Telephone & Telegraph Co. (0.073ac) (6/9/80) 434/79)
survey prepared by Freehold Land Surveys of Pittsboro Inc. 5/29/80 (434/79)

1978 Grace Ward Lingerfeldt to T.H. Lingerfeldt (1st Tract) (129ac) (6/8/78) 415/39
both parties of Moore Co.; same description as in J-E/245; "It is the intention of the grantor and the grantee of this deed to convey to each other real property of a similar nature and which is approximately equal in value. To accomplish this intention the grantor and the grantee of this deed are this date conveying and exchanging real property to each other of a like kind and value" (415/39) ((also see Orange County deed 285/868))

1944 Lillie Johnson (heir?) to T.H. & Grace Ward Lingerfeldt (129ac) ($2500) (8/19/44) J-E/245
same description as in D-N/346 (J-E/245) ((see also J-H/561 1944 Hayes Johnson et al. (heirs?) to W.G. Fields (2nd Tract) (115ac) (Jones Grove Lot No. 11) (10/2/44)))

1944 Zebulon J. Johnson (5/16/70-2/2/44) Will-?

1936 Z.J. Johnson to Carolina Power & Light Company (easement) (11/23/36) H-T/243
over 269 acres bounded by R.L. Ward, K.D. Cole et al. (H-T/243) ((see also F-P/57 1918 Chatham Lumber Company to Z.J. Johnson (115ac) (Jones Grove Lot No. 11)))

1899 Z.J. Johnson to Savanah C. Ward (mort.) (129ac) ($580) (7/25/99) D-H/438
same description as in D-N/346 (D-H/438)

1899 R.J. & Nettie Johnson to Zebulon Johnson (129ac) ($540) (7/24/99) D-N/344
land adjoining E.H. Ward, Net Kirby, R.J. Ward et al…; same description as in D-N/346 (D-N/344)

1899 Univ. of N.C. to R.J. Johnson & Zebulon Johnson (Lot #12) (129ac) ($1,000) D-N/346
dated 7/15/99, recorded 1/6/02; land adjoining E.H. Ward, Net Kirby, R.L. Ward, E.M. Fearington, E.W. Williams et al., beginning at E.W. Ward and Net Kirby's East corner, then N 40P with Kirby to Kirby's and R.L. Ward's corner (Lot #13), N 141P with Ward to E.W. Fearrington (Lot #2), E 84º (sic) with Fearington and J.M. Williams (Lots #2, #3, & #4) to E.W. Williams' corner (Lot #8), S 190P with Williams and Lot #9 to N.M. Gilmore's corner (Lot #11), W with Gilmore to beginning; being part of the Jones Grove tract formerly owned by Frank Smith and devised by his heir Mary Ruffin Smith to the University of North Carolina; being Lot #12 of said Jones Grove land, a plot of which is approved by this deed and is to be registered therewith (D-N/346)

1885 Mary Ruffin Smith (1814-11/13/85) (at Image 224) Will E-375
will dated 4/27/77, with 3 codicils dated 1/29/81, 1/29/81 & 2/7/81; Hon. Kemp P. Battle appointed Executor; 9th Item: all the residue ((after subtracting 300 acres given to three women of color by Item 8)), of the Jones Grove, Tract late the property of her brother Dr. Frances J. Smith, is devised to the Trustees of the University of N. Carolina with liberty to sell the same, the proceeds of which are to establish a student scholarship (to be named for her brother, see 1st codicil dated 1/29/81)

https://www.ancestry.com/discoveryui-content/view/2128316:9061?_phsrc=yhy48&_phstart=successSource&gsfn=Mary+R.&gsln=Smith&ml_rpos=1&queryId=65467ba5119a747d557ec1a370e67e93

1877 Dr. Francis ('Frank') Jones Smith (8/17/16-4/17/77) Will-
1867 James Sidney Smith (3/20/19-4/25/67) Will-
1854 Delia (Jones) Smith (5/3/87-11/8/54) Will-

1852 Dr. James Strudwick Smith (9/8/87-12/7/52) Will-

1847 Josiah Turner to Francis J. Smith (1,800ac) (8/28/47) A-H/499

both parties of Orange Co.; whereas, said POSP, together with James S. Smith, Sidney Smith & Mary R. Smith entered into certain article of agreement dated 3/12/47 with POFP, which stipulations have been met; land on Pokeberry Creek adjoining John Hackney, Joseph Bynum, James Kirby et al. called the Grove tract; being same given in remainder to POSP by the will of Francis Jones, dec., and which POFP purchased at auction 8/10/46 for which the Sheriff of Chatham Co. executed a deed dated 9/16/46 (A-H/499)

1846 Sheriff (John Harmon?) to Josiah Turner (8/10/46) (A-H/499) (not A-H/369) Unrec?

1844 Francis Jones (1760-2/22/44) (at Image 223) Will E-372

to only child, daughter Delia Smith, wife of Dr. James S. Smith (of Hillsboro), then grandchildren Francis J. Smith, James Sidney Smith, and Mary R. Smith; plantation in Chatham Co. called the Road or Grove place on Pokeberry Creek adjoining John Hackney, Joseph Bynum, James Kirby et al. containing from 2,000 to 2,700 acres (Will E-372)

https://www.ancestry.com/imageviewer/collections/9061/images/004754662_00223?backlabel=ReturnSearchResults&queryId=cd03a3f49ccebddcaa20d3003f82a2a6&pId=2127910

Exhibit 25

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To:
Project Code: 2022-0089038
Project Name: The Granville

September 26, 2022

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

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). If your project area contains suitable habitat for any of the federally-listed species on this species list, the proposed action has the potential to adversely affect those species. If suitable habitat is present, surveys should be conducted to determine the species' presence or absence within the project area. The use of this species list and/or North Carolina Natural Heritage program data should not be substituted for actual field surveys.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- Migratory Birds

Official Species List

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

This species list is provided by:

Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
(919) 856-4520

Project Summary

Project Code: 2022-0089038
Project Name: The Granville
Project Type: Residential Construction
Project Description: This project is located in Chatham County, NC and is approximately 51 acres.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.788742049999996,-79.08606487668756,14z

Counties: Chatham County, North Carolina

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

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

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

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

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

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7614

Clams

NAME	STATUS
Atlantic Pigtoe *Fusconaia masoni*	Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/5164

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

Flowering Plants

NAME	STATUS
Harperella *Ptilimnium nodosum*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3739

Critical habitats

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

Migratory Birds

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

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

---

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

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

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

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10

NAME	BREEDING SEASON
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20
Kentucky Warbler *Oporornis formosus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler *Dendroica discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

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

Probability of Presence (■)

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

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

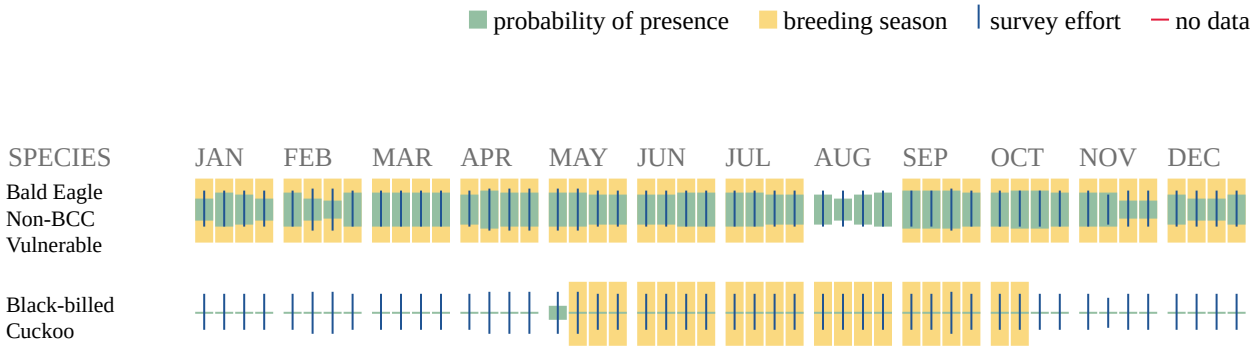
1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

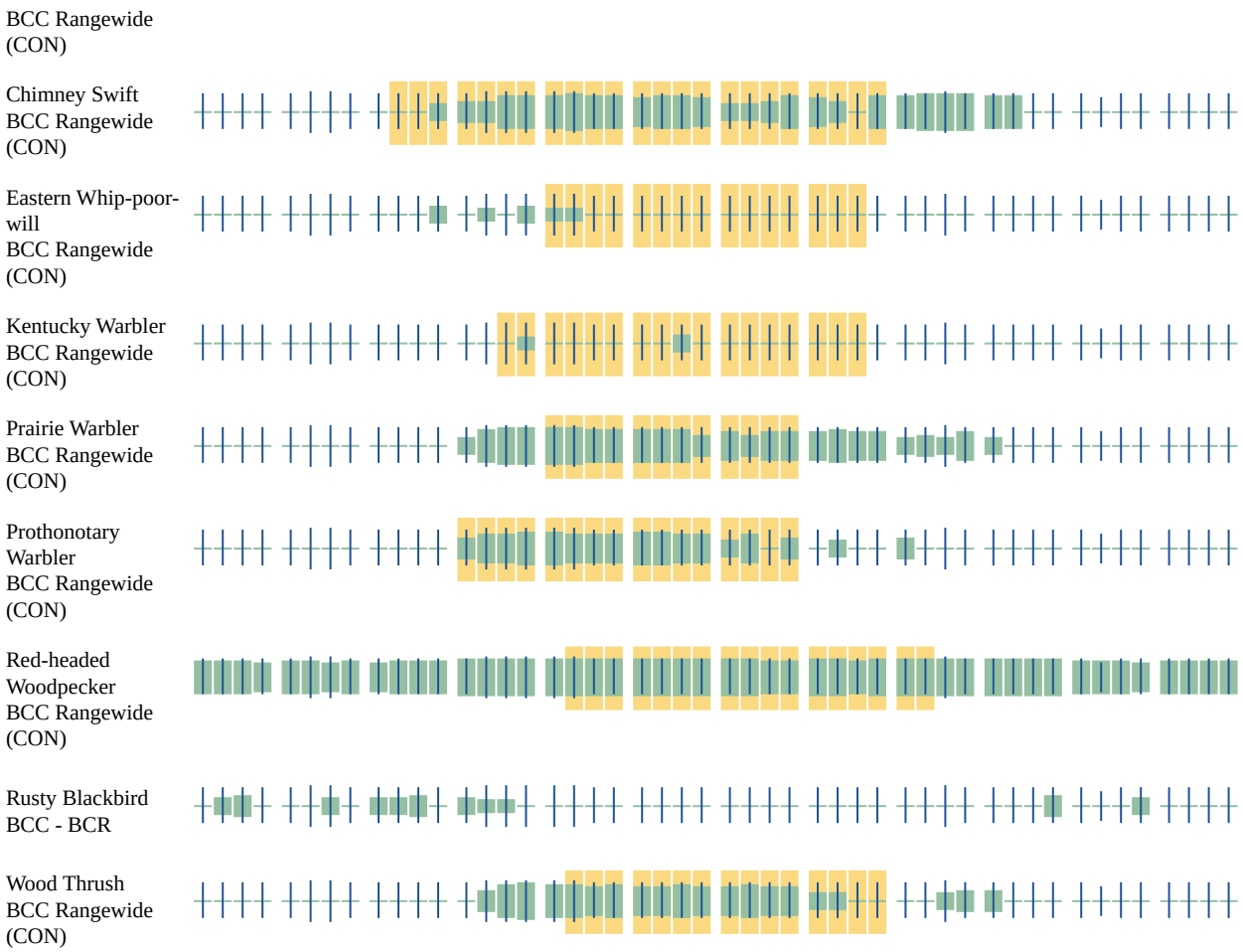
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

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

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





Additional information can be found using the following links:

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

Migratory Birds FAQ

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

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

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?
The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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

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

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?
The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

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

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

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

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

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

IPaC User Contact Information

Agency:	Soil & Environmental Consultants, PA
Name:	Mason Montgomery
Address:	8412 Falls of Neuse Road
Address Line 2:	Suite 104
City:	Raleigh
State:	NC
Zip:	27615
Email	mmontgomery@sandec.com
Phone:	7047732837

Species Conclusions Table

Project Name: Granville (Fearrington Village South)

Date: October 10, 2022

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Red-cockaded Woodpecker (*Picoides borealis*)	No suitable habitat present	No effect	Preliminary habitat survey completed by S&EC staff on October 7, 2022.
Atlantic Pigtoe (*Fusconaia masoni*)	No suitable habitat present	No effect	Preliminary habitat survey completed by S&EC staff on October 7, 2022.
Monarch Butterfly (*Danaus plexippus*)	Suitable habitat present	No official determination required due to "Candidate" status	Preliminary habitat survey completed by S&EC staff on October 7, 2022.
Harperella (*Ptilimnium nodosum*)	No suitable habitat present	No effect	Preliminary habitat survey completed by S&EC staff on October 7, 2022.
Bald Eagle *Haliaeetus leucocephalus*	Unlikely to disturb nesting Bald Eagles	No Eagle Act permit required	Preliminary habitat survey completed by S&EC staff on October 7, 2022.
Northern Long-eared Bat *Myotis septentrionalis*	Suitable habitat present, species not present	May affect, not likely to adversely affect	Preliminary habitat survey completed by S&EC staff on October 7, 2022. Relying upon the findings of the 1/5/2016 Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions to fulfill our project-specific section 7 responsibilities.
Critical Habitat	No critical habitat present	No effect	

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

Mason Montgomery / Environmental Scientist, Wetlands Department at S&EC, PA — October 10, 2022

Signature /Title — Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 10/18/2022

Self-Certification Letter

Project Name Granville

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- [x] "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- [x] "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- [ ] "may affect, likely to adversely affect" determination for the Northern long-eared bat (Myotis septentrionalis) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- [x] "no Eagle Act permit required" determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website http://www.fws.gov/raleigh/pp.html. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package

Exhibit 26

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**

D. Reid Wilson, **Secretary**

Misty Buchanan
Deputy Director, Natural Heritage Program

NCNHDE-19443

September 26, 2022

Robert Zarzecki
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, NC 27615
RE: The Granville; 15120.W6

Dear Robert Zarzecki:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
The Granville
Project No. 15120.W6
September 26, 2022
NCNHDE-19443

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Natural Community	16867	Dry Oak--Hickory Forest (Piedmont Subtype)	---	2019-10-08	B	3-Medium	---	---	G4G5	S4
Vascular Plant	10956	Thermopsis mollis	Appalachian Golden-banner	1958-05-04	H	4-Low	---	Significantly Rare Throughout	G3G4	S2

Natural Areas Documented Within a One-mile Radius of the Project Area

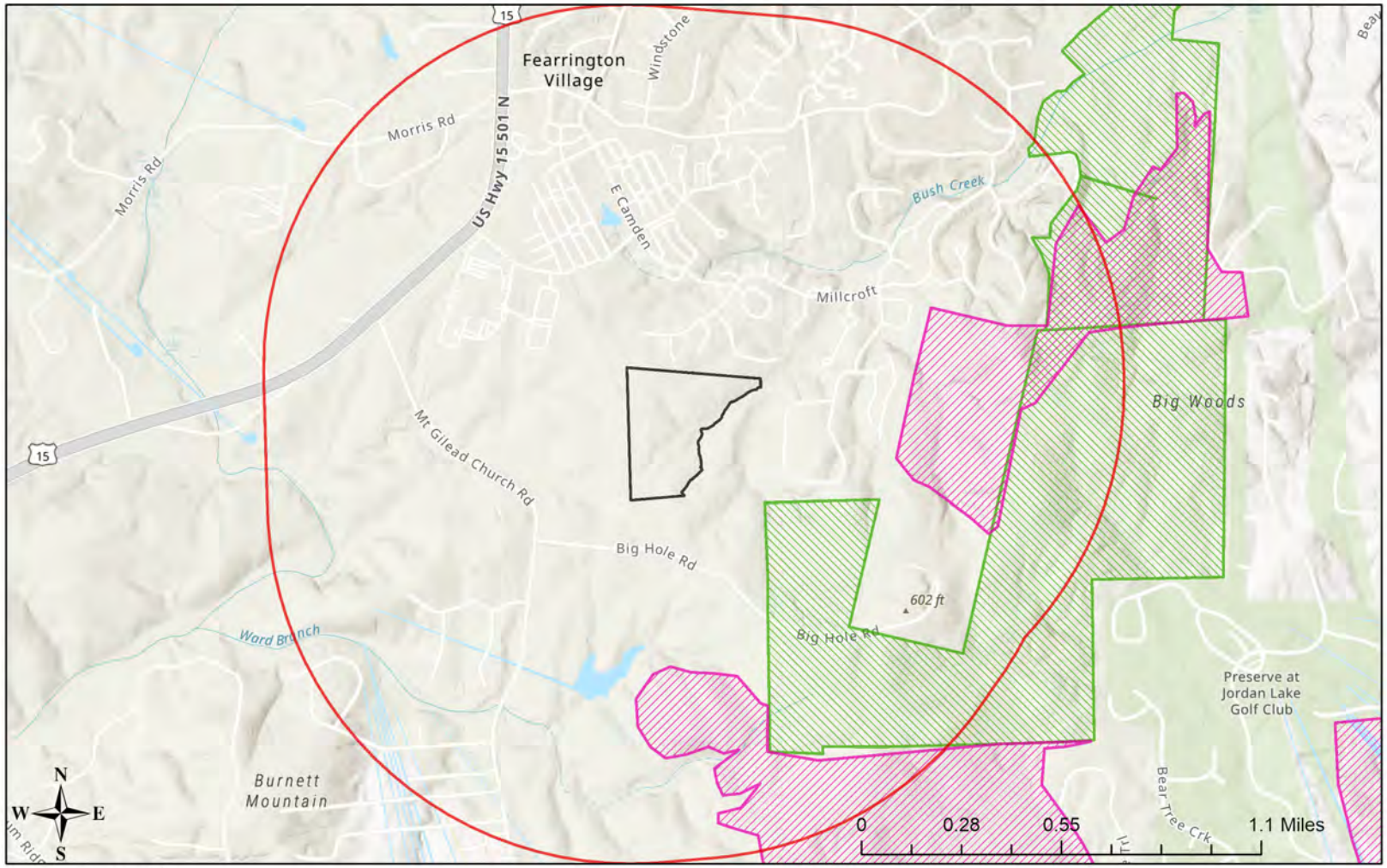
Site Name	Representational Rating	Collective Rating
Big Woods Road Upland Forests	R5 (General)	C5 (General)

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State
NC Land and Water Fund Project	NC DNCR, NC Land and Water Fund	State

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on September 26, 2022; source: NCNHP, Q2, July 2022. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-19443: Fearrington Village South



September 26, 2022

- Managed Area (MAREA)
- NHP Natural Area (NHNA)
- Buffered Project Boundary
- Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Exhibit 27

Fearrington South Project

Photo: Justin Robinson

County: Chatham Quad: Farrington

Date: November 7, 2022

NHP Staff: Justin Robinson, Special Projects Botanist
North Carolina Natural Heritage Program
Division of Land and Water Stewardship
Department of Natural and Cultural Resources
www.ncnhp.org

Executive Summary

The North Carolina Natural Heritage Program (NHP) is a nonregulatory state agency in the Department of Natural and Cultural Resources. Our biologists, data managers, and stewardship specialists assist landowners and managers in assessing and managing properties for the preservation of North Carolina's natural heritage. At the request of the landowners, NHP conducted a customized environmental review for the Fearrington South Project near the intersection of Big Hole Road and Mt. Gilead Church Road to look for natural communities and rare plants. The project area was surveyed on November 2, 2022.

Disclaimer

Data gathered during site visits provided the basis for this ecological assessment, but not all areas of the property were visited in all seasons or during all trips. As such, this inventory should not necessarily be considered comprehensive. Some plant species, for example, are visible and/or identifiable only during certain times of the year. Also, while the inventory of the flora and plant communities was thorough, no detailed or methodical survey of fauna was performed.

Background and Site Description

The project area is located north of Big Hole Road, east of the intersection with Mt. Gilead Church Road. The tract is a combination of even-aged stands of loblolly pine (*Pinus taeda*) and naturally regenerated hardwood stands. During the time of agriculture, this tract was likely in pasture land. The current condition of this tract is likely the result of a series of timber harvests, in which forests were allowed to regenerate naturally or were planted in loblolly pine (*Pinus taeda*) between harvest rotations.

Landscape Characteristics and Context

The project area is located within the Carolina Slate Belt and contains the acidic soils characteristic of the central Piedmont. Soils in the Slate Belt tend to be acidic and clayey, and highly erodible and therefore usually unsuitable for the long-term cultivation of row crops. Most of the non-residential and non-commercial area within the county are typically forest lands. The project area is adjacent to timber and residential parcels.

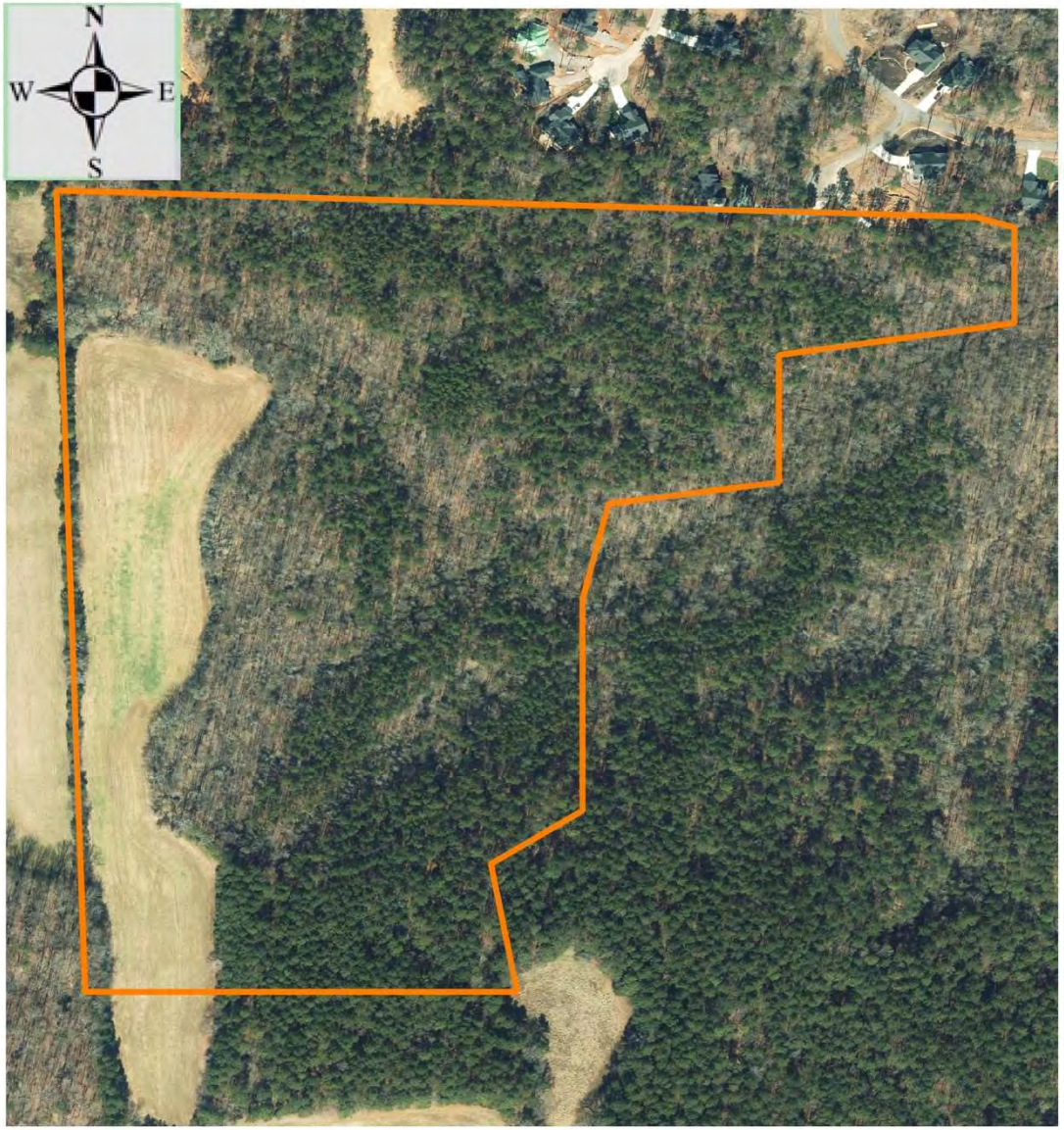
The project area is largely made up of upland flats, gentle slopes and small valleys and is approximately 51 acres with an elevation of 410-460 feet. Big Woods Road Upland Forest Natural Areas are less than 1 air mile from the project area.

Ecological Significance

The forested portion of the project area is an even-aged successional stand of largely young hardwoods and loblolly pine. The stands range from 25-30 years since the previous timber harvest. The canopy consists of loblolly pine (*Pinus taeda*), willow oak (*Quercus phellos*), tulip-poplar (*Liriodendron tulipifera*), winged elm (*Ulmus alata*), sweetgum (*Liquidambar styraciflua),* and white oak (*Quercus alba*). The understory consists of black cherry (*Prunus serotina*), red maple (*Acer rubrum*), water oak (*Quercus nigra*), eastern red cedar (*Juniperus virginana*), winterberry (*Ilex decidua*) and sassafras (*Sassafras albidum*).The shrub layer is dominated by invasive exotic autumn-olive (*Eleaegnus umbellata*) while the herb layer consists of species found commonly in disturbed acidic soils in the Piedmont such as invasive exotic Japanese stiltgrass (*Microstegium vimineum*) and Japanese honeysuckle (*Lonicera japonica*), and native catbrier (*Smilax* sp.) and St. Andrew's cross (*Hypericum stragulum*).

Restoration Potential and Management Recommendations

Although no natural communities or rare plants were observed during this survey, the restoration potential for this project area is high. Similar plant communities nearby have benefited greatly from prescribed fire, treatment of invasive exotic species, and the elimination of pine plantation silviculture. The soils found within this project area suggest that rare or uncommon plants may be able to grow successfully here with active forest management.



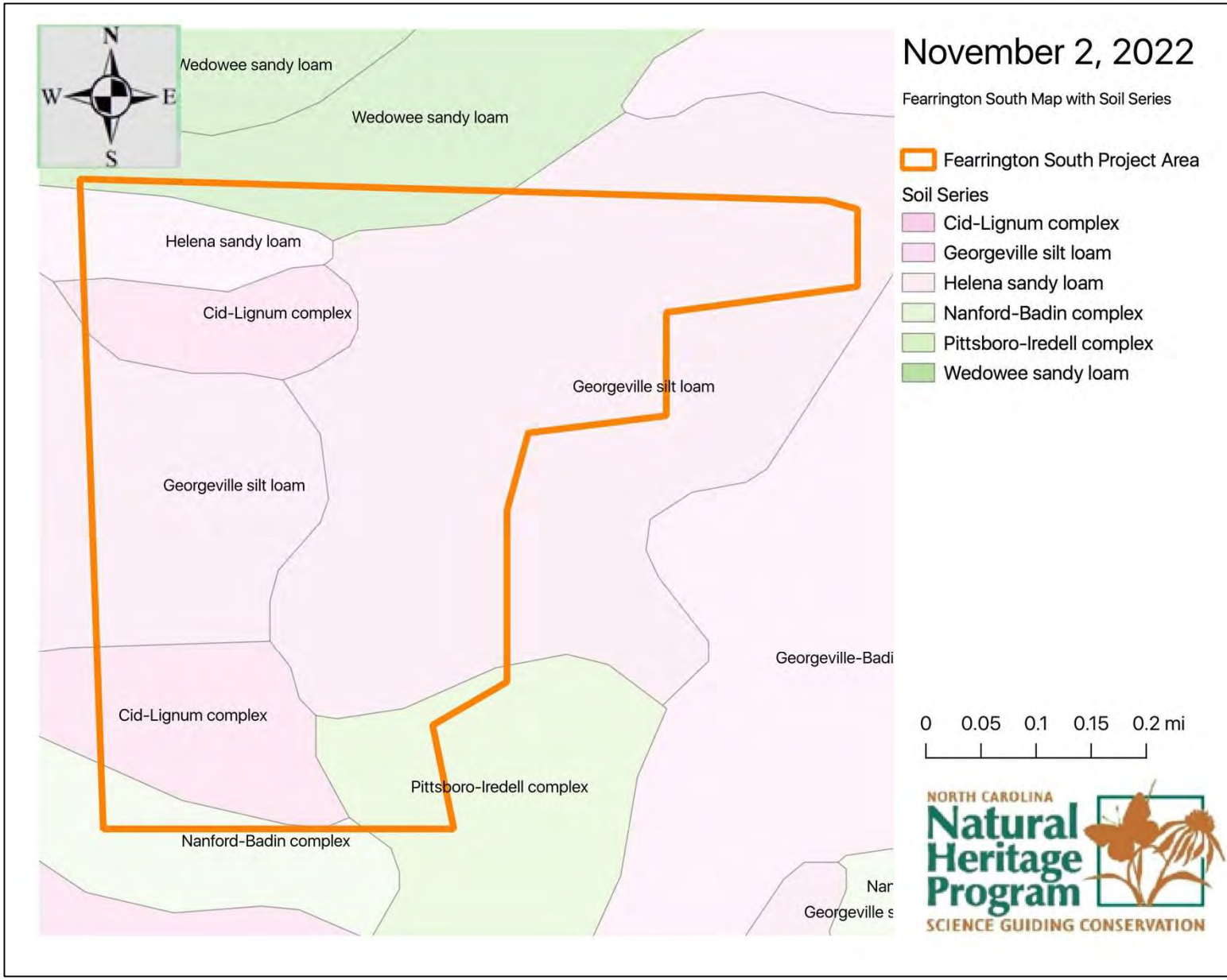
November 2, 2022

Fearrington South Aerial Map

Fearrington South Project Area

0 0.05 0.1 0.15 0.2 mi

NORTH CAROLINA
Natural Heritage Program
SCIENCE GUIDING CONSERVATION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November 2, 2022
Fearrington South Map with Soil Series
Fearrington South Project Area
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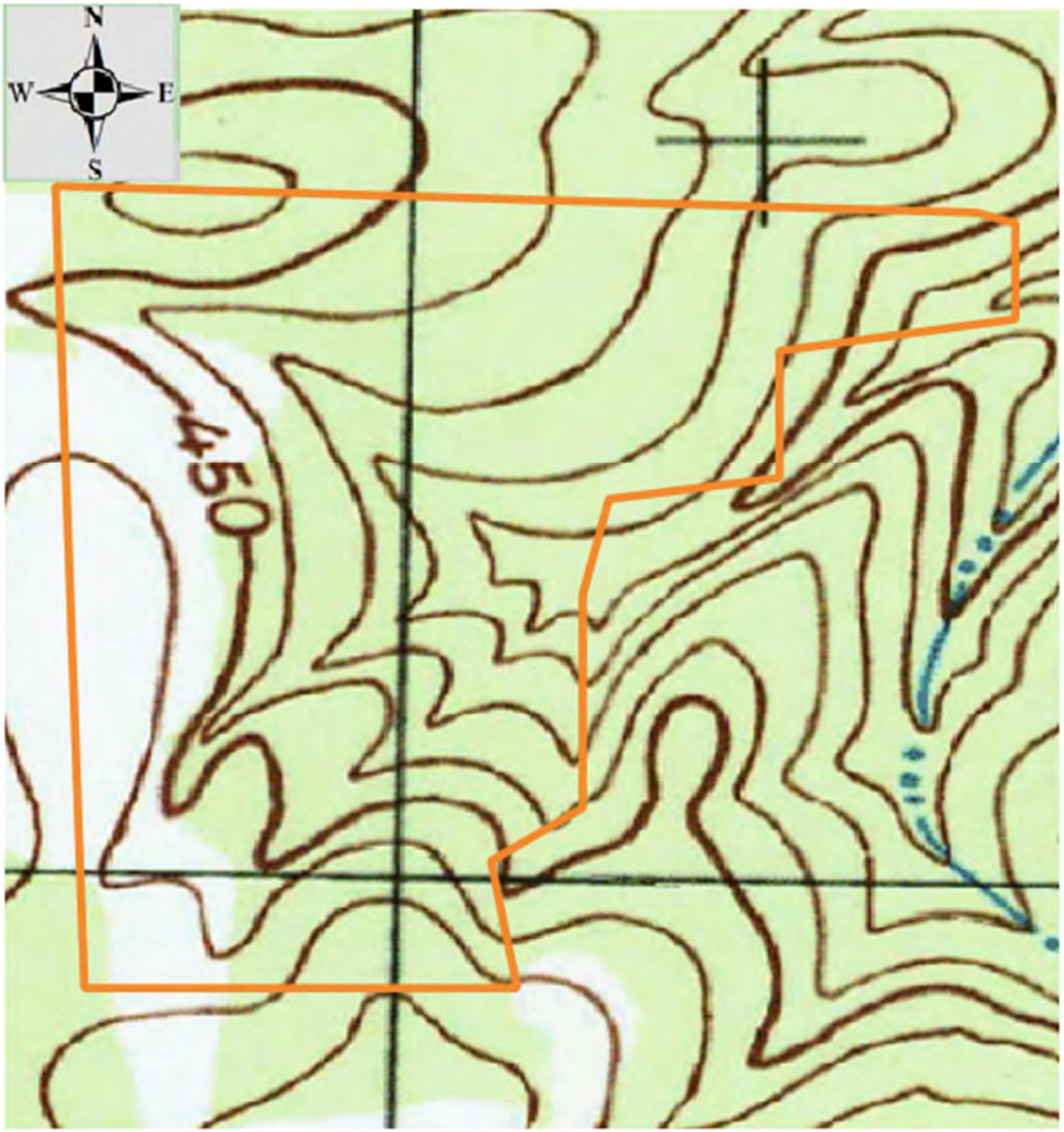
NORTH CAROLINA
Natural Heritage Program
SCIENCE GUIDING CONSERVATION



November 2, 2022

Fearrington South Map with Soil Series

Fearrington South Project Area

0 0.05 0.1 0.15 0.2 mi

NORTH CAROLINA
Natural Heritage Program
SCIENCE GUIDING CONSERVATION

Exhibit 28

Expected Wildlife On Granville

Reptiles Associated with the Region

Common Name	*Scientific Name*	Observed Onsite
Black racer	*Coluber constrictor*	No
Broadhead skink	*Eumeces laticeps*	No
Brown snake	*Storeria dekayi*	No
Copperhead	*Agkistrondon contorix*	No
Corn snake	*Elaphe guttata*	No
Eastern box turtle	*Terrapene carolina*	No
Eastern garter snake	*Thamnophis sirtalis*	No
Eastern hognose snake	*Heterodon platirinos*	No
Eastern kingsnake	*Lampropeltis getulus*	No
Eastern mud turtle	*Kinosternon subrubrum*	No
Green anole	*Anolis carolinensis*	No
Ground skink	*Scincella lateralis*	No
Mole kingsnake	*Lampropeltis calligaster*	No
Northern fence swift	*Sceloporu undulatus*	No
Northern water snake	*Nerodia sipedon*	No
Rat snake	*Elaphe obsoleta*	No
Red-bellied snake	*Storeria occipitomaculata*	No
Ringneck snake	*Diadophis punctatus*	No
Rough green snake	*Opheodrys aestivus*	No
Scarlet kingsnake	*Lampropeltis triangulum*	No
Scarlet snake	*Cemophora coccinea*	No
Smooth earth snake	*Virginia valeriae*	No
Snapping turtle	*Chelydra serpentina*	No
Southeastern crowned snake	*Tantilla coronata*	No
Southeastern five-line skink	*Eumeces inexpectatus*	No
Stinkpot	*Sternotherus odoratus*	No
Timber rattlesnake	*Crotalus horridus*	No
Worm snake	*Carophophis amoenus*	No

Avifauna Associated with the Region

Common Name	*Scientific Name*	Observed Onsite
Acadian flycatcher	*Empidonax virescens*	No
American coot	*Fulica americana*	No
American goldfinch	*Carduelis tristes*	No
American kestrel	*Falco sparverius*	No
American redstart	*Setophaga ruticilla*	No

American woodcock	*Scolopox minor*	No
Barn swallow	*Hirundo rustica*	No
Barred owl	*Strix varia*	No
Belted kingfisher	*Megaceryle alcyon*	No
Black and white warbler	*Mniotilta varia*	No
Black-crowned night heron	*Nycticorax nycticorax*	No
Black Vulture	*Coragyps atratus*	No
Blue jay	*Cyanocitta cristata*	No
Blue-gray gnatcatcher	*Polioptila caerulea*	No
Brown creeper	*Certhia familiaris*	No
Brown thrasher	*Toxostoma rufum*	No
Brown-headed cowbird	*Molothrus ater*	No
Brown-headed nuthatch	*Sitta pusilla*	No
Canadian goose	*Branta canadensis*	No
Northern cardinal	*Cardinalis cardinalis*	Yes
Carolina chickadee	*Parus carolinensis*	No
Carolina wren	*Tyryothorus lucovicianus*	Yes
Cedar waxwing	*Bombycilla cedrorum*	No
Chipped sparrow	*Spizella passerina*	No
Common crow	*Corvus brachyrhynchos*	Yes
Common flicker	*Colaptes auratus*	No
Common nighthawk	*Chordeiles minor*	No
Dark-eyed junco	*Junco hyemalis*	No
Downy woodpecker	*Picoides pubescens*	No
Eastern phoebe	*Sayornis phoebe*	Yes
Eastern wood pewee	*Contopus virens*	No
Fish crow	*Corvus ossifragus*	No
Fox sparrow	*Passerella iliaca*	No
Golden-crowned kinglet	*Regulus satrapa*	No
Great blue heron	*Ardea herodias*	No
Great crested flycatcher	*Myriarchus crinitus*	No
Great horned owl	*Bubo virginianus*	No
Green heron	*Butorides sriatus*	No
Hairy woodpecker	*Picoides villosus*	No
Hermit thrush	*Catharus guttata*	No
Hooded warbler	*Wilsonia citrina*	No
House wren	*Troglodytes aedon*	No
Indigo bunting	*Passerina cyanea*	No
Kentucky warbler	*Oporornis formosus*	No
Mallard	*Anas platyrhynchos*	No
Myrtle warbler	*Dendroica coronata*	No
Northern waterthrush	*Seirurus motacilla*	No
Ovenbird	*Seiurus aurociapillus*	No
Parula warbler	*Parula americana*	No

Pied-billed grebe	*Podilymbus podiceps*	No
Pine siskin	*Carduelis pinus*	No
Purple finch	*Carpodacus purpureus*	No
Purple martin	*Progne subis*	No
Red-bellied woodpecker	*Melanerpes carolinus*	No
Red cockaded woodpecker	*Picoides borealis*	No
Red-eyed vireo	*Vireo olivaceus*	No
Red-shouldered hawk	*Buteo lineatus*	No
Red-tailed hawk	*Buteo jamaicensis*	No
Red-winged blackbird	*Agelaius phoeniceus*	No
American robin	*Turdus migratorius*	Yes
Rough-winged swallow	*Stelgidopteryx ruficolis*	No
Ruby-crowned kinglet	*Regulus calendula*	No
Ruby-throated hummingbird	*Archilochus colubris*	No
Rufus-sided towhee	*Pipilo erthrophthalmus*	No
Rusty blackbird	*Euphagus carolinus*	No
Scarlet tanager	*Piranga olivacea*	No
Screech owl	*Otus asio*	No
Sharp-shinned hawk	*Accipiter striatus*	No
Song sparrow	*Melospiza melodia*	No
Spotted sandpiper	*Actitis maculdria*	No
Summer tanager	*Piranga rubra*	No
Swamp sparrow	*Melospiza georgiana*	No
Tree sparrow	*Spizella arborea*	No
Tufted titmouse	*Parus bicolor*	No
Turkey vulture	*Cathartes aura*	Yes
White-breasted nuthatch	*Sitta carolinenis*	No
White-crowned sparrow	*Zonotrichia albicolis*	No
Wild Turkey	*Meleagris gallopavo*	Yes
Winter wren	*Troglodytes hiemalis*	No
Wipoorwill	*Caprimulgus vociferus*	No
Wood thrush	*Hyclocichla mustelina*	No
Yellow warbler	*Dendroica petechia*	No
Yellow-bellied sapsucker	*Sphrypicus varius*	No
Yellow-billed cuckoo	*Coccyzus americanus*	No
Yellow-breated chat	*Icteria virens*	No
Yellow-throated warbler	*Dendroica dominica*	No

Mammals Associated with the Region

Common Name	***Scientific Name***	**Observed Onsite**
North American beaver	*Castor canadensis*	No

Big brown bat	*Eptesicus fuscus*	No
Eastern chipmunk	*Tamias striatus*	No
Eastern cottontail	*Sylvilagus floridanus*	No
Eastern gray squirrel	*Sciurus carolinesis*	Yes
Eastern mole	*Scalopus aquaticus*	No
Eastern pipistrel	*Pipistrellus subflavus*	No
Evening bat	*Nycticeius humeralis*	No
Golden mouse	*Ochrotomyss nutalli*	No
Gray fox	*Urocyon cinereoargenteus*	No
Hoary bat	*Lasiurus cinereus*	No
Long-tailed weasel	*Mustela frenata*	No
Meadow jumping mouse	*Zapus hudsonius*	No
Mink	*Mustela vison*	No
Muskrat	*Ondatra zibethicus*	No
Opossum	*Didelphis marsupialis*	No
Raccoon	*Procyon lotor*	No
Red bat	*Lasurius borealis*	No
Red fox	*Vulpes vulpes*	No
River otter	*Lutra canadensis*	No
Short-tailed shrew	*Blarina brevicauda*	No
Silver-haired bat	*Lasionycteris noctivigans*	No
Southern flying squirrel	*Glaucomys volans*	No
White-footed mouse	*Peromyscus leucopus*	No
White-tailed deer	*Odocoileus virginicus*	Yes
Woodland vole	*Microtus pinetorium*	No

Exhibit 29

PROGRESS 7/19/2022

LEGEND

- PHASE BOUNDARY
- RIGHT OF WAY LINE
- EASEMENT
- LOT LINE
- BUFFER
- STREAM BUFFER
- STREAM BANK
- TREE LINE
- CONTOURS
- STREET LIGHTS

SPECIAL USE PERMIT PLAN NOTES: (ZONING SECTION 17.5.C)

PURPOSE: PERMIT MAXIMUM FLEXIBILITY IN LOT CREATION AND RESIDENTIAL UNIT PLACEMENT WITHIN LARGER PLANNED RESIDENTIAL PROJECTS WHILE AT THE SAME TIME PRESERVING OPEN SPACE IN A MORE USABLE AND ENVIRONMENTALLY SENSITIVE UNITS.

EXECUTION: PROVIDING SMALLER LOTS WITHIN CONNECTING AREAS OF PRESERVED OPEN SPACE.

EXISTING ZONING - RI (1 DWELLING UNIT FOR EACH 40,000 SF OF NET LAND AREA) - SEE CALCULATIONS IN 'D' (S.U.P. NOTES) BELOW

SITE ACREAGE:
- 51.765 ACRES (2,254,886 SF) (MINIMUM REQUIRED FOR SUP - 50 ACRES)

NET LAND AREA COMPUTATION
- SEE 'D' BELOW (S.U.P. NOTES)

EXISTING LAND USE:
- 86% MATURE FORST, 14% FARM FIELD

PROPOSED LAND USE:
- PLANNED RESIDENTIAL DEVELOPMENT / SPECIAL USE PERMIT (SUP)

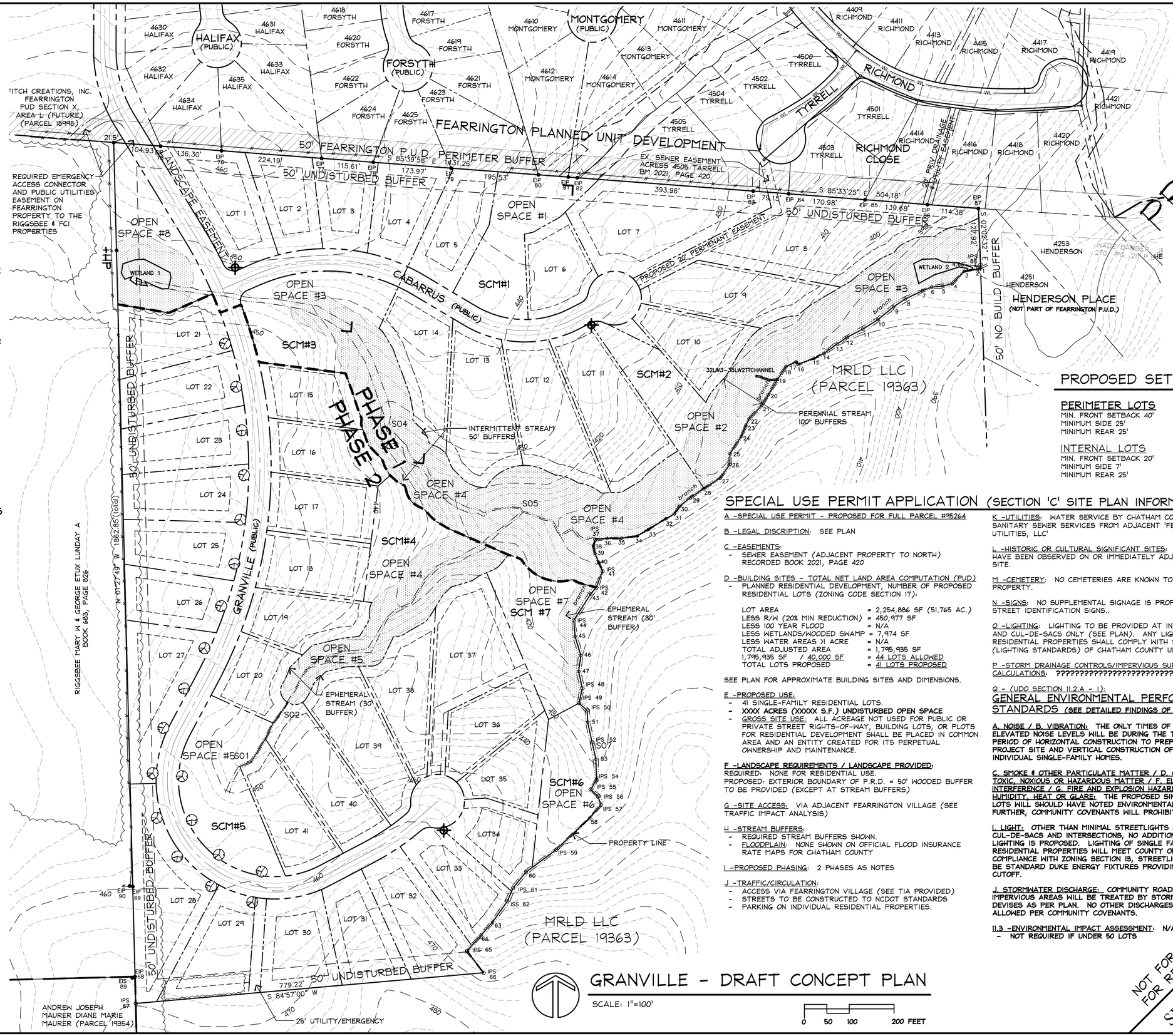
LOCATION OF NEAREST MAJOR THOROUGHFARE: US-501 (SEE COVERSHEET)

PROPOSED PUBLIC USES: UNDISTURBED OPEN SPACE WITH ACCESS TO ADJACENT FEARRINGTON VILLAGE AMENITIES

PLANNED UNIT DEVELOPMENTS

SUBDIVISION REGULATIONS - SECTION 9 - SEE COVERSHEET NOTES

LINE	BEARING	DISTANCE
1 - 2	S 64°00'59" W	6.65'
2 - 3	S 81°48'48" W	30.86'
3 - 4	S 43°41'10" W	37.98'
4 - 5	S 74°46'36" W	22.53'
5 - 6	S 84°31'58" W	24.94'
6 - 7	S 68°27'25" W	22.23'
7 - 8	S 64°28'31" W	42.75'
8 - 9	S 56°09'16" W	30.89'
9 - 10	S 50°45'03" W	45.26'
10 - 11	S 57°43'27" W	39.75'
11 - 12	S 62°47'22" W	40.25'
12 - 13	S 55°49'09" W	26.38'
13 - 14	S 53°44'48" W	35.71'
14 - 15	S 64°20'07" W	25.02'
15 - 16	S 69°15'43" W	38.02'
16 - 17	N 37°26'12" W	6.79'
17 - 18	S 65°41'10" W	25.05'
18 - 19	S 33°24'06" W	34.67'
19 - 20	S 30°48'19" W	40.23'
20 - 21	S 31°59'23" W	27.99'
21 - 22	S 43°19'07" W	40.76'
22 - 23	S 25°33'43" W	16.63'
23 - 24	S 22°33'03" W	25.46'
24 - 25	S 33°21'26" W	46.81'
25 - 26	S 00°07'39" E	23.75'
26 - 27	S 35°08'14" W	37.56'
27 - 28	S 57°16'41" W	44.15'
28 - 29	S 55°59'20" W	31.66'
29 - 30	S 51°58'23" W	34.80'
30 - 31	S 34°17'47" W	20.64'
31 - 32	S 59°55'05" W	21.73'
32 - 33	S 58°48'11" W	45.34'
33 - 34	S 58°50'19" W	28.92'
34 - 35	S 82°00'03" W	36.32'
35 - 36	S 89°06'05" W	31.68'
36 - 37	S 85°22'49" W	26.50'
37 - 38	S 15°56'36" W	15.63'
38 - 39	S 12°27'45" E	16.83'
39 - 40	S 22°34'06" E	22.56'
40 - 41	S 23°43'32" E	20.62'
41 - 42	S 21°29'32" W	38.58'
42 - 43	S 39°44'11" W	19.33'
43 - 44	S 32°38'32" W	69.97'
44 - 45	S 04°39'57" E	36.10'
45 - 46	S 16°50'31" E	44.26'
46 - 47	S 07°50'58" W	35.65'
47 - 48	S 12°05'25" E	38.93'
48 - 49	S 12°30'44" W	33.57'
49 - 50	S 46°58'05" E	24.51'
50 - 51	S 02°54'22" E	25.95'
51 - 52	S 12°16'00" E	46.24'
52 - 53	S 12°41'20" E	38.53'
53 - 54	S 01°51'48" E	46.73'
54 - 55	S 31°58'15" W	24.76'
55 - 56	S 47°12'06" E	22.54'
56 - 57	S 18°26'24" E	20.23'
57 - 58	S 40°56'42" W	38.02'
58 - 59	S 46°27'18" W	103.28'
59 - 60	S 53°32'06" E	83.91'
60 - 61	S 38°57'38" W	46.04'
61 - 62	S 23°16'21" W	31.94'
62 - 63	S 35°15'13" W	57.13'
63 - 64	S 41°36'53" W	38.76'
64 - 65	S 41°20'03" W	47.67'
65 - 66	S 37°32'05" E	60.81'
67 - 68	N 01°27'45" W	60.00'
80 - 81	S 85°39'58" E	66.71'
81 - 82	S 85°39'58" E	20.05'
68 - 89	S 35°15'23" W	0.85'(tie)
69 - 90	N 80°04'32" W	1.58'(tie)



PROPOSED SETBACKS

PERIMETER LOTS
MIN. FRONT SETBACK 40'
MINIMUM SIDE 25'
MINIMUM REAR 25'

INTERNAL LOTS
MIN. FRONT SETBACK 20'
MINIMUM SIDE 7'
MINIMUM REAR 25'

SPECIAL USE PERMIT APPLICATION (SECTION 'C' SITE PLAN INFORMATION)

A -SPECIAL USE PERMIT - PROPOSED FOR FULL PARCEL #95264

B -LEGAL DISCRIPTION: SEE PLAN

C -EASEMENTS:
- SEWER EASEMENT (ADJACENT PROPERTY TO NORTH) RECORDED BOOK 2021, PAGE 420

D -BUILDING SITES - TOTAL NET LAND AREA COMPUTATION (PUD)
- PLANNED RESIDENTIAL DEVELOPMENT, NUMBER OF PROPOSED RESIDENTIAL LOTS (ZONING CODE SECTION 17):

LOT AREA	= 2,254,886 SF (51.765 AC.)
LESS R/W (20% MIN REDUCTION)	= 450,977 SF
LESS 100 YEAR FLOOD	= N/A
LESS WETLANDS/WOODED SWAMP	= 7,974 SF
LESS WATER AREAS >1 ACRE	= N/A
TOTAL ADJUSTED AREA	= 1,795,935 SF
1,795,935 SF / 40,000 SF	= 44 LOTS ALLOWED
TOTAL LOTS PROPOSED	= 41 LOTS PROPOSED

SEE PLAN FOR APPROXIMATE BUILDING SITES AND DIMENSIONS.

E -PROPOSED USE:
- 41 SINGLE-FAMILY RESIDENTIAL LOTS.
- XXXX ACRES (XXXXX S.F.) UNDISTURBED OPEN SPACE
- GROSS SITE USE: ALL ACREAGE NOT USED FOR PUBLIC OR PRIVATE STREET RIGHTS-OF-WAY, BUILDING LOTS, OR PLOTS FOR RESIDENTIAL DEVELOPMENT SHALL BE PLACED IN COMMON AREA AND AN ENTITY CREATED FOR ITS PERPETUAL OWNERSHIP AND MAINTENANCE.

F -LANDSCAPE REQUIREMENTS / LANDSCAPE PROVIDED:
REQUIRED: NONE FOR RESIDENTIAL USE.
PROPOSED: EXTERIOR BOUNDARY OF P.R.D. = 50' WOODED BUFFER TO BE PROVIDED (EXCEPT AT STREAM BUFFERS)

G -SITE ACCESS: VIA ADJACENT FEARRINGTON VILLAGE (SEE TRAFFIC IMPACT ANALYSIS)

H -STREAM BUFFERS:
- REQUIRED STREAM BUFFERS SHOWN.
- FLOODPLAIN: NONE SHOWN ON OFFICIAL FLOOD INSURANCE RATE MAPS FOR CHATHAM COUNTY

I -PROPOSED PHASING: 2 PHASES AS NOTES

J -TRAFFIC/CIRCULATION:
- ACCESS VIA FEARRINGTON VILLAGE (SEE TIA PROVIDED)
- STREETS TO BE CONSTRUCTED TO NCDOT STANDARDS
- PARKING ON INDIVIDUAL RESIDENTIAL PROPERTIES.

K -UTILITIES: WATER SERVICE BY CHATHAM COUNTY / SANITARY SEWER SERVICES FROM ADJACENT 'FEARRINGTON UTILITIES, LLC'

L -HISTORIC OR CULTURAL SIGNIFICANT SITES: NO SUCH SITES HAVE BEEN OBSERVED ON OR IMMEDIATELY ADJACENT TO THE SITE.

M -CEMETERY: NO CEMETERIES ARE KNOWN TO EXIST ON THE PROPERTY.

N -SIGNS: NO SUPPLEMENTAL SIGNAGE IS PROPOSED BEYOND STREET IDENTIFICATION SIGNS..

O -LIGHTING: LIGHTING TO BE PROVIDED AT INTERSECTIONS AND CUL-DE-SACS ONLY (SEE PLAN). ANY LIGHTING ON RESIDENTIAL PROPERTIES SHALL COMPLY WITH SECTION 13 (LIGHTING STANDARDS) OF CHATHAM COUNTY UDO.

P -STORM DRAINAGE CONTROLS/IMPERVIOUS SURFACE CALCULATIONS: ????????????????????????????

Q - (UDO SECTION 11.2.A - 1):

GENERAL ENVIRONMENTAL PERFORMANCE STANDARDS (SEE DETAILED FINDINGS OF FACT)

A. NOISE / B. VIBRATION: THE ONLY TIMES OF SIGNIFICANTLY ELEVATED NOISE LEVELS WILL BE DURING THE TEMPORARY PERIOD OF HORIZONTAL CONSTRUCTION TO PREPARE THE PROJECT SITE AND VERTICAL CONSTRUCTION OF THE PROPOSED INDIVIDUAL SINGLE-FAMILY HOMES.

C. SMOKE & OTHER PARTICULATE MATTER / D. ODORS/ E. TOXIC, NOXIOUS OR HAZARDOUS MATTER / F. ELECTROMAGNETIC INTERFERENCE / G. FIRE AND EXPLOSION HAZARDS/ H. HUMIDITY, HEAT OR GLARE: THE PROPOSED SINGLE FAMILY LOTS WILL SHOULD HAVE NOTED ENVIRONMENTAL IMPACTS; FURTHER, COMMUNITY COVENANTS WILL PROHIBIT.

I. LIGHT: OTHER THAN MINIMAL STREETLIGHTS AT CUL-DE-SACS AND INTERSECTIONS, NO ADDITIONAL SITE LIGHTING IS PROPOSED. LIGHTING OF SINGLE FAMILY RESIDENTIAL PROPERTIES WILL MEET COUNTY ORDINANCES. IN COMPLIANCE WITH ZONING SECTION 13, STREETLIGHTING SHALL BE STANDARD DUKE ENERGY FIXTURES PROVIDING REQUIRED CUTOFF.

J. STORMWATER DISCHARGE: COMMUNITY ROADWAYS AND IMPERVIOUS AREAS WILL BE TREATED BY STORMWATER DEVISES AS PER PLAN. NO OTHER DISCHARGES WILL BE ALLOWED PER COMMUNITY COVENANTS.

11.3 -ENVIRONMENTAL IMPACT ASSESSMENT: N/A
- NOT REQUIRED IF UNDER 50 LOTS

GRANVILLE - DRAFT CONCEPT PLAN

SCALE: 1"=100'

0 50 100 200 FEET

REVISED DRAFT CONCEPT PLAN

GRANVILLE

Chatham County, North Carolina

Proj: DCLS
Coord:
Date: 5/11/2022
Revisions:

NOT FOR CONSTRUCTION
FOR REVIEW AND PRICING ONLY

SEARS DESIGN GROUP, P.A.
LANDSCAPE ARCHITECTS
625 W. Jones Street Raleigh, NC 27603
(919)832-7000 Fax (919)832-8140
email: searsdesign@bellsouth.net

Sheet No. SP2 Of 2

TYPICAL STREET SECTION - 60' R/W 20' PAVEMENT

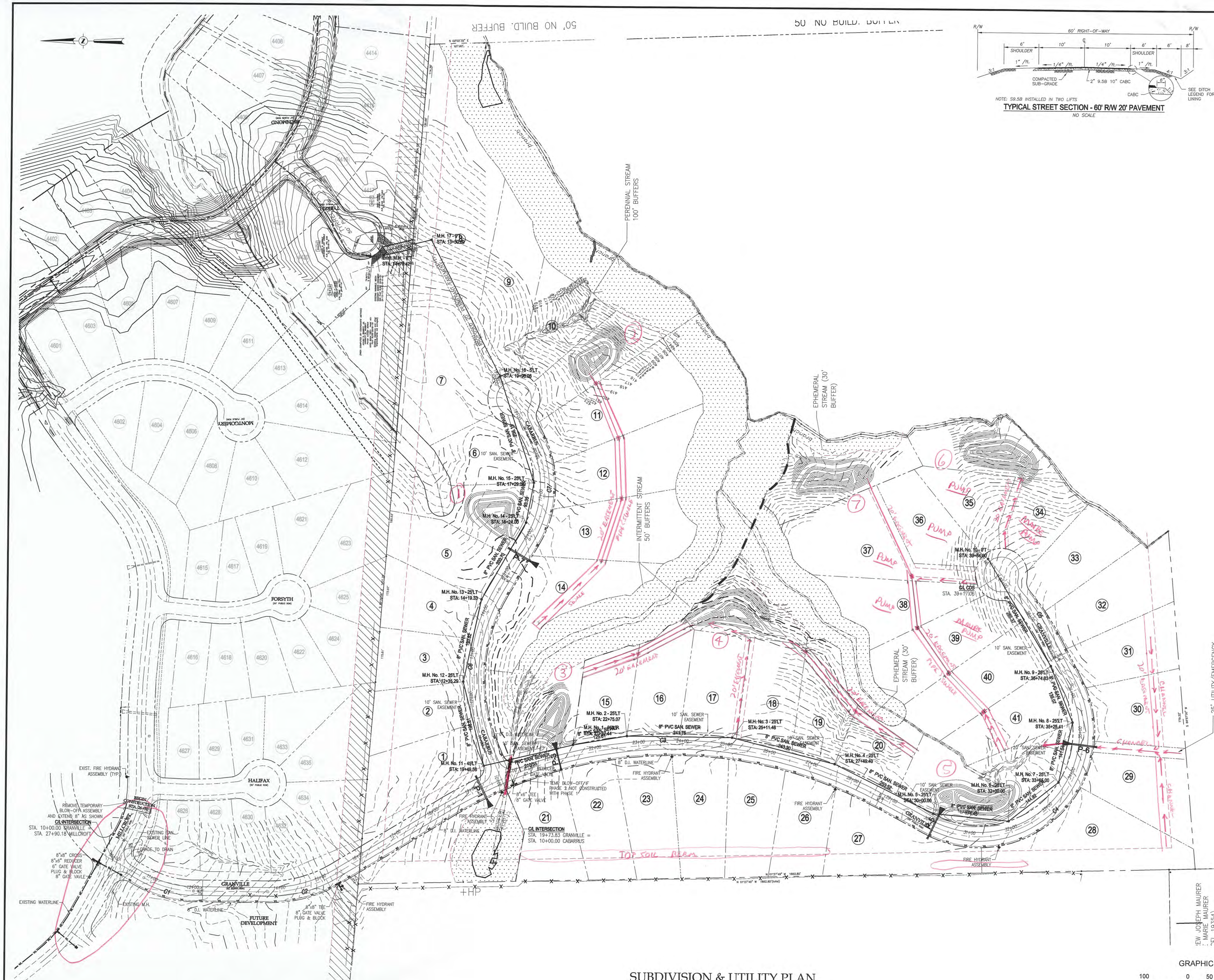
NO SCALE

NOTES

1. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
2. SURVEY INFORMATION FROM VAN FINCH LAND SURVEYS, PITTSBORO, NC
3. SITE LAYOUT BY SEARS DESIGN GROUP.
4. ALL PUBLIC STREET CONSTRUCTION SHALL BE IN COMPLIANCE WITH NORTH CAROLINA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
5. ALL WATER MAIN CONSTRUCTION SHALL BE IN COMPLIANCE WITH CHATHAM COUNTY PUBLIC UTILTIIES & WATER DIVISION STANDARDS AND SPECIFICATIONS. ALL WATER SHALL BE OWNED AND OPERATED BY THE COUNTY OF CHATHAM. NOTIFY CHATHAM COUNTY PUBLIC UTILITIES PRIOR TO ALL WATER MAIN TAPS AND BLOW OFF REMOVAL OF EXISTING WATER MAINS.
6. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN COMPLIANCE WITH FITCH CREATIONS, INC. (FEARRINGTON UTILITIES) STANDARDS AND SPECIFICATIONS. ALL SANITARY SEWER SHALL BE OWNED AND OPERATED BY FITCH CREATIONS OR ASSIGNS.
7. NOTIFY FITCH CREATIONS PRIOR TO ALL SANITARY SEWER TAPS OR CONNECTIONS. NEW SEWER MAINS SHALL REMAIN PLUGGED UNTIL NEW MAINS ARE TESTED AND ACCEPTED BY FITCH CREATIONS.
8. STOPS SIGNS SHALL BE INSTALLED AS SHOWN. SIGNS SHALL BE RETROREFLECTIVE PER NCDOT & MUTCD STANDARDS MOUNTED ON 350 CRASH COMPLIANT POST.
9. CURB INLETS SHALL BE NCDOT STANDARD 840.02. YARD INLETS SHALL BE NCDOT STANDARD 840.14.

UTILITY NOTES:

1. ALL BLOW-OFF ASSEMBLIES SHALL BE DIRECTED AWAY FROM ANY TRAVEL LANE.
2. ALL BLOW-OFF VALVES, VAULTS, MANHOLES, AND OTHER APPURTENANCES WITHIN THE PROPOSED NCDOT RIGHT-OF-WAY SHALL BE LOCATED BEHIND THE DITCH AND AT THE RIGHT-OF-WAY LINE. MANHOLES AND/OR VAULTS SHALL NOT BE PLACED IN THE DITCH LINE SIDE SLOPES OF DITCHES OR IN THE PAVEMENT.
3. COMPLETE ALL UTILITY WORK BEFORE FINAL OVERLAY IS PLACED.
4. AT POINTS WHERE UTILITY IS PLACED UNDER EXISTING STORM DRAINS, THE TRENCH SHALL BE BACKFILLED WITH EXCAVATABLE FLOWABLE FILL UP TO THE OUTSIDE DIAMETER OF THE EXISTING PIPE.
5. LOCATE METERS OUTSIDE OF THE RIGHT OF WAY.
6. MANHOLE RINGS AND COVERS AND VALVE BOXES IN THE RIGHT OF WAY SHALL BE INSTALLED FLUSH TO OR BELOW THE SURFACE OF THE GROUND IN SUCH MANNER THAT THEY DO NOT POSE OBSTACLES OR OBSTRUCTION TO PEDESTRIANS, VEHICLES, EQUIPMENT, OR ROADWAY MAINTENANCE OPERATIONS.
7. PROVIDE #10 INSULATED COPPER TRACER WIRE ON ALL PIPE PER CHATHAM COUNTY STANDARDS.
8. PVC WATER MAINS SHALL BE ANSI/NSF 61 COMPLIANT.



SUBDIVISION & UTILITY PLAN

SCALE: 1" = 60'

JOB NO.	?
DESIGN	ARK
DRAWN	MAT
CHECKED	ARK
SCALE	1" = 100'
FILE	Fearrington – Granville.dwg

REVISIONS:

DIEHL & PHILLIPS, P.A.
CONSULTING ENGINEERS - LIC. NO. C-0465
1500 Piney Plains Rd., Suite 200
CARY, N.C. 27518 • (919) 467-9972

D&P

FEARRINGTON SECTION X
MILLCROT REAILGNMENT
CHATHAM COUNTY, NORTH CAROLINA

MILLCROFT REALIGNMENT
OVERALL PLAN

NORTH CAROLINA PROFESSIONAL SEAL 13371 ENGINEER ALAN R. KEITH
5/24/19

SHEET 1 OF 9

Exhibit 30

RAMEY KEMP ASSOCIATES

TOGETHER WE ARE LIMITLESS

Granville Residential

Traffic Impact Analysis

Chatham County, North Carolina

RKA rameykemp.com

TRAFFIC IMPACT ANALYSIS

FOR

GRANVILLE RESIDENTIAL

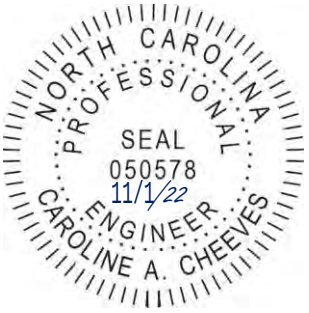
LOCATED

IN

CHATHAM COUNTY, NC

Prepared For:
Fitch Creations, Inc.
2000 Fearrington Village Circle
Pittsboro, NC 27312

Prepared By:
Infrastructure Consulting Services, Inc.
dba
Ramey Kemp Associates
5808 Faringdon Place
Raleigh, NC 27609
License #F-1489



NOVEMBER 2022

RKA Project No. 22190

Prepared By: DT

Reviewed By: CC

TRAFFIC IMPACT ANALYSIS
GRANVILLE RESIDENTIAL
CHATHAM COUNTY, NORTH CAROLINA

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Granville Residential development in accordance with the Chatham County (County) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed development is to be located south of Fearrington Village, along the future Granville Road in Chatham County, North Carolina. The proposed development, anticipated to be completed by 2028, is assumed to consist of a maximum of 44 single-family homes. Site access to the development is proposed via the northbound approach of the future full movement intersection of Millcroft Extension and Granville Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2028 No-Build Traffic Conditions
- 2028 Build Traffic Conditions

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the County and NCDOT and consists of the following existing intersections:

- US 15-501 and Weathersfield
- Weathersfield and W Camden
- Weathersfield and E Camden

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in June of 2022 by Quality Counts during typical weekday AM

(7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods while schools were in session for in-person learning:

- US 15-501 and Weathersfield
- Weathersfield and W Camden
- Weathersfield and E Camden

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate.

3. Site Trip Generation

The proposed development is assumed to consist of a maximum of 44 single-family homes. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition. Table E-1 provides a summary of the trip generation potential for the site.

Table E-1: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	44 units	474	9	26	29	17

4. Future Traffic Conditions

Through coordination with the County and NCDOT, it was determined that an annual growth rate of 3% would be used to generate 2028 projected weekday AM and PM peak hour traffic volumes. The following adjacent developments were identified to be considered under future conditions:

- Halifax
- Forsyth
- Montgomery
- Richmond
- Tyrell

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2022 existing, 2028 no-build, and 2028 build traffic conditions. Refer to Section 7 of the TIA for the capacity analysis summary performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The improvements are summarized below and are illustrated in Figure E-1.

Background Improvements by Millcroft Extension

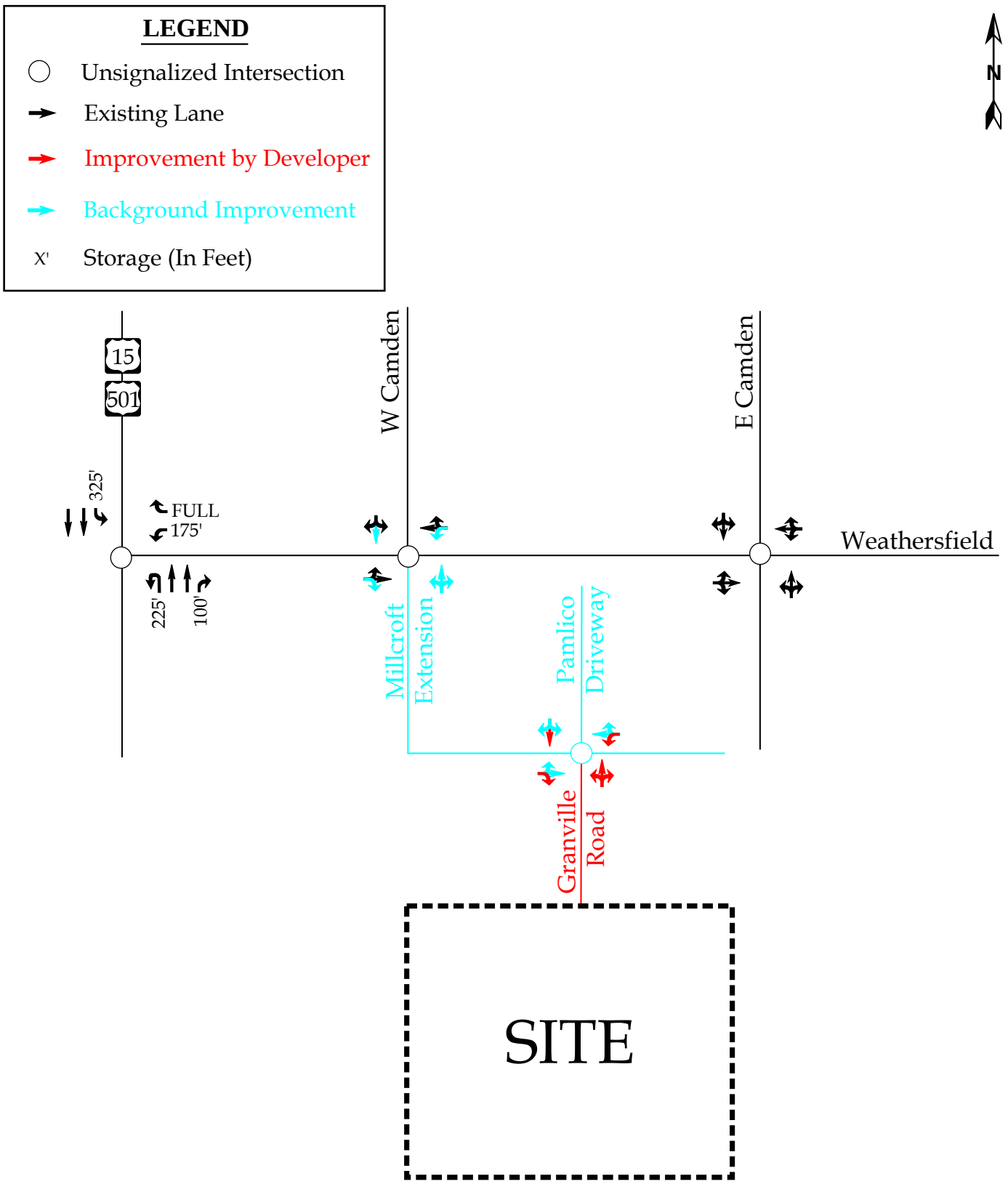
Weathersfield and W Camden / Millcroft Extension

- Construct the northbound Millcroft extension to align with W Camden.

Recommended Improvements by Developer

Millcroft Extension and Granville Road

- Construct the northbound approach (Granville Road) with one (1) ingress lane and one (1) egress lane.
- Provide stop-control for the northbound approach.



RAMEY KEMP ASSOCIATES

Granville Residential
Chatham County, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure E-1

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TECHNICAL APPENDIX

TRAFFIC IMPACT ANALYSIS
GRANVILLE RESIDENTIAL
CHATHAM COUNTY, NORTH CAROLINA

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Granville Residential development to be located south of Fearrington Village, along the future Granville Road in Chatham County, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development, anticipated to be completed by 2028, is assumed to consist of a maximum of 44 single-family homes.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2028 No-Build Traffic Conditions
- 2028 Build Traffic Conditions

1.1. Site Location and Study Area

The development is proposed to be located south of Fearrington Village, along the future Granville Road in Chatham County, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the North Carolina Department of Transportation (NCDOT) and Chatham County (County) and consists of the following existing intersections:

- US 15-501 and Weathersfield
- Weathersfield and W Camden

- Weathersfield and E Camden

Refer to Appendix A for the approved scoping documentation.

1.2. Proposed Land Use and Site Access

The site is expected to be located south of Fearrington Village, along the future Granville Road. The proposed development, anticipated to be completed by 2028, is assumed to consist of a maximum of 44 single-family homes.

Site access to the development is proposed via the northbound approach of the future full movement intersection of Millcroft Extension and Granville Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of residential development and undeveloped land.

1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), lane widths, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1, on the following page, provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	Maintained By	2018 AADT (vpd)
US 15-501		4-lane divided	55 mph	NCDOT	20,000
Weathersfield	SR 1812	2-lane undivided	25 mph	NCDOT	1,730*
W Camden	SR 1814	2-lane undivided	25 mph (assumed)	NCDOT	170*
E Camden	SR 1813	2-lane undivided	25 mph (assumed)	NCDOT	1,720*

*ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.

N

LEGEND

Study Intersection

Study Area

RAMEY KEMP ASSOCIATES

Granville Residential
Chatham County, NC

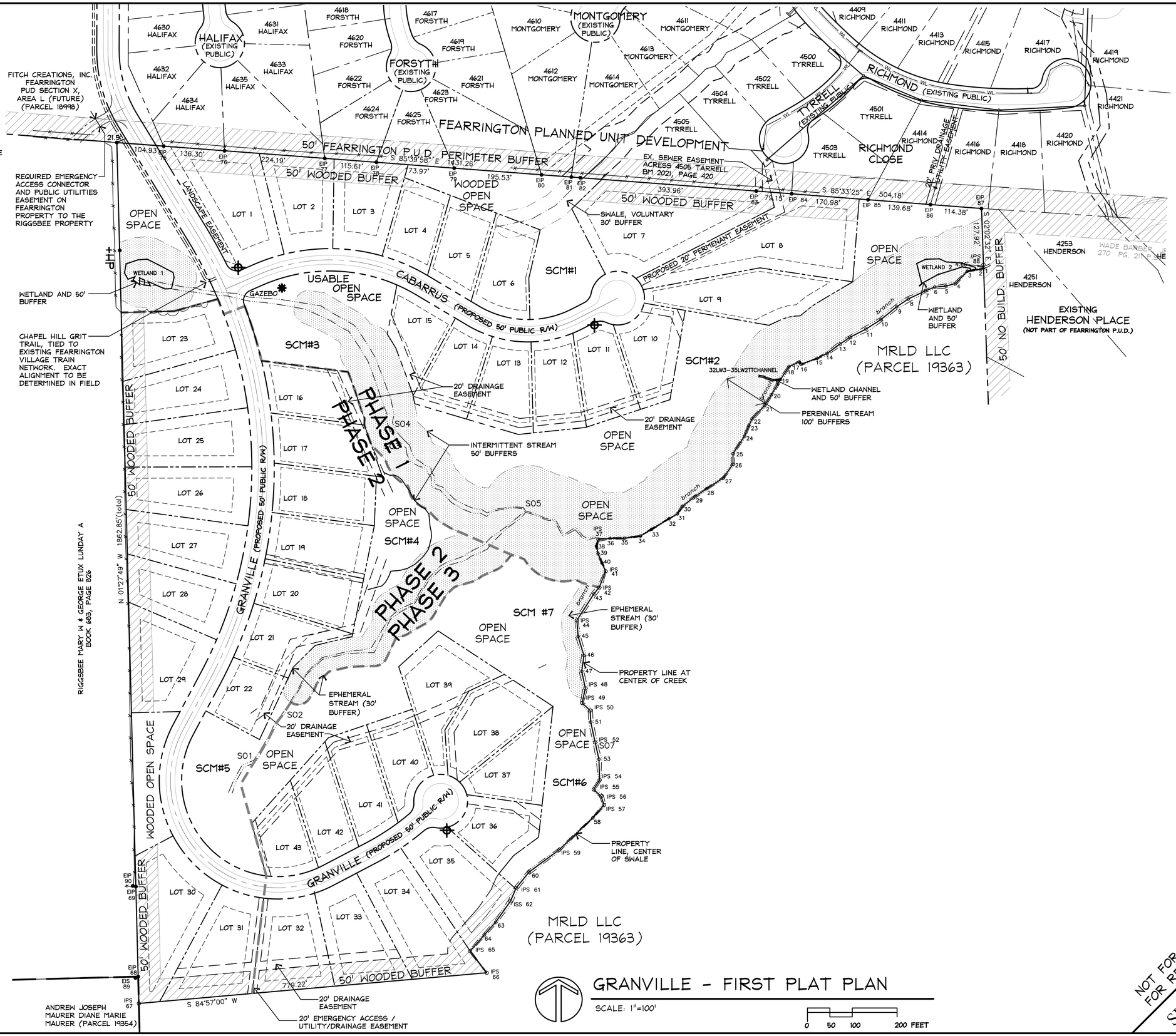
Site Location Map

Scale: Not to Scale | Figure 1

LEGEND

- PHASE BOUNDARY
- RIGHT OF WAY LINE
- EASEMENT
- LOT LINE
- BUFFER
- STREAM BUFFER
- STREAM BANK
- TREE LINE
- PHASE LINE
- STREET LIGHTS
- OPEN SPACE FEATURE
- SCM# STORMWATER POND

LINE			BEARING		DISTANCE
1	–	2	S 64°00'59"	W	6.65'
2	–	3	S 81°48'48"	W	30.86'
3	–	4	S 43°41'10"	W	37.98'
4	–	5	S 74°46'36"	W	22.53'
5	–	6	S 84°31'58"	W	24.94'
6	–	7	S 68°27'25"	W	22.23'
7	–	8	S 64°28'31"	W	42.75'
8	–	9	S 56°09'16"	W	30.89'
9	–	10	S 50°45'03"	W	45.26'
10	–	11	S 57°43'27"	W	39.75'
11	–	12	S 62°47'22"	W	40.25'
12	–	13	S 55°49'09"	W	26.38'
13	–	14	S 53°44'48"	W	35.71'
14	–	15	S 64°20'07"	W	25.02'
15	–	16	S 69°15'43"	W	38.02'
16	–	17	N 37°26'12"	W	6.79'
17	–	18	S 65°41'10"	W	25.05'
18	–	19	S 33°24'06"	W	34.67'
19	–	20	S 30°48'19"	W	40.23'
20	–	21	S 31°59'23"	W	27.99'
21	–	22	S 43°19'07"	W	40.76'
22	–	23	S 25°33'43"	W	16.63'
23	–	24	S 22°33'05"	W	25.46'
24	–	25	S 33°21'26"	W	46.81'
25	–	26	S 00°07'39"	W	23.75'
26	–	27	S 35°08'14"	W	37.56'
27	–	28	S 57°16'41"	W	44.15'
28	–	29	S 55°59'20"	W	31.66'
29	–	30	S 51°58'23"	W	34.80'
30	–	31	S 34°17'47"	W	20.64'
31	–	32	S 59°55'05"	W	21.73'
32	–	33	S 58°48'11"	W	45.34'
33	–	34	S 58°50'19"	W	28.92'
34	–	35	S 82°00'03"	W	36.32'
35	–	36	S 89°06'05"	W	31.68'
36	–	37	S 85°22'49"	W	26.50'
37	–	38	S 15°56'36"	W	15.63'
38	–	39	S 12°27'45"	E	16.83'
39	–	40	S 22°34'06"	E	22.56'
40	–	41	S 23°43'32"	E	20.62'
41	–	42	S 21°29'32"	W	38.58'
42	–	43	S 39°44'11"	W	19.33'
43	–	44	S 32°38'32"	W	69.97'
44	–	45	S 04°39'57"	E	36.10'
45	–	46	S 16°50'31"	E	44.26'
46	–	47	S 07°50'58"	W	35.65'
47	–	48	S 12°05'25"	E	38.93'
48	–	49	S 12°30'44"	W	33.57'
49	–	50	S 46°58'05"	E	24.51'
50	–	51	S 02°54'22"	E	25.95'
51	–	52	S 12°16'00"	E	46.24'
52	–	53	S 12°41'20"	E	38.53'
53	–	54	S 01°51'48"	E	46.73'
54	–	55	S 31°58'15"	W	24.76'
55	–	56	S 47°12'06"	E	22.54'
56	–	57	S 18°26'24"	E	20.23'
57	–	58	S 40°56'42"	W	38.02'
58	–	59	S 46°27'18"	W	103.28'
59	–	60	S 53°32'06"	W	83.91'
60	–	61	S 38°57'38"	W	46.04'
61	–	62	S 23°16'21"	W	31.94'
62	–	63	S 35°15'13"	W	57.13'
63	–	64	S 41°36'53"	W	38.76'
64	–	65	S 41°20'03"	W	47.67'
65	–	66	S 37°32'05"	E	60.91'
67	–	68	N 01°27'45"	W	60.00'
80	–	81	S 85°39'58"	E	66.71'
81	–	82	S 85°39'58"	E	20.05'
68	–	89	S 35°15'23"	W	0.85'(tie)
69	–	90	N 80°04'32"	W	1.58'(tie)



GRANVILLE - FIRST PLAT PLAN

SCALE: 1"=100'

Fitch Creations, Inc.
2000 Fearrington Village Cricle
Pittsboro, NC 27312

FIRST PLAT PLAN SUBMITTAL

GRANVILLE

PLANNED RESIDENTIAL DEVELOPMENT (S.U.P.)

Chatham County, North Carolina

Proj. Coord: DCLS

Date: 10/13/2022

Revisions:

NOT FOR CONSTRUCTION
FOR REVIEW AND PRICING ONLY

SEARS DESIGN GROUP, P.A.
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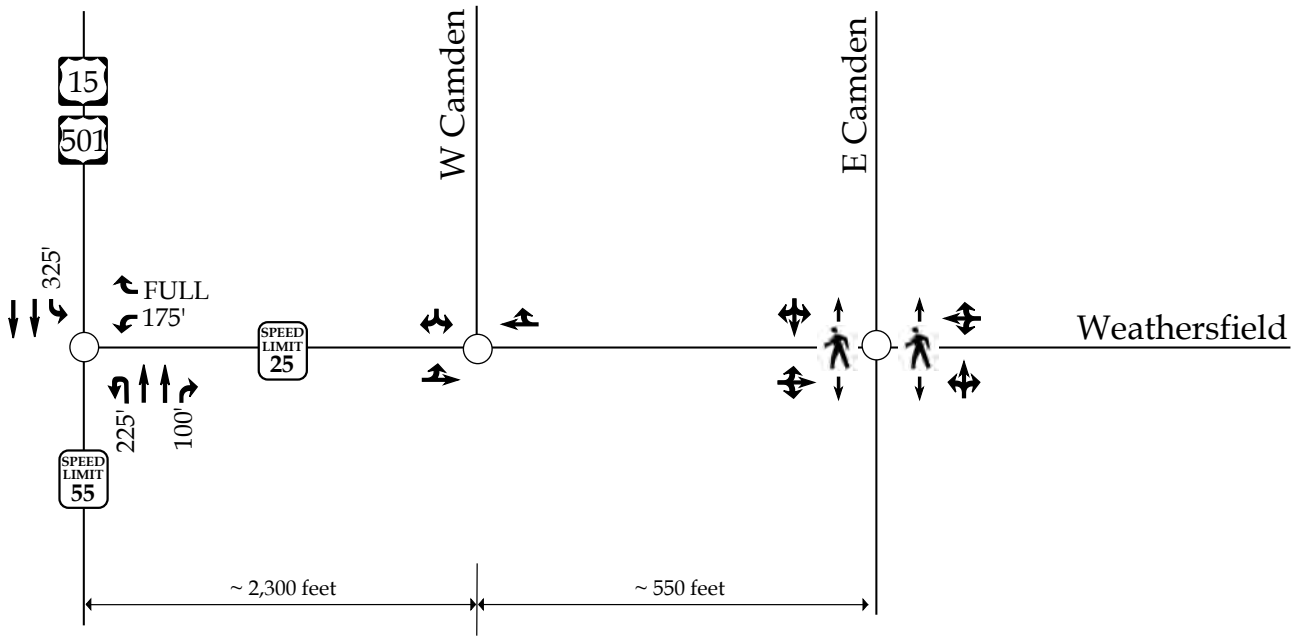
Sheet No. SP2 Of 2

LEGEND

- Unsignalized Intersection
- Existing Lane
- X' Storage (In Feet)
- Pedestrian Crosswalk
- SPEED LIMIT XX Posted Speed Limit

N



RAMEY KEMP ASSOCIATES

Granville Residential
Chatham County, NC

2022 Existing
Lane Configurations

Scale: Not to Scale | Figure 3

2. 2022 EXISTING PEAK HOUR CONDITIONS

2.1. 2022 Existing Peak Hour Traffic Volumes

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in June of 2022 by Quality Counts during typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods while schools were in session for in-person learning:

- US 15-501 and Weathersfield
- Weathersfield and W Camden
- Weathersfield and E Camden

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2022 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.

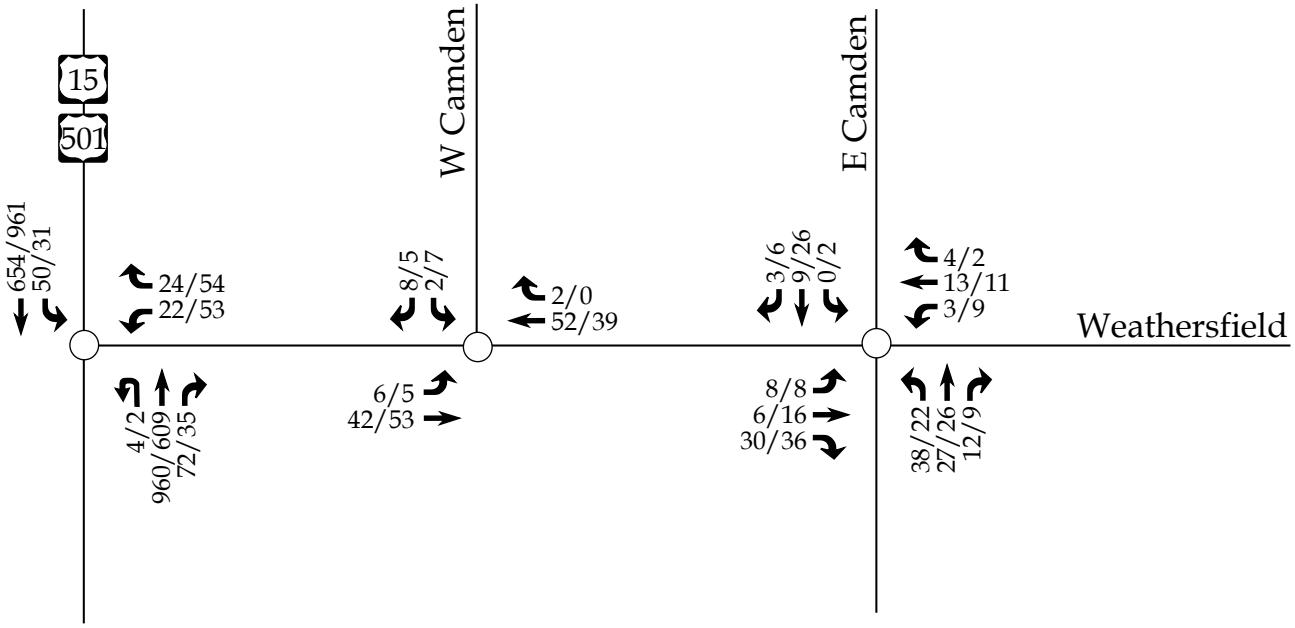
2.2. Analysis of 2022 Existing Peak Hour Traffic Conditions

The 2022 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. Signal information was obtained from NCDOT and is included in Appendix C. The results of the analysis are presented in Section 7 of this report.

LEGEND

◯ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	2022 Existing Peak Hour Traffic	
		Scale: Not to Scale	Figure 4

3. 2028 NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with the County and NCDOT, it was determined that an annual growth rate of 3% would be used to generate 2028 projected weekday AM and PM peak hour traffic volumes. This growth rate was discussed during scoping and is consistent with historical AADT growth within the vicinity of the site. Refer to Figure 5 for 2028 projected peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the County and NCDOT, the following adjacent developments were identified to be included as an approved adjacent development in this study:

- Halifax
- Forsyth
- Montgomery
- Richmond
- Tyrell

Table 2, on the following page, provides a summary of the adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Halifax	South of Fearrington Village, along Halifax	**N/A** *Expected prior to the build out of the proposed development*	10 single-family homes	**N/A** *Trips generated and applied to roadway network*
Forsyth	South of Fearrington Village, along Forsyth	**N/A** *Expected prior to the build out of the proposed development*	11 single-family homes	**N/A** *Trips generated and applied to roadway network*
Montgomery	South of Fearrington Village, along Montgomery	**N/A** *Expected prior to the build out of the proposed development*	14 single-family homes	**N/A** *Trips generated and applied to roadway network*
Richmond	South of Fearrington Village, along Richmond	**N/A** *Expected prior to the build out of the proposed development*	21 single-family homes	**N/A** *Trips generated and applied to roadway network*
Tyrell	South of Fearrington Village, along Tyrell	**N/A** *Expected prior to the build out of the proposed development*	5 single-family homes	**N/A** *Trips generated and applied to roadway network*

It should be noted that the adjacent developments were approved, during scoping, by the County and NCDOT. A percentage of these adjacent single-family homes have been partially constructed making this study conservative as a portion of homes were constructed when peak hour turning movement counts were collected. Adjacent development trips are shown in Figure 6. Adjacent development information can be found in Appendix C.

3.3. Future Roadway Improvements

Based on coordination with the NCDOT and the County, it was determined that the roadway improvements associated with the future Millcroft Extension and the future full movement intersection of Millcroft Extension and Granville Road should be considered in this study.

The future roadway plans can be found in Appendix D.

3.4. 2028 No-Build Peak Hour Traffic Volumes

The 2028 no-build traffic volumes were determined by projecting the 2022 existing peak hour traffic to the year 2028 and adding the adjacent development trips. Refer to Figure 7 for an illustration of the 2028 no-build peak hour traffic volumes at the study intersections.

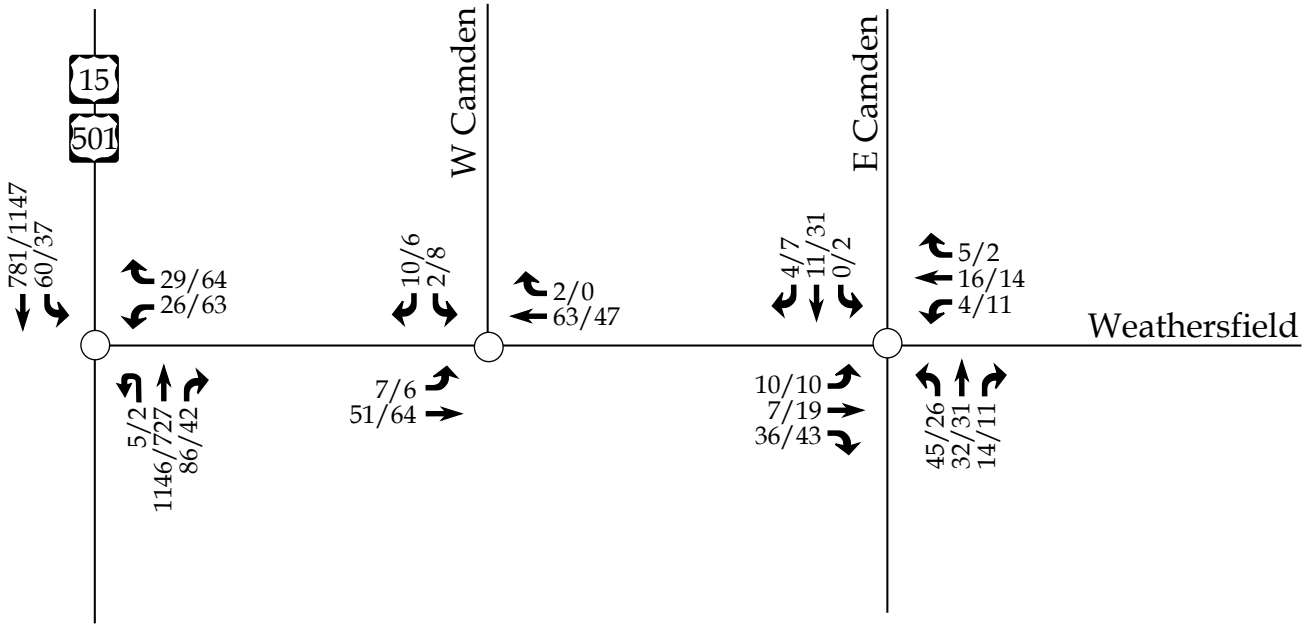
3.5. Analysis of 2028 No-Build Peak Hour Traffic Conditions

The 2028 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.

LEGEND

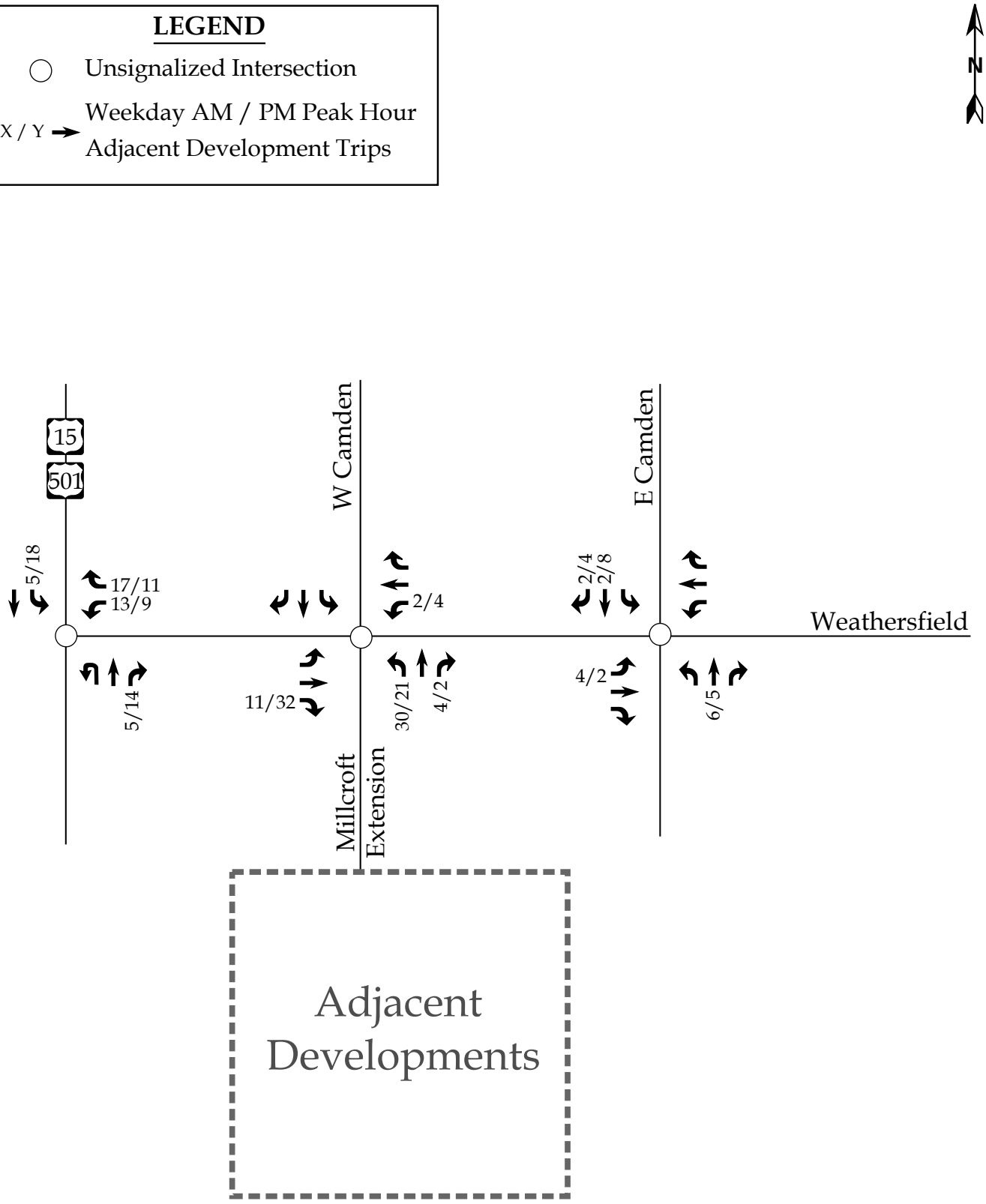
◯ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RKA RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	2028 Projected Peak Hour Traffic Scale: Not to Scale | Figure 5



RAMEY KEMP ASSOCIATES

Granville Residential
Chatham County, NC

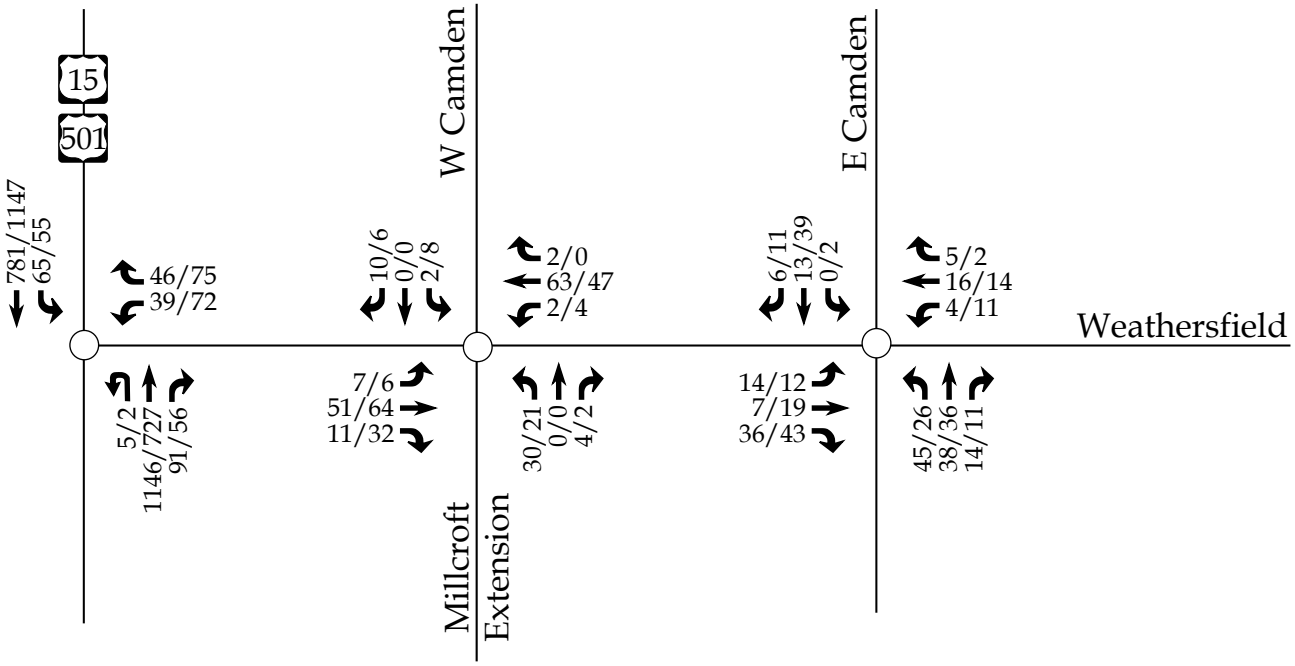
Peak Hour Adjacent
Development Trips

Scale: Not to Scale | Figure 6

LEGEND

◯ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Traffic



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	2028 No-Build Peak Hour Traffic	
		Scale: Not to Scale	Figure 7

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of a maximum of 44 single-family homes. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Single-Family Detached Housing (210)	44 units	474	9	26	29	17

It is estimated that the proposed development will generate approximately 474 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 35 trips (9 entering and 26 exiting) will occur during the weekday AM peak hour and 46 trips (29 entering and 17 exiting) will occur during the weekday PM peak hour.

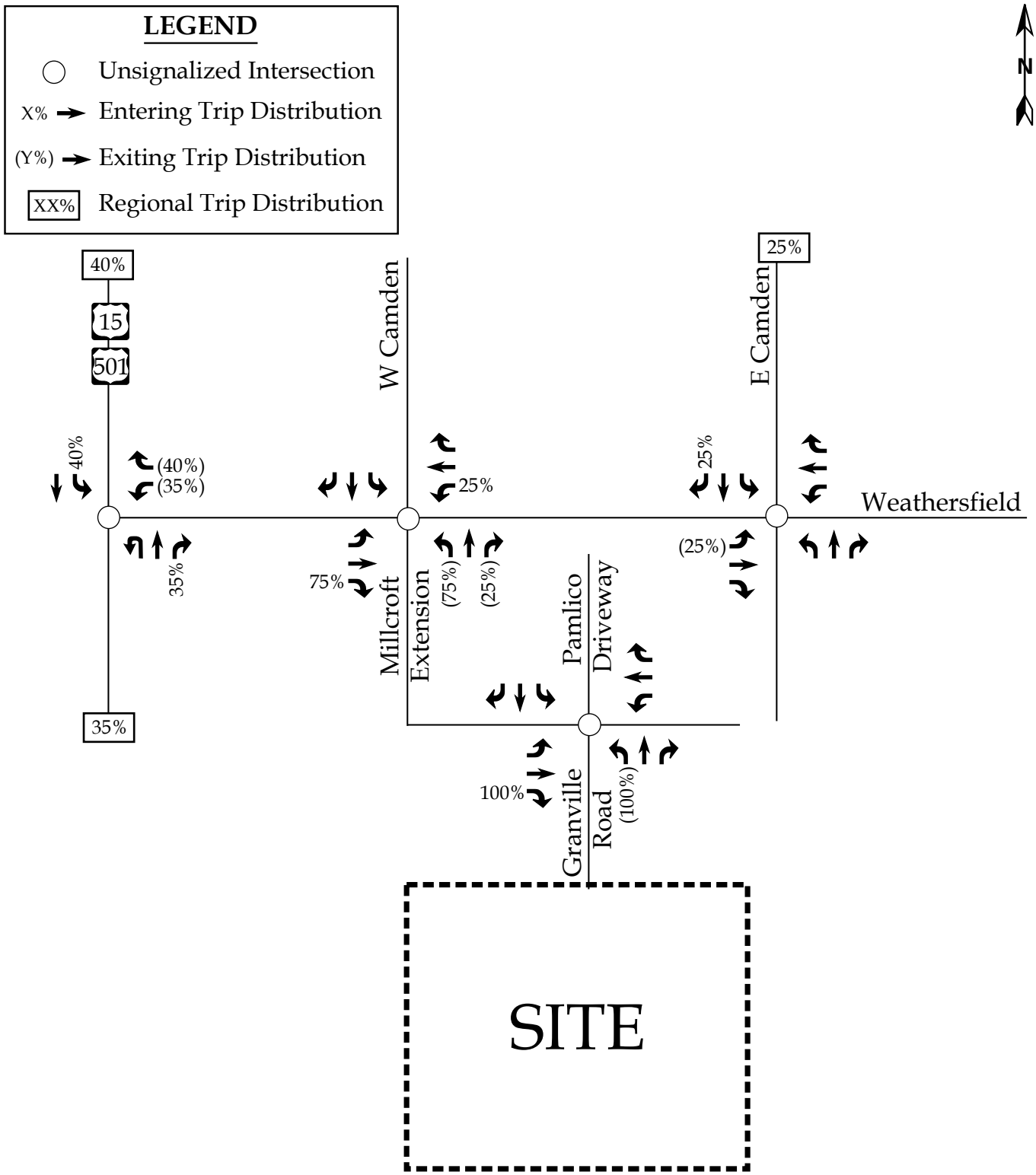
4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

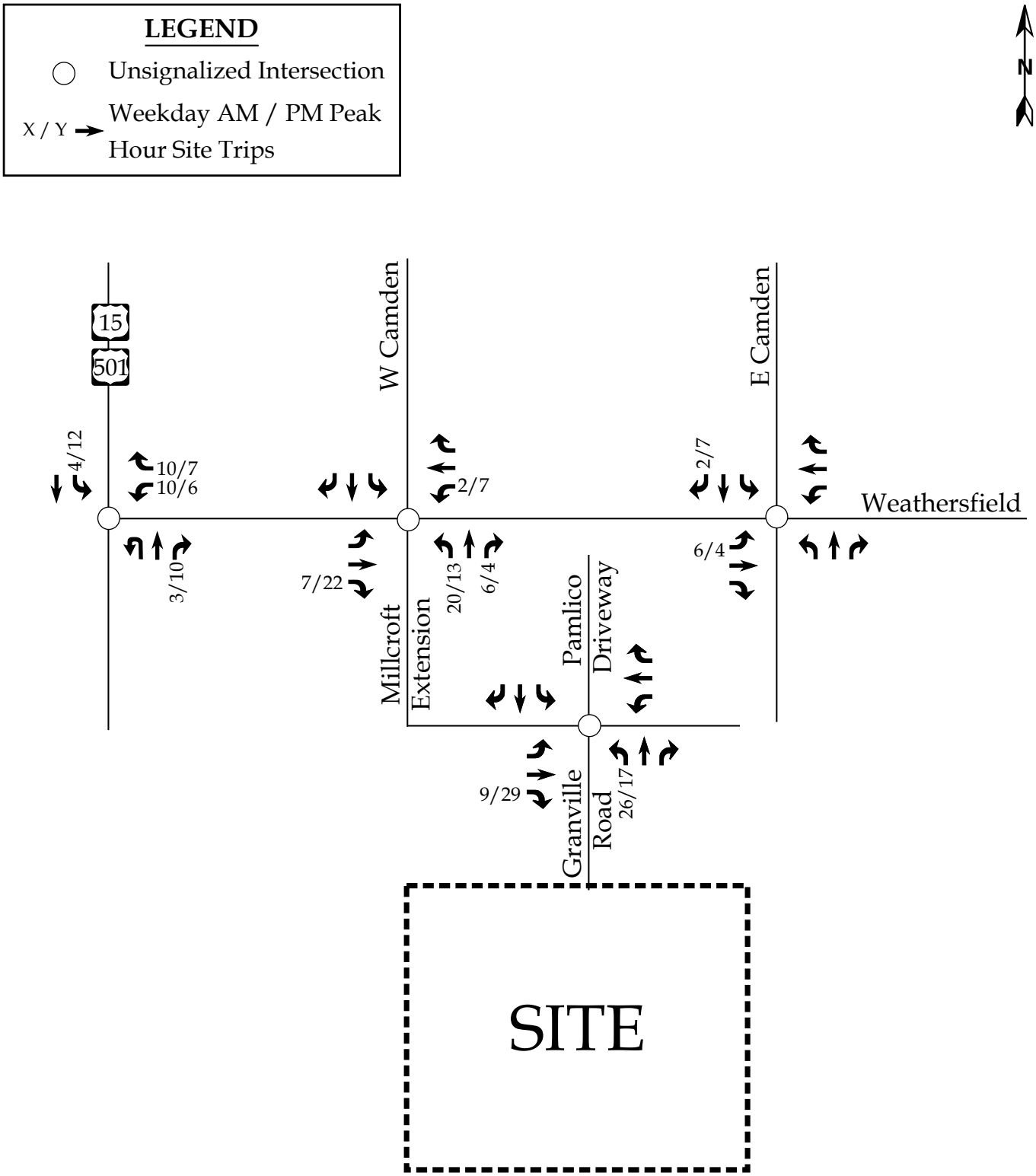
It is estimated that the site trips will be regionally distributed as follows:

- 40% to/from the north via US 15-501
- 35% to/from the south via US 15-501
- 25% to/from the north via E Camden

The site trip distribution is shown in Figure 8. Refer to Figure 9 for the site trip assignment.



RKA RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	Site Trip Distribution Scale: Not to Scale | Figure 8



RKA RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	Site Trip Assignment	
		Scale: Not to Scale	Figure 9

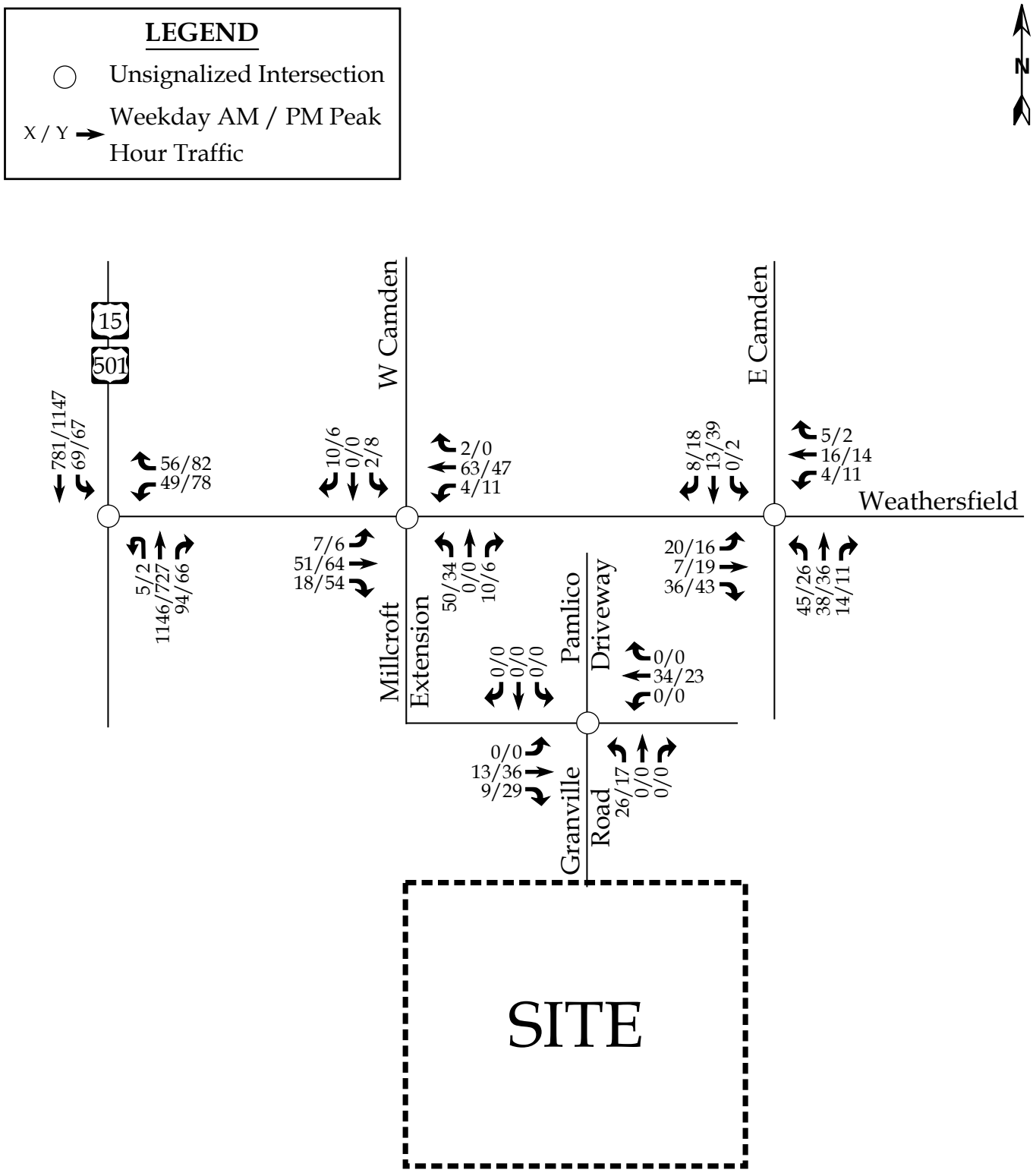
5. 2028 BUILD TRAFFIC CONDITIONS

5.1. 2028 Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2028 no-build traffic volumes to determine the 2028 build traffic volumes. Refer to Figure 10 for an illustration of the 2028 build peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of 2028 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2028 build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

RAMEY KEMP ASSOCIATES	Granville Residential Chatham County, NC	2028 Build Peak Hour Traffic	
		Scale: Not to Scale	Figure 10

6. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 10.3), was used to complete the analyses for the study area intersections. Please note that the unsignalized capacity analysis for two-way stop-controlled intersections does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as "the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions." Level of service (LOS) is a term used to represent different driving conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers." Level of service varies from Level "A" representing free flow, to Level "F" where breakdown conditions are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes "initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay". An average control delay of 50 seconds at a signalized intersection results in LOS "D" operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

6.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestion Management Guidelines.

7. CAPACITY ANALYSIS

7.1. US 15-501 [NB-SB] and Weathersfield [WB]

The existing unsignalized intersection of US 15-501 and Weathersfield was analyzed under 2022 existing, 2028 no-build, and 2028 build traffic conditions with lane configurations and traffic control shown in Table 5. Refer to Table 5 for a summary of the analysis results. Refer to Appendix E for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix I.

Table 5: Analysis Summary of US 15-501 and Weathersfield

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	WB NB SB	1 LT, 1 RT 1 UT, 2 TH, 1 RT 1 LT, 2 TH	D[2] B[1] B[1]	N/A	D[2] C[1] A[1]	N/A
2028 No-Build	WB NB SB	1 LT, 1 RT 1 UT, 2 TH, 1 RT 1 LT, 2 TH	F[2] B[1] B[1]	N/A	F[2] C[1] B[1]	N/A
2028 Build	WB NB SB	1 LT, 1 RT 1 UT, 2 TH, 1 RT 1 LT, 2 TH	F[2] B[1] B[1]	N/A	F[2] C[1] B[1]	N/A
2028 Build – *Signalized*	WB NB SB	1 LT, 1 RT 1 UT, 2 TH, 1 RT 1 LT, 2 TH	D B A	B (13)	C B B	B (14)

1. Level of service for major-street U-turn / left-turn movement.
2. Level of service for minor-street approach.

Improvements to mitigate poor levels of service shown in *italics*.

Capacity analysis of 2022 existing traffic conditions indicates that the major-street U-turn / left-turn movements and the minor-street approach at the intersection of US 15-501 and Weathersfield currently operate at LOS D or better during the weekday AM and weekday PM peak hours. Under 2028 no-build and 2028 build traffic conditions, the major-street U-turn / left-turn movements are expected to operate at LOS C or better during the weekday AM and weekday PM peak hours. The minor-street approach is expected to operate at LOS F during the weekday AM and weekday PM peak hours. These levels-of-service are not uncommon

for stop-controlled minor-street approaches when heavy volumes are experienced on the major throughfare (US 15-501).

A traffic signal was considered at this intersection utilizing the criteria contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) under 2028 build traffic conditions. Based on these criteria, a traffic signal was warranted under 2028 build conditions during the weekday AM and PM peak hours. Although peak hour warrants for a signal are met under 2028 build conditions, NCDOT typically requires warrants to be met for up to eight hours during a weekday in order to approve a traffic signal for installation. With signalization, the intersection is expected to operate at an overall LOS B during the weekday AM and weekday PM peak hour.

Although a traffic signal may be warranted at this intersection under 2028 build conditions to mitigate poor levels of service, the intersection should be monitored to determine if and when a traffic signal would be needed. It should be noted that the proposed development is only expected to account for approximately 1% of the overall traffic at the intersection during the weekday AM and PM peak hours. When comparing 2028 no-build and 2028 build conditions, delays on the westbound approach are not expected to increase beyond 25% [associated with approach]. Additionally, based on the 95th percentile queue lengths reported in Synchro, queuing on the minor-street approach is not expected to increase by more than one vehicle when comparing 2028 no-build and 2028 build conditions. Due to minor impacts to queuing by the proposed development and the low percentage of traffic expected, no improvements are recommended at this intersection by the proposed development.

7.2. Weathersfield [EB-WB] and W Camden [SB] / Millcroft Extension [NB]

The existing unsignalized intersection of Weathersfield and W Camden was analyzed under 2022 existing traffic conditions with lane configurations and traffic control shown in Table 6. Under future conditions, the existing Millcroft Road is expected to be extended to align with W Camden and was analyzed under 2028 no-build, and 2028 build traffic conditions with lane configuration and traffic control shown in Table 6. Refer to Table 6 for a summary of the analysis results. Refer to Appendix F for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix I.

Table 6: Analysis Summary of Weathersfield and W Camden / Millcroft Extension

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB WB SB	1 LT-TH 1 TH-RT 1 LT-RT	A[1] -- A[2]	N/A	A[1] -- A[2]	N/A
2028 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A[1] A[1] A[2] A[2]	N/A	A[1] A[1] A[2] A[2]	N/A
2028 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A[1] A[1] A[2] A[2]	N/A	A[1] A[1] B[2] A[2]	N/A

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Background improvements by the Millcroft Extension shown underlined.

Capacity analysis of 2022 existing, 2028 no-build, and 2028 build traffic conditions indicates that the major-street left-turn movements and the minor-street approaches at the intersection of Weathersfield and W Camden / Millcroft Extension are expected to operate at LOS B or better during the weekday AM and PM peak hours. Due to acceptable levels of service and minimal impacts from the proposed development, no improvements are recommended at this study intersection by the proposed development.

7.3. Weathersfield [EB-WB] and E Camden [NB-SB]

The existing all-way stop controlled intersection of Weathersfield and E Camden was analyzed under 2022 existing, 2028 no-build, and 2028 build traffic conditions with the lane configurations and traffic control shown in Table 7. Refer to Table 7 for a summary of the analysis results. Refer to Appendix G for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix I.

Table 7: Analysis Summary of Weathersfield and E Camden

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2022 Existing	EB	1 LT-TH-RT	A[3]	A (7)	A[3]	A (7)
	WB	1 LT-TH-RT	A[3]		A[3]	
	NB	1 LT-TH-RT	A[3]		A[3]	
	SB	1 LT-TH-RT	A[3]		A[3]	
2028 No-Build	EB	1 LT-TH-RT	A[3]	A (8)	A[3]	A (8)
	WB	1 LT-TH-RT	A[3]		A[3]	
	NB	1 LT-TH-RT	A[3]		A[3]	
	SB	1 LT-TH-RT	A[3]		A[3]	
2028 Build	EB	1 LT-TH-RT	A[3]	A (8)	A[3]	A (8)
	WB	1 LT-TH-RT	A[3]		A[3]	
	NB	1 LT-TH-RT	A[3]		A[3]	
	SB	1 LT-TH-RT	A[3]		A[3]	

3. Level of service for stop-controlled approach.

Capacity analysis of 2022 existing, 2028 no-build, and 2028 build conditions indicate that the intersection of Weathersfield and E Camden is expected to operate at an overall LOS A during the weekday AM and weekday PM peak hours. Additionally, all approaches are expected to operate at LOS A during the weekday AM and weekday PM peak hours. Due to acceptable levels of service and minimal impacts from the proposed development, no improvements are recommended at this study intersection by the proposed development.

7.4. Millcroft Extension [EB-WB] and Granville Road [NB-SB]

The proposed development is expected to construct the northbound approach (Granville Road) to connect to the future Millcroft Extension to order to provide access to the proposed site via this full movement intersection. The proposed intersection was analyzed under 2028 build traffic conditions with the lane configurations and traffic control shown in Table 8. Refer to Table 8 for a summary of the analysis results. Refer to Appendix H for the Synchro capacity analysis reports. SimTraffic queuing reports can be found in Appendix I.

Table 8: Analysis Summary of Millcroft Extension and Granville Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2028 Build	EB WB **NB** SB	1 LT-TH-**RT** **1 LT**-TH-RT **1 LT-TH-RT** 1 LT-**TH**-RT	A[1] A[1] A[2] A[2]	N/A	A[1] A[1] A[2] A[2]	N/A

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Improvements by Developer shown in bold.
Background improvements by Millcroft Extension and adjacent developments shown underlined.

Under 2028 build traffic conditions, all approaches at the proposed intersection of Millcroft Extension and Granville are expected to operate at LOS A during the weekday AM and weekday PM peak hours.

Exclusive turn lanes were considered at this intersection based on the methodology outlined in the *Policy on Street and Driveway Access to North Carolina Highways* (Driveway Manual). Based on the findings from the turn lane warrant analysis, exclusive turn lanes are not warranted or recommended at this intersection due to the low turning volumes. It should be noted that all approaches are expected to operate at an acceptable level-of-service under 2028 build conditions.

8. SENSITIVITY ANALYSIS

A sensitivity analysis was conducted at all the study intersections to determine the maximum number of units the proposed development could construct that would cause the intersections to degrade to a failing level-of-service. To perform this analysis, trips were generated using land use code (LUC) 210 (single-family homes) contained within the ITE *Trip Generation Manual*, 11th Edition and distributed using the proposed development's distribution shown in Figure 8. Table 9 below illustrates the number of units that is expected to cause the study intersection to fail and a comparison of the original 2028 build traffic volumes and the 2028 build traffic volumes that includes these additional units.

Table 9: Sensitivity Analysis Results

Intersection	# Of Units	Total 2028 Build Volume - Original		Total 2028 Build Volume – Additional Units	
		AM Peak	PM Peak	AM Peak	PM Peak
US 15-501 and Weathersfield	44	2,200	2,169	2,200	2,169
Weathersfield and W Camden	875	215	233	718	954
Weathersfield and E Camden	1,275	206	237	841	1,190
Millcroft Extension and Granville Road	4,900	80	102	802	1,147

It should be noted that the intersection of US 15-501 and Weathersfield is expected to operate at poor levels of service with the original density of the proposed development. Due to high volumes on the major-street, this intersection is expected to operate poorly under 2028 no-build conditions, prior to the build out of the development. Based on this analysis, it can be concluded that intersections father away from the proposed development and intersections with less site traffic assigned to them would require the development to consist of more units in order for them to fail. For all the study intersections to operate with failing levels of service, the developer would have to build at least 4,900 single family homes.

9. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed Granville Residential development, south of Fearrington Village along the future Granville Road in Chatham County, North Carolina. The proposed development is expected to be a residential development and be built out by 2028. Site access to the development is proposed via the northbound approach of the future full movement intersection of Millcroft Extension and Granville Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2022 Existing Traffic Conditions
- 2028 No-Build Traffic Conditions
- 2028 Build Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 474 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 35 trips (9 entering and 26 exiting) will occur during the weekday AM peak hour and 46 trips (29 entering and 17 exiting) will occur during the weekday PM peak hour.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

Intersection Capacity Analysis Summary

All the study area intersections (including the proposed site driveways) are expected to operate at acceptable levels-of-service under existing and future year conditions with the exception of the intersections listed below. A summary of the study area intersections that are expected to need improvements are as follows:

US 15-501 and Weathersfield

The minor-street approach is expected to operate at LOS F during the weekday AM and weekday PM peak hours. These levels-of-service are not uncommon for stop-controlled minor-street approaches when heavy volumes are experienced on the major throughfare (US 15-501). A traffic signal was considered at this intersection utilizing the criteria contained in the *Manual on Uniform Traffic Control Devices* (MUTCD) under 2028 build traffic conditions. Based on these criteria, a traffic signal was warranted under 2028 build conditions during the weekday AM and PM peak hours. Although peak hour warrants for a signal are met under 2028 build conditions, NCDOT typically requires warrants to be met for up to eight hours during a weekday in order to approve a traffic signal for installation. With signalization, the intersection is expected to operate at an overall LOS B during the weekday AM and weekday PM peak hour.

Although a traffic signal may be warranted at this intersection under 2028 build conditions to mitigate poor levels of service, the intersection should be monitored to determine if and when a traffic signal would be needed. It should be noted that the proposed development is only expected to account for approximately 1% of the overall traffic at the intersection during the weekday AM and PM peak hours. When comparing 2028 no-build and 2028 build conditions, delays on the westbound approach are not expected to increase beyond 25% [associated with approach]. Additionally, based on the 95th percentile queue lengths reported in Synchro, queuing on the minor-street approach is not expected to increase by more than one vehicle when comparing 2028 no-build and 2028 build conditions. Due to minor impacts to queuing by the proposed development and the low percentage of traffic expected, no improvements are recommended at this intersection by the proposed development.

10. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 11 for an illustration of the recommended lane configuration for the proposed development.

Background Improvements by Millcroft Extension

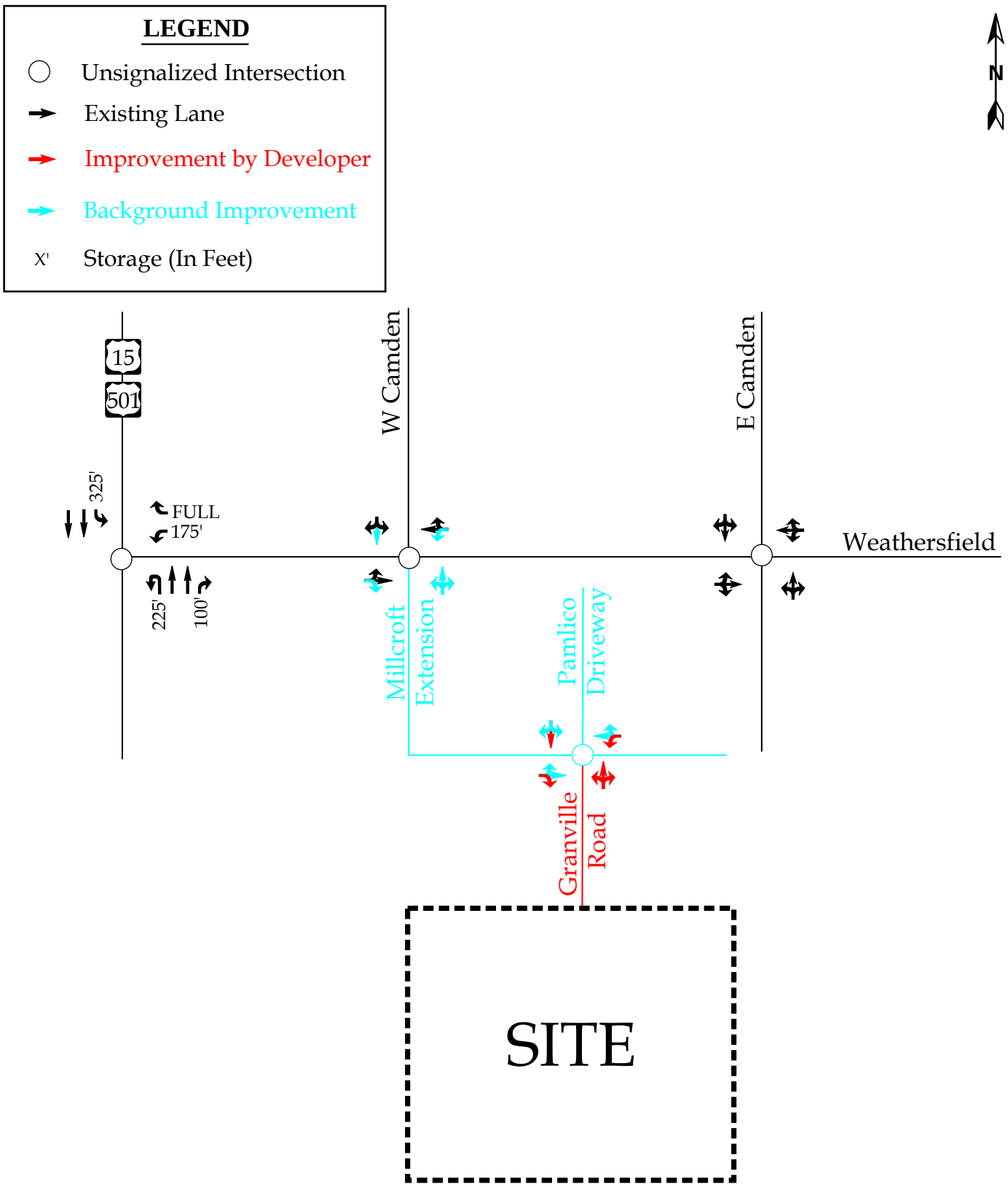
Weathersfield and W Camden / Millcroft Extension

- Construct the northbound Millcroft extension to align with W Camden.

Recommended Improvements by Developer

Millcroft Extension and Granville Road

- Construct the northbound approach (Granville Road) with one (1) ingress lane and one (1) egress lane.
- Provide stop-control for the northbound approach.



RAMEY KEMP ASSOCIATES

Granville Residential
Chatham County, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure 11

Exhibit 31

CHATHAM COUNTY
NORTH CAROLINA

WATERSHED PROTECTION DEPARTMENT

P.O. Box 548
Pittsboro, NC 27312
PHONE: (919) 545-8394

Fax: (919) 542-2698 ● E-mail: drew.blake@chathamcountync.gov ● Website: www.chathamcountync.gov

April 18, 2022

Mr. Steven Ball
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, North Carolina 27615

Project Name:	Fearrington Big Hole Property Parcel # 95264
Location:	Big Hole Road, Chatham County
Subject Features:	Three (3) ephemeral stream segments, two (2) intermittent stream segments, one (1) perennial stream segment, and two (2) potential wetlands.
Date of Determination:	March 28, 2022

Explanation:
The site visit was completed on March 28, 2022, by Drew Blake with Chatham County Watershed Protection and Steven Ball of Soil & Environmental Consultants, PA. (S&EC), on Parcel # 95264 that is located within the Jordan Lake watershed. S&EC personnel completed a previous site visit which resulted in the identification of three (3) ephemeral stream segments, two (2) intermittent stream segments, one (1) perennial stream segment, and two (2) potential wetlands on the property. S&EC submitted a request for Chatham County to complete a formal review to determine if the features would be subject to riparian buffers according to Section 304 of the Chatham County Watershed Protection Ordinance.

All points of origin, stream type transitions, and wetland boundaries were reviewed and agreed to in the field by all parties in attendance.

Required Riparian Buffers:
All ephemeral stream segments will require a 30-ft buffer from the top of bank landward on both sides. All intermittent stream segments will require a 50-ft buffer from the top of bank landward on both sides. The perennial stream segment will require a 100-ft buffer from the top of bank landward on both sides. A 50-ft buffer will be required on all wetlands from the flagged boundary landward.

Impacts to Riparian Buffers:
Impacts to the riparian buffers may require a Riparian Buffer Authorization depending on the size and scope of the impacts. Please refer to Section 304 (J)(3) of the Chatham County Watershed Protection Ordinance to determine if your impacts will require a Riparian Buffer Authorization. If you determine that a Riparian Buffer Authorization is required please contact Drew Blake to receive the required application and submittal instructions.

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by Chatham County, on parcels outside of the Jordan Lake watershed, may submit a request for appeal in writing to the Watershed Review Board. A request for a

CHATHAM COUNTY
NORTH CAROLINA

WATERSHED PROTECTION DEPARTMENT

P.O. Box 548
Pittsboro, NC 27312
PHONE: (919) 545-8394

Fax: (919) 542-2698 ● E-mail: drew.blake@chathamcountync.gov ● Website: www.chathamcountync.gov

determination by the Watershed Review Board shall be made in accordance with Section 304 of the Chatham County Watershed Protection Ordinance. Landowners or affected parties that dispute a determination made by Chatham County, on parcels inside the Jordan Lake watershed, shall submit a request for appeal in writing to NC DWR, 401 & Buffer Permitting Unit, 1650 Mail Service Center, Raleigh, NC 27669-1650 attention of the Director of the NC Division of Water Quality.

Should this project result in any direct impacts to surface water features (i.e., crossing and/or filling streams or wetlands) additional reviews may be necessary. Additionally, a Section 404/401 Permit may be required. Any inquiries regarding Section 404/401 permitting should be directed to the Division of Water Resources (Central Office) at (919)-807-6364 and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-554-4884.

Respectfully,

Drew Blake

Drew Blake
Senior Watershed Specialist, CESSWI

Enclosures:

- Figure 1: USGS Topographic Map – Completed by S&EC
- Figure 2: NRCS Soil Survey – Completed by S&EC
- Figure 3: Wetland Sketch Map – Completed by S&EC
- S&EC Stream ID Forms
- S&EC Wetland Data Form
- Major Subdivision Riparian Buffer Application
- Authorized Agent Form
- Authorization to Enter Property Form
- Site Photographs – provided by S&EC

cc: Rachael Thorn, Director, Chatham County Watershed Protection Department
Kimberly Tyson, Planner II/Subdivision Administrator, Chatham County Planning Department
Angela Plummer, Planner II/Zoning Administrator, Chatham County Planning Department
Jason Sullivan, Director, Chatham County Planning Department

Per Site Visit with Drew Blake
with Chatham County on 03/28/22

1 tt 18

31 tt 20

DP1

W2

W1

S04

S03

32LW 3'-
35LW 2' tt CH

S05

Feature A

A

25 tt CH -
26 tt CH

SB01

B

C

S02

S07

BIG HOLE

Detailed Delineation of Waters of the US
Suitable for Preliminary Planning Only

S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.

Legend

- Evaluation Area
- Potentially Jurisdictional Perennial Stream
- Potentially Jurisdictional Intermittent Stream
- Unimportant Ephemeral
- Potentially Jurisdictional Linear Wetland
- Potentially Jurisdictional Wetland
- 100ft Chatham Co. Buffer
- 50ft Chatham Co. Buffer
- 30ft Chatham Co. Buffer
- 2'Chatham County Contours

NCCGIA

Wetland Sketch Map

Fearrington Village South

Aerials from NC One Map

0 250 500 1,000 Feet

N

Project No. 15120.W1	**Scale:** 1" = 250'	
Project Mgr.: SB	03/31/2022	**Prepared by: JH**

S&EC Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2022-00554** County: **Chatham** U.S.G.S. Quad: **NC-Farrington**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Requestor:	**Soil and Environmental Consultants** **Steven Ball**
Address:	**8412 Falls of Neuse Road, suite 104** **Raleigh, NC 27615**
Telephone Number:	**919-846-5900**
E-mail:	**sball@sandec.com**

Size (acres)	**51.76**	Nearest Town	**Fearrington**
Nearest Waterway	**Bush Creek**	River Basin	**Cape Fear**
USGS HUC	**03030002**	Coordinates	Latitude: **35.7897** Longitude: **-79.0854**

Location description: **The project site is approximately 51 acres located south of Millcroft Drive, near the town of Pittsboro, Chatham County North Carolina, and is identified by PIN 95264.**

Indicate Which of the Following Apply:

A. Preliminary Determination

☒ There appear to be **waters, including wetlands** on the above described project area/property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The **waters, including wetlands** have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. The approximate boundaries of these waters are shown on the enclosed delineation map dated **4/18/2022**. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.

☐ There appear to be **waters, including wetlands** on the above described project area/property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). However, since the **waters, including wetlands** have not been properly delineated, this preliminary jurisdiction determination may not be used in the permit evaluation process. Without a verified wetland delineation, this preliminary determination is merely an effective presumption of CWA/RHA jurisdiction over all of the **waters, including wetlands** at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the **waters, including wetlands** on your project area/property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

B. Approved Determination

☐ There are Navigable Waters of the United States within the above described project area/property subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

☐ There are **waters, including wetlands**on the above described project area/property subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

☐ We recommend you have the **waters, including wetlands** on your project area/property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

☐ The **waters, including wetlands** on your project area/property have been delineated and the delineation has been verified by the Corps. The approximate boundaries of these waters are shown on the enclosed delineation map dated **DATE**. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once

verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

☐ The **waters, including wetlands** have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on **DATE**. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

☐ There are no waters of the U.S., to include wetlands, present on the above described project area/property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

☐ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in **Morehead City, NC, at (252) 808-2808** to determine their requirements.

Placement of dredged or fill material within waters of the US, including wetlands, without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). Placement of dredged or fill material, construction or placement of structures, or work within navigable waters of the United States without a Department of the Army permit may constitute a violation of Sections 9 and/or 10 of the Rivers and Harbors Act (33 USC § 401 and/or 403). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **James Lastinger at 919-554-4884 ext 32 or James.C.Lastinger@usace.army.mil**.

C. Basis For Determination: Basis For Determination: See the preliminary jurisdictional determination form dated 05/05/2022.

D. Remarks:

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information (This information applies only to approved jurisdictional determinations as indicated in B. above)

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Mr. Philip A. Shannin
Administrative Appeal Review Officer
60 Forsyth Street SW, Floor M9
Atlanta, Georgia 30303-8803
AND
PHILIP.A.SHANNIN@USACE.ARMY.MIL

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **Not applicable**.
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: James Lastinger

Date of JD: **05/05/2022** Expiration Date of JD: **Not applicable**

SAW-2022-00554

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete the Customer Satisfaction Survey located at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0

Copy furnished:

Property Owner:	**Fitch Creations, Inc.**
	Greg Fitch
Address:	**2000 Fearrington Village Ctr**
	Pittsboro, NC 27312
Telephone Number:	**919-542-4000**
E-mail:	

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **Soil and Environmental Consultants, Steven Ball**	File Number: **SAW-2022-00554**	Date: **05/05/2022**

Attached is:		See Section below
☐	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
☐	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
☐	PERMIT DENIAL	C
☐	APPROVED JURISDICTIONAL DETERMINATION	D
☒	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at or http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or the Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: **District Engineer, Wilmington Regulatory Division** **Attn: James Lastinger** **Raleigh Regulatory Office** **U.S Army Corps of Engineers** **3331 Heritage Trade Drive, Suite 105** **Wake Forest, North Carolina 27587**	If you only have questions regarding the appeal process you may also contact: MR. PHILIP A. SHANNIN ADMINISTRATIVE APPEAL REVIEW OFFICER CESAD-PDS-O 60 FORSYTH STREET SOUTHWEST, FLOOR M9 ATLANTA, GEORGIA 30303-8803 PHONE: (404) 562-5136; FAX (404) 562-5138 EMAIL: PHILIP.A.SHANNIN@USACE.ARMY.MIL

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, Attn: James Lastinger , 69 Darlington Avenue, Wilmington, North Carolina 28403

For Permit denials, Proffered Permits and Approved Jurisdictional Determinations send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Philip Shannin, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. **REPORT COMPLETION DATE FOR PJD:** 05/05/2022

B. **NAME AND ADDRESS OF PERSON REQUESTING PJD:** Soil and Environmental Consultants, Steven Ball, 8412 Falls of Neuse Road, suite 104, Raleigh, NC 27615

C. **DISTRICT OFFICE, FILE NAME, AND NUMBER:** Wilmington District, Fearrington Village South, SAW-2022-00554

D. **PROJECT LOCATION(S) AND BACKGROUND INFORMATION:** The project site is approximately 51 acres located south of Millcroft Drive, near the town of Pittsboro, Chatham County North Carolina, and is identified by PIN 95264.

(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: NC County: Chatham City: Fearrington
Center coordinates of site (lat/long in degree decimal format): Latitude: 35.7897 Longitude: -79.0854

Universal Transverse Mercator:

Name of nearest waterbody: Bush Creek

E. **REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

☐Office (Desk) Determination. Date:

☒Field Determination. Date(s): April 14, 2022

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION

Site Number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resources in review area (acreage and linear feet, if applicable	Type of aquatic resources (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
W1	35.7887	-79.0853	0.07 acre	Wetland	Section 404
W2	35.7905	-79.0817	0.06 acre	Wetland	Section 404
LW	35.7900	-79.0827	96 LF	Wetland	Section 404
A	35.7894	-79.0856	2000 LF	Non-wetland	Section 404
B	35.7885	-79.0857	711 LF	Non-wetland	Section 404

1. The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre- construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply) Checked items are included in the administrative record and are appropriately cited:

☒ Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
Map: **attached dated April 18, 2022**

☒ Data sheets prepared/submitted by or on behalf of the PJD requestor. Datasheets:

☒ Office concurs with data sheets/delineation report.

☐ Office does not concur with data sheets/delineation report. Rationale:_____

☐ Data sheets prepared by the Corps:_____

☐ Corps navigable waters' study:

☒ U.S. Geological Survey Hydrologic Atlas:

☒ USGS NHD data:

☐ USGS 8 and 12 digit HUC maps:

☒ U.S. Geological Survey map(s). Cite scale & quad name: **Farrington Quad**

☒ Natural Resources Conservation Service Soil Survey. Citation: **Chatham County, Sheet 5**

☒ National wetlands inventory map(s). Cite name: **USFWS NWI mapper**

☐ State/local wetland inventory map(s):_____

☒ FEMA/FIRM maps: **NC FIRM**

☐ 100-year Floodplain Elevation is:_____ (National Geodetic Vertical Datum of 1929)

☐ Photographs: ☒ Aerial (Name & Date): **undated**

or ☐ Other (Name & Date):

☐ Previous determination(s). File no. and date of response letter:_____

☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

James Lastinger

Signature and date of Regulatory staff member completing PJD
05/05/2022

Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requester to return signed PJD forms. If the requester does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action

Exhibit 32

Job #: 15120.W6
October 18, 2022

Site Photos for the Proposed Granville Project

Photo 1:

Photo 2:

Photo 3:

Photo 4:

Photo 5: