

# **Attachment E**

U.S. ARMY CORPS OF ENGINEERS  
WILMINGTON DISTRICT

**COPY**

Action Id. SAW-2014-01501 County: Chatham U.S.G.S. Quad: NC-FARRINGTON

**NOTIFICATION OF JURISDICTIONAL DETERMINATION**

Property Owner: ZR Chatham, LLC  
William Bakker  
Address: 2416 East 37th Street North  
Wichita, KS, 67219  
Telephone Number: 316-847-4869

Size (acres)	<u>116 (approximately)</u>	Nearest Town	<u>Chapel Hill</u>
Nearest Waterway	<u>Cub Creek</u>	River Basin	<u>Haw. North Carolina.</u>
USGS HUC	<u>3030002</u>	Coordinates	Latitude: <u>35.8367985521908</u> Longitude: <u>-79.0845749074743</u>

Location description: The site is located immediately northeast of the US 15/501, Lystra Road intersection in Chatham County, North Carolina. Chatham County Parcel Numbers are: 65382,18760,18889,18891,18748,18901,18758,18757,80023,76461,60704,76461 and 18789 .

**Indicate Which of the Following Apply:**

**A. Preliminary Determination**

- Based on preliminary information, there may be wetlands on the above described property. We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). 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.

**B. Approved Determination**

- There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. 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 waters of the U.S. including wetlands on the above described project area 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 strongly suggest you have the wetlands on your property delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. 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 of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on August 18, 2014. 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 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 and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact Andrew Williams at 919-554-4884 x26 or Andrew.E.Williams2@usace.army.mil.

**C. Basis For Determination:** The unnamed tributaries (Stream A, B, C, D, F, G, H) are relatively permanent waters (RPWs), which all flow to Cub Creek (Stream E), an RPW. Cub Creek is a tributary to Jordan Lake, which is a traditionally navigable water (TNW) and an impoundment of the Haw River, which is also a TNW. The Haw River flows to the Cape Fear River, a navigable water of the United States. The Ordinary High Water Marks (OHWMs) of the streams listed above were indicated by the following physical characteristics: clear natural line impressed on the bank, shelving, and the destruction of terrestrial vegetation. The wetlands meet the hydrophytic vegetation, wetland hydrology, and hydric soil criteria of the 1987 Corps of Engineers Wetland Delineation Manual and the Eastern Mountains and Piedmont Regional Supplement. Wetlands A,D,B(sheet 12) are contiguous with Stream E. Wetland B (sheet 12) is adjacent to Stream E. Wetland B, C and J are contiguous with Stream A. Wetland E is contiguous with Stream H. The pond is an impoundment of Stream A.

**D. Remarks:** None

#### **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)**

This correspondence constitutes an approved jurisdictional determination for the above described site. 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: Jason Steele, Review Officer  
60 Forsyth Street SW, Room 10M15  
Atlanta, Georgia 30303-8801

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 October 16, 2014.

\*\*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: \_\_\_\_\_

*Andrew Williams*

Date: August 18, 2014

Expiration Date: August 18, 2019

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 our Customer Satisfaction Survey, located online at <http://regulatory.usacesurvey.com/>.

Copy furnished:

Kevin Yates  
The John. R. McAdams Company, Inc.  
PO Box 14005  
Research Triangle Park, North Carolina 27713

**NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL**

Applicant: William Baker/ZR Chatham, LLC

File Number: SAW-2014-01501

Date: August 18, 2014

Attached is:

See Section below

<input checked="" type="checkbox"/>	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
<input type="checkbox"/>	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
<input type="checkbox"/>	PERMIT DENIAL	C
<input checked="" type="checkbox"/>	APPROVED JURISDICTIONAL DETERMINATION	D
<input type="checkbox"/>	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 <http://www.usace.army.mil/inet/functions/cw/cecwo/reg> or 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:  
Andrew Williams, Regulatory Project Manager  
Raleigh Regulatory Field Office  
U.S. Army Corps of Engineers  
3331 Heritage Trade Drive, Suite 105  
Wake Forest, North Carolina 27587

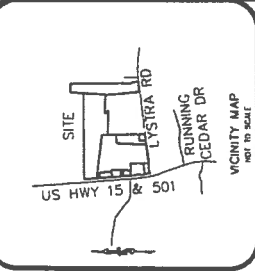
If you only have questions regarding the appeal process you may also contact:  
Mr. Mike Bell, Administrative Appeal Review Officer  
CESAD-ET-CO-R  
U.S. Army Corps of Engineers, South Atlantic Division  
60 Forsyth Street, Room 9M15  
Atlanta, Georgia 30303-8801

**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.

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

**For appeals on Initial Proffered Permits and approved Jurisdictional Determinations send this form to:**

**District Engineer, Wilmington Regulatory Division, Attn:Andrew Williams, Project Manager, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, North Carolina 27587**



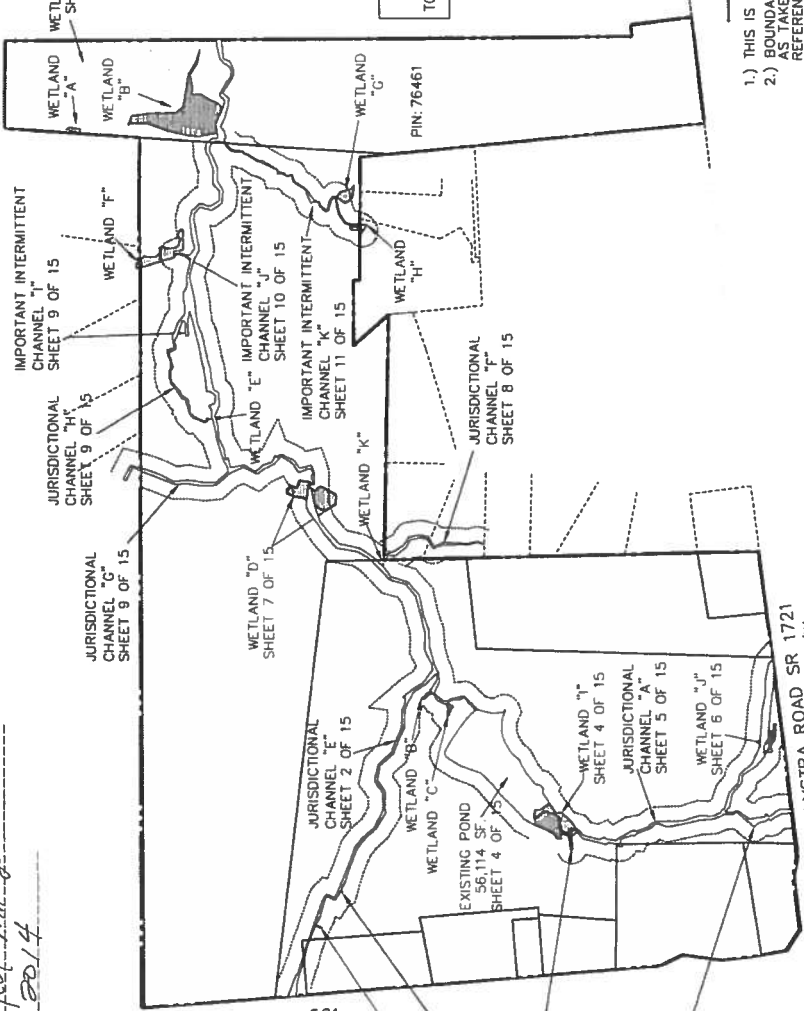
RECEIVED  
MAY 21 2014  
RALEIGH REGULATORY  
DIVISION OF JCR

TOTAL WETLAND AREA : 1.33 ACRES  
TOTAL CHANNEL AREA : 2.09 ACRES  
TOTAL CHANNEL LENGTH : 8,180 LINEAR FEET

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by the John B. McAdams Company, Inc., Durham, N.C.  
Date: 5-12-2014  
RONALD T. FREDERICK

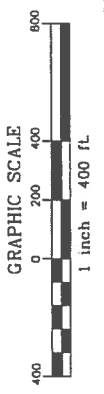


This certifies that this copy of this plot accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.  
(name) Andrew Williams  
(title) Regulatory Project Manager  
(date) 18 August 2014



GENERAL NOTES

- 1.) THIS IS A WETLANDS DELINEATION EXHIBIT.
- 2.) BOUNDARY LINES ARE SHOWN ON THIS WETLANDS EXHIBIT AS TAKEN FROM PLATS AND DEEDS LISTED HEREON AS REFERENCES, AND HAVE NOT BEEN SURVEYED.
- 3.) COORDINATES SHOWN HEREON ARE BASED ON N.C. GRID - N.A.D. 1983, BY VIRTUE OF TIES TO N.C.C.S. MONUMENT "MEACHAM".
- 4.) WETLANDS WERE DELINEATED IN THE FIELD BY THE JOHN R. MCADAMS COMPANY.
- 5.) FOR WETLAND FLAG DATA TABLE SEE SHEET 13. FOR TOP OF BANK DELINEATION TABLE SEE SHEETS 13, 14, & 15. FOR LINE AND CURVE TABLES SEE SHEETS 15.



REFERENCES

- PLAT BOOK 2002, PAGE 456
- PLAT BOOK 2001, PAGE 391
- DEED BOOK 850, PAGE 989
- DEED BOOK 654, PAGE 218
- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
- PLAT BOOK 23, PAGE 78
- PLAT BOOK 17, PAGE 33

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(name) *Andrew Williams*  
 (title) *Regulatory Project Mgr*  
 (date) *18 August 2014*

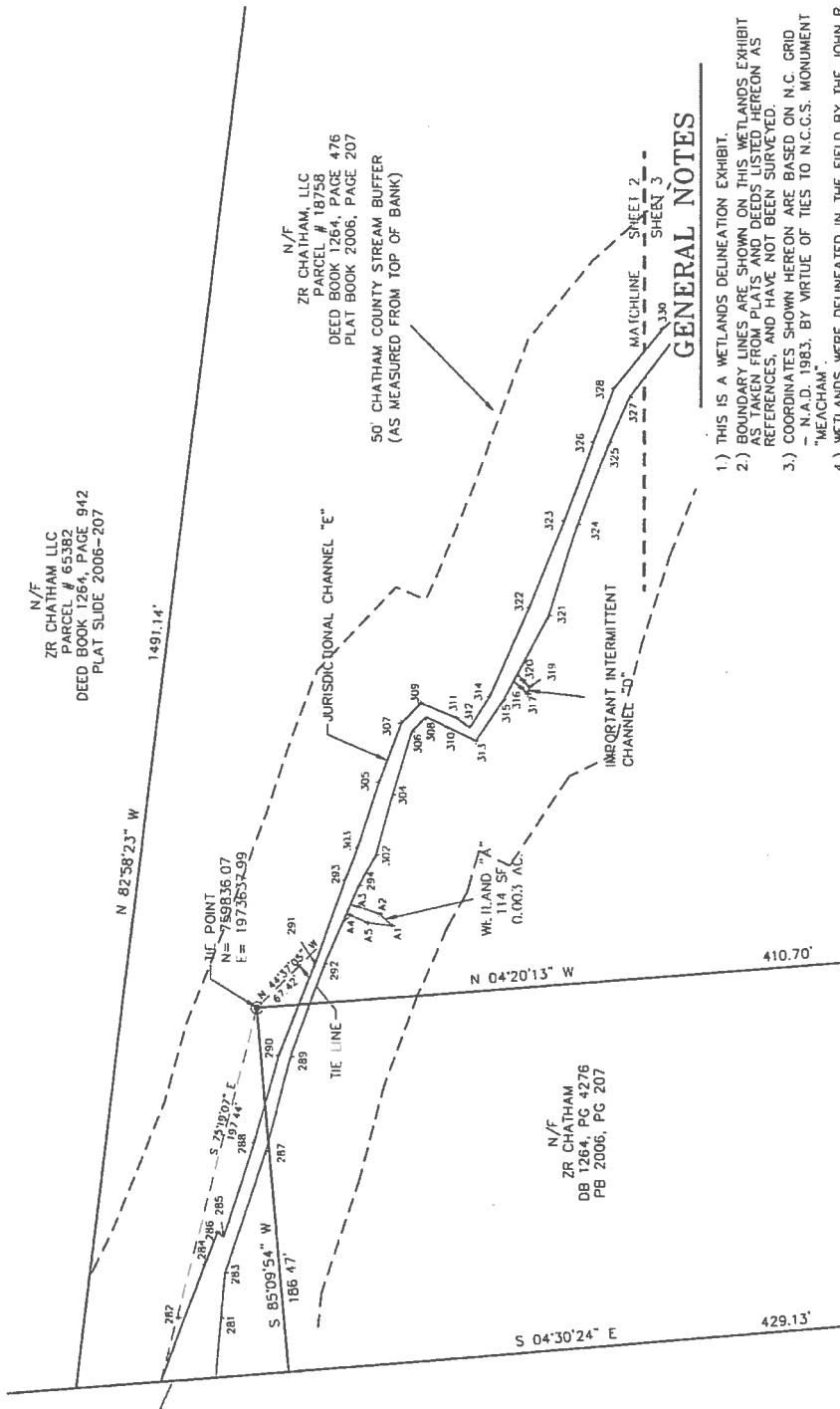


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Date *5-12-2014*  
 RONALD T. FREDERICK

N/F  
 ZR CHATHAM LLC  
 PARCEL # 65382  
 DEED BOOK 1264, PAGE 942  
 PLAT SLIDE 2006-207

11X4 CULVERT  
 INV. -458.45

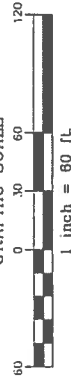


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- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
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- PLAT BOOK 17, PAGE 33

LEGEND  
 ● EXISTING IRON PIPE

GRAPHIC SCALE



**GENERAL NOTES**

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(name) Andrew Wilton  
 (title) Project Manager  
 (date) 18 August 2014

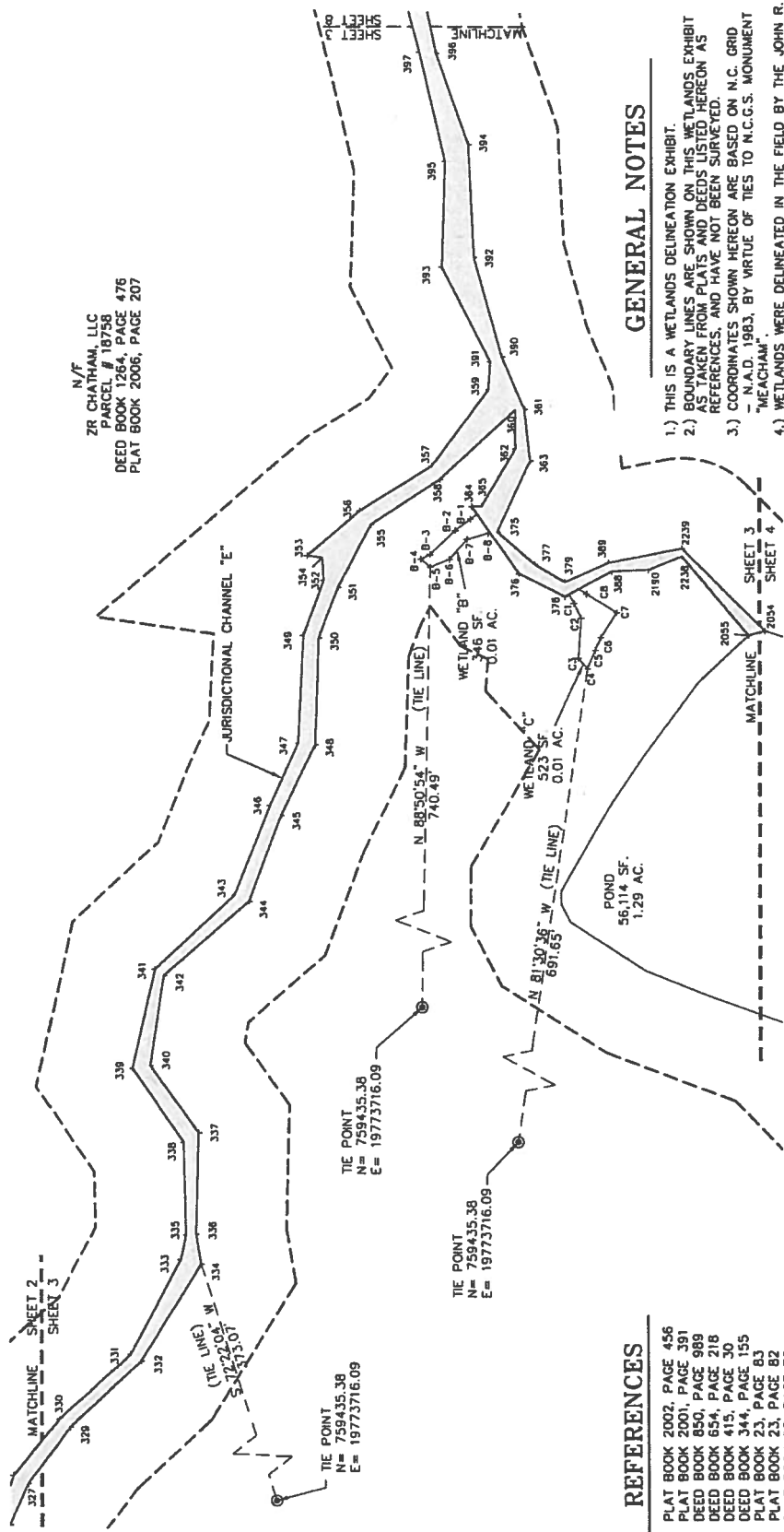


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Date 5-2-2014

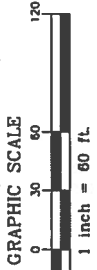
RONALD T. FREDERICK

N/F  
 ZR CHATHAM, LLC  
 PARCEL # 18758  
 DEED BOOK 1264, PAGE 476  
 PLAT BOOK 2006, PAGE 207



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- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
- PLAT BOOK 23, PAGE 82
- PLAT BOOK 23, PAGE 78
- PLAT BOOK 17, PAGE 33

This certifies that this copy of this plat accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) *Arthur Hillier*  
 (title) *Regulatory Project Manager*  
 (date) *18 August 2014*



I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by the John R. McAdams Company, Inc., Durham, NC.

*Ronald T. Frederick*  
 Date: *5-12-2014*

THE JOHN R. McADAMS COMPANY, INC.  
 2205 Meadows Parkway  
 Durham, North Carolina 27715  
 Phone: 919-486-0088  
 Fax: 919-486-0089

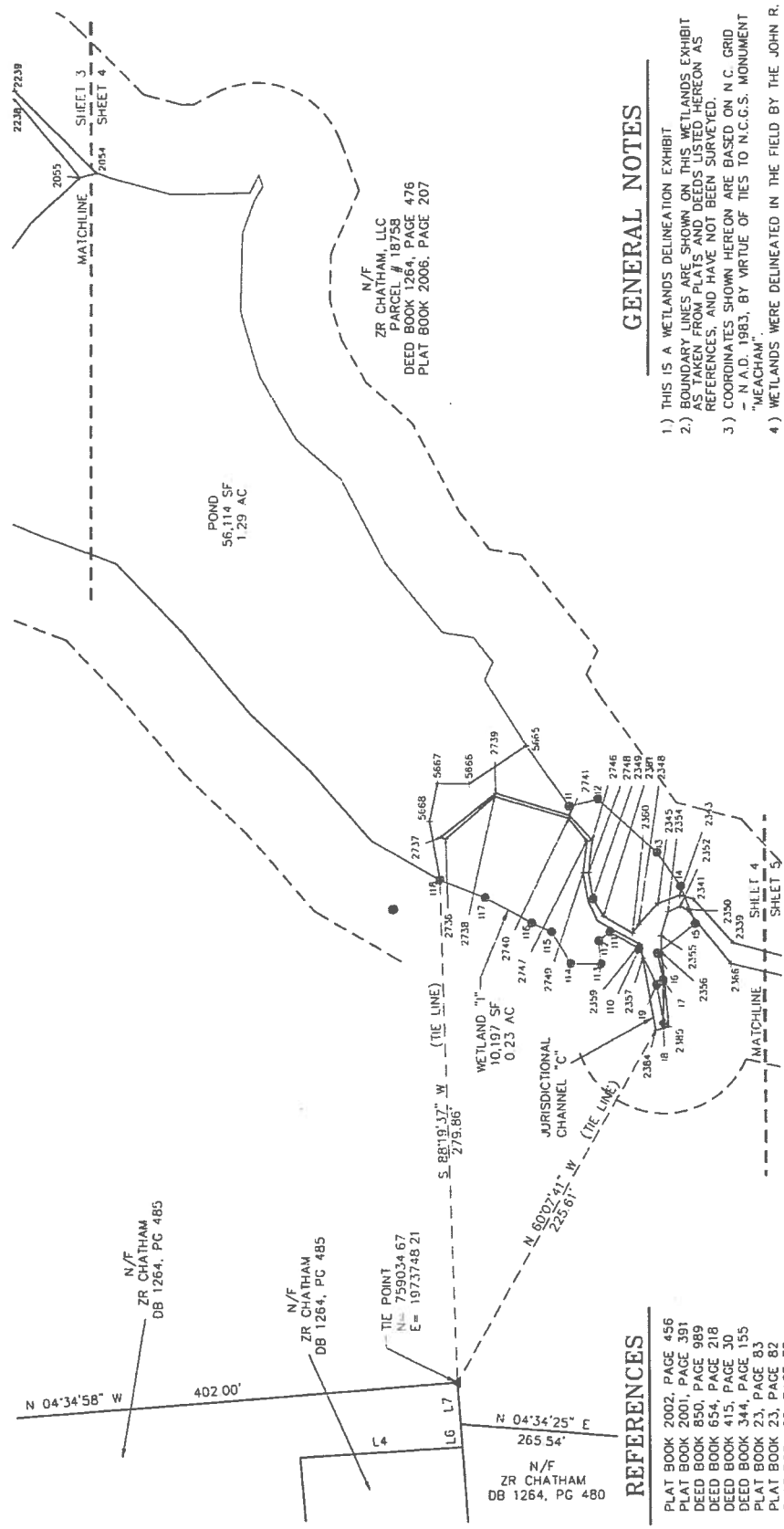


# WETLANDS DELINEATION EXHIBIT

## WILLIAMS CORNER

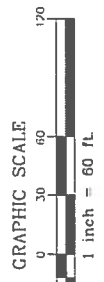
### CHATHAM COUNTY, NORTH CAROLINA

PRODUCT: LRD13000  
 FILE: LRD13000-W1  
 SCALE: 1"=60'  
 DATE: 2014-05-12



### GENERAL NOTES

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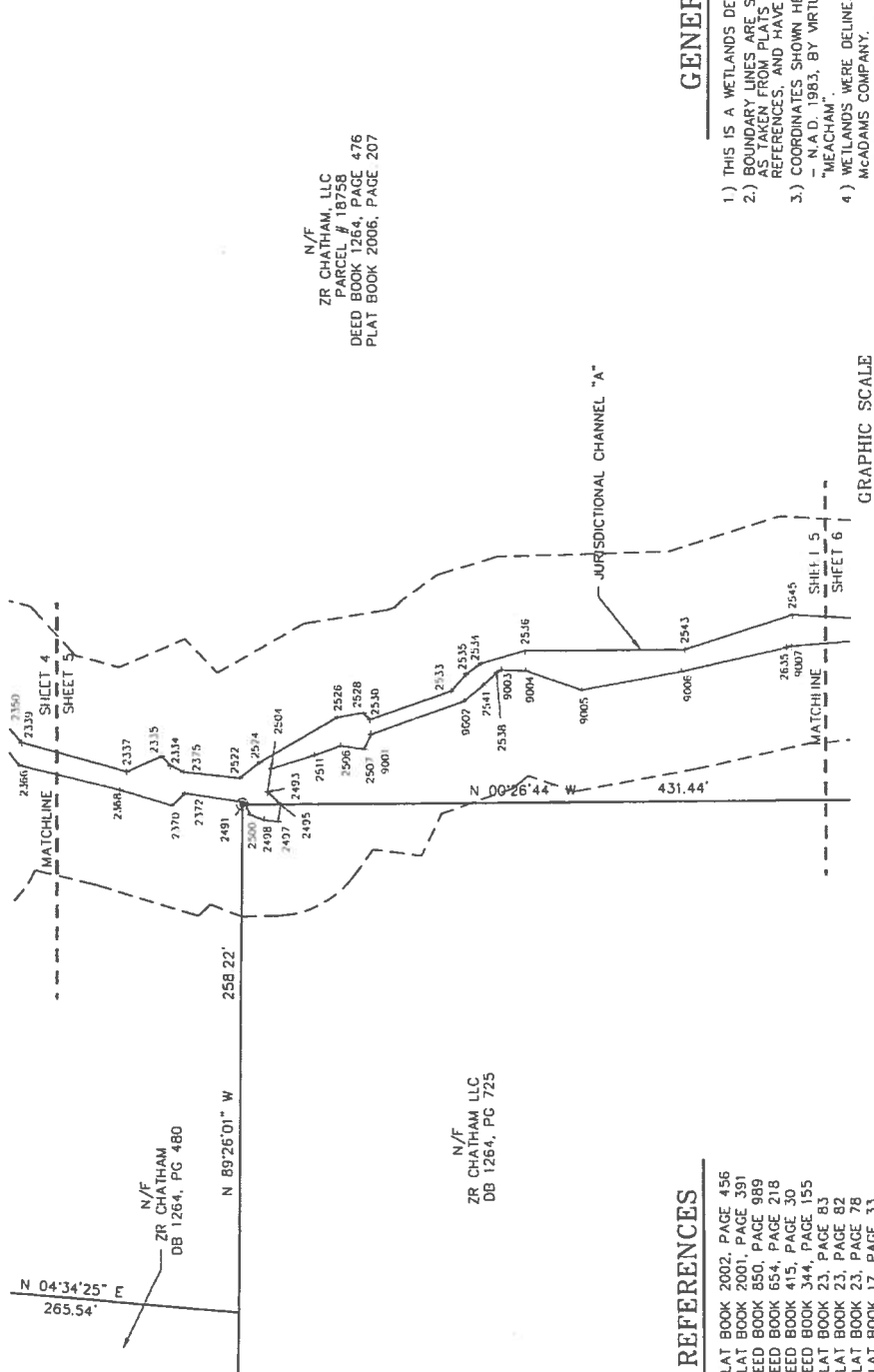
(name) Andrew Williams  
 (title) Regulatory Project Manager  
 (date) 18 August 2014



I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. Madams Company, Inc., Durham, NC.

Ronald T. Frederick  
 Date: 5-12-2014

RONALD T. FREDERICK



N/F  
 ZR CHATHAM, LLC  
 PARCEL # 18758  
 DEED BOOK 1264, PAGE 476  
 PLAT BOOK 2006, PAGE 207

N/F  
 ZR CHATHAM LLC  
 DB 1264, PG 725

**REFERENCES**

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- 5.) FOR WETLAND FLAG DATA TABLE SEE SHEET 1.3 FOR TOP OF BANK DELINEATION TABLE SEE SHEETS 1.3, 1.4, & 1.5 FOR LINE AND CURVE TABLES SEE SHEETS 1.5



LEGEND  
 (Symbol) EXISTING IRON PIPE



# WETLANDS DELINEATION EXHIBIT

WILLIAMS CORNER  
 CHATHAM COUNTY, NORTH CAROLINA

THE JOHN R. McADAMS COMPANY, INC.  
 2905 McAdams Parkway  
 Durham, North Carolina 27713  
 919.733.9646 • [McAdams.com](http://McAdams.com)

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. McAdams Company, Inc., Durham, NC.

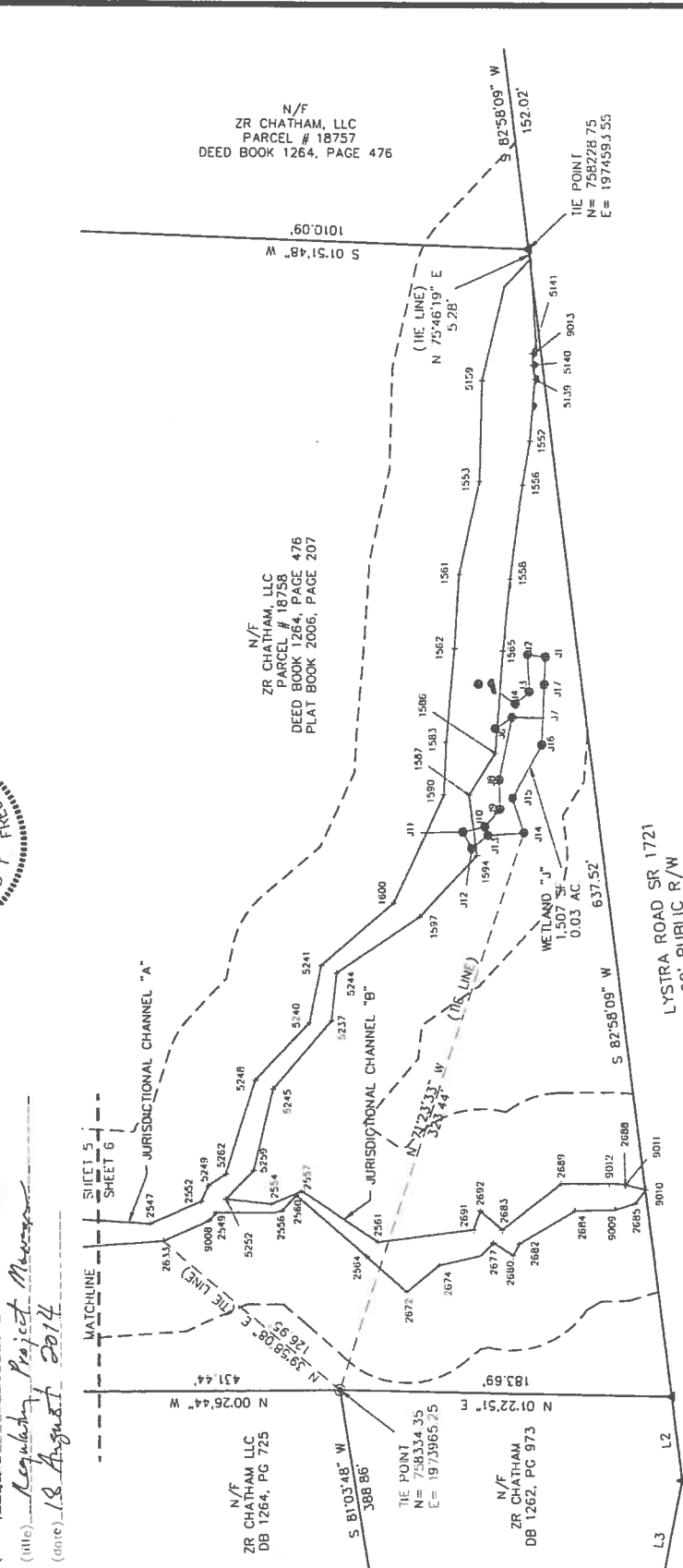
*Ronald T. Frederick*  
 Date: 5-9-2014

RONALD T. FREDERICK



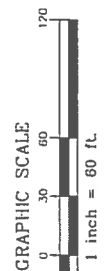
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(name) Arthur Wilkins  
 (title) Regulatory Project Manager  
 (date) 18 August 2014



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- PLAT BOOK 2002, PAGE 456
- PLAT BOOK 2001, PAGE 391
- DEED BOOK 850, PAGE 989
- DEED BOOK 654, PAGE 218
- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
- PLAT BOOK 23, PAGE 82
- PLAT BOOK 17, PAGE 33

This certifies that this copy of this plat accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual

(name) *Ronald T. Frederick*  
 (title) *Professional Land Surveyor*  
 (date) *19 August 2014*



I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. McAdams Company, Inc., Durham, NC.

Date *5-12-2014*

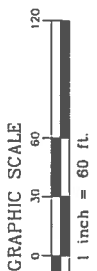
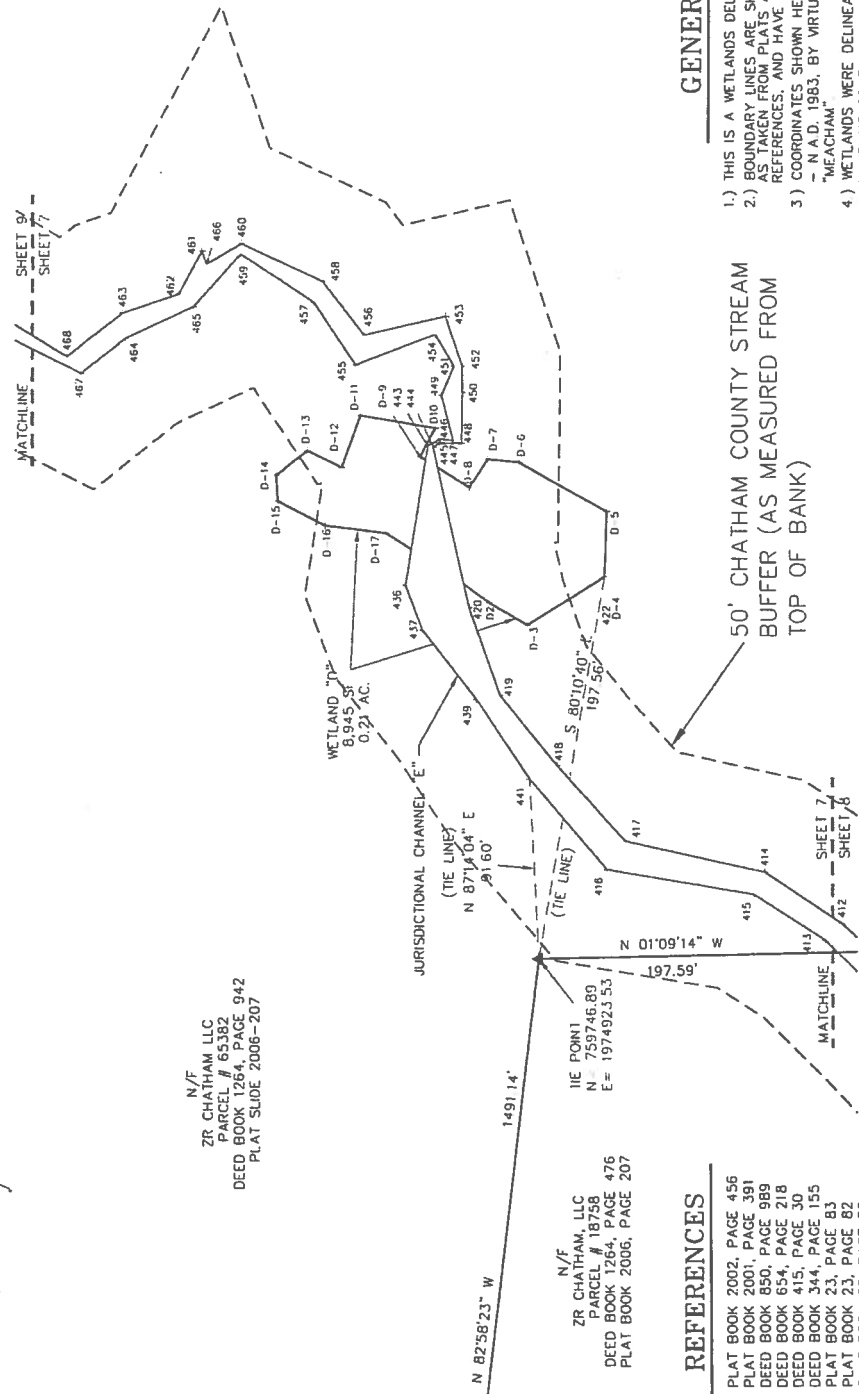
RONALD T. FREDERICK

N/F  
 ZR CHATHAM LLC  
 PARCEL # 65382  
 DEED BOOK 1264, PAGE 942  
 PLAT SLIDE 2006-207

N/F  
 ZR CHATHAM LLC  
 PARCEL # 18758  
 DEED BOOK 1264, PAGE 476  
 PLAT BOOK 2006, PAGE 207

**REFERENCES**

- PLAT BOOK 2002, PAGE 456
- PLAT BOOK 2001, PAGE 391
- DEED BOOK 850, PAGE 989
- DEED BOOK 654, PAGE 218
- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
- PLAT BOOK 23, PAGE 78
- PLAT BOOK 17, PAGE 33



LEGEND  
 Ⓞ EXISTING IRON PIPE

**GENERAL NOTES**

- 1.) THIS IS A WETLANDS DELINEATION EXHIBIT.
- 2.) BOUNDARY LINES ARE SHOWN ON THIS WETLANDS EXHIBIT AS TAKEN FROM PLATS AND DEEDS LISTED HEREON AS REFERENCES, AND HAVE NOT BEEN SURVEYED.
- 3.) COORDINATES SHOWN HEREON ARE BASED ON N.C. GRID - N.A.D. 1983, BY VIRTUE OF TIES TO N.C.G.S. MONUMENT "MEACHAM".
- 4.) WETLANDS WERE DELINEATED IN THE FIELD BY THE JOHN R. McADAMS COMPANY.
- 5.) FOR WETLAND FLAG DATA TABLE SEE SHEET 13 FOR TOP OF BANK DELINEATION TABLE SEE SHEETS 13, 14, & 15 FOR LINE AND CURVE TABLES SEE SHEETS 15

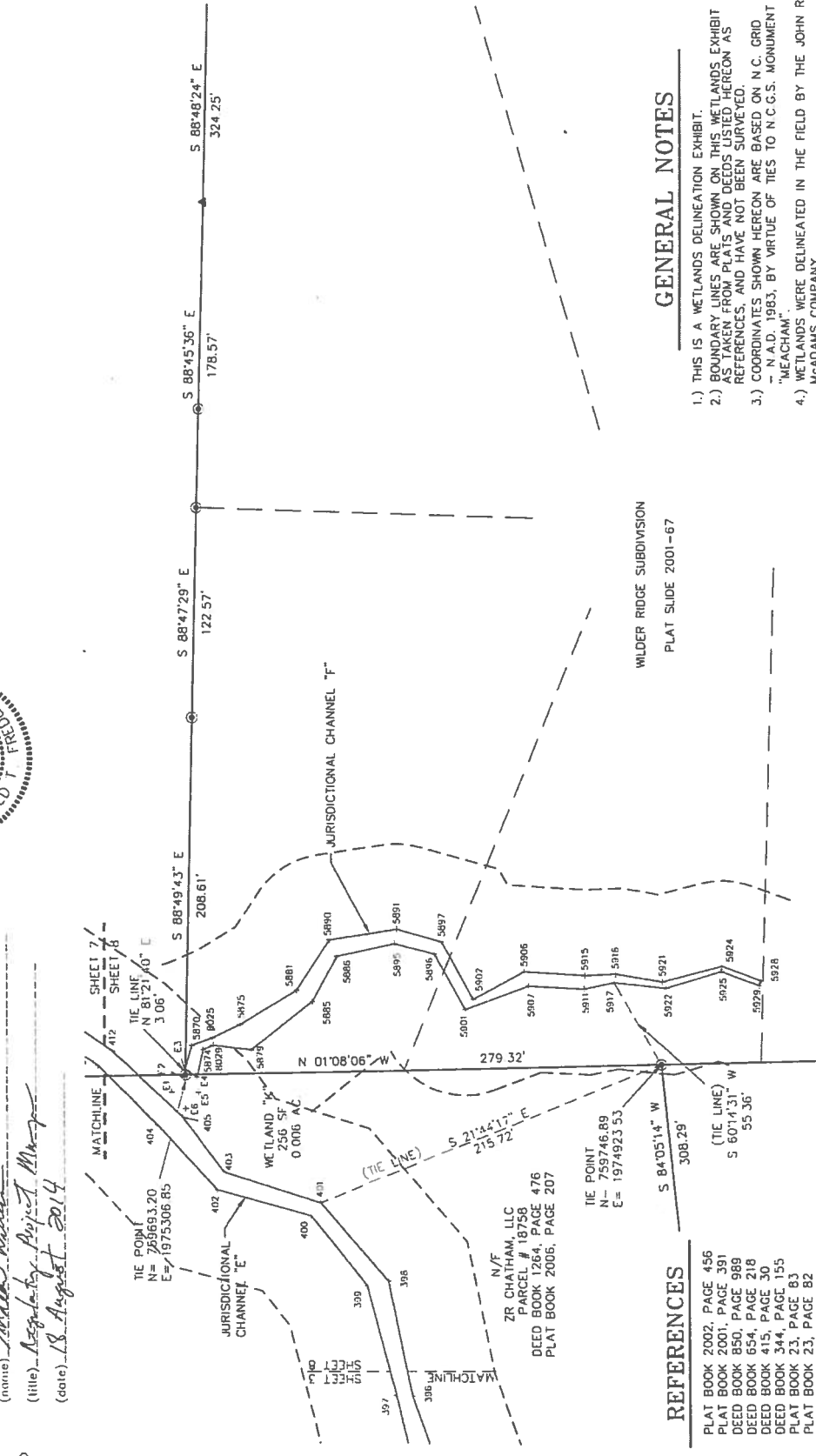
I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. McAdams Company, Inc., Durham, NC.

*Ronald T. Frederick*  
 Date: 5-12-2014



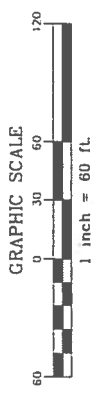
This certifies that this copy of this plat accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) *Amber Williams*  
 (title) *Assistant Project Manager*  
 (date) *18 August 2014*



**GENERAL NOTES**

- 1.) THIS IS A WETLANDS DELINEATION EXHIBIT.
- 2.) BOUNDARY LINES ARE SHOWN ON THIS WETLANDS EXHIBIT FROM PLATS AND RECORDS THAT HAVE BEEN SURVEYED. REFERENCES, AND HAVE NOT BEEN SURVEYED.
- 3.) COORDINATES SHOWN HEREON ARE BASED ON N.C. GRID - N.A.D. 1983, BY VIRTUE OF TIES TO N.C.G.S. MONUMENT "MEACHAM".
- 4.) WETLANDS WERE DELINEATED IN THE FIELD BY THE JOHN R. McADAMS COMPANY.
- 5.) FOR WETLAND FLAG DATA TABLE SEE SHEET 13. FOR TOP OF BANK DELINEATION TABLE SEE SHEETS 13, 14, & 15 FOR LINE AND CURVE TABLES SEE SHEETS 15



**REFERENCES**

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- PLAT BOOK 23, PAGE 78
- PLAT BOOK 17, PAGE 33

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(name) *Ronald T. Frederick*  
 (title) *Registered Professional Engineer*  
 (date) *18 August 2014*



I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John P. McAdams Company, Inc., Durham, NC.

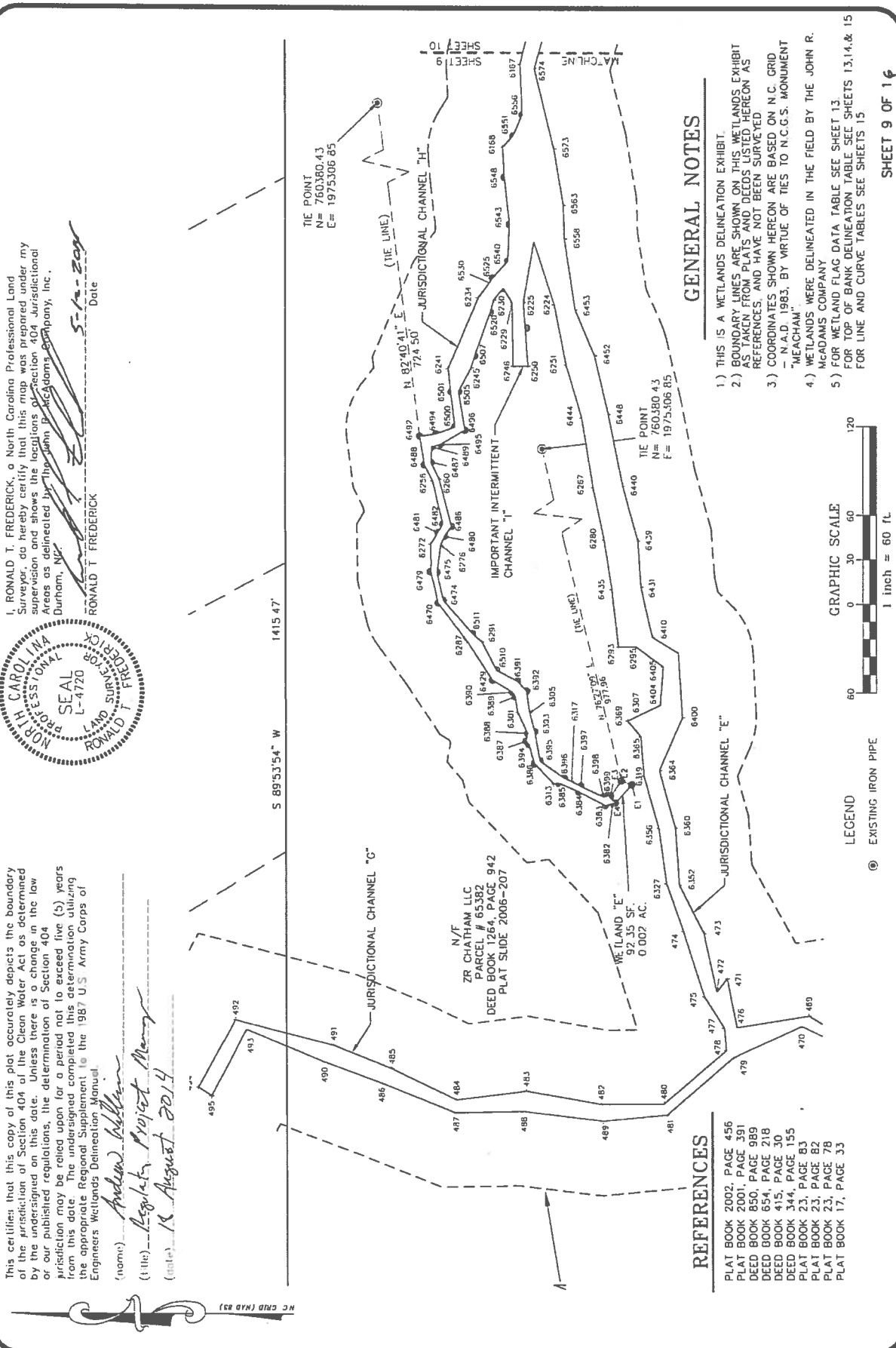
Date *5-12-2014*  
 RONALD T. FREDERICK

# WETLANDS DELINEATION EXHIBIT

## WILLIAMS CORNER

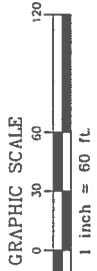
### CHATHAM COUNTY, NORTH CAROLINA

PROJECT:	LFD13000
FILE:	LFD13000-W1
SCALE:	1" = 60'
DATES:	2014-05-12



### GENERAL NOTES

- 1) THIS IS A WETLANDS DELINEATION EXHIBIT.
- 2) BOUNDARY LINES ARE SHOWN ON THIS WETLANDS EXHIBIT AS DASHED LINES. POINTS AND LOCATIONS WITH HEREON AS REFERENCES, AND HAVE NOT BEEN SURVEYED.
- 3) COORDINATES SHOWN HEREON ARE BASED ON N.C. GRID - "N.A.D. 1983, BY VIRTUE OF TIES TO N.C.G.S. MONUMENT "MEACHAM".
- 4) WETLANDS WERE DELINEATED IN THE FIELD BY THE JOHN R. MCADAMS COMPANY.
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### REFERENCES

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- DEED BOOK 850, PAGE 989
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- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
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- PLAT BOOK 23, PAGE 82
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- PLAT BOOK 17, PAGE 33

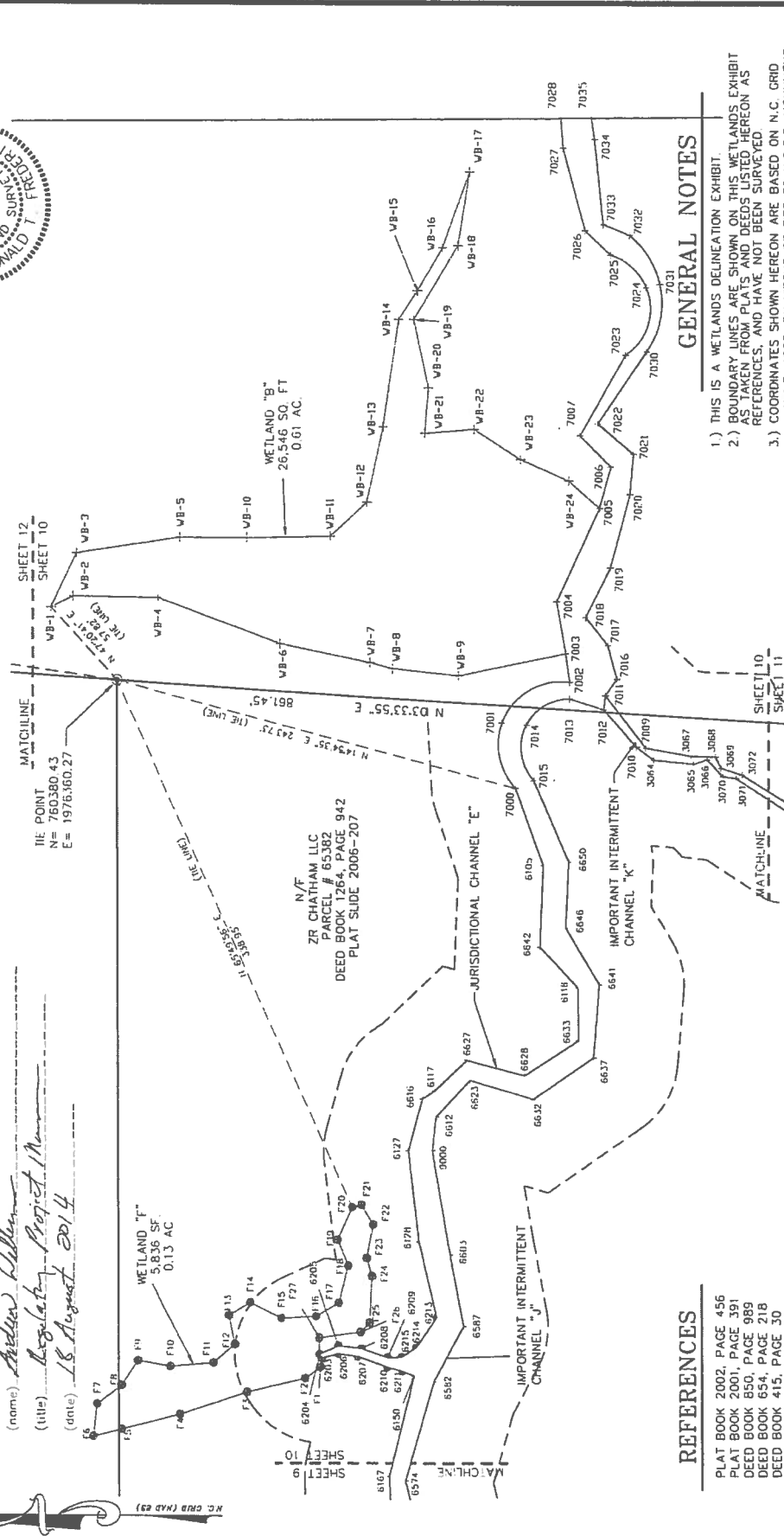
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(name) *Ronald T. Frederick*  
 (title) *Professional Land Surveyor*  
 (date) *18 August 2014*

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The Johns McAdams Company, Inc., Durham, NC.

RONALD T. FREDERICK  
 Date: *5-12-2014*

SEAL  
 PROFESSIONAL LAND SURVEYOR  
 RONALD T. FREDERICK  
 L-4720

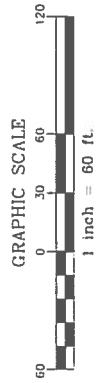


**REFERENCES**

- PLAT BOOK 2002, PAGE 456
- PLAT BOOK 2001, PAGE 391
- DEED BOOK 850, PAGE 989
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- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
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(name) *Arnold Miller*  
 (title) *Registered Professional Mapper*  
 (date) *18 August 2014*

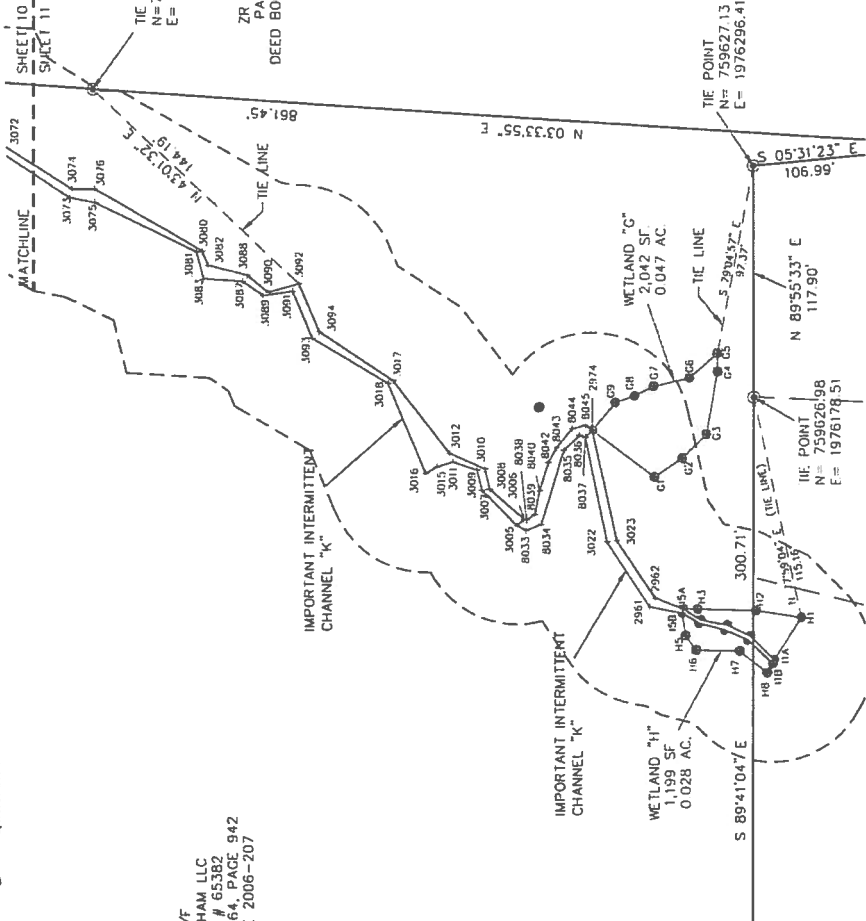
N/F  
 ZR CHATHAM LLC  
 PARCEL # 65382  
 DEED BOOK 1264, PAGE 942  
 PLAT SLIDE 2006-207



I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 jurisdictional areas as delineated by the John R. McAdams Company, Inc., Durham, NC.

RONALD T. FREDERICK Date *5-12-2014*

TIE POINT  
 N= 759964.66  
 E= 1976334.22  
 N/F  
 ZR CHATHAM, LLC  
 PARCEL # 7646  
 DEED BOOK 1262, PAGE 977

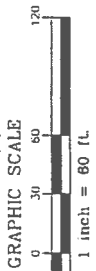


**GENERAL NOTES**

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- 2.) BOUNDARY LINES ARE SHOWN ON THIS WETLANDS EXHIBIT AS TAKEN FROM PLATS AND DEEDS LISTED HEREON AS REFERENCES, AND HAVE NOT BEEN SURVEYED.
- 3.) COORDINATES SHOWN HEREON ARE BASED ON N.C. GRID "MEACHAM", N.A.D. 1983, BY VIRTUE OF TIES TO N.C.G.S. MONUMENT "MCADAMS COMPANY".
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**REFERENCES**

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- DEED BOOK 415, PAGE 30
- DEED BOOK 344, PAGE 155
- PLAT BOOK 23, PAGE 83
- PLAT BOOK 23, PAGE 82
- PLAT BOOK 17, PAGE 33



PROJECT: LR013000 FILE: LR013000-W1 SCALE: 1"=60' DATE: 2014-05-12

McADAMS

WETLANDS DELINEATION EXHIBIT  
 WILLIAMS CORNER  
 CHATHAM COUNTY, NORTH CAROLINA

THE JOHN R. MCADAMS COMPANY, INC.  
 2006 Hargett Street, Suite 2771A  
 Durham, NC 27703  
 919-286-5668 • info@mcadams.com

This certifies that this copy of this plot accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) Andrew Hillman  
 (title) Regulatory Project Manager  
 (date) 18 August 2014



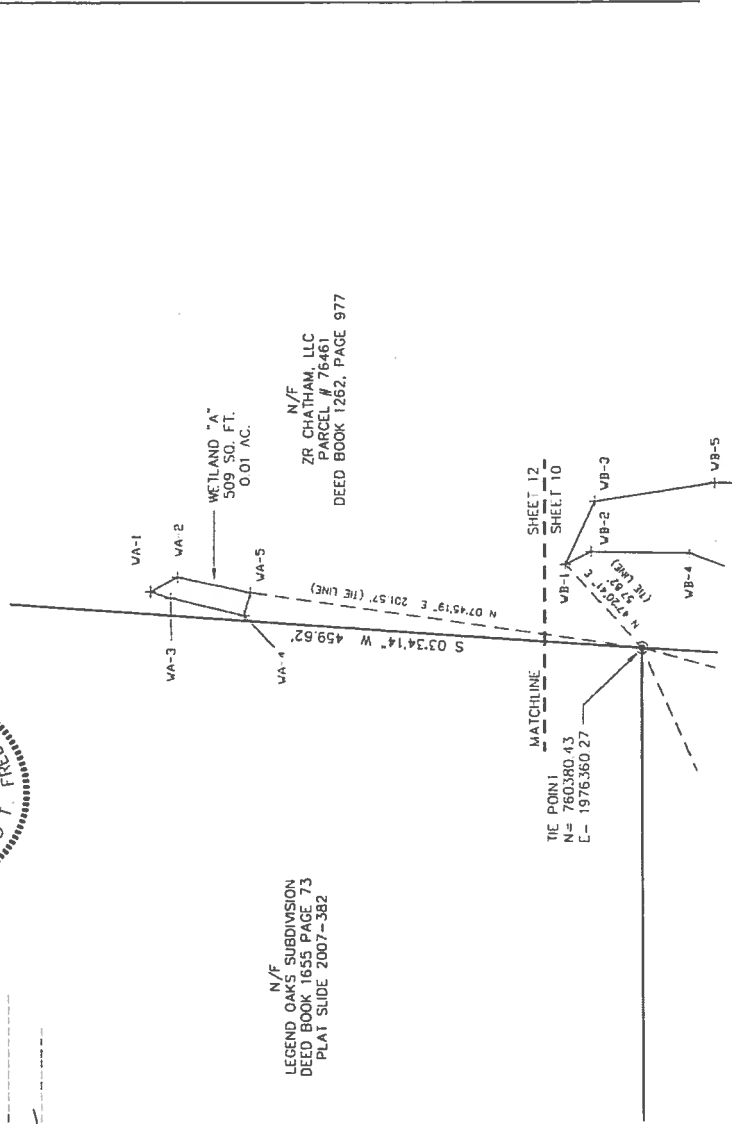
I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by the John W. McAdams Company, Inc., Durham, N.C.

Date 10-21-15

RONALD T. FREDERICK

N/F  
 LEGEND OAKS SUBDIVISION  
 DEED BOOK 1655 PAGE 73  
 PLAT SLIDE 2007-382

N/F  
 ZR CHATHAM, LLC  
 PARCEL # 76461  
 DEED BOOK 1262, PAGE 977



**REFERENCES**

- PLAT BOOK 2002, PAGE 456
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- DEED BOOK 850, PAGE 989
- DEED BOOK 854, PAGE 218
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**WETLANDS DELINEATION EXHIBIT**  
**WILLIAMS CORNER**  
 CHATHAM COUNTY, NORTH CAROLINA

PROJECT: RD13000  
 FILE: RD13000-W1  
 SCALE: 1" = 60'  
 DATE: 2014-05-12

McADAMS

THE JOHN R. MCADAMS COMPANY, INC.  
 2905 Mercedes Parkway  
 Bladen, North Carolina 27715  
 Phone: 753-9646 • Fax: 753-9648  
 1809 753-9646 • McAdamsCo.com

WETLANDS DELINEATION EXHIBIT  
 WILLIAMS CORNER  
 CHATHAM COUNTY, NORTH CAROLINA

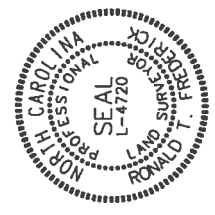


THE JOHN R. MCDAMS COMPANY, INC.  
 3005 Madison Parkway  
 Durham, NC 27713  
 919 487-8800 • Fax: 919 487-8801

This certifies that this copy of this plot accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) Andrew Wilkins  
 (title) Regulatory Project Manager  
 (date) 18 August 2014

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. McDams Company, Inc.  
 5-12-2014  
 Date  
 RONALD T. FREDERICK



Wetland ID	Wetland Code	Northing	Easting
A1	C9	759697.7	1976175.8
A2	G10	759709.5	1976161.3
A3	H1	759830.0	1976065.9
A4	H2	759826.0	1976069.5
A5	H3	759858.0	1976070.3
B-1	H5	759852.1	1976056.7
B-2	H6	759856.8	1976049.3
B-3	H7	759834.6	1976048.8
B-4	H8	759820.5	1976037.8
B-5	H8	759820.5	1976037.8
B-6	H8	759820.5	1976037.8
B-7	H8	759820.5	1976037.8
B-8	H8	759820.5	1976037.8
C1	H8	759820.5	1976037.8
C2	H8	759820.5	1976037.8
C3	H8	759820.5	1976037.8
C4	H8	759820.5	1976037.8
C5	H8	759820.5	1976037.8
C6	H8	759820.5	1976037.8
C7	H8	759820.5	1976037.8
C8	H8	759820.5	1976037.8
D-1	H8	759820.5	1976037.8
D-2	H8	759820.5	1976037.8
D-3	H8	759820.5	1976037.8
D-4	H8	759820.5	1976037.8
D-5	H8	759820.5	1976037.8
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D-9	H8	759820.5	1976037.8
D-10	H8	759820.5	1976037.8
D-11	H8	759820.5	1976037.8
D-12	H8	759820.5	1976037.8
D-13	H8	759820.5	1976037.8
D-14	H8	759820.5	1976037.8
D-15	H8	759820.5	1976037.8
D-16	H8	759820.5	1976037.8
D-17	H8	759820.5	1976037.8
E1	WA-1	760631.3	1976387.4
E2	WA-2	760620.9	1976384.9
E3	WA-3	760583.4	1976375.6
E4	WA-4	760580.2	1976375.6
E5	WA-5	760406.6	1976402.8
F1	WB-1	760406.6	1976402.8
F2	WB-2	760404.7	1976435.0
F3	WB-3	760356.1	1976444.5
F4	WB-4	760343.2	1976444.5
F5	WB-5	760284.2	1976382.7
F6	WB-6	760284.2	1976382.7
F7	WB-7	760230.9	1976321.2
F8	WB-8	760217.5	1976387.7
F9	WB-9	760113.2	1976478.6
F10	WB-10	760147.0	1976491.1
F11	WB-11	760169.4	1976508.7
F12	WB-12	760196.6	1976506.4
F13	WB-13	760205.2	1976523.2
F14	WB-14	760177.1	1976616.7
F15	WB-15	760168.2	1976606.0
F16	WB-16	760203.2	1976590.2
F17	WB-17	760213.1	1976573.2
F18	WB-18	760221.2	1976510.1
F19	WB-19	760232.7	1976485.5
F20	WB-20	760254.3	1976445.6
F21	WB-21	760303.6	1976444.3
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F23	WB-23	760303.6	1976444.3
F24	WB-24	760303.6	1976444.3
F25	WB-25	760303.6	1976444.3
F26	WB-26	760303.6	1976444.3
F27	WB-27	760303.6	1976444.3
G1	WA-1	759851.5	1976177.5
G2	WA-2	759865.5	1976159.3
G3	WA-3	759843.6	1976200.8
G4	WA-4	759851.5	1976191.6
G5	WA-5	759843.6	1976188.3
G6	WA-6	759851.5	1976188.3
G7	WA-7	759851.5	1976188.3
G8	WA-8	759851.5	1976179.2

TOP OF BANK #	Northing	Easting
281	759854.9	1973478.5
282	759876.7	1973479.8
283	759892.7	1973502.8
284	759903.1	1973507.2
285	759915.4	1973521.4
286	759926.8	1973523.4
287	759937.6	1973534.8
288	759948.8	1973569.0
289	759961.8	1973613.2
290	759974.1	1973613.7
291	759986.0	1973681.0
292	759998.1	1973703.3
293	759990.8	1973703.3
294	759983.7	1973700.7
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300	759940.3	1973719.9
301	759932.8	1973747.0
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307	759887.2	1973786.9
308	759879.6	1973781.6
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318	759803.6	1973791.4
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326	759742.8	1973791.4
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358	759499.6	1973791.4
359	759492.0	1973791.4

WETLANDS DELINEATION EXHIBIT  
 WILLIAMS CORNER  
 CHATHAM COUNTY, NORTH CAROLINA



2515 JONES BL. WETLANDS  
 CONCEPT, INC.  
 3008 LITTLETON PIKE  
 FAYETTEVILLE, NC 28404  
 PHONE: 704-785-8846  
 FAX: 704-785-8847

This certifies that this copy of this plot accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) Andrew Nikle  
 (title) Regulatory Project Manager  
 (date) 18 August 2014

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John R. McAdams Company, Inc., Durham, NC.

RONALD T. FREDERICK  
 Date 5-12-2014



TOP OF BANK #	Northing	Easting	TOP OF BANK #	Northing	Easting	TOP OF BANK #	Northing	Easting
360	7593731	1974543.3	461	7589119	1972783.0	141	759208.5	1974018.3
361	7593668.2	1974543.3	462	7593205	1972920.6	243	7592016	1974014.8
362	7593532	1974521.7	463	7593533	1972510.0	245	759315	1974003.2
363	7593650	1974515.0	464	7593579	1972584.7	249	759304.3	1974017.4
364	7593974	1974489.8	465	7593231	1972384.3	250	759300.2	1974012.9
365	7593920	1974490.0	466	7593166	1972270.4	254	759315.0	1974010.0
366	7593398.2	1974482.9	467	7593604	1972275.8	255	759319.0	1973996.9
367	7594006.6	1974478.7	468	7593879	1972228.8	256	759318.8	1973987.5
368	7594206	1974463.4	469	7600274	1972209.9	257	759318.8	1973987.5
369	7594425	1974460.9	470	7600295	1972244.0	257	759318.8	1973987.5
370	7594205	1974456.4	471	7600295	1972276.3	259	759319.0	1973981.9
371	7594098	1974460.6	472	7600871	1972287.3	260	759319.0	1973981.9
372	7594000	1974471.7	473	7600951	1972306.6	261	759319.0	1974007.7
374	7593388.4	1974473.1	474	7601087	1972308.0	266	759319.0	1973981.9
375	7593383.3	1974476.0	475	7600955	1972384.2	268	759319.0	1973981.9
376	7593371.2	1974452.7	476	7600714	1972343.3	270	759319.0	1973981.9
377	7593362.6	1974458.0	477	7600870	1972342.9	272	759319.0	1973981.9
378	7593455.8	1974440.2	478	7600860	1972327.8	275	759319.0	1973981.9
379	7593458.8	1974448.0	479	7600757	1972323.0	284	759319.0	1973981.9
380	7593408	1974436.4	480	7600231	1972181.9	285	759319.0	1973981.9
381	7593368	1974428.1	481	7601210	1972184.4	289	759319.0	1973981.9
382	7593385	1974405.9	482	7601655	1972191.7	293	759319.0	1973981.9
383	7593333.3	1974400.2	483	7602163	1972200.6	295	759319.0	1973981.9
384	7593328.9	1974410.3	484	7602287	1972194.7	298	759319.0	1973981.9
385	7593296	1974417.5	485	7603073	1972155.7	298	759319.0	1973981.9
386	7593170	1974431.2	486	7603114	1972205.9	298	759319.0	1973981.9
387	7593339	1974441.6	487	7603114	1972205.9	298	759319.0	1973981.9
388	7593197	1974544.0	488	7602718	1972186.2	298	759319.0	1973981.9
389	7593216	1974546.8	489	7601841	1972180.4	298	759319.0	1973981.9
390	7593190	1974522.3	490	7603591	1972220.2	298	759319.0	1973981.9
391	7593284	1974529.8	491	7603591	1972220.2	298	759319.0	1973981.9
392	7593162	1974527.5	492	7603591	1972220.2	298	759319.0	1973981.9
393	7593393	1974568.6	493	7604036	1972201.6	298	759319.0	1973981.9
394	7594125	1974680.0	494	7604384	1972202.7	298	759319.0	1973981.9
395	7594172	1974740.3	495	7604294	1972197.0	298	759319.0	1973981.9
396	7594265.5	1974740.6	496	7604294	1972197.0	298	759319.0	1973981.9
397	7594308	1974807.2	497	7592277	1972487.8	298	759319.0	1973981.9
398	7594308	1974807.2	498	7592277	1972487.8	298	759319.0	1973981.9
399	7594434	1974804.7	499	7592277	1972487.8	298	759319.0	1973981.9
400	7594760	1974845.6	500	7592277	1972487.8	298	759319.0	1973981.9
401	7594760	1974845.6	501	7592277	1972487.8	298	759319.0	1973981.9
402	7595009	1974860.5	502	7592277	1972487.8	298	759319.0	1973981.9
403	7595271	1974870.9	503	7592277	1972487.8	298	759319.0	1973981.9
404	7595271	1974870.9	504	7592277	1972487.8	298	759319.0	1973981.9
405	7595551	1974902.9	505	7592277	1972487.8	298	759319.0	1973981.9
412	7595922	1974941.2	512	7592277	1972487.8	298	759319.0	1973981.9
413	7596007	1974932.9	513	7592277	1972487.8	298	759319.0	1973981.9
414	7596315	1974967.7	514	7592277	1972487.8	298	759319.0	1973981.9
415	7596372	1974956.2	515	7592277	1972487.8	298	759319.0	1973981.9
416	7597119	1974968.8	516	7592277	1972487.8	298	759319.0	1973981.9
417	7597028	1974983.5	517	7592277	1972487.8	298	759319.0	1973981.9
418	7597374	1975021.9	518	7592277	1972487.8	298	759319.0	1973981.9
419	7597666	1975057.8	519	7592277	1972487.8	298	759319.0	1973981.9
420	7597824	1975102.4	520	7592277	1972487.8	298	759319.0	1973981.9
436	7598148	1975113.8	577	7592650	197272.4	2633	759431.6	1974046.6
437	7598062	1975091.0	578	7592650	197272.4	2633	759431.6	1974046.6
439	7597787	1975035.6	579	7592445	197284.7	2672	7592970	1974019.1
441	7597513	1975015.0	580	7592445	197284.7	2672	7592970	1974019.1
443	7598003	1975184.9	581	7592337	197284.7	2672	7592970	1974019.1
444	7597976	1975186.1	582	7592337	197284.7	2672	7592970	1974019.1
445	7597976	1975186.1	583	7592337	197284.7	2672	7592970	1974019.1
447	7597805	1975184.9	584	7592337	197284.7	2672	7592970	1974019.1
448	7597805	1975184.9	585	7592337	197284.7	2672	7592970	1974019.1
449	7597805	1975184.9	586	7592337	197284.7	2672	7592970	1974019.1
450	7597805	1975184.9	587	7592337	197284.7	2672	7592970	1974019.1
451	7597805	1975184.9	588	7592337	197284.7	2672	7592970	1974019.1
452	7597805	1975184.9	589	7592337	197284.7	2672	7592970	1974019.1
453	7597805	1975184.9	590	7592337	197284.7	2672	7592970	1974019.1
454	7597805	1975184.9	591	7592337	197284.7	2672	7592970	1974019.1
455	7597805	1975184.9	592	7592337	197284.7	2672	7592970	1974019.1
456	7597805	1975184.9	593	7592337	197284.7	2672	7592970	1974019.1
457	7597805	1975184.9	594	7592337	197284.7	2672	7592970	1974019.1
458	7597805	1975184.9	595	7592337	197284.7	2672	7592970	1974019.1
459	7597805	1975184.9	596	7592337	197284.7	2672	7592970	1974019.1
460	7598987	1975287.0	597	7592337	197284.7	2672	7592970	1974019.1
460	7598987	1975287.0	598	7592337	197284.7	2672	7592970	1974019.1

1788 CHERRY B. MADAMS  
 2000 Industrial Parkway  
 Durham, North Carolina 27713  
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 www.mcadams.com



# WETLANDS DELINEATION EXHIBIT

## WILLIAMS CORNER CHATHAM COUNTY, NORTH CAROLINA

PROJECT: LRD13000  
 STATE: NTS  
 DATE: 2014-05-12

This certifies that this copy of this plot accurately depicts the boundary of the jurisdiction of Section 404 of the Clean Water Act as determined by the undersigned on this date. Unless there is a change in the law or our published regulations, the determination of Section 404 jurisdiction may be relied upon for a period not to exceed five (5) years from this date. The undersigned completed this determination utilizing the appropriate Regional Supplement to the 1987 U.S. Army Corps of Engineers Wetlands Delineation Manual.

(name) Andrew White  
 (title) Assistant Project Manager  
 (date) August 20, 2014

I, RONALD T. FREDERICK, a North Carolina Professional Land Surveyor, do hereby certify that this map was prepared under my supervision and shows the locations of Section 404 Jurisdictional Areas as delineated by The John McAdams Company, Inc., Durham, NC.

Date: 5-12-2014  
 RONALD T. FREDERICK



LINE	BEARING	DISTANCE
L1	S 08°18'03" E	60.70
L2	N 83°22'52" E	46.28
L3	S 78°39'37" E	68.12
L4	N 03°32'54" W	90.58
L5	S 04°30'22" E	88.84
L6	N 85°58'17" E	23.40
L7	N 79°22'11" E	47.86
L8	S 00°26'19" W	21.80

CURVE	RADIUS	LENGTH	CURVE TABLE		
			CHORD BEARING	CH. DIST.	TANGENT
C1	2214.56'	80.60'	S 10°00'05" E	80.60	2°20'39"
C2	2214.56'	70.63'	S 07°54'56" E	70.63	1°49'39"

TOP OF BANK #	Northing	Eastng
3087	759868.0	1976237.0
3088	759865.9	1976240.2
3089	759877.5	1976229.8
3090	759862.4	1976231.5
3091	759859.2	1976231.9
3092	759859.2	1976235.8
3093	759852.5	1976208.3
3094	759848.9	1976211.6
3139	758225.1	1974521.9
3140	758226.1	1974529.6
3141	758236.0	1974536.0
3142	758234.4	1974531.0
3237	758338.0	1974168.2
3240	758330.2	1974167.7
3241	758343.7	1974198.5
3242	758343.7	1974198.3
3243	758330.2	1974198.3
3244	758330.2	1974198.3
3245	758330.2	1974198.3
3246	758330.2	1974198.3
3247	758330.2	1974198.3
3248	758330.2	1974198.3
3249	758330.2	1974198.3
3250	758330.2	1974198.3
3251	758330.2	1974198.3
3252	758330.2	1974198.3
3253	758330.2	1974198.3
3254	758330.2	1974198.3
3255	758330.2	1974198.3
3256	758330.2	1974198.3
3257	758330.2	1974198.3
3258	758330.2	1974198.3
3259	758330.2	1974198.3
3260	758330.2	1974198.3
3261	758330.2	1974198.3
3262	758330.2	1974198.3
3263	758330.2	1974198.3
3264	758330.2	1974198.3
3265	758330.2	1974198.3
3266	758330.2	1974198.3
3267	758330.2	1974198.3
3268	758330.2	1974198.3
3269	758330.2	1974198.3
3270	758330.2	1974198.3
3271	758330.2	1974198.3
3272	758330.2	1974198.3
3273	758330.2	1974198.3
3274	758330.2	1974198.3
3275	758330.2	1974198.3
3276	758330.2	1974198.3
3277	758330.2	1974198.3
3278	758330.2	1974198.3
3279	758330.2	1974198.3
3280	758330.2	1974198.3
3281	758330.2	1974198.3
3282	758330.2	1974198.3
3283	758330.2	1974198.3

TOP OF BANK #	Northing	Eastng
2744	758921.1	1974043.1
2745	758907.9	1974024.3
2746	758957.4	1974050.1
2747	758960.4	1974049.8
2748	758959.6	1974032.1
2749	758962.5	1974031.8
2750	758899.7	1974003.5
2751	758920.8	1973987.0
2752	758918.0	1973971.9
2753	758921.5	1973969.3
2754	758917.6	1973947.5
2755	758932.6	1973981.1
2756	758931.4	1973989.4
2757	758941.8	1973989.0
2758	758940.0	1973983.9
2759	758939.3	1973983.3
2760	758939.3	1973983.3
2761	758939.3	1973983.3
2762	758939.3	1973983.3
2763	758939.3	1973983.3
2764	758939.3	1973983.3
2765	758939.3	1973983.3
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2796	758939.3	1973983.3
2797	758939.3	1973983.3
2798	758939.3	1973983.3
2799	758939.3	1973983.3
2800	758939.3	1973983.3
2801	758939.3	1973983.3
2802	758939.3	1973983.3
2803	758939.3	1973983.3
2804	758939.3	1973983.3
2805	758939.3	1973983.3
2806	758939.3	1973983.3
2807	758939.3	1973983.3
2808	758939.3	1973983.3
2809	758939.3	1973983.3
2810	758939.3	1973983.3
2811	758939.3	1973983.3
2812	758939.3	1973983.3
2813	758939.3	1973983.3
2814	758939.3	1973983.3
2815	758939.3	1973983.3
2816	758939.3	1973983.3
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2831	758939.3	1973983.3
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2833	758939.3	1973983.3
2834	758939.3	1973983.3
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2863	758939.3	1973983.3
2864	758939.3	1973983.3
2865	758939.3	1973983.3
2866	758939.3	1973983.3
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2872	758939.3	1973983.3
2873	758939.3	1973983.3
2874	758939.3	1973983.3
2875	758939.3	1973983.3
2876	758939.3	1973983.3
2877	758939.3	1973983.3
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2884	758939.3	1973983.3
2885	758939.3	1973983.3
2886	758939.3	1973983.3
2887	758939.3	1973983.3
2888	758939.3	1973983.3
2889	758939.3	1973983.3
2890	758939.3	1973983.3
2891	758939.3	1973983.3
2892	758939.3	1973983.3
2893	758939.3	1973983.3
2894	758939.3	1973983.3
2895	758939.3	1973983.3
2896	758939.3	1973983.3
2897	758939.3	1973983.3
2898	758939.3	1973983.3
2899	758939.3	1973983.3
2900	758939.3	1973983.3



# **Attachment F**



## WATERSHED PROTECTION DEPARTMENT

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

Fax: (919) 542-2698 • E-mail: [drew.blake@chathamnc.org](mailto:drew.blake@chathamnc.org) • Website: [www.chathamnc.org](http://www.chathamnc.org)

November 12, 2019

Mr. Perry Isner  
Wetlands & Waters, Inc.  
328 Broad Street, Suite D  
Statesville, NC 28677

Project Name: Williams Corner

Location: Lystra Road & 15/501, Chatham County

Subject Features: Seven (7) intermittent streams, three (3) perennial streams, fourteen (14) jurisdictional wetlands, one (1) pond

Date of Determination: November 5, 2019

Planning Application: 2019-2201

#### Explanation:

The site visit was completed on November 5, 2019 by Drew Blake with the Chatham County Watershed Protection Department and Chris Huysman of Wetlands & Waters, Inc., for Williams Corner that is located within the Jordan Lake watershed. Wetlands & Waters personnel completed a previous site visit which resulted in the identification of three (3) potentially ephemeral streams, nine (9) intermittent streams, four (4) perennial streams, and fourteen (14) potential wetlands on the property. Wetlands & Waters 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 in the field. SF6, SF7, and SF8 were determined to not meet the requirements of an ephemeral stream. The wetland boundaries had previously been confirmed by Andy Williams of the US Army Corps of Engineers.

#### Required Riparian Buffers:

Tributaries A, B, F, H, I, J, and Z were confirmed as intermittent streams and will require a 50-ft buffer from the top of bank landward. Tributaries E, G, and K were confirmed as perennial streams and will require a 100-ft buffer from the top of bank landward. All wetlands were confirmed by the USACE and will require a 50-ft buffer from the flagged wetland boundary. The existing pond between Wetland I and SF4 will require a 50-ft buffer as the pond meets the definition of a "perennial waterbody" as defined in Section 109 of the Chatham County Watershed Protection Ordinance.

#### Proposed Buffer Impacts:

Submittal of a No Practical Alternatives Authorization Application, in accordance with Section 304 (I) of the Chatham County Watershed Protection Ordinance, must occur if this project results in impacts to riparian buffers. No Practical Alternatives Authorization Applications must be submitted prior to or at the same time as the projects Soil Erosion and Sedimentation Control Plans. All approvals for the No Practical Alternatives





**WATERSHED PROTECTION DEPARTMENT**

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

Fax: (919) 542-2698 • E-mail: [drew.blake@chathamnc.org](mailto:drew.blake@chathamnc.org) • Website: [www.chathamnc.org](http://www.chathamnc.org)

Authorization must be received prior to submitting for Construction Plan approval from the Chatham County Planning Department.

**Project Revisions:**

Should the scope of the project change additional consultation and reviews may be necessary. This report is written to apply to most recent revision of the Chatham County Watershed Protection Ordinance. Alternations to the project scope may apply riparian buffers that are not described in this report.

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 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: Wetland Sketch Map dated 10/21/19, completed by Wetlands & Waters  
Stream Forms, completed by Wetlands & Waters  
Wetland Data Forms, completed by Wetlands & Waters  
NRCS Soil Survey Map, Completed by Wetlands & Waters  
USGS Topographic Map, completed by Wetlands & Waters  
Major Subdivision Riparian Buffer Application Packet

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

\*Wetland Sketch provided for illustrative purposes for preliminary planning use only. Not intended to be relied upon for exact location, dimensions, or orientation. All findings and assessments made by wetland consultants regarding limits of jurisdiction or permitting requirements are subject to verification by the US Army Corps of Engineers and other appropriate state and local authorities.

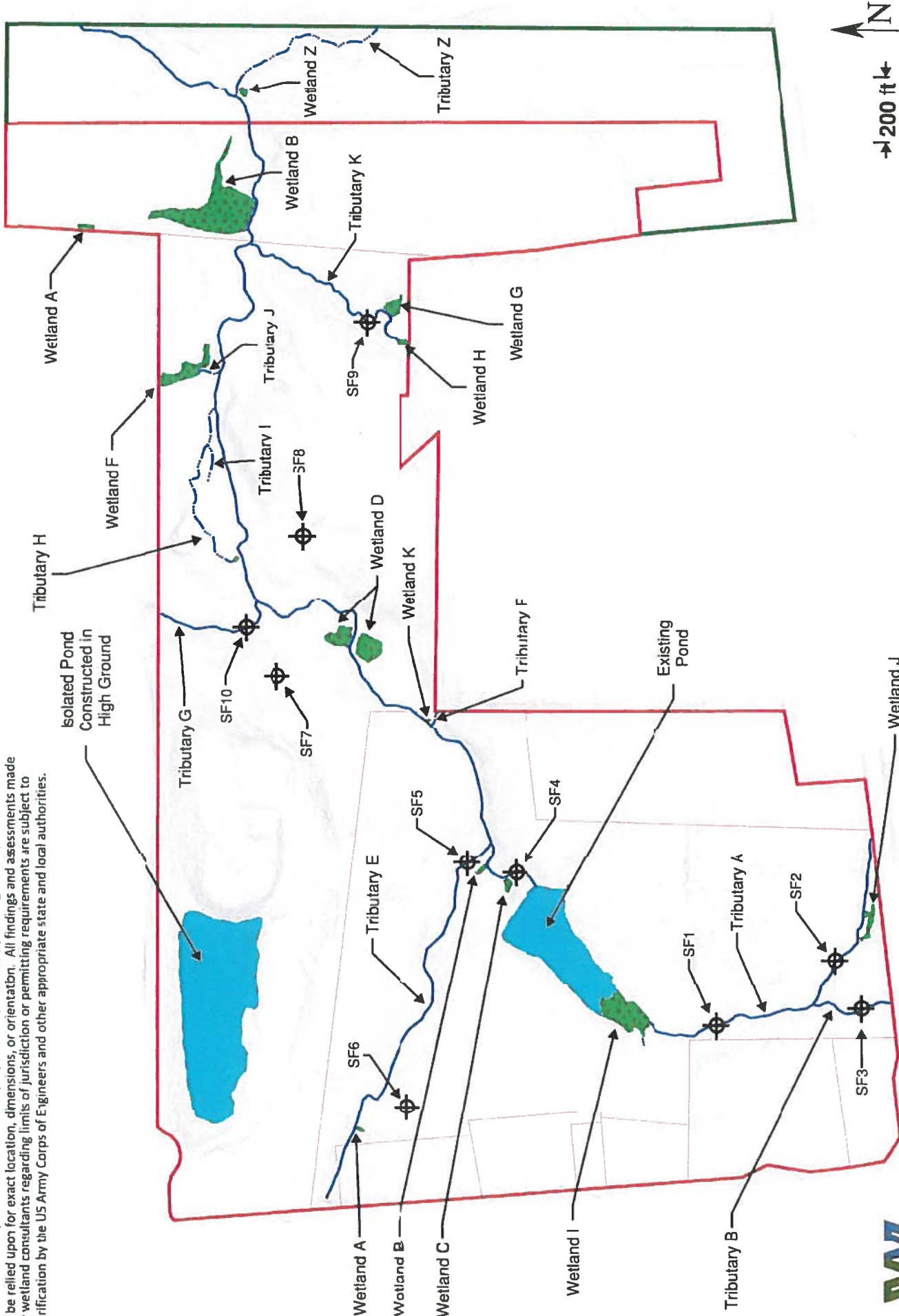


Figure 2: Approximate Depiction of Aquatic Resources

Owner / Developer	Bold Development Group			Project Name:	Williams Corner		
City / Town:	Chapel Hill	County:	Chatham	State:	NC	Tax PIN(s):	18747, 18760, 18891, 18899, 18748, 18901, 65392, 18757, 18758, 76461
Coordinates (Lat/Long):	35.83756 / -79.08443		AID / ORM:	2014-01501	Scale:	graphic	
					Date:	10/21/19	

NC DWQ Stream Identification Form Version 4.11/Williams Cove

Date: 2/13/14  
 Evaluator: CH PE  
 Project/Site: TribA-SF1  
 County: Durham  
 Stream Determination (circle one):  
 Ephemeral Intermittent Perennial  
 Stream is at least intermittent #2, 19 or perennial #2 & 30?  
 Longitude: 29  
 Latitude: 5F1  
 Other: e.g. Quail Name: 29

A. Geomorphology (Subtotal = 17.5)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/nick floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0			Yes = 3

B. Hydrology (Subtotal = 5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	0.5	1	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0			Yes = 3

C. Biology (Subtotal = 6.5)

18. Fibrous roots in streambed	0	2	1	0
19. Rooted upland plants in streambed	0	2	1	0
20. Macroinvertebrate (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5

Notes: FACW = 0.75; OBL = 1.5; Other = 0

Sketch:

NC DWQ Stream Identification Form Version 4.11/Williams Cove

Date: 01/30/14  
 Evaluator: CH PE  
 Project/Site: TribA-SF2  
 County: Wakeham  
 Stream Determination (circle one):  
 Ephemeral Intermittent Perennial  
 Stream is at least intermittent #2, 19 or perennial #2 & 30?  
 Longitude: 20  
 Latitude: 5F2  
 Other: e.g. Quail Name: 20

A. Geomorphology (Subtotal = 14.5)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/nick floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0			Yes = 3

B. Hydrology (Subtotal = 5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	0.5	1	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0			Yes = 3

C. Biology (Subtotal = 6.5)

18. Fibrous roots in streambed	0	2	1	0
19. Rooted upland plants in streambed	0	2	1	0
20. Macroinvertebrate (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5

Notes: FACW = 0.75; OBL = 1.5; Other = 0

Sketch:

NC DWQ Stream Identification Form Version 4.11

Project/Site: FB SF-3

County: Duplin

Latitude: Longitude:

Other e.g. Quad/Name:

Stream Determination (circle one):  
Epimeral Intermittent Perennial

Stream e.g. at least intermittent #2, 19 or perennial #2, 30\*

Date: 09/20/14

Evaluator: C.H. BT

Latitude: Longitude:

Other e.g. Quad/Name:

Stream Determination (circle one):  
Epimeral Intermittent Perennial

Stream e.g. at least intermittent #2, 19 or perennial #2, 30\*

NC DWQ Stream Identification Form Version 4.11

Project/Site: SF 4

County: Williams

Latitude: Longitude:

Other e.g. Quad/Name:

Stream Determination (circle one):  
Epimeral Intermittent Perennial

Stream e.g. at least intermittent #2, 19 or perennial #2, 30\*

Date: 9/25/19

Evaluator: C.H. P.C.

Latitude: Longitude:

Other e.g. Quad/Name:

Stream Determination (circle one):  
Epimeral Intermittent Perennial

Stream e.g. at least intermittent #2, 19 or perennial #2, 30\*

A. Geomorphology (Subtotal = 12.5)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/inactive floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0 Yes = 3			

B. Hydrology (Subtotal = 4)

	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0 Yes = 3			

C. Biology (Subtotal = 1)

	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	0	1	2	3
19. Rooted upland plants in streambed	0	1	2	3
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	No = 0 Yes = 1			

Notes: FACW = 0.75, OBL = 1.5, Other = 0

\* perennial streams may also be identified using other methods. See p. 36 of manual.

Sketch:

A. Geomorphology (Subtotal = 17)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/inactive floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0 Yes = 3			

B. Hydrology (Subtotal = 5)

	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0 Yes = 3			

C. Biology (Subtotal = 7)

	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	0	1	2	3
19. Rooted upland plants in streambed	0	1	2	3
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	No = 0 Yes = 1			

Notes: FACW = 0.75, OBL = 1.5, Other = 0

\* perennial streams may also be identified using other methods. See p. 36 of manual.

Sketch:

NC DWQ Stream Identification Form Version 4.11 TRIB E

Date: 9.30.2019  
 Project/Site: SFS  
 County: CH 3 PI  
 Stream Determination (circle one): 40  
 Ephemeral Intermittent Potential

NC DWQ Stream Identification Form Version 4.11

Date: 09/30/19  
 Project/Site: Salt Marsh SFG  
 County: Chatham  
 Stream Determination (circle one): 8.5  
 Ephemeral Intermittent Potential

A. Geomorphology (Subtotal = 22)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/active floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	0.5	1	1.5
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		1	Yes = 3

B. Hydrology (Subtotal = 1.5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	0	0.5	1	1.5
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0	0.5	1	1.5

C. Biology (Subtotal = 3)

18. Fibrous roots in streambed	0	1	2	3
19. Rooted upland plants in streambed	0	1	2	3
20. Microbenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

Notes: FACW = 0.75; OBL = 1.5; Other = 0

Notes:  
 \* perennial streams may also be identified using other methods. See p. 35 of manual.  
 \* artificial ditches are not rated; see ditches in manual.  
 \* FACW = 0.75; OBL = 1.5; Other = 0

Sketch:

A. Geomorphology (Subtotal = 4)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/active floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	0.5	1	1.5
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0	0.5	1	Yes = 3

B. Hydrology (Subtotal = 1.5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	0	0.5	1	1.5
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0	0.5	1	1.5

C. Biology (Subtotal = 3)

18. Fibrous roots in streambed	0	1	2	3
19. Rooted upland plants in streambed	0	1	2	3
20. Microbenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5

Notes: FACW = 0.75; OBL = 1.5; Other = 0

Notes:  
 \* perennial streams may also be identified using other methods. See p. 35 of manual.  
 \* FACW = 0.75; OBL = 1.5; Other = 0

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 10.1.19  
 Project/Site: SF7  
 County: CH  
 Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Stream Determination (circle one)  
 Ephemeral Intermittent Perennial  
 Other e.g. Quag Name: \_\_\_\_\_  
 Total Points:  
 Stream is at least streambed #2, 19 or perennial #2, 30\*

A. Geomorphology (Subtotal = 4)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/semi floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No	0	1	Yes = 3

B. Hydrology (Subtotal = 1)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No	0	1	Yes = 3

C. Biology (Subtotal = 7)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5
FACW = 0.75 OBL = 1.5 Other = 0				

Notes:  
 \* perennial streams may also be identified using other methods. See p. 35 of manual.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 10.1  
 Project/Site: SF8  
 County: \_\_\_\_\_  
 Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Stream Determination (circle one)  
 Ephemeral Intermittent Perennial  
 Other e.g. Quag Name: \_\_\_\_\_  
 Total Points:  
 Stream is at least streambed #2, 19 or perennial #2, 30\*

A. Geomorphology (Subtotal = 4.5)

	Absent	Weak	Moderate	Strong
1. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/semi floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No	0	1	Yes = 3

B. Hydrology (Subtotal = 1)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No	0	1	Yes = 3

C. Biology (Subtotal = 7)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	0.5	1	1.5
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5
FACW = 0.75 OBL = 1.5 Other = 0				

Notes:  
 \* perennial streams may also be identified using other methods. See p. 35 of manual.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: \_\_\_\_\_ Project/Site: **SF 9** Latitude: \_\_\_\_\_  
 Evaluator: \_\_\_\_\_ County: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Total Points: **34.5** Stream Determination (circle one) Other \_\_\_\_\_  
 Stream is at least ephemeral # 2, 19 or perennial # 2, 30\* Ephemeral Intermittent Perennial  
 # 2, 19 or perennial # 2, 30\* e.g. Quail Name:

A. Geomorphology (Subtotal = **19.5**)

	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3 In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
B. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0			Yes (3)

\* artificial ditches are not rated; see geomorphology in manual

B. Hydrology (Subtotal = **1.5**)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	0.5	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes (1)	Yes (3)

C. Biology (Subtotal = **14.5**)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinfauna (note diversity and abundance)	0	0.5	2	3
21. Aquatic Mollusks	0	0.5	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5

Wetland plants may also be identified using other methods. See p. 35 of manual.  
 FACIW = 0.75; OBL = 1.5; Other (0)

NOTES: \_\_\_\_\_  
 Sketch: \_\_\_\_\_

NC DWQ Stream Identification Form Version 4.11

Date: \_\_\_\_\_ Project/Site: **SF 10** Latitude: \_\_\_\_\_  
 Evaluator: \_\_\_\_\_ County: \_\_\_\_\_ Longitude: \_\_\_\_\_  
 Total Points: **37** Stream Determination (circle one) Other \_\_\_\_\_  
 Stream is at least ephemeral # 2, 19 or perennial # 2, 30\* Ephemeral Intermittent Perennial  
 # 2, 19 or perennial # 2, 30\* e.g. Quail Name:

A. Geomorphology (Subtotal = **20**)

	Absent	Weak	Moderate	Strong
1* Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3 In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
B. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes (3)	Yes (1.5)

\* artificial ditches are not rated; see geomorphology in manual

B. Hydrology (Subtotal = **1.5**)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	0.5	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes (1)	Yes (1.5)

C. Biology (Subtotal = **14.5**)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinfauna (note diversity and abundance)	0	0.5	2	3
21. Aquatic Mollusks	0	0.5	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0	0.5	1	1.5

Wetland plants may also be identified using other methods. See p. 35 of manual.  
 FACIW = 0.75; OBL = 1.5; Other (0)

NOTES: \_\_\_\_\_  
 Sketch: \_\_\_\_\_

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Williams Corners City/County: Pittsboro/ Chatham Sampling Date: 07/31/19  
 Applicant/Owner: ZR Chatham LLC State: NC Sampling Point: DF1  
 Investigator(s): C. Huysman, P. Isner Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 1  
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.83338 Long: -79.08625 Datum: WGS84  
 Soil Map Unit Name: Wedowee NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	<b>Is the Sampled Area within a Wetland?</b> Yes <u>X</u> No _____
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:



**VEGETATION (Four Strata) – Use scientific names of plants.**

Sampling Point: DF1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

=Total Cover

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>42</u>	x 3 = <u>126</u>
FACU species <u>2</u>	x 4 = <u>8</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>44</u> (A)	<u>134</u> (B)
Prevalence Index = B/A = <u>3.05</u>	

**Sapling/Shrub Stratum (Plot size: 15)**

1. <u>Liquidambar styraciflua</u>	<u>2</u>	<u>No</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - X 2 - Dominance Test is >50%
  - 3 - Prevalence Index is ≤3.0<sup>1</sup>
  - 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

=Total Cover

50% of total cover: 1 20% of total cover: 1

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Herb Stratum (Plot size: 5)**

1. <u>Microstegium vimineum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Carex abscondita</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
3. <u>Sambucus nigra</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

- Definitions of Four Vegetation Strata:**
- Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
- Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- Woody Vine** – All woody vines greater than 3.28 ft in height.

=Total Cover

50% of total cover: 20 20% of total cover: 8

**Woody Vine Stratum (Plot size: 15)**

1. <u>Lonicera japonica</u>	<u>2</u>	<u>No</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

=Total Cover

50% of total cover: 1 20% of total cover: 1

**Hydrophytic Vegetation Present?** Yes X No \_\_\_\_\_

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DF1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	5YR 3/2	95	5YR 4/4	5	C	PL	Sandy	Distinct redox concentrations
5-7	7.5YR 4/4	100					Sandy	
7-16	5GY 5/2	100					Loamy/Clayey	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Mucky Mineral (F1) (MLRA 136)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 122, 136)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147, 148)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (F21) (outside MLRA 127, 147, 148)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes X No \_\_\_\_\_

Remarks:

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region</b> See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending</i> <i>Requirement Control Symbol EXEMPT:</i> <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Williams Comer City/County: Pittsboro, Chatham County Sampling Date: 07/31/19  
 Applicant/Owner: ZR Chatham LLC State: NC Sampling Point: DF2  
 Investigator(s): C. Huysman, P. Isner Section, Township, Range: \_\_\_\_\_  
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): Concave Slope (%): 2  
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.833360 Long: -79.086880 Datum: WGS 84  
 Soil Map Unit Name: Wedowee NWI classification: \_\_\_\_\_

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ significantly disturbed? Are "Normal Circumstances" present? Yes X No \_\_\_\_\_  
 Are Vegetation \_\_\_\_\_, Soil \_\_\_\_\_, or Hydrology \_\_\_\_\_ naturally problematic? (If needed, explain any answers in Remarks.)

**SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.**

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
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<b>Field Observations:</b> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five Strata) – Use scientific names of plants.**

Sampling Point: DF2

Tree Stratum (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liriodendron tulipifera</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Pinus taeda</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>50</u> =Total Cover		
50% of total cover:	<u>25</u>	20% of total cover:	<u>10</u>
Sapling Stratum (Plot size: <u>25</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>25</u> =Total Cover		
50% of total cover:	<u>13</u>	20% of total cover:	<u>5</u>
Shrub Stratum (Plot size: <u>15</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Elaeagnus angustifolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
	<u>15</u> =Total Cover		
50% of total cover:	<u>8</u>	20% of total cover:	<u>3</u>
Herb Stratum (Plot size: <u>5</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>25</u> =Total Cover		
50% of total cover:	<u>13</u>	20% of total cover:	<u>5</u>
Woody Vine Stratum (Plot size: <u>30</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Lonicera japonica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>15</u> =Total Cover		
50% of total cover:	<u>8</u>	20% of total cover:	<u>3</u>

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>85</u>	x 3 = <u>255</u>
FACU species <u>45</u>	x 4 = <u>180</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>130</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.35</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - X 2 - Dominance Test is >50%
  - 3 - Prevalence Index is ≤3.0<sup>1</sup>
  - 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Five Vegetation Strata:**

**Tree** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

**Sapling** – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

**Shrub** - Woody Plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

**Herb** – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

**Woody Vine** – All woody vines, regardless of height.

**Hydrophytic Vegetation Present?** Yes X No   

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL**

Sampling Point: DF2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	2.5Y 4/3	100					Loamy/Clayey	
2-8	2.5Y 5/3	60	7.5YR 4/2	40	D	M	Loamy/Clayey	
8-12	2.5Y 5/3	50	10YR 5/4	50	D	M	Loamy/Clayey	
12-20	10YR 5/4	50	10YR 4/4	30	D	M	Loamy/Clayey	
			2.5Y 5/2	20	D	M		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Mucky Mineral (F1) (MLRA 136)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 122, 136)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147, 148)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (F21) (outside MLRA 127, 147, 148)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

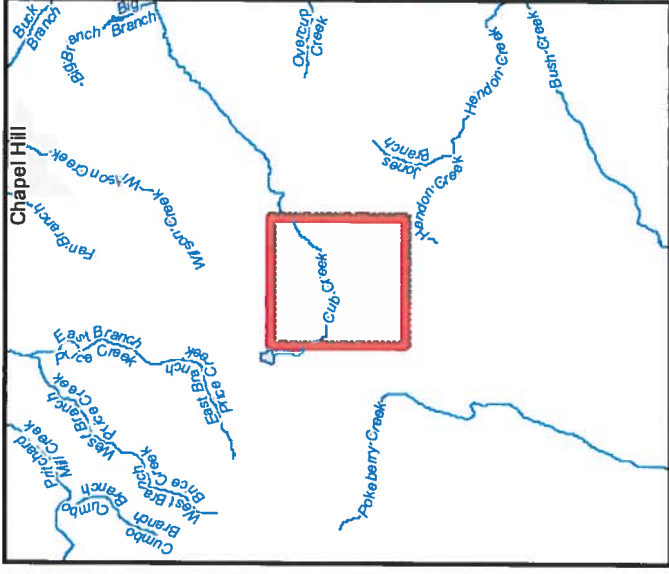
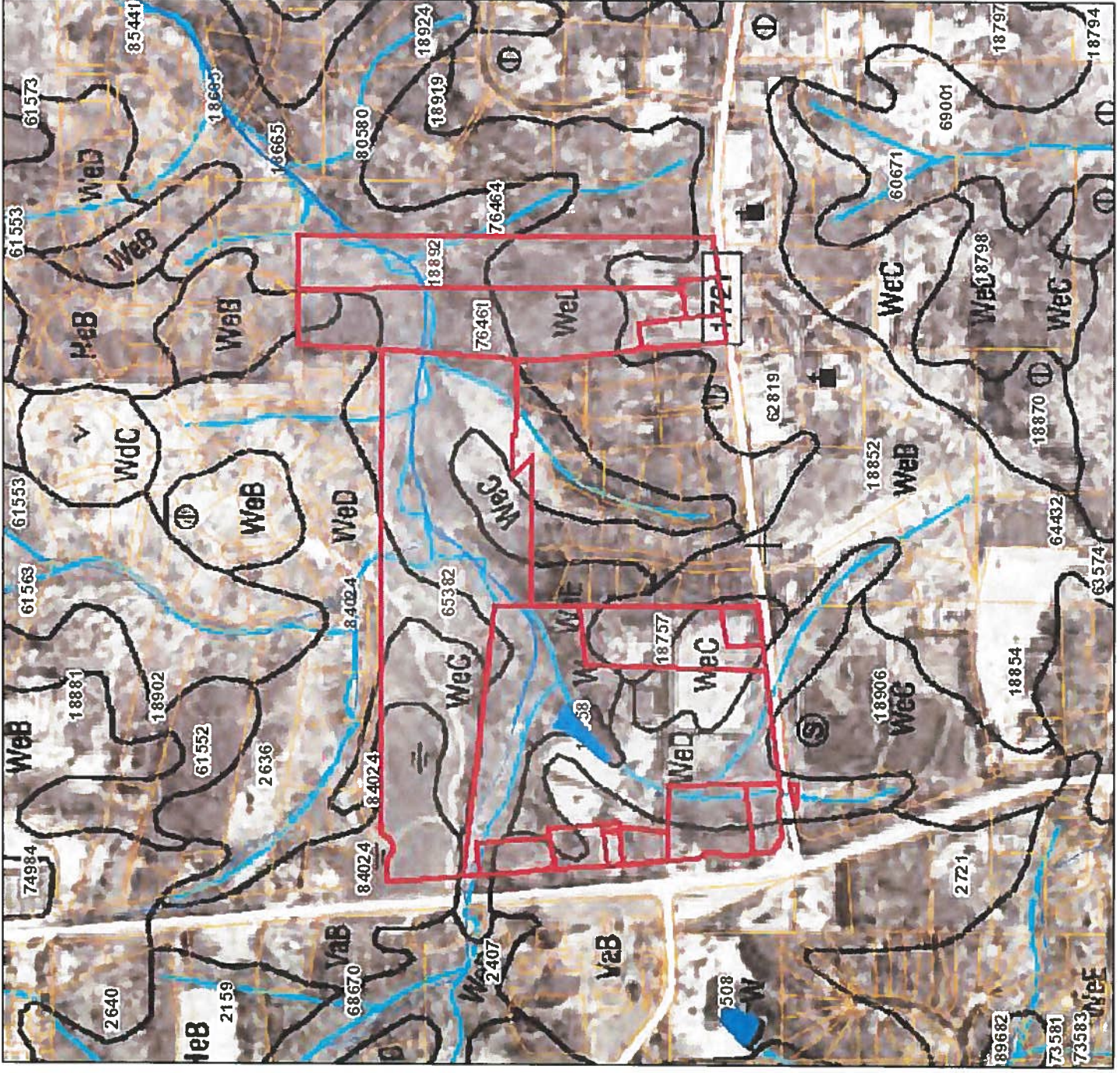
**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No X

Remarks:

# Chatham County Tax Map

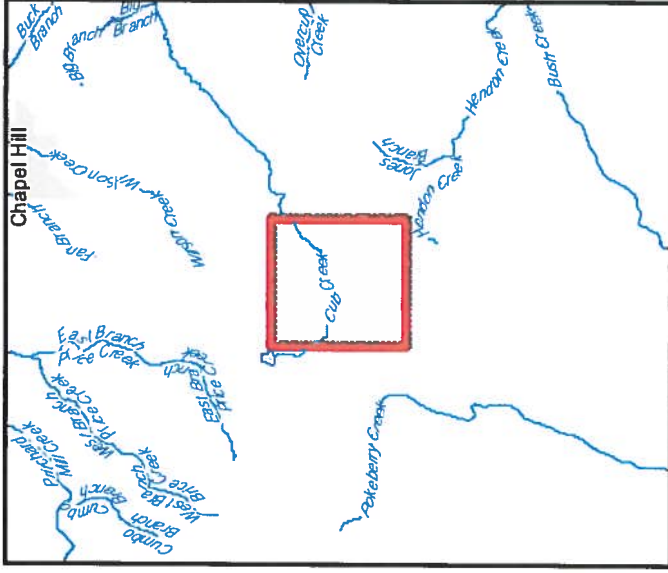
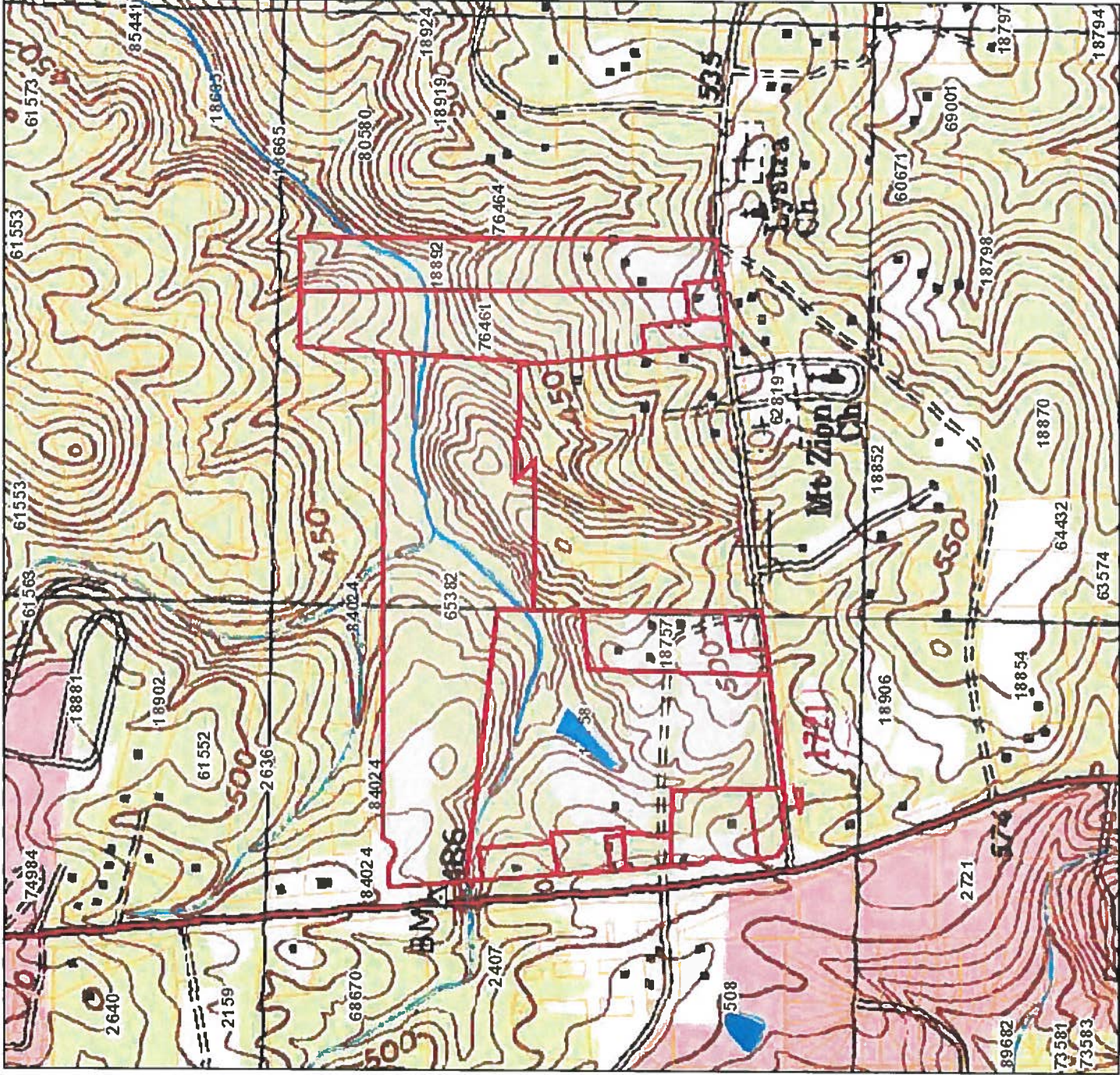


Service Layer Credits: Chatham County,  
Chatham County GIS  
NRCS, Chatham County, Chatham County



Date: 10/11/2019  
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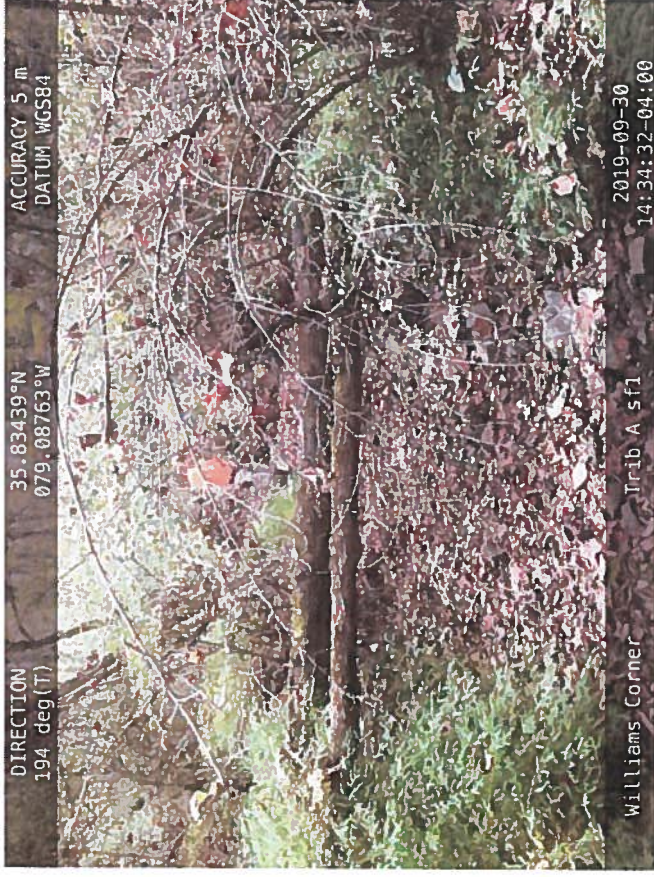
# Chatham County Tax Map



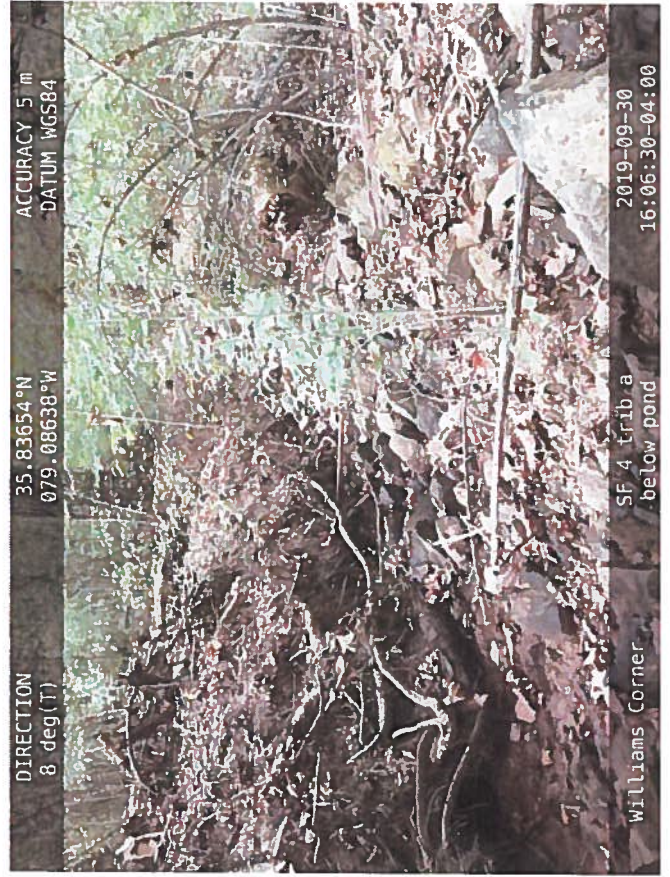
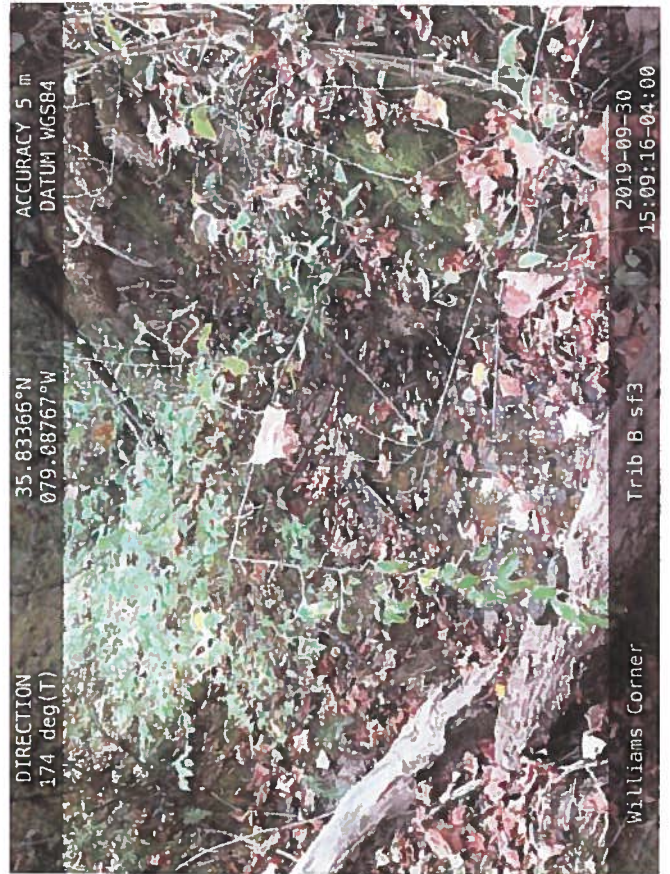
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Chatham County, Chatham County GIS

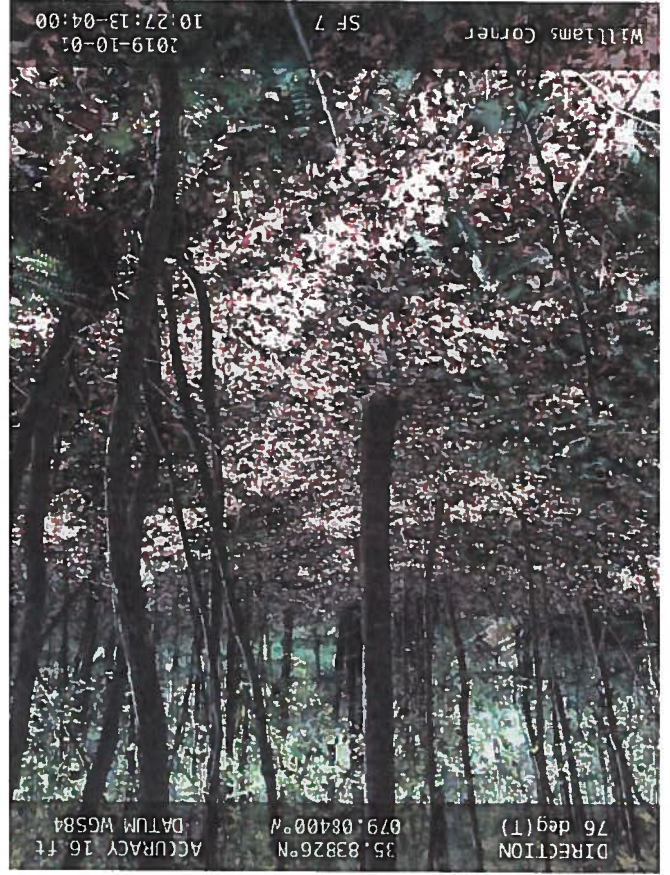
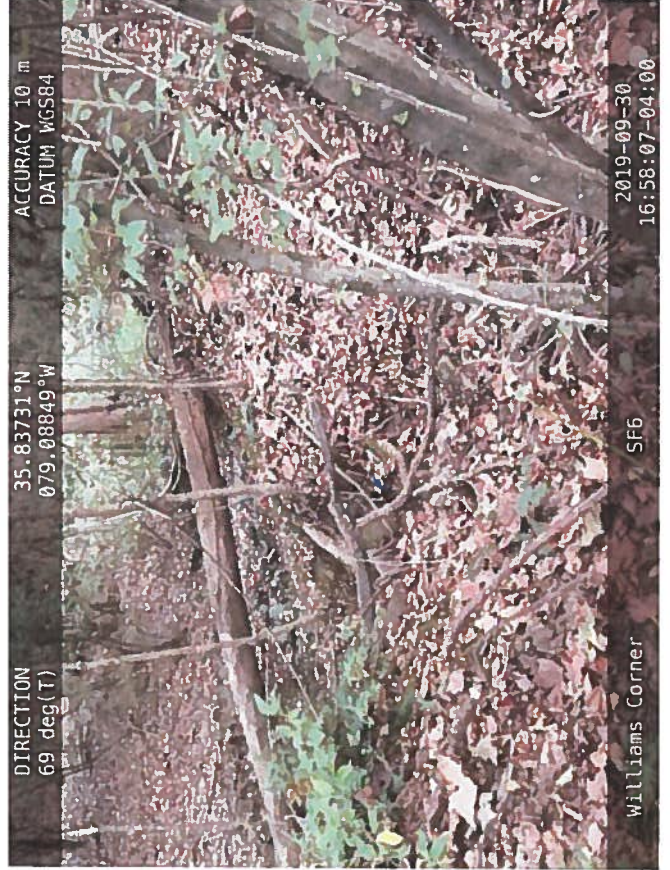
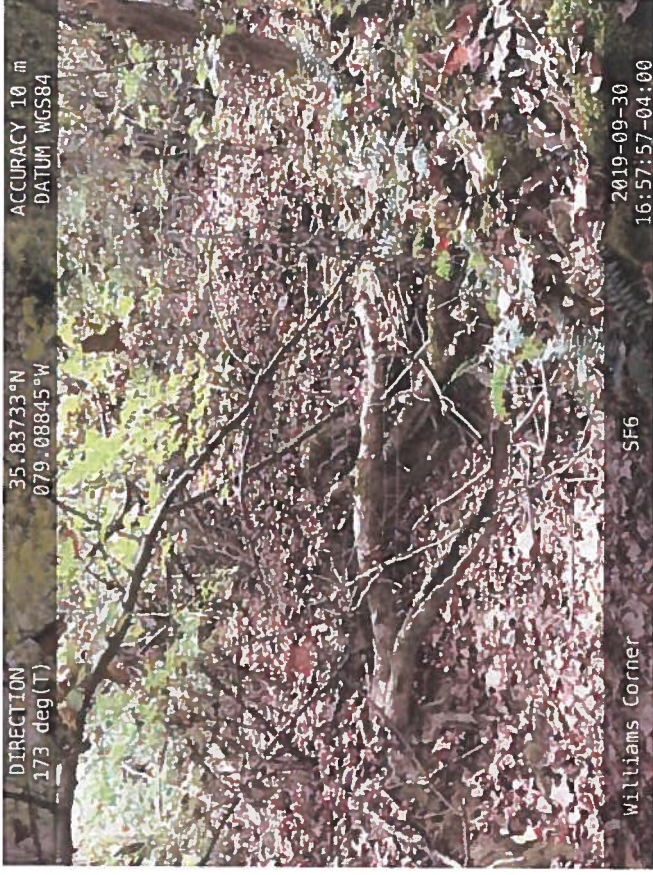


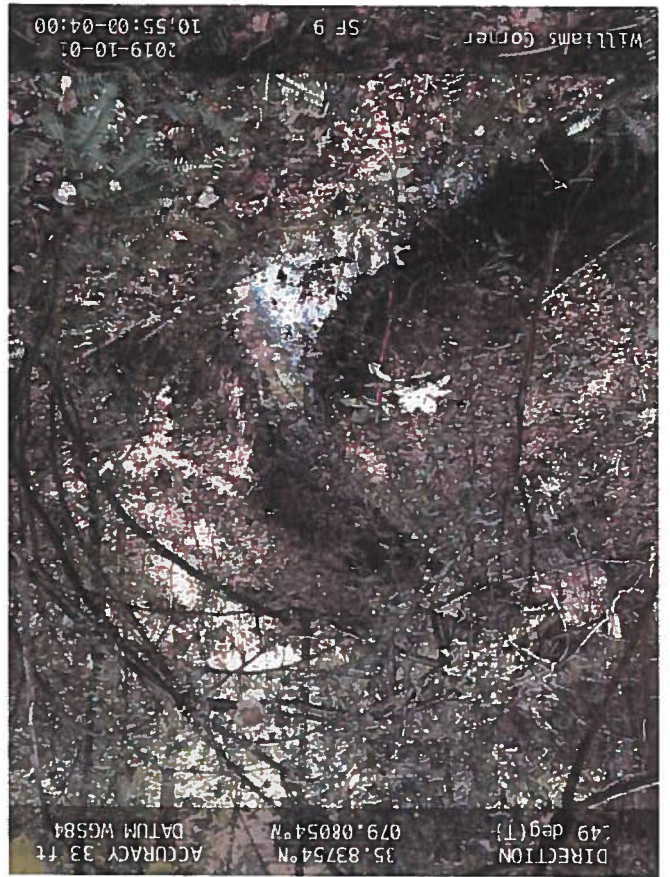
Date: 10/11/2019  
Time: 3:46:07 PM















North Carolina Department  
of Environmental Quality

Division of Water Resources

Surface Water Identification Training  
and Certification Program



Division of Water Resources  
Certificate of Training

*Perry Isner*

Has successfully demonstrated capability and proficiency to determine the presence of surface waters that require the application of rules adopted by the N.C. Environmental Management Commission for the protection of riparian buffers as determined by 15A NCAC 02B.0200.

*S. J. Zimmerman*  
S. J. Zimmerman, Director  
Division of Water Resources

December 10, 2015

Date

863T-1115

Certification Number

# **Attachment G**



Meagan Jolly <meaganjolly@wetlands-waters.com>

## Historic Resource Inquiry

history@chathamhistory.org <history@chathamhistory.org>  
To: Meagan Jolly <meaganjolly@wetlands-waters.com>

Thu, Oct 3, 2019 at 10:40 AM

Hi Meagan--

The Chatham County Planning Office should have records of any cultural/historic resources on the property if any kind of survey was done in the past.

The Chatham County Historical Association will want to look at any structures, remains, or things like old roads, walls, etc. before any disturbance begins. The GIS shows a number of structures--likely more than 50 years old.

There is a cemetery on the property. The graves in one shown on the GIS were moved by the current owner some years ago to a new location on the property. The new location is not showing up on the GIS but is the current cemetery location and will need to be verified and protected. I have notes that should help locate the cemetery. I do recall that the company did not follow through with the prescribed procedure for recording the new grave locations. I tried unsuccessfully to correct that at the time. I will have to pull my notes and get back to you with more information. I will try to do that this afternoon.

Are you planning to do a cultural/historic resources survey of the property?

I will be your contact with the Chatham County Historical Association.

I think Kimberly Tyson will be your contact in the Planning Office. If not, she can direct you to the right person. She will need to know that you are looking at the Williams Corner property to look up the old files.

[Kimberly.tyson@chathamnc.org](mailto:Kimberly.tyson@chathamnc.org)  
919-542-8283

Beverly Wiggins  
CCHA volunteer

On 2019-10-03 09:27, Meagan Jolly wrote:  
Good Morning,

I'm trying to find information on the history of a property and to see if there are any cultural or historic resources known to exist on the property. Can you help me find the right person to contact? I have attached the shapefile of the property and a Chatham County GIS map of the parcels I am interested in. I appreciate your help!

Best,

Meagan Jolly  
704.681.3479

The information contained in this email message is confidential and may be legally privileged and is intended only for the use of the individual or entity named above. If you are not an intended recipient or if you have received this message in error, you are hereby notified that any dissemination, distribution or copy of this email is strictly prohibited. If you have received this email in error, please immediately notify us by return email or telephone if the sender's phone number is listed above, then promptly and permanently delete this message. Thank you for your cooperation and consideration.



Meagan Jolly <meaganjolly@wetlands-waters.com>

## Historic Resource Inquiry

history@chathamhistory.org <history@chathamhistory.org>  
To: Meagan Jolly <meaganjolly@wetlands-waters.com>  
Cc: kimberly.tyson@chathamnc.org

Thu, Oct 3, 2019 at 5:44 PM

Meagan--

I have checked the files to which I have easy access and cannot find details on the new location of the Cole cemetery. I did find correspondence with the Parks Development representative, Luis Rios, about the site from 2008. In that, he alternates between assuring me that there is no risk to the newly-located cemetery because all of the workers know where it is, and indicating that he can't find anyone to take me to the site because they don't know the exact location. I was also promised maps of the location, which I did not receive. So, CCHA has never visited the site.

I think that the company did file a removal of graves form with the county health department when they moved the graves, but they never filed the reinterment location part of that. I contacted the company attorney about this way back in 2008 or 2009, but never got anything. The surveyors for the Williams Corner project should have the location of the reinterred graves on their maps. If you are successful at getting that, please let me know so we can have the location added to the county GIS. We will also want to visit and document the site if any development is proposed.

The county planning office may well have copies of some or most of the correspondence about this as they were copied on many of my attempts to get information and arrange a visit. The correspondence I have copies of is from 2008. The graves would have been moved prior to that but I don't remember the date--probably between 2005 and 2008.

The county health department should have a record of the removal of graves form. I don't know if a professional archaeologist looked at the original gravesites to locate the graves before the removal took place. I think that should have happened. If it did, perhaps the planning office has that information.

If I find older files with more info, I will let you know.

Beverly Wiggins

On 2019-10-03 09:27, Meagan Jolly wrote:

Good Morning,

I'm trying to find information on the history of a property and to see if there are any cultural or historic resources known to exist on the property. Can you help me find the right person to contact? I have attached the shapefile of the property and a Chatham County GIS map of the parcels I am interested in. I appreciate your help!

Best,

Meagan Jolly  
704.681.3479

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Meagan Jolly <meaganjolly@wetlands-waters.com>

---

## Historic Resource Inquiry - Williams Corner Property

---

Kimberly Tyson <kimberly.tyson@chathamnc.org>  
To: Meagan Jolly <meaganjolly@wetlands-waters.com>

Wed, Oct 16, 2019 at 4:10 PM

Ms. Jolly,

From subdivision related items, I don't have anything, however GIS shows a cemetery on parcel 65382.

Sincerely,

Kimberly Tyson

Planner II/Subdivision

Chatham County Planning Department

80 East Street/P. O. Box 54

Pittsboro, NC 27312

Office: 919.542.8283

Please take a moment and tell us how we are doing by completing this short survey <https://seam.ly/uR2vfwN6>

*In keeping with the NC Records Law, emails, including attachments, may be released to others upon request for inspection and copying.*

**From:** Meagan Jolly [mailto:[meaganjolly@wetlands-waters.com](mailto:meaganjolly@wetlands-waters.com)]

**Sent:** Friday, October 11, 2019 11:14 AM

**To:** Kimberly Tyson <[kimberly.tyson@chathamnc.org](mailto:kimberly.tyson@chathamnc.org)>

**Subject:** [Ext] Historic Resource Inquiry - Williams Corner Property

**CAUTION:** This email originated from outside of the Chatham County network. Do not reply, click links, or open attachments unless you recognize the sender and know the content is safe. When in doubt, please call the sender (do not use the number listed on the email in question).

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Good Morning Kimberly,

Ms. Beverly Wiggins forwarded your contact information to me. We're in the process of gathering data on the Williams Corner property. Can you tell me if you have any records of cultural/historic resources on the property? I have attached a county GIS and shapefile for location reference. I appreciate any information you can provide.

Thank you,

Meagan Jolly  
704.681.3479

[Redacted]

[Quoted text hidden]

# **Attachment H**



**ENVIRONMENTAL  
SERVICES, INC.**  
A Terracon COMPANY

23 September 2019

Mireille Vargas  
Bold Development Group  
50201 Governors Drive  
Chapel Hill, NC 27517

Re: ESI Project HL197048  
Cole Cemetery Delineation  
Chatham County, NC

Dear Mireille:

Environmental Services, Inc., A Terracon Company ("ESI") conducted research and field investigations at the purported location of the Cole Family Cemetery, located on PID 0065382 (10926 US 15-501 North) in Chatham County, North Carolina. Based on information provided by the client, the Cole Family Cemetery covers an approximately 0.139-acre area.

### **Research**

Prior to the initiation of field investigations, ESI conducted an examination of readily available deeds, census records, and other archival information in an attempt to determine the names of those interred within the small cemetery. A search of records on file at the North Carolina State Historic Preservation Office (SHPO) Office of State Archaeology (OSA) revealed that one previously recorded archaeological site (31CH790) was mapped north of the cemetery location. Inspection of the North Carolina Archaeological Site Form on file at the OSA suggests that this archaeological site does, in fact, represent the Cole Cemetery; however, the site location was incorrectly mapped in 2003. The site was described on the form as an historic cemetery with 24 graves, located adjacent to a proposed borrow pit associated with NCDOT construction along US 15-501.

Background research also included an examination of cemetery records on file at the North Carolina State Archives. The 1997 North Carolina Cemetery Survey record for the cemetery (identified as E22.2 by the Chatham County Historical Association) indicated that the cemetery contained approximately 12 graves marked by fieldstones and six sunken areas likely representing graves (Heiser 1997). At the time of the 1997 survey, loggers had cleared the area surrounding the cemetery and had marked the perimeter trees in yellow paint. This area is clearly shown on a 2002 aerial photograph of the project area (see attached Figures).

According to a survey conducted by Chatham county resident Gerald Oldham around 1989, the Cole Cemetery contained 33 graves (<http://cemeterycensus.com/nc/chat/cem096.htm>). Some of these were marked with uncarved field stones; others were represented by sunken areas.



A search of readily available historic and topographic maps of the project area did not indicate the presence of a cemetery; however, recent and historical aerial photographs of the project area do appear to show the cemetery (see attached Figures). An examination of aerial photographs indicated that the area had been significantly disturbed after 2002 and prior to 2007, suggesting that the cemetery had been removed or inadvertently destroyed during this time period. The area surrounding the cemetery was a former agricultural field, visible in the 1997 aerial photograph. The 2002 aerial photograph shows clearcutting and grading of the area (likely related to NCDOT highway construction). The cemetery area, however, is left untouched and is clearly visible as a circle of trees. By 2007, the area containing the cemetery has been graded and there is no surface evidence of a cemetery.

### Results of Deed Research

The cemetery is located on a 44.34-acre parcel currently owned by ZR Chatham LLC (PARCEL ID. 0065382; Chatham County Deed Book [DB]1264 Page 942). The land was described in a 2001 deed (DB 893 Page 1077) as the “Bland Tract”. A 2006 plat identifies the property as owned by Spicewood Services, Inc. and depicts the cemetery adjacent to a pond (Plat Book 2006 Page 207; see attached figure). A 2001 survey for Thomas Albert Bland, Jr., and Cynthia Renee Bland (Plat Book 89 Page 125; Plat Book 2001 Page 391) similarly depicts the cemetery as an irregularly-shaped 0.139-acre area and references an earlier deed (DB 257 Page 126; see attached figure).

A 1995 timber lease (DB 660 Page 867) does include a provision that “no logging activity will be allowed...in the cemetery at the southeast end of the field.” As mentioned previously, the 1997 visit of the cemetery indicated that loggers had marked the trees surrounding the cemetery in yellow paint (*cemeterycensus.com*).

A 1958 deed between William Brooks Cheek and his wife Rena R. Cheek (grantors) and W. J. Cheek and wife Pauline B. Cheek (grantees) references a 33.5-acre tract on the east side of US 15-501 and adjacent to land formerly owned by Claude Pearson and Joseph Blake (DB 257 Page 126). The land was referred to as the western portion of “Tract No. 3” surveyed in 1941. No reference to a cemetery was made on this deed.

W.B. Cheek purchased 25 acres of land from Albert E. Cole and his wife Mayma Cole in 1941 (DB I-O Page 421). The land was described as located on the east side of U.S. Highway 15. William Brooks Cheek’s house is located on the west side of US 15-501 (on the south side of WB Cheek Drive); W.B. Cheek’s family does not appear to have ever resided on this parcel.

Thomas Sidney Cole (1855–1933) divided his land in 1932 among his three children; granting son Albert Cole “Lot #3” (36.06 acres) adjacent to the land owned by Albert’s brother Hugh Cole, subject to a life estate for T.S. Cole (1933 DB H-H Page 415). A 1934 mortgage confirms that the tract was part of the T.S. Cole homeplace (DB H-N Page 67).

A 110-acre parcel was conveyed to T.S. Cole from his parents Stephen Elbert Cole (1809–1892) and wife Nancy Mariah Oldham Cole (1811–1897) in 1883 (DB C-M Page 105; DB H-A Page 459). This land was described as the homeplace of S.E. Cole and was located adjacent to the Chapel Hill and Pittsboro Road as well as land owned by Jesse Dollar, Allen Oldham, and Thomas Oldham. The Stephen Elbert Cole House was formerly located on the site of Cole Park Plaza shopping center and was moved



prior to its development. The house is currently located north of Manns Chapel Road, approximately 0.7 mile north of the Cole Cemetery.

A 1923 mortgage (DB G-E Page 510) referred to the land as the [Stephen] Elbert Cole Homeplace. In 1883, S.E. Cole granted the surrounding property to his other children: to daughter L.J. Cole Riggsbee (wife of William Riggsbee), 138 acres (DB E-D Page 321); to son W.C. Cole, 85 acres (DB C-M Page 107); and to daughter Bettie M. Oldham, 98 acres (DB C-H Page 567). All of these parcels were located on Cubb Creek and the Chapel Hill-Pittsboro Road (US 15-501) near the project area.

Only one deed listing S.E. Cole as grantee was located (DB A-Z Page 490): a deed dated 1842 from Isaiah Cole (Stephen's father) for 290.5 acres. Isaiah purchased 291 acres of land in 1811 from his father William Cole (DB U Page 196); likely the same parcel Isaiah granted his son.

Many members of the Cole family are buried in the nearby Lystra Baptist Church cemetery, including S.E. Cole and his wife. The land was granted for the church to be built in 1850 from Isaiah Riggsbee (DB A-Z Page 1). The first marked burial at this cemetery is 1864. As such, Cole ancestors who died prior to 1864 (and likely prior to 1850) would not have been buried at Lystra and could possibly have been interred in the Cole Cemetery.

Stephen Elbert and his wife Nancy are known to have been interred at Lystra; however, Stephen's father Isaiah may have been buried in the Cole Cemetery, as he died sometime around 1857. Other potential burials include Isaiah's father William (died in 1824), William's wife Elizabeth (died in 1833), son Reuben (died in 1823) and son John William (died in 1848). Other burials may have included slaves owned by the Cole family.

### **Results of Fieldwork**

ESI archaeologists Melissa McKay and Terri Russ, and Terracon Geophysicist Josh Lopez visited the cemetery location on September 16, 2019. The area identified as containing the cemetery (based on the plat maps and the Chatham County GIS records) appeared to have been graded and was surrounded by construction debris (likely related to the construction of the adjacent roads or the NCDOT construction along US 15-501 in 2003).

The field crew utilized a ground penetrating radar (GPR) system to perform an upper profile geophysical survey of the area to determine the presence of any anomalies consistent with unmarked graves. Data was collected bi-directionally on approximately 5-foot spacing, with an approximately 8-foot depth of GPR signal penetration below the top of the existing surface. The area surveyed revealed no anomalies consistent with unmarked graves, which appears to confirm the removal of graves from the cemetery. Results from the GPR survey indicated that the entirety of the area had been disturbed and was likely backfilled with construction debris or fill after the removal of the graves.

### **Additional Research**

Following completion of the GPR field investigations, ESI archaeologist Terri Russ conducted additional research to determine if and when the Cole Cemetery had been removed or relocated. An examination



of Chatham County Board of Commissioners meeting records was undertaken, as any cemetery removals would have had to solicit the Board's approval. The May 19, 2003 Board of Commissioners Regular Meeting minutes included a petition from Greg Hamilton, Project Engineer for the parcel (then owned by Spicewood Services, Inc.) to relocate approximately 26 graves from the property. The motion was tabled until the following meeting, pending receipt of additional information (Board of Commissioners Minutes May 19, 2003). During the subsequent Regular Meeting and Work Session, the Chatham County Board of Commissioners voted to adopt a resolution approving the removal of the graves (Board of Commissioners Minutes June 02, 2003; attached).

The Resolution stated that the Board of Commissioners consented to the removal and relocation of the graves within the same parcel under several provisions, including that "perpetual access easement for all relatives of the decedents" be provided and recorded in the Register of Deeds prior to the relocation of any graves (Resolution #2003-21).

An examination of available deeds online as well as a request for information from the Chatham County Register of Deeds office in Pittsboro, North Carolina revealed that no such easement had been formally recorded. As the Resolution delegated the Chatham County Health Director to be responsible for assuring compliance, a records request was made at the Chatham County Public Health Department (who maintains records of grave disinterments). No disinterment permit was located for this cemetery; however, the Environmental Health Department did have a set of handwritten notes dated July 8, 2003 describing the removal and reinterment of the graves. According to the notes, a total of 38 graves were removed from the cemetery under the supervision of Smith and Buckner Funeral Home (Siler City). The notes indicated that Greg Hamilton (Project Engineer) labeled each grave with a number, recorded the grave locations prior to disinterment, and placed stakes at the reinterment site with the intention of formally recording the location. The notes indicated that Hamilton was to submit the survey map showing the "new" gravesite location to the Register of Deeds; however, this does not appear to have been done.

During the disinterment, soil from each grave site, as well as any associated headstone or marker, were placed in individual boxes. The notes indicated that two long trenches measuring approximately 100 feet in length and six feet in depth were excavated to house the remains, which were placed "head to toe" within the trench. No scale site plan for the reinterment location was located; however, a 2005 landscape sketch plan produced by the John R. McAdams Company for the then-proposed Williams Corner development does depict the new location as well as a proposed pedestrian access to the new location (see attachment). A 2007 landscape sketch plan also shows the same cemetery location as well as a proposed pedestrian access.

## **Conclusions and Recommendations**

In summary, field investigations as well as background research suggest that the graves associated with the Cole Cemetery had been previously removed and reinterred in the southeastern corner of the parcel. It is recommended that the landscape sketch plans produced by John R. McAdams for the proposed Williams Corner development (see attachments) be formally recorded with the Chatham County Register of Deeds to fulfill the conditions set forth by the Chatham County Board of Commissioners (Resolution # 2003-21) as well as Article 5, Chapter 65 of the General Statutes of North Carolina.



This new interment location, as shown on the landscape sketch plans, should be protected in place and avoided by future development activities. Cemeteries are protected under *North Carolina General Statute 14-148* (Defacing or desecrating grave sites) and *North Carolina General Statute 14-149* (Desecrating, plowing over or covering up graves).

Although the current investigation indicated that the graves from this cemetery had been removed, there is always a possibility that unmarked graves may be inadvertently encountered during construction outside of the suspected cemetery boundaries. In the unlikely event that unmarked graves are encountered during construction, *North Carolina General Statutes Chapter 70, Article 3* provides specific procedures to follow. If construction impacts to the known locations of marked or unmarked graves are planned and/or are unavoidable, ESI can advise the client regarding the disinterment and relocation of the remains under *North Carolina General Statute Chapter 65, Article 5* (Removal of Graves) and *North Carolina General Statute Chapter 65, Article 106* (Abandoned and Neglected Cemeteries).

Sincerely,

Environmental Services, Inc.

Melissa McKay, RPA  
Project Manager—Archaeology

Terri Russ, RPA  
Department Manager—Archaeology





## References

### Cemetery Census.Com

- 2018 Cole Cemetery (E22.2). <http://cemeterycensus.com/nc/chat/cem096.htm> Accessed 6 September 2019.

### Chatham County Board of Commissioners

- 2003a *Minutes of the Chatham County Board of Commissioners Regular Meeting and Work Session, June 02, 2003*. On file, County Manager's Office, Pittsboro, North Carolina.
- 2003b *Resolution Giving Conditional Consent for the Removal and Relocation of Graves from Land Previously Owned by Thomas Bland*. Resolution #2003-21. On file, County Manager's Office, Pittsboro, North Carolina.

### Heiser, Will M.

- 1997 *Cole Cemetery (E22.2)* North Carolina Cemetery Survey Form. Submitted by Chatham County Historical Association 4 January 1997. Form on file at North Carolina State Archives, Raleigh, North Carolina.

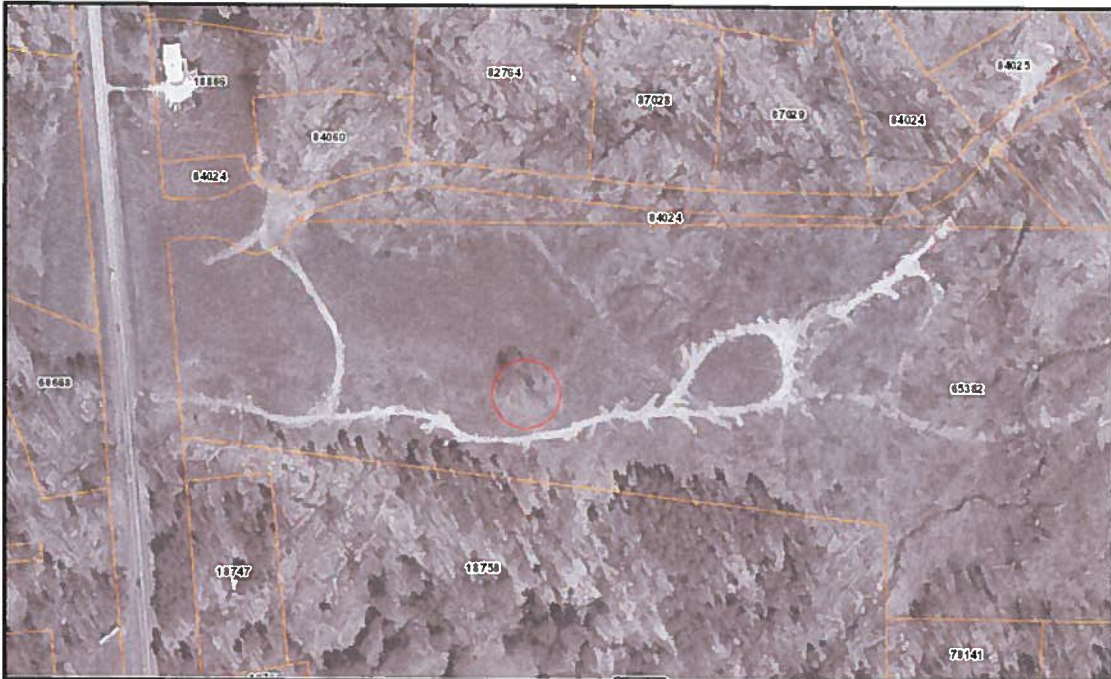
### Office of State Archaeology

- 2003 *31CH790 North Carolina Archaeological Site Form*. Form on file at North Carolina Office of State Archaeology, Raleigh, North Carolina.

### Unknown Author

- 2003 *Handwritten Notes Regarding Cole Cemetery Removal*. Notes on file at Chatham County Department of Environmental Health, Pittsboro, North Carolina.

## FIGURES



**1997 Aerial Photograph**  
*Approximate cemetery location circled in red*



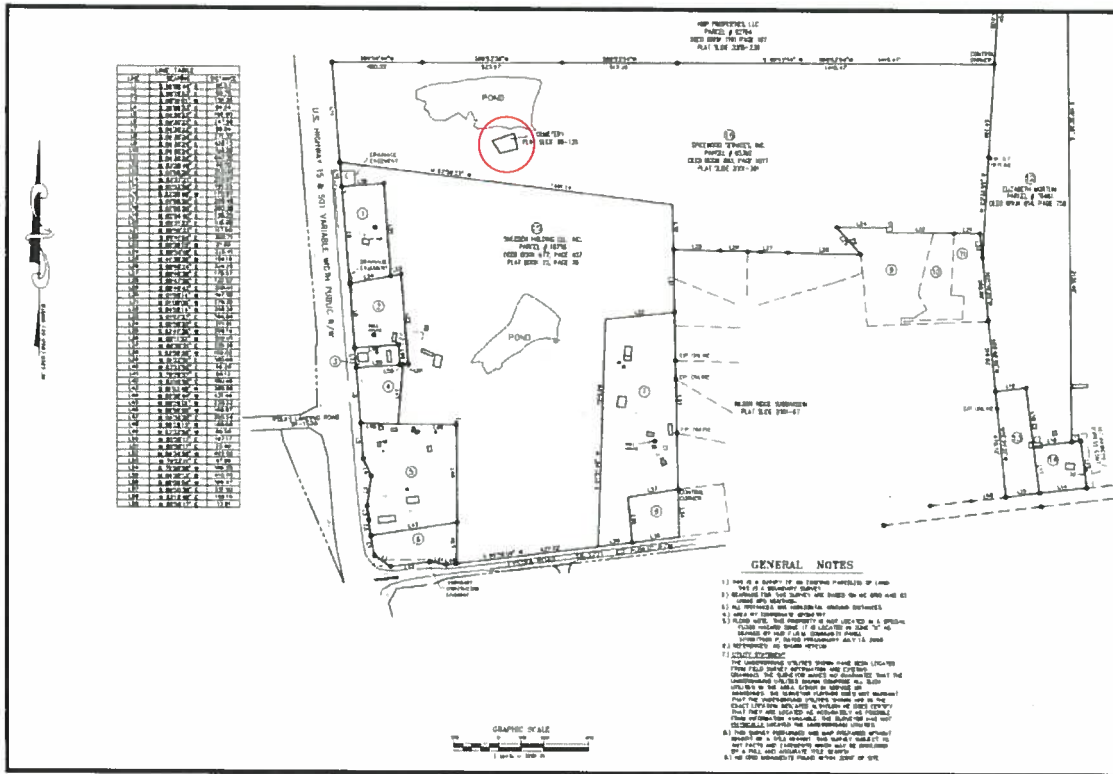
**2002 Aerial Photograph**  
*Approximate cemetery location circled in red*



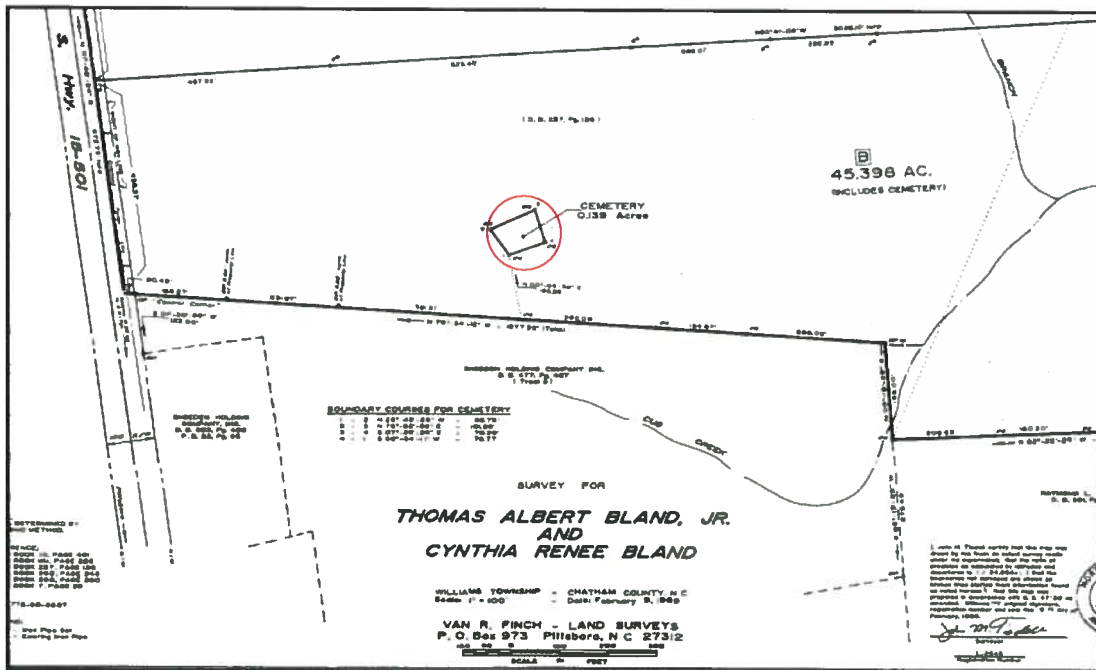
**2007 Aerial Photograph**  
*Approximate (former) cemetery location circled in red*



**2019 Aerial Photograph**  
*Approximate (former) cemetery location circled in red*



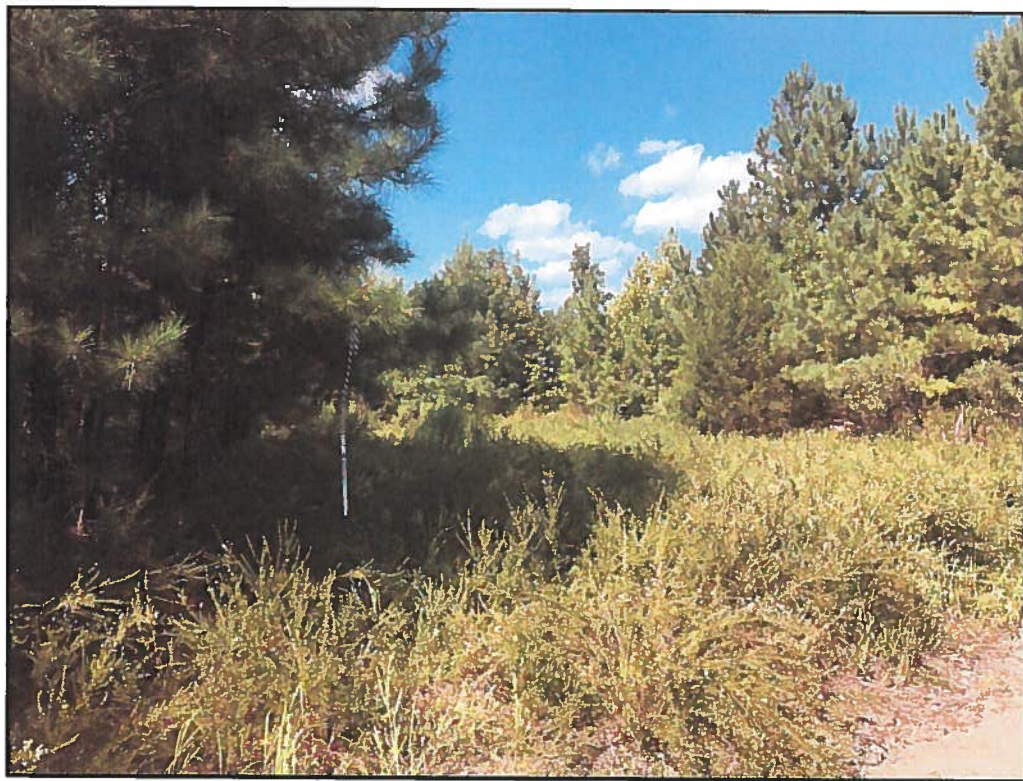
**Excerpt from Plat Book 2006 Page 207**  
*Note Cemetery, circled in red*



**Excerpt from Plat Book 89 Page 125**  
*Note Cemetery, circled in red*



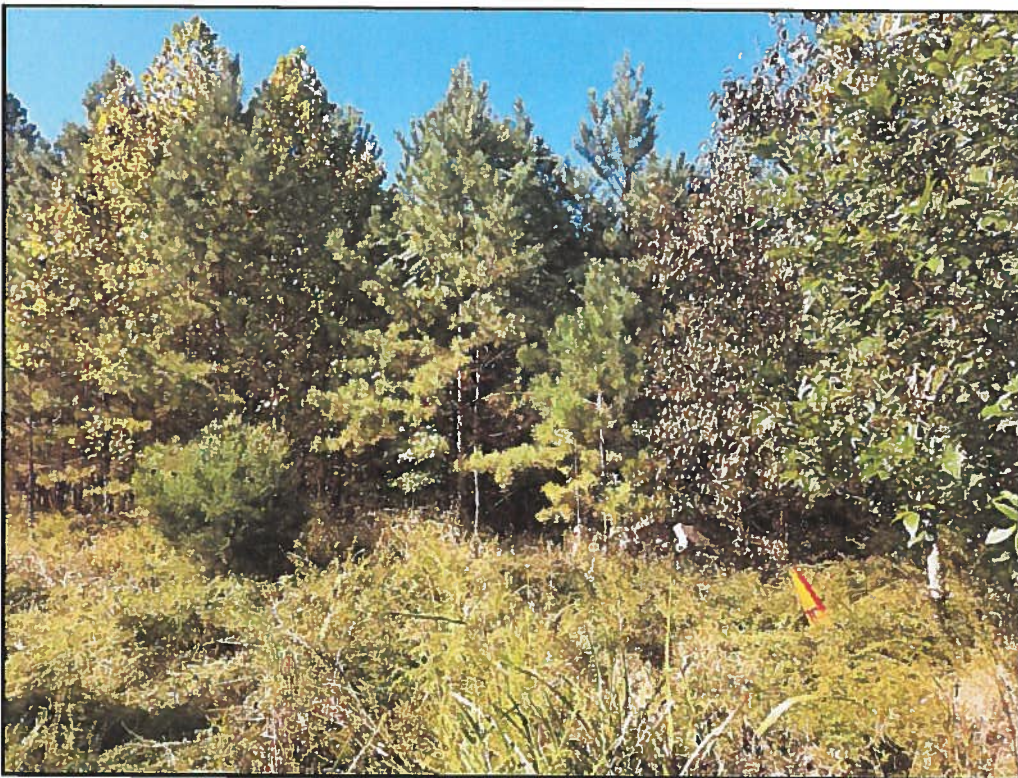
**Terracon Geophysicist Josh Lopez setting up GPR unit**



**Former Cole Cemetery Location, facing Northeast**



**Former Cole Cemetery Location, facing North**



**Former Cole Cemetery Location, facing West**



## ATTACHMENTS

- **Minutes: Chatham County Board of Commissioners June 02, 2003**
- **Chatham County Board of Commissioners Resolution # 2003-21**
- **John R McAdams Landscape Sketch Plan Dated 6 August 2005**
- **John R McAdams Landscape Sketch Plan Dated 17 May 2007**

**MINUTES**  
**CHATHAM COUNTY BOARD OF COMMISSIONERS**  
**REGULAR MEETING AND WORK SESSION**  
**JUNE 02, 2003**

---

The Board of Commissioners ("the Board") of the County of Chatham, North Carolina, met in the Agricultural Auditorium Building, 45 South Street, located in Pittsboro, North Carolina, at 9:00 AM on June 02, 2003.

Present: Chairman Tommy Emerson; Vice Chair Carl Outz; Commissioners Margaret Pollard, Bob Atwater, and Bunkey Morgan; County Manager, Charlie Horne; County Attorney, Robert L. Gunn; Assistant County Manager, Paul Spruill; Finance Officer, Vicki McConnell; and Clerk to the Board, Sandra B. Sublett

The meeting was called to order by the Chairman at 9:05 AM.

**PLEDGE OF ALLEGIANCE AND INVOCATION**

- Chairman Emerson invited everyone present to stand and recite the Pledge of Allegiance after which he delivered the invocation.

**AGENDA AND CONSENT AGENDA**

- The Chairman asked if there were additions, deletions, or corrections to the Agendas.

- Chairman Emerson requested that:

- 1) Item #6, Engineering Services Contracts for Group B Hydraulic Improvements and Water System Transmission Mains be removed from the Consent Agenda and deferred until a later date
- 2) Bond Refinancing added to the Regular Agenda as Item #14A
- 3) Closed Session added to the Regular Agenda to discuss potential acquisition of property

Commissioner Morgan moved, seconded by Commissioner Outz, to approve the Agenda and the Consent Agenda with the noted requests. The motion carried five (5) to zero (0).

1. **Minutes:** Consideration of a request for approval of Board Minutes for Regular Meeting held May 19, 2003 and Work Session held May 26, 2003

The motion carried five (5) to zero (0).

2. **Road Names:** Consideration to approve a request from citizens for the naming of private roads in Chatham County as follows:



1. **Buckskin Drive**      2. **Jerrys Junction**

The motion carried five (5) to zero (0).

3. **Tax Releases:** Consideration of a request for approval of tax releases, attached hereto and by reference made a part hereof.

The motion carried five (5) to zero (0).

4. **Refunds on Tax Bills:** Consideration of a request for approval of refunds on regular tax bills paid in error, attached hereto and by reference made a part hereof.

The motion carried five (5) to zero (0).

5. **Soil and Water Grant Acceptance:** Consideration of a request for acceptance of two grants for the Chatham Soil & Water Conservation District as follows:

- 1.) Grant made available for the closure of Craig Thomas' waste storage pond in the amount of \$7,550
- 2.) Grant made available for the closure of Charlie Suggs waste storage pond in the amount of \$8,150

The motion carried five (5) to zero (0).

6. ~~**Engineering Services Contracts for Group B Hydraulic Improvements and Water System Transmission Mains:** Consideration of a request to approve the Engineering Services Contracts for Group B Hydraulic Improvements and Water System Transmission Mains, attached hereto and by reference made a part hereof.~~

This item was deferred until a later date.

7. **Home and Community Care Block Grant Committee:** Consideration of a request to approve the Home and Community Care Block Grant Committee recommended budget for FY2003-2004, attached hereto and by reference made a part hereof.

The motion carried five (5) to zero (0).

**END OF CONSENT AGENDA**

**PUBLIC INPUT SESSION**

There was no one present who wished to make public comments.

**"NO WAKE" ZONE**

**"No Wake" Zone Around Ebenezer Church Road Access Point:** Public hearing to receive public comments on a request to establish a "no wake" zone around the Ebenezer Church Road access point

**Jim Jablonsky**, 301 Piney Woods Lane, Apex, NC, expressed concern with regard to safety of

citizens around the Ebenezer Church Road access point. He stated that the slips are heavy and that the present buoy is one hundred feet or so from the dock; that as the boats leave the dock, they throw a tremendous wake at the ramp; that one fisherman lost an expensive bass boat the day before because a wave hit him from the back and sunk his boat; that it could have been avoided; that there is a tremendous thrust of wake from the short buoy; that a petition was put together by a lot of people requesting a larger no wake area at the Ebenezer Church Road access point; that a proposal was submitted in the spring of 2002 but not received by the proper authorities; that he does not know how many accidents that there have been during that time; and that they propose that the proper authorities expedite this matter to have a larger no wake zone in the area.

Commissioner Pollard moved, seconded by Commissioner Morgan, to adopt **Resolution #2003-18 Proclaiming No Wake Zones**, attached hereto and by reference made a part hereof. The motion carried five (5) to zero (0).

By consensus, the Board asked that the County Manager contact the Parks and Wildlife Resources Commission authorities to ask them to exercise keener enforcement of existing no wake zones.

### **NC DEPARTMENT OF TRANSPORTATION-DIVISION OF HIGHWAYS**

**2003-2004 Secondary Roads Improvement Supplement for Chatham County:** Consideration of a request to present the Chatham County 2003-2004 Secondary Roads Improvement Supplement

Jeff Picklesimer, District Engineer for the North Carolina Department of Transportation, Division of Highways, introduced G. R. Kindley, Board Member for Division 8, Richard Hancock, Division Maintenance Engineer, Benny Sloan, Chatham County Maintenance Engineer, Wayne Whorton and Reuben Blakely, Assistants in his office, and presented the Secondary Roads Improvement-Highway Funds Program for Chatham County. He reviewed the 2003-2004 proposed allocations for unallocated highway funds and unallocated trust funds, a copy attached hereto and by reference made a part hereof.

Mr. Picklesimer and staff answered questions from the Board.

Commissioner Pollard moved, seconded by Commissioner Outz, to adopt **Resolution #2003-19 for Secondary Roads for the Chatham County Secondary Road Improvement Program**, attached hereto and by reference made a part hereof. The motion carried five (5) to zero (0).

G. R. Kindley, stated that he had seen a number of good things happen during his eleven year tenure as a member of the Board of Transportation; that he thinks that the Moving Ahead Program will be one of the best things that has come along in a long time; that there are specific things for which the monies can be used, i.e. bridges (replacement, maintenance, and widening); that there are still a few roads that need to be widened; that there have been a number of requests to widen the Pittsboro-Moncure Road; that Chatham County will benefit from the Moving Ahead Program in the amount of approximately \$3-3.5 million in that type of work; that priorities are now being established; that their division should probably receive approximately \$45 million to be distributed within eight counties; that they understand Chatham County's needs; that they are trying to represent the County as best they can; that is always a pleasure to work with the County Manager; and that they stand ready, willing, and able to do what they can with the dollars that they have with which to work.

Commissioners Morgan asked about DOT/economic development funds available for roads on government-owned and developed lands.

Mr. Kindley replied that the monies are available for industrial park areas; that they will be happy to

take a look at the County's industrial park land; that funds are limited up to \$400,000.00 per industrial park; that there are certain requirements; and that if this type of assistance is needed, the Board should prepare a resolution for adoption, that he will be glad to take up the matter with the engineers and division staff in Raleigh to see if it meets the requirements.

After further discussion, Chairman Emerson moved, seconded by Commissioner Morgan, to investigate the application process and send a letter to Mr. G. R. Kindley requesting approval of funds from DOT economic development funds (Bill #1005) for Chatham County's evolving business/industrial park. The motion carried five (5) to zero (0). A copy of the letter is attached hereto and by reference made a part hereof.

## **PLANNING AND ZONING**

### ***Zoning Board of Adjustment:***

**Pilkington Appeal on Junk Yard Enforcement Actions:** Public hearing to receive public comments on an appeal to the Zoning Board of Adjustment by Jimmy and Betty Pilkington on Junk Yard Ordinance enforcement actions of the Land Use Administrator on property along the Pittsboro-Goldston Road (SR #1010)

Chairman Emerson asked to be excused from voting on this matter due to a possible conflict of interest.

Commissioner Morgan moved, seconded by Commissioner Pollard, to excuse Chairman Emerson from voting on this matter. The motion carried four (4) to zero (0).

Commissioner Morgan moved, seconded by Commissioner Pollard, to recess as the Board of Commissioners and convene as the Zoning Board of Adjustment. The motion carried four (4) to zero (0).

**\*See Minutes of the Zoning Board of Adjustment, June 2, 2003.**

Commissioner Morgan moved, seconded by Commissioner Atwater, to adjourn as the Board of Adjustment and reconvene as the Chatham County Board of Commissioners. The motion carried four (4) to zero (0).

## **RECESS**

- The Vice Chair called for a five-minute break.

## **FINANCE OFFICE**

**Audit Contract for Fiscal Year 2002-03:** Consideration of a request to approve audit contract for Fiscal Year 2002-2003

Commissioner Morgan moved, seconded by Commissioner Outz, to accept staff recommendation and approve the audit contract for Fiscal Year 2002-2003 and go out for competitive bids prior to the next fiscal year. The motion carried four (4) to zero (0).

## **APPOINTMENTS**

**Chatham County Planning Board Appointments:** Consideration of a request to appoint members

to the Chatham County Planning Board by Commissioners Pollard, Morgan, and Outz

Commissioner Pollard deferred her appointment until after the Compact Communities Ordinance is adopted.

Commissioner Morgan deferred his appointment until the next meeting.

Commissioner Outz deferred his appointment until the next meeting.

**Ag Advisory Committee Appointment:** Consideration of a request to appoint a member to the Chatham County Ag Advisory Committee

This item was deferred until a later date.

**Chatham Trades, Inc.:** Consideration of a request to appoint a replacement for former Commissioner Rick Givens on the Chatham Trades Board of Directors

By consensus, the Board asked that this appointment be advertised and returned to the Board for consideration at a later date.

#### **BOARD OF COMMISSIONER MATTERS**

##### **Bond Order:**

Commissioner Atwater introduced the following Bond Order which was read by the County Attorney at length.

Commissioner Atwater moved, seconded by Commissioner Morgan, adoption of **Resolution #2003-20 Bond Order Authorizing the Issuance of \$13,500,000 General Obligation Refunding Bonds of the County of Chatham**, directing the Clerk to the Board to publish the Bond Order setting the public hearing on said bond order for June 16, 2003, and directing the Finance Officer to file the debt statement, attached hereto and by reference made a part hereof. The motion carried five (5) to zero (0).

Commissioner Atwater moved, seconded by Commissioner Pollard, to contract with Ferris, Baker, & Watts for refunding of Bond Order. The motion carried five (5) to zero (0). The contract is attached hereto and by reference made a part hereof.

##### **Relocation of Graves:**

**Relocation of Graves:** Consideration of a request to approve the relocation of graves from a parcel of land located south of Mann's Chapel Road and adoption of **Resolution Giving Consent to the Disinterment, Removal, and Reinterment of Graves on Land Previously Owned by Thomas Bland on US Highway #15-501 Approximately 0.5 Mile South of Its Intersection with Mann's Chapel Road**

Commissioner Morgan moved, seconded by Commissioner Outz, to adopt **Resolution #2003-21 Giving Consent to the Disinterment, Removal, and Reinterment of Graves on Land Previously Owned by Thomas Bland on US Highway #15-501 Approximately 0.5 Mile South of Its Intersection with Mann's Chapel Road**, to include placing a future notice in the next publications of the Durham-Chapel Hill Herald, Chapel Hill News, and the News and Observer newspapers and that both family names, Cheek and Cole, be advertised. The motion carried five (5) to zero (0). The resolution is attached hereto and by reference made a part hereof.

# COUNTY OF CHATHAM

Res. # 2003-21

## COMMISSIONERS

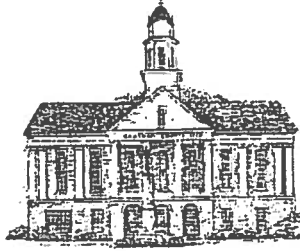
TOMMY J. EMERSON  
Chairman

CARL OUTZ  
Vice Chair

BOB ATWATER

BUNKEY MORGAN

MARGARET BRYANT POLLARD



P. O. BOX 87  
PITTSBORO, N. C. 27312-0087

ORGANIZED 1770

707 SQUARE MILES

CHARLIE HORNE  
County Manager

ROBERT L. GUNN  
County Attorney

Phone (919) 542-8200  
Fax (919) 542-8272

## Resolution Giving Conditional Consent for the Removal and Relocation of Graves from Land Previously Owned by Thomas Bland

Be it Resolved by the Chatham County Board of Commissioners as follows:


1. The Board of Commissioners hereby gives its conditional consent for removal and relocation of said graves on the same parcel of land; and
2. This consent is expressly conditional upon the petitioner, Spicewood Services, Inc., shall strictly comply with all provisions Article 5, Chapter 65 of the General Statutes of North Carolina; and
3. Said conditions include, but are not limited to, provisions of a perpetual access easement for all relatives of the decedents to the relocation site and recordation thereof in office of the Register of Deeds of Chatham County prior to relocation of any grave; and
4. The Board delegates to the Chatham County Health Director to follow up on the matter.

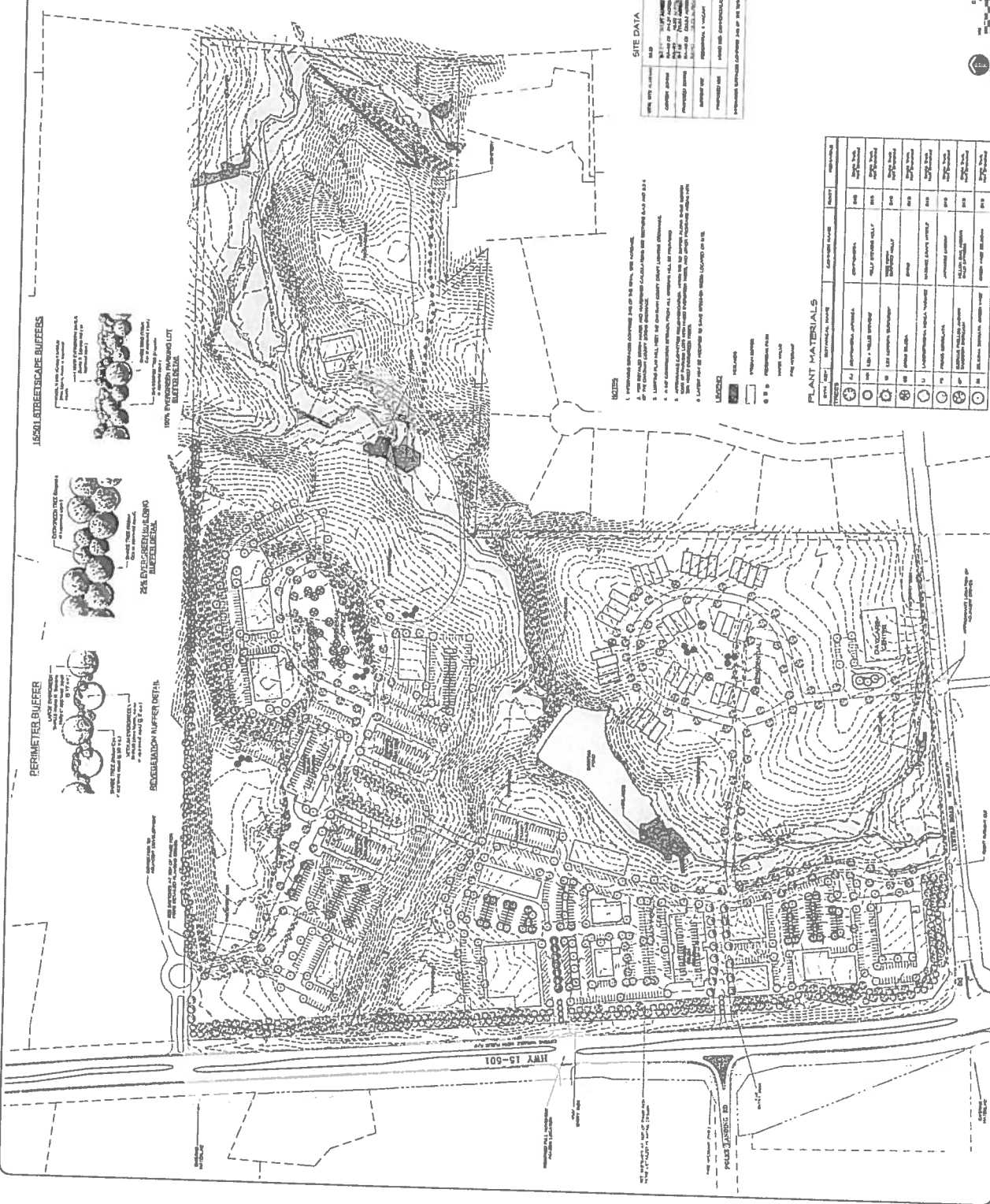
The foregoing Resolution was introduced by Commissioner Morgan, seconded by Commissioner Outz, at a regular meeting of the Board of Commissioners on May 19, 2003; and adopted by a vote of five for and zero against.

Adopted this the 2nd day of June, 2003.

  
Thomas J. Emerson, Chairman

ATTEST:

  
Sandra B. Sublett, CMC  
Clerk to the Board



**PERIMETER BUFFER**

1550' ORNAMENTAL BUFFER

10% IMPROVED PARKING LOT

25% ENHANCED LANDSCAPE BUFFER

- NOTES**
1. REFER TO SHEET C-2 FOR SITE DATA.
  2. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  3. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  4. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  5. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  6. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  7. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  8. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  9. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.
  10. ALL DISTANCES ARE MEASURED TO THE CENTERLINE OF THE ROAD UNLESS OTHERWISE NOTED.

**SITE DATA**

DATE	12/15/10
SCALE	AS SHOWN
DRAWN BY	JRM
CHECKED BY	JRM
PROJECT NO.	15-501
SHEET NO.	C-3

- LEGEND**
- PERIMETER BUFFER
  - 1550' ORNAMENTAL BUFFER
  - 10% IMPROVED PARKING LOT
  - 25% ENHANCED LANDSCAPE BUFFER

**PLANT MATERIALS**

SYMBOL	PLANT MATERIAL	QUANTITY	REMARKS
1	PLANT MATERIAL	100	SEE NOTE 1
2	PLANT MATERIAL	200	SEE NOTE 2
3	PLANT MATERIAL	300	SEE NOTE 3
4	PLANT MATERIAL	400	SEE NOTE 4
5	PLANT MATERIAL	500	SEE NOTE 5
6	PLANT MATERIAL	600	SEE NOTE 6
7	PLANT MATERIAL	700	SEE NOTE 7
8	PLANT MATERIAL	800	SEE NOTE 8
9	PLANT MATERIAL	900	SEE NOTE 9
10	PLANT MATERIAL	1000	SEE NOTE 10

**THE JOHN R. MADAMS COMPANY, INC.**  
 2025 W. HARRIS ST. SUITE 100  
 RICHMOND, VA 23261  
 (804) 781-1000

**REGISTRATION**  
 A - DESIGN AND DRAWING  
 B - SURVEYING

**PROJECT**  
 NORTH CATHAM INVESTMENTS, INC.  
 9088 U.S. HIGHWAY 15-501  
 STATE ROAD NORTH CATHAM 9817  
 PHONE: 804-937-0000

**WILLIAMS CORNER**  
 CATHAM COUNTY, NORTH CAROLINA  
 LANDSCAPE DESIGN PLAN

**SCALE**  
 1" = 40' (GENERAL)  
 1" = 20' (PLANTING)

**DATE**  
 10/15/2013

**PROJECT NO.**  
 13-0001

**REVISIONS**

**C-3**

**NOTES**

1. ALL PLANTING SHALL BE INSTALLED BY THE CONTRACTOR.
2. ALL PLANTING SHALL BE INSTALLED BY THE CONTRACTOR.
3. ALL PLANTING SHALL BE INSTALLED BY THE CONTRACTOR.
4. ALL PLANTING SHALL BE INSTALLED BY THE CONTRACTOR.



**SITE DATA**

DATE OF SITE VISIT	10/15/2013
PROJECT NAME	WILLIAMS CORNER
PROJECT ADDRESS	9088 U.S. HIGHWAY 15-501
PROJECT CITY	CATHAM COUNTY, NC
PROJECT STATE	NORTH CAROLINA
PROJECT ZIP	27513
PROJECT CLIENT	NORTH CATHAM INVESTMENTS, INC.
PROJECT CONTACT	JOHN R. MADAMS
PROJECT PHONE	804-937-0000
PROJECT FAX	804-937-0000
PROJECT EMAIL	john@madams.com
PROJECT WEBSITE	www.madams.com

**PLANT MATERIALS**

PLANT	SYMBOL	PLANT NAME	QUANTITY	REMARKS
1	(Symbol)	PLANTING	100	PLANTING
2	(Symbol)	PLANTING	50	PLANTING
3	(Symbol)	PLANTING	20	PLANTING
4	(Symbol)	PLANTING	10	PLANTING
5	(Symbol)	PLANTING	5	PLANTING
6	(Symbol)	PLANTING	5	PLANTING
7	(Symbol)	PLANTING	5	PLANTING
8	(Symbol)	PLANTING	5	PLANTING
9	(Symbol)	PLANTING	5	PLANTING
10	(Symbol)	PLANTING	5	PLANTING



**LEGEND**

- PLANTING
- PLANTING
- PLANTING

THIS PLAN IS THE PROPERTY OF THE JOHN R. MADAMS COMPANY, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF THE JOHN R. MADAMS COMPANY, INC.

# **Attachment I**



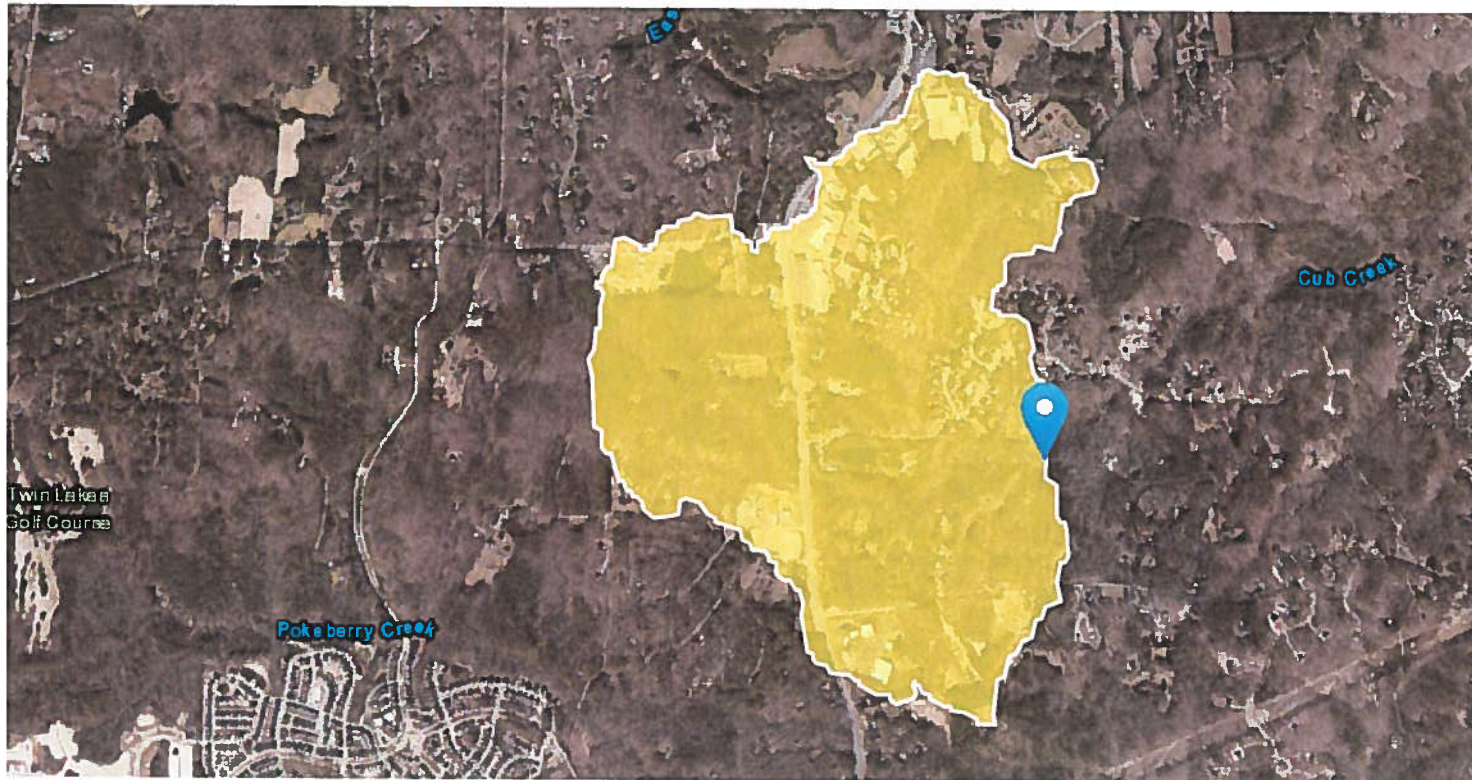
# StreamStats Report

Region ID: NC

Workspace ID: NC20191016130356784000

Clicked Point (Latitude, Longitude): 35.83853, -79.07916

Time: 2019-10-16 09:04:11 -0400



## Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
BASINPERIM	Perimeter of the drainage basin as defined in SIR 2004-5262	7.09	miles
BSLDEM30FT	Mean basin slope, based on slope percent grid	8.35	percent
CSL10_85fm	Change in elevation between points 10 and 85 percent of length along main channel to basin divide divided by length between points ft per mi	101.07	feet per mi
DRNAREA	Area that drains to a point on a stream	1.22	square miles
ELEV	Mean Basin Elevation	511	feet
ELEVMAX	Maximum basin elevation	603	feet

<b>Parameter Code</b>	<b>Parameter Description</b>	<b>Value</b>	<b>Unit</b>
I24H50Y	Maximum 24-hour precipitation that occurs on average once in 50 years	6.85	inches
LC01BARE	Percentage of area barren land, NLCD 2001 category 31	0.016	percent
LC01CRPHAY	Percentage of cultivated crops and hay, classes 81 and 82, from NLCD 2001	7.192	percent
LC01DEV	Percentage of land-use from NLCD 2001 classes 21-24	18.982	percent
LC01FOREST	Percentage of forest from NLCD 2001 classes 41-43	67.082	percent
LC01HERB	Percentage of herbaceous upland from NLCD 2001 class 71	3.453	percent
LC01IMP	Percent imperviousness of basin area 2001 NLCD	5.77	percent
LC01SHRUB	Percent of area covered by shrubland using 2001 NLCD	2.642	percent
LC01WATER	Percentage of open water, class 11, from NLCD 2001	0.632	percent
LC01WETLND	Percentage of wetlands, classes 90 and 95, from NLCD 2001	0	percent
LC06BARE	Percent of area covered by barren rock using 2006 NLCD	0.016	percent
LC06DEV	Percentage of land-use from NLCD 2006 classes 21-24	24.867	percent
LC06FOREST	Percentage of forest from NLCD 2006 classes 41-43	63.639	percent
LC06GRASS	Percent of area covered by grassland/herbaceous using 2006 NLCD	3.107	percent
LC06IMP	Percentage of impervious area determined from NLCD 2006 impervious dataset	8.22	percent
LC06PLANT	Percent of area in cultivation using 2006 NLCD	5.269	percent
LC06SHRUB	Percent of area covered by shrubland using 2006 NLCD	2.471	percent
LC06WATER	Percent of open water, class 11, from NLCD 2006	0.632	percent
LC06WETLND	Percent of area covered by wetland using 2006 NLCD	0	percent
LC11BARE	Percentage of barren from NLCD 2011 class 31	0.016	percent
LC11CRPHAY	Percentage of cultivated crops and hay, classes 81 and 82, from NLCD 2011	5.213	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	27.5	percent
LC11FOREST	Percentage of forest from NLCD 2011 classes 41-43	61.692	percent
LC11GRASS	Percent of area covered by grassland/herbaceous using 2011 NLCD	3.107	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	9.14	percent
LC11SHRUB	Percent of area covered by shrubland using 2011 NLCD	1.836	percent
LC11WATER	Percent of open water, class 11, from NLCD 2011	0.632	percent

USGS Data Disclaimer: Unless otherwise stated, all data, metadata and related materials are considered to satisfy the quality standards relative to the purpose for which the data were collected. Although these data and associated metadata have been reviewed for accuracy and completeness and approved for release by the U.S. Geological Survey (USGS), no warranty expressed or implied is made regarding the display or utility of the data for other purposes, nor on all computer systems, nor shall the act of distribution constitute any such warranty.

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Application Version: 4.3.8

# **Attachment J**



Roy Cooper, Governor  
Susi Hamilton, Secretary  
Walter Clark, Director, Land and Water Stewardship

NCNHDE-10350

September 30, 2019

Meagan Jolly  
Wetlands & Waters, Inc.  
328 East Broad Street  
Statesville, NC 28677  
RE: Williams Corner 0.5 mile buffer

Dear Meagan Jolly:

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, Clean Water Management Trust 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](mailto: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  
 Williams Corner 0.5 mile buffer  
 September 30, 2019  
 NCNHDE-10350

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	
Crustacean	25541	Cambarus davidi	Carolina Ladle Crayfish	2007-03-14	E	3-Medium	---	Significantly Rare	G3	S3	
Moth	38109	Lytrosis permagnaria	A Geometrid Moth	2017-05-16	E	2-High	---	Significantly Rare	G3G4	S2S3	
Natural Community	28442	Dry-Mesic Oak--Hickory Forest (Piedmont Subtype)	---	2010	C	3-Medium	---	---	G4G5	S4	
Natural Community	25454	Dry-Mesic Oak--Hickory Forest (Piedmont Subtype)	---	2014-10-09	C	2-High	---	---	G4G5	S4	
Natural Community	37049	Low Elevation Seep (Floodplain Subtype)	---	2014-10-09	C	2-High	---	---	G4	S2	
Natural Community	25574	Mesic Mixed Hardwood Forest (Piedmont Subtype)	---	2006	C	2-High	---	---	G3G4	S4	
Natural Community	37048	Mesic Mixed Hardwood Forest (Piedmont Subtype)	---	2014-10-09	C	2-High	---	---	G3G4	S4	
Natural Community	25520	Piedmont Alluvial Forest	---	2010	BD	2-High	---	---	G4	S4	
Natural Community	37051	Piedmont/Mountain Semipermanent Impoundment (Open Water Subtype)	---	2014-10-09	C	2-High	---	---	G4G5	S4	
Natural Community	37050	Piedmont/Mountain Semipermanent Impoundment (Piedmont Marsh Subtype)	---	2014-10-09	B	2-High	---	---	G4?	S4	
Vascular Plant	18744	Monotropsis odorata	Sweet Pinesap	2013-12-26	D	2-High	---	Special Concern Vulnerable	G3	S3	

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
Vascular Plant	10956	<i>Thermopsis mollis</i>	Appalachian Golden-banner	1958-05-04	H	4-Low	---	Special Concern	G3G4	S2

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

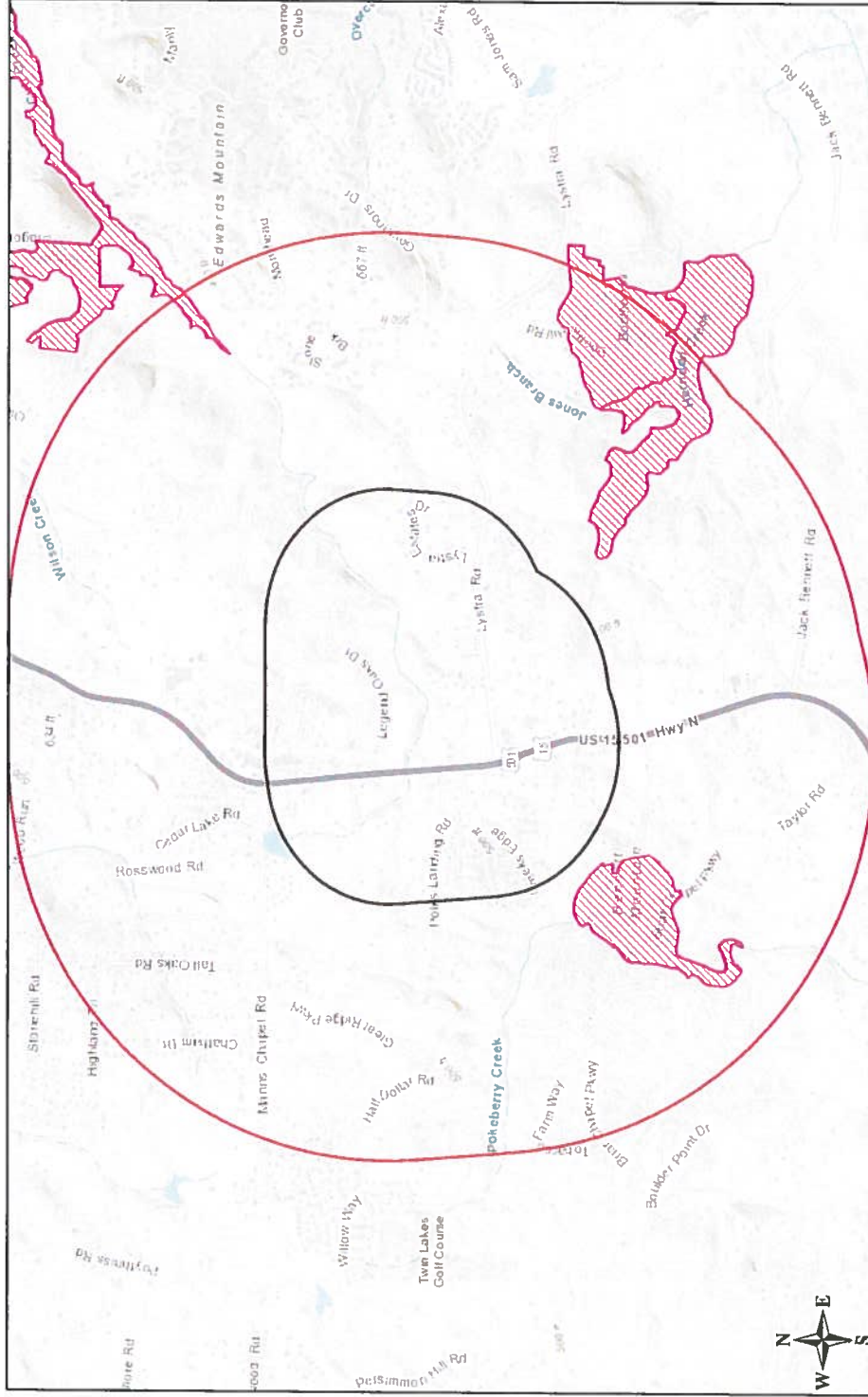
Site Name	Representational Rating	Collective Rating
Bennett Mountain	R5 (General)	C5 (General)
Cub Creek Forests and Beaver Ponds	R5 (General)	C5 (General)
Herrndon Creek Ravine	R5 (General)	C5 (General)
Boothe Hill	R5 (General)	C5 (General)

No Managed Areas are Documented Within a One-mile Radius of the Project Area

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/content/help>. Data query generated on September 30, 2019; source: NCNHP, Q3 Jul 2019. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

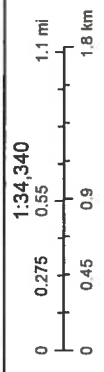


# NCNHDE-10350: Williams Corner 0.5 mile buffer



September 30, 2019

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



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeBCO, CN, IGN, SWIS, GEBCO, Esri, METI, Esri, China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community