

WATERSHED PROTECTION DEPARTMENT

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

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

July 22, 2022

Ms. Rhiannon Graham Terracon 2401 Brentwood Road Suite 107 Raleigh, NC 27612

Project Name: Parcel # 17531 & 18070

Location: Pea Ridge Road & Seaforth Road, Chatham County

Subject Features: One (1) ephemeral stream, three (3) intermittent stream

segments, three (3) perennial stream segments, and nine

(9) potential wetlands

Date of <u>July 14, 2022</u>

Determination:

Chatham County WP-22-338

Record Number:

Explanation:

The site visit was completed on July 14, 2022, by Drew Blake with Chatham County Watershed Protection and staff of Terracon on Parcel # 17531 & 18070 that are located within the Jordan Lake watershed. Terracon personnel completed a previous site visit which resulted in the identification of three (3) intermittent segments, 3 perennial segments, and nine (9) potential wetlands on the property. Terracon submitted a request for Chatham County to complete a formal review to determine if the features would be subject to riparian buffers according to Section 304 of the Chatham County Watershed Protection Ordinance.

All points of origin, stream type transitions, and wetland boundaries were reviewed and agreed to in the field by all parties in attendance. An ephemeral segment was added to the end of T4 connecting to T6.

Required Riparian Buffers:

All ephemeral stream segments will require a 30-ft buffer from the top of bank landward on both sides. All intermittent stream segments will require a 50-ft buffer from the top of bank landward on both sides. The perennial stream segment will require a 100-ft buffer from the top of bank landward on both sides.

The potential wetlands identified by Terracon have not been confirmed by the US Army Corps of Engineers. Once the USACE confirmation is received the 50-ft riparian buffers will be required from the flagged wetland boundaries as confirmed by the USACE.

Impacts to Riparian Buffers:

Impacts to the riparian buffers may require a Riparian Buffer Authorization depending on the size and scope of the impacts. Please refer to Section 304 (J)(3) of the Chatham County Watershed Protection Ordinance to determine if your impacts will require a Riparian Buffer Authorization. If you determine that a Riparian





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Buffer Authorization is required please contact Drew Blake to receive the required application and submittal instructions.

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

Exhibit 3: Approved Potential Wetlands & Waters Map – Completed by Terracon

Wetlands & Waters Delineation Report - Completed by Terracon

Exhibit 1: USGS Topographic Map – Completed by Terracon

Exhibit 2: NRCS Soils Survey Map - Completed by Terracon

Exhibit 3: Preliminary Stream and Wetland Map – Completed by Terracon

NC DWQ Stream Identification Form -Version 4.11 - Completed by Terracon

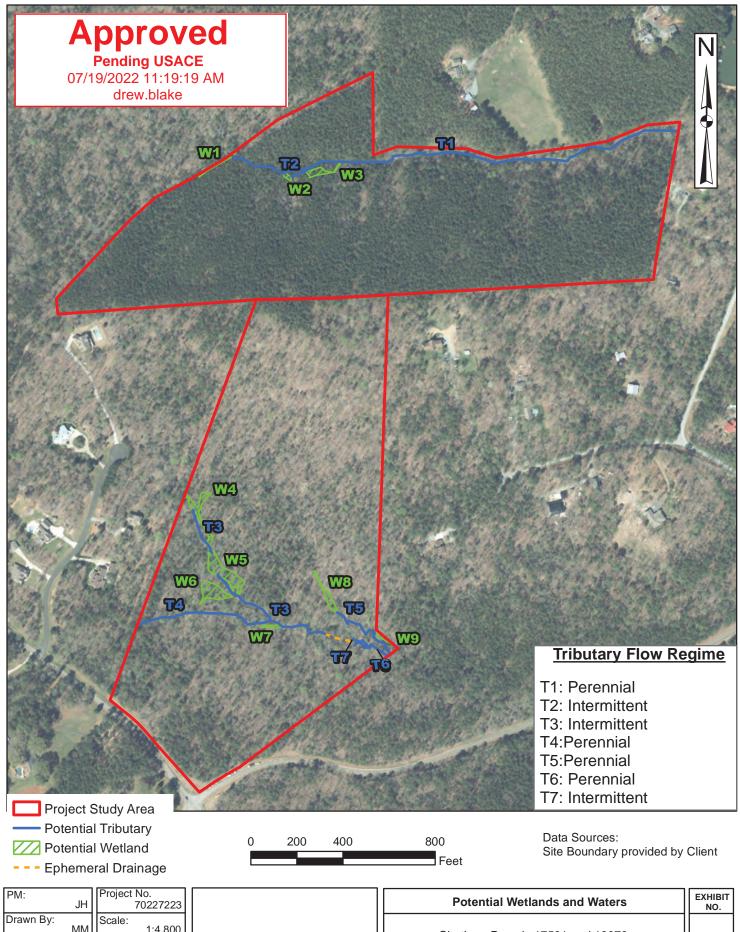
Wetland Determination Data Forms - Completed by Terracon

Major Subdivision Riparian Buffer Application

Authorized Agent Form

Authorization to Enter Property Form

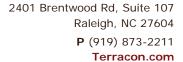
cc: Rachael Thorn, Director, Chatham County Watershed Protection Department
Kimberly Tyson, Planner II/Subdivision Administrator, Chatham County Planning Department
Hunter Glenn. Planner I, Chatham County Planning Department
Angela Plummer, Planner II/Zoning Administrator, Chatham County Planning Department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



PM:	JH	Project No. 70227223
Drawn By:	ММ	Scale: 1:4,800
Checked By:	RG	File Name: ChathamParcles
Approved By:	JH	Date: May 2022

l	2401 Brentwood Road, Suite 107	Raleigh, NC 27604
ı	Phone: (919) 873-2211	Fax: (919) 873-9555

Potential Wetlands and Waters	NO.
Chatham Parcels 17531 and 18070 Chatham County, North Carolina	3





Chatham Parcels 17531-18070 Wetlands and Waters Delineation Chatham County, NC

No. 70227223

Re:

Terracon Consultants, Inc. (Terracon), has completed the requested wetlands and waters delineation for the approximately 76-acre Chatham County Parcels 17531-18070 located in Chatham County, NC (Exhibit 1). Terracon staff was tasked with evaluating features that may be considered subject to jurisdiction and permitting requirements under Sections 404 and 401 of the Clean Water Act (CWA) and under the North Carolina Isolated and Other Non-404 Jurisdictional Wetlands and Waters program.

Background Research

Prior to the initiation of field efforts, several available resources were reviewed, including the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle of New Hope Dam, NC, the Natural Resources Conservation Service (NRCS) published Soil Survey of Chatham County, NC, aerial photography, and other publicly available mapping resources. Field work was conducted by technical staff on May 3 and May 10, 2022.

Topography

Topography in the study area is characterized by flat land. Elevations range from a high of approximately 435 feet above mean sea level (MSL) down to approximately 322 feet above MSL (Exhibit 1) based on a review of USGS mapping and other online resources.

Soils

Exhibit 2 depicts eight soil mapping units potentially occurring in the study area: Cid silt loam, 6-10% slopes; Cid-Lignum complex, 2-6% slopes; Goldston-Badin complex, 2-6% slopes; Goldston-Badin complex, 15-35% slopes; Nanford-Badin complex, 2-6% slopes; Nanford-Badin complex, 6-10% slopes; Nanford-Badin complex, 10-15% slopes; and Pittsboro-Iredell complex, 2-8% slopes.

The soil mapping unit Cid-Lignum complex, 2-6% slopes, potentially occurring in the study area, is considered a hydric (wetland) soils by NRCS.

Preliminary Delineation Results

Our review of the Chatham County Parcels identified nine (9) potential wetlands, and seven (7) potential tributaries, or in some instance's segments thereof (Exhibit 3). These features may be subject to Section 404/401 jurisdiction by the USACE and/or NCDWR. The potential wetlands were flagged with pink-and-black and blue flagging and potential tributaries and surface waters were flagged with orange and blue flagging.



These delineation results are considered preliminary and are subject to change pending site review by the USACE. Exhibit 3 depicts the approximate location and extent of the potential wetlands and tributaries and was prepared using non-survey grade, sub-meter GPS data. Exhibit 3 is not a replacement for a traditional survey. It is suitable for preliminary planning purposes only and for use by a surveyor to aid in locating flags. The potential wetlands and tributaries will likely be subject to Section 404/401 jurisdiction.

Table 1. Potential Wetlands Identified for the Chatham County Parcels

Potential Wetland ID	NCWAM Classification	Approximate size (ac)	Hydrophytic Vegetation ¹	Hydric Soil (Munsell color)	Indicators of Hydrology ¹
W1	Headwater Forest	0.03	Red maple, sweetgum, common rush	2.5Y 3/2 with redox	Saturation, drainage patterns
W2	Headwater Forest	0.01	Red maple, sweetgum, common rush	2.5Y 3/2 with redox	Saturation, drainage patterns
W3	Headwater Forest	0.05	Red maple, sweetgum, common rush	2.5Y 3/2 with redox	Saturation, drainage patterns
W4	Headwater Forest	0.02	Red maple, sweetgum, common rush	2.5Y 3/2 with redox	Saturation, water- stained leaves
W5	Headwater Forest	0.22	Common rush, American sycamore, red maple	2.5Y 3/2 with redox	Saturation, water- stained leaves
W6	Headwater Forest	0.15	Common rush, American sycamore, red maple	2.5Y 3/2 with redox	Saturation, water- stained leaves
W7	Headwater Forest	0.01	Red maple, sweetgum, common rush	2.5Y 7/2 with redox	Saturation, drainage patterns
W8	Headwater Forest	0.06	High bush blueberry, red maple, sweetgum	2.5Y 7/2 with redox	Saturation, drainage patterns



Potential Wetland ID	NCWAM Classification	Approximate size (ac)	Hydrophytic Vegetation ¹	Hydric Soil (Munsell color)	Indicators of Hydrology ¹
W9	Headwater Forest	0.02	Red maple, sweetgum, common rush	2.5Y 4/2 with redox	Saturation, drainage patterns
	Total:	0.60 ac			

¹ Does not include all hydrophytic vegetation or hydrology indicators

Table 2. Potential Tributaries Identified for the Chatham County Parcels

Potential Tributary ID	Flow Regime ¹	NCDWR Stream Score	Approximate Amount in Study Area (LF)
T1	Perennial	39.5	2,050
T2	Intermittent	22	87
Т3	Intermittent	26.5	594
Т4	Perennial	33.5	610
T5	Perennial	32.5	377
T6	Perennial	37.5	193
Т7	Intermittent	21.5	90
		Total:	4,211

¹ Based on NCDWR score

Several tributaries occur in the southern portion of the site and there are discontinuous segments where the main channel appears to go underground and then reemerge. This area will require review by Chatham County to determine the appropriate buffer requirements.

Riparian Buffers/Setbacks

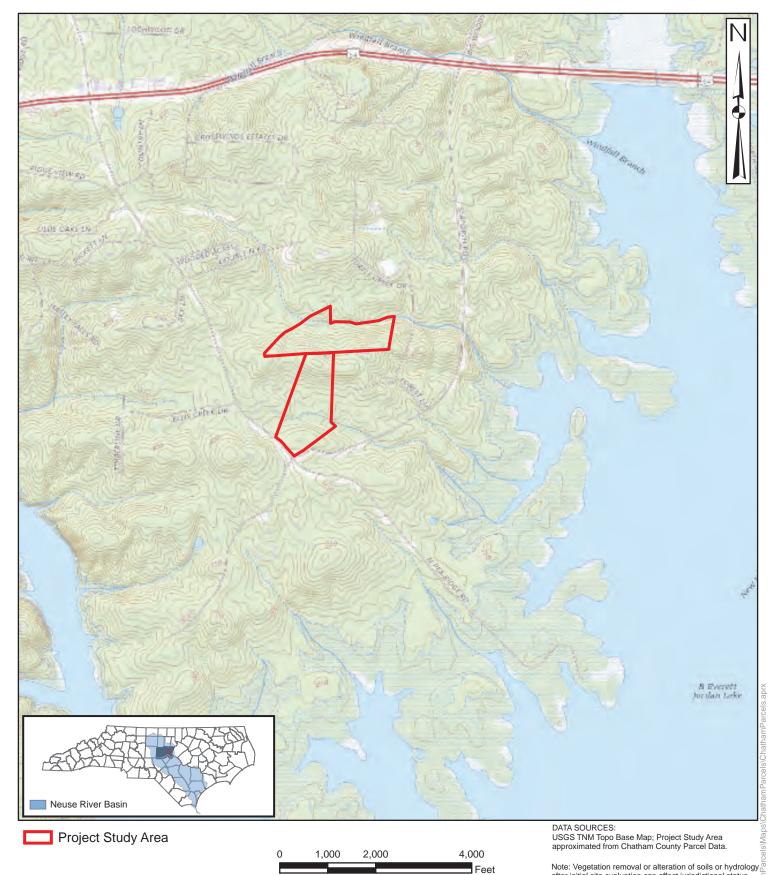
The study area is within the Cape Fear River Basin. Specifically, the study area is in Chatham county, within the Jordan Lake Watershed. Per the Jordan Lake Watershed Riparian Buffer Rule, a riparian buffer may apply to streams that are mapped on either the most current version of the 1:24,000 scale (7.5 minute) quadrangle topographic maps (Exhibit 1) and/or the published Soil Survey prepared by the Natural Resources Conservation Service of the United States Department of Agriculture (Exhibit 2). Buffers in this area are defined by Chatham County as follows:

- Ephemeral Streams the riparian buffer is 30-ft from the top of bank
- Intermittent Streams the riparian buffer is 50-ft from the top of bank



- Perennial Streams the riparian buffer is 100-ft from the top of bank
- Wetlands the riparian buffer is 50-ft from the delineated boundary

Tributary T1 is depicted on the topo and published soil survey and will likely be subject to a 100-ft buffer. Additionally, the topo and published soil survey depicts a stream near the southern boundary of the site. There are at least three tributaries (or portions thereof) in this area and a review with Chatham County is needed to determine which tributary will be subject as there are three distinct channels (perennial and intermittent) present along with smaller segments thereof.



 PM:
 JH

 Drawn By:
 KT

 Checked By:
 JH

 Approved By:
 JH

Project No. 70227223
Scale: 1:24,000
Filename:

April 2022

Date:

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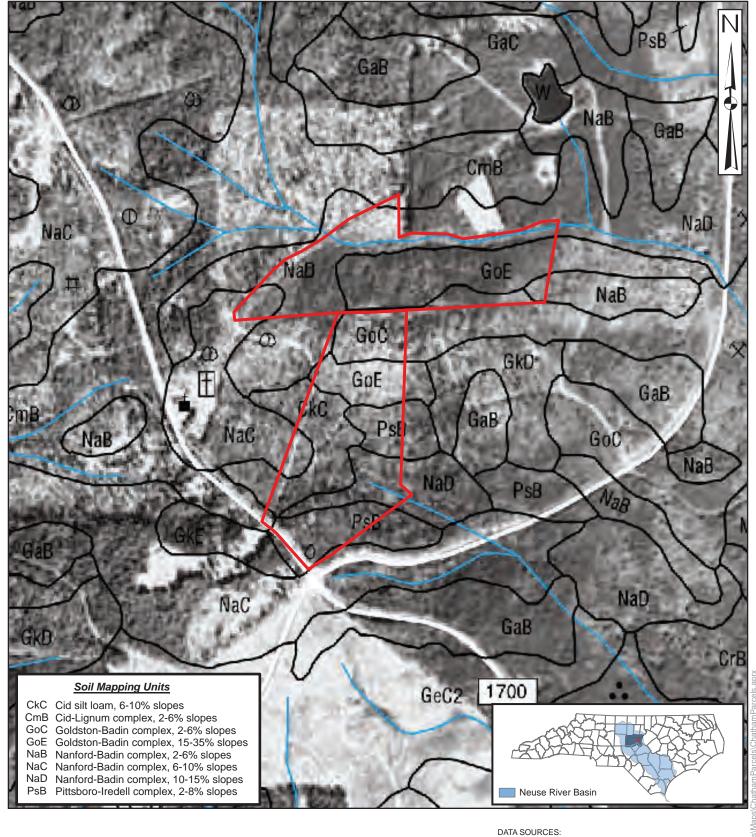
l		
l	2401 Brentwood Road, Suite 107	Raleigh, NC 27604
	Phone: (919) 873-2211	Fax: (919) 873-9555

Note: Vegetation removal or alteration of soils or hydrology after initial site evaluation can affect jurisdictional status and may require re-evaluation of wetland boundaries.

Chatham Parcels 17531 and 18070		
Chatham County,		
North Carolina		

Project Location

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EXHIBIT NO.	23 CF
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0 400 800 1,600 Feet

NRCS Soil Survey of Chatham County, 2006; Project Study Area approximated from Chatham County Parcel Data.

PM:	JH
Drawn By:	KT
Checked By:	JH
Approved By:	JH

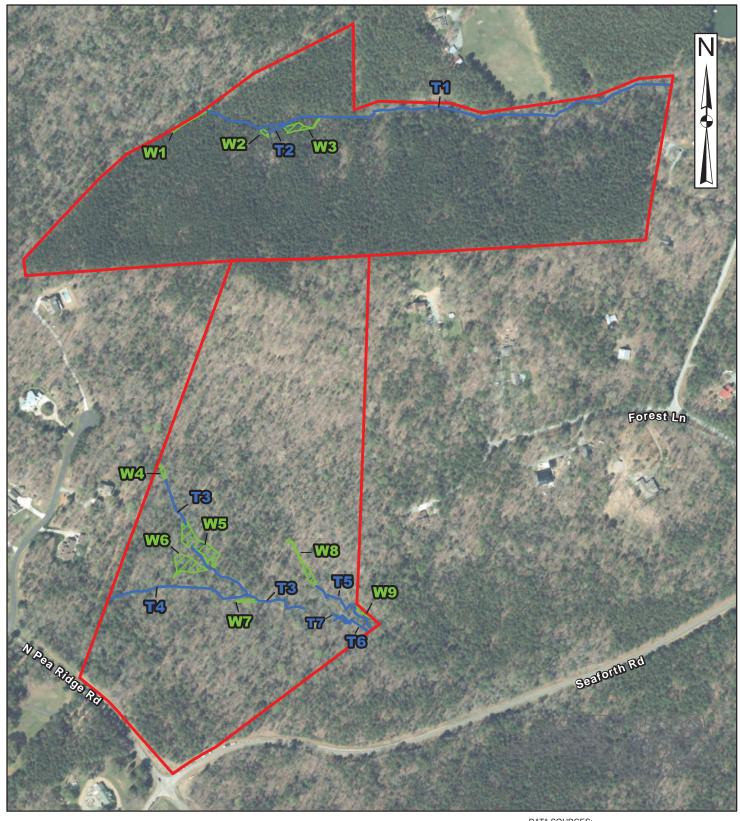
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Date:	April 2022	

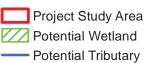
erra	CON Explore with us
2401 Brentwood Road, Suite 107	Raleigh, NC 27604
Phone: (919) 873-2211	Fav: (010) 873-0555

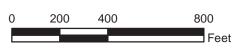
Chatham Parcels 17531 and 18070	
Chatham County,	
North Carolina	

NRCS Soils

	natham
EXHIBIT NO.	223_CF
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DATA SOURCES: Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; 2017; Project Study Area approximated from Chatham County Parcel Data.

Note: Vegetation removal or alteration of soils or hydrology after initial site evaluation can affect jurisdictional status and may require re-evaluation of wetland boundaries.

PM: JH
Drawn By: MM
Checked By: RG
Approved By:

Project No.
70227223
Scale:
1:4,800
File Name:
ChathamParcles

May 2022

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2401 Brentwood Road, Suite 107	Raleigh, NC 27604

Potential Wetlands and Waters	EXHIBIT NO.
Chatham Parcels 17531 and 18070 Chatham County, North Carolina	3

Date: 4/27/22	Project/Site: Chatham Parcels	Latitude: 35.72386
Evaluator: Terracon-R. Graham	County: Chatham	Longitude: -79.06624
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30* 39.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other New Hope Dam e.g. Quad Name:

A. Geomorphology (Subtotal = 24)	Absent	Weak	Moderate	Strong
1 ^{a.} 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			= 3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 9.5)				
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	o = 0	Yes = 3	
C. Biology (Subtotal = <u>6</u>)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
22.11011				
23. Crayfish	0	0.5	1	1.5
	0	0.5 0.5	1	1.5 1.5

FACW = 0.75; OBL = 1.5 Other = 0

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

Notes:

26. Wetland plants in streambed

Sketch:

Date: 4/27/22	Project/Site: Chatham Parcels	Latitude: 35.72370
Evaluator: Terracon-R. Graham	County: Chatham	Longitude: -79.06770
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other New Hope Dam e.g. Quad Name:

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	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
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	N	lo = 0	Yes	= 3
a artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal = 3.5)				
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?	N	o = 0	Yes	= 3
C. Biology (Subtotal =6)			·	
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	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		FACW = 0.75;	OBL = 1.5 Other = ()
*perennial streams may also be identified using other metho	ds. See p. 35 of manu	al.		

Sketch:

Notes:

Date: 4/27/22	Project/Site: Chatham Parcels	Latitude: 35.71920
Evaluator: Terracon-R. Graham	County: Chatham	Longitude: -79.06824
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 13.5)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
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
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			
^a artificial ditches are not rated; see discussions in manual	•			
B. Hydrology (Subtotal =7)				
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 = 0	Yes	=3
C. Biology (Subtotal =6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	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		FACW = 0.75;	OBL = 1.5 Other = ()
*perennial streams may also be identified using other metho	ds. See p. 35 of manua	al.		

Notes:

Sketch:

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Date: 4-27-22	Project/Site: Zalel Chatham	Latitude: 35,71861
Evaluator: Terracin - R. Coeper	County: Chatham	Longitude: -79.06846
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 33.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other New Mye Dam e.g. Quad Name:

A. Geomorphology (Subtotal = 145)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	(2)	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	0	2	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	7	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No € 0 Yes = 3			
a artificial ditches are not rated; see discussions in manual 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)	11	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	No = 0 Yes ₹3		
C. Biology (Subtotal = 7,5)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	10	2	3
21. Aquatic Mollusks	(0)	1	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		FACW = 0.75;	OBL = 1.5 Other = 0)
*perennial streams may also be identified using other meth	ods. See p. 35 of manual			
Notes:				

NC DWQ Stream Identification Form Version 4.11 Latitude: 35, 71845 Date: 4 -Project/Site: Evaluator: Terrocon - R Longitude: - 79.06824 County: **Total Points:** Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent (Perennia) e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1^{a.} Continuity of channel bed and bank 0 1 (2) 3 (2) 2. Sinuosity of channel along thalweg 0 1 3 3. In-channel structure: ex. riffle-pool, step-pool, 3 0 1 3 ripple-pool sequence 4. Particle size of stream substrate 0 1 2 (3) 1) (5) 5. Active/relict floodplain 0 3 0 (1) 6. Depositional bars or benches 3 2 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 No EQ 11. Second or greater order channel Yes = 3artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 1 2 3 (1 13. Iron oxidizing bacteria 0 2 3 0 14, Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 0.5 0 1 1.5 16. Organic debris lines or piles 0 0.5 (1) 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed (3) 2 1 0 2 19. Rooted upland plants in streambed 3 1 0 0 20. Macrobenthos (note diversity and abundance) 2 3 21. Aquatic Mollusks 60 2 1 3 22. Fish 0 0.5 1 1.5 23. Crayfish 90 0.5 1 1.5 24. Amphibians 0.5 0 1 1.5 25. Algae 0 0.5 1.5 1 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Sketch:

NC DWO Stream Identification Form Version 4.11 Project/Site: Tadell Chatham Latitude: 35, 71803 Date: 4-77-Evaluator: Tessacen - R County: Chatham Longitude: -70.06634 **Total Points:** Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = **Absent** Weak **Moderate** Strong 1a. Continuity of channel bed and bank 0 (3) 1 2. Sinuosity of channel along thalweg 0 2 1 3 3. In-channel structure: ex. riffle-pool, step-pool, (2) 0 3 1 ripple-pool sequence 3 0 2 4. Particle size of stream substrate 1 0) 2 5. Active/relict floodplain 1 3 0 1 2 3 6. Depositional bars or benches (1) 2 3 7. Recent alluvial deposits 0 2 8. Headcuts 0 3 1 9. Grade control 0 0.5 1 1.5 0 10. Natural valley 0.5 1 1.5 No = 011. Second or greater order channel Yes = 3 artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 4.5 12. Presence of Baseflow 0 1 2 (3)0 2 13. Iron oxidizing bacteria 1 3 14, Leaf litter 1.5 (1) 0.5 0 15. Sediment on plants or debris 0 0.5 1 1.5 1 0 16. Organic debris lines or piles 0.5 1.5 No = 017. Soil-based evidence of high water table? Yes =(3) C. Biology (Subtotal = 3) 2 1 0 18. Fibrous roots in streambed 3 19. Rooted upland plants in streambed 2 1 0 0 2 3 20. Macrobenthos (note diversity and abundance) 1 0 1 2 3 21. Aquatic Mollusks (0) 22. Fish 0.5 1 1.5 0 0.5 1 1.5 23. Crayfish 1 0.5 24. Amphibians 0 1.5 25. Algae 0) 0.5 1.5 FACW = 0.75; OBL = 1.5 Other =0) 26. Wetland plants in streambed *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Sketch:

11C DVVQ Stream Identification Form	V CI SIUII 4.11	· •
Date: 4/29/22	Project/Site: Chatham County Parcels	Latitude: 35.71824
Evaluator: Terracon-R.Graham	County: Chatham	Longitude: -79.06783
Total Points: Stream is at least intermittent 21.5 if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other New Hope Dam e.g. Quad Name:

A. Geomorphology (Subtotal = 17.5) a. Continuity of channel bed and bank 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	2
3. In-channel structure: ex. riffle-pool, step-pool,	0			3
	i i	1	2	3
hppie-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
S. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
3. Headcuts	0	1	2	3
O. Grade control	0	0.5	1	1.5
0. Natural valley	0	0.5	1	1.5
Second or greater order channel	No	0 = 0	Yes	= 3
artificial ditches are not rated; see discussions in manual				
3. Hydrology (Subtotal = 8)				
2. Presence of Baseflow	0	1	2	3
3. Iron oxidizing bacteria	0	1	2	3
4. Leaf litter	1.5	1	0.5	0
5. Sediment on plants or debris	0	0.5	1	1.5
6. Organic debris lines or piles	0	0.5	1	1.5
7. Soil-based evidence of high water table?	No	0 = 0	Yes	= 3
C. Biology (Subtotal = 6)				
8. Fibrous roots in streambed	3	2	1	0
9. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	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
6. Wetland plants in streambed		FACW = 0.75;	OBL = 1.5 Other = ()
*perennial streams may also be identified using other methods	. See p. 35 of manua	l.		
lotes:				

Sketch:

Date: 4/27/22	Project/Site: Chatham County Parcels	Latitude: 35.71822
Evaluator: Terracon-R. Graham	County: Chatham	Longitude: -79.06771
Total Points:33.5Stream is at least intermittent 33.5 if \geq 19 or perennial if \geq 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other New Hope Dam e.g. Quad Name:

A. Geomorphology (Subtotal = 19	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
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
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			
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 8.5)				
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 = 6)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	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		FACW = 0.75;	OBL = 1.5 Other = 0	
*perennial streams may also be identified using other metho	ds. See p. 35 of manua			
Notes:				

Sketch:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Chatham Parcels 17531 and	d 18070 Citv/C	_{county:} Chatham		Sampling Date: 4-27-22
Applicant/Owner: Andrew Ross				Sampling Point: W5 wet
• •	Section	on, Township, Range: NA		
Landform (billolona torrace etc.): Depression	Local rali	of (conceve convey nor	None	Slana (%): 10-15
Subregion (LRR or MLRA): LRR-P		er (concave, convex, nor	06905	Slope (%) WGS 64
Subregion (LRR or MLRA): LRR-P Soil Map Unit Name: Nanford-Badin complex,	_at:	Long:	00000	Datum: <u>************************************</u>
Soil Map Unit Name: Namord-Badin Complex,	TO to 15 percent sit	ppes	NWI classific	cation: FFO
Are climatic / hydrologic conditions on the site typical				
Are Vegetation, Soil, or Hydrology _	significantly distur	bed? Are "Normal	Circumstances"	present? Yes X No
Are Vegetation, Soil, or Hydrology _	naturally problema	atic? (If needed, e	explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS - Attach site	map showing sam	pling point location	ns, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes X	No			
Hydric Soil Present? Hydric Soil Present? Yes X	No	Is the Sampled Area	X	
	No	within a Wetland?	Yes <u>/\</u>	No
Remarks:				
Represents W2, W3, W4, W5, W6	`			
11001030113 112, 113, 114, 113, 110	,			
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; ch	eck all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Od	or (C1)	✔ Drainage Pa	atterns (B10)
Saturation (A3)	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim L	ines (B16)
Water Marks (B1)	Presence of Reduced	l Iron (C4)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)	Thin Muck Surface (C	′	l I	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)	l I	Stressed Plants (D1)
Iron Deposits (B5)	<u> </u>			Position (D2)
Inundation Visible on Aerial Imagery (B7)			Shallow Aqu	, ,
Water-Stained Leaves (B9) Aquatic Fauna (B13)			FAC-Neutra	aphic Relief (D4)
Field Observations:			I AC-Neulla	r rest (D3)
	Depth (inches): NA			
	Depth (inches): 14"			
Saturation Present? Yes X No	Depth (inches): 2"		lydrology Prese	nt? Yes ^X No
(includes capillary fringe)				nt: 165 NO
Describe Recorded Data (stream gauge, monitoring	ng well, aerial photos, pre	vious inspections), if ava	ilable:	
Remarks:				

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

'EGETATION (Four Strata) – Use scientific n	ames of	plants.		Sampling Point: W5 wet	
20# Dadius	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30ft Radius		Species?		Number of Dominant Species	
1. Acer rubrum	25	Yes	FAC	That Are OBL, FACW, or FAC: 6	(A)
2. Liquidambar styraciflua	15	Yes	FAC	Total Number of Dominant	
3					(B)
l				Develop of Deminant Species	
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100	(A/B)
3					(, , , _)
7				Prevalence Index worksheet:	
	40	= Total Cov	er	Total % Cover of: Multiply by:	
50% of total cover: 20		total cover:		OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 30ft Radius)		•		FACW species x 2 =	
Acer rubrum	15	Yes	FAC	FAC species x 3 =	
Liquidambar styraciflua	20	Yes	FAC	FACU species x 4 =	
<u> </u>				UPL species x 5 =	
3				Column Totals: (A)	(R)
1				Goldmir Fotals (A)	(D)
5				Prevalence Index = B/A =	
5				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetation	
3				X 2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0¹	
	35	= Total Cov	er		
50% of total cover: <u>17.5</u>	20% of	total cover:	7	4 - Morphological Adaptations ¹ (Provide suppo	orting
Herb Stratum (Plot size: 30ft Radius)				data in Remarks or on a separate sheet)	
1. Microstegium vimineum	75	Yes	FAC	Problematic Hydrophytic Vegetation ¹ (Explain)
Woodwardia areolata	15	No	FACW		
	-			¹ Indicators of hydric soil and wetland hydrology mu	ust
3				be present, unless disturbed or problematic.	
4				Definitions of Four Vegetation Strata:	
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cr	m) or
6				more in diameter at breast height (DBH), regardles	,
7				height.	
8				Sapling/Shrub - Woody plants, excluding vines, I	ess
9				than 3 in. DBH and greater than or equal to 3.28 ft	
10				m) tall.	
11				Herb – All herbaceous (non-woody) plants, regard	lless
	100	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.	
50% of total cover: 50	20% of	total cover:	20	Woody vine – All woody vines greater than 3.28 f	t in
Woody Vine Stratum (Plot size: 30ft Radius)				height.	LIII
_{1.} Smilax rotundifolia	15	Yes	FAC		
2					
3		-			
3					
4		-		Hydrophytic	
				Vegetation	
4	15	= Total Cover:		, , ,	

Sampling Point: W5 wet

SOIL

Profile Desc	cription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix			x Feature	es _ 1	. 2		
(inches)	Color (moist)	<u>%</u>	Color (moist)	<u>%</u>	Type ¹	Loc ²	<u>Texture</u>	Remarks
0-20	2.5Y 3/2	85	10YR 4/6	15	С	M	LC	
				-	_			
				-				
					-			
-								
1 _T 0-0			—Dadwaad Matrix M6		- C C		21	I - Dana Linina Manhatria
Hydric Soil		oletion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.		L=Pore Lining, M=Matrix. ators for Problematic Hydric Soils ³ :
Histosol			Dark Surface	(\$7)			1 1	cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ace (S8) (I	VILRA 147		coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su				, ,	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye				⊢ P	iedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma					(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark					ery Shallow Dark Surface (TF12)
1 1 '	d Below Dark Surfac	e (A11)	Depleted Dai				□°	other (Explain in Remarks)
	ark Surface (A12) ⁄lucky Mineral (S1) (I DD N	Redox Depre	•	,	I DD N		
	A 147, 148)	LKK N,	MLRA 13		SES (F 12) (LKK N,		
	Gleyed Matrix (S4)		Umbric Surfa		(MLRA 1	36. 122)	³ Indi	icators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					tland hydrology must be present,
	l Matrix (S6)		Red Parent N					less disturbed or problematic.
Restrictive	Layer (if observed)	:						
Type:								
Depth (in	ches):						Hydric Soil	Present? Yes X No
Remarks:							1	

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Zadell Chatham		Citv/C	_{ountv:} Chatham		Sampling Date: 4-27-22	
Applicant/Owner: Andrew Ross					_{Sampling Point:} W5 up	
Investigator(s): Terracon- R. Graham	m	Section	on, Township, Range: NA			
		occur	of (conceve, convey, non	None	Slone (%/): 10-15	
Landform (hillslope, terrace, etc.): Hills Subregion (LRR or MLRA): LRR-P	3	Local lell	er (concave, convex, nor	06864	Slope (%) WGS 84	
Soil Map Unit Name: Nanford-Badin	Lat:	0.7 1000	Long:	.0000+	Datum: VVOO 07	
Are climatic / hydrologic conditions on the						
Are Vegetation, Soil, or F	lydrology	significantly disturb	bed? Are "Normal	Circumstances" p	resent? Yes X No	
Are Vegetation, Soil, or H				explain any answei		
SUMMARY OF FINDINGS – At	tach site mar	showing sam	pling point locatio	ns, transects	, important features, etc.	
Lhudnenhutie Verstetien Descent?	V	N-X				
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes	No.X	Is the Sampled Area		V	
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	No X	
Remarks:	100	110				
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)	
Primary Indicators (minimum of one is r	equired; check al	ll that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	<u></u> ⊢ Trι	ue Aquatic Plants (l	B14)	Sparsely Veg	etated Concave Surface (B8)	
High Water Table (A2)		drogen Sulfide Odd	` ′	Drainage Pat	terns (B10)	
Saturation (A3)			es on Living Roots (C3)	Moss Trim Li		
Water Marks (B1)		esence of Reduced	` '	l I '	Water Table (C2)	
Sediment Deposits (B2)			n in Tilled Soils (C6)	Crayfish Burr		
Drift Deposits (B3) Algal Mat or Crust (B4)		iin Muck Surface (C her (Explain in Ren	′		sible on Aerial Imagery (C9)	
Iron Deposits (B5)		ner (Explain in Ren	ians)	Stunted or Stressed Plants (D1) Geomorphic Position (D2)		
Inundation Visible on Aerial Imager	v (B7)			Shallow Aquitard (D3)		
Water-Stained Leaves (B9)	, ,				phic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)	
Field Observations:						
		epth (inches): NA				
Water Table Present? Yes	No X D	epth (inches): <u>>20"</u>	<u>'</u>			
Saturation Present? Yes	No X D	epth (inches): <u>>20"</u>	Wetland H	lydrology Presen	t? Yes No ^X	
(includes capillary fringe) Describe Recorded Data (stream gauge	e, monitoring well	, aerial photos, pre	vious inspections), if ava	ilable:		
, , ,			. ,			
Remarks:						

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

50% of total cover: $\underline{32.5}$

50% of total cover: ^{22.5} 20% of total cover: ⁹

50% of total cover: 17.5 20% of total cover: 7

Tree Stratum (Plot size: 30ft Radius

2 Juniperus virginiana

Herb Stratum (Plot size: 30ft Radius)

3 Acer rubrum

2 Liquidambar styraciflua

Sapling/Shrub Stratum (Plot size: 30ft Radius

4. Ligustrum sinense

1. Juniperus virginiana

3. Pinus taeda

_{1.} Carya glabra

1. Ilex opaca

2. Lonicera japonica

1. None Present

mes of	plants.		Sampling I	oint: W5 up	
Absolute			Dominance Test worksheet	1	
<u>% Cover</u> 20	Species? Yes	<u>Status</u> FACU	Number of Dominant Species		
5	Yes	FAC	That Are OBL, FACW, or FAC): <u>4</u>	(A)
30	Yes	FAC	Total Number of Dominant	0	
50	162	FAC	Species Across All Strata:	8	(B)
			Percent of Dominant Species That Are OBL, FACW, or FAC		(A/B)
			Prevalence Index workshee	t:	
35	= Total Cove		Total % Cover of:	Multiply by:	
	total cover:		OBL species	x 1 =	_
			FACW species	x 2 =	_
5	No	FACU	FAC species	x 3 =	_
5	Yes	FACU	FACU species	x 4 =	_
0	Yes	FAC	UPL species	x 5 =	_
15	Yes	FAC	Column Totals:	(A)	_ (B)
			Prevalence Index = B/A		_
	-		Hydrophytic Vegetation Ind		
			1 - Rapid Test for Hydrop	, ,	
			X 2 - Dominance Test is >5		
45	= Total Cove		3 - Prevalence Index is ≤		
	total cover:	_	4 - Morphological Adapta		
			data in Remarks or on	. ,	
5	Yes	FACU	Problematic Hydrophytic	Vegetation' (Expla	in)
20	Yes	FACU	¹ Indicators of hydric soil and was be present, unless disturbed of		nust
			Definitions of Four Vegetati	on Strata:	
			Tree – Woody plants, excludi more in diameter at breast he height.		
			Sapling/Shrub – Woody plan than 3 in. DBH and greater th m) tall.		
35	= Total Cove	 er	Herb – All herbaceous (non-wof size, and woody plants less		rdless
_ 20% of	total cover:	7	Woody vine – All woody vine	s greater than 3.28	3 ft in
			height.		
	= Total Cove	 er	Hydrophytic Vegetation Present? Yes X	No	
	total cover:				

	50% of total cover:	20
Remarks:	(Include photo numbers here or on a separate s	sheet.)

Woody Vine Stratum (Plot size: 30ft Radius)

Sampling Point: W5 up

Color (moist) W Type Loc Texture Remarks	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. L L L L Z- L L Z- L L Z- L L Z- L Z- L Z- L Z- L L Z- L Z- L Z- L Z- L Z- L L Z- Z-	
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. 2 Location: PL=Pore Lining, M=Matrix.	
dric Soil Indicators: Indicators for Problematic Hyd	
instruction of the control of the co	ric Soils³:
Histosol (A1) Dark Surface (S7) 2 cm Muck (A10) (MLRA 14)	7)
Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148) Coast Prairie Redox (A16)	
Black Histic (A3)	
Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Piedmont Floodplain Soils (F	19)
Stratified Layers (A5) Depleted Matrix (F3) (MLRA 136, 147)	(a)
2 cm Muck (A10) (LRR N) Redox Dark Surface (F6) Depleted Below Dark Surface (A11) Very Shallow Dark Surface (Other (Explain in Remarks)	IF12)
Depleted Below Dark Surface (A11) Depleted Dark Surface (F7) Thick Dark Surface (A12) Redox Depressions (F8) Other (Explain in Remarks)	
Sandy Mucky Mineral (S1) (LRR N, Iron-Manganese Masses (F12) (LRR N,	
1 MLRA 147, 148) MLRA 136)	
Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Umbric Surface (F13)	tation and
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be pro-	
Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) unless disturbed or problemat	
strictive Layer (if observed):	
Type:	
Depth (inches): Hydric Soil Present? Yes	No X
emarks:	

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Chatham Parcels 17531 and 18 Applicant/Owner: Andrew Ross	070 _{City/Co}	_{ounty:} Chatham		Sampling Date: 4-27-22
Applicant/Owner: Andrew Ross		,	State: NC	Sampling Point: W8 wet
Investigator(s): Terracon- R. Graham	Section	n, Township, Range: NA	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
Landform (hillolone, torrose, etc.). Depression	l and rolin	of (concave convex non	_{e)} . None	Slone (%): 10-15
Subregion (LRR or MLRA): LRR-P Lat: 3	20021 10110 5.71954	Long: -79.	0677	Glope (70)
Subregion (LRR or MLRA): LRR-P Lat: 3 Soil Map Unit Name: Nanford-Badin complex, 10 t	o 15 percent slo	Long nes	NIVA/I =1===:6:	Datum
Are climatic / hydrologic conditions on the site typical for t	Listing of the O. M.	. X N. /	NVVI Classific	Sauon
Are Vegetation, Soil, or Hydrology				
Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS – Attach site ma			xplain any answe	
		pg perior recent	,	, p
Hydrophytic Vegetation Present? Yes X	No	Is the Sampled Area		
Hydric Soil Present? Yes X Wetland Hydrology Present? Yes X	No	within a Wetland?	Yes X	No
Remarks:	NO			
Represents W1, W8, W9, W7				
Represents WT, WO, W9, W7				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is required; check a	ll that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	ue Aquatic Plants (B	(14)	Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	ydrogen Sulfide Odo	r (C1)	✓ Drainage Pa	atterns (B10)
Saturation (A3)	xidized Rhizosphere	s on Living Roots (C3)	Moss Trim L	ines (B16)
	resence of Reduced	` ′	1 '	Water Table (C2)
	ecent Iron Reduction		Crayfish Bur	
	nin Muck Surface (C	′	I	isible on Aerial Imagery (C9)
	ther (Explain in Rem	arks)	I	Stressed Plants (D1)
Iron Deposits (B5)		l I		Position (D2)
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)		l i	Shallow Aqu	aphic Relief (D4)
Aquatic Fauna (B13)		ļ	FAC-Neutral	, ,
Field Observations:			1710 Noutra	1 1001 (00)
Surface Water Present? Yes No X D	epth (inches): NA			
Water Table Present? Yes X No				
Saturation Present? Yes X No D	Depth (inches): 4"		ydrology Presei	nt? Yes X No
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring wel				
Describe Recorded Data (stream gauge, monitoring wer	i, aeriai priotos, prev	ious inspections), ii avai	lable.	
Remarks:				

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

EGETATION (Four Strata) – Use scientific	names of	plants.		Sampling P	oint: W8 wet	
20# Dadius	Absolute	Dominant		Dominance Test worksheet:		
<u>Free Stratum</u> (Plot size: <u>30ft Radius</u>) LAcer rubrum	<u>% Cover</u> 15	Species? Yes	Status FAC	Number of Dominant Species	7	(4)
•				That Are OBL, FACW, or FAC:	<u>/</u>	(A)
				Total Number of Dominant	7	
				Species Across All Strata:	7	(B)
				Percent of Dominant Species		
j				That Are OBL, FACW, or FAC:	100	(A/B
)				Prevalence Index worksheet:		
, 				Total % Cover of:		
		= Total Cov				
50% of total cover: 7.5	20% of	total cover:	3	OBL species		
Sapling/Shrub Stratum (Plot size: 30ft Radius)				FACW species		
Acer rubrum	20	Yes	FAC	FAC species		
Vaccinium corymbosum	15	Yes	FACW	FACU species		
Liquidambar styraciflua	10	Yes	FAC	UPL species	x 5 =	-
l <u> </u>				Column Totals: ((A)	_ (B)
i				December of the last DA		
5				Prevalence Index = B/A		_
7				Hydrophytic Vegetation Indic		
3				1 - Rapid Test for Hydroph		
).		-		X 2 - Dominance Test is >50		
	45	= Total Cov		3 - Prevalence Index is ≤3.		
50% of total cover: ^{22.5}				4 - Morphological Adaptati	ons¹ (Provide sup	portin
Herb Stratum (Plot size: 30ft Radius)	20 /0 01	total cover.		data in Remarks or on a	a separate sheet)	
Acer rubrum	10	Yes	FAC	Problematic Hydrophytic V	egetation¹ (Explai	n)
Carex lurida	- 10	Yes	OBL			
3 Juncus effusus	- 5	Yes	FACW	¹ Indicators of hydric soil and we	etland hydrology r	nust
				be present, unless disturbed or	problematic.	
1				Definitions of Four Vegetatio	n Strata:	
5				Tree – Woody plants, excluding	avines 3 in (7.6	cm) oi
S				more in diameter at breast heigh		
7				height.		
3				Sapling/Shrub – Woody plants	s excluding vines	less
9				than 3 in. DBH and greater than		
10				m) tall.		
l1				Herb – All herbaceous (non-wo	nody) plants rega	rdlass
	20	= Total Cov	er	of size, and woody plants less		alcoo
50% of total cover: 10	20% of	total cover:	4	Mr. a decederate Allege de la constante		c. :
Noody Vine Stratum (Plot size: 30ft Radius)				Woody vine – All woody vines height.	greater than 3.28	It in
None Present				o.g		
2.						
3.						
1.						
5.				Hydrophytic		
J		= Total Cov		Vegetation Present? Yes X	No	
50% of total cover:						
		total cover.				
Remarks: (Include photo numbers here or on a separate	sheet.)					

Sampling Point: W8 wet

Profile Desc	ription: (Describe	to the dep	oth needed to docur	nent the	indicator	or confirm	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	es			
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	_Loc ²	Texture	Remarks
0-20	2.5Y 7/2	85	10YR 4/6	15	С	M	LC	
		-						
					- ——			
		-						
	-							
¹ Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, MS	S=Maske	d Sand Gr	ains.	² Location: Pl	L=Pore Lining, M=Matrix.
Hydric Soil	ndicators:						<u>Ind</u> ica	ators for Problematic Hydric Soils ³ :
L Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	pipedon (A2)		Polyvalue Be	low Surfa	ace (S8) (I	VILRA 147	, 148) 🔲 C	oast Prairie Redox (A16)
Black Hi	stic (A3)		Thin Dark Su	rface (S	9) (MLRA	147, 148)		(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)		⊣₽	iedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma	trix (F3)				(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark	,				ery Shallow Dark Surface (TF12)
1 1 '	d Below Dark Surfac	e (A11)	Depleted Dai				Ħ°	ther (Explain in Remarks)
	ark Surface (A12)		Redox Depre	•	,			
	lucky Mineral (S1) (I	LRR N,	Iron-Mangan		ses (F12)	(LRR N,		
	147, 148)		MLRA 13	-	(14) 5 4 4		3, ,	
	Sleyed Matrix (S4)		Umbric Surfa					icators of hydrophytic vegetation and
1 1 '	ledox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F21) (MLF	KA 127, 14	/) un	less disturbed or problematic.
	_ayer (if observed):	;						
Type:								v
Depth (ind	ches):						Hydric Soil	Present? Yes X No
Remarks:								

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Zadell Chatham	City/C	_{county:} Chatham		Sampling Date: 4-27-22
Applicant/Owner: Andrew Ross			State: NC	Sampling Date: 4-27-22 Sampling Point: W8 up
	Section			
Landform (hillslope terrace etc.). Hillslope	l ocal reli			Slope (%): 10-15
Subregion (LRR or MLRA): LRR-P	35.71998	Long: -79.	06758	Datum: WGS 84
Subregion (LRR or MLRA): LRR-P Soil Map Unit Name: Nanford-Badin complex	, 10 to 15 percent slo	opes	NIWI classifi	ication: NA
Are climatic / hydrologic conditions on the site typic	al for this time of year? V	os X No /		Pomarks \
Are Vegetation, Soil, or Hydrology _				
Are Vegetation, Soil, or Hydrology _				ers in Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing sam	ipling point location	ns, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes	No_X	Is the Sampled Area		
Hydric Soil Present? Yes	No X No X	within a Wetland?	Yes	No X
Wetland Hydrology Present? Yes	No_X	William a VVollama	.00	
Remarks:				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indic	cators (minimum of two required)
Primary Indicators (minimum of one is required; ch	neck all that apply)		Surface Soi	l Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Od	` '		atterns (B10)
Saturation (A3)		es on Living Roots (C3)	Moss Trim I	
Water Marks (B1)	Presence of Reduced	` '	'	Water Table (C2)
Sediment Deposits (B2) Drift Deposits (B3)	Recent Iron Reductio Thin Muck Surface (0		Crayfish Bu	/isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Ren	′		Stressed Plants (D1)
Iron Deposits (B5)	Ctrior (Explain in real	nanc)		c Position (D2)
Inundation Visible on Aerial Imagery (B7)			Shallow Aq	
Water-Stained Leaves (B9)				raphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutra	al Test (D5)
Field Observations:	NIA			
	Depth (inches): NA			
Water Table Present? Yes No X	Depth (inches): >20'	<u> </u>		~
Saturation Present? Yes No X (includes capillary fringe)	Depth (inches):>20'	Wetland H	lydrology Prese	nt? Yes No_X
Describe Recorded Data (stream gauge, monitoring	ng well, aerial photos, pre	vious inspections), if ava	ilable:	
Remarks:				

					nt: W8 up	
Tree Stratum (Plot size: 30ft Radius)	Absolute	Dominant Species?		Dominance Test worksheet:		
1 Juniperus virginiana	20	Yes	FACU	Number of Dominant Species	2	(\\\
Liquidambar styraciflua	15	Yes	FAC	That Are OBL, FACW, or FAC:		(A)
·· <u>·</u>	- 10	100	1710	Total Number of Dominant	7	<i>(</i> =)
J	·			Species Across All Strata:	7	(B)
·				Percent of Dominant Species		
j	- ———			That Are OBL, FACW, or FAC:	28	(A/B
S				Prevalence Index worksheet:		
	· 			Total % Cover of:	Multiply by:	
		= Total Cov		OBL species x		
50% of total cover: <u>17.5</u>	20% of	total cover:	/			
Sapling/Shrub Stratum (Plot size: 30ft Radius	45	V	E4011	FACW species x		
Carya glabra	15	Yes	FACU	FAC species x		
Juniperus virginiana	15	Yes	FACU	FACU species x		
Acer rubrum	10	Yes	FAC	UPL species x		
l <u>. </u>				Column Totals: (A)	_ (B)
5				Prevalence Index = B/A =		
S						
7				Hydrophytic Vegetation Indica		
3				1 - Rapid Test for Hydrophyt	-	
).	· ·			2 - Dominance Test is >50%		
^	40	= Total Cov	er	3 - Prevalence Index is ≤3.0		
50% of total cover: ²⁰				4 - Morphological Adaptation		portino
Herb Stratum (Plot size: 30ft Radius		•		data in Remarks or on a		
Carya glabra	15	Yes	FACU	Problematic Hydrophytic Ve	getation ¹ (Explai	n)
Lonicera japonica	10	Yes	FACU			
Acer rubrum	5	No	FAC	¹ Indicators of hydric soil and wetl		nust
	· ——			be present, unless disturbed or p		
5.				Definitions of Four Vegetation	Strata:	
				Tree – Woody plants, excluding	vines, 3 in. (7.6	cm) o
1				more in diameter at breast height	t (DBH), regardl	ess of
7				height.		
3	·			Sapling/Shrub – Woody plants,		
9				than 3 in. DBH and greater than	or equal to 3.28	ft (1
10				m) tall.		
11				Herb - All herbaceous (non-woo		rdless
700/ 61 / 1		= Total Cov		of size, and woody plants less th	an 3.28 ft tall.	
	20% of	total cover:	<u> </u>	Woody vine – All woody vines g	reater than 3.28	ft in
Noody Vine Stratum (Plot size: 30ft Radius)				height.		
None Present	· ———					
2						
3	 					
4				Hydrophytic		
5				Vegetation	٧	
		= Total Cov	er	Present? Yes	No <u>^</u>	
50% of total cover:	20% of	total cover:				
	20% of				No X	_

Sampling Point: W8 up

Profile Desc	ription: (Describe	to the depth	needed to docum	ent the indicator	or confirm	the absence of indicato	ors.)
Depth	Matrix			Features			
(inches)	Color (moist)		Color (moist)	%Type ¹	Loc ²	Texture	Remarks
0-3	10YR 3/3	100				<u>L</u>	
3-20	10YR 6/4	100				L	
							
					-		
¹Type: C=Co	ncentration D=Der	oletion RM=F	Reduced Matrix, MS	=Masked Sand G	rains	² Location: PL=Pore Linis	ng M=Matrix
Hydric Soil I		Jiction, rtivi–i	Caacca Matrix, Mo	-Masked Carle C	iaiiis.		oblematic Hydric Soils ³ :
Histosol			Dark Surface	(S7)		1 1	A10) (MLRA 147)
	pipedon (A2)			ow Surface (S8) (MLRA 147.		Redox (A16)
Black His				face (S9) (MLRA		(MLRA 14	, ,
	n Sulfide (A4)		Loamy Gleyed				odplain Soils (F19)
Stratified	Layers (A5)		Depleted Mati	rix (F3)		(MLRA 13	6, 147)
	ck (A10) (LRR N)		Redox Dark S	, ,			Dark Surface (TF12)
1 1 '	Below Dark Surfac	e (A11)	Depleted Dark			Other (Explai	n in Remarks)
	rk Surface (A12)		Redox Depres	, ,			
	lucky Mineral (S1) (LRR N,		ese Masses (F12)	(LRR N,		
	147, 148)		MLRA 136	•	00 400)	3, ,, ,	
	leyed Matrix (S4)			ce (F13) (MLRA 1			drophytic vegetation and
1 1 1	edox (S5) Matrix (S6)			odplain Soils (F19 aterial (F21) (MLI			logy must be present, ed or problematic.
	-ayer (if observed)		Red Farent M	ateriai (FZT) (WILI	XA 121, 141) unless disturbi	ed or problematic.
	-ayer (ii observeu)	•					
Type:	. I X					Headain Onli Burnani	YesNo X
	ches):					Hydric Soil Present?	Yes No _X
Remarks:							

7/19/22, 9:58 AM OpenGov



County of Chatham, NC

07/19/2022

WP-22-338

On-site Riparian Buffer Review

Status: Active

Date Created: May 24, 2022

Applicant

Rhiannon Graham rhiannon.graham@terracon.com 2401 Brentwood Road Suite 107 Raleigh, NC 27612 760-717-2621

Location

1623 N Pea Ridge Rd Pittsboro, North Carolina 27312

Owner:

LIENAU LYDIA JAN COPELAND LIENAU CLINTON BERINGER 930 SEAFORTH RD PITTSBORO, NC 27312

Project Information

Review Type

Major Subdivision

Before continuing please complete a phone or email conversation with Paula Phillips of the Planning Department. (919) 542-8276 paula.phillips@chathamcountync.gov

If your project will result in a review of greater than 10 acres please contact a private consulting firm to complete the surface water determination. For stream determinations the consultant must have successfully completed the NCDWQ/NC State **University Surface Waters Classification. For wetland** delineations the consultant must demonstrate at least 2 years of experience delineating jurisdictional wetlands in accordance with the Eastern Mountains and Piedmont Regional Supplement to the 1987 US Corps of Engineers Wetland Delineation Manual. **Please visit the Watershed Protection Department** website for a list of consultants that regularly complete work within Chatham County.

Number of Features Found

14

If your project is a Major Subdivision please contact a private consulting firm to complete the surface water determination. For stream determinations the consultant must have successfully completed the NCDWO/NC State University Surface Waters Classification, For wetland delineations the consultant must demonstrate at least 2 years of experience delineating jurisdictional wetlands in accordance with the Eastern Mountains and Piedmont Regional Supplement to the 1987 US Corps of Engineers Wetland Delineation Manual. Please visit the Watershed Protection Department website for a list of consultants that regularly complete work within Chatham County.

Feature is defined as any surface water that is subject to Chatham County Riparian Buffers (streams, wetlands, ponds). Include each stream type transition, with corresponding forms, and individual wetland in your total. Total is total features found before USACE or County site visit.

Date Field Work Was Completed

05/10/2022

Has USACE on-site review been scheduled or completed

A Minor Subdivision is the creation of 5 or less new lots. If the original tract is over 10 acres and the

7/19/22, 9:58 AM OpenGov

subdivision results in the total of that tract becoming less than 10 acres then two lots have been created by default.

Parcel Info	rmation
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Parcel Number (s)

17531 and 18070

Is the property within the Jordan Lake Watershed

Yes

Property Owner Name

LIENAU LYDIA JAN COPELAND & CLINTON BERINGER LIENAU

Location of Tract (address if applicable)

1623 N PEA RIDGE RD

Driving Directions from Pittsboro

off of 64

Subdivision Name (if applicable)

--

Please describe access issues (provide gate codes, or information for scheduling site visit)

park and access off of N Pea Ridge Road

Applicants Information

Are you the Landowner or an Agent

Agent

Primary Phone Number

760-717-2621

Mailing Address

2401 Brentwood Road, Suite 107

Zip Code 27612

Full Name

Rhiannon

Primary Email

Watershed District

Cape Fear

rhiannon.graham@terracon.com

City/State

Raleigh, NC

How would you like to receive the completed review letter?

I would like to pick up the completed Riparian Buffer Review at the County Office

I would like the completed Riparian Buffer Review mailed to me

I would like the completed Riparian Buffer Review e-mailed to me.

 \mathbf{V}

Statement of Understanding

I have read and understand the regulations of the Watershed Protection Ordinance, Section 304, and I agree to adhere to these associated policies and guidelines.

Name

Rhiannon Graham

New Field

05/24/2022

Attachments

pdf Agent Authorization.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:32 am

pdf agent form.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:35 am

Pdf Chatham Parcels Buffer Letter of Findings.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:42 am

pdf wetlands and waters map.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:44 am

pdf T1-T7.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:45 am

pdf Soils1.pdf

ل. Uploaded by Rhiannon Graham on May 24, 2022 at 9:43 am

pdf Topo.pdf

Uploaded by Rhiannon Graham on May 24, 2022 at 9:43 am

History

Date	Activity
May 18, 2022 at 5:28 pm	Rhiannon Graham started a draft of Record WP-22-338
May 24, 2022 at 9:48 am	Rhiannon Graham submitted Record WP-22-338
May 24, 2022 at 9:48 am	approval step Intake Approval was assigned to Drew Blake on Record WP-22-338
Jul 14, 2022 at 8:14 am	Drew Blake approved approval step Intake Approval on Record WP-22-338
Jul 14, 2022 at 10:44 am	Drew Blake changed Number of Features Found from "13" to "14" on Record WP-22-338
Jul 14, 2022 at 10:45 am	Drew Blake added a guest: brad.zadell@gmail.com to Record WP-22-338

Timeline

Label		Status	Activated	Completed	Assignee	Due Date
~	Intake Approval	Complete	May 24, 2022 at 9:48 am	Jul 14, 2022 at 8:14 am	Drew Blake	-
•	Major Subdivision Riparian Buffer Review Fee	Active	Jul 14, 2022 at 8:14 am	-	-	-
~	Field Review	Inactive	-	-	-	-
	Major Subdivision Riparian Buffer Confirmation Report	Inactive	-	-	-	-





CHATHAM COUNTY

AUTHORIZED AGENT FOR FORM

PROPERTY LEGAL DESCRIPTION	DN:
LOT NOPARCEI	ID (PIN) 17531 and 18070 PARCEL SIZE 40ac and 36 ac totaling to 76
STREET ADDRESS: 1623 N PE	A RIDGE RD, pittsboro NC 27312
Please print: Property Owner: Shaddox Cre	ek Developers
Property Owner:	
The undersigned owner(s) of the abo	ve described property, do hereby authorize
	of
(Contractor / Agent)	, of(Name of consulting firm if applicable)
Check here for all of the bell Building Permit Zoning Compliance Permits Floodplain Determination Soil Erosion & Sedimentatio Permits to install, repair, eva Evaluation/inspection/permit	
Property Owner's Address (if diffe	rent than property above):
Telephone;	E-mail:
We hereby certify the above information whereby certify the above information with the control of the control o	tion submitted in this application is true and accurate to the best of our
Owner Authorized Signature	Agent Authorized Signature





P.O. Box 548 Pittsboro, NC 27312

Website: www.chathamnc.org

Authorization to Enter Property Form

PARCEL No. (AKPAR) 17531 and 18	8070
I, (print name) Shaddox Creek Devel	lopers, as owner of the property described above
or as a representative of the owner(s) do hereb	y convey permission to Chatham County staff to enter the property as
their convenience to conduct a surface water ide	ntification (SWID) necessary to determine whether or not water features
on my property are subject to the riparian buffer	regulations described in Section 304 of the Chatham County Watershed
Protection Ordinance. The SWID will be pu	iblic record and on file at the Planning and Watershed Protection
Departments, and may be requested in the future	e for review by interested parties.
The control of the co	roperty listed above will be made by County staff only once and that it operty boundary, it will require a surface water identification by a private
The control of the co	
future subdivisions are proposed within this pro- consultant at the property owner's expense.	
future subdivisions are proposed within this pro	operty boundary, it will require a surface water identification by a private