

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

Phone: (919) 548-6715 • E-mail: drew.blake@chathamcountync.gov

April 9, 2024

Mr. AJ Kamal Soil & Environmental Cor 8412 Falls of Neuse Road, Raleigh, NC 27615	nsultants, PA , Suite 105
Project Name:	Parcel # 2035, 1806, 95989
Location:	Hamlets Chapel Road/Pleasant Springs Road

WP-24-17

Subject Features: Three (3) ephemeral segments, three (3) intermittent segments, one (1) perennial segment, six (6) potential wetlands, and one (1) beaver impoundment

Dear Mr. Kamal,

Project Number

#### **Explanation:**

The site visit was completed on March 31, 2024, by AJ Kamal of Soil & Environmental Consultants, PA (S&EC), and Drew Blake and Phillip Cox of the Chatham County Watershed Protection Department, on properties identified as Chatham County Parcel # 2035, 1806, and 95989 that are located within the Jordan Lake watershed. S&EC personnel completed a previous site visit in October 2023, and identified four (4) ephemeral segments, three (3) intermittent segments, one (1) perennial segment, and seven (7) potential wetlands within the review area that are potentially subject to riparian buffers through the Chatham County Watershed Protection Ordinance. S&EC submitted a request for Chatham County to complete a formal review to determine if the features would be subject to riparian buffers according to Section 304 of the Chatham County Watershed Protection Ordinance.

#### Summary of Findings

During the site visit, Chatham County staff determined that one identified ephemeral stream (SF8) did not meet the definition of an ephemeral stream as defined in Section 109 of the Chatham County Watershed Protection Ordinance. The start and end points of two ephemeral segments (E2-SF11 and G-SF10) were relocated in during the site visit. Wetland (W5) was determined to be a beaver impoundment during the site visit.

#### **Required Buffers Required**

The required riparian buffers provided below are in accordance with Section 304(D) of the Chatham County Watershed Protection Ordinance.

#### Section 304 (D)(1) - Perennial Streams

The riparian buffer shall be one hundred (100') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides of perennial streams, or shall be the full horizontal extent of the Area of Special Flood Hazard as most recently mapped by the North Carolina Floodplain Mapping Program, NC Division of Emergency Management, whichever is the greater horizontal distance.



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## Section 304(D)(2) – Intermittent Streams

The riparian buffer shall be fifty (50') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides of intermittent streams.

### Section 304(D)(3) – Ephemeral Streams

The riparian buffer shall be thirty (30') feet landward, measured horizontally on a line perpendicular from top of bank; this distance shall be measured on all sides along all ephemeral streams.

#### Section 304(D)(4) – Jurisdictional and Non-Jurisdictional Wetlands

The riparian buffer shall be fifty (50') feet landward, measured horizontally on a line perpendicular from the delineated boundary, surrounding all features classified as wetlands and linear wetlands. The potential wetlands identified by S&EC 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 confirmed wetland boundaries.

#### Beaver Impoundments - DWQ Clarification Memo 2007-005

Beaver impoundments are streams dammed up by beaver activity. Therefore, if the stream that is now a beaver impoundment shows on wither the USGS Topo or the most recent version of the soil survey map, the beaver impoundment should be treated as an open water since it is a pond in the intent of the rules and must have a 50-ft protected riparian buffer around its perimeter measured from the elevation of the beaver. Streams coming into or out of a beaver pond also have a 50-ft protected riparian buffer.

#### Impacts to Riparian Buffers:

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

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



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Respectfully,

Blake

Drew Blake Assistant Director, CESSWI Chatham County Watershed Protection Department

Enclosures:

Wetland Sketch Map Post Chatham County Visit – Completed by S&EC Surface Water & Riparian Buffer Spreadsheet – Completed by S&EC October 2023 Stream ID & Wetland Data Forms – Completed by S&EC March 2023 (Site Visit) Stream ID Forms – Completed by S&EC Major Subdivision Riparian Buffer Application Authorized Agent Form Authorization to Enter Property Form

 cc: Taylor Burton, Sr. Watershed Specialist, Chatham County Watershed Protection Department Phillip Cox, Sr. Watershed Specialist, Chatham County Watershed Protection Department Justin Hasenfus, Erosion Control Program Manager, Chatham County Watershed Protection Dept Rachael Thorn, Director, Chatham County Watershed Protection Department Kimberly Tyson, Planner II/Subdivision Administrator, Chatham County Planning Department Angela Plummer, Planner II/Zoning Administrator, Chatham County Planning Department Jason Sullivan, Director, Chatham County Planning Department Rachel Capito, Regulatory Project Manager, US Army Corps of Engineers, Raleigh Field Office Zachary Thomas, Environmental Program Consultant, NCDEQ - Division of Water Resources



B SF6			SF5			Att 41B
				Detailed Sur S&EC reserves the and any other additional topographic maps, air pr to be disturbed, S&EC's permitted by the U.S. An this work desires an acc S&EC, they should retail locate S&EC's flagging.	<b>Delineation of Waters of</b> itable for Preliminary Planning Only e right to modify this map based on 1 information. Approximations were hotos and ground truthing. If the si detailed delineation should be appr rmy Corps of Engineers as required curate map of the regulated features in a NC Registered Professional Lan	f the US y more fieldwork, e mapped using ite is going roved and . If the user of s flagged by ad Surveyor to
Wetland Sketch Map	Project No.Hamlets15842.W1Scale: 1 =150'Project Mgr.: SB3/21/2024	Chapel Road boro, NC d by: AJ	Soil & Environmental C 8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone sandec.com	<b>Consultants, PA</b> e: (919) 846-5900 • Fax: (919) 846-9467	0 150 300 Feet	600 

			Project Nar	ne			
		Surface Wa	ater & Riparian Bu	ffer Spread	dsheet		
			Completed By:	T			
Feature ID	Feature Type	Stream/Wetland Data Form ID	Stream Length or Wetland Acres	Latitude	Longitude	Buffer Required	Buffer Jurisdiction (Jordan, County + Jordan)
W1	Jurisdictional Wetland	N/A	.02 ac	35.794118	-79.140037	50' Jurisdictional Wetland	County+Jordan
W2	Jurisdictional Wetland	N/A	.01 ac	35.794132	-79.139721	50' Jurisdictional Wetland	County+Jordan
W3	Jurisdictional Wetland	N/A	.02 ac	35.793918	-79.139685	50' Jurisdictional Wetland	County+Jordan
W4	Jurisdictional Wetland	N/A	.04 ac	35.789644	-79.135287	50' Jurisdictional Wetland	County+Jordan
W5	Jurisdictional Wetland	N/A	1.23 ac	35.790461	-79.134498	50' Jurisdictional Wetland	County+Jordan
W6	Jurisdictional Wetland	N/A	.09 ac	35.794537	-79.136472	50' Jurisdictional Wetland	County+Jordan
W7	Jurisdictional Wetland	DP2	.91 ac	35.795866	-79.137458	50' Jurisdictional Wetland	County+Jordan
А	Intermittent	SF1	3186 ft	35.793103	-79.138735	50' (Intermittent)	County+Jordan
В	Intermittent	SF6	95 ft	35.788477	-79.142205	50' (Intermittent)	County+Jordan
С	Perennial	SF5	1288 ft	35.789557	-79.136657	100' (Perennial)	County+Jordan
D	Intermittent	SF7	515 ft	35.789415	-79.135515	50' (Intermittent)	County+Jordan
E1	Ephemeral	SF4	82 ft	35.794989	-79.136565	30' (Ephemeral)	County+Jordan
E2	Intermittent	SF3 + SF11	430 ft	35.794408	-79.136275	50' (Intermittent)	County+Jordan
E3	Ephemeral	SF2	132 ft	35.791086	-79.134634	30' (Ephemeral)	County+Jordan
G	Intermittent	SF10	114 ft	35.795714	-79.136172	50' (Intermittent)	County+Jordan
G	Ephemeral	SF9	72 ft	35.795132	-79.140136	30' (Ephemeral)	County+Jordan
	30000000000000000000000000000000000000					90010000000000000000000000000000000000	
	30000000000000000000000000000000000000					90010000000000000000000000000000000000	

Date: 10/12/23	Project/Site: Ha	mlets chopel Rd.	Latitude:35	793926	
Evaluator: STEC-AJK+KM	County: Chatham		Longitude: 79.13943		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial	Other e.g. Quad Name:		
A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> 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	$\bigcirc$	2	3	
7. Recent alluvial deposits	Q		2	3	
8. Headcuts	$\bigcirc$	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural vallev	0	0.5	(1)	1.5	
11. Second or greater order channel	No		Yes	= 3	
<sup>a</sup> artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal =)		-		-	
12. Presence of Baseflow	0	0	2	3	
13. Iron oxidizing bacteria	0	0	2	3	
14. Leaf litter	1.5	0	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 =)					
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; OI	BL = 1.5 Other =	0)	
*perennial streams may also be identified using other metho	ods. See p. 35 of manua	al.			

Project/Site:	mlets Rd.	Latitude:35.	791079	
County: Chat	ham	Longitude: -79./3462 Other e.g. Quad Name:		
Stream Determin Ephemeral Inter	ation (circle one) mittent Perennial			
Absent	Weak	Moderate	Strong	
0	1	(2)	3	
0		2	3	
0	Ō	2	3	
0	(1)	2	3	
0	Ø	2	3	
(0)	1	2	3	
0	0	2	3	
0	(L)	2	3	
0	(0.5)	1	1.5	
0	0.5	1	1.5	
No		Yes = 3		
(0)	1	2	3	
	1	2	3	
1.5	1	(0.5)	0	
0	(0.5)	1	1.5	
0	(0.5)	1	1.5	
No	0 = 0	Yes	€3)	
			Allowed P.	
3	2	Ô	0	
3	(2)	1	0	
(0)	1	2	3	
(0)	1	2	3	
	0.5	1	1.5	
0	0.5	1	1.5	
(0)	0.5	1	1.5	
10	0.5	1	1.5	
0	FACW = 0.75; OI	3L = 1.5 Other =	0	
nods. See p. 35 of manua	FACW = 0.75; OI	3L = 1.5 Other =	9	
	County:         Chi           Stream Determin         Ephemeral Inter           0         0	County: Che, the Gam         Stream Determination (circle one)         Ephemeral Intermittent Perennial         Absent       Weak         0       1         0       0.5         0       1         0       1         0       1         0       1         0       1         0       1         0       1         0       1 <tr< td=""><td>County: Che. Th Gan         Longitude: -7           Stream Determination (circle one) Ephemeral Intermittent Perennial         Other e.g. Quad Name:           Absent         Weak         Moderate           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         0.5         1           0         0.5         1           0         1         2           1.5         1         0.5           0         1         2           0         1         2           1.5         1         0.5           1         <td< td=""></td<></td></tr<>	County: Che. Th Gan         Longitude: -7           Stream Determination (circle one) Ephemeral Intermittent Perennial         Other e.g. Quad Name:           Absent         Weak         Moderate           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         1         2           0         0.5         1           0         0.5         1           0         1         2           1.5         1         0.5           0         1         2           0         1         2           1.5         1         0.5           1 <td< td=""></td<>	

Date: 10/12/23	Project/Site: HG	mlets hepel Rd.	Latitude: 35. 779369 Longitude: -79.13620 Other e.g. Quad Name:		
Evaluator: SHEC - AJK+KM	County: Cha	tham			
Total Points: Stream is at least intermittent $20.5$ if $\geq 19$ or perennial if $\geq 30^*$	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial			
A Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> 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	0	2	3	
4. Particle size of stream substrate	0		2	3	
5. Active/relict floodplain	0	(1)	2	3	
6. Depositional bars or benches	0		2	3	
7. Recent alluvial deposits	0	0	2	3	
8. Headcuts	0	1	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5		1.5	
11. Second or greater order channel	No	0€0)	Yes = 3		
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	10	1	2	3	
14. Leaf litter	1.5		0.5	15	
15. Sediment on plants or debris	0	(0.5)	1	1.0	
16. Organic debris lines or piles	0	0.5	Vos	1.5	
17. Soil-based evidence of high water table?	N	0 = 0	163	0	
C. Biology (Subtotal =)		6	4	0	
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed		2	2	3	
20. Macrobenthos (note diversity and abundance)		1	2	3	
21. Aquatic Moliusks		0.5	1	1.5	
22. FISH		0.5	1	1.5	
23. Craynsh		0.5	1	1.5	
24. Amphibians	10	0.5	1	1.0	
25. Algae	10	EACW = 0.75	BI = 1.5 Other =	0)	
26. Weband plants in streambed	ada Saa n 35 of manu	FACW - 0.75, O			
-perennial streams may also be identified using other mean	ods. See p. 35 of manu				

ALT. AT	Project/Site:	hepel Ra	Latitude: 55, 79494		
Evaluator: SFEC - ADK+KM	County: Cha	than	Longitude: -79,13657 Other e.g. Quad Name:		
Fotal Points: $\Box$ Stream is at least intermittent $\Box$ $f \ge 19$ or perennial if $\ge 30^*$	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial			
Geomorphology (Subtotal = 6	Absent	Weak	Moderate	Strong	
<sup>a</sup> Continuity of channel bed and bank	0	(1)	2	3	
2 Sinuosity of channel along thatweg	0	$\widehat{\mathbf{D}}$	2	3	
In-channel structure: ex. riffle-pool, step-pool,     ripple-pool sequence	0	3	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		1.5	
11. Second or greater order channel	No	0€0	Yes = 3		
	(6)	1	2	3	
13. Iron oxidizing bacteria 14. Leaf litter	1.5	(Ť)	0.5	0	
13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris	1.5 0	(0.5)	0.5	0	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> </ul>	1.5 0 0	(1) (0.5) (0.5)	0.5 1 1	0 1.5 1.5	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> </ul>	1.5 0 0 N	(1) (0.5) (0.5) o = 0	0.5 1 1 Yes	0 1.5 1.5 €3	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> </ul>	1.5 0 0 No	(0.5) (0.5) (0.5) (0.5)	0.5 1 1 Yes	0 1.5 1.5 €3	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> </ul>	1.5 0 0 No	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $	0.5 1 1 Yes	0 1.5 1.5 €3)	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> </ul>	1.5 0 0 No	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $	0.5 1 1 Yes (1) 1 2	0 1.5 1.5 €3) 0 0 0	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> </ul>	1.5 0 0 No 3 3	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $	0.5 1 1 Yes (1) 1 2 2	0 1.5 1.5 3 0 0 0 3 3	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> </ul>	1.5 0 0 0 No 3 3 3 0 (0)	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $	0.5 1 1 Yes (1) 1 2 2 1	0 1.5 1.5 €3) 0 0 0 3 3 3 15	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> </ul>	1.5 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $	0.5 1 Yes (1) 1 2 2 1 1 1	0 1.5 1.5 €3) 0 0 0 3 3 1.5 1.5 1.5	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amaphibiano</li> </ul>	1.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $ $ \begin{array}{c} 2 \\ (2) \\ 1 \\ 1 \\ 0.5 \\ 0$	0.5 1 Yes (1) 1 2 2 1 1 1 1 1 1	0 1.5 1.5 €3) 0 0 0 3 3 1.5 1.5 1.5 1.5 1.5 1.5	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Alappa</li> </ul>	1.5 0 0 No 3 3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $ $ \begin{array}{c} 2 \\ (2) \\ 1 \\ 1 \\ 0.5 \\$	0.5 1 Yes (1) 1 2 2 1 1 1 1 1 1 1 1 1	0 1.5 1.5 3 0 0 0 0 0 3 3 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> </ul>	1.5 0 0 0 No 3 3 3 0 (0) (0) (0) (0) (0) (0) (0) (0) (0) (	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $ $ \begin{array}{c} 2 \\ (2) \\ 1 \\ 1 \\ 0.5 \\$	0.5 1 Yes (1) 1 2 2 1 1 1 1 1 1 Bl = 1.5 Other =	0 1.5 1.5 €3 0 0 0 0 3 3 1.5 1.5 1.5 1.5 1.5 0	
<ul> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> </ul>	1.5 0 0 No 3 3 3 (0) (0) (0) (0) (0) (0) (0) (0)	$ \begin{array}{c} (1) \\ (0.5) \\ (0.5) \\ (0.5) \\ 0 = 0 \end{array} $ $ \begin{array}{c} 2 \\ (2) \\ 1 \\ 1 \\ 0.5 \\ 0.5 \\ 0.5 \\ 0.5 \\ 0.5 \\ FACW = 0.75; O \end{array} $	0.5 1 Yes (1) 1 2 2 1 1 1 1 BL = 1.5 Other =	0 1.5 1.5 3 0 0 0 3 3 1.5 1.5 1.5 1.5 1.5 0	

Date: 0 12 23	Project/Site: H	nedel Rd.	Latitude: 35.789566		
Evaluator: STEC - AJK + KM	County: Che	than	Longitude:-79.13637 Other e.g. Quad Name:		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 35	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial			
A. Geomorphology (Subtotal = 16)	Absent	Weak	Moderate	Strong	
1 <sup>ª</sup> Continuity of channel bed and bank	0	1	2	(3)	
2. Sinuosity of channel along thalweg	0	1	(2)	3	
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>	0	1	2	3	
4. Particle size of stream substrate	0	1	(2)	3	
5. Active/relict floodplain	0	1	2	3	
<ol><li>Depositional bars or benches</li></ol>	0	1	2	3	
7. Recent alluvial deposits	0	0	2	3	
8. Headcuts	0		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(0)	Yes	= 3	
artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = 10)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	( <b>0</b> )	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 =)					
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		2	3	
21. Aquatic Mollusks	()	1	2	3	
22. Fish	0	(0.5)	1	1.5	
23. Crayfish	(0)	0.5	1	1.5	
24. Amphibians	0	0.5	0	1.5	
25. Algae	0	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; OB	SL = 1.5 Other =	0)	
*perennial streams may also be identified using other me	thods. See p. 35 of manua	al.			
Notes:					
Sketch: - Caddisfly - Sms 11 fr	casings ish				

County: Che	ithan	Longitude: -7	9 147704	
Stroam Dotormin	athan Longitude		jitude: -79 <b>.142</b> 204	
Ephemeral Inter	nation (circle one) mittent Perennial	Other e.g. Quad Name:		
Absent	Weak	Moderate	Strong	
0	1	(2)	3	
0	1	(2)	3	
0	1	2	3	
0	1	(2)	3	
(0)	1	2	3	
0	(1)	2	3	
0	<b>()</b>	2	3	
(0)	1	2	3	
ō	(0.5)	1	1.5	
0	0.5	(1)	1.5	
Nc	0€0)	Yes	= 3	
0	1	2	3	
0	(1)	2	3	
1.5	(1)	0.5	0	
0	(0.5)	1	1.5	
0	(0.5)	1	1.5	
No	0 = C	Yes	=3)	
			-	
3	(2)	1	0	
(3)	2	1	0	
Q	1	2	3	
$\bigcirc$	1	2	3	
$\bigcirc$	0.5	1	1.5	
(0)	0.5	1	1.5	
(0)	0.5	1	1.5	
(0)	0.5	1	1.5	
	FACW = 0.75; OF	BL = 1.5 Other =	0)	
ds. See p. 35 of manua	al.			
	Absent           0 <td>Absent         Weak           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         0           0         0           0         0           0         1           0         0           0         1           0         1           0         0           0         0           0         0           0         0           0         0           0         0           3         2           3         2           0         0           1         0           0         0           1         0           0         0           1         0           0         0           0</td> <td>Absent         Weak         Moderate           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         2           0         1         2           0         1         2           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1</td>	Absent         Weak           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         1           0         0           0         0           0         0           0         1           0         0           0         1           0         1           0         0           0         0           0         0           0         0           0         0           0         0           3         2           3         2           0         0           1         0           0         0           1         0           0         0           1         0           0         0           0	Absent         Weak         Moderate           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         (2)           0         1         2           0         1         2           0         1         2           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1           0         0.5         1	

Date: 10/12/23	Project/Site: Ha	hapel Rd	Latitude: 35,7	289348	
Evaluator: StFC - AJK + KM	County: Cha-	tham	Longitude: -79.135339 Other e.g. Quad Name:		
Total Points:         Stream is at least intermittent         if ≥ 19 or perennial if ≥ 30*	Stream Determin Ephemeral Inter	nation (circle one) mittent) Perennial			
A Geomorphology (Subtotal = $13$ )	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> 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	V	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 = <u>6</u> )	0		2	3	
12. Presence of Basenow		0	2	3	
13. Iron oxidizing bacteria	1.5		0.5	0	
14. Leat litter	1.5	(0.5)	1	15	
15. Sediment on plants of debris	0	(0.5)	1	1.5	
16. Organic deprisitines of piles	N	n = 0	Yes	=3)	
C Biology (Subtotal - 5 )				0	
19. Eibrous roots in streambed	3	(2)	1	0	
10. Pooted upland plants in streambed	(3)	2	1	0	
20 Macrobenthos (note diversity and abundance)		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; O	BL = 1.5 Other =	0	
*perennial streams may also be identified using other me	thods. See p. 35 of manua	al.			
Notes:					

Date: 10/12/23	Project/Site: Ho	hapel Rd.	Latitude: 35, 793697 Longitude: - 79, 136203 Other e.g. Quad Name:		
Evaluator: St Ec - AJK + KM	County: Cha	than			
Total Points:         Stream is at least intermittent         if ≥ 19 or perennial if ≥ 30*	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial			
A Geomorphology (Subtotal = 5)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> Continuity of channel bed and bank	0	(1)	2	3	
2. Sinuosity of channel along thalweg	0		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	
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	
12. Presence of Baseflow	٢	1	2	3	
13. Iron oxidizing bacteria	(0)	1	2	3	
14. Leaf litter	1.5	D	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	<b>b</b> = 0	Yes	E3)	
C. Biology (Subtotal =)				-	
18. Fibrous roots in streambed	3	2	(1)	0	
19. Rooted upland plants in streambed	3	2	0	0	
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3	
21. Aquatic Mollusks	50	1	2	1 5	
22. Fish	00	0.5	1	1.5	
23. Crayfish	0	0.5	1	1.0	
24. Amphibians		0.5	1	1.5	
25. Algae	01			1.5	
26. Wetland plants in streambed		FACVV = 0.75; U	BL = 1.5 Other	0	
*perennial streams may also be identified using other metho	ods. See p. 35 of manua	al.			
Notes:					

Date: 10/12/23	Project/Site: H	inlets the Rel.	Latitude: 35.795/20		
Evaluator: StEC _ AJK + KM	County: Che	them	Longitude:-79./40/8 Other e.g. Quad Name:		
Total Points:Stream is at least intermittentif $\geq 19$ or perennial if $\geq 30^*$	Stream Determin Ephemeral Inter	ation (circle one) mittent Perennial			
A Geomorphology (Subtotal = $4.5$ )	Absent	Weak	Moderate	Strong	
1 <sup>ª</sup> Continuity of channel bed and bank	0	(1)	2	3	
2. Sinuosity of channel along thalweg	0	(T)	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	
8. Headcuts		1	2	3	
9. Grade control	(0)	0.5	1	1.5	
10. Natural vallev	0	(0.5)	1	1.5	
11. Second or greater order channel	No F 0 )		Yes = 3		
<sup>a</sup> artificial ditches are not rated; see discussions in manual		0			
B. Hydrology (Subtotal = 5)					
12. Presence of Baseflow	$(\overline{0})$	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 = $\mathcal{U}$ )					
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	
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; O	BL = 1.5 Other =	0	
*perennial streams may also be identified using other met	hods. See p. 35 of manua	al.			
Notes:					
Notes.					

U.S. Army Corps of Engineers						
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region						
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)

Project/Site: Hamlets Chapel Road	City/County: Pittsboro / Chatham Sampling Date: 10/12/2023
Applicant/Owner: Moore Family Partnership	State: NC Sampling Point: DP1
Investigator(s): S&EC - AJ Kamal + Kevin Murphrey Se	ection, Township, Range: Pittsboro
Landform (hillside, terrace, etc.): Hillslope Local	relief (concave, convex, none): <u>None</u> Slope (%): <u>2-4</u>
Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.796903	Long: -79.138472 Datum: NAD 83
Soil Map Unit Name: WeC	NWI classification: N/A
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 Hydrologysignificantly distur	rbed? Are "Normal Circumstances" present? Yes x No
Are Vegetation, Soil, or Hydrologynaturally problems	atic? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing sam	npling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes 0 No X	s the Sampled Area

Hydrophylic Vegetation Present?	Yes U	NO X	is the Sampled Area	
Hydric Soil Present?	Yes	<u>No X</u>	within a Wetland?	Yes No_X_
Wetland Hydrology Present?	Yes	No X		
Remarks:				

#### HYDROLOGY

Wetland Hydrology Indicators:		5	Secondary Indicators (m	inimum of two required)		
Primary Indicators (minimum of one is rec	quired; check all that apply)		Surface Soil Cracks	(B6)		
Surface Water (A1)	True Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (			
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		x Drainage Patterns (E	310)		
Saturation (A3)	Oxidized Rhizospheres on Living R	oots (C3)	Moss Trim Lines (B1	16)		
Water Marks (B1)	Presence of Reduced Iron (C4)		Dry-Season Water T	able (C2)		
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soil	s (C6)	Crayfish Burrows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C7)		Saturation Visible or	n Aerial Imagery (C9)		
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stunted or Stressed	Plants (D1)		
Iron Deposits (B5)			Geomorphic Positior	n (D2)		
Inundation Visible on Aerial Imagery	(B7)		Shallow Aquitard (D3	3)		
Water-Stained Leaves (B9)			Microtopographic Re	elief (D4)		
Aquatic Fauna (B13)			FAC-Neutral Test (D	05)		
Field Observations:						
Surface Water Present? Yes	No X Depth (inches):					
Water Table Present? Yes	No X Depth (inches):					
Saturation Present? Yes	No X Depth (inches):	Wetland Hy	drology Present?	Yes No X		
(includes capillary fringe)						
Describe Recorded Data (stream gauge,	monitoring well, aerial photos, previous insp	ections), if ava	ilable:			
Remarks:						

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

Sampling Point: DP1

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: <u>3011 A 3011</u> )	% Cover	Species :	Status	Dominance Test worksneet:
1. Acer rubrum	10	Yes		Number of Dominant Species
2. Pinus taeda	20	Vee		
	10	res	FAG	Total Number of Dominant
4				Species Across Air Strata.
5. 				Percent of Dominant Species
o				Browslopes Index workshoet:
/·	40	-Total Cover		Total % Cover of Multiply by:
50% of total cover: 20			R	OPL encise 0   x1 = 0
Sapling/Shrub Stratum (Plot size: 15ft X 15ft )		) 01 10101 00701.		$FACW \text{ species } 0 \qquad x^2 = 0$
1 Acer rubrum	10	Yes	FAC	FAC species $80 \times 3 = 240$
2 Pinus taeda	10	Yes	FAC	FACU species $15 \times 4 = 60$
3 Liquidambar styraciflua	10	Yes	FAC	$\frac{1}{10} x 5 = 50$
A		100		Column Totals: 105 (A) 350 (B)
т. 5				$\frac{1}{2} \frac{1}{2} \frac{1}$
6				Hydronhytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
Ω				Y 2 - Dominance Test is >50%
a				$3$ - Prevalence Index is $< 3.0^{1}$
	30	=Total Cover		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover: 1/	<u> </u>	- fotal cover	6	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5ft X 5ft )	<u> </u>	) 01 10101 0010		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1 Lonicera japonica	10	Yes	FACU	
2 Polystichum acrostichoides	5	Yes	FACU	'Indicators of hydric soil and wetland hydrology must be
3		100	17.00	Definitions of Four Vegetation Strata:
<u> </u>				Tree Woody plants excluding vines 3 in (7.6 cm) or
5				more in diameter at breast height (DBH), regardless of
6				height.
7				Sanling/Shrub - Woody plants, excluding vines, less
8				than 3 in. DBH and greater than or equal to 3.28 ft
9				(1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
11.				of size, and woody plants less than 3.28 ft tall.
	15	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover: 8	20%	6 of total cover:	3	height.
Woody Vine Stratum (Plot size: 30ft X 30ft )				
1. Smilax rotundifolia	10	Yes	FAC	
2. Vitis vinifera	10	Yes	UPL	
3.				
4.				
5.				
	20	=Total Cover		Hydrophytic Vegetation
50% of total cover: 10	0 20%	of total cover:	4	Present? Yes No X
Pomerke: (Include photo numbers here et en e cons				
Remarks. (include photo numbers here of on a sepa	rate sneet.)			

## VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: DP1

Tree Stratum (Plot size: )	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet:
1.		Number of Dominant Species
2.		That Are OBL, FACW, or FAC:(A)
3	· · ·	Total Number of Dominant
4		Species Across All Strata: (B)
5		Percent of Dominant Species
6		That Are OBL, FACW, or FAC: (A/B)
		Prevalence Index worksheet:
Sopling Stratum (Dist size:		
2		FAC species x3 =
2.		
3		1 A00 species         x + -           1 IPI species         x 5 =
5		Column Totals: (A) (B)
6		Prevalence Index = B/A =
· ·	=Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover <sup>.</sup>	20% of total cover:	1 - Rapid Test for Hvdrophvtic Vegetation
Shrub Stratum (Plot size: )		2 - Dominance Test is >50%
<u> </u>		$3 - \text{Prevalence Index is } \le 3.0^1$
2.		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3.		data in Remarks or on a separate sheet)
4.		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6		present, unless disturbed or problematic.
	=Total Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover:	<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)		(7.6 cm) or larger in diameter at breast height (DBH).
2		- Conting Massivelants such diagons du vines
3		approximately 20 ft (6 m) or more in height and less
4.		than 3 in. (7.6 cm) DBH.
5.		- Shrub - Woody Plants, excluding woody vines.
6.		approximately 3 to 20 ft (1 to 6 m) in height.
7.		Herb – All herbaceous (non-woody) plants, including
8.		herbaceous vines, regardless of size, and woody
9		plants, except woody vines, less than approximately
10		
11		<b>Woody Vine</b> – All woody vines, regardless of height.
	=Total Cover	
50% of total cover:	20% of total cover:	-
Woody Vine Stratum (Plot size:)		
1		-
2.		
3.		-
4.		-
5		- Hydrophytic
		Vegetation
50% of total cover:		Present? Yes No
Remarks: (include photo numbers here or on a sep	arate sneet.)	

SOIL

Profile Descr	iption: (Describe f	to the dep	oth needed to docu	ument t	he indica	tor or co	onfirm the abse	nce of ind	icators.)		
Depth	Matrix		Redo	Redox Features							
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		F	Remarks	
0-20	7 5YR 4/4	100					Loamy/Clave	v			
0.20	1.011(4)4	100					Louny/olayo	<u>y</u>			
<sup>1</sup> Type: C=Cor	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.	<sup>2</sup> Loc	ation: PL=	Pore Linin	g, M=Mat	rix.
Hydric Soil In	dicators:	,						Indicators	for Proble	ematic Hy	dric Soils <sup>3</sup> :
Histosol (/	A1)		Polyvalue Be	elow Su	face (S8)	(MLRA	147, 148)	2 cm I	/luck (A10)	(MLRA 1	47)
Histic Epi	pedon (A2)		Thin Dark Surface (S9) (MLRA 147, 148) Coast Prairie Redox (A1				dox (A16)				
Black Hist	tic (A3)		Loamy Mucky Mineral (F1) (MLRA 136) (MLRA 147, 148)								
Hydrogen	Sulfide (A4)		Loamy Gleye	ed Matri	x (F2)			Piedm	ont Floodp	lain Soils	(F19)
Stratified	Layers (A5)		Depleted Ma	trix (F3)	)		-	(ML	RA 136, 14	7)	
2 cm Muc	k (A10) <b>(LRR N)</b>		Redox Dark	Surface	(F6)			Red P	arent Mate	rial (F21)	
Depleted	Below Dark Surface	e (A11)	Depleted Da	rk Surfa	ce (F7)		-	(out	side MLRA	127, 14 <sup>-</sup>	7, 148)
Thick Dar	k Surface (A12)		Redox Depre	essions	(F8)			Very S	Shallow Dai	k Surface	e (F22)
Sandy Mu	icky Mineral (S1)		Iron-Mangan	ese Ma	sses (F12	2) (LRR N	I,	Other	(Explain in	Remarks	)
Sandy Gle	eyed Matrix (S4)		MLRA 136	5)			-				
Sandy Re	dox (S5)		Umbric Surface (F13) (MLRA 122, 136) <sup>3</sup> Indicators of hydrophytic vegetation					tation and			
Stripped N	Matrix (S6)		Piedmont Floodplain Soils (F19) (MLRA 148) wetland hydrology must be prese					e present,			
Dark Surf	ace (S7)		Red Parent I	Material	(F21) <b>(M</b>	LRA 127	, 147, 148)	unless	disturbed	or problei	natic.
Restrictive La	ayer (if observed):										
Type:	,										
Depth (inc	ches):						Hydric Soil F	Present?	Yes	Ν	lo X
Remarks:									-		

U.S. Army Corps of Engineers						
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region						
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)

Project/Site: Hamlets Chapel Road City/County: Pittsboro / Chatham Sampling Date: 10/1					
Applicant/Owner: Moore Family Partnership	State: NC Sampling Point: DP2				
Investigator(s): S&EC - AJ Kamal + Kevin Murphrey Se	ection, Township, Range: <u>Pittsboro</u>				
Landform (hillside, terrace, etc.): Depression Local	relief (concave, convex, none): concave Slope (%): 0-2				
Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.796009	Long: -79.137163 Datum: NAD 83				
Soil Map Unit Name: WeB	NWI classification: N/A				
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 Hydrologysignificantly distur	rbed? Are "Normal Circumstances" present? Yes x No				
Are Vegetation, Soil, or Hydrologynaturally problem	atic? (If needed, explain any answers in Remarks.)				
SUMMARY OF FINDINGS – Attach site map showing sar	npling point locations, transects, important features, etc.				
Hydrophytic Vegetation Present? Yes X No I	s the Sampled Area				

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

## HYDROLOGY

Wetland Hydrology Indicators:		Se	econdary Indicators (minimum of two required)
Primary Indicators (minimum of one is requi	red; check all that apply)		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)		Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	x	Drainage Patterns (B10)
Saturation (A3)	Oxidized Rhizospheres on Living Ro	oots (C3)	Moss Trim Lines (B16)
Water Marks (B1)	Presence of Reduced Iron (C4)		Dry-Season Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils	s (C6) x	Crayfish Burrows (C8)
Drift Deposits (B3)	Thin Muck Surface (C7)		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stunted or Stressed Plants (D1)
Iron Deposits (B5)	_		Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B	7)		Shallow Aquitard (D3)
x Water-Stained Leaves (B9)			Microtopographic Relief (D4)
Aquatic Fauna (B13)		×	FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present? Yes	No X Depth (inches):		
Water Table Present? Yes	No X Depth (inches):		
Saturation Present? Yes	No X Depth (inches):	Wetland Hyd	Irology Present? Yes X No
(includes capillary fringe)			
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, previous insp	ections), if availa	able:
Remarks:			

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

Sampling Point: DP2

	Absolute	Dominant	Indicator	
Tree Stratum (Plot size: 30ft X 30ft )	% Cover	Species?	Status	Dominance Test worksheet:
1. Acer rubrum	20	Yes	FAC	Number of Dominant Species
2. Pinus taeda	20	Yes	FAC	That Are OBL, FACW, or FAC: 9 (A)
3. Liquidambar styraciflua	10	Yes	FAC	Total Number of Dominant
4				Species Across All Strata: 11 (B)
5				Percent of Dominant Species
6				That Are OBL, FACW, or FAC: 81.8% (A/B)
7				Prevalence Index worksheet:
	50	=Total Cover		Total % Cover of: Multiply by:
50% of total cover: 25	20%	o of total cover:	10	OBL species <u>5</u> x 1 = <u>5</u>
Sapling/Shrub Stratum (Plot size: 15ft X 15tt )				FACW species $25$ x 2 = $50$
1. Acer rubrum	10	Yes	FAC	FAC species 90 x $3 = 270$
2. Pinus taeda	10	Yes	FAC	FACU species 10 $x 4 = 40$
3. Liquidambar styraciflua	10	Yes	FAC	UPL species 10 x 5 = 50
4				Column Totals: 140 (A) 415 (B)
5				Prevalence Index = B/A =2.96
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				X 2 - Dominance Test is >50%
9				X 3 - Prevalence Index is $\leq 3.0^1$
	30	=Total Cover		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover:15	<u>;</u> 20%	o of total cover:	6	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5ft X 5ft )				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. Juncus effusus	15	Yes	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
2. Woodwardia areolata	10	Yes	FACW	present, unless disturbed or problematic.
3. Lycopus americanus	5	No	OBL	Definitions of Four Vegetation Strata:
4				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
5		<u> </u>		more in diameter at breast height (DBH), regardless of
6		<u> </u>		height.
7		<u> </u>		Sapling/Shrub – Woody plants, excluding vines, less
8		<u> </u>		than 3 in. DBH and greater than or equal to 3.28 ft
9				(1 m) tall.
10.				Herb – All herbaceous (non-woody) plants, regardless
11				of size, and woody plants less than 3.28 ft tall.
	30	=Total Cover		Woody Vine – All woody vines greater than 3.28 ft in
50% of total cover:15	<u>،</u> 20%	of total cover:	6	height.
Woody Vine Stratum (Plot size: 30ft X 30ft )				
1. Smilax rotundifolia	10	Yes	FAC	
2. Vitis vinifera	10	Yes	UPL	
3. Rubus argutus	10	Yes	FACU	
4.				
5.				Developments at a
	30	=Total Cover		Hydropnytic Vegetation
50% of total cover: 15	5 20%	of total cover:	6	Present? Yes X No
Pomarke: (Include photo numbers here or on a senai	rate sheet )			
	ale sheel.)			

## VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: DP2

Tree Stratum (Plot size:	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet
1.		Number of Dominant Species
2.		That Are OBL, FACW, or FAC:(A)
3		Total Number of Dominant
4		Species Across All Strata:(B)
5.		Percent of Dominant Species
6		- That Are OBL, FACW, or FAC:(A/B)
50% of total cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size:		OBL species x1 =
1		FACW species x2 =
2		FAC species x3 =
3.		FACU species x 4 =
4.		UPL species x 5 =
5.		Column Totals: (A) (B)
6.		Prevalence Index = B/A =
	=Total Cover	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: )		2 - Dominance Test is >50%
1.		3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
3.		data in Remarks or on a separate sheet)
4.		<ul> <li>Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)</li> </ul>
5.		<sup>1</sup> Indicators of hydric soil and wetland hydrology must be
6.		present, unless disturbed or problematic.
	=Total Cover	Definitions of Five Vegetation Strata:
50% of total cover:	20% of total cover:	<b>Tree</b> – Woody plants, excluding woody vines,
Herb Stratum (Plot size:)		approximately 20 ft (6 m) or more in height and 3 in.
1		(7.6 cm) or larger in diameter at breast height (DBH).
2		<b>Sapling</b> – Woody plants, excluding woody vines,
3		approximately 20 ft (6 m) or more in height and less
4		- (7.6 cm) DBH.
5		Shrub - Woody Plants, excluding woody vines,
6		approximately 3 to 20 ft (1 to 6 m) in height.
7		Herb – All herbaceous (non-woody) plants, including
8		herbaceous vines, regardless of size, and woody
9		<ul> <li>plants, except woody vines, less than approximately</li> <li>3 ft (1 m) in height</li> </ul>
10		
11		woody vine – All woody vines, regardless of height.
	=Total Cover	
50% of total cover:	20% of total cover:	-
<u>Woody Vine Stratum</u> (Plot size:)		
1		-
2.		-
3.		-
4.		-
5		– Hydrophytic
	=Total Cover	Vegetation
50% of total cover:	20% of total cover:	Present? Yes No
Remarks: (Include photo numbers here or on a sepa	arate sheet.)	

SOIL

Profile Desc	ription: (Describe	to the de	oth needed to doc	ument ti	he indica	tor or co	onfirm the abs	ence of indicators.)
Depth	Matrix		Redo	x Featur	es			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-20	10YR 4/2	90	10YR 4/6	10	С	М	Loamy/Clay	Prominent redox concentrations
<sup>1</sup> Type: C=Co	ncentration, D=Depl	etion, RM	=Reduced Matrix, N	/IS=Mas	ked Sand	d Grains.	<sup>2</sup> Lc	ocation: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:							Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Be	elow Sur	face (S8)	(MLRA	147, 148)	2 cm Muck (A10) <b>(MLRA 147)</b>
Histic Ep	ipedon (A2)		Thin Dark Su	urface (S	69) <b>(MLR</b>	A 147, 14	48)	Coast Prairie Redox (A16)
Black His	stic (A3)		Loamy Muck	y Miner	al (F1) <b>(N</b>	ILRA 136	6)	(MLRA 147, 148)
Hydrogei	n Sulfide (A4)		Loamy Gley	ed Matri	x (F2)			Piedmont Floodplain Soils (F19)
Stratified	Layers (A5)		X Depleted Ma	trix (F3)				(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark	Surface	(F6)			Red Parent Material (F21)
Depleted	Below Dark Surface	e (A11)	Depleted Da	rk Surfa	ce (F7)			(outside MLRA 127, 147, 148)
Thick Da	rk Surface (A12)	. ,	Redox Depr	essions	(F8)			Very Shallow Dark Surface (F22)
Sandy M	ucky Mineral (S1)		Iron-Mangar	ese Ma	Masses (F12) (LRR N. Other (Explain in Remarks)		Other (Explain in Remarks)	
Sandy G	leved Matrix (S4)			5)	,	<i>,</i> , ,		
Sandy R	edox (S5)		Umbric Surfa	, ace (F13	) (MLRA	122, 136	6)	<sup>3</sup> Indicators of hydrophytic vegetation and
Stripped	Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLR/		(A 148) wetland hydrology must be present					
Dark Sur	face (S7)		Red Parent	Material	(F21) <b>(M</b>	LRA 127	, 147, 148)	unless disturbed or problematic.
Restrictive L	ayer (if observed):							
Туре:								
Depth (in	ches):						Hydric Soil	Present? Yes X No
Remarks:								

## NC DWQ Stream Identification Form Version 4.11 G - SF 10

Date: $3/21/24$	Project/Site: Hanlets chapel Rd. County: Chatham		Latitude: 35, 79499/ Longitude:-79, /40326	
Evaluator: StEC - AJ Kamal				
Total Points: $22$ Stream is at least intermittent $22$ if $\geq 19$ or perennial if $\geq 30^*$	Stream Determin Ephemeral Inter	nation (circle one) mittent Perennial	Other e.g. Quad Name:	
A. Geomorphology (Subtotal = 9.5 )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	Ø	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		1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	0	2	3
8. Headcuts	Q	1	2	3
9. Grade control	O I	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	Na	(=0)	Yes = 3	
B. Hydrology (Subiotal – 1.9)				
12. Presence of Baseflow	0	1	(2)	3
12. Presence of Baseflow 13. Iron oxidizing bacteria	0	1	2	3
12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter	0 0 1.5	1 1 ①	2 2 0.5	3 3 0
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> </ul>	0 (0) 1.5 0	1 1 (1) (0.5)	2 2 0.5 1	3 3 0 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> </ul>	0 (0) 1.5 0 0	1 1 (1) (0.5) 0.5	$     \begin{array}{c}             2 \\             2 \\         $	3 3 0 1.5 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> </ul>	0 (0) 1.5 0 0 0 No	1 (1) (0.5) 0.5 = 0	(2) 2 0.5 1 (1) Yes	3 0 1.5 1.5 €3
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =</li></ul>	0 0 1.5 0 0 No	$ \begin{array}{c} 1 \\ 1 \\ (0.5) \\ 0.5 \\ = 0 \\ \end{array} $	(2) 2 0.5 1 (1) Yes	3 0 1.5 1.5 3
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = <u>5</u>)</li> <li>18. Fibrous roots in streambed</li> </ul>	0 (0) 1.5 0 0 No 3	$ \begin{array}{c c} 1 \\ 1 \\ (0.5) \\ 0.5 $	(2) 2 0.5 1 (1) Yes	3 0 1.5 1.5 €3
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = <u>5</u>)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> </ul>	0 (0) 1.5 0 0 0 No 3 (3)	$ \begin{array}{c c} 1 \\ 1 \\ \hline 0.5 \\ 0.5 \\ \hline 0.5 \\ \hline 0.5 \\ \hline 2 \\ \hline 2 \\ \hline \end{array} $	(2) 2 0.5 1 (1) Yes 1 1	3 0 1.5 1.5 € 3 0 0
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = <u>5</u>)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> </ul>	0 (0) 1.5 0 0 No 3 (3) (0)	$ \begin{array}{c} 1 \\ 1 \\ (1) \\ (0.5) \\ 0.5 \\ = 0 \\ \hline 2 \\ 1 \\ \end{array} $	(2) 2 0.5 1 (1) Yes 1 1 1 2	3 0 1.5 1.5 €3 0 0 3
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = 5)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> </ul>	0 0 1.5 0 0 No 0 No 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c c} 1 \\ 1 \\ (0.5) \\ 0.5 \\ \hline 0.5 \\ \hline 2 \\ 1 \\ 1 \\ \hline 1 \end{array} $	(2) 2 0.5 1 (1) Yes 1 1 1 2 2 2	3 0 1.5 1.5 3 0 0 0 3 3 3
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> </ul>	0 0 1.5 0 0 No 0 No 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} 1 \\ 1 \\ (1) \\ (0.5) \\ 0.5 \\ 0.5 \\ 0.5 \\ \hline 2 \\ 1 \\ 1 \\ 0.5 \\ \hline \end{array} $	(2) 2 0.5 1 (1) Yes 1 1 2 2 2 1	3 0 1.5 1.5 €3 0 0 0 3 3 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = <u>5</u>)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> </ul>	0 0 1.5 0 0 No No No 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c c} 1 \\ 1 \\ (0.5) \\ 0.5 \\ 0.5 \\ \hline 0.5 \\ \hline 2 \\ 1 \\ 1 \\ 0.5 \\ 0.5 \\ \hline 0.5 \\ \hline \end{array} $	(2) 2 0.5 1 (1) Yes 1 1 2 2 2 1 1 1 1 2 2 1 1 1 2 2 1 1 1 2 2 1 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	3 3 0 1.5 1.5 € 3 0 0 0 3 3 1.5 1.5 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> </ul>	0 0 1.5 0 0 No No No 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} 1 \\ 1 \\ (0.5) \\ 0.5 \\ = 0 \\ \hline \hline 2 \\ 1 \\ 1 \\ 0.5 \\ 0.5 \\ \hline 0.5 \\ 0.5 \\ \hline \end{array} $	(2) 2 0.5 1 (1) Yes 1 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	3 0 1.5 1.5 3 0 0 0 3 1.5 1.5 1.5 1.5 1.5 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal =)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> </ul>	0 0 1.5 0 0 No No No 0 0 0 0 0 0 0 0 0 0 0 0 0	$ \begin{array}{c} 1 \\ 1 \\ (1) \\ (0.5) \\ 0.5 \\ = 0 \\ \hline 2 \\ 1 \\ 1 \\ 0.5 \\ 0.5 \\ 0.5 \\ 0.5 \\ 0.5 \\ \hline 0.5 \\ 0.5 \\ \hline $	(2) 2 0.5 1 (1) Yes 1 1 2 2 1 1 1 1 1 1 1 1 1 1	3 0 1.5 1.5 3 0 0 0 0 3 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = 5)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> </ul>	0 0 1.5 0 0 No No 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 (0.5) 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	(2) 2 0.5 1 (1) Yes 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	$ \begin{array}{r} 3\\ 0\\ 1.5\\ 1.5\\ 3\\ 0\\ 0\\ 0\\ 0\\ 3\\ 1.5\\ 1.5\\ 1.5\\ 1.5\\ 5\\ \end{array} $
<ul> <li>12. Presence of Baseflow</li> <li>13. Iron oxidizing bacteria</li> <li>14. Leaf litter</li> <li>15. Sediment on plants or debris</li> <li>16. Organic debris lines or piles</li> <li>17. Soil-based evidence of high water table?</li> <li>C. Biology (Subtotal = 5)</li> <li>18. Fibrous roots in streambed</li> <li>19. Rooted upland plants in streambed</li> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> <li>*perennial streams may also be identified using other meth</li> </ul>	0 0 1.5 0 0 No 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 (0.5) 0.5 0.5 0.5 1 = 0 (2) 2 1 1 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	(2) 2 0.5 1 (1) Yes 1 1 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1	$ \begin{array}{r} 3\\ 0\\ 1.5\\ 1.5\\ 3\\ \hline 0\\ 0\\ 0\\ 3\\ 3\\ 1.5\\ 1.5\\ 1.5\\ 1.5\\ \hline 0\\ \hline \end{array} $

# NC DWQ Stream Identification Form Version 4.11 E2-SF11

Date: 3/21/24	Project/Site: Hamlets Chapel Rd.	Latitude: 35.795045	
Evaluator: StEC - AJ Kanel	County: Chatham	Longitude: -79.136616	
Total Points:Stream is at least intermittentif $\geq$ 19 or perennial if $\geq$ 30*23.5	Stream Determination (circle one) Ephemeral Intermitten Perennial	Other e.g. Quad Name:	
A Geomorphology (Subtotal = 10)	Absent Weak	Moderate Strong	

A. Ocomorphology (Oublotal - 10 /	resource	Tround	mederate	e ar e r . g
1 <sup>a.</sup> 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	0	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	0	1.5
10. Natural valley	0	0.5	0	1.5
11. Second or greater order channel	No	=(0)	Yes	= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal = <u>7</u> )				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	( <b>0</b> )	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 = 6.5 )		Nimo		
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	0	2	3
21. Aquatic Mollusks	Ó	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	Õ	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 =	の
*perennial streams may also be identified using other metho	ds. See p. 35 of manua	ıl.		
Notes:				

Sketch:

	Project/Site:	anlets rapel Read	Latitude: 35,3	791250
Evaluator: SFEC -AJ Kanal	County: Ch	athan	Longitude: -79, 134754	
Total Points: Stream is at least intermittent $18.75$ if $\geq 19$ or perennial if $\geq 30^*$	Stream Determination (circle one) Other Ephemeral Intermittent Perennial e.g. Quad I		Other e.g. Quad Name:	
A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . 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	Õ	1	2	3
4. Particle size of stream substrate	0		2	3
5. Active/relict floodplain	0	0	2	3
6. Depositional bars or benches	$\bigcirc$	1	2	3
7. Recent alluvial deposits	0	$\bigcirc$	2	3
8. Headcuts	0	$\overline{0}$	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	0 = 0)	Yes = 3	
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0		2	3
14, Lear mer	1.0		0.5	1.5
15. Sediment of plants of debris	0	0.5	1	1.5
17. Soil-based evidence of high water table?		0.5	Ves	1.5
C Dialogue (Subtatal a 2.25		0-0	105	0
19. Eibreug mete in streambed	2	2	0	0
19. Rooted upland plants in streambed	3	0		0
19. Rooted upland plants in streambed	- M		2	3
20 Macrobenthos (note diversity and abundance)	0	1	2	3
20. Macrobenthos (note diversity and abundance)			2	1.5
20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks	(D)	0.5	1	
20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Cravfish	0	0.5	1	1.5
<ul> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24 Amphibians</li> </ul>	0	0.5	1 1 1	1.5
<ul> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> </ul>	0 0 0	0.5 0.5 0.5	1 1 1 1	1.5 1.5 1.5
<ul> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> </ul>	0 0 0 0	0.5 0.5 0.5 0.5 FACW = 0.75 OB	1 1 1 1 1 = 1.5 Other = (	1.5 1.5 1.5 1.5
<ul> <li>20. Macrobenthos (note diversity and abundance)</li> <li>21. Aquatic Mollusks</li> <li>22. Fish</li> <li>23. Crayfish</li> <li>24. Amphibians</li> <li>25. Algae</li> <li>26. Wetland plants in streambed</li> <li>*perennial streams may also be identified using other method</li> </ul>	0 0 3s. See p. 35 of manu	0.5 0.5 0.5 FACW = 0.75 OB	1 1 1 1 L = 1.5 Other = (	1.5 1.5 1.5 1.5



County of Chatham, NC

WP-24-17 On-site Riparian Buffer Review Status: Active Submitted On: 1/11/2024

Primary Location 0 VACANT , North Carolina 00000 Owner MOORE FAMILY PARTNERSHIP C/O MARILYN M KOENIG 293 FEARRINGTON POST PITTSBORO , NC 27312-5507 Applicant

- 💄 AJ Kamal
- 1 +1 828-320-1959
- @ ajkamal@sandec.com
- 8412 Falls of Neuse Road
   Ste. 104
   Raleigh, NC 27615

Project Information

## **Review Type\***

Major Subdivision

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 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.

Has this review been completed by an environmental consultant prior to submittal to the county?\*

Number of Features Found\*

15

Yes

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* 10/12/2023	Has USACE on-site review been scheduled or completed —
Parcel Information	
Parcel Number (s)* 2035, 1806, 95989	Watershed District Cape Fear
Is the property within the Jordan Lake Watershed* Yes	Property Owner Name* Moore Family Partnership
Location of Tract (address if applicable)*	
0 Hamlet's Chapel Road, Pittsboro, NC (35.792336, -79.137744)	
Driving Directions from Pittsboro*	
Head North on us 15-501. Turn le couple miles down the road on th	ft onto Hamlets Chapel Road. The site is a e left.
Subdivision Name (if applicable)	

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

N/A

## **Applicants Information**

Are you the Landowner or an Agent*	Full Name*
Agent	AJ Kamal (S&EC)
Primary Phone Number*	Primary Email*
828.320.1959	ajkamal@sandec.com
Mailing Address*	City/State*
8412 Falls of Neuse Rd. STE 104	Raleigh, NC
Zip Code* 27615	

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 emailed to me.

 $\checkmark$ 

## 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\*New Field\*AJ Kamal01/10/2024

## Attachments

B	<b>Signed Right to Enter Property Form</b> right to enter.pdf Uploaded by AJ Kamal on Jan 10, 2024 at 2:16 PM	REQUIRED
B	<b>Signed Owner's Agent Designation Form</b> Auth Agent.pdf Uploaded by AJ Kamal on Jan 10, 2024 at 2:17 PM	
B	<b>Consultant Findings Report</b> ORM_Upload_Sheet_Consolidated_Amended_2023Rule_20230921.pdf Uploaded by AJ Kamal on Jan 10, 2024 at 2:37 PM	REQUIRED
B	<b>Consultants Findings Map</b> Wetland Sketch Map (Chatham Co).pdf Uploaded by AJ Kamal on Jan 10, 2024 at 2:23 PM	REQUIRED



NCDWQ Stream Identification Forms & Wetland Data Forms	REQUIRED
Stream Forms.pdf	
Uploaded by AJ Kamal on Jan 10, 2024 at 2:23 PM	

## NRCS Map

SS Labeled.pdf Uploaded by AJ Kamal on Jan 10, 2024 at 2:18 PM

REQUIRED

REQUIRED



## USGS Topographic Map USGS.pdf

Uploaded by AJ Kamal on Jan 10, 2024 at 2:18 PM



## **Project Inventory Table** Project Impact Inventory Table Chatham Online Submittal.pdf Uploaded by AJ Kamal on Jan 11, 2024 at 10:14 AM

REQUIRED



## Buffer Feature Spreadsheet

Copy of Buffer Feature Spreadsheet.pdf Uploaded by AJ Kamal on Jan 16, 2024 at 10:04 AM



## County Buffer Review Receipt.pdf County Buffer Review Receipt.pdf

Uploaded by AJ Kamal on Feb 2, 2024 at 10:45 AM



## **Stream Forms Site Visit.pdf** Stream Forms Site Visit.pdf Uploaded by AJ Kamal on Mar 28, 2024 at 12:58 PM



Wetland Sketch Map Post Chatham Co. Drew Blake 3.21.2024.pdf Wetland Sketch Map Post Chatham Co. Drew Blake 3.21.2024.pdf Uploaded by AJ Kamal on Mar 28, 2024 at 12:59 PM

## History

## Timeline

Label	Activated	Completed	Assignee	Due Date	Status
✓ Watershed Intake Approval	1/11/2024, 10:14:56 AM	1/11/2024, 3:45:13 PM	Hollie Squires	-	Completed
Subdivision Riparian Buffer Review Fee	1/11/2024, 3:45:14 PM	2/1/2024, 7:57:01 AM	AJ Kamal	-	Completed
✓ Field Review	2/1/2024, 7:57:01 AM	-	Drew Blake	2/14/2024	Active
Major Subdivision Riparian Buffer Confirmation Report	-	-	-	-	Inactive

DocuSign Envelope ID: 0085662E-55DB-4EBA-A408-32FD648575C4





## CHATHAM COUNTY

## AUTHORIZED AGENT FOR FORM

#### PROPERTY LEGAL DESCRIPTION:

LOT NO. \_\_\_\_\_\_PARCEL ID (PIN) 2035, 1806, 95989 PARCEL SIZE 118

STREET ADDRESS: 0 Hamlet's Chapel Road

Please print: Property Owner: Moore Family Partnership

Property Owner:

(Contractor / Agent)

The undersigned owner(s) of the above described property, do hereby authorize

Steven Ball

, of Soil and Environmental Consultants (Name of consulting firm if applicable)

to act on my/our behalf and take all actions, I/we could have taken if present, necessary for the processing, issuance and acceptance of reviews, inspections, or permits and any and all standard and special conditions attached to these approvals. The activities authorized include the following (Check all that apply):

Check here for all of the below options.

2	Building Permit
~	Zoning Compliance Permits
V	Floodplain Determination
~	Soil Erosion & Sedimentation Control Permit
	Permits to install, repair, evaluate, or expand onsite wastewater system(s)
	Evaluation/inspection/permitting of a private drinking water well(s).
V	Riparian Buffer Review pursuant to §304 of the Chatham Co. Watershed Protection Ordinance.
	Other:

Property Owner's Address (if different than property above):

293 Fearrington Post, Pittsboro, NC 27312

Telephone: 919-542-3344

E-mail: tkoenig@mindspring.com

We hereby certify the above information submitted in this application is true and accurate to the best of our knowledged by:

Date:

Marilyn M. Lourig Owner Rtfff8rized Signature 11/29/2023 Date:

Agent Authorized Signature

Revised 10/2017

DocuSign Envelope ID: 0085662E-55DB-4EBA-A408-32FD648575C4



Watershed Protection Department

P.O. Box 548 Pittsboro, NC 27312

Website: www.chathamnc.org

## Authorization to Enter Property Form

## Date: 11/29/23

PARCEL No. (AKPAR) 2035, 1806, 95989

I, (print name) Moore Family Parnership by Marilyn M. Koenig

, as owner of the property described above,

or as a representative of the owner(s) do hereby convey permission to Chatham County staff to enter the property at their convenience to conduct a surface water identification (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 public record and on file at the Planning and Watershed Protection Departments, and may be requested in the future for review by interested parties.

I understand that stream delineations for the property listed above will be made by County staff only once and that if future subdivisions are proposed within this property boundary, it will require a surface water identification by a private consultant at the property owner's expense.

Moore Family Partnership by Marilyn M. Koenig (Print Owner's Name)

DocuSigned by: Source (Signat Free 230 (Date)

(Print Authorized Agent Name)

(Signature of Authorized Agent) (Date)