CHATHAM COUNTY
NORTH CAROLINA

WATERSHED PROTECTION DEPARTMENT

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

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

March 13, 2019

Mr. David Johnson
544 Fern Creek Trail
Pittsboro, NC 27312

Project Name:	Fern Creek Subdivision Parcel # 80855
Location:	Fern Creek Trail, Chatham County
Subject Features:	One (1) intermittent segment and two (2) perennial segments
Date of Determination:	March 11, 2019

Explanation:
The site visit was completed on March 11, 2019 by Drew Blake with the Chatham County Watershed Protection Department and Julie Davidson Agri-Waste Technology, Inc. (AWT), on a property identified as Chatham County Parcel# 80855 that is located within the Jordan Lake watershed. AWT personnel completed a previous site visit which resulted in the identification of two (2) ephemeral stream segments (stream forms 1 & 2), one (1) intermittent stream (stream form 3), and two (2) perennial streams (stream form 4) on the property. You submitted a request for Chatham County to complete a formal review to determine if the features would be subject to riparian buffers according to Section 304 of the Chatham County Watershed Protection Ordinance. All points of origin, stream type transitions, and wetland boundaries were reviewed in the field. The following changes were agreed to by all parties: (1) the two (2) ephemeral streams were removed. The stream scored on form 1 (ephemeral #1) was a relict erosional gully that was heavily covered with pine straw and indicated no recent flow patterns. The stream associated with stream form 2 (ephemeral #2) was removed as it lacked a defined channel; therefore the feature didn't meet the minimum criteria for an ephemeral stream. This feature appeared to be a seep that generated overland flow and didn't meet the requirements of a feature subject to riparian buffers as defined in Section 109 and Section 304 subsections (A), (B), (D) and (E) of the Chatham County Watershed Protection Ordinance. These revisions are accurately reflected on Figure 1, completed by AWT.

Required Riparian Buffers:
Intermittent streams will require a 50-ft buffer from the top of bank landward on both sides of the features. Perennial streams require a 100-ft buffer from the top of bank landward on both sides of the features. 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

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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
Watershed Specialist

Enclosures: Figure 1: Post-Confirmation Map – completed by AWT
Figure 2: Pre-Confirmation Map – completed by AWT
AWT Stream ID Forms
Major Subdivision Riparian Buffer Application Packet

cc: Rachael Thorn, Chatham County Watershed Protection Director
Kimberly Tyson, Chatham County Planner II/Subdivision
Jason Sullivan, Chatham County Director of Planning

Agri-Waste Technology, Inc.
501 N. Salem St. Suite 203
Apex NC 27502
P: 919.859.0669
www.agriwaste.com

AWT Stream Evaluation

Samir Bahho
Fern Creek
Chatham Co., NC

PIN: 9762-86-8859

Important Notes

This maps shows the streams found on this property. They will be subject to buffers according to their classification setforth by NCDEQ and the Chatham County Watershed Protection Ordinance.

These streams were confirmed by Drew Blake of Chatham Co. on 3/11/2019.

Stream Evaluation was completed by AWT on 1/9/2019. AWT is certified by NC DWQ to identify streams for regulatory application. Furthermore, NC DWQ methodology for identifying streams and their origins was used for this evaluation.

Stream classification datasheets were completed and attached to this map.

Drawn By: Julie Davidson
Reviewed By: Jeff Vaughan
Date: 3/12/19

Perennial stream. 100-ft buffer required on both sides.

Chatham County Figure 1
Added by Drew Blake 3/12/19

Perennial Stream. 100-ft buffer required on both sides.

Intermittent stream. 50-ft buffer required on both sides.

Fern Creek Trl

Running Deer Trl

Legend
- Parcel
- USGS Perennial Stream

AWT Stream Evaluation
- Intermittent
- Perennial
- Stream Origin

0 50 100 200 300 400 Feet

*** This map was created for proposed planning purposes only. It is not intended to be used as a plat or survey map of any type.***

Engineers and Soil Scientists

Agri-Waste Technology, Inc.
501 N. Salem St. Suite 203
Apex NC 27502
P: 919.859.0669
www.agriwaste.com

AWT Stream Evaluation

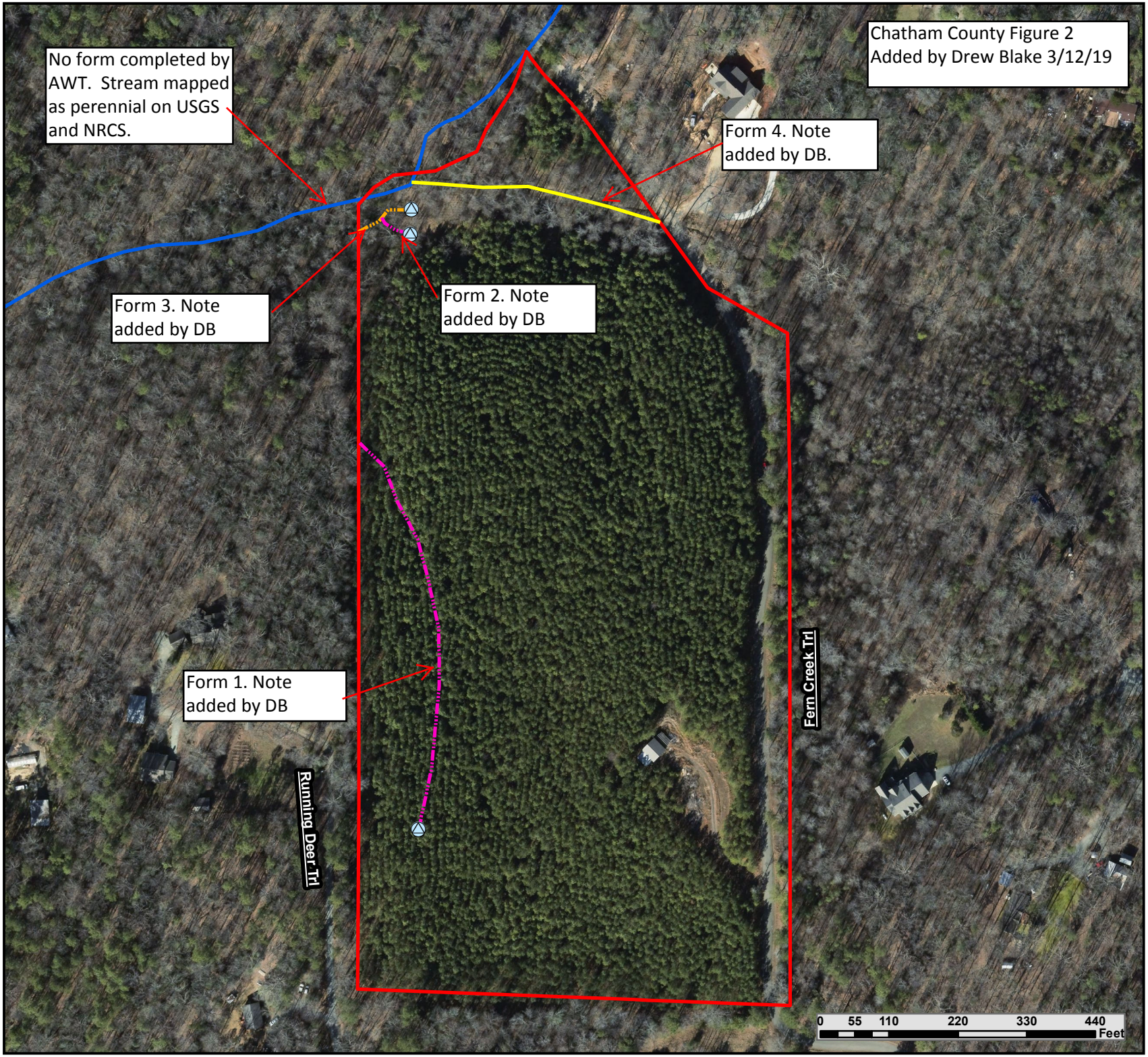
Samir Bahho Fern Creek
Chatham Co., NC

PIN: 9762-86-8859

N

Important Notes

Stream Evaluation was completed by AWT on 1/9/2019. AWT is certified by NC DWQ to identify streams for regulatory application. Furthermore, NC DWQ methodology for identifying streams and their origins was used for this evaluation.



Legend
- Stream Origin
- USGS Perennial Stream
- Parcel

AWT Stream Evaluation
- Ephemeral
- Intermittent
- Perennial

Drawn By: Trevor Hackney
Reviewed By: Jeff Vaughan
Date:1/11/19

**** This map was created for proposed planning purposes only. It is not intended to be used as a plat or survey map of any type.****

This stream removed per Drew Blake-Chatham Co. 3/12/19. See AWT corresponding GIS map.

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 12-9-19	**Project/Site:** Fern Creek	**Latitude:**
Evaluator: JPD & JV	**County:** Chatham	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13.5	**Stream Determination (circle one)** (Ephemeral) Intermittent Perennial	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 6)	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
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 = ~~1.5~~ 0)				
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 methods. See p. 35 of manual.

Notes:

Sketch:

See pic

Season of huge rain events - No water in bed.

- flagged w/ Red/white tape
- GPS points.

- Ent area = entire draw
- not a blue line
- ephemeral #1

Drew Blake said to Remove

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 1/9/19	**Project/Site:** Fern Creek	**Latitude:**
Evaluator: JPD & JV	**County:** Chatham	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** ~~14.5~~ 13.5	**Stream Determination (circle one)** ~~Ephemeral~~ Intermittent Perennial	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 6)	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
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 = 7.5)				
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 = ~~13~~)				
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 methods. See p. 35 of manual.

Notes:

Sketch: Flagged Red / Wht

GPS

Pic #4 facing off #1 = E#2 (flagged E #2)

Drew Blake said to keep as Intermittent
by 3-11-19 field verification

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 1/9/19	**Project/Site:** Fern Creek	**Latitude:**
Evaluator: JPD & JV	**County:** Chatham	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 19	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 10)	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
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 = 4.5)				
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 = 4.5)				
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)	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 methods. See p. 35 of manual.

Notes:

Sketch: Pic 2 & 3

GPS - red/white flagging

Small trib to trib to perennial

Drew agreed to this perennial stream.

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 1/9/19	**Project/Site:** Fern Creek	**Latitude:**
Evaluator: JBD + JV	**County:** Chatham	**Longitude:**
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 32.5	**Stream Determination (circle one)** Ephemeral Intermittent (Perennial)	**Other** *e.g. Quad Name:*

A. Geomorphology (Subtotal = 21)	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
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 = 4.5)				
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 = 7)				
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 methods. See p. 35 of manual.

Notes:

Sketch: PI on flagging
PL # 5
GPS ✓
Connects to USGS

CHATHAM COUNTY
NORTH CAROLINA

Watershed Protection Department
Website: www.chathamnc.org

Date Received: 3/4/19 PL# 2019-0419

Riparian Buffer Review Application
Surface Water Identification Request for
Major Subdivisions

Tract Information

Parcel #: 80855 Watershed District (and name of creek if known): TEMPLE

Property Owner: DAVID JOHNSON

Location/Physical Address of Tract: FERN CREEK TRAIL

Driving Directions from Pittsboro: GO 64-E OVER RIVER LEFT ON MT GILEAD GO 1± MILE TURN LEFT ON SUGAR LAKE GO 1± MILE TURN RIGHT ONTO FERN CREEK TRAIL PROPERTY ON LEFT WITH PINE TREES

Subdivision Name (if applicable): FERN CREEK

Owner's/Agent Contact Information (Agent: Consultant, Real Estate Agent, Surveyor, Other) Circle one

Name: DAVID JOHNSON

Contact Phone Numbers: (h) _____ (w) _____ (c) 919-619-1957

E-mail: DCJSMI @ EMBARQMAIL.COM

Mailing Address: 544 FERN CREEK TRAIL PITTSBORO, NC 27312

Do you wish to be contacted prior to Chatham County staff visiting the property? ☐ Yes ☒ No

How much notice is required prior to arrival onsite? -0-

How would you like to receive the completed review letter? (Please check one of the following)

☐ 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

Please include the following items with this request

☐ Completed consultant findings report including the following:
- ☐ GIS generated or hand drawn sketch of surface water features found onsite (Buffer Plan Sheet) No smaller than 1"=60' and paper size 11"x17" or larger
- ☐ NCDWQ Stream Identification Forms, Version 4.11, Wetland Determination Data Form –

CHATHAM COUNTY
NORTH CAROLINA

Watershed Protection Department
Website: www.chathamnc.org

Riparian Buffer Review Application
Surface Water Identification Request

Eastern Mountains and Piedmont Region, digital photographs, notes, sketches, etc.

☐ NRCS map with property boundary depicted

☐ USGS map with property boundary depicted

☐ Statement of Credentials (Training Certificate for NCDWQ/NC State University Surface Waters Classification course, 2 years of jurisdictional wetland delineation according to the Eastern Mountains and Piedmont Regional Supplement to the 1987 US Corps of Engineers Wetland Delineation Manual)

☑ Signed Right to Enter Property Form

☐ Signed Owner's Agent Designation Form

☐ Fee (make checks payable to Chatham County) **$100 per feature confirmed onsite**

***Feature** is defined as any surface water that is subject to Chatham County Riparian Buffers (streams, wetlands, ponds)*

Total Number of Features: _____ Total Paid: $_____

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 herein.

Owner/Agent Signature: D Johnson Date: 2/25/19

CHATHAM COUNTY
NORTH CAROLINA

Watershed Protection Department

P.O. Box 548
Pittsboro, NC 27312

Website: www.chathamnc.org

Authorization to Enter Property Form

Date: 2/25/19

PARCEL No. (AKPAR) 80855

I, (print name) DAVID JOHNSON, 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.

DAVID JOHNSON
(Print Owner's Name)

D J 2/25/19
(Signature of Owner)
(Date)

(Print Authorized Agent Name)

(Signature of Authorized Agent)
(Date)