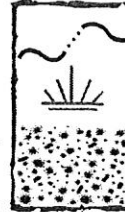




Wetland and Natural Resource
Consultants, Inc.



August 8, 2014

Mr. Lee Bowman
Newland Communities
16 Windy Knoll Circle
Chapel Hill, NC 27516

Re: Brair Chapel Phase 9
Ephemeral Drainage

Lee:

The purpose of this letter is to render my professional opinion that the removal of a portion of the area previously classified as an ephemeral channel from Briar Chapel Phase 9 (known as Ephemeral Channel C") will have no negative effects on water quality.

The area of interest is located in a small drainage area located off of Boulder Pointe Blvd. in Phase 9 as shown on the attached figure. The drainage area is approximately 6 acres and it is forested.

On August 6, 2014 Ms. Natalie Landry and I conducted a field review of the subject area in accordance with the protocol established in the NCDWQ Identification Methods for the Origins of Intermittent and Perennial Streams (Version 4.11). Our review confirmed my prior assessment made in November 2013 (see attached forms), that the reach scored between 1.5 and 6.5 points (the minimum threshold score for an ephemeral stream under the applicable ordinance is 10 points).

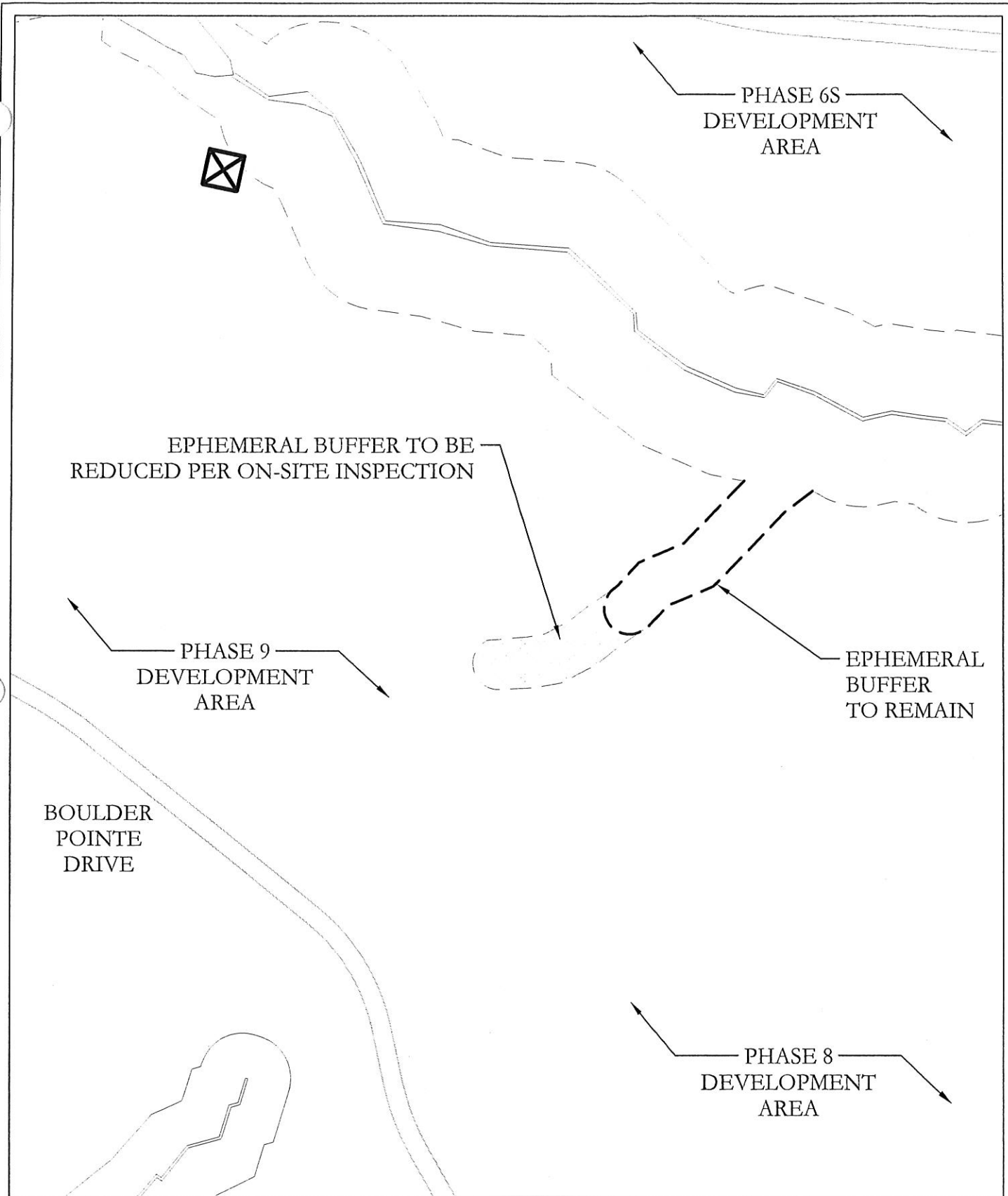
Irrespective of the scoring, we reached consensus and I have concluded that, removing this portion of the feature (as depicted in the attached figure) will have no adverse impact on water quality because the storm flow that would otherwise be conveyed through the valley will be treated in approved stormwater BMP's. The only storm flow that the area will receive is from the back of the lots and from the roof gutters and this flow will pass through approximately 30' of lawn area and another approximately 25' wooded area before it even reaches the 30' buffer.


Please contact me with any questions that you might have.

Best regards,

Chris Huysman

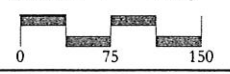
336 / 406-0906

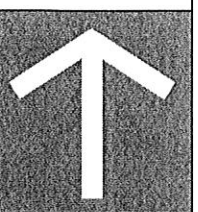


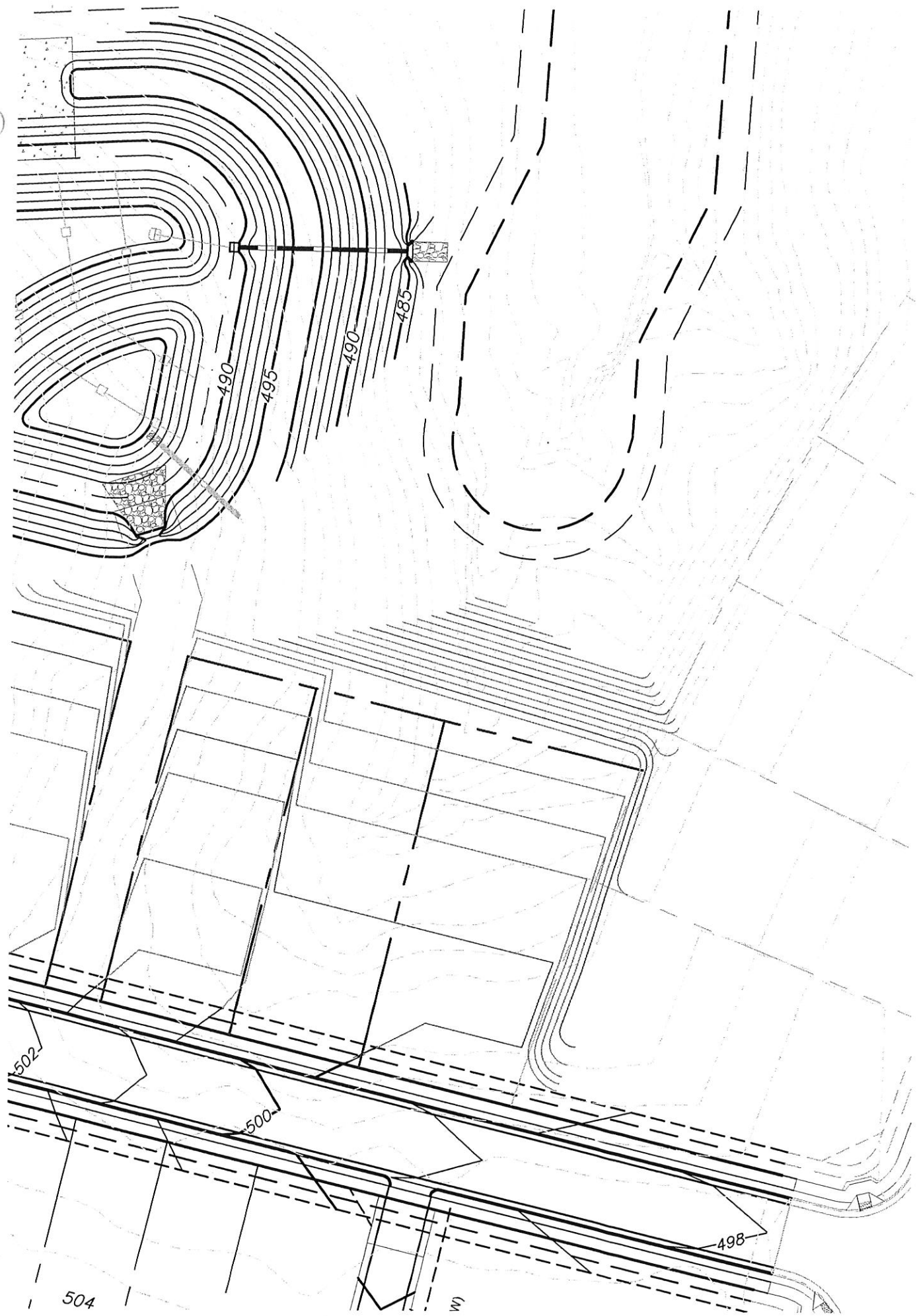

MKIM & CREED
 1730 Varsity Drive, Suite 500
 Raleigh, North Carolina 27606
 O: 919.233.8091 F: 919.233.8031

Ephemeral C Exhibit

Briar Chapel

Scale: 1"=150'

 Date:
 August 18, 2014





NC DWQ Stream Identification Form Version 4.11

Date: <u>NOV 15, 2013</u>	Project/Site:	Latitude:
Evaluator: <u>HUYSMAN</u>	County:	Longitude:
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = 4.5)

	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
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)

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	

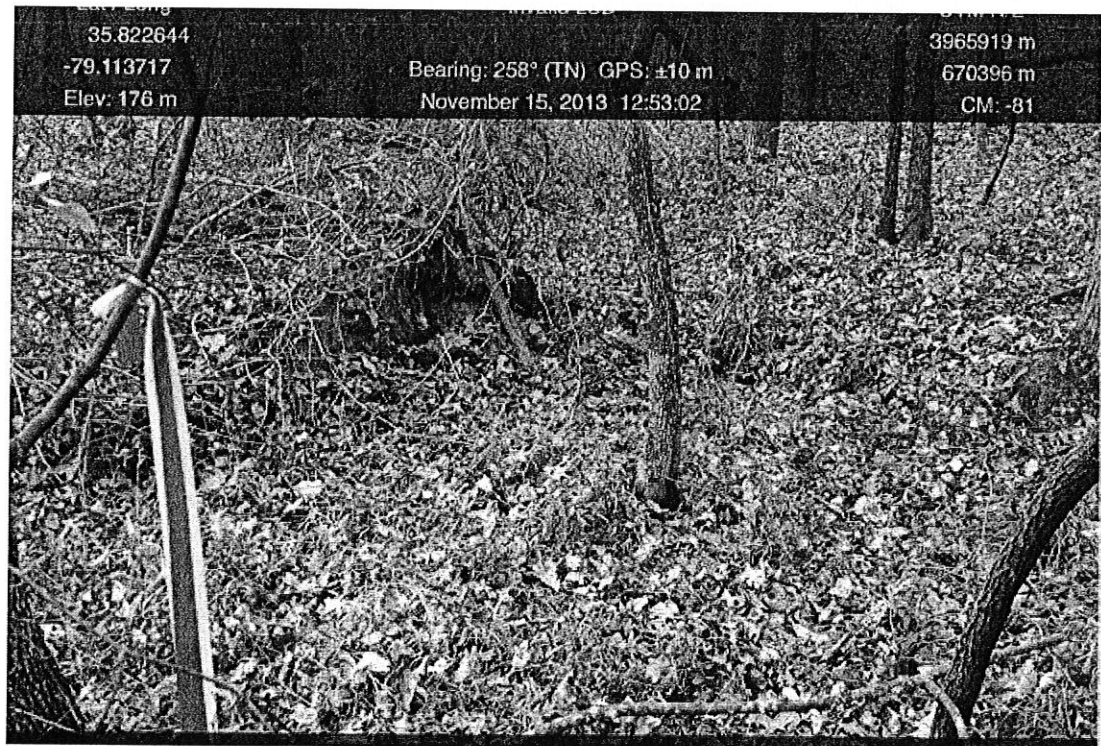
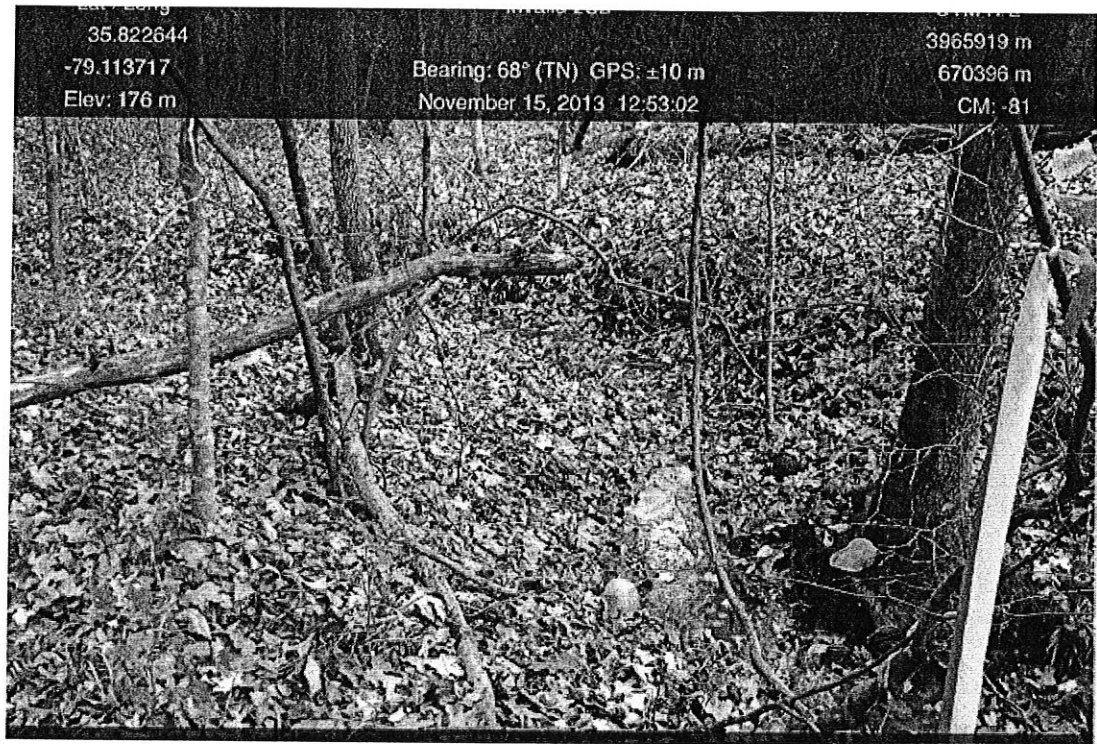
C. Biology (Subtotal =)

18. Fibrous roots in streambed	3	2	1	(0)
19. Rooted upland plants in streambed	3	2	1	(0)
20. Macroinvertebrates (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	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: UPSTREAM OF BLUE & YELLOW

Sketch:



NC DWQ Stream Identification Form Version 4.11

Date: NOV. 15, 2013	Project/Site:	Latitude: 35.822507
Evaluator: HUYSMAN	County:	Longitude: -79.113896
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i>	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = 1.5)

	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
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 = 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 = 0)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	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:

