CONCEPT PLAN APPLICATION

Parcel Identifier Number (PIN): 9777 90 4196 / 9777 80 9681 / 9777 80 9133 / 9776 99 1927 Date: 22 May 2018

Section A: Project Information

Project Name: Obey Meadows

Property Address: 1609 US 15 501 S Zip Code: 27517

Use Groups (A, B, and/or C): A Existing Zoning District: R-LD1

Project Description: Subdivision of 4 existing lots into 11 residential lots / 12 homes with an access road.

Section B: Applicant, Owner and/or Contract Purchaser Information

Applicant Information (to whom correspondence will be mailed)

Name: Coulter Jewell Thames PA, Attn Wendi Ramsden

Address: 111 West Main Street

City: Durham State: NC Zip Code: 27701

Phone: 919-682-0368 Email: wramsden@cjtpa.com

The undersigned applicant hereby certifies that, to the best of his knowledge and belief, all information supplied with this application is true and accurate.

Signature: Wendi Ramsden Date: 5-22-2018

Owner/Contract Purchaser Information:

X **Owner** ☐ **Contract Purchaser**

Name: Peter S Slomianyj LLC

Address: 727 Eastowne Drive, Suite 300-D

City: Chapel Hill State: NC Zip Code: 27514

Phone: 919-949-1014 Email: B1bomber@aol.com

The undersigned applicant hereby certifies that, to the best of his knowledge and belief, all information supplied with this application is true and accurate.

Signature: See Next Page Date:

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Signature: [signature] Date: 5/21/18

Concept Plan Overview

Site Description	
Project Name	**Obey Meadows**
Address	**1609 US 15 501 S**
Property Description	**Almost 35 acres of forested hilly land with two streams.**
Existing Land Use	Mostly vacant, forested. There is one home and gravel drive in the western corner.
Proposed Land Use	11 Lots with 12 single family homes. 1 lot anticipated to have 2 small homes
Orange County Parcel Identifier Numbers	**9777 90 4196 / 9777 80 9681 /9777 80 9133 / 9776 99 1927**
Existing Zoning	R-LD1
Proposed Zoning	No change requested
Application Process	Concept plan
Comprehensive Plan Elements	
Overlay Districts	none

Regulatory Land Use Intensity

Design/LUMO Standards		Requirement	Proposal	Status
Sec. 3.7	Use/Density	Max 1 unit / ac	11 units / 34 acres	✓
Sec 3.8	Net Land Area	43,560 sf	Average 121,653 sf	
Sec 3.8	Gross Land Area		1,459,839 sf / 33.514 ac	
Sec. 3.8	Dimensional Standards	Street 30' Interior 16' Solar 19'	Will meet code	✓
Sec. 3.8	Floor area	.047 max 68,612 sf	Maximum 68,000 sf	✓
Sec. 4.5.6	Modification to Regulations		Frontage dimension	Modification request
Sec. 5.5	Recreation Space	Min .050 = 1.676 ac		Modification request

Site Design

	Design/LUMO Standards		Requirement	Proposal	Status
Landscape	Sec. 5.6	East	0	0	✓
	Sec. 5.6	North	D buffer – 30'	30' buffer against US 15 501	✓
	Sec. 5.6	South	0	0	✓
	Sec. 5.6	West	0	0	✓
	Sec. 5.7	Tree Canopy		Will meet code	✓
	Sec. 5.11	Lighting Plan (footcandles)		To be provided at subdivision plan	
Environment	Sec. 3.6	Resource Conservation District	Yes	Shown	✓
	Sec. 5.18	Jordan Riparian Buffer			
	Sec. 5.3.2	Steep Slopes	Yes	Shown	✓
	Sec. 5.4	Stormwater Management		To be provided at subdivision plan	
		Land Disturbance			
	Sec. 5.4	Impervious Surface	Max .5/.7	Less than .5	✓
	Sec. 5.13	Solid Waste & Recycling		Private	
Housing		Affordable Housing Proposal, if applicable	15% of units	2 units on 1 lot = 16%	✓

	Design/LUMO Standards		Requirement	Proposal	Status
Access & Circulation	Sec. 5.8	Street Standards		Will meet Town standards	
	Sec. 5.8	Vehicular Access		Will meet Town standards	
	Sec. 5.8	Bicycle Improvements		n/a	
	Sec. 5.8	Pedestrian Improvements		n/a	
	Sec. 5.8	Distance from bus stop			
	Sec. 5.8	Transit Improvements		n/a	
	Sec. 5.9	Vehicular Parking Spaces		Will be provided on each lot	
	Sec. 5.9	Bicycle Parking Spaces		n/a	
	Sec. 5.9	Parking Lot Standards		n/a	
Other		Homeowners Association		No	
	Sec. 5.5	Recreation Space		Requested reduction	M
	Sec. 5.12	Utilities		Well and septic	
	Sec. 5.16	School Adequate Public Facilities		n/a	

Symbol	Meaning	Symbol	Meaning
✓	Meets Standard	**M**	Modification necessary
NA	Not Applicable	UNK	Not known at this time

Checklist

The following must accompany your application. Failure to do so will result in your application being considered incomplete. For assistance with this application, please contact the Chapel Hill Planning and Sustainability at (919)968-2728 or at planning@townofchapelhill.org.

X	**Application fee** (refer to fee schedule)	Amount Paid $ 360.00
X	**Pre-application meeting** – with appropriate staff	
X	**Digital Files** - provide digital files of all plans and documents	
X	**Project Fact Sheet**	
X	**Statement of Compliance with Design Guidelines** (2 copies)	
X	**Statement of Compliance with Comprehensive Plan** (2 copies)	
X	**Affordable Housing Proposal, if applicable** (Rezoning Policy or Inclusionary Ordinance)	
X	**Mailing list of owners of property within 1,000 feet perimeter of subject property** (see GIS notification tool)	
X	**Mailing fee for above mailing list**	Amount Paid $ 73.60
X	**Developer's Program – brief written statement explaining how the existing conditions impact the site design. Including but not limited to:**	

- Natural features of site
- Access, circulation, and mitigation of traffic impacts
- Arrangement and orientation of buildings
- Natural vegetation and landscaping
- Impact on neighboring properties
- Erosion, sedimentation, and stormwater

X	**Resource Conservation District, Floodplain, & Jordan Buffers Determination** - necessary for all submittals
X	**Reduced Site Plan Set (reduced to 8.5"x11")**

Plan Sets (10 copies to be submitted no larger than 24"x36")

Plans should be legible and clearly drawn. All plan sets sheets should include the following:

- Project Name
- Legend
- Labels
- North Arrow (North oriented toward top of page)
- Property Boundaries with bearing and distances
- Scale (Engineering), denoted graphically and numerically
- Setbacks and buffers
- Streams, RCD Boundary, Jordan Riparian Buffer Boundary, Floodplain, and Wetlands Boundary, where applicable

Area Map

a) Project name, applicant, contact information, location, PIN, & legend
b) Dedicated open space, parks, greenways
c) Overlay Districts, if applicable
d) Property lines, zoning district boundaries, land uses, project names of site and surrounding properties, significant buildings, corporate limit lines
e) Existing roads (public & private), rights-of-way, sidewalks, driveways, vehicular parking areas, bicycle parking, handicapped parking, street names.
f) 1,000' notification boundary

Existing Conditions Plan

a) Slopes, soils, environmental constraints, existing vegetation, and any existing land features
b) Location of all existing structures and uses
c) Existing property line and right-of-way lines
d) Existing utilities & easements including location & sizes of water, sewer, electrical, & drainage lines
e) Nearest fire hydrants
f) Nearest bus shelters and transit facilities
g) Existing topography at minimum 2-foot intervals and finished grade
h) Natural drainage features & water bodies, floodways, floodplain, RCD, Jordan Buffers & Watershed boundaries

Proposed Site Plan

a) Existing building locations
b) General location of proposed structures
c) Parking areas
d) Open spaces and landscaped areas
e) Access points and circulation patterns for all modes of transportation
f) Approximate locations of trails, pedestrian and bicycle connections, transit amenities, and parking areas
g) Approximate location of major site elements including buildings, open areas, natural features including stream buffers, wetlands, tree stands, and steep slopes
h) Proposed land uses and approximate location

Coulter Jewell Thames, PA

MAIN OFFICE
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p919.682.0368 f919.688.5646

Planning for the Future

Obey Meadows

1609 US 15 501 S
CONCEPT PLAN FOR SUBDIVISION

DEVELOPER'S PROGRAM

The Obey Meadows project is a proposal for a small low density single-family neighborhood south of but close to Town.

The site is approximately 33.5 acres made up of 4 parcels. It is a fully wooded site with two streams in deep valleys running south to north, and three upland areas. The developer intends to reconfigure the community for 11 lots and 12 homes, served by a main road at the north end of the site. Most of the homes will be along this road, though there will be two flag lots on the easternmost upland area served by a shared private drive. This development will need to be serviced with well water and septic fields as it is beyond the boundary served by OWASA. The existing soils on site will support approximately 9 four-bedroom home sites, and 2 three-bedroom home sites. The developer is proposing 2 two-bedroom homes on one of the lots, to be added to the affordable housing stock.

This development will be accessed from US 15 501 and is currently not adjacent to any neighborhoods. No connectivity is proposed into nearby neighborhoods. Tree coverage, buffers, and stormwater treatment will meet Town codes.

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Planning for the Future

Obey Meadows

1609 US 15 501 S
CONCEPT PLAN FOR SUBDIVISION

STATEMENT OF COMPLIANCE WITH THE COMPREHENSIVE PLAN

We believe the proposed subdivision is consistent with and applicable to three of the goals outlined for the area in the **2020 Plan**.

The applicable themes and goals outlined in the 2020 plan are:

A place for everyone
Good places, new spaces
Nurturing our community

Goal 1. A Place For Everyone: Specifically this project would support PFE.3 – A range of housing options for current and future residents. The project would provide for low density housing including affordable single family homes close to Chapel Hill.

Goal 4. Good Places, New Spaces: GPNS.1 The proposed project will provide housing at low density in the Rural Buffer, minimizing sprawl.

Goal 5: Nurturing Our Community: The low density development will protect riparan land and continue to protect wildlife corridors. (NOC.3)

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Planning for the Future

15 501 Subdivision

1609 US 15 501 S
CONCEPT PLAN FOR SUBDIVISION

STATEMENT OF COMPLIANCE WITH TOWN DESIGN GUIDELINES

The project is located on the east side of US 15 501 across from the Cole Road intersection, just outside of Chapel Hill's urban services boundary. The site is not within any study areas identified in the 2020 Plan.

The Chapel Hill Design Guidelines provide five categories of design criteria. Some of these criteria are more applicable to development within the Town versus this location in the Rural Buffer.

Livability

The project will provide single family housing in a small low density development.

Visual Impact

The project homes will be built into and retain as much of the existing woods as possible. The shared community road will wind up and down the slopes and will be designed to minimize grading. This community will not be highly visible from US 15 501.

Vegetation

The homes will be set in the woods and will appeal to the homeowner who wants to be surrounded by natural forest. Some clearing will be required to install sanitary septic systems but otherwise clearing will not be part of the design.

Activity Centers

Located on US 15 501, this development is not sited in a location conducive to pedestrian activity.

Views

The low density development south of Town is not part of the Town's urban environment. Forest and stream views within the development will be retained.

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Planning for the Future

Obey Meadows

1609 US 15 501 S
CONCEPT PLAN FOR SUBDIVISION

AFFORDABLE HOUSING PROPOSAL

The project is anticipated to have 11 lots. This development will need to be serviced with well water and septic fields. The existing soils on site will support approximately 9 four-bedroom home sites, and 2 three-bedroom home sites. Fifteen percent of the homes would calculate out to be 1.65 affordable homes. The developer is proposing 2 two-bedroom homes on one of the lots, resulting in 2 homes added to the affordable housing stock, and representing 16% of the housing stock in the subdivision.

Both homes would be located on one lot thereby eliminating the extra property line setbacks for septic and well.

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Planning for the Future

Obey Meadows

1609 US 15 501 S
CONCEPT PLAN SUBDIVISION

SUMMARY RESPONSE TO APPLICATION QUESTIONS

22 May 2018

Would this project demonstrate compliance with the Comprehensive Plan?

There is no applicable small area plan, overlay, or study area associated with this parcel or the adjoining parcels.

This project would comply with the Land Use Plan.

Would the proposed project comply with the Land Use map?

This parcel is outside the urban services boundary in an area targeted for rural residential development at a density of 1 unit per 2-5 acres. Twelve homes on 34 acres complies exactly with this use.

Would the proposed project require a rezoning?

No rezoning is required or requested.

Would the proposed project require modifications to the existing regulations?

The project would comply with most regulations in the LUMO. Modifications requested:

1- Reduction of frontage length
2- Elimination of recreation space.

If there is a residential component to the project, does the applicant propose to address affordable housing?

The applicant has not presented the project to the Housing Advisory Board. The developer and designer have met with Robert Dowling of the Community Land Trust.

The applicant has met with Planning and discussed options for affordable housing.

The project will be a single-family home community for ownership.

Are there existing conditions that impact the site design (ie: environmental features such as RCD, slopes, erosion and sedimentation, retention of trees and tree stands, stormwater drainage patterns, significant views into and out of the site)

There are two existing RCD corridors on the site which extend north to south in two locations. The development will avoid the RCD except to install vehicular crossings. The western RCD will be crossed by one roadway. The eastern RCD will be crossed by one private shared driveway, and possibly by a sanitary sewer utility to reach remote septic fields. The site is forested and the majority of the site will remain so. Clearing will be selective to site homes. Additional clearing will be required in septic field areas. Most of the homes will be well screened from the US 15 501 roadway.

Has the applicant addressed traffic impact? Traffic and circulation issues?

The addition of 12 homes on us 15 501 would not require a traffic impact study. There is one existing gravel drive which would continue to be used. There would be one additional paved roadway entry into the subdivision to serve 10-11 homes. This driveway would allow right-in / right-out traffic circulation onto the northbound lanes of US 15 501 South.

Has the applicant discussed the project with adjacent neighbors?

A public information meeting will be arranged by the Town.

Detailed Delineation of Waters of the US
Suitable for Preliminary Planning Only

S&EC reserves the right to modify this map based on more fieldwork, and any other additional information. Approximations were mapped using
topographic maps, air photos and ground truthing. If the site is going to be disturbed, S&EC's detailed delineation should be approved and permitted by the U.S. Army Corps of Engineers as required. If the user of this work desires an accurate map of the regulated features flagged by S&EC, they should retain a NC Registered Professional Land Surveyor to locate S&EC's flagging.

Feature E2 is not approximately shown on the soil survey or USGS; The Town of Chapel Hill should confirm whether a buffer should be present

The Town of Chapel Hill may reqire a Resource Conservation District (RCD) Overlay on this property. The 150' perennial stream buffer shown on the map should be confirmed by a representative from the town.

SF4
E
SF3
S05
S04
D34 CL 2'
Stop CH
W5
D10
E
D30 CL 2'
S06
W1
E2
D28TT D05

Inset 1
SF1
S03
D
W2
S07
SF2
SB01 - SB07
C
W3
40TTCH - 50TTCH

A (Wilson Creek)
SF6
SF5
B
D01 CL 2'
W4

A (Wilson Creek)

Inset 1
SF1
W2
S03
40 TT CH
SB01
W3
D
S07
SB07
50 TT CH
C
45
SF2

Legend

- Evaluation Area
- Perennial Stream
- Intermittent Stream
- Jurisdictional Linear Wetland
- Jurisdictional Wetland
- Potential 50' Chapel Hill Buffer
- Potential 150' RCD Buffer - Must be Confirmed

Project No.
12994

Project Mgr.:
SB

Scale:
1" = 250'

1/25/17

N W E S

0 250 500 1,000
Feet

Overall Sketch Map

Slomianyj Property
Orange County, NC

NOTE: Parcel boundary shown is based on a georeferenced image from the Watauga Co. GIS mapping website, aligned based on NCDOT roads GIS layer. As such, all calculated areas shown herein are approximate and subject to change based on new or better information.

S&EC
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104, Raleigh, NC 27615 • Phone: (919) 846-5900 • Fax: (919) 846-9467
sandec.com

TOWN OF CHAPEL HILL
405 Martin Luther King, Jr. Blvd.
Chapel Hill, NC 27514-5705

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www.townofchapelhill.org

Office of the Town Manager
(919) 968-2746

June 20, 2017

Mr. Steven Ball
Soil & Environmental Consultants, PA
8412 Falls of Neuse Road, Suite 104
Raleigh, North Carolina 27615

Re: Response to appeal of stream determination affecting the Slominayj Property, Orange County, NC

Dear Mr. Ball:

We received your letter dated March 6, 2017 related to the Slominayj Property (Parcel #s 9777-90-4196, 9777-80-9681, 9777-80-9133, 9776-99-1927, 9786-09-4001, and 9786-09-6177). Your letter was submitted as a written notice of appeal of the administrative determination by Allison Weakley of a stream determination performed on February 27, 2017. Your letter specifically requested an appeal of the on-site stream determinations for **Features B, C, G, F, K, 6, and L**.

I have reviewed the materials you provided in your appeal, the documentation of the original stream determination performed by Town staff, and Town policies and procedures. I have also met with the Town stormwater staff and Town Attorney about the staff's stream determination and the basis for their determination. Based on my review of all of this information, I deny your appeal at this time for **Features B, C, G, F, K, 6 and L**. Attached is a memo submitted by Town Stormwater staff that explains and supports the reasons for denial of the appeal for **Features B, C, G, F, K, 6 and L**.

In accordance with Town policy, if you would like to appeal this administrative decision, you may submit an appeal to the Board of Adjustment. Other options include proceeding with submittal of a development application for this property based on the Town's stream classification; and applying for a variance if the proposed development cannot proceed in strict compliance with the applicable regulations.

Sincerely,

Roger L. Stancil, Town Manager

Copy: Chris Jensen, P.E., CFM, Senior Engineer
Allison Weakley, Stormwater Analyst
Ralph Karpinos, Town Attorney

Attachment: Appeal Response Memo from Town Stormwater Staff, dated May 30, 2017

PUBLIC WORKS DEPARTMENT
STORMWATER MANAGEMENT DIVISION
405 Martin Luther King, Jr. Blvd.
Chapel Hill, NC 27514-5705
Telephone (919) 969-7246
Fax (919) 969-7276
www.townofchapelhill.org

MEMORANDUM

DATE: May 30, 2017

TO: Roger Stancil, Town Manager

FROM: Allison Weakley, Stormwater Analyst
Chris Jensen, Senior Engineer

RE: **Stream Determination Appeal Response for Slominayj Property, Orange County, NC**

In response to the stream determination appeal request received from Soil & Environmental Consultants, PA (S&EC) on March 6, 2017, for the Slominayj Property (Parcel PIN #s 9777-90-4196, 9777-80-9681, 9777-90-9133, 9776-99-1927, 9786-09-4001, 97869-09-6177), Town Stormwater staff has reviewed the supporting documentation submitted for the contested stream reaches (**Features B, C, G, F, K, 6, and L**) and provides the following analysis and conclusion that supports the denial of the request for all seven (7) stream features.

1. Town Stormwater staff determined that all seven (7) of the stream features being contested are perennial, based on site visits that took place on February 14 and 17, 2017. S&EC determined that all seven (7) of these stream features were intermittent based on site visits on January 19, 2017.

2. All seven (7) stream reaches being contested are subject to Resource Conservation District (RCD) buffer requirements, and all seven of these features are shown on the Town's Geographic Information System (GIS) and have been field-validated. **Features C/F and G** are also shown on the most recent version of the USGS 24K (7.5 minute) topographic map, and **Features 6, K and L** are shown on soils maps in the Orange County Soil Survey.

3. Section 3.6.3 of the Town's Land Use Management Ordinance (LUMO) states that *"the most current versions of the following documents shall be used to classify streams within the Planning Jurisdiction of the Town of Chapel Hill: (1) North Carolina Division of Water Quality "Stream Classification Form and Internal Guidance Manual" and (2) Town of Chapel Hill "Field Procedures for Classification of Streams". (Ord. No. 2003-11-10/O-3, § 2)"*

4. Both Town Stormwater staff and S&EC made determinations based on the on North Carolina Division of Water Resources' (NCDWR) *Methodology for Identification of Intermittent and Perennial Streams and Their Origins,* v. 4.11 (NCDWR 2010).

5. According to NCDWR's Guidance for the Determination of Perennial Streams, which includes a

policy for the definition of a perennial stream origin (NCDWR 2010, pg. 35), ***a stream is perennial when <u>any of the following criteria</u> are met:***

a. *Biological indicators such as <u>fish (except Gambusia), crayfish (in channel), amphibians (larval salamanders and large, multi-year tadpoles), or clams are present</u>. If only crayfish or fingernail clams are present, a numerical value of at least 18 on the geomorphology section of the most current version of the NC DWQ stream classification form is required.*

OR

b. *A <u>numerical value of at least 30 points</u> is determined from the most recent version of the NC DWQR stream identification form.*

OR

c. *<u>More than one benthic macroinvertebrate that requires water for their entire life cycles are present as later instar larvae</u>. A list of the benthic organisms commonly collected by NCDWR biologists during perennial stream determinations are included with the Guidance."*

6. NCDWR staff suggest that a stream be examined using these three criteria in the sequence above – namely, a field examination should first look for criterion a. and then criterion b. If the channel does not meet either of these two criteria and the field biologist believes the channel to be perennial, then the third criterion should be utilized.

7. Town staff determined that **Features B, G, F, K, 6, and L** are perennial based on NCDWR methodology, whereby **Features B, G, F, K, 6, and L** all received a numerical score of at least 30 points.

8. Town staff documented the presence of larval (aquatic) salamanders within five stream segments that are the subjects of this appeal (**Features B, C, G, K and G)**. According to NCDWR's Guidance for the Determination of Perennial Streams (NCDWR 2010, pg. 35), **Features B, C, G, K and G** meet the first criteria for a perennial stream due to the presence of larval (aquatic) salamanders.

9. Town staff also documented the presence of more than one benthic macroinvertebrate that requires water for their entire life cycle present as later instar larvae in **Features K and L**. Benthic macroinvertebrates documented within **Features K and L** include members of the Ephemeroptera, Plecoptera, and Trichoptera (EPT) orders that are perennial stream indicators. Therefore, **Feature L** is perennial based on NCDWR's guidance for this criterion.

10. The presence of these biological indicators – larval salamanders and benthic macroinvertebrates - is objective (not subjective), and was documented by Town staff during site visits. Biological indicators are documented by Town staff on the stream identification form for each feature; the supporting documentation submitted with the appeal request did not include any notes for biological indicators observed by S&EC within each feature.

11. A second opinion by a third party was considered for **Feature F** due to the perennial classification being based solely on numerical score. Orange County Erosion Control staff, Steve Kaltenbach and Wesley Poole, conducted a third party determination on May 4, 2017 (see attached) and confirmed the classification of **Feature F** as perennial (score 34.5).

12. The table below lists the stream features identified as perennial by Town staff, but intermittent by Soil & Environmental Consultants (S&EC), in which the presence of crayfish (in channel), benthic macroinvertebrates that require water for their entire life cycle, and/or larval salamanders were documented.

Table 1. Presence of perennial stream biological indicators and NCDWR score for each of the stream features contested, as evaluated by Town Stormwater staff, S&EC, and Orange County Erosion Control staff.

Town Stream Feature Label	Total NCDWR score based on Town determination (score ≥ 30 is perennial)	Presence of biological indicators documented by Town staff that serve as NCDWR criteria for perennial streams			Total NCDWR score based on S&EC determination (S&EC Stream Feature Label)	Total NCDWR score based on Orange County determination
		Crayfish	Larval (aquatic) salamanders	Benthic macro-Invertebrates that require water for entire life cycle		
B	31.5	X	X	-	23 (E2)	--
C	29.5*	-	X	-	23 (E2)	--
F	31	-	-	-	27.5 (E above E2)	34.5
G	36	-	X	-	29.5 (E below E2)	--
K	33.5	X (abundant)	X	X	26.5 (D)	--
6	40	X	X	-	28.5 (B)	--
L	32.5	-	-	X	27.5 (C)	--

** See #8 above for explanation for Feature C, and #5 above for criteria outlined in NCDWR Guidance for the Determination of Perennial Streams.*

CONCLUSION

Due to the presence of larval salamanders documented in **Features B, C, G, K, and 6**, and the presence of benthic macroinvertebrates that are perennial stream indicators documented in **Features K and L**, six of the seven contested features are perennial based on NCDWR Guidance for the Determination of Perennial Streams, regardless of the total numerical rating as scored using NCDWR methodology. Because the presence or absence of biological indicators is an objective (not subjective) criterion, only **Feature F** was further considered and referred to Orange County staff for third party review. Orange County staff have concurred that **Feature F** is perennial, with a score of 34.5.

Attachment: NCDWR Stream Identification Form (Version 4.11) for **Feature F**, submitted by Orange County, dated May 4, 2017

NC DWQ Stream Identification Form Version 4.11

Date: 5-4-17	Project/Site: Feature "F"	Latitude:
Evaluator: Steve Kaltenbach, Wesley Poole	County: Orange	Longitude:
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 34.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 15)	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 = 9.5)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?	No = 0		(Yes = 3)	

C. Biology (Subtotal = 10)				
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: