



WATERSHED PROTECTION DEPARTMENT

P.O. Box 548
Pittsboro, NC 27312

Website: chathamcountync.gov

Office: (919) 545-8343 • E-mail: rachael.thorn@chathamcountync.gov

STORMWATER REVIEW LETTER

2/1/2022

OWNER OR DEVELOPER

Kirk Metty
Tuscan Group, Inc.
661 Cedar Grove Road
Pittsboro, NC, 27312

CONSULTANT

Samir Bahho
Civil and Structural Engineering Services
4612 Kaplan Drive
Raleigh, NC, 27606

VIA EMAIL: tuscangroupinc@gmail.com , ba.casespllc@gmail.com

Project Name: Chestnut Creek Subdivision

The Chatham County Stormwater Administrator has reviewed your stormwater plans and calculations dated 12/17/2021 pursuant to the Chatham County Stormwater Ordinance and have the following comments:

General

1. The Stormwater Permit Application Checklist not provided with submittal. Provide a completed checklist and update the plan set to reflect the items included on the checklist.
2. Provide completed and signed O&M Agreements.

Plan and Calculations

1. Provide average dwelling units per acre and % BUA on plan sheet.
2. The Ordinance requires that "Emergency overflow devices for water quantity detention is included and conveys the 50-yr, 24-hr peak discharge while maintaining 12-in of freeboard (Article 4 Section 400.1.e)." The detail for Pond 1 does not appear to show any freeboard above the emergency spillway. The detail for Pond 2 only shows 6 inches of freeboard above the emergency spillway. Show that the wet ponds convey the 50-yr, 24-hr peak discharge while maintaining 12" of freeboard.
3. Chatham County uses the NC DENR Minimum Design Criteria (MDC) for treatment measure design requirements. According to the MDCs for Wet Ponds, the following items need to be added or specified on the wet pond profile:
 - a) A minimum top width 10' along the berm.
 - b) A trash rack for the riser structure for the proposed ponds.
4. The Ordinance requires that "Post development peak flow shall not exceed the pre-development peak discharge for all storms up to and including the 25-yr, 24-hr storm event. Analysis of 1-, 2-, 5-, 10-, 25-yr, 24-hr are required (Article 4 Section 400.3.a)."
 - a) The post development peak flows exceed the predevelopment peak flows for the Pond 1 drainage area for 1-, 2-, 5-, 10-, and 25-year 24-hour storm as provided on page 8 of the Narrative & Calculations.



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- b) The post development peak flows exceed the predevelopment peak flows for the Pond 2 drainage area for 2-, 5-, 10-, and 25-year 24-hour storm as provided on page 11 of the Narrative & Calculations.

Review the peak flow calculations and adjust the design as needed to confirm that the post development peak flows do not exceed the predevelopment peak flows for all storms up to the 25-year 24-hour storm

5. The Ordinances require that “Discharge velocities shall be non-erosive for the 2-yr, 24-hr design storm (Article 4 Section 400.4.b).” Peak discharge calculations for the 2-yr, 24-hr design storm were provided, but velocity was not included. Include exit velocity calculations for the wet pond outfall to ensure non-erosive velocities during the 2-yr, 24-hr storm event for Chatham County.
6. The diffuse flow requirements of the Jordan Lake Buffer rules do not appear to be met by the proposed design of the wet pond outfall. Riprap apron protection is shown at the outlet, but since it is not located in an existing natural drainage feature, this does not meet diffuse flow requirements, which require that “concentrated runoff from new ditches or manmade conveyances shall be converted to diffuse flow at nonerosive velocities before the runoff enters Zone Two of the riparian buffer”. Please revise the design and calculations to demonstrate that the diffuse flow requirements are met through the use of, for example, level spreaders, preformed scour holes, or other similar energy dissipating and diffuse flow devices.

Provide a proposed outlet and/or calculations demonstrating that the diffuse flow outlet protection requirements of the Jordan Lake Buffer rules are met.

7. The project is subject to the 2014 Chatham County Watershed Protection Ordinance and must be submitted for review under Section 304. I. Determination of “No Practical Alternative” or “Variances”. Submit the project to the Chatham County Watershed Protection Department for review for “No Practical Alternatives”.

If you have any questions, please do not hesitate to contact me directly.

Respectfully,

Rachael Thorn, CPESC
Chatham County Watershed Administrator
CC: Jason Sullivan, Chatham County Planning Department Director

