

CIVIL AND STRUCTURAL ENGINEERING SERVICES, PLLC
SAMIR W. BAHHO, P.E.
May 30, 2022

Watershed Protection Department
P.O Box548
Pittsboro, NC 27312

Attached is construction plans for Chestnut Creek Subdivision revised to address Watershed Protection Department comments as listed per Stormwater Review Letter of February 01, 2022. This letter addresses comments in same sequence as listed on the Stormwater Review Letter and as follows:

General

1. The Stormwater Permit Application Checklist.....

Response: Filled Stormwater Permit Application Checklist is attached and included as part of the Permit Application

2. Provide completed and signed O&M Agreement

Response: Completed , signed and notarized O&M Agreement is attached

Plans and Calculations

1. Provide average dwelling units per acre and % BUA on plan sheet

Response: The number of proposed lots in the subdivision is 14 and the average area per acre is 3.51 Acres/Lot. The %BUA is based on an average house area of 80'x70' including porches, garage, concrete pads and a driveway of an average 80'x12' long (Total BUA Area:6560 sq ft)divided by the actual size of the lot. Actual size of lots in acres and sq. ft as well as Individual % BUA of lots area are listed in a table on Sheet 6.1 of the construction plans

2. The Ordinances requires that "Emergency Overflow Devices for water quantity

Response: Sheet 11 was revised to show 1' of free board over 50-yr, 24-hr peak discharge. Sheet 12 was revised to show 1' freeboard over 50-yr, 24-hr peak discharge.

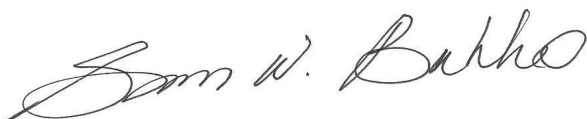
3. Chatham County used the NC DENR Minimum Design Criteria.....

Response: Sheet 11 and 12 were revised to show A)10' width of dam and B) trash track over the riser structure. See sheet 11 and sheet 12



- 4 The Ordinances require that "Post development peak flow shall....."
- Response:** All routed discharges (1-yr, 2-yr, 5-yr, 10-yr, 25-yr and 50-yr) through the riser are equal or less than the correspondent Pre-development events.
- a) See calculation routing events page 9 for Pond #1 and
 b) pages 11&12 for Pond #2.
- Highlights were added to sheets 9, 11 and 12 to show values of the routed discharge through the riser versus Pre-development and Post-development rain events. There was 3 erroneous values for 1-yr, and 2-yr 50-yr pre-development corrected on sheet 11 and 12 (Cause of Error: Wrong Data entered on the excel sheet). Refer to drainage calculation package page 9. on the top right side of page the column with the first arrow to the left is the routed through control box discharge. The arrow in the middle shows the column of calculated discharge, Pre-development. The arrow to the right is column of calculated discharge Pro-development. All routed through the control box values are less than the pre-development discharge.
- 5 The Ordinances require that "Discharge velocities shall be non-Erosive for the 2-yr
- Response:** Velocity for 2-yr, 24-hr were calculated and added to drainage calculations. Velocity-2y, 24hr pond # 1 is 2.03 ft/sec. velocity-2-yr, 24hr pond 2 is 1.78 ft/sec. Calculations for 2-yr velocity (pond #1) and (Pond #2) show not-erosive velocity. However outlet of both are rip-rapped over filter fabric. See Calculations and ponds details
6. The diffused flow requirements of the Jordan Lake Buffer rules do not.....
- Response:** The velocities at both pond outlet are non erosive. Plans are revised to install level spreader 16'x8' with rip-rap over filter fabric at the pipe outlet for pond #1 and 20'x8' for pond #2 to defuse flow and meet Jordan Lake buffer defused flow. Velocity out of spread level line in 1.34 ft/sec for pond #1 and 1.68 ft/sec for pond#2
7. The project is subject to the 2014 Chatham County Watershed Protection
- Response:** The project will be submitted to the Chatham County Watershed Protection for review for "No Practical Alternatives"

the site plan and the responses letter will meet your satisfaction. If more information is needed please call me or email me. My Telephone # is 919-621-0628. **My email address is** ba.casespllc@gmail.com



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