

Engineering has reviewed the plans for the Shinnwood Cottages project submitted on May 23, 2017 and have the following comments:

1. How were the wetlands delineated? Provide jurisdictional determination for the wetlands.
2. Delineate applicable Conservation Resource Setbacks.
3. Based on the 5:1 Grassed Swale detail and calculations, the 5:1 swales will be overtopped in the 10-year storm event. Per the regulations for curb outlet systems (15A NCAC 02H .1003(2)(d)(i)), the swales must be designed to carry the peak flow from the 10-year storm at a non-erosive velocity.
4. Per 15A NCAC 02H .1003(2)(d)(iii); the swale's cross-section shall be trapezoidal with a minimum bottom width of two feet. The city technical standards require a 3 foot bottom width for a swale (TSSM Ch. V; Section D.3.g). Please revise design using a 3 foot bottom width.
5. The 3:1 swale that connects the wetlands should be designed and sized as an open channel (TSSM Ch. V; Section 3). The 3:1 swale is a relocation of an existing ditch. Please demonstrate with spot elevations that the existing ditches upstream of the 3:1 swale can still drain to the wetlands.
6. Demonstrate the minimum length of the swales are 100 feet per 15A NCAC 02H .1003(2)(d)(v).
7. The Site, Grading and Drainage Utilities and Stormwater Management Plan is at too small of a scale to review. Resubmit at an larger scale.
8. Provide proposed contours at 1 foot increments resolved w/existing grades. Spot elevations are acceptable. The number of spot elevations provided are not sufficient to confirm the drainage areas. Provide spot elevations at the top of curb and edge of pavement every 200 feet and at all grade breaks.
9. Provide proposed contours and/or spot grades to demonstrate that the swales can be constructed in the locations shown. The 3:1 conveyance swale is of particular concern.
10. Existing contours were not provided on the plans for the existing wetlands. The stage-storage for the existing wetlands cannot be confirmed.
11. Where is the 60-inch weir at elevation of 26.10 located in the existing wetlands? Please label.
12. The total BUA from lot listing in the Low Density Supplement looks to be incorrect.
13. Provide the drainage area for the 3:1 swale that connects the wetlands. This drainage area should be accounted for in the routing calculations.
14. The drainage area does not match from application/pond calculations (2.37 ac.) to Wet Detention Routing (2.32 ac.).

Please submit one complete set of plans, calculations and any other supporting documentation to Engineering for additional review. Please call or email if there are any questions. Thank you.