

From: [Rob Gordon](#)
To: [Phil Tripp \(ptripp@trippengineering.com\)](mailto:ptripp@trippengineering.com)
Cc: [Tripp Engineering \(trippeng@ec.rr.com\)](mailto:trippeng@ec.rr.com); [Trent Butler](#); [Brian Chambers](#)
Subject: Eng review - the Homeplace
Date: Thursday, February 23, 2017 11:22:51 AM
Attachments: [SWP_approval_acad2004.dwg](#)
[Deed Restrictions_Beasley.docx](#)
[image002.png](#)

Engineering has reviewed the submittal for the Homeplace and have the following comments:

1. Please provide an inlet and SCM drainage area map.
2. In the site data table, impervious totals need to be broken out and listed for both existing and proposed.
3. You only show 1550 sf of offsite BUA, which appears to be the entrance road connection. You specify 11,100 sf of onsite sidewalks. Does this include the Beasley sidewalk? Clearly this sidewalk does not drain to the pond and we don't require that it does. It might be more appropriate if this sidewalk were shown on the application as offsite and excluded from the pond DA. This would free up additional future allocation or reduce overall pond BUA.
4. I am assuming Ms. Beasley will be selling the property to the applicant. If so, she probably does not need to remain on the application. The property owner signature is typically reserved for owners who will remain owner of the project for the life of the project and be written into the permit as such.
5. The deed restrictions submitted reference state permit and statute requirements. Please see attached deed restriction language. Please review and correct as necessary. It does not need to be re-signed and notarized. I will attach to the permit once issued and it will be required to be inserted into the restrictive covenants.
6. We are going to need additional detail on the Beasley r/w:
 - a. You are currently showing a driveway pipe projecting to the west (toward Chelon). There is not much of a ditch nor is there a driveway pipe under Chelon to accept runoff. Our stormwater inventory shows the 18" pipe near the Eastern edge of the project carrying runoff under Beasley away from the project, not toward – but it is not in great shape. I am wondering if a driveway culvert is necessary at all? Might the project entrance be at a high point along Beasley? Please investigate the drainage patterns and provide your opinion. I am hesitant to allow drainage to be directed to the West if there is no driveway pipe to accept runoff (under Chelon).
 - b. There is a bit of an embankment, lots of trees and power poles along the frontage of the property. Please clarify how this will be graded and work out any conflicts with the sidewalk.
 - c. Please give additional spot elevations for the sidewalk along Beasley Road
7. The section detail only applies to about half of the length of the road, please provide additional spot elevations or grading detail for the islands and cul-de-sac to demonstrate proper cross-slope and drainage.
8. Please provide a little more grading detail on the southern edge of the project. The natural grade is falling off toward the creek – how will the shoulder and trail extend through that area? Please also demonstrate how water will drain from lots 12-15 to the proposed stormwater system. Is another swale system necessary?

9. Specify pipe sizing and invert elevation for FES and pipe leading to SDMH No. 2, maybe replace proposed FES with an open throat catch basin as there will not be a lot of cover over that pipe.
10. There will be small embankment on the pond (it will not be entirely in cut). Please grade in top of dam – show top of dam width, 5' landscape & 10' maintenance buffers on plan.
11. The rim elevation of CI 4 does not appear to be correct.
12. Regarding easements:
 - a. We will need a public pedestrian access easement covering the sidewalk along the Beasley frontage
 - b. The easement covering the swale behind lots 18-26 should probably be within common area and not easement (like the line from DI-1 to CI-1). There's no need for a private drainage easement for on-site runoff. Simply address drainage in the common area in the restrictive covenants.
 - c. The pipe from CI-8 to CI-10 cannot be maintained within the proposed r/w. Please apply the standard easement width and dedicate whatever portion extends off the r/w in a public drainage easement.
 - d. The 30" pipe between lots 15 & 16 is between 4.5' & 6.5' deep. The required easement width is 25', not 20' per City technical standards. This easement should follow this pipe (through MH 1 & 2) and terminate at the pond.
 - e. The public drainage easement called out on the North side of the pond should be removed.
 - f. Note - The 25' public drainage easement covering the ditch along the southern property boundary is good.
13. Because of the concerns of the downstream residents, we made a commitment at SRB to prevent impacts to downstream drainage.
 - a. Is there velocity concerns from the outlet pipe? Is a rip-rap apron necessary? If so, would it be more appropriate for the apron to extend into the channel (cut into the bottom as not to create blockage -or- would it be better for the rip-rap to terminate at the channel (which would require recessing the FES back from the channel)
 - b. There is no grading detail in the channel below the pipe outlet. Does constant grade exist from elevation 13.0 (the pipe outlet) or is a ditch clean out necessary?
14. The spillway is not permitted to be grass per technical standards.
15. The spillway must be at least 6" above the top of the outlet structure per City technical standards.
16. City of Wilmington residential driveway detail needs to be added to the plans
17. A grass swale detail needs to be added to the plans.
18. City of Wilmington curb and gutter detail needs to be added to the plans
19. City code requires the pre-developed condition to be modeled in the woods good condition. This is not expressly defined with c-factor (why we prefer SCS). But 0.15 is the high end of the wooded condition in sandy soils and the max we generally allow for the predevelopment condition. Please revise.
20. On the wet pond detail, the bottom and sediment bottom elevations appear to be flip-flopped

21. Please use the updated City of Wilmington SW management plan approval stamp, see attached
22. Note Only - The landscape plan, when submitted will have to address street trees and street lighting.
23. Note Only - The NCDEQ BMP Manual has recently been updated. With the update for wet pond requirements, the vegetated shelf only has to be a minimum of 6' wide (previously 10' minimum), see NCDEQ BMP Manual section C-3 on Wet Ponds, MDC 6.

Please submit one complete set of revised plans and sealed calcs along with any revised forms to Engineering for additional review. Please include a digital copy of all items included in the submittal. Please call or email if there are any questions.

Robert Gordon, PE
Plan Review Engineer

City of Wilmington, Engineering Division
212 Operations Center Drive
Wilmington, NC 28412
Office: (910) 341-5856 | Fax: (910) 341-5881
Email: rob.gordon@wilmingtonnc.gov
www.wilmingtonnc.gov



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