

From: [Rob Gordon](#)
To: [Boyd, Joseph](#)
Cc: [Trent Butler](#); [Brian Chambers](#)
Subject: RE: Eng review - Arbor commons
Date: Monday, February 27, 2017 12:03:43 PM
Attachments: [image001.png](#)

Joe – Engineering has reviewed this latest submittal

- The (re)grading of the turn lane is preferred over the grade break at the existing EP – thank you. However, it creates a little bit of a conflict at the entrance to Road B. The profile for Road B included with the last submitted (not included with the resubmittal) shows a HP at sta 3+40. All runoff South of that HP would fall back toward the entrance. But your DA map shows the western half of the entrance draining back onto the site (as if the HP was shifted to the end of the profile), but the eastern half breaking at the and draining down the turn lane. I guess that could work, but we have the following concerns:
 - The west side of the entrance is really flat - there is not a lot of grade along the curbline on the West side of the entrance and there is not a lot of crown (on the West side) to direct runoff to the curbline. See if there is a way this could be resolved. Construction management felt another inlet along that radius would help – perhaps as a sag to add crown to the West side. This box would have to be placed as not to conflict with the MUP crossing.
 - Construction management also felt like JB-18 was going to be a challenge to grade around. If you added the box above, it would be possible to eliminate the JB and extend the 15” straight to CB-10 – unless there is some conflict I am missing...
 - On the turn lane - there is only 0.10’ of fall between the end of the flare 49.42 & the flow line of the existing CB (49.32). This is almost 100’, making the slope close to 0.1% along the curbline. This really is too flat – please consider adjusting elevations to provide more slope along the curbline – perhaps raising that spot to 49.5 would help.
- We will need one additional street light at the Peel St intersection. I have no other comments on the landscape plan.

Please call if you would like to discuss – would welcome thoughts on the intersection grading. One final (digital) submittal to Engineering should be able to complete the Engineering review. Thank you.

Robert Gordon, PE
Plan Review Engineer
City of Wilmington/Engineering
(910) 341-5856

From: Boyd, Joseph [mailto:jboyd@withersravenel.com]
Sent: Friday, February 17, 2017 4:48 PM
To: Rob Gordon <Rob.Gordon@wilmingtonnc.gov>
Cc: Trent Butler <Trent.Butler@wilmingtonnc.gov>; Brian Chambers <Brian.Chambers@wilmingtonnc.gov>

Subject: RE: Eng review - Arbor commons

Rob,

Please see attached for our response letter to your comments, along with the revised stormwater application pages 3 and 4, and the most up to date Impervious Area Exhibit.

The revised plan sheets are too large to send via email so here is a link to my dropbox folder that has the updated plan sheets per your comments that you can download and save:

<https://www.dropbox.com/s/85q5x795xdals69/170207-Revised%20Plan%20Sheets%20to%20COW%20SW.pdf?dl=0>

Thank you again for allowing us to resubmit this plan electronically to hopefully get your approval on the project as soon as possible. As you stated in your comments, these revisions do not involve changing any of the stormwater design and therefore no calculations are attached, nor needed.

Also, thank you for your emails today to get us answers on the Landscape Plan issues. It has been confusing to us with the conflicting information, but now I think we are all on the same page.

Please let me know if you have any questions or need any additional information in order to give this your approval.

Thanks again and have a good weekend.

Joe

From: Rob Gordon [<mailto:Rob.Gordon@wilmingtonnc.gov>]
Sent: Wednesday, February 15, 2017 12:14 PM
To: Boyd, Joseph <jboyd@withersravenel.com>
Cc: Trent Butler <Trent.Butler@wilmingtonnc.gov>; Brian Chambers <Brian.Chambers@wilmingtonnc.gov>
Subject: Eng review - Arbor commons

Engineering has reviewed the plans for the Arbor Commons project and have the following comments. Please note I reviewed the plan set submitted to planning on 2/6 and not the set initially submitted to Eng in Jan.

1. A public pedestrian access easement is required where the Hollingsworth sidewalk extends off the r/w at the mini roundabout (as it crosses Road B).
2. The inlet DA's noted on sheet C-12 are fine. Please make the overall DA to the pond clear. Perhaps a thicker outline of the BMP DA?
3. The impervious area breakdown exhibit you provided is very clear to me. However, I am not able to reconcile the data contained in the exhibit with what is on the site data table and the Stormwater application. I have attached the most current application we have on file. Please review and adjust as necessary

4. Regarding the grading on the turn lane:
 - a. I don't see a section detail for the turn lane. We will at least need a pavement section detail. If you are proposing 3"/8" on road B, it might be best to continue that in the turn lane.
 - b. It appears you are showing a grade break at the existing EP. This is fine, but there is a concern with water flowing along a seam in the asphalt. Avoiding a seam can be challenging to construct, but will likely involve milling the existing edge back 12-24", placing stone and initial lift of asphalt at the seam and extending the finish coarse across the seam to the milled edge. This will require some field judgement and adjustment. Please note this on the plans.
 - c. The spot elevations show a flat section along the existing EP (50.0). This was an existing EP and we have no anecdotal evidence of standing water in that area, so it could be a survey issue. But if that area is flat, it will require field adjustment to ensure positive grade along the flow line. Please specify a min slope (to satisfy spread) and note the possibility for field adjustment.
5. Regarding the landscape plan:
 - a. The landscape plan does not identify street light locations along the public street. Street lighting is required every 300'.
 - b. The existing light at the intersection of Hollingsworth and JB Barry will have to be relocated.
 - c. After discussion with planning and City Arborist – we believe additional street trees are needed to satisfy technical standard requirements. I see no reason why trees could not be added in the attached areas.
6. Regarding pavement markings:
 - a. Parallel bars at the roundabout (see why you did what you did – SD 11-14, but bars are all that is required at a mini RAB)
 - b. You call out a special emphasis x-walk at the 17th MUP crossing, but you draw a hi-vis. Also, arrow needs to be at least 4' from x-walk. Might help to clarify.
 - c. Need a return and lines on Hollingsworth, near the east entrance to lot 1. See attached.

I do not believe any of the above comments affect the calcs. I will assume the calcs submitted previously are final unless there is a design change. Please send an email addressing the above comments and I will complete the review. No hard copy submittal is necessary and the project will not have to go back through the review queue. Please call or email if there are any questions. Thank you.

Robert Gordon, PE
Plan Review Engineer
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From: Rob Gordon
Sent: Tuesday, December 13, 2016 11:32 AM
To: 'Boyd, Joseph' <jboyd@withersravenel.com>

Cc: Trent Butler <Trent.Butler@wilmingtonnc.gov>; Brian Chambers <brian.chambers@wilmingtonnc.gov>

Subject: Eng review - Arbor commons

Engineering has reviewed the resubmittal for Arbor Commons and have the following comments:

1. Note only – First, thank you for the detailed response letter and narrative! I cannot tell you how helpful it makes a re-review.
2. There appear to be encroachments (fences) into the proposed r/w. We will not accept r/w with encroachments. Please resolve the fence and any other encroachment that may exist.
3. I discussed with our attorney's office and the easement recorded in MB 33/132 can simply remain. There is no need to propose another 20' easement to cover the pond outfall.
4. Please make sure all easement widths are as required by City technical standards (Sec 5 p3). 20' is a minimum, the connections to the pond will almost certainly need to be larger.
5. The public drainage easement along Rd B does not need to extend over CB-11. That box does not collect public runoff. The cross pipe from CB 11-to CB-10 will remain privately maintained.
6. I am going to need you to restructure how the impervious area is compiled. It will have to be broken down by lot and the proposed deed restrictions need to be revised. Call to discuss.
7. We will allow street trees in the easement as long as they are not located over top of or in direct proximity to the pipes. Street trees are required adjacent to Spring Arbor. They may not be necessary in areas because of the existing Spring Arbor trees. Please work with the city Urban Forester to add select trees to achieve compliance with City Standards.
8. Note regarding ADA accessibility:
 - a. We will not require crosswalk markings on any of the identified driveway or street crossings associated with the project except the MUP on the 17th entrance, and that should be called out as a special emphasis crosswalk.
 - b. We will require ADA ramps along Hollingsworth across Rd B.
 - c. Please make sure the stop bar is set back the proper distance from the accessible path, even if it an unmarked accessible path (Hollingsworth & Peel, possibly others)
9. Please utilize a 60' radius or more on the MUP bends. Sharp bends in the trail are undesirable for cyclists.
10. There is a maintenance concern with CB 7 in the middle of the driveway, especially if this is a sag. You will either need to move the entrance or move the sag and CB. If the sag is moved to the West side of the entrance, you may be able to eliminate a box.
11. Please add additional spot elevations or grading detail for the turn lane on 17th. I do not know if 17th is super-elevated to drain to the North or if it has normal crown. Will there be a break in the crown at the turn lane (shown on DA map)? Will all drainage from the HP at 3+45 on Rd B flow along w turn lane drainage to the East toward the ex CB?
 - a. Note – if you are adding drainage to the existing CB, you will need to analyze spread and capacity of that pipe (to the ditch). I will not require calcs for the ditch or downstream receiving pipe.
12. See attached pdf regarding the existing ramp at Peel and 17th. Please address this comment and be sure to add pedestrian easement if sidewalk has to be re-aligned.

13. Note Only – City staff are going to meet internally about the proposed traffic calming measure at Hollingsworth/Road B. Additional comments may be provided after that discussion.

Please submit one full set of revised plans and a full set of final calcs to Engineering for final review. Please call or email if you have any questions. Thanks.

Robert Gordon, PE
Plan Review Engineer

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