

From: Rob Gordon

Sent: Friday, September 25, 2015 5:13 PM

To: Denise Freund (dfreund@wkdickson.com) <dfreund@wkdickson.com>; Daniel Dawson (dedawson@wkdickson.com) <dedawson@wkdickson.com>

Cc: Jeff Walton <Jeff.Walton@wilmingtonnc.gov>; Genna Porter <Genna.Porter@wilmingtonnc.gov>

Subject: RE: Eng review - Vertex

I have reviewed the plans for the onsite portion of the Vertex facility. Many of the same comments from the offsite portion would apply to this phase as well. Please address them in addition to the following comments:

1. Note Only - the overall impervious area plan is great – exactly what we need to establish overall redevelopment.
2. The wet pond DA map does not include any kind of contour information. The plan should support the DA delineated.
3. Please quantify the area of the pond DA on the DA map.
4. I thought there was a piped collection system proposed, but I see no system proposed or existing. Please provide calcs and an inlet DA map if a collection system is being utilized for drainage the pond. We will evaluate the collection system for the rest of the site as other areas are redeveloped.
5. Also, drainage to a wet pond is required to be directed to the forebay. It is not clear how all area within the DA is being directed to the forebay.
6. Note Only - There appears to be areas around the periphery of the pond that are included within the DA simply because there is nowhere else for runoff to go. I have no problem allowing these periphery areas to be excluded from the DA of the pond if you are comfortable with that. With an infiltration rate of 30 iph, it is unlikely these pervious area will contribute much, if any drainage to the pond, in my opinion.
7. Please add an average depth calculation to the calc packet to justify the 4 ft avg depth.
8. There is 92753 sf listed as a future allocation on p3 of the supplement. The exhibits only show a 21452 sf net reduction. If I am calculating everything correctly, p3 of the application should be modified as attached. Please revise.

Please submit one set of plans and calcs along with any revised forms to Engineering for additional review. Please call or email if there are any questions. Thank you.

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

From: Rob Gordon

Sent: Thursday, September 24, 2015 6:03 PM

To: Denise Freund (dfreund@wkdickson.com) <dfreund@wkdickson.com>; Daniel Dawson (dedawson@wkdickson.com) <dedawson@wkdickson.com>

Cc: Jeff Walton <jeff.walton@wilmingtonnc.gov>; Genna Porter <genna.porter@wilmingtonnc.gov>

Subject: Eng review - Vertex

Engineering has reviewed the plans for the NCSIPA portion of the Vertex project and have the following comments:

1. It appears the drainage area for the infiltration swale extends offsite onto the Martin Marietta property. Please break out the portion onsite v offsite portion on p4 of the application.
2. There is no existing impervious or impervious to be removed noted on p3 of the application, but there is 3919 sf noted to be removed on the impervious area exhibit and 3713 sf (2749+964) noted to remain. Please clarify. Is there any other existing impervious within this area other than what is noted?
3. P4 of the specifies 20681 sf of impervious to remain in addition to 20681 sf of “other” new impervious. It should be one or the other and not both unless there is 41362 sf draining to the BMP. Please also add a figure for the total impervious area draining to the BMP – it currently blank.
4. It is assumed that this offsite portion will not meet the criteria for redevelopment and thus attenuation is required. We cannot accept rational routing from hydraflow. The volumes simply do not compare to SCS or

chainsaw. This is evidenced in the calc packet; the 1-yr predevelopment hydrograph volume using SCS is 10358 cf whereas the 10-yr predevelopment hydrograph volume using rational is only 2422 cf. We will need all analysis to be via SCS or, if you prefer, the chainsaw method outlined in the City Technical standards.

5. Please specify a type III rainfall distribution and not type II in the routing analysis.
6. City code requires the predeveloped CN be calculated assuming woods in good condition. With infiltration rates of 30 iph, the soils would have to be considered A soils. I am not sure why CN 68 was used. We do allow CN 39 to be used as anything lower does not generate any predevelopment flow.
7. Note Only – If you choose graphic hydrograph reports instead of numerical, the output will be one page for each hydrograph instead of 15. It might help reduce the size of the calc packet. I typically also prefer to have a summary page included in the report as well.
8. There is no vegetation requirement and specifications for the infiltration basin included on the drawing set. I understand only one set of Vertex plans will be approved even though we had to split the project into two stormwater permits. If the vegetation requirements will be clearly specified on one of the sheets not submitted, no action is necessary. Otherwise, please provide vegetation specifications.
9. Please make sure the Engineering approval stamp is included on each sheet in the plan set.

The on-site portion of the Vertex project will be reviewed next. Please submit one copy of revised plans and calcs to Engineering for additional review along with any revised forms. Please call or email if there are any questions. Thank you.

Robert Gordon, PE
Project Engineer

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