

**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 NCSPA 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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