



October 21, 2020

Mr. Stephen Gorski  
Duffield Associates, Inc.  
5400 Limestone Road  
Wilmington, Delaware 19808

RE: **Fishers Cove - Step 2 Review**  
**Lewes, DE**

Mr. Gorski:

Sussex Conservation District has reviewed the sediment and stormwater management plans submitted for the above referenced project by letter of October 05, 2020. Additional information will be necessary for the plans to be approved. Please address the following comments:

1. Please provide pre DA DAC-2 in your pre HydroCAD routing to verify LULC for DA and discharge rates at POA 2.
2. I question if all of pre DA DAC-2 is being conveyed to POA 2. It appears that the back  $\frac{3}{4}$  of the DA would be sending runoff toward parcel 335-4.18-1.06 and not to Pilottown Rd.
3. The Tc path shown for post DA DAP-4/C-3 on the post DA exhibit is not consistent with the Tc path defined in the HydroCAD routing. Please make them consistent.
4. Are the existing structures on parcel 103 being demolished, if so, provide notation or do not show the existing LULC in the post DA exhibit and plan set.
5. I question if there is more offsite DA on the western side of the property that is coming to you from the U of D property up to Pilottown Rd. Consider reviewing available LIDAR data to determine the limits of the CDA.
6. Provide more detail on how Rodney Ave.'s drainage will be directed toward Pilottown Road and toward Patchy Way and the entrance.
  - a. Will the City required you to improve the drainage conveyance features along Rodney Ave to their road design standards?
7. How will Rodney Ave's south swale discharge to the wetlands?
8. TR-55 Residential lot LULC definitions usually include to the centerline of the right-a-way in front of the lot. I am not sure that you are consistently including or excluding the road in your lot areas.
  - a. In DAC-4 you did not include the road but all other DAs it appears that you included the road. I would say include the road to the centerline only in front of the lot or not include as you did in DAC-4.

9. Provide hatch for the 1/3 acre lot, 1/4 acre lot and road area on your post DA exhibit.
10. I am unable to verify reach 1R's inlet invert that was indicated in the post HydroCAD routing when compared to the plan.
11. Since your shortest Tc path is the minimum, I recommend that your HydroCAD dt=0.01 rather than 0.05. I question if the 0.05 time step interval ( 3min) is missing the DA peak with such a short Tc path time.
12. Explain how DAP-4 and DAC-3 are being conveyed to pond P-1, as indicated in the post routing. It appears that DAP-4 and C-3 are running off unmanaged and DAP-3 is being conveyed into pond P-2.
13. It appears that your bioswale bottom width exceeds the recommended maximum 8ft. width. Provide one or more of the recommended items indicated in the BMP Standards and Specs to minimize braiding and erosion along the channel bottom.
14. Provide a level spreader at the end of FES E1 to generate a uniform distribution of flow to the bioswale.
15. Provide a profile of the bioswale from FES E1 through the outfall pipe.
16. Provide a bioswale cross section.
17. Provide proposed contour labels on the bioswale contours.
18. Provide spot shots along the length of the bioswale to illustrate that the bottom is sloped and not flat, as it appears in plan view.
19. I question is the bioswale outfall pipe is sized adequately since the RPv inflow rate is 238% of the Manning's capacity for the pipe.
20. I question if the head required to push the RPv 1.72 cfs flow rate through the pipe will be higher than the maximum allowable ponding depth for a bioswale. The RPv head on the pipe can not be deeper than 4" for this BMP to be considered a bioswale. Anything high, then the BMP is a dry pond.
21. Change Reach 1R to the catch basin pond node to account for the inlet condition of the pipe in your analysis.
22. The District can not accept the geotechnical report provided in the Duffield report since it is not signed and sealed by an engineer and does not follow the SIP submittal checklist. Please provide a signed and sealed soils report that addresses all applicable SIP submittal checklist items.
23. I question if the bioswale's bottom is above the seasonal high water table. The BMP Standards and Specs indicate that the bottom has to be above the SHWT.
24. It appear that the RPv depth of flow through the bioswale exceeds the allowable 4" maximum depth.
25. It appears that pond P-1 and P-2's aquatic benches @2.0' are not 1ft. below the defined permanent pool, which is also @ 2.0'.
26. I am unable to verify pond P-1 and P-2's outfall structure definition that was indicated in the report from the plan. The plan does not show the weir wall in the plan view or in any details on the pond CCSWM plan sheet.
27. Extend the post HydroCAD time span out to hour 72 to better show that you are meeting the 48 hour extended detention requirement. Looking at the tabular hydrographs, I question if you will have enough flow to reach hour 60.
28. Provide tailwater on the ponds consistent with the FEMA flood zone elevation AE7.

29. Relocate the drainage conveyance feature on lots 3-7 to be within the building setback or in a separate drainage easment. The District does not condone drainage conveyances through individual parcels.
30. Make sure that you have 15ft maintenance access around the ponds TOB to the outfall structure; pond P-2 access on the south side of the pond looks a little iffy.
31. How are you tying your proposed grade in between the PS and lot 2?
32. Provide pretreatment for the inflow points into ponds P-1 and P-2 that are conveying  $\geq 10\%$  of pond R<sub>Pv</sub> runoff volume.
33. Provide ROP for all concentrated inflow points into Ponds P-1, P-2, and bioswale.
34. I question if riprap should be placed on the downstream side of pond P-1 and P-2's weir wall to minimize erosion.
35. I am unable to verify DURMM DAP-2's SWM impervious that was indicated on the CA RCN sheet from the plan set. I come with @ twice as much.
36. See comment #6 above and make the necessary corrections to DURMM DAP-2 CA RCN lot area and impervious entries.
37. I am unable to verify DURMM DAP-3's SWM impervious that was indicated in DURMM CA RCN sheet from the plan.
  - a. Adjust the post impervious on the LOD also.
38. See note #2 on the DURMM Summary Table and revise accordingly.
39. Please provide R<sub>Pv</sub> Summary Table. To substantiate quality compliance, please:  
If you wish to continue utilizing the "Drainage Area" methodology:
  - a. Provide DURMM utilizing "No BMP" for each spreadsheet to establish required management.
  - b. Transfer "shortfalls" to the R<sub>Pv</sub> Summary Table, "Required" columns.
  - c. To substantiate Wet Extended Detention Pond compliance:
    - i. Convert pond inflow volume from af to cf.
    - ii. Transfer cf conversion to R<sub>Pv</sub> Summary Table "Provided" column.
  - d. Once all the appropriate "Required" and "Provided" columns are filled in, the 'Totals' cells in the table bottom will indicate if compliance is met.
  - e. TMDL cells should be completed as directed in notes on bottom of table.
40. It appears that on sheet 3, you reference super silt fence along the wetland line; however, you show reinforced silt fence. Please make them consistent.
41. In your project level SOC you reference sediment trap 1 and 2 construction. Provide sediment trap data blocks on sheet 3 with data to explain trap configuration to obtain required volume. Trap volume is the volume between the low flow device and the next outfall device. You may need to block up the weir wall to get the required volume.
42. Provide CIP for E2 until the bioswale becomes fully stabilized.
43. The bioswale BMP SOC should be unique to this BMP and project, and not "copied and pasted" from BMP Standard and Specs handbook.
44. The wet extended detention BMP SOC should be unique to this BMP and project, and not "copied and pasted" from BMP Standard and Specs handbook.
45. In the wet pond BMP SOC, indicate what must happen for this to be a sediment trap.

46. Provide temporary and permanent seed specs for the wet pond and bioswales.
47. In the wet pond BMP SOC, step 9 should include that the conversion should not proceed until SCD inspector's approval.
48. The District questions if the disconnection between the low area to the right of the entrance and the low area to the right of lot 3 will negatively impact parcel 11.00.

If you should have any questions concerning these comments, please do not hesitate to call.

Sincerely,

SUSSEX CONSERVATION DISTRICT

*Jim Elliott*

Jim Elliott  
Sediment & Stormwater Reviewer

CC: