

April 19, 2016

Mr. John Radcliffe
Chairman
New Bedford Conservation Commission
New Bedford City Hall
133 William Street
New Bedford, MA 02744

RE: Nitsch Project #9972
Northside Farm
Review Letter
New Bedford, MA

Dear Mr. Radcliffe:

This letter is in regards to the proposed Northside Farm project located between Acushnet Avenue, Phillips Road, and Victoria Street in New Bedford, Massachusetts. Nitsch Engineering has received and reviewed the following revised documents for compliance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards:

- Site Plans entitled, "Site Plan To Accompany Notice of Intent, *Northside Farm*, New Bedford, MA 02745," prepared by Charon Associates, Inc., revised April 12, 2016;
- Response to Comment Letter, prepared by Cavanaro Consulting, dated April 13, 2016, including the following attachments:
 - a. Construction Period Erosion, Sedimentation, and Pollution Prevention Plan;
 - b. Long Term Stormwater Operation and Maintenance Plan and Illicit Discharge Compliance Statement;
 - c. Total Suspended Solids (TSS) Removal Worksheets;
 - d. Existing Subcatchment Areas Plan;
 - e. Proposed Subcatchment Areas Plan;
 - f. Existing Conditions HydroCAD model;
 - g. Proposed Conditions HydroCAD model; and
 - h. Proposed HydroCAD "One House Model."

The comments below reflect updates to our previous comments, as well as additional comments based on the receipt of new information.

1. The existing and proposed design points were revised from the previous submittal. While we agree that the previous Design Point #2 (located near the southwest corner of the site) should have been removed, it is unclear why the wetland design point (previously indicated as Design Point #4) was also removed. Based on the topography, it appears that there should be three Design Points: Acushnet Avenue, Victoria Street, and the wetland system in the eastern portion of the site. In our opinion, it is important for the Commission to understand whether there is an increase in run-off towards the wetlands.
2. The revised Existing Conditions Plan does not include the existing topography and drainage infrastructure for the bank property. Based on the Existing Subcatchment Areas Plan, it appears the entire bank property is collected and discharged to the existing Underground Infiltration System No. 1. It is unclear where the Pond "RC" is located although it is modeled as a part of the bank development in the existing and proposed HydroCAD model. Since the bank property and Underground Infiltration System #1 are effectively part of the proposed project because the infiltration system is collecting stormwater generated by both properties, we recommend that the plans and HydroCAD be made consistent to accurately document the existing condition.

3. The location of Test Pit 1A should be included on the plans.
4. The soil test pits performed on the site by the Applicant indicate approximately a foot of loam underlain by sandy loam, loamy sand, and coarse sand materials. It appears that the bottom of the proposed infiltration systems will be located within the loamy sand or sandy soil horizons. Since onsite permeability testing wasn't performed, the Applicant should model the infiltration systems using the Rawl's rate for the appropriate soil texture. In the HydroCAD model, the proposed infiltration rate ranges between 1.02 and 2.16 inches per hour, while the Rawl's rate for sandy loam and sand are 2.41 to 8.27 inches per hour, respectively. We recommend that the construction of the underground infiltration systems include removing the topsoil and subsoil and installing Title V sand between the system and the top of the C-layer. The infiltration rate of the C-layer should be used.
5. In areas where infiltration is proposed within highly permeable soils (loamy sand or sand), MassDEP requires additional pretreatment of non-roof areas to provide 44% TSS removal before discharge into infiltration areas. The Infiltration Pond meets the 44% pretreatment requirement through deep sump and hooded catch basins and a sediment forebay (25% TSS removal each). However, additional pretreatment is needed for the Underground Infiltration Systems. The TSS removal spreadsheets should be revised to include the pretreatment separately to document 44% TSS removal for each treatment train. We also note that infiltration systems achieve an overall TSS removal of 80% with pretreatment, rather than the 86% indicated on the submitted spreadsheets.
6. The Applicant indicates that the water quality volume (WQV) for the proposed pavement is 4,614 CF and that the infiltration systems have a capacity of over 10,000 CF. However, credit for the WQV can only be taken below the outlet, which is less than 1,000 CF in each system. The Applicant should demonstrate how the WQV requirement is being met for the proposed development. It is also unclear how much of the WQV provided in Underground Infiltration System No. 1 is needed for the bank development. As noted in Comment #5, additional pretreatment measures may be required, which should also be designed for the appropriate WQV.
7. In the eastern portion of the site, there are several proposed house recharge systems located near the wetland. Given that there are no soil test pits located near these systems, we recommend that the Commission include a Condition and, if approved, that the Applicant confirm the estimated seasonal high groundwater elevation during construction. We assume that, prior to the construction of these homes, additional Notice of Intent filings will need to be made to the Commission that will include design information, including the design of the subsurface soil systems. However, all of the proposed homes, including the homes that are located outside of the buffer zone, have recharge systems that accept stormwater from the rooftops. Therefore, it is important that the construction of all of the recharge systems associated with the house lots be constructed consistently with the design calculations.
8. The proposed rooftop infiltration systems overflow to the surface via area drains in the 10- and 100-year design storms. During final grading of the individual lots, positive drainage should be provided to direct the run-off away from adjacent homes.
9. The stormwater report indicates that the existing peak flow rate is being increased towards Acushnet Avenue by 6 to 10 cfs in the 10- and 100-year storms, respectively. The Applicant indicates that the Department of Public Infrastructure was consulted in the previous permitting process (2006-2008) to confirm the Acushnet Avenue drainage system could handle the increased flow. Since several years have passed, we recommend that DPI confirm the approach is still acceptable.

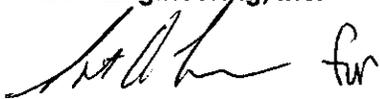
10. On the Drainage Layout Plan, the closed drainage system discharging to Infiltration System 2 indicates pipes flowing with negative slopes.
11. Some pipe sizing is provided in the HydroCAD model. However, it is difficult to review since the naming convention and labels are not consistent between the Drainage Plans, Profile Plans, Subcatchment Plans, and HydroCAD model. We recommend that the pipe sizes be labeled on the Grading and Drainage Plan and the Drainage Layout Plan. If the HydroCAD model is to be used for pipe sizing, each segment of the drainage trunk lines should be included as a reach, and all reaches should be consistently labeled on the Proposed Subcatchment Map and in the model. The plans and HydroCAD model should also be reviewed for consistency.
12. The portion of proposed Subcatchment 11 along Acushnet Avenue appears to flow towards Underground Infiltration System No. 2 and should be included in Subcatchment 10.
13. The area within proposed Subcatchment 4 that surrounds the Infiltration Pond should be included in the drainage area that contributes to the Pond, rather than going straight to the Design Point.
14. The flow path/calculation for the time of concentration for proposed Subcatchment 7 should be provided.
15. Standard 4 requires a Long-Term Pollution Prevention Plan to document procedures for good housekeeping, storing materials and waste products inside or under cover, vehicle washing, spill prevention and response, landscape maintenance, pet waste management, and snow management. The Applicant provided some of this information for the construction period, but, similar to the Operation and Maintenance Plan, they should also be provided for the on-going operation of the development.
16. The Applicant provided a Construction Period Erosion, Sedimentation, and Pollution Prevention Plan that includes recommendations for dust control, material stockpiles, stabilized construction entrance and silt fence, and hay bale around the project perimeter. Consistent with MassDEP and NPDES SWPPP requirements, we recommend that the Applicant also include inlet protection and slope protection, as well as the inspection and maintenance requirements for these measures. Additionally, all proposed sedimentation and erosion controls should be provided in the plans and details.
17. The Operation and Maintenance Plan indicates that the Owner of Northside Farm will be responsible for maintenance of the stormwater management system. Typically, DPI is responsible for maintaining drainage systems that are constructed as part of subdivision projects. Will there be a homeowners association that is responsible for maintaining the systems after the house lots are sold. Also, since part of the subdivision drainage system is shared with the adjacent bank property, there should be some agreement between the subdivision and the bank regarding who will maintain the subsurface system. The Applicant should confirm if the Owners will be responsible for all maintenance or if it will be shared with DPI and/or individual homeowners.
18. We recommend that the Commission consider adding a Condition to the project, if approved, to require the submittal of the inspection and maintenance forms for the stormwater BMPs to the Commission.
19. We previously requested that a signed Illicit Discharge Compliance Statement be provided with the Stormwater Report. The Applicant indicated that the Illicit Discharge Compliance Statement will be provided prior to the Approval.

20. The detail for the Infiltration Pond indicates 2:1 side slopes. To improve accessibility for maintenance and reduce potential for erosion, we recommend reducing the slopes to 3:1.
21. In the Infiltration Pond and Rip Rap End detail, the stone should be labeled as Stone for Pipe Ends, MassDOT Specification M2.02.3.
22. The project involves the filling of just under 500 square feet of wetlands. No compensatory wetlands are proposed as part of the project.
23. The Applicant is proposing to clean and trim vegetation for 450 linear feet in the river channel to help alleviate a past flooding condition in the Lucy Street neighborhood. From discussions with Sarah Porter, Conservation Agent, we understand that DPI replaced a culvert that has improved the flooding condition, and therefore clearing of vegetation is not needed at this time.

We appreciate the opportunity to review this project for the Conservation Commission. Please contact us with any questions.

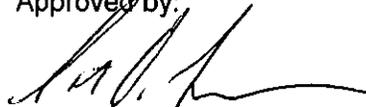
Very truly yours,

Nitsch Engineering, Inc.



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JLJ/aab