

April 1, 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 regard 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 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 March 10, 2016;
- Application for Notice of Intent, Proposed Subdivision of Land, Northside Farm, New Bedford, MA, prepared by Cavanaro Consulting, Inc., including:
  - a. Stormwater Operation and Maintenance Plan; and
  - b. Stormwater Drainage Calculations, dated March 3, 2016.

We performed a site visit on March 30, 2016 with New Bedford Conservation Agent Sarah Porter. The Northside Farms project is proposed for an existing undeveloped parcel abutted by Acushnet Avenue, Arnoff Street, Phillips Road, and a wetland system that is bordering on a perennial stream. The project was initially approved by the New Bedford Conservation Commission and Planning Board in 2006 with a modification through the Planning Board in 2008. Work was never started under the 2006 Order of Conditions, requiring a new Notice of Intent to be filed. In 2008, after the initial Conservation Commission approval, MassDEP enacted new Stormwater Management Standards, which serve as this basis of our review.

The submitted materials appear to be conceptual and key pieces of the stormwater documentation were not included, as noted in the comments below. We have provided comments based on the information provided but may have additional comments following the receipt of new information.

We reviewed this project with respect to the MassDEP Stormwater Management Standards, as described below:

1. The Existing Conditions Plan does not appear to accurately reflect the current conditions of the site and surrounding parcels. Specifically, the limit of paved surfaces and the existing tree line should be provided so that the existing cover types within the watershed boundaries (both on and offsite) can be confirmed. Based on the site visit, it appears the parcel is substantially woods in fair condition with some areas of grass in the northern portion of the site near Acushnet Avenue. The existing drainage infrastructure, including the subsurface infiltration system installed for the bank property and other components that the proposed drainage system connect to, should also be provided. Complete topography for the limit of analysis should also be provided.

2. Additional information should be provided for the existing subsurface infiltration system. It is unclear how this system interacts with the proposed development, if at all. As an existing condition, this pond should be included in the existing HydroCAD model. Does this infiltration system have capacity to accept additional stormwater from the proposed project? There appears to be a significant amount of road that is being routed to the infiltration field.
3. The NRCS soil survey and onsite soil testing was not provided with the Application. MassDEP requires soil testing in the locations of all proposed stormwater management systems to confirm soil texture and groundwater and ledge conditions. Following the soil testing, the stormwater calculations, including curve number and infiltration rates, should be updated as necessary to reflect the onsite conditions.
4. Based on the elevations of the wetland and the existing field drain, it appears that groundwater is within a couple of feet of the existing grade. Documentation should be provided to demonstrate that a 2-foot separation will be provided between estimated seasonal high groundwater and the bottom of the infiltration systems. Due to the fact that all roof surfaces are routed to subsurface infiltration systems, the Applicant should perform enough test holes on the property to clearly demonstrate groundwater elevations throughout the property.
5. A flood study was prepared in September 2007 for the perennial stream that runs along the eastern property boundary. We recommend that the Applicant review the study, if possible, to ensure that the site is designed appropriately for the designated flood area. The study was prepared by CDM and is titled *The City of New Bedford, Massachusetts Stratford Street and Barnum Street Drainage Design Report*.
6. On the Existing Subcatchment Areas Plan, it is difficult to distinguish between property lines and watershed divides.
7. Based on the topography provided, it does not appear that Design Point 2 is a receiving point for the site that needs to be analyzed. Run-off generated in the southwest corner of the site appears to flow down towards Arnoff Street and Design Point 3.
8. The Applicant should consider modeling Arnoff Street as an interim design point since it is the downstream boundary for a large portion of the site.
9. The existing drainage divides should also be evaluated for consistency with the high points outlined by the existing topography.
10. The proposed plans appear to be conceptual design plans and are missing certain information that would aid in reviewing the stormwater management system. For example, drainage infrastructure (catch basins, drain manholes, pipes, basins, subsurface systems, etc.) are not labeled in plain view or provided on the proposed conditions watershed map.
11. The Proposed Subcatchment Areas Plan should be revised to include and label the proposed subcatchments, ponds, and reaches to be consistent with the HydroCAD model. The ponds should also be labeled on the Grading and Drainage Plan.

12. The stormwater report indicates that the existing peak flow rate directed towards the wetland (DP-4) is being reduced, while the peak rate is being increased towards Acushnet Avenue. We recommend that the peak flow rate be maintained at all design points to the maximum extent possible to align with Standard 2. If an increase is proposed to the municipal drainage system, we recommend consulting with the Department of Public Infrastructure to confirm there is adequate capacity for the proposed flows.
13. The existing and proposed areas of analysis are not consistent. It appears the difference may be the proposed roofs, which are to be directed to their own infiltration systems. If this is the case, additional sizing information and details should be provided for the rooftop systems to confirm they capture and recharge the 100-year storm event.

Alternatively, the Commission may consider stipulating that the lot infiltration systems be sized to accommodate the 100-year storm and that the design plans and calculations be provided if the Applicant files Notices of Intent for the individual house lots or – if the house lots are outside the jurisdictional area – when they file for building permits.

14. The Applicant is proposing deep sump and hooded catch basins, a surface basin, and subsurface infiltration basins for water quality treatment.
  - a. TSS removal spreadsheets should be provided to document that 80% TSS is removed for each proposed treatment train.
  - b. Water quality volume calculations should be provided for each treatment BMP – only volume below the outlet can be counted towards the treatment volume.
  - c. The design of the proposed surface basin is unclear. Given the nearby wetland elevations, groundwater may be present in the bottom of the basin; however there is an outlet at the bottom of the basin. The Applicant should provide additional information to clarify the intent of the basin and the conformance with MassDEP design standards.
  - d. Sediment forebay sizing calculations should be provided.
15. The Applicant is proposing subsurface infiltration basins for groundwater recharge. The recharge calculations should be revised to include the volume below the system outlets only.
16. There appears to be a typo in the HydroCAD for Pond 2 – the bottom surface elevation is 93 feet and the top elevation is 105 feet. Please review and revise as necessary.
17. 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.
18. The Stormwater Checklist indicates a Stormwater Pollution Prevention Plan will be provided prior to construction. There are currently no erosion and sediment controls provided on the plans or detail sheets.
19. The Operation and Maintenance Plan should be updated to include inspection and maintenance activities and frequencies for all proposed stormwater components (including the roof infiltration systems and surface basin) in accordance with the MassDEP Stormwater Handbook.
20. The Illicit Discharge Compliance Statement should be signed by the Applicant.

Mr. John Radcliffe: Nitsch Project #9972  
April 1, 2016  
Page 4 of 4

21. In addition to the wetlands, snow should also not be stored within proposed drainage structures or basins.

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

Very truly yours,

**Nitsch Engineering, Inc.**



Jennifer L. Johnson, PE, CPSWQ, LEED AP BD+C  
Senior Project Engineer

Approved by:



Scott D. Turner, PE, AICP, LEED AP ND  
Director of Planning

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