

July 8, 2022

Mr. Dennis Audette, Chair  
New Bedford Conservation Commission  
New Bedford City Hall  
133 William Street  
New Bedford, MA 02740

RE: Nitsch Project #14850  
Permitting Peer Review  
East Beach Parking Lot  
Green Infrastructure  
New Bedford, MA

**RE: East Beach Parking Lot Green Infrastructure Retrofit  
Peer Review Responses**

Dear Mr. Audette:

On behalf of the City of New Bedford (the Applicant), Nitsch Engineering is writing to respond to the comments prepared by Woods Hole Group (WHG) as part of the project peer review.

Nitsch Engineering received updated peer review comments from WHG in a letter dated June 28, 2022. Please find the series of comments from WHG in *italics* and responses by Nitsch Engineering responses in **Bold**.

## Stormwater Report Comments

- Bioretention basins are listed as Treatment BMP's in Volume 2 Chapter 2 of the MA DEP Stormwater Standards. The Standards indicate that a constraint of the use of those is that they should not be used near bathing beaches, a designated Critical Area. No additional guidance is included in the Standards on what distance is adequately far enough away to alleviate that concern. The closest infiltrating bioretention basin at this site appears to be approximately 60 feet from the bulkhead bordering the beach. The Applicant should provide additional information regarding the use of bioretention basins in such close proximity to a Critical Area.*

**Nitsch Engineering: There are no infiltrating basins within the 100-ft buffer zone to the coastal bank (see revised plans and response to Comment #13 below). Additionally, per table CA-1 Standard 6, both non-infiltrating and exfiltrating bioretention basins are listed as BMPs designated as BMPs for Discharges Near Or To Shellfish Growing Areas And Bathing Beaches.**

**Table CA 1 Standard 6**

<p><b>Stormwater BMPs for Discharges Near or To Shellfish Growing Areas and Bathing Beaches</b>                  If applicable, proponent must comply with Coastal Wetlands Regulations<sup>10</sup>.                  All BMPs must be designed in accordance with specifications and sizing methodologies in Volumes 2 and 3 of the Massachusetts Stormwater Handbook.                  Required Water Quality Volume = 1.0 inch times impervious area.                  At least 44 % TSS removal must be provided prior to discharge to infiltration BMP.                  For discharges near or to shellfish growing areas or bathing beaches, proprietary BMPs may be used only for pretreatment, unless verified by TARP or STEP for other uses. For the purpose of this requirement, subsurface structures, even those that have a storage chamber that has been manufactured are not proprietary BMPs, since the pretreatment occurs in the soil below the structure, not in the structure itself.</p>	
<p><b>Pretreatment:</b></p>	Deep Sump Catch Basin
	Oil Grit Separators
	Proprietary Separators See Volume 2.
	Sediment Forebays
	Vegetated Filter Strips
<p><b>Treatment:</b>                  Sand Filters, Organic Filters, Proprietary Media Filters, Filtering Bioretention Areas, and Wet Basins must be lined and sealed if at least 44% TSS has not been removed prior to discharge to the BMP.</p>	Filtering Bioretention Areas including rain gardens
	Constructed Stormwater Wetlands ( <i>highly recommended</i> )
	Gravel Wetlands
	Proprietary Filter Media ( <i>Proprietary Media Filters may not be used as terminal treatment for discharges near or to critical areas unless they have been verified for such use through the TARP or STEP process. See Volume 2. Proprietary media filters do not include catch basin inserts.</i> )
	Sand /Organic Filters
<p><b>Infiltration:</b></p>	Wet Basins
	Exfiltrating Bioretention Areas including rain gardens
	Dry Wells ( <i>runoff from non-metal roofs and runoff from metal roofs located outside of the Zone II or Interim Wellhead Protection Area of a public water supply and outside of an industrial site only.</i> )
	Infiltration Basins ( <i>highly recommended</i> )
	Infiltration Trenches ( <i>highly recommended</i> )
Subsurface Structures	

- Sediment forebays prior to the bioretention basins are proposed within the Stormwater Report and a credit for their TSS removal is taken in the TSS calculations sheets. There is one label within Bioretention Basin #6b on sheet C5.3, but no further details other than what appears to be detailed as “Curb Break Detail For Vertical Granite Curb” on sheet C6.3. There is not enough information for the sediment forebays on the plans (grading, dimensions, etc.) to determine if they provide the required volume to handle the minimum 0.1 inch per impervious acre designated in the Structural BMP section of the MA DEP Stormwater Standards prior to discharge to the bioretention basin for further treatment. The Applicant should include further details and may want to include additional vertical curb check dams at the curb inlet points within the bioretention basins in order to provide the required volume control for a sediment forebay isolated from the remainder of the basin.

Mr. Dennis Audette: Nitsch Project #14850  
July 8, 2021  
East Beach Parking Lot Green Infrastructure – New Bedford, MA

**Nitsch Engineering: Accepted. Provided and Required volume calculations are now provided on the plans (See Sheet C6.3). Check dams are included between the forebay and basins are now provided and detail included.**

3. *Soil testing follows the method used for Title 5 septic system site evaluations which identified the infiltration soils as sandy loam while the NRCS Web Soil Survey maps the hydrologic soil group at the site as Urban. The soils report does not indicate that the person who conducted the testing is a licensed soil evaluator.*

**Nitsch Engineering: Soil Report has been updated. Site Evaluations were performed by Brian Biagini, EIT– Licensed Soil Evaluator Number 14419. <https://neiwpsc.org/wp-content/uploads/2022/02/SE-In-state-2-3-22.pdf>**

4. *The soils tests indicate a “Groundwater Elevation” which is actually a depth below grade. The measured groundwater table elevation should be shown for each test and the seasonal high groundwater table elevation should be calculated. The Applicant should confirm that there is a 2-foot separation between the bottom of the stormwater infiltration systems and the seasonal high groundwater table, per the Massachusetts Stormwater Standards.*

**Nitsch Engineering: Confirmed. Soil test reports have been updated in the stormwater report (reference: Page 4) .**

5. *Buoyancy calculations for structures that extend below the seasonal groundwater table elevation should be included.*

**Nitsch Engineering: Specification SECTION 334000: STORM DRAINAGE UTILITIES states the following requirement of the Contractor. The buoyancy calculations and design solutions, as needed, will be reviewed as part of the submittal process.**

**Section 1.3: Submittals: *The Contractor shall submit buoyancy calculations for storm drainage structures assuming groundwater is one (1) foot below finish grade. If buoyancy is an issue the structure(s) shall be modified to prevent uplift. All buoyancy calculations and precast concrete structure designs shall be prepared and sealed by a professional Civil Engineer licensed in the state of Massachusetts.***

6. *Piping connections below the seasonal high groundwater table elevation should be mortared\sealed to prevent inflow into the drainage system.*

**Nitsch Engineering: Accepted. Per Specification SECTION 334000: STORM DRAINAGE UTILITIES:**

- **Pipe entrances at catch basins shall be made with a mortar made with Type II cement. Mortar mixture shall follow instructions provided by cement manufacturer. Pipe connections at drain manholes and water quality structures shall be made with integral flexible rubber sleeves and Corrugated Pipe Adapters designed for use with the pipe and sleeves.**

Mr. Dennis Audette: Nitsch Project #14850  
July 8, 2021  
East Beach Parking Lot Green Infrastructure – New Bedford, MA

- **The pipe and fitting joints shall be bell-and spigot with watertight gaskets in accordance with the requirements of ASTM D3212.**
7. *TSS calculations for Treatment Trains C and D list the Isolator Row as having a TSS removal rate of 81%. The UNHSC report states the median annual removal efficiency at 80%. These calculations should be corrected*

**Nitsch Engineering: TSS Removal Calculations have been updated to reflect a TSS removal rate of 80%.**

## Plan Set Comments

### General Plan Set Comments:

8. *Plans are not stamped by a Professional Engineer or Professional Land Surveyor.*

**Nitsch Engineering: Revised Plans are stamped by a Professional Engineer and survey has been stamped by a Professional Land Surveyor.**

9. *Text and labels overlap in many areas and are difficult to read. We recommend using text masking and/or relocating labels and turning off unnecessary background information to help focus the important information on each of the plan sheets.*

**Nitsch Engineering: Accepted. Text masks have been added**

10. *Stray labels such as pipe diameters on a sheet where the pipe isn't being shown should be removed.*

**Nitsch Engineering: Accepted, pipe diameter labels are removed from other sheets.**

11. *Text information is clipped off the edge of the plan view (viewport) on some sheets (i.e., C5.1 Site Drainage Plan – Lot A: DMH1 invert values)*

**Nitsch Engineering: Viewports and clipped text has been revised.**

### Plan Sheet C5.1 Site Drainage Plan – Lot A

12. *Not Used*

13. *The proposed area labeled as "Ponding Basin with Bioretention Soil Mix" does not show up anywhere in the calculations or details. We believe this should be labeled "Bioretention Basin #2A" but the Applicant should correct the information as needed.*

**Nitsch Engineering: This basin is a landscape depression with plantings. Runoff from the parking lot is now collected via a catch basin in the drive aisle and no runoff from vehicular areas drains to the area formerly identified as Ponding Basin with Bioretention Soil Mix.**

Mr. Dennis Audette: Nitsch Project #14850  
July 8, 2021  
East Beach Parking Lot Green Infrastructure – New Bedford, MA

14. *Inspection ports are shown and labeled within the Isolator Rows and StormTech infiltration systems. A typical detail of the construction of those would be helpful for a contractor.*

**Nitsch Engineering: Accepted.**

#### **Plan Sheet C6.2 Site Details Sheet II**

15. *Isolator Row Section Detail:*
- a. *Non-woven filter fabric should be shown surrounding the entire Isolator Row between the chambers and stone as required by manufacturer.*

**Nitsch Engineering: Accepted. Detail has been updated to show non-woven filter fabric around the Isolator Row Chambers, per the manufacturer recommendations.**

- b. *Piping to the Isolator row(s) should be modified to include an overflow in the initial catchment basin (DMH2, DMH12, & DMH33). An outlet pipe from each structure should be piped to allow the water quality volume storm flow only to the isolator row. An overflow pipe or control weir within the basin structure should be set at a higher elevation to allow larger storm flows to directly feed a header pipe that feeds the additional StormTech chamber rows to allow infiltration throughout the system as directed by the manufacturer.*

**Nitsch Engineering: Accepted, this pipe change is reflected in the updated plans. Reference: Sheets C5.1 - C5.3 for layout of the header pipe, isolator row inlet, and weir/pipe overflow. An Isolator Row and Header Pipe Detail has been incorporated into Sheet C6.2 to detail the configuration.**

- c. *Isolator rows connected to the lined bioretention systems should have an overflow pipe connecting from the top of the last chamber to the outlet structure (DMH10, DMH20, & DMH31) that directs stormwater to partially bypass the system in the event that the infiltration through the system to the underdrain becomes reduced due to clogging at the stone/geotextile interface.*

**Nitsch Engineering: Accepted, this pipe change is reflected in the updated plans. Reference: Sheet C6.2, Lined Isolator Row Detail.**

- d. *Isolator Row detail shows an underdrain connected to the same manhole as inlet pipe. Plans show underdrain connecting to a downstream collection manhole. The detail should be edited to note/show the proper connection per manufacturer's specifications.*

**Nitsch Engineering: Accepted, this detail change is reflected in the updated plans. Reference: Sheets C5.1 - C5.3 and Sheet C6.2, Lined Isolator Row Detail.**

- e. *We recommend adding a layer of filter fabric between the pea gravel and crushed stone in the bioretention basin cross section details.*

Mr. Dennis Audette: Nitsch Project #14850  
July 8, 2021  
East Beach Parking Lot Green Infrastructure – New Bedford, MA

**Nitsch Engineering: Not Accepted, Nitsch Engineering does not typically include filter fabric between pea gravel and crushed stone layer, as the filter fabric between these layers can lead to clogging and create a restrictive layer.**

Please let me know if you have further questions or comments.

Very truly yours,

**Nitsch Engineering, Inc.**



Jessica Wala, PE, LEED AP ND, ENV SP  
Senior Project Engineer



Brian Creamer, AICP, SITES AP  
Project Manager

\\jnei.local\DFS\Projects\10000-14999\14850 EastBeachPark\Planning\Project Data\Permitting\Peer Review\2022-07-07 14850-LT-Peer Review Reponse Letter.docx