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December 17, 2019

Mr. Craig Dixon
Chairman
New Bedford Conservation Commission
New Bedford City Hall
133 William Street
New Bedford, MA 02744

RE: Nitsch Project #9972
Photovoltaic Solar Array
John Vertente Boulevard
New Bedford/Dartmouth, MA

Dear Mr. Dixon:

This letter is regarding the Notice of Intent (NOI) submitted for the proposed Photovoltaic Solar Array on John Vertente Boulevard in New Bedford and Dartmouth, Massachusetts. In response to our initial letter dated December 03, 2019, Nitsch Engineering received and reviewed the following documents from the Applicant:

- Plans entitled "Proposed Large Scale, Ground Mounted Photovoltaic Solar Array on John Vertente Boulevard in Dartmouth and New Bedford, MA," prepared by Prime Engineering, Inc., revised through December 6, 2019;
- Report entitled "Narrative in Support of Proposed Ground Mounted Photovoltaic Solar Array, John Vertente Blvd.," prepared by Prime Engineering, Inc., revised through December 3, 2019;
- Plans entitled "Jurisdictional Isolated Land Subject to Flooding Assessment," prepared by Prime Engineering, Inc., revised through December 2, 2019;
- Plans entitled "Pre- and Post-Development Catchment Areas," prepared by Prime Engineering, Inc., dated December 3, 2019; and
- *Response to Comments* Letter, prepared by Prime Engineering, Inc., dated December 9, 2019;

For clarity, we have provided our initial comments from December 3, 2019 in blue font, the Prime Engineering response in black font, and our updated response is provided in **blue bolded font.**

General Comments

1. The proposed project includes the clearing and stumping of large forested areas and construction of gravel access roads. These alterations will result in the change of the curve numbers (CN) used in the drainage analysis and increased stormwater runoff if left unmitigated. A Stormwater Report should be provided with drainage calculations documenting compliance with the MassDEP Stormwater Management Standards.

   Prime Response (12/09/2019): The project narrative has been updated to include a drainage analysis along with a description of how the stormwater standards have been met. Given the existing gravel roads will be removed and converted to meadow and no grading is proposed, the drainage calculations show there will either be no change or a decrease in peak rates of runoff.

   Nitsch Response (2019-12-16): The Applicant has provided a Stormwater Report and associated supporting calculations and documents. The analysis provided confirms no increase in peak runoff rates. Comment closed.

2. The project includes alterations within the 25'-setback to BVW consisting of tree clearing with stumps and low-lying vegetation to remain. It is assumed the clearing is to allow the maximum amount of sunlight possible to reach the solar array in the developable area. Nitsch Engineering recommends the Applicant further analyze the existing vegetation within the 25'-setback and reduce the alterations/clearing where possible due to shadows.

   Prime Response (12/09/2019): Refer to the attached memo which indicates the benefits of the proposed clearing.

   Nitsch Response (2019-12-16): The project still proposes alterations within the 25'-setback adjacent to the panels. It is recommended that the Applicant further evaluate the extent to which the canopy is required to be altered. Selective canopy alteration (e.g. pollarding) may be feasible versus clear-cutting or no alterations required in areas depending on the location of the panels in relation to the canopy (i.e. no clearing needed within the 25'-setback to the north of the array).

3. There is an existing active culvert and stream located next to wetland flag WF-34 in the upland wetland located in the northwestern corner of the project site as witnessed during a site visit on 11/26/19. This culvert appears to be outside the limit of work; however, a note specifying the maintenance and protection of this culvert should be included in the plans. Should the stream/culvert be a design point in the drainage analysis?

   Prime Response (12/09/2019): The plans have been revised to add a note to sheet C-3. The wetland on both side of the culvert were combined into one design point. Given the peak rate of runoff has been reduced in post-development, a separate culvert analysis was not warranted.

   Nitsch Response (2019-12-16): The Applicant has provided a note on the plans specifying the maintenance and protection of this culvert, as requested. An analysis of the culvert is not required based on the decrease in post-development runoff rates. Comment closed.

4. There is a Sediment Trap Detail provided on sheet D-1; however, the location of the sediment trap is not shown on sheet C-1, Clearing and Grubbing Plan.

   Prime Response (12/09/2019): The sediment trap is only to be installed if necessary, based on site conditions during construction. A note to that affect has been added to the detail.

   Nitsch Response (2019-12-16): The Applicant has revised the detail to clarify the use of the sediment trap. Comment closed.

5. The plans do not appear to provide stormwater mitigation for the proposal solar panels. Concentrated flows from the panels may cause erosion and potentially increase stormwater runoff from the project limits. The Applicant should provide mitigation measures that meet the MassDEP Stormwater Management Standards.

   Prime Response (12/09/2019): MassDEP recommends methods to mitigate potential concentrated flow from panels. Specifically, providing gaps between panels and having no drip edge greater than 10' above grade. Refer to the attached photographs. The racking proposed provides for gaps between the panels which lets the stormwater through as shown by the grass being pushed down in the winter. In the summer time, the effect cannot be seen. By allowing the stormwater to flow in between the panels, there will be no effect to peak rates.

Nitsch Response (2019-12-16): We have reviewed the comment response and understand erosion potential will be reduced with the low panel heights and gaps between panels. It should be noted (where applicable) all erosion control measures are to remain in place until new vegetation is established. Comment closed.

6. Based on the site plans and Typical Rack Assembly Detail there does not appear to be any grading proposed at the site. The Applicant should clarify how the solar arrays will be constructed with the existing undulating surface. If the racks are to maintain a constant height, there may be additional erosion concerns at the dripline with higher rack assemblies in low points.

   Prime Response (12/09/2019): No grading is proposed, except for flattening the steep slope of the New Bedford non jurisdictional Isolated Land Subject to Flooding, as detailed on the upper left corner of the detail sheet. The panels can be placed on a 3:1 slope with no need for grading. Refer to the attached photograph for an example of how the panels are racked across undulating topography. As shown, the panels follow the topography and in no case are the drip edges greater than 10' from the ground surface.

   Nitsch Response (2019-12-16): The Applicant has provided information clarifying the installation of the panels. Comment closed.

Jurisdictional Assessment of Depression on the North Side of John Vertente Blvd. Extension

7. The calculations provided with the assessment of the ILSF areas appear to be correct and per the Wetlands Protection Act (WPA, 310CMR 10.00) Section 10.57(2)(b) definition of an ILSF.

   Prime Response (12/09/2019): No response necessary.

   Nitsch Response (2019-12-16): No further response required. Comment closed.

8. The analysis of the ILSF areas should be included in the Stormwater Report.

   Prime Response (12/09/2019): The narrative has been updated to include the ILSF narrative.

   Nitsch Response (2019-12-16): No further response required. Comment closed.

9. Depression D-5 shall be annotated and shown similarly as depressions D-1 & D-2, D-3 & D-4, NB-1 & NB-2, and NB-3 on sheets 2, 3, and 4 of the plans provided with the assessment. Provide a summary of the HydroCAD analysis and findings in the Assessment report.

   Prime Response (12/09/2019): The report has been updated to include the analysis. D-5 has been removed from the analysis. The depression represented by D-5 is now included in the overall wetlands BVW.

   Nitsch Response (2019-12-16): The Applicant has provided the requested information. Comment closed.

If you have any questions, please call us at 617-338-0063.

Very truly yours,

Nitsch Engineering, Inc.

Joshua Soares, PE
Project Manager

Jennifer L. Johnson, PE, CPSWQ, CFM, LEED AP
Project Manager

JMS/ajc

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