

JONES & BEACH ENGINEERS INC.

85 Portsmouth Avenue, PO Box 219, Stratham, NH 03885
603.772.4746 - JonesandBeach.com

January 5, 2022

Barrington Planning Board
Attn: James Jennison, Chairman
333 Calef Highway
Barrington, NH 03825

RE: Response Letter
44 Meadowbrook Drive, Barrington, NH
Tax Map 270, Lots 2 & 3
Tax Map 273, Lot 49
JBE Project No. 20747

Dear Mr. Jennison,

We are in receipt of comments from Jodie Bray Strickland and William Straub from CMA Engineers dated December 9, 2021. Review comments are listed below with our responses in bold.

Review of Drainage Analysis:

The drainage design uses grass-lined swales along the roadway, with a roadway crossing culvert pipe to convey runoff to a grass-lined swale that discharges stormwater into an infiltration basin. The infiltration basin has a discharge pipe that outlets to a riprap swale.

The proposed drainage system utilizes elements of BMP to hydraulically limit peak post-development flows to below pre-development levels. However, the current NHDES Stormwater Manual also requires stormwater treatment by BMP installations. The drawings show an infiltration basin, which is commonly used for treatment by infiltrating a portion of the stormwater, particularly at low flows. The effectiveness of the designed infiltration basin to infiltrate stormwater is in question because of the two issues pointed out below.

- 1. Per the NHDES Stormwater Manual, at least 36" of separation between the bottom of the treatment layer and the Seasonal High-Water Table (SHWT) is required. The GZA soils report estimates the SHWT is 22" and 32" below ground surface in the test pits located within the proposed infiltration basin location. The existing conditions suggest the ground surface elevations are between 178' and 180', indicating the required 3' separation elevations are 175' or 177'. The bottom of the pond is proposed to be 175' indicating no separation from the SHWT, in fact, the pond bottom may be seasonally in the SHWT.*

RESPONSE: Proposed stormwater features have been revised.

RECEIVED

JAN 05 2022

LAND USE OFFICE

2. *The Site-Specific Soil Mapping Report, prepared by GZA GeoEnvironmental (GZA), reported percolation rates of 15 in/hr at Test Pits #1 and #2 (reported as 4 min/in); however, the assumed exfiltration rate used in the stormwater model was only 0.030 in/hr. A factor of safety of 2 is commonly used, but a much larger factor of safety has been applied. Was the GZA percolation rate measured directly by infiltration equipment or was it a textbook value for the soil type?*

RESPONSE: Infiltration basin has been replaced with a vegetated treatment swale and detention basin.

These two issues would affect the ability of infiltration basins to function as intended. Please provide clarification on these issues. If needed, other treatment methods could be explored.

In addition, we have the following minor comments on the Drainage Analysis and Sediment Control Plan:

1. *The Existing and Proposed Watershed Plans show three separate locations for Analysis Point #1 (AP #1). Where is AP#1?*

RESPONSE: AP #1 defined as the wetland boundary located along the west side of the developed area.

2. *In the stormwater analysis, the pond is referred to as Pond 1P but labelled P1 on the watershed plan.*

RESPONSE: The watershed plan has been updated as required.

3. *In the O&M manual, there are several references to parking lots that do not apply to this project and should be removed.*

RESPONSE: O&M has been revised as required.

4. *Section B.2.f. of the O&M manual references catch basins and drain manholes maintenance. These do not apply to this project and should be removed.*

RESPONSE: O&M has been revised as required.

5. *Section B.2.g of the O&M manual references permanent stone check dam maintenance is included. These do not apply to this project and should be removed.*

RESPONSE: O&M has been revised as required.

6. *Section B.1.b of the O&M manual, and the Maintenance Report Sheet, references plunge pool maintenance. Plunge pools do not apply to this project and should be removed.*

RESPONSE: O&M has been revised as required.

7. *Infiltration basin maintenance should discuss mowing the embankments and removing woody growth.*

RESPONSE: O&M has been revised as required.

8. *Regardless of how the infiltration basin works, Infiltration Basin #1 Detail shows the outlet below the bottom of the pond schematically (the invert elevation is correct).*

RESPONSE: The stormwater basin detail has been revised as required.

RECEIVED

JAN 05 2022

LAND USE OFFICE

JONES & BEACH
ENGINEERS, INC.

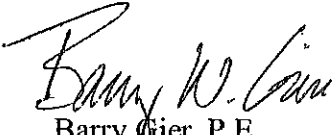
Included with this response letter are the following:

1. Five (5) Full Size Plans.
2. Twelve (12) 11"x17" Plans.
3. Two (2) Drainage Analysis.

Thank you very much for your time.

Very truly yours,

JONES & BEACH ENGINEERS, INC.



Barry Gier, P.E.

Vice President

cc: 21 Boylston Street, LLC (letter & plan set via email)

Jodie Bray Strickland & William Straub, CMA Engineers (letter & plans via email)

RECEIVED
JAN 05 2022
LAND USE OFFICE