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Planning Board
Town of Framingham
150 Concord St.
Room 205
Framingham, MA 01701

TOWN CLERK

Subject: Modification to Site Plan Approval
Bose Solar Array
Dewberry No. 50059184

Dear Ms Loomis:

On behalf of Sunpower, Dewberry Engineers Inc. (Dewberry), acting as the engineer for the design of the subject project, is submitting the attached documentation for Modification to Site Plan Approval in accordance with Sections II.F and VI.F.2.a.(2) of the Town's Zoning Bylaw. Included are the following documents:

- Form A - Cover Letter
- Form B - Building Department Recognition Form
- Form C - Abutters Request Form
- Form G - Request for Modification Application
- Fifteen (15) sets of the prepared site plans and details, (five (5) sets are 24" by 36", ten (10) sets are 11" by 17".
- Stormwater Summary (a section within this document)
- Letter from Paul V. Galvani to Michael Tusino, Building Commissioner, dated August 19, 2016

Project Description

The proposed improvements are located on existing land owned by Bose. The property slopes north to south (from the Bose parking lot down to Pennsylvania Avenue) and consists of brush and small trees. The solar project consists of ground-mounted photovoltaic system connected to, and for the direct use by, the Bose office building. The solar array, as currently proposed, incorporates 4,260 435-watt solar panels mounted on a fixed-tilt elevated racking system (solar panel data sheet is attached). The exact quantity of panels and overall system size may vary slightly from this concept plan as the design documents are refined. Miscellaneous site improvements include underground electrical conduit, security signage and perimeter fencing. The project maximizes the use of existing grades; therefore, the project does not significantly alter the surface grades or affect overland flow of stormwater runoff or drainage patterns. See the Stormwater Summary within this document that reviews how this project complies with the Massachusetts Department of Environmental Protection's *Checklist for Stormwater Report*.

The solar array incorporates an elevated racking system supported by a foundation system. The foundation system supports a metal frame to which the solar panels are mounted. The foundation system minimizes ground disturbance and the generation of excavation spoils. The bottom edge of the solar arrays will be located a minimum of 18" off the ground surface. The maximum height of the solar panels along the top edge of the arrays will vary from 3.5 to be 5-feet above the ground surface. All foundations and racking system components will be hot-dipped galvanized.

Electrical wiring connecting the panels is primarily mounted to the underside of the arrays to minimize trenching activities. The array supported electrical wiring connects to several string inverters mounted on the foundation posts. The inverters convert the DC current generated from the solar panels into AC current for distribution and use by Bose (string inverter data sheet is attached). The use of small string inverters

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OCT 28 2016
Page 1 of 4
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eliminates the need for large electrical equipment and eliminates the potential for propagation of noise from the property. AC wiring from the inverters is buried underground and connected to a small, frame-mounted electrical panel board cabinet. The AC wires within this panel board are combined into a larger diameter wire that is then connected, via underground wire, to the building.

The solar improvements will be surrounded by a 6-foot high chain link fence for security purposes. All fencing components will be hot-dipped galvanized.

It is anticipated that the existing vegetation will continue to provide adequate ground cover following construction of the arrays and the ground cover will be maintained as required. Any localized areas disturbed during construction will be restored to the ground cover conditions that existed prior to construction.

Existing Property Conditions

The property is designated as Block 24; Lot 5984 and Lot 7666 developed as Bose Corporation. The property is approximately 35.4 acres and the site is currently developed with a multi-story office building, asphalt pavement parking areas/roadways, open lawn, and meadow areas. Based on a review of local information, historical site development plans and an onsite evaluation of environmental constraints, there are no wetlands, wetland transition areas, streams, or riparian buffers are not located within the area proposed to be developed.

Stormwater Summary

As requested the following is a review to indicate how this project complies with the Massachusetts Department of Environmental Protection's *Checklist for Stormwater Report* lists ten (10) standards in accordance with 310 CMR 10.05 (6) (k)-(q).

Standard 1

"No new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth."

No new stormwater conveyances are proposed as part of this design.

Standard 2

"Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04."

The proposed project will not add to post-development peak discharge and will not exceed pre-development peak discharge rates or volumes.

Standard 3

"Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook."

The proposed project will not add any impervious area and will not impede the site's ability to recharge groundwater.

Standard 4

“Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

- a. *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*
- b. *Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
- c. *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.”*

The proposed project does not anticipate any new post-construction loading.

Standard 5

“For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.”

The proposed project is not located within a land use associated with higher potential pollutant loads.

Standard 6

“Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A “storm water discharge” as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.”

The proposed project is not anticipated to create any new stormwater discharges to any critical areas.

Standard 7

“A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.”

The proposed project is not a redevelopment project.

Standard 8

Ms. Loomis
Bose Solar Array
October 27, 2016

"A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented."

Construction-related impacts shall be controlled with erosion control measures (silt fencing and inlet protection) as shown on the attached site plans.

Standard 9

"A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed."

There are no new stormwater management systems to be operated and maintained on the project site. Therefore, an Operations and Maintenance Plan for such systems is not required.

Standard 10

"All illicit discharges to the stormwater management system are prohibited."

No illicit discharges are proposed as part of this design.

We trust that you will find this application comprehensive and addressing the requirements outlined in Sections II.F and VI.F.2.a.(2) of the Town's Zoning Bylaw. If there are any questions, or if you need further clarification on any information provided herein, please do not hesitate to contact me at 617-531-0745.

Very truly yours,

Dewberry Engineers Inc.



Christopher Barrett, PE
Project Engineer

Enc.

cc: Sara Parsons, Sunpower
Brad Dakake, Sunpower
Paul V. Galvani, Galvani Law Offices
Evan Hill, Dewberry