



136 West Street, Suite 103
Northampton, MA 01060
Office: 413.517.0133
Fax: 413.517.0136

Doucetengineers.com

March 3, 2016

Town of South Hadley Planning Board
ATTN: Richard Harris
Town Hall
116 Main Street, Room 204
South Hadley, MA 01075

**RE: Criteria for Review of Stormwater Permit
Berkshire Hills Music Academy – Bernon Music Center
48 Woodbridge Street**

Dear Mr. Harris:

Section 16-4 of the Stormwater Management Bylaw requires that the Planning Board make affirmative findings in regards to the following:

- A. The Stormwater Management and Erosion and Sediment Control Plan are consistent with the Purposes and Objectives of this Bylaw in Section 16-1;
- B. Provisions for stormwater management meet the Performance Standards described in Section 16-6;
- C. Provisions for erosion and sediment control meet the Design Requirements in Section 16-7.

In order to assist the Planning Board with its findings, Doucet & Associates, Inc. (D&A) has addressed the criteria below in **bold**:

Section 16-1

1.B. The proper management of stormwater runoff will meet the following objectives:

1. Reduce the adverse water quality impacts of stormwater discharges to rivers, lakes, reservoirs and streams in order to attain federal water quality standards;
Water quality impacts are addressed in the “Stormwater Quality” section of the Report (page 3), and under Standard #4 (page 5). No direct discharges to any water bodies are proposed.
2. Prevent the discharge of pollutants, including hazardous chemicals, into stormwater runoff;
Water quality impacts are addressed in the “Stormwater Quality” section of the Report (page 3), and under Standard #4 (page 5). We target TSS removal as the basis for pollutant prevention.
3. Minimize the volume and rate of stormwater which is discharged, to rivers, streams, reservoirs, lakes and combined sewers that flows from any site during and following development;

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PEOPLE YOU TRUST.

Overall stormwater volume has been mitigated for each design storm through infiltration in the rain garden. A comparison of existing and proposed flow rates is summarized in Table 1 (page 3) of the Report. A footnote explains an extremely small increase in peak flow rates for the Western Analysis Point.

4. Prevent erosion and sedimentation from land development, and reduce stream channel erosion caused by increased runoff;
Erosion & Sedimentation Control Plans (Sheets C-6 & C-7) have been provided. Stream channel erosion has been addressed by mitigating peak flow rates as summarized in Table 1 (page 3) of the Report.
5. Provide for the recharge of groundwater aquifers and maintain the base flow of streams;
Recharge of groundwater is provided by the proposed rain garden. See Standard #3 (pages 4-5) in the Report.
6. Provide stormwater facilities that are attractive, maintain the natural integrity of the environment, and are designed to protect public safety;
We believe that the proposed 2'-deep open vegetated swale and rain garden, which are designed to infiltrate quickly after rainfall events, adequately address these criteria.
7. Maintain or reduce pre-development runoff characteristics after development to the extent feasible;
A comparison of existing and proposed flow rates is summarized in Table 1 (page 3) of the Report. A footnote explains an extremely small increase in peak flow rates for the Western Analysis Point.
8. Minimize damage to public and private property from flooding;
We have minimized damage from flooding by mitigating peak flow rates. A comparison of existing and proposed flow rates is summarized in Table 1 (page 3) of the Report.
9. Ensure that these management controls are properly maintained; and,
A Long-Term Operation and Maintenance Plan has been included in Appendix D of the Report.
10. To provide construction site management practices for waste materials and debris.
Contractors shall abide by all applicable local, State, and Federal laws during construction. This project will also require permit coverage through NPDES. As such, management of waste and debris will comply with all applicable design guidance documents.

Section 16-6

2. Stormwater Management Measures

- A. Stormwater management measures shall be required to satisfy the minimum control requirements and shall be implemented in the following order of preference:
 1. Infiltration, flow attenuation, and pollutant removal of runoff on-site to existing areas with grass, trees, and similar vegetation and through the use of open vegetated swales and natural depressions;

The site stormwater management system has been designed in accordance to this stated preference of the Town. Infiltration, flow attenuation, and pollutant removal are provided by the proposed open vegetated swale and rain garden.

2. Use of stormwater on-site to replace water used in industrial processes or for irrigation;
Not applicable.
 3. Stormwater detention structures for the temporary storage of runoff which is designed so as not to create a permanent pool of water; and
The proposed rain garden has a draw-down time of 6.6 hours for the required Recharge Volume. The draw-down time for the entire rain garden volume is 29.2 hours. See Appendix E for supplemental calculations related to Standard #3.
 4. Stormwater retention structures for the permanent storage of runoff by means of a permanent pool of water;
Not proposed.
 5. Retention and evaporation of stormwater on rooftops or in parking lots.
Not proposed.
- B. Infiltration practices shall be utilized to reduce runoff volume increases. A combination of successive practices may be used to achieve the applicable minimum control requirements. Justification shall be provided by the applicant for rejecting each practice based on site conditions.
Overall stormwater volume has been mitigated for each design storm through infiltration in the rain garden.
- C. Best Management Practices shall be employed to minimize pollutants in stormwater runoff prior to discharge into a separate storm drainage system or water body.
Water quality impacts are addressed in the “Stormwater Quality” section of the Report (page 3), and under Standard #4 (page 5). No direct discharges to a separate drainage system or water body are proposed.
- D. All stormwater management facilities shall be designed to provide an emergency overflow system, and incorporate measures to provide a non-erosive velocity of flow along its length and at any outfall.
An emergency overflow weir has been provided at elevation 260.00 in the rain garden (See Sheet C-5). Flared end sections (FES) with stone protection are shown on Sheet C-5 and detailed on Sheet C-9. The FES have been designed to dissipate energy at the overflow outfall. See Standard #1 (page 4) of the Report and Appendix E for supplemental calculations.
- E. The designed release rate of any stormwater structure shall be modified if any increase in flooding or stream channel erosion would result at a downstream dam, highway, structure, or normal point of restricted stream flow.
Understood.

Section 16-7

1. The design requirements of the Erosion and Sediment Control Plan are:

- A. Minimize total area of disturbance.
The project seeks to minimize the total area of disturbance. ±2.82 Acres of the ±48.80 Acre site are proposed to be disturbed.
- B. Sequence activities to minimize simultaneous areas of disturbance.
The project has been divided into two phases (see Sheets C-6 & C-7) to minimize simultaneous areas of disturbance. Phase I has ±1.54 Acres of disturbance and Phase II has ±2.04 Acres.
- C. Minimize peak rate of runoff in accordance with the MA DEP Stormwater Management Standards.
A comparison of existing and proposed flow rates is summarized in Table 1 (page 3) of the Report.
- D. Minimize soil erosion and control sedimentation during construction. Prevention of erosion is preferred over sedimentation control.
Erosion will be prevented by minimizing disturbance and stabilizing areas within 14 days of completion. Sedimentation control will be provided by down-gradient silt fence and straw waddles uphill of the proposed swale and rain garden.
- E. Divert uncontaminated water around disturbed areas.
The existing BHMA building is a local high point; off-site run-on is not anticipated to be a factor.
- F. Maximize groundwater recharge.
Groundwater recharge will be implemented to the maximum extent practicable.
- G. Install, and maintain all Erosion and Sediment Control measures in accordance with the manufacturers specifications and good engineering practices.
All erosion and sedimentation control measures shall be installed in accordance with the manufacturers' specifications and good engineering practices.
- H. Prevent off-site transport of sediment.
Sedimentation control will be provided by down-gradient silt fence and straw waddles uphill of the proposed swale and rain garden.
- I. Protect and manage on and off-site material storage areas (overburden and stockpiles of dirt, borrow areas, or other areas used solely by the permitted project are considered a part of the project).
Material stockpiles shall have down-gradient silt fence protection to limit sedimentation.
- J. Comply with applicable Federal, State and local laws and regulations including waste disposal, sanitary sewer or septic system regulations, and air quality requirements, including dust control
The project shall comply with applicable Federal, State, and local laws and regulations.



- K. Prevent adverse impact from the proposed activities to habitats mapped by the Massachusetts Natural Heritage & Endangered Species Program as Endangered, Threatened or of Special concern, Estimated Habitats of Rare Wildlife and Certified Vernal Pools, and Priority Habitats of Rare Species.
Rare Species and Rare Wildlife Habitats do exist on portions of the 48.80 Acre site, however none are within 250 feet of the proposed disturbance area. Please see the attached exhibit of habitat mapping within 500 feet of the site.

- L. Institute interim and permanent stabilization measures. The measures shall be instituted on a disturbed area as soon as practicable but no more than 14 days after construction activity has temporarily or permanently ceased on that portion of the site.
Disturbed areas will be stabilized within 14 days of completion.

- M. Properly manage on-site construction and waste materials.
Contractors shall abide by all applicable local, State, and Federal laws during construction. This project will also require permit coverage through NPDES. As such, management of waste and debris will comply with all applicable design guidance documents.

- N. Prevent off-site vehicle tracking of sediments.
A stabilized construction entrance is shown on Sheets C-6 & C-7 and detailed on Sheet C-10.

We anticipate that the enclosed information will assist the Planning Board with its findings. Please let us know if you require any further information or clarification.

Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Tait', is written over a light blue horizontal line.

Chris Tait, P.E.
Senior Project Engineer
Doucet & Associates, Inc.

PH 1337

SOUTH HADLEY

Berkshire Hills Music Academy

100 m
200 ft
Scale = 1:9,028
111,110.48m 891,226.25m

- Canoe Access Points
- Canoe Trips
- Natural Heritage Data
 - BioMap2
 - NHESP Ecoregions
 - NHESP Certified Vernal Pools
 - NHESP Estimated Habitats of Rare Wildlife
 - NHESP Natural Communities
 - NHESP Priority Habitats of Rare Species
 - Potential Vernal Pools
 - Office of Fishing and Boating Access Sites
 - Openspace

Active Data Layers

- Check all Uncheck all Remove
- NHESP Priority Habitats of Rare Species
 - NHESP Certified Vernal Pools
 - NHESP Estimated Habitats of Rare Wildlife
 - Tax Parcels for Query
 - Detailed Features

Legend

- NHESP Priority Habitats of Rare Species
- NHESP Certified Vernal Pools
- NHESP Estimated Habitats of Rare Wildlife
- Tax Parcels for Query