



October 2, 2019

Ms. Marcia Gasses
Town Planner and Land Use Administrator
Town of Barrington
P.O. Box 660
Barrington, New Hampshire 03825

Subject: Wildlife Encounters Ecology Center – Map 250, Lot 133; Map 249, Lot 32
Stormwater and Site Plan Review

Dear Ms. Gasses:

As requested, we have completed our review of the following plans and materials submitted for the above referenced project:

- Plan set consisting of 2 sheets, produced by Farwell Engineering Services, LLC with a date of June 26, 2019.
 - Drainage Report, produced by Farwell Engineering Services, LLC, dated July 2019.
1. We recommend that the applicant provide a site distance plan and profile in accordance with Site Plan Review Regulations 3.5.9.
 2. We recommend that the applicant provide the notes on the plan specified in Site Plan Review Regulations 3.2.10.
 3. We recommend that the applicant revise the plans so that the private driveway maximum grade does not exceed 9%.
 4. We recommend that the applicant provide a legend that shows and defines each symbol and linetype used on the plans in accordance with Site Plan Review Regulations 3.2.8.
 5. Sheet C-2. We recommend that the applicant revise the proposed drainage pipe to meet the requirements of Site Plan Review Regulations 4.7.7(1), which requires a minimum pipe diameter of 15”.
 6. Sheet C-2. We recommend that the applicant revise the plan to show all proposed temporary erosion protection measures during construction (silt fence, hay bales, etc.) on the plan and their associated details,0 in accordance with Site Plan Review Regulations 3.5.3.
 7. Sheet C-2, Drainage Post- Development Drawing DR-2. The proposed grading and stormwater flow appears to flow directly through a line that is assumed to denote an existing rock retaining wall. It is unclear if stormwater will flow through the wall or if the wall will act as a barrier. We recommend that the applicant clarify the drainage flow pattern in this area and consider adding a defined flow path without a rock wall obstruction.
 8. Sheet C-2. We recommend that the applicant perform test pits to confirm that the proposed stormwater system retention is above the estimated seasonal high water table (ESHWT) elevations.

9. Sheet D-2. Details. We recommend that the applicant provide a detail of the stormwater retention pond that depicts the embankment section, embankment material compaction and gradation requirements, limits of riprap slope stabilization, and inverts of the emergency overflow spillway.
10. Sheet D-2. Details. We recommend that the applicant provide a pipe trench detail that depicts the compaction and material requirements for the stormwater drainage.
11. Sheet D-2. Details. Outlet Control Structure No. 1 Detail. We recommend that the applicant provide stone bedding wrapped in geotextile for the base of the outlet control structure.
12. Sheet D-2. Details. We recommend that the applicant provide a typical section for the driveway.
13. Drainage Analysis. Riprap Outlet Protection. We recommend that the applicant provide riprap apron and stone sizing calculations in the drainage analysis in accordance with Site Plan Review Regulations 4.7.2(11), and that the required dimensions and stone size are clearly defined on the drawings.
14. Drainage Analysis. The outlet control structure (Pond 2P) culvert length and outlet invert elevation does not match Sheet C-2. We recommend that the applicant revise the submitted materials to match.
15. Drainage Analysis. The Table of Contents indicate that AOT worksheets are included in the analysis. No worksheets were provided. We recommend that the applicant revise the drainage analysis to provide stormwater treatment and pre-treatment calculations that meet the requirements of the NH Stormwater Design Manual in accordance with Site Plan Review Regulations 4.7.2(10). We anticipate that the applicant can utilize the grass lined swale as a vegetated treatment swale.
16. Drainage Analysis. Watershed Plans DR-1 and DR-2. We recommend that the applicant revise the pre- and post-development watershed delineations to both have at least 2 points of analysis into the receiving watershed downstream. For example, the runoff associated with "2S" in the post-development model should be a separate point of analysis so that the effects of the disturbed areas associated with the proposed gravel parking lot can be compared more accurately.

If you have any questions or comments, please do not hesitate to contact us.

Very truly yours,

DuBOIS & KING, Inc.



Jeffrey A. Adler, P.E.
Sr. Project Manager