



October 28, 2021

Barrington Planning Board
P.O. Box 660
333 Calef Highway
Barrington, NH 03825

**Re: The Village at Barrington Square - Plan Reviewed
Addendum to Second Review - Response to Applicant Comments
Dove Development Group, LLC
Map 235, Lot 2 1-1 & 3
CMA # 1205 Task 40**

Dear Members of the Barrington Planning Board:

CMA Engineers has continued our review of materials supporting the development of a proposed 20-unit mixed use building and 25 townhouse units off the proposed extension of Community Way in Barrington. On August 20th, CMA Engineers completed our first review of the original submittal package and submitted a letter to the Town documenting our comments and questions on the package. Subsequently, Berry Surveying & Engineering (BS&E) has updated the submittal package for review, on behalf of the applicant. Most of the comments and questions in CMA Engineer's August 20th and 26th review letters were addressed; however, there are some that remain and require further discussion. Below are CMA Engineers' remaining comments on the application.

SITE PLAN REVIEW COMMENTS

8. Deep sump catch basins are generally standard practice to provide preliminary sediment removal from stormwater, and they would reduce the sediment loading on, and maintenance of, proposed stormwater treatment devices. Why are "no sump" catch basins proposed?

BS&E comment: On several of our recent more rural NHDES AoT permitted projects, NHB & NH F&G has requested that deep sumps be removed from catch basins and special bee-hive grates be used on catch basins in grassed areas. We have not received return correspondence from NHB or NH F&G to this point, but are expecting similar to comments to what has been received previously and will adjust the design as needed.

It is standard practice to install catch basins with deep sumps within the roadway to collect stormwater and provide preliminary treatment. Following a conversation with BS&E, NH F&G may ask for no-sump catch basins for all catch basins, regardless if they are in the roadway or not, for the applicant to receive their Alteration of Terrain Permit. CMA Engineers recommends all catch basins within the roadway be deep sump catch basins, and all catch basins outside of the roadway be no-sump catch basins; however, we defer to NHDES Land Development Bureau and their project specific requirements.

17. Underground Utilities

- e. For underdrain to function properly, it needs to be deep enough to drain water from the road base plus some portion of the subgrade material to prevent water trapped under the roadway to freeze and heave the road. Underdrain is typically installed 4 ft to 6 ft deep to accomplish this. The plans show the underdrain being installed approximately 2ft to the pipe invert. We recommend the underdrain pipe depth be lowered.

BS&E comment: After consideration from BS&E, underdrain is remaining in the same location at the bottom of the bankrun gravel layer, for multiple reasons. In several previous projects designed in Barrington, underdrain has been located at this elevation. In our experience, underdrain is commonly placed at this location in the roadway and is effective. Furthermore, the majority of locations that underdrain is proposed have ledge at or close to road select material elevation. Trenching an additional 3-4' into ledge would create unnecessary construction and be ineffective in these applications.

CMA Engineers notes that CB&E updated the Underdrain Detail, so the underdrain is installed 4-ft deep to top of pipe or 1-ft below ledge to top of pipe; however, there is a dimension remaining stating "1' min. cover". This dimension should be removed from the final plan submittal.

REVIEW OF DRAINAGE ANALYSIS

Rain Garden 102

2. From the BMP worksheet provided, the rain garden is only designed to treat the proposed additional impervious area, and it does not account for the existing impervious runoff flowing to the existing rain garden. Therefore, the BMP is designed to treat approximately half of the impervious area that is actually flowing to it, and it will not function properly. The rain garden should be designed for all impervious area flowing to it.

BS&E comment: Rain Garden #102 does not need to be designed for all impervious area flowing to the BMP. This BMP was designed for additional impervious area created as part of the 2019 approved project. Remaining impervious area that is not accounted for in the WQV is greater than 10 years old and the applicant would not be responsible for treatment of this impervious surface according to Env-Wq 1502.58(b)(2).

CMA Engineers reviewed the information provided for the design of Rain Garden #102. Under the proposed, future condition, the impervious area flowing to Rain Garden #102 is the sum of 31,150 sf from the 2019 development project and 36,800 sf from the proposed project, yielding a total impervious area flowing to the rain garden of 67,950 square feet (sf).

Based on the Filtration Practice Design Criteria for Rain Garden #2, the rain garden is designed for 36,800 sf of impervious area, but there is 67,950 sf of total impervious area flowing to it. CMA Engineers understands Rain Garden #102 was designed for the 2019 development project and the impervious area under that project; however, under the proposed condition, the rain garden would be undersized, and it will not function properly in treating stormwater, and we recommend this be addressed.

Two potential solutions are to reconstruct existing Rain Garden #102 for the total future impervious area or construct a new stormwater treatment practice to treat only the proposed impervious area, leaving the existing Rain Garden #102 to treat the stormwater it was designed for in the 2019 development project.

Our understanding of Env-Wq 1502.58(b)(2) is that planned work over a 10-year period must be considered in an AoT permit. It does not preclude existing impervious features from being included in calculating requirements for treatment, regardless of age.

Rain Garden 108

1. The forebay is <2' deep. See comment on Rain Garden 101.

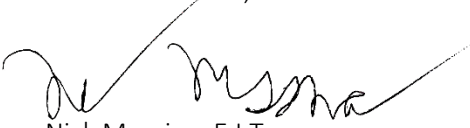
BS&E comment: The sediment forebay is less than two feet deep because the BMP has less than 2' of open water storage.

Env-Wq 1508.11(d) Pretreatment Practices: Sediment Forebays, states "Forebays shall be no less than 2 feet and no more than 6 feet in depth." CMA Engineers does not object to the proposed deviation from the regulation and defer judgement to NHDES Land Development Bureau and Planning Board.

Once our, and Town, comments are satisfactorily addressed, CMA Engineers recommends the Planning Board make the Town approval contingent on the Applicant receiving the Alternation of Terrain permit.

Should you have any questions, please do not hesitate to contact us.

Very truly yours,
CMA ENGINEERS, INC.



Nick Messina, E.I.T.
Project Engineer



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Cc: Chris Berry, P.E.