

January 9, 2017

Ms. Maria Mast
Conservation Agent
Grafton Municipal Center
30 Providence Road
Grafton, MA 01519

**RE: Estates at Bull Meadow
Response to Peer Review Comments
Dated December 6, 2016**

Dear Maria:

McCarty Engineering Inc. (MEI) is in receipt of a review letter dated December 6, 2016 prepared by Graves Engineering, Inc. relative to the Bull Meadow Estates proposed subdivision off Appaloosa Drive. This letter is in response to the revised definitive subdivision application package submitted to the Town of Grafton on November 22, 2016. No new comments have been offered to the Board on conformance with the Town of Grafton Wetland Bylaw, Regulations Governing Stormwater Management, the Massachusetts Stormwater Handbook and standard engineering practice. One existing comment was expanded on, however Graves Engineering Inc. deferred to the Planning Board for their recommendation.

For ease of review, the Graves Comment is shown below with MEI's response provided below it in italic font.

The comments received are as follows:

Regulations for the Administration of the Wetland Bylaw

1. The locations of wells on abutting properties were not shown on the plans. (§V.B.3(e))

Comment Satisfied: 11/1/2016

Response: Acknowledged

2. On Sheet 10 of the plans, the horizontal layout of the replication area is shown but no proposed topographic information was provided and the replication area is located partially outside the limits of the existing conditions topographic survey. (§V. B.5(b) & §V. C.1(a))

Comment Satisfied: 11/1/2016

Response: Acknowledged

3. The top of the berm at the two infiltration basins is only seven feet wide whereas the minimum width must be either ten feet or twelve feet, depending upon whether the berm is to be used for access. (§V. B.5(h)(2))

Comment Satisfied: 11/1/2016

Response: Acknowledged

4. Fences have not been proposed at the two infiltration basins. (§V. B.5(h)(3))

Comment Satisfied: 11/1/2016

Response: Acknowledged

5. Eighty percent total suspended solids (TSS) removal will not be achieved prior to the stormwater leaving the forebays and entering the infiltration basins. With 25% TSS removal from the catch basins and another 25% from the forebays, only 44% TSS removal will be achieved when stormwater enters the infiltration basins. (§V. B.5(h)(10))

Comment Satisfied: 12/6/2016

Response: Acknowledged

6. Retaining walls are proposed within the Paddock Ridge Drive right-of-way between stations 12+50± and 14+45± and a waiver from the Subdivision Rules & Regulations was requested. We understand that the Town of Grafton requires retaining walls to be outside the rights-of-way. (Schedule E, Standard Cross Section Minor Street B). Furthermore, there needs to be sufficient room on the road shoulders to allow for proposed or future utilities, guard rails, fences, ancillary wall construction materials (e.g. geogrids, if used) and sufficient grass area for the temporary storage of snow. The allocated width at this crossing does not appear to be adequate as currently proposed. (§V.C.2)

Comment Partially Satisfied: 12/6/2016. A cross section of the right-of-way at the wetland crossing has been added to Sheet 23. GEi respectfully defers to the Planning Board regarding the location of the retaining walls at the wetland crossing. We offer the following for consideration: the cross section did not include a grass strip between the roadway's sloped granite edging and the sidewalk. This grass strip would serve the purpose of separating pedestrians from vehicular traffic and for snow storage (otherwise snow storage will occur on the sidewalk). Ideally, a grass strip should be provided. However, if the cross section is to be implemented then the sloped granite edging on the sidewalk-side of the street should be changed to vertical granite curb to better prevent drivers from being able to drive onto the sidewalk .

Response: A cross section has been added to the detail sheets. MEI will defer to the planning board regarding the curbing type and location of the grass strip.

Regulations Governing Stormwater Management

7. Erosion control barriers need to be provided along the base of the roadway fill slopes between Bridle Ridge Drive and Lots 5 and 6. (§7.B.2.c)

Comment Satisfied: 11/1/2016

Response: Acknowledged

Stormwater Management & Hydrology Review

8. Access to Infiltration Basins 1 and 2 needs to be revised. The minimum top-of-berm berm width needs to be ten feet and the access grade can't exceed 20%. The tops of the berms are proposed to be approximately seven feet wide and the grade at Infiltration Basin 2 is approximately 33% (3H:1V).

Comment Satisfied: 11/1/2016

Response: Acknowledged

9. Calculations must be provided to demonstrate the infiltration forebay size in Infiltration Basins 1 and 2 comply with DEP Stormwater Management Guidelines.

Comment Satisfied: 11/1/2016

Response: Acknowledged

10. The two infiltration basins will only have approximately 0.8 feet of freeboard as measured between the 100-year peak water surface elevation and the top of the berms; at least one foot of freeboard needs to be provided.

Comment Satisfied: 11/1/2016

Response: Acknowledged

11. The plans should clearly show that the sides of the riprap spillways and down-gradient aprons are to also be lined with riprap in order to avoid erosion along the spillways' edges.

Comment Satisfied: 12/6/2016

Response: The grading has been revised to reflect the spillway elevations.

12. The riprap spillway elevations need to be labeled at Infiltration Basins 1 and 2.

Comment Satisfied: 12/6/2016.

Response: Acknowledged.

13. Soil testing has not yet been performed at Infiltration Basin 2 to demonstrate compliance with MassDEP's required two-foot offset to seasonal high groundwater. Based upon the soil testing data that was submitted (for fifteen building lots and Infiltration Basin 1), the proposed elevation for Infiltration Basin 2 does not appear to be unreasonable. Nevertheless, soil testing will have to be performed at infiltration Basin 2.

Comment Satisfied: 12/6/2016

Response: Acknowledged

14. The Area 2A label on the Existing Conditions Watershed Plan should be removed. This label applies to the proposed conditions.

Comment Satisfied: 11/1/2016

Response: Acknowledged

15. There is an unlabeled area shown on the Proposed Conditions Watershed Plan in front of Subcatchment Lot 13.

Comment Satisfied: 12/6/2016

Response: Acknowledged

16. It is necessary to provide appropriately-sized riprap aprons at drainage system discharge points. Additionally, supporting calculations relative to the apron dimensions and riprap stone size must be submitted.

Comment Satisfied: 12/6/2016

Response: Acknowledged

17. Sheet 10 refers to an infiltration basin while Sheet 12 refers to the same structure as a detention basin. The labels on the plans should be consistent and should follow MassDEP nomenclature.

Comment Satisfied: 12/6/2016

Response: Acknowledged

General Engineering Comments

18. On Sheet 21, the floor fill in the precast drain manhole construction detail needs to have a channel as opposed to being a planar surface.

Comment Satisfied: 12/6/2016

Response: Acknowledged

General Comments

19. It is recommended for clarity that the existing conditions plans (Sheets 1 and 2) be revised so the underlying gray existing conditions lines are black.

Comment Satisfied: 11/1/2016

Response: Acknowledged

20. Although the boundary of the development was drawn on the plans, it is difficult to distinguish the boundary from other interior and exterior lot lines. The boundary should be a heavier line type.

Comment Satisfied: 11/1/2016

Response: Acknowledged

Additional Comments November 1, 2016

21. The Proposed Conditions Watershed Plan was not revised to address the changes to the drainage and stormwater management system, grading or the hydrology computations.

Comment Satisfied: 12/6/2016

Response: Acknowledged

22. GEI noted that Infiltration Basin 2 was converted to a subsurface infiltration system. Sheet 27 includes details for the system, however, no elevations were provided. Elevations for the cross section of the system must be provided, as well as a detail for the upstream manhole with weir.

Comment Satisfied: 12/6/2016

Response: Acknowledged

23. Sheet 25 includes an SC-740 Dry Well detail for the recharge of roof runoff at individual lots. The dry wells should be clearly labeled as dry wells on the plans in order to differentiate the dry wells from the subsurface infiltration system.

Comment Satisfied: 12/6/2016

Response: Acknowledged

24. On Sheet 22, in the table Sequence of Work, installation of the stabilized construction entrance(s) to be used for land clearing needs to occur before the start of tree cutting and chipping.

Comment Satisfied: 12/6/2016

Response: Acknowledged

We trust that the responses provided above satisfactorily address the comments raised by Graves Engineering, Inc. We will prepare a revised set of Plans and forward them to the Town for review.

Please feel free to contact me with any questions.

Sincerely,



Brian Marchetti, PE
Vice President

CC: Project File
Gordon Lewis-Bull Meadow LLC.
Applicant
Jeff Walsh, PE - Graves Engineering, Inc.