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June 19, 2020

Planning Board

Grafton, MA



100 GROVE ST. | WORCESTER, MA 01605

June 19, 2020

Christopher McGoldrick
Town Planner
Grafton Municipal Center
30 Providence Road
Grafton, MA 01519

Exhibit 6

Leah Cameron
Conservation Agent
Grafton Municipal Center
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Grafton, MA 01519
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gravesengineering.com

**Subject: 80 Snow Road, Lot 2 and Lot 3
Special Permit, Site Plan and Stormwater Review**

Dear Chris and Leah:

We received the following documents on May 7, 2020:

- Correspondence from Thompson-Liston Associates, Inc. to Grafton Planning Board dated March 26, 2020 Re: Special Permit application for Lot 2 at 80 Snow Road, Grafton, Massachusetts, with attachments.
- Plans entitled "Site Plan of Land at 80 Snow Road, Grafton, Massachusetts" dated March 9, 2020 and last revised April 22, 2020, prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (7 sheets)
- Plan entitled "Site Plan of Land at 80 Snow Road in Grafton, Mass., Predevelopment Drainage Area Plan" dated March 9, 2020 prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (1 sheet)
- Plan entitled "Site Plan of Land at 80 Snow Road in Grafton, Mass., Postdevelopment Drainage Area Plan" dated March 9, 2020 prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (1 sheet)
- Bound document entitled "Drainage Report for 80 Snow Road, Grafton, MA" dated March 9, 2020 and revised April 8, 2020, prepared by Thompson-Liston Associates, Inc.

We also received the following documents on June 4, 2020 via email:

- Correspondence from Thompson-Liston Associates, Inc. to Grafton Planning Board dated May 15, 2020 Re: Site Plan Approval application for Lot 3 at 80 Snow Road, Grafton, Massachusetts, with attachments.
- Plans entitled "Site Plan of Land at 80 Snow Road, Grafton, Massachusetts" dated March 9, 2020 and last revised May 13, 2020, prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (7 sheets)
- Plan entitled "Site Plan of Land at 80 Snow Road in Grafton, Mass., Predevelopment Drainage Area Plan" dated March 9, 2020 prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (1 sheet)

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- Plan entitled "Site Plan of Land at 80 Snow Road in Grafton, Mass., Postdevelopment Drainage Area Plan" dated March 9, 2020 prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (1 sheet)
- Bound document entitled "Drainage Report for 80 Snow Road, Grafton, MA" dated March 9, 2020 and revised April 8, 2020, prepared by Thompson-Liston Associates, Inc.

Graves Engineering, Inc. (GEI) has been requested to review and comment on the plans' and supporting documents' conformance with applicable "Grafton Zoning By-Law" amended through October 21, 2019; Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook and standard engineering practices on behalf of the Planning Board. GEI has also been requested to review and comment on the documents' conformance with applicable Grafton "Regulations Governing Stormwater Management" dated May 28, 2013 on behalf of the Conservation Commission. As part of this review, GEI visited the site on May 21, 2020.

Our comments follow:

Zoning By-Law

1. GEI has no issues with compliance with the Grafton Zoning By-Law except as noted in the following comments three.
2. The title block must contain the Assessor's Map/Lot number for the proposed project site. (§1.3.3.3.d.9)
3. The ownership of all abutting land and approximate location of buildings within two hundred feet of the property lines need to be shown on the plans. (§1.3.3.3.d.11)
4. The vehicle parking and maneuvering areas are problematic. The plans need to clearly demonstrate where the required two parking spaces per dwelling unit will be provided and how a vehicle can maneuver into and out of its parking space while the other dwelling unit owner's parking spaces are occupied. Furthermore, the design engineer must demonstrate how vehicles will maneuver on the lots. The maneuvering areas need to be of sufficient size to allow vehicles to enter and depart the lots in a forward motion without the need for backing from or to Snow Road. (§1.3.3.3.d.16, §1.3.3.3.d.19 & §4.2.2)

Stormwater Management Regulations

5. The application needs to contain supporting documentation (e.g. TSS removal calculations, groundwater recharge calculations, etc.) to demonstrate compliance with the applicable MassDEP Stormwater Management Standards. Supporting documentation was provided only for Standard 2 (the Drainage Report addressed peak runoff rates) and Standard 8 (Sheet D6 of the plans addressed construction phase operation & maintenance). (§6.A & §7.A)
6. Existing and proposed electrical, telephone and cable utilities need to be shown on the plans. (§7.B.1.f)
7. Due to the site's topography, GEI has no issues with the plan's use of two-foot contour intervals. Nevertheless, GEI defers to the Conservation Commission whether a waiver needs to be requested. (§7.B.1.h)

8. An Operation & Maintenance plan needs to be submitted for each of the two lots. (§7.B.3)

Hydrology & MassDEP Stormwater Management

9. GEI reviewed the hydrology computations and found them to be in order except as noted in the following two comments.
10. GEI estimated the area of Subcatchment 12S to be approximately 31,000 sq.ft. The area for Subcatchment 12S is listed as 59,973 sq.ft. The design engineer needs to check and revise as necessary.
11. In the hydrology computations 51 chambers were modeled for the Lot 2 subsurface infiltration system but only 50 chambers were shown on the plans. The information needs to be consistent.
12. The dimensions for a typical section of a Cultec R902 chamber system (e.g. chamber dimensions, chamber spacing and distance from the edges of stone to the chambers) need to be shown on the plans.
13. Please see comment # 5 relative to compliance with the MassDEP Stormwater Handbook

General Engineering Comments

14. Sight lines at the driveway entrance are unacceptable and need to be addressed. The area between the two driveways (including the shoulder of Snow Road) needs to be excavated and re-graded to provide sight lines appropriate for travelled speeds and grades on Snow Road as determined by the design engineer (no less than 30 mph). Such excavation could require that the existing utility pole would have to be reset deeper into the ground. Photos of the problematic sight lines are presented below.
15. The plans should note that brush clearing on the west side of the Lot 3 driveway needs to be performed to keep vegetation from obstructing sight lines to the west.
16. The construction detail for the subsurface drainage system is labeled as "Infiltration/Detention." The plans need to clearly specify whether an infiltration system or a detention system is proposed.
17. GEI is concerned about the stability of the proposed 1H:1V slope on Lot 3. The applicant should engage a geotechnical engineer to evaluate and provide documentation to the Planning Board that demonstrates the stability of the 1 H:1 V slope. Also, considering the height of the slope (approximately ten feet), a fence needs to be provided at the top of this slope if it is to remain a 1H:1V.

General Comments

18. GEI understands that the North Grafton Water District and the Grafton Sewer Department will review the plans relative to their respective service connections.

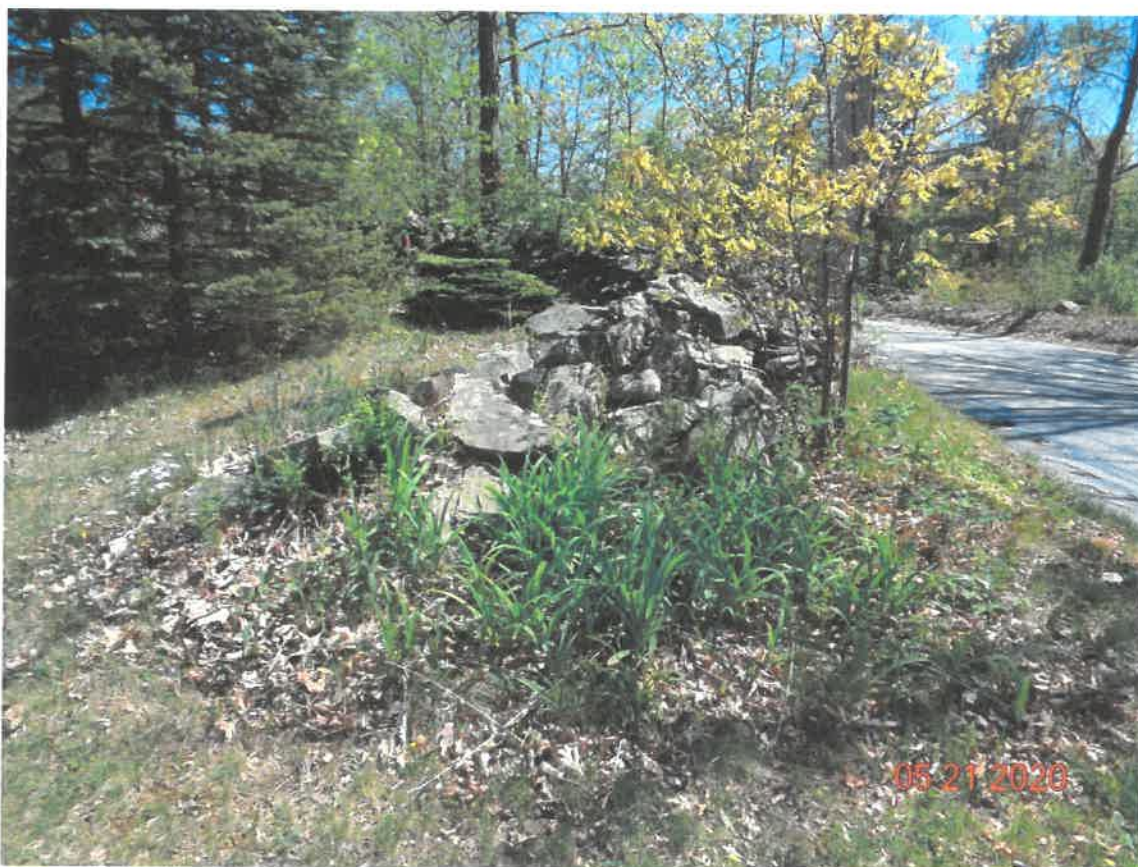
We trust this letter addresses your review requirements. Feel free to contact this office if you have any questions or comments.

Very truly yours,
Graves Engineering, Inc.



Jeffrey M. Walsh, P.E.
Principal

cc: James Tetreault, P.E.; Thompson-Liston Associates, Inc.



Driver's sight line looking west from the proposed Lot 2 driveway entrance.



Driver's sight line looking east from the proposed Lot 3 driveway entrance.