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July 27, 2020

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Christopher McGoldrick  
Town Planner  
Grafton Municipal Center  
30 Providence Road  
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**Planning Board**  
Grafton, MA

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**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 July 15, 2020:

- Correspondence from Thompson-Liston Associates, Inc. to Grafton Conservation Commission dated July 15, 2020 Re: Stormwater Management Bylaw Permit applications for Lots 2 and 3 at 80 Snow Road, Grafton, Massachusetts.
- Plans entitled "Site Plan of Land at 80 Snow Road, Grafton, Massachusetts" dated March 9, 2020 and last revised July 7, 2020, prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (8 sheets)
- Bound document entitled "Drainage Report for 80 Snow Road, Grafton, MA" dated March 9, 2020 and last revised July 7, 2020, prepared by Thompson-Liston Associates, Inc.
- Bound document entitled "Massachusetts Department of Environmental Protection – Checklist for Stormwater Report – Lot 2 at 80 Snow Road" dated April 9, 2020, with attachments.
- Bound document entitled "Massachusetts Department of Environmental Protection – Checklist for Stormwater Report – Lot 3 at 80 Snow Road" dated April 8, 2020, with attachments.
- Plans entitled Pre-Development Drainage Areas and Post-Development Drainage Areas (for 80 Snow Road) dated March 9, 2020 and last revised July 7, 2020, prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (one sheet each)

We also received the following documents on July 20, 2020:

- Correspondence from Thompson-Liston Associates, Inc. to Grafton Planning Board dated July 20, 2020 Re: Site Plan Approval application for Lot 2 at 80 Snow Road, Grafton, Massachusetts.
- Correspondence from Thompson-Liston Associates, Inc. to Grafton Planning Board dated July 20, 2020 Re: Site Plan Approval application for Lot 3 at 80 Snow Road, Grafton, Massachusetts.

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- Plan entitled Sight Distance Plan at 80 Snow Road in Grafton, Mass. dated July 17, 2020, prepared by Thompson-Liston Associates, Inc. for One Six Three, LLC and CIL Realty of Massachusetts, Inc. (2 copies)

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 our initial review, GEI visited the site on May 21, 2020.

This letter is a follow-up to our previous review letter dated June 19, 2020. For clarity, comments from our previous letters are *italicized* and our latest comments to the design engineer's responses are depicted in **bold**.

#### 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.*  
**No further comment.**
2. *The title block must contain the Assessor's Map/Lot number for the proposed project site. (§1.3.3.3.d.9)*  
**Acknowledged. The title block has been revised to include the Assessor's Map/Lot number.**
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)*  
**The abutting property owners have been labelled. However, the approximate locations of buildings within 200 feet of the property lines still need to be added to the plans.**
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)*  
**Acknowledged. The parking areas were enlarged and reconfigured. It would be advantageous to lengthen the turnaround on Lot 3, but if the turnaround were lengthened then it may be used as a parking space, thereby resulting in no turnaround space at all.**

##### 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)*

**Supplemental documentation has been provided. GEI has reviewed these documents and compliance with the MassDEP Stormwater Handbook is reasonable.**

6. *Existing and proposed electrical, telephone and cable utilities need to be shown on the plans. (§7.B.1.f)*  
**Acknowledged. Proposed (underground) electric, telephone and cable utilities originating at an existing utility pole were added to Sheet 2.**
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)*  
**No further comment.**
8. *An Operation & Maintenance plan needs to be submitted for each of the two lots. (§7.B.3)*  
**Acknowledged. Operation & Maintenance plans have been submitted for both lots and are in order.**

#### **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.*  
**The revised hydrology computations are in order.**
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.*  
**Acknowledged. The modeling of Subcatchment 12S was revised and is reasonable.**
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.*  
**Acknowledged. Pond 21P (Lot 2 subsurface infiltration system) of the hydrology computations was revised to model 50 chambers.**
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.*  
**Acknowledged. Sheet D5 was revised to include a typical section of Cultec R902 chamber system.**
13. *Please see comment # 5 relative to compliance with the MassDEP Stormwater Handbook.*  
**Compliance with the MassDEP Stormwater Handbook is reasonable.**

#### **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.

On Sheet G3, the proposed 330 topographic contour was revised north of the Lot 2 driveway and between the Lot 2 and Lot 3 driveways, and a note was added that requires the clearing of brush and stone wall remnants between utility poles 29, 30 and 31. Based upon the Sheet G3 revisions and the Sight Distance Plan, it appears there will be adequate sight distance once this work is performed. Nevertheless, the Planning Board may wish to consider a condition in its decisions that requires the contractor to perform this work at the start of construction so that construction phase traffic can benefit from the work, and that the sight distances be evaluated by the design engineer after the work is executed and his findings reported to the Planning Board.

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.

**Acknowledged.** Sheet G3 has been revised to depict the removal of brush between utility poles 29, 30 and 31.

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.

**Acknowledged.** Sheet D5, has been revised to label the subsurface drainage system as an infiltration system.

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.

**Acknowledged.** The slope on Lot 3 has been revised to 2H:1V slope, which is a generally-accepted slope for site development.

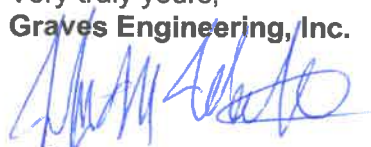
### General Comments

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

**No further comment.**

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.