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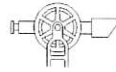
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July 15, 2020

Planning Board
Grafton, MA

Exhibit 14

THOMPSON-LISTON ASSOCIATES, INC.



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July 15, 2020

Sandra Brock, Chair
Grafton Conservation Commission
30 Providence Road
Grafton, Massachusetts 01519

Re: Stormwater Management Bylaw Permit applications for
Lots 2 and 3 at 80 Snow Road, Grafton, Massachusetts
Assessor's map 28 parcel 66

Dear Ms. Brock:

Enclosed are two copies of revised Site Plans now with a revision date of 7 July 2020. The Plans were revised pursuant to the peer reviewer's comment letter dated 19 June 2020.

I'd like to take this opportunity to explain how we have addressed each of the peer reviewer's comments. The form that this letter will take is that I will repeat his comments in italics and explain our response in normal text.

1. *GEI has no issues with compliance with the Grafton Zoning By-Law except as noted in the following three comments.*

No response is necessary.

2. *The title block must contain the Assessor's Map/Lot number for the proposed project site. (ss1.3.3.3.d.9)*

All the sheet title blocks now indicate that the site is parcel 66 on assessor's map 28.

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. (ss1.3.3.3.d.11)*

We added a locus map at a scale of 1 inch equals 160 feet to sheet D7 to show the ownership of all such properties and those buildings.

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.
(ss1.3.3.3.d.16, ss1.3.3.3.d.19 & ss4.2.2)*

To address this comment, we significantly increased the proposed paved area at each duplex. As shown on sheet S2, the driveway is 20 feet wide in front of each garage door at the duplex on lot 2. That paved area will extend at least 32 feet deep off the garage and more toward the middle of the driveway, allowing drivers from either side to back up and have room behind the other unit's parked vehicles to execute a 3 point turn. On lot 3, we made the parking area in front of the duplex 36 feet wide to accommodate 4 vehicles and deepened this pavement away from the duplex so that it is 28 feet deep at the shallowest point and progressively more to the north with a turnaround stub provided off the north of the driveway such that any of four vehicles parked in front of the duplex should be able to back up to the turnaround stub and execute a 3 point turn.

- 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). (ss6.A & SS7.A)*

I apologize for not passing along the Stormwater Report Checklists for both lots previously. Copies of them are attached.

- 6. Existing and proposed electrical, telephone and cable utilities need to be shown on the plans. (ss7.B.1.f)*

We added the proposed electric, telephone and cable tv service conduits to the Plans. They can be seen on sheet S2, and others, on the north side of both driveways.

- 7. Due to the site's topography, GEI has not 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. (ss7.B.1.h)*

We agree that this contour interval is appropriate for this site. We also added some spot grades along Snow Road to the Plans.

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

The construction period and long term Operation & Maintenance Plan for each lot is included in the Stormwater Report Checklists which are now enclosed.

- 9. GEI reviewed the hydrology computations and found them to be in order except as noted in the following two comments.*

No response is necessary.

- 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.*

The reviewer is correct. I mistakenly added in an adjacent subcatchment's area to the area of Subcatchment 12S. I corrected this mistake and the area of this subcatchment is now listed as 30,862 sq.ft.

- 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.*

The reviewer is correct. I revised the drainage calculations to model pond 21P as having 50 Cultec model 902 chambers embedded within the stone filled area.

- 12. The dimensions for a typical Cultec R902 chamber (e.g. chamber dimensions, chamber spacing and distance from the edges of stone to the chambers) need to be shown on the plans.*

We revised the details on sheet D5 to add chamber widths, spacing between chambers and spacing from chambers to the edges of the stone.

- 13. Please see comment #5 relative to compliance with the MassDEP Stormwater Handbook.*

As noted above, copies of the Stormwater Report Checklists for both lots are enclosed.

- 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 resented deeper into the ground. Photos of the problematic sight lines are presented below.*

We expanded the proposed grading between the two driveways for the discharge from the Lot 2 infiltration system. We also widened both driveways in response to the reviewer's comment and a comment from an abutter. We added an existing elevation spot grade at utility pole #30 between the two driveways. The ground adjacent to that pole is at elevation 331.4.

From AASHTO, the standard height of the eye of a driver for considering available sight distance is 1070 mm or just over 42 inches. A driver in a car at the end of lot 2's driveway

will be over ground at elevation 330.5 and thus his eye will be at elevation 334 just 20 feet away from utility pole #30.

A driver in the car at the end of lot 3's driveway will be over ground at elevation 328.5 and thus his eye will be at elevation 332 approximately 40 feet away from utility pole #30. But, if looking north, past the pole he will be looking for vehicles several feet high, not along the ground. AASHTO prescribes a vehicle height for these purposes of 1300 mm or just over 51 inches high. So, a vehicle approaching from the north along Snow Road that has just passed the intersection with Greany Drive will be on ground at elevation 332 and the top of that vehicle will be at elevation 336.3. The driver on the driveway of lot 3 will look over the small rise of ground at utility pole #30 to see this vehicle.

In response to this comment we added a note to the Plans that can be seen on sheets S2, G3 and ESC4 calling for all brush to be cut between utility poles #'s 29 and 31 in order to improve available sight distance. For 35 mph traffic AASHTO prescribes stopping sight distance of approximately 250 feet. This will be easily available to the south from both driveways. To the north this is to a point just beyond the intersection with Greany Drive from Lot 3's driveway and in front of the middle of the Holdsworth property from Lot 2. The grades will allow this visibility. The previous restriction was primarily shrubs and saplings just off the traveled way, which we will replace with grass.

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 obscuring sight lines to the west.

We agree and, as noted above, that's why we call for clearing of brush between utility poles #'s 29 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.

We revised the labels of the two details on sheet D5 to refer only to Infiltration.

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 1H:1V slope. Also, considering the height of slope (approximately 10 feet), a fence needs to be provided at the top of this slope if it is to remain a 1H:1V.

We reconsidered this element of the design. We raised the proposed duplex on Lot 3, moved it forward and slightly decreased the depth of back yard behind it. With these changes, we were able to change the 1:1 slope to a 2H:1V slope.

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

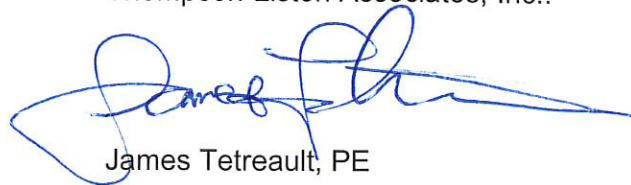
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We acknowledge this requirement.

Along with revised Site Plans and the Stormwater Report Checklists for each lot, copies of the revised Drainage Report and Pre and Postdevelopment Drainage Area Plans are also enclosed. If you have any questions, or need any additional information, please contact me. Thank you.

Sincerely,

Thompson-Liston Associates, Inc..

A handwritten signature in blue ink, appearing to read "James Tetreault", with a long horizontal flourish extending to the right.

James Tetreault, PE

Enclosures

Cc: Grafton Planning Board
One Six Three, LLC
CIL Realty of Massachusetts, Inc.