

November 27, 2018

Mr. Robert Truax
GLM Engineering Consultants, Inc.
16 Exchange Street
Holliston, MA 01746

Re: Goodridge Brook Estates
Sterling Road, Lancaster, MA
(HEI File no. 18002.00)

Dear Rob:

Hamwey Engineering, Inc. performed a review of the following revised/additional information regarding the proposed Goodridge Brook Estates project on Sterling Road in Lancaster, MA.

- Plan entitled "Site Development Plan of Land, Goodridge Brook Estates, Multi Unit & Single Family Subdivision Layout, Lancaster, MA", prepared for Crescent Builders, Inc., prepared by GLM Engineering Consultants, Inc., dated February 8, 2018, last revised November 6, 2018 and stamped 11/7/18.

New Plan Sheets SUP-A1 and SUP-A2 (Site Distance) have been added to the set of plans.

- New Lighting Plan entitled "Goodridge Brook Estates, Lancaster, MA, prepared by Electrical Professionals, LLC, dated 9/14/18, approved by lighting design engineer 11/4/18, including a Light Pole Foundation Base drawing, dated 11/26/18 and light fixture catalog cut sheets.
- Stormwater Management Report entitled "Goodridge Brook Estates, Sterling Road, Lancaster, MA", prepared for Crescent Builders, Inc., prepared by GLM Engineering Consultants, Inc., dated July 5, 2018, last revised 11/6/18 and stamped 11/6/18.

Hamwey Engineering, Inc. has the following comments. This list also includes comments from my October 8, 2018, review letter that have not been addressed or still require further discussion.

The applicant is asking for the comments that are doubled asterisked (**) to be a condition in the decision and/or addressed prior to submitting an application for Building Permit. Comments that are not fully addressed prior to the ZBA's decision will probably require a large number of extensive revisions to the plans. These revisions would have to be reviewed and the reopening of the ZBA's public hearing process is a strong possibility.

It is recommended that technical design comments not be conditioned, and the conditions be limited to only approvals from the Conservation Commission, state and federal permits.

GENERAL

1. The availability of water (flow & pressure) should be confirmed with the Water Department. **
2. The availability of sewer capacity should be confirmed with the Sewer Commission. **
3. Please clarify the extent of the existing sewer in Sterling Road (length, slope, SMH's, lot servicing, etc.). Refer to the comments under **PLAN SHEET 19**.
4. The applicant will be submitting the plans to the Conservation Commission.
5. Will the ZBA require speed limit signs?
6. Sewer pump station calculations should be submitted. **
7. A Special Permit may be required for the apartment complex driveway (greater than 1000').
8. The electric, telephone & cable lines shown on the plans may have to be relocated to the other side of the roadways to connect to the relocated utility poles. This will require the water lines and hydrants to be relocated to the opposite side of the roadways. **

The applicant has stated that the electric company will provide the layout for multi-unit portion of the site.

9. It should be noted that the majority of the site's upland area is proposed to be developed.

10. The Zoning Board may want to require that the proposed lots that abut Sterling Road, including the lots on the corners of Road A & Road C, be similar in size, frontage, setbacks, etc. as the existing lots on Sterling Road.
11. The applicant should submit a list of all local, state and federal permits/approvals that will be required.
12. Confirm with the Water Department that they will accept the water line to be installed outside of the traveled way (paved portion of the roadway).
13. Passive recreation areas are mentioned but not shown on the plans. **
14. The applicant is providing 1.7 parking spaces per unit for the multi-unit portion of the site. The required parking spaces should be 2 spaces per unit. This would allow for overflow and visitor parking. **
15. Confirm adequate access for emergency vehicles with the Police Department. **

WAIVERS/VARIANCES

Subdivision Rules and Regulations

1. Waive the Environmental Analysis. ZBA's decision.
2. Variance to reduce the diameter of the cul-de-sac. ZBA should request input from the Fire Department. **
3. Variance to allow a dead end street for collector streets. ZBA should request input from the Fire Department. **
4. Variance of the right of way & pavement widths (40' & 24'). The requirements for a lane are 40' & 24", for a minor street are 50' & 24' and for a collector street 60' & 30'. ZBA should request input from the Fire Department. **
5. Variance to install iron rods at front lot corners and easements. ZBA should require the bounds.
6. Request to allow Modified Cape Cod berms. The requirement is bituminous concrete berms. I don't believe this request is necessary.
7. An additional variance is required for the centerline radii of Road "B" (150' required, 100' provided).

Zoning By-Laws

1. Variance for lot shape. The lots sizes have been considerably reduced and the lot shapes are basically square and rectangular. I don't believe this that variance is applicable.

Lot shape calculations have been provided and the applicant has stated that this variance is not required.

2. Variance of the lot area and frontage. ZBA's decision.

3. Variance of the yard setbacks. ZBA's decision

4. Waiver of building permit fees for the affordable units. ZBA's decision.

5. Waiver of occupancy permit fees for the affordable units. ZBA's decision.

6. Variance of parking space size from 9'x20' to 9'x18'.

The applicant has stated " *that all the parking abuts a cape cod berm. There is no interior parking abutting one vehicle to another*". It is my understanding that the vehicles' bumpers would be allowed to hang over the cape cod berms.

There is no need to allow this variance.

- a. A majority of the parking spaces abut a sidewalk. If the vehicles are allowed to hang over the berms, the sidewalk width would be reduced.
- b. Where there are no sidewalks, snow will be piled during the winter season.
- c. Even though we have supposedly gone to compact vehicles. Many people still drive large trucks, SUV's and vans that will be parking in these spaces.

7. Waiver of sewer fees for the affordable units. ZBA's decision.

8. Waiver of water fees for the affordable units. ZBA's decision.

PLAN SHEET 1

1. Zoning Classification Table: There is a conflict with the Town's Subdivision Rule & Regulations and the Zoning Map regarding the status of Sterling Road (collector street vs minor street). This will affect the required front setback.

2. The date of the NOTE: Stormwater Management Report should be July 5, 20128, last revised 11/6/18.

PLAN SHEET 4

1. Show landscaping. **
2. The required parking space size is 9' x 20'. The plan shows spaces 9' x 18', a variance has been requested.

Please refer to WAIVERS/VARIANCES, Zoning By-laws, Item 6, above.

PLAN SHEET 5

1. A school bus shelter/area should be included on the plan. **
2. Is the one long entrance adequate for emergency vehicles? Confirm with the Police Department. **

PLAN SHEET 6

1. Show the type and size of the water services to the buildings. **
2. The Fire Department may want a hydrant opposite the 46 unit building. Check with the Fire Department. **
3. Show the size and type of the sewer force main. **
4. The pipe at HW #67 should be labelled 15" RCP.
5. The size of the snow storage areas appear to be very small compared to the amount of pavement and sidewalks that will require snow removal. Please submit detailed calculations showing the adequacy of the snow storage areas.

The applicant will accept a condition in the decision that if the snow removals areas are not sufficient then the excess snow will be removed from the site.

PLAN SHEET 7

1. Show the type and size of the water services to the buildings. **
2. Show the size and type of the sewer force main. **
3. The size of the snow storage areas appear to be very small compared to the amount of pavement and sidewalks that will require snow removal. Please submit detailed calculations showing the adequacy of the snow storage areas.

The applicant will accept a condition in the decision that if the snow removals areas are not sufficient then the excess snow will be removed from the site.

PLAN SHEETS 9 - 11

1. Show all the required bounds (along the ROW, each front lot corner & easement corners) as reinforced concrete.
2. The centerline radii for Road "B" is designed at 100'. The required centerline radius is 150'. A variance is requested.

PLAN SHEETS 12 - 14

1. At the cul-de-sac, the required pavement diameter should be 120' and the required property line diameter should be 160'. A variance has been requested.
2. The required right-of-way width for a collector street (Road A) is 60' and a minor street (Road B) is 50'. A variance is requested.
3. The required pavement width for a collector street (Road A) is 30', a minor street (Road B) is 24' and a lane (Road C) is 24'. The plan shows a 22' width. The proposed width of the apartment complex driveway is 24'. Why is the roadway width less than the driveway width? A variance has been requested.
4. Do the proposed street trees fit within the right-of-way? Do they interfere with the water mains and E/T/C lines?

The applicant will plant the trees outside of the right-of-way. Is this acceptable to the ZBA?

5. Is the one long entrance adequate for emergency vehicles? Confirm with the Police Department. **
6. Should the entrances to Roads A & B line up with the Town of Lancaster ROW's on the north side of Sterling Road?
7. Confirm with the Water Department that they will accept the water line installed outside of the traveled/paved portion of the road. **
8. Does the Conservation Commission consider that the isolated wetlands are protected under their regulations?

PLAN SHEET 15

1. Proposed SMH#1: How does it affect any upstream pipes and services along Sterling Road? Please show the existing sewer line that extends up Sterling Road. Coordinate this design with the Sewer Commission and DPW.

The applicant has stated that the construction shall be coordinated with the Sewer Commission prior to installation. This should be stated on the plan.

PLAN SHEETS 16 - 17

1. What is the size and type of the force main? **

PLAN SHEET 19

1. The existing sewer line in Sterling Road to Station -2+50 should be shown on the profile.

PLAN SHEET 21

1. Typical Right of Way Cross Section Detail: Variance requested.
 - a. The required right-of-way width for a minor street is 50'. The detail shows 40'.
 - b. The required pavement width for a lane and minor street is 24'. The detail shows a 22' width.

PLAN SHEET 22

1. Grass Access Detail.
 - a. Show the width of the access drive.
 - b. Show 12" depth of M1.03.0, Type b gravel.
2. Detention Basin Typical Section.
 - a. Show the depth of the sand bottom (12").

PLAN SHEETS SUP-A1 & SUP A2

1. On the Intersection Site Distance drawings, all obstructions (trees, vegetation, utility poles, stone walls, other site obstructions, etc.) to be removed and/or relocated should be shown on the plans.

The following note should be added to the plans.

"Signs, landscaping and other features located within sight triangle areas shall be designed, installed and maintained so as not to exceed 2.5-feet in height. Snow windrows

located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed.”

Also, the following condition should be added to the decision.

“The Applicant must submit an affidavit from a Professional Engineer confirming that the required sight lines are provided at the driveways after they are constructed and prior to the issuance of the first Certificate of Occupancy for the project.”

LIGHTING PLAN

I am not an Electrical Engineer, so portions of my comments maybe incorrect.

1. The plan should be stamped by a Mass. Registered Electrical Engineer.
2. The plan only shows the lighting for the apartment complex. No lighting is shown for the subdivision roadways.
3. The foot candles opposite the apartment building along the west property line exceed 0.3 foot candles.
4. Are there any lights proposed on the buildings?
5. The plan should state that the lighting design meets the requirements of the Town of Lancaster Zoning By-Law and the Town of Lancaster Subdivision Rules and Regulations.

ADDITIONAL REQUIRED DETAILS

1. Sewer Pump Station and Calculations **
2. Wetland Crossing (should be shown on the design plans).

The applicant will show the wetland impact details on the plans submitted to the Conservation Commission. After they receive an Order of Conditions, the details should be shown on the Construction Drawings. This should be added as a condition in the decision.

3. Privacy Fence
4. Sewer Flushing Manhole
5. Street & Stop Signs with Posts
6. Fire Lane

Goodridge Brook Estates
Sterling Road
Lancaster, MA

November 27, 2018

STORMWATER MANAGEMENT REPORT

1. Hydrogeological Calculations:
 - a. The length of Post 16S flow path should be greater than 1000'. The flow length was not revised.
2. Appendix A-1:
 - a. The Average "c" Value for Structures Table is labelled Fieldcrest Estates and dated 9/27/07. The correct title and date should be on the Table.

Please contact me if you have any questions.

Very truly yours,
HAMWEY ENGINEERING, INC.



Fred A. Hamway, Jr., PE
President

cc: Orlando Pacheco (Town Administrator)
Deb Dennis (Lancaster ZBA)
Michael Franciosi (Lighting Designer)