

Ref: 7943

April 15, 2019

Mr. Fred Hamwey, P.E.
Principal
Hamwey Engineering Inc.
46 Austin Street
Leominster, MA 01453

Re: Supplemental Traffic Engineering Peer Review
Goodridge Brook Estates – Sterling Road
Lancaster, Massachusetts

Dear Fred:

Vanasse & Associates, Inc. (VAI) has completed a review of the latest supplemental materials submitted on behalf of Crescent Builders, Inc. (the “Applicant”) in support of the proposed Goodridge Brook Estates residential development to be located off Sterling Road in Lancaster, Massachusetts (hereafter referred to as the “Project”). As stated in our September 26, 2018 review letter, the Applicant has addressed the comments pertaining to the June 2018 *Traffic Impact and Access Study* (the “June 2018 TIAS”). Our remaining comments at that time were focused on the *Site Development Plan of Land* (hereafter referred to as the “Site Plans”) prepared by GLM Engineering Consultants, Inc. (GLM). In response to these comments and those that were received from the Town, GLM submitted updated Site Plans revised through April 12, 2019, and supporting materials which are the subject of this supplemental review.

Since our last review, the Applicant has eliminated one (1) multifamily residential building which resulted in a corresponding reduction in the number of multifamily units from 120 units (three 40-unit buildings) to 96 units (two 48-unit buildings), and the number of single-family homes has been reduced from 62 homes to 56 homes. As a result of these changes, the overall impact of the Project on the transportation infrastructure has also been reduced. In addition, the parking supply for the multifamily residential community has been increased and a school bus waiting area with a shelter and parking area have been provided.

Based on our review of the supplemental information, we are satisfied that the Applicant has addressed our comments pertaining to the Site Plans, or that appropriate conditions can be developed to include the requested information on the final Site Plans or prior to the issuance of a Building Permit for the Project to the extent that the Zoning Board of Appeals is inclined to act favorably on the Application.

For reference, listed below are the comments that were raised in our September 26, 2018 review letter pertaining to the Site Plans followed by a summary of the response submitted on behalf of the Applicant or a description of the revisions that have been completed to the plans, with additional comments indicated in **bolded** text for identification.

SITE PLANS

Comment 1: *A truck turning analysis should be provided for the Lancaster Fire Department design vehicle, a school bus (to the extent that a school bus will be accessing the Project) and a single-unit (SU) truck (representative of a moving/delivery truck, trash/refuse truck or similar). The turning analysis should demonstrate that the subject vehicles can access and circulate within the Project in an unimpeded manner.*

Response: A truck turning analysis was provided for the Lancaster Fire Department design vehicle for both the single-family home and multifamily components of the Project. This analysis has demonstrated that the subject vehicle can access and maneuver within both sites in an unimpeded manner. Given that the Lancaster Fire Department design vehicle is larger than a single-unit (SU) truck, a separate analysis for the SU design vehicle is not required. **No further response required.**

Comment 2: *Internal to the Project site, circulating roads and drive aisles should be a minimum of 22-feet in width for two-way travel and 23-feet where adjacent to perpendicular parking, or as required to accommodate truck access and fire truck turning maneuvers.*

Response: Circulating roads open to general traffic within both the single-family home and multifamily components of the Project are proposed to be 24-feet in width. A median has been added to the multifamily residential driveway approaching Sterling Road that provides 12-foot wide entering and exiting travel lanes separated by a 6-foot wide raised median. **The median was not included as a part of the truck turning analysis and it appears that the design will need to be modified (median nose cut-back) to accommodate the Lancaster Fire Department design vehicle. This should be reflected on the final Site Plans for the project and informed by the vehicle turning analysis to the extent that the median is to be retained (discussion follows). No further response required.**

Comment 3: *Fire lanes and/or emergency access drives, where provided, should be a minimum of 20-feet in width pursuant to the requirements of NFPA® 1.¹*

Response: Fire lanes within the multifamily residential component of the Project are shown as 20-feet in width. **No further response required.**

Comment 4: *Unless otherwise approved by the Fire Department, a secondary means of access for emergency vehicles should be provided to the multi-family residential development given the number of units that are proposed (136 units) and the length of the access roadway.*

Response: The Applicant has indicated that the Fire Department has not requested that a secondary means of access be provided. **We defer to the Fire Department as to the adequacy of the access to the multifamily component of the Project for emergency response.**

¹National Fire Protection Association (NFPA)® 1, Fire Code, Seventh Edition; NFPA; Quincy, Massachusetts; 2015; as amended per 527 CMR.

Comment 5: *To the extent that the Town may wish to develop an access to the property along the north side of Sterling Road opposite the Project site, Road “C” should be shifted to the west to align with the Town right-of-way that has been reserved for such access.*

Response: The Applicant has indicated that they are not inclined to relocate “Road C” as suggested. **The future disposition or intended use of the Town right-of-way should be discussed with the Applicant. We note that the location and design of “Road C” does not currently pose an inherent safety or operational issue. No further response required.**

Comment 6: *The Applicant should provide a turn-around area at the end of each of the drive aisles for the multi-family residential buildings pursuant to the requirements of NFPA® 1 or provide a letter from the Fire Department indicating their acceptance of the access given that the current design requires a backing maneuver for emergency vehicles that exceeds 150-feet.*

Response: A turn-around area and separate fire lanes have been provided for the multifamily buildings. **No further response required.**

Comment 7: *Circulation around the traffic circle at the front of the southern multi-family residential buildings should be directed in a one-way counterclockwise direction, with appropriate signs and pavement markings provided to regulate the one-way circulation pattern.*

Response: The subject traffic circle has been removed from the multifamily residential development and has been replaced with a standard drive with perpendicular parking. **No further response required.**

Comment 8: *A sign and pavement marking plan should be developed for the Project and included as a part of the Site Plans.*

Response: The appropriate signs and pavement markings for a residential setting have been added to the Site Plans to facilitate traffic control within both sites. **The final Site Plans for the multifamily component of the Project should include “Keep Right” signs on the nose of the proposed median (both ends) to the extent that the median is to be retained (discussion follows). No further response required.**

Comment 9: *A sidewalk has been provided along one side of Road “A”, Road “B” and the driveway to the multi-family development that extend to Sterling Road. A sidewalk should also be provided along Road “C” that extends to Sterling Road. In addition, pedestrian crossings should be provided at appropriate locations within the Project that should include marked crosswalks with Americans with Disabilities Act (ADA) compliant wheelchair ramps. These crossings should be shown on the Site Plans.*

Response: Sidewalks have been provided along one side of the roadways and circulating drives within both the single-family home and multifamily components of the Project, and ADA compliant wheelchair ramps are provided at proposed pedestrian crossings. **We would recommend that the final Site Plans include marked crosswalks at the (2) pedestrian crossings along “Road A”. No further response required.**



Comment 10: *Consideration should be given to providing a sidewalk along the Project site frontage on Sterling Road between the multi-family driveway and Road “A” as discussed previously.*

Response: The Applicant has indicated that they are open to discussions with the Town reading the installation of a sidewalk along Sterling Road in the context of the overall mitigation program for the Project. **We would suggest that the Applicant develop a proposal for mitigation that is informed by the comments that have been provided by the Town and as a part of the peer-review process as the basis for this discussion.**

Comment 11: *The sight triangle areas for the Project site roadways/driveway intersections should be shown on the Site Plans along with a note to indicate: “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.”*

Response: The sight triangle areas and the requested note have been added to the Site Plans. **No further response required.**

Comment 12: *A note should be added to the Site Plans stating: “All Signs and pavement markings to be installed within the Project site shall conform to the applicable specifications of the Manual on Uniform Traffic Control Devices (MUTCD).”²*

Response: **The requested note should be added to the final Site Plans. No further response required.**

Comment 13: *Where provided, double-yellow centerline pavement markings should consist of two parallel double-yellow lines.*

Response: Centerline pavement markings are not proposed.

Comment 14: *A narrative should be provided indicating how tenant moves for the multi-family component of the Project will be managed. The location of the moving vehicle staging area should be reflected in the truck turning analysis and include the required maneuvers for the subject vehicle to enter and exit the Project site.*

Response: The Applicant has indicated that they will provide the requested narrative in conjunction with the Building Permit Application. This should be a condition of any approvals that may be granted for the Project. **No further response required.**

Comment 15: *A narrative should be provided indicating how trash/recycling will be managed for the multi-family component of the Project, including the location where these items will be picked-up. The pick-up location should be reflected in the truck turning analysis.*

Response: The revised Site Plans indicate the location of the trash/recycling area which is along the west side of the proposed driveway. **To the extent that residents will need to drive to**

²Ibid 3.

transport trash and recycling to the designated area, an adjacent parking area and accompanying sidewalk should be provided. This should be reflected on the final Site Plans. No further response required.

Comment 16: *Secure bicycle parking should be provided for the multi-family component of the Project consisting of exterior bicycle racks for each building and weather protected bicycle storage.*

Response: The Applicant has agreed to accept a condition requiring that exterior bicycle parking be provided for the multifamily residential component of the Project. **No further response required.**

Comment 17: *The Applicant should consult with the Lancaster School Department to define the location of the school bus waiting areas for the Project.*

Response: A school bus waiting area with a shelter has been added to the multifamily residential component of the Project at Sterling Road. The Applicant should confirm if the school bus will enter the single-family residential development to pick-up/discharge students. **No further response required.**

Comment 18: *Consideration should be given to accommodating electric vehicle (EV) charging stations within the multi-family component of the Project.*

Response: The Applicant has indicated that they will consider the installation of EV charging stations within the multifamily residential component of the Project and, to the extent that charging stations are proposed, they will be shown on the final Site Plans. **No further response required.**

PARKING

Comments: *For the multi-family component, we recommend that the Site Plans be revised to accommodate a minimum parking ratio of 1.5 spaces per dwelling unit, with additional parking spaces provided to accommodate visitors, staff and prospective tenants.*

Response: The Applicant is proposing a minimum of 2.0 parking spaces per residential unit for both the multifamily and single-family residential components of the Project, which is sufficient to accommodate the anticipated parking demands.

The raised median behind the (5) parking spaces that are proposed adjacent to the grass field/play area should be removed in order to provide sufficient distance for vehicles to enter and exit the parking spaces. A minimum distance of 23-feet is required behind perpendicular parking to accommodate vehicle maneuvering. If the median is to be retained at the direction of the Fire Chief, the subject parking should be changed to angled parking and the traveled-way behind the parking increased to 14-feet for 60-degree angled-parking. These changes should be reflected on the final Site Plans for the Project. No further response required.



Mr. Fred Hamwey, P.E.

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Page 6 of 6

SUMMARY

VAI has completed a review of the latest supplemental materials submitted on behalf of Crescent Builders, Inc. in support of the proposed Goodridge Brook Estates residential development to be located off Sterling Road in Lancaster, Massachusetts. Based on our review of this information, we are satisfied that the Applicant has addressed our comments, or that appropriate conditions can be developed to include the requested information on the final Site Plans or prior to the issuance of a Building Permit for the Project to the extent that the Zoning Board of Appeals is inclined to act favorably on the Application.

This concludes our review of the materials that have been submitted to date in support of the Project. If you should have any questions regarding our review, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE, FITE

Partner

Professional Engineer in CT, MA, ME, NH, RI and VA

JSD/jsd

cc: File