



BEALS + THOMAS

BEALS AND THOMAS, INC.
Reservoir Corporate Center
144 Turnpike Road
Southborough, MA 01772-2104

T 508.366.0560
F 508.366.4391
www.bealsandthomas.com
Regional Office: Plymouth, MA

January 27, 2017

Ms. Martha A. Morrison, Chair, Topsfield Planning Board
c/o Ms. Donna Rich, Topsfield Planning Board Coordinator
Town of Topsfield
Town Hall, 8 West Common Street
Topsfield, Massachusetts 01983

Via: Email to morrismh@bc.edu, drich@topsfield-ma.gov
and First Class Mail

Reference: Independent Supplemental Peer Review
Rolling Green Elderly Housing Development
470 Boston Street
Topsfield, Massachusetts
B+T Project No. 2814.00

Dear Ms. Morrison and Members of the Board:

Beals and Thomas, Inc. (B+T) is pleased to assist the Town of Topsfield Planning Board (the Board) with the supplemental review of the proposed Rolling Green Elderly Housing Development (the Project) at 470 Boston Street in Topsfield, Massachusetts (the Site).

B+T is assisting the Board with supplemental review services relative to the requirements of an Elderly Housing Special Permit, which requires Site Plan Approval and a Stormwater Management Permit which are being requested by the Applicant. We understand that the Project proposes an age-restricted community of 30 residences in 15 duplex style buildings with associated site improvements including a stormwater management system.

B+T issued a letter to the Board dated November 22, 2016 that presented the results of our initial review of the documentation submitted by the Applicant. Please refer to our November 22, 2016 letter for a project overview and the results of our site visit conducted on November 14, 2016. As a consequence of our initial comments, the Applicant has provided supplemental documentation as listed herein.

We received the following documentation, which served as the basis for our independent supplemental peer review:

- *A&M Project #2165-01A, Rolling Green Elderly Housing Development, 470 Boston Street, Topsfield, MA, 01983, **Response to Town of Topsfield DWP & Water Department Review**, dated January 17, 2017, prepared by Allen & Major Associates, Inc. (5-page PDF)*
- *A&M Project #2165-01A, Rolling Green Elderly Housing Development, 470 Boston Street, Topsfield, MA, 01983, **A&M Response to Peer Review Letter**, dated January 17, 2017, prepared by Allen & Major Associates, Inc. (7-page PDF)*
- *A&M Project #2165-01A, Rolling Green Elderly Housing Development, 470 Boston Street, Topsfield, MA, 01983, **A&M Response to Horsley Witten Review Letter**, dated January 17, 2017, prepared by Allen & Major Associates, Inc. (5-page PDF)*
- *Elderly Housing Development – 470 Boston Street, Topsfield, Massachusetts, Drainage Report, dated October 13, 2016, revised thru January 17, 2017 prepared by Allen & Major Associates, Inc. (391-page PDF)*
- *Site Development Plans for Over 55 Residential Development, 470 Boston Street, Topsfield, MA, dated October 13, 2016, revised thru January 17, 2017, prepared by Allen & Major Associates, Inc. (15 sheets)*

We have reviewed the documentation submitted by the Applicant with respect to the requirements of the Town of Topsfield Bylaws including Section 3.16 (Elderly Housing District), Article IX (Site Plan Review), and the Stormwater Management and Erosion Control; the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Handbook (the Handbook); the Environmental Protection Agency's (EPA) 2012 Construction General Permit (CGP); and, particularly the comments presented in our previous review letter dated November 22, 2016.

The Applicant has requested a series of waivers from the Topsfield Rules and Regulations Governing the Subdivision of Land (the Regulations). Specifically, the Applicant is requesting waivers from constructing the Project access drive in strict accordance with the Regulations relative to subdivision roadway requirements. The Applicant considers that access to the Project should be considered as a private driveway and not a public roadway. Whereas the Site is not proposed to be subdivided and will remain a contiguous lot under the jurisdiction of a home owner's association; we concur with the position of the Applicant regarding the majority of the waivers requested. A summary of the waivers requested and justification for each is included herein.

Review Format:

In an effort to establish clarity for the Administrative Record, we have included the comments from our previous letter report dated November 22, 2016 followed by a summary of the Applicant's response in *italicized* font, followed by our current comment in **bold** font to document the status of our original comment.

Waiver Comments:

The following is a summary of the waivers being requested by the Applicant relative to Article 5 – Design and Construction Standards of the Bylaws.

1. 5.1.2 Streets, Cross Sections: The Applicant is requesting a waiver to reduce the pavement width from 26-ft to 22-ft. We concur that the reduced pavement width is a benefit from a stormwater management and vegetated wetland impact perspective. It is our opinion that the proposed 22-ft pavement width will provide for safe travel for this application with limited traffic.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

2. 5.1.3 Alignment, Grade, Dead End and Intersections: The Applicant is requesting a waiver from the dimensional and geometric requirements of the Bylaw. We concur with the Applicant that the driveway alignment as proposed will provide for safe travel to a limited number of dwelling units.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

3. 5.1.4 Dead End Streets: The Applicant is requesting a waiver to have a dead end street in excess of 650-ft. The Project will not become an accepted Town subdivision roadway. We concur with the Applicant that the driveway alignment as proposed will provide for safe access as supported by Chief Giovannacci's memorandum dated June 7, 2016.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

4. 5.3 Curbing: The Applicant is requesting a waiver from providing granite curbs at intersections. The Project will not become an accepted Town subdivision roadway. We concur with the Applicant that whereas the driveway will be operated and maintained as a private access drive, the use of Cape Cod berm throughout the Project appears appropriate.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

5. 5.4.2 Sidewalks: The Applicant is requesting a waiver from providing a continuous sidewalk on one side of the driveway in accordance with the regulations and to utilize the meandering sidewalk as proposed. The Project will not become an accepted Town subdivision roadway. Whereas there is no sidewalk access on Route 1, we concur that the waiver from a formal sidewalk network appears to be reasonable. However, we recommend that the Applicant evaluate the addition of sidewalk along proposed units 1 thru 6 to provide access to the mailbox area for those who utilize the inner sidewalk loop.

Applicant's Response: The applicant has added a bituminous sidewalk with crosswalks in front of units 28-30 to the proposed mailbox location. All residents will be able to access the mailbox without having to walk along the length of the roadway. Additionally, a parking spot has been provided for easy drive-up access to the mailbox area. Alternatively, the walking path through the woods may be utilized to reach the mailbox area on foot as well.

Current B+T Response: This comment has been adequately addressed by the Applicant. We have no objection to the Board's granting of this waiver, based on the modified design.

6. 5.5.2 Grass Strips: The Applicant is requesting a waiver from providing a grass strip and will have the walkways directly abut the driveway. We concur with the Applicant that in this application the elimination of the grass strip would be appropriate in the context of the development.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

7. 5.5.3 Grass Strip Tree Planting: The Applicant is requesting a waiver from providing grass strip tree plantings. In conjunction with Waiver Comment #6 above, we concur with the elimination of the grass strip, and therefore, the associated plantings. The Applicant appears to be providing adequate plantings within the dwelling yards to mirror the intent of the Bylaw.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

8. 5.10 Street Lighting: The Applicant is requesting a waiver from providing a formal street lighting system. The site lighting provided via individual dwelling lamp posts appears to be appropriate for the interior context of the development proposed. Although we recognize that Route 1 does not have street lighting in this area, we request the Applicant to consider providing street lighting or reflective markings at the Route 1 curb cut, in consultation with the Topsfield DPW and MassDOT.

Applicant's Response: The applicant's intention has been to add lighting at the Boston Street main entrance. The lighting options will be reviewed and designed by a lighting consultant. The landscape & lighting plan will be updated in the future with this change.

Current B+T Response: We acknowledge the response provided by the Applicant and recommend, if deemed appropriate by the Board, that the incorporation of adequate lighting at the Boston Street main entrance be made a condition of the decision if the Project is approved.

9. 5.12.1.b Utility Locations: The Applicant is requesting a waiver from the utility layouts required by the Bylaw. The reduced pavement width and elimination of the grass strip will require a consolidation of the utility installations within the roadway as proposed. It is our opinion that the proposed layout of the utilities is appropriate.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

10. 5.12.3.e Drainage: The Applicant is requesting a waiver for the use of HDPE pipe in lieu of the required RCP. We concur with the Applicant that the use of HDPE has become increasing more common and is appropriate for use within a private development controlled and maintained by a home owner's association.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

11. 5.12.3.m Drainage Manholes: The Applicant is requesting a waiver to have drainage manholes spaced on the order of 350-ft as opposed to the 300-ft maximum required. It is our opinion that the drainage structure spacing proposed is appropriate for use within a private development controlled and maintained by a home owner's association.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

12. 5.13.1 Utility Easements: The Applicant is requesting a waiver from providing 30-ft wide utility easements. The Applicant should provide further information regarding the demarcation point of the public water system vs the private condominium service main. This should be reviewed with DPW to determine whether the Town will require an easement for water main operation and maintenance on the Project Site.

Applicant's Response: The Applicant has reached out to the Topsfield DPW Water Division and determined that the demarcation point for the public water system versus the private service shall be the Route 1 right-of-way. The portion of the waterline on-site and outside of the Route 1 right-of-way will be owned and maintained by the current property owner.

A small waterline easement will be required along the southwestern property line, to potentially complete a waterline loop with the main beneath North Street. A conceptual easement has been added to the Water and Gas Utilities Plan, Sheet C5A. The proposed easement is subject to review by the Topsfield DPW Water Division.

Current B+T Response: We acknowledge the response provided by the Applicant and defer to the Board and the Topsfield DPW Water Division relative to the appropriateness of the waiver requested and response provided.

13. 5.13.2 Drainage Easements: The Applicant is requesting a waiver from providing drainage easements. The stormwater management system will be privately controlled and maintained by the home owner's association; therefore, drainage easements will not be required.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

14. 5.14 Monuments: The Applicant is requesting a waiver from providing right-of-way and property line monuments. The Project will not be further subdivided and a defined right-of-way is not being provided; therefore, monuments will not be required.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

15. 5.20 Tree Planting: The Applicant is requesting a waiver from providing two (2) trees per lot. The Project will not be further subdivided; therefore, a two (2) tree per lot requirement is not applicable. The arrangement and number of tree plantings being proposed appears to mirror the intent of the Bylaw.

Applicant's Response: The Applicant concurs.

Current B+T Response: We acknowledge the response provided by the Applicant and have no objection to the Board's granting of this waiver.

16. 5.21 As-built Plans: The Applicant is requesting a waiver from providing an as-built plan. Though not a formal subdivision that will be accepted by the Town, it is our opinion that it would be appropriate for the Applicant to provide an as-built plan to document conformance with the approved design, permits and associated conditions, and to facilitate future property and utility maintenance.

Applicant's Response: An As-Built plan will be provided once substantial construction has been completed.

Current B+T Response: We acknowledge the response provided by the Applicant and recommend that the requirement for the Applicant to provide an as-built plan in a timely fashion upon substantial completion of the project be made a condition of the decision if the Project is approved.

General Comments:

1. Section 5.1.4 of the Bylaws references the need for secondary access to dead end streets. The Project proposes a secondary emergency access drive that will require a curb cut from Boston Street (Route 1) that will be subject to review and approval under the jurisdiction of MassDOT. We acknowledge the memorandum from Topsfield Fire Chief Giovannacci relative to being comfortable without a secondary means of access to the project if the dwellings include sprinkler systems. We recommend that conformance with Chief Giovannacci's requirement for sprinklers in compliance with NFPA 13 be made a condition of the decision if the Project is approved.

Applicant's Response: The Applicant requests that either a secondary means of access such as currently shown or residential sprinklers be a condition of approval and not both.

Current B+T Response: We acknowledge the response provided by the Applicant. Accordingly, we defer to Chief Giovannacci regarding the need for residential sprinkler systems.

2. Section 3.16.C.1.q of the Bylaws requires a buffer zone of no less than 25-feet for all side and rear boundaries of the Site within the Elderly Housing District. We acknowledge the inclusion of this buffer zone within the plans; however, the provided project narrative references that a 27-foot buffer zone will be provided. We request that the Applicant clarify the noted discrepancy relative to the depth of the buffer zone being provided.

Applicant's Response: The minimum required setback of 25' has been maintained. To clarify the verbiage from the application package, the narrative should read "The development design includes a minimum buffer zone of twenty-five (25) feet, as required by the Town Bylaw"

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

3. Section 3.16.C.1.s of the Bylaws requires that an eligibility plan for the Elderly Housing Development be supplied to the Board. It does not appear such a plan has been provided to date. We recommend that conformance with the referenced section of the Bylaws be made a condition of the decision if the Project is approved.

Applicant's Response: The Applicant will provide a draft of such eligibility plan for review and discussion in short order. The final version can be made a part of the decision.

Current B+T Response: We acknowledge the response provided by the Applicant and defer to the Board on the appropriateness of deferring the requirements of Section 3.16.1.s to a potential condition of the decision if the Project is approved.

4. The Applicant proposes to reuse in part the existing water service connection previously installed for the Site; however, documentation relative to its age or relative condition have not been provided. We recommend that the Topsfield Department of Public Works confirm the appropriateness of the reuse of this water service connection.

Applicant's Response: The Applicant has reached out to the Topsfield DPW Water Division for more information pertaining to the age and condition of the waterline on-site. The existing waterline is an 8" cement-lined ductile iron pipe, installed in the late 1980's. The Town of Topsfield Water Division has recommended the re-use of the existing water line on-site, and suggested that it will be an appropriate service for the proposed development. It should be noted that any portion of the waterline on-site and outside of the Route 1 right-of-way shall be owned and maintained by the current owner of the development.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

5. The Project proposes multiple soil absorption systems (SASs) to serve the wastewater disposal needs of the proposed development. We acknowledge the SASs design details provided; however, review of the wastewater disposal systems is outside of our review scope for the Planning Board. We recommend that review and approval of the wastewater disposal systems be confirmed by the Topsfield Board of Health.

Applicant's Response: The Applicant concurs.

Current B+T Response: We reiterate the intent of our previous comment and recommend that full compliance with the requirements of the Board of the Health relative to the SASs proposed be made a condition of the decision if the Project is approved.

6. The Applicant proposes that a single post with a fixed banner style sign that will be externally lit be installed on Boston Street; however, specifics of the sign have not been provided. We recommend that conformance with the Bylaws relative to any proposed signage be made a condition of the decision if the Project is approved.

Applicant's Response: A detail of the proposed signage along Route 1 is being designed and will be provided in a subsequent submission.

Current B+T Response: We reiterate the intent of our original comment.

7. We acknowledge the inclusion of architectural floor plans within the plan set; however, inconsistencies appear between the plans. The second floor plans for both the A and B unit types appear to be the same as the first floor plans for each respective unit. We request that the Applicant clarify the design intent for the noted unit styles and revise the plans as applicable.

Applicant's Response: The Architectural plans have been updated accordingly to show the correct floor layouts. See enclosed plans.

Current B+T Response: Revised architectural plans have not been provided to B+T with the submission by the Applicant. Accordingly, we reiterate the intent of our original comments.

Stormwater Management Comments:

1. The outlet from the proposed infiltration basin (Pond D-1) is defined as a 15-in HDPE pipe on Drainage Plan C-4B; however, is modeled as an 8-in by 4-in box culvert within the HydroCAD modeling. We request that the Applicant clarify the design intent of the infiltration basin outlet and revise the documentation as applicable.

Applicant's Response: The site plans including the Drainage Plan, Sheet 3-C3, and the HydroCAD model have been updated accordingly. The design intent is to allow for an 8"x4" inlet box within outlet control structure 1 (OCS#1). The outlet of OCS# shall be a 15" circular HDPE pipe, which will outlet to the wetlands to the northwest of the site. A detail of OCS#1 with elevations has been provided in the details section of the plans, Sheet D-5, Detail 6, for clarification.

Current B+T Response: Sheet D-5 has not been provided by the Applicant as indicated. However, based on the revisions made to the HydroCAD modeling and Sheet C-4B, we consider this comment to have been adequately addressed by the Applicant. We request that the Applicant provide a revised Sheet D-5 to the Board for the Administrative Record.

2. Standard 3 of the Handbook requires a mounding analysis for infiltrative best management practices (BMPs) when separation to groundwater is less than four (4) vertical feet. The Applicant acknowledges only a two (2) foot vertical separation exists, but states that these BMPs are not attenuated systems and the mounding analysis is not required. However, for both systems, the inflow rate is greater than the outflow rate, indicating that some level of attenuation is occurring within each system. We request that the Applicant clarify the design intent of these BMPs relative to the required mounding analysis and provide the noted calculations as applicable.

Applicant's Response: The Applicant has contracted with New England Environmental to conduct such mounding analyses for the applicable systems and will provide such report upon completion.

Current B+T Response: We acknowledge the response provided by the Applicant and reiterate the intent of our original comment pending the submission of the outstanding mounding analysis. We recommend that full compliance with Handbook and Standard 3 be made a condition of the decision if the Project is approved prior to the submission of the required analysis.

3. The locations and parameters used to model Ponds D-2 and D-3 is unclear. We request that the Applicant document and verify the parameters used in the modeling of these Ponds.

Applicant's Response: The ponds were modeled using the "Custom Stage Data" feature within the HydroCAD modeling program. This feature allows for the user to input surface areas and corresponding elevations for each pond to create a 3-dimensional model of the pond. Surface areas for the ponds were calculated directly from AutoCAD Civil 3D software program.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

4. Inconsistencies exist within MA DEP recharge and water quality volume calculations provided. The pervious areas utilized for watersheds P-2 and P-9 are inconsistent between the HydroCAD modeling provided and the calculation table. Watershed R-17 is not included within the calculations nor does it appear on the Proposed Watershed Plan. It is also unclear how the recharge and water quality volumes being provided were calculated. We request that the Applicant clarify the noted discrepancies and revise the documentation as applicable.

Applicant's Response: Watersheds P-2 and P-9 have been revised to be consistent between the site plans, HydroCAD modeling and the MassDEP Calculation spreadsheet. Watershed R-17 has been added to both the calculations and Proposed Watershed Plan. Equations taken from the Massachusetts Stormwater Handbook were previously provided on the submitted calculations indicating how the recharge and water quality volumes were calculated. They have been enlarged for clarity on the revised calculations.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

5. Inconsistencies exist between the plan set and the Pipe Listing (Node) table provided within the HydroCAD modeling. These inconsistencies include:
- a. The slope and diameter on Node D-1
 - b. The out-invert and slope of Node UIS-7
 - c. The out-invert of Node UIS-9

We request that the Applicant clarify the noted inconsistencies and revise the documentation provided as applicable.

Applicant's Response: The documents have been revised accordingly.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

6. Inconsistencies exist between the Existing Watershed Plan and the HydroCAD modeling provided in the Drainage Report. These inconsistencies include:
- a. Ground cover type and CN used for Subcatchment E4
 - b. HSGs and CN used for Subcatchment E3
 - c. CN used for Subcatchment E2

We request that the Applicant clarify the noted inconsistencies and revise the documentation provided as applicable.

Applicant's Response: The documents have been revised accordingly.

Current B+T Response: We acknowledge the response provided by the Applicant; however, a de minimis typographical error continues to exist for Subcatchment E2 on the Existing Watershed plan. This typographical error does not affect the modeling results or the intended system performance.

7. Inconsistencies exist between the Pipe Sizing Table from the Drainage Report and the drainage plans provided. These inconsistencies include:
- a. The length of the pipe between WQU-1 and UIS-1
 - b. The slope, lower invert and upper rim elevations for the pipe length between CB-5 and DMH-4
 - c. A duplicate entry exists for the pipe length between CB-6 and DMH-4

- d. The diameter and lower invert elevation for the pipe length between Roofs 4, 5 & 6 and DMH-9
- e. The length, upper invert and rim elevations for the pipe length between DCB-9 and CB-2

We request that the Applicant clarify the noted inconsistencies and revise the documentation provided as applicable.

Applicant's Response: The documents have been revised accordingly.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

8. A drawdown calculation has not been provided for the infiltration basin. We request that the Applicant document that the noted BMP drains within the required 72 hours.

Applicant's Response: A drawdown calculation for the surface infiltration basin has been included in the revised submittal materials, indicating the basin will drawdown within the required 72-hour timeframe.

Current B+T Response: We acknowledge the drawdown calculation provided; however, the parameters used in the calculation do not appear to correlate with the HydroCAD modeling provided. Even though it appears that the infiltration basin will drawdown well within the 72-hour requirement, we request that the Applicant clarify the calculation for the Administrative Record.

9. Relative to the narrative provided for Standard #3 of the Handbook, the Drainage Report provided defines SCS-420B soil as being hydrologic soil group (HSG) C. The Exiting Watershed Plan provided defines the same soil type as HSG A. We request that the Applicant clarify the noted inconsistency and revise the documents as applicable.

Applicant's Response: The documents have been revised to show soil SCS-420B as HSG A, per the Natural Resources Conservation Services (NRCS) Web Soil Survey website.

Current B+T Response: This comment has been adequately addressed by the Applicant. No further action is required.

Ms. Martha A. Morrison, Chair, Topsfield Planning Board
c/o Ms. Donna Rich, Topsfield Planning Board Coordinator
Town of Topsfield
January 27, 2017
Page 14

We will be available at the Public Hearing scheduled for February 7, 2017 to present the results of our review and be available for discussion regarding the comments listed herein.

We appreciate the opportunity to assist the Town of Topsfield with the review of this Project. Please do not hesitate to contact our office with any questions.

Very truly yours,

BEALS AND THOMAS, INC.



Matthew Cote, PE
Senior Civil Engineer

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