

March 19, 2024

Groton Zoning Board of Appeals
c/o Mr. Takashi Tada
Land Use Director/Town Planner
173 Main Street
Groton, MA 01450

RE: Nitsch Project #13346.27
Heritage Landing
Comprehensive Permit Review
Groton, MA

Dear Zoning Board of Appeals Members:

Nitsch Engineering has received and reviewed the following documents:

1. The Comprehensive Permit Plans (the Plans) entitled “Comprehensive Permit Plan Set, Heritage Landing, Cow Pond Brook Road, Groton, MA” (5 sheets), dated April 25, 2023, revised January 30, 2024, and prepared by Meisner Brem Corporation; and
2. Heritage Landing – Comprehensive Permit Application Response Letter (6 sheets), dated February 9, 2024, and prepared by Meisner Brem Corporation;
3. Heritage Landing Preliminary Stormwater Management Report, dated January 30, 2024, and prepared by Meisner Brem Corporation;
4. Heritage Landing Waiver Requests Letter, dated February 5, 2024, and prepared by Alphen & Santos, P.C.; and
5. Heritage Landing Board of Health Waiver Requests Letter, dated November 30, 2023, and prepared by Alphen & Santos, P.C.

Nitsch Engineering has reviewed the Plans and application to determine conformance to the following:

1. “Zoning”, Chapter 218 from the Code of the Town of Groton, latest version;
2. “Comprehensive Permits”, Chapter 338, Part 2 from the Code of the Town of Groton, latest version;
3. “Earth Removal Stormwater Advisory Committee” Regulations, Chapter 352, Article II, Stormwater Design Criteria from the Code of the Town of Groton, latest version;
4. “Subdivision Rules and Regulations”, Chapter 381, Part 1, Article IV, Design Standards from the Code of the Town of Groton, latest version;
5. “Site Plan Review”, Chapter 381, Part 5 from the Code of the Town of Groton, latest version; and
6. The Massachusetts Stormwater Management Standards, latest version.

This letter includes Nitsch Engineering’s previous comments in standard text, Meisner Brem Corporation’s (MBC) responses in *italics*, and our current comments in **bold**.

Comments from Nitsch Engineering Letters dated September 20, 2023 and January 24, 2024

WAIVERS REQUESTED BY THE APPLICANT

Nitsch Engineering takes no exceptions to the comprehensive permit waivers submitted. We recommend the Applicant confirm if the submitted list is complete or if any other waivers will be requested.

This comment is still applicable, and we recommend the Applicant confirm if any other waivers will be requested.

Nitsch Engineering has reviewed the latest waiver requests and takes no exceptions to them. We recommend the Applicant provide a single document with all waiver requests.

ZONING

Nitsch Engineering does not have any comments related to Zoning.

SUBDIVISION RULES AND REGULATIONS

1. Section 381-10, Streets

The Plans should include all pertinent design information for streets as required by this section, including radii, grades/slopes, and stopping sight distances.

This comment has not been addressed. While we understand the proposed road, Rosie Lane, will not be a public right-of-way and will remain private, please note that cut and fill in proposed public roads are limited to seven feet maximum. The roadway profile plan indicates fill will exceed 20 feet in some areas.

MBC Response: The plans entitled "Heritage Landing, Preliminary Plan Set by Meisner Brem Corp., Revision 2, dated January 30, 2024" show the horizontal control of the proposed roadway, Rosie Lane with stations labeled every 100 feet and tic marked every 50 feet. Full mathematical horizontal control is established with a total length of roadway when measured around the cul-de-sac as 936.31 feet (Sta 9+36.31). The radii and curve length is shown on this revision.

Additionally, full vertical control is shown with the profile grade shown and the vertical curve parabolas labeled with PVI station and elevations are shown. The vertical curve lengths, BVC & EVC stationing, and "K" values are all depicted on all curves. The K values represent the stopping sight distance per AASHTO. Proposed street grades are shown. Existing ground and finished ground elevations at the centerline are shown every 50 feet, as is typical for final road design. The profile is complete.

The comment regarding cuts and fills in excess of seven feet is allowed under the subdivision control regulations as a finding of the Planning Board and we do not feel a waiver is required since it is not required for conventional subdivisions with Planning Board approval.

Therefore, under Revision 2, dated 1-30-2024, the street, Rosie Lane, is fully designed, both horizontally and vertically. We expect Nitsch engineering to concur. The Board can provide a general condition for the project for the applicant to provide any construction details to meet the current subdivision standards in a final construction set, unless otherwise waived.

Complete horizontal and vertical geometry has been provided for the proposed road on the Plans. Rosie Lane would be considered a minor street since it serves more than 20 units and less than 50 units. The horizontal geometry meets most of the requirements under this Section, however two sections of the centerline radii are less than 150 feet. While K values do relate to stopping sight distances, they are not the same thing. The Applicant should confirm stopping sight distances meet the minimum requirements of this Section and note them on the roadway profile plan.

2. Section 381-11, Stormwater Management

The Plans do not include all relevant information regarding the stormwater design. The Plans should include:

- a) The location of all drainage structures;
- b) Rims and invert elevations for all drainage structures;
- c) Storm drain connections with invert elevations; and
- d) Size and material of all drainage structures, pipes, and stormwater BMPs.

The Plans and supporting documents do not include hydrologic and hydraulic calculations for the proposed stormwater management system.

Nitsch Engineering recommends providing a complete stormwater report for review which includes:

- a) MassDEP Stormwater Checklist (signed and stamped);
- b) Web Soil survey with a soil analysis and test pit logs;
- c) Existing and proposed area delineations with defined sub-catchments and design points;
- d) A hydrologic (HydroCAD) model with a summary report of the existing and proposed stormwater system for the 2-, 10-, 25-, and 100-year storm events;
- e) Stormwater recharge calculations;
- f) Water quality calculations;
- g) An Operation and Maintenance Plan;
- h) A Long-term Pollution Prevention Plan; and
- i) A Stormwater Pollution Prevention Plan.

These comments have not been addressed. The revised site plans include a smaller development footprint than the previous design, but they also include only one area for stormwater management (SMF 1). The Applicant will need to confirm SMF 1 is large enough to comply with all applicable regulations.

MBC Response: In any event, as mentioned, we recently completed preliminary stormwater design and calculations and are enclosing same with this transmittal in response to Nitsch comment #2 on page 2. The following items are completed and included on the "Heritage Landing, Preliminary Plan Set by Meisner Brem Corp., Revision 2, dated January 30, 2024", and in the corresponding "Preliminary Stormwater Report, dated 01-30-2024, by Meisner Brem Corporation" as follows:

Plans:

The following information is now shown on "Heritage Landing, Preliminary Plan Set by Meisner Brem Corp., Revision 2, dated January 30, 2024":

- a) Location of all drainage structures.*
- b) Rims and invert elevations for all drainage structures.*
- c) Storm drain connections with invert elevations.*
- d) Size and material of all drainage structures, pipes, and stormwater BMPs.*

Stormwater Report – Hydrologic and Hydraulic Calculations

The following information is now shown on "Preliminary Stormwater Report, dated 01-30-2024, by Meisner Brem Corporation":

- a) MassDEP Stormwater Checklist (unstamped – preliminary only).*
- b) Web soil survey.*
- c) Existing and proposed area delineations (simplified – preliminary only).*
- d) A hydrologic model for the 2, 10, 25, and 100 year storms (simplified – preliminary only).*
- e) Stormwater recharge calculations.*
- f) Water quality calculations.*

Other

The following plans are not being submitted herewith because they are related to construction and long-term maintenance and are considered part of final design or construction. These plans are:

- g) an Operation and Maintenance Plan (to be included with the Condominium Association documents).*
- h) A Long-Term Pollution Prevention Plan (to be included with the Condominium Association documents).*
- i) A Stormwater Pollution Prevention Plan (for construction activities).*

The Nitsch review stated that “the applicant will need to confirm SMF 1 is large enough to comply with all applicable regulations”. The submitted Preliminary Plans and Preliminary Stormwater Report does confirm that SMF 1 is sized properly.

In summary, it is the applicant’s position that the Board has enough information on the stormwater design, through the revised plans and with the Stormwater Report, to approve the plans with conditions.

These comments have mostly been addressed. The Applicant has not yet provided a web soil survey with a soil analysis and test pit logs. The Stormwater Pollution Prevention Plan, Long-Term Pollution Plan, and Operation and Maintenance Plan will be submitted as part of the final design. Nitsch Engineering has conducted a separate stormwater review of the project, and our comments on the stormwater design will be provided under separate cover.

3. Section 381-12, A., Municipal Services – Water

The Plans should include the domestic water and fire protection (if applicable) services to the proposed residential units. The Plans should also indicate the location of water valves. Nitsch Engineering recommends the Plans be updated to include this information.

The Plans should include the full extension of the site water main up to and including the connection to the existing municipal water main.

The Applicant should verify with the Water Department that the available pressure and flow rate in the municipal system is adequate to service the proposed site and all residential units.

These comments have not been addressed. Please also refer to Nitsch Engineering’s peer review letter dated November 8, 2023 on the water line extension plans.

MBC Response: The plans submitted do show the proposed water line throughout the site along the northerly side of the proposed road. Also submitted to the Board of Appeals by this office on 10-17-2023 was a sketch plan of the proposed water line extension pursuant to the MassWorks grant applied for the water extension from its current terminus to the project site. From this point, the plan set does show an 8” ductile iron water main throughout the site with proposed fire hydrants shown no longer than every 500 feet.

The location of the valves and services to each house with corresponding individual corporation stops is certainly part of final design. The Board can condition the project to provide the water valve, services, and corporation stop information as part of the construction set.

The applicant is working with the Groton Water Department in paying the town’s consultant to update the hydraulic model to ensure adequate pressure and flow rate is adequate with the water line extended to the site. Again, this is a final design issue and the final water design should be conditioned if the Board of Appeals concurs with the Water Department comment.

Nitsch Engineering is generally comfortable with the preliminary design of the water services as shown on the Plans. We will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision.

4. Section 381-12, D., Municipal Services – Sanitary Sewers

The Plans should include all relevant information for the gravity sanitary sewer system, including rim and invert elevations for sewer manholes, size and materials for sewer pipes, and service connections for each proposed residential unit. Nitsch Engineering recommends the Plans be updated to include this information.

The Applicant should confirm the total proposed sanitary sewer flow for the development. Septic systems are not allowed if the total flow exceeds 10,000 gallons per day.

The first comment above has not been addressed. The reduction in total units to 28 results in a proposed sanitary sewer flow of less than 10,000 gallons per day. Therefore, a septic system is allowed.

MBC Response: The plans show a gravity sewer system providing the location of every manhole and location of all proposed sewer lines to each of the four (4) septic treatment locations (A,B,C,D). The rim and invert elevations of the manholes, the size and material of the pipe (which will be the typical 8" diameter PVC), the profile and grades of the piping, and the service connections to each unit are all part of final design.

The total daily sewage flow is 9240 GPD and is now under the 10,000 GPD threshold for a Groundwater Discharge Permit, and, as such, a septic system approved by the local Board of Health is allowed.

The Board can condition the project to provide the final design information for the gravity sewer transmission system as part of the construction set.

Nitsch Engineering is generally comfortable with the preliminary design of the sanitary sewer services as shown on the Plans. We will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision.

5. Section 381-13, Other Improvements

The Plans should include information on site features identified in this section, including sidewalks, curbing, driveways, and street signs.

This comment has not been addressed.

MBC Response: The plans do show the location of the driveways. No sidewalks are proposed. The location of the curbing is at the edge of the roadway. The locations of street signs are final design. The curbing details, pavement cross section, sign details, and other related details of construction are part of the final design for construction. The Board can condition the project to provide street construction details as part of the construction set.

Nitsch Engineering is generally comfortable with the preliminary design of the site improvements as shown on the Plans. The Applicant should note that for minor streets, sidewalks are required on at least one side of the road. We will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision.

SITE PLAN REVIEW

6. Section 381-39, Site Plan Content

The Plans should include the following items:

- a) A cut and fill analysis for the proposed development;
- b) The location of electrical, telecommunication, and mechanical services, including manholes, ductbanks, and equipment pads; and
- c) Information on snow removal and snow storage areas.

The Zoning Board of Appeals should consider if an assessment of traffic impacts and safety conditions are required.

All site plans should be stamped by the appropriate licensed professional.

This comment has not been addressed.

MBC Response: Site Plan review is not applicable to this project and therefore the applicant is not intending to submit the following noted items:

- a. *A cut and fill analysis*
- b. *The location of electrical, telecommunication, ductbanks, etc. (this is usually done post approval by the utility companies directly as part of the construction plans anyway).*
- c. *Snow removal and storage areas – this is a private site, not necessarily open to the public as would be for a business and will be maintained by the eventual Condominium Association.*

Nitsch Engineering will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision pertaining to the above items.

COMPREHENSIVE PERMITS

7. Section 338-34, B., Filing and Notice – Additional Materials

The Zoning Board of Appeals should consider if an environmental analysis is required.

This comment is still applicable and we defer to the Zoning Board of Appeals.

MBC Response: The applicant provided a statement in Attorney Alphen's original transmittal letter dated on or about February 14, 2023 as follows:

- (i) *Although not specifically required by the Bylaw nor the Rules and Regulations, the submission will not include "...a development impact report that may include, but not be limited to, analysis of the impacts of the proposed project on the environment (i.e., wetlands, water resources, open space), and infrastructure and services (i.e., roadways, wastewater, schools)", and such standards are more applicable to commercial projects.*

Pursuant to the comment received, we hereby formally request the Board to determine if an environmental analysis pursuant to Section 338-34. B of your regulations is required.

Nitsch Engineering will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision pertaining to the above item.

GENERAL COMMENTS

- 8. The Plans should be updated to identify the minimum provisions necessary for erosion and sediment controls during construction.

This comment has not been addressed.

MBC Response: The erosion control and sediment controls are part of final design and will be included in the plans pursuant to Comment 2 above.

Nitsch Engineering will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision pertaining to the above item.

- 9. If Rosie Lane is considered a shared driveway, a portion exceeds the maximum slope of 8% per Section 381-36, B.

MBC Response: Rosie Lane is approved by the Town Manager, see separate email. A waiver will be requested to allow a 14% grade prior to the close of the hearing.

Nitsch Engineering takes no exceptions to the waiver request. Per the letter dated February 5, 2024, the waiver request is to allow a maximum grade of 12%. We will make recommendations to the Zoning Board of Appeals for conditions to be included in the final decision.

RECOMMENDATIONS

Nitsch Engineering is generally comfortable with the preliminary design of the site as shown on the Plans. We recommend outstanding items noted above be addressed by the Applicant prior to the Zoning Board of Appeals granting approval of the Comprehensive Permit Plans. We will provide a separate letter to the Zoning Board of Appeals with recommendations for conditions to be included in the final decision.

If the Zoning Board of Appeals has any questions, please let us know.

Very truly yours,

Nitsch Engineering, Inc.



Rones Lubin
Project Designer

Approved by:



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