

Planning Board  
173 Main Street  
Groton, MA 01450

February 11, 2025

RE: "Gratuity Brook Farm Estates" – Civil Review  
63 Gratuity Road  
Groton, MA, 01450

Dear Members of the Committee,

Please find enclosed two (2) copies of the revised Definitive Subdivision plan for "Gratuity Brook Farm Estates" located at 63 Gratuity Road, Groton, MA. This letter is specific to the review of the Definitive Subdivision Plan, Special Permit Review, as outlined in the technical review letter from Nitsch Engineering, dated September 11, 2024, as well as the comments discussed at the Planning Board meeting on September 12, 2024.

The plans have also been revised to address the comments specific to the flooding issues associated with Gratuity Brook. The plans have revised show updated floodplain information, revised the layout of Theresa Lane, and elimination 2 Duplex Buildings (4 Units) from the development. The project now includes a total of 12 Duplex Buildings, 24 Units.

The following items address the outstanding comments individually with *LandTech responses in italics*.

## **NITSCH COMMENTS – CIVIL**

### **Waivers Requested by the Applicant**

1. Section 381-10.D.(5) – A waiver is being requested to allow proposed grades to be more than 7 feet above existing grades at two locations on Therese Lane.

Nitsch takes no exception to this waiver request provided the Applicant documents the maximum lift thickness, compaction requirements, and gradation for the fill material so long-term settlement isn't a concern.

*LTC Response: The plans have been revised to include the maximum lift thickness, compaction requirements, and gradation for the fill material to avoid long-term settlement.*

2. Section 381-11.C.(1) – A waiver is being requested to reduce the minimum cover required over storm drain pipes at Catch Basin (CB) 3 and CB-4 in Therese Lane from 3 feet to 2 feet.

Nitsch takes no exception to this waiver request provided the Applicant confirms the storm drain pipes can still accommodate H-20 loading and the catch basins are constructible at this pipe depth. This waiver request should be updated to include all drainage structures with pipe cover less than 3 feet.

*LTC Response: Reducing the minimum cover required over storm drain pipes can still accommodate H-20 loading as all of the storm drain pipes are designed with a minimum of 2-feet of cover in accordance with Best Management Practices for Class III, Reinforced Concrete Pipe, which typically has minimum cover of 18 inches.*

*Additionally, the catch basins are still constructible at this pipe depth by utilizing optional flat top sections, which typically have a height of 12", still allowing for an 8-inch frame, and brick grade adjustments, if needed.*

*The waiver has been updated to include all drainage structures with pipe cover less than 3 feet.*

## **Zoning Bylaw**

1. Section 218-9.2.D. states Applicants for a major residential development shall submit both a conventional plan and an alternative development plan. For subdivision of land that creates nine or more lots, the alternative development plan shall be a flexible development plan, pursuant to Section 218-9.1.

The Applicant should submit an alternative development plan to comply with this section. In 2023 the Applicant provided a flexible development plan as part of their preliminary subdivision plan application. Submission of this flexible development plan would satisfy the requirements of this section.

*LTC Response: Consistent with the preliminary subdivision plan submission, the Applicant is providing a flexible development plan to comply with the requirement for an alternative development plan.*

## **Subdivision Rules and Regulations**

2. Section 381-8.B. (31) states the Plans shall include the location of specimen trees to be saved.

The Plans do not include the location of specimen trees to be saved. The Applicant should confirm if there are any specimen trees to be saved.

*LTC Response: No specimen trees have been identified on site which are proposed to be saved; however, the construction sequence includes the requirement to inspect the clearing limits prior to any construction. This allows for the town/applicant to make minor adjustments in the field, and save a specimen tree located along the limits, if possible.*

3. Section 381-9.B.(3) states no building lot shall be laid out which is substantially irregular in shape. For purposes of this provision, "substantially irregular" is defined as having a coefficient of regularity lower than 0.4.

The Applicant should calculate and verify that all building lots have a coefficient of regularity no lower than 0.4.

*LTC Response: The plans have been revised to include coefficient of regularity calculations. All building lots have a shape factor greater than 0.4.*

4. Section 381-9.B.(5) states the coefficient of regularity shall be labeled on each lot.

The Plans should include the coefficient of regularity for each building lot.

*LTC Response: The plans have been revised to include the coefficient of regularity for each lot.*

5. Section 381-10.D.(3) states all changes in street grade shall be connected by vertical curves of sufficient length to afford a minimum stopping sight distance of 175 feet for a minor street.

The Plans should include the stopping sight distance for each vertical curve on the roadway profile sheets.

*LTC Response: The plans have been revised to include stopping sight distances for each vertical curve as noted on the roadway profile sheets.*

6. Section 381-10.D.(4) states on any street intersection, a leveling area with a slope of not more than 3% shall be provided for a distance of at least 30 feet from the nearest edge of the intersecting traveled way. Center-line grades of vertical curves within this leveling area shall also comply with the three percent maximum slope.

The Plans show a 5% slope on Therese Lane for the first 30 feet off Jenkins Road. The Plans should be updated to comply with this section or the Applicant should request a waiver from the Planning Board.

*LTC Response: The Applicant has updated the plans to comply with this section.*

7. Section 381-12.(A)(2) states a water connection shall be provided for each lot in the subdivision. The water connection shall be located along the frontage of the lot where the lot abuts the right-of-way of the road.

The Plans should be updated to show water connections to each building.

*LTC Response: The Applicant has updated the plans to show water connections to each building.*

8. Section 381-12.(C)(2)(d) states fire hydrants shall be at the far end of the cul-de-sac at a minimum of five feet and less than 10 feet from the edge of pavement.

The Applicant should update the Plans to locate fire hydrants at cul-de-sacs as required by this section. The Applicant should also confirm with the Fire Department if any additional fire hydrants are required along the proposed roadways.

*LTC Response: The plans have been revised to show fire hydrants at the far end of the cul-de-sacs as required by this section and the recommendations of the Fire Department (see email from the Fire Department dated May 31, 2023 reviewing hydrant placement for the Preliminary Subdivision Plans). The layout and placement of hydrants is also consistent with the Preliminary Plans and the recommendations of the Water Department.*

9. Section 381-13.D.(1) states for minor streets both sides of the road shall have granite curbing with a minimum thickness of six inches and shall not be less than 18 inches plus or minus one inch in depth.

The Plans show sloped granite curb along both sides of both proposed roadways. Nitsch recommends the Applicant consider vertical granite curb.

*LTC Response: The Applicant has updated the Plans show sloped granite curb along both sides of both proposed roadways.*

## General Comments

8. On Drawing C-16, the water line appears to end at the outer edge of the cul-de-sac pavement and also at the intersection of Gratuity Road and Gerard Way. The Applicant should update the Plans to specify the location of the water line connections to existing services and termination points for the new services.

*LTC Response: The plan has been revised to show the location of the water line connections to existing services and termination points for the new services.*

9. On Drawing C-16, the sewer services from Units 11 and 14 are shown connecting to the sewer main in Gerard Way with wye connections. Nitsch recommends these sewer service connections be made with manholes. A single sewer manhole could be utilized at this location to connect both services to the main.

*LTC Response: The plan set has been revised to connect the sewer services from all units to a manhole. Please be advised that final septic system plans will be submitted to the Board of Health for review and approval, consistent with best management practices.*

10. To be consistent with the Town of Groton Zoning Bylaw, application forms, and past major residential development submissions, Nitsch recommends the Plans be updated to refer to the 14 proposed Units as Lots and the 28 dwelling structures as Units.

*LTC Response: The information is presented this way to specifically address concerns raised by the Board of Health as to how the septic systems will be permitted, owned, and maintained. To avoid any confusion, the land area associated with each building is defined as an Exclusive Use Area, or Unit, as to not imply individual lot ownership for the common septic system configurations.*

11. The Applicant should provide additional details on the directional drilling operations for the installation of the site water main under Gratuity Brook.

*LTC Response: The Applicant has provided additional details on the directional drilling operations for the installation of the site water main under Gratuity Brook under a separate cover. The plan provides information specific to this project consistent with best management practices for directional drilling.*

## PLANNING BOARD - SEPTEMBER 19, 2024 MEETING COMMENTS

### General Comments

#### Clearing Limits:

1. Request to permanently mark the limits of clearing with permanent monument (ie. Iron Rods).

*LTC Response: The plan set has been revised to incorporate permanent markings along the clearing limits. The markers, iron pins, would be set after construction as a permanent delineation of the clearing limits. During construction, the limit of work will be delineated by the proposed erosion control, silt fence and straw wattles.*

#### Lighting:

2. Recommendation that the temperature and light color for the post light fixture be less than 3,000 Kelvin.

*LTC Response: The plans have been updated to add a note to the post mounted light detail, sheet C-22, that the temperature and light color of the fixtures shall be less than 3,000 kelvin.*

3. The lamp post fixture detail is incorrect.

*LTC Response: The plans have been updated to update the post-mounted light detail, sheet C-22.*

4. Residents should have control of the light fixture (on/off) and shall not be an automatic photocell.

*LTC Response: The plans have been updated to add a note to the post mounted light detail, sheet C-22, that the residents shall have control of the light fixture (on/off) without the use of an automatic photocell.*

#### Layout:

5. If possible, development plans should provide additional (Hemlock Model) building layouts that include side-load entry driveways. Development plans should also be revised to separate the driveways for the (Birch Model) building layouts, with adjacent front-load entry driveways, with an island.

*LTC Response: The plan set has been designed in accordance with the regulations and the requirements to provide a mix of unit styles such that no adjacent buildings match minimizing the opportunity to provide additional Hemlock Model buildings with side-load entry driveways.*

*The plans have also been revised to split the driveways for the Birch Model buildings with the adjacent front-load entry driveways.*

#### Landscape:

6. Show the existing trees on the landscape plan.

*LTC Response: The plan set has been revised to show the existing trees on the landscape plan.*

*The plan set has been revised to show the existing trees on the Landscape Plan. No specific trees have been identified to be saved, however, the construction sequence includes the requirement to inspect the clearing limits prior to any construction. This allows for the town/applicant to make minor adjustments in the field, and save a specimen tree located along the limits, if possible.*

7. Provide improved pedestrian access around the buildings by reducing the grading along the sides of the buildings.

*LTC Response: Once the layout is finalized, the final plan set will be updated with grading adjustments to encourage pedestrian access around the building. This will include retaining walls, steps, and reducing the steepness of the grading.*

8. Remove any black tupelo plantings and add more diversity such as red maple trees and/or swamp white oak trees. Additionally, the roadway entrances should include additional plantings to help screen the development.

*LTC Response: The landscape plan has been revised to not include any black tupelo tree plantings and to incorporate more diversity with red maple tree plantings and swamp white oak tree plantings. Additional plantings were added to both entrances to help screen the development.*

9. Add scientific name to the planting plan.

*LTC Response: Scientific names have been added to the planting plans.*

10. Edit the tree planting details to eliminate any reference to trunk wrapping and add a note that any mulch placed around the tree plantings shall not touch the tree.

*LTC Response: The Landscape plan detail has been updated accordingly.*

11. Why does the plan set include tree planting details that are specific to coniferous trees and deciduous trees?

*LTC Response: The detail sheet, and planting detail, has been revised to include one tree planting detail.*

12. Add the meadow area to the O&M Manual.

*LTC Response: The meadow area has been added to the O&M Manual.*

### **Stormwater**

13. Concern with the location of Infiltration basin #4 located at the entrance of Gerard Way and potential impacts to the easterly abutters.

*LTC Response: The existing topography and proposed grading at the overflow weir for infiltration basin #3 (previously infiltration basin #4) direct potential discharges southerly, along the easterly boundary of Unit #8 and Parcel A, towards the intermittent stream, Gratuity Brook. Additionally, the infiltration basin is designed to fully contain and infiltrate the 100-year storm, which will minimize any discharges at this overflow weir.*

- 14.** Flooding concerns in this area and the impacts to the proposed dwellings, the foundation elevations should be provided.

*LTC Response: Federal Emergency Management Agency (FEMA) is in the process of updating the Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) for the Town of Groton and the surrounding area with Preliminary Flood Maps available to the public. While not final, the plan set has been revised to include this updated floodplain information.*

*The floodplain in this area is associated with the Nashua River and the Gratuity Brook Tributary. Previously, the floodplain, Zone AE, terminated offsite to the north and east without impacting on the locus property. The revised floodplain, Zone A, no Base Flood Elevation, extends significantly onto the property along the westerly property line to Jenkins Road. The extents of the floodplain mimic the location of Gratuity Brook diverging to the south as the brook extends to the east. Analyzing contours, the elevation of the floodplain is assumed to be 210.3 +/-, and is most likely a result of surcharging conditions down-gradient.*

*Further, LandTech reviewed the floodplain and how it diverges to the south, away from Gratuity Brook. While it is expected that flooding would surcharge Gratuity Brook further east than is shown on the updated flood maps, the elevation of the bank of the river, along the east-west portion, is greater than the 100-year flooding event elevation, and is therefore any additional surcharge would be confined to the stream channel. The floodplain does extend south, away from Gratuity Brook, due to the fact that the existing elevations for this area are less than the 100-year floodplain elevation, elevations less than 210.3 +/-.*

*The elevations of dwellings have also been reviewed, and plans have been updated, to raise basement slab elevations along Gratuity Brook and Floodplain. All basement slab elevations are set to be above the flooding limits to minimize potential impacts to the proposed dwellings.*

Thank you and please feel free to contact our office if you have any additional comments.

Sincerely,

**LANDTECH CONSULTANTS, INC.**

A handwritten signature in black ink, appearing to read "Matthew A. Waterman".

Matthew A. Waterman, P.E.

Senior Project Engineer/Manager