

December 17, 2020

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

RE: Nitsch Project #13346.15  
The Village at Shepley Hill  
Definitive Plan and  
Special Permit Review  
Groton, MA

Dear Planning Board Members:

Nitsch Engineering has received and reviewed the following documents:

1. The Definite Subdivision Plans (the Plans) entitled “The Village at Shepley Hill, Groton, MA, Sand Hill Road & Longley Road” (26 sheets), dated November 23, 2020, revised December 7, 2020, and prepared by Meridian Associates;
2. The Definitive Plan Application and supporting documents, dated November 23, 2020, and prepared by Mann & Mann, P.C.;
3. The Special Permit Application and supporting documents, dated November 23, 2020, and prepared by Mann & Mann, P.C.;
4. The Conceptual Flexible Development Plan entitled “The Village at Shepley Hill” (1 sheet), dated October 5, 2020, and prepared by Meridian Associates;
5. The Water Main Extension Plans entitled “Longley Road Water Main Extension” (4 sheets), dated November 11, 2020, and prepared by Provencher Engineering, LLC;
6. The Landscape Plan entitled “The Village at Shepley Hill Groton, MA” (2 sheets), dated November 20, 2020, and prepared by William Fleming Associates Incorporated;
7. The Lighting Plan entitled “Shepley Hill” (one sheet), dated November 18, 2020, and prepared by Illuminate; and
8. The Lighting Specifications entitled “Village at Shepley Hill” (24 sheets), dated November 19, 2020, prepared by Illuminate.

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

1. “Zoning Bylaw”, Chapter 218 from the Code of the Town of Groton, latest version; and
2. “Subdivision Rules and Regulations”, Chapter 381, Part 1 from the Code of the Town of Groton, latest version.

Nitsch Engineering is also conducting a stormwater review of the project. Our comments on the stormwater design will be provided under separate cover to the Earth Removal Stormwater Advisory Committee.

#### **WAIVERS REQUESTED BY THE APPLICANT**

1. Section 381-10 C.(2) – A waiver is being requested to reduce the right-of-way width (50 feet minimum required, 40 feet proposed) and to reduce the pavement width (22 feet minimum required, 20 feet proposed).
2. Section 381-10 D.(5) – A waiver is being requested to allow cuts and fills greater than 7 feet.

Based on this review, Nitsch Engineering offers the following comments:

## ZONING BYLAW

Nitsch Engineering has reviewed the applicable sections of the Zoning Bylaw, including Sections 218-5, 218-6, 218-8, and 218-9.2, and does not have any comments. The project documents appear to comply with the applicable sections of the Zoning Bylaw.

## SUBDIVISION RULES AND REGULATIONS

1. Section 381-8.B.(1)(a) states that station numbers should be included in the subtitle when the road and profile plan cannot be included on one sheet.

The Plans should be revised to include station numbers in the subtitles when the road and profile plan cannot be included on one sheet. This applies to Sheets 19, 20, and 21.

2. Section 381-8.B.(5) states that the Plans shall contain existing and proposed lines of streets, ways easements and any public or common areas within the subdivision.

The Applicant should confirm if they are proposing any new easements for maintenance of utilities, access, or for other uses.

3. Section 381-8.B.(8) states the Plans shall contain the location and outline of all existing buildings and site features such as existing stone walls, fences, large trees or wooded areas, rock ridges and outcroppings, swamps, floodplain areas, water bodies and watercourses, including depth of water and direction of flow within or adjacent to the proposed subdivision.

The Plans should be revised to include the direction of flow of the intermittent stream.

4. Section 381-8.B.(19) states the Plans shall contain the location of a minimum of two permanent benchmarks.

The Plans do not contain a minimum of two permanent benchmarks. The Plans should be revised to meet the requirements of this section.

5. Section 381-8.B.(20)(c) states that on each plan to be recorded the following statements shall be noted: "I \_\_\_\_\_ Clerk of the Town of Groton, hereby certify that the notice of approval of this plan by the Planning Board has been received and recorded by this office and no appeal was received during the 20 days after such receipt and recording of said notice."

Sheets 3,4,5, and 6 do not include this statement. The Plans should be revised to meet the requirements of this section.

6. Section 381-8.B.(22) states the Plans shall contain the location of subsurface test pits and percolation tests as required by the Board. The Board will not normally require more than one pit per four proposed lots, locations to be selected after consultation with the Board of Health and the Conservation Commission. Test pits and percolation tests shall be performed at locations of leaching catch basins and detention basins. Test pits shall be performed during that portion of the year when groundwater is at its highest elevation.

The Plans include the locations of subsurface test pits. However, the information for these test pits was not included in the submission package. The Applicant should provide test pit and percolation test information for review.

7. Section 381-8.B.(27) states that the Plans shall include the geometry of both the centerline of the pavement and the centerline of the right-of-way at cul-de-sacs and/or where the pavement is not centered within the right-of-way.

The Plans should be revised to include the centerline of the right-of-way at the cul-de-sac.

8. 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.

9. Section 381-8.C.(1) states that the definitive plan shall be accompanied by a written statement addressing Section 381-8.C.(1)(a) through Section 381-8.C.(1)(e) including subsections.

Nitsch Engineering did not receive a written statement pursuant to all subsections of Section 381-8.C.(1). The Applicant should provide a written statement that addresses all subsections of this section including, but not limited to, zoning, test pit log results, estimated seasonal high groundwater elevations, erosion and sediment control methods, and cut and fill calculations.

10. Section 381-10.C.(2) states that the minimum width of minor streets shall be 50 feet of right-of-way and pavement of 22 feet.

A waiver is being requested to reduce the right-of-way width (50 feet minimum required, 40 feet proposed) and to reduce the pavement width (22 feet minimum required, 20 feet proposed). Nitsch Engineering takes no exceptions to this waiver request and recommends the Planning Board decide if this is acceptable.

11. Section 381-10.D.(5) states that the proposed grades within the right-of-way, including the cul-de-sac, shall not be more than seven feet above or below existing grade unless specifically authorized by the Board in unusual topographic circumstances.

A waiver has being requested to allow cuts and fills greater than 7 feet. The Plans indicate areas of the site have cuts and fills greater than 20 feet. The Applicant should provide additional information on earthwork requirements for the project, cut and fill calculations, and a color-coded site plan showing areas of both cuts and fills with magnitude. The Applicant should also provide information on groundwater elevations and any impacts groundwater will have in areas of cut both during and after construction.

12. Section 381-10 G.(2) states that the shoulders shall pitch at 3/8 inch to the foot towards the curb or swale. This area shall have an eight-inch gravel foundation and be loamed, graded with at least six inches of loam or other good topsoil conducive to the growing of grass, rolled and seeded with lawn grass seed.

The Applicant should ensure the proper slope is provided on the landscape shoulder with 6 inches of loam instead of 4 inches as shown on the Plans.

13. Section 381-11.D. states catch basins will be required at all low points and on both sides of the roadway on continuous grade at intervals of not more than 300 feet. Drainage patterns at intersections shall be evaluated and catch basins designed and constructed so as to prevent any flooding at the intersection. Any catch basins used shall be at least six feet deep and four feet in diameter (inside measurements), with a thirty-six-inch or greater sump below pipe invert and shall be constructed of

precast concrete units. Manholes used shall be at least four feet diameter (inside measurements) and shall be constructed of precast concrete units, with formed inverts (unless waived by the Board to allow the use of concrete blocks). Oil and grease traps shall be installed on all structures that discharge to a resource area as defined by 310CMR, the Wetlands Protection Act, and where required by the Board. Manhole covers and catch basin grates shall be in conformance with Massachusetts Department of Public Works Section 201, with catch basin grates designed and placed so as to cause no hazard to bicycles. Standard catch basin frames and grates and manhole rims and covers are specified in Part 2, Construction Appendix. Granite curb inlets shall be provided at all catch basins located within the roadway.

Drain manhole and catch basin details included in the Plans do not include formed inverts or granite curb inlets. The Plans should be revised to include formed inverts in drain manholes and granite curb inlets at catch basins.

14. Section 381-13.C.(1) states that street trees, not less than 12 feet in height and 2 1/2 inches in diameter and of a species approved by the Planning Board, after consultation with the Tree Warden, shall be placed on each side of every street in the subdivision wherever, in the opinion of the Board, existing woodlands or suitable individual trees are not retained. A landscaping plan showing street trees, plantings and specifications for grass seed to be used on the road shoulders shall be submitted with the definitive plan.

The Landscape Plan includes trees less than 12 feet in height. The Landscape Plan should be revised to meet the requirements of this section.

15. Section 381-13.F.(1) states that street lines shall have bounds placed at all angle points, at the beginning and end of all curves and every 1,000 feet on straight lines. Such bounds shall be of sound granite, not less than three feet long and not less than five inches square, with a dressed top and one-half-inch drill hole. Reinforced concrete bounds will not be allowed.

The Plans do not include the locations of bounds. The Plans should be revised to meet the requirements of this section.

16. Section 381-13.G. states that street signs shall be provided and installed as directed by the Highway Surveyor. A street sign shall be placed at every intersection and shall clearly indicate if the road is a private way and shall state the name of each street. Street signs shall be installed prior to the issuance of any building permits

The Plans do not indicate a street sign at the intersection with Longley Road and Sand Hill Road or at the interior intersection of Road A and Road B. The Plans should be revised to indicate a street sign at these intersections.

17. Section 381-13.J. states that at the access to lots on a dead-end street, cul-de-sac or permanent turnaround, a sign shall be provided and installed as directed by the Fire Chief indicating the location and street numbers of all residential units accessed from the turnaround.

The Plans do not include this required sign. The Plans should be revised to meet the requirements of this section.

## GENERAL COMMENTS

18. The Plans should include a north arrow on all Plan and Profile sheets with a plan view.
19. The Applicant should provide all test pits and percolation test data as applicable.
20. The Plans should be revised to indicate the limit of work on all sheets, or the Applicant should confirm if the proposed tree line coincides with the project's limit of work.
21. The Plans should include additional information, including a detail, for the design of the 1:1 rip rap slopes.
22. The Applicant should consider providing a safety barrier (i.e. fence) where unit side and/or rear yards are adjacent to 1:1 rip rap slopes.
23. All temporary sediment basins to be converted to permanent infiltration basins shall be dredged and cleaned of all collected sediment prior to final conversion.
24. Silt fence should be provided in addition to the compost filter sock for all perimeter erosion control protection.
25. The Water Main Extension Plans include multiple sections of erosion control barriers. Additional erosion control measures should be provided if needed to protect adjacent property owners and wetlands.
26. The Air Release Valve Assembly detail on the Water Main Extension Plans should be provided with a drain on the vertical section of copper tubing to prevent freezing in the winter and damage to the assembly.
27. The Watermain/Storm Drain Clearance detail on the Water Main Extension Plans should include a minimum separation dimension between the water pipe and drain pipe.

## RECOMMENDATIONS

The Plan appears to conform to the Code, except as noted. The applicant should revise and resubmit the documents.

If the Planning Board has any questions, please call.

Very truly yours,

**Nitsch Engineering, Inc.**



Basel Alhadidi  
Project Designer

Approved by:



Jared E. Gentilucci, PE, CPESC, LEED AP BD+C  
Project Manager

BMA/jeg