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February 29, 2024

Alana Kenney, Land Use Clerk
Town of Nottingham
P.O. Box 114
Nottingham, NH 03290

RE: Town of Nottingham, Planning Board Services
Pawtuckaway Ridge Subdivision
Planning Board Application Review
CMA #887.180

Dear Alana:

CMA Engineers has received the following information for site plan review of a proposed open space subdivision on Raymond Road in Nottingham, NH (Tax Map 69, Lot 17):

1) Subdivision Application
2) Plans titled "Pawtuckaway Ridge Subdivision," dated December 18, 2023, prepared by Beals Associates, PLLC.
3) Drainage Analysis & Erosion and Sediment Control Plan, dated December 18, 2023, prepared by Beals Associates, PLLC.
4) Traffic Impact Study, dated November 14, 2023, prepared by Vanasse & Associates, Inc.

We have reviewed the information submitted for conformance with the Town of Nottingham Subdivision Regulations: Articles 9, 13, 14, 15, 17, 18, 19, 20, Fire Suppression, and Appendix 5, Zoning Ordinance: Article IV.S, and general engineering practices. The Drainage Analysis & Erosion and Sediment Control Plan and Traffic Impact Study were not reviewed. We offer the comments below for consideration by the Planning Board.

General

On behalf of the owner (Forgotten Mtn Realty Trust), the Applicant, Joseph Falzone of Stratham, NH, is proposing the creation of an open space subdivision consisting of sixteen individual lots on Raymond Road in Nottingham. The open space subdivision is proposed on Tax Map 69, Lot 17, which is an existing undeveloped lot with an area of approximately 90.5 acres. There is a proposed lot line adjustment with an existing abutter for proposed drainage features.

The site was surveyed by Doucet Survey, Inc. in July and August of 2023, and wetlands were delineated by Gove Environmental, in July 2023.

The applicant is not requesting any waivers.

Subdivision Regulations

PART II – THE APPLICATION PROCESS

Article 9 Procedures for Review and Action on Applications

9.7.1 Streets and Roads

1) (b) The applicant is proposing a cul-de-sac, and the Regulation states that cul-de-sacs are permitted by the granting of a waiver by the Board. The Applicant shall submit a waiver request. We note that a second connection to an existing road may not be feasible.

1) (d) The applicant has not provided a landscape plan and there does not appear to be any proposed. There are two proposed open space areas, one at the entrance and one behind lots 6-10. It is assumed that the open space areas will remain vegetated. The applicant should confirm the open space plan.

2) (c) The Regulation requires adequate pedestrian and bicycle safety and access. The Applicant does not provide bike lanes and sidewalks that would meet this requirement, and is this acceptable to the Board?

Article 13 Open Space Development

13.1 Authority and Purpose

f) Buildings and structures shall be located in areas suitable for development and avoid unsuitable areas such as hydric soils, areas subject to flooding, and steep slopes. The existing lot has a significant number of locations of poorly/very poorly drained soils and steeps slopes, and it is unclear how/if these requirements are met on all lots. The proposed building envelope should be shown on the plans.

13.5 Protection and Management of Open Space

Has the applicant submitted information about the proposed Open Space, so it can be determined if the requirements in this Section are met?

Part III – DESIGN AND CONSTRUCTION STANDARDS

Article 14 General Design Standards

14.3 Building Placement

3) Building envelopes shall not include wetlands or floodplains; however, the existing lot has a significant number of locations of poorly/very poorly drained soils, and it is unclear if this requirement is met. The Applicant should show the proposed building envelope, building setbacks, and leach field setbacks on the Yield Plan, Subdivision Plan, and Subdivision Site Plans, so this requirement can be evaluated.

4) Building envelopes shall not include areas with slopes in excess of 25%; however, the existing lot has a significant number of locations of steep slopes, and it is unclear if this requirement is met. The Applicant should show the proposed building envelope, building setbacks, and leach field

setbacks on the Yield Plan, Subdivision Plan, and Subdivision Site Plans, so this requirement can be evaluated.

14.4 Protection of Existing Natural and Historic Features

1) & 2) Significant natural features should be shown on the plans and preserved and/or protected. The development requires significant cuts/fills to construct the roadway, and likely the housing lots. How are natural features being preserved and protected?

3)a) The plans should contain notes, etc. regarding preservation of trees and shrubbery during lot development and road construction. Is the cul-de-sac proposed to be vegetated?

4) Are there existing buildings or other man-made structures (stone walls) on the property?

14.5 Fire Protection

How are the fire protection requirements of this section being met?

Article 15 Road & Driveway Design and Construction Standards

15.1.1 Highway Bounds and Signs

1) Granite bounds should be shown on the plan.

15.2.1 Road Design Standards

When curbing is required on rural roads at intersections or because of steep slopes, the pavement width shall be increased by two feet.

15.3.1 Number of Access Points to Roads

2) Driveways shall be located at least 100 ft from street intersections, but the proposed relocated driveways for the two existing lots do not meet this requirement. The driveways should be relocated, or a waiver request submitted if this requirement cannot be met.

15.3.2 Driveway Design

It is unclear if the requirements of this section are met. The Typical Rural Driveway Cross Section on Sheet D2 should include a plan view in addition to the cross-section to show more detail. Additionally, the Plan and Profile sheets should include proposed driveways and site grading to construct them, so it can be shown that the proposed driveways meet this section's requirements.

15.3.3 Related Improvements

3) Curbing

a) Curbing shall be straight granite curb or sloped granite curb, but the Applicant is proposing bituminous curb. The plans shall be updated to include granite curb.

b) When the plans are updated to include granite curb, construction of curbing shall be in accordance with AASHTO and NH-DOT standards

15.5 Sidewalks, Bikeways and Trails

Are sidewalks or bikeways deemed appropriate for this subdivision by the Planning Board? The open space appears to be accessible between proposed Lots 4 and 5, although the access is not labeled, and it is unclear if the open space is to be open to the public.

15.6 Road Construction Standards

1a) Boulders and/or ledge shall be removed to a depth of not less than 12 inches below proposed subgrade. Since there are significant cuts to construct the project, we recommend this note be added to the Typical Cross Section Detail.

15.6.3 Loaming and Seeding

2) All disturbed shall be loamed and seeded in accordance NHDOT Specification Section 646, and this should be shown on the plans.

3) Slopes and ditches shall require the use of erosion control matting, and this should be shown on the plans.

15.6.4 Road in Cut/Fill

Ledge cuts are limited to 1H:1V slopes with a fall zone outside of the right-of-way. Is this requirement met?

15.6.5 Street Lights

Are streetlights required by the Board?

15.6.6 Guardrail

Guardrail and terminal end units shall meet NHDHOT requirements. The Guardrail Detail, Sheet D2, needs to include more information to confirm if this requirement is met.

15.6.7 Roadside Drainage

7) Underdrain shall be installed in cut sections or where the SHWT is within three feet of the subbase elevation. The latter conflicts with Town's typical roadway section which requires it within four feet of finished grade, and this is a more reasonable requirement. We note that test pits were not conducted along the roadway, so the location of the SHWT is unknown.

15.6.11 More Stringent Provisions

2) Date Requirements

c) Slope and drainage easement should be shown on the plans.

d) The roadway centerline tangent lengths and bearing data are missing and should be added.

f, g, h) The applicant should submit cross sections at each half station showing existing and proposed grades.

Article 17 Utility Design Standards

17.1 Utility Structures

Proposed transformer locations and easements are not shown on the plan as is required.

1) Underground utilities are indicated in the Typical Cross Section on Sheet D2 but are not shown on the plans and profiles. The applicant should provide a detail. Fire protection measures are not shown.

Article 18 Subsurface Sewage System Design Standards

18.2 Test Pits

The Regulation requires two test pits located in the dedicated 4,000 square foot leach field area with two test pits separated by 50 feet. Lot 7 does not have two test pits. Several lots, including Lots 1 and 15 (and potentially others) appear to have test pits with less than 50-feet of separation. These comments should be addressed.

Article 19 Water System Design Standards

19.3 Well Radius Placement

3) The Regulation requires the well radius to be within the lot's property limits; however, the well radii for Lots 5 and 8 extend beyond the property limits. The well location shall be moved, so this requirement is met.

Article 20 Landscaping, Recreation and Open Standards

20.1.1 Buffer Strips

It is assumed that the open spaces will remain vegetated as buffers for abutting residences and the Pawtuckaway River. The plans should indicate vegetation preservation.

20.2.1 Public Access to Water Bodies

1) It appears that there is access to the open space and the Pawtuckaway River between Lots 4 and 5. Is this public access, and if so, parking should be provided.

20.2.4 Conservation of Natural Features

Are there natural features (i.e. watercourses, wetland areas, steep slopes, etc.) on the property that the Board wants maintained?

Appendix 4

Fire protection is not included in the application. Does the Town require the development to have fire protection (i.e. fire hydrants, fire ponds, and/or cisterns)? .

Appendix 5 – Typical Minor Roadway Section

In reviewing the Town's detail as compared to the project's Typical Cross Section detail provided in plan set, we have the following comments:

1. A 24-ft paved roadway with 2-ft gravel shoulders is required, but the provided detail shows a 22-ft paved roadway with curbing on both sides. The detail should be updated.

2. In the detail, the pavement nomenclature is outdated (even though it follows Town Regulations) and should be updated to current pavement nomenclature.
3. The inside of the cul-de-sac is not curbed, so a detail is needed showing the 2-ft gravel shoulder that would be installed.
4. In a ledge cut, ledge shall be removed to six inches below the proposed subgrade elevation. We note this contradicts the 12-inch requirement in 15.6.1.a), and we recommend the more stringent 12-inch requirement be met. The detail shall be updated to reflect this.
5. Roadway underdrain shall be provided in all cut sections and where seasonal high-water table is within four feet of proposed finished grade. The detail shall be updated to reflect this.
6. In the detail, the underdrain depth should be updated to 4-ft to match the Regulation.
7. Roadway side slopes are limited to 3H:1V. The detail shall be updated to reflect this.
8. Ledge cuts are limited to a 1H:1V slope. The detail shall be updated to reflect this.
9. Where guardrail is installed, the face of rail shall be three feet minimum from edge of travelway.

Zoning Ordinance

Article IV General Provisions

9.7.1 Streets and Roads

S. Open Space Development (Amended March 9, 2010)

3. Objectives

a) Any contiguous area shall not have a horizontal dimension of less than 75 feet; however, the smaller, northeastern open space land has a horizontal dimension so of 19.02' Is this acceptable?

j) The open space shall provide trails or green space connections with adjacent properties. We note the proposed house lots are located on portions of the existing trails. Will the trails be rerouted to the proposed open space?

Plan Set:

General:

1. On sheets showing existing and proposed linework, the existing/proposed lines print black and are similar lineweights making the plans difficult to read and differentiate between existing/proposed work. For drawing clarity, existing linework should be faded back.
2. Some text is directly over lines and difficult to read. Text masking may be helpful.

Cover:

1. Correct the statement under Town Notes "Surface area and shall be…".
2. The sheet names in the index do not match those on the plan sheets:
    a. Sheet 15 is labeled Subdivision Plan (not Subdivision Site Plan)
    b. There is no Highway Access Plan in the Index.
    c. There are two Plan and Profile P2s.
    d. The Drainage Basin plans are labeled Pond Plan on the sheets.
    e. The Erosion & Sedimentation Control Details sheet is labeled, and Erosion & Sedimentation and the title should be updated to match.
3. There are 27 numbered sheets in the plan set, not 26.

Sheet 6 of 13 – Subdivision Plan

1. An easement to control Beaver dam is shown on the plans. What are the details of this easement and how does it factor into the design of the subdivision?

Sheets 8 – 12 of 13 – Subdivision Plan

1. The A symbols and TP symbols should be defined.

Sheet 13 of 13 – Subdivision

1. The hatched area should be defined.
2. The A symbols and TP symbols should be defined.

Sheet 14 – Subdivision Yield Plan

1. "Yield" is spelled incorrectly in the title block.
2. Correct Yield Lots Notes.
3. The building envelope should be shown on each lot to visually show conformance with the Regulations.
4. The hatched area should be defined.

Sheet 15 – Subdivision Plan

1. The hatched area should be defined.
2. Building setbacks shown should include poorly, and very poorly, drained soils.

Sheet 16/17 – Subdivision Site Plan

1. The Wetland Notes indicate that the wetlands were delineated by GES -Environmental, but Sheet 1 indicates that they were delineated by Gove Environmental.

Sheet 18 – Roadway Access Plan

1. Grading necessary to achieve site distance should be more clearly shown on the plan and profile, and in the Profile View, the required re-grading should be called out in the view.
2. The Stop Line's distance from the edge of pavement should be dimensioned.
3. The Notes do not seem relevant to the intent of this plan, and if so, they should be removed.

Sheet 18A – Highway Access Plan – H2

1. The truck movement linework do not stand out and are difficult to read.
2. Define "SU" utility truck and show the length/width/type of the truck.

Sheet 19 – Plan & Profile – P1

2. CB#13/14
    a. The catch basin grate is not shown at the edge of pavement and should be adjusted.
    b. Since the proposed rim elevations nearly match the roadway sag elevation at centerline, it does not appear the proposed rim elevations account for the roadway cross slope, nor the additional 1-inch of depression. The rim elevation should be adjusted and confirmed for the other catch basins.
    c. The drainage pipe exiting the C.B. has about 0.9 ft of cover after accounting for the above adjustments. This doesn't meet the manufacturer's minimum cover requirement of 12 inches, it doesn't match the Drain Pipe Detail on Sheet D1 that requires 2-ft min. cover, and typically, a drainage pipe is set below the road's base materials.
    d. The pipe elevations specified in the plan view drainage notes do not match the pipe elevations shown in the profile view.
    e. The drainage system downstream of CB#14 is on private property. Is a drainage easement proposed? Additionally, this pipe run is set at a 0.4% slope down to Infiltration Pond #3; however, the typical minimum drainage pipe slope is 0.5%. This should be corrected.

3. The drainage pipe from CB #12 to #13 should be relocated CB #11 to #14 to prevent pipe clogging issues backing up stormwater. This will provide a shorter path for stormwater.
4. Culvert #2 Road Crossing
    a. The lower culvert is 10-inch diameter, but the Regulation has a 12-inch minimum requirement, so the pipe diameter should be increased.
    b. Why are there two culvert pipes and why are they at different elevations?
    c. In the Profile View, the pipe elevations don't match the Plan View elevations.
    d. Erosion control should be located beyond the downstream work limits.
5. Underdrain
    a. In the Plan View, the underdrain should be shown.
    b. In the Profile View, the underdrain should be extended beyond the cut slope.
    c. If the underdrain is discharging into catch basins, they should be included in the catch basin information.
6. The proposed finished grade tangent slopes should be shown on all profile views.
7. The House #209 driveway should be relocated further away from the Raymond Rd. intersection to provide more separation.
8. The proposed northern pavement flare should match at the Raymond Road edge of pavement, not at a bump out of the road's pavement.
9. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan.

Sheet 20 – Plan & Profile – P2

1. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan.
2. The proposed finished grade tangent slopes should be shown on all profile views.

Sheet 21 – Plan & Profile – P2

1. The sheet title should be renamed to P3.
2. The Culvert #1 inlet elevation does not match the elevation shown in the profile view and should be corrected.
3. A drainage swale is shown on the inside of the cul-de-sac, so a detail should be included on a detail sheet.
4. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan.
5. The proposed finished grade tangent slopes should be shown on all profile views.

Sheet 22 – Pond Plan

1. The plan shows stormwater treatment devices on proposed residential lots. Any part of the drainage system on private property should include maintenance easements.
2. Portions of the stormwater treatment systems are entirely within, or partly within, the proposed Open Space. Is this permissible?
3. Who is responsible for maintaining the treatment devices?
4. Infiltration Ponds #4, 5, 6, and 7 are behind the building lots. What is the purpose of these ponds?

Sheet 23 – Pond Plan

1. On the Outlet Control Structure detail, the Infiltration Pond Orifice Table shows ponds 1 and 2. Where is the information for the other ponds?

2. On the Outlet Control Structure detail, Notes 1 and 2 reference individual infiltration pond outlet details but none are provided.

Sheet 24 – Construction Details D1

1. Underdrain Trench Detail shall be updated to show 4-ft minimum cover to match the Town requirements.
2. An underdrain flushing basin detail should be included.
3. Catch Basin Detail is shown, and called out as, "no-sump catch basins. Catch basins typically include a 3-ft deep sump to provide stormwater pretreatment and will likely be a requirement of the Alteration of Terrain permit application review. Additionally, we note the catch basins shown in the profile views show a 3-ft deep sump.
4. Where is a level spreader proposed on the project? If not a project requirement, it should be removed from the detail sheet and/or called out on the plan sheets.

Sheet 25 – Construction Details D2

1. Typical Cross Section
    a. See comments in Appendix 5 – Typical Minor Roadway Section
2. Provide additional information on the Beam Guardrail detail including post material and flared end sections to meet the requirements of the Regulation.
3. The locations of the proposed signs in the Traffic Control Schedule should be shown in the plan views.
4. The Typical Rural Driveway detail should include a plan view with dimensional information to show conformance with the Regulations.

Sheet 26 – Erosion & Sedimentation

1. There are two different seeding rates specified on this plan 1.10 lbs/1000 SF and 2.5 lbs/1000 SF and a third seeding rate on the Cross Section of Infiltration Basin detail (2 lbs/1000 SF). Please clarify the correct seeding rate.
2. The Temporary Erosion Control Measures notes are repetitive.
3. References to drainage swales in the Construction Sequence.

Should you have any questions, please do not hesitate to call.

Very truly yours,

CMA ENGINEERS, INC.

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Senior Project Engineer

Josh W. Bouchard, PE
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cc: Christian Smith, Beals Associates