

# BA BEALS

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Stratham, NH

Nottingham Planning Board,  
P.O. Box 114  
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March 12, 2024

Ref: Map 69 Lot 17-19  
Pawtuckaway Ridge Residential Development

Dear Mr., Chairman & Members of the Board:

We are in receipt of a review comments from CMA Engineers, dated Feb. 29, 2024 and we offer the following responses to the noted comments. Each comment is followed by our response in **bold**.

## 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. **Response: A waiver was submitted and approved.**
  
- 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. **Response: Open space areas are to remain wooded in all locations that do not need clearing for drainage features. There is no landscaping proposed.**
  
- 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? **Response: There is no need for these amenities as there is no other connections in the area. The open space access areas were discussed with 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 steep slopes, and it is unclear how/if these requirements are met on all lots. The proposed building envelope should be shown on the plans. **Response: This topic has been discussed with the board in detail about the overall protection of the majority of the parcel within the open space. The alternative of a conventional subdivision would not provide any protection to the sensitive areas.**

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? **Response: Draft HoA and open space documents are being prepared and will be submitted after meeting with the Conservation commission.**

**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. **Response: The yield plan did show the proposed required buildable area which was reviewed by the board and have approved the yield plan design. The open space design was discussed with the board and was determined for the smaller lots the building envelope requirement does not apply.**

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. **Response: Same comment and response above.**

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? **Response: As stated the most significant features are being preserved and protected in the open space.**

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? **Response: The center of the cul-de-sac is to be cleared and graded for safety and sight lines. The developer has discussed clearing with the board and agreed to keep as many trees as possible however reserves the right to make that determination.**

4) Are there existing buildings or other man-made structures (stone walls) on the property? **Response: All existing features have been shown on the surveyor's plans.**

14.5 Fire Protection

How are the fire protection requirements of this section being met? **Response: Sprinklers systems are being provided as discussed with the Fire Department.**

**Article 15 Road & Driveway Design and Construction Standards**

15.1.1 Highway Bounds and Signs

1) Granite bounds should be shown on the plan. **Response: Bounds have been added.**

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. **Response: This section of the regulations clearly defines the class of roadway based on unit count. Based on the count of 7-40 units the road is a Minor local street requiring 18' of surface width, however also states the minimum pavement width for local access is 20 and shall be increased by 2' when curbing is required. The road is designed as required at 22' wide.**

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. **Response: The southern relocated driveway is 100' from the travel way of RT 156. The northern driveway has been relocated as much as possible and ties into the existing driveway in an effort to reduce disturbance to the existing abutter. The section reads "where possible" giving the board the authority to accept the location. This area was reviewed on the planning board site walk. In addition, the proposed relocated driveways were found acceptable by NHDOT and the state permit has been issued.**

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. **Response: The detail has been updated with town standards for clarity.**

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. **Response: The proposed driveways are shown on the plans with associated grading.**

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. **Response: This section is for driveway access design and follows section 15.3.2 "driveway Design". Section 15.6.8 Curbing is very specific to the use of bituminous curbing in roadways without sidewalk as proposed.**

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. **Response: The access point has been provided to the open space. Public access is not proposed and being discussed**

**with the board.**

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. **Response: The note has been added as requested.**

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. **Response: Notation added to sheet 19.**

3) Slopes and ditches shall require the use of erosion control matting, and this should be shown on the plans. **Response: Notations have been added to the roadway plans as requested.**

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? **Response: In the event ledge is encountered the steep slope and fall zone would be less than the proposed slope provided.**

15.6.5 Street Lights

Are streetlights required by the Board? **Response: No street lights are proposed or requested.**

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. **Response: Detail has been updated.**

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. **Response: Underdrains are proposed and have been added to the plan and profile views.**

15.6.11 More Stringent Provisions

2) Date Requirements

c. Slope and drainage easement should be shown on the plans. **Response: Drainage easement are provided and slope and drainage easements have been added along the frontage of the proposed lots on the boundary plans.**

d. The roadway centerline tangent lengths and bearing data are missing and should be added. **Response: The data has been added as requested.**

f, g, h) The applicant should submit cross sections at each half station showing existing and proposed grades. **Response: Road cross sections have been provided as requested.**

**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. **Response: Underground utilities have been added to the plans and a detail to sheet 25. Transformer location is to be determined by the utility company and will be provided at that time. A work order has been initiated with Eversource for utility design. Fire protection is noted for sprinklers.**

#### **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. **Response: All test pit locations have been reviewed and are a min. 50' separation from center to center. Additionally a new pit has been done for Lot 7.**

#### **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. **Response: The regulations reads, "within the boundaries of the subdivision" which these meet. This was discussed with the board and is acceptable in an open space subdivision.**

#### **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. **Response: See previous response for open space.**

##### **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. **Response: See previous response.**

##### **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? **Response: Previously discussed.**

#### **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)? **Response: See previous response.**

## 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. **Response: See previous response.**
2. In the detail, the pavement nomenclature is outdated (even though it follows Town Regulations) and should be updated to current pavement nomenclature. **Response: The data referenced is directly from town standards. If this is incorrect the town's review engineer should provide the correct data to be followed.**
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. **Response: The detail has been added as requested.**
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. **Response: The detail has been revised.**
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. **Response: The detail has been revised.**
6. In the detail, the underdrain depth should be updated to 4-ft to match the Regulation. **Response: The detail has been revised.**
7. Roadway side slopes are limited to 3H:1V. The detail shall be updated to reflect this. **Response: A waiver has been requested for 2:1 over 10'.**
8. Ledge cuts are limited to a 1H:1V slope. The detail shall be updated to reflect this. **Response: The detail has been revised.**
9. Where guardrail is installed, the face of rail shall be three feet minimum from edge of travel way. **Response: This is shown on the typical cross section.**

## Zoning Ordinance

### Article IV General Provisions

#### 9.7.1 Streets and Roads

5. 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? **Response: The board agrees it does not apply to the open space.**

- 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? **Response: Proposed access points have been provided.**

Plan Set: General:

1. On sheets showing existing and proposed linework, the existing/proposed lines print black and are similar line weights making the plans difficult to read and differentiate between existing/proposed work. For drawing clarity, existing linework should be faded back. **Response: Additional linework has been lightened for clarity.**
2. Some text is directly over lines and difficult to read. Text masking may be helpful. **Response: The conflicts have been reduced after review.**

Cover:

1. Correct the statement under Town Notes "Surface area and shall be...". **Response: The note has been revised.**
2. The sheet names in the index do not match those on the plan sheets: **Response: Corrected.**
  - a. Sheet 15 is labeled Subdivision Plan (not Subdivision Site Plan) **Response: Corrected.**
  - b. There is no Highway Access Plan in the Index. **Response: The plan has been revised.**
  - c. There are two Plan and Profile P2s. **Response: Corrected.**
  - d. The Drainage Basin plans are labeled Pond Plan on the sheets. **Response: Corrected.**
  - e. The Erosion & Sedimentation Control Details sheet is labeled, and Erosion & Sedimentation and the title should be updated to match. **Response: Corrected.**
3. There are 27 numbered sheets in the plan set, not 26. **Response: Sheet 18a is for NHDOT use and part of sheet 18.**

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? **Response: This item is noted in the survey history and plan reference. No other data is available.**

Sheets 8 – 12 of 13 – Subdivision Plan

1. The A symbols and TP symbols should be defined. **Response: The test pit symbols are shown in the legend as required. Other than numerical value in the test pit numbers we are not aware of any other "A" symbols.**

Sheet 13 of 13 – Subdivision

1. The hatched area should be defined. **Response: The area is now shown in the legend.**

2. The A symbols and TP symbols should be defined. **Response: See previous response.**

#### Sheet 14 – Subdivision Yield Plan

1. “Yield” is spelled incorrectly in the title block. **Response: Corrected.**
2. Correct Yield Lots Notes. **Response: Corrected.**
3. The building envelope should be shown on each lot to visually show conformance with the Regulations. **Response: See previous response.**
4. The hatched area should be defined. **Response: See previous response.**

#### Sheet 15 – Subdivision Plan

1. The hatched area should be defined. **Response: See previous response.**
2. Building setbacks shown should include poorly, and very poorly, drained soils. **Response: The most restrictive setbacks are shown.**

#### 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. **Response: Revised.**

#### Sheet 18 – Roadway Access Plan **Response: The proposed access is all within NHDOT jurisdiction and review and permit received. Stamped plans from NHDOT have been received and cannot be altered.**

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 **Response: (All within NHDOT review and permit received.)**

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. **Response: The locations have been updated.**
  - 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. **Response: Rim elevations have been adjusted.**

- 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. **Response: The detail has been revised and we are providing a minimum coverage of 1 foot over all RCP pipes and 2 feet over all HDPE pipes.**
  - d. The pipe elevations specified in the plan view drainage notes do not match the pipe elevations shown in the profile view. **Response: These have been corrected.**
  - 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. **Response: The slope has been revised to a minimum of 0.5% and a drainage easement is shown on the private property.**
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. **Response: The drainage run has been revised.**
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. **Response: A 12-inch culvert has been provided.**
  - b. Why are there two culvert pipes and why are they at different elevations? **Response: There are 2 different pipes at separate elevations in order to maintain the current drainage flows at the different storm events.**
  - c. In the Profile View, the pipe elevations don't match the Plan View elevations. **Response: The pipe elevations have been updated.**
  - d. Erosion control should be located beyond the downstream work limits. **Response: The erosion control line has been revised as requested.**
5. Underdrain
- a. In the Plan View, the underdrain should be shown. **Response: Underdrain lines have been added.**
  - b. In the Profile View, the underdrain should be extended beyond the cut slope. **Response: Revised.**
  - c. If the underdrain is discharging into catch basins, they should be included in the catch basin

information. **Response: A note has been added to sheet 19 requiring under drains to be terminated into catch basins at lowest invert in.**

6. The proposed finished grade tangent slopes should be shown on all profile views. **Response: All slopes are now shown.**
7. The House #209 driveway should be relocated further away from the Raymond Rd. intersection to provide more separation. **Response: The proposed driveway location has been revised further away.**
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. **Response: Revised as requested.**
9. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan. **Response: See previous response.**

#### Sheet 20 – Plan & Profile – P2

1. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan. **Response: See previous response.**
2. The proposed finished grade tangent slopes should be shown on all profile views. Sheet 21 – Plan & Profile – P2 **Response: See previous response.**
1. The sheet title should be renamed to P3. **Response: Revised.**
2. The Culvert #1 inlet elevation does not match the elevation shown in the profile view and should be corrected. **Response: The invert elevation has been revised.**
3. A drainage swale is shown on the inside of the cul-de-sac, so a detail should be included on a detail sheet. **Response: Detail section has been added.**
4. Underground electrical, cable, and communication utilities should be shown on the profiles and the plan. **Response: See previous response.**
5. The proposed finished grade tangent slopes should be shown on all profile views. **Response: See previous response.**

#### 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. **Response: Easements were provided on abutters property and not needed in the open space.**
2. Portions of the stormwater treatment systems are entirely within, or partly within, the proposed Open Space. Is this permissible? **Response: The board has verified drainage and utilities are allowed in open space.**
3. Who is responsible for maintaining the treatment devices? **Response: This will be in the home owner's association documents.**

4. Infiltration Ponds #4, 5, 6, and 7 are behind the building lots. What is the purpose of these ponds? **Response: to reduce lot development runoff per NHDES.**

#### 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? **Response: Orifices for additional infiltration ponds (where provided) have been added to the table and the note has been revised to reference of the infiltration pond details.**
2. On the Outlet Control Structure detail, Notes 1 and 2 reference individual infiltration pond outlet details but none are provided. **Response: The note has been revised to reference the infiltration pond details.**

#### Sheet 24 – Construction Details D1

1. Underdrain Trench Detail shall be updated to show 4-ft minimum cover to match the Town requirements. **Response: Detail revised.**
2. An underdrain flushing basin detail should be included. **Response: We believe with the proposed structures being used an additional flushing basin is not necessary.**
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. **Response: The CB detail has been revised.**
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. **Response: The detail has been removed.**

#### Sheet 25 – Construction Details D2

1. Typical Cross Section
  - a. See comments in Appendix 5 – Typical Minor Roadway Section. **See previous response.**
2. Provide additional information on the Beam Guardrail detail including post material and flared end sections to meet the requirements of the Regulation. **Response: The detail has been updated as requested that meets 15.6.6.**
3. The locations of the proposed signs in the Traffic Control Schedule should be shown in the plan views. **Response: Signs are shown on the roadway plans.**
4. The Typical Rural Driveway detail should include a plan view with dimensional information to show conformance with the Regulations. **Response: The detail has been updated with town standards for clarity.**

#### Sheet 26 – Erosion & Sedimentation

1. There are two different seeding rates specified on this plan 1.10 lbs/1000 SF (**General lot seeding**) and 2.5 lbs/1000 SF (**Temporary seeding**) and a third seeding rate on the Cross Section of Infiltration Basin detail (2 lbs/1000 SF) (**Specific to Basin slopes**). Please clarify the correct seeding rate. **Response: Based on our working with NHDES the rates are correct for their respective applications.**
2. The Temporary Erosion Control Measures notes are repetitive. **Response: These notes have been developed in coordination with NHDES reviews and respectfully remain unchanged.**
3. References to drainage swales in the Construction Sequence. **Response: Corrected.**

Thank you for your timely and professional review of the submitted plans. We hope the information provided address your concerns. Please feel free to contact our office if you have any additional question and/or comments.

Very Truly Yours,

BEALS ASSOCIATES, PLLC



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