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April 20, 2023

Town of Nottingham Planning Board
Attention: Board Chair, Ed Viel
139 Stage Road
PO Box 114
Nottingham, NH 03290

RE: Owner: Frederick Fernald
Applicant: Owl Ridge Builders
Smoke Street and Fort Hill Road
Project Narrative, Environmental Design and Conditional Use Permit Impact

Chairperson & Members of the Nottingham Planning Board:

On behalf of the land owner Fredrick Fernald and the applicant, Owl Ridge Builders, Berry Surveying & Engineering (BS&E) is submitting a 25 Lot Subdivision & Open Space Development Application for Tax Map 23, Lot 11, on Smoke Street and Fort Hill Road. The project is located in the Residential-Agricultural Zone and is also located in an Aquifer Protection Overlay District. The Little River is adjacent to the project and is listed as a protected river with an active Local Rivers Advisory Committee. (LAC) The Little River also contains a flood zone A around it. This zone is only a visual representation on the FEMA flood maps and has no documented elevation. For the purposes of this project, the zone was traced and is generally irrelevant to the project design.

Existing Conditions:

The property was originally surveyed for the existing conditions in 2021 with the on-site jurisdictional wetlands being delineated by John P. Hayes, a Certified Wetland Scientist (CWS) and a Certified Soils Scientist (CSS). Mr. Hayes also conducted a Site Specific Soils Map (SSSM) for the project as well as a series of test pits. The boundary and the existing conditions of the complete 102 acres is provided. The site has varying topography with the primary slope towards the center of the parcel where the primary wetland system exists. This wetland will be discussed further in the report and will be described as **Wetland System #1**. The wetlands adjacent to the Little River are largely flood zone and will be referred to as **Wetland System #2.** There is a wetland system that traverses the rear of the lots the front on Smoke Street, and drains to a large off-site wetland to the south. This area will be referred to as **Wetland System #3.** A review of the town maps has found that none of the wetlands internal to the project site are considered Critical Wetlands per the Zoning Definition. Little River is associated with Wetland Inventory #6 and is also subject to a 75’ setback.

The site does contain slopes that exceed 25% which are noted and hatched on the Existing Conditions Plans as well as others throughout the set.

BS&E has coordinated with the Nottingham Historical Society to locate an existing cemetery on the project site. This is located adjacent to the existing trail on the northern portion, adjacent to Smoke Street. The area is generally shown on the Existing Conditions plan as well as the required state mandated 25' buffer. In addition to this piece of heritage, BS&E has hired Monadnock Archaeological Consulting LLC, to review the site pursuant to Section 106 of the Clean Water Act. The results of the study will be submitted to the Division of Historical Resources for review and comment prior to the commencement of construction. A review of the town maps has found that there are no other historically significant aspects to the project site.

The project has filed with Natural Heritage Bureau (NHB) which is required pursuant to the Alteration of Terrain Permit (AoT). (NHB23-0799 enclosed) there are two plant species of concern, three turtles of concern and one salamander of concern. BS&E has hired Fraggle Rock Environmental to review the site for the species of concern and coordinate with Fish and Game (NH F&G) and NHB to ensure compliance with State and Federal requirements.

John P. Hayes has conducted a vernal pool analysis of the site and has found there to be no vernal pools on the site. Report enclosed and further comment below.

A right of way for a proposed range road called Summer Street runs through the site, starting at Smoke Street and running northeast up the middle of the site. The site has multiple abutters all around it, including the neighborhoods of Fort Hill Road and Little River Road. There are also multiple logging trails that run throughout the site, with one ending at Fort Hill Road and another coming out to Smoke Street. The southern most boundary contains an easement for New Hampshire Coop. This is an un-recorded implied easement with existing tree clearing and pole construction with overhead utilities installed.

A review of the town maps has found that there are no soils of state wide importance on the project site. A Site Specific Soils Map (SSSM) is provided by John P. Hayes CSS as required by AoT for stormwater calculations.

Environmental Considerations:

Wetland System #1: This wetland starts in the northwest corner of the property, adjacent to the Little River Subdivision. The top section is a ponded between Smoke Street and a connecting upland island. The shape and location of this section appears to be manmade and contains no inlet or outlet. The primary source of water is overland flow from the property, abutting land and Smoke Street. As the area fills it spills out over an upland area and enters the primary wetland system that traverses the property. The wetland is Palustrine Forested Broad-Leaved Deciduous and seasonally flooded. (PFO1E), which is very common in the state.

The primary wetland below this starts adjacent to Smoke Street and flows in a south easterly direction, off the property to the east. Large portions of the site drain to this wetland. The top

starts as a PFO1E, but the center does contain sections of Very Poorly Drained Wetlands. These areas are Palustrine Emergent Persistent and Seasonally Flooded. (PEM1E) These wetlands are also common in the state. The entering PFO1E has been disturbed in the past which is evident with an intersecting woods road as well as some piles of materials. The remaining wetland is natural with one wood road crossing in the lower eastern section. The wetland is not shown as a local Critical Wetland, but is subject to a 50' setback to the poorly drained jurisdictional boundary, a 75' setback to the very poorly drained soils, and is now subject to a 25' buffer. In review of the published maps for NH F&G Wild Life Action Plan (WAP) it is noted that the center section of the property around the wetland is considered Highest Ranked Habitat with portions being Highest Ranked Habitat in the Biological Region. There are also areas of Supporting Habitat in the center portions of the parcel, adjacent to **Wetland System #1.**

Wetland System #2: This system is adjacent to the Little River and is relatively isolated to the same. The area is primarily PFO1E and is shown connected to Critical Wetland #6. The Little River is prone to flooding in this area, and generally flows from the north to the south as it boarders the subject parcel. The topography adjacent to the Little River is relatively flat, and has wetland systems that reach up slope a bit. The WAP Map shows areas of Highest Ranked Habitat with portions being Highest Ranked Habitat in the Biological Region. There are also areas of Supporting Habitat in the area of the Little River. The river contains a local 75' buffer, is part of the Local Rivers program, and is obviously part of a larger watershed that feeds from and to many adjacent communities. The surrounding poorly drained jurisdictional wetlands require a 50' setback, a 75' setback to the very poorly drained soils and a 25' buffer.

Wetland System #3: This system starts at the rear of the existing frontage lots on Smoke Street, and flows south east through the project site, and then directly south down the eastern boundary line to a large offsite wetland complex. The wetland is PFO1E, but does contain an intermittent stream in the center of it. The contributing area is too small for the stream to be perennial and flows water more often than would be considered ephemeral. Given the preceding slopes and soils it is likely that ground water is a contributing factor to the flow. The WAP maps shows portions of this wetland to be Highest Ranked Habitat with the surrounding land scape shown as supporting habitat. There is an additional wetland system that contributes to the offsite scrub shrub wetland to the south. This area is PFO1E and contains very poorly drained soils with PEM1E located within the same. The same 50' and 75' setbacks are required to both of the areas along with the 25' buffer.

Other Considerations: As noted above, portions of the property are located in the Aquifer Protection. This is located around Wetland System #1, east of Wetland System #3 and the south eastern corner of the parcel. The soils in the south eastern corner are sandy and highly transmissive.

There are slopes on the project site that exceed 25%. These are located around the large esker found in north central portion of the parcel. There are some slopes of 25% or greater adjacent to the wetland areas.

There are other isolated wetlands within the project limits. These were reviewed by John P. Hayes during the spring months of 2021 and again in 2022 for the presence of vernal pools. Though there are three areas that have topographic characteristics which are conducive to pools, (no inlet or outlet), the underlying soil geomorphology allows for a high rate of infiltration and therefore there is an insignificant hydro period. The other isolated wetland areas are located on slopes that allow them to drain freely and not retain water for any significant hydro period. These areas are all subject to the 50' setback and the 25' buffer.

Proposed Development:

The applicant is proposing to subdivide the parcel using the Open Space Subdivision Ordinance and corresponding Subdivision Regulations. After review of the regulations, BS&E prepared a Yield plan for the purposes of developing the total number of allowable units for the project site and design. The Yield Plan was discussed once under a Design Review with the Planning Board with some revisions requested. During the second Design Review, it was the general consensus that the Yield Plan was reasonable given the following attributes: Lot areas and frontages met the requirements of the underlying zone and aquifer zone, building areas, setbacks and buffers met the requirements of the underlying zoning, the design minimized wetland impacts, and generally complied with the Subdivision Regulations. Through the yield plan process, the total yield of the property is determined to be 25 single family units.

Using the Open Space Subdivision Ordinance, the environmental considerations note above, abutting input and board input during the Design Review process, BS&E has developed a 25 Lot Subdivision design for the project. The following goals were set as part of the project design:

- Cluster the largest amount of housing adjacent to existing housing stock while respecting required landscape buffers and furthest from wetlands.
    - Peekaboo Drive is designed adjacent to the Little River subdivision while maintaining open space with a minimum width of 100' from the boundary. This is to promote a limit to the private ownership of lots. This section of the subdivision is designed as far from **Wetland System #1** given the natural attributes and habitat connectivity that takes place within. Though the project proposes to remove a significant portion of the esker location on site, the development stops short of the slope leading to the Little River. This creates an 800' buffer and open space adjacent to the river. All of the setbacks and buffers to the smaller internal wetlands are preserved with varying lot sizes and housing stock strategically placed so as to not create the need for disturbance in the future.
    - The two lots on Fort Hill were designed with respect to the abutting land owners and residents of Fort Hill. There is an adequate 100' buffer to all bounds to the proposed housing stock. Lot sizes in this area were increased to be congruent with surrounding land uses. The lots are specifically designed around the wetland and setbacks to not promote private ownership of the important areas.
    - Frederick Lane is designed as a smaller housing group using the landscape buffers or enhancements as prescribed in the ordinance. The residential density in the area is less than the northern boundary and therefore all of the proposed density is placed

internally and adjacent to the proposed road. **Wetland System #3** and other contributing areas were specifically avoided due to the natural attributes and habitats described above.

- Maintaining large continuous open space areas around as much of the Highest Ranked Habitat as practical.
    - All housing groups are placed as far from these areas as practical with a focus on continuous connection. The areas around the three wetland systems and the supporting habitat were the primary focus for the placement of open space and the connectivity.
    - The project proposes to conserve 78.59 acres of the 102.77 acre site and is all strategically placed around areas of higher importance.
- Avoidance of the Aquifer Zone.
    - The two larger housing groups specifically avoid the aquifer zone. With minor exception of the lot lines for proposed Lot 11-16, 11-17 and 11-23, the two larger housing groups avoid this zone. There are only two housing units, of large size, provided within the zone. This provides a large reduction in potential impervious surface; water withdraw and effluent disposal.
- Avoidance and minimization of wetlands filling and associated buffer disturbance.
    - The merits of the Conditional Use Permit will be discussed later. The project does not propose any direct wetland impacts or crossings.
    - In general Peekaboo Drive, provides a serpentine design through an upland connection in Wetland System #1 to specifically avoid direct wetland impact. The road is designed in a balanced effort between the wetlands to avoid impacts to buffers where feasible.
    - Frederick Lane provides a similar entrance geometry to avoid direct wetland impact, and keeps the grading impacts to the outer 25’ setback.
- Cultural impacts.
    - The project avoids the existing Rollins cemetery and provides documentation of its location on a plan. The implied access easement to it is also referenced.
    - The former Summer Street range is specifically avoided. Private ownership is designed at its limits and does not propose to extend into or beyond.

Excavation:

The project design includes the removal of materials in the noted esker. The grading for the removal is provided on the Overview Grading Plan for Peekaboo Drive, and is integrated into the final road design. We note that there is no local Excavation Permit and there are no specific local submission requirements other than what is found in the Zoning Ordinance. The Ordinance directs applicants to RSA 155E and requires a reclamation design. The project requires an AoT permit and therefore will be required to comply with 155E, and a reclamation design is enclosed within project plan set.

Stormwater Design:

A stormwater analysis was conducted for the entire project. The design captures water from developed areas and directs them to best management practices that are bested suited for the landscape they are located in.

Peekaboo Drive is design with a super elevation at the entrance with a small section of curbing, to direct a small amount of flow to a treatment swale. This swale is designed to meet the treatment criteria for AoT. The swale is 8' wide and over 100' long, which aids in velocity reduction prior to discharge into the wetland areas. Given the proximity of the road to the wetland and wetland setbacks and buffers, and the topography of the site, the swale is located within the 50' setback and portions are located in the 25' buffer. Given the elevational constraints and the contributing area, the treatment swale is the best option for treatment while limiting disturbance.

Peekaboo Drive from STA: 3+75 to the cul-de-sac is captured through large 3' wide and 3' deep swales armored with rip-rap. This flow is discharged to a large Subsurface Gravel Wetland (SGW) for attenuation, treatment and volume control. The pond is design to hold the 100 Yr./24 Hr. storm event. Discharge from this pond is to a small infiltration cell to promote ground water recharge within the aquifer zone as well as to meet the ground water recharge volume for the project site. Both of these devices are designed into the existing slope and away from the 50' setback. They are placed within the open space and not on private lots, with a primary access provided for operation and maintenance.

The remainder of Peekaboo Drive and developed lots drain to a Rain Garden that is located in a natural depression for filtration prior to discharge to the natural flow pattern.

Frederick Lane is designed with an SGW at the entrance given the low profile needed in the design. The outlet is to a stone lined level spreader which attenuates some flow and volume prior discharge to the wetland and eventually a town owned cross culvert under Smoke Street.

The end of Frederick Lane is designed with an Infiltration Rain Garden which was integrated into the side slope over soils that are well suited for infiltration. This was chosen given the proximity to the aquifer zone and allows for the required recharge volume.

All lots in the subdivision have been noted to be required to have a drip edge system or dry well system to capture roof runoff and infiltrate it at the source.

Conditional Use Permit (Wetlands Buffer) and Construction Design & Considerations:

Given the natural context of the project site, the following construction considerations have been included within the plan set as design considerations:

- Natural Fiber products are used throughout the site. Matting and erosion control materials are proposed to be natural fiber, with product specification, and do not contain plastic products.
- Rip-rap lining is kept so a minimum and is not proposed in the culvert crossings within **Wetland System #1.** Weirs in ponds are lined with matting and not rip-rap. Only forebay areas and swales outside of the sensitive areas are proposed to be lined with rock.
- Over sized natural bottom culvert designs are used where appropriate. Reinforced Concrete Pipe (RCP) is used in specific areas where animal movement is anticipated.
- There are no proposed sumps to drainage outlet structures. If they are required by the manufacturer they are noted to be filled with stone or flowable fill.
- Infiltration ponds are designed at the outlets to treatment cells to reduce the thermal effects on stormwater entering the wetland systems.

As noted above the project proposes impacts within the 25' wetlands buffer at the entrance to Peekaboo Drive. The impact within the 25' foot buffer is 5,627 Sq.Ft. The impact is eligible for a Conditional Use Permit under Article III, Section B, Item #6 whereas the impacted areas are not adjacent to Vernal Pools. (Item #3 (b) Vegetative Buffers)

The following are the criteria used in determine the appropriateness of a Conditional Use Permit:

a) The proposed construction is essential to the productive use of land not within a Wetland Conservation Area and the upland area considered for development is not smaller (acreage) than the wetland area (acreage) being considered;

The buffer impact is proposed for the purposes of installing stormwater practices used to treat flow from a proposed roadway. The roadway proposed is completely outside of the 25' buffer and is placed between two wetland areas. The roadway is essential to the productive use of 102 acres of land. The impact to the buffer represents 0.126% of the total parcel area. The design cannot be placed outside of the buffer whereas the lowest practical elevation is required to achieve the maximum treatment of the impervious surface.

b) Designs, construction, and maintenance methods will be such as to minimize detrimental impact upon the wetland and will include restoration of the site as nearly as possible to its original grade and conditions;

As noted above the construction design utilized is in keeping with the best management practices of NHDES AoT as well as the latest guidance from NH F&G.

c) The Nottingham Conservation Commission has provided comments relative to the value of the wetland under construction and design of the proposed project as it relates to the wetland.

BS&E is prepared to meet with the Conservation Commission and discuss the impacts and project as a whole. The provided narrative and Wetland Class Overlay Plan, along with

reports from John P. Hayes will aid in understanding the rationale used for the proposed impacted buffer areas.

d) Economic advantage alone is not a reason for the proposed construction;

Economic advantage is not the reason for the proposed buffer impact. The proposed design minimizes and avoids wetlands and buffers to the extent feasible. In so doing creates additional cost to the applicant through the construction of longer, less direct road access. Time on planning and engineering was spent to ensure the best approach was taken for the access and the use of the proper best management practices.

e. Prior to the granting of the Conditional Use Permit under this Section, the applicant shall agree to submit a performance security to ensure all construction is carried out in accordance with an approved design.

The applicant agrees to place a surety for 115% of the cost of the proposed work within the 25' wetland buffer.

f) The Planning Board may require the applicant to submit an Environmental Impact Assessment when necessary to evaluate an application made under this Section.

The applicant has provided a large amount of environmental data enclosed here with. Additionally, Fraggle Rock Environmental is preparing a wildlife assessment for the project, which will be submitted to the Town upon completion. If additional studies are needed the applicant will work with the Planning Board to ensure it has the information needed to make an informed decision.

As always we look forward to working with the Planning Board and Conservation Commission to develop the project site in a reasonable and productive manner.

BERRY SURVEYING & ENGINEERING

Christopher R. Berry, SIT, Project Manager
Principal, President