

BERRY SURVEYING & ENGINEERING

335 Second Crown Point Road

Barrington, NH 03825

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www.BerrySurveying.Com

November 21, 2018

Barrington Planning Board
Attention: Marcia Gasses
PO Box 660
333 Calef Highway
Barrington, NH 03825

Ms. Gasses, Mr. Chairman, Members of the Barrington Planning Board,

On behalf of Mike and Lisa McMahon, Berry Surveying & Engineering (BS&E) is submitting for your review a design review set of plans for a 13 Lot Conservation Subdivision on Tax Map 234, Lots 31 & 31-4 and 21 units (7 triplex buildings) on Tax Map 234, Lot 25. Lots 31 & 31-4 are currently owned by Donetta Haley.

As discussed during a prior design reviews both of these parcels will be developed at the same time under the same ownership team. It was noted that it was preferred by the board to develop the Meetinghouse side of Lot 25 more heavily than the NH Route 9 side of the property. Please note that this project does not show development along NH Route 9 at this time, however the applicant is reserving the right to develop this in the future. The current focus of this development is on the Meetinghouse side of the parcel.

The applicant conducted a Design Review with the Planning Board Prior to going to the Barrington Zoning Board and receiving a variance for the "buffer" along Meetinghouse. It was determined by the ZBA that a 40' front setback was the most appropriate approach and ultimately granted the buffer variance. However, during the design review conducted by the Planning Board it was determined that the board would require the applicant upgrade all of Meetinghouse Road to Smoke Street. Since that time BS&E on behalf of the applicant has conducted the additional survey work, wetlands and soils work required for the revised scope of the project.

With the additional information acquired, BS&E has now conducted a large amount of design work on the two parcels and have re-designed Meetinghouse Road. Based on the Subdivision Regulations, we *think* the application might require some waivers to the road design standards, however this is not fully clear whereas this is an existing Town Road, which is being upgraded. If the board and planner determine that waiver are needed, we wanted to discuss the variations in the proposed design and receive input from the board and town staff, while we work through final design.

Many of the contemplated waivers revolve around the differences in the roadway standards based on Vehicle Trips Per Day (VPD). A minor access roadway is defined with less than 200 VPD, while a Major Access is defined with a VPD between 200 and 1,000. If the Minor access

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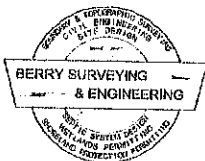
was applied to this project the standards for design would be met and likely no waivers would be required. However, the anticipated traffic generation from this project is projected to be 250 VPD, and it is anticipated that an additional 50 VPD will be recognized with the connection being made between Smoke Street and Oakhill Road. This total is above the threshold for a minor access but is far below the top threshold for a major access.

Enclosed with this narrative we have provided the 80% road design for Meetinghouse Road, some overview subdivision plans, an over site plan for perspective, and the waiver requests for discussion. The board cannot move to approve or deny these at this time, but can provide design guidance for the applicant to move forward with. Affixed to the waiver request is a demonstration plan for the waiver request discussion road grade at an intersection. The waiver request discusses how this is the least impacting alternative, and we wanted to provide an idea of what the impact would be if the regulation were adhered to.

Please let us know if you have further questions we look forward to advancing this project with the Barrington Planning Board.

BERRY SURVEYING & ENGINEERING

Christopher R. Berry - Project Manager
Principal, President



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Project Application

Land Use Department

P.O. Box 660; 333 Calef Hwy, Barrington, NH 03825 ♦ Phone: 603-664-5798 ♦ Fax: 603-664-0188

234-31, 31.4, 25 V&GR-180 Design #2

Case Number: _____ Project Name: Meetinghouse Woods Date: 11-20-18

Staff Signature required PRIOR to submittal

PRELIMINARY APPLICATION: Preliminary Conceptual Review _____ Design Review Development of Regional Impact _____

FORMAL APPLICATION:

Subdivision Type: Major Minor _____ Conventional _____ Conservation _____
Site Plan Review: Major Minor _____
Conditional Use Permit _____ Sign Permit _____ Boundary Line Adjustment _____ Special Permit _____
Change of Use _____ Extension for Site Plan or Subdivision Completion _____
Amendment to Subdivision/Site Plan Approval _____ Other _____

Project Name: _____ Area (Acres or S.F) 51.5 Ac

Project Address: Meetinghouse Road

Current Zoning District(s): Village District Map(s) 234 Lot(s) 25, 31, 31-4

Request: General Residential & Conservation District

The property owner shall designate an agent for the project. This person (the applicant) shall attend pre-application conferences and public hearings, will receive the agenda, recommendations, and case reports, and will communicate all case information to other parties as required.

All contacts for this project will be made through the Applicant listed below.

Owner: Michael & Lisa McMahon & Donetta Haley

Company _____

Phone: 553-3929 & 591-7801 Fax: _____ E-mail: _____

Address: 139 Stage Road Hampstead, NH 03825 & P.O. Box 367 Barrington, NH 03825

Applicant (Contact): Same

Company _____

Phone: _____ Fax: _____ E-mail: _____

Address: _____

Developer: Same

Company _____

Phone: _____ Fax: _____ E-mail: _____

Address: _____

Architect: _____

Company _____

Phone: _____ Fax: _____ E-mail: _____

Address: _____

Engineer: Christopher Berry

Company Berry surveying & Engineering

Phone: 603-332-2863 Fax: _____ E-mail: crberry@metrocast.net

Address: 335 Second Crown Point Road

Michael McMahon
Owner Signature

Daniela Drucini
Staff Signature

Donetta Haley
Applicant Signature

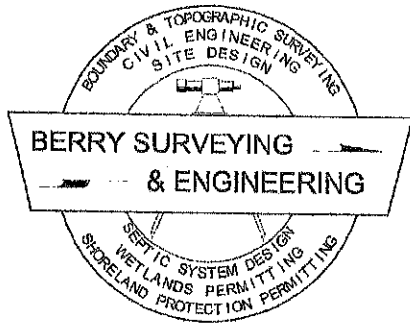
Date

11-20-18

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November 19, 2018

Barrington Planning Board
Attention: Marcia Gasses Town Planner
PO Box 660
333 Calef Highway
Barrington, NH 03825

RE: Site Plan Review & Subdivision Review
Mike and Lisa McMahon
Tax Map 234, Lots 25, 31 & 31-4

Mr. Chairman and Members of the Barrington Planning Board

The applicants are proposing to reconstruct Meetinghouse Road from a Class VI road to a 22' wide paved roadway. The reconstructed road will then provide access to a conservation subdivision on lots 31 and 31-4 and a series of Triplexes on the south side of Meetinghouse Road, on lot 25. The proposed road was designed so that it is a "best fit" based on alignment and existing topography of Meetinghouse Road. This was done to limit the overall disturbance required and to keep the majority of the grading and drainage features within the right of way. As part of this proposed development the applicant is requesting waivers to be granted by the planning board in order to develop the road with the least amount of disturbance possible. Those waiver requests are listed below.

In accordance with the Town of Barrington's Subdivision Regulations, the applicant requests the following waivers:

1. Identification of Waiver Request: 12.2.1 Table one of the Subdivision Regulations, maximum of 7% road grade for a major access road.

- Proposed roadway with sections greater than 7%, at 9% max.

The applicant is proposing to reconstruct Meetinghouse in order to provide access to a proposed development and provide through access from Smoke Street to Meetinghouse Road, per the Planning Boards request. The proposed road was designed so that it would conform to the existing centerline and topography as much as possible, in order to limit the overall disturbance.

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2. Waiver Justification:

a. Granting the waiver will properly carry out the purpose and intent of the regulations.

The purpose and intent of regulation 12.2.1 with regard to maximum road grade is to allow for safe vehicular traffic. The vehicles per day (VPD) for a major access road is between 200 to 1,000 trips. A traffic impact analysis was done for the proposed road and it was determined that the subdivision and triplexes would generate between 250-300 trips when the connection is considered, which is on the low side of VPD for a major access road. The 9% road grade was deemed appropriate given the relatively low VPD generated from the development, given the short length of the tangent. The 9% road grade would provide for a more effective design and road layout, without compromising safety.

b. Strict conformity to the regulations would pose an unnecessary hardship to the applicant.

Strict conformity to the regulations will pose an unnecessary hardship on the applicant and the Town. The road was designed so that there would be the least amount of disturbance possible. Requiring the applicant to conform to the maximum of 7% would greatly increase the amount of excavation required for the road construction, thus increasing the overall disturbance and increase maintenance costs for the town.

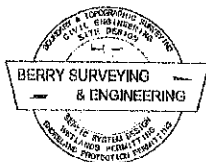
1. Identification of Waiver Request: 12.2.1 Table 1 of the Subdivision Regulations, shoulder width of 6 feet in a cut and 3 feet in fill.

- Proposed roadway with shoulders of 4 feet in a cut and 2 feet in a fill.

The applicant is proposing to reconstruct Meetinghouse road from a class VI roadway to a 22 foot wide paved road that will connect Smoke Street to Oak Hill Road, with 2' shoulder in cut and 4' in fill. This will not only provide access to the proposed development but will also act as a throughway for the two adjacent streets. The proposed road was designed so that it would be constructed over the existing footprint of Meetinghouse road and conform to the existing topography as much as possible.

a. Granting the waiver will properly carry out the purpose and intent of the regulations.

The purpose and intent of the minimum shoulder width is to provide vehicles with ample room to pull off the road if necessary and provide snow storage in cut slopes. The proposed roadway will be constructed so that the gravel shoulders are only 1-2 feet less than the required shoulder width. Given the relatively low vehicles per day generated from the development, it was determined that the designed shoulder widths would be adequate, without compromising safety, or winter maintenance.



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b. Strict conformity to the regulations would pose an unnecessary hardship to the applicant.

Strict conformity to these regulations would pose an unnecessary hardship on the applicant and Town. The roadway is designed so that there will be the least amount of disturbance possible for the road construction. Requiring the applicant to maintain the minimum shoulder widths would increase the road footprint and greatly increase the overall disturbance generated from the road.

1. Identification of Waiver Request: 12.7 Table 2, maximum of 2% of a road grade within 100 feet of an intersection.

- Proposed roadway with a platform of 2% or less for 26' and 4% or less for 40' at the intersection of Smoke Street.

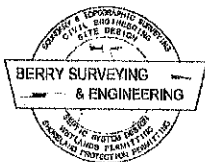
As part of the proposed development, Meetinghouse Road will be fully reconstructed from a class VI road to a 22 foot wide paved road that connects Smoke Street to Meetinghouse Road.

a. Granting the waiver will properly carry out the purpose and intent of the regulations.

The intent of the maximum road grade of 2% within an intersection is to allow for the safe approach of vehicles to an intersections. The proposed road design intersects Oak Hill Road and Smoke Street. The intersection at Smoke Street has a grade of 2% or less within 26 feet of the intersection. Then from there it transitions to a -9.0% road grade beyond 100' of the intersection, with a large vertical curve. Although the grade within 100' of the intersection is greater than 2.0%, the road design will still allow for vehicles to approach the intersection safely. This is because the road goes from a negative slope to a positive slope and then flattens out as it intersects Smoke Street. This change in slope will cause vehicles to slow gradually and safely approach the intersection.

b. Strict conformity to the regulations would pose an unnecessary hardship to the applicant.

Strict conformity to these regulations would pose an unnecessary hardship on the applicant and Town. The intersection of Meetinghouse and Smoke Street was designed so that the existing footprint and intersection point could remain the same. By requiring the applicant to grade the road at 2%, will cause there to be 6 feet of cut for several hundred feet and cause the required grading to go off the property due to the drastic elevation changes. A concept grading plan is included to show the extents of the grading.



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1. Identification of Waiver Request: 12.7 Table 2, minimum angle of intersection of 90 degrees +/- 10 degrees

- Proposed roadway intersection at Smoke Street with an intersection angle of 60 degrees.

As part of the proposed development, Meetinghouse Road will be fully reconstructed from a class VI road to a 22 foot wide paved road that connects Smoke Street to Meetinghouse Road.

a. Granting the waiver will properly carry out the purpose and intent of the regulations.

The intent of the maximum angle for an intersection is to allow for safe intersections and to increase vehicular safety. The proposed intersection of Meetinghouse Road and Smoke Street was designed so that the existing intersection point could be maintained so as to limit the disturbance. Furthermore, sight line distance analysis has been done to show that a vehicle approaching the intersection has adequate sight line distance to make a turn onto Smoke Street. The entrance and turning radii are designed to accommodate the required turning movement. Even though the intersection angle does not meet the standard, the proposed design still allows for a safe intersection.

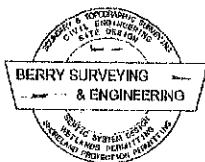
b. Strict conformity to the regulations would pose an unnecessary hardship to the applicant.

Strict conformity to these regulations would pose an unnecessary hardship on the applicant. Given the close proximity of the property line to the South of Meetinghouse Road, this intersection design was deemed the most appropriate so as not to encroach on the property line. Requiring the applicant to conform to the intersection regulation would bring the grading much closer to boundary line and in some cases, would encroach onto the abutting property.

1. Identification of Waiver Request: 12.8.8(4) % 12.8.9, No ditches at grades above 8%, which require curbing, culverts and basins, or at grades above 6% when the developed length exceeds 250 feet.

- Proposed roadway without curbing above 8% grade and ditches with a 9% grade for a 100 feet, in two locations.

The applicant is proposing to construct Meetinghouse Road over its existing footprint, utilizing the exiting centerline and road topography when possible. As part of this reconstruction,



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open drainage will be utilized through swales and culverts in order to capture and treat the runoff generated from the proposed roadway.

a. Granting the waiver will properly carry out the purpose and intent of the regulations.

The intent of regulation 12.8.8 & 12.8.9 is to limit the use of swales along steep slopes in order to achieve stabilization and prevent washouts.

The proposed road design has both natural and manmade swales that will be utilized in the drainage design to capture and treat the runoff generated from the proposed road. All the proposed swales are in road grades that are less than 8% except for one section, where the swale will be constructed at 9% for 100 feet. Although the slope of the swale is greater than 8%, necessary measures will be taken to ensure that this section of the swale is well protected until it is stabilized. The swale will be rip-rap lined at this location and check dams will be utilized to control the runoff.


The proposed road design does not include any curbing along the road. This was done as part of the drainage design so that the runoff generated from the road will sheet off into the adjacent swales. These swales will be constructed with bio-media and stone as part of their drainage design, so that the runoff can be treated as it is directed to adjacent rain gardens and treatment cells.

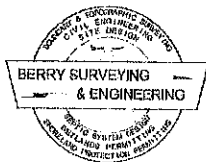
b. Strict conformity to the regulations would pose an unnecessary hardship to the applicant.

Strict conformity to these regulations would pose an unnecessary hardship on the applicant and Town. Due to the existing topography and layout of the road, the design options were limited. Requiring the applicant to install curbing and remove the section of the swale in the 9% road grade would cause the Town to have to maintain the curbing and catch basins.

Respectfully submitted,
BERRY SURVEYING & ENGINEERING


James Hayden
Project Engineer


Christopher R. Berry
Principal, President



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