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March 15, 2023

Town of Barrington
Planning Office
Attn: Vanessa Price, Town Planner
4 Signature Drive
Barrington, NH 03825

Re: Major Subdivision Review
Berry Surveying & Engineering
TSB Construction, LLC
NH Route 9/Franklin Pierce Highway
Tax Map 234, Lot 25-1

Based on comments from CMA Engineers, Inc. dated February 17, 2023, we respectfully submit the following comments and revisions. Our comments are in **bold**.

COMMENTS

ZONING ORDINANCE

This lot is in the Village District. Residential uses are allowed.
The Zoning Board of Adjustment granted relief from allowing a sharded driveway not over the intended lot frontage and allowing the frontage of Lot 23-1 to be less than the required dimensional standards.

SUBDIVISION REGULATIONS

Article 5. Plan Requirements

5.3 Specific Plan Information

5.3.2(10) The plans should contain a note indicating "all road and drainage work to conform to the standard specifications for construction in the Town of Barrington".
This note has been added as #27 on the Overview Grading Plan, sheet #8.

5.3.2(12) Provide the location, type, design, and intensity of any street lighting, including the cone of illumination on the site, if proposed.
There is no street lighting proposed as part of the project.

Article 11. General Design Standards

11.2 Lot Shape and Development

11.2.1(1) Several access and drainage easements are required for the subdivision. The applicant should describe planned easements and ensure they are in place.

The Easement Plan, sheet #6, will be recorded at the S.C.R.D. along with the Subdivision Plans upon project approval. The applicant requests that providing draft easement language is a condition of approval.

11.2.2(2) The lot shapes are unconventional and not rectangular. The applicant should apply for a waiver.

Based upon conversation with the Planning Board, the Town of Barrington does not feel that the applicant should apply for a waiver. The design meets the rules.

11.5. Fire Protection

11.5(1) The applicant is not proposing any improvements for fire safety. Does the Barrington Fire Department require a fire pond, cistern, etc.?

A package has been set to the Barrington Fire Department as part of the staff submissions by the planning department; no feedback has been provided at this time.

11.5(2) Has the applicant consulted with the Barrington Fire Department to determine if any fire protection measures are necessary?

A package has been set to the Barrington Fire Department as part of the staff submissions by the planning department; no feedback has been provided at this time.

Article 12. Road Design & Construction Standards

12.3. For sight distance to the west, the applicant should have control over the area of vegetation that needs to be cleared and remain cleared in the future. This area should be in the public ROW or the applicate should have a sight distance easement.

Please find relocated driveway entrance sight distance plans, sheets #14 & 15. No vegetation is needing to be removed from abutting land owners, whereas it is all within

the NHDOt right of way.

12.3.2 Driveway Design

12.3.2(7) The driveway connection to NH Route 9/Franklin Pierce Highway requires a culvert in the roadside swale line.

Detention Pond #201 provides a culvert under the driveway to the connection to NH Route 9/Franklin Pierce Highway. Please find sheet #9. There is no roadside swale.

12.3.4 Safety Requirements

12.3.4(2) The curve in the driveway at Sta 2+25 on a 10% grade may be difficult to access during winter months/icy conditions. The inside of this curve is steeper than 10%. Additionally, the driveway is proposed with a gravel surface; winter maintenance on a 10% grade is extremely difficult.

Please find revised road profile, with reduced grade to 9% in this corner, sheet #9.

Article 13. Design Standards for Erosion and Sedimentation Control

13.2.(4) E8 on Sheet 17 Note 4 should specify stabilization within 30 days of disturbance, not 45. In addition, E21 on Sheet 19 Note 15 should indicate stabilization should occur within 30 days of removing temporary measures.

Please find sheet #17 and sheet #19 revised notes referencing the requirements of Env-Wq 1504.16 and the EPA 2022 CGP.

Article 15. Subsurface Sewage System Design Standards

Are there two proposed effluent disposal areas for the duplex or is one to be shared?

A single EDA is to be shared for the duplex.

15.2 It does not appear the 4,000 sf leaching system areas and test pit locations shown on Sheet 7 match the proposed effluent disposal areas shown on Sheet 8. It is not clear that two test pits were performed in the effluent areas shown on Sheet 8. The test pits should be shown on Sheet 8.

This is correct, this 4k leaching areas shown on sheet #7 do not match what is shown on sheet #8. The 4k areas are reserve areas required to prove the site is buildable and

developable. The owners are not required to use those reserve areas, if other areas are found to be acceptable. A septic design will be submitted to the state and town for approval. Please find additional test pits conducted under each field areas.

Article 16. Water System Design Standards

Are there two proposed wells for the duplex or is one well shared?

16.2 Each lot in the subdivision shall include a water supply well. Sheet 8 should show the well radius protection area with relation to the proposed effluent disposal areas.

Sheet #8 now shows the well radius protection area with relation to the proposed effluent disposal areas.

STORMWATER MANAGEMENT & SEDIMENT AND EROSION CONTROL PLAN

Stormwater treatment includes drainage swales and closed piping that discharge to sediment forebays, a rain garden and a detention pond. The stormwater design is comprehensive and does not increase peak flows for any of the modelled storms. There are no positive discharge pipes out of the ponds. The stormwater ponds rely on infiltration only. If the infiltration capacity decreases over time, the ponds will overtop and potentially damage abutting properties.

As shown in the Infiltration Feasibility Study, Rain Garden with Infiltration #202 utilizes an infiltration rate of 3in/hr over a Gloucester Sandy Loam. As shown in the Ksat NH document provided in the drainage binder, the most restrictive horizon is 6-20 inches per hour. By utilizing the methodology described in Env-Wq 1500, BS&E feels that a conservative estimate for infiltration rate was used and is appropriate in this application. (50%) With the Inspection & Maintenance Manual provided, inspections will occur and if infiltration capacity is reduced overtime, the owners will have to take corrective action.

We have the following comments that relate to the stormwater management plan:

1. The symbols for reaches, ponds and subcatchments on the Routing Diagram for 22-052 Proposed Analysis don't coincide with the symbols

used on Sheet W-2 Proposed Conditions Watershed (12 vs 12S, 202 vs 202P, etc.)

Please find statement included on Watershed Plans and in the Drainage Narrative clarifying this.

2. Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic) states disturbed areas will be re-stabilized within 14 calendar days but E8 Note 4 on Sheet 17 states disturbed areas will be stabilized within 45 days or prior to any home construction. These should match.
Please find sheet #17 with revised note referencing the requirements of Env-Wq 1504.16 and the EPA 2022 CGP.

3. Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic) references the City of Dover four times. Update this section to apply to this project.
Dover has been removed from the section.

4. Where is the Conservation Mix to be used? These areas should be called out on the plans and on Sheet 18.
Conservation mix is to be used on all 2:1 side slopes. This has been added to callouts on the Erosion & Sediment Control Plan and added as a note on sheet #18, E-102, detail E16.

5. Remove the reference to the wetland buffer under Conservation Mix from Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic).
The reference to the wetland buffer has been removed.

6. Under Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic), remove the Inlet Protection/Storm Drain Inlets section.
This section has been removed.

7. In Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic), the Sediment Track-Out/Stabilized Construction Entrance/Exit specifies 1 and 2-inch coarse aggregate but Note 1 under E5 on Sheet 17 indicates 3-inch stone. These should match.
The Drainage Narrative has been updated to 3-inch stone.

8. In Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic), the Sediment Track-Out/Stabilized Construction Entrance/Exit specified a minimum length of 50 feet, but E5 on Sheet 17 shows a minimum length of 75 feet. These should match.
   The Drainage Narrative has been updated to 75' construction entrance.

9. In Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic), the Construction Sequence does not match that shown in E21 on Sheet 18.
   Please find the construction sequence revised on E21 and in the Drainage Narrative.

10. In Section 4.0 Erosion & Sediment Control Plans Best Management Practices (BMP's) (sic), the Inspection and Maintenance Schedule references the City of Dover twice. Update this section for this section to apply to this project.
    Dover has been removed from the section.

11. Under the Proposed Analysis, in the Pipe Listing table, the inverts, length and slope of 1P do not match those shown on Sheet 9.
    This is correct. The outlet pipe of 1P is an existing 18" HDPE under NH Route 9. This callout of the existing pipe under NH Route 9 has been added to the Existing Conditions Plan, sheet #2. The 50-foot long, 18" RCP is not modeled, as this is an equalization pipe, with both bodies of storage (the existing depression & Detention Pond #201) included in this pond in the proposed condition.

12. Under the Proposed Analysis Summary for Pond 1P, the 18" HDPE pipe outlet inverts do not match those shown on Sheet 9.
    See response #12 above.

13. The Inspection & Maintenance Manual should include a discussion of rip rap lined swale maintenance.
    Please find the revised Inspection & Maintenance Manual.

14. The Inspection & Maintenance Checklist includes pavement sweeping but the proposed driveway is gravel. This should be removed.
    This refers to the sweeping of the paved apron at NH Route 9.

15. Are dumpsters proposed? The reference should be removed from the Inspection & Maintenance Manual Checklist.

This checklist has now been modified.

16. Remove the reference to Rochester Engineering Dept/DPW in the Inspection & Maintenance Manual Checklist under Annual Report.
This has been corrected.

17. Where is the use of Filtrex inlet protection proposed?
Filtrex inlet protection is proposed at the 18" RCP discharging from Detention Pond #201. Please find Erosion & Sediment Control Plan, sheet #13.

PLAN SET:

1. General Comments
   a. There are inconsistencies with the titles of the plan sheets in the table of contents and on the individual sheets in the plan set.
   These inconsistencies have been corrected in the table of contents on the Cover sheet.

2. Title Sheet
   a. Add the date that yearly inspections must be delivered to the Barrington Planning Board by (December 15th) to the Note.
   December 15th has been added to the note.

   b. Correct "On September 21, 2022, the Zoning Board of Adjustment grated…"
   This has been corrected.

   c. The signs should go on a detail sheet.
   The signs have been removed from the Neighborhood Plan and added to their own sheet, C-102. Please find sheet #20.

3. Sheet 1
   a. Update the legends for the project.
   Please find revised legends based upon review comments.

4. Sheet 2
   a. Are the test pit locations and soil types necessary on this sheet?
   BS&E places test pit locations and NRCS soils lines on all Existing Conditions Plans prepared as part of a plan set.

5. Sheet 3
   a. John P. Hayes' stamp should be on the plan.
   John P. Hayes' stamp has been added to the plan.

6. Sheet 4
   a. **John P. Hayes is not responsible for the test pits provided, Christopher Berry permitted designer 1886 is and therefore his stamp will be added to the final approved plans.**

   b. **Include information on the date the test pits were performed, by whom, etc.**

7. Sheet 6
   a. The leaders pointing to the "Proposed Boundary Line and Proposed Easement Line" for the access from NH Route 9/Franklin Pierce Highway, show the same linetype (although there are different linetypes in the legend).
   A leader to these lines was chosen in this location due to the inability to shown multiple line types in a single location.

8. Sheet 8
   a. The stonewalls crossing the driveways should be removed.
   Please find leader addressing stonewalls on sheet #9.

   b. Water supply wells and their radii should be shown on the plan.
   The well and protective radius are now shown on Grading Plans.

   c. The hammerhead turnaround should be dimensioned.
   The hammerhead turnaround is dimensioned on sheet #10.

   d. Define the gray circles in multiple locations on the plans.
   Six-foot-tall white pines are shown for screening purposes and called out on the plans. These trees have been added to the legend for clarity.

   e. Define the black circles at the toe of slope above the driveway on Lot 25-8.
   Leaders call these out as "stone retaining wall (design by others)". This

symbol has been added to the legend on the Grading Plans and cover sheet.

f. The plan should indicate that the driveway is proposed to be gravel.
Gravel has been added to the typical road section callout.

g. Is Note 14 necessary? Erosion control notes are part of the plan set.
Note #14 has been revised to call the contractor to review the Erosion & Sediment Control Plans.

h. Note 23: "Voids between stones and clumps of material shall be filled with fine materials." How is this achieved?
This portion of the note has been removed.

i. What is the difference between "stone wall" and "stone wall remains"?
"Stonewall" refers to stonewall portions that are largely intact while "stonewall remains" refers to stonewall portions that are partially complete or have broken down over time.

9. Sheet 9
   a. The stonewalls crossing the driveways should be removed.
   Please find leaders addressing stonewalls. It is assumed that the stonewall will be removed where necessary for driveway construction.

   b. The water supply well and its radius should be shown on the plan.
   The well and protective radius are now shown on Grading Plans.

   c. Define the gray circles in numerous locations on the plans.
   Six-foot-tall white pines are shown for screening purposes and callout out on the plans. These threes have been added to the legend for clarity.

   d. The plan should indicate that the driveway is proposed to be gravel.
   Gravel has been added to the typical road section callout.

   e. The roadway profile has a sag vertical curve with a low point at STA 0+22.60. How is stormwater being collected, and removed from the roadway, to prevent ponding?
   A 2% super elevation to the right side of the driveway conveys stormwater into the detention pond to the right of the

driveway. The centerline low point is 198.02, with the edge of pavement elevation of +/- 197.78, allowing stormwater to enter the BMP.

f. Is there a design for the "path to remain accessible to abutting parcel of land at all times" when it is located in a 4-foot fill section?
Please find regraded driveway showing a 10% max grade from the proposed driveway to existing grade in this location, sheet #9.

10. Sheet 10
    a. Details for the retaining wall should be provided.
    As the stone retaining walls shown are to be designed by others, details of these walls are not available at this time.

    b. The water supply well and radius should be shown on the plan.
    The well and protective radius are now shown on the Overview Grading Plan, the protective radius is now shown on sheet #10, the well is located upslope of the house and is out of plan view.

11. Sheet 11
    a. The water supply well and its radius should be shown on the plan.
    The well and protective radius are now shown on the Overview Grading Plan, the well and protective radius are located upslope of the house and is out of plan view.

    b. Define the black circles at the toe of slope above the driveway on Lot 25-8.
    Leaders call these out as "stone retaining wall (design by others)". This symbol has been added to the legend on the Grading Plans and cover sheet.

    c. There are several leaders with lining material called out (RECB NAG bionet, RECB S 150) that do not have corresponding details. Please provide.
    The corresponding detail for all RECB is located on sheet E102, detail E20.

    d. The plan should indicate that the driveway is proposed to be gravel.
    Gravel has been added to the typical road section callout.

12. Sheet 12
    a. Correct the "Sections of Rain Garden w/ Infiltration #102" labels.
    The section label has been corrected.

    b. In P3, is Note 1 "2' core is to be constructed of compacted loam…" correct?
    This note has been revised to say "Low Permeability Material", referencing the adjacent gradation.

    c. What do the "ASTM C-33 Fine Aggregate" and "Table 7-24 Rip Rap Gradation Ranges" apply to?
    The fine aggregate table has been removed; the rip-rap gradations refer to the spillway in detail P4.

13. Sheet 13
    a. Where is the construction fence located?
    Construction fence has been removed from the legend.

    b. Where is the silt fence located?
    Silt fence has been removed from the legend.

    c. What is "rain garden bio-media protection"?
    This is the silt soxx shown along the limit of the bio-media in Rain Garden w/ infiltration #201.

    d. Define "perimeter control".
    Perimeter control is now defined as note #7, sheet #13.

    e. Is there a difference between the perimeter control signified by the symbol and the linetype?
    No there is not a difference. The "P" is placed as a typical callout and has been added to all applicable perimeter control BMPs.

    f. Define "residential/roadway construction". Where is the symbol on the plan?
    This is referring to the construction entrance at NH Route 9, with the symbol shown adjacent to the callout for construction entrance.

    g. Note 6 is contradictory.
    Prior note #6 has been removed.

h. Note 9 references sweeping the driveway, but the driveway is proposed to be gravel.
The entrance requires a paved entrance along NH Route 9/Franklin Pierce Highway.

Sheet 14

a. Note 15 references paving but the driveway is proposed to be gravel.
The entrance requires a paved section along NH Route 9/Franklin Pierce Highway.

b. Note 14 does not apply to this project and should be removed.
Note #14 is a standard NHDOT note that is requested on plans.

c. Note 16 does not apply to this project and should be removed.
Note #16 has been updated.

Sheet 16

a. Utilities should be shown in the cross sections.
Please find revised cross sections.

Sheet 17

a. Is the construction safety fence shown E4 proposed for use on the project? Also, is the detail supposed to be colored red?
The construction safety fence detail has been removed.

b. Details in E5 do not match those specified in the stormwater management plan.
Detail E5 now matches the Erosion & Sediment Control Plan and the stormwater management plan.

Sheet 18

a. E21 Construction Sequence differs from that in the stormwater management plan.
Please find the revised construction sequence on E21 and in the Drainage Narrative.

b. What does E14 apply to?
E14 applies to the rip-rap inlet/outlet protection and swale lining

proposed throughout the project. The name of the detail has been updated.

Sheet 19

a. The perimeter control details indicates that the maximum slope behind the control will not exceed 5%. The grades on Sheet 13 conflict with this statement.

   Please find revised Erosion & Sediment Control Plan, sheet #13, note #7 and revised detail C9, sheet C-101.

b. Correct "activities" in Note 4 of the Perimeter Control detail.
   The word "activities" has been corrected.

c. The Typical Driveway Section Cross Section Notes reference a roadway in Notes 1 and 2.
   The word "roadway" has been changed to "driveway". See C-101, Detail C5.

Very truly yours,
BERRY SURVEYING & ENGINEERING

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