April 6, 2022
21397

Sandy Fredricks, Planning Board Clerk
Town of Raymond
401 Webbs Mills Road
Raymond, ME 04071

Major Subdivision Application
Raymond Cape Subdivision
Raymond Cape Road, Raymond, ME

Dear Sandy:

The following are our responses to the peer review (Gorrill Palmer Consulting Engineers, Inc.) and fire department comments received to date for the project:

Peer Review Comments

1. A waiver has been requested from the Town of Raymond Subdivision Ordinance Article 10.3.B.5 requirement that a dead-end street is limited to 1,000 feet. We have no technical concerns with the waiver request. The Applicant has added a hammerhead turnaround approximately halfway along the road. The Fire Department may also want to weigh in on this waiver request.

   As noted.

2. A waiver has been requested from the Town of Raymond Land Use Ordinance Article 13.C.4.c requirement that the total open space in a development shall equal or exceed the sum of the areas by which the building lots are reduced. The open space area provided is 1.09 acres less than required and the reason provided is that there is a substantial area of wetlands and wetland buffers retained on individual lots. The final decision on this waiver rests with the Planning Board. Based on the reasoning for this waiver request, and if the Board grants this waiver, we recommend that a note be added to the subdivision plan stating that the wetland buffers and wetlands on the lots shall not be cleared.

   As noted.

3. Final subdivision plan shall be sealed by a licensed professional engineer and licensed professional land surveyor.

   The final subdivision plan is signed and sealed by a professional land surveyor.

4. The net residential density calculation shown on the subdivision plan is somewhat confusing. We recommend that a total net residential area (NRA) total be shown that is the raw NRA, then

another line be added that is the Raw NRA x 1.2 for the allowable density increase for opens space projects.

The calculation has been modified as recommended.

5. Add a note to the subdivision plan restricting clearing on lots to a maximum of 25% of the lot area, or 15,000 sf, whichever is greater, as required by the land use ordinance article 9.Y.

   Note has been added to the subdivision plan.

6. Show suggested locations of the buildings on the subdivision plan in accordance with subdivision ordinance section 5.2.B.3. We also recommend that driveway locations and driveway culvert sizes be shown on the plans.

   The suggested locations for buildings on the lots are indicated by the areas enclosed by the setback lines. A note is enclosed on the subdivision plan that the driveway locations will be shown on the plot plan submitted with each lot. A typical detail for the driveway culverts has been added to the plans that indicates that the culvert size will 15".

7. Provide the estimated size of subsurface disposal system and a well exclusion zone on the subdivision plan in accordance with subdivision ordinance section 10.7.D.

   Subdivision plan has been modified as requested.

8. Provide roadway centerline curve data. This information is required and will allow us to confirm that the road design meets the ordinance requirements.

   Road centerline curve data has been added to the Plan and Profile Plans as requested.

9. Provide the following note on the subdivision plan in accordance with subdivision ordinance section 10.3.B.10: "All roads in this subdivision shall remain private roads to be maintained by the developer or the lot owners and shall not be accepted or maintained by the Town until they meet all municipal street design and construction standards and are approved as such by the Town Meeting".

   Note has been added to the subdivision plan.

10. A hydrogeologic assessment is pending.

    Hydrogeologic assessment is enclosed. Based upon the assessment of the nitrate dissolution necessary for the lots, lots 1 and 11 will require pre-treatment systems to reduce initial nitrate concentration to the subsurface field to 20 mg/L.

11. A financial capacity letter is pending.

    Financial capacity letter is enclosed.

12. Add a note to the subdivision plan stating that the lots shall not be further subdivided.

Note has been added to the subdivision plan.

13. Show soil test pits on the subdivision plan.

    Test pit locations have been added to the subdivision plan.

14. We recommend adding grading easements where ditch backslopes extend beyond the road right of way. This minimizes potential private property encroachment issues in the future if the backslopes ever need maintenance or repair.

    The slopes into the lots will be stabilized. A five-foot grading easement has been added to the subdivision plan to account for the slope of the swale portion that extends into the lot.

15. Provide a draft Homeowners Association document stating requirements and responsibility for inspection and maintenance of the stormwater management system and roadway.

    Draft Homeowner Association documents are currently being prepared and will be submitted with the Final Subdivision Plan submission. These documents will address the requirements and responsibilities for the stormwater management facilities, open space areas, roadway as well as development restrictions.

16. Provide drainage calculations for ditch sizing and to determine the need for ditch stabilization.

    The HydroCad calculations have been modified for dynamic routing that includes backwater effects on the system hydraulics. The results of the 25-year routing indicate the expected depth and velocities within the ditches.

17. Will the ditch at the outlet of the 30-inch storm drain at roadway station 15+00 be stable and not undermine the pond berm?

    The rip-rap of the emergency overflow of the under drained soil filter has been extended over to include the discharge of the 30 in culvert.

18. Provide drainage calculations for culvert sizing.

    The HydroCad calculations have been modified for dynamic routing that includes backwater effects on the system hydraulics. The results of the 25-year routing indicate the expected depth and velocities within the culverts.

19. The emergency spillway of UDSF-1 is adjacent to the OCS. Revise to provide a 20-foot separation to the OCS and construction on non-fill soil, if possible, as required by the Stormwater Law Chapter 500.

    The separation requirement is for the outlet and not the OCS ("…the spillway must be horizontally offset at least 20 feet from the principal outlet…"). The outlets are at least a minimum 20 feet from the spillways' discharges. The spillway needs to be on the downslope side of the under drained soil filter so it has to be in a filled location; the spillways have been designed to have rip-rap slope to meet the existing natural grade.

20. The emergency spillway of UDSF-1 conveys flow in the 25-year storm. Revise to ensure that the emergency spillway is not activated during the 25-year storm in compliance with Chapter 500.

    The MDEP criteria for emergency spillways are not that discharge is not allowed during a 25-year storm, but that "Emergency spillways should independently convey the runoff from the 25-year, 24-hour storm while maintaining at least one foot of freeboard between the peak storage elevation and the top of the embankment crest; and should safely convey the 100-year storm without overtopping the embankment." Therefore, the crest must be one foot above the plug flow 25-year storm and above 100-year storm. Calculation results for the 25-year plug flow routing and 100-year routing are enclosed.

21. Provide a spillway calculation for the emergency spillway at both soil filters to demonstrate flow depth and freeboard to the top of the berm for the spillway as the sole outlet for the 25-year and 100-year storms.

    Calculation results for the 25-year plug flow routing and 100-year routing are enclosed.

22. The berm height for UDSF-2 is over 6 feet. Based on Maine DEP BMP's the berm top width should be 6 feet.

    The top of berm for UDSF-2 has been increased to 6' in width.

23. A trash rack should be shown at the orifices on the two outlet control structures.

    The details for the outlet control structures have been changed to reflect the installation of a trash rack.

24. The underdrain inverts at the two outlet control structures are over 5 feet from the rim elevations. If the orifice cap needs to be removed, the 2-foot square basin will make this difficult. We recommend that a standard 4' diameter structure be used instead of the field inlet.

    The size of the outfall structure has been modified as suggested.

25. The emergency spillway of UDSF-2 is within 20 feet of the OCS. Revise to provide a 20-foot separation to the OCS and construction on non-fill soil, if possible, as required by the Stormwater Law Chapter 500.

    The separation requirement is for the outlet and not the OCS ("…the spillway must be horizontally offset at least 20 feet from the principal outlet…"). The outlets are at least a minimum 20 feet from the spillways' discharges. The spillway needs to be on the downslope side of the under drained soil filter so it has to be in a filled location; the spillways have been designed to have rip-rap slopes down to meet the existing natural grade.

26. Add note to Subdivision Plan requiring fire sprinklers for all residences as previously requested by the Fire Department.

    Note has been added to the subdivision plan.

27. Provide Fire Truck turning movement diagram as previously requested by the Fire Department.

A fire truck turning movement is included as requested.

28. Add street name and E911 street address for each lot as requested by the Fire Department.

Street name and address request has been made to the Town for the project. The requested name, Settlers Ridge Road has been added to the plans. Address numbers will be added to the subdivision plan as provided by the Town.

Fire Marshal Comments

1. In response to the RFRD Memo dated December 7, 2021, the applicant has indicated in their cover letter the intent to provide two (2) Hammer-head turn-arounds on the 1,970 foot street, and proposes to install residential fire sprinkler systems in the dwelling units within the subdivision. The RFRD acknowledges these statements contained in the cover letter, but requests that the plans and "Plan Notes" address the issues outlined in the December RFRD Memo as follows.

As noted.

2. The application should address Fire Rescue Department access in accordance with NFPA 1, Chapter 18.

    a. An Auto-Turn or equivalent template for the "Hammerhead" turn-around between Sta. 9+00 to Sta. 11+00 and the "Hammerhead" turn-around between Sta. 18+00 to 19+76 be provided to the RFRD for review and verification of emergency vehicle access in these areas. The Auto-Turn template shall show a 40 ft. commercial day-cab, tandem axle fire truck with a 214-inch wheelbase making the 180-degree turn-around maneuver within the designed configurations.

    An Auto-Turn analysis of the hammerhead turn arounds is enclosed. Conservatively, a truck with a slightly larger wheelbase was used for analysis.

    b. The entire "Hammerhead" turn-around from Sta 9+00 to 11+00, and from Sta. 18+00 to 19+76 should be designated as a "Fire Lane" on the approved plans, and also addressed in the Plan "Notes". The "Fire Lane" as designated above should have RFRD approved "Fire Lane" signs installed throughout the entire area of the 180-degree turn-around area.

    The areas have been designated as Fire Lanes as requested with the appropriate Fire Lane signs. Subdivision Plan notes have been added as requested.

    c. The approved plan "Notes" should include language that indicates that the location and installation of the required "Fire Lane" signs shall be approved by the Raymond Fire Rescue Department.

    Subdivision Plan notes have been added as requested.

3. The proposal to install residential fire sprinklers in lieu of providing a fire protection water supply is acceptable to the RFRD. The installation of residential fire sprinklers in each of the dwellings in the subdivision should be addressed in the approved plan "Notes".

Subdivision Plan notes have been added as requested.

4. E-911 street name and street addresses should be noted on the approved plans. The approved plans should note the street address for each lot as assigned by the Town of Raymond; E-911 Coordinator.

   The Subdivision Plan has been changed to indicate the street name and addresses assigned by the Town of Raymond E-911 Coordinator.

5. The approved Plan "Notes" should include language that temporary E-911 addresses will be installed and visible to emergency responders during the construction phases of this project.

   Subdivision Plan notes have been added as requested.

6. The approved plan "Notes" should include language that the permanent street address shall be installed for each dwelling unit prior to issuance of a Certificate of Occupancy. The street address shall be visible from the proposed street and located to be clearly visible from within the fire apparatus cab. The street address lettering shall be no less than 4" in height, shall be of a contrasting color to the sign background, and preferably the letters should be reflective for night or reduced light conditions. The placement of street addresses and/or signs shall be approved by the Raymond Fire Rescue Department.

   Subdivision Plan notes have been added as requested.

7. Each residential CMP meter box shall include an outside service disconnect to enable Fire/Rescue personnel to be able to disconnect the power from the outside of the building during an emergency response. Outside electrical service disconnect should be included in the approved plan "Notes".

   Subdivision Plan notes have been added as requested.

8. All proposed designs to address Fire Rescue Department access or fire protection shall be approved by the Raymond Fire Rescue Department.

   As noted.

This response is being submitted electronically to Gorrill Palmer and the Town of Raymond Fire Department along with attachments for analysis of the hammerhead turnarounds, hydrogeological analysis and the stormwater management calculations to reflect the modifications noted above. It is expected that these changes will be submitted in hard copy for the Planning Board with the Final Subdivision Plan submission.

Thank you for your time and assistance relative to this application.

Sincerely,

SEBAGO TECHNICS, INC.

Robert A. McSorley, P.E.
Senior Project Manager

RAM:js

cc. William C. Haskell, P.E., Gorrill Palmer
Wayne C. Jones, Fire Inspector, Town of Raymond
Brandon Chase