



December 15, 2016

Town of Richmond
Attn: Geoffrey Urbanik, Town Manager
203 Bridge Street
Richmond, VT 05477

RE: Buttermilk LLC Development Plans – Phase 1
Review and Comments

Dear Geoff,

Per the Town's request, I have reviewed three site plans produced by Grenier Engineering, PC (Grenier) for the proposed Buttermilk, LLC development project at the former Richmond Cheese Factory property. The "Public Works Specifications for the Town of Richmond", last amended in 2000 were utilized for my review along with several of the referenced VTrans standard details. Below are my findings and comments.

Road/Driveway - In the 2000 addendum to the Richmond DPW standards, VTrans Standard Details B-71 (Residential/Commercial Drives) and A-76 (Town and Development Roads) were incorporated. Several aspects of the proposed road are not in compliance with these standards.

1. The proposed paved road is 22' in width. B-71 notes 24' minimum width for the road (two 12-ft lanes). The lane without a curb should have a shoulder before it drops into the swale.
2. The proposed road improvement does not have an "approach area" at the intersection, as shown on Standard B-71, and has a steep transition into the existing road (10%+) . The required approach area on B-71 has a minimum 20' length at a shallow grade (3% maximum).
3. The proposed road crown is shown on the "Private Local Roadway Section", however is not indicated on the proposed grading contours. The crown will direct the water to both the north and south side of the road.
4. Given proposed narrow entrance to Jolina Court, it would be advantageous to see a vehicle turning template or "AutoCAD Autoturn" performed for Town emergency vehicles turning in/out of the main entrance and turning around in the back of the parking lot.

Drainage/Stormwater – Based on a site visit on December 14, 2016 and the existing/proposed contours on the provided plans, I've attached a PDF sketch of approximate drainage areas for Phase 1 that head toward Bridge Street and highlighted in red (southern lane, sidewalk, parking), blue (roof of Phase 1) and green (northern lane, half of Blue Seal roof, eastern lane of Bridge Street).

1. The drywell in the Town right-of-way, located on the edge of Bridge Street, is not acceptable. Infiltrating runoff adjacent to the road subbase may lead to future maintenance issues. Grenier should provide drainage calculations and documentation as part of their design submission. The highlighted "green area" appears to be much larger than 2,500 square feet (the area noted in the Grenier Letter dated December 5, 2016). Under sizing the drywell could lead to more frequent overflows and potential stormwater issues. If a drywell is going to be utilized, it should be located on Buttermilk,



LLC property and preferably as far from roads and existing foundations as feasible. To eliminate new stormwater discharge from the “green” area, it is recommended that the project considers a stormwater collection system to re-direct the majority of flow to the south and away from Bridge Street.

2. The proposed curb on the south side of the proposed drive will collect water from the sidewalk, southern lane and several parking spots (red shading). This runoff water will discharge onto Bridge Street at a concentrated point at the end of the curb. Currently, there is not a swale or ditch to collect water on the east side of Bridge Street. Similar to the above comment, it is recommended that the project considers a stormwater collection system to re-direct flow to the south.
3. Water from the roof discharges to south side of building toward cemetery and eventually Bridge Street (blue shading). The cemetery is only a few feet from the drip edge of the roof. It is recommended that water is captured in a stone lined swale or French drain system. If possible, this should discharge to the stormwater collection system.
4. The finished floor of the building is 329.0' and the finished grade of the road adjacent to the entrance is 329.0. It is recommended that the road be lower than the building entrance.

Water, Sewer and Other Utilities

1. Grenier should provide calculations and anticipate flows for water/sewer that tie into Town systems to confirm service sizes and Town capacity.
2. Water and sewer should be separated by a minimum of 10' measured from edge of pipe to edge of pipe.
3. To avoid conflicts during construction, Grenier should discuss existing water and sewer locations with the Town in addition to material requirements (e.g. Town requires PVC water main).
4. It appears that the plans are missing several utilities at the intersection – gas, underground telephone, etc. It would be beneficial to show these on the plans for future tie-ins, locating proposed infrastructure, and avoiding conflicts during construction.
5. The proposed water main parallels the curb and in a few locations is only approximately 6' from the face of building – this will make future maintenance very difficult. It is recommended that the water main be kept a minimum of 10' from proposed building.

Foundation

1. On the south side of the property, the face of foundation is 5' from the property line/cemetery. Grenier or the architect/structural engineer should provide a copy of the proposed foundation plans and/or means/methods to limit the construction limits to the Buttermilk property so that the cemetery is not impacted. If there are building foundation drains, the location and daylight locations should be indicated.

Please feel free to contact me with any questions.

Sincerely,

Tyler Billingsley, P.E.
Engineer / Owner