



Town of Millbury Department of Public Works

SEWER DEPARTMENT OFFICE • 131 PROVIDENCE STREET • MILLBURY, MA 01527 • Tel. 508 / 865-9143

To: Zoning Board of Appeals, Town of Millbury
From: Mark Hollis, Director of Engineering, Facilities & Sewer Operations, Town of Millbury
Date: November 21, 2023
Re: Ch. 40B Comprehensive Permit Application for Rice Pond Village

Per your request, the Department of Public Works, Engineering and Board of Sewer Commissioners has reviewed the provided materials for the Rice Pond Village development at 17 Rice Road and offers the following comments:

Engineering Comments:

1. The provided Drainage Report should be updated to include discussion of how the stormwater design meets the ten Massachusetts Stormwater Standards.
2. An Operations & Maintenance Report should be provided that speaks to maintenance of the stormwater structures. Inspection and maintenance of the CDS units is particularly important to keep sediment out of the infiltration structures and therefore maintain infiltration capacity. The applicant should clarify whether access will be required to the infiltration structures for maintenance purposes. If maintenance is required, a path should be shown on the plan set. The Operations & Maintenance Report should also specify who is responsible for the cost of maintaining the stormwater system.
3. The HydroCAD modeling of the infiltration structures and plan details should be modified to eliminate the stone storage volume on top of the Retain-It concrete modules. The modules have concrete top slabs with tape-sealed joints that do not allow stormwater to migrate into the stone above the modules. Per manufacturer guidelines, "the system should fill to the maximum design storm water level elevation (hydraulic grade line) per design. In most cases, that is the highest storage elevation available in the system, at the underside of the module top slab." Therefore, as part of the design modifications, the flooding elevation in the 100-year storm should not be higher than the underside of the module top slab. Infiltration Structure #2 is particularly problematic because the RIM elevations of the catch basins located at the bottom of the access road are at close to the same elevation as the top of the concrete modules. Therefore, when stormwater reaches the top of the infiltration structure, it could start to back flood out of the catch basins and onto Rice Road, instead of infiltrating as designed. As an alternative to design modifications, the applicant could provide shop drawings and a letter from the manufacturer (Retain-It) stating that they agree with the design and HydroCAD modeling as

presented. Shop drawings should include “windows” within the concrete modules that allow for even distribution of stormwater throughout the infiltration system.

4. Trees are proposed on top of Infiltration Structure 2 and directly adjacent to Infiltration Structure 1, applicant should clarify whether these trees will survive with limited soil. Infiltration Structure 3 is proposed to be installed within 10 feet of the existing oak tree to remain. Applicant should clarify whether this infiltration structure can be installed without damaging the root system of that tree.
5. Infiltration Structure 2 is within a foot of the proposed transformer pad. Applicant should show actual size of transformer pad, confirm whether oil containment is required, and show bollard protection to ensure that this location is appropriate per utility company standards and required clearances.
6. The Drainage Report and HydroCAD modeling should be updated to include information on flow rates through the proposed CDS structures to ensure adequate sizing. Applicant should also consider re-routing roof runoff around the CDS units as the rooftops do not contribute a sediment load and the additional flow risks re-suspending the solids and clogging the infiltration systems.
7. Detail Sheet D-4 lists “Unofficial Soil Test Results.” Official soil test logs, including information for deep test holes 20-23, should be provided that includes seasonal high groundwater readings. Three feet of separation to the seasonal high groundwater table should be provided at *all* corners of the infiltrating surface. If proper separation to groundwater cannot be maintained, as could be the case with the south side of Infiltration Structure 1, then a groundwater mounding analysis should be provided.
8. More detail should be provided on the proposed retaining walls. The wall behind Building #1 is over 17 feet high and should include a guardrail and pedestrian fall protection fence. Depending on the type of wall, geogrid tiebacks may be required that could conflict with the drainage structures and the proposed light pole base. Wall drainage may also need to be considered. The wall between infiltration structure 1 and the northern property line is almost directly on the property line. The applicant should confirm whether this can be constructed without encroaching on the railroad property and whether the nearby infiltration structure will affect wall stability. The Board may want to consider requiring stamped plans from a geotechnical engineer or shop drawings from the manufacturer for these two walls. Similarly, the applicant should confirm whether the proposed 1:1 slope along the northern property line is constructable without encroaching on the railroad property and whether there is enough room for a guardrail to be installed between the edge of pavement and the top of slope.
9. Pipe sizing calculations should be provided to ensure drain lines have adequate capacity to safely move stormwater through the drainage network. Note that a minimum pipe size of 12 inches is required by the Town of Millbury Subdivision Regulations and there are 23 – 8 inch pipes proposed in the design.

Department of Public Works Comments:

1. There is an existing catch basin located near the center of the proposed driveway, applicant should clarify if this is to stay in the same location or be relocated. Information on this catch basin and downstream drainage network (RIMs, inverts, pipe sizes and slopes) should be added to the Existing Conditions Plan. This catch basin appears to be at a low point on Rice Road, therefore the drainage analysis should quantify how much flow is expected to bypass the catch basins within the development and reach this catch basin and whether any puddling is expected in larger storms.
2. Inlet protection should be shown on the catch basin at the proposed entrance as it is directly adjacent to the proposed construction entrance. Catch basin should be rebuilt by contractor if it is damaged due to heavy construction traffic. If sediment from the development enters into the catch basin and downstream drainage network, applicant will be responsible for cleaning the drain lines.
3. Plans indicate that a retaining wall is to be removed in front of 9 Rice Road, applicant should clarify the purpose of this. DPW would also like clarification on whether the project will include a sidewalk along the northern side of Rice Road between the proposed development and South Main Street.
4. Any modifications to the existing trees along Rice Road in the right-of-way need to be approved by the Tree Warden.
5. Rice Road was recently paved, any damage to the road due to heavy construction equipment will be the applicant's responsibility to repair/repave. Any repaving is to be coordinated with the DPW Director. Applicant will also be responsible for daily street sweeping if deemed necessary by the DPW Director.
6. The provided Traffic Impact Study recommends that a stop sign be installed at the northbound approach of Thomas Hill Road and the eastbound approach of Rice Road at its intersection with Providence Street, these signs should be added to the plans.

Board of Sewer Commissioners Comments:

1. Based on Article IV, Section 3 of the Town of Millbury Board of Sewer Commissioners Sewer System Rules & Regulations (Revised August 27, 2019), for multifamily dwellings, a permanent sewer privilege fee shall be assessed at a rate of \$7,500/unit for the first unit and \$3,750 for each additional unit. For uses other than residential, there shall be an assessment of a minimum of one unit (\$7,500). Therefore, the total betterment fee due for the proposed development is \$738,750, due once occupancy of the buildings has been established.
2. Based on Article II, Section 29 of the Town of Millbury Board of Sewer Commissioners Sewer System Rules & Regulations (Revised August 27, 2019), "any new proposed subdivision or commercial/industrial business that requires a sewer extension discharging into their sewerage system shall require the removal, on the ratio of at least 4 (four) gallons removed for each gallon proposed, of excess infiltration/inflow (I&I) within the existing sewerage system, thus decreasing the total flow to the wastewater treatment facility. The removal of identified and quantified infiltration/inflow (I&I) shall be as approved by the Board of Sewer Commissioners. If at this time, there is no identified and quantified location where Infiltration/Inflow (I&I) may be

removed, the Board of Sewer Commissioners shall require that a sum of money in the amount of \$1.00 per gallon of I&I proposed for removal shall be deposited ... with the Town Treasurer.” The total proposed sewer flow from the residential buildings within the development is 33,660 gallons per day (GPD) (based on 310 CMR 15.000: Title 5 of the State Environmental Code). Based on a required removal ratio of 4/1, the applicant is responsible for removing 134,640 gallons of I/I or paying the I/I fee of \$134,640. Note that this fee is for the residential buildings only, building plans for the Clubhouse are required to properly determine the sewer flow and assess the I/I fee for the Clubhouse use. Building plans should also be provided for the Clubhouse to determine if a grease trap is required for food preparation.

3. The Board of Sewer Commissioners requires that the applicant fund a study to determine if the existing sewer system has the capacity to accept the additional flow from the proposed development. The Town of Millbury solicited a quote from Weston & Sampson Engineers for this work for a fee between \$3,950 and \$8,000. If the existing sewer system is found to have capacity to accept the additional flow from the development, then the fee will be \$3,950. If existing capacity is inadequate and additional engineering is involved to recommend upsizing the pipes, then the fee will move to \$8,000. This study should be completed before the Zoning Board of Appeals decides on the project, as potential upsizing of pipes is something that would have to be incorporated into the design.
4. The Board of Sewer Commissioners notes that, at the time of writing these comments, the applicant has not yet paid for the sewer capacity study for the original design of the project in 2021. \$5,500 is owed to the Town to pay for the cost of the original capacity study.

Sincerely,



Mark Hollis
Director of Engineering, Facilities and Sewer Operations
Town of Millbury DPW

CC: Keith Caruso, DPW Director, Town of Millbury
Gary C. Nelson, Chairman, Board of Sewer Commissioners, Town of Millbury