

Robert E. Puff, Jr. P.E.  
Consulting Civil Engineer  
53 Cutts Island Lane  
Kittery Point, ME 03905

May 19, 2022  
VIA EMAIL

Ipswich Planning Board  
Town Hall  
25 Green Street  
Ipswich, MA 01938

RE: 55 Waldingfield Road – Phases 2 and 3  
Site Plan Review & Special Permit Applications  
Initial Drainage and Stormwater Management Review (Task 2)

Mr. Ethan Parsons and Planning Board Members:

As requested, I have continued a drainage and stormwater management review of the above referenced project. In response to the initial (Task 1) review dated April 20, 2022, I have received the following supplemental or revised plans and documents as prepared by Hancock Associates of Danvers, MA (unless otherwise noted).

- Copy of correspondence from Hancock Associates to the Ipswich Planning Board, dated May 9, 2022, regarding ‘Response to Drainage and Stormwater Management Review (Task 1).’
- Plan set entitled “Permit Site Plan, Phase 2/3 (to accompany a Great Estate Preservation Development Special Permit) 55 Waldingfield Road...” consisting of thirteen (13) sheets; plans 2A through 2F being dated July 1, 2021, and plans 1 and 3 to 8 being dated March 28, 2022. All plans are revised to May 5, 2022.
- “Stormwater Report in Support of A Great Estate Preservation Development (GEPD) Special Permit Phase 2-3 for 55 Waldingfield Road...” dated March 2022 and revised to May 2022, including Appendices A-K.
- Plan entitled “Ora at Waldingfield, Rain Garden Planting Plans” dated April 9, 2022 and prepared by Laura Gibson, ASLA, of Manchester, MA.

At this time, the following remaining comments and opinions are offered for your consideration relative to the proposed stormwater management and drainage design.

**Stormwater Management & Drainage:**

1. In response to Task 1 review comment 2, the proposed parking field grading has been revised. The proposed modification is satisfactory, however, the design engineer should address the following items.
  - a. Coordinate the parking field high point so that the grading on the plans reflect the subcatchment boundary shown on the subcatchment map.
  - b. The plans should specify that the gravel foundation of the parking field be graded to slope towards the catch basin, and that gravel grade be as-built prior to placement of the soil stabilizer/geogrid and peastone and submitted to the Planning Board. The intent of the as-built is to confirm that the subgrade properly slopes towards the catch basin.

- c. The catch basin should be provided with an underdrain system that will enable runoff that flows along the peastone/gravel interface to enter the catch basin and infiltration system.
  - d. To properly establish the 100 year peak stage of infiltration system PS-2, the 100 year storm should be rerun using dynamic tailwater rather than free discharge (i.e., the storm drain pipe entering the infiltration system will be submerged during the 100 year storm).
2. As noted in the Task 1 review, the proposed drainage swale (located north and east of the proposed parking field) will concentrate runoff and discharge it onto the adjacent steep slope. It was requested that the swale be widened as it approaches the steep slope (to disperse flow) and that the stability of the slope (i.e., whether erosion will occur as a result of the concentrated flow) be evaluated. The slope evaluation was not received, and the grading should be revised further to reflect a widening of the swale at the westerly terminus.
  3. It is noted that the revised plans imply an expanded area of development west of the proposed deck, however, the proposed use and grading is not specified. Additional information should be provided to clarify the proposal. Proposed grading should be identified on the plans.
  4. The Grading Plan should be revised to better define the grading transition in the area between the patio and the crushed stone underneath the deck (along the westerly side of the proposed building). As specified, there is more than 2 feet of elevation difference between the abutting elements and the grading intent at the transition should be clarified.
  5. The ‘Crushed Stone Infiltration’ detail on plan sheet 7 should be revised to specify the dimension between the top of slope and the adjacent ‘impervious barrier.’
  6. The following items were requested to be added to the plans in the ‘Task 1’ review. The engineering response indicated that they were provided, however, they were not found on the revised Grading Plan. It is again requested that the following items be addressed.
    - a. Add a high point spot grade along the easterly side of the parking field at a location consistent with the drainage subcatchment mapping and calculations.
    - b. Provide flow arrows to specify where runoff from the northerly portion of Subcatchment P-2 will flow across the main driveway and into the pasture (as assumed in the calculations). Reference to the stormwater mitigation areas in the pasture area should also be included.
  7. The design engineer has indicated that additional soils testing is scheduled to be conducted within the proposed stormwater infiltration areas to confirm soil characteristics and groundwater elevations, however, that information has not yet been received.

**MA DEP Stormwater Standards:**

1. Standard 3 – Relative to the crushed stone infiltration area beneath the proposed deck, coordinate the storage volume used in the recharge calculations with the information specified in the plans and drainage calculations (i.e., contradictory data is provided).
2. Standard 8 – Provide additional erosion control. The previous review suggested the need for additional erosion/sediment control to be implemented at the proposed deck and patio areas (refer to Task 1, comment 3). The design engineer’s response indicates that additional erosion control and grading was added to the plans, however, the information was not observed. It is again suggested that supplemental erosion control and slope protection be provided along the westerly site slope during the course of earthwork, grading, and building construction. Interim sediment basins and diversion swales may also be beneficial during grading operations.
3. Standard 9 – Operation and Maintenance Plan (O&M). On the ‘Inspection Schedule and Evaluation Checklist’ clarify the relevance of the ‘overflow outlet rip rap’ and ‘downhill slope outlet’ as these do not appear in the narrative. If they are intended to address existing conditions, additional narrative should be provided, and the locations should be identified on the plans.

**Additional Planning Board Considerations:**

1. As noted in the Task 1 review, portions of the westerly section of proposed development are in close proximity to the existing 'Conservation Restriction' boundary and the '200 foot Riverfront' boundary. As such, the Planning Board may wish to require either temporary (during construction) or permanent physical monumentation to clarify and define these boundaries.
2. The Planning Board is reminded that stormwater impacts associated with the initial 500 linear feet of driveway widening are proposed to be mitigated in conjunction with Phase 1B development. As of this writing (and to the best of my knowledge), the Phase 1B stormwater management plan is still under consideration by the Planning Board. As such, additional temporary mitigation should be provided for driveway impacts if Phases 1A, 2 or 3 are to be constructed in advance of Phase 1B.
3. To ensure that construction of the stormwater management system is conducted in accordance with the design, an as-built plan of the stormwater management and drainage improvements should be submitted to the Planning Board along with a report from the engineer of record indicating whether or not construction complies with the design intent. The as-built plan and engineering report should also be appended to the final version of the 'Operation and Maintenance Plan' prepared for the stormwater management system, for the property owner's future use and reference.
  - a. The as-built plan should include an updated survey and condition assessment of drainage ponds P1, P2, and P3 (located in the pasture area) as proposed in Phase 1A.
  - b. The engineering report should also speak specifically to the ability of runoff from the northerly portion of subcatchment P2 (i.e., the northerly portion of the peastone parking area) to flow across the project driveway and into the lower pasture area, as intended in the stormwater management calculations.
4. Because existing topographical depressions within the pasture are being utilized as part of the stormwater management system, any earthwork that would alter these depressions from what was submitted as part of the Phase 1A stormwater management plan should be subject to appropriate hydrologic/hydraulic study and Planning Board review to ensure that the stormwater management design intent is not adversely impacted.
5. If the Planning Board determines that the Application is ready for a vote, the following documents are suggested to be incorporated as part of any approval:
  - a. The 'Construction Period Pollution Prevention Plan' (LTPPP) and the 'Stormwater Pollution Prevent Plan' (SWPPP) to clarify responsibilities relative to sedimentation and erosion control during construction. The Planning Board may wish to reserve the right to review and comment on the SWPPP prior to the start of construction.
  - b. The 'Operation and Maintenance Plan' to provide guidance for the long term inspection and maintenance of the drainage and stormwater management systems.
  - c. The 'Long Term Pollution Prevention Plan' (LTPPP) to provide guidance relative to long term management of the site.

Please feel free to contact me if you have any questions regarding the above comments and opinions.

Very truly yours,

*R.E. Puff*

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Robert E. Puff, Jr., PE

cc: C Wear, PE (via email)