



# Town of Falmouth

Department of Public Works - Engineering Division

416 Gifford Street, Falmouth, MA 02540  
Office: 508-457-2543, Fax: 508-548-1537

Jim McLoughlin, P.E., Town Engineer

Jim.McLoughlin@falmouthmass.us

## Zoning Board of Appeals Review

To: Noreen Stockman, Board of Appeals Administrator  
CC: File

From: Scott Schluter, P.E., Staff Engineer  
Date: 6/18/2020

Re: 63 North Falmouth Highway

---

The Engineering Division reviewed the following:

- Document – Town of Falmouth Zoning Board of Appeals Application for Comprehensive Permit stamped received June 9, 2020, by the Falmouth Zoning Board of Appeals.
- Plan - "Existing Conditions Plan," 1 sheets, dated September 24, 2018, with no revisions, by Ribelin Land Surveyors, Inc.
- Plan Set – "Wings Pond Condominiums," 11 sheets, dated May 28, 2020, with no revisions, by Ribelin Land Surveyors, Inc.
- Plan – "Wings Pond Condominiums," 1 sheet, dated May 22, 2020, with no revisions, by Hawk Design, Inc.
- Plan Set – Untitled, 7 sheets, stamped received June 9, 2020 by the Falmouth Zoning Board of Appeals, some sheets dated April, 2020, by Bruce Devlin Designs.
- Report – "Wings Pond Condominiums, 63 North Falmouth Highway, Falmouth, MA, Pre-Development and Post-Development Drainage Calculations," dated May 15, 2020, with no revisions, by Hermenau and Hermenau Consulting Engineers.

The following is a list of our comments regarding this project:

---

[Open Items from our 10/23/19 MassHousing Site Approval Comments](#)

---

Original comments are in *italics*, new comments are in **bold**.

- *The location of the proposed soil absorption system (sas) for the septic is in a portion of the parcel close to the certified vernal pool. We recommend that the Applicant explore moving the sas away from the vernal pool if possible. If relocation to another portion of the site isn't possible, flipping the driveway and sas locations should be explored. Or if the drive were to be changed to impervious, placing the sas under the driveway would provide more separation from the vernal pool and less clearing of potential habitat upland of the vernal pool.*  
**Could the primary and reserve sas areas be switched?**  
**Could the road and sas area be switched? Overflow from a septic tank or pump chamber would flow into the resource area and habitat where a spill on a roadway would have to work through**

**the treatment train for stormwater to reach these areas. What does the Conservation Commission think?**

- *It appears that the proposed location of the soil absorption system falls within, or is adjacent to, an area where a number of buildings are visible in the 1950 aerial photographs of this area. There is considerable disturbance visible around the buildings in the 1950 aerial. This area can be seen disturbed in more recent aerial photographs up to 2014. Test pits should be performed in the leaching area to determine depth of potential fill and how deep native soils are so any additional costs associated with Title 5 fill can be accounted for in the project costs.*
- *MassDOT's State Highway Layout (SHLO) of 1904 (Layout 925, Sheet No. 23) and 1905 (Layout 992, Sheet No. 23-A) shows that a portion of the original roadway (1899 County Layout) fell within the front portion of the lot before it was relocated to the 1905 and the 1928 layout (Layout 2544, Sheet No 4). The location of the proposed soil absorption system appears to fall within, or is adjacent to, the "old road." Test pits should be performed in this area to determine depth of potential fill and how deep native soils are so any additional costs associated with Title 5 fill can be accounted for in the project costs.*

**Is a 21E Site Assessment warranted?**

**Should a LSP oversight, reporting to the town, be required for excavation operations during construction?**

- *Connection to the Town municipal water system will be subject to Falmouth Water Department.*  
**The proposed water system, any hydrants, service details are all subject to Falmouth Water Department review and approval.**
- *No driveway or street opening permit would be required from the Engineering Division; permitting for the right of way work would be through MassDOT since North Falmouth Highway is a State right of way. The Applicant has reached out to MassDOT with their intentions to file a permit.*
- *What is shown would be considered a driveway and not a road.*
- *Because this is a driveway, the Town will not provide snow removal.*
- *Because this is a driveway, the Town will not provide trash and recycle service within the site.*  
**This will be considered a driveway, no snow removal will be provided. Connection to the State road will be subject to MassDOT review and approval.**
- *The addresses for the units will be parcel based. Addresses would be in the format of 63 North Falmouth Highway, Building #1-6, Unit A/B. Attached is a sketch for the Applicant to use in planning this project so there can be consistent unit designation throughout the process.*  
**The plans show the correct street address, building and unit designation. The Engineering Division will assign the addresses prior to signing off on the first Building Permit. Note that some of the documents still refer to Units 1-12, we recommend that all references to units match the correct designation in any plans and documents approved by the Board.**
- *Number and location of parking spaces would be further reviewed during the formal application process.*  
**The Applicant indicates that there are 24 parking spaces proposed. There are no parking space labels on the plans. We recommend that all parking spaces be designated on the plans, including any guest parking spaces, and a parking space count be added to one of the plans.**
- *Adequacy of the turnaround area size and location would be subject to Falmouth Fire Rescue review and approval.*
- *Town standards if this were a road would be 18' wide, which this appears to meet, and 80' long, which this does not appear to meet.*
- *T-turnarounds are also required at the end of roads, this one is approximately 77' short of the end. Where this is a driveway, the concerns are maneuverability in this dead end.*
- *We would recommend that a SU-30 maneuvering sketch be submitted.*  
**While this is a driveway, larger vehicles such as the trash truck, emergency vehicles, and delivery vehicles will still have to access and maneuver within the site. The T-turnaround does not meet standards we would hold for a road. We recommend that either the T-turnaround be redesigned to meet our minimum standards, or vehicle maneuvering sketches be provided for**

**at least an SU-30 vehicle, if not a larger model should Falmouth Fire Rescue indicate larger vehicles may be required.**

- *Floor elevations are not provided on the plans and there appears to be considerable earthworks on this site for the project. Some of the grading is close to abutting properties. We will recommend an erosion and sediment control plan be included in the Comprehensive Permit Application plan set so that conditions can be made in any approval referencing this plan. We have included our current standard conditions to aid in plan development for the formal application.*
- *Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook also points out that “care is needed to avoid compacting underlying parent soils.” This is also a concern for septic system soil absorption systems (sas) and bio-retention areas.*
  - *We will look for protection of all of these areas during construction shown on the erosion and sediment control plan (cordoned off or fenced in).*
  - *With both the permeable pavement and sas shown across the right of way edge of the property, there won't be much area left for access to the site during construction.*
  - *We will expect an anti-tracking construction entrance shown on the erosion and sedimentation control plan.*

**An Erosion Control Plan was included in this submission. We recommend some additional information be provided on the plans to meet the requirements laid out in the conditions. See comments below**

- *Some of the proposed slopes on the plan appear to be steep. Slope stabilization information and details will be expected to be shown on the formal application plans for any proposed slopes greater than 3:1.*

**There are slopes as steep as 1:1 proposed with no details for stabilization of these slopes. We recommend details be added to the plans.**
- *Third party inspections of the roadway and bio-retention areas during construction will be recommended. Costs associated with these inspection should be accounted for in the costs of this project.*

**We recommend that a third party be hired for inspections and construction conformance review. As-built plans should be required.**
- *Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook provides some setback distances between porous pavement and other site features. Some of these are not met, for example 10' to property lines, and 50' to soil absorption system. We will expect the setback distances to be met or information on why they are not met should be provided in the formal application.*

**Some areas appear to be close or not conforming to these requirements. We recommend that distances between these site features be added to the plans and separation provided as required. Can it be confirmed that there is no porous pavement proposed for this project?**
- *We are assuming the vernal pool water elevation is a typo and should read 19.37, not 69.37, but this should be confirmed.*
- *During the site visit it was pointed out that there are resource areas inland of the certified vernal pool delineation that are not shown on the plans. Delineation of these resource areas are not shown on the plan (i.e. Bordering Vegetated Wetlands) as required by MassHousing in Section 2 of the Application. Proximity of disturbance and structures to these other resource areas should be considered. Identification of all resource areas within and near the project should be shown on the formal application plans.*

**The plans were corrected to show a water elevation of 14.37 and additional BVW delineation was provided. However, the Existing Conditions Plan still has 69.37 and the new BVW is not shown on this plan. We recommend that the Existing Conditions Plan be updated.**
- *Will there be restrictions on expanding existing patios or adding new patios or decks for at least units 1-4?*

**While the buildings have been reconfigured and shifted away from the vernal pool, the back yards are still in vernal pool habitat. We recommend that the Conservation Commission be consulted to determine if there should be restrictions to what can and cannot be done in these areas.**

---

*Plan Comments*

---

**Existing Conditions Plan**

- As previously mentioned, it does not appear that the resource areas are updated on this plan.

**Existing Drainage Areas and Post Development Drainage Areas (Sheets 2&3)**

- Offsite areas to the East and South that would contribute stormwater flow into the site and into the proposed stormwater structures do not appear to be accounted for.
- Some of the drainage divides do not appear to follow the grading on the proposed plans.
- The Time of Concentration information on the plans do not match the calculations.
- The Time of Concentration calculations utilize the Upland Method surfaces where TR-55 uses paved or unpaved for shallow concentrated flow. We typically use TR-55.

**Post Development Drainage Plan (should be Grading and Drainage Plan?) (Sheet 4)**

- There are two walls shown on the landscaping plans not shown on the civil plan set. One is behind Building 1, the other behind Building 6.
- A 1:1 slope is shown along the southern, eastern, and northern property lines with no details for stabilization of these slopes. We recommend details be added to the plans. The constructability of these slopes up to the limits of the property should be considered. Will any trees on the abutting properties be lost from constructing these slopes?
- The grading behind Building 6 would divert stormwater flows directly into the home, and does not show the wall that is on the landscaping plans.
- There is considerable grading in the vernal pool upland habitat area. What species are in this vernal pool? Preservation of use or prevention of use by these vernal pool species, if applicable, should be explored. Can or should there be landscaping useful as habitat or measures to prevent use of these areas where maintenance may detrimental to the vernal pool species here?
- What are the distances between stormwater and subsurface sewage disposal system appearances? These should be labeled on the plans.
- Note that any pipes and stormwater appurtenances within 10 feet of a building could be subject to state or local plumbing code. We recommend that the Building Department be consulted for applicability of plumbing codes.
- The "Table of Foundation Elevations" should use the appropriate unit designations of Buildings 1-6 not units 1-12. (This should carry through wherever this table shows, on some sheets the table could be removed)
- The proposed tree line appears to follow the downhill limits of the proposed riprap 1:1 slope.

- While this will be considered a driveway, we typically do not recommend super elevation, and when it is part of the design, additional stormwater measures may be required (shorter distance between catchbasins, higher curbing, steeper longitudinal slopes, gutter flow spread calculations, etc.).

#### **Proposed Septic and Utility Plan (Sheet 5)**

- The septic reserve area is further from the vernal pool than the proposed leaching area is. Can these locations be swapped to move the leaching away from the vernal pool?
- If the septic leaching area is not relocated, could the roadway and septic location be swapped? Spills in a roadway would go through a closed treatment train, overflows in a septic system would flow overland to habitat and resource areas without a treatment system. What does the Conservation Commission think?

#### **Erosion Control Plan (Sheet 6)**

- We typically require formal barriers around the stormwater and septic leaching areas to keep construction activities outside these areas.
- Have earthworks calculations been done for this site? We typically require disposal location for excess materials.
- Will the entire limit of work be the Filtermitt product?
- We typically would look for construction period erosion controls and details such as temporary swales and basins including any project phasing impacts.
- Note #7 should refer to MassDOT.
- Will there be an outside consultant hired for inspections?
- We defer to the Board if the project should be reviewed for conformance with our Soil Erosion & Sediment Control Standard Conditions.

#### **Drive Profile (Sheet 7)**

- Drywell configuration in the calculations and the “Infiltration Basin/Dry Well Specification Table” should match.

#### **Layout Control Plan (Sheet 8)**

- Has the buildings and roadway been staked in the field?
- Can the roadway be added to these plans with widths, curbing, turnaround dimensions, and parking information?

#### **Septic Profile and Details, Typical Construction Details, Stormtech MC-3500 (Sheets 9-11)**

- Can the test pit locations be added to the Existing Conditions plan?

## Landscape Plan

- Will there be a sign for the development? The address should be posted at the entrance (63).
- Two retaining walls are shown on this plan but not the civil plans.
- A 6 foot high privacy fence as needed is shown on "Section D" but not on the civil plans. What will determine when it is needed? Where is the fence in relation to the property line and 1:1 slope?
- Section D shows the 1:1 slope terminating prior to the property line but the civil plans appear to show the slope right up to the property line.
- This plan designates where patios and where decks will be used, the civil plans do not and the grading on the civil plans suggest patios only. The plans should be coordinated.
- As previously mentioned, landscaping that can conform to vernal pool species habitat could be explored.

---

### *Drainage Calculations Comments*

---

- Two different time spans were used for the pre and post development calculations.
- The timespan used for the 100 year storm does not capture the full volume of the storm which would be used to determine if the stormwater structures would drawdown within 72 hours.
- The calculations model larger storms being conveyed by the closed drainage system. Catchbasin grates should be able to pass the peak flow and the catchbasins should be capable of handling the peak volume or the resulting ponding/puddling/overflow should be determined. This can be done either in the model or separate calculations.
- Plans and calculations should be coordinated.
- The calculations should be reviewed for conformance with standard practice and procedures as well as conformance with the Stormwater Management Regulations.
- A complete stormwater report including an operations and maintenance plan, showing compliance with the Stormwater Management Standards, project description, and summary and conclusions will be required for the Notice of Intent. We recommend that the peer review engineer for the ZBA be utilized for review of the Notice of Intent, or if there is no peer review for the Notice of Intent, this document should be provided for this review.

Thanks,



Scott Schluter, P.E.  
Staff Engineer  
DPW Engineering Division  
Town of Falmouth