

March 8, 2023

Town of Scituate  
Zoning Board of Appeals  
600 Chief Justice Cushing Highway  
Scituate, Massachusetts 02066

Attn: Anthony Bucchere, ZBA Chairman  
Robert Vogel, Building Commissioner  
Janine M. Cicchese, [jcicchese@scituatema.gov](mailto:jcicchese@scituatema.gov)

**RE: 3<sup>rd</sup> Comprehensive Permit Peer Review  
The Cottages at Old Oaken Bucket  
279-281 Old Oaken Bucket Road  
Scituate, Massachusetts**

Dear Mr. Bucchere and Members of the Board,

As requested, Merrill Engineers & Land Surveyors (Merrill) has completed our review of the revised Comprehensive Permit Plans and Stormwater Management Report submittals for the above referenced project for compliance under the Town of Scituate Zoning Board of Appeals Comprehensive Permit Rules and Regulations, Zoning Bylaws, Stormwater Regulations and good engineering practice. This report is based on our review of the submitted documents listed below:

- **The Cottages at Old Oaken Bucket at 279-281 Old Oaken Bucket Road, Scituate MA, Comprehensive Permit Plan Set, prepared by South Shore Survey Consultants, Inc., dated February 16, 2023, 16 sheet set.**
- **Drainage Calculations and Stormwater Management Plan for The Cottages at Old Oaken Bucket at 279-281 Old Oaken Bucket Road, Scituate MA, prepared by Anthony A Esposito, P.E., South Shore Survey Consultants, Inc., dated February 16, 2023.**
- **Response to Peer Review Comments Letter, prepared by South Shore Survey Consultants, Inc., dated February 15, 2023.**
- **The Cottages at Old Oaken Bucket Landscape Plan, dated February 7, 2023**
- **The Cottages at Old Oaken Bucket, Revised Site and Architecture Package, prepared by Union Studio, dated January 11, 2023**

We offer the following comments on the revised site plans and stormwater report and have organized our comments in order of our original review letter. Our original comments are noted with our new comments and recommendations following listed in ***Bold Italics***.



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MARINE DIVISION:  
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NORWELL OFFICE:  
687 Main Street  
Norwell, MA 02061  
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FALMOUTH OFFICE:  
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North Falmouth, MA 02556  
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## COMPREHENSIVE PERMIT RULES AND REGULATIONS

### 3.01 The application for a Comprehensive Permit shall consist of:

The following is a listing of the items required by the Zoning Board of Appeals shown in *italic print* with our comments noted below.

- a) *Preliminary site development plans showing the locations and outlines of proposed buildings, the proposed locations, general dimensions and materials for streets, drives, parking areas, walks and paved areas; and proposed landscaping improvements and open areas within the site. All site development plans shall be signed and stamped by a registered Professional Engineer or Land Surveyor;*

A Comprehensive Permit Plan prepared by a registered professional engineer has been submitted for this project as required. The plan set consists of thirteen (13) sheets: Existing Conditions Plan, Utility Layout Plan, Grading and Drainage Plan, Erosion Control Plan, Plan & Profile Road A Plan, Plan & Profile Road B Plan, Emergency Vehicle Movement Plan, Septic System Design Plan and Construction Details Sheets 1-4.

The property information on the Cover Sheet and Existing Conditions Plan should be updated to reference the current deed and plan information. *The Cover Page and Existing Conditions Plan should include the most recent deed information for #281 Old Oaken Bucket Rd, Deed Bk 56372, Pg 143 with the deed information provided for #279 Old Oaken Bucket Rd.*

**Addressed.**

The FEMA Flood Zone reference should also be updated to the current 2021 map reference. **Addressed.** Please update the Prepared For information in the Title Block for consistency. **Addressed.** The dimensions and materials for the roadway are show on the Detail Sheet. There is a 1 ft wide strip proposed between the back of berm/road and the sidewalk. Is this sufficient separation to provide pedestrian safety and what will be the surface treatment of this strip? *Not addressed. **The 1 ft grass strip has been removed from the design and where the sidewalk is adjacent to the roadway, vertical granite curb is proposed. Addressed.***

The site plan shows that the existing #281 dwelling is to be retained. If this is the case, this is extremely close to the proposed Unit 3/4 Building and the private septic system that is indicated will serve this dwelling is not shown. Additional information should be provided. **Addressed, the existing #281 dwelling has been indicated to be razed.**

Grading is proposed immediately adjacent to abutting properties at a number of locations. We recommend that a vegetated buffer be provided for those areas of the project abutting residential dwellings. *Please provide an updated Landscape Plan. Addressed.*

Retaining walls are proposed, many over 4 ft in height very close to buildings, wetland areas and property lines. Additional setback distances and further detail on how these walls will be constructed should be provided. *It is difficult to tell which retaining walls are proposed with fencing. Please indicate the retaining walls that will have fencing. The Building Code indicates that fencing is required for grade drops greater than 30 inches. Also, it is our understanding that all retaining walls over 4 feet high shall require a structural*

design and a separate building permit. We recommend additional detail be provided for the retaining wall conditions where it is being proposed very close to or connecting to the dwelling units. **Addressed.**

We recommend that the following additional information be shown on the plans:

- Distance between buildings - **Addressed.**
- Minimum distance along driveway from edge of sidewalk and or pavement to garages **Addressed.**
- Distance from the stormwater basin to units, wetland boundary and property line **Addressed.**
- Roof drain leader systems – Partially addressed, one roof leader is shown from the unit to the designated roof infiltration system. A typical roof leader configuration around a dwelling unit should be provided to ensure all downspouts can be collected and discharged as designed. **A typical roof leader configuration has been provided. Addressed.**
- Designated Open Areas, if any. **Addressed – it is indicated that the large island area where the septic leaching system is proposed can be used for recreational purposes, although no uses have been indicated**
- Additional Landscaping details, in particular for the areas in close proximity to abutting property and around the septic system – species and sizes of plantings etc. The stone seatwall with ornamental tree locations seem to conflict with the proposed septic system leaching field locations. Landscape hardscape features as shown on the preliminary landscape plans should be added to the site plan to confirm no conflicts with other proposed infrastructure. *It is indicated that Landscaping Plans shall be provided under separate cover. A Landscape Plan has been provided. Addressed.*
- Estimated earthwork quantities *Partially addressed – The plans indicate that the site will require approximately 28,599 CY of fill. The Excavation Quantity Plan indicates some cells to have fill when no work or almost no work is proposed, it may need to be updated. Construction traffic should be addressed. Addressed.*
- Label Roads and locate roadway intersections on the road profiles **Addressed.**
- Pavement markings, cross walk and signage at intersections, including details **Addressed. Stop signs are proposed at the intersections and cross walk striping is proposed. It is not clear what the sidewalk conditions are near the driveways for Buildings 10 through 14. Is a sidewalk being proposed on Old Oaken Bucket Road in front of Buildings 1 and 2? It is assumed that the #281 driveway curb cut be closed, please note proposed condition. Sidewalk is proposed along Old Oaken Bucket in front of Units 1 and 2 and the existing #281 driveway curb cut will be closed. Addressed.**
- Sight distance analysis to provide Sight Distance triangles at the intersections. **Addressed.**
- The type of curbing and all curb radii specified on site layout plan. Road Section Detail indicates 12” cape cod berm. *Partially addressed. Please*

*label curbing on the driveway for Buildings 1 through 4. **Curbing is proposed on the downgradient edge of the driveway. Addressed.***

- Topographic and utility information on Old Oaken Bucket Road adjacent to the site. The plans propose gas and water mains within the project site. Please provide information on gas and water mains within Old Oaken Bucket Road and how the project will connect to these utilities. *Partially addressed. The existing water and gas mains within Old Oaken Bucket Road have been shown on the plans. It is indicated that an existing water connection is already provided but not shown on the plans. It seems three hydrants are proposed at the end of the Road A and along Road B but are not labeled. The hydrant on Road A is located over 800 ft from Old Oaken Bucket Road and would recommend an additional hydrant along Road A. This would ensure all dwellings were located within 500 feet of a hydrant. We defer to the Fire Department to confirm if the hydrant locations are acceptable. **Addressed.***
- Street light pole locations should be added to the plan **Addressed.**
- Will there be provisions for Visitor or Accessible Parking Spaces? **Addressed. Additional parking within driveways.**
- The vehicle template used for the Emergency Vehicle Movement Plan should be indicated on the plan set. *Partially addressed. A note has been added to the plan noting that the vehicle turning template was provided by the Scituate Fire Department. Please provide the vehicle template with dimensions for clarification. The turning movement is also shown as overhanging into the sidewalk and leaving the site rather than entering. **Emergency fire truck template was provided and noted on the plan. Addressed.***
- Provide location of individual septic system for #281 dwelling, as noted this dwelling will be serviced by a private system **Addressed. It is indicated that this dwelling and system will be razed.**
- Provide construction entrance, stockpile areas, construction staging, temporary sedimentation basin and dewatering locations on the Erosion Control Plan. It is recommended to limit the construction activity over the infiltration and septic system locations. Recommend a compost sock for erosion control barrier rather than straw wattle. *Partially addressed. Please provide the leaching field limits on the Erosion Control Plan to ensure this area is protected from heavy equipment. Can the siltation barrier behind the infiltration system 3 be pulled in? There doesn't seem to be any proposed work in this location. It is recommended that the siltation barrier be extended along the easterly property line between the intermittent stream and the project. **Notations have been provided on the plan for the protection of the leaching areas. Addressed.***

There is conflicting subbase information provided on the Sidewalk Detail, Road B Section Detail and the Cape Cod Berm Detail. The Water Service Detail indicates a 6" DI water main which conflicts with the Road plan and profiles which indicate an 8" PVC water main is proposed. Please correct the Hydrant

Detail to reference the Town of Scituate. Please verify the elevations provided Test Pit 22 log. *Partially addressed. Please correct the Hydrant detail to reference the Town of Scituate. **Addressed.***

- b) *A report on existing site conditions and a summary of conditions in the surrounding areas, showing the location and nature of existing buildings, existing street elevations, traffic patterns and character of open areas, if any, in the neighborhood. This submission may be combined with that required in section 3.01(a), above;*

Information on the Existing Conditions has been provided and an Overall Map not scaled is presented on the Comprehensive Permit Plan Cover showing the location and nature of existing buildings and existing streets. As required, a detailed Transportation Impact Assessment prepared by Vanasse & Associates Inc. discussing both existing and future conditions has been submitted for this project. A peer review of the Transportation Impact Assessment is being performed by Ron Muller & Associates and is being submitted as a separate document. *Addressed through peer reviews by Ron Muller & Associates. **Addressed.***

Soil Logs for soil testing performed between December 2019 through February 2021 are included in the submittal. We recommend that additional soil testing be performed regarding the existing soil conditions and depth to estimated seasonal high groundwater (ESHGW) within the locations of the subsurface infiltration systems for both the closed drainage system and the roof dry well locations since these conditions have a significant impact on the design of the proposed stormwater management system. Additional soil testing should be performed within the upper portion of the primary subsurface sewage disposal system. The existing grade drops approximately 6 ft across the system and there are no test pits in the upper portion while surrounding test pits within similar elevations of the site indicate that SHGW is approximately 2 feet from grade. The depth to groundwater as well as the infiltration capabilities of the soil will have a significant impact on the size and elevation of these systems. This may impact building placement as well as the elevation of the roadway and consequently the total amount of fill which may be necessary for construction as already seen in the site design. *Partially addressed. Additional soil testing was performed in December 2022. Limited additional testing was completed within the leaching field areas. We defer to the Board of Health to the adequacy of the soil testing within the proposed leaching fields. **The project will require Board of Health approval for the septic system. Addressed.***

- c) *Preliminary, scaled, architectural drawings. For each building the drawings shall be signed by a registered architect, and shall include typical floor plans, typical elevations, and sections, and shall identify construction type and exterior finish. The applicant shall also provide a representative list of materials and interior amenities:*

Preliminary, scaled, architectural drawings showing typical floor plans, typical elevations, and typical sections with typical exterior materials and finishes are contained in the Comprehensive Permit Application document. There are two different layouts indicating 34 units or 32 units with a different building and driveway layout than the site plans illustrate. Please confirm the proposed

layout. A list of typical interior materials is not included. We recommend that the plans be updated to the current proposal and be stamped by a registered architect. *Not addressed.* **Addressed.**

- d) *A tabulation of proposed buildings by type, size (number of bedrooms, floor area) and ground coverage, and a summary showing the percentage of the tract to be occupied by buildings, by parking and other paved vehicular areas, and by open areas.*

A tabulation of proposed buildings by type, size (number of bedrooms, floor area) is contained within the preliminary Architecture Package. We recommend building, pavement and other impervious area, and open space coverage calculations be provided. *Not addressed.* **Addressed.**

- e) *Plan details required under local bylaws:*  
i. *Where a subdivision of land is involved, a Subdivision Plan conforming to all of the applicable requirements of the Scituate Regulations for Definitive Subdivision Plans;*

Not applicable.

- ii. *Where a condominium or apartment complex is proposed, a plan conforming to all details required under Scituate By-laws for application for special permits for multifamily development;*

Applicable, refer to following comments

- iii. *Where wetlands, buffer zones or other resource areas are defined under the Scituate Wetland Protection By-law are on the subject property, a plan and memorandum containing all details that would otherwise be required by the Scituate Conservation Commission;*

Applicable, refer to following comments

- f) *A utilities plan showing the proposed location and types of sewage, drainage, and water facilities, including hydrants. Adequate supporting information shall be provided to demonstrate that the drainage system will meet all Stormwater Management Guidelines promulgated by the Massachusetts Department of Environmental Protection, or best management practices, whichever is more stringent. Mass DEP Guidelines shall apply to the entire site, not just those portions of the site that contain wetlands;*

A utility layout plan showing the proposed location of the subsurface sewage disposal system as well as the stormwater management system and water facilities, including hydrants, is shown on the plans. Roadway Plan and Profile Plans have been provided which include rim and invert elevations for the sewer and closed drainage systems. There are two pre-treatment structures noted for the Chamber Area 3 system but only one is indicated in the drainage design calculations. **Addressed.**

We recommend that additional design information be provided to demonstrate that the size of the subsurface sewage disposal system has been adequately designed to meet the state and local regulations. This additional information

should include additional soil testing results and a mounding analysis. *Please review septic system details as there are still conflicting elevations between details and section. There are several test pits located within the systems with higher groundwater elevations than what is shown in the bed profile.*

**Addressed.**

The proposed septic system is approved for general use subject to some specific requirements in the DEP Approval. DEP standard conditions for an Alternative Soil Absorption System permit for new construction or increases in flow state the following:

- *The System shall be subject to the following: d) where the system has reduced the effective leaching area, as allowed by the standard conditions, the installation shall not disturb the site in any manner that would preclude the future installation of the full-sized conventional primary SAS without encroaching on the reserve area; and e) except for the installed SAS, the system owner shall not construct any permanent buildings or structures or disturb the site in any manner that would encroach on the area approved for a full-sized conventional primary SAS or the area approved for a full-sized conventional reserve SAS.*

The access to the proposed septic reserve area includes a wetland crossing. The details of the crossing, impacts and any mitigation should be provided. *Not Addressed. A note indicating the wetland alteration area is provided but no other detail on the crossing or mitigation is provided.* **Addressed. The project including the proposed wetland crossing will be required to obtain an Order of Conditions under 310 CMR 10.00, DEP Wetlands Protection Act Regulations.**

Please review the grading around the leaching field and the pump station, there may be a need for a retaining wall to address the grade change between the system minimum cover and the Road A grades. Review and update the construction design notes on the Septic Design Plan. *It is very difficult to see the retaining walls along the system and not labeling to indicate materials, height etc. It looks to be about 4 ft high directly next to the roadway. There may be potential for the wall being hit, can a shoulder along the road be provided.* **Addressed. Granite curbing is proposed along the recreational area with the retaining wall set back a bit as it runs along Road A.**

We recommend that the Board of Health review the septic system information provided and comment to the Board on the proposed system. *Comment Remains.* **The project will require Board of Health approval for the septic system. Addressed.**

A stormwater management report entitled "Drainage Calculations and Stormwater Management Plan" has been submitted and indicates that the overall stormwater management system will attenuate the post development stormwater flows to a level not exceeding the existing conditions.

We offer the following comments regarding the stormwater management system design and analysis:

- As previously stated, we recommend that additional soil testing be performed within the limits of the proposed stormwater infiltration systems

to confirm the soil conditions and depth to the Estimated Seasonal High Groundwater Elevation (ESHGW) used for the design and to demonstrate that the design meets the criteria specified in the Mass DEP Stormwater Management Handbook. **Addressed. Additional soil testing has been performed in December 2022.**

- Watershed Plans for both the Existing and Post-Development Conditions were provided. We recommend that the Post-Development Watershed Plan be revised to extend existing topography for the #269 - #275 Old Oaken Bucket offsite area which will be flowing onto the project site and consequently into the proposed stormwater system. *Not Addressed. Addressed.*
- The post development watershed plan indicates that all roof runoff will be directed into multiple proposed subsurface stormwater infiltration systems. We recommend that the roof drains be shown on the plan. The size and material of the roof drains should be specified. We recommend that a detail be provided of the roof leader downspout and connection to the infiltration system. *Partially addressed. One leader is shown on the plans from the building to the roof infiltration chamber. A detail of the downspout connection is provided. A typical house roof leader layout should be provided to ensure that the roof leader system can be fully connected to the chamber systems as designed. Addressed.*
- We recommend capacity calculations for the roadway stormwater system be provided and that the Roadway Plan & Profile plans be revised to show the pipe size, material, slope and flow arrows for all drain lines. *Partially addressed. Capacity calculations have been provided within the HydroCad model. Since there is no way for the stormwater runoff to reach the subsurface chamber system other than through the closed drainage system, it should be designed for the 100-yr storm event. There is surcharge in several pipe runs during the 100-yr storm event that should be reviewed to confirm no flooding within the roadway will occur. The drainage analysis now illustrates that the surcharge in the closed drainage system during larger storm events will not overflow the system. Addressed.*
- The HydroCAD analysis for the roof chamber systems and the detail are not consistent. Additional information should be provided to clarify the specific dimensions, stone surround width, top and bottom for the two layout configurations. The Roof Drain Chamber Elevation Chart should be reviewed, some elevations look to be incorrect. The roadway chamber systems details are not provided on the plans and should be provided. Chamber Area 1 is proposed as 2 rows of 7 chambers while HydroCAD models the system with a total of 18 units. Please adjust accordingly. *Partially addressed. Please review the Roof Drain Chamber Layout Detail and Table. There are elevation and dimensional conflicts. Please verify all chamber system sizing as the plans and drainage analysis conflict for several systems. Minor edits have been addressed in the latest plans, dated March 2, 2023. Addressed.*



- The HydroCAD analysis uses an infiltration rate of 2.41 in/hr although the majority of the soil test pit data indicates sandy loam. Per the Mass DEP Stormwater Management Handbook, a rate of 1.02 in/hr should be used for sandy loam. As mentioned above, additional soil testing within the location of the subsurface infiltration chamber systems is required to verify the seasonal high groundwater and the soil conditions. The use of the 1982 Rawls Rate Table is acceptable for modeling subsurface systems. However, it is not appropriate to use the conductivity to groundwater model in the HydroCAD analysis for rate control modeling when using the Rawls rate. This option in HydroCAD takes into account the saturated thickness of the soil and is not a constant rate of infiltration as required in the Mass DEP Stormwater Management Handbook. The model should either use the constant velocity rate control option or permeability testing is needed at the system locations and half of the measured permeability rate could be used as an acceptable conductivity rate. **Addressed.**

*Please provide justification for modification of soil conditions to HSG C in the model. As noted in almost all the soil test pits and the NRCS mapping, the site consists of sandy loam which is consistent with HSG B, which was used in the original analysis. **Addressed.***

- As specified in the Mass DEP Stormwater Management Handbook, the following setbacks to infiltration systems shall be provided:
  - Other surface waters, including wetland areas – 50 ft
  - Property Lines – 10 ft
  - Building foundations, including slabs – 10 ft min.

We recommend that the subsurface infiltration chamber system locations be reviewed and adjusted to provide the appropriate setbacks. *Addressed, except please adjust the roof chamber system for Building 18 as it looks to be too close to the building. **Addressed.***

- As specified in the Mass DEP Stormwater Management Handbook, stormwater infiltration systems shall be designed to exfiltrate in no less than 72 hours. Calculations should be provided to show that the basin meets this requirement. *Partially addressed. The drawdown calculations are provided for just the recharge volume only. Since the systems have no outlet other than the overflow at the downspout, the drawdown calculations should consider the entire storage volume. This would apply to the larger roadway systems with no overflow outlet and the two systems with outlets then the drawdown should consider the volume of storage below the outlet elevation. **Addressed.***
- Mounding analysis is required when the separation from the bottom of an infiltration system to ESHGW is less than four (4) feet and the basin is used to attenuate peak discharges from the 10 year or higher 24 hour storm. This analysis has been provided but we recommend it be updated with any revisions to the infiltration systems as necessary. *Comment remains as the system sizing is still conflicting between the plans, details and drainage analysis. **Minor edits have been addressed in the latest plans, dated March 2, 2023. Addressed.***

- We recommend that all outlets be equipped with trash racks/safety grates. The riprap outlet protection is shown but not labeled on the plans and a detail is provided but does not address the 3 to 5 ft elevation drop at the outlet. **Addressed.**

It is general practice to design sites to comply with Massachusetts DEP Stormwater Management Regulations. The following section describes the 10 Standards for compliance with Stormwater Management Regulations and the status of the submittal relative to each standard.

#### Standard 1 – Untreated Stormwater

This standard requires that no new untreated point source discharges are created and that point source or sheet flow discharges do not result in erosion into or scour of wetlands.

A several new point source discharges are proposed from the stormwater chamber systems, calculations and details should be provided for the design of the plunge pool and outlet at these systems. *Partially addressed. Details have been provided but we did not find sizing calculations for the two infiltration chamber system outlets.* **Addressed.**

#### Standard 2 – Post Development Peak Discharge Rates

This standard requires that the peak rate of discharge does not exceed pre-development conditions and that the design would not result in off-site flooding during the 100-year storm.

A stormwater management report entitled “Drainage Calculations and Stormwater Management Plan” has been submitted and indicates that the overall stormwater management system will attenuate the post development stormwater flows to a level not exceeding the existing conditions. Additional information as noted above is necessary. *Partially Addressed. The following comments are for the HydroCad analysis:*

- *Please review the post construction overall area as it seems it may be overestimated. The existing conditions and proposed conditions watersheds should be somewhat similar with a small increase due to additional runoff at the entrance being added to the post construction watershed.*
- *Reach 158R: DMH3 to Hydro2 – Please review for surcharge in system*
- *Reach 168R: DCB8 to DMH 4 – Please review for surcharge in system*
- *Reach 173R: 173R: CB6 to Hydro 4 – Please review for surcharge in system.*
- *Reach 174R: Hydro4 to Chambers 2 – pipe length should be corrected.*
- *Reach 182R: Hydro3 to Chambers 4 – Inlet invert should be corrected.*
- *Several of the roof chamber systems look to have 11 chambers and some have 6 and the stone envelope dimensions don't seem to match the chamber dimensions. Check the invert elevations for Unit 4, they do not match the detail table.*
- *Pond 116P: CB 2 – The outlet size should be 12”*
- *Pond 149P: CB 3 – The outlet size should be 12”*
- *Pond 171P: Chambers Unit 1 – The stone envelope dimensions don't match the chamber dimensions.*

- *Pond 175P: Chambers Unit 2 – The stone envelope dimensions don't match the chamber dimensions.*
- *Pond 190P: Chambers Unit 4 – The stone envelope dimensions don't match the chamber dimensions.*
- *Pond 193P: Chambers Unit 3 – The stone envelope dimensions don't match the chamber dimensions and the numbers of chambers doesn't match the plan.*
- *Pond 222P: Unit 14 – Review for surcharge in system, may be addressed once field dimensions are addressed*
- *Pond 230P: Unit 15 – Same as Unit 14*

**Minor edits have been addressed in the latest plans, dated March 2, 2023. Addressed.**

*As stated above, please provide justification for the use of HSG C soil type rather than HSG B which seems consistent with the onsite soil testing and soil mapping. Addressed.*

#### Standard 3 – Recharge to Groundwater

This standard requires that designs provide on-site recharge to mimic pre-development conditions.

The calculations provided should be adjusted for chamber systems 2 through 5 to only take into account the available storage below the outlet and as necessary to address comments noted above. The drawdown calculations should evaluate the entire storage volume below the outlet or the entire storage when no outlet is proposed. *Partially addressed. The 1.02 in/hr Rawls Rate is correct for Sandy Loam, HSG B. The groundwater recharge calculations utilize HSG C capacity of 0.25". This should be adjusted back to HSG B capacity of 0.35". As noted, the stormwater facilities are designed to mitigate the 100-year storm, therefore the systems should be able to meet the required groundwater recharge. Addressed.*

#### Standard 4 – 80% Total Suspended Solids (TSS) Removal

This standard requires runoff be treated to remove suspended solids (TSS) to at least 80% removal. In areas with a rapid infiltration, pretreatment of 44% is required prior to infiltration systems.

One Total Suspended Solids (TSS) calculation worksheet was submitted. A TSS Removal Calculation Worksheet for each of the treatment trains should be submitted. **Addressed. TSS calculation worksheets have been provided for each treatment train. We would recommend the TSS removal rate for the First Defense Units (Hydro Unit) to be 50% per NJCAT evaluation and assessment of testing on the unit. This still would result in a 93% TSS removal rate and would meet the standard.**

The water quality volume calculations have been provided. Water quality treatment is being addressed by proprietary pretreatment units installed prior to the five (5) infiltration chamber systems attenuating the roadway runoff. The calculations were completed for the First Defense unit (FD-4HC). The detail label on Sheet 11 should be updated. **Addressed.**

#### Standard 5 – Higher Potential Pollutant Loads

This project is not considered a source of higher pollutant loads. This Standard is not applicable.

#### Standard 6 – Protection of Critical Areas

The project is located in a Critical Area based on DEP requirements for an Outstanding Resource Water – Public Water Supply. This standard is applicable under DEP requirements. Stormwater BMPs must be designed for 1" water quality treatment, 44% TSS removal prior to the infiltration BMP and proprietary BMPs may be used for pretreatment only unless verified by TARP or STEP. These requirements have been used in the design.

#### Standard 7 – Redevelopment Projects

This project is not considered a redevelopment project and consequently this Standard is not applicable.

#### Standard 8 – Erosion/Sediment Control

This standard requires construction phase erosion controls.

A Construction Phase Pollution Prevention and Erosion and Sedimentation Plan document has been provided. The limits of erosion control barrier are indicated on the Erosion Control Plan. A straw wattle erosion control barrier is provided at the limit of construction and a detail is presented on the plans. Since a majority of the proposed work is located within the wetland buffer zone, we recommend that a compost sock barrier be proposed in lieu of the straw wattle. **Addressed. A Filtermitt siltation barrier is proposed. The Filtermitt title under Structural Practices should be corrected.**

The Construction Phase Pollution Prevention and Erosion and Sedimentation Plan should provide information for stabilized construction entrance, temporary sediment basins, and diversion swales as well as address spill prevention and containment. Reference to individual private lots should be removed. All BMPs should be listed in on the Inspection Checklist. *Comment Remains.* **Addressed.**

We also recommend detailed construction sequencing be provided and that the location of the construction entrance, stockpile areas and temporary sedimentation basins be included. Calculations should be submitted for sizing of the basins and details of the sedimentation basins be provided including the proposed grading as well as the type of outlet control structures. *Partially addressed. Erosion controls and construction staging has been provided on the plans. Further detail of erosion and sedimentation control methods to be used during construction should be provided. This can be addressed with the submittal of the SWPPP prior to construction.* **Addressed.**

An EPA Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) will be required since the project proposes more than 1 acre of disturbance. If this project is approved and if acceptable to the Board of Appeals the submittal of this additional information could be made a Condition of Approval. *Comment remains. It has been indicated that the SWPPP documents will be provided to the Town.* **Addressed.**

### Standard 9 – Operation and Maintenance Plan

This standard requires long term maintenance of non-structural and structural BMP's and requires a specific inspection schedule, etc.

A Post-Construction Best Management Practices Operation and Maintenance Plan (O&M) and Long-Term Pollution Prevention Plan has been submitted. An estimated operation and maintenance budget and inspection log be provided. We recommend that the O&M be a standalone document with a plan that identifies BMP locations, snow storage areas, locations for landscape debris disposal if proposed, etc. *Partially addressed. Please include the Manufacturers Operation and Maintenance Guides for both the Chamber units and the First Defense structures. A checklist and a BMP location plan should be included. Addressed.*

### Standard 10 – Illicit Discharges

In order to meet this standard, an "Illicit Discharge Compliance Statement" meeting the requirements specified in the Stormwater Management Regulations has been submitted. This statement requires a signature. *Comment remains. It is indicated that the Applicant shall provide a signed compliance statement upon permit approval.*

g) *Documents showing that the applicant fulfills the jurisdictional requirements of 760 CMR 31.01, that is,*

a) *The applicant shall be a public agency, a non-profit organization, or a limited dividend organization;*

The Comprehensive Permit Site Approval Application indicates that the proposed development entity, The Lovendale Company LLC is a formed Limited Dividend Organization, although the Applicants' name on the Public Hearing application is provided as Salt Meadow Development at Scituate, LLC.

b) *The project shall be fundable by a subsidizing agency under a low and moderate income housing subsidy program.*

We recommend that Council review the funding mechanism for this project. We note that a contractual agreement between Lovendale LLC and SEB Housing LLC, dated December 19, 2019 and a MassHousing Project Eligibility / Site Approval letter, dated August 10, 2021 were provided.

c) *The applicant shall control the site and the means of access thereto.*

Deed information provided indicates that Sale Meadow Development at Scituate, LLC has ownership of the property as of January 2022.

**No comment needed.**

h) *A list of requested exemptions to local requirements and regulations, including local codes, ordinances, bylaws or regulations, along with a memorandum supporting the need for such requested exceptions;*

A List of Waivers and or Variances Requested, no date is included in the Comprehensive Permit Application. A further review of the requested waivers will be required. **An updated waiver list has been provided. Addressed.**

- i) *A complete pro-forma detailing the projected costs and revenues of the proposed project:*

An initial pro forma has been provided in Section 5 of the Comprehensive Permit Application. The Board should consider if updated information is appropriate. **No comment needed.**

- j) *A complete copy of any and all materials and applications submitted by the applicant to any prospect subsidizing agency or source, including, but not limited to all applications for site eligibility;*

It appears that copies of any and all materials and applications submitted by the applicant to any prospect subsidizing agency or source, including, but not limited to applications for site approval are included in the Comprehensive Permit Application. This should be confirmed by the Applicant. **No comment needed.**

- k) *A list of each member of the development and marketing team and their professional qualifications, including all contractors and subcontractors, to the extent known at the time of application. The Applicant shall also be required to disclose its relationship to all such entities;*

A List of Development Team is included in Section 6 of the Comprehensive Permit Application and team resumes were provided as part of the application package. Site contractor information was not provided at this time. **No comment needed. Site contractor information may be provided prior to construction if approved by the Board.**

- l) *A list of all prior development projects completed by the Applicant, along with a brief description of each such project;*

Statements regarding the Developments Team's prior development projects have been provided. The Development Team behind the Applicant has successfully constructed mixed-use developments and residential developments that are similar in nature. **No comment needed.**

- m) *Evidence of local need for the type and number of housing units being proposed by this Application;*

It is unclear if this information was provided. This should be confirmed by the Applicant. **No comment needed.**

- n) *A memorandum on the project's compliance with any and all state or federal environmental, historical, archeological, housing or other standards, regulations, statues that apply to the project.*

No other applications or submittal information have been included. This should be confirmed by the Applicant. **No comment needed.**

- o) *A traffic memorandum prepared by a qualified engineer or other professional analyzing impacts relating to traffic volume, emergency vehicle access, intersections safety and adequacy of internal circulation;*

A Transportation Impact Assessment prepared by Vanasse & Associates Inc. dated June 2022 has been provided. A peer review of the Transportation

Impact Assessment is being performed by Ron Muller & Associates and is being submitted as a separate document. **No further comment needed.**

**Additional Plan Comments:**

- *Could a driveway turnaround be provided for Unit 1? **A turnaround has been provided. Addressed.***
- *It seems some building foundations will intercept groundwater. Please indicate how this will be addressed. **Tuff-N-Dry foundation waterproofing system is proposed, and information was provided. Addressed.***
- *Please provide a few proposed spot grades over the larger chamber systems to ensure minimum cover is provided. **Addressed.***
- *Please provide rim and invert information for First Defense Units (Hydro 1 and 2) **Addressed.***
- *The closed drainage systems have very shallow cover of approximately 1.3 ft. Please confirm minimum cover for ADS pipe. **It is noted where shallow cover over drain pipes is proposed, Class V reinforced concrete pipe shall be used. Addressed.***
- *On the Road A profile, please review the inverts for DMH 4, the outlet looks to be too high. Please add the 12" lateral invert for CB 9. **Addressed.***
- *Please review the Infiltration Chamber system 4 outlet. It seems to be lower than the surrounding grading. **Addressed.***
- *Please provide the pipe information for DMH6 to Hydro 3 on profile plan. **Addressed.***
- *Please verify Chamber Field dimensions on plans and in the HydroCad analysis. **Addressed.***

As stated, minor plan edits have been made since the February 16, 2023 plan submission and are provided on the revised plans with a revision date of March 2, 2023.

Merrill Engineers and Land Surveyors appreciates the opportunity to review this project for the Board of Appeals. Please feel free to call me with any questions or to request additional information.

Very truly yours,

MERRILL ENGINEERS AND LAND SURVEYORS



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Deborah W. Keller, P.E.  
Director of Engineering