TETRA TECH

May 8, 2025
(Updated August 8, 2025)

Mr. John J. McNicholas, Chair
Medfield Zoning Board of Appeals
Town House
459 Main Street
Medfield, MA 02052

Re: Winder Estates Residential Development – Comprehensive Permit
Engineering Peer Review – Site/Civil
86 Plain Street
Medfield, Massachusetts

Dear Mr. McNicholas:

Tetra Tech (TT) has reviewed specific submittal materials for the above-referenced Project to assist the Medfield Zoning Board of Appeals (Board) in its Comprehensive Permit review of the proposed Winder Estates development located at 86 Plain Street in Medfield, MA. The following letter provides comments generated during our review of Applicant submittals and generally focus on substantive concerns that speak to issues whose eventual resolution may substantially impact Project design or could otherwise result in potentially unsafe conditions or unanticipated impacts.

The Project includes development of 24 single-family residential homes on approximately 14.86 acres of land located at 86 Plain Street. The site is accessed from Plain Street and consists of one existing single-family dwelling and several outbuildings dedicated to the former animal farm at the site. Wetlands and a vernal pool exist on the north side of the subject property. The Project proposes to remove existing dwellings and construct an approximate 1,800-foot private driveway. Each unit is proposed with a porch, two car garage and an additional two parking spaces in the driveway. Three subsurface infiltration systems and a pocket wetland are proposed to promote groundwater recharge and mitigate increase in stormwater runoff as a result of the development and the Project site is located in a Zone II Wellhead Protection Area. Water supply will be through proposed watermain connection to the existing main in Plain Street and a proposed septic system to treat sewage generated by the Project.

Our review is based on materials received from the Board comprising the following pertinent documents:

- A plan set (Plans) titled "Winder Estates Residential Development M.G.L. C. 40B Comprehensive Permit Project", dated February 3, 2025, prepared by Merrill Engineers and Land Surveyors (MELS).
- A Narrative titled "Winder Estates Design Narrative", not dated, prepared by MELS and BF Architects.
- A Stormwater Report titled "Stormwater Management Report", dated February 3, 2025, prepared by MELS.
- A Preliminary List of Waivers dated July 30, 2024, prepared by Winder Estates.
- Architectural revised model sheets, not dated, prepared by BF Architects.
- A Response Letter from MassHousing Agency dated December 10, 2024.

The Plans and accompanying materials were reviewed for good engineering practice, overall site plan efficiency, utilities, stormwater, septic, environmental and public safety as it relates to each of the subject areas. Specifics on review scope are included in the narrative at the beginning of each section. Our initial comments are provided below.

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TT 8/8/25 Update

The Applicant has supplied TT with a revised submission addressing comments provided in our previous letter including the following documents:

- A Response Letter dated July 17, 2025, prepared by MELS.
- A plan set (Plans) titled "Winder Estates Residential Development M.G.L. C. 40B Comprehensive Permit Project", dated February 3, 2025 with revisions through July 17, 2025, prepared by MELS.
- A Stormwater Report titled "Stormwater Management Report", dated February 3, 2025 with revisions through July 17, 2025, prepared by MELS.

The revised Plans and supporting information were reviewed against our previous comment letter (May 8, 2025) and comments have been tracked accordingly. Text shown in gray represents information contained in previous correspondence while new information is shown in black text.

A. SITE DESIGN

The Site Plans provide a good introduction to the scope of the Project and its various components. The Site Plans were reviewed for good engineering practice and public safety. The following comments are offered to identify areas where additional information is required, or changes are requested to address questions or support further review.

A.1 The Project main access driveway is approximately 1,300 feet in length to its farthest point from Plain Street which exceeds the maximum length allowed under local subdivision regulations (500 feet maximum). The Applicant should coordinate with the Medfield Fire Department (MFD) to determine if emergency access to the site is sufficient and whether each unit may be required to be sprinkled. We recommend the Applicant provide written confirmation from the Medfield Fire Department related to their review of the Project.

- *MELS 7/17/25 Response: Coordination with the Medfield Fire Department has been completed and Fire Department Correspondence has been provided to the ZBA.*
  - **TT 8/8/25 Update: This item was addressed in our July 10, 2025 Traffic Review Letter and was determined to be resolved in our opinion.**

A.2 Drive 2 and 3 are greater than 150 feet in length and do not include a turnaround. The Applicant should coordinate with the MFD to determine if the proposed access driveways pose a risk to emergency access.

- *MELS 7/17/25 Response: Medfield Fire Department has reviewed and accepted the layout for Drive's 2 and 3.*
  - **TT 8/8/25 Update: The Applicant has coordinated with the MFD who determined the current version of the site layout is satisfactory. In our opinion, this comment is resolved.**

A.3 The Project includes a dedicated access and egress lane, each lane is 15 feet wide which does not meet the minimum 20-foot width required by NFPA. The Applicant shall coordinate with the MFD to determine if the proposed access/egress from Plain Street poses a risk to emergency response at the Project site.

- *MELS 7/17/25 Response: The previously proposed access and egress driveways have been merged into one-two way-20' wide driveway.*
  - **TT 8/8/25 Update: As noted, the Applicant has revised the driveway layout to 20-foot width and has removed the dedicated access/egress lanes and merged them into one driveway at the project intersection with Plain Street. The Applicant has coordinated with the MFD who determined the current version of the driveway layout is satisfactory. In our opinion, this comment is resolved.**

A.4 We recommend stop signs and stop bars be provided at Drive 2 and 3. All signage and pavement markings should meet MUTCD standards.

- *MELS 7/17/25 Response: Stop signs and stop lines have been added to drive 2 and 3 at the intersection with the main driveway. All signage and pavement markings shall meet MUTCD standards.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

A.5 The Applicant shall confirm if the proposed gravel access path to the proposed septic reserve area will be constructed during this phase of the Project. A mountable curb or curb cut should be provided at the intersection of the gravel access and the site driveway. The Applicant should also provide a standard detail of the wetland crossing and provide existing topography and proposed grading. The extent of off grading may require additional wetland fill that should be understood during this review process.

- *MELS 7/17/25 Response: The proposed gravel access path shall be included in the construction of this project. Cape cod berm is proposed along the main driveway to allow for access to the path. A preliminary wetland crossing detail has been provided. The wetland crossing shall include a 5 ft wide by 4 ft high (1.5 ft clearance) bottomless concrete box culvert with retaining walls to minimize the wetland impacts at the crossing. The wetland impact, including permanent and temporary, is estimated at 466 square feet. Proposed wetland replication is proposed at a ratio of 2:1 with an approximate area of 938 square feet.*
    - **TT 8/8/25 Update: The Applicant has included this information on the revised Plans. We anticipate this crossing will be reviewed in detail during the Medfield Conservation Commission's review of the Project during the Notice of Intent process. In our opinion, this comment is resolved.**

A.6 A detail of the proposed retaining walls has been provided on the Plans. Several walls appear to be greater than four feet in height, which will require structural design and approval by the Building Department. Additionally, we recommend fencing be placed at the top of wall to protect against falls.

- *MELS 7/17/25 Response: The proposed retaining walls that are 4' high or more will have fencing and or guardrails for safety purposes. The structural design for retaining walls will be coordinated with a licensed structural engineer and be provided for Building Department approval prior to construction.*
    - **TT 8/8/25 Update: A wall detail has been added and provides protection by either a guardrail or fence. In our opinion, this comment is resolved.**

A.7 The retaining wall located behind Units 8-10 is nearly coincident with the existing stone wall. We recommend the Applicant provide a reasonable offset from the property line to construct the proposed retaining wall and not impact the existing wall. Additionally, other retaining walls on-site are close to buffers that are not intended to be impacted. All walls should be located a realistic distance away from property lines, buffers, etc. to allow for proper installation.

- *MELS 7/17/25 Response: The proposed retaining wall behind units 8-10 was offset further from the property line and is now 6' off of the property line instead of 3', which will provide adequate separation to the existing stone wall to ensure construction of the retaining wall does not undermine or affect the structural integrity of the existing stone wall.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

A.8 The proposed development sidewalk ends adjacent to Unit 4 at a crosswalk that dead ends. We recommend the sidewalk extend to Plain Street as it is understood school bus pickup occurs along Plain Street and buses will not enter the Project site for pick-up.

- *MELS 7/17/25 Response: The proposed sidewalk has been extended to the driveway entrance at Plain Street. A bus stop is proposed at the driveway entrance.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

A.9 The Applicant has provided a Landscape Plan but the plan includes minimal detail and does not include plant quantities and their locations.

- *MELS 7/17/25 Response: Further detail including plant quantities shall be provided on the Landscape Plan with the Final Plan Set.*
    - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant provide a final version of the Landscape Plan prior to building permits being issued for the Project.**

A.10 The Applicant has not provided a Lighting Plan. The Lighting Plan should show details on proposed lighting as well as photometrics to help the ZBA understand the potential for light trespass on abutting properties.

- *MELS 7/17/25 Response: A Lighting/Photometric Plan will be submitted under a separate cover.*
    - **TT 8/8/25 Update: We did not receive a Lighting Plan with the Applicant's submission. Street lights are proposed on the Project and we recommend a Condition requiring the Applicant provide a photometrics plan to ensure light trespass does not occur at the property lines.**

B. STORMWATER

The Project scope includes development of 24 units of housing on approximately 14.86 acres of land with proposed paved access driveway. The Project site is located in the upgradient portion of the Zone II Wellhead Protection Area for the Mine Brook Wellfield in Walpole, MA and bounded by wetlands to the north and east. Stormwater runoff generated by the Project is proposed to be directed to traditional piped infrastructure which discharges to three proposed subsurface infiltration systems (SIS's) dispersed throughout the main portion of the development and one at-grade pocket wetland located at the intersection of the development driveway and Plain Street.

Stormwater scope was reviewed against the *Massachusetts Department of Environmental Protection (MA DEP) Stormwater Management Standards (Standards) and Stormwater Handbook (Handbook)*, *Medfield Zoning Bylaw, Article 16 – Aquifer Protection District* and *Medfield Board of Health Regulations for Storm Water and Runoff Management (April 1991 – Amended January 2000)*. The Project was also reviewed for general stormwater design elements and good engineering practice. The following comments are offered specific to the Project stormwater design.

MA DEP Stormwater Standards and Handbook

B.1 The Applicant is proposing a pea gravel diaphragm (PGD) as the sole pre-treatment for approximately 450 feet of proposed driveway that appears to discharge directly to the adjacent wetlands and vernal pool. However, it is unclear if the intent of this discharge is to be directed to the adjacent existing pond or the wetland area since existing topography is limited around the existing pond. PGD's are typically coupled with vegetated filter strips (VFS's) to achieve required pre-treatment prior to discharge. There does not appear to be sufficient vegetated area meeting the design requirements of the best management practice (BMP) beyond the PGD to meet the total suspended solids (TSS) removal efficiency noted in the Handbook. VFS's cannot extend greater than 50 feet into a wetland buffer zone which the current design does not comply with. We believe this is an untreated discharge to the adjacent wetland and vernal pool and the Applicant shall explore alternative options for pre-treatment of this area prior to discharge. (Standard 1)

- *MELS 7/17/25 Response: A rain garden with a grassed swale is proposed in place of the previous proposed pea gravel diaphragm. The subcatchment area from the road going to the rain garden will spill over a 4' wide rip rap spillway at the edge of the roadway into the grassed swale and flow towards the rain garden through stone check dams. The swale and rain garden will provide adequate pretreatment prior to discharging stormwater to the wetland resources.*
    - **TT 8/8/25 Update: We recommend a curb break be proposed at the 4' wide rip-rap spillway to direct flow to the proposed swale and rain garden. Additionally, a test pit is required at the proposed rain garden to confirm soil texture and depth to ESHGW.**

B.2 The time of concentration (Tc) line in existing subcatchment 1S appears to disregard the existing shallow swale that runs along the south side of the existing driveway. The swale was observed during the Project site walk and appears to run downhill from Plain Street to a low point at approximate STA 3+00 where flow may be intercepted by a culvert. It was difficult to locate the suspected culvert in the field due to leaf litter, but it appears it may cross under the driveway and discharge to a plunge pool on the opposite side of the roadway which ultimately discharges to the adjacent existing pond. We recommend the Applicant explore this condition and add the existing culvert and pond to the analysis, additional detailed survey of the south side of the roadway may also be required. Additionally, Subcatchment 1S may need to be split into separate subcatchments to model this condition. This is required to ensure runoff is properly accounted in the analysis. (Standard 2)

- *MELS 7/17/25 Response: The time of concentration for subcatchment 1SA (Previously just 1S) has been adjusted to incorporate flow moving down the swale adjacent to the existing driveway, and through the culvert under the existing driveway. In addition, the revised HydroCAD model for existing and proposed conditions incorporates the area and storage provided from the existing pond on site. As a result, the subcatchments for existing and proposed conditions have been further delineated with the separation of subcatchment 1SA area flowing to the existing pond (pond 1Pe).*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.3 Consistent with Comment B.2, we believe the existing pond should be added to the HydroCAD model as it appears to intercept flow from the site and provide runoff mitigation in the pre-development condition. This is required to ensure runoff is properly accounted in the analysis. (Standard 2)

- *MELS 7/17/25 Response: As mentioned in the previous comment, the pond area and storage volume have been included in the HydroCAD model for both existing and proposed conditions.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.4 We recommend clearing of the proposed Title 5 reserve area be included in the stormwater design for the Project. Future clearing of this area will affect runoff and should be included in the analysis to limit future modifications to the proposed stormwater system if the reserve area is eventually required. (Standard 2)

- *MELS 7/17/25 Response: The existing and proposed HydroCAD models include a new subcatchment area located at the upland area where the septic leach field reserve area is proposed. The proposed conditions HydroCAD model incorporates the potential development of this upland area, if by chance the septic reserve area is necessary in the future for this site.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.5 Mounding analysis is required for all of the proposed SIS's. All systems are within four feet of estimated seasonal high groundwater (ESHGW) based on the test pits provided at each system. (Standard 3)

- *MELS 7/17/25 Response: All proposed subsurface infiltration systems (SIS's) have a minimum separation of 4' between estimated seasonal high groundwater and the bottom of each infiltration system. Therefore, mounding analyses are not required to meet this standard.*
    - **TT 8/8/25 Update: It appears the bottom elevations of SIS's 1-3 have been adjusted to maintain the four feet of separation. However, the Applicant has added a proposed Rain Garden and SIS 4 that do not appear to have any test pit information associated with them which will be required to confirm if those BMP's are viable at their proposed locations.**

B.6 SIS 2 is located within 50 feet of the adjacent wetland which does not meet the general setback requirements noted in the Handbook. (Standard 3)

- *MELS 7/17/25 Response: SIS #2 has been reconfigured and relocated so the setback to the adjacent wetland is greater than 50'.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.7 Snow management is included in the Long-Term Pollution Prevention Plan (LTPPP), but the Applicant shall show proposed snow storage locations on the Plans to confirm areas where snow is anticipated to be stockpiled. (Standard 4)

- *MELS 7/17/25 Response: Snow storage locations have been added to the site plan (see sheet 3.1)*
    - **TT 8/8/25 Update: As noted in our July 10, 2025 Traffic Review Letter, the Applicant has provided snow storage labels on the site plan as requested, no snow storage areas shown for Drive 2 and 3. We believe the areas at the ends of Drive 2 and 3 will continually be utilized for snow storage in reality and these areas must remain clear for the proposed fire department access. The Applicant shall detail snow storage areas at the ends of the drives and/or provide confirmation of method for maintaining snow on the drives.**

B.8 The Project site is located in a Zone II Wellhead Protection Area and requires additional stormwater treatment prior to discharge to the proposed SIS's. Table CA 3 (Vol. 1, Ch. 1, Pg. 19) of the Handbook requires specific stormwater BMP's in a treatment train that include pre-treatment, treatment and infiltration BMP's. Additionally, the standard requires the Applicant meet all applicable requirements of the local aquifer protection district (Medfield Zoning Bylaw, Article 16 – Aquifer Protection District) as required by the Handbook in Table CA 3 (Vol. 1, Ch. 1, Pg. 19). Review of the Project against Article 16 is included later in this section. (Standard 6)

- *MELS 7/17/25 Response: The proposed stormwater systems for this project utilize recommended stormwater best management practices (BMP's), listed within the Massachusetts Stormwater Handbook (MSH), for sites located within Zone II's (Table 3 – MSH Vol. 1, Ch.1, Pg. 19), such as proprietary structures (pre-treatment), rain gardens (treatment), wet basin (treatment), and subsurface infiltration structures (infiltration). It is our understanding that the necessary requirements for stormwater systems within a Zone II to meet MSH standards does not include utilization of a pretreatment, treatment, and infiltration BMP in a treatment train. It is necessary at a minimum to remove 44% TSS in pretreatment structures and 80% TSS prior to stormwater discharge to an outlet structure.*
    - **TT 8/8/25 Update: The MA DEP Stormwater Handbook (Table CA 3 Standard 6) notes that Projects must comply with local requirements as it relates to stormwater discharges in the Zone II. The Town has a local Aquifer Protection District Bylaw which seeks to protect groundwater quality. It is our opinion, additional treatment BMP's are required to limit potential for groundwater impact by nutrients, metals and other pollutants that may be present in stormwater runoff. In our opinion, removal of TSS alone does not satisfy this requirement.**

B.9 The Project appears to meet the requirements for coverage under the US EPA NPDES General Permit for Discharges from Construction Activities (CGP). We recommend a Condition requiring the Applicant provide proof of coverage under the NPDES CGP and provide a copy of the approved Stormwater Pollution Prevention Plan (SWPPP) prior to construction. (Standard 8)

- *MELS 7/17/25 Response: Merrill Engineers and Land Surveyors will coordinate with the applicant to complete the Stormwater Pollution Prevention Plan (SWPPP) prior to construction, as part of the requirements for coverage under U.S. EPA NPDES General Permit for Discharges from Construction Activities.*
    - **TT 8/8/25 Update: Condition recommended in original comment.**

B.10 The Applicant shall provide an estimated operation and maintenance budget to the Operation and Maintenance Plan (O&M Plan). This budget shall also include scope for inspection by qualified personnel and reporting. (Standard 9)

- *MELS 7/17/25 Response: An operation and maintenance budget shall be provided with the Final Plan Set.*
    - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant to provide an estimated operation and maintenance budget in the final O&M Plan.**

B.11 The Applicant has not provided a signed illicit discharge compliance statement. The form was included in the Stormwater Report, but it is not signed. (Standard 10)

- *MELS 7/17/25 Response: The illicit discharge compliance statement has not been signed.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.12 The Applicant shall provide water budget for the proposed pocket wetland. The Applicant shall confirm if sufficient water will be present in the BMP to ensure wetland plants are sustained throughout a dry period of not more than two months. Redoximorphic features were noted in the test pit log (T.H. 24-18 conducted October 29, 2024) at the BMP location but no groundwater infiltration into the pit was noted. Groundwater may be deeper than ESHGW during much of the summer and fall months which have recently been dry due to changing weather patterns. (Vol. 2, Ch. 2, Pg. 42)

- *MELS 7/17/25 Response: A wet basin with a silt loam layer as a liner shall be utilized in place of a pocket wetland.*
  - **TT 8/8/25 Update: Wet basins require an average permanent pool depth of 3 ft to 6 ft to achieve proper sediment removal efficiency and maintain habitat for plantings. The current design shows approximately one-foot of permanent pool in the basin.**

B.13 An emergency spillway shall be proposed at the Pocket Wetland to provide controlled release of stormwater when the BMP reaches maximum storage capacity. (Vol. 2, Ch. 2, Pg. 45)

- *MELS 7/17/25 Response: The emergency spillway for the wet basin will be an open grate located at the top of the outlet control structure, such that in case of stormwater system overflow or failure, water will spill over the top of the structure and out of the basin.*
  - **TT 8/8/25 Update: The proposed double catch basin grate at the outlet control structure is located approximately 6" below the top berm of the basin. In our opinion, this comment is resolved.**

Medfield Zoning Bylaw, Article 16 – Aquifer Protection District

B.14 The Project proposes impervious lot coverage of 17.3% which exceeds the allowable 15% impervious coverage. The Applicant is proposing groundwater recharge in the Project scope as mitigation, but additional treatment of stormwater is required to limit degradation of groundwater quality. Specifically, as noted in the section above, stormwater treatment BMP's are required to be implemented as part of the treatment train and include bioretention areas, sand filters, etc. to filter out nutrients, metals and other pollutants that may degrade groundwater quality in the Zone II. (Ch. 300 §300-16.7.B.8.g)

- *MELS 7/17/25 Response: Impervious coverage from the site is collected within recharge and treatment stormwater systems to the extent possible. Stormwater systems recommended within the Massachusetts Stormwater Handbook for sites located with Zone II's were utilized for this project. A waiver shall be requested.*
  - **TT 8/8/25 Update: We defer action on this comment to the Board, see Update at Comment B.8 for further information.**

Medfield Board of Health Stormwater Regulations/Checklist

B.15 The Applicant has not provided the 2-inch, 1- and 50-year storm events in the HydroCAD analysis.

- *MELS 7/17/25 Response: The revised HydroCAD model includes the 2-inch, 1- and 50-year storm events in addition to the previously analyzed storm events (2-, 10-, 25- and 100-year storm events). None of the storm events for the proposed conditions exceeds the peak rates or volumes determined within the existing conditions.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.16 A summary of runoff volume has not been provided in the Stormwater Report.

- *MELS 7/17/25 Response: The revised Stormwater Management Report includes a summary of runoff volumes for each storm event in addition to the peak runoff rates.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.17 The Applicant calculated proposed water quality volume using 1-inch times the impervious coverage at the site. Water quality volume to remove contaminants from runoff shall be calculated using 2-inch times the impervious coverage at the site.

- *MELS 7/17/25 Response: The stormwater facilities have been revised and the water quality volume calculations updated to provide 2-inches over the impervious coverage for the project.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.18 Soil conductivity testing has not been provided at any of the proposed SIS locations.

- *MELS 7/17/25 Response: A waiver is requested from this requirement to provide soil conductivity testing for soil within proposed SIS's.*
  - **TT 8/8/25 Update: The Applicant is utilizing Rawl's rates for proposed infiltration rates at each of the SIS's consistent with methodology noted in the MA DEP Stormwater Handbook. It should be noted that test pitting shows loamy sand subsoils at the basin locations which is preferable for groundwater infiltration. However, as a practical matter, we defer action on this item to the Board in its decision on waiver requests.**

B.19 Groundwater mounding is required to determine if the bottom of the SIS's (including the mound) is within two feet of groundwater.

- *MELS 7/17/25 Response: All subsurface infiltration systems have been revised to provide 4 ft or more of separation between the bottom of the system and seasonal high groundwater per the SMR. A waiver is requested from this requirement.*
  - **TT 8/8/25 Update: See Update at Comment B.5.**

General Stormwater Comments

B.20 We recommend additional pre-treatment of runoff prior to discharge to the proposed Pocket Wetland particularly with the subject Property's location within the Zone II. The Applicant is proposing trench drains to intercept surface runoff from impervious surfaces which do not discharge to a deep sump, hooded structure.

- *MELS 7/17/25 Response: The proposed trench drains utilize a 4' deep sump for pre-treatment. To follow the proposed trench drains, sediment forebays are proposed in the treatment train to provide the required 44% TSS removal prior to discharging to the wet basin.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.21 SIS 1 is located on a proposed 3:1 fill slope, and the bottom of system elevation is above the toe of slope. We anticipate groundwater breakout may occur on the slope. The Applicant shall provide sufficient evidence through mounding analysis to confirm if groundwater breakout from the slope is anticipated as a result of the basin recharge and provide mitigation to prevent the breakout if expected.

- *MELS 7/17/25 Response: 40 mil polyethylene barriers are provided to eliminate any potential breakout from side slopes adjacent to the SIS which are 3:1.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.22 SIS 2 is located approximately five feet from the adjacent retaining wall and the Applicant shall confirm if a liner is required at the edge of the system to ensure proposed recharge from the system is not intercepted by the adjacent wall drain and discharged to grade.

- *MELS 7/17/25 Response: A 40 mil polyethylene impervious barrier is proposed for SIS #2 along the retaining wall to ensure flow does not breakout into the wall drains. See the site plan for more information on the location and elevations proposed for the impervious barrier for SIS #2.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.23 The Applicant shall provide existing and proposed topography at the proposed gravel access path wetland crossing and provide a cross-culvert if the crossing will impact water flow in the wetland.

- *MELS 7/17/25 Response: A 5' wide bottomless concrete culvert is proposed at the wetland crossing. Additional cross section details and site grading have been provided.*

- **TT 8/8/25 Update: We anticipate this crossing will be reviewed in detail during the Medfield Conservation Commission's review of the Project during the Notice of Intent process. In our opinion, this comment is resolved.**

B.24 Location of inspection ports at all subsurface systems should be shown on the Plans. We recommend inspection ports be placed at a minimum at each inlet, outlet and midpoint in the system.

- *MELS 7/17/25 Response: Inspection ports are shown on the plans. They are proposed at each system inlet and outlet chamber, and at a chamber in the middle of the system.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.25 We recommend the Applicant propose Stormtech Isolator Rows and appropriate access manholes at all proposed SIS's to ensure the systems can be properly maintained. Isolator Rows are additional protection for the systems and capture sediment and debris that may bypass upgradient pre-treatment. This will extend lifespan of the systems and reduce cost burden on future residents of the Project.

- *MELS 7/17/25 Response: Stormtech isolator rows with an access manhole for maintenance will be utilized to increase the lifespan on the proposed SIS systems which collect runoff from the proposed roadway, sidewalks, and/ or driveways. SIS's #4 and #5 will not utilize isolator rows because they only collect runoff from the proposed roofs.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

B.26 The proposed grass shoulder along the driveway retaining wall (north side of the proposed driveway) is graded toward the wall. We recommend the shoulders be graded toward the roadway to provide positive drainage away from the wall structure.

- *MELS 7/17/25 Response: Shoulder areas where retaining walls are proposed are now graded towards the roadway on the revised site plan set.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

C. EROSION AND SEDIMENTATION CONTROL

The Applicant has included provisions for erosion and sediment control as part of the Project scope. The following comments are offered specific to the Project and potential for off-site erosion during construction.

C.1 The Applicant should provide a cut-fill analysis on the Plans to confirm extent of material import/export required on the Project. Additionally, we recommend the Applicant provide a Construction Management Plan (CMP) which notes total import/export volume, truck routes, construction phasing, staging and stockpile areas, etc. to limit nuisances to abutting residents and the Town.

- *MELS 7/17/25 Response: A Construction Management Plan (CMP) will be provided with Final Plans to allow for coordination with the Site Contractor for construction means and methods. The additional general information regarding soil and material stockpile areas and temporary sediment basins have been added to the revised Erosion Control and Demolition Plan.*
  - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant provide a CMP prior to construction.**

C.2 The Applicant shall confirm location of temporary sediment basins, particularly at low points where runoff may impact the abutting wetland resources during construction. Temporary Sediment Basins shall not be sited at proposed post-development BMP locations.

- *MELS 7/17/25 Response: Temporary sediment basins have been added to the Erosion Control and Demolition Plan and are not located within any post-development stormwater BMP's.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

C.3 Details of proposed erosion controls should be included on the Plans. The Erosion Control and Demolition Plan notes a silt sock is the only linear erosion control proposed. We anticipate additional controls (silt fence, additional rows of silt sock, etc.) may be required, particularly at points of runoff channelization during construction.

- *MELS 7/17/25 Response: Details for erosion control measures are shown on the Construction Details sheet C6.5. A silt sock in combination with a siltation fence is proposed.*
    - **TT 8/8/25 Update: Erosion control details are shown on Sheet C6.6. Silt fence is now proposed along with proposed silt sock. If issues arise during construction the Applicant is required by the NPDES CGP to make modifications to the SWPPP to accommodate site conditions as they may arise. In our opinion, this comment is resolved.**

C.4 As noted, the Project appears to meet the requirements for coverage under the US EPA NPDES CGP. We anticipate additional detail will be provided prior to construction in order to meet the requirements of the permit including submission of a stormwater pollution prevention plan (SWPPP).

- *MELS 7/17/25 Response: A SWPPP shall be prepared prior to construction. No response required (NRR).*
    - **TT 8/8/25 Update: See Update at Comment B.9.**

D. UTILITIES

The Project proposes connecting to the municipal water system located in Plain Street. Private utilities (electric, telephone and cable) are proposed underground, no gas main is shown on the Plans and it is presumed the units will use either propane or electric appliances. Gravity sewer main is proposed which will discharge to a proposed pump chamber for force main discharge to proposed Presby Enviro-Septic soil absorption system (SAS), septic is discussed in the next section. The following specific comments are offered to identify areas where additional information is required, or changes are requested to address questions or support further review.

D.1 The Applicant should provide water demand calculations for review and coordinate with Medfield DPW to confirm sufficient supply exists to serve the Project.

- *MELS 7/17/25 Response: The water main configuration through the site has been coordinated with the Water Department and the Fire Department. The water main has been looped through as requested by the Water Department.*
    - **TT 8/8/25 Update: It appears the looped watermain linework is missing between approximate stations 5+75 and 8+00. We recommend a Condition requiring the Applicant address this prior to applying for building permits.**

D.2 The Applicant should provide size and type of proposed watermain. Additionally, watermain at Drive 2 and 3 dead ends at a cap. We recommend the watermain end at a hydrant which will allow for flushing to maintain appropriate water quality.

- *MELS 7/17/25 Response: The watermain is now looped through the project and the dead ends at the shared driveways 2 & 3 were removed. This revision was coordinated with the DPW.*
    - **TT 8/8/25 Update: We anticipate water services will be tapped in the main driveway for the homes on Drives 2 and 3 and brought up each driveway to the proposed homes. This detail will need to be confirmed during the building permit process. In our opinion, this comment is resolved.**

D.3 If the units require sprinklers as determined by the Medfield Fire Department and/or Building Department, the Applicant shall perform pressure testing of the municipal water system to determine if sufficient pressure exists to meet applicable fire safety standards.

- *MELS 7/17/25 Response: Sprinklers are not anticipated to be required for this project.*
    - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E. SEPTIC

The Project scope includes development of 24 units (90 bedrooms) of housing on approximately 14.86 acres of land. The Project site is located in the upgradient portion of the Zone II Wellhead Protection Area for the Mine Brook Wellfield in Walpole, MA. Sewage generated by the Project is directed to two septic tanks which flow by gravity to a proposed pump chamber where effluent is pumped via force main to the proposed Presby Enviro-Septic SAS. A reserve SAS area has been proposed on the northeast side of the Project site in a pocket of upland away from the primary SAS location. The septic scope was reviewed against the MA DEP State Environmental Code, Title V (310 CMR 15.00) (Title 5) and *Medfield Board of Health Regulations for the Siting, Construction, Inspection, Upgrade, Repair, and Expansion of On-Site Wastewater Disposal Systems* for the benefit of the ZBA. The Project was also reviewed for general septic design elements and good engineering practice.

MA DEP Title 5

E.1 The proposed Title 5 septic system for the Project consists of two gravity collection systems for 90 bedrooms. The Title 5 design flow (310 CMR 15.203.1) would be 110 gallons per day (gpd) per bedroom for a combined design flow of 9,900 gpd.

- *MELS 7/17/25 Response: NRR*
  - **TT 8/8/25 Update: Original comment provided for context, no further update required.**

E.2 The Project site is located in the upgradient portion of the Zone II for the Mine Brook Wellfield in Walpole. The wellfield is approximately 4,000 feet from the Project site. Title 5 considers Zone II areas to be nitrogen sensitive (310 CMR 15.215) and in nitrogen sensitive areas, flow for new construction is restricted to 440 gpd per acre. The Project site is approximately 14.86 acres which would limit flow to the proposed system to 6,538 gpd or 59 bedrooms to meet the nitrogen loading requirement. Title 5 allows for addressing this requirement through nitrogen aggregation or the use of approved nitrogen reduction treatment systems (310 CMR 15.217).

- *MELS 7/17/25 Response: The proposed septic system shall be designed to include an approved nitrogen reduction treatment system that will allow flows up to 660 gpd per 310 CMR 15.217 and the Approved Title 5 Innovative/Alternative technologies online I/A certification list. Utilizing an approved nitrogen reduction treatment system, the project site would be able to accommodate a proposed system up to 9,900 gpd or 90 bedrooms.*
  - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant provide the required nitrogen reduction treatment system design for review prior to building permits being issued for the Project. Furthermore, we anticipate this item will be addressed during the Medfield Board of Health's review of the Project for compliance with Title 5.**

E.3 Medfield Water Department data shows the site has access to public water via an 8-inch ductile iron main in Plain Street. However, the MassDEP well viewer indicates domestic bedrock water supplies at both 88 and 92 Plain Street. These wells appear to be greater than 200 feet from the SAS but the Applicant shall provide confirmation on the Plans.

- *MELS 7/17/25 Response: Merrill researched the location of the surrounding wells and confirmed the proposed system is greater than 200' from the wells. A note has been added to the plans stating that no known wells are located within 200' of the proposed SAS.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.4 Plan C2.1 indicates bedrock outcrops adjacent to the proposed SAS. Additionally, TP 24-05 does not appear to have four feet of naturally occurring pervious material. However, TP 24-13 does appear to meet the four-foot requirement. The Applicant shall confirm if TP 24-05 was excavated to refusal and if it was used for percolation only. The Applicant shall provide DEP Forms 11 and 12 for all test pits.

- *MELS 7/17/25 Response: Test pit 24-05 was completed for percolation testing only, there was no note on the soil logs suggested that refusal occurred at the bottom of the hole. Soil log forms for test pits are provided in the Stormwater Report and will be provided with the Septic Design Plan to Board of Health (BOH).*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.5 Plan C8.3 indicates a groundwater mound of 1.13 feet above the estimated high water. The Applicant shall provide the parameters used to calculate the mound including hydraulic conductivity, saturated thickness and porosity and provide details of the source of the parameters.

- *MELS 7/17/25 Response: Groundwater mounding data and parameters will be provided to BOH as part of the Septic Design Plans.*
  - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant provide the required information for review prior to building permits being issued for the Project. Furthermore, we anticipate this item will be addressed during the Medfield Board of Health's review of the Project for compliance with Title 5.**

E.6 The reserve area identified on Plan C8.4 indicates the soils beneath the proposed reserve SAS meet Title 5 requirements but may need to be re-evaluated if the proposed site flows change. Additionally, the reserve area is located in areas jurisdictional to the Massachusetts Wetlands Protection Act (WPA) and a Notice of Intent would be required for this construction.

- *MELS 7/17/25 Response: A Notice of Intent application will be made to the Medfield Conservation Commission for the reserve area construction if and when necessary. The required wetland crossing for access shall be constructed during the project development.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.7 The Applicant shall coordinate with Medfield Board of Health related to removal of the septic system associated with the existing dwelling.

- *MELS 7/17/25 Response: NRR*
  - **TT 8/8/25 Update: We anticipate this will be conducted during the Board of Health Review of the Project. In our opinion, this comment is resolved.**

Medfield Board of Health Septic System Regulations

E.8 Local Regulations prohibit septic systems that serve more than one single dwelling. The Project proposes a shared septic system serving 24 single-family dwellings. (§IV.6)

- *MELS 7/17/25 Response: A waiver is requested from the requirement that prohibits shared septic systems.*
  - **TT 8/8/25 Update: We defer action on this item to the Board. We recommend the Board discuss this requirement with the Board of Health in their deliberation on waiver requests.**

E.9 The Applicant shall provide a statement on the Septic Plans noting setbacks to various required appurtenances noted in the Regulations which include public wells, private wells, bordering vegetated wetlands, etc. (§VII.1)

- *MELS 7/17/25 Response: Notes have been added to the Septic Plan Sheet C8.3 regarding setbacks to applicable items listed within the Board of Health (BOH) Supplemental Regulations.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.10 The Regulations require a complete design of the reserve area be provided for review. Additionally, the Applicant shall demonstrate they have approved access to the proposed reserve area. It is unclear if the proposed gravel access path to the reserve area is proposed as part of this Project. Approved access by the Conservation Commission will be required in order to make the proposed reserve area a viable option. (§VII.1)

- *MELS 7/17/25 Response: A waiver is requested for full compliance with this requirement, although a preliminary design of the septic reserve area is provided in this revised plan set. The project site design includes the construction of the gravel path as a means of access to the septic reserve area, which will be included in the Notice of Intent filing with the Conservation Commission for approval.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.11 Several of the test pits were performed outside of the date range (December 20th to May 29th) required in the Regulations. (§VII.2)

- *MELS 7/17/25 Response: A waiver is requested from the requirement to complete test pits between the date range of December 20th and May 29th.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.12 The Applicant shall submit grain size analysis of the test pit soils to verify soil classification. (§VII.2.d)

- *MELS 7/17/25 Response: A waiver is requested from the requirement to submit a grain size analysis of the test pit soils to verify soil classification.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.13 The Regulations require SAS's for single family homes be designed for a minimum of four bedrooms each. The Applicant is proposing 6 three-bedroom units with design included for three bedrooms for each of those units. (§VII.4.D)

- *MELS 7/17/25 Response: A waiver is requested from the requirement to design the flow rate for a single family house with 4 bedrooms, as several buildings are designed only for 3 bedrooms.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.14 The Regulations require reserve area be proposed between the primary system trenches. (§VII.6)

- *MELS 7/17/25 Response: A waiver is requested from the requirement to install septic reserve leaching trenches between primary trenches.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.15 The Applicant shall confirm if foundation drains are proposed for units adjacent to the proposed SAS. The SAS shall be located at least 25 feet from any foundation drain. (§VII.7)

- *MELS 7/17/25 Response: All buildings are 25' or greater from the SAS. Minimum setback dimensions have been added to the plans.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.16 The Applicant is proposing the SAS reserve area adjacent to bordering land subject to flooding (BLSF) with an associated 100-year flood elevation of 177.4 as noted on the Plans. The limit of BLSF line appears to be incorrect as the line does not follow the 177.4 contour which traverses across the proposed reserve SAS location. SAS's shall not be constructed less than one foot above the floodplain elevation. (§VII.9)

- *MELS 7/17/25 Response: A Bordering Land Subject to Flooding (BLSF) Flood Plain Study was completed by Merrill and approved through an ORAD for the 100-yr flood plain line as shown on the site plans. The flood plain line follows the 177.4 contour for the 100-yr flood event only around the vernal pool. This approved Flood Plain Study line does not follow the 177.4 contour past the vernal pool, as water spills over, and flows downgradient. Therefore, any construction within the proposed reserve area will not be within the flood plain on site.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.17 The Applicant shall provide basement elevations on the Plans to confirm compliance with the minimum 2-foot separation to high groundwater elevation requirement. (§VII.9)

- *MELS 7/17/25 Response: A waiver is requested from requiring a 2' separation between basement slab and groundwater.*
  - **TT 8/8/25 Update: See Update at Comment E.8.**

E.18 The Applicant has not provided design of the proposed SAS reserve area which we anticipate may require filling of floodplain to meet the Regulations. Compensatory storage shall be provided if filling of floodplain is required. (§VII.11)

- *MELS 7/17/25 Response: As mentioned in response E.16, the BLSF floodplain line does not intercept the septic reserve area, nor is it adjacent to the septic reserve area. Therefore, filling of the floodplain will not occur.*

- **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.19 The Applicant has not provided details on the proposed pump station such as pump specifications, performance curves, total dynamic head, etc. (§XII.1)

- *MELS 7/17/25 Response: Pump specifications have been provided on the plans and further computations will be submitted to the BOH and will comply with §XII.1 of the supplemental regulations.*
  - **TT 8/8/25 Update: We recommend a Condition requiring the Applicant provide the pump design, calculations and any other required information for the system prior to issuance of building permits for the Project. Furthermore, we anticipate this item will be addressed during the Medfield Board of Health's review of the Project for compliance with Title 5.**

General Septic Comments

E.20 We recommend the Applicant combine flow from the proposed septic tanks into a single manhole prior to discharge to the proposed pump chamber. This will provide a point of connection in the future if the proposed SAS reserve area is required. Additionally, we recommend a piping run or sleeve be proposed from the recommended manhole and stubbed across the Project driveway to limit construction scope/impact and financial burden to the future homeowners if the reserve area is required. The pipe may be stubbed outside of the recommended manhole for future connection.

- *MELS 7/17/25 Response: A manhole has been added to the plans at the intersection point between the outlet from the septic tanks, and the inlet to the pump chamber.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

E.21 We recommend signage be provided on the Plans noting the limits of the SAS within the proposed openspace green area above the system. This is recommended to notify anyone who may need to drive on the green with a heavy vehicle to limit potential impacts to the system below.

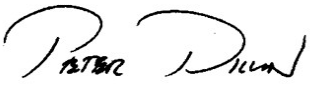
- *MELS 7/17/25 Response: Signage has been added to the plans at the corners of the SAS to provide identification of the SAS for any future heavy vehicle loads on site.*
  - **TT 8/8/25 Update: In our opinion, this comment is resolved.**

These comments are offered as guides for use during the Town's review and additional comments are likely to be generated during the course of review. The Applicant shall be advised that any absence of comment shall not relieve him/her of the responsibility to comply with all applicable local, state and federal regulations for the Project. If you have any questions or comments, please feel free to contact us at (508) 786-2200.

Very truly yours,



Steven M. Bouley, PE
Project Manager
(Site/Civil Review)



Peter Dillon, PG
Geoscience Discipline Lead
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