DK Engineering LLC

Address: 59 Granite Lane, Chester, NH 03036
Tel. (603) 505-5226 ◆ E-mail dan@dke.llc

July 15, 2025

Andover Planning Board
Town Office
36 Bartlett Street
Andover, MA 01810

Attn: Ms. Jacki Byerley, Town Planner

RE: Response to 3rd Peer Review of the Stormwater Design
Ministers Estates – Definitive Subdivision @ 39 Sunset Rock Road, Andover, MA

The Horsley Witten Group, Inc. performed a peer review of the stormwater design for Ministers Estates and provided comments to the Board as outlined in their letter dated July 10, 2025. The following responses address each of the outstanding comments:

STORMWATER REVIEW

2. STANDARD 2:

f. The Applicant has provided a Post-Development HydroCAD model. There are multiple nodes regarding infiltration trenches. (Nodes 24, 34, 44) It is unclear where these trenches are on the plans. HW recommends that the Applicant clearly label these stormwater practices on the Grading & Erosion Control Plan. HW further recommends that the Applicant consider providing a separate plan for the stormwater management and utilities layout.

06/20/25: *The Applicant has labeled the infiltration trenches on the Grading and Drainage plan. It is unclear how these trenches are connected or receive stormwater. HW recommends that the Applicant clarify the design intent and use in the stormwater narrative and on the grading plans. Furthermore, HW recommends that the Applicant review the setback requirements from slopes as listed in Volume 2, Chapter 2, page 97 of the MSH and confirm the placement of the trenches complies with the requirements.*

07/10/25: *The Applicant has proposed area drains to capture runoff upgradient of the infiltration trenches and has added 6-inch outlets that are directed towards the southern property line. The HydroCAD model and the plan set are not consistent. For example, the HydroCAD indicates that the top of Infiltration Trench #1 is set at elevation 210.8 elevation, with primary 6-inch outlets at elevation 208.75, and the secondary 10-inch outlets at elevation 210.0. Sheet 4 indicates that the southern edge of the trench (top of level spreader) is set at elevation 210, with 6-inch outlets at elevation 208.50 and 10-inch outlets at elevation 208.00. As drawn, it is not obvious where the 6-inch outlets will be installed. It is HW's opinion that the 6-inch outlets should be set at the top of the infiltration trenches as overflow devices. However, it is not clear if that is the intention of the proposed design. The Applicant has included a level spreader on the southern side of Infiltration Trench #1. HW recommends that the Applicant includes a detail that clearly illustrates the material and dimensions proposed for the level spreader to confirm it will be constructed and remain level at elevation 208.0 as designed.*

Response: The design has been reviewed and modified as needed. Also, additional details have been provided on a new Sheet 8.

h. The Applicant has proposed a Stormwater Pond (node 23) in the Post-Development HydroCAD model. It is unclear where this is on the plan. There is a proposed depression area on the southeast corner of the lot, but it does not match in size or elevation. Furthermore, there is no information regarding the overflow spillway or structure information on the plans. HW recommends that the Applicant review the design and revise the HydroCAD model as needed.

06/20/25: *HW recommends that the Applicant adjust the HydroCAD model to reflect the slope on the plans, changing the manning coefficient to 'clean and straight' for this ditch and all other swales, and adding a pond node for the circular structure prior to Infiltration Trench 1 (B24) to confirm that the stormwater from the ditch is fully captured and not flowing off property.*

07/10/25: *The Applicant has adjusted the slope of Reach 23 to have a 1% slope and has modeled it accurately in HydroCAD. The reduced slope has reduced the velocity. The circular structure is a Nyloplast basin surrounded by stone. HW recommends that the Applicant add the rim of the dome grate to the plan set. Furthermore, HW recommends that the Applicant include a detail of the structure with the depth and size of stone proposed.*

Response: The rim elevation has been added to the grading plan and the cross section has been added to Sheet 8.

k. The Applicant has provided a standard roof infiltration system detailed on the plans and in the Post-Development HydroCAD model. However, the dimensions of the systems in the HydroCAD model do not match the plans. Furthermore, it appears that the routing of the buildings in the HydroCAD model to the infiltration systems does not match the plans. HW recommends that the Applicant review the design and revise as needed.

06/20/25: *The Applicant has updated the HydroCAD model to match the plans. HW notes that the information for Building #2 and Building #4 is not consistent between Sheet 7 and the HydroCAD model. HW recommends that the Applicant review the Table provided on Sheet 7. It also appears that some of the downspout's routing and invert elevations of the pipes may be exposed based on the surrounding grades. HW recommends that the Applicant confirm there is adequate cover over the drainage pipes leading to the infiltration systems specifically for Lots 1 and 2 and adjust the grading if necessary.*

07/10/25: *It appears that the information provided on Sheet 7 for Building #2 does not match the HydroCAD model. The top elevation should be 223.9 and the finish grade should be higher than 224.2. HW recommends that the Applicant adjust the table on Sheet 7 as applicable.*

Response: The table on Sheet 7 has been reviewed and updated.

HW further notes that the garage elevations (GF) on several of the houses does not appear accurate. For example, on Lot 5 the GF is listed as 221.8, the Basement Floor Elevation (BFE) is 224.8 and the elevation 224 contour crosses the driveway in front of the garage. HW recommends that the Applicant review the GF elevations listed and revise as necessary.

Response: The garage floor elevations have been reviewed and updated as needed.

HW also recommends that the Applicant include all proposed contours including those that may be similar to the existing grades within the limit of disturbance. For example, between Lot 4 and Lot 5, HW recommends that the Applicant include the 226, 228, and 230 proposed contours. It is not clear if these grades are proposed to cross the Lot 4 driveway.

Response: The contour elevations have been added as recommended.

4. STANDARD 3

a. It does not appear that the Applicant has provided recharge calculations as part of the Stormwater Report. HW recommends that the Applicant provide a summary of the required recharge calculations for the site in accordance with the MSH Volume 3, Chapter 1, page 15.

06/20/25: *The Applicant has provided recharge calculations in Section V of the Project Stormwater Report. The Applicant used a total impervious area of 5,037 sf for Treatment Train #1 in the Required Recharge Volume calculations. HW believes this value is closer to 9,228 sf. It does not appear that the Applicant has included the storage provided in Trench #2 or #3 in the Provided Recharge Volume calculations. In HW's opinion the Applicant has provided adequate recharge, however we were not able to confirm the values provided. HW recommends that the Applicant revisit the calculations and for documentation purposes clearly outline the proposed impervious areas and the provided recharge volumes.*

07/10/25: *The Applicant has revised the recharge calculations. However, it appears to have left out the impervious areas of the houses. HW recommends that the Applicant include the stage storage area print out from the HydroCAD model to confirm the storage provided below the lowest outlet elevation. HW agrees that the Applicant has provided adequate recharge, however we were not able to confirm the values provided.*

Response: The area of the houses was not included because each has its own infiltration system. However, these areas have been added to the recharge calculations. The Stage-Area-Storage tables accompany this letter. Please refer to the Required Recharge Volume and Provided Recharge Volume calculations also accompanying this letter. The provided values exceed the required values by at least six times for each area.

8. STANDARD 8

a. The proposed project will be disturbing greater than one acre of land. A SWPPP is required by EPA for land disturbance of greater than 1 acre. The Applicant has provided recommended erosion controls to be included in a SWPPP in Section V. of the Stormwater Report. The SWPPP should include source control and pollution prevention measures, stormwater practices to address erosion and sedimentation, stabilization measures, and procedures for operating and maintaining the proposed stormwater practices. The plan should also identify the parties responsible for implementing the plan. HW recommends that the Planning Board requires receipt of a final signed SWPPP a minimum of 14 days prior to land disturbance.

06/20/25: **Suggested Condition of Approval.**

Should you require any additional information or questions concerning the responses, please do not hesitate to contact me at your convenience.

Sincerely,

Daniel Koravos, P.E.
DK Engineering LLC