DK Engineering LLC

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

July 29, 2025

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

Attn: Ms. Jacki Byerley, Town Planner

RE: Response to 4th 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 18, 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.*

07/18/25: *The Applicant has included a detail for the Level Spreader on Sheet 7, provided below. The level spreader is approximately 55 feet long and must be set at elevation 208.0 for the entire 55 feet. HW recommends that the Applicant includes a detail that clearly illustrates the material and dimensions proposed for the level spreader to confirm it can be constructed level at elevation 208.0 as designed. The detail below lacks the type of material proposed and the means to maintain elevation 208 for 55 feet.*

Response: Please refer to the "Level Spreader Detail", the "Infiltration Trench #1 With Level Spreader Detail" and the "Infiltration Trench Section Detail" on Sheet 8. The perimeter of the stone section outside the infiltration trench is set at elevation 208.5+ with the level spreader section at 208.0. The level spreader section is 40 feet wide with a concrete berm or equal set at 208.0.

12. ADDITIONAL COMMENT

07/18/25: *HW notes that the catchment area B11 that discharges via a single catch basin to the infiltration basin has a peak flow of 5.3 cfs during a 10-year storm event. The peak flow is 7.1 cfs during a 25-year storm event per the HydroCAD model. HW recommends that the Applicant propose a double catch basin instead of the single catch basin at the end of the cul-de-sac and confirm that the proposed grate inlet can manage the flow directed towards it.*

Response: Catch basin #3 located at the end of the cul-de-sac has been upgraded to a double grate catch basin. Details for the catch basin, frame and grate have been added to Sheet 7 and the sizing calculations are presented in the "Supplemental Information for the Drainage Report".

ADDITIONAL DKE MODIFICATIONS

- Infiltration Trench #2 was oversized, and the following changes were made:
  - The width of the trench was reduced to fourteen (14) feet.
  - The imbedded perforated pipe was reduced to twelve (12) inches.
  - The infiltration trench table on Sheet 7 has been updated.
  - In the "Pre-Development vs. Post-Development Drainage Summary Tables" in the "Supplemental Information for the Drainage Report", under Point #3 (C), the 100-year post-dev. peak flow rate was reduced 0.1 cfs.

Should you require any additional information or questions concerning the responses, please contact me at your convenience.

Sincerely,

Daniel Koravos, P.E.
DK Engineering LLC

Enclosures: 1) Definitive Subdivision Plan Set for Ministers Estates, Revised 07/24/25 – Sheets Nos. 4, 6, 7 & 8

2) Supplemental Information for the Drainage Report, Dated 07/28/25