

Horsley Witten Group

Sustainable Environmental Solutions

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April 2, 2025

Mr. Robert Douglas, Director of Conservation
Ms. Jacki Byerley, Planner
Andover Planning Board
Town Office
36 Bartlett Street
Andover, MA 01810

Re: 3rd Stormwater Peer Review
3rd Amendment for 140 Haverhill Street
Andover, MA
MassDEP File No. 090-1383

Dear Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Andover Conservation Commission and the Andover Planning Board with this report summarizing our third review of the amended stormwater management for the proposed development at 140 Haverhill Street in Andover, Massachusetts. HW reviewed the original application in 2021 and the first amended design in 2024. The approved 2024 design has recently been revised, and the Applicant is requesting a second amendment to the previous approvals received in 2021 and 2024 from the Conservation Commission and the Planning Board.

The project involves the redevelopment of a 7.2-acre parcel. Medico 140, LLC (Applicant) is now proposing to separate the parcel into two lots and construct one two-story 19,200 square foot (sf) building on one lot and a second two-story 17,688 sf day care on the second lot. The project includes reusing two access driveways, reconfiguring the parking lots, upgrading the utility infrastructure, and improving stormwater management. The Applicant intends to utilize the existing stormwater infrastructure pipes, add new and replace existing catch basins with deep sump catch basins, install two jellyfish treatment systems, install a subsurface detention system adjacent to Building 1 and a subsurface infiltration system to manage the roof runoff from Building 2. The proposed work is within the buffer zone of three wetland resource areas and therefore the project is under the jurisdiction of the Andover Conservation Commission.

HW received the following documents and plans associated with the third amended design in response to our review letter dated March 13, 2025:

- Letter to Andover Conservation Commission, regarding Response to Peer review Comments, prepared by Ranger Engineering Group, dated March 31, 2025 (2 pages);
- Pipe Capacity Calculations for 140 Haverhill Street, Andover, Massachusetts, prepared by Benjamin C. Osgood Jr., dated October 1, 2024 revised March 31, 2025 (5 pages); and
- Site Plan, 140 Haverhill Street, Andover, Massachusetts, prepared by Ranger Engineering Group, Inc., dated December 18, 2024, revision dated February 21, 2025

(no additional revision date listed) which includes:

- Grading and Drainage Plan Sheet CS1501
- Drainage Details Sheet CS6004

Stormwater Review

HW has reviewed the documents listed above and has the following comments concerning the stormwater management design in accordance with the Massachusetts Stormwater Handbook (MSH) dated February 2008, and the Town of Andover Stormwater Management and Erosion Control Bylaw and Regulations amended May 11, 2021 (Stormwater Bylaw).

In accordance with Section VI. B. of the Andover Stormwater Bylaw the Stormwater Management Permit and Narrative provided by an Applicant shall contain sufficient information to verify compliance with the local Stormwater Bylaw and the MassDEP Stormwater Management Handbook. Below are comments relating to the standards as presented in the MSH. Where the more stringent requirements of the Andover Stormwater Regulations are applicable, those comments are included.

The proposed site improvements are considered redevelopment and therefore are required to comply with MassDEP Stormwater Management Standards 2, 3, and 4 only to the maximum extent practicable and the pretreatment requirements of Standards 4, 5, and 6 only to the maximum extent practicable. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The comments below correlate to our second review letter dated March 13, 2025. Follow up comments are provided in **bold underlined font**.

1. *Standard 1 states that no new stormwater conveyances (e.g. outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*
 - a. Under existing conditions, the developed site manages the stormwater via a closed drainage network that is piped to one of the three onsite wetland resource areas. The small resource area on the east side of the site, delineated by wetland flags WF-1A through WF-4A, is piped to the central Bordering Vegetated Wetland (BVW), marked by flags WF-1B through WF-27B, via a 24-inch reinforced concrete pipe (RCP). The central BVW is piped to the larger BVW in the west and north corners of the site, delineated by wetland flags WF-1C through WF-34C, via an 18-inch RCP. There are six existing outfalls into one of the three resource areas.

March 13, 2025: No further action is requested.

- b. The proposed development will modify the existing stormwater drainage network to include a subsurface detention chamber, a subsurface infiltration system, new deep sump catch basins, and two jellyfish structures to improve water quality. Three of the existing outfalls will be eliminated and one new outfall is proposed. Under proposed conditions there will be four outfalls.

March 13, 2025: No further action is requested.

- c. The Applicant has revised the outlet configuration at the edge of the central BVW. Under existing conditions there is an 18-inch RCP that discharges near wetland flag WF-11B at elevation 82.15. There is a second 18-inch RCP that discharges near flag WF-12B at elevation 81.40. The Applicant has revised the design to remove both pipes and install a new 18-inch HDPE pipe with a head wall at elevation 82.15. This reconfiguration is identical to the approved 2021 and 2024 designs, creating a buffer zone disturbance of 660 square feet (sf) and a temporary BVW alteration of 340 sf.

March 13, 2025: No further action is requested.

- d. The Applicant has proposed adding riprap to the existing 18-inch RCP that outlets from the central BVW between WF18B and WF19B. The cleaning of debris at the outlet and adding the riprap will create a wetland disturbance of 275 sf and a buffer zone disturbance of 525 sf. This disturbance is identical to the approved 2021 and 2024 designs.

March 13, 2025: No further action is requested.

- e. As previously approved in 2021 and 2024, the Applicant appears to comply with Standard 1.

March 13, 2025: No further action is requested.

2. *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*

- a. The callout on Sheet CS1501 and the details on Sheet CS6003, for the detention system, Pond 3P, reference StormTech SC-310 chambers. HW recommends that the Applicant revise the plans to avoid confusion.

March 13, 2025: The Applicant has revised the callout and details as suggested. No further action is requested.

- b. It appears that the Applicant has not provided the proposed 98 contour between the two proposed buildings. HW recommends that the Applicant provides the proposed grading in this area as well as over the proposed subsurface infiltration system.

March 13, 2025: The Applicant has provided the contour line for elevation 98 as suggested. However, the proposed grading over the proposed subsurface infiltration system is not clear. HW recommends that the Applicant provide the proposed grading. The existing topography will be impacted with the installation of the chamber system.

April 2, 2025: The Andover Conservation Commission may consider requiring receipt of as-builts to confirm that the grading over the proposed subsurface infiltration system is returned to its existing condition.

- c. HW recommends that the Applicant clarify the outlet pipe from JellyFish Filter JF4-1-1 located on the east side of the site near wetland series A.

March 13, 2025: The Applicant is proposing to connect the proposed JellyFish JF4-1-1 to an existing drainage pipe. No further action is requested.

HW notes that the existing 24-inch CMP that is proposed to remain does not

appear on Sheet CS1501.

April 2, 2025: The Applicant has responded that the existing pipe is 12-inch and has shown it on Sheet CS1501. No further action is requested.

- d. The Applicant has provided the closed drainage system sizing calculations in the Additional Drainage Documents. Several of the slopes listed on the spreadsheet do not match the proposed drainage plan. The pipe between CB6 and DMH 10 is not consistent between the calculations and the plans, and the pipe from the Outlet Control Structure (OCS) to DMH10 has not been included. HW recommends that the Applicant revisit the 10-year Pipe Capacity Calculations and revise accordingly.

March 13, 2025: HW notes that the slopes listed for OCS2 to DMH 10, DMH2 to DMH3, and DMH10 to DMH5 are not consistent between the Drainage System spreadsheet and the plans. HW recommends that the Applicant revisit the 10-year Pipe Capacity Calculations and revise the plans or the calculations accordingly.

April 2, 2025: The Applicant has revised the 10-year Pipe Capacity Calculations as suggested. No further action is requested.

- e. HW recommends that the Applicant match the crowns of the pipes at a manhole instead of the inverts whenever feasible. For example, DMH 5 calls out an 18-inch inlet and an 18-inch outlet at elevation 82.60. The 12-inch inlet is also set at elevation 82.60. If feasible the 12-inch inlet should be raised 6 inches.

March 13, 2025: The Applicant has raised the 12-inch pipe as suggested. No further action is requested.

- f. HW recommends that the Applicant clarify the limit of clearing around the site. HW recommends that the limit of work be clearly shown on all the plans in the set.

March 13, 2025: The Applicant has added the limit of work line on each of the plans in the set as suggested. No further action is requested.

3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*

- a. The Applicant has increased the impervious area from 93,800 sf to 98,400 sf. An increase of 4,600 sf that will require recharge. The proposed subsurface infiltration system should provide the required recharge volume. The Applicant has conducted three test pits. TP1 is in the location of the proposed infiltration system. The soil profile indicates Sandy Loam which may have an exfiltration rate of 1.02 inches per hour (iph). It is not clear why the Applicant has not included exfiltration in the HydroCAD model for the proposed infiltration system. HW recommends that the Applicant provide the recharge calculations as well as the drawdown calculations for the proposed subsurface infiltration system or provide a justification for why infiltration was not considered.

March 13, 2025: The Applicant has provided the recharge calculations as suggested. No further action is requested.

- b. It appears that the proposed infiltration system could be raised. The existing surface is between elevations 92 and 98. The current design indicates a minimum surface elevation of approximately 90 with the bottom of the system set at elevation 86.5. HW

recommends that the Applicant revisit the design of the proposed infiltration system and raise it to the maximum extent practicable.

March 13, 2025: The Applicant has raised the proposed infiltration system as suggested. No further action is requested.

- c. The Estimated Seasonal High Groundwater (ESHGW) was determined to be at elevation 83.83 within TP1. The bottom of the system is set at elevation 86.50, a separation of 2.67 feet. In accordance with Volume 3, Chapter 1, page 28 a mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet *and* the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm. If the proposed system is designed to infiltrate and the bottom of the system remains at elevation 86.5, HW recommends that the Applicant provide the required mounding analysis.

March 13, 2025: The Applicant has provided greater than four feet of separation between groundwater and the bottom of the system. No further action is requested.

4. *Standard 4 requires that the stormwater system be designed to remove 80% Total Suspended Solids (TSS) and to treat 1.0-inch of volume from the impervious area for water quality.*
 - a. The Applicant is proposing Jellyfish Filters to provide the required TSS removal. The details provided on Sheet CS6004 are not consistent with the Rim and Invert information provided on Sheet CS1501. HW recommends that the Applicant revisit the plans and details and revise accordingly.

March 13, 2025: Sheet CS1501 lists the inverts of JFPD08-08-12-3 as 82.55 and 82.05. The detail lists the inverts as 82.55 and 82.22. HW recommends that the Applicant confirm the inverts and add the pipe dimensions to Sheet CS1501. Furthermore, Sheet CS1501 lists the 12-inch invert at 99.55 and the 24-inch invert out at 99.05. The details on Sheet CS6004 lists the 12-inch inlet at 99.90 and the 12-inch outlet at 99.65. HW recommends that the Applicant confirm the inverts and add the pipe dimensions to Sheet CS1501.

April 2, 2025: The Applicant has coordinated the inlet and outlet elevations between the plans and details. No further action is requested.

- b. The Applicant has provided a third-party documentation listing 89% TSS removal for the Jellyfish Filter. HW notes that the Jellyfish Filter requires specific long-term maintenance to maintain the removal capacity. The Town of Andover may choose to require receipt of the annual maintenance of the Jellyfish Filter as a condition of approval.

March 13, 2025: Suggested condition of approval.

5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
 - a. The Applicant has noted that the proposed project is not considered a LUHPPL. Therefore Standard 5 is not applicable.

March 13, 2025: No further action is requested.

6. *Standard 6 is related to projects with stormwater discharging into a critical area, a Zone II or an Interim Wellhead Protection Area of a public water supply.*
 - a. The site does not discharge to a critical area, therefore Standard 6 is not applicable.

March 13, 2025: No further action is requested.

7. *Standard 7 is related to projects considered Redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*
 - a. The proposed project is considered a mix of new development and redevelopment. The Applicant is increasing the impervious cover by 4,600 sf. HW recommends that the Applicant documents how it is meeting the standards for the proposed increase in impervious surface.

The Applicant has provided adequate recharge for the proposed increase in impervious surface. The Applicant is also providing additional peak runoff and volume control as well as water quality measures to the existing drainage system therefore improving existing conditions. No further action is requested.

8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation or other pollutant sources.*
 - a. The Applicant has provided an Erosion and Sediment Control Plan. HW recommends that the erosion control barrier on the north side of the proposed infiltration system be extended east to the edge of the driveway.

March 13, 2025: The Applicant has extended the erosion control line as suggested. No further action is requested.

- b. The Applicant has previously provided a Stormwater Pollution Prevention Plan (SWPPP). The Planning Board and /or Conservation Commission may choose to require receipt of the final SWPPP signed by the contractor as a condition of approval.

March 13, 2025: Suggested condition of approval.

9. *Standard 9 requires a Long-Term Operation and Maintenance (O&M) Plan be provided.*
 - a. The Applicant has provided a Stormwater Operation and Maintenance (O&M) Plan, which includes instructions for maintenance of stormwater control measures, an O&M budget, and an O&M log. HW has the following comments in relation to the O&M Plan provided by the Applicant:
 - i. The Applicant has included a simple sketch with the O&M Plan. However, the sketch needs to be updated to correlate to the amended design.

March 13, 2025: The Applicant has revised the sketch as suggested.

- ii. HW recommends that the Applicant locate the inspection ports for both subsurface stormwater systems.

March 13, 2025: The Applicant has included the inspection ports as suggested.

- iii. HW recommends that the Applicant includes the manufacturers' O&M directives on long term maintenance for the subsurface detention system as well as the subsurface infiltration system.

March 13, 2025: The Applicant has provided the manufacturer's directives as suggested.

- iv. HW recommends that the Applicant include the manufacturer's O&M directives for long term maintenance of the Jellyfish filters and confirm that the Owner is aware of its responsibilities.

March 13, 2025: The Applicant has provided the manufacturer's directives as suggested.

- v. Per Andover Stormwater Regulations Section VI.C.1.b.5, HW recommends that the Applicant provide a standalone copy of the O&M Plan signed by the property owner. The Town may choose to require receipt of the final signed O&M Plan with all appendices attached as a Condition of Approval.

March 13, 2025: Suggested condition of approval.

10. *Standard 10 requires an Illicit Discharge Compliance Statement to be provided.*

- a. The Applicant has provided an Illicit Discharge Compliance Statement signed by Paul Kneeland, dated June 11, 2024.

March 13, 2025: No further action is requested.

Conclusions

HW is satisfied that the Applicant has adequately addressed our comments. The Applicant is advised that the provision of these comments does not relieve him/her of the responsibility to comply with all Town of Andover Codes and By-Laws, Commonwealth of Massachusetts laws, and federal regulations as applicable to this project. Please contact Janet Bernardo at 857-263-8193 or at jbernardo@horsleywitten.com if you have any questions regarding these comments.

Sincerely,

HORSLEY WITTEN GROUP, INC.



Janet Carter Bernardo, P.E.
Principal



Sydney Stanton
Project Engineer