

Horsley Witten Group

Sustainable Environmental Solutions

112 Water Street • 6th Floor • Boston, MA 02109
857-263-8193 • horsleywitten.com



August 16, 2022

Ms. Jacki Byerley, Planner
Andover Planning Board
Town Office
36 Bartlett Street
Andover, MA 01810

Re: Initial Stormwater Peer Review
Special Permit Major Non-Residential Project
Self Storage Facility
43 River Road, Andover, MA

Dear Ms. Byerley and Board Members:

The Horsley Witten Group, Inc. (HW) is pleased to provide the Andover Planning Board with this letter report summarizing our initial peer review of the stormwater management for the proposed project at 43 River Road in Andover, Massachusetts. The application, dated July 12, 2022, was prepared for 3P Properties, LLC (Applicant) by Dana F. Perkins, Inc. The Applicant is proposing the development of a 77,400 square foot (sf) self storage facility on an 86,929 sf parcel. The project includes constructing a new building with a 25,800-sf footprint and associated parking, grading, utilities, and stormwater management.

HW received the following documents and plans:

- Application for Special Permit for Major Non-Residential Project, prepared by Dana F. Perkins, Inc., dated July 12, 2022 (4 pages).
- Stormwater Management Permit, Proposed Self Storage Facility, prepared by Dana F. Perkins, Inc., dated July 11, 2022 (85 pages).
- Proposed Self Storage Facility plan set, prepared by Dana F. Perkins, Inc., dated July 11, 2022, which includes:
 - Cover Sheet 1 of 10
 - Existing Conditions Plan 2 of 10
 - Soil Erosion & Sedimentation Control 3 of 10
 - Site Layout Plan 4 of 10
 - Grading & Drainage Plan 5 of 10
 - Utility Plan 6 of 10
 - Landscape Plan 7 of 10
 - Details & Material Specifications 8 of 10
 - Detail Sheet 9 of 10
 - Detail Sheet 10 of 10

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 Regulations amended May 11, 2021 (Stormwater Regulations).

In accordance with Section VI. B. of the Andover Stormwater Regulations, 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 (MSH). 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 new development and are required to comply with the MSH fully.

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. The existing and proposed site topographic discharges stormwater to four separate design points (DP):
 - DP-1: collects stormwater from the majority of the site flowing towards the southern property boundary.
 - DP-2: collects stormwater flowing towards the western property boundary and the Greater Lawrence Regional Vocational Technical High School.
 - DP-3: collects stormwater flowing towards the northern property boundary and the Andover Park Development L.P.T.
 - DP-4: collects stormwater from a small portion of the site flowing towards Riverside Drive.

It appears that the project site does not directly discharge towards any wetlands or waters of the Commonwealth, therefore the Applicant complies with Standard 1.

2. *Standard 2 requires that post-development runoff does not exceed pre-development runoff off-site.*
 - a. In the Proposed HydroCAD model, the Applicant includes subcatchments PR-1A, PR-1B, and PR-1C. However, these subcatchment areas are not delineated on the Proposed Drainage Divide figure. To avoid confusion, HW recommends that the Applicant indicate the individual subcatchments on the Proposed Drainage Divide figure.
 - b. HW recommends that the Applicant confirm the catchment area to DP-4 under proposed conditions. It appears that the top of the berm, approximately elevation 81, associated with Infiltration Basin #2 should be a divide and the catchment area towards Riverside Drive should be larger.
 - c. In accordance with the Section IX. E.4. of the Andover Stormwater Regulations,

- Flooding Protection, HW recommends that the Applicant adjust the Curve Number (CN) value for Post Construction grass to be 79 instead of 61 as listed in Table 1.
- d. HW recommends that the Applicant provide the flow paths and confirm the time of concentration (Tc) values provided under existing conditions. The Applicant has included a direct entry of 5 minutes for each catchment area which may be fast through this naturally wooded area.
 - e. The Applicant has noted that test pits have been conducted and therefore are using Hydrologic Soil Group (HSG) B. HW recommends that the Applicant provide the test pit logs.
3. *Standard 3 requires that the annual recharge from post-development shall approximate annual recharge from pre-development conditions.*
- a. The Applicant has provided two infiltration basins that appear to provide greater than the required recharge volume. HW recommends that a detail be provided for the Infiltration Basins to clarify surface material, stone sizes, side slopes, and peak elevations for the various storm events.
 - b. As noted above, HW recommends that the Applicant provide the test pits to confirm the soil type and depth to seasonal high groundwater. If the separation between the bottom of the basins and seasonal high groundwater is less than 4 feet, HW recommends that the Applicant provide a mounding analysis in accordance with the MSH Volume 3, Chapter 1, page 28.
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 has designed Infiltration Basin #1 to manage the roof runoff from the proposed building. The Applicant has designed Infiltration Basin #2 with a forebay and a water quality unit to capture, treat, and manage the runoff from the parking lot. HW recommends that the Applicant provide the sizing calculations for the forebay in accordance with Section IX.I.1 of the Andover Stormwater Regulations.
 - b. HW recommends that the Applicant provide the vendor information for the CDS 2015 water quality unit to verify the size as well as the percentage of TSS removal.
 - c. HW recommends that the Applicant confirm that the forebay and trench drain at the end of the driveway will provide adequate pretreatment for this catchment area.
 - d. In accordance with Section IX.C. of the Andover Stormwater Regulations, HW recommends that the Applicant provide the applicable calculations to verify that the pre-treatment devices have been adequately sized.
5. *Standard 5 is related to projects with a Land Use of Higher Potential Pollutant Loads (LUHPPL).*
- a. A self-storage facility is a land use that does not produce higher potential pollutant loads. therefore Standard 5 is not applicable.
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 project site does not appear to discharge to a critical area, therefore Standard 6 is not applicable.

7. *Standard 7 is related to projects considered Redevelopment.*

- a. This project is not considered redevelopment, therefore Standard 7 is not applicable.

8. *Standard 8 requires a plan to control construction related impacts including erosion, sedimentation, or other pollutant sources.*

The Applicant has provided a Soil Erosion and Sedimentation Control plan (Sheet 3 of 10). HW has the following comments regarding this plan:

- a. The Applicant has proposed erosion controls on the southern corner of the site only. HW recommends that the Applicant place erosion controls around the entire site to avoid any soil from migrating onto abutting properties.
- b. HW recommends that the Applicant delineate the locations of critical areas for erosion potential as required in the Andover Stormwater Regulations.
- c. HW recommends that the Applicant label the locations of temporary and permanent seeding, vegetative controls, and other temporary and final stabilization measures.
- d. HW recommends that the Applicant provide a means to prevent soil compaction on the floor of the basin during construction in accordance with Section IX.I.3. of the Stormwater Regulations.

The Applicant has also provided a Construction Period Pollution Prevention Plan in the Stormwater Management Permit. HW has the following comments regarding this plan:

- e. HW recommends that the Applicant include maintenance and inspection procedures for each proposed stormwater practice, such as deep-sump catch basins, hydrodynamic separator, and the infiltration basins once installed. HW recommends that the stormwater practices be included in the inspection logs.
- f. The proposed land disturbance will exceed 1 acre therefore a NPDES Construction General Permit will be required. The Applicant has noted that a Stormwater Pollution Prevention Plan (SWPPP) will be provided prior to construction. The Planning Board may choose to require receipt of the SWPPP a minimum of 14 days prior to land disturbance as a condition of approval.

9. *Standard 9 requires a Long-Term Operation and Maintenance (O&M) Plan be provided.*

The Applicant has provided a Long-Term Pollution Prevention Plan. HW has the following comments regarding this plan:

- a. HW recommends that the Applicant specify the name of the party(ies) responsible for operation and maintenance, including how future property owners will be notified of the presence of the stormwater management system and the requirement for proper operation and maintenance per MSH Volume 1, Chapter 1.
- b. HW recommends that the Applicant include an O&M budget per MSH Volume 1, Chapter 1.

- c. Per Section VI.C.1.b.7 of the Andover Stormwater Regulations, HW recommends that the Applicant include a simple sketch indicating where the stormwater practices requiring inspections are located.

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

- a. HW recommends that the Planning Board requires receipt of an Illicit Discharge Statement signed by the property owner prior to land disturbance.

11. Additional Comments per Andover Stormwater Regulations:

- a. In accordance with Section IX.D. of the Andover Stormwater Regulations, HW recommends that the Applicant provide the applicable calculations to document that the stormwater management systems have been adequately sized to remove 90% of TSS and 60% of Total Phosphorus (TP) from the post-construction impervious surfaces.
- b. In accordance with Section IX.I.4. the perimeter of the basins shall be curvilinear. HW recommends that the Applicant discuss the site constraints with the Planning Board.
- c. HW recommends that the Applicant confirm it has provided a minimum of 1 foot of freeboard above the 25-year storm elevation in accordance with Section IX.I.6.
- d. HW recommends the Applicant determine if a low flow outlet is required to prevent clogging in accordance with Section IX.I.9.

Conclusions

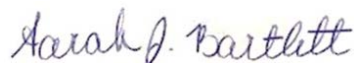
HW recommends that the Planning Board require the Applicant to provide a written response to address these comments as part of the permitting review process. The Applicant is advised that provision of these comments does not relieve him/her of the responsibility to comply with all Town of Andover Codes 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.
Associate Principal



Sarah Bartlett
Staff Scientist