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ALLEN & MAJOR ASSOCIATES, INC.

February 15, 2023

Nazih Elkallassi, Chairman
Town of Wareham
Zoning Board of Appeals
54 Marion Road
Wareham, MA 02571

Re: Initial Peer Review
Site Plan Review
True Storage Facility
ZBA Case 4-23
2400 & 2402 Cranberry Highway
Wareham, MA

Dear Mr. Elkallassi and Members of the Zoning Board of Appeals:

In accordance with our contract to conduct a peer review of the proposed True Storage Facility at 2400 & 2402 Cranberry Highway in Wareham, Massachusetts, Allen & Major Associates, Inc. (A&M) is pleased to provide the following comments. The comments presented below are based on the review of the design documents provided to A&M by Wareham Planning and Community Development. A&M did not conduct a field assessment of the project but can do so if the ZBA requires.

In conducting the peer review, A&M reviewed the following documents:

- Stormwater Management Plan for 2400 & 2402 Cranberry Highway Wareham, Massachusetts 02571 prepared for Wareham Development, LLC & JB Development, LLC, Bourne Acquisition, LLC & 2425 LLC prepared by Nobis Group dated April 6, 2022, revised July 18, 2022;
- Site Plans for True Storage Facility 2400 & 2402 Cranberry Highway Wareham, Massachusetts 02571 prepared by Nobis Group dated April 2022, latest revision dated November 09, 2022, total of 14 sheets which include plans prepared by others, listed below;
    - Boundary & Location Survey prepared by Control Point Associates, Inc. dated January 25, 2021 revised July 12, 2022;
    - Boundary, Topographic & Utility Survey prepared by Control Point Associates, Inc. dated January 25, 2021 revised July 12, 2022;
    - Proposed Sewage Disposal Site Plan prepared by Provencher Engineering, LLC dated March 3, 2022;
    - Proposed Sewage Disposal Detail Plan prepared by Provencher Engineering, LLC dated March 3, 2022;
- Architectural Plans for True Storage Wareham 2400, 2402, 2406 Cranberry Highway Wareham, MA 02571 prepared by True Storage Wareham – Architectural Department dated January 11, 2022 revised May 3, 2022;
- USGS Locus Map (Figure 1) & Aerial Map (Figure 2) dated August 2022;
- Denial letter from the building Department dated March 25, 2021;
- Letter from the Wareham Fire Department dated January 24, 2023;

- Wareham Zoning Board of Appeals Application for Extension of Time to Exercise Use of Variance dated June 15, 2022;
- Town of Wareham Board of Appeals certificate of Granting of Use Variance dated July 14, 2021;
- Traffic Memorandum prepared for Acquisitions & Due Diligence True Storage prepared by Vanasse & Associates, Inc. dated October 20, 2022.

A&M reviewed the information/materials, listed above in conjunction with the applicable requirements of:

- Town of Wareham By-Laws revised October 25, 2021;
  - Division IV, Article III Earth Removal Regulations;
  - Division V, Article XI Stormwater Management and Illicit Discharge;
  - Division VI, Article I Wareham Wetland Protective By-Law.
- Town of Wareham Zoning By-Laws Revised April 12, 2022;
  - Article 4: Overlay Districts;
  - Article 6: Density and Dimensional Regulations;
  - Article 7: Design Standards and Guidelines;
  - Article 9: Parking;
  - Article 10: Landscaping;
  - Article 12: Performance Standards;
  - Article 15: Site Plan Review.
- Massachusetts Stormwater Handbook, Volumes 1 through 3, as applicable under the Massachusetts Wetlands Protection Act (310 CMR 10.00) with focus on the Stormwater Management Standards.
- National Fire Protection Association (NFPA 1) and the Massachusetts Amendments (527 CMR 18) as applicable to site development plans.

The following represents A&M's review comments. A&M may submit additional comments based on supplemental information provided after the initial peer review.

Wareham By-Laws and Zoning By-Laws

1. The proposed project is required to obtain a Stormwater Management Permit (SMP) in accordance with Wareham By-Laws Division V, Article XI, Article I Stormwater Management. The applicant should provide documentation on the status of the SMP.
2. The proposed project is located within the Groundwater Protection Overlay District (GPOD) per Zoning By-Law Article 4, subsection 440. Since the project proposes lot coverage exceeding the 15% maximum allowed under the GPOD, a Special Permit is required from the Board of Appeals. The applicant should provide documentation on the status of the Special Permit.
3. The design engineer should review Zoning By-Law Article 7, subsection 752.6 Buffer Strip Adjacent to Public Arterials (Route 28) requires industrial uses to be screened from view by a 50-foot wide landscape buffer strip. The proposed parking lot and portions of the internal drive aisles are located within the 50-foot buffer strip.

4. Zoning By-Law, Article 750, subsection 752.12 provides guidance on building façade designs facing street and roads. The architect should provide a statement on compliance with this section.
5. Zoning By-Law, Article 750, subsection 752.15 Site Lighting. Lighting fixture cutsheets have been provided on the architectural set, see Sheet A0931, but exact locations have not been identified on the Site Plans. The applicant should provide a photometric plan showing the footcandle intensity on the property and document compliance with the applicable section.
6. Zoning By-Law, Article 750, subsection 752.17 Site Drainage & Stormwater Retention, reference is made to Zoning By-Law Article 1260. The proposed project is also subject to Article 12: Performance Standards, subsection 1260 Analysis of Development Impact: Stormwater Runoff in Compliance with MS4. The project is subject to an MS4 Stormwater Management Permit (MS4 SMP) issued by the ZBA. The applicant should provide documentation on the status of the MS4 SMP for the record. The design engineer should provide additional narrative and calculations to show/demonstrate compliance with the required one (1) inch infiltration volume, removal of 90% Total Suspended Solids (TSS) and removal of 60% Total Phosphorus from the total post-construction impervious surfaces.
7. Zoning By-Law Article 9: Parking states that the Building Inspector shall determine the number of spaces required for a use not identified under 921 Table of Parking Regulation. The ZBA may want to inquire with the Building Inspector to confirm the number of spaces is adequate for the proposed use. In support of the twelve spaces shown, the applicant should provide empirical data from similar facilities managed by the developer to support the usage.
8. Zoning By-Law Article 10: Landscaping – is applicable to all new non-residential development projects. A landscape plan shall be prepared for and submitted in conjunction with any other submittal required for a Special Permit, Site Plan Review or Building Permit. For new projects exceeding 5,000 sf of non-residential development, the landscape plan shall be prepared by a registered landscape architect whose seal shall appear on the plan. No landscape plan was included in the site plan package. The development team shall provide the required plan to verify and show conformance with Article 10 of the Zoning By-Laws.
9. Zoning By-Law Article 11: Signs. The project plans do not depict any signage for the use. A&M recommends that anticipated signs be added to the site plans for consideration by the Zoning Board as applicable and confirmation that signs do not interfere with any sight lines, setback or other operational aspects.
10. Article 15 of the Zoning By-Law outlines the criteria for site development plans including site lighting, dumpsters, fire hydrant locations, landscaping, and an impact statement to the Town services. None of these elements are addressed in the application materials and should be included to meet this requirement or if not applicable, described as such.

Drainage Calculations and Site Plans

11. The design engineer shows a series of catch basins, totaling five (5) interconnected along the easterly and westerly side of the building, prior to discharging into the sediment forebays. MassDEP Stormwater Handbook requires catch basins (CB) to be offline. The CB to CB connection is not permissible as proposed and should be revised accordingly. This action will re-suspend solids and/or floatables negating the purpose of the catch basin hoods and sumps.
12. The grading plan should be modified to include additional spot grades and contours along the easterly side of the sediment forebay and infiltration basin. During the 100-yr event, the drainage calculations

are reporting the 100-yr elevation within the basin to be at 48.05. Based on the information contained within the plans, it appears that water will overtop the forebay and infiltration basin. The basin sizing as reported in the HydroCAD model appears to be utilizing existing area of the 48 and 49 contours within the tree line. The design engineer should confirm this. If this is the case, the required freeboard elevation of 49.05 would occur off the property in several areas. The basin should be revised to wholly contain the basin onto lands owned by the applicant. The design engineer shall also confirm and verify the proposed infiltration system has been designed in accordance with the Massachusetts Stormwater Handbook (i.e. access road, freeboard, monitoring wells, etc.).

13. The design engineer shall provide the supporting calculations in accordance with the "Dynamic Field Method" as outlined within the Massachusetts Stormwater Handbook Volume 3, Documenting Compliance.
14. Since the basin is utilized for 100-year mitigation, the design engineer should update the drawdown time calculations to include the entire storage volume associated with the 100-yr flood elevation event.
15. The design engineer has provided detailed calculations associated with the 10-yr design storm, but only provided summary reports for the 2-yr, 25-yr and 100-yr design storm events. Detailed calculations should be provided for all storm events to verify input variables.
16. In Massachusetts, the length of sheet flow is seldom greater than 50 feet (reference MassDEP Hydrology Handbook for Conservation Commissioners). The design engineer should review the following sheet flow lengths, which exceed 50 feet under existing and proposed conditions, and revise the calculations accordingly or provide justification for the longer lengths.
    a. Subcatchment E-1, sheet flow length equals 100 feet;
    b. Subcatchment E-3, total sheet flow length equals 100 feet;
    c. Subcatchment P-1A, sheet flow length equals 100 feet;
    d. Subcatchment P-3, sheet flow length equals 100 feet;
    e. Subcatchment P-6, sheet flow length equals 100 feet.
17. The Proposed Drainage Area Plan depicts flow from Subcatchments P-3, P-4, and P-6 continuing to flow to the State Highway Layout. The drawings denote revisions were made to address MassDOT comments. Please provide supporting documentation that these drainage flow paths have been accepted by MassDOT and how they comport with MassDOT Standard Operating Procedure HMD-02-02-2-000 on drainage connections to the state highway that include sheet flow runoff conditions.
18. The design engineer shall provide sediment forebay calculations to confirm/verify compliance with the Massachusetts Stormwater Handbook.
19. It appears, based on interpolation of existing contours and spots grades, that the proposed infiltration basin does not provide 4-ft separation to the estimated seasonal high water table. Since an infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm event and separation to seasonal high water table is less than 4-ft, a mounding analysis is required to show compliance with Standard 3. The design engineer should provide the required documentation along with the supporting calculations for the groundwater mounding analysis.
20. Within the Operation & Maintenance (O&M) Plan and the Stormwater checklist, the design engineer make reference to Proprietary Water Quality Devices, but A&M is unable to locate them on the site

plan or within the report. The design engineer shall review the Operation & Maintenance Plan and the Stormwater checklist and revise them accordingly or provide the required documentation.

21. The design engineer provided a HydroCAD routing diagram depicting the pipe connections onsite, however, no data or results on each node was provided. The HydroCAD model utilizes the SCS TR-20 stormwater routing method while the closed drainage computations should be based on the Rational Method. The design engineer should confirm that the catch basin/manhole nodes as provided do not affect the peak flow routing calculations to the recharge systems and/or design points. See also Comment 22 below.
22. The design engineer should provide a pipe analysis to confirm/verify that the proposed stormwater will be routed through the pipe network as proposed and discharge to the recharge area as intended. The engineer is routing 100 year stormwater flows to the subsurface infiltration systems and the pipe analysis should confirm this.
23. The design engineer should revise the TSS calculation worksheet for the Infiltration Basin and provide two (2) sets of TSS calculation worksheets, one to demonstrate the required 44% TSS removal prior to infiltration and another for the overall TSS removal for the entire drainage system. The infiltration system only receives 80% TSS removal with the appropriate pre-treatment, therefore the design engineer cannot take additional credit for the sediment forebay in the overall calculation for the entire drainage system. The design engineer should update the TSS worksheets accordingly.
24. The design engineer should provide appropriate calculations for the sizing of the rip rap apron associated with the proposed flared end section and the anticipated flows. The detail should be updated to show the appropriate dimensions, based on the calculations. The limits of the stone apron should also be added to the site plans.
25. The proposed sewage disposal site plan background depicts different site conditions than those contained on other drawing sheets. A&M did not review the proposed site conditions (stormwater basin, grading, drain structures) shown on the sewage disposal sheet but the engineer should confirm the correct information is shown on this sheet to facilitate further review by the Board of Health as part of a disposal works application.

In order to track any changes made to the proposed project, A&M recommends the applicant/engineer provide a written response to the items identified above and/or supplemental information necessary to review the application.

Very Truly Yours,

ALLEN & MAJOR ASSOCIATES, INC.

Digitally signed by Philip Cordeiro
Date: 2023.02.15 16:24:42-05'00'

Philip Cordeiro, PE
Branch Manager

cc: File