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May 29, 2024

Mr. Tobin Shulman, Chair
Zoning Board of Appeals
Town of Stoneham
35 Central Street
Stoneham, MA 02180

Via: E-Mail to tobin.shulman@gmail.com
msagarino@stoneham-ma.gov

Re: **Comprehensive Engineering Review
The Residences at Spot Pond
5 Woodland Road
Stoneham, MA**

Dear Mr. Shulman:

McKenzie Engineering Group, Inc. (MEG) has reviewed the proposed Residences at Spot Pond Comprehensive Permit Application for conformance with the Stoneham Zoning Bylaw (ZBL), the Stormwater Management Rules and Regulations, Massachusetts Department of Housing and Community Development Comprehensive Permit Regulations (760 CMR 56.00), Massachusetts Department of Protection (MassDEP) Stormwater Management Standards, and sound engineering practices.

The following documentation was received and served as the basis for our second review:

- Plans entitled "The Residences at Spot Pond, 5 Woodland Road, Map 27, Lots 3, 3CM & 6, Stoneham, MA," prepared by Allen and Major Associates, Inc., dated November 16, 2023, revised April 30, 2024(Site Plans).
- The stormwater management report entitled "Drainage Report – The Residences at Spot Pond, 5 Woodland Road, Map 27, Lots 3, 3CM & 6, Stoneham, MA," prepared by Allen and Major Associates, Inc., dated September 8, 2023, revised April 5, 2024.
- Allen and Major Associates, Inc. response letter dated April 9, 2024.

MEG offers the following updated comments regarding the documentation of the proposed site plan. Most of our comments have been satisfactorily addressed. The text in **red bold font** provides our comments regarding the Applicants' response to our letter in *blue italics* dated April 9, 2024. **Yellow highlighted** responses require an Applicant response.

General Comments

1. The plans and drainage report submitted by the Applicant were performed consistent with sound engineering practices.

A&M Response: The comment has been noted by the Applicant.

MEG Response: Response acknowledged.

2. We request that the Applicant provide a water and sewer impact assessment identifying anticipated project demands and supporting analysis to show the development demands can be met without impacts to the sewer collection or water distribution systems and that adequate capacity is available.

A&M Response: Prior to construction, the existing water line capacities will be further evaluated by means of a hydrant flow test, and supplemental domestic and fire pumps will be included if necessary. Sewer line capacity will be estimated and reviewed with the Town of Stoneham DPW.

MEG Response: Response acknowledged.

3. We request that the Applicant coordinate with the Board of Health on dumpster locations.

A&M Response: The Applicant is proposing trash collection accommodations be made inside the buildings. The location of any permanent exterior dumpsters will be coordinated with the Board of Health.

MEG Response: Response acknowledged.

4. We request that the Applicant provide calculations that the existing municipal drainage system provides sufficient capacity to accommodate the existing and proposed flows from the development for all connections to the municipal drainage system.

A&M Response: The proposed drainage system has been designed to reduce peak flows for all storms analyzed. Historically there have been no flooding issues with the Site, and a new drainage design point, Study Point SP-3, has been incorporated into the design to further distribute the flows discharging from the Site. All of the stormwater connections currently exist and there are no connections to the Town of Stoneham municipal system.

MEG Response: Comment satisfied.

Town of Stoneham Town Code Chapter 15 Zoning

The following sections of the Town Code Chapter 15 Zoning apply to the Project. The text in **bold red font** provides our comments regarding the Applicants' response to our letter in *blue italics* dated April 9, 2024. **Yellow highlighted** comments require an Applicant response.

5. Section 4.15.2.4

Garden or Townhouse design dwelling units not to exceed 310 units in the Medical/Office/Residential District provided that there is a maximum of thirty (30) units per acre for Garden dwellings and a maximum of ten (10) units per acre for Townhouse style dwellings.

The Applicant is proposing two new multi-family garden apartment buildings with a total of 378 units, and a maximum density of thirty-eight (38) units per acre.

The Applicant is requesting waivers to exceed 310 units and 30 units per acre.

A&M Response: Agreed, no response required.

MEG Response: Response acknowledged.

6. Section 5.15.2.10

Off-street Parking, Layout, Screening and Loading Requirements for Medical/Office/Residential District are in accordance with Section 6.3 except as follows:

(a) Minimum of 1.7 parking spaces per dwelling unit

The Applicant proposes using a portion of a grassed area at 11 Executive Drive for a paved parking lot to achieve the minimum of 1.7 parking spaces per dwelling.

The Applicant will request a waiver if the proposed parking lot at 11 Executive Drive is not feasible.

A&M Response: Subject to a grant of a waiver from the Board of Appeals, the Applicant is amenable to eliminating the 82-space parking area at 11 Executive Drive and only building if the spaces are required or needed.

MEG Response: The site layout has been revised to provide 643 parking spaces, and the 82-space parking area at 11 Executive Drive has been eliminated. No further comment is required.

7. (e) Parking spaces shall be on the same lot as the principal use except that parking spaces may be provided on an adjacent lot provided there is a recorded parking easement for said parking.

The Applicant proposes using a portion of a grassed area at 11 Executive Drive for a paved parking lot.

The Applicant should provide documentation of a recorded parking easement.

A&M Response: The parking easement is part of the deed recorded in Book 69291 Page 355 in the Southern Middlesex District Registry of Deeds, a copy of which is included.

MEG Response: Comment satisfied.

8. Section 5.21 Table 1 Dimensional Requirements – Minimum Setbacks

Minimum Front Yard Setback = 30 feet

The Applicant proposes six (6) detached garages within the 30-foot setback, with the closest being 9.2 feet.

The Applicant is requesting a waiver.

A&M Response: Agreed, no response required.

MEG Response: The site layout has been revised to provide five (5) detached garages, with two within the 30-foot setback, with the closest being 11.0 feet. No further comment is required.

9. Section 5.21 Table 1 Dimensional Requirements – Lot Coverage (Portion of lot devoted to structure)

Maximum Lot Coverage = 30%

The Applicant is proposing a maximum lot coverage of 31.1%

The Applicant is requesting a waiver.

A&M Response: Agreed, no response required.

MEG Response: Response acknowledged.

Town of Stoneham Town Code Chapter 11A Stormwater

As submitted, the Site Plans and Drainage Report complies with the requirements except as noted herein.

10. Sec. 11A.3.7 Stormwater Management Plan

Subsection 1 Design Standards

The Stormwater Management Plan for any parcel (larger than one (1) acre) that discharges, through pipes or other manmade conveyances, to the Town's Municipal Separate Storm Sewer System (sometimes referred to herein as "MS4") or any brook, stream, river, pond, lake, resource water or wetland within the Town or subject to the Clean Water Act (33 USC 1342) shall additionally be designed to infiltrate two (2) inches of water, regardless of soil infiltration rates, per impervious square foot prior to any discharge. In addition, ninety (90) percent of the average load of Total Suspended Solids (TSS) and sixty (60) percent of the Total Phosphorus (TP) shall be removed prior to discharge.

The Applicant did not provide recharge, TSS (90%), or TP (60%) removal rates that meet the Town's MS4 requirements. Please review and revise accordingly.

A&M Response: The proposed drainage system includes no connections to the municipal drainage system. Stormwater flow is directed to an existing MWRA basin at the rear of the Site and also to existing on-site closed-pipe systems which eventually discharge into the drainage system on Woodland Road, which is under DCR jurisdiction.

MEG Response: Agreed that the Project's closed-pipe system eventually discharges into the drainage system on Woodland Road, which is under DCR jurisdiction. DCR projects are subject to Federal Environmental Protection Agency (EPA) municipal storm sewer system (MS4) General Permit Requirements. While this Project is not a DCR project or a project on DCR property, runoff from the Site eventually outfalls into Spot Pond, located within a DCR priority watershed. Therefore, MEG suggests that 90% TSS and 60% total phosphorous removal rates should be obtained.

Town of Stoneham Stormwater Management Rules and Regulations

As submitted, the Site Plans and Drainage Report complies with the requirements except as noted herein.

11. Section 3.1 Permits and Procedures

A. Permit issuance is required prior to any land disturbance activity that results in:

1. Disturbance of one (1) or more areas of land and any land-disturbing activity that is part of a Common Plan of Development or Sale that will ultimately result in the disturbance of one (1) or more acres of land.

More than one (1) acre of land will be disturbed; therefore, a Land Disturbance Permit is required.

A&M Response: If required, it is anticipated that a Land Disturbance Permit shall be issued under the Comprehensive Permit for the Project.

MEG Response: Comment satisfied.

12. Section 3.3 Stormwater Management Plan
- B. Submittal of a Stormwater Management Plan
8. The locations (s) of existing and proposed easements.

A recorded parking easement for the proposed parking lot at 11 Executive Drive should be provided.

A&M Response: The parking easement is part of the deed recorded in Book 69291 Page 355 in the Southern Middlesex District Registry of Deeds, a copy of which is included.

MEG Response: Comment satisfied.

13. (14.) Estimated seasonal high groundwater elevation (November to April) in areas to be used for stormwater retention, detention, or infiltration.

No soil testing has been performed in the areas proposed for subsurface infiltration. The Applicant proposes that soil testing be performed in the Spring of 2024.

A&M Response: Stormwater test pits were performed on March 19, 2024. The test pits confirmed the design as proposed and no modifications to the subsurface infiltration design is required. The findings including the MassDEP Form 11 and infiltration sizing calculations are included with this response.

MEG Response: Comment satisfied.

14. (16.) A drainage area map showing pre- and post-development construction watershed boundaries, drainage areas, NRCS hydrologic soil group boundaries (A, B, C, and D soil groups), flow paths for time of concentration, points of analysis and location of soil tests.

The Applicant has provided pre- and post-development watershed plans. However, we disagree with the number of design points and the delineation of both the pre- and post-development watershed areas. The Applicant should review Sub Area F-6 in the Drainage Report for Langwood Executive Center and MWRA Tank Site, Stoneham, MA, as provided. We believe that the northern portion of the Site, as delineated in Sub Area F-6, flows to the existing closed drainage system within the existing parking lot and not to Design Point 1 as shown on the proposed pre- and post-development watershed plans.

In addition, per the MassDEP Stormwater Handbook, watershed areas should include all areas contributing drainage to the Site, including off-site locations.

Please review and revise accordingly.

A&M Response: The watershed plans have been updated to include the entire F-6 area which includes off-site areas, and an additional Study Point, SP-3, has been added and modeled as the existing closed drainage system in the northerly existing parking lot as requested. No significant changes to the drainage system are required.

MEG Response: Comment satisfied.

15. (20.) Timing, schedules, and sequence of development including clearing, stripping, rough grading, construction, final grading, and vegetative stabilization.

Please provide a construction sequence.

A&M Response: A conceptual construction sequence outline is provided as part of the Operation and Maintenance Plan report included with this response.

MEG Response: Comment satisfied.

16. (22.) A narrative section which includes a discussion of each measure, its purpose, its construction sequence and installation timing as they apply to the Site and the Project proposed

Please provide a narrative in the Operations and Maintenance Plan.

A&M Response: A conceptual construction sequence outline is provided as part of the Operation and Maintenance Plan report included with this response.

MEG Response: Comment satisfied.

C Standards.

17. 1. Stormwater Management Design Calculation and Standards

- a. Drainage systems shall have adequate capacity to handle all storm water runoff presently flowing through the property/site, as well as to dispose of any additional runoff generated by the proposed development up to the 100-year storm event. Rainfall data used for stormwater design shall utilize the 24-hour event from NOAA Atlas 14.

The Applicant provided rainfall data for the 24-hour Atlas 14, Type III, NRCC_D rain event, not NOAA Atlas 14. Please review and revise accordingly.

A&M Response: A narrative section to address the construction sequence has been included in the Operation and Maintenance Plan report, a copy of which has been included with this response.

MEG Response: Comment satisfied.

18. b. Test pits shall be performed in the location of all proposed retention or detention facilities to determine depth to groundwater, depth to refusal, and soil classification. If the system proposed recharge to groundwater an infiltration test shall also be performed.

For soil testing to be performed in the Spring of 2024, confirm that infiltration testing will be performed at all locations and results will be submitted.

A&M Response: Stormwater test pits were performed on March 19, 2024, and the results are included with this response.

MEG Response: Comment satisfied.

19. c. Low Impact Development (LID) site planning and design strategies must be used to the maximum extent feasible.

The Applicant has not provided LID site strategies.

A&M Response: The Applicant has reviewed incorporation of LID measures for the Project, however, there are no feasible areas available on-site for LID site strategies. The entire project site is previously disturbed and is not significantly different from previously approved development plans. Stormwater runoff is fully attenuated by the proposed drainage systems.

MEG Response: Comment satisfied.

20. h.(i) Storm drain piping and grate inlets shall be designed for a 25-year storm event.

Please provide grate capacity calculations.

A&M Response: Grate inlet capacities have been provided in the updated drainage report Appendix, a copy of which is included with this response.

MEG Response: Comment satisfied.

21. i.. Drainage pipe systems shall be designed to accommodate the 25-year storm event, maintain velocities between 2.5 and 10 feet per second, provide self-cleaning flow velocities.

For CB-7 to DMH-7, the pipe slope is less than 0.50%, and the velocity is less than 2.5 feet per second. Please review and revise accordingly so that all pipe slopes have a minimum of 0.50%.

A&M Response: The drainage line between CB-7 and DMH-7 has been revised in the pipe sizing chart to meet minimum slope and scour velocities.

MEG Response: Comment satisfied.

22. o. At the discretion of the Authorized Enforcement Agency, drainage system may discharge to an existing, adjacent municipal drainage system if the Owner can show that the municipal drainage system provides sufficient excess capacity to accommodate both the existing runoff and the proposed additional runoff from the Project during a 25-year frequency and a 24-hour duration storm event.

Provide calculations that the existing municipal drainage system provides sufficient capacity to accommodate the existing and proposed flows from the development for all connections to the municipal drainage system.

A&M Response: The proposed drainage system has been designed to reduce peak flows for all storms analyzed. Historically there have been no flooding issues with the Site, and a new drainage design point, Study Point SP-3, has been incorporated into the design to further distribute the flows discharging from the Site. All of the stormwater connections currently exist and there are no connections to the Town of Stoneham municipal system.

MEG Response: Comment satisfied.

23. Section 3.5 Operation and Maintenance Plan

3. Map showing location of all stormwater facilities including but not limited to catch basins, manholes, drainage piping, and stormwater devices.

Submittal of the plan could be made as a condition of approval.

A&M Response: The drainage plan indicates the locations of proposed catch basins, manholes, drainage piping and stormwater devices. A simplified drainage plan for maintenance purposes can be provided as a condition of approval.

MEG Response: Comment satisfied.

MassDEP Stormwater Management Regulations

The following Section describes the 10 Standards for Compliance with MassDEP Stormwater Management Regulations and the status of the submittal relative to each Standard.

24. Standard 1 – Untreated Stormwater

This Standard requires that no new stormwater outfalls may discharge untreated Stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

See Standard 4 as additional information is needed to demonstrate compliance.

A&M Response: Acknowledged. No response required.

MEG Response: Response acknowledged.

25. Standard 2 – Post Development Peak Discharge Rates

This Standard requires that that stormwater management systems be designed so that post-development peak rates of discharge do not exceed pre-development peaks of discharge rates.

The following needs to be completed to demonstrate compliance:

- ***Review and revise the pre- and post-development watershed areas to include off-site locations, per the MassDEP Stormwater Handbook.***
- ***Review and revise the pre- and post-development watershed areas to align with Sub Area F-6 of the Drainage Report for Langwood Executive Center and MWRA Tank Site, Stoneham, MA.***

A&M Response: See response #14.

MEG Response: Comment satisfied.

26. Standard 3 – Recharge to Groundwater

This Standard requires that a minimum, the annual recharge from the post-development condition shall approximate the annual recharge from pre-development conditions based on soil type.

The following needs to be completed to demonstrate compliance:

- ***Perform soil testing to determine estimated seasonal high groundwater.***

- **Subsurface infiltration systems must have a minimum vertical separation of 2 feet from the estimated seasonal high groundwater to the bottom of the infiltration system.**
- **Provide mounding analysis for all subsurface infiltration systems if the vertical separation from the estimated seasonal high groundwater is less than four feet and the systems are proposed to attenuate the 10–100-year storms or provide calculations (in addition to HydroCAD) demonstrating the subsurface systems are not attenuated systems.**
- **Use all impervious areas on Site to calculate the required recharge volume. Unconnected areas were not included in the submitted report.**

A&M Response: Stormwater test pits were performed on March 19, 2024, and the results are included with this response. The test pit results confirm that a minimum of 4 feet of vertical separation to estimated seasonal high groundwater will be maintained for proposed drainage systems 1 and 3, and therefore a mounding analysis is not required for those systems. Test pits for System 2 will be performed prior to construction if needed. Additional impervious areas are included in the updated HydroCAD analysis as requested.

MEG Response: Comment satisfied.

27. Standard 4 – 80% Total Suspended Solids (TSS) Removal

This Standard requires that stormwater management systems be designed to remove 80% of Total Suspended Solids (TSS).

The following needs to be completed to demonstrate compliance:

- **Perform soil testing to determine estimated seasonal high groundwater.**
- **Subsurface infiltration systems must have a minimum vertical separation of 2 feet from the estimated seasonal high groundwater to the bottom of the infiltration system.**
- **Use all impervious areas on Site to calculate the required water quality volume. Unconnected areas were not included in the submitted report.**

A&M Response: See response to #26. The Standard DEP calculations have been revised to incorporate all impervious areas on-site with regards to calculating water quality volume.

MEG Response: The Project's closed-pipe system eventually discharges into the drainage system on Woodland Road, which is under DCR jurisdiction. DCR projects are subject to federal Environmental Protection Agency (EPA) municipal storm sewer system (MS4) General Permit Requirements. While this Project is not a DCR project or a project on DCR property, runoff from the Site eventually outfalls into Spot Pond, located within a DCR priority watershed. Therefore, MEG suggests utilizing the 1-inch water quality volume.

28. Standard 5 – Higher Potential Pollutant Loads

This Project is not considered a source of higher pollutant loads. This Standard is not applicable.

A&M Response: Agreed. The Applicant has utilized the ½" water quality volume in the revised Standard DEP calculations, as the Site is not considered a source of higher pollutant loads.

MEG Response: See Response to #27.

29. Standard 6 – Protection of Critical Areas

The Project is not located in a Critical Area based on DEP requirements. This Standard is not applicable.

A&M Response: Agreed.

MEG Response: Response acknowledged.

30. Standard 7 – Redevelopment Projects

This Project is not considered a redevelopment project. This Standard is not applicable.

A&M Response: Agreed.

MEG Response: Response acknowledged.

31. Standard 8 – Erosion/Sediment Control

This Standard requires a plan to control construction-related erosion, sedimentation, and other pollutants during construction.

Change all references from hay to straw in the Demolition & Construction Maintenance Plan.

Please provide a construction sequence.

More than one (1) acre of land will be disturbed; therefore, an EPA Notice of Intent and Stormwater Pollution Prevention Plan (SWPPP) is required.

See General Plan Comments for additional comments.

A&M Response:

All references to hay have been revised to straw. A NPDES SWPPP will be applied for and obtained prior to land disturbance and once a contractor has been awarded the Project. A conceptual construction sequence is provided and included with this response.

MEG Response: Comment satisfied.

32. Standard 9 – Operation and Maintenance Plan

This Standard requires long term maintenance of non-structural and structural BMP's and required a specific inspection schedule, etc.

A Long-Term Pollution Prevention Plan has been submitted, and we recommend that the O&M Plan be a standalone document that identifies BMP locations, snow storage areas, etc.

A&M Response: The O&M Plan is provided as a standalone document with BMP locations, and snow storage areas are included as an Exhibit in the O&M plan, all of which are included with this response.

MEG Response: Comment satisfied.33. Standard 10 – Illicit Discharges

A signed "Illicit Discharge Compliance Statement" meeting the requirements specified in the Stormwater Management Regulations needs to be submitted.

A&M Response: A signed "Illicit Discharge Compliance Statement" is provided in the Appendix of the revised stormwater report.

MEG Response: Comment satisfied.General Plan Comments34. Cover Sheet

1. Check the Assessor Map and Lot designations.
2. Suggest adding the Assessor Map and Lot designations to the plan view.

A&M Response: The cover sheet will be revised as recommended.

MEG Response: Comment satisfied.35. V-101 Existing Conditions

1. Label benchmark.
2. Label existing chapel.
3. Show the entire area for the proposed parking lot at 11 Executive Drive.
4. Show the existing conditions (if available) for 3 Woodland Road.
5. Incomplete existing conditions at the northeast corner of the site (missing walls, pavement, building, etc.)

A&M Response: The plan items for the Existing Conditions sheet will be incorporated to the maximum extent practicable, and field checked prior to construction.

MEG Response: Comment satisfied.36. C-001 Abbreviations and Notes

1. Erosion & Sedimentation Control Notes (1.) EPA 2020, not 2017.
2. Duplicate notes 15-20.
3. Provide SWPPP for review.

A&M Response: The Abbreviations and Notes sheets will be revised as recommended. A NPDES SWPPP will be applied for and obtained prior to land disturbance and once a contractor has been awarded the Project.

MEG Response: Comment satisfied.37. C-101 Erosion Control Plan

1. Show temporary sedimentation basin locations and calculations.

2. Some items in the legend are not shown on the plan. If not applicable, items should be removed from the legend.
3. Show concrete washout areas.

A&M Response: The Erosion Control Plan will be revised as recommended showing proposed locations for temporary sedimentation basins which are subject to change as construction progresses.

MEG Response: Comment satisfied.

38. C-102 Site Preparation & Demolition Plan

1. Are construction easements required?

A&M Response: No construction easements are required.

MEG Response: Response acknowledged.

39. C-103 Layout & Materials Plan

1. Label all curb radii not 3 feet.
2. Label the type of proposed vertical curbing—i.e., granite, precast concrete.
3. Dimension and label the entrances to the garage parking for Building B.
4. Label the fence around the pool to be 6 feet high and provide details.
5. Dimension the proposed detached garages.
6. Clarify the material of the proposed sidewalks: bituminous concrete or cement concrete.
7. Clarify the location of the proposed crosswalk and stop line at the northeast corner site entrance. Add a stop sign.
8. Clarify the number of proposed parking spaces at the northeast parking lot.

A&M Response: The Layout and Materials plan sheet will be revised as recommended.

MEG Response: See additional comments on pages 17 and 18.

40. C-104 Grading & Spot Grades Plan

1. Check the proposed grading at the garage entrance. It appears that a 220 contour is missing.
2. The 222 contour at the proposed parking lot at 11 Executive Drive is incorrect. It should be labeled 226.
3. Provide details of the 1:1 rip rap slope. Provide fencing at the top of the slope.
4. Label the slope at the northeast corner of the Site.
5. Confirm if construction and/or permanent easements are required for the proposed retaining walls along Executive Drive and the property line with 3 Woodland Road.
6. Confirm the constructability of the proposed retaining wall at the Site's northeast corner. A proposed 9-foot-high wall appears to be located along the property line, with an existing wall located 4 feet away.

7. Confirm the constructability of the proposed 16-foot and 13-foot-high retaining walls adjacent to the existing building to remain at 3 Woodland Road.
8. Check the proposed grading along the existing concrete walk between proposed Building A and the existing building to remain at 3 Woodland Road. The existing grade appears to be at elevation 198, not 200.

A&M Response: The Grading and Spot Grades plan sheet will be revised as recommended. Proposed retaining walls over 4 feet in height shall be designed by a registered Structural Engineer. Additional retaining wall coordination will be required with the site contractor and all required documentation shall be provided as part of the Building Permit submission.

MEG Response: See additional comments on pages 17 and 18.

41. C-105A Drainage Plan

1. Confirm that existing drain manholes EX-1 and EX-2 can accommodate the proposed connections.
2. The outfall pipe at the proposed drain manhole DMH 28 is an 18-inch HDPE, and the connection from the proposed development is a 30-inch HDPE. Provide calculations that the existing municipal drainage system provides sufficient capacity to accommodate the existing and proposed flows from the development for all connections to the municipal drainage system.
3. Recommend a minimum slope of 0.50% for all drainpipes. Roof leaders are proposed to be at 0.25%.
4. Recommend showing proposed inverts for all roof leaders.
5. Check cover for subsurface infiltration systems #1 and #2. Per the manufacturer's details, pavement depth should not be included in the 2 feet of cover.
6. Check cover for CB-6 and CB-7. Distance from rim to invert is less than a minimum of 2.5 feet, and the pipe slopes are less than 0.50%. In addition, the minimum cover over HDPE pipe is 12-inches.
7. The drainage outlet from the existing drainage system within the parking lot to remain appears to be undersized. Please provide calculations that the existing system provides sufficient capacity and what improvements are proposed if it does not. At a minimum, upgrade existing catch basins with hoods if not provided.
8. Outlet Control Structure orifice elevations are not provided.
9. Revise HydroCAD analysis for Pond 3P. No Exfiltration is provided.
10. Revise HydroCAD analysis for Ponds 2P and 3P. Primary discharge pipe sizes should match pipe sizes in rational calculations.
 - a. DMH-14 (OCS) 15-inch (rational) vs. 18-inch (HydroCAD).
 - b. DMH-16 (OCS) 24-inch (rational) vs. 18-inch (HydroCAD).

A&M Response: The Drainage plan sheet will be revised as recommended. Existing drain manholes have been checked to confirm proposed connections are feasible. The proposed drainage connection to DMH-28 has been revised such that a 15" pipe now discharges from UIS-

1 to DMH-28, and the drainage patterns have been revised to accurately show flow from the existing parking area within watershed P-1 as discharging to a separate closed drainage system which flows to the north. Roof leaders will be revised as noted. Inverts for catch basins CB-6 and 7 have been revised to meet the manufacturer's recommended minimum cover. As there are no known historical flooding issues at the site and peak rates of runoff have been reduced, no further review is required. Hoods shall be provided at all existing and proposed catch basins. Outlet control structures (OCS) elevations have been provided in plan view on the drainage sheet as well as in the HydroCAD model, and OCS elevation details will be provided within the Details sheets as part of the final building permit plan set. The HydroCAD model for Pond 3P has been revised to include exfiltration, and the exfiltration rate of 1.02 inch/hour has been confirmed via test pits.

MEG Response: See additional comments on pages 17 and 18.

42. C-105B Drainage Plan

1. Provide the following in the rational calculations provided in the Drainage Report.
 - a. DMH-1 (WQU) to IUS2
 - b. DMH 25 to IUS3
 - c. IUS2 to DMH 14 (OCS)
 - d. DMHs 27, 28, 29, 20 and 31
2. Inconsistencies between rational calculations in the Drainage Report and the plan. Please review and revise accordingly.

A&M Response: The Drainage plan, sheet C-105B will be revised as recommended, and the Drainage Report rational calculations will be rectified with the site plans. The revised Drainage Report is included with this response.

MEG Response: See additional comments on pages 17 and 18.

43. C-106 Utility Plan

1. Coordinate note of the existing hydrant at Building A with the Demolition Plan. Is it to be removed or relocated?
2. Confirm the number of hydrants and fire department connections with the Stoneham Fire Department.
3. Look at providing one sewer connection from Building A.

A&M Response: The existing hydrant is to be relocated. The Applicant will meet with the Stoneham Fire Department to review the site plans including hydrant locations, fire department connections, standpipe locations, etc. as part of the final review prior to issuance of a Building Permit. Only one (1) sewer line is proposed for Building A and will include a sewage grinder pump as requested by Stoneham Department of Public Works.

MEG Response: See additional comments on pages 17 and 18.

44. C-108 Fire Truck Turning Plan

1. Confirm the following is acceptable by the Stoneham Fire Department:

- a. Per 527 CMR 1.00, Chapter 18 Fire Department Access and Water Supply: 18.2.3.5.6.1. The gradient for a fire department access road shall not exceed 10%. The proposed grade of the emergency access drive is 14.9%.
- b. Per 527 CMR 1.00, Chapter 18 Fire Department Access and Water Supply: 18.2.3.5.8 Travel in the Opposing Lane. The use of the opposite lane is prohibited in the design of all new fire apparatus access roads. There is encroachment into the opposite lane at all entrances and exits from the development.
- c. No direct access to the proposed garages.

A&M Response: The emergency access drive will be revised to no greater than a 10% gradient. The Applicant will meet with the Stoneham Fire Department to review the site plans including hydrants, fire department connections, standpipe locations, etc. as part of the final review prior to the issuance of a Building Permit.

MEG Response: Comment satisfied.

45. C-109 Refuse Truck Turning Plan

1. Coordinate with the Board of Health on dumpster locations.

A&M Response: The Applicant is proposing trash collection accommodations be made inside the buildings. The location of any permanent exterior dumpsters will be coordinated with the Board of Health

MEG Response: Comment satisfied.

46. All Detail Sheets

1. Confirm that all details are consistent with the Town of Stoneham DPW construction details.

A&M Response: Details consistent with the Town of Stoneham DPW will be provided.

MEG Response: Comment satisfied.

47. C-501 Details

Silt Fence and Straw Bale Detail

- a. Remove reference to hay.

Building Sewer Detail:

- a. The Utility Plan calls for an 8-inch PVC pipe.

A&M Response: The plan details will be updated as requested.

MEG Response: Comment satisfied.

48. C-502 Details

Precast Concrete Sewer Detail

- a. Show Section A
- b. The Utility Plan calls for an 8-inch PVC pipe.

A&M Response: The plan details will be updated as requested.

MEG Response: See additional comments on pages 17 and 18.

49. C-503 Details

Typical Segmental Block Retaining Wall

- a. Add note that the design of precast concrete modular block retaining walls shall be by a professional structural engineer registered in the Commonwealth of Massachusetts.

Typical Outlet Control Structure Detail

- a. Suggest providing separate details for each outlet control structure showing elevations of proposed orifices, weirs, rims, and pipe inverts.

General and Heavy-Duty Bituminous Pavement

- a. Please label the location of the heavy-duty bituminous pavement on the Layout and Materials Plan.

Heavy-Duty Cement Concrete Pavement

- a. Please label the location on the Layout and Materials Plan.

A&M Response: The plan details will be updated as requested.

MEG Response: See additional comments on pages 17 and 18.

50. C-504 Details

Typical Outlet Control Structure Detail

- a. Recommend providing separate details for each outlet control structure showing elevations of proposed orifices, weirs, rims, and pipe inverts.

ADS MC-4500 Infiltration System Chamber System

- a. Recommend providing separate details for each chamber system in the plan view, showing the number and size of the inspection ports, isolator row, headers, and inverts.
- b. Recommend providing separate details for each chamber system showing the elevation of the estimated seasonal high groundwater and the proposed top and bottom of the stone and chambers.

A&M Response: The plan details will be updated as requested.

MEG Response: Comment not satisfied. Submittal of the revised details as part of the final building set could be made as a condition of approval.

51. L-101 Landscape Plan

1. Provide screening around the proposed parking lot at 11 Executive Drive.

A&M Response: Acknowledged. As previously indicated, the applicant is amenable to land banking the parking spaces and only building the parking if the spaces are required or needed.

MEG Response: The site layout has been revised to provide 643 parking spaces, and the 82-space parking area at 11 Executive Drive has been eliminated. Therefore, screening for the proposed parking is not required.

Additional comments to A&M in an email dated May 8, 2024

1. C-103 Layout & Materials Plan
 - a. Garage sizes
 - b. Label the 60' striped area at Building B
2. C-104 Grading & Spot Grades Plan
 - a. Treatment & detail for the 1.5:1
 - b. Detail for the 1:1 riprap slope
3. C-105A Drainage Plan
 - a. The infiltration system #1 configuration does not match the HydroCAD configuration.
 - b. Test Pit data for TP-101 does not match the soil logs.
4. C-105A Drainage Plan
 - a. There are numerous inconsistencies with the pipe sizing table.
5. C-106 Utility Plan
 - a. Electric conduit for EV chargers?
AC-502 Details
 - b. Where are the double grate catch basins?
6. C-503 Details
 - a. The fence detail should be 6' high.

Drainage Report

8. Why flood elevation for Pond 3P in HydroCAD?
9. Calculations for Infiltration Pond #3 are not complete.
10. Pipe sizing table
 - a. The pipe inlets to the proposed infiltration systems would be below peak elevations in all storms modeled. This will impact the available capacity of the pipes. Please update the pipe calculations to include the water surface elevation (hydraulic grade line) and freeboard using MassDOT procedures.
 - a. AD-3 is missing from the table.
 - b. Header to DMH-31 is missing from the table.

- c. The minimum pipe cover should be 1 foot, not 0.69.
 - d. Show pipes from infiltration systems to outlet control structures (OCS).
 - e. Previous calculations used a 100-yr storm for pipe sizing from OCS, and this submission uses a 25-year storm.
 - f. There are numerous inconsistencies with Sheet 105B.
11. TSS removal
- a. Need TSS removal for runoff to DMH-27.

Additional comments to A&M in an email dated May 1, 2024

12. The project is located within a DCR priority watershed; therefore, the project needs to maximize treatment 90% TSS, 60% Phosphorus removal, and a 1" water quality depth.
13. It appears that less than 65% of the total impervious areas are directed to the infiltration BMPs. Therefore, the project does not comply with Standard 3-Recharge. I apologize for not catching this during my first review.

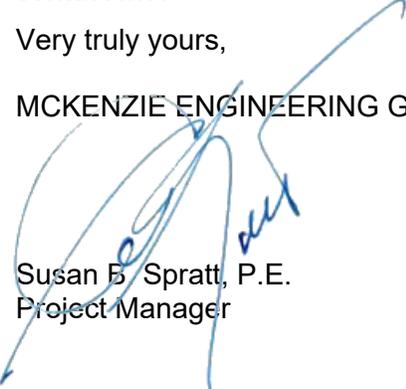
Additional comments to A&M in an email dated April 29, 2024

14. Clarification on the soil logs and whether all material encountered during test pits was fill?

We thank you for the opportunity to assist the Stoneham Zoning Board of Appeals with the engineering review of this Project. Should you have any questions, please do not hesitate to contact me.

Very truly yours,

MCKENZIE ENGINEERING GROUP, INC.


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