



MetroWest Engineering, Inc.

December 3, 2019

Ms. Winifred Li, Chairperson
Weston Zoning Board of Appeals
Town of Weston
Town House Road
Weston, MA 02493

RE: Fourth Review
Modera Weston, 751-761 Boston Post Road, Weston, MA 02493

Dear Ms. Li:

With reference to the Modera Weston 40B Project proposed for property located at 751-761 Boston Post Road, I am in receipt of the following materials:

1. Plan set entitled "Permit Set, Modera Weston, 751-761 Boston Post Road, Weston, MA" consisting of 18 sheets with a most recent revision date of November 22, 2019, prepared by Howard Stein Hudson and signed and stamped by Richard Latini, PE. The Erosion and Sediment Control Plan was omitted from this set.
2. A Stormwater Report also prepared by Mr. Latini of Howard Stein Hudson, dated November 22, 2019
3. A Limited Hydrogeologic Study, prepared by GZA, dated October 23, 2019
4. Email correspondence from Michael Ostrowski of GZA to me, dated November 26, 2019, providing further support to the 10/23/2019 GZA report.

As you will recall, I had reviewed several earlier versions of the plans for this project and last reported to the Board on August 7, 2019, at which time I discussed various issues related to the site engineering plans and, in particular, the drainage plans and analysis. Since that time, I have been meeting regularly with Mr. Latini to review progress plans and provide comments and direction in an effort to resolve as many issues as possible.

The most recent submittal, referenced above, has resolved many of the deficiencies noted in the earlier submissions and greatly narrowed the issues that remain to discuss. Additionally, the quality and clarity of the materials has greatly improved since the earlier submittals. I believe that with a little more time all of the issues could have been resolved, but the meeting schedule required Mr. Latini to submit the plans prior to final resolution of several items. Most of these items are relatively minor, and likely can be corrected, although there is one issue may take a bit more effort to fully resolve. My comments are as follows:

Hydrologic Analysis and Drainage Calculations

The revised hydrologic analysis and drainage calculations have been performed in a manner consistent with accepted engineering practice as well as in compliance with the requirements both of the Town of Weston Stormwater Regulations and the MA DEP Stormwater Management Handbook. The analysis demonstrates that the project will not result in drainage or flooding impacts to project abutters or downstream properties within the Cherry Brook watershed. The project now provides sufficient on-site stormwater storage and infiltration to mitigate the impacts of the new impervious areas that will be constructed on the property.

While my statement concerning project impacts is inclusive of all abutting properties, I want to specifically discuss the impacts at 775 Boston Post Road and at 6 Elliston Road.

775 Boston Post Road: This property abuts the project in the southwest corner. Under existing conditions, this property is impacted by stormwater runoff from Boston Post Road, where a storm drain discharges stormwater onto the subject property, which then flows onto the 775 Boston Post Road property. The project now proposes to collect the discharge from this catch basin, treat it to improve water quality, and infiltrate a significant portion of it in a sub-surface infiltration system. This approach will result in a significant reduction in the volume of stormwater that flows onto the 775 Boston Post Road property, compared to the existing condition.

6 Elliston Road: This property abuts a large depression which presently collects stormwater from the subject property. During larger storm events, such as the 25 or 100-year storm, water can collect within this depression to depths that spill over onto the 6 Elliston Road property. The revised plans now include an outlet for this depression which will allow stormwater in the larger storm events to flow out of the depression. The result is that maximum water levels, as well as the total volume of water held in the depression, will be significantly reduced by the project. As a result, any existing stormwater flooding issues that impact the 6 Elliston Road property will be significantly improved.

Groundwater Conditions

Sufficient data and analysis have been provided by GZA, the project's Geotechnical Engineer, to demonstrate the likely level of maximum groundwater levels. All structures, both surface and sub-surface, have been located in positions where no adverse impact to groundwater should result.

Drainage and Grading Plans, Sheets C3.00 and C3.01

The following are technical comments on the drainage plans that should be addressed:

1. **Infiltration System 12C:** The plans and the hydrologic model are in conflict, with the plans calling for the bottom of stone to be set at elevation 168.0-feet while the analysis indicates it is at elevation 166.75-feet. Additionally, this system has too much soil cover on top of the chambers. The depth of cover of the system should be reduced to a maximum of three feet.
2. **Infiltration System 12B:** the depth of cover on this system should also be reduced by raising the system one foot.
3. **Infiltration System 13D:** The hydrologic model calls for bottom of stone to be at elevation 175.9-feet, while the plans call for it at 175.75-feet.

Peer Review Letter #4: Modera Weston Project, 751-761 Boston Post Road, Weston

4. Infiltration System 13C: The plans do not provide the elevation data on the isolator chamber.
5. Outlet Control Structure OCS-2: The specified rim grade of 177.8-feet is in conflict with the grading plan contour of 176-feet.
6. Infiltration System 13A: This system should be raised one foot.
7. Infiltration System 10A: This system should be raised one foot.

Required Offset between drains tributary to water supply and the proposed sewage system soil absorption system

Cherry Brook and any wetland body bordering on Cherry Brook, is a tributary to the City of Cambridge water supply. Although the project proposes to treat sanitary sewage with an onsite Wastewater Treatment Plant (WWTP), the soil absorption field that disposes the treated effluent is subject to the Title-5 setback requirements of 310 CMR 15.211. At this time the WWTP has not been designed and current civil-site plans provide placeholders for the probable location of the plant and the soil absorption system (SAS). The general location of the proposed SAS is shown on Sheet C3.01. It is generally located within the island area inside the driveway loop.

A potential issue exists in the separation between the SAS and storm drains that include an overflow discharge into wetlands on the site. Title 5 requires a minimum of 100-feet of separation between any subsurface drain that discharges into a water supply tributary and the SAS. The conceptual plans presently show the SAS within this 100-foot setback to DMH-8, Infiltration System 6S, and the roof drain cleanout for Building TH-4. Each of these referenced drains has an overflow discharge into the wetlands that border on Cherry Brook and will therefore be subject to the 100-foot setback requirement,

I note that the SAS has not been designed or sized, and its location and size will likely change when final engineering plans are developed. It is possible that the final design plans may be able to adjust the size and location of the SAS to account for the setback requirements without impacting the design of the drainage system. This is, however, an important issue that must be resolved and it is possible that its resolution will require modifications to the drainage plans.

At this time, the plans should be adjusted to remove the conflict between the drain setback and the SAS, either by adjusting the conceptual SAS location and size, or by adjusting drainage components to meet the setback requirements. Final plans demonstrating Title 5 compliance should be submitted to the Board at such time that the treatment plant and SAS design are complete.

Construction Management Plans

While most of the site design issues have been resolved, a major unresolved component of the project is management during the construction period. The proponent has advised me that the project will not be phased, and construction of the various buildings and infrastructure components will be occurring simultaneously. This will result in intense construction activity and will require a well-planned approach to mitigate both resident and environmental impacts during the construction period. Several issues must be carefully considered and addressed, including but not limited to the following:

Wetland Protection Coordination

The Weston Conservation Commission (WCC) is currently reviewing the Notice of Intent submitted for the project. The WCC will typically review Erosion and Sediment Control Plans and aspects of the

Peer Review Letter #4: Modera Weston Project, 751-761 Boston Post Road, Weston

construction that could impact wetland resource areas. I suggest that the ZBA coordinate requirements for this aspect of the project with the WCC and incorporate any recommendations from the WCC into any conditions issued for the project. This duplication of conditions is important in the event of an appeal to MADEP of the Order of Conditions issued by the WCC. Should MADEP issue a Superseding Order for the project based on an appeal, any local orders issued by the WCC may not survive into the Final Order for the project. Including such orders in the Comprehensive Permit will ensure their survival.

One condition that both the ZBA and the WCC should consider is the requirement for an independent Environmental Monitor (EM) to inspect and report on site conditions to both the WCC and the ZBA. An effective environmental monitor can often be instrumental in identifying poor management practices and preventing environmental calamities from occurring.

Site Excavation Activities

The project will require an intense site work effort in a relatively small area, adjacent to several existing residential homes. The project engineer estimates that approximately 160,000 cubic yards (CY) of earth will be exported from this site. This volume may be somewhat understated, as it does not account for site utilities or for a swell factor for excavated soil. Based on 20 CY trailer dumps, this equates to roughly 8000 large truck trips in and out of the site, simply to remove excess material. Additional trips are required to import materials, supplies and equipment. Most of trips will occur during the early stages of the project when site construction activities peak.

Additionally, dozens of workers will be engaged at the site at any one time. They will require suitable parking facilities as well as sanitary facilities.

This level of activity will require a well-planned approach if disruption to the area residents is to be minimized. The applicant should therefore submit a construction management plan detailing a schedule of activities, a proposal to manage local traffic to and from the site, and a plan to provide for worker needs for parking and sanitary facilities.

Construction Oversight

The proposed drainage system for the project controls stormwater by means of numerous subsurface infiltration systems. As such, the proper installation of these systems is essential for the proper performance of the stormwater management system. I recommend that a representative of the town be present to witness the installation of these systems at critical junctures including system excavation and component installation.

Stormwater System Operation and Maintenance Plan

The long-term performance of the stormwater management system will depend on an aggressive and consistent maintenance plan. The system relies on infiltration of stormwater through subsurface chambers, and such systems are prone to sediment clogging if they are not maintained on a regular basis. The applicant's engineer has provided a draft version of an Operation and Maintenance Plan which can serve as the basis for discussion. I offer the following comments:

Peer Review Letter #4: Modera Weston Project, 751-761 Boston Post Road, Weston

1. In general, the plan actually sets over aggressive maintenance intervals for cleaning. My experience is that when a plan requires excessive action, in the end none of it is performed. It is better to set realistic goals that the facility operator will incorporate into its annual budget.
2. Catch Basin Sumps should be cleaned of sediment once per year
3. Water Quality devices should be pumped once per year to remove oils and sediment
4. The plan should spell out the pre-treatment devices on each infiltration system (isolator chambers or deep sump manholes) and specify an annual cleaning and inspection.
5. Each infiltration system should be inspected annually during the spring (March 1 through May 15 as weather allows) immediately after a major storm event in which a minimum of one-inch of rain has fallen within a 24-hour period. The inspection should be performed within 8-hours of the cessation of the storm. The inspection should document the water level in each system and also record the time required for the system to fully drain.
6. Streets and parking lots should be cleaned twice a year by vacuum sweeping. Weekly cleaning of streets and parking areas should be performed by landscaping crews using leaf blowers during the growing season.
7. Curbing should be inspected and repaired each spring as necessary
8. Building gutters should be cleaned twice annually, spring and fall.
9. A snow storage location should be clearly identified in area away from storm drain inlets and wetlands.
10. Level spreader outlets and riprap outlets should be inspected annually and repaired as necessary.
11. Landscaping waste products such as leaves and grass clippings should be composted in a designated area, no closer than 25-feet from a wetland resource. Such materials should not be pushed into wetland areas.
12. Given the proximity of this project to wetland areas that are tributary to the City of Cambridge Water Supply, serious consideration should be given to prohibiting the use of sodium-based de-icing products during winter storms. I recommend that both the City of Cambridge Water Department and the WCC be consulted on this topic.
13. The O & M plan should include a certification by the facility operator that he or she has read and understands the plan requirements and will execute the plan.
14. Any Comprehensive Permit issued for the project should adopt the O & M Plan as a perpetual condition of approval.
15. The O & M plan activities should be documented annually in a report prepared by a MA Registered Professional Engineer with expertise in stormwater management and drainage systems. The report should document all completed maintenance activities and provide a complete inspection report that discusses current conditions, deficiencies and maintenance requirements. The plan should be provided both to the facility owner and the WCC.

City of Cambridge Water Supply

As has been noted earlier, the project lies within the Cherry Brook watershed which is a tributary to the City of Cambridge water supply. The applicant should provide any comments received from the City of Cambridge to the Board. To date, I have not been copied on any correspondence.

Emergency Equipment Access to Buildings A and B

My earlier report requested that Captain Robertson of the Weston Fire Department (WFD) be contacted to confirm that the WFD is satisfied with the access to the two large buildings, Building A and Building B.

Peer Review Letter #4: Modera Weston Project, 751-761 Boston Post Road, Weston

The plans provide for access to the front of each building but not to the rear. I understand that the applicant has met with Captain Robertson, but I have not received any written comments from him.

Site Lighting

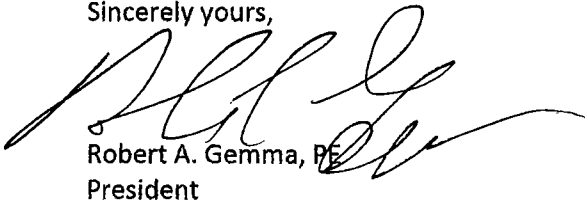
To date I have not seen a plan showing the proposed exterior site lighting fixtures. This plan should be submitted. I recommend that all lighting utilize Dark Sky compliant fixtures and that the site lighting minimize exposure and glare to adjoining properties to the extent feasible.

Landscaping and Site Engineering Coordination

I have not been provided with a proposed landscaping plan. Given the number of sub-surface utilities proposed, it is important that the site engineer and landscape architect carefully coordinate their submittals to avoid field conflicts that may impact the effectiveness of the landscaping plan.

In my opinion significant progress has been made in the analysis and design of this project and the remaining issues are likely resolvable. Please feel free to contact me should you have any questions or require any clarification concerning my comments.

Sincerely yours,



Robert A. Gemma, PE
President

- CC: Michele Grzenda at WCC
Patrick Garner (WCC Peer review Consultant)
Richard Latini
Lars Unhjem
Mark Romanowicz