

Chessia Consulting Services LLC



June 3, 2021

Daniel C. Hill, Esq.
Hill Law
Six Beacon Street, Suite 600
Boston, MA 02108

RE: Professional Engineering Review
Proposed Comprehensive Permit
518 and 540 South Avenue, Weston, MA

Dear Mr. Hill:

Chessia Consulting Services, LLC has reviewed the above referenced project relative to an Application for a Comprehensive Permit from the Zoning Board of Appeals. In particular, I have reviewed the Town's Peer Review comment letter together with the submittal and noted areas where I recommend that the Board consider additional design modifications be required. Professional Services Corporation, PC (PSC) has done a thorough review of the project and I concur with their remaining comments that need to be addressed.

It is clear that this is an intensive use of the available land area. Comprehensive Permits allow relief from local zoning requirements, if waived, but are subject to state and federal requirements. The project should be required to strictly comply with all DEP stormwater and wastewater design requirements as these are state standards. The design of the site should have been based on what is allowed within the limits of the Regulations. It appears in this case that the Applicant is trying to justify not complying with the regulations to implement their program rather than designing a project that complies as required.

The data reviewed included the following information:

Plans Entitled:

- "Hanover Weston Comprehensive Permit Package 21 June 2019 518 South Ave Weston MA" revised 04-27-21, Sheet Issuance 2 consisting of 36 Sheets Architecture prepared by Cube 3, Civil Site plans are prepared by Tetra Tech and Landscape design is by GWH Landscape Architects (Plans);

Supporting Data:

- "Stormwater Management Report 518 South Avenue (Route 30) Weston Massachusetts" report submitted to Town of Weston Conservation Commission revised March 19, 2021 prepared by Tetra Tech, Inc. (Report)

- Memorandum prepared by Professional Services Corporation, PC dated May 15, 2021.

I recommend that the following issues that have not been addressed in the submittal or PSC review letter be required to be addressed by the Board.

Stormwater Issues:

Watersheds:

The Existing Conditions analysis ignores low areas that would trap and hold runoff on both 540 South Avenue along the front of the lot and 518 South Avenue in the southerly part of the lot just west of the 100 foot buffer zone. These areas have been identified on the plans as closed contour low areas but this issue has not been addressed by the Applicant and has not been included in the Memorandum from PSC. I have raised this concern in prior comment letters. The model should be corrected to address the low areas as changes to the plans could make this issue significant in future revisions.

The Post Conditions model assumes that the existing low area that is modeled on #526 South Avenue flows directly into the wetlands, when in fact it would have to flow over the porous pavement to reach the wetlands. As noted below there should be no flow from other areas into porous pavement.

Infiltration system within garage:

Although the Applicant is pursuing pre-approval from the State Plumbing Board for the proposed subsurface infiltration system, it is clearly not in compliance with DEP requirements for infiltration systems. Table RR attached and previously provided clearly requires that infiltration systems be a **minimum** of >10 feet from a building foundation or slab. There is no question that a parking garage is a building and that the proposed system is within 10 feet of the slab. This is not allowed under the Regulations regardless of the State Plumbing Board determination as this aspect is subject to DEP Regulations as well as other State regulations.

The proposed infiltration system under the garage building is less than 50 feet from the wastewater effluent disposal area. PSC raised this as a concern and Tetra Tech's response claims only a 25 foot setback required from the infiltration system to the soil absorption system for effluent disposal based on DEP's "Guidelines for the Design, Construction, Operation, and Maintenance of Small Wastewater Treatment Facilities with Land Disposal" ("WWTF Guidelines"). I agree that further groundwater modeling is required to determine all of the impacts of the various systems, but also point out that Tetra Tech at public hearings has claimed that the effluent disposal system is subject to Title 5 setbacks from wetlands **not** the greater (100 foot) setback from surface waters in the WWTF Guidelines. The Applicant should not be able to pick and choose which setback regulation applies and when.

Infiltration systems (Recharge Area 1 & 2):

The plans do not identify the location of septic systems on abutting properties as required to confirm that the systems proposed meet required setbacks. A subsurface infiltration is

required to be 50 feet from an existing septic system. The proposed infiltration systems are 13-14 feet from the property line. A septic system is required to be a minimum of 10 feet from a property line. It is likely that the septic system for 546 South Avenue to the east of Recharge Area 1 is within 50 feet based on clearing limits and the location of the pool. It is my understanding that the septic system to the west for 534 South Avenue is to the rear of the house. For both adjacent septic systems, the Applicant is required to demonstrate that the proposed systems meet setbacks. If they do not, the design will need to be revised and given the limited available space on the site it is critical to determine the location of abutting septic systems at this time.

Porous pavement:

It is not clear that it is feasible to construct the Stone Strong Wall adjacent to the porous pavement. The blocks are a minimum of 44 inches wide and the largest are 86 inches wide. The plans indicate approximately 5 feet from the edge of the porous pavement to the face of the wall. The detail indicates that the liner proposed to prevent breakout of infiltrated runoff through the wall is not vertical but would be under the porous pavement and slope towards the wall this could impact the capacity of the porous pavement in locations where the wall is close to the pavement.

Porous pavement design is detailed in Volume 2 Chapter 2 Structural BMP Specifications for the Massachusetts Stormwater Handbook. These are **specifications** not guidance. A copy of the specification for porous pavement is included. In particular the design does not conform to the following aspects of the specifications:

- Porous pavement provides peak rate control for small storms. This is for a 2 year or lower rainfall based on the DEP Handbook. The design assumes all storms including the 100 year storm would be controlled by the porous pavement and does not comply with the Regulations.
- Setback from Septic System soil absorption system 50 feet. Although the proposed system is not a septic system, the setback proposed is much less than 50 feet and is 0 feet at one point. I note that setbacks for infiltration basins from wastewater treatment system effluent disposal areas is 25 feet based on DEP's "Guidelines for the Design, Construction, Operation, and Maintenance of Small Wastewater Treatment Facilities with Land Disposal" ("WWTF Guidelines"). In any case the systems should be redesigned to meet at least a 25 foot setback. The Applicant recognizes this requirement as it stated this setback in the response to PSC's initial review letter regarding infiltration system setbacks for the subsurface system under the garage, yet fails to apply it to a similar infiltration system reportedly designed to infiltrate the entire 100 year storm.
- Setback from surface waters 100 feet. 310 CMR 10.00: Wetlands Protection Act Regulations define wetlands as surface waters. The access road from South Avenue into the site between wetland flag 10 and 16 is within 100 feet of wetlands and all but the southernmost section is within 50 feet of the wetlands.
- Setback from a property line of 10 feet. The pavement is setback approximately 4 feet from the property line of #526 South Avenue. This is also an area that currently has a low ponding area that overflows into 518 South Avenue in larger storms. The Regulations are not specific to whether the porous pavement is

higher or lower than the adjacent property to require this setback, but in this case as there is a low area on the abutting property it is lower in some areas and higher in others. The PSC letter seems to agree with the Applicant that this is OK to not comply with the setback since the adjacent lot is higher than the project site. The Board should require that the design comply, there is no justification to install this type of system in this location where it is not compliant with the Regulations.

- Porous pavement should not receive runoff from other drainage areas. Clearly the only way for runoff from #526 South Avenue to reach the wetlands is over the roadway as currently occurs. This is not addressed in the stormwater model and is not reflected in the site design.

The Board should require the project to comply with State Regulations relative to the location and design of porous pavement. Although it is described as necessary to install the porous pavement for the emergency access road required by the Fire Department, it is the Applicant's responsibility to comply with all Regulations and design a project that fits the site subject to the applicable requirements. This is not the case as the project is not able to comply as designed. An alternative plan that is less intensive should be considered for this site to eliminate this issue.

Foundation underdrain:

Based on my review of the PSC review letter, the project requires a foundation drain for the garage building at Elevation 218. The bottom of the recharge system under the garage is at Elevation 216 and is reportedly 4 feet above groundwater. It is unclear why a foundation drain is necessary if that is the case. Reportedly the foundation drain flow is included in the recharge system but that is not apparent in the HydroCAD analysis as there is only the inflow from the subarea listed. In any case it is not recommended to have constant groundwater flow into an infiltration system as it will reduce the capacity, raise the groundwater in the vicinity and impact the overall operation of a system that is designed to flood and drain periodically not have a constantly pumped flow of water into it. I agree with PSC that this aspect needs further investigation, but recommend that the Board require a different outlet for the system if it is required and that any impacts to recharge, groundwater mounding, capacity, etc. all be a consideration of the design.,

Wastewater Management Design Issues:

The Applicant proposes to construct a wastewater treatment facility with a design flow of 38,000 gallons per day. Treated effluent would be recharged into the ground at one of two irregularly shaped leaching areas. The primary leaching field is on the east side of the Site, within 100 feet of the BVW, and the reserve area is along the southern property boundary, abutting the Seminary.

The Site Plans do not comply with setback requirements set forth in DEP's WWTF Guidelines included with this letter. Since wastewater disposal is a health and safety issue, full compliance with the WWTF Guidelines should be required. The Applicant has continually stated that DEP approved the location of the system based on what has been demonstrated is a flawed model. Further, the revised design would further impact the model that has been submitted to DEP. A revised groundwater model as discussed in the

PSC letter should be required and it should also be a requirement of the Board that DEP fully review the revised model. We request that the Board require that the Applicant comply with the minimum setbacks listed in the WWT Guidelines of 100 feet.

Construction Management

A Storm Water Pollution Prevention Plan (“SWPPP”) will be required for this site but only minimal information has been submitted. I agree with PSC that for a site with this intense of a development a draft SWPPP is a reasonable request. The plans have some minimal data on construction phase stormwater controls but they are not sufficient for a SWPPP.

This site has minimal area for construction parking, material staging and stockpiling, and general construction. It is clear just looking at the retaining wall design that there is no way to construct the wall without impact to #546 South Avenue. The wall is in a cut with the excavation to install the 44” wide minimum wall impacting several feet into the abutting lot. Lines on paper do not mean that it is feasible to construct in the field.

The design should address how runoff from even a relatively common event over this expanse of stripped, graded and compacted ground will be controlled. There are two temporary basins at the front of the site that would not be at elevations that could collect runoff from most of the site. Construction phase runoff can be significant. Soils are not as permeable as previously assumed based on testing. Compaction from construction equipment will exacerbate this issue. There is no buffer to abutting properties if there is an issue with runoff or dust. The Board should require this aspect be addressed now. The development is right up to the property line over much of the site and how the abutting properties will be protected should be a requirement of the Board.

Very truly yours,

Chessia Consulting Services, LLC

John C. Chessia, P.E.