



August 15, 2023

Mr. John Lee, Chairman
135 School Street
Walpole, MA 02081
United States

**Re: Cedar Edge – Proposed Project Modification
Comprehensive Permit (40B) Peer Review
Walpole, Massachusetts**

Dear Mr. Chairman:

Tetra Tech (TT) has reviewed various Project submittals in support of a requested modification of the approved plan to substitute for-rent apartment/townhouse units for single-family/duplex homes. The number of total units will remain at 268 however those units will be distributed over a much smaller development footprint which now includes a third multi-story building and a modified townhouse layout. Although we focused our review on those portions of the Project that have changed due to the modification, we have also revisited the design in its entirety given our last review was issued in February of 2021 on documents prepared in January of 2021 and did not include detailed review of any subsequent submittals including those approved by the Board in its Revised Decision or reviewed/approved by any other board or department.

To assist the Board with distinguishing between clearly “Modification-Related” comments and others that are more general we show “Modification-Related” comments in *italicized font* and list them first in each section followed by our general comments.

Our review is based on materials received from the Board comprising the following:

- Letter dated June 7, 2023 from David Hale and Robert Hewitt requesting modification to the approved plans.
- A table dated June 6, 2023 summarizing proposed modification.
- A set of plans including 3 sheets titled “Revised Layout (Redline)”, “Revised Layout”, “Buffer Zone Use Reduction” dated June 6, 2023 prepared by Howard Stein Hudson (HSH).
- An architectural plan set titled “Cedar Crossing – Multi-Family: Building 3” dated May 26, 2023, prepared by CNK Architects, Inc. (CNK).
- Cover letter dated June 20, 2023 prepared by HSH.
- Plan set titled “Site Plan for Proposed Multifamily Development, Walpole, MA”, dated June 20, 2023, prepared by HSH.
- A “Supplemental Data Report – Proposed Multi-family Development 51-53-55 Summer Street Walpole, Massachusetts” dated June 2023 prepared by HSH.
- A set of plans including 9 sheets titled “Truck Turning Plan” dated June 20, 2023 prepared by Howard Stein Hudson (HSH).
- A memorandum dated December 17, 2020 prepared by Raymond Willis, of Onsite Engineering Inc. summarizing the preliminary design of the sewage collection system.
- A memorandum dated July 24, 2023 prepared by Raymond Willis, of Onsite Engineering Inc. providing “Sewer and Water Demand Updates” resulting from the proposed modification.

- Letter dated July 24, 2023 prepared by Bayside Engineering addressing anticipated traffic changes resulting from the proposed modification.

The Plans and accompanying materials were reviewed for good engineering practice, overall site plan efficiency, stormwater, utilities, traffic, and public safety. The plans and supporting materials were competently prepared and accurately depict the proposed modification and associated infrastructure changes.

The documentation clearly demonstrates the proposed modification will result in less impact than the currently Approved Plan. We offer the following comments for consideration by the Board as well as the applicant and its design team.

Site Plans

Cover Sheet (Sheet C.1)

1. General Note 2 indicates sheets C6 - C10 are provided for “reference only” and refers to stamped plans prepared by Legacy Engineering that are not included in the set or the resubmission materials. We recommend the Legacy Plans be provided as a separate submittal with appropriate professional endorsements or the “reference only” sheets be replaced with the stamped plans from Legacy Engineering.

Site Plan Notes (Sheets C.2 - C.4)

These sheets were not reviewed as they contain no design content.

Locus Plan (Sheet C.5)

2. We would typically consider this sheet a “Key Plan” or “Sheet Index Plan” as opposed to a Locus Plan which typically shows the site in context with surrounding community/region similar to the “Locus Map” provided on the Cover Sheet.

Existing Conditions Plan (Sheets C.6 – C.10)

3. Suggest these plans include a reference to content source (ie. Legacy plans referenced on Sheet C.1 and/or wetland ORAD) and be stamped by the party responsible for the sheet.

Proposed Subdivision/Overall Plan (Sheet C.12)

4. *Given the change has eliminated the single-family homes we recommend re-titling this sheet to “Proposed Overall Plan”.*

Open Space and Recreation Plan (Sheet C.13)

5. *Recommend the south access trail be extended to connect with proposed Driveway A since the connecting roadway has been eliminated.*
6. *The Plan shows a proposed parking ratio of just over 1.88 spaces per unit consistent with Comprehensive Permit Condition. However given some of the spaces currently shown may not meet minimum size requirements (minimum offset to sidewalk) or lack proper access (see parallel spaces at end of Driveway A) modifications to address those issues may be required to meet 1.88 space/unit requirement.*

7. *Sheet includes very little information on open space/recreation amenities and far more content related to the revised parking summary. Recommend the sheet title be revised to "Open Space, Recreation and Parking Plan" and modified to address other comments noted in this section.*
8. Provide labels identifying Lot 1 and Lot 2 so lots can be identified without referring to other sheets.
9. Recommend access trail at the northeast corner of the development be extended to connect with the sidewalk in front of Building 1000 to create a connected loop.

Layout and Materials Plan

Sheet C.14

10. *The crosswalk north of the clubhouse is located behind and within a car length of the stop bar. We recommend this crosswalk be moved to in front of the stop bar.*

Sheet C.15

11. *Based on responses to Fire Department comments it was our understanding that the one-way direction of Driveway D was to be reversed. The plans show the direction away from Building 2000 instead of toward. Plan should be revised to reflect intended circulation.*

Sheet C.16

12. *The crosswalk at the Driveway D approach to Driveway A is located behind and within a car length of the stop bar. We recommend this crosswalk be moved to in front of the stop bar.*
13. *The parallel configuration of the two visitor spaces east of the Driveway D/A intersection does not work given there is no turnaround provided. We recommend these spaces be modified to a 90-degree configuration.*
14. Several of the Townhouse driveways appear to not be long enough to accommodate a vehicle without extending into the path of the sidewalk or travel way.

Sheet C.17

15. *It's unclear why Driveway A widens to 24' at the location shown when non-emergency access ends at the visitors spots near Driveway D. We recommend the emergency access road be a consistent 20' width to (1) reduce impervious surface, (2) reduce likelihood of illegal parking and (3) reduce culvert crossing length, unless otherwise requested by the Fire or Police Departments.*
16. *It's unclear where the concrete curb (cc) ends or how it transitions. Suggest that information be added to the plans along with a clarification of curb type. The details include "Cape Cod Berm/Curb" and "Vertical Bit Berm Curb" without a clear indication of which is intended by the "cc" callout. Please clarify on the plans.*

Grading and Drainage Plan

Sheet C.19

17. Test Pit 51 which borders on the Stormtech Infiltration System #2 (behind Bldg. 1000) indicates ESHGW at approximately 195.9 which is above the proposed system bottom at elevation 194.77 suggesting the system is located within groundwater. Recommend applicant clarify conditions by providing a summary table of the test pits results used to document compliance of each infiltration

system including test pit surface elevation and Estimated Seasonal High Groundwater (ESHGW). Please note, the content on this sheet has changed from that shown on the Approved Plans but the changes were not directly related to the proposed modification and as such are considered general.

18. It would be helpful if the Stormtech Infiltration Systems were labeled (plans and details) with the labels used in the stormwater modeling.
19. The trench drain from Building 2000 discharges directly to the wetland without any water quality treatment. Based on our understanding of the stormwater standards and handbook some level of water quality treatment is required prior to discharge.
20. Stone armoring of emergency spillway from Infiltration Pond 2 stops mid-slope. We recommend the stone armoring extend to the base of the 3:1 side slope to minimize erosion risk at the interface.

Sheet C.20

21. *No test pit information is provided for Stormtech Infiltration System #3 (south of Bldg. 11000) from which soil characteristics or ESHGW can be determined. Please clarify how each was determined and how it complies with requirements of stormwater handbook.*
22. *The closest test pit information for Stormtech Infiltration System #4 (north of Bldg. 11000) is more than 30 feet away. Please clarify how soils and ESHGW information was determined and how it complies with stormwater handbook.*

Utilities Plan

23. *Pump station details were provided in the Approved Plans but are not included in the Revised Plans. We recommend the same level of information be provided on the Revised Plans as was shown on the Approved Plans.*
24. *It appears that gas service is no longer proposed to serve the development. Please clarify what fuel is proposed for pump station emergency generators.*

Landscaping Plan

25. The Landscaping Plans do not specify tree species by location nor provides a proposed tree/shrub count. For this plan to be of value we would expect to have specific tree species identified at each location and a proposed count provided on the planting table as is provided on Sheet C.33 for the entry planting.
26. Planting Note 1 indicates the number of each plant is provided in the Plant List however that information is not included.
27. Deciduous and Street Trees are proposed at 2-inch caliper which is relatively small in comparison to typical installations. While we have no technical objection to the proposed size, we call it to the Board's attention to inform its expectations.

Lighting Plan

28. *No lighting is proposed along the emergency access section of Driveway A. In our opinion this is an appropriate design decision.*
29. The Lighting Plan is intuitively understandable but lacks a means of differentiating among multiple light fixtures. The Plan indicates reasonable and adequate lighting coverage will be provided and shows that light poles will be 15'.

Pavement and Curbing Details (Sheet C.40)

30. *The detail sheet calls out two different bituminous curb systems, but plans do not clearly indicate which is to be used and Accessible Curb Ramp details and Roadway Cross Sections include conflicting information. Based on our review it appears the intent is to use "Cape Cod Berm/Curb" in all locations other than when adjacent to a sidewalk in which case the curb will be cement concrete and integrally formed with the sidewalk as shown on the "Monolithic Concrete Curb and Walk" detail. Please confirm or otherwise note where intent is other than described.*

Drainage Structures (Sheet C.43)

31. The "3-sided culvert detail" provides no information on backfill, bedding or bottom construction which is typically provided. Suggest at least the information noted above be included on the detail.

Stormtech Infiltration System Detail Sheet (Sheet C.55)

32. As noted in prior comment on Grading and Drainage Plan, the Stormtech Infiltration System #2 does not appear to have adequate separation from groundwater.
33. The detail shows the Manifold header only 0.1 feet above the Isolator Row. If installed as shown, the isolator row would provide almost no useable storage as sediment could only accumulate in the isolator row to a depth of 0.05 feet before requiring removal to restore function. Recommend raising the Manifold to just below the inlet elevation of 196.98 to maximize available Isolator Row storage volume and effectiveness.
34. Detail appears to show building roof drains co-mingled with pavement runoff. Recommend roof drains be bypass the Isolator Row to reduce potential for bypass and sediment re-suspension.
35. Recommend the system be given a unique identifier ideally matching the label used in the stormwater model and that it be noted on the plans and on the detail and in the detail sheet title block.

Stormtech Infiltration System Detail Sheet (Sheet C.56)

36. Recommend the system be given a unique identifier ideally matching the label used in the stormwater model and that it be noted on the plans and on the detail sheet title block.
37. The detail shows the Manifold header only 0.1 feet above the Isolator Row. If installed as shown, the isolator row would provide almost no useable storage as sediment could only accumulate in the isolator row to a depth of 0.05 feet before requiring removal to restore function. Recommend raising the Manifold to just below the inlet elevation of 204.0 to maximize available Isolator Row storage volume and effectiveness.
38. Detail appears to show building roof drains co-mingled with pavement runoff. Recommend roof drains be routed to bypass the Isolator Row to reduce potential for bypass and sediment re-suspension.

Stormtech Infiltration System Detail Sheet (Sheet C.57)

39. As noted in prior comment on Grading and Drainage Plan, there appears to be no test pit documenting soil conditions or ESHGW beneath the infiltration system. Please provide documentation supporting a conclusion that the system has adequate separation from ESHGW and applicable RAWLS rate or equivalent.

40. Recommend the system be given a unique identifier ideally matching the label used in the stormwater model and that it be noted on the plans and on the detail and in the detail sheet title block.
41. The detail shows the Manifold header only 0.1 feet above the Isolator Row. If installed as shown, the isolator row would provide almost no useable storage as sediment could only accumulate in the isolator row to a depth of 0.05 feet before requiring removal to restore function. Recommend raising the Manifold to just below the inlet elevation of 203.7 (North Side) and 202.57 (South Side) to maximize available Isolator Row storage volume and effectiveness.

Stormtech Infiltration System Detail Sheet (Sheet C.58)

42. As noted in prior comment on Grading and Drainage Plan, there appears to be no test pit documenting soil conditions or ESHGW beneath the infiltration system. Please provide documentation supporting a conclusion that the system has adequate separation from ESHGW and applicable RAWLS rate or equivalent.
43. Recommend the system be given a unique identifier ideally matching the label used in the stormwater model and that it be noted on the plans, details and in the detail sheet title block.
44. The detail shows the Manifold header only 0.08 feet above the Isolator Row. If installed as shown, the isolator row would provide almost no useable storage as sediment could only accumulate in the isolator row to a depth of 0.04 feet before requiring removal to restore function. Recommend raising the Manifold to just below the inlet elevation of 202.15 to maximize available Isolator Row storage volume and effectiveness.
45. Detail appears to show building roof drains co-mingled with pavement runoff. Recommend roof drains be bypass the Isolator Row to reduce potential for bypass and sediment re-suspension.

Wetland Crossing Culvert (Sheet C.60)

46. The detail does not accurately depict proposed conditions and includes no information on backfill, bedding or bottom construction which is typically provided. Suggest the detail be modified to reflect proposed culvert alignment/geometry and to show details regarding proposed stream bottom construction.

Supplemental Data Report

47. Modeling analysis applies a range of pond exfiltration rates that is not adequately supported by the data provided. We recommend the analysis be simplified by using infiltration rates noted in Table 2.3.3 (1982 Rawls Rates) of the Stormwater Handbook corresponding to the most restrictive soil layer observed in applicable test pits. Our specific comments for each pond are noted below.
 - a. Pond 204 - Stormtech Infiltration System #1: Applies a 0.66 in/hour exfiltration rate despite Test Pit 43A indicating underlying soils comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam as provided in the Stormwater Handbook given the results of Test Pit 43A.
 - b. *Pond 205 - Infiltration Pond #3: Applies a 2.41 in/hour exfiltration rate (Type A soil) without clear justification and in contradiction to soils mapping provided and results of Test Pit 13*

suggesting the pond is constructed in Type B soils. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam as provided in the Stormwater Handbook given the result of Test Pit 13.

- c. Pond 206 - Stormtech Infiltration System #2: Applies a 2.50 in/hour exfiltration rate apparently based on a falling head permeability test conducted near Test Pit 52 but disregarding results at Test Pits 51 and 53 showing lower exfiltration rates and consistent test pit results indicating underlying soils partly comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam as provided in the Stormwater Handbook given the results of Test Pit 51-53.
 - d. Pond 207 - Infiltration Pond #2: Applies a 3.69 in/hour exfiltration rate apparently based on a falling head permeability test conducted near Test Pit 47 but disregarding results at Test Pit 50 showing lower exfiltration rates and test pit results consistently indicating underlying soils partly comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam as provided in the Stormwater Handbook given the results of Test Pit 47-50.
 - e. *Pond 212 - Infiltration Pond #1: Applies a 5.13 in/hour exfiltration rate apparently based on a falling head permeability test conducted near Test Pit 40 which is more than 100 feet away and disregarding results at Test Pits 2, 7, 36 that are within the system footprint and showing consistent results indicating underlying soils comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam as provided in the Stormwater Handbook given the results of Test Pit 2, 7, 36.*
 - f. *Pond 213 – Stormtech Infiltration System #3: Applies a 5.13 in/hour exfiltration rate apparently based on a falling head permeability test conducted near Test Pit 40 which is more than 300 feet away and disregarding results at closer Test Pits 2, 7, 36 that are still not within the system footprint and showing consistent results indicating underlying soils comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam despite not having data from within the system footprint given the consistency of soil testing showing Sandy Loams across the site.*
 - g. *Pond 214 – Stormtech Infiltration System #4: Applies an 8.28 in/hour exfiltration rate apparently based on a falling head permeability test conducted near Test Pit 41 which is more than 30 feet outside the system footprint and disregarding results at Test Pits 27 and 42 that are at a similar distance and show lower permeability results and uniformly indicating underlying soils partly comprised of Sandy Loams. Recommend the analysis apply the 1.02 in/hour Rawls Infiltration Rate for Sandy Loam despite not having data from within the system footprint given the consistency of soil testing showing Sandy Loams across the site and in test pits proximate to the system.*
48. None of the test pit data provided includes the recorded surface elevation making it extremely difficult to determine/validate design compliance with required system offsets to Estimated Seasonal High Groundwater (ESHGW). We recommend any future presentation of test pit results include a reporting of test pit ground surface elevation and a calculated ESHGW elevation.
49. The Long-Term Pollution Prevention includes a section on Isolator Row maintenance stipulating that sediment should be removed when accumulated sediment reaches a depth of 3 inches which is more

than 1.5 inches above the distribution manifold and as such allows sediment to be discharged to the balance of the infiltration system. We recommend the manifold elevations be raised as described in earlier comments or a weir structure be added to provide at least 6 inches clearance above the bottom elevation of the Isolator Row.

Truck Turning Plans

50. *The Truck Turning Plans demonstrate that the proposed roadway geometry and layout will provide adequate access for responding emergency vehicles. Additionally, the proposed Project modification eliminates several dead-end conditions which can complicate a response. Please note the 7/17/23 Revision of the Truck Turning Plans shows the proposed change in direction (west to east) of the one-way road between Building 2,000 and Building 11,000. The change is not reflected on the site plans or the original version of the Truck Turning Plans.*

Traffic Letter (Bayside – July 24, 2023)

51. *We concur with the Project's assertion that the proposed modification will result in approximately 15% fewer vehicle trips despite maintaining the same number of total units since the for-rent apartment/townhouse units generate substantially fewer vehicle trips than the single-family homes they are proposed to replace.*
52. *In addition, the proposed modification simplifies traffic circulation patterns by eliminating several intersections and driveways.*

Sewer/Water Demand Memo (Onsite Engineering Inc. - July 24, 2023)

53. *We concur with the Project's assertion that the proposed modification will result in approximately 7% reduction in estimate water demand and wastewater generation despite maintaining the same number of total units since the for-rent apartment/townhouse units have fewer bedrooms than the single-family homes they are proposed to replace.*

In our opinion the proposed modification results in a net reduction in potential negative impact as it results in (1) less impervious surface, (2) less traffic generation, (3) less water and sewer demand and (4) a simpler more efficient roadway layout. As such, we recommend the Board accept the proposed modification provided the technical comments identified in our comments above are addressed.

If you have any questions or comments, please feel free to contact us at (508) 786-2200.

Very truly yours,



Sean P. Reardon, P.E.
Vice President