



January 16, 2025

George Chimento, Chair
Zoning Board of Appeals
Dover Town House
P.O. Box 250
Dover, MA 02030

Re: Tetra Tech Peer Review Letter 1
81-85 Tisdale Drive 40B
Dover, Massachusetts

Dear Mr. Chairman:

Tetra Tech (TT) has reviewed submittal materials for the above-referenced Project.

The documents forming the basis of our review include those available on the Dover ZBA's webpage under the "81-85 Tisdale 40B" tab as of the date of this letter.

Summary of Findings

The plans and supporting materials were understandable and provided for a good basic understanding of major project components. However, the civil-related submittal materials included fundamental design issues and lacked detail typically provided and required for our review. At a minimum, we expect the Applicant to provide enough information to determine the Project, as shown, is constructible in compliance with applicable regulations and standards so the ZBA can proceed based on the expectation what is shown is achievable. What has been provided does not meet that minimum requirement.

Plan Content, Coordination and Organization – The civil plans were difficult to understand, lacked content needed to effect a thorough review and most importantly depicted a proposed building that was inconsistent with that shown on the architectural plans. We request future submittals be more clearly presented and organized to support review by the Board and the public.

Stormwater Design and Documentation – The stormwater system shown is aggressive with nearly no room for adjustment, but no documentation has been provided demonstrating the system's ability to comply with Massachusetts Stormwater Handbook. At a minimum, the Project should provide documentation clearly demonstrating how the system meets applicable performance standards (ideally a Stormwater Management Report).

Emergency Access – The plans do not appear to show adequate access for emergency vehicles. We request the applicant provide a figure showing how the Dover Fire Department, using its largest vehicle, will enter Tisdale Drive from Route 109 and travel to and through the site without interruption and without having to perform an awkward turnaround to access and leave the site. This information is needed to demonstrate that the proposed building and site can be safely and effectively served by Dover first responders without major modification to building design or site layout. We recommend the applicant (1) coordinate with the Dover Fire Department to identify the appropriate vehicle to use in the analysis and to determine minimum access requirements of the Department, (2) modify the site plan to accommodate identified vehicles and required access, and (3) prepare a Fire Truck Access Plan using accepted design software clearly demonstrating adequate space exists to accommodate vehicle movements without interruption. The Fire Truck Access Plan should include, at a minimum, dimensions of design vehicle, tire path and swept path of vehicle bumper.

Wastewater Disposal – The Project will require an on-site wastewater disposal system capable of discharging 8,800 gallons per day. The submittal includes conceptual designs of two potential systems including a "Presby System" and a "T5 Septic". The Presby system is an alternative/innovative technology

that requires demonstrating a Title 5 compliant system can be constructed. As such we request the applicant base their design on a standard Title 5 system for the purposes of demonstrating project viability. To be considered viable, the system must demonstrate compliance with all applicable provisions of 310 CMR 15.0. At present the design does not show a reserve area as required under Title 5 and as such may not be viable as shown.

Water Supply – The submittal includes a will serve letter from the local water company. The ability to serve the project from a public water supply is a significant benefit and avoids risks associated with serving such a concentrated population from a private well. Based on the letter, it appears that adequate supply exists to meet proposed demands and adding rate payers to a small water system is a benefit as it provides additional revenue for system operations and safety improvements distributing that burden over a larger service base. The Project has not provided any detail on available water distribution infrastructure in Tisdale Drive nor demonstrated the new demands can be met without negatively impacting existing users. At a minimum the Project needs to show the size and location of existing water mains in Tisdale Drive and in Route 109 at Tisdale and provide recent fire flow test data from a hydrant test near the Project.

Until the above referenced issues are addressed it is difficult to reach any substantive conclusions regarding the viability of the project from a civil engineering standpoint. That being said, we offer the following comments in the hope of clarifying expectations and providing constructive input and expect to have additional comments as new or revised materials are provided.

Plan Comments

Existing Conditions Plan (C-1)

The Existing Conditions Plan is very rough and lacks important information and professional endorsement. Given the nature of the Project and the extent to which it requests relief from local regulations and standards a clear understanding of existing conditions on the Project Site and the adjacent public way as well as the relative location of key features on abutting properties will be critical. We request of the Existing Conditions Plan be improved as noted below.

1. The Existing Conditions Plan is not endorsed by a licensed land surveyor and does not include labeled property line bearings. Given the proposed project density and extent of work it is critical that the boundary shown is accurately defined by a licensed surveyor and confirmed boundary shown on the plans. Please update the plan to include at a minimum, surveyor reconciled bearing and distances for all property lines, vertical datum reference, scale bar, and endorsement by a Massachusetts licensed surveyor as to the source and reliability of information shown.
2. The plan does not clearly distinguish which parcels comprise the project assemblage. The subject assemblage should be clearly distinguishable as a single line on all sheets and individual parcels and internal lot lines should be provide as well.
3. Coverage should be expanded to include at a minimum the approximate location of structures on abutting properties (or any others within 100 feet of the subject parcel), extension of contour coverage at least 10 feet onto abutting property (inferred from MassGIS LIDAR information if necessary), existing tree line and location of specimen trees (or trees greater than 24" in diameter), all utility and roadway infrastructure and topographical information for the complete width of the public right of way including descriptions. All information provided should be assigned to and endorsed by qualified professional.
4. No information is provided regarding proposed tree clearing, demolition or anticipated methods for pre-construction erosion and sedimentation control. We recommend the applicant include this information on the existing conditions plan to prove that required perimeter controls and temporary basins fit within the available property and proposed construction footprint.

5. The plans show an extensive program of subsurface investigation, but no results have been provided. We request the Applicant include test pit logs in the plans and that logs include the performance date as well as the name and qualifications of the person reporting the results. Care should be taken to ensure all elevations reference the same vertical datum and that the datum be referenceable (not assumed for Project).
6. Recommend locations of any trees larger than 12" in diameter be shown on the plan.

Site Plan Proposed Erosion Control (C-2)

7. We recommend the applicant include this information on the existing conditions as these measures will be installed prior to the start of demolition or construction.
8. A separate Layout Plan should be provided showing proposed surface finishes and demonstrating that space allocated to those finishes is sufficient to accommodate the intended objective. At a minimum, we expect the Layout Plan will provide enough information to show how the site will be used and accessed by the residents and that surface improvements shown are coordinated with the construction and maintenance needs of underground infrastructure.

Site Plan Grading & Drainage (C-4)

The plan is difficult to read and understand and only shows very basic details describing site grading and intended stormwater management strategy. Given the number of technical issues that need to be addressed between the septic system and the stormwater design, we question if adequate area exists on site to meet applicable standards and design requirements.

9. The legend does not match linetypes used in the drawing. Legend and drawing lines should be fixed in future submittals. Please use consistent and clear labeling and take care to make sure linetypes match those noted in the legend and that all acronyms and abbreviations are defined.
10. The plan shows a wall at the east end of the building that is not shown on other plans. Any walls or other substantial site features should be shown on all plans and coordinated among disciplines.
11. Some contours don't appear to tie-out properly and we question if the grading along the "vounatsos" parcel can be constructed within the limits of the subject parcel.
12. No information has been submitted demonstrating the design shown meets applicable standards. Please provide documentation showing intended system performance consistent with performance standards and the Massachusetts Stormwater Handbook.
13. Several wall types are shown. Please describe each wall system and ensure space allocated is sufficient to install and maintain the wall.
14. Provide calculations demonstrating proposed catch basin location are capable of meeting at least the 10-year design storm.
15. Catch basins are shown connected in series which is not allowed per the Stormwater Handbook. Please address in future submittals.
16. The grading plan suggests underground infiltration systems will be constructed in areas of fill supported by retaining walls. The design documentation will need to address how proposed retaining walls and the noted impervious barrier will manage hydrostatic loads from infiltrating stormwater without allowing

breakout or excessive loading of the wall. Please note the impermeable barrier shown does not extend the full length of the wall.

17. Please specify the “Stormwater Treatment Unit” proposed for this application and be sure model can treat volume anticipated and in the orientation shown.
18. Grading shown does not appear to comply with requirements for accessible slopes. We recommend the applicant include this information on the existing conditions as these measures will be installed prior to the start of demolition or construction.
19. Note wall heights on plan. Preferably by labeling top and bottom of wall at representative locations.

Layout and Proposed Utilities (C-4A)

The plan provides for a basic understanding of major project components. However, the plan provides only basic information and lacks design detail typically provided for review.

20. Building shown does not match architectural drawings.
21. It would be helpful to have parking space dimensions and totals provided on the plan along with a comparison to the number of spaces required for the proposed use.
22. Please label proposed setbacks and provide a summary comparing proposed setbacks to those that are required under current zoning.
23. The plan shows a proposed fire system storage tank. Please provided documentation as to its sizing and operation parameters.
24. The proposed layout does not appear to provide adequate accommodation for fire trucks to navigate through the site or that the space provided is adequately setback from the building to serve its intended function (access too close to tallest side of building). Applicant should coordinate with the Fire Department and provide access as requested and/or required. A Fire Truck Access Plan should be provided showing how responding apparatus will navigate the Tisdale Drive and the site including areas of proposed vehicle staging during response.
25. The plan shows light fixtures in locations different than shown on the Lighting Plan. Please ensure all information is coordinated among disciplines.
26. Curb should have a minimum radius of 2’.
27. Please show and describe proposed signage including stop signs and any facility sign.
28. All building access points should be shown on the plan. Currently only the main entry is shown.
29. Snow storage areas are shown on the plans but do not appear to provide adequate space to serve the areas requiring removal. Please provide a justification for the areas provided and including a description of how snow will be managed along the emergency access drive without impact to abutting property.

Site Plan Proposed Presby System (C-5)

30. This plan and the associated details are not relevant to Comprehensive Permit review, and we recommend removing them from the set.

Site Plan Proposed T5 System (C-6)

The septic system design provided does not appear to meet basic standards and submittal materials lack critical information needed to validate the proposed design. Correction of these issues will likely result in a larger system footprint potentially impacting the proposed facility layout.

31. Lines are barely readable. Recommend all proposed work be shown as black lines and all existing conditions information be shown in gray to assist in review.
32. No soil testing logs have been provided to confirm adequate separation from groundwater or other related design information. Please provide a copy of test pit results for all locations shown on the plans.
33. No Reserve Area is shown on the plan. New septic system designs must include “a reserve area sufficient to replace the primary absorption system” and there does not appear to be adequate space for a reserve area on site. Please provide a design meeting standards.
34. Please clarify why separate septic tanks are proposed for each side of the building and confirm the pump chamber is sized to serve a pressure dose system as required for systems over 2,000 gallons per day.

Site Plan Proposed Presby Details (C-7)

35. These details are not relevant to Comprehensive Permit review, and we recommend removing them from the set.

Septic Details (C-8)

36. Only details of the Title 5 compliant design should be provided to confirm the Project is eligible for an alternative technology.
37. Be advised, the separation from Estimated Seasonal High Groundwater (ESHGW) must include consideration of the groundwater mounding. It does not appear the design includes consideration of the groundwater mound. Please provide documentation showing a Title 5 compliant system can be constructed within the available footprint.

Drainage Details (C-9 & 10)

38. Gray lines are difficult to read. Please use black lines in future submittals.
39. Confirm rated capacities of the Stormceptor units are not exceeded based on the proposed layout.
40. Plans only indicate a Type B structure is proposed. If Type A structure is not proposed, please remove detail from the plan set.
41. Design documentation is required to confirm details shown meet standard.

Site Details (C-11 & 12)

42. Gray lines are difficult to read. Please use black lines in future submittals.
43. Plans should clearly indicate where details apply. For example, a timber guardrail detail is provided but no guardrail is shown on the plans. Please coordinate the details with the plans and ensure plans clearly reference the correct detail.
44. Details of any proposed wall systems should be provided.

Landscape Plan (L-1)

The Landscape Plan appeared to be well thought and appropriate to the application and suggests a robust assortment and density of site landscaping. Tree sizes are specified at 3-inch caliper which is also appropriate. However, there is no outdoor recreation space shown suggesting residents will have no programmed or otherwise useable recreation space that is not above a wastewater or stormwater disposal field. This issue will be addressed in detail as part of the architectural review being conducted by Davis Square Architects to which we defer.

45. Plans should show at least 10 feet of abutting property to ensure that as plantings installed along the project boundary grow, they will not impact abutting property.
46. Show the location and design of the proposed facility sign.
47. Provide a detail of the “reinforced grass”.
48. Planting is proposed within an area designated as a drainage swale and near a wall on the Grading and Drainage Plan. Confirm the swale and planting are coordinated or otherwise revise the plan.
49. Show all proposed walls.
50. Show proposed light fixtures.
51. Show proposed snow storage areas.

Lighting Plan (L-2)

52. Parking lot light fixtures are proposed at the end of a parking stall. Please coordinate placement so that the fixtures are adequately protected from damage and placement does not reduce effective parking stall dimension.
53. The plan shows light fixtures near the property boundary and light levels shown suggest light spill onto abutting property. Design should be modified to ensure no light spill onto abutting property and demonstrated on the photometric plan.

Stormwater Report

No stormwater report or similar documentation has been provided. As such there is no way to confirm the designs shown meet applicable standards.

54. Provide documentation demonstrating the drainage design meets applicable standards.

Traffic Report

The Traffic Report was professionally prepared, well organized and addressed traffic related project impacts in a manner consistent with applicable guidance and expectations. We concur with the report’s fundamental conclusion that the project can be “accommodated within the confines of the existing transportation infrastructure”. However, the plans do not show enough of Tisdale Drive or its other curb cuts to assess adequacy to convey additional project vehicular, pedestrian and bicycle traffic. We expect to have comments once that information is provided.

55. The report describes a secondary emergency access not shown on the Site Plans.
56. The report indicates 66 parking spaces will be provided when the Site Plan shows only 64.

57. The report indicates a pick-up/drop-off area is provided at the front of the building. No such accommodation is shown on the site plan.
58. We request that sight distance triangles be shown on at least the Project Site Layout Plan along with a note specifying that it must be maintained as necessary to ensure minimum required sight distances are met.
59. We recommend the ZBA include a condition requiring implementation of the Transportation Demand Management (TDM) measures listed in the Traffic Report in any Comprehensive Permit approval.

Construction Management Plan

60. The documentation submitted does not include any information on construction staging or temporary controls to manage runoff during construction. We recommend the ZBA request the Applicant to provide a Construction Management Plan clearly describing how construction on such a limited site will be accomplished without risk to abutters or the use of the Tisdale Drive right of way. At a minimum, the CMP should show the proposed building footprint and limit of excavation, construction trailers, contractor parking, construction dumpsters, emergency access, material/soil stockpile areas, delivery/turnaround area, crane staging area (if applicable) and construction period erosion and sedimentation controls meeting requirements of the USEPA NPDES Construction General Permit.

These comments are offered as guides for use during the Town's review and additional comments are likely to be generated as additional or revised documentation is submitted. We recommend the Board require the Applicant to provide a written response to each numbered comment listed above, modify its submittals accordingly and provide the additional materials requested at which point we can continue our review. If you have any questions or comments, please feel free to contact me at (508) 786-2230.

Very truly yours,



Sean P. Reardon, P.E.
Vice President

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