



January 9, 2024

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

**Re: Comment Letter 3  
Residences at Darwin Common  
Comprehensive Permit (40B) Peer Review  
Walpole, Massachusetts**

Dear Mr. Chairman:

The following is an update to our January 3, 2024 Comment Letter to incorporate comments on the updated Stormwater Management Report and associated figures received shortly after issuing our prior letter (Comment Letter 2).

Our updates are noted below in “black” with the heading “Jan 9, 2024 Update:” Text shown in gray represents information contained in previous correspondence while new information is shown in black text. As with prior letters, comments noted as “**Comment Resolved**” are considered addressed and will be indicated as resolved in future correspondence.

New comments generated during our review of the revised submittals are included at the end under the heading **January 9, 2024 Update**.

### **Groundwater Protections**

1. It’s important to note that the Project will be one of, if not the, closest developed property to a Walpole drinking water supply well with a proposed density that presents a greater risk than zoning compliant developments while severely limiting available options for protection of the water supply. As such, we recommend the Board require the applicant to clearly demonstrate and document its compliance with Massachusetts drinking water supply regulations and applicable local regulations and/or bylaws including providing the information required to support granting of a special permit per Section 12 of the Walpole Zoning Bylaw.

Jan 3, 2024 Update: No additional documentation has been provided.

Jan 9, 2024 Update: Unresolved, status reflected above.

2. There appears to be some question as to if portions of the Project lie within the Zone 1 Wellhead Protection Area in which development is not allowed to protect drinking water supplies. Given its criticality we recommend the applicant be required to clearly document how the limit of the Zone 1 boundary shown on the plans was determined including locating the well(s) from which it is derived.

Jan 3, 2024 Update: Response indicates an on the ground survey was performed that confirmed the subject property is more than 400 feet for the Washington 5 wellhead however no additional documentation has been provided on the plans or in any other form supporting the statement. We recommend the surveyed boundary be shown on the plan and certified by the design engineer or other equally reliable documentation be provided.

Jan 9, 2024 Update: Unresolved, status reflected above.

3. The Project is clearly within a Zone II Wellhead Protection area and as such “must comply with local source water protection regulation ordinances, bylaw, and regulations” to comply with Standard 6 of the Massachusetts Stormwater Standards. The Project is wholly located within the Water Resource Protection Overlay District (WRPOD) and is thereby subject to requirements of Section 12 of the Zoning Bylaw which regulates activities within the WRPOD as a means of protecting its water sources. Given the Project density exceeds that allowed under Section 12 - 3. (2) (d) and information listed under Section 12 – 4. A. has not been provided, in our opinion, it does not comply with Massachusetts Stormwater Standard 6.

Jan 3, 2024 Update: Neither justification required under Section 12-3.C (4) or an updated Stormwater Management Report has been provided to date.

Jan 9, 2024 Update: Unresolved, status reflected above.

## **Site Plans**

### **Cover Sheet**

4. Resolved Jan 3, 2024.
5. Zoning Schedule indicates a 40% allowed impervious lot coverage which conflicts with the maximum coverage allowed as-of-right per Section 12. In our opinion indicating 40% as the allowed amount in the table is misleading and should be noted as 15% in the table with a corresponding note indicating a higher amount could be allowed with Special Permit.

Jan 3, 2024 Update: Cover sheet still conflates “allowed” with “allowed by special permit” and does not clearly acknowledge that 15% is the maximum allowed impervious coverage. We still recommend the table be modified to clearly indicate a maximum allowed lot impervious coverage of 15%. The 40% maximum coverage currently noted on the table is only allowed by Special Permit which requires substantial justification none of which has been provided to date.

Jan 9, 2024 Update: Unresolved, status reflected above.

6. Resolved Jan 3, 2024.

### **Existing Conditions Plan**

7. Resolved Jan 3, 2024.
8. Resolved Jan 3, 2024.
9. Resolved Jan 3, 2024.
10. Resolved Jan 3, 2024.

### **Site Plan**

11. Note the proposed curb material on site and if the intent is to have “Cape Cod Berm” throughout the site as suggested by the plan and details we suggest only using it along the street and not extending to driveways as a means of reducing impervious area.

Jan 3, 2024 Update: All curb, except those sections located within the public way, has been removed. While we support the elimination of curb around driveways elimination of curb at the edge of travel way is a problem as it (1) channelizes roadway runoff at the pavement/soil joint which will tend to erode particularly on the steeper sections of road at the entry and (2) provide no vertical differentiation between travel way and sidewalk. Recommend application revise curb or grading accordingly. If curb is added, be sure to adjust drainage calculations accordingly to include added impervious area.

Jan 9, 2024 Update: Unresolved, status reflected above.

12. Resolved Jan 3, 2024.

13. Resolved Jan 3, 2024.

14. Resolved Jan 3, 2024.

15. The snow storage areas shown are inconsequential in comparison to the area required to be served and conflicts with other site plan considerations such as maintaining intersection sight lines, proposed landscaping, and emergency access. Recommend the Board request the applicant to provide a calculation demonstrating the depth of snowfall accommodated by the areas shown. Please note, the viability of the storage areas shown is limited due to proposed tree locations limiting access.

Jan 3, 2024 Update: Plans revised to show more reasonable snow storage locations however the areas provided are small and no calculation has been provided demonstrating efficacy (contrary to response). It remains our opinion that areas designated for snow storage are inadequate to accommodate large or successive snow event given the project density and the large area occupied by roads and driveways that must be kept clear of snow for emergency access.

Jan 9, 2024 Update: Unresolved, status reflected above.

16. Describe how the "Proposed Recreation Area" is intended to serve the purpose noted.

Jan 3, 2024 Update: "Recreation Area" noted was removed from the Plans and no other recreation or similar public use area is provided. Given steep slopes occupy most other open area there is effectively no useable lawn area on the site which in our opinion falls short of basic expectations.

Jan 9, 2024 Update: Unresolved, status reflected above.

17. Resolved Jan 3, 2024.

18. The proposed 82' cul-de-sac radius is substantially smaller than the 104' radius required by the Walpole Subdivision Regulations which limits the size of vehicle that can navigate the turn without having to back up. We recommend the Board request the Applicant to provide a figure showing the largest vehicle accommodated by the geometry proposed.

Jan 3, 2024 Update: The Plans still show only an 82' diameter paved turnaround which is 6' smaller than otherwise required. Fire truck turning figures provided by the applicant show the fire apparatus bumper overhanging the roadway edge in several locations and very close to a proposed street tree, streetlight, and fire hydrant. Recommend the Board require the applicant to obtain a specific approval of the proposed cul-de-sac geometry and truck circulation plan from the Walpole Fire Chief or otherwise provide the 88' minimum required.

Jan 9, 2024 Update: Unresolved, status reflected above.

### Grading and Drainage Plan

19. Resolved Jan 3, 2024.

20. Resolved Jan 3, 2024.

21. Plans shows several critical areas with a 2:1 slope which require special attention during construction to ensure adequate stabilization and long-term viability of what are, and will continue to be, surfaces prone to damage from erosion. Given the proximity of these slopes to the property line and immediately upgradient from the public water supply, we recommend the Board require the applicant to provide documentation from a Massachusetts licensed geotechnical engineer certifying the stability and long-term viability of the slopes shown and any required construction details and post installation conditions required to maintain the slopes or otherwise modify the design to incorporate slopes no steeper than 3:1.

Jan 3, 2024 Update: Contrary to response provided we saw no note or detail addressing slope stabilization requirements for the 2:1 slopes. Recommend a detail be provided showing how these areas will be constructed and maintained in a manner that ensures stability is maintained.

Jan 9, 2024 Update: Unresolved, status reflected above.

22. Resolved Jan 3, 2024.

23. Resolved Jan 3, 2024.

24. Resolved Jan 3, 2024.

25. Resolved Jan 3, 2024.

26. Resolved Jan 3, 2024.

27. Given the proximity to the public water supply we recommend the applicant consider a more reliable and robust method of pretreatment prior to discharge than currently provided. In our opinion incorporating an isolator row (Stormtech) or similar pretreatment measure would enhance system performance and reliability.

Jan 3, 2024 Update: Plans revised to show isolator areas within the infiltration system however no detail is provided and no isolator protection is provided for connections from CB7 or CB8. Recommend Board request applicant to provide detail on isolator row construction including maintenance access as well as bypass piping and weir elevations.

Jan 9, 2024 Update: Unresolved, status reflected above.

28. Given the size and criticality of the infiltration system, we recommend the plans clearly indicate where inspection ports will be provided.

Jan 3, 2024 Update: Plans revised to show information requested. Request all manhole locations be added to the Layout Plan to confirm no conflicts with other proposed site improvements.

Jan 9, 2024 Update: Unresolved, status reflected above.

29. The proposed infiltration trench does not appear to comply with design or construction requirements of the Stormwater Handbook for Infiltration Trenches. The following should be addressed:
- Describe how design meets soil testing requirements are met
  - Bottom of trench appears to be within 4' of estimated seasonal high groundwater (ESHGW) yet no mounding has been provided as required.
  - Confirm infiltration rates used are applied as required by the Handbook (not variable). Modeling results suggest a variable infiltration rate is being applied.
  - The infiltration trench is more than 14' deep which makes it effectively impossible to inspect, clean or repair and is fundamentally different than the example design provided in the Handbook.
  - Design guidance specifically precludes the use of perforated underdrains in the manner shown on the detail.
  - The proposed location beneath a 10-foot fill makes it impossible to comply with construction criteria noted in the Handbook.

Jan 3, 2024 Update: Plans revised to address conditions noted by revising the proposed design to include an infiltration trench at the base of the slope and access path. However, infiltration trench does not meet 10' minimum setback for property line nor does the detail show observation well or sand filter layers as required. Recommend applicant revise plans accordingly.

Jan 9, 2024 Update: Unresolved, status reflected above.

#### **Utilities Plan**

30. Resolved Jan 3, 2024.
31. Resolved Jan 3, 2024.
32. Resolved Jan 3, 2024.
33. Please describe where sewer pump station controls and alarms will be located and who will be responsible for responding to alarms and maintaining the system.

Jan 3, 2024 Update: Pending direction from Sewer and Water Department. Status unchanged.

Jan 9, 2024 Update: Unresolved, status reflected above.

34. Resolved Jan 3, 2024.
35. Confirm acceptability of proposed hydrant locations with Fire Department.

Jan 3, 2024 Update: Confirmation not provided but reasonable to include as a condition of approval instead.

Jan 9, 2024 Update: Unresolved, status reflected above.

#### **Details**

36. It's unclear how the pump station float levels were set or how the sizing of the wet well volume correlates to the anticipated demand. Please provide the design basis used for sizing the pump station and its wet well volumes including any a description of provisions for emergency power. As

shown the wet well volume between “pump on” and “pump off” is only 21 gallons which seems very small for a station serving a nearly 10,000 gpd design load.

Jan 3, 2024 Update: Pending direction from Sewer and Water Department. Status unchanged.

Jan 9, 2024 Update: Unresolved, status reflected above.

37. Resolved Jan 3, 2024.

38. Resolved Jan 3, 2024.

39. Resolved Jan 3, 2024.

### **Construction Period Plan**

40. Resolved Jan 3, 2024.

41. Resolved Jan 3, 2024.

42. No information is provided describing the proposed methods for installing fill material and preventing erosion of resulting slopes. At a minimum the plans should describe the fill sequence and provide a detail for slope stabilization. Simply loaming and seeding (with or without “straw guard”) a 2:1 slope will not protect it from erosion and a 12’ silt sock is unlikely to provide suitable protection for the downgradient property.

Jan 3, 2024 Update: Found no information addressing 2:1 slopes. “Straw Guard” noted on the plans does not provide adequate protection or stabilization of 2:1 slopes.

Jan 9, 2024 Update: Unresolved, status reflected above.

43. Resolved Jan 3, 2024.

44. Suggest the applicant provide a concrete washout detail and designate its location on the plan.

### **Landscape Plan**

45. Resolved Jan 3, 2024.

46. Resolved Jan 3, 2024.

### **Lighting Plan**

47. The plan indicates a modest amount of light from the project will spill partially onto abutting property at 31 Darwin Lane. Given the proximity of the proposed sidewalk to #31 it will be difficult to provide adequate lighting of the sidewalk without such spill onto #31.

Jan 3, 2024 Update: Response indicates adjustments will be made but we have not received any revised photometric plans.

Jan 9, 2024 Update: Unresolved, status reflected above.

48. The plan does not indicate any fixture type or mounting height. Please provide.

Jan 3, 2024 Update: Plans revised to show information requested indicating a fixture height of 22.5’ which seems high considering the suburban setting and number of proposed poles (12). We recommend the Board and the Applicant discuss expectations regarding acceptable/preferred light levels as what is currently shown seems excessive in contrast to the two light poles on Darwin Lane

(at intersection with Queens Court and at end of cul-de-sac) and considering the amount of ambient light likely generated from the units.

Jan 9, 2024 Update: Unresolved, status reflected above.

### **Fire Truck Circulation Plan**

49. Resolved Jan 3, 2024.

50. Plan does not show or describe the vehicle used or its assumed performance characteristics. Please provide the model of apparatus used in the analysis and its operational metrics (i.e., Wheelbase, bumper overhang, turning radius etc.)

Jan 3, 2024 Update: Vehicle information still not provided.

Jan 9, 2024 Update: Unresolved, status reflected above.

51. Resolved Jan 3, 2024. (See Comment 18)

52. Resolved Jan 3, 2024. (See Comment 18)

### **Stormwater Report**

53. The Project proposes to route all the flow coming from the existing detention basin behind 27 Darwin Lane and the surrounding area through a single catch basin grate and into the on-site infiltration system. As noted in prior comment, we do not recommend connecting any offsite flow into the infiltration system. The report suggests very little flow will discharge from the basin but bases this on what appear to be flawed analysis. In our opinion the model overestimates the amount of recharge provided by the existing basin. For example, the analysis suggests the existing basin has more than 5X the infiltrating rate of the proposed basin during the 10-year storm and nearly 10X the rate during the 25-yr storm despite it being less than 1/3 the size. In our opinion the analysis used to estimate offsite flow to the on-site infiltration system is materially flawed and under no circumstances should the flow be routed to the on-site infiltration system. Instead, off-site flow should be routed around the proposed stormwater management system and that routing should be sized based on guidelines provided in the Stormwater Handbook.

Jan 3, 2024 Update: Plans revised to address concern, but revised stormwater report has not been provided.

Jan 9, 2024 Update: Concern addressed in Stormwater Report. **Comment Resolved.**

54. The Infiltration Trench analysis appears to apply a variable exfiltration rate which is not allowed per guidance of the Stormwater Handbook. Notwithstanding our concerns expressed about design suitability, we recommend the analysis be configured to apply a static exfiltration rate.

Jan 3, 2024 Update: Revised stormwater report has not been provided.

Jan 9, 2024 Update: Concern addressed in Stormwater Report. **Comment Resolved.**

55. The Pre-Development Watershed Plan accurately depicts the existing flow path and discharge location which should be maintained under post-development conditions. The current design shows a

significant shift in the discharge location and very little offset distance to the property line which may result in off-site erosion issues due to changes in off-site runoff patterns.

Jan 3, 2024 Update: Plans revised to address discharge point however revised stormwater report has not been provided.

Jan 9, 2024 Update: Concern addressed in Stormwater Report. **Comment Resolved.**

56. The Post-Development Watershed Plan and analysis appears to suggest all roof runoff from the Units 23-28 will be directed to the drain at the front of the units and directly to the infiltration system. This ignores the practical reality that rear portions of the roof slope toward the rear of the lot. Runoff from the rear facing section of roof should be routed through the swale and CB-7 otherwise documentation should be provided demonstrating the gutters are sized properly based on the pitch of the roof to accommodate the storm events analyzed and are routed to the front of the building.

Jan 3, 2024 Update: Plans revised to show information requested. However revised stormwater report has not been provided.

Jan 9, 2024 Update: Concern addressed in Stormwater Report. **Comment Resolved.**

57. Provide calculations or specifications demonstrating the proposed stormwater management system meets the 44% TSS removal requirement prior to infiltration. Include performance information for the proposed water quality unit.

Jan 3, 2024 Update: Revised stormwater report has not been provided.

Jan 9, 2024 Update: We did not see this addressed in the Stormwater Report and plans show connections to the infiltration system with no pre-treatment for TSS removal.

58. The Construction Period Pollution Plan (sic.) which presumably should read “Construction Period Pollution Prevention Plan” assumes site capacity for construction activity that may not exist. For example, item 6 indicates top and subsoil shall be stockpiled without realistically proposing a location where that can be done while accommodating the sequence of construction that follows. Nor does the plan provide any practical option for temporary sedimentation basins given the volume of fill proposed, resulting steep slopes and the proposed location and depth of the trench drain. Given the combination of factors including a relatively small site, very dense development, fill volume, required infiltration area protection, steep slopes, location within Zone II and lack of buffer to downgradient Zone I, we recommend the Board require the applicant to provide a more thorough and readily achievable construction phasing and execution plan addressing all activities that could negatively impact the downgradient watershed protection zones.

Jan 3, 2024 Update: Revised Pollution Prevention Plans have not been provided.

Jan 9, 2024 Update: Plans revised to address concern, but revised stormwater report has not been provided.



59. Walls and Slopes should be included in the list of stormwater system components and included in the inspection and maintenance section of the Operation and Maintenance Plan Storm (sic.) Water Control and Mitigation System.

Jan 3, 2024 Update: Revised O&M Plans have not been provided.

Jan 9, 2024 Update: Plans revised to address concern, but revised stormwater report has not been provided.

60. Resolved Jan 3, 2024.

### **Traffic**

61. Resolved Jan 3, 2024. (See Comment 18)

62. Resolved Jan 3, 2024. (See Comment 18)

63. Resolved Jan 3, 2024. (See Comment 18)

64. Resolved Jan 3, 2024. (See Comment 18)

65. Resolved Jan 3, 2024. (See Comment 18)

66. Resolved Jan 3, 2024. (See Comment 18)

67. Tetra Tech recommends that the proposed landscaping on-site be less than 2 feet tall where the internal site driveway splits east and west. Additionally, designated snow storage in this area should be reconsidered so that it does not impede sight lines at this internal intersection.

Jan 3, 2024 Update: Comment partially addressed by December 22, 2023 response letter from Chappell Engineering Associates which includes alternative traffic calming measures for consideration but does not provide an actionable recommendation. Given the proposed site access drive's offset from the Darwin Lane approach combined with the calming effect created by the prevalence of on street parking, additional traffic calming measures at the Project approach may be unwarranted. As the Project traffic engineer, Chappell should determine and clearly state if additional measures are warranted and if so, show those proposed improvements on the Site Plans for consideration by the Board. It is not the Board's responsibility to determine what if any measures are required.

Jan 9, 2024 Update: Unresolved, status reflected above.

68. Resolved Jan 3, 2024. (See Comment 18)

69. Resolved Jan 3, 2024. (See Comment 18)

### **January 3, 2024 Update**

70. All visitor parking spaces have been eliminated. While the Project provides 4 spaces for each unit (2 garage, 2 driveway) providing no other accommodation for visitors seems short sighted.

Jan 9, 2024 Update: Recent comment, status unchanged.

71. The Project provides almost no useable open space and the current plans do not include the recreation and open space amenities described in the original application. The lack of any useable

open space or programmed amenities in combination with the proposed building density is likely to increase risk of encroachment onto the adjacent unoccupied Zone 1. We recommend the Board require the Applicant to address the lack of useable open space.

Jan 9, 2024 Update: Recent comment, status unchanged.

72. The east end of underground detention system still extends into an area where other utilities are proposed. Please revise to ensure adequate separation is provided and geometry accurately reflected in stormwater analysis.

Jan 9, 2024 Update: Recent comment, status unchanged.

73. Please explain the intent of the solid white lane line proposed at the edge of pavement. It seems unnecessary.

Jan 9, 2024 Update: Recent comment, status unchanged.

74. Please provide a stop bar at the proposed stop sign.

Jan 9, 2024 Update: Recent comment, status unchanged.

75. The 220 contour appears to be missing in front of Units 20, 21, 26 and 27 and between units 9 and 10. Please address on future submittals.

Jan 9, 2024 Update: Recent comment, status unchanged.

### **January 9, 2024 Update**

76. An updated Stormwater Report was provided but an endorsed Stormwater Checklist was not included and the is missing information such as supporting calculations demonstrating compliance with Standard 1. Given the Project will not require subsequent review and approval under the Wetlands Protection Act and its potential risk to the adjacent Wellhead Protection Zone 1, it must provide a complete Stormwater Report meeting requirements listed in the Massachusetts Stormwater Handbook including a copy of a completed Stormwater Checklist.
77. Please include page numbers and page headings in the Stormwater Report so the documents and its content are referenceable. Also, there appears to be two sets of recharge and draw down calculations.
78. The Infiltration Trench detail does not match the grading plan or the stormwater model. Recommend the detail be modified to accurately show the downgradient berm and that a spillover be incorporated at the existing site discharge point.
79. We recommend discharging Headwall 2 into the infiltration trench as a means of mitigating scour risk during larger storms.
80. DMH 10 is 16.5' deep and located on the property boundary. Please explain how this installation will be performed without trespass on the abutting Zone 1 or relocate to a more constructible location.
81. Please explain why CB5 and CB6 have double grates while CB4 has a single grate despite receiving 50% more flow as noted in the "Drainage Computations" table included in Appendix I.

82. Please provide spot grades clearly describing how water is expected to drain to CB3 and CB4. Contours suggest a low point of 218.5 would occur on the gutter opposite CB6 which appears to be at the low point of the road. Please explain/confirm.
83. Show location of stormwater infiltration system and associated structures on the Utility Plan to address conflicts between water and sewer routing and drainage infrastructure.
84. Temporary construction entrance should no extend into the public way. Please revise.

We recommend the Board request the applicant address any outstanding/new comments and provide documentation and justification in support of its proposal to exceed the maximum 15% allowed impervious coverage. 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

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