



December 28, 2020

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

Re: Diamond Hill Estates – Dupee Street
Review Letter No. 2
Comprehensive Permit (40B) Peer Review
Walpole, Massachusetts

Dear Mr. Chairman:

TT 12/28/2020 Update

The Applicant has provided revised submission materials addressing comments provided in our previous letter including the following documents:

- A plan (Site Plans) set titled "Site Development Plan A Comprehensive Permit M.G.L c. 40B "Diamond Hill Estates" Walpole, Massachusetts", dated February 26, 2020 with most recent revision date Nov. 30, 2020, prepared by GLM Engineering Consultants, Inc. (GLM).
- Stormwater Management Report (Stormwater Report) dated Nov. 30, 2020, prepared by GLM.
- A Response to Comments letter dated Nov. 25, 2020, prepared by GLM.

The most significant plan change is a reduction in unit count from twelve (12) duplex units to eight (8) single family homes. The change reduces traffic volume generated as well as anticipated demand for visitor parking. Otherwise the Project is still remarkably similar to the prior plan with many of the same issues including:

- a right of way width that is substantially (>40%) smaller than required under Walpole Subdivision Regulations,
- a dead-end travel way that is substantially narrower (>23%) and longer than allowed and without required end of cul-de-sac accommodations for vehicle turnaround,
- a stormwater detention basin perched on the side of a hill immediately upgradient from an abutting structure and residence,
- and a development program that proposes modifications up to the very limit of the subject property without clear strategies for how that work can be achieved without trespass on abutting property.

The revised Plans and supporting information were reviewed against our previous comment letter (October 19, 2020) and comments have been tracked accordingly. Text shown in gray represents information contained in previous correspondence while new information is shown in black text. Comments noted as "addressed" will be removed from future correspondence and comment numbering will be maintained throughout the review.

Tetra Tech (TT) has reviewed specific submittal materials for the above-referenced Project to assist the Town of Walpole Zoning Board of Appeals (Board) in its Comprehensive Permit review of the proposed Diamond Hill Estates development. We found the plans and supporting documentation to be professionally done and generally thorough in their analysis. However, the site is very narrow, and the proposed development density

leaves very little room for normal traffic access and circulation or to accommodate some routine or unanticipated needs.

Comments provided below are intended to inform and prompt discussion as well note where minor changes or edits should be reflected for the record. We reserve the option to provide additional comments as the design and discussion advances. Our review is based on materials received from the Board comprising the following pertinent documents:

- Comprehensive Permit Application package prepared by Wall Street Development Corp.
- A plan (Site Plans) set titled "Site Development Plan..." "Diamond Hill Estates" Walpole, Massachusetts", dated February 26, 202 (Rev. Aug 5, 2020), prepared by GLM Engineering Consultants, Inc. (GLM).
- Stormwater Management Report (Stormwater Report) dated August 5, 2020, prepared by GLM.
- "Traffic Assessment for Diamond Hill Estates" dated February 21, 2020 prepared by Green International Affiliates, Inc. (GIA).
- "Traffic Assessment Update for Proposed Residential Development" Memorandum dated June 2, 2020 prepared by GIA
- "Supplemental Traffic Information" Letter dated July 16, 2020 prepared by GIA.
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- A June 2, 2020 "Traffic Assessment Update for Proposed Residential Development" Memorandum prepared by GIA.
- An architectural plan set dated June 5, 2020, prepared by Morabito Architects (MA).
- Comment letters from Town Boards, Commissions and Departments.

The Plans and accompanying materials were reviewed for good engineering practice, overall site plan efficiency, stormwater, utilities, traffic and public safety. In general, the plans and supporting materials were well prepared and we appreciate the clarity and completeness of documents provided. Our initial comments are provided below.

Site Plans

The Site Plans were generally well organized, clear, readable and professionally done. Although some information may be missing or confusing, they are suitable for review.

The principal concern is the lack of available right-of-way width on Dupee Street. Plans suggest a variable approximately 27-foot wide right of way width is available in which to accommodate those public way functions for which Walpole Subdivision Regulations require 46 feet (single-family) and 52 feet (multi-family). The net result is a constrained public access way of 20 feet which is substantially narrower than the 26 feet otherwise required by Walpole Subdivision Regulations. The constrained right of way makes the development hypersensitive to density-related issues on the proposed home sites.

The following specific comments are offered to identify areas where additional information is required, or changes are requested to address questions or support further review.

General Comments

1. Please clarify if any of the proposed development is, or is intended to become, the responsibility of the Town or its departments. For example, the plans note that portions of Dupee Street are

maintained by the Town. This note should be removed unless Dupee Street has been accepted by the Town or the Town has committed to a specific maintenance responsibility.

- *TT 12/28/2020 – Applicant’s response suggests a portion of the road will continue to be maintained by the Town but that “the proposed extension will remain private.” We recommend any continuing Town obligations be clearly defined in the decision as the proposed project will fundamentally alter the operational characteristics of all sections of Dupee Street.*
2. The Project includes 12 units with a single narrow means of access that is constrained by driveways/buildings and stormwater detention basin along most of its length.
 - *TT 12/28/2020 – The revised plans include eight (8) single family homes instead of the 12 duplex units originally proposed. While this reduces resident density total building footprint remains practically the same as originally proposed. Access is still limited to a narrow paved width and right-of-way.*
 3. The proposed layout and density leave very little available space for snow storage and none are identified on the plans.
 - *TT 12/28/2020 – Snow storage areas are shown in practical locations. on the plans. However, there is almost no available shoulder width west of Dupee Street. Any snow bladed to the west will be pushed onto abutting private property. We recommend any decision include a condition the snow is not to be plowed onto adjacent private property.*
 4. Driveways are currently shown as 24’ deep which we recommend maintaining at a minimum to ensure adequate space is available for at least one non-garage space. We also recommend the decision include a condition that garages be maintained as viable parking spaces given the lack of any available space elsewhere in the development.
 - *TT 12/28/2020 – Plans label a driveway depth of 25’ in one area and 24’ in another area. Please address inconsistency unless deviation is intended. In either case, driveway depths shown are sufficient to accommodate parked vehicles.*
 5. The proposed building footprint shown on the Site Plans appears to be different (smaller) than that shown on the Architectural Plans. The site is extremely tight and any increase in building size may have impacts on site viability.
 - *TT 12/28/2020 – Construction staging and sequencing notes are provided however temporary sedimentation basins are proposed within steeply graded areas. Please provide a detail showing slope stabilization measures that will be used to maintain steep slopes before groundcover is established.*
 6. We request the applicant provide a Construction Phasing Plan showing the anticipated sequence of construction and identifying proposed locations and sizes of construction staging and stockpile areas.
 - *TT 12/28/2020 – Comment partially addressed. Stockpile and sediment basin areas are propose within the footprint of three units and no area is shown for construction trailers or contractor parking. Given the constrained access and the density of development it is hard to determine how routine construction issues such as managing tractor trailer deliveries will be accommodated during construction. Our concern is that unanticipated needs will result in impacts to abutting properties, preclude emergency access or otherwise create potentially unsafe conditions during construction.*

Existing Conditions Plan

7. Please clarify the current ownership status of Dupee Street. In particular is it considered part of the development project or is it part of a larger right of way or shared use parcel.
 - *TT 12/28/2020 – Please clarify who own’s fee interest in Dupee Street and to what extent it applies. We are interested in understanding the current ownership interests in Dupee Street.*
8. It is important to note that the existing Dupee Street travel way is not centered on the available right of way but rather skews heavily to the west.
 - *TT 12/28/2020 – No response needed. Comment will be removed from future correspondence.*
9. The garage and associated driveway to House No. 257 should be shown on the plans. Given the skewing of the existing Dupee Street travel way, properties along the east side of Dupee Street will be more affected than those on the west side.
 - *TT 12/28/2020 – Garage is shown however no accommodations for the existing driveway are noted on the plans. Please provide notes on plans or a typical section clarifying how existing driveway will be accommodated in the proposed widening/relocation of Dupee Street.*
10. Intersecting sidelines for Sybil and Victoria Street properties should be clearly shown given the proximity of project impacts to, and potential trespass onto, those properties.
 - *TT 12/28/2020 – Sidelines of abutting lots are not shown connecting to subject property. As indicated in our original comment, the actual location of these lot boundaries should be defined given the proximity of the project and the constrained space.*
11. Existing tree line and limit of clearing should be shown on the plans.
 - *TT 12/28/2020 – Applicant states the entire site is wooded and refers to sheet 13 Of 13. The entire site is not wooded as portions of Dupee Street and abutting parcels are cleared. Trees near the connection to High Plain Street appear to require removal to accommodate the re-positioning of Dupee Street. Please indicate the location of existing trees and woods on the existing conditions plan and clearly show what trees will be removed.*

Layout Plan

12. It is unclear what improvements are proposed for Dupee Street north of Change Street. In particular, it’s unclear how existing driveways will be impacted and how the modified width will transition to High Plain Street. All roadway improvements should be shown on the plans.
 - *TT 12/28/2020 – The plans show no information addressing how existing driveways will be addressed nor how the relocated Dupee Street will impact abutting parcels. The response does not address our comment. Please show how driveways and other abutting properties will be impacted by the modification of Dupee Street.*
13. What is the justification for stopping the Cape Cod berm at the location shown?
 - *TT 12/28/2020 – Given the steep slope of Dupee Street, it is highly likely that portions of the gutter line flow will bypass the proposed catchbasins (flow slipping) and continue down Dupee Street likely resulting in the eventual erosion at the edge of pavement. We recommend curb be continued down the length of Dupee Street and double grates be considered to reduce flow slip.*

14. Subdivision Regulations clearly require dead end streets to be “provided with cul-de-sacs at the closed end with a turnaround having an outside street line diameter of at least one hundred and four (104) feet”. The turnaround shown is substantially below these requirements and is proposed within an “easement”. Any turn around should be within the dedicated right of way.
- *TT 12/28/2020 – The only change made in response to our comment was to add parking spaces at the end of the turnaround which provides for visitor parking but increases the likelihood that larger or poorly parked vehicles could block access. It is still our opinion that the turnaround does not provided adequate access for the Town’s larger emergency vehicles or for larger trucks accessing the site. As mentioned during the public hearing, the turnaround is difficult, if not impossible to see from High Plain Street requiring emergency vehicles to drive up Dupee Street without knowing if the turnaround is blocked or not. At a minimum, the applicant should coordinate with the Walpole Fire Department to provide accommodations suitable for Fire Department access and provide documentation to the ZBA.*
15. The proposed edge of road appears to go through an existing utility pole south of House No. 6.
- *TT 12/28/2020 – Utility pole will be relocated. We recommend any decision include a condition requiring any utility poles within the proposed travel way be relocated prior to issuing building permits.*
16. The roadway geometry opposite Units 11 and 12 does not appear to provide adequate width to back out of those driveways.
- *TT 12/28/2020 – Comment addressed.*
17. There are no provisions for guest parking.
- *TT 12/28/2020 – Conversion to single family units provides additional space for driveway parking and additional spaces have been added. Comment addressed.*
18. A dividing line is shown between driveway sections. Please clarify what this line represents.
- *TT 12/28/2020 – Comment addressed.*

Grading and Utilities Plans

19. Temporary construction easements will likely be required to install new catchbasins given the anticipated depth of excavation and the proximity to the abutting parcel.
- *TT 12/28/2020 – This comment has not been addressed. Trench boxes or other stabilization measures will not eliminate the need to occupy abutting parcels to complete the work. We recommend any decision include a condition requiring the applicant to obtain any easements needed to complete the work prior to the issuing any building permits. This issue is a function of the constrained right of way. Typically, all work and related transitions would be accomplished within the street layout and not require any work or trespass onto abutting property.*
20. The proposed detention pond is constructed in retained fill with an emergency spillway that discharges over the top of a proposed wall 2'-3' above grade and directly onto Dupee Street. This is a very atypical installation and will at a minimum require strict operation and maintenance assurances and additional construction details to ensure water does not infiltrate through the embankment and

that the energy of the water is adequately dissipated. The applicant should provide documentation that the pond does not qualify as a “dam”.

- *TT 12/28/2020 – Applicant has adequately addressed dam status and has included a “Revised Basin Detail Impermeable core, riprap” which only partially addresses our concern. Detail should include how impermeable core will be keyed into the underlying soils to prevent embankment from sliding when under full hydrostatic load. We still have significant concerns regarding the proposed detention basin and its placement on a side slope. It is our opinion that it is not a suitable location, is potentially unsafe and does not meet applicable design standards for Infiltration Basins included in the Massachusetts Stormwater Handbook including but not limited to (1) basin floor slope exceeds maximum 1% (0% preferred), and (2) design shown is in obvious contradiction to the requirement to “Design infiltration basins to be below surrounding grade to avoid issues related to potential embankment failure.” We recommend any decision include a condition requiring details of construction stamped by a Massachusetts licensed structural and geotechnical engineer be provided for review prior to the issuance of any building permits.*
21. A hydrant is proposed immediately adjacent to the edge of road without any proposed curb to protect it. Given the narrowness of the roadway additional protection for the hydrant may be required to prevent damage from plows or vehicles.
- *TT 12/28/2020 – Comment addressed. However, hydrant installation at the location shown will likely require work on adjacent parcel. Suggest applicant consider relocating hydrants to the building side of the street to increase set back from the travel way, avoid impacts on abutting property and to be closer to buildings they serve.*
22. Water and sewer lines appear to be only separated by 6 feet. At least 10 feet of separation should be maintained.
- *TT 12/28/2020 – Please provide copy of correspondence indicating Town Engineer approval of the spacing shown.*
23. No sediment forebay is shown for the detention pond.
- *TT 12/28/2020 – Comment addressed. Please call out the unit clearly on the plans.*
24. We request clarification on what the notations “TC” and “CF” refer to within the propose building. The elevations assigned appear to not reflect adjacent grading.
- *TT 12/28/2020 – Comment addressed.*
25. Contours appear to be missing between the buildings. Please add contours or show walls if otherwise.
- *TT 12/28/2020 – Comment addressed.*
26. The proposed looped water system is a significant benefit to the quality and quantity of water available to the development. However, the proposed connection geometry is awkward with two 90-degree bends in a short distance. We recommend the two bends be eliminated in exchange for a ‘T’ connection and that a valve be added to allow isolation of the Project loop.

- *TT 12/28/2020 – Comment partially addressed. We recommend valves and bends be clearly shown on plans and that proposed water system details be approved by the Town prior to installation.*
27. Please note 100-year water surface elevation on pond.
- *TT 12/28/2020 – Comment addressed.*
28. We recommend adding outlet control structure OCS elevation data (i.e. rim, orifices, etc.) into Grading and Utility Plan.
- *TT 12/28/2020 – Comment addressed.*
29. Please note datum reference on any plans where elevations are shown, also show benchmark references where possible.
- *TT 12/28/2020 – Comment addressed. (Please note, elevations shown on plans refer to NAVD88 vertical datum which is several feet different than Town of Walpole vertical datum)*
30. Please add top/bottom of wall elevations to the Grading and Drainage Plans.
- *TT 12/28/2020 – Comment addressed.*
31. The Project will disturb greater than an acre of area and will be discharging to the public stormwater system in High Plain Street and as such will require an NPDES Construction General Permit. Please provide a summary of how runoff will be managed during construction assuming the proposed detention basin cannot be used for management of construction runoff.
- *TT 12/28/2020 – Comment addressed.*
32. The development will result in a modest new demand on municipal water and sewer infrastructure. We recommend the applicant provide the Board a simple memorandum or similar documentation by a licensed Massachusetts engineer demonstrating the Project can be served adequately without impacts to existing or proposed infrastructure or its users. At a minimum the documentation should describe and quantify proposed demand, describe existing infrastructure serving the site, provide calculations demonstrating available capacity/service and describing improvements, if any, needed to town infrastructure to serve the project.
- *TT 12/28/2020 – Comment addressed. Applicant has provided copy of a December 10, 2020 letter from the Board of Sewer and Water Commissioners authorizing the sewer and water connection subject to the conditions included in the letter.*

Roadway Profile

33. It's unclear if a level landing area is provided for vehicles on Dupee Street approaching High Plain Street. If not, we recommend one be provided given the consistent downward slope of Dupee Street.
- *TT 12/28/2020 – A level area should be provided at the base of Dupee Street's approach to high Plain Street to ensure runoff from a widened and lengthened Dupee Street does not flow into High Plain Street. Please provide additional detail of grading at the intersection to show how catchbasin rims and Dupee Street centerline relate while maintaining handicap accessibility along the sidewalk.*
34. Please show the transition back to grade at the top of the Profile.

- *TT 12/28/2020 – Comment addressed.*

Stormwater Report

35. Summary tables indicate peak runoff during the 2-year storm to Design Point 1 increases under post development conditions. This does not meet Stormwater Standard 2. Standard 2 does not provide for consideration of “overall” project increases. Applicant must demonstrate that peak rates of runoff do not increase to abutting properties
- *TT 12/28/2020 – Comment addressed.*
36. Elevations provided in the Summary of Retention Basin table do not match elevations on plans.
- *TT 12/28/2020 – Comment addressed.*
37. Please number tables in future submittals for ease of reference.
- *TT 12/28/2020 – Comment addressed.*
38. Pond modeling applies an infiltration rate over “wetted perimeter”. Stormwater Standards specify using only bottom area. Please address in future submittals.
- *TT 12/28/2020 – Comment addressed.*
39. It appears that a variable infiltration rate has been used in the pond modeling. Stormwater Standards specify using static infiltration rates. Please address in future submittals.
- *TT 12/28/2020 – Response letter suggests that modeling guidance included in the Stormwater Handbook only applies to Recharge Calculations and not to modeling used for peak rate attenuation. While we disagree, the impact of the requested change is likely minor and is insignificant in comparison to our other listed concerns.*
40. Final plans should include monitoring well at infiltration basin location.
- *TT 12/28/2020 – Comment addressed.*
41. Given the nature of the emergency spillway please provide the rainfall intensity at which the basin is expected to overtop.
- *TT 12/28/2020 – Comment addressed. Please note the basin should be expected to overtop during storms with rainfall intensities just above the 100-year design storm (7.0”/24 hour) and flow down the Dupee Street to High Plain Street. Given recent changes in climate patterns combined with normal degradation of pond performance residents and abutters should expect that overtopping will occur.*

Traffic

42. The project accurately forecasts the relatively minor increase in new traffic in comparison to current volumes on High Plain Street. Project traffic is not expected to significantly impact operations at nearby intersections.
- *TT 12/28/2020 – No response required.*
43. Required site distances were calculated based on the posted speed of 35 mph. Based on conditions observed during our site visit, it appears that actual vehicle speeds may be significantly higher. We

recommend the applicant document the 85th percentile speed and confirm adequate site distances based on the 85th percentile speed. This is consistent with requests made by the Town Engineer and is important record information for support of an eventual ZBA decision.

- *TT 12/28/2020 – Information requested has not yet been provided. Request is outstanding.*
44. Site distance triangles based on the 85th percentile speed should be shown on the approved plans.
- *TT 12/28/2020 – Response indicates a plan has been included in the updated plan set but none was found or referenced in the Cover Sheet.*
45. As noted earlier, proposed accommodations for fire truck turnaround are less than ideal and likely prone to being blocked by visiting/resident vehicles or plowed snow. We recommend a cul-de-sac turnaround as described in the Walpole Subdivision Regulations be provided to accommodate emergency vehicles and others seeking to change direction such as delivery vehicles. The Project may also consider providing a secondary means of turning in case the primary turnaround is blocked.
- *TT 12/28/2020 – The reduced unit count and additional parking/unit reduces the likelihood that parked vehicles will block the turnaround however we still recommend a more reliable means of turnaround similar to that required by the Subdivision Regulations due to the lack of an alternate means of egress and the narrow street width and right of way.*
46. Fire truck turning movements should be shown on the Site Plans to confirm movements incorporate the most current design and all related improvements such as curb, wall and hydrant locations.
- *TT 12/28/2020 – Please specify the vehicle used in the Typical Fire Truck Turning Detail and its dimensions.*
47. Pedestrian volumes are expected to be low and the dead-end configuration suggests vehicles using Dupee Street will either be residents or those known to residents decreasing likelihood of irresponsible vehicle speeds or operation. Given the already constrained roadway and right of way width it would be very difficult to provide room for a sidewalk on either side of the road.
- *TT 12/28/2020 – No response required.*
48. Any plans for widening Dupee Street at its intersection with High Plain Street must maintain pedestrian movement along High Plain Street.
- *TT 12/28/2020 – Comment addressed.*

The following are additional comments generated during our review of the revised submittal information.

49. Please review sheet numbering provided on revised plans and update to reflect current sheet totals and titles. Include all sheets on the Sheet Index provided on the Cover Sheet
50. The Plans were very difficult to read as PDFs making detailed information unreadable in many cases. Please check future submittals for readability of scanned images or provide unstamped versions printed to PDF direct from AutoCAD.

Diamond Hill Estates
Comprehensive Permit Peer Review
(December 28, 2020 Review Letter)

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. 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



Steven M. Bouley, P.E.
Senior Project Engineer

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