Responses in bold were added on December 7, 2023 to this documents

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.

The applicant will demonstrate that the project is in compliance with Massachusetts drinking water supply regulations and with the Special Permit requirements found in Section 12 of the Walpole Zoning Bylaw.

No further response at this time.

It is the applicant's opinion that the proposed site plan and the accompanying Stormwater Management Report comply with the requirements of the Massachusetts Stormwater policy as amended. A description of earth removal and replacement has been addressed on the plans and in written form in the Stormwater Management Report.

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.

There is no question that no portion of the project is in the Zone 1 Wellhead Protection Area. The Zone 1 area was established by an on the ground survey done by John Anderson PLS and is shown on Land Court Plan 4531-I.

The applicant will either provide the petitioner's plan from Land Court if that plan shows the wellhead, the 400 foot radius and the lot line or the applicant will provide a stamped site plan made from an on the ground survey showing the location of the wellhead with respect to the property.

An on the ground survey confirmed that the property line between the subject property and the Town of Walpole property is 400 feet or more from the Washington 5 wellhead. Therefore, none of the subject property is within Zone 1 of the Water Resource Protection Overlay District Zone 1.

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.

The information required in Section 12-3.C(4) will be submitted to the Board and will show that the project complies with the requirements for a Special Permit.

No further response at this time.

A revised Stormwater Management Report has been submitted to the Zoning Board of Appeals along with a description of earth removal and replacement. Other requirements found in Section 12 of the Walpole Zoning Bylaw will be submitted under separate cover.

Site Plans

Cover Sheet

4. Remove redundant Zoning Schedule or clarify its intended purpose.

The redundant Zoning Chart will be removed.

No further response at this time.

The redundant Zoning Schedule has been removed from the Cover Sheet.

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.

The chart will be revised to more clearly indicate the requirement / limitation for lot coverage at the site.

No further response at this time.

The Zoning Schedule and notes have been revised to clearly indicate that a Special Permit is needed in order to cover the site with more than 15% impervious cover.

6. Clarify if the "Total Area of Roads and Driveways" includes sidewalks and curb.

The total area of roads and driveways includes walkways and curbing (berms).

The proposed paved areas will be reduced to a minimum by removing paved berms, removing unnecessary parking stalls, shortening driveways by relocating buildings closer to the access driveway.

The paved area has been reduced to the minimum needed to provide safe vehicle and pedestrian access to the site and to the proposed residential units.

Existing Conditions Plan

7. Note the vertical reference datum used.

The vertical datum will be added to the plans.

No further response at this time.

The vertical datum, NGVD of 1929 has been added to the site.

8. Clarify how the WRPOD Zone Limits noted on the plan were determined and note the source on the plan.

The WRPOD Zones were determined from the Town WRPOD Overlay zoning map. A note will be added to the plan.

No further response at this time.

The WRPOD was determined from the Town of Walpole Aquifer Zoning map. Furthermore, an on the ground survey confirmed that Washington Well 5 is 400 feet or more from the subject site.

9. Explain the solid oval line shown along the west edge of the existing stormwater basin. If it is intended to note the 225 contour, then please show how the adjacent 225 through-contour traverses the area so the basin spillover geometry is more clearly represented.

That line is the "Top of Slope" line shown on the Darwin Lane as built plan that is on file with the Town Engineering Dept.

No further response at this time.

The solid oval line was shown on the as built plan done by John Anderson and Associates for the Darwin Lane subdivision. That line delineated the location where the existing storm water infiltration/detention basin would overflow in less frequent rain storms. The line has been removed from the site plans.

10. Please provide the license number of the Massachusetts Licensed Soil Evaluator certifying the test pit information.

The Soil Evaluator was John F. Glossa P.E. His Soil Evaluator license # is SE 890. That information will be added to the plan.

No further response at this time.

The name and license number of the Massachusetts Soil Evaluator has been added to the plans.

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.

The proposed curb material on site will be added to the plans.

No further response at this time.

The proposed berm has been removed from the plan in order to reduce the amount of impervious surface at the site.

12. Extend granite curb to the limits of the public right-of-way so that only granite is used within the Darwin Lane layout.

The granite curb will be extended so that all of the driveway to the site that is within the Darwin Road ROW will be granite curb.

No further response at this time.

The granite curb has been extended so that all of the proposed access driveway within the public way will have a granite curb edge.

13. Show proposed light fixtures on the Site Plan.

Light fixtures will be added to the plan.

No further response at this time.

All of the proposed light fixtures have been shown on the plans.

14. We recommend the mailbox and associated parking area be moved outside of the Darwin Lane layout as they are Project elements and not part of the public way.

The mailbox will be relocated to be within the site.

No further response at this time.

The mail boxes have been relocated to an area within the site.

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.

The snow storage areas will be relocated so that the storage areas do not conflict with proposed trees, street lights etc.

The applicant will submit volume computations for snow storm depths and volume computations for storage areas. Snow storage areas will be adjusted as needed and the point at which snow will need to be removed from the site will be identified.

A volumetric calculation has been submitted indicating the quantity of snow that can be stored at the site. Any snow in excess of these amounts will need to be removed from the site to maintain the emergency access turning requirements. Snow storage areas will not impact landscaping or light poles.

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

The recreation area was requested by the Board of Health. There is no specific design or use for the recreation area.

It is the intent of the applicant to leave the area simply as a lawn area and the future residents can decide if they want a more active recreation area.

The recreation area has been removed from the plan.

17. The on-site sidewalk terminates at the "T" intersection at an accessible ramp with no opposite landing area. We recommend the Board consider requiring the applicant to extend the site sidewalk to at least the visitor parking areas including appropriate landings for accessible travel. Additionally, any driveway should be at least 20 feet deep as measured from the garage door to the nearest of either the sidewalk or edge of travel way.

The applicant does not believe that there is any reason to extend the sidewalk any farther than what is shown on the plan. There are no driveways shown on the plan that are less than 20 feet deep as measured from the garage door.

The plan will be adjusted so that the sidewalk ends with and HP ramp that will have a corresponding ramp on the opposite side of the access driveway.

The sidewalk has been removed from the plan with the exception of the location between the tee intersection and Darwin Lane. There will be a 5 foot wide sidewalk at this location. The sidewalk will be an extension of the roadway cross section and the sidewalk surface will be stamped asphalt in order to differentiate the sidewalk from the access driveway. The sidewalk will end with an HP ramp and a HP ramp will be constructed on the opposite side of the access driveway.

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.

The 104' (diameter) radius requirement found in the Walpole Planning Board Rules and Regulations is the required diameter of the right of way. The Walpole Planning Board Rules and Regulations required an 88' diameter cul de sac.

No further response at this time.

Plans, produced by the Project Traffic engineer have been submitted showing that path of the Fire Truck.

Grading and Drainage Plan

19. Provide a vertical datum reference and show hydrant on which benchmark is noted.

The vertical datum will be added to the plan.

No further response at this time.

The vertical datum NGVD of 1929 has been noted on the plan.

20. Provide a summary of propose cuts and fills and an estimate of the total volume of fill material required.

A summary of the proposed cuts and fill will be submitted to the Board. An estimate of the total fill volume will be provided.

No further response at this time.

A plan showing the cuts and fills needed to achieve the grades on the plan has been submitted to the Board. There needs to be fill brought to the site.

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.

The applicant believes that this proposed requirement is excessive. The Town of Walpole Planning Board Rules and Regulations allow for a 2 to 1 side slope along new constructed subdivision roads. More erosion controls can be added to the design if the Board feels that erosion is a potential issue.

The plan will show additional details with the methods of placing the fill at the 2 to 1 slope locations as well as the methods for erosion control at these locations.

Notes that require the applicant to use the services of a geotechnical engineer for earthwork in these critical areas have been added to the plan.

22. Show proposed light fixtures on the Grading and Drainage Plan for coordination purposes.

The light fixtures will be added to the plans.

No further response at this time.

The light fixtures have been added to the Grading and Drainage plan sheet.

23. Grading plan suggests overland flow will be redirected toward the Parlon and Griffin properties and at least partially blocked (Elevation 220 and lower). Recommend the grading plan be adjusted to maintain all flow patterns at the boundary of the subject parcel.

The grading will be adjusted so that stormwater will not flow to the adjoining properties.

No further response at this time.

The grading has been revised at this location to show that stormwater will not discharge toward the abutting property.

24. Top of wall elevations and contours behind units 23-28 suggest flow from 31 Darwin Lane will no longer be allowed to flow south in an uninterrupted manner s the pathway will now be blocked by a significant fill section and a wall of homes. Additionally, a large area of runoff will be directed from the

site toward the boundary with 31 Darwin. We recommend the Board require the applicant to provide analysis demonstrating drainage from 31 Darwin Lane will not be impacted by the proposed project.

The top of wall elevations are proposed to be at the same height of the ground at the west side property line for 31 Darwin Lane. A note will be added to the plan. There should not be and will not be any blockage of runoff from #31 Darwin Lane toward and onto the project site. The proposed grades do not show a fill section behind #31 Darwin Lane, the grades show a cut section. Drainage from #31 Darwin Lane will not be impacted as a result of the proposed project.

Details, cross sections, elevations will be added to the plan to show that the wall and or sloping will not block or dam the runoff from any abutting property. Furthermore the applicant will seek a legal opinion to see if it is possible to grade within the access and utility easement which would allow for a smoother transition of grading between the properties.

The retaining wall has been relocated away from the property line and a rip rap swale will be installed between the retaining wall and the property line. That swale will discharge within the subject property.

25. The Plan shows a substantial shift in discharge location from existing conditions with no slope protection beyond a 10-foot rip-rap apron at the outlet . We recommend the existing discharge location be maintained to avoid potential offsite erosion that may occur from the change in flow pattern and intensity.

The discharge location was moved so that the discharge is directed away from the nearby well and toward a large area of wetland that is above the well. There is no discharge from that pipe up to and including a 50 year storm (see attached post development model). The velocity of the flow from the pipe in a 100 year storm event is 0.78 fps.

The applicant's engineer will view the area of the proposed outlet for slope, vegetated cover, and provide information pertaining to the potential for erosion at this location.

The outlet location has been relocated to the area where runoff will occur in the existing condition.

26. It appears CB-7 is intended to capture all overland flow entering the site from the north and direct it to the on-site infiltration system. Given the Project has no control over the off-site areas we recommend all off-site runoff be redirected around proposed infiltration systems. It also appears flow considered at CB-7 is significantly underestimated and should be addressed as part of any revision. This apparent underestimation is addressed later in this letter.

It is a fact that the applicant and subsequent future owners have no control over the abutting properties. However, the abutting properties that are in the watershed to CB-7 are also within Area 1 of the WRPOD and therefore are restricted to 15% max lot coverage by impervious surfaces.

See response to comment #52.

The drainage components have been reconfigured at this location so that storm water that is generated off site will flow unimpeded through the subject site in a 24" drain pipe.

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.

The applicant is willing to explore this additional pretreatment with the Board.

No further response at this time.

Additional pre treatment has been added to the stormwater management system. The 1st 1" of rainfall will from paved surfaces will be captured in deep sump and hooded catch basins, and discharge through a stormceptor water quality unit into a row of leaching galleys that will be fitted with #410 filter fabric which will trap and hold addition suspended solids that may be found in the runoff.

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

The exact location of inspection ports will be shown on the plan.

No further response at this time.

The exact location of inspection ports along with the specification of how they are to be constructed have been added to the plan.

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

TP# 1 and TP#2 are located just above the location of the trench.

The applicant has agreed to explore removing the trench altogether and connecting the area served to the infiltration basin. If that cannot be done, the trench will be designed to meet the comments including additional test pits.

An additional test pit has been dug in the location of the infiltration trench. The soil evaluation shows Hydrologic Group A soil with no groundwater at a depth of 11 feet below the ground surface.

- Bottom of trench appears to be within 4' of estimated seasonal high groundwater (ESHGW) yet no mounding has been provided as required.

Yes, the trench needs to be reconfigured so that it is located at the bottom of the sloping ground. Also, test pits will be done in this location to confirm the elevation of the ground water table.

See response above.

The trench was relocated to the bottom of the slope and a test pit was dug to confirm soil type and high groundwater table elevation.

- Confirm infiltration rates used are applied as required by the Handbook (not variable). Modeling results suggest a variable infiltration rate is being applied.

Not sure how this happened, something in the software. The model will be rerun with a static infiltration rate.

See response above.

The 18" pipe in the infiltration trench was no designated as an embedded pipe thus the varying infiltration rates. That has been corrected in the Hydrocad model.

- 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.

The infiltration trench is for rooftop runoff and any runoff from the grassed area proposed behind the buildings. This is runoff that is clean water, free of solids. There is no reason to conclude that the trench will fail. There are a number of 12" inlet riser pipes that will allow for inspection.

See response above.

The infiltration trench has been relocated to the bottom of the slope so that the finished grade of the top of the trench is at the grade of the existing ground. There shows on the plan a "path" to be graded so that the location of the infiltration can be accessed by maintenance equipment when needed.

- Design guidance specifically precludes the use of perforated underdrains in the manner shown on the detail.

The purpose of the 18" perforated HDPE pipe is to create volume in order to meet the rates of runoff requirements. It is intended to be an underdrain.

See response above.

The function of the 18" pipe is to provide volume in the trench.

- The proposed location beneath a 10-foot fill makes it impossible to comply with construction criteria noted in the Handbook.

We would expect that the trench would be installed first, and then filled over.

See response above.

The trench has been relocated so that the trench is at the bottom of the slope. The top of the slope is at the ground surface and the bottom of the trench is 5 feet below the ground surface.

Utilities Plan

30. Several water services as well as the proposed sewer force main are shown routed through the infiltration system where inadequate cover exists above the system to protect either from freezing. Please Show the proposed drainage system and light fixtures on the Utility Plan to confirm coordination of underground utilities in an extremely congested environment.

The infiltration basin can be lowered to allow for adequate cover for the sewer and water piping or the piping can be installed though sleeves below the infiltration basin. The light fixtures and other above ground and underground utilities will be added to the plan.

The water services and sewer force main will be reconfigured to avoid crossings where adequate cover is not shown.

The water main has been reconfigured so that the main passes in the front of each unit so that the water services do not cross the infiltration basin.

31. The water services to units 1-5 all cross the sewer force main. Suggest the water main and force main be swapped to avoid the need for water to cross sewer.

The location of the water main and sewer force main can be swapped to avoid the crossings.

No further response at this time.

The location of the water main and the sewer force main have been swapped so that there are no sewer/water crossings at this location.

32. The plans show a 6" sewer service to remain but the service is not shown on the existing conditions plan. Please clarify what, if any, sewer infrastructure exists serving the project site and how it will be used, replaced, or removed. The operability of any infrastructure proposed to remain should be verified and the proposed force main should transition to gravity prior to entering the Darwin Lane layout.

There is a 6" sewer lateral to the property according to the as built plan for Darwin Lane. The as built plan was done by John Anderson PLS who is a local and well respected professional, so we believe that the lateral exists as shown. The location will be shown on the as built plan.

The connection from the public sewer main to the proposed force main will be reconfigured so that the gravity pipe will be 8" and the force main will connect within the site.

The plan has been revised so that a new 8" gravity sewer will be installed in the location of the existing 6" sewer service and manhole holes are shown so that the 8" main will extend into the subject site where a summit sewer manhole will be installed at the junction of the force main and the gravity sewer.

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.

The sewer pump and appurtenances are being designed by others at the request of the Sewer and Water Superintendent. All pumps, pump chambers, and appurtenances will be shown on the plan. The applicant will work with the Sewer and Water Department to determine who is responsible for responding to the alarms.

No further response at this time.

The applicant is waiting for the Sewer and Water Department to forward the type and specifications of the "Required" pump station.

34. Please provide any testing that's been done confirming the adequacy of the existing water supply to serve the project without impacting existing users.

The applicant has no knowledge of recent testing. There is a 16” water main in Washington Street that feeds a 12” water main in Common Street that reduces to a recently installed 8” water main in Common Street. The new 8” watermain feeds the 8” main in Darwin Lane. The 8” main in Darwin Lane connects to the 6” main in Eleanor Road via an 8” main in Queens Court and an 8” main running cross country from Queens Court to Eleanor Road.

The applicant will submit the results of pressure and flow testing from nearby hydrants.

Pressure and flow testing results have been submitted by the applicant under separate cover.

35. Confirm acceptability of proposed hydrant locations with Fire Department.

The applicant will confirm the hydrant locations with the Fire Dept.

No further response at this time.

The applicant has/will confirm the location of the fire hydrants with the Fire Dept.

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.

The pump station is being designed by others at the request of the Sewer and Water Dept.

No further response at this time.

The applicant is waiting for the Sewer and water Dept. to provide the “required type” type and specification for the sewer pump station.

37. The Allen Block Retaining wall detail indicates height is limited to 4’ yet wall heights are shown as high as 6’ on the grading and drainage plan. Please provide the detail anticipated for walls taller than 4’.

The detail will be revised to match the grading.

No further response at this time.

The grading has been clarified so that the Allen Block Retaining wall will not be more than 4 feet high.

38. The Infiltration Trench Detail poses several fundamental issues that in our opinion make the design unsuitable to the application. See listing of concerns noted under prior comment.

Addressed under previous comment.

No further response at this time.

39. The design of the Underground Infiltration System will submerge, and at times backflow through the critical water quality structures which will have trapped contaminants and sediments. We do not recommend routing flow in reverse through the water quality units. If the condition remains we

recommend the Board require the applicant to obtain a certification from the manufacturer that the proposed design is acceptable and included in its performance analysis.

The applicant will either 1) provide the certification from the manufacturer as requested or 2) Lower the infiltration basin as needed or 3) place the water quality units off line and add backflow preventer valves.

The water quality units will be placed off line.

The elevation of the water quality units and the infiltration trench have ben revised so that the inverts of the water quality inlets are higher than the maximum elevation of the stormwater in the infiltration basin during 100 year storm event.

Construction Period Plan

40. It appears that the project is located outside Wetlands Protection Regulation jurisdiction and is not subject to review by the Walpole Conservation Commission. The Project will disturb more than an acre and thereby requires coverage under a NPDES Construction General Permit. We recommend a note requiring compliance NPDES permit conditions and associated Storm Water Pollution Prevention Plan be added to the plan and that proof of coverage be provided to the Board before commencing any land clearing activities.

The note will be added to the plans and the applicant will provide proof of the NPDES permit with the SWPPP before construction begins.

No further response at this time.

A note has been added to the plans indicating that a SWPPP and a NPDES will be required to be in place prior to the start of construction.

41. Temporary sedimentation areas are not shown nor are any details provided. Limitations on placement of such areas in location where infiltration is proposed leave few if any available options and as such should be clearly shown on the plan along with an indication of the area intended to be directed to them and its flow path.

Temporary sedimentation areas will be shown on the plan along with their watershed area and flow path.

No further response at this time.

Temporary sedimentation areas have been added to the plan.

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.

Information and details describing the methods of installing fill material and preventing erosion of the slopes will be shown on the plan.

No further response at this time.

Notes and information regarding how the 2:1 slope will be constructed have been added to the plans.

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

A concrete washout area will be shown on the plan.

No further response at this time.

A concrete washout area and detail has been added to the plans.

Landscape Plan

44. Proposed tree locations appear to conflict with areas designated for snow storage. Please explain how proposed street trees are expected to survive in areas designated for snow storage.

The location of the proposed trees will be revised as needed.

No further response at this time.

The location of the trees and or the location of the snow storage areas have been relocated on the plans.

45. Tree locations also appear to conflict with drain and sewer infrastructure. Most notably at the location of the proposed sewer pump station.

The location of the proposed trees will be revised as needed.

No further response at this time.

The location of the trees has been revised on the plans.

Lighting Plan

46. 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.

The lighting will be adjusted as requested by the Board

No further response at this time.

The lighting engineer will adjust the lighting plan as requested the Board.

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

The light fixture type and mounting height will be added to the plan.

No further response at this time.

The light fixture detail and mounting height has been added to the plan.

Fire Truck Circulation Plan

48. Show proposed trees and light poles on plan.

Trees and light poles will be added to the plan.

No further response at this time.

The trees and light poles on the plan set have been setback from the pavement so as to not interfere with the path of the Fire Truck including the Fire Truck bumper.

49. 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 (ie. Wheelbase, bumper overhang, turning radius etc.)

Truck description will be shown on the plan.

No further response at this time.

The Fire Truck specifications will be confirmed by the Traffic Engineer.

50. Plans show vehicle bumper is required to travel outside the travel way and through areas designated for snow storage and street trees. This is likely doe to the 82' radius used instead of the 104' radius required in the Subdivision Regulations. Recommend all trees and snow storage be kept at least 2 feet from the intended path of the fire apparatus and swept path of any protruding feature (bumper, ladder, bucket etc.).

The 104 foot radius is not required per the Walpole Planning Board Subdivision Regulations. The requirement is an 88' radius. Trees, snow storage and other obstructions will be shown on the plan and will be moved out of the path of the Fire Truck and Fire Truck bumper.

No further response at this time.

The plan set has been revised so that the trees, light poles, snow storage areas and other obstructions do not conflict with the "path" of the Fire Truck bumper.

51. The proposed circulation should be reviewed and approved by the Walpole Fire Department.

The circulation has been reviewed by the Fire Dept.

No further response at this time.

The plan will be resubmitted to the Fire Department for their review.

Stormwater Report

52. 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.

As stated previously, the off site flow from the existing drainage basin in inconsequential based on the fact that the drainage calculation were done by a Registered Professional Engineer, reviewed by a Registered Professional Engineer, and approved by the Walpole Planning Board. The amount of runoff that is not intercepted by the existing basin is minimal and future development of these properties is regulated by the Town zoning bylaw.

The existing basin will be analyzed for the design storms using the methodology in the MA DEP Stormwater Regulations that pertain to new drainage infiltration basins. The basin bottom will be taken as the 10 feet wide x 130 feet long and an exfiltration rate of 8.27 iph will be applied. The volume of the basin will include the leach pits and the volume of the above ground basin. The results will be discussed with the peer reviewer and the Town Engineer.

The offsite basin was analyzed using the methods that currently in place in the MA Stormwater Regulation. This analysis results in the overtopping of the existing basin in 10, 25, 50 and 100 year storm events. A headwall with a 24" pipe will be constructed on the subject property to allow the storm water discharge from the existing basin to pass through the subject site and discharge at the location as defined on the existing conditions plan.

53. 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.

The static exfiltration rate will be applied. The basin may need to be reconfigured.

No further response at this time.

The data for the trench was not entered correctly into the Hydrocad software. The 18" pipe in the trench was not designated as embedded. That has been corrected and the exfiltration rate is now the same for all storms that were studied..

54. 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-stie runoff patterns.

The shift in the discharge location was to have the flow of runoff directly away from the well and is directed to a sub watershed with wetlands just above the well. Runoff from this pipe only occurs in storms that are less frequent than a 50 year storm. The discharge for the 100 year storm creates a velocity at the pipe of only 0.78 fps.

The location of the proposed discharge will be viewed in the field and an evaluation will be made as to the likelihood of erosion at this location.

The discharge point in the proposed condition has been revised so that it mimics the existing condition.

55. 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.

That is an oversight. The design is for the rear of the buildings to discharge to the ground and then through the swale at the rear of the buildings to the CB-7. That will be corrected.

No further response at this time.

The runoff from the rooftops for Units 23-28 has been routed through CB -7.

56. 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.

Performance information for the water quality unit will be provided.

No further response at this time.

The manufacturer of the unit will provide the TSS removal rate based on the site configuration. Those results will be provided under separate cover.

57. 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. Fore 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.

A more thorough Construction Period Pollution Plan will be submitted.

No further response at this time.

The Construction Period Pollution Prevention Plan has been revised and resubmitted.

58. 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 PlanStorm (sic.) Water Control and Mitigation System.

Walls and slopes will be added to the O and M plan.

No further response at this time.

The walls and slopes have been added to the Stormwater report.

59. Given the proximity to the public water supply we recommend the Board consider requiring an Annual Stormwater Management System Inspection Report prepared by an approved Massachusetts licensed professional civil engineer be submitted to the Town demonstrating the system is being inspected and maintained as required and is preforming as intended.

The applicant has no objection to an annual stormwater inspection and inspection report to be done by a Ma Registered Civil Engineer.

No further response at this time.

The applicant has no objection to an annual stormwater inspection report that would be done by a Massachusetts Registered Professional Engineer.

Traffic

60. The traffic memo reports that the posted speed limits are 30 mph eastbound and 35 mph westbound on Common Street approaching Darwin Lane. Google Street view imagery indicates a posted speed limit of 30 mph westbound in the vicinity of 556 Common Street. Tetra Tech recommends that the Applicant confirm the regulatory speed limit in this area.

Traffic Engineer will respond

No further response at this time.

Traffic Engineer will/did respond.

1. The traffic memo included an evaluation of stopping sight distance (SSD) and intersection sight distance (ISD) at the Darwin Lane/Common Street intersection. The evaluation was based on procedures outlined in the American Association of State Highway and Transportation Officials' (AASHTO) A Policy on Geometric Design of Highways and Streets 7th Edition, 2018 which is consistent with industry standards. Tetra Tech recommends that the sight distance calculations be provided to the Town for review.

Traffic Engineer will respond.

No further response at this time.

Traffic Engineer will/did respond.

62. The traffic memo recommends that any proposed landscaping, fences, walls, or signs in the vicinity of the site driveway be kept low to the ground (less than 2 feet above street level) or set back outside the sight triangles as defined by AASHTO. Tetra Tech recommends that the Applicant include sight distance triangles on the final site plans showing the areas to remain clear of obstructions (i.e., signage, vegetation, etc.) to ensure that safe stopping sight distance and intersection sight distance will be met.

Sight distance triangles will be added to the plans.

No further response at this time

Site distance "triangles" have been added to the site plan.

63. Common Street has curved horizontal and vertical alignments through the intersection with Darwin Lane. Tetra Tech recommends that the Applicant prepare sight distance plans and profiles of this intersection to demonstrate that adequate sight distance is provided including stopping sight distance for the entire travel lane width in each direction on Common Street.

Traffic Engineer will respond

No further response at this time.

Traffic Engineer did/will respond.

64. The Institute of Transportation Engineers' Trip Generation Manual, 10th Edition trip Generation Land Use Code (LUC) 220 (Multifamily Housing – Low-Rise) trip rates were applied to 28 units. Tetra Tech generally agrees with the use of this land use category. However, ITE has published a more recent version of the Trip Generation Manual. Tetra Tech recommends that the Applicant revise the trip generation estimates to be based on the 11th edition of the Trip Generation Manual.

Traffic Engineer will respond.

No further response at this time.

Traffic Engineer did/will respond.

65. The traffic memo recommends that the Applicant install a speed hump on the site driveway before its intersection with the Darwin Lane cul-de-sac. Tetra Tech recommends that the Applicant explore alternative traffic calming measures (including along Darwin Lane) as opposed to a speed hump on the site driveway since the proposed Stop bar and Stop sign at the site driveway/Darwin Lane intersection would be anticipated to slow vehicles down along the site driveway.

Traffic Engineer will respond.

No further response at this time.

Traffic Engineer did/will respond.

66. 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.

The plan will be revised to indicate that landscaping at the split will be less than 2' high. There will be no snow storage areas allowed at the areas of the split in the access drive.

No further response at this time.

The plans have been revised so that landscaping will be less than 2 feet high at the tee intersection of the access driveways and a note has been added regarding the location of snow storage areas.

67. Tetra Tech recommends that any proposed traffic signage and pavement markings be compliant with the Manual on Uniform Traffic Control Devices (MUTCD).

A note will be added to the plans that all traffic control signs will be per the MUTCD.

No further response at this time.

A note has been added to the plans indicating that all traffic signs must be compliant with the MUTCD requirements and specifications.

68. Tetra Tech recommends that the Applicant review proposed Fire Access with the Walpole Fire Department to ensure the proposed geometry is acceptable.

The Fire Access will be reviewed with the Walpole Fire Dept.

No further response at this time.

The applicant has/will review the access driveway layout with the Fire Dept.