




John Kellard, P.E.  
David Sessions, RLA, AICP  
Joseph M. Cermele, P.E., CFM  
Jan K. Johannessen, AICP

## MEMORANDUM

TO: North Castle Planning Board

CC: Adam Kaufman, AICP

FROM: John Kellard, P.E.   
KSCJ Consulting  
Consulting Town Engineers

DATE: April 20, 2023  
Updated September 8, 2023  
Updated November 10, 2023  
**Updated March 25, 2024**

RE: Wael Alesawy Subdivision  
32 Orchard Drive  
Section 108.01, Block 6, Lot 1

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As requested, KSCJ Consulting has reviewed the site plans submitted in conjunction with the above-referenced revised project. The applicant is proposing to subdivide a 12.9 acre parcel with an existing residence into seven (7) building lots which will be accessed along a new 500 foot long cul-de-sac roadway. Proposed building lots would range between 43,788 s.f. and 145,874 s.f. in size.

**The applicant has submitted a revised subdivision design which now includes five (5) building lots which are accessed by a 575 foot long cul-de-sac roadway which is designed to private roadway standards. Proposed building lots range between 71,544 s.f. and 194,508 s.f. in size.**

The applicant has submitted a preliminary layout and roadway profile. Our preliminary comments follow below. As the applicant progresses through on-site testing and detailed design of stormwater collection and treatment, septic and well design, detailed site development with grading and drainage profiles, more substantive comments can be provided.

**Preliminary comments on our review of the revised subdivision design follow below. As additional detail is provided, more substantive comments can be provided. Future submissions should include driveway profiles, site grading on the individual lots, house sizes more typical of what is being built and potential pool sites should be provided on each lot.**

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CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE | SITE & ENVIRONMENTAL PLANNING

**GENERAL COMMENTS**

1. In general, it appears it will be a challenge to develop seven (7) building lots on the parcel once the proposed roadway is designed to comply with Town standards, septic systems are tested and designed in conformance with Westchester County Department of Health (WCHD) regulations, realistic houses are shown on each lot, stormwater mitigation is provided on each lot, driveway profiles and site grading is provided and not buildable area and contiguous buildable area is established for each lot. The applicant should provide such details within future submissions.

**The revised five (5) lot subdivision accessed by a private roadway is a much improved plan compared to the previous submission. The applicant has provided an evaluation of net lot area and contiguous buildable area for each lot. A detailed review of each lot will be performed upon agreement of the lot arrangement.**

Lot #3, however, does not appear to be a complying building lot. In accordance with Section 355-14(G), no building permits shall be issued for any structure unless the lot built has at least the amount of frontage required in the District in which it is located on a street which has been suitably improved to Town Road or Private Road standards. Lot #3 as proposed has no legal frontage on the proposed roadway and would require a Zoning Board of Appeals (ZBA) 280a Variance.

**ZBA Approval of Lot #3 has been obtained by the applicant.**

The Alternate Plan provides an irregular shaped access strip for Lot #3, which is 15 feet wide and 900+ feet long around Lot #2 in an effort to establish frontage on the private roadway. The lot is not accessible through this access strip. Furthermore, when evaluating conformance to the Bulk Zoning Requirements for the District, a lot with a total depth of 1,200+ feet would need to be at least 150,000 s.f. (3.44 acres) in size to conform to the width requirements (125 feet) of the District. The applicant should reevaluate zoning compliance of Lot #3 within the Alternate Plan.

A review of the neighboring Townsend Subdivision Approval confirms the above stated requirement and confirms the need for a ZBA 280a Variance.

2. The applicant will need to prepare a roadway design in conformance with Town Roadway Standards.

The revised roadway represents a much improved design which complies with all aspects of the Town's private roadway standards, except the entry grade and Vertical Curve #1. The maximum

entry grade of 4% must extend 10 feet beyond the right-of-way boundary or 35 feet of roadway centerline, whichever is greater. The minimum vertical curve should be 75 feet.

**The applicant is requesting a waiver of the regulations for the common driveway platform and vertical curve length at the common driveway's intersection with Orchard Drive. The Planning Board will need to evaluate the benefits of the reduced excavation and disturbance versus the steeper entry platform of the driveway and reduced transition between grades.**

**Prior to considering the waiver, the applicant should examine a second alternative which would include a longer 4% platform, a reduction in the length of the crest curve VC #2 and the shifting of vertical curve VC #1 to share a common tangent point with curve VC #2.**

3. Sight line information should be provided at the proposed roadway intersection with Orchard Drive. Sight lines should also be provided at the proposed driveway intersections with Orchard Drive.

The applicant should consider off-setting the driveway to Lot #5 not to have both driveways intersecting Orchard Drive adjacent to each other. The applicant should also consider the best sight distances when locating the Lot #5 driveway.

The driveway proposed to service Lot #5 will intersect Orchard Drive directly adjacent to the common driveway serving Lots #1 - #4. The applicant should examine clearing and regrading which will be required to obtain adequate sight distance to the west. Furthermore, the Planning Board may wish to consider limiting driveway curb cuts along Orchard Drive. The applicant should examine relocating the lower portion of the Lot #5 driveway to intersect the lower portion of the common driveway.

**The Town Highway Superintendent has visited the site and has no objection to the existing driveway remaining adjacent to the private roadway. The applicant needs to examine clearing and grading required to obtain adequate sight distance.**

4. A stormwater collection and mitigation system should be prepared for the project.

**The applicant is proposing a stormwater basin along the easterly side of the entry road to mitigate stormwater runoff from the project. Discharge from the stormwater basin is directed to a stone lined gutter along the western side of the private roadway. The stone line channel discharges onto Orchard Street.**

**There are no existing storm drainage facilities within Orchard Street to accept the proposed discharge. The Town Highway Department experiences continual problems and maintenance issues along the roadway after significant rainfall events. A point discharge of runoff from the stormwater basin is not acceptable since it will add an additional concentrated flow to this problem area. The applicant should examine extending the drainage system from the proposed stormwater basin along Orchard Drive to Whippoorwill Brook. I would suggest that the applicant meet with the Town Highway Superintendent to discuss the drainage concerns on Orchard Drive.**

5. A Stormwater Pollution Prevention Plan (SWPPP) should be prepared which addresses erosion and sediment controls, water quantity and water quality.

**The applicant has submitted a Stormwater Pollution Prevention Plan (SWPPP) for the project. The plan indicates that runoff leaving the property will be reduced to pre-development conditions. A detailed review of the SWPPP will be provided as the project progresses.**

**The applicant is proposing a rain garden to mitigate runoff from the house and portion of the driveway on Lot #5. The NYS Stormwater Management Design Manual recommends a maximum contributing area of 1,000 s.f. to a rain garden. The applicant should follow the recommendations of the Design Manual.**

6. Site development design for each building lot should be provided. Designs should include a realistic house size, stormwater treatment, erosion and sediment controls, site grading, site drainage and driveway profiles. It is advisable to consider pool sites if available.
7. The applicant should explain whether on-site soil testing was performed and the likelihood of obtaining compliant septic systems and stormwater treatment systems on each lot.
8. The applicant should avoid locating retaining walls within the road right-of-way.

**Comment addressed.**

9. The applicant should prepare a steep slope plan for the property. The plan should be used to establish the net buildable area and contiguous buildable area required for compliance with zoning.

**Comment addressed.**

10. **The proposed lot development for Lot #1 includes a house, driveway and rear yard amenities, which can not drain to the stormwater treatment basin. The applicant will need to address stormwater mitigation for Lot #1.**
11. **The Integrated Subdivision Plan should provide drainage improvements for the collection and piping of runoff from the proposed residences and driveways.**
12. **The applicant has submitted a Well Suitability Assessment Report for the project. The assessment is limited to an evaluation of the bedrock recharge which can be expected on-site.**

The five (5) homes proposed within the subdivision will draw water from the bedrock aquifer below the project site. Some of the rainfall infiltrating the soil zone percolates downward recharging the bedrock groundwater. Published bedrock groundwater recharge values in Westchester average 8.45 inches annually or approximately 628 gpd/acre. During drought conditions, annual precipitation levels will drop approximately 67% of the average perception resulting in a bedrock recharge of 5.66 inches or 420.76 gpd/acre or approximately 5,469 gallons for the entire site.

The applicant has used a recharge of 3.25 inches within their evaluation which seems to be a conservative approach to estimating bedrock recharge which can be expected at the site annually.

The applicant has also estimated a daily water demand of 350 gpd for each residence. This appears to be a reasonable estimate based on accepted standards. It should, however, be noted that it is not unusual to find new homes within the area with inground swimming pool and lawn irrigation systems. While 350 gpd water usage is an annual average, during the months of June, July and August when the water table is typically at its lowest levels pool and irrigation use will likely increase monthly averages by 50%.

Well permitting is processed by Westchester County Department of Health (WCHD). Location of wells, depth of wells and acceptable yields are determined and approved by WCHD. If there are well yield or quality issues which are documented within the WCHD, they may require additional testing prior to approval.

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As additional information becomes available, we will continue our review. It is noted that an itemized response to all comments will facilitate completeness and efficiency of review.

**PLANS & REPORT REVIEWED, PREPARED BY RALPH G. MASTROMONACO, P.E., P.C., DATED SEPTEMBER 21, 2023:**

- Preliminary Plat (1 of 3)
- Erosion Control Plan (2 of 3)
- Details/Notes/Road Profile (3 of 3)
- Alternate Preliminary Plat (1 of 1)
- Contiguous Buildable Area/Slope Map
- Lot Width Calculations Proposed Subdivision
- Calculation 'A' Lot Width Calculations
- Calculation 'B' Lot Width Calculations
- Calculation 'C' Lot Width Calculations
- Calculation 'D' Lot Width Calculations

**REPORT REVIEWED, PREPARED BY RALPH G. MASTROMONACO, P.E., P.C., DATED MARCH 11, 2024:**

- Well Suitability Assessment

JK/dc