Dolph Rotfeld Engineering, P.C.

M E M O

TO: CHRISTOPHER BRADBURY
VILLAGE ADMINISTRATOR

FROM: Dolph Rotfeld, P.E.

SUBJECT: North Ridge Street Residential Development
SUBDIVISION AND SITE PLAN APPLICATION

DATE: December 13, 2016

With regard to the above mentioned project, this office has received and reviewed the following:

1. Memo prepared by Ralph G. Mastromonaco, P.E., P.C., dated December 8, 2016;
2. Stormwater Report prepared by Ralph G. Mastromonaco, P.E., P.C., dated December 8, 2016;
3. Plans prepared by Ralph G. Mastromonaco, P.E., P.C., dated December 7, 2016.

As per the Village of Rye Brook Zoning Code, Chapter 209, "Site Plan Review", and in review of the materials listed above please see below for issue(s) that will need further response. Numbering of items below maintains numbering from this office's previous memo (dated December 6, 2016) and the numbering from the applicant's engineer's memo referenced above:

1. DRE continues to be of the opinion that the disturbance area will likely exceed the 1 acre threshold, requiring coverage under the NYSDEC General Permit for Stormwater discharges. This is evident by the grading plan and silt fence placement line.

2. Applicant's engineer's response is acceptable.

3. Applicant's engineer's response is acceptable.

4. Applicant's engineer's response is acceptable.

5. Applicant's engineer's response is acceptable.

6. Applicant's engineer's response is acceptable.

7. Applicant's engineer's response is acceptable.

8. It is understood that exfiltration is not required for the stormtech detention galleries, and was not utilized in the design, however, for the drywells serving the proposed house on Lot 3, this rate must be verified with percolation testing in the field. This is necessary in order to verify the disturbance required for the proposed drywells, if more are required, there will also be a greater disturbance area.

9. The drywell details do not show individual overflows as stated, please clarify. One 6" overflow is shown, in addition this should be provided with a rip-rap outfall.

10. DRE continues to recommend that the piped discharge and headwall from the proposed detention galleries be extended down the slope and discharge much closer to the wetlands; the anticipated 1.6 cfs discharge can result in erosion.

11. A cross-section must also be provided through the water quality system and must extend to include the tiered retaining walls. Existing and proposed grades must be shown on the cross-sections with stormwater system invert elevations.

12. The Applicant's engineer has stated that a Homeowner's Association will be responsible for maintaining the stormwater system including the monitoring of the filter cartridges, the cleaning of sumps and sediment traps, and watching for the accumulation of material in the Stormtech units. Please provide an operation and maintenance manual with schedule.

13. A discharge manhole for the sanitary sewer forcemain must be provided on the applicant's property (Lot 1), not in the public right of way. The Building Inspector will review the proposed sanitary sewer connection for the appropriate pipe material to be used.

14. A discharge manhole for the sanitary sewer forcemain must be provided on the applicant's property (Lot 3) with the sanitary sewer service lateral continuing as a gravity connection to the Village's sanitary sewer system. Invert elevations, pipe sizes, material and slopes must be provided. The discharge manhole must not be installed in the public right of way.

15. Applicant's engineer's response is acceptable.

16. A photometric plan must be provided demonstrating that adequate lighting will be provided in common driveway and parking areas, as well as along pedestrian paths. The photometric plan must also demonstrate that lighting intensities along property lines will not exceed one (1) foot-candle.

As stated in previous memos by this office, the following must be addressed:

It should be noted that no structural plans, details or calculations were submitted (or reviewed) for the retaining wall design as part of this application. Prior to the issuance of any permits the following must be provided for review:

- Cross-sections through the proposed tiered retaining wall which show existing and proposed grades, depths of wall footings, etc.
- All retaining wall design calculations and plans must be signed and sealed by a licensed New York State professional engineer.
- Subgrade bearing capacity requirements must be specified on the plans.
- Backfill and compaction requirements must be included on the plans.
- The completed installation must be certified by a licensed New York State professional engineer to be in conformance with the approved plans and must include test results certified by a NYS certified testing lab including but not limited to:
  - Subgrade bearing capacity
  - Backfill gradation
  - Compaction
- Vehicular protection along the top of the wall (i.e. guiderail).

Traffic-related elements of the site plan were not part of the review by this office.

Plans have not been reviewed by this office for zoning compliance.

Once revised plans have been received this office will be pleased to continue its review.

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Civil / Site / Environmental

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December 8, 2016

Anthony Oliveri, P. E.
Dolph Rotfeld Engineering, P.C.
200 White Plains Road # 3
Tarrytown, NY 10591-5833

RECEIVED
DEC - 8 2016
DOLPH ROTFELD ENGINEERING
late afternoon

Re: 259 North Ridge Street
Rye Brook, NY

Dear Anthony,

Enclosed please find the following information:

1. North Ridge Street Development Stormwater Report dated December 8, 2016,
2. Plans as follows:

   a. North Ridge Street Development, Cover Sheet last revised December 7, 2016
   b. Grading Plan, North Ridge Street Development dated December 7, 2016, sheet 1 of 8 sheets,
   c. Utility Plan, North Ridge Street Development dated December 7, 2016, sheet 2 of 8 sheets,
   d. Erosion Control Plan, North Ridge Street Development dated December 7, 2016, sheet 3 of 8 sheets,
   e. Details/Notes, North Ridge Street Development dated December 7, 2016, sheet 4 of 8 sheets,
   f. Details/Profiles/Notes, North Ridge Street Development dated December 7, 2016, sheet 5 of 8 sheets,
   g. Fire Truck Access Study, North Ridge Street Development dated December 7, 2016, sheet 6 of 8 sheets,
   h. Sight Distance Study/Intersection Improvements, North Ridge Street Development dated December 7, 2016, sheet 7 of 8 sheets,
   i. Fire Truck Access Study at Intersection of North Ridge Street and West Ridge Street, North Ridge Street Development dated December 7, 2016, sheet 8 of 8 sheets,

We received comments from your office dated December 6, 2016 and offer the following information:

Comment 1: A computation for the area of disturbance proposed is not on the plan, however we understand that 0.98 acres is proposed to be disturbed. The limit of disturbance line seems impractical in some areas and does not include or extend to the proposed silt fencing. The area can and will likely as shown exceed the 1 acre threshold, requiring coverage under the NYSDEC General Permit for Stormwater discharges. As noted previously, the NYSDEC General Permit requires providing for Runoff Reduction Volume (RRv) as well as other criteria in the design.

Response 1: The site is designed to minimize disturbance to less than 1 acre. There is no possibility that the disturbance will be over 1 acre.

Comment 2: The impervious areas listed under the existing and proposed conditions seem incorrect in that the offsite impervious areas do not seem to be included.

Response 2: The off-site impervious areas are now included in the computations. Since these are present in both the existing and the proposed case, there is no effect on the conclusion of the computations, namely, that there is no increase in peak flow.

Comment 3: Details must be provided for both the CS1 and CS2 control structures including internal baffles, panels, orifices, weirs, etc.

Response 3: The new sheet shows the control structures in detail.

Comment 4: Details of the proposed Stormtech chambers must include 12" of stone below and around the units as modelled in the HydroCAD report.

Response 4: The standard details now reflect this modification.

Comment 5: The HydroCAD report lists 16 Stormtech 740 chambers while the plan seems to show only 15.

Response 5: The volume of the 16th chamber is made up by the volume in the control structure which is part of the storage system.

Comment 6: The water Quality gallery is modelled in the report with a "user defined outlet" set at 0.02 cfs. This flow must be documented or justified in some way as the plan depicts a 6" outlet pipe which is not reflected in the model. Presumably this pipe would flow full when the limiting flow of the filters is exceeded.

Response 6: There is no 6" bypass around the filters. When the level in the water quality chambers exceeds the designed water quality volume the weir passes any excess flows. Please note that there is no NYS DEC requirement for post-construction water quality treatment for this project and the storm systems will provide benefits over and above the rules.

Comment 7: The HydroCAD report models the overflow weir in "CS1" control structure as part of the water quality basin while other orifices are modeled as part of the CS1 structure; presumably the weir should also be modeled within the CS1 unit and routed appropriately.

Response 7: The overflow weir is shown on the new detail sheet as being at the outlet of the WQ storage system which is precisely where the hydraulic model shows it. Our model configuration allows the water quality system to be designed at an elevation independent of the upstream control structure. The suggested configuration in comment 7 would require the water quality system and the control structure to be at the same elevation, which is a confining restriction.

Comment 8: An exfiltration value of 5"/hr was utilized for the drywells serving the proposed house on Lot 3; this rate must be verified with percolation testing in the field.

Response 8: The exfiltration rate (aka 12 min/inch) is an average rate and was estimated from preliminary field tests and our field inspections of the subsoil on site by hand excavation. The entire storm system does not need this exfiltration component to meet the goals of maintaining peak flows to current conditions.

However, the final, design rate of exfiltration would be performed during the building permit process for that single house. If the rate is slower than 12 minutes per inch then more drywells would be added to the system.

Comment 9: The HydroCAD model utilizes three 6" overflow devices from the proposed drywells on Lot 3, it is unclear how that is achieved; a detail must be provided.

Response 9: Each drywell has its own overflow that would be used in extremely rare instances. The detailed plans show the overflow which is a standard feature on drywells.

Comment 10: The piped discharge and headwall from the proposed detention galleries is terminated at a high point of the slope, this should be extended down the slope and discharge much closer to the wetlands; this will prevent erosion of the steep slope area.

Response 10: The system discharges after a velocity dissipater into a small channel at the top of a rock cliff. This was designed to minimize disturbance of the wetland buffer and the rocky nature of the slope will limit erosion. In 90% of all storms there would only be a tiny, 0.02 cubic feet per second flow from this pipe which is not enough flow to cause erosion. In the 100 year storm (a frequency of occurring once in 100 years) – there would be only 1.6 cubic feet per second, again indicating a low probability of erosion.

Comment 11: Cross-sections must be provided through both the water quality system and the detention system and must extend to include the tiered retaining walls. Existing and proposed grades must be shown on the cross-sections with stormwater system invert elevations.

Response 12: This profile is shown on the revised plans.

Comment 12: It is unclear who will be responsible for maintaining the stormwater system including the monitoring of the filter cartridges, the cleaning of sumps and sediment traps, and watching for the accumulation of material in the Stormtech units. Please indicate who will be responsible for system upkeep and provide an operation and maintenance manual with schedule.

Response 12: The project will have a Homeowner's Association to handle these maintenance tasks.

Comment 13: A discharge manhole for the sanitary sewer force main must be provided on the applicant's property (Lot 1) with the sanitary sewer service lateral continuing as a gravity connection to the Village's sanitary sewer system. Invert elevations, pipe sizes, material and slopes must be provided.

Response 13: Plans are revised to address the connections.

Comment 14: The full extent of Lot 3's proposed sanitary sewer service lateral must be provided on the plans with invert elevations.

Response 14: Plans are revised to address the connection.

Comment 15: The memo by Mr. Neuringer states that retaining wall heights have been reduced, "with one tier." However, the plan shows two tiers. Please clarify.

Response 15: There are two walls with a middle flat area – Mr. Neuringer was referring to one terrace, not tier.

Comment 16: A photometric plan must be provided demonstrating that adequate lighting will be provided in common driveway and parking areas, as well as along pedestrian paths. The photometric plan must also demonstrate that lighting intensities along property lines will not exceed one (1) foot-candle.

Response 16: The walkway lights are now changed to short bollards. The attached illumination plan indicates that there is no way lighting could advance to the property line with any adverse brightness.

Additional comment:

As stated in previous memos by this office, the following must be addressed:

It should be noted that no structural plans, details or calculations were submitted (or reviewed) for the retaining wall design as part of this application. Prior to the issuance of any permits the following must be provided for review:

- Cross-sections through the proposed tiered retaining wall which show existing and proposed grades, depths of wall footings, etc.
- All retaining wall design calculations and plans must be signed and sealed by a licensed New York State professional engineer.
- Subgrade bearing capacity requirements must be specified on the plans.
- Backfill and compaction requirements must be included on the plans.
- The completed installation must be certified by a licensed New York State professional engineer to be in conformance with the approved plans and must include test results certified by a NYS certified testing lab including but not limited to:

- Subgrade bearing capacity
- Backfill gradation
- Compaction
- Vehicular protection along the top of the wall (i.e. guiderail).

Response to additional comment:

A guiderail has been added to the plans in selected areas.

The other "additional comments" are essentially structural issues that are resolved at the building permit phase rather than the zoning and site planning phase. We expect that the wall system will require its own building permit and the issues of bearing capacity of the soil would be addressed at that time.

The above materials are transmitted in the hope of obtaining a positive response.

Sincerely,

Ralph G. Mastromonaco, PE
RGM/mte
1 attach
Cc: Lou Larizza W/Enclosures