

DRAINAGE AGENCY
DIVISION OF THE HIGHWAY DEPARTMENT
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Charles H. "Skip" Vezzetti
Superintendent of Highways
Chairman, Drainage Agency

Vincent Altieri
Executive Director

February 25, 2016

Route 304 LLC
75 Michael Roberts Court
Pearl River, New York 10965
Attn: Edmund Lane

Re: **RCDA Permit Application No. 07-38**
Hillside Commercial Park – Route 304 LLC
Section 68.16, Block 1, Lot 1; and
Section 68.11, Block 3, Lots 39 & 40
Town of Orangetown Tax Map
Resource: Muddy Creek

Dear Mr. Lane:

The Rockland County Drainage Agency, hereinafter "RCDA," has received the following information regarding the above referenced permit application:

- A. Comment response letter to RCDA review letter dated November 18, 2015 from Stuart Strow, P.E., Brooker Engineering, PLLC to County of Rockland Drainage Agency, dated January 15, 2016.
- B. "Drainage Analysis" report prepared by Brooker Engineering, PLLC, signed and stamped by Stuart Stow, P.E., last revised January 11, 2016.
- C. The "Hillside Commercial Park" drawings prepared by Brooker Engineering, PLLC, signed and stamped by Brian A. Brooker, P.E., dated/last revised January 12, 2016:
 - a) Title Sheet, Drawing Number: T,
 - b) Layout Plan, Drawing Number: 1,
 - c) Grading and Utility Plan (1 of 2), Drawing Number: 2,
 - d) Grading and Utility Plan (2 of 2), Drawing Number: 3,
 - e) Soil Erosion & Sediment Control, Drawing Number: 4,
 - f) Landscaping & Lighting Plan, Drawing Number: 5,
 - g) Existing Condition, Drawing Number: 6,
 - h) Road Profiles (1 of 2), Drawing Number: 7,
 - i) Road Profiles (2 of 2), Drawing Number: 8,
 - j) Drainage Profiles, Drawing Number: 9,
 - k) Sanitary Sewer Profile & Detail, Drawing Number: 10,
 - l) Force Main Profiles, Drawing Number: 11,
 - m) Construction Details (1 of 3), Drawing Number: 12,
 - n) Construction Details (2 of 3), Drawing Number: 13,
 - o) Construction Details (3 of 3), Drawing Number: 14,
 - p) Fire Service and Access Plan, Drawing Number: 15,
 - q) TC Map - Existing Conditions, Drawing Number: TC-EX; and,
 - r) TC Map - Proposed Conditions, Drawing Number: TC-PR.

The RCDA has previously provided the applicant with written comments regarding the application in comment letters dated January 8, 2008, March 7, 2008, February 5, 2010, October 25, 2010, May 8, 2013, March 9, 2015, July 20, 2015 and November 18, 2015. Based on a review of the current submission, the RCDA offers the following comments:

1. The calculations included with comment response 3 indicate that stormwater conveyance systems for sub-areas N1 & S1 are designed for a rainfall of 2.65 inch/hour, instead of 9.0 inch/hour, and further states that potential overflows from the collection and conveyance system would still be conveyed to the stormwater management systems, either by overland flow or through collection systems. In addition, "HEC-1 Computer Output Proposed Conditions" section in the "Drainage Analysis" report indicate 100-year rainfall (9.0 inch/hour) peak flows from sub-areas S1 & N1 will be routed to the respective stormwater management systems and will result in reduced peak outflows. Please demonstrate how roof top and parking area overflow runoff resulting from 100-year, 24-hour, storms for sub-areas S1 & N1 will be controlled and conveyed to the respective underground stormwater management systems. In addition, please include all calculations with the "Drainage Analysis" report that is signed and stamped or sealed by a professional engineer/ registered architect or provide separate calculations signed and stamped or sealed, as required.
2. The comment response 10 indicates that the delineation of the 2.04 acre conservation area has been revised and the conservation easement will be properly documented and recorded in accordance with the NYSSMDM. However, the current submission did not show any conservation easement limits, as previously stated. In accordance with chapter 5 of the NYSSMDM, "natural conservation areas must be protected during construction and managed after occupancy by a responsible party able to maintain the areas in a natural state in perpetuity, protected by legally enforceable deed restrictions, conservation easements." Please clearly identify the limits of deeded 2.04 acres of natural area preservation conservation easement on the project drawings and demonstrate that the 2.04 acres of the conservation easement area will be protected during and after construction, as required and as previously requested.
3. The comment response 11 indicates that the proposed project will have approximately 54,000 cubic feet (2000 cubic yards) of fill placement within the 100-year floodplain limits of Muddy Creek. In accordance with Chapter 353: Stream Conservation, also known as Rockland County Stream Conservation and Universal Flow Control Act, "it shall be a breach of this chapter for any person or firm to take any action of filling in or dumping material which would obstruct normal flow within the one-hundred-year floodplain of a County regulated stream or water recharge area." This act further requires the preservation of capacity and proper function of 100-year floodplain and County streams. Therefore, please revise the project design as necessary to eliminate floodplain filling or to indicate equivalent volume of floodwater storage in other areas within the site.
4. The comment response 15 indicates that the vegetated swales have been designed in accordance with the requirements of Chapter 5, and Section 5.3.3 of the NYSSMDM. In accordance with Section 5.3.3 of the NYSSMDM, vegetated swale is a conveyance system designed to convey stormwater at a low velocity, promoting natural treatment and infiltration. However, the proposed system, labeled as "Vegetated Swale #1 & Swale #3", with 4-foot high concrete retaining walls, 4" orifice outlet at the invert and an overflow weir at 3.5 feet above the grade are not vegetated swales but stormwater detention systems. Please identify the standard stormwater management practice consistent with the NYSSMDM and demonstrate that the design meets the practice requirements. In addition, the Drainage Analysis report indicates "Vegetated Swale #1 & Swale #3" as water quality practices and runoff reduction volume (RRv) credits have been taken also. Upon revisions, please review and revise the Drainage Analysis report as necessary to be consistent.
5. The proposed Stormtec Chamber systems indicate isolator rows to meet the water quality pre-treatment requirements; however, pre-treatment calculations are not provided in the Drainage Report. In addition, the stormwater detention system labeled as Vegetative Swale #3, which also receive parking area runoff, does not appear to have any pre-treatment system. Also, water quality volume credits taken for vegetative swales #1 and #3 do not appear to be consistent with the NYSSMDM. Upon necessary revisions, please quantify the required pre-treatment and water quality volumes and demonstrate that the proposed stormwater management system designs will have adequate pre-treatment and water quality volume as per the NYSSMDM.
6. The "Soil Tests" section in the "Drainage Analysis" report indicates that the site soil infiltration rate as 12 inch/hour, which is same as the selected field observation of 1 inch water level drop in 5 minutes through the test holes without casing. It is noted that the calculation of infiltration rate did not account for the absence of a casing in the test hole. The additional infiltration on the sides of the test holes results in a higher observed infiltration rate that must be adjusted to only account for infiltration at the bottom of the test hole. However, based on a further review by the RCDA, the proposed infiltration system is sufficiently sized for the proposed application.
7. Contrary to the titles of the "Summary Tables" on page 5 of the "Drainage Analysis" report, the "Summary Tables" appear to indicate discharges into the onsite wetlands. In addition, the HEC-1 analysis output printouts included in the Drainage Analysis report did not include peak discharges at the two outlet locations of the site and the outlet structure dimensions to be used to calculate the peak discharges. Please review and revise the HEC-1 Analysis as necessary to provide supporting


calculations demonstrating that the proposed project will not result any increase in the rate of runoff/discharge from the site, as required.

8. The "Grading and Utility Plan (1 of 2) indicates that the project, as proposed, will reduce the width of 100-year flood discharge from the site to less than 50% of the existing condition, which may have an adverse impact to Route 304 and upstream properties. Please provide the RCDA with an analysis of the Muddy Creek with an effective existing model and a developed condition model demonstrating that the project as proposed will not have any impacts to any properties in the project vicinity, upstream and downstream. Alternatively, please revise the design so that the width of 100-year flood discharge from the site will have minimal or no change.
9. The comment response 19 indicates that the filed instrument ID number 2010-00035246 will be updated, disclaimed or supplemented as necessary. As previously stated, the maintenance responsibility for the proposed stormwater management facilities must be vested with a responsible authority by means of a legally binding and enforceable mechanism such as a maintenance agreement, deed covenant or other legal measure that include a maintenance plan as specified section 3.5 of the NSSMDM. Upon execution, please provide documentation assigning the future obligation to current or future holders of title regarding the integrity, protection and maintenance of the specific stormwater management facilities such as proposed infiltration systems, vegetated swale, and stormwater detention systems in sub-areas N3 & S4 or any other proposed systems that will ensure necessary and proper functioning, maintenance and notice to future holders of the property, as previously requested.
10. Upon revisions, please provide a copy of the "Development Permit" for construction in the Special Flood Hazard Area (SFHA) of the Muddy Creek floodplain with the certification issued by the Floodplain Administrator for the Town of Orangetown indicating that the current project proposal is in compliance with Chapter 14B, "Flood Damage Prevention", Town of Orangetown Town Code, as adopted by the Town of Orangetown and the Federal Emergency Management Agency (FEMA), as previously requested.
11. Please provide a copy of the "MS4 SWPPP Acceptance" form, revised January 2015, signed by the Executive Officer or ranking elected official or by a duly authorized representative of that person from the Town of Orangetown, as previously requested.
12. As previously requested, please provide a copy of the acknowledgement letter from the New York State Department of Environmental Conservation indicating that the applicant has filed its Notice of Intent that includes a "SWPPP Preparer Certification Statement" for Stormwater Compliance.

Please note that all drawings and calculations submitted in support of the application must be signed and stamped or sealed by a Professional Engineer or a Registered Architect licensed in the State of New York.

Please provide the requested information at your earliest convenience in order for the RCDA to continue processing the above-referenced application. Please contact the undersigned at (845) 638-5081 or by e-mail: thottaks@cc.rockland.ny.us, if you would like to schedule a meeting or if you have any questions/comments regarding this matter.

Very truly yours,



Shajan S. Thottakara P.E., CFM
Rockland County Drainage Agency

- c: Vincent Altieri, RCDA
Town of Orangetown Planning Board (by e-mail: ccoopersmith@orangetown.com)
Town of Orangetown Building Department (by e-mail: OBZPAE@orangetown.com)
Town of Orangetown Floodplain Administrator (by e-mail: OBZPAE@orangetown.com)
Stuart Strow, P.E., Brooker Engineering (by e-mail: stu@brookerengineering.com)
Joseph Taylor, NYSDOT, Region 8, (by e-mail)
NYSDEC Division of Permits, Region 3 (by e-mail)
Rockland County Department of Planning