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September 23, 2024

Village of New Hempstead
108 Old Schoolhouse Rd
New City, NY 10956

Att.: Glenn McCreedy, P.E.
Village Engineer

Ref.: Illinois Properties 26 LLC (Job #5030)
Drainage calculation certification letter per NYSDEC 2024 stormwater code

Dear Mr. McCreedy,

The Stormwater Pollution Prevention Plan (SWPPP) report, dated April 12, 2024, initially proposed an underground infiltration system to ensure no net increase in peak runoff and to address water quality mitigation requirements. The development plan at that time included the construction of a two-story building adjacent to the west side of the existing two-story masonry building, along with the addition of parking spaces on the western portion of the site. A detailed breakdown of the drainage area, impervious area, required water quality volume (WQv), and minimum runoff reduction volume (RRv) is shown below:

- Drainage study area = 2.388 acres
- Existing Impervious area in disturbance (I_{Ext})= 0.834 acres
- Proposed impervious area in disturbance = 1.227 acres
- New Impervious (I_{New})= 1.227 acres – 0.834 acres
- New Impervious (I_{New})= 0.393 acres

$$Imp_{Treat} = I_{New} + 0.25 * I_{Ext}$$

$$Imp_{Treat} = 0.393\ acres + (0.25 * 0.834\ acres)$$

$$Imp_{Treat} = 0.602\ acres$$

- **$(WQv)_{Required}$ = 0.083 acs.ft. or 3,600.0 cu.ft**
- **$(RRv)_{Minimum}$ = 0.021 acs.ft. or 934.0 cu.ft**

However, the layout of the proposed parking lot has since been revised in response to an updated wetland delineation conducted by Peter D. Torgersen of Environmental Sciences on August 13, 2024. The revised layout is reflected in the updated site plan, dated September 23, 2024. Consequently, the drainage calculations, impervious area, required water quality volume (WQv), and minimum runoff reduction volume (RRv) have been updated accordingly.

- Drainage study area = 2.308 acres
- Existing Impervious area in disturbance (I_{Ext})= 0.834 acres
- Proposed impervious area in disturbance = 1.18 acres
- New Impervious (I_{New})= 1.18 acres – 0.834 acres
- New Impervious (I_{New})= 0.346 acres

$$Imp_{Treat} = I_{New} + 0.25 * I_{Ext}$$

$$Imp_{Treat} = 0.346\ acres + (0.25 * 0.834\ acres)$$

$$Imp_{Treat} = 0.555\ acres$$

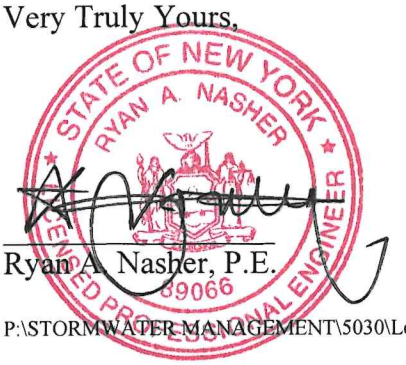
- **$(WQv)_{Required}$ = 0.077 acs.ft. or 3,346.0 cu.ft**
- **$(RRv)_{Minimum}$ = 0.020 acs.ft. or 861.0 cu.ft**

The above updated drainage calculation meets the 2024 NYSDEC stormwater code. As outlined in the updated calculations, the revised impervious area that requires treatment is smaller than what was initially submitted in the original SWPPP. This reduction in impervious surface results in a decreased volume of runoff that needs to be managed for both peak flow and water quality treatment. Given that the design of the previously proposed underground infiltration system was based on a larger impervious area, it has the capacity to handle the required volume.

Therefore, despite the changes to the site layout and drainage conditions, the original stormwater management system remains not only functional but also capable of meeting the new NYSDEC 2024 stormwater code. This includes mitigating peak runoff rates and providing the required water quality treatment. As such, no modifications to the previously designed system are necessary, and it continues to comply with all requirements.

If you have further questions or comments, feel free to contact our office. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.

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