



851 Chemung Street
Horseheads, New York 14845

December 2, 2015

Mr. Tom Skebey, Code Enforcement Officer
Town of Horseheads Code Enforcement Department
150 Wygant Road
Horseheads, New York 14845

**Re: Proposed Retail Development - Primax Properties, LLC
658 Main Street, Horseheads, New York
Review of Stormwater Pollution Prevention Plan**

Mr. Skebey:

I have completed a cursory review of the above-referenced project regarding the proposed stormwater management system for that project.

- Response letter to our October 29, 2015 review letter, Prepared by Bohler Engineering, Dated November 16, 2015, Received November 17, 2015
- Aerial photo of project site and vicinity with existing and proposed drainage paths indicated, Undated, Received November 17, 2015
- Stormwater Pollution Prevention Plan (SWPPP) for Proposed Retail Development, PRIMAX PROPERTIES, LLC, Not stamped by a NYS Licensed Professional Engineer, Prepared by Bohler Engineering, Revision Dated November 30, 2015, Received on December 1, 2015
- Site Development Plans for PRIMAX PROPERTIES, LLC - Location of Site 658 Main Street, Town of Horseheads, Chemung County, NY, Not Stamped by a NYS Licensed Professional Engineer, Prepared by Bohler Engineering, Revision Dated November 30, 2015, Received on December 1, 2015.

My review comments and questions regarding the SWPPP and stormwater management system for the above-referenced project, based upon the submitted information, are as follows.

SOILS TESTING & EVALUATION

1. There appears to be a lack of consistency with the infiltration testing and percolation testing completed. In June 2015, two infiltration tests and two percolation tests were completed by Terracon. On November 24, 2015, two infiltration tests and one percolation test were completed by Bohler.

As per the June 2015 testing, the infiltration test results showed marginal infiltration capacity (an average of 0.33 inches/hour) and the percolation rates ranged from 1.4 to 3.8 min/inch. As per the November 24, 2015 testing, the measured infiltration rates ranged from 8.8 to 9.6 inches/hour and a percolation rate of greater than 9.6 inches/hour was reported.

The infiltration tests from June 2015 were completed at a depth of 5 feet, as opposed to the November 2015 infiltration tests that were completed at depths of 12 inches and 24 inches. Do these results indicate that there is a confining/restrictive layer that would limit overall infiltration from the proposed basin?

It is imperative that complete and well-understood soils data (including infiltration test results) exist to allow the feasibility and performance of a conceptual stormwater infiltration basin to be fully evaluated. In regards to the percolation testing, the NYS Stormwater Management Design Manual requires infiltration testing be completed for the sizing and design of infiltration facilities.

STORMWATER MODELING

1. As per the submitted hydrologic modeling, the proposed infiltration basin was modeled with an infiltration rate of 7.5 inches/hour, although the average of the infiltration tests at a depth of 5 feet was less than 0.5 inches/hour. Refer to Comment #1 under Soils Testing & Evaluation. Does a restrictive/limiting soil layer exist?
2. A substantial portion of the adjacent Dandy Mini-Mart site to the east drains to the project site. Much of this off-site area is impervious.
 - Presently, it appears that this off-site area drains to the west to (and through) Existing Watershed Area 2. Runoff from the Dandy Mini-Mart site flows over a gently sloping lawn area (and perhaps a light depression), which promote infiltration of this off-site runoff.
 - In the proposed Post-Developed condition, a swale is proposed to divert runoff from the Dandy Mini-Mart site to the north to a proposed drainage ditch along NYS Route 223.

As such, this proposed diversion of the runoff from the Dandy Mini-Mart site would act to increase and concentrate stormwater flows to the NYSDOT right-of-way. The drainage analysis should consider this, when estimating peak flows to the NYSDOT right-of-way.

3. In regards to the hydrologic modeling of the existing, pre-developed conditions, it appears that the pre-developed peak stormwater flow rates and volumes are over-estimated given the following considerations.
 - The estimated times of concentration values for the pre-developed drainage sub-areas appear to be too low and unrepresentative of the existing conditions.
 - The existing pervious areas are well-established grassed lawn areas with grass cover of greater than 75 percent. An appropriate curve number should be utilized for these areas.
 - The amount of impervious area in the existing condition appears to be over-estimated.
 - It is unclear what curve number was utilized to model the existing driveway.
4. In regards to the modeling of the Grass Swale, off-site areas that drain to this swale should be included.

PROPOSED STORMWATER INFILTRATION BASIN

1. A significant portion of the footprint of the proposed infiltration basin is currently occupied by a house. With that said, how will soils within the footprint of this house be prepared/restored/replaced such to achieve the design infiltration rate. Furthermore, specifics of how the existing house shall be demolished should be outlined. The plans and SWPPP should clearly address this item. It is requested that post-construction infiltration testing be completed.

2. The proposed infiltration basin, as currently designed, is shallow (less than 8 inches). Given this shallow depth, items such as sediment build-up could have a significant impact.

STORMWATER CONVEYANCE

1. The existing downstream stormwater conveyance system along the southside of NYS Route 223 and the east side of First Street is meager, ill-defined, and in some locations non-existent. Given that the applicant is proposing the following items, it is recommended that the applicant evaluate/pursue improvements to the downstream stormwater conveyance system. These improvements would include increasing the hydraulic capacity of the downstream conveyance system such to accommodate the peak design stormwater flows. Improvements may include re-establishment of the existing conveyance system. This will most likely involve coordination with the NYSDOT and the Town of Horseheads.
 - Runoff from the existing Dandy Mini-Mart site is proposed to be redirected to NYS Route 223
 - A significant portion of the proposed parking lot is proposed to drain directly to NYS Route 223
 - An overflow from the proposed infiltration basin is directed to NYS Route 223
2. Hydraulic calculations justifying the sizing of the proposed driveway culvert should be provided. Peak flows from off-site areas should be estimated and utilized in the sizing of the driveway culvert and downstream conveyance system improvements.
3. The proposed type of pipe to be used for the storm sewers should be specified. Will adequate cover exist over the proposed storm sewer?
4. Bends in the storm sewer (without access structures) should be avoided.

SOIL RESTORATION

1. In regards to soil restoration, the Plans and SWPPP should reference NYSDEC's document entitled "Deep-Ripping and Decompaction, April 2008" for specifications. It is recommended that the SWPPP include this document.
2. Is soil restoration proposed to be completed for the proposed infiltration basin?
3. In regards to Note #2 under Soil Restoration Procedure of Sheet 5 of the Plans, the tilling of compost into the subsoil shall be to the full depth of impacted soils (but at least to a depth of 12 inches).

EROSION & SEDIMENT CONTROL

1. Silt fence should be provided along the north side of the project site (i.e. along NYS Route 223).
2. The proposed temporary sediment basin is within the proposed setbacks from the existing water supply wells. This could represent a potential source of contamination.

MISCELLANEOUS

1. What is the NYSDOT's status regarding their review and approval of the driveway entrance permit, the discharging of developed stormwater to their ditch along Main Street (including the redirecting of the runoff from the Dandy Mini-Mart site), and the culvert for this project?
2. Additional proposed spot elevations at the basin bottom, along the perimeter of the proposed parking lot, at the top and bottom of the proposed curb, and along the "ridgeline" of the parking lot are requested.
3. The following comments pertain to the proposed asphalt curb.
 - The Grading Plan does not seem to reflect the proposed curb. Also, the Site Plan should clearly indicate the location of this curb.
 - A concern exists regarding the long-term reliability of asphalt curbing. Asphalt curbing is vulnerable to snow plowing operations. Damage to the proposed curbing could negate its purpose of conveying runoff to the proposed forebay.
4. The O & M Plan should clearly indicate what measures shall be taken if the proposed stormwater infiltration basin does not drain at least at the design infiltration rate.
5. In regards to the NOI, the following comments pertain.
 - Item 16 on Page 5 of the NOI indicates that the municipality/entity that owns the separate storm sewer system is the NYSDOT. Although that may be true (at least for NYS Route 223), runoff may also reach the Town of Horseheads drainage system. As noted previously, the Town of Horseheads is a MS4 municipality.
 - The flow values indicated in Item 37 of the SWPPP, do not appear to agree with those in the Stormwater Management Report.
6. How will the existing on-site well be decommissioned? Likewise, how will the existing on-site septic system be decommissioned? The specific state and local requirements should be referenced.

If you have any questions or comments regarding this letter, please do not hesitate to contact me. Furthermore, I would be happy to meet to discuss this project in greater detail.

Sincerely,



Jimmie Joe Carl, P.E.

Cc: Bohler Engineering
Al Curran, NYSDOT