



851 Chemung Street
Horseheads, New York 14845

November 20, 2017

Mr. Thomas Whispel, Code Enforcement Officer
Town of Big Flats Code Enforcement Department
476 Maple Street, P.O. Box 449
Big Flats, New York 14814

**Re: Corning Big Flats, LLC
SWPPP for Proposed Storage Building
Sing Sing Road, Big Flats, New York**

Mr. Whispel:

I have completed a review of the following submitted information for the above-referenced project regarding the Stormwater Pollution Prevention Plan (SWPPP) and stormwater management system design for that project.

- Stormwater Pollution Prevention Plan for Corning Big Flats, LLC, Stamped by a NYS Licensed Professional Engineer, Prepared by Napierala Consulting Professional Engineer, P.C., Revision dated September 27, 2017, Received October 2, 2017
- Site Plan Drawings for the Proposed Storage Building, Stamped by a NYS Licensed Professional Engineer, Prepared by Napierala Consulting Professional Engineer, P.C., Revision dated September 27, 2017, Received on October 2, 2017
- September 27, 2017 reply letter from Napierala Consulting Engineer, P.C., Completed in response to our August 22, 2017 review letter, Received on October 2, 2017

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

General Drainage Plan Considerations

1. In regards to the proposed Soil Restoration, the following questions and comments are provided.
 - a. It is recommended that NYSDEC's document entitled "Deep-Ripping and Decompaction (April 2008)" and/or the "Standards and Specifications for Soil Restoration" from the New York State Standards and Specifications for Erosion and Sediment Control (November 2016) be included in the SWPPP.
 - b. Areas that are unable to be effectively decompacted and restored should be identified (such as areas within 10 feet of buildings and areas of deep fill) and appropriate Hydrologic Soil Groups (HSGs) assigned to these areas.

2. It appears that stormwater from off-site areas could reach the proposed infiltration basin during extreme storm events. This should be evaluated and considered when sizing the infiltration basin. Refer to the attached topographic maps with a cursory watershed boundary shown. Red arrows denote off-site sheet drainage to the project site. Blue arrows denote possible stormwater overflow routes.
 - Upon review of LIDAR topography, it appears that adjacent areas to the east of the project site drain towards the project property.
 - Upon review of the submitted topographic mapping prepared by C. T. Male Associates, it appears that stormwater flows at rates near or in excess of the capacity of the existing 18-inch diameter culvert near the western property line (which receives flow from the wetland area to the north of the project site) could enter the project site.
 - It appears that off-site stormwater could enter the infiltration basin from the west, during extreme storm events.

Upon review of the Stormwater Management Report for the existing building, completed in 2001, a larger overall drainage area was used in the design and sizing of the existing infiltration basin than is presently being used. Furthermore, it was noted that the design of the infiltration basin was intended to exceed minimum requirements.

3. In the response from the Applicant's engineer, it is noted that on-site materials would be suitable for fill in areas other than the structural fill beneath the proposed building. As per the proposed Grading Plan, a significant amount of fill is proposed outside of the footprint of the proposed building. With that said, is there an opportunity to utilize on-site soils from the south bank area of the existing infiltration basin for fill that would be used for areas outside of the building footprint? This could act to increase the overall storage volume of the infiltration basin.

Stormwater Infiltration & Pretreatment

1. Could the existing surface of the bottom of the infiltration basin be limiting in regards to infiltration rate? For example, could the surface of the basin have received silt and organics over time that, in turn, has acted to reduced the infiltration capacity?
2. On Page 12 of the SWPPP, it is noted that the infiltration tests were completed on May 17, 2017 and May 8, 2017. Also, in Appendix E, it is noted that the infiltration tests were completed on May 18, 2017. Which date were the infiltration tests completed?
3. In accordance with the NYS Stormwater Management Design Manual, a minimum vertical separation between the bottom of the infiltration system and the seasonally high groundwater table shall be a minimum of 3 feet. The SWPPP should document that this minimum separation from groundwater will be maintained.

As per the submitted SWPPP, the deep test holes were completed to a depth of 5 feet and groundwater was encountered. As such, for DH3, the groundwater elevation was approximately 928.5 feet (933.5 - 5). Is this anticipated to be the seasonal highwater table?

4. As per the Stage versus Storage calculations, the bottom of the infiltration basin is approximately 931.50 feet. As per the Stormwater Basin Cross-section on Sheet C-12, the bottom of the basin is noted to be 932 feet. It is requested that this discrepancy be addressed. If appropriate, the elevation contour of 931.50 feet should be clearly indicated on the Grading Plan.

Stormwater Conveyance

1. It is recommended that cross-sections of the proposed drainage swales be included on the plans, including bottom width and sides slopes.
2. Will the proposed drainage swale along the west side of the project site have sufficient hydraulic capacity to accommodate peak stormwater flows in excess of the capacity of the proposed adjacent storm sewer? Appropriate calculations should be provided.
3. Will the proposed drainage swale along the east side of the proposed building have sufficient hydraulic capacity to accommodate peak stormwater flows in excess of the capacity of the proposed adjacent storm sewer? Appropriate calculations should be provided.
4. As noted previously, it appears that stormwater from off-site areas could reach the proposed storm sewer systems (as well as the infiltration basin). This should be evaluated and considered when sizing the stormwater conveyance system. Refer to the attached topographic maps with a cursory watershed boundary shown. Red arrows denote off-site sheet drainage to the project site. Blue arrows denote possible stormwater overflow routes.
5. In regards to the "Rip Rap End Section" detail on Sheet C-12, as per the NYS Standards and Specifications for Erosion and Sediment Control, for Dmax of 18 inches, the minimum blanket thickness should be a minimum of 27 inches.
6. The rock outlet protection should be extended down the steep slopes. Rock should be of dimensions and angularity that rolling will not occur.
7. When will sizing calculations for the proposed roof drainage system be provided to the Town?

Hydrologic/Hydraulic Modeling

1. In regards to the proposed fill material, what will be the nature of this material? Will it be heavily compacted? An appropriate Hydrologic Soil Group (HSG) should be utilized for the fill areas that shall be vegetated.
2. The following comments pertain to the estimation of the Times of Concentration (Tc).
 - a. The Tc calculations in Table 3 do not coincide with the flow path information provided on the "Proposed Drainage Area" map in the SWPPP.
 - b. Given the relatively large areas of the existing and proposed building roofs and that these roofs are/shall be hard-piped to the infiltration basin, these areas would be expected to have a short (<5 min.) Tc. As such, consideration should be given to breaking out these roof areas as separate sub-areas.

Erosion & Sediment Control

1. Is the area at and downstream of the discharge storm sewer from the existing building into the existing infiltration basin eroding? If so, it is recommended that appropriate measures be included to address this erosion.

Miscellaneous

1. As noted previously, in accordance with the Town's Stormwater Management and Erosion and Sediment Ordinance, a formal, signed enforceable operation and maintenance agreement for the stormwater collection and management system shall be provided by the Applicant. Furthermore, this agreement must reference and include an approved Operation & Maintenance Plan.

As per the submitted SWPPP, maintenance and inspection checklists were provided in Appendix D regarding the long-term maintenance and inspection of the permanent post-construction practices. Upon review of this information, it appears that this information lacks appropriate detail. It is requested that a detailed Operation & Maintenance Plan be provided for this project. This plan would include (but not be limited to) information regarding the following items, as well as the associated inspection frequency and reporting requirements.

Infiltration Basin & Pre-Treatment Basin

- Mowing and vegetation requirements, including removal of woody plants
- Removal of debris, sediment, trash, and other obstructions
- Degree of vegetation of side slopes
- Actions to be taken if observed infiltration rate of infiltration basin is less than the design infiltration rate
- Use of sediment markers to monitor sediment depth

Drainage Swales/Ditches

- Mowing and vegetation requirements, including removal of woody plants
- Removal of debris, sediment, trash, and other obstructions
- Stability and degree/condition of vegetation
- Actions to be taken if erosion and/or unvegetated areas exist

Culverts & Storm Sewers

- Maintenance tasks for roof drainage system
- Maintenance of stormwater catch basins, including removal of debris, sediment, and trash
- Maintenance and inspection requirements for storm sewers and culverts, including cleaning requirements, including the removal of debris, sediment, and trash
- Inspection frequency and reporting requirements
- Inspection and repair of rip rap pads
- Repair of areas at and downstream of culvert and storm sewer discharges that are eroded

If you have any questions regarding these comments, please do not hesitate to contact us. Furthermore, I would be happy to meet to discuss this project.

Sincerely,

Jimmie Joe Carl, P.E.

Cc: Napierala Consulting, Professional Engineer, P.C.
Robert Switala, Bergmann Associates