



851 Chemung Street
Horseheads, New York 14845

April 17, 2014

Mr. Robert Young, Code Enforcement Officer
Village of Horseheads
202 South Main Street
Horseheads, New York 14845

**Re: Proposed Hotel, NYS Route 14, Village of Horseheads
Review of Stormwater Management Plan**

Mr. Young:

I have completed a review of the following information for the above-referenced project regarding the proposed stormwater management system for that project. This information was submitted in response to my November 20, 2013 review letter.

- Stormwater Pollution Prevention Plan (SWPPP) for the Horseheads Hotel, Not stamped by a NYS Licensed Professional Engineer, Prepared by Bergmann Associates, Dated March 2014, Received March 18, 2014
- Site Plan Drawings for Horseheads Hotel, Not Stamped by a NYS Licensed Professional Engineer, Prepared by Bergmann Associates, Revision dated March 7, 2014, Received March 18, 2014
- Response Letter to my November 20, 2013 review letter, Prepared by Bergmann Associates, Dated March 14, 2014, Received March 18, 2014

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

I. HYDROLOGIC & HYDRAULIC CALCULATIONS AND MODELING

1. Details regarding the proposed soil restoration of disturbed soils and existing impervious areas (to be reclaimed as lawn) should be provided on the plans and SWPPP. Appropriate soil restoration would justify the use of the HSG A assumption in the hydrologic calculations.
2. The drainage calculations and design should consider the off-site areas that currently drain to the project site. These off-site areas include a portion of the Friendly's site. The peak developed stormwater flow rates to the proposed infiltration basin appear to be underestimated.

II. STORMWATER MANAGEMENT

1. An existing stormwater inlet is located near the proposed forebay. This inlet is located on the NYSDOT's existing 30-inch diameter storm sewer and has a top elevation of 910.03 feet. Given that the elevation of the weir from the proposed forebay is proposed to be 911 feet, would developed stormwater flows from the forebay inadvertently be directed to this existing inlet as opposed to being directed to the infiltration basin? This would defeat the intent of the proposed infiltration basin. There appears to be an issue with the proposed elevation contours in the area of the proposed forebay and infiltration basin.

2. The invert elevation of the incoming storm sewer to the forebay of the proposed infiltration system is proposed to be approximately 5 feet below the overflow of the forebay. Furthermore, relatively little storage volume is proposed within the forebay below the invert elevation of the incoming storm sewer. It appears that only 0.23 feet of storage depth is proposed below the invert of this storm sewer. As such, given these proposed design features, the following consequences would most likely result.
 - Much of the proposed storm sewer system would be surcharged during significant runoff events. The frequency of this surcharging would depend (in part) upon the infiltration capacity of the forebay. With the accumulation of silt and sediment within the forebay, it would be reasonable to expect that this infiltration capacity would be reduced over time. The surcharging of storm sewers would result in a reduction of the average flow velocities within these sewers and an inability to effectively flush sediment.
 - Relatively little effective sediment storage volume would be available within the forebay.
 - Given the above considerations, the proposed storm sewer system may be prone to sediment accumulation over time that would act to reduce its hydraulic capacity.

It is recommended that the Applicant's engineer consider alternatives to increase sediment storage below the invert elevation of the incoming storm sewer, to better manage sediment reaching the storm sewer system, and to reduce the magnitude and frequency of surcharging events and tailwater impacts.

3. On Sheet C120, what is the dashed line near the proposed infiltration basin? The proposed grading in the vicinity of the proposed infiltration plan should be reviewed.
4. It is requested that the Stage versus Storage calculations for the proposed infiltration basin be checked.
5. The proposed Sequence of Construction should indicate when the proposed infiltration basin shall be constructed.

III. STORMWATER CONVEYANCE

1. Based upon the submitted storm sewer sizing calculations and the proposed grading plan, stormwater would not be contained on site and stormwater overflows from the site to Circle Drive would occur. This is contrary to the stated design objective for the collection system. There appears to a mislabeled proposed elevation contour near the entrance onto Circle Drive.
2. A means to ensure that stormwater flows at rates in excess of the capacity of the storm sewer system (i.e. overflows) reach the proposed infiltration basin (the intended discharge point) should be provided. This is especially pertinent, given that the storm sewer system would most likely be prone to accumulating sediment (that would reduce its hydraulic capacity) and surcharging. It is important that uncontrolled flows from the developed site do not reach off-site areas like Circle Drive.
3. Proposed spot grade elevations in the vicinity of the southwest corner of the parking area (including near the proposed Storm Manhole #13 and the proposed shallow berm) are requested.
4. The plans should note that "SLCPP" refers to smooth interior HDPE storm sewer (ADS N-12) pipe. Under the Storm Sewer Section of the General Notes (Sheet C000), the use of Corrugated Metal Pipe (CMP) is still noted and may be confusing.
5. In regards to sizing calculations for the proposed stormwater collection system, it was assumed that the rooftop of the proposed building shall drain to the proposed Storm Manhole #11. Could all or a portion of the rooftop drain to other points? The proposed storm line(s) from the proposed building should be indicated on the Utility Plan.

6. A sag/depression is proposed along the entrance drive immediately behind the existing one-story building near Circle Drive, although no stormwater inlet is proposed for that location. This should be reviewed.
7. Hydraulic calculations that document the ability of the grates of the proposed stormwater inlets to collect peak stormwater flows should be provided. The submitted hydraulic calculations for the storm sewer sizing appear to have some anomalies that should be discussed with the Applicant's engineer.
8. In regards to the estimation of the ability of the proposed storm sewer system to accommodate peak stormwater flows, consideration should be given to the impacts of accumulated sediment within the storm sewers. This accumulation would act to reduce the hydraulic capacity of the storm sewer system. As per the submitted O & M Plan, sediment depth within a storm sewer would be allowed to reach 1/4 of the diameter of the pipe, before cleaning would be completed.

IV. STATUS OF NYSDOT REVIEW AND PLAN ACCEPTANCE

1. What is the status of NYSDOT's approval to allow construction and improvements within their existing easement within the project site (including the proposed storm sewers across the NYSDOT's existing storm sewer)?

V. POST-CONSTRUCTION OPERATION & MAINTENANCE OF STORMWATER MANAGEMENT SYSTEM

1. In accordance with the Village'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.

This agreement shall be binding on all subsequent landowners and recorded in the office of the County Clerk as a deed restriction on the property. Also, the Applicant shall convey to the Village easements and/or rights-of-way to assure access for periodic inspections by the Village or their representatives (and for maintenance if required). These agreements, as well as the Operation & Maintenance Plan, shall be subject to the review and approval of the Village of Horseheads, their attorney, and Chemung County Stormwater Coalition.

As per the request of the Applicant's engineer, a copy of the generic front-end portion of the O & M Agreement is attached. This front-end portion of the agreement is provided in the Village's Stormwater Management Ordinance.

2. The O & M Plan should clearly note the following.
 - Actions to be taken, if standing water persists within the infiltration basin.
 - Actions to be taken, if uncontrolled stormwater flows leave the site. Uncontrolled stormwater flows are flows that are intended to be directed to the proposed infiltration basin, but do not reach that basin.
3. The "Stormwater Pond Maintenance and Inspection" items of the submitted O & M Plan appear to pertain to a detention basin, as opposed to an infiltration basin. Maintenance items, appropriate to the proposed infiltration basin, should be indicated in the O & M Plan.
4. In regards to the control of sediment within the collection system and the forebay, the following items are noted.
 - The O & M Plan discusses the cleaning of debris from the sumps of catch basins, although the plans indicate that catch basins (i.e., inlets with sumps) are not proposed.
 - As per the submitted O & M Plan, a maximum sediment depth of over 2 feet would be allowed to accumulate, before cleaning would be required. At this depth, the outfall storm sewer would be covered.

5. In regards to Parking Lot Maintenance and Inspection, in the O & M Plan, it is noted that parking lots and drives shall be cleaned or swept at a minimum of twice per month during the months of May through September. What is exactly meant by cleaning?

VI. EROSION & SEDIMENT CONTROL

1. If 5 acres or more of area proposed to be disturbed at any one time, a 5-acre authorization would be required.
2. In regards to the Temporary Stabilized Construction Entrance detail on Sheet C502, as per NYS Standards and Specifications for Erosion and Sediment Control, a drive width of 24 feet is required if a single entrance is provided to the site.
3. In regards to the Block and Aggregate Inlet Sediment Filter on Sheet C503, it is requested that the Standard Specifications (and one of the associated details) for Storm Drain Inlet Protection (per the NYS Standards and Specifications for Erosion and Sediment Control) be utilized. The Erosion & Sediment Control Plan should clearly indicate/note where Storm Drain Inlet Protection shall be provided.
4. As per the current plan, runoff from adjacent existing off-site impervious area would be directed to areas that would be disturbed during construction. A means to manage this off-site runoff during construction before reaching disturbed areas is recommended.
5. A means to controlled sediment from the access drive to Circle Drive should be noted on the plans.

VII. MISCELLANEOUS

1. This review pertains only to stormwater management. The Applicant is responsible to obtaining all necessary approvals, including those from the Village of Horseheads, the Chemung County Sewer District, and the New York State Department of Transportation.

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: Galen Salisbury, Chemung County Sewer District
Al Curran, NYSDOT
Justin Latierre, P.E., Bergmann Associates

Schedule A

**SAMPLE STORMWATER CONTROL FACILITY
MAINTENANCE AGREEMENT**

Whereas, the Village of Horseheads ("Municipality") and the _____ ("facility owner") want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Municipality for the below named project, and

Whereas, the Municipality and the facility owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Municipality and the facility owner agree as follows:

1. This agreement binds the Municipality and the facility owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this agreement.
2. The facility owner shall maintain, clean, repair, replace and continue the stormwater control measures depicted in Schedule A as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drainage ditches, swales, dry wells, infiltrators, drop inlets, pipes, culverts, soil absorption devices and retention ponds.
3. The facility owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The facility owner shall provide for the periodic inspection of the stormwater control measures, not less than once in every five year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a Professional Engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the stormwater control measures.
5. The facility owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality.
6. The facility owner shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.
7. The facility owner shall provide to the Municipality within 30 days of the date of this agreement, a security for the maintenance and continuation of the stormwater control measures in the form of (a Bond, letter of credit or escrow account).
8. This agreement shall be recorded in the Office of the County Clerk, County of Chemung together with the deed for the common property and shall be included in the offering plan and/or prospectus approved pursuant to _____.
9. If ever the Municipality determines that the facility owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.
10. This agreement is effective _____.