

May 22, 2017

Mr. Jimmie Joe Carl
Chemung County Stormwater Coalition
851 Chemung Street
Horseheads, NY 14845

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

Dear Mr. Carl:

Below are our responses to your comments and questions.

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.
Response: Soil restoration will be done in accordance with Table 5.3 of the Stormwater design manual, this note has been added to the notes sheet C000.
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.
Response: An area of 0.31 acres has been added to the Storm Sewer models. DR-1, DR-3, DR-4, DR-11 and DR-30 for the existing and proposed HydroCAD model have also been updated to reflect additional off-site drainage. This area has been confirmed with the Stormwater coalition.

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 develop 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.
Response: The grading has been revised in this area to prevent water from spilling out of the pond and into the NYSDOT structure. The pond grading has been revised.



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.

Response: The pond forebay has been enlarged and the spillway between the pond and the forebay has been lowered to provide less tail water on the storm system. The entire WQv is still contained in the forebay below the spillway as noted in the Stormwater Design Manual. It is noted that the project site will require diligent stormwater maintenance to deal with the issues noted above.

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.
Response: The dashed line is the 911.5 contour and has been labeled as such, the grading in this area has been revised.
4. It is requested that the Stage versus Storage calculations for the proposed infiltration basin be checked.
Response: Comment is noted, the pond has been increased in size to address this.
5. The proposed Sequence of Construction should indicate when the proposed infiltration basin shall be constructed.
Response: The sequence or construction has been revised.



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 be a mislabeled proposed elevation contour near the entrance onto Circle Drive.
Response: The grading at Circle Drive has been revised to correct this issue.
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.
Response: With the lowered tail water from the revised pond design, the HGL of the storm system for the 100 year storm does not exceed any of the proposed rim elevations. Additional the grading onsite has been revised to insure that access water would spill into the basin in lieu of spilling out to 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.
Response: Spots have been added as noted.
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.
Response: A note has been added to sheet C000
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.
Response: At the current time the exact roof drain locations are not known other than at the back side of the building. A note will be added to the plans to require coordination with the Village of Horseheads if this changes prior to or during construction.
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.
Response: The spot elevation has been revised.
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.

Response: A cut sheet for the proposed grates has been included in the Stormwater report to show the grates can pass the designed flows with a max 6" of head.

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.

Response: Comment is noted, revised pond design has minimized this issue. The provided O&M manual outlines practices to address the above noted sediment build-up.

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)?

Response: The NYSDOT has approved the permit, the permit will be issued once they receive 3 sets of final stamped plans and the project bond.

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.

Response: Comment is noted.

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.

Response: Comment is noted

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.

Response: Comment is noted



2. The O & M Plan should clearly note the following.
 - Actions to be taken, if standing water persists within the infiltration basin.
Response: This action has been added to the O & M Plan.
 - 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.
Response: The redesign of the pond and site grading has eliminated this issue.
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.
Response: The O & M Plan has been revised as noted.
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.
Response: Catch basins with sumps will be proposed as discussed due to the tail water on the storm system.
 - 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.
Response: The depth has been revised noting when sediment reaches the bottom of the inlet pipe into the forebay.
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?
Response: Cleaning would mean removal of debris, dirt, marks and mess from the pavement surface by wiping or brushing. This has been clarified in the O & M Plan.

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.
Response: Comment is noted.
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.
Response: The detail has been revised.



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.
Response: The detail has been replaced as noted and the plan has been revised to clearly note inlet protection locations.
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.
Response: A temporary diversion swale has been shown to route this runoff around the disturbed portion of the site until the storm sewer and forebay can be installed.
5. A means to controlled sediment from the access drive to Circle Drive should be noted on the plans.
Response: A section of Filtrexx Filtersoxx has been shown and the end of Circle Drive to collect sediment.

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.
Response: Comment is noted.

