



851 Chemung Street
Horseheads, New York 14845

July 24, 2013

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

**Re: Tri-County Conference Center
Big Flats, New York
Review of Stormwater Management Plan**

Mr. Gilbert:

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

- Stormwater Pollution Prevention Plan for Tri-County Conference Center, Stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers, Dated June 2013, Received June 24, 2013
- Site Plan Drawings for Tri-County Conference Center, Not Stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers, Revision Dated June 21, 2013, Received June 24, 2013. These plans are noted to be PRELIMINARY.
- Response letter to my April 11, 2013 review letter, Prepared by Fagan Engineers, Dated June 24, 2013

My review comments and questions, regarding the stormwater management system for the above-referenced project, based upon the submitted information, are as follows. At your request, we would be happy to direct a copy of this letter to Fagan Engineers.

HYDROLOGIC & HYDRAULIC MODELING

1. It was my understanding that an assumed infiltration rate was to be incorporated into the modeling of the existing depression. The calculations do not appear to have included this. That approach seemed appropriate, given the shallow, relatively flat, vegetated nature of this existing depression.
2. In regards to the modeling of the off-site area, was a hydrograph developed for each storm return period evaluated (1 year, 25 year, and 100 year)?
3. It is my understanding that the proposed detention basin is intended to be an Extended Detention Basin. Accordingly, it is unclear why the permanent pool volume is proposed to be 61 percent of the WQv and the extended detention volume is proposed to be only 39 percent of the WQv. This should be considered, as it could affect the design of the flow control orifices in the outlet control structure. In turn, this could impact the associated modeling. Also, some questions exist regarding the hydraulic design of the outlet structure and stage versus discharge relationships for the proposed stormwater management basin that should be discussed with the design engineer.

STORMWATER MANAGEMENT CONSIDERATIONS

1. A stormwater drywell is proposed to be installed near the southside of the proposed Homewood Suites. The following questions and comments pertain to this proposed drywell.
 - Has on-site soil testing and test pits been completed to determine if suitable percolation exists to accommodate a drywell? As noted in the SWPPP, the existing mapped soils are Collamer which tend to have low infiltration rates.
 - How much area is proposed to drain to this drywell?
 - Is it intended that this drywell be used to accomplish the RRv requirement?
2. Design details regarding the proposed rain gardens, bio swale, and bioretention swale should be provided on the plans. How much area will drain to the proposed rain gardens? Will the rain gardens have plantings?
3. As per Sheet 3 of the plans, it appears that a water feature of some sort is proposed near the south entrance of the Homewood Suites building. Is this intended to be part of the stormwater management plan?
4. In the northeast corner of the project site (near Arnot Road), a drive is proposed to connect to an existing parking lot. As per the submitted plans, this drive and the associated grading would result in the filling of an existing stormwater management basin. It is recommended that the volume (i.e. stage versus storage) of this existing basin be maintained or increased. Can the filling of this basin be avoided?
5. It is recommended that forebay volume be provided for each of the major storm sewer discharges into the proposed stormwater management basin, to better manage sediment accumulation.
6. In regards to the proposed grading plan for the proposed stormwater detention area, the following comments pertain.
 - It appears that some proposed contours are missing in the vicinity of Toys “R” Us and Colonial Drive.
 - Given that the proposed top of berm elevation is 967, will the existing adjacent “macadam parking” lot to the south be able to drain directly to the proposed basin (as shown on the developed drainage area map in the SWPPP)?
 - Where will the existing stormwater inlet near the proposed outlet structure be in relation to the proposed berm?
7. In regards to the use of perforated pipe, in conjunction with increased stone bedding, for Runoff Reduction Volume (RRv), the following questions and comments pertain.
 - Could the stone (including the geotextile fabric) become blinded/clogged with silt and sediment over time rendering this conceptual measure ineffective?
 - This conceptual approach seems analogous to the Infiltration Trench green infrastructure practice. As per the NYS Stormwater Design Manual, the following elements are required for Infiltration Trenches.
 - Pretreatment of stormwater
 - Soils testing
 - Soil percolation rates of 0.5”/hour or greater
 - Performance monitoring

STORMWATER CONVEYANCE

1. Hydrologic and hydraulic calculations justifying the ability of the proposed stormwater collection and conveyance system (including roof drains) to convey peak design flows should be provided, as part of the SWPPP. These should include consideration to potential tailwater conditions.
2. The calculations shall include estimates of the hydraulic capacity of stormwater inlets.
3. Roof drains for the proposed buildings should be shown on the plans.
4. In the SWPPP, in regards to Permanent Erosion Control, it is noted that Turf Reinforcement Mats shall be utilized. The plans should indicate the locations where the Turf Reinforcement Mats are proposed.
5. In regards to the existing storm sewer that crosses the Colonial Drive/Hickory Grove intersection, it is my understanding that it is 15 inches in diameter. The plans indicate that it is 12 inches in diameter.
6. In regards to the proposed entrance drives onto Colonial Drive and Arnot Road, the plans should clearly demonstrate how sheet runoff from the proposed access drives (and parking lots) will not be directed onto those thoroughfares.
7. Runoff from a portion of Colonial Drive will be directed to the proposed stormwater conveyance system on the project site. As such, the drainage of that thoroughfare will depend upon the performance of the proposed stormwater conveyance system. Upon discussion with the Chemung County DPW, it is requested that an easement over the proposed downstream stormwater system be provided that;
 - o Gives the County DPW the right (but not the responsibility) to complete necessary maintenance on this proposed downstream stormwater system, such to avoid negative impacts to Colonial Drive.
 - o Has provisions for the County DPW to be reimbursed for maintenance completed by them on the proposed downstream stormwater system.
8. In the northeast corner of the project site (near Arnot Road), a drive is proposed to connect to an existing parking lot. As per the submitted plans, this drive and the associated grading would impact the existing storm sewer system that presently collects runoff from the existing parking lot to the east of the project site and conveys this runoff to the existing stormwater management basin along Arnot Road.
 - o How will this existing storm sewer system be replaced or modified?
 - o Could runoff from the existing parking lot to the east be inadvertently conveyed along the proposed drive to the project site?
9. An existing stormwater inlet is shown on the east side of the proposed entrance drive onto Arnot Road. Is this existing inlet connected to the nearby 12-inch diameter storm sewer on the west side of this entrance drive?
10. In regards to the existing culvert for the existing entrance drive onto Colonial Drive, is this culvert proposed to be removed upon the elimination of this entrance drive? Will the roadside ditch along Colonial Drive in that area be restored? Could the existing adjacent watermain be impacted?

EROSION & SEDIMENT CONTROL

1. The location of temporary erosion control measures including stabilized construction entrances and silt fence should be indicated on Sheet 9.
2. The proposed construction sequence on Sheet 9 of the plans and Page 10 of the SWPPP do not match and a number of discrepancies exist. A single detailed construction sequence should be prepared.
3. Where are temporary sediment basins proposed to be located? Are temporary check dams proposed to be utilized? These should be indicated on the plans.
4. A detail of the Rock Outlet Protection for storm sewer discharges should be provided on the plans. This detail should include size of the dimensions of the rock pad and the specification for the rock. Appropriate sizing calculations are requested.
5. Soil restoration should be completed in accordance with Chapter 5 of the New York State Stormwater Management Design Manual. Appropriate information should be included on the plans.

MISCELLANEOUS

1. 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. This is especially pertinent to this project, as the selected stormwater management practices will have specific O & M needs to maintain their on-going performance.

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 Town easements and/or rights-of-way to assure access for periodic inspections by the Town 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 Town of Big Flats, their attorney, and Chemung County Stormwater Coalition.

2. This review pertains to stormwater management. The Applicant is responsible to obtaining all necessary approvals, including those from the Town of Big Flats and the Chemung County Sewer District.
3. In accordance with the SPDES Stormwater General Permit for Construction Activity, documentation must be included in the SWPPP that the proposed construction activities will not adversely affect a property that is listed or is eligible for listing on the State of National Register of Historic Places (including archeological sites).

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. Given the preliminary nature of the submitted plans, additional questions may result in subsequent reviews.

Sincerely,



Jimmie Joe Carl, P.E.

Cc: Andy Avery, P.E., Chemung County DPW