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851 Chemung Street  
Horseheads, New York, 14845

December 18, 2012

Mr. Tom Skebey, Stormwater Management Officer  
Town of Horseheads  
150 Wygant Road  
Horseheads, NY 14845

**Re: SWPPP Review  
Biltmore Crossing  
Town of Horseheads, New York**

Mr. Skebey:

As per the Town's request, we have reviewed the following information in regards to the above-referenced project. This information was prepared in response to my June 26, 2012 drainage review letter.

- Site Plan Drawings for Conifer Realty – Biltmore Crossing, Prepared by Fagan Engineers, Not stamped by a licensed professional engineer, Dated November 20, 2012, Received November 28, 2012
- Stormwater Pollution Prevention Plan for the Conifer Realty Biltmore Crossing, Prepared by Fagan Engineers, Not stamped by a licensed professional engineer, Dated November 2012, Received November 28, 2012
- Response letter to the Chemung County Stormwater Coalition's June 26, 2012 review letter, Prepared by Fagan Engineers, Dated November 28, 2012

My review comments and questions regarding the above-referenced project are as follows. At your request, I would be happy to direct a copy of this letter to Fagan Engineers.

**Stormwater Management Calculations**

1. It appears that the existing land use is brush. As per Table 2-2c of the TR-55 Manual, if the ground cover is 75% or greater, the hydrologic condition is termed Good and a curve number of 65 is noted. In the submitted calculations, a Fair hydrologic condition was noted and a curve number of 70 was utilized. The use of the lower curve number for existing conditions would be conservative and appears to reflect the existing land use (overgrown brush).
2. The modeling input and output, associated with the estimated mitigated peak flow rates in Table IV of the SWPPP, are requested.

3. The ability to infiltrate is an important component of the proposed stormwater management system design. As per the submitted calculations, the stormwater management basin is estimated to infiltrate from 0.75 to 1 CFS (depending upon the storm event). If this estimated infiltration is not realized, for a given storm event, water surface elevations within the basin and peak flows rates to Gardner Road would be increased.

As such, it is important to have complete soils testing done, to confirm the percolation. The design engineer indicates that one infiltration test has been completed and additional tests to meet the NYSDEC's Stormwater Management Design Manual will be completed after the site has been cleared.

I have some questions regarding this. When would the additional infiltration tests be completed? What is those test reveal a lower infiltration rate (or no infiltration).

#### **Stormwater Collection & Conveyance**

1. Site grading should be such that overland stormwater flows, including flows at rates in excess of the capacity of the storm sewer system, are safely conveyed to the proposed stormwater management basin.
2. Rip rap pads are recommended at the outlet of the proposed drive culverts.
3. In regards to the sizing of the proposed drive culverts, was the off-site/uphill drainage area considered?
4. The site grading plan should clearly indicate how overflows from the rain gardens shall be directed. Furthermore, the grading for the vegetated swale for along the parking lot for Building D should be refined.

#### **Stormwater Treatment, Infiltration, and Detention**

1. A fence is proposed to be extended over the emergency spillway of the proposed stormwater management basin and could negatively impact the performance of this spillway.
2. In regards to the proposed Buildings A, B, C, D, F, and the proposed Community Building, the RRv calculations indicate that the roofs of these buildings would be treated by the respective proposed vegetated swales. The plans should clearly note that the runoff from these buildings shall be directed to the respective vegetated swales.
3. A means to protect the proposed 1.2-inch diameter orifice in the outlet control structure from clogging should be considered. In regards to the proposed hoods, what make and model are proposed?
4. The diameter of the outfall storm sewer from the proposed stormwater management basin, as noted on Sheet C5, does not match the diameter noted on the Outlet Control Structure Detail on Sheet C7. Will a 24-inch diameter storm sewer fit into the proposed 3-foot diameter outlet control structure?
5. Two of the larger proposed parking lots and a portion of the proposed drive will receive little pre-treatment. As such, sand and grit may enter the proposed stormwater management basin from these areas. As such, consideration could be given to incorporating a small forebay in the stormwater management basin, to allow for the settling and storage of sand and grit.

### Erosion & Sediment Control

1. If 5 acres or more are to be disturbed at any time, a 5-acre authorization would need to be obtained by the applicant.
2. As per the proposed Construction Sequence in the submitted SWPPP, temporary sediment basins (including one in the location of the proposed stormwater management basin) shall be installed and utilized as part of the Erosion & Sediment Control plan. The locations of these temporary sediment basins should be indicated on Sheet C10 of the engineering plans.

### Miscellaneous Items

1. For permanent stormwater management controls for which their long-term performance/viability depends upon routine maintenance, an associated operation & maintenance agreement for the stormwater system must be developed and executed by the Owner. This agreement must be binding and enforceable and run in perpetuity with the property. It is recommended that this agreement be reviewed by the Town's lawyer.

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

Sincerely,

A handwritten signature in blue ink that reads "Jimmie Joe Carl". The signature is written in a cursive, flowing style.

Jimmie Joe Carl, P.E.  
Stormwater Engineer

Cc: Jessica Verrigni, Chemung County Stormwater