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851 Chemung Street  
Horseheads, New York 14845

October 31, 2016

Mr. Tom Skebey, Code Enforcement Officer  
Town of Horseheads Code Enforcement Department  
150 Wygant Road  
Horseheads, New York 14845

**Re: Fairport Ridge Planned Unit Development  
Horseheads, New York  
Review of Stormwater Management Plan**

Mr. Skebey:

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.

- SWPPP for the Fairport Ridge Planned Unit Development, Stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers & Land Surveyors, P.C., Dated September 2016, Received September 29, 2016
- FINAL PRINTS Site Plan Drawings for the Fairport Ridge Planned Unit Development, Stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers & Land Surveyors, P.C., Revision Dated September 29, 2016, Received on September 29, 2016
- Response Letter, Prepared by Fagan Engineers, Dated September 29, 2016, completed in response to our September 12, 2016 SWPPP review letter
- Infiltration Testing and Test Pit Results for Proposed Infiltration Basin, Prepared by Fagan Engineers & Land Surveyors, P.C., Received on October 7, 2016 (approx.).

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

**HYDROLOGIC & HYDRAULIC MODELING**

1. In regards to estimating the Time of Concentration for Post-Developed Sub-Areas B-4, B-5, B-6, and B-7, a Manning n-value of 0.15 was utilized to model the hydraulics of the proposed roadside swales. This value is too high for a grass-lined swale that would be routinely mowed/maintained. Utilizing a lower n-value would act to increase the peak estimated flow rates and the estimated peak channel velocities. This could impact the sizing of the driveway culverts, the downstream storm sewer system, and the rock outlet protection.
2. The hydraulic sizing of the proposed conveyance system shall be reviewed after Item #1 under Hydrologic & Hydraulic Modeling is addressed.

### STORMWATER COLLECTION & CONVEYANCE

1. Are end-sections proposed for the proposed driveway culverts?
2. The depth of the proposed drywells should be indicated in the plans. Whom will own and maintain the proposed drywells?
3. How will stormwater runoff reaching the eastern roadside ditch along Prospect Hill Road be conveyed at the driveway for the proposed Building #26?
4. Could stormwater flows along Prospect Hill Road that originate to the north of Building #26 be directed to the proposed infiltration basin?
5. Will adequate cover exist over the proposed driveway culverts?

### ON-SITE SOILS TESTING & EVALUATION

1. It is requested that the locations of the infiltration tests and test pits for the proposed infiltration basin be indicated on the Existing Conditions Plan (Sheet C1).

### SEQUENCE OF CONSTRUCTION

1. Has a specific Phasing Plan been developed for this project that has been approved by the Town? Has the Town limited the number of homes to be constructed, before both roadway entrances (and the complete roadway) are completed?
2. Is the general development/phasing of this project proposed to proceed from the south entrance to the north? This could impact the Erosion & Sediment Control Plan, as well as the Sequence of Construction.
3. Will the proposed forebays and infiltration basin be stabilized prior to the installation of the proposed storm sewer system?

### EROSION & SEDIMENT CONTROL

1. As per the September 29, 2016 response letter from Fagan Engineers, it is indicated that the actual buildings will be completed in clusters of 2 to 4 buildings each construction season. Accordingly, the following considerations are noted.
  - a. It is recommended that a specific Erosion & Sediment Control Plan be developed by the applicant for each "phase" and submitted to the Town for their review and acceptance, as part of the building permit process. These plans should include the locations of proposed erosion and sediment control practices, as well as concrete wash-outs. Also, this plan should define the limits of that particular phase.
  - b. The Sequence of Construction should make note of the development of a specific Erosion & Sediment Control Plan for each building phase.
2. In regards to the Rip Rap Outlet Apron Detail on Sheet C15, the rock gradation noted in the associated table appears to be undersized. Likewise, the thicknesses of the rock pads appear also to be undersized. This should be reviewed.
3. As per Sheet C14, silt fence is proposed to be installed across the proposed drainage swale to the west of the proposed roadway. The placement of silt fence within a drainage swale is generally avoided.

4. As part of the Erosion & Sediment Control Plan, provisions and practices should be implemented to prevent silt and sediment from reaching the proposed forebays and infiltration basin. For example, the proposed Buildings #11 through #14 are adjacent to the proposed forebays and infiltration basin and the construction of these buildings could result in silt and sediment from reaching the proposed forebays and infiltration basin, if appropriate controls are not employed.

#### OPERATION & MAINTENANCE AGREEMENT

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. 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).

As per the September 29, 2016 response letter from Fagan Engineers, it is noted that the Developer will work with the Town of Horseheads to develop an acceptable Operation & Maintenance Agreement.

2. The Operation & Maintenance Plan should include requirements for the proposed storm sewer system (including catch basin structures) and drywells.
3. The Operation & Maintenance Plan should indicate that appropriate maintenance of the infiltration basin should be implemented to restore the infiltration capacity of this basin, when the effective infiltration rate drops of the basin below the design infiltration rate of 10 inches per hour.

#### MISCELLANEOUS

1. In Table B-2 of the New York State Design Standards for Intermediate Sized Wastewater Treatment System (March 5, 2014), recommended minimum horizontal separation distances from septic tanks, sewer lines, and absorption fields to Stormwater Infiltration Management Practices are provided. As shown on Sheet C8, in the vicinity of the proposed Building #14, the minimum recommended separation distance between a proposed septic tank and the proposed infiltration basin forebay is not maintained. Similarly, as shown on Sheet C8, the minimum recommended separation distance between a section of sanitary sewer line and a proposed infiltration basin forebay is not maintained.

If you have any questions regarding these comments, please do not hesitate to contact us.

Sincerely,



Jimmie Joe Carl, P.E.

Cc: Fagan Engineers & Land Surveyors, P.C.