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851 Chemung Street  
Horseheads, New York 14845

June 26, 2017

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.

- 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 June 9, 2017, Received on June 12, 2017
- Stormwater Conveyance Calculations for proposed storm sewer system for Fairport Ridge PUD, Not stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers & Land Surveyors, P.C., Provided via e-mail on June 14, 2017

As you are aware, the Applicant has decided to pursue the installation of a storm sewer system to collect and convey stormwater to the proposed infiltration basin (in lieu of the originally proposed roadside drainage swale/culvert approach). My review comments and questions regarding the submitted plans and stormwater conveyance calculations for the above-referenced project are as follows.

**OFF-SITE DRAINAGE**

1. An off-site drainage area of approximately 4 acres is located adjacently north of the project site and would contribute runoff to the project site. It was noted by the Applicant's engineer that the design/sizing of the proposed storm sewer system was based upon the premise that runoff from this off-site area would not be received/conveyed by the storm sewer system.

The Applicant's engineer indicated that it is the intent of the design to allow runoff from this area to flow down the proposed cut slope, be conveyed behind and near Buildings #3 and #4, and (in turn) allowed to flow overland to the east of Buildings #5 - #24 to the proposed East Forebay.

In the interest of flexibility, the Applicant may wish to consider sizing the proposed storm sewer such that it could accept runoff from the off-site area in case they would like to convey this off-site stormwater to the proposed storm sewer system.

2. Drainage Area A-2 includes the eastern half of Prospect Hill Road between the proposed two entrance drives for the project. In regards to Drainage Area A-2, the following questions and comments are noted.
  - It is indicated in the submitted Stormwater Conveyance System calculations that Drainage Area A-2 shall be directed to the proposed culvert entrance near Building #20. The Grading Plan and/or Utility Plan should clearly indicate how runoff from this area shall be collected and conveyed to the culvert entrance.
  - Is there a potential that the Applicant may wish to convey roof runoff from Lots #7 through #16 (as well as Lot #20) to the proposed drainage swale to the west of these and to the proposed culvert entrance near Lot #20? If so, the proposed drainage swale and downstream culvert would have to be designed/sized accordingly.

#### STORMWATER COLLECTION & CONVEYANCE

1. As per the submitted calculations, the Applicant's engineer indicates that *"the catch basins will not have sumps"*. On the contrary, the 2' x 2' Catch Basin Detail and the 4' x 4' Catch Basin Detail on Sheet C14 of the Plans indicate that sumps within the catch basin (with hoods) are proposed.
2. The Plans should indicate where 2' x 2' catch basins are proposed to be located, as well as 4' x 4' catch basins.
3. On the Plans, it is noted that *"All roof storm water runoff shall be collected using gutter. All downspouts shall be collected in an under drain pipe and directed to the roadside swale"*. Given the currently proposed storm sewer system, is this note accurate or does it need to be revised? Does this note pertain to each of the proposed buildings?
4. In regards to the "Typical Roof Drain Detail" on Sheet C14, what is the minimum required diameter and slope of the roof drain piping? Does this piping have a smooth interior?
5. The Plans indicate that Neenah R-3561 frames and grates are proposed for the stormwater catch basins. On the contrary, the revised calculations are based upon the use of East Jordan 5423 frames and grates. This should be rectified.
6. In regards to the 4' x 4' Catch Basin Detail on Sheet C14, what size is the opening in the top concrete slab of these structures?
7. It is recommended that provisions for an emergency overflow/relief be incorporated into the drainage system design, where stormwater flows at rates in excess of the capacity of the storm sewer system that reach the lower portion of the proposed roadway (in the vicinity of Building #23) can be conveyed in a controlled fashion to the infiltration basin. From the submitted calculations, it is noted that overflows are estimated to occur from CB-14. Where would these overflows be directed?

Furthermore, as per the submitted calculations, overflows would also occur from CB-20 and CB-21. Given the proposed grading, these overflows would not be directed to the proposed infiltration basin, but rather towards Prospect Hill Road. This is contrary to the intent of the design.
8. In regards to the inlet control calculations for the proposed culvert entrance near Building #20, a HW elevation of 961 feet was used. From the proposed Grading Plan, it appears that the maximum HW elevation is roughly 960 feet.
9. In the narrative of the calculations, it is noted that *"If the hydraulic was below the upstream invert, the water elevation was reset to the invert elevation"*. Shouldn't the water elevation be reset to the normal flow depth? This item should be considered and the associated calculations checked.

### GRADING PLAN

1. The "Roadway Section" detail on Sheet C14 indicates that roadside swales of varying depth and 3 horizontal:1 vertical side slopes are proposed. On the contrary, the revised Grading Plan indicates that no roadside swales are proposed for much of the proposed roadway.
2. As per the submitted calculations, the Applicant's engineer indicates that "*Catch basins will be located just upstream of driveways in a 4-inch deep sump to encourage drainage into the system*". On the contrary, these sumps are not indicated on the Grading Plan. Furthermore, the Top of Grate elevations of the proposed catch basins do not indicate the placement of the basins within topographic depressions.
3. The current proposed grading for much of the project site does not show how front yard areas would be directed to the proposed storm sewer system. It appears that the proposed elevation contours shall generally run perpendicularly to the roadway.

### EROSION & SEDIMENT CONTROL

1. In Item #5 under "Construction Sequence" on SWPPP-10, it states that "*Building phase sediment trap locations shall be determined by the Town of Horseheads Stormwater Management Officer*". In Item #4 under "Information on Drawings" on SWPPP-11, it states that "*Phase specific locations of compost filter sock shall be determined by the Town of Horseheads Stormwater Control Officer as the building plans are reviewed*". This is contrary to our discussion at Fagan Engineer's office.

It was discussed that, as part of the building plan review/permit process, an individual Erosion & Sediment Control Plan for each building would be prepared and submitted to the Town for their review and acceptance. These plans would be in addition to the Erosion & Sediment Control Plans that would be prepared for each development phase.

### OPERATION & MAINTENANCE AGREEMENT

1. 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 of the basin drops below the design infiltration rate of 10 inches per hour.

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.