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851 Chemung Street  
Horseheads, New York 14845

July 18, 2022

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

**Re: 607 Pro Sports Complex, LLC  
61 Philo Road, Horseheads, New York  
Review of Stormwater Management Plan**

Mr. Larnard:

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.

- Stormwater Pollution Prevention Plan for 607 Pro Sports Complex, Stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers, Dated June 2022, Received on June 17, 2022
- Project Drawings for 607 Pro Sports Complex, LLC, Not stamped by a NYS Licensed Professional Engineer, Prepared by Fagan Engineers, Dated June 9, 2022, Received on June 17, 2022

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.

**HYDROLOGY**

1. A Tc of 29.6 minutes was utilized for EDA-1, the existing drainage area that includes the adjacent hillside area. A Tc of 47.9 minutes was utilized for PDA-1A, the post-developed drainage area that includes much of the adjacent hillside area. It is unclear why these Tc values are significantly different.
2. Sizeable topographic depressions currently exist in the western portion of the property. Given the permeable nature of the soils, it is expected that these existing depressions presently act as infiltration basins. These depressions, as well as any others on the project site, should be considered in the hydrologic modeling of the existing conditions, as these depressions most likely act to reduce stormwater flow rates and volumes leaving the project site.
3. Does the grading of the existing driveway on the adjacent property to the west of the project site act to direct stormwater from a larger hillside drainage area than that presently noted in the SWPPP?

4. On Sheet C1 of the submitted plans, an existing 12-inch dia. culvert is noted below the existing driveway on the adjacent property to the west that appears to discharge to the project property. What area is tributary to this culvert. This should be considered in the hydrologic modeling.

#### **STORMWATER MANAGEMENT, COLLECTION & CONVEYANCE**

1. Calculations and background information regarding the sizing of the proposed driveway culverts should be included in the SWPPP. Where would overflows from these culverts be directed?
2. Will the proposed diversion berm/diversion ditch along the south side of the proposed development direct increased stormwater flows to the Diamond Gym property to the east?
3. What is the proposed invert elevation at the west end of the proposed diversion ditch?
4. The surcharged hydraulic calculations for the storm sewer should include consideration to junction losses.
5. Is rock outlet protection (or other comparable practice) needed at the storm sewer discharges to the proposed infiltration basin?
6. Will the spillway from the forebay of the proposed infiltration basin need a permanent erosion control practice?
7. Are all stormwater flows from the hillside area of PDA-1B intended to be directed to the proposed forebay?
8. The top of berm for the proposed infiltration basin is higher than the adjacent grades to the west of the basin. Will this result in periodic ponding in these adjacent areas? Will this impact that adjacent property to the west?
9. Is the bottom of the proposed infiltration proposed to be topsoiled? If so, will this act to reduce the infiltration capacity? How will the basin bottom be prepared?

#### **EROSION & SEDIMENT CONTROL**

1. Will the proposed silt fence along the west side of the proposed infiltration basin act to impede/block flows from the existing 12-inch dia. culvert on the adjacent property to the west?
2. Will silt fence be installed across the location of the western entrance, until this entrance is constructed? The Sequence of Construction should note when this entrance shall be constructed.

#### **OPERATION & MAINTENANCE AGREEMENT**

1. In accordance with the Town's Stormwater Management and Erosion and Sediment Ordinance, a formal, signed enforceable operation and maintenance agreement 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). These agreements, as well as the Operation & Maintenance Plan, shall be subject to the review and approval of the Town of Horseheads, the Town's attorney, and Chemung County Stormwater Coalition.

2. In regards to the proposed stormwater infiltration basin, a detailed O & M Plan should be developed that includes (but not be limited to) the following items.

- i. Specific operation and maintenance tasks (including mowing and control of woody growth)
- ii. Monitoring requirements (including frequency)
- iii. Frequency of and thresholds (triggers) for maintenance activities

Like other stormwater infiltration systems, the proposed infiltration basin would have an effective life span, after which the repair, restoration, and/or replacement of it would be needed. A number of factors impact the effective working life of an infiltration system, including the nature of the existing soils, the nature and amount of solid particulates discharged to the system, the degree of maintenance, and the nature of the pretreatment provided. Maintenance of the proposed infiltration basin will be critical to the long-term performance and effective life of this basin.

The Operation & Maintenance Plan should include the following items.

A. Infiltration Basin Performance

- i. As per the submitted SWPPP, the infiltration basin was designed to contain stormwater flows from a 100-year storm event, while providing one foot of freeboard from the top of berm.
  - a. Maintenance and improvement items to be implemented, if stormwater levels within the basin reach or exceed the one-foot freeboard zone during a storm event with a return frequency of 100-years (or lower).
  - b. Time frame to implement above maintenance and system improvement items
- ii. The observed infiltration rate in the infiltration system (as measured in the infiltration basin) is less than the design infiltration rate (20 inches per hour).
  - a. Procedures for measuring observed infiltration rates
  - b. Maintenance and system improvement items to be implemented, if observed stormwater infiltration rates are less than the design infiltration rate
  - c. Frequency of completing the measurement of observed infiltration rates

B. Maintenance of Catch Basins

- i. Frequency of inspection of catch basins
- ii. Threshold for cleaning of sumps
- iii. Threshold for cleaning grates
- iv. Procedures for removal of trapped oils, gasoline, and other floatables

- C. Maintenance of Culverts and Storm Sewers
  - i. Frequency of inspection
  - ii. Threshold for cleaning
  
- D. Maintenance of Diversion Berm/Diversion Ditch
  - i. Frequency of inspection
  - ii. Frequency of mowing
  - iii. Threshold for regrading/re-establishing diversion ditch
  
- E. Maintenance of Roof Gutters and Downspouts
  
- F. Tables should be included in the O & M Plan that shall be used to document the date of inspections, the findings of the inspections, and maintenance completed to the stormwater system. These completed tables shall be maintained by the Owner on-site and shall be made available upon request by Town of Horseheads personnel for their review.

**MISCELLANEOUS**

1. This review pertains to stormwater management. The Applicant is responsible to obtaining all necessary approvals, including those from the Town of Horseheads and the Chemung County Sewer District.

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

Sincerely,

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

Jimmie Joe Carl, P.E.

Cc: Fagan Engineers