



July 17, 2013

Mr. Jimmie Joe Carl, P.E.  
Stormwater Engineer  
Chemung County Stormwater Coalition  
851 Chemung Street  
Horseheads, New York 14845

RE: SWPPP Review – Parmenter Tire Storage Area  
Horseheads (V), Chemung (C)  
FE Project #2012-052

Dear Mr. Carl:

The following are Fagan Engineers and Land Surveyors, P.C.'s responses to your review comments from the June 14, 2013 letter to Robert Young, Village of Horseheads Stormwater Management Officer.

### **Stormwater Management**

#### Hydrologic Calculations

1. Based upon the submitted mapping, existing topographic depressions exist on the eastern portion of the site (near E Street) that would store/infiltrate runoff and act to reduce stormwater runoff rates and volumes leaving the site. This should be considered in the estimation of stormwater discharge rates for the current condition.

Any comment on the existing conditions should be addressed in the initial project review. The project site is flat with a slope of ½-1% and the depressions are approximately ½ foot deep. The affect on the runoff rates and volumes are relatively small. We have created a new subarea of 1.90 acres that is tributary to the two depressions. We have estimated a infiltration rate of 2 inches per hour with any overflow draining to our outlet. The depressions and infiltration control and 1-year and 10 year storms. A small amount of runoff flow out of the depression during the 100-year storm. However, due to the subareas peaking at different times it does not increase the peak runoff rate from Area 1. Factoring in the depressions caused the overflow elevation of the outlet structure to be raised by 0.15 feet.

2. It appears that the developed peak stormwater flow rate, noted in the SWPPP, is underestimated. The shorter time of concentration, associated with the proposed impervious areas, was not considered in those estimates.

The developed and mitigated conditions have been split into two subareas. The buildings and main parking/storage area have the minimum Tc, and the second subarea that includes the northern access drive, lawn area and parking area have a longer Tc.

3. A portion of the proposed access drive to the south would not be tributary to the proposed stormwater management basin. The calculations for the developed conditions should reflect this. Where will runoff from this drive be directed?

This access drive has been moved to E Street. We have added a swale along the southern edge of the impervious area that directs stormwater to the stormwater basin. The majority of the southern portion of the site drains north thru grass buffers to the stormwater basin. We are not regarding this portion of the project and runoff will flow in the same direction as the existing conditions.

### Stormwater Management Basin

1. The invert elevations of the existing and proposed storm sewers should be noted on the plans.

The existing storm sewers were uncovered after the site survey. We have supplemented the survey with these elevations and they are shown on the project drawings and details.

2. Will the slope on the east side of the proposed forebay be prone to erosion from stormwater flows from the adjacent proposed storage area?

The parking/storage area has been regarded to direct the runoff south to a rain garden and swale. We have specified TRM or rip-rap in critical areas. If additional areas are found to be prone to erosion during construction the SWPPP will be modified to place rip-rap or TRM in the problem areas.

3. A sizeable portion of the proposed storage area will not drain to the proposed forebay.

The site grading has been altered to direct all of the proposed storage area runoff to the forebay.

4. What is the depth of groundwater, in relation to the bottom of the stormwater management basin?

Based on other projects in the area and the aquifer mapping for the Holding Point we estimate the groundwater elevation to be 890'. The existing onsite catch basin has a bottom elevation of 892.20'. There does not appear to be any issues with groundwater affecting the catch basin.

### Rain Garden & Runoff Reduction Volume

1. The proposed rain gardens should be shown on the Site Plan and Grading Plan. On the Grading Plan, the elevations of the proposed rain gardens should be indicated.

The rain garden has been moved is shown on the Site Plan and Grading Plan. It has been moved to the upstream side of the drainage swale. An 8-foot wide rain garden will extent the length of the drainage swale.

2. Are planting proposed for the rain gardens?

The rain garden will be planted with species from the suggested plant list on E & S Details C4. Plants will be placed 1-foot on center throughout the rain garden.

3. Will sufficient drainage area to the proposed rain gardens exist? Will the proposed rain gardens receive the RRv (as a minimum) from the rainfall events of 0.9 inches?

The rain garden has been relocated and will receive runoff from a sufficient drainage area.

4. The storage calculations for the proposed rain gardens indicate that 2 feet of stone will be utilized, while the detail on Sheet C4 indicated only 1 foot of washed stone.

The storage calculations have been changed. 1 foot of washed stone will be used as a drainage area in the rain garden.

#### Groundwater Protection & Hot Spot Considerations

We agree that the site has not been designed as a "hot spot". The owner is limited to store only materials that do not have the potential to generate highly contaminated runoff. We agree that a formal agreement between the Owner and the Village of Horseheads be created including your provisions.

#### Stormwater Collection & Conveyance

The site design is based on conveying stormwater to an existing 18-inch concrete culvert pipe. The outlet of the pipe is buried. Before any site construction can take place this outlet pipe must be daylighted and the condition of the culvert pipe and catch basin shall be evaluated. The owner has permission to excavate parking lot and extend the culvert pipe to the existing wetland. The owner will be responsible for all inspections and maintenance of this drainage system.

#### Erosion & Sediment Control

1. The questions and comments pertain to the proposed construction sequence on Sheet C5 have been addressed. The construction sequence matches the SWPPP, no temporary sediment traps will be used and a concrete washout area has been added to the drawing.
2. The applicant's engineer indicated that the proposed drives and storage area may be gravel. How will dust and turbid runoff be controlled?

Gravel parking/storage areas are allowed in the Village of Horseheads. The site will have limited traffic. The gravel areas are tributary to the on-site rain garden, forebay and detention pond. Any turbidity should be controlled by the on-site drainage system.

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July 17, 2013

If you have any question, please do not hesitate to contact me at (607) 734-2165, ext. 228.

Sincerely,

FAGAN ENGINEERS & LAND SURVEYORS, P.C.



Karl M. Schwesinger, P.E. CPESC  
Project Manager

cc: Jay Parmenter, Parmenter Tire