

Storm Water Management
&
Erosion Control Narrative

For
Performance Elite Gymnastics

2930 Airport Road
La Crosse, WI

Prepared By
Makepeace Engineering, LLC

1.0 Introduction

A. Project Description

Makepeace Engineering is assisting Wieser Brothers General Contractor Inc with the site design, which includes the stormwater management and erosion control, for its project of Performance Elite Gymnastics located at 2930 Airport Road within the City of La Crosse.

The project consists of a building addition, relocation of HVAC systems, a rain garden, redevelopment of the parking lot, a biofilter, and other necessary improvements.

B. Pre-Construction Site

The project site is located within La Crosse County Tax Parcel 17-10530-220. The projects will disturb an area of approximately 0.682 acres. The disturbed area is approximately 50.3% impervious. It contains approximately 330 square feet of roof area, 937 square feet of concrete, and 13,446 square feet of paved parking. The remaining 14,765 square feet consists of pervious areas.

The back of the site drains to the east, onto airport property. The front parking lot drains to the street.

2.0 Requirements

The project will disturb 0.682 acres. It is subject to requirements of the City of La Crosse stormwater ordinance, including post-construction performance standards.

3.0 Erosion Control Plan

A. Management Practices

Erosion and sediment control best management practices are shown on the plans and will be installed and maintained as indicated below in accordance with WDNR Technical Standards.

- Technical Standard 1056 Silt Fence
- Technical Standard 1057 Trackout Control Practices
- Technical Standard 1058 Mulching for Construction Sites
- Technical Standard 1059 Seeding
- Technical Standard 1052 Non-channel Erosion Mat

B. Sequence of Work

1. Install silt fence, and sediment barriers prior to any land disturbance.
2. Mass grading for parking lot, building area, impervious areas, and rain garden.

3. Disturb only as much soil as is necessary to complete construction. Preserve as much vegetation as possible.
4. Temporary erosion control seeding and mulch will be placed on disturbed areas which will not be disturbed again for a period of more than 14 days.
5. Temporary erosion control seeding, mulch, and silt fence will be used on stockpiles which will exist for more than seven days.
6. Post-construction bmp's construction sequencing will follow Section 4A below.
7. Grade site as construction progresses.
8. Properly dispose of construction waste.
9. Re-vegetate each phase as construction for that phase is completed.
10. Continuously clean up off-site sediment deposits.
11. Inspect erosion and sediment control practices weekly, and within 24 hours following a rainfall of 0.5 inches or greater. Written documentation of each inspection shall be maintained at the construction site and shall include the time, date, and location of inspection, the phase of land disturbance at the construction site, person conducting the inspection, assessment of control practices, and a description of any erosion or sediment control measure installation or maintenance performed in response to the inspection.
12. Remove tracking pad once construction is completed.
13. Remove all sediment barriers once construction is completed and the site is at least 70% re-vegetated.

4.0 Storm Water Management Plan

A. Post-Construction Site

The post construction site will consist of a new addition, relocation of HVAC systems, redevelopment of the parking lot, a biofilter, and a rain garden.

Storm water from the new addition will drain to a rear rain garden. The rain garden is sized to meet the peak flow requirements in the ordinance.

Storm water from the redeveloped southernly parking lot will drain to a biofilter, which discharges to a catch basin to the south.

The redeveloped northern parking area will drain directly to the street. The existing top back of curb is only 15" below the finished floor elevation of the existing building. Therefore, there is inadequate elevation change to accommodate any sort of pond or treatment device without flooding the parking lots.

All grading will be done with slopes less than 50%. The disturbed site will have a breakdown of approximately 81.5% impervious and 18.5% pervious compared to the pre-construction breakdown of 49.7% impervious and 50.3% pervious.

B. Post-Construction Performance Requirements

The proposed site is zoned as heavy industrial. As such, the site is subject to the following post-construction performance standards under the city of La Crosse ordinance chapter 105 section 61:

- 80% TSS reduction for new development
- 40% TSS for redevelopment
- 2-year 24-hour peak runoff discharge
- 10-year 24-hour peak runoff discharge
- Minimum infiltration of 60% of pre-development volume

C. Modelling Results

1. TSS Reduction & Infiltration

Stormwater for the new addition will be directed to the rain garden. The rain garden will be constructed as shown on the plan detail sheet and in accordance with DNR Technical Standard 1009. Stormwater for the redevelopment of the parking lot will be directed to the biofilter. The biofilter will be constructed as shown on the plan detail sheet and in accordance with DNR Technical Standard 1004.

The required TSS percentage of 55.9% reduction was found via weighted calculation. 60.26% of the site is being redeveloped and therefore subject to 40% reduction, the remaining 39.74% is subject to 80% reduction for new development.

WinSLAMM v10.4.1 was used to model pollutant loading and reduction and indicates 57% solids reduction from the site as well as 62% runoff reduction will be achieved with the device size and location shown on the plans. The rain file modeled was the 1981 rain file from Madison, Wisconsin.

2. Peak Flow Control

Peak flow values were modeled in HydroCAD 10.00-26. The site was modeled in a similar fashion as described above for SLAMM. Pre-construction and post-construction peak flows are summarized in the following table.

Storm Event	Pre-Construction	Post Construction
2-yr	1.48 CFS	1.41 CFS
10-yr	2.59 CFS	2.34 CFS

Table 1. Runoff Results.

D. Sequence of Work

1. Install erosion control measures as discussed in Section 2B.
2. Construct project including rough grading.
3. Side slopes will be no steeper than 2H:1V on biofilter side slopes, and 3H:1V everywhere else on the site.
4. Once construction is completed and the site is stabilized, excavate rain garden to subgrade. Remove accumulated sediment if needed.
5. Install engineered soil and plantings in accordance with construction details.

E. Long-Term Maintenance

1. Water plants as necessary during the first growing season.
2. Water as needed after first growing season.
3. Treat diseased vegetation as needed.
4. Inspect soil and repair eroded areas as needed.
5. Remove litter and debris monthly.
6. Remove accumulated sediment as needed to allow proper function.
7. Make repairs as needed when performance is compromised.