

Storm Water Management
&
Erosion Control Narrative

For
18 Unit Apartment Complex

1100 Block of Pine Street
La Crosse, WI 54601

Prepared By
Makepeace Engineering, LLC

1.0 Introduction

A. Project Description

Makepeace Engineering is assisting the Benson Properties LLC, with the site design, which includes the stormwater management and erosion control, for its 18 Unit Apartment project approximately 140 feet from the intersection of West Ave and Pine St.

B. Pre-Construction Site

The project site is located within La Crosse County Tax Parcels 17-20160-20, 17-20200-60, 17-20200-70, 17-20200-80, and 17-20200-90. All parcels consist of single-family homes that have been converted into rentals.

The site includes 46% pervious as follows:

<u>Ground Surface</u>	<u>Area</u>
Roof	7,695 sf
Gravel	1,185 sf
Asphalt Pavement	247 sf
Concrete	2,925 sf
<u>Grass</u>	<u>10,452 sf</u>
Total	22,504 sf

A soil evaluation was not completed for the project, however Makepeace Engineering has extensive experience working in the area. Existing soils can be expected to include silty sand. While most of the material is expected to be sand, lenses of silty material are common in the area. For this reason, a native infiltration rate of 0.51 inches per hour is assumed.

2.0 Requirements

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 Wisconsin Department of Natural Resources (WDNR) Technical Standards and the United States Environmental Protection Agency (EPA).

- WDNR Technical Standard 1056 Silt Fence
- WDNR Technical Standard 1058 Mulching for Construction Sites
- WDNR Technical Standard 1059 Seeding

- EPA Concrete Washout Guidance
(<https://www3.epa.gov/npdes/pubs/concretewashout.pdf>)

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 pervious areas.
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 2A 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 all sediment barriers once construction is completed and the site is at least 70% re-vegetated.

Storm Water Management Plan

A. Post-Construction Site

The post-construction site will consist of an apartment building, parking lot, sidewalks, landscaping and grading. The proposed site includes 28% pervious as follows:

<u>Ground Surface</u>	<u>Area</u>
Roof	5,765 sf
Gravel	0 sf
Asphalt Pavement	8,745 sf
Concrete	1,683 sf
<u>Grass & Landscaping</u>	<u>6,311 sf</u>
Total	22,504 sf

B. Post-Construction Performance Requirements

The proposed site is subject to City of La Crosse post-construction performance standards.

1. Peak Flow – 2, 10-year storm peak flow control
2. Infiltration – Redevelopment is exempt from infiltration
3. TSS – 40% reduction from parking areas

C. Modelling Results – TSS Reduction

As a residential project, all runoff may be treated by rain gardens, rather than bio-infiltration devices. A single rain garden is proposed, north of the the north parking lot. Construction details for the rain garden include 5' of clean sand meeting DNR technical standards for material eligible for a native infiltration rate of 3.6 inches per hour. As such, modeling includes 3.6 inches per hour native infiltration rate at the bottom of the proposed rain garden.

WinSLAMM v10.4.1 was used to model pollutant loading and reduction and indicates 45.31% solids reduction. The rain file modeled was the 1981 rain file from Madison, Wisconsin.

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 3H:1V everywhere on the site.

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.