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STORMWATER MANAGEMENT PLAN

30 Merrill Street
Portland, Maine

The following Stormwater Management Plan has been prepared for Banner Properties, LLC to evaluate stormwater runoff and erosion control for the proposed 7-unit residential building to be located at 30 Merrill Street, Portland, Maine.

Site Calculations

Total Property Area	5,100 S.F.
Existing Impervious Area	1,509 S.F.
New Pervious Parking/Drive	2,190 S.F.
New Impervious Roof	1,824 S.F.
Total Landscaped Area	1,086 S.F.
Total Developed Area	5,100 S.F.
Total New Impervious Area	315 S.F.

Existing Conditions

The development parcel is located on the westerly side of Merrill Street, across from the intersection with Turner Street in Portland, Maine. The property is 5,100 square feet in area and currently includes a two-unit residential building with driveway and storage sheds. There is a brick sidewalk along the frontage of the lot and a street tree.

The lot gently slopes from west to east (back to front). Runoff is conveyed to Merrill Street via overland flow, in the lot's current state. A combined sewer overflow system within Merrill Street collects stormwater runoff in a limited number of catchbasins.

Proposed Development

The applicant is proposing to remove the existing building and replace it with a four-story building that will house (7) seven residential units. There is to be a 10-foot wide driveway that will be adjacent to the south side of the building. The driveway will lead to a 6-space parking area at the rear of the site. Project fencing will be installed along the rear and side property lines.

Drainage Pattern

Runoff leaves the development area via overland flow to Merrill Street. Runoff will continue to flow off the site via overland flow in the developed state. The entire parking area and driveway will be pervious pavers that will allow treatment of the first flush. First flush runoff will be collected within the filter layers of the sub-base and treated prior to being released into native soils and overflowing to the existing sidewalk at the front of the property. Once the sub-soil collection system is full, runoff will flow overland to Merrill Street, as it does today.

Flooding

The development area is not located within an area of flood hazard according to the Federal Insurance Rate Map 2300510014 B. See attached map.

Onsite & Offsite Soils

The on-site soils are shown on the attached Medium Intensity Soil Survey and are categorized as follows:

Soil Type Summary Table		
Soil Symbol	Soil Name	HSG
HIB	Hinckley Loamy Sand	A

Water Quality (BMP Standard)

The use of LID features, such as the pervious pavers, reduces the overall impervious footprint of the site while offering water quality treatment for runoff from the highest areas for potential contaminants. For this particular project, the water quality requirements will be met by use of pervious pavers within the driveway and parking areas.

Pervious Paver Filter Bed Sizing

We propose to provide treatment for the driveway/parking area by constructing a Pervious Paver Filter Bed within the sub-base of the driveway and parking area:

This bed will receive the runoff from approximately 2,156 s.f. of pervious pavers. The reservoir course of the Filter Bed is required to provide storage volume for 1" of runoff from the contributing area. The bed sizing is as follows:

Area of Watershed: 2,190 SF

Treatment Volume Required: Area x runoff depth: 2,156 SF x 1/12 FT = **179.66 CF**

Treatment Volume Provided:

Porosity = 40%, Bed Area = 2,190 s.f., Bed Depth = 1.25', Total Volume Treated = **1,095 CF**

Summary

Based on the results of this evaluation, the proposed stormwater design is not expected to cause flooding, erosion or other significant adverse effects downstream of the site.

Prepared by:
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