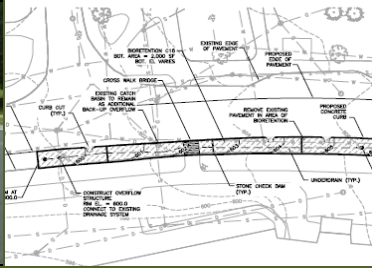


# Site C-18: North Eagleville Road

Integrating Stormwater, Landscaping, and Traffic Calming Measures

## Project Summary



Parameter	C18
Impervious Cover Treated (acres)	1.25 acres
Runoff Reduction Volume (cu ft per 1" rain event)	881
TN Removal (lb/yr)	7.76
TP Removal (lb/yr)	0.9
TSS Removal (lb/yr)	195.25
Estimated Cost	\$23,100

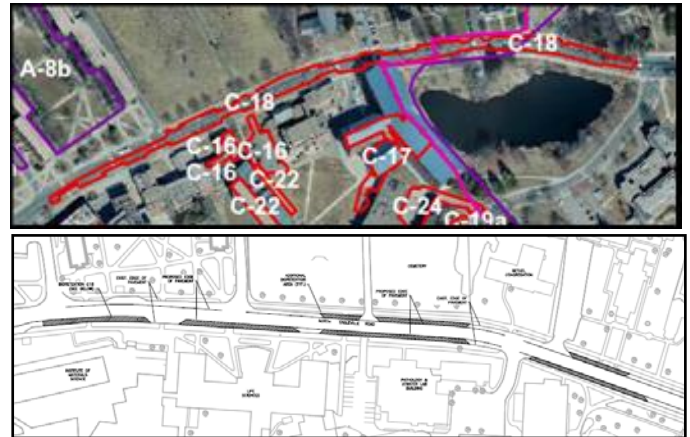


Figure 1. Drainage area (top) and proposed location(s) of street filter designs along North Eagleville Road.

## Site Description

The proposed retrofit concept is located on the UConn Campus along North Eagleville Road. This road runs through campus and separates Central Campus and Swan Lake from North Campus, several student housing residences, and privately owned churches (Figure 1).

## Existing Conditions

Runoff from the crowned roadway drains to catch basins that are located along the edge of the street. The existing roadway is very wide, up to 44 feet from curb to curb in some locations. The University has expressed concern over a dangerous situation with high pedestrian and vehicle traffic along this roadway, and has taken action by painting no driving areas along the edge of the roadway in an attempt to slow car traffic. Some of these areas are used in the project design.

## Proposed Concept

In select areas along the edge of the roadway, remove impervious cover and install street planter areas. These areas should contain a perimeter 6" curb and curb cuts installed to direct the roadway runoff into these areas. The planter areas should provide 6 inches of ponding depth as measured from the roadway surface to the low point in the filter surface. The filter media depth should be 6-12 inches deep. An underdrain is needed for the design of each street filter. The underdrain and overflow should tie into the stormwater network.



Figure 2. Remove pavement along existing road shoulder to edge of existing curb (top). Example street planters with curb cuts from Portland, OR (bottom).

### Preliminary Concept Designs

A 25% concept design for the proposed retrofit can be found in attachment B, which includes preliminary plan views, cross sections and project details. These initial plans will require field survey and more information on drainage pipes, utilities (among other things) before going to construction plans.

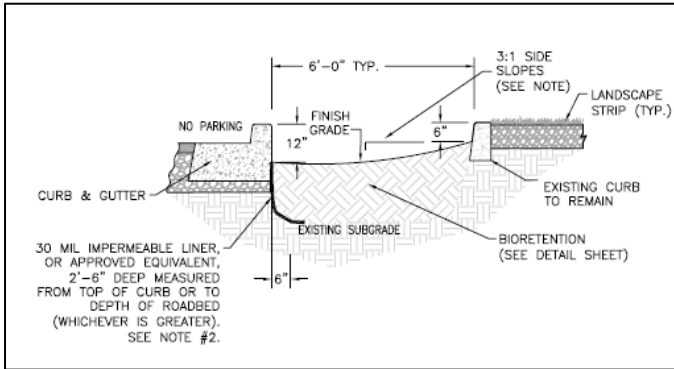


Figure 3. Sample cross section detail from Appendix B.

### Preliminary Hydrologic Calculations

Preliminary sizing of the street filter area was completed based on bioretention guidance provided in the 2004 Connecticut Stormwater Quality Manual. These computations are summarized in the table below.

Sizing Calculations for Site C-18	
Parameter	Value
Drainage Area, A (acres)	1.25
Imperviousness, I (%)	100
Volumetric Runoff Coefficient, Rv	0.95
Rainfall Depth, P (in)	1
Water Quality Volume, WQv (cf)	4,300
Depth of the Filter Bed, d (ft)	2.50
Hydraulic Conductivity, k (ft/day)	1
Max. Ponding Depth, hmax (in)	6
Average Ponding Depth, h (ft)	0.25
Drawdown Time, t (days)	1
Surface Area Required, Af (sq. ft)	3909
Surface Area Provided (sq ft)	2,000
Treatment Provided (% of 1")	51

### Design Considerations

- While utility constraints are expected to be minimal, detailed utility mapping should be obtained before completing the final project design.
- At cross walk areas, pedestrian bridges can be incorporated into the design so that people can cross over the street filter area.
- Current concept design sets a 24' road width, uniform along Eagleville rd. Wider road (and bike

lanes) can be obtained by either narrowing the filters themselves or expanding into the sidewalk.

- Designs can serve to calm traffic along the roadway. This project should be integrated with University efforts to calm traffic along the road and also with the Sasaki Landscape Plan.

### Maintenance

Maintenance is important for these street filter areas, particularly in terms of ensuring that they continue to provide measurable stormwater management benefits over time. The routine maintenance activities typically associated with bioretention areas are summarized in the table below.

Maintenance Activities for site C-18		
Activity Schedule	Frequency	
<ul style="list-style-type: none"> <li>• Water once a week during the first two months, and then as needed and depending on rainfall to promote plant growth and survival.</li> <li>• For the first six months following construction, the site should be inspected at least twice after storm events that exceed a half-inch. Inspectors should look for bare or eroding areas in the contributing drainage area or around the street filter area, and make sure they are immediately stabilized.</li> <li>• Trim trees to prevent line of sight issues.</li> </ul>	As Needed (following construction)	
<ul style="list-style-type: none"> <li>• Prune and weed the filter area to maintain appearance.</li> <li>• Remove accumulated trash and debris.</li> </ul>	Regularly (Monthly)	
<ul style="list-style-type: none"> <li>• Inspect inflow area for sediment accumulation and remove any accumulated sediment or debris.</li> <li>• Inspect filter area for dead or dying vegetation. Plant replacement vegetation as needed.</li> </ul>	Annually	
<ul style="list-style-type: none"> <li>• Remove and replace existing mulch</li> </ul>	Every 2 to 3 Years	