

PERMEABLE PAVERS

Transportation and Stormwater Infrastructure



Business district in West Union is permeable from storefront to storefront.



WHAT ARE PERMEABLE PAVERS?

Permeable pavers are a stormwater management practice used in place of traditional concrete or asphalt to decrease stormwater runoff. Unlike traditional surfaces, permeable pavers allow water to infiltrate into a layer of rock. Water then moves into the soil or to a subsurface drain.

WHY INSTALL PERMEABLE PAVERS?

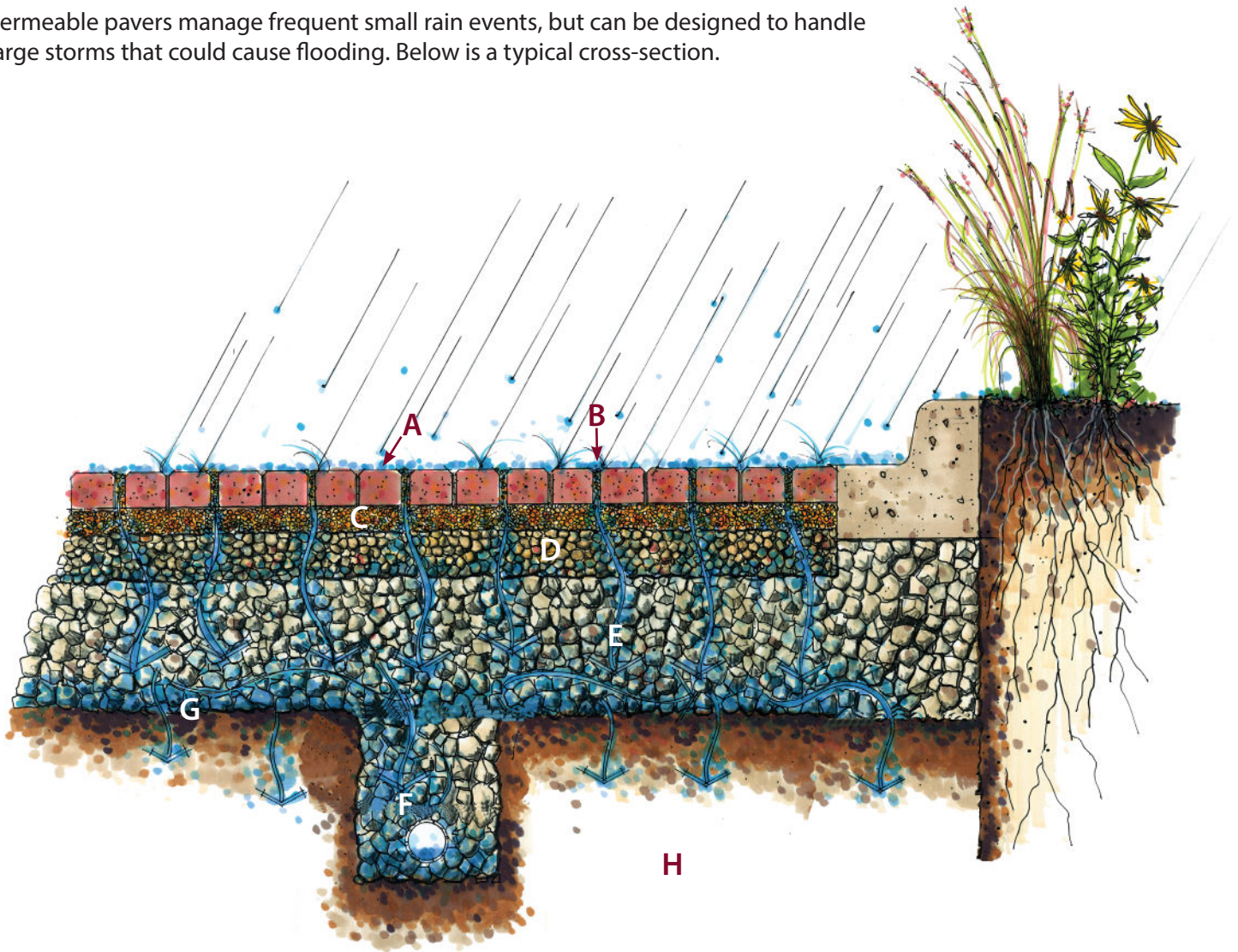
Permeable pavers are installed to protect water quality and reduce the volume of stormwater runoff. The process allows the water to percolate slowly through the rock layer, filtering out many pollutants. This process also slows the water down, stabilizing stream flows and reducing flood potential.

WHERE TO INSTALL?

With careful planning and design, permeable pavers can be installed where traditional pavement is found. Areas such as driveways, roads, alleys, and parking lots are all suitable locations for pavers.

PERMEABLE PAVER COMPONENTS

Permeable pavers manage frequent small rain events, but can be designed to handle large storms that could cause flooding. Below is a typical cross-section.



A. Pavers: solid concrete pavers that fit together with slight gaps

B. Granular Fill: gaps in pavers usually filled with a small granite chip to allow water to pass through

C. Setting Bed Aggregate: 2" layer of clean crushed 3/8" stone (ASTM No. 8)

D. Filter Aggregate: 4" layer of 3/4" to 1" clean crushed stone (ASTM No. 57)

E. Storage Aggregate: 12" layer of 1.5" to 3" clean stone (ASTM No. 2) (depth varies, depending on storage volume)

F. Subdrain: Perforated subdrain tile ensures the system never stays saturated

G. Fabric: high flow geotextile fabric

H. Existing Soils: soils under the rock layer

PERMEABLE PAVER **INSTALLATION**



Step 1 Removal of concrete and excavation



Step 2 Installation of perforated subdrain tile



Step 3 Leveling and compacting aggregate



Step 4 Laying pavers

PERMEABLE PAVER **MAINTENANCE**

- » Develop a maintenance plan and inspect pavement routinely.
- » Ensure pavers infiltrate during rain events (no ponding or runoff).
- » Pavers should be cleaned with a vacuum truck on a scheduled basis to avoid plugging.
- » Sand should not be used on pavers because it plugs pore spaces.
- » Remove built up dirt/leaves/grass/other organic material.
- » Stabilize surrounding soil immediately to prevent sediment from moving onto pavers.
- » Avoid staging of landscaping materials (mulch or soil) on pavers.

PERMEABLE PAVERS OF IOWA



1 Davenport - Residential Street

2 Storm Lake - Parking Stalls

3 Charles City - Residential Intersection

4 Dubuque - Alleyway

5 Grinnell - Public Library Walkway

6 Clinton - Business District Retrofit