

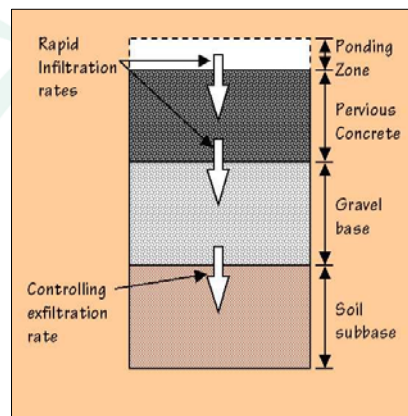
General Design Principles

Chapter 4



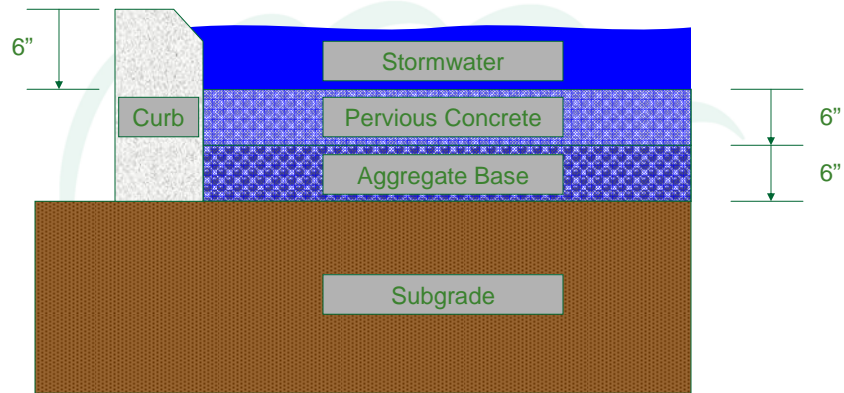
Layout/Grade/Slope

- Part of System
 - Supports traffic
 - Allows water to pass
- Water should flow vertically
- Minimize horizontal flow
- Storage in gravel base
- Can use pavement and ponding zone
- Flat system offers the maximum storage



Pervious Pavement Profile

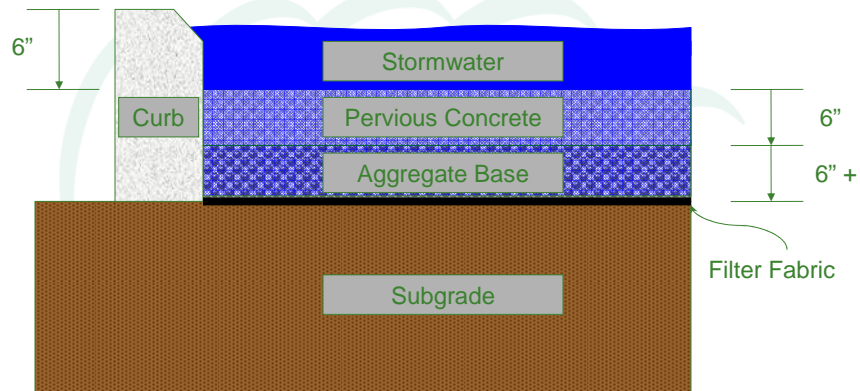
Sandy Soil Subgrade



Subgrade permeability should be at least 0.5 inches per hour

Pervious Pavement Profile

Silty or Clayey Subgrade Soils



Permeable subgrade compacted to 92-95% Modified Proctor

Filter Fabric



Curbs



Transition to Asphalt



Header Curb



Decorative Curb



Prevent Debris from Clogging Slab



Slope Grade Away from Pavement



Grade Pavement High



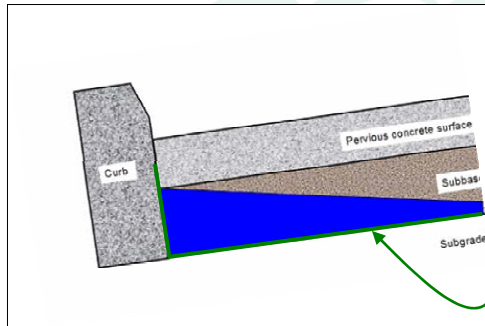
No Adjacent Dirt Parking



Islands/Vegetation



Pavement Grades



**Filter Fabric
may be
Required to
Stabilize Base**

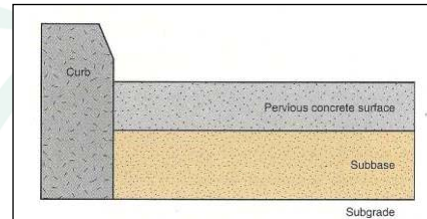
Base/Subgrade



COMPACT TO 92 - 95% OF MODIFIED PROCTOR

Base Thickness

- Typically 6 inches
- Greater than 6 inches to increase storage
- Greater than 6 inches for freeze-thaw
- Not required in some cases
 - Minimize root damage
 - Native soils highly permeable



Freeze-thaw Resistance

- Store water in aggregate base
- Dry Freeze
 - 4 – 8 in. of aggregate base
- Wet Freeze
 - 4 – 8 in. of aggregate base
- Hard Wet Freeze
 - 8 – 24 in. of crushed rock drainage base
 - Air-entraining admixture
 - Perforated drainage pipe



Pavement Thickness

- Minimums
 - 6" Parking lots
 - 6" Residential Driveways
 - 8" Streets
 - 8" Commercial Driveways
- Consider Conventional Concrete Pavement
 - Heavy truck traffic
 - High volume traffic



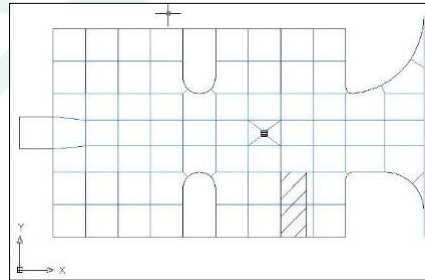
Storage Capacity

- Storage capacity typically governs design
- Depends on porosity of pavement and subbase
- 1" of pavement with 20% porosity can store 0.20"
- 1" of #67 stone base with 40% porosity can store 0.40"
- 6" pavement on 6" subbase can store 3.6" of rain

$$(20\%) 6 \text{ in.} + (40\%) 6 \text{ in.} = 3.6 \text{ in.}$$

Proper Joints

- 15' typical
- 20 ' max.
- Square panels
- Isolation joints as appropriate
- Align with joints in plain concrete
- No need to seal



Isolation Joint



Do not Seal Joints



Signage



Aesthetic Design



A Good Idea...



Colored Concrete



Striping



Design Aids



www.NRMCA.org