

Toledo's First Green Alley

Mary Lehr, P.E.
City of Toledo
Engineering Services



Problem: The 110-year-old brick Sanitary Sewer was collapsing. Existing alley was typical inverted crown design.



Problem: Storm catch basins were connected to sanitary sewer.

Needs:

- A long history of sewer repairs necessitated full replacement of the sanitary sewer
- Storm catch basins draining to the sanitary sewer called for the sewers to be separated.

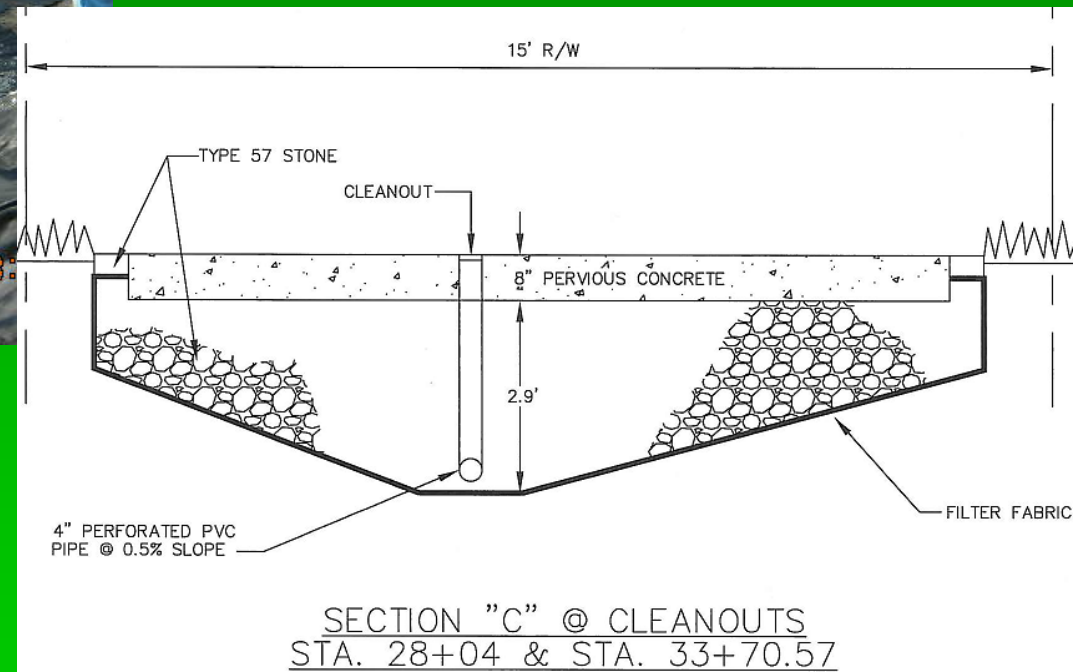
Limitations:

- Narrow Right-of-Way and deep sewer meant that full width pavement replacement was required.
- The garages were built so close to the alley that the existing slope had to be maintained to insure positive drainage.
- The alley sloped to the east and the storm sewer in that location was too small to handle all of the storm drainage.

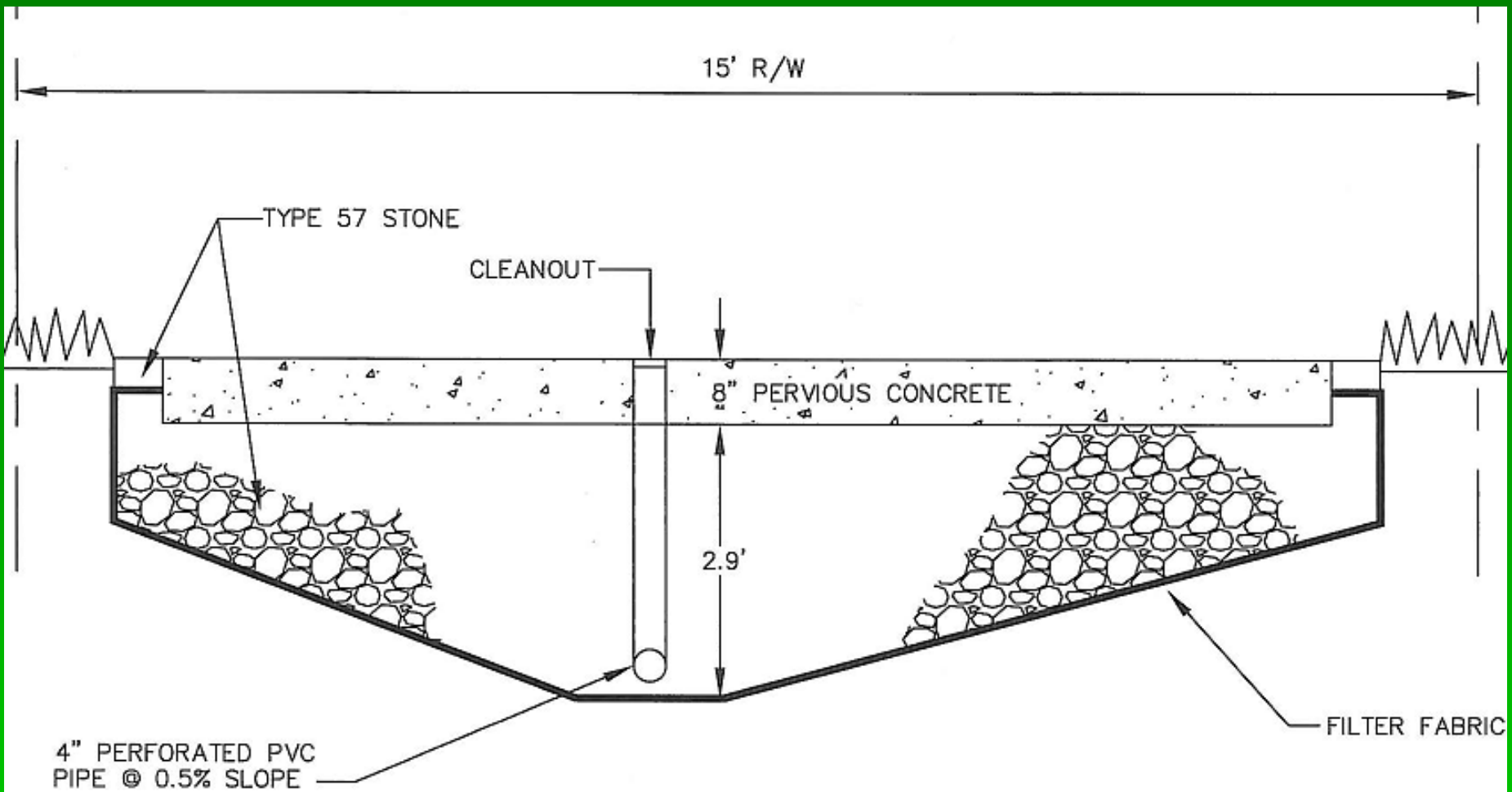
Looking at a solution

- A presentation by the Ohio Concrete Association to the City of Toledo in 2008 focused on pervious pavement and mentioned Chicago's "Green Alley" Program.
- Discussions with Chicago's DOT and other engineers who had experience with pervious concrete helped to finalize a workable design.
- Computer software provided by Ohio Concrete Association used to size drainage bed below pervious concrete.

Construction



3/30/10 – Constructing drainage bed before concrete is placed.



SECTION "C" @ CLEANOUTS
STA. 28+04 & STA. 33+70.57

Construction



4/7/10 – Pervious concrete poured in center alley.
Contractor was Smith Paving (Norwalk, OH) and
Mix came from Nissen's Concrete.

Construction



Pervious concrete is covered and allowed to cure.

Construction



4/12/10 - Traditional concrete is poured for side alleys.

Construction

4/20/10 - Traditional concrete is poured for garage approaches and walks.



Construction



Concrete is transported to each approach and the edge of the pervious concrete is protected with plastic.

Construction

Traditional Concrete used for collars around manhole structures.



Construction

Things you may not think about:

- Majority of traffic is in side alleys. No garbage trucks in alley. Standard concrete used at side alleys and approaches.
- Contractor should be trained & certified in placement of pervious pavement.
- Temperature and accessibility are factors.

Before



After



Mary Lehr, P.E.

Mary.Lehr@toledo.oh.gov

419-936-2683

Thanks!