

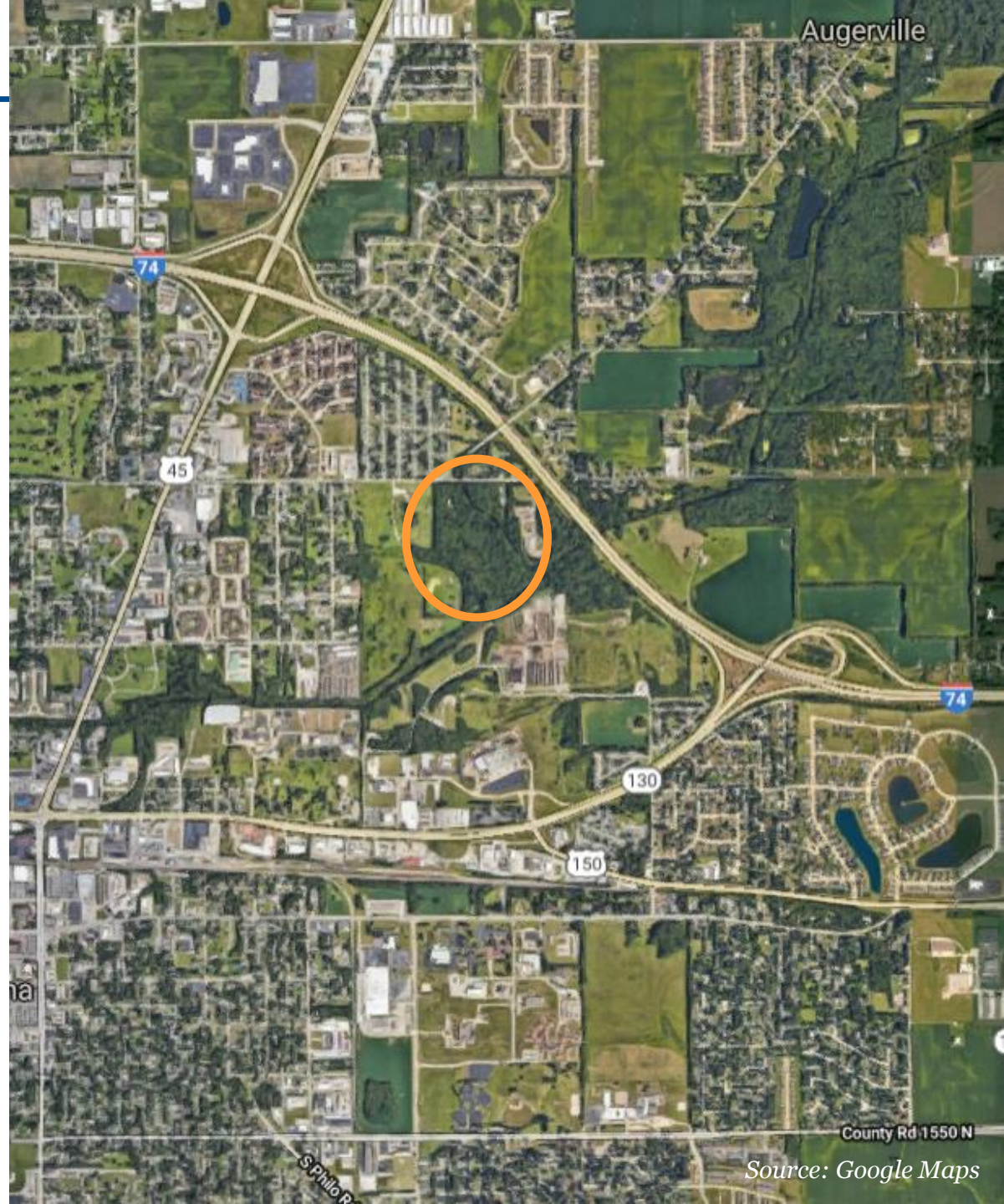
saving a sanitary sewer:

A Stream Restoration Story

Emily Poynter Jenkins, PE, PhD, CFM

setting

- Urbana, Illinois
- 1965
- Tributary to the Saline Branch Drainage Ditch
- Present-day location of Judge Webber Park





Brownfield Road

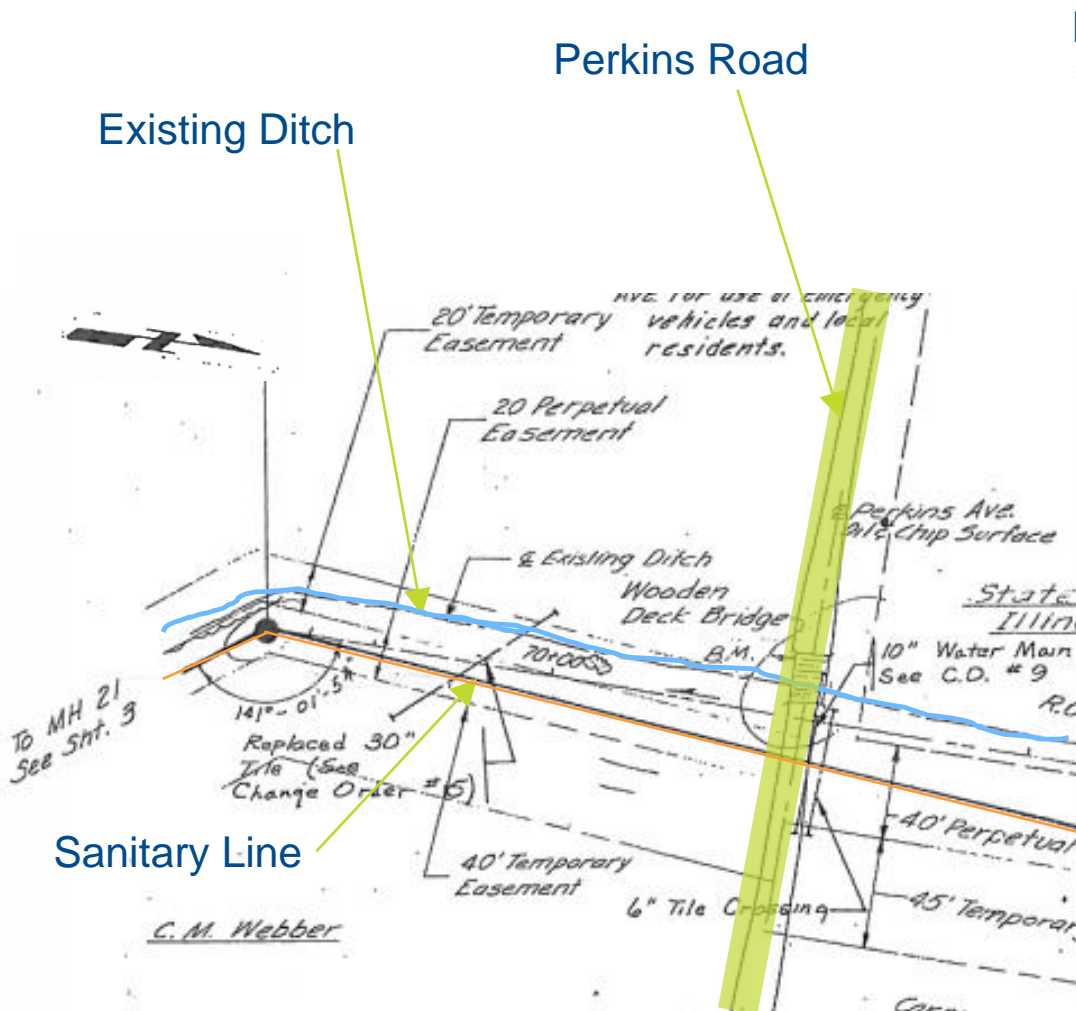
Perkins Road

1965

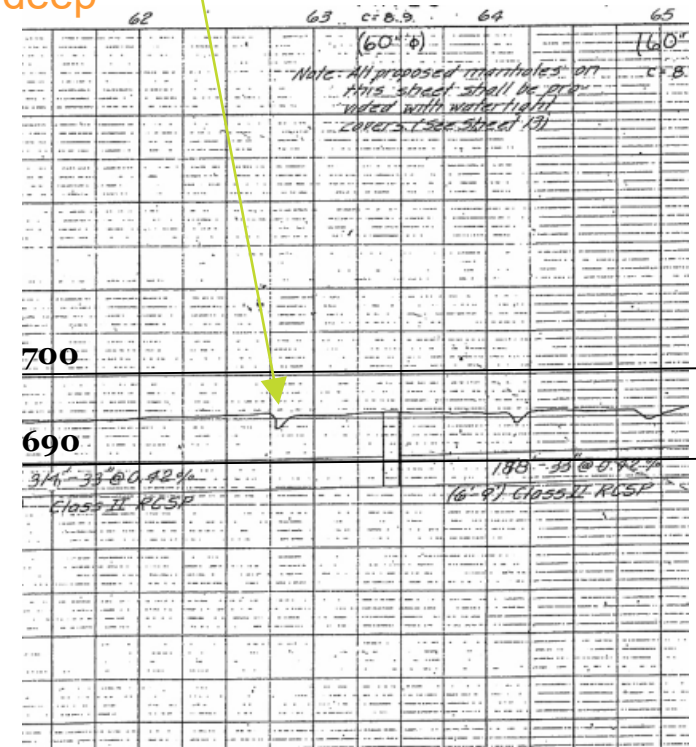
Urbana-Champaign
Sanitary District
installed an
interceptor
next to *existing ditch*

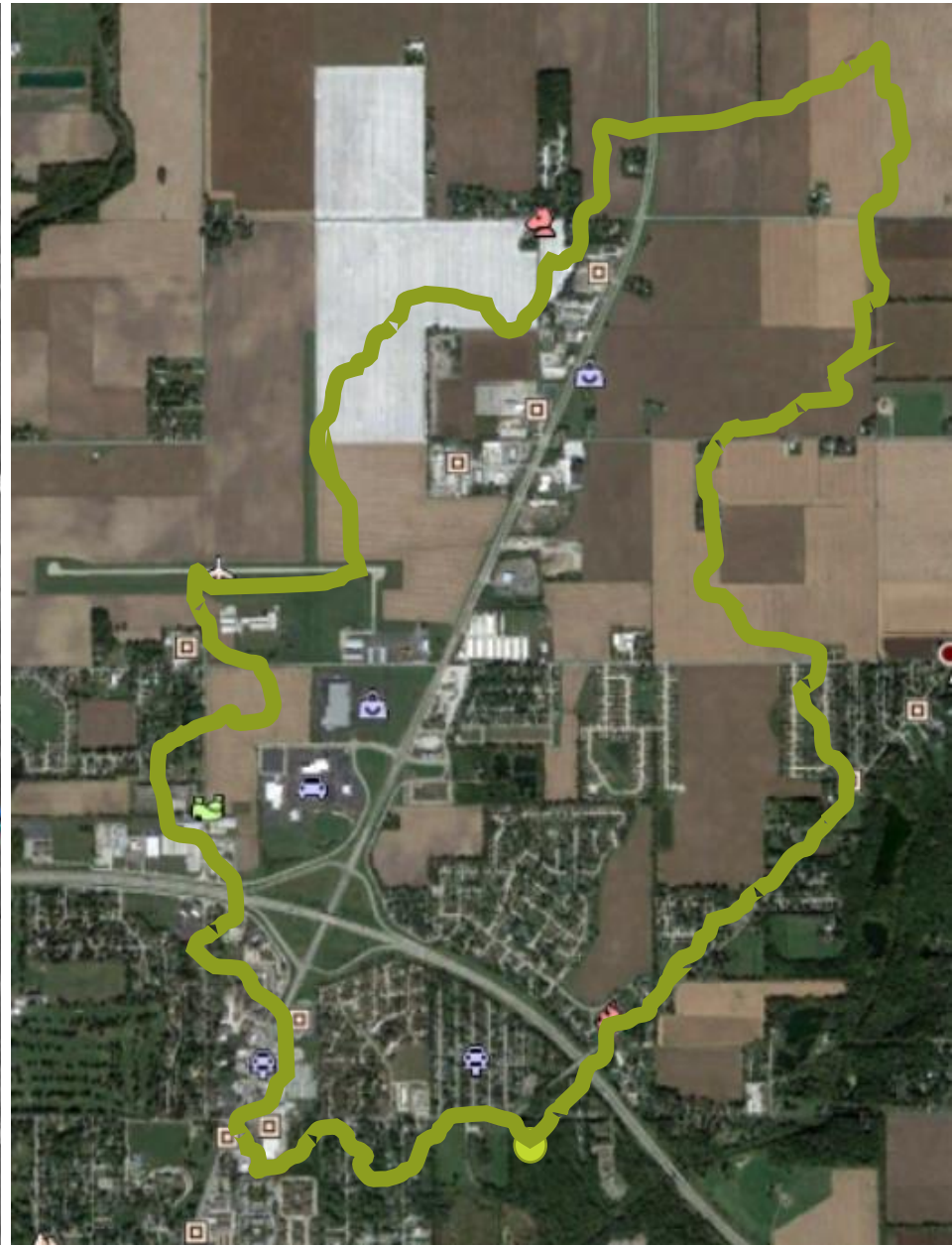
(Aerial from 1969)

As-built Sanitary Sewer Plans: 1965



Existing Ditch
1.5' deep





Brownfield Road

Perkins Road

Channel



1993



Brownfield Road

Perkins Road

Channel Instabilities

Farm crossing

2002

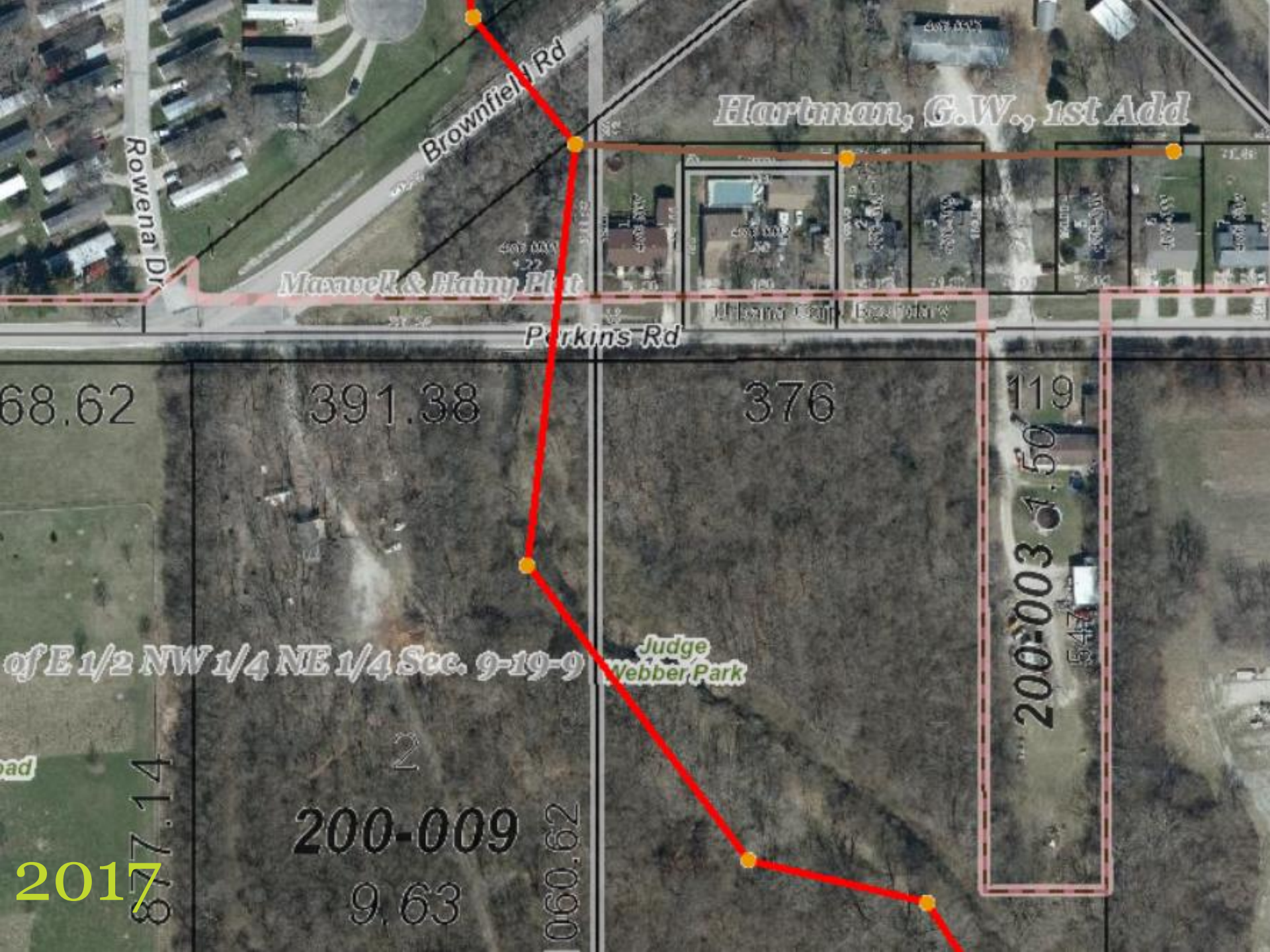
Brownfield Road

Perkins Road

Exposed Sanitary Pipe



2017



Hartman, G.W., 1st Add

Brownfield Rd

Rowena Dr

Masavek & Mainy Plat

Perkins Rd

68.62

391.38

376

119

of E 1/2 NW 1/4 NE 1/4 Sec. 9-19-9

Judge
Webber Park

oad

877.14

200-009

9.63

1060.62

200-003 1.50

5437

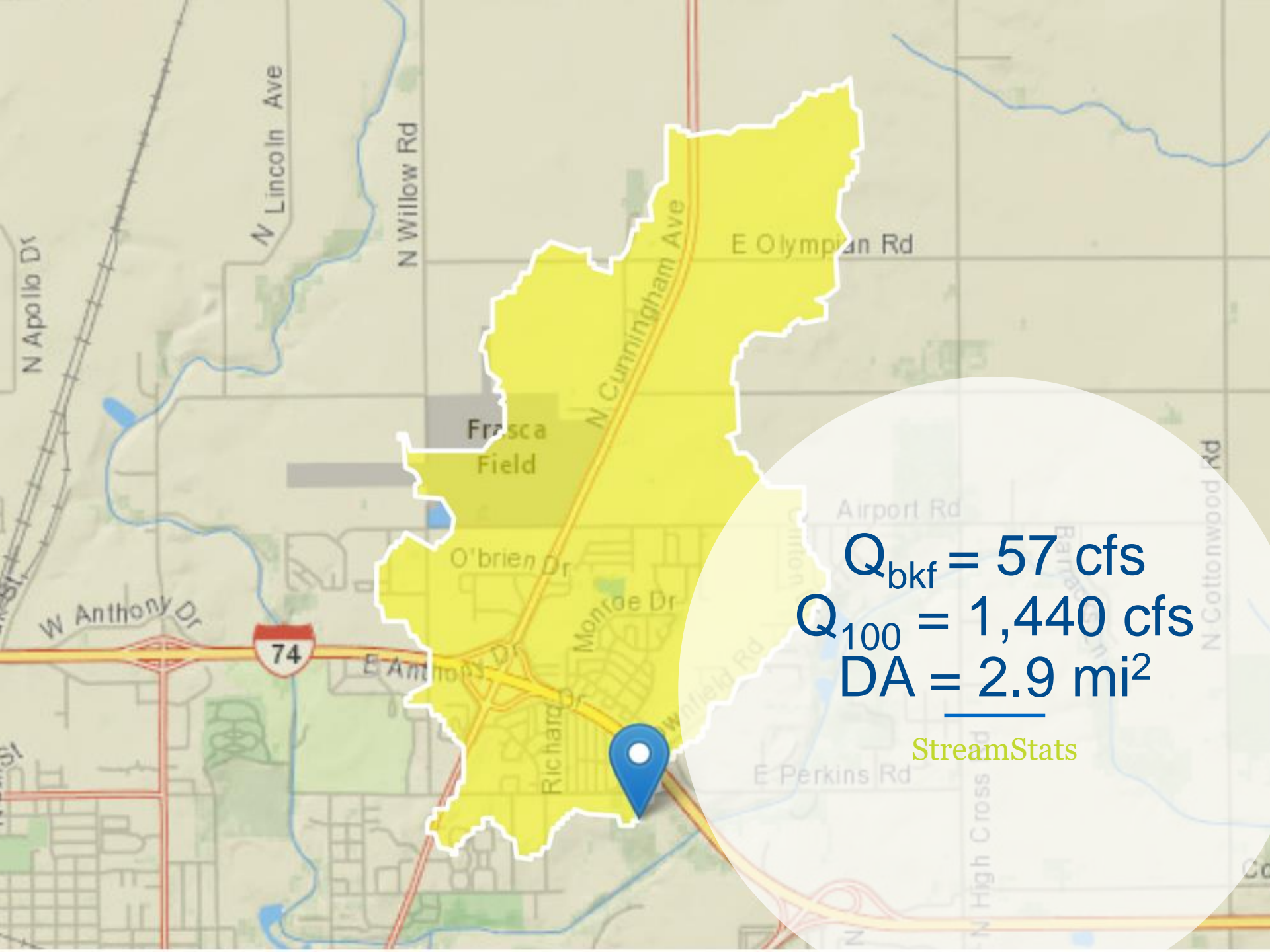
2017



Looking north/upstream towards Perkins Road



Same location looking south/downstream



$Q_{bkf} = 57 \text{ cfs}$
 $Q_{100} = 1,440 \text{ cfs}$
 $DA = 2.9 \text{ mi}^2$

StreamStats



lateral

The image shows a topographic map with a red line drawn across it, likely representing a proposed path or boundary. The map includes contour lines, elevation numbers (e.g., 268.62, 391.38, 376, 119), and labels for roads like 'Perkins Rd' and 'Urbana Corp. Boundary'. A red line starts near the top left, goes down, and then turns right, following a contour line.



elevations

The image shows a stream flowing through a wooded area. A large log is partially submerged in the water, and there is a lot of debris (branches, leaves) on the banks. The water is clear, and the surrounding trees are bare, suggesting a late autumn or winter setting.

constraints



permits

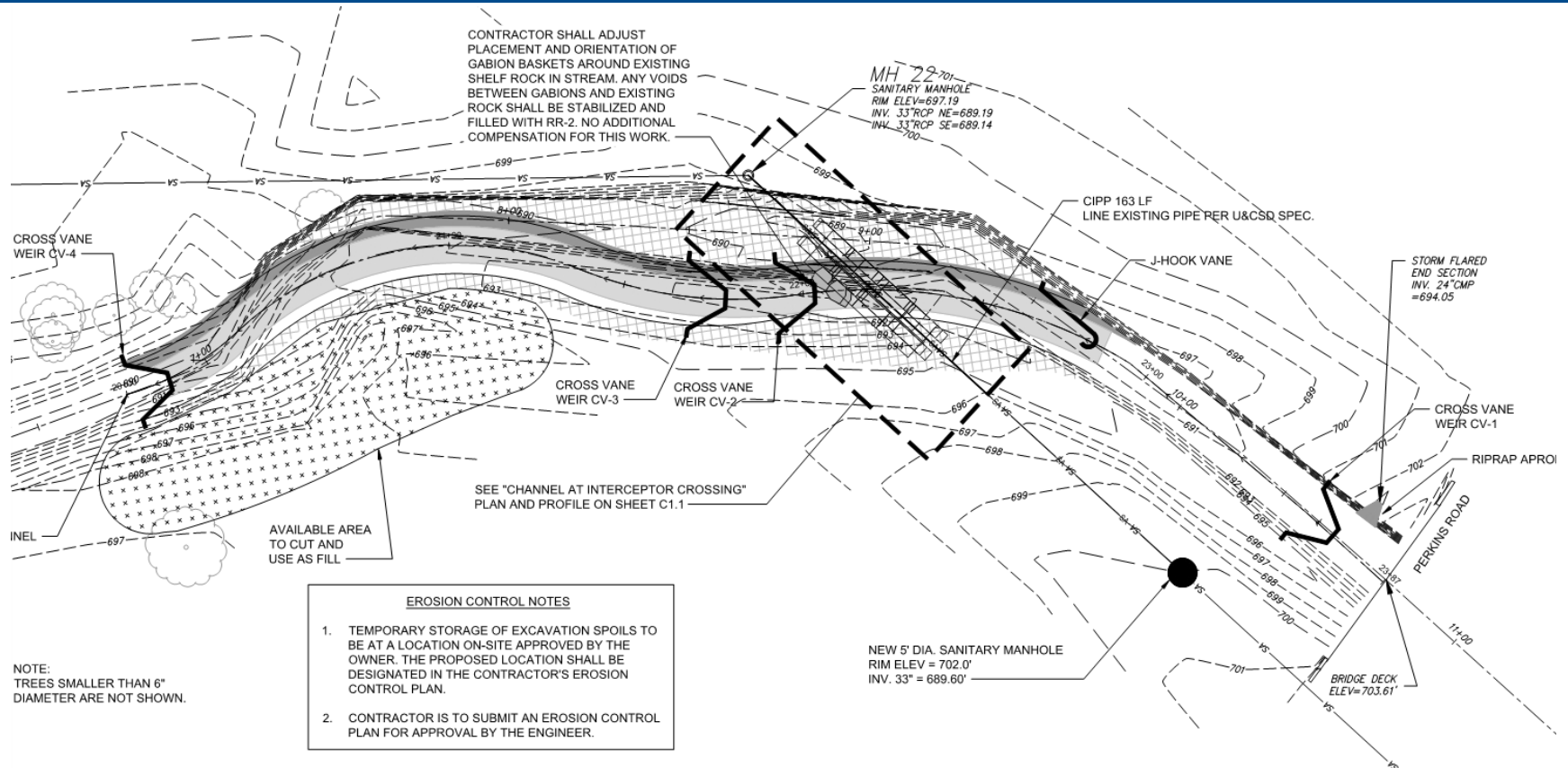
The image shows a stack of many white papers or documents, likely representing a large volume of paperwork or permits. The papers are stacked in a way that shows the edges of many pages, suggesting a thick stack.



accessibility

The image shows a dirt road or path leading through a wooded area. The road is unpaved and appears to be a natural or recently cleared path. The surrounding trees are green, suggesting a summer or early autumn setting.

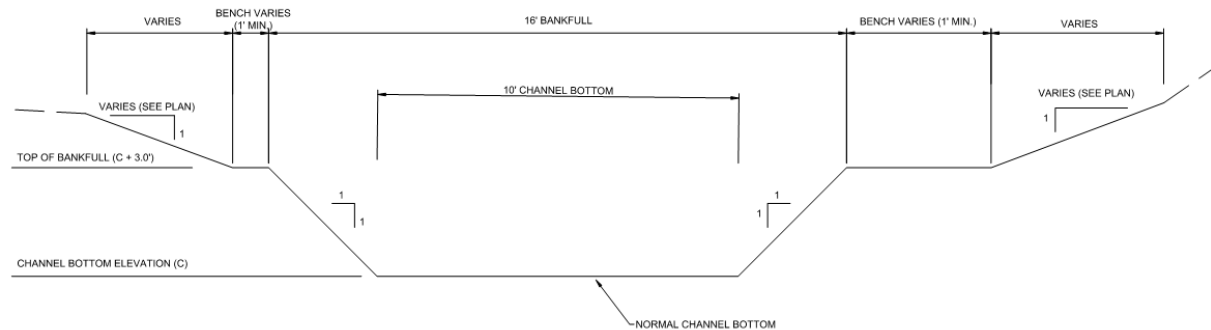
the design



4 cross vane weirs
1 j-hook
Gabion baskets around pipe

Reshaping channel cross-section
Adjusted alignment at stream/pipe crossing
Riprap toe

680









construction challenge

Pipe originally backfilled with sand
Concerns with pipe stability



construction



Structure of soil



Solution: toe boulders





Farnsworth
GROUP

construction









Farnsworth
GROUP

construction





Farnsworth
GROUP

construction









Farnsworth
GROUP

construction









looking north



looking south



Farnsworth
GROUP

finished product





credits

Client: Urbana-Champaign Sanitary District
Rick Manner, Executive Director
Mark Radi, Director of Engineering Services

Contractor: Stark Excavating, Inc.
Brad Jameson, Project Manager
Todd Baker, Project Superintendent

Landowner: Urbana Park District
Derek Liebert, Supt. Of Planning and Operations

Contact:
Emily Jenkins
Farnsworth Group
ejenkins@f-w.com

questions?

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