



Sponsor's Property

## Technical Data

- Watershed Area = 31.4 acres
- Curve Number = 74.94
- Design Storm (DS): 10-year, 24 hour
- Runoff Volume for DS = 196,800 ft<sup>3</sup>
- Runoff Depth for DS = 1.73 in
- Peak Flow for DS = 37.58 ft<sup>3</sup>/s
- Water Table Depth: 0-12 in



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Sponsor:

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## Lindberg Road Stormwater Control Project

Stormwater  
Management Solution  
on an Agricultural and  
Residential Property

# Problem Scope

## Problem

Local property experiences significant flooding during storm events. The property is at a topographical low point which causes the county ditches to be overwhelmed. The flooding is affecting the structures on the property and making it challenging to utilize agricultural machinery in the field.

## Goals and Constraints

The project aims to capture the water on the upstream part of the property and safely direct it to a detention pond and eventually to the county ditch. These stormwater management solutions will slow the water and temporarily hold it to lessen the burden on the ditch. The project must meet all local flood control standards, have a natural look, be sustainable, and fit within the specified section of the property.

## Project Impact

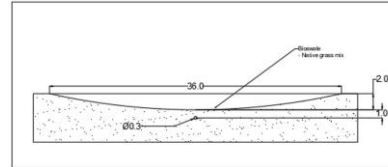
- Increase biodiversity and provide a habitat for native species
- Increase the usability of the property for residential and agricultural use
- Serve as a case study for other land-owners experiencing similar flooding

# Solution

## Bioswale

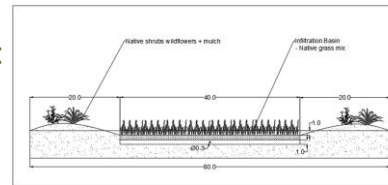
Cross Section

- 36 ft x 2 ft
- Length
- West: 200 ft
  - East: 100 ft
  - South: 150 ft



## Bioretention Pond

- 50 ft x 40 ft
- Surface Area: 1,949 ft<sup>2</sup>
- Volume: 3,261 ft<sup>3</sup>



# Final Design

## Final Design

A sustainable solution including

- Civil 3D Design
- 2D Rendering Design
- Vegetation Plan
- Maintenance and Safety Guide

Native Vegetation and Habitat

- Improve soil structure, utilize water, provide habitat
- Ex:
  - Black-eyed Susan
  - Foxglove Beardtongue
  - Blue Vervain

