



Storm Water Quality Camp Courageous, Monticello, IA

December 8th, 2021

Prepared by: Duncan Szpara, Daniel Zirtzman, and Kyle Jenkins



Daniel Zirtzman



Duncan Szpara, Project Manager

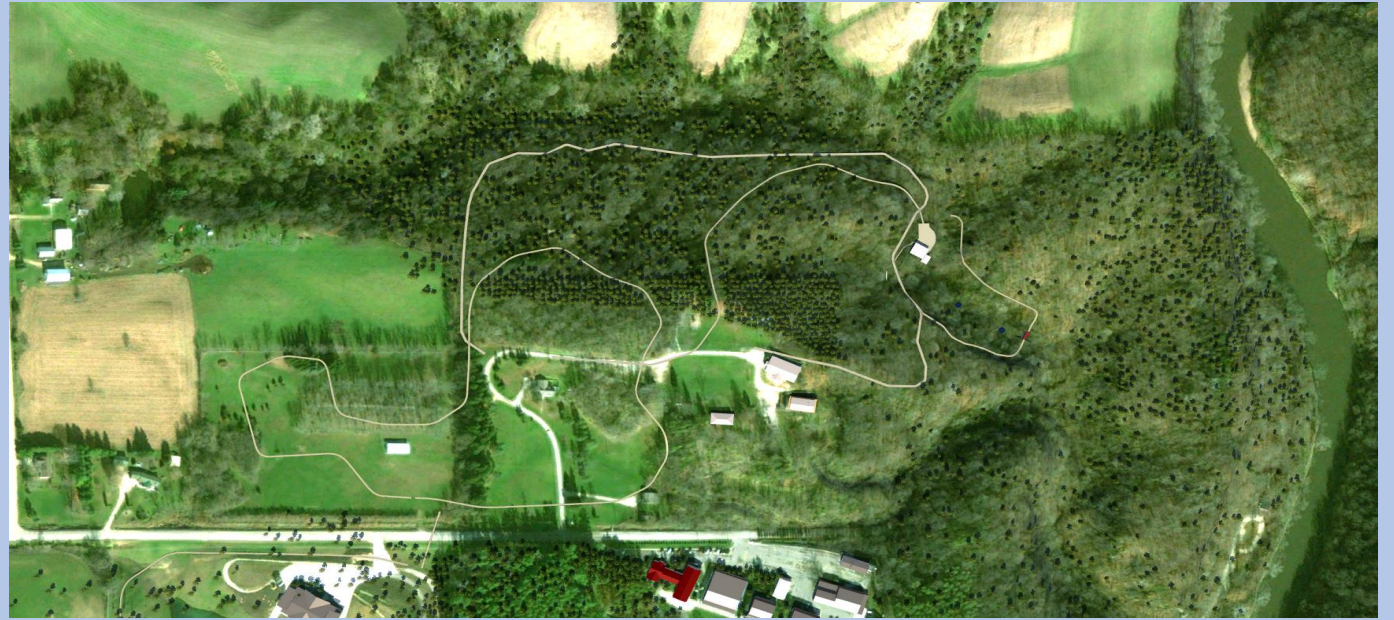


Kyle Jenkins

Who We Are

Presentation Roadmap

- Who We Are
- Project Scope
- Designs
 - Dam Design
 - Habitat Pools
 - Sock Sleeve Check Dam
 - Rock Check Dam
 - Wood Check Dam
 - Sediment Trap
 - Habitats
- Cost Estimate
- Questions



Control Water

Improve Water
Quality

Reduce Erosion

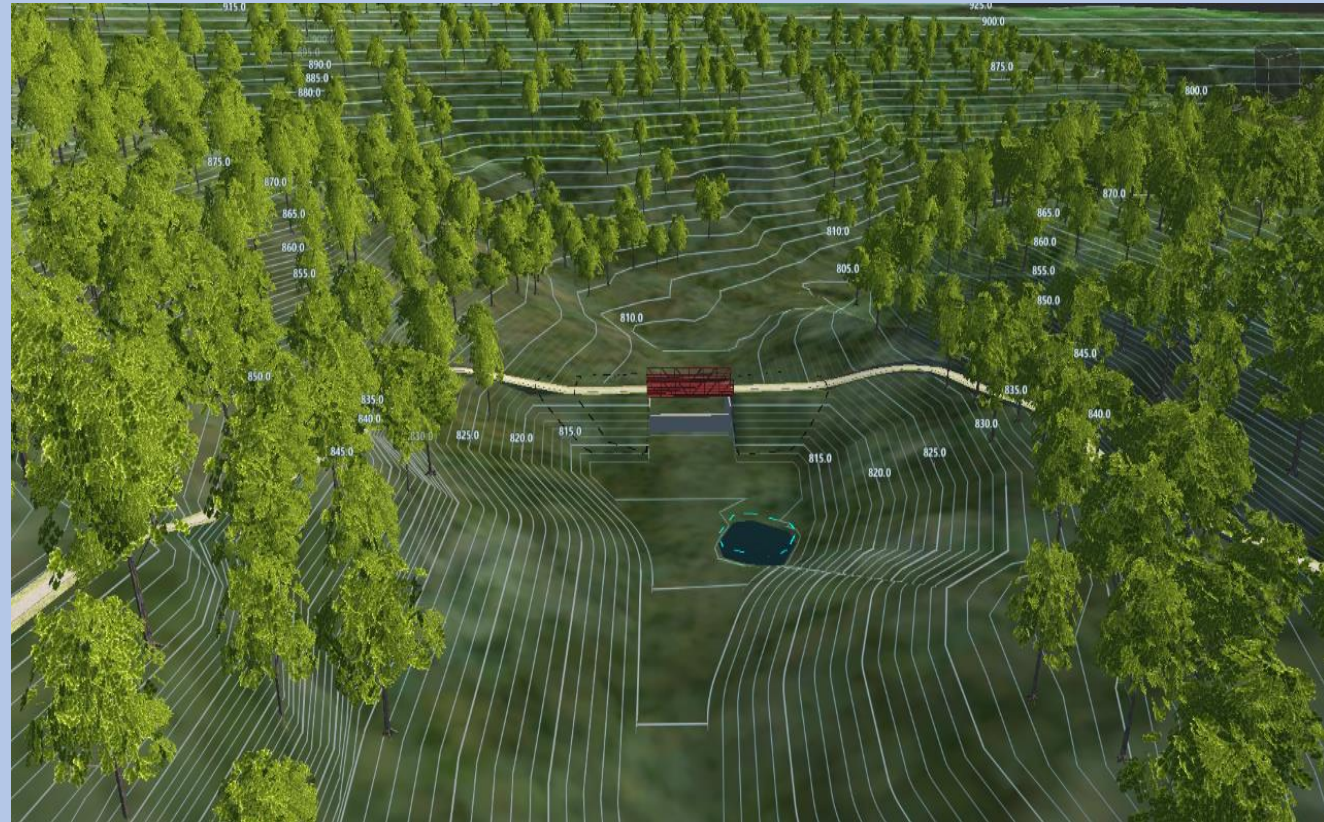
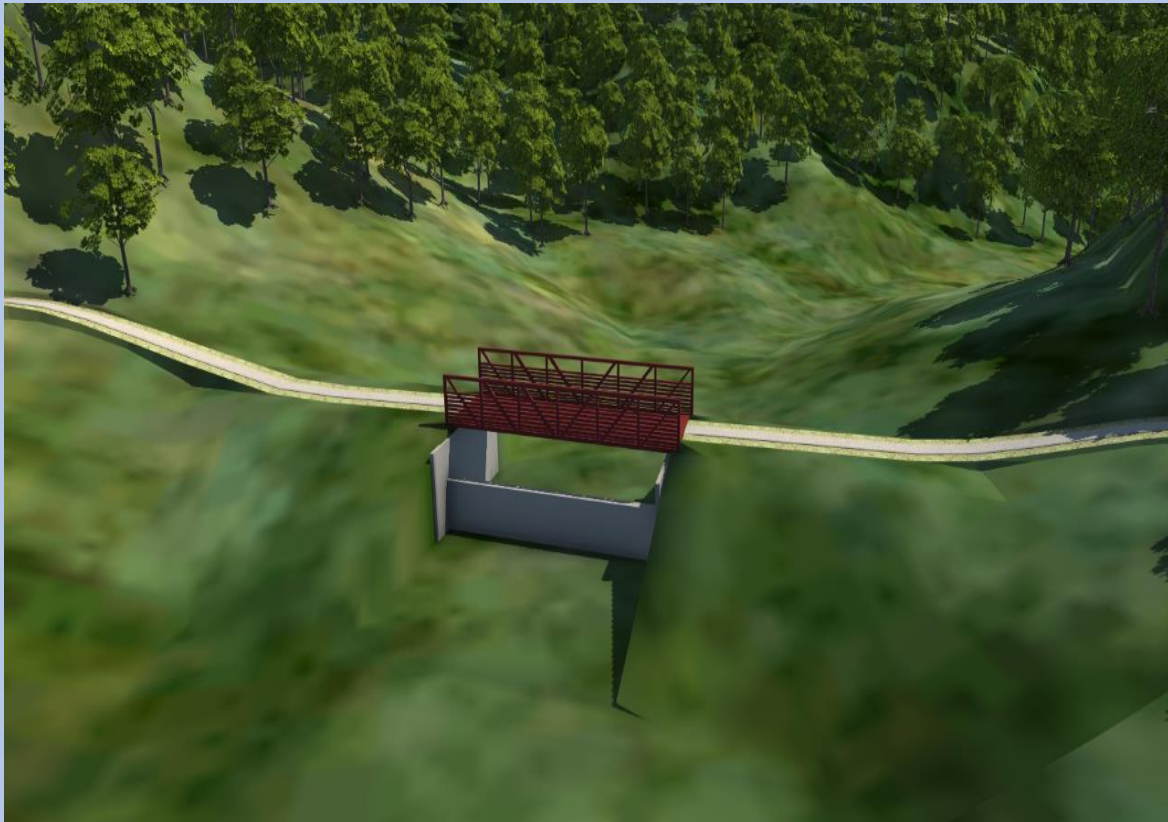
Encourage
Natural Habitat
Growth

Coordinate with
Project Teams

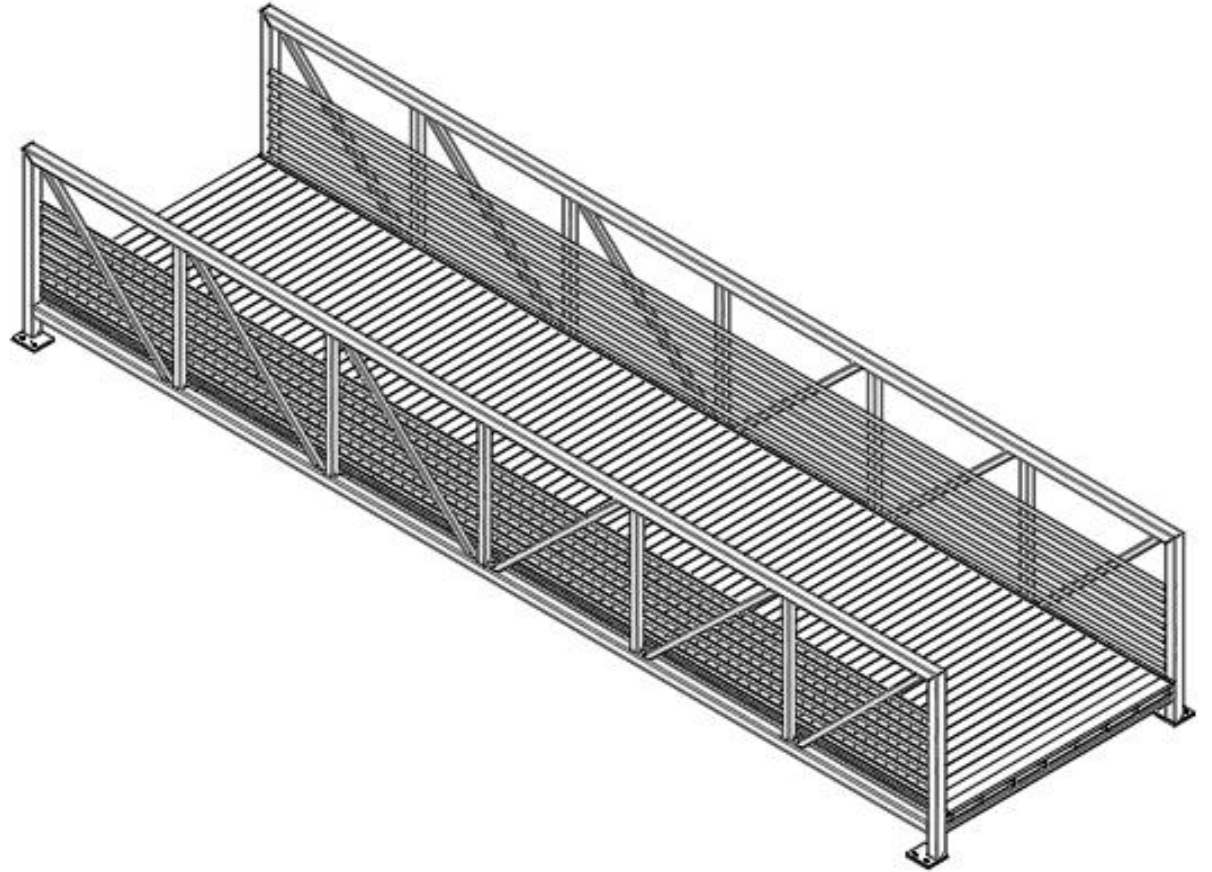
Showcase Water
Management
Techniques

Project Scope

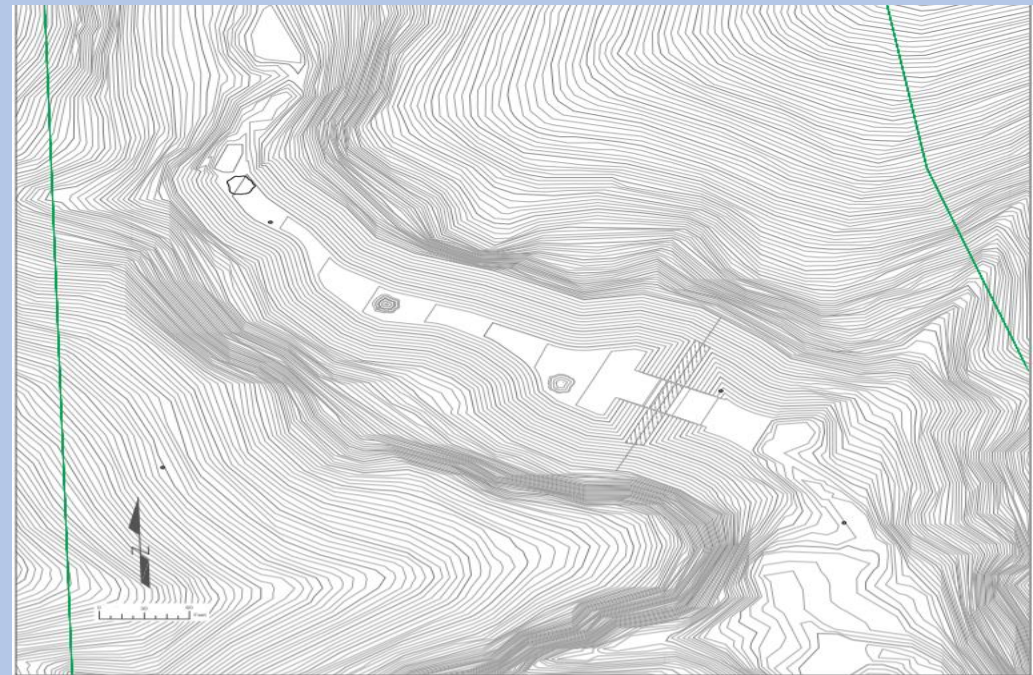
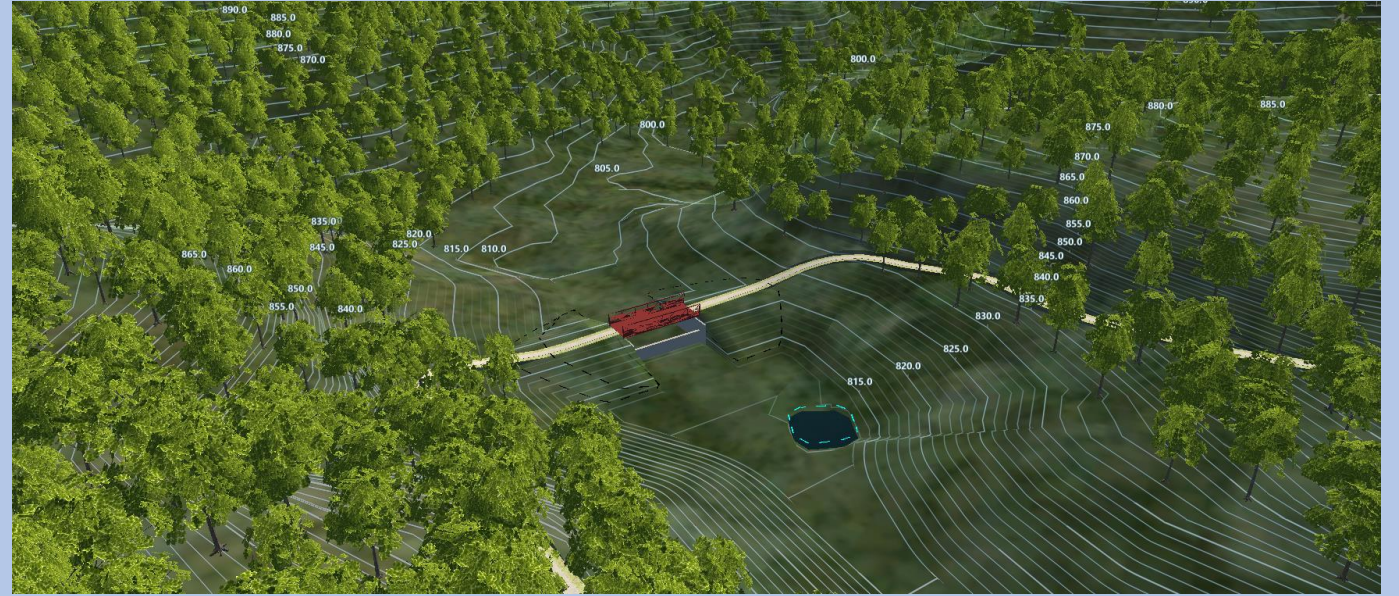
Dam



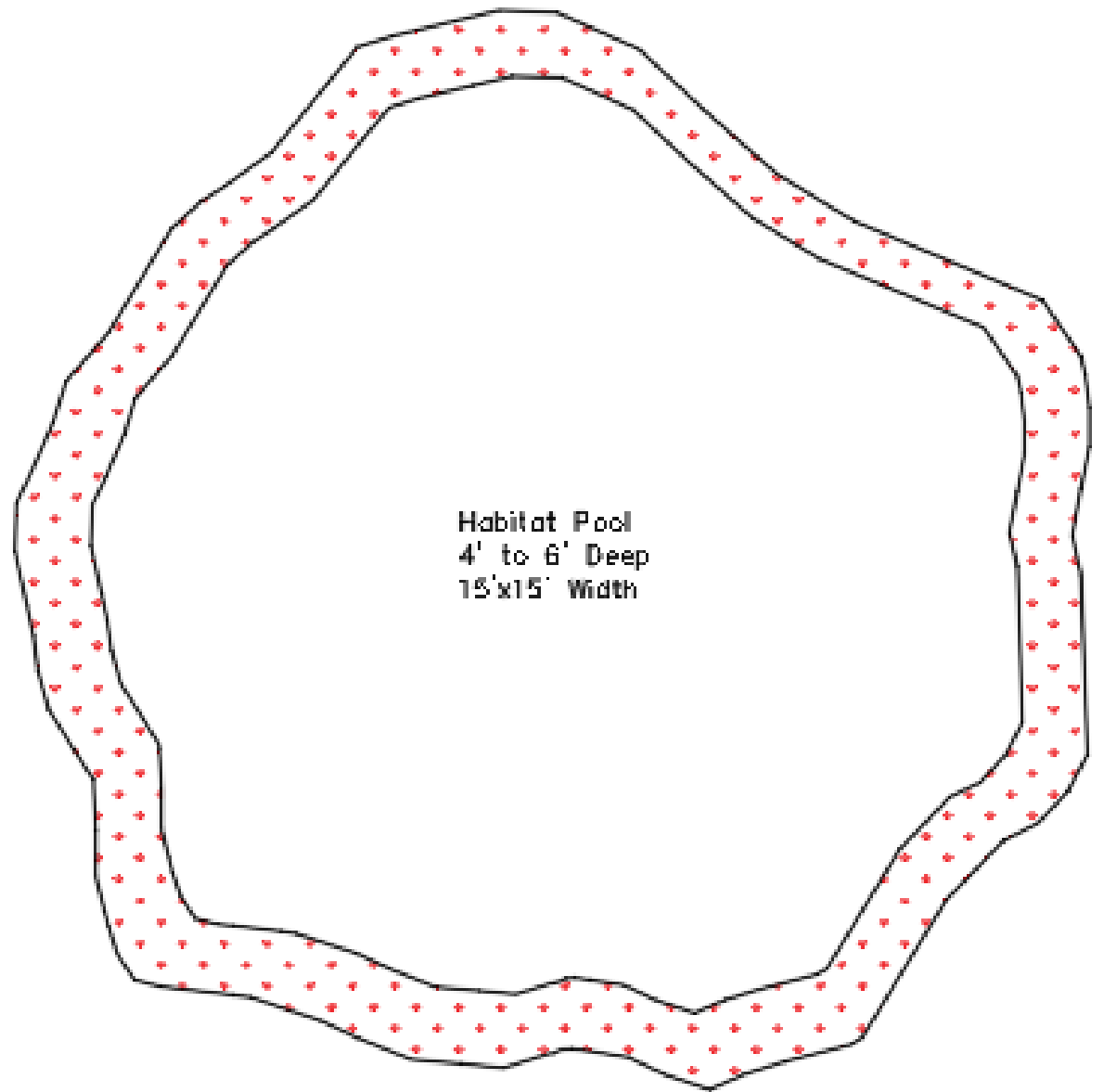
Bridge Design

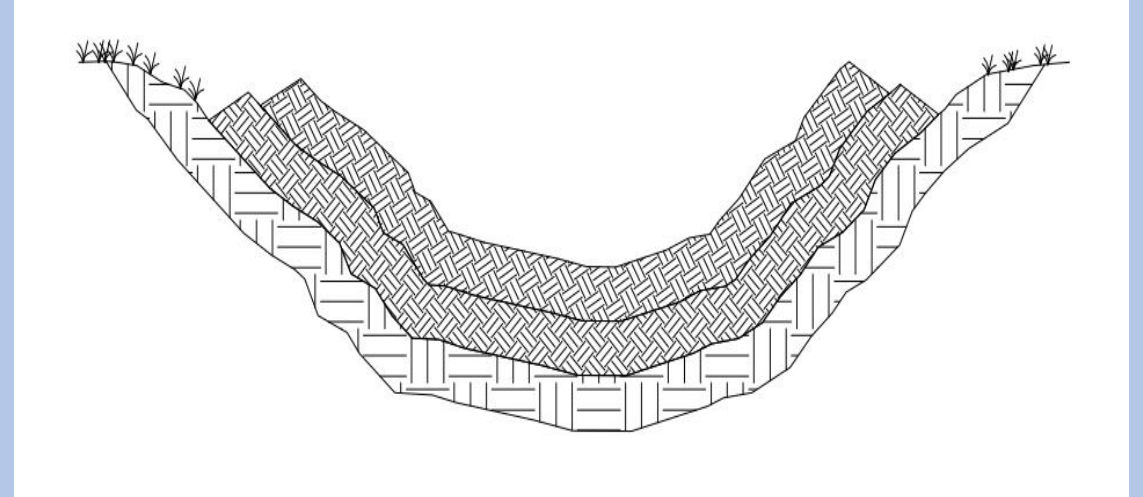
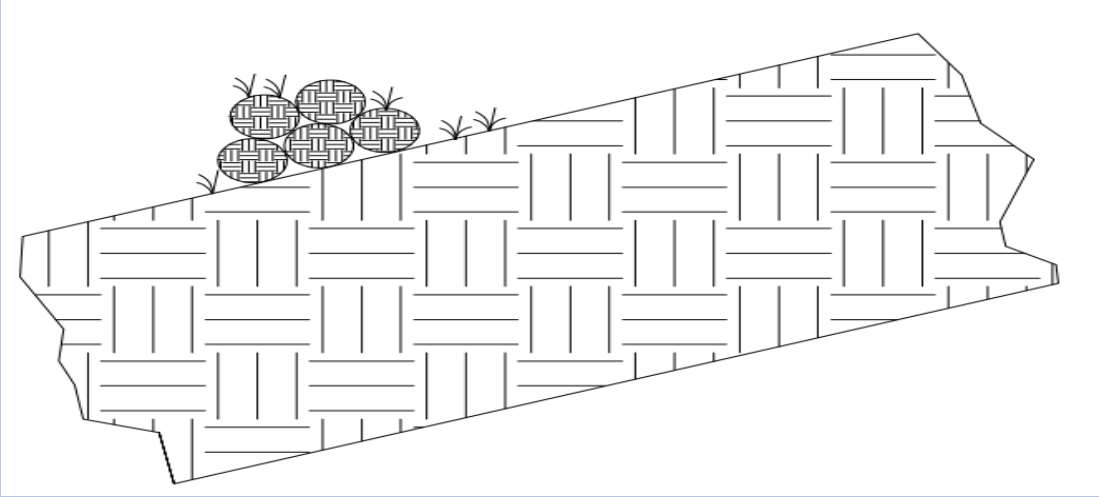


Site Grading



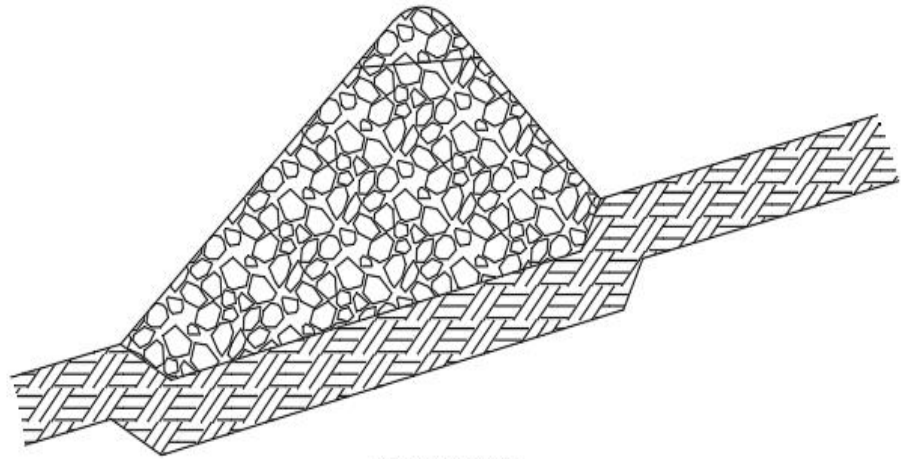
Habitat Pool



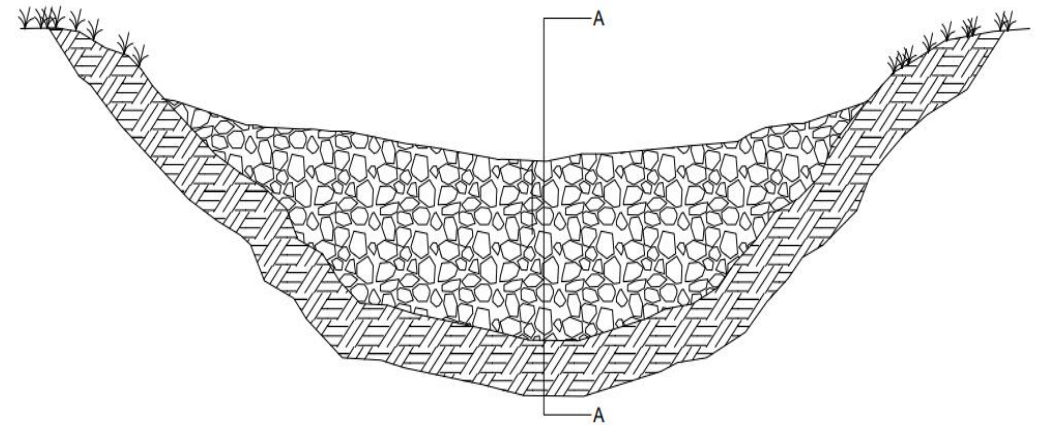


Sock Sleeve Check Dam

Rock Check Dam

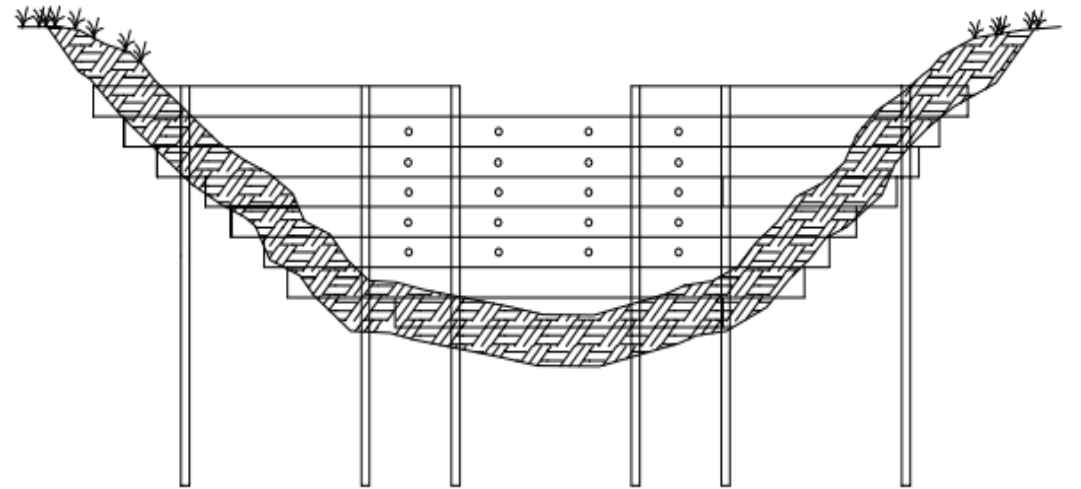
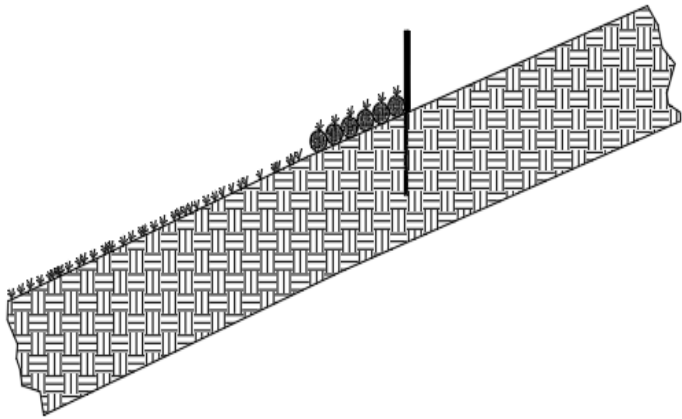


SECTION A-A

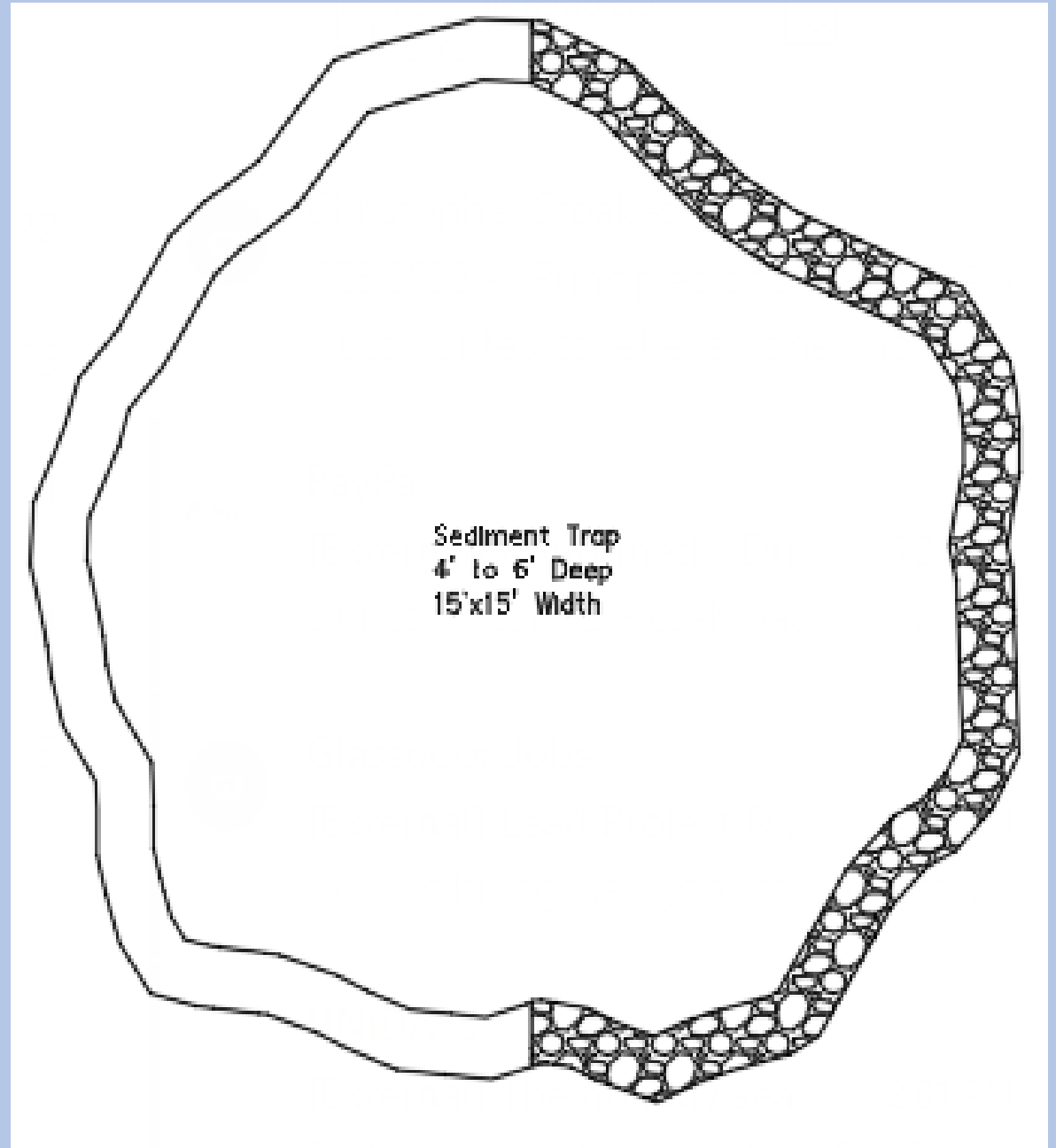


DITCH CROSS-SECTION

Wood Check Dam



Sediment Trap





Habitat

Landscape Plan

- Long Beaked Sedge
- Green Milkweed
- Cut-Leaved Toothwort
- Elderberry Plant
- Indian Grass
- Early Sunflower
- Pennsylvania Sedge
- Woodland Blue Phlox
- Prairie Wild rose
- Marsh Marigold





Elderberry Plant



Wildlife



Early Sunflower



Indian Grass

Water Quality

Cost Estimate

- SOCK SLEEVE.....\$1,500 EA
- WOODEN CHECK DAM.....\$2,000 EA
- ROCK CHECK DAM.....\$3,000 EA
- HABITAT.....\$23,000
- BRIDGE.....\$44,000
- Site Grading.....\$80,000
- Dam.....\$227,500
- Sediment Trap.....\$14,000
 - Sediment Trap Per Trap...\$7,000 EA
- Habitat Pool.....\$9,000
 - Habitat Pool Per Pool.....\$4,500 EA
- TOTAL.....\$404,000



Questions