



# North Mill Creek Restoration









**Rasmussen Lake**



# Rasmussen Lake – Conditions

- ▶ **IEPA non-support for aquatic life, swimming and recreation**
- ▶ **Clean Water Act classification 303(d) as Impaired Lake**
- ▶ **LCHD ranked 161 of 162 lakes for water quality**
- ▶ **Phosphorus levels are 10 times higher than median of all lakes in county**
- ▶ **Alkalinity are highest recorded in county**



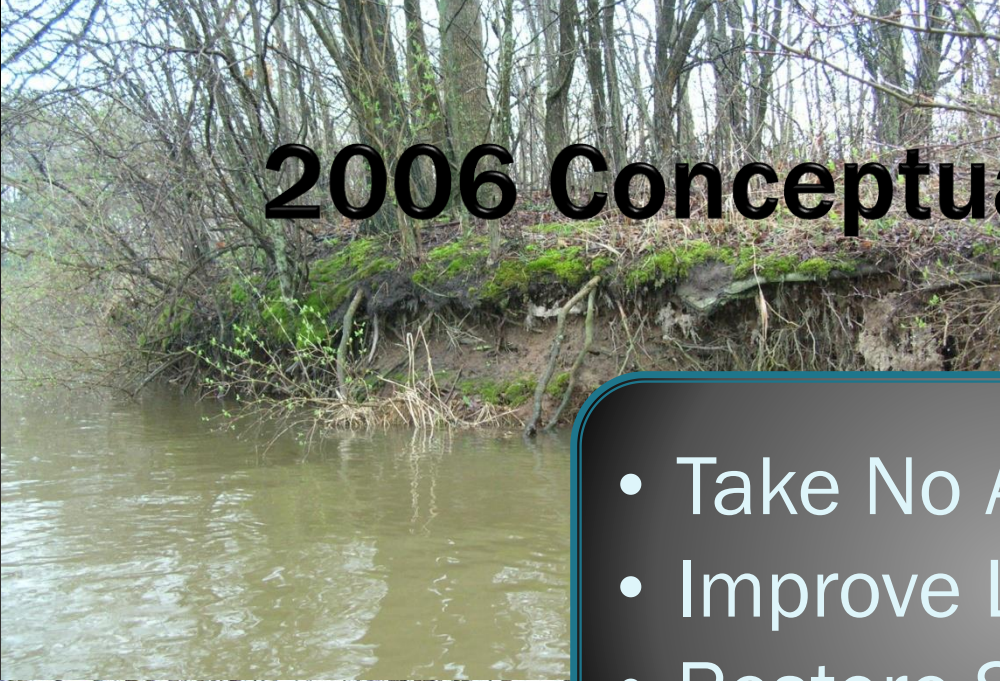
# Rasmussen Lake – Conditions

- ▶ Severely eroding shoreline with slopes 5' or greater
- ▶ Dam, spillway and overflow outlet are in poor condition
- ▶ Engineering models show earthen dam is overtopped in 100-year event and very close to overtopping in 10-year event



# 2006 Conceptual Alternatives

- Take No Action
- Improve Lake
- Restore Stream





February 2007 Board approved moving forward with planning for dam modification and stream restoration.



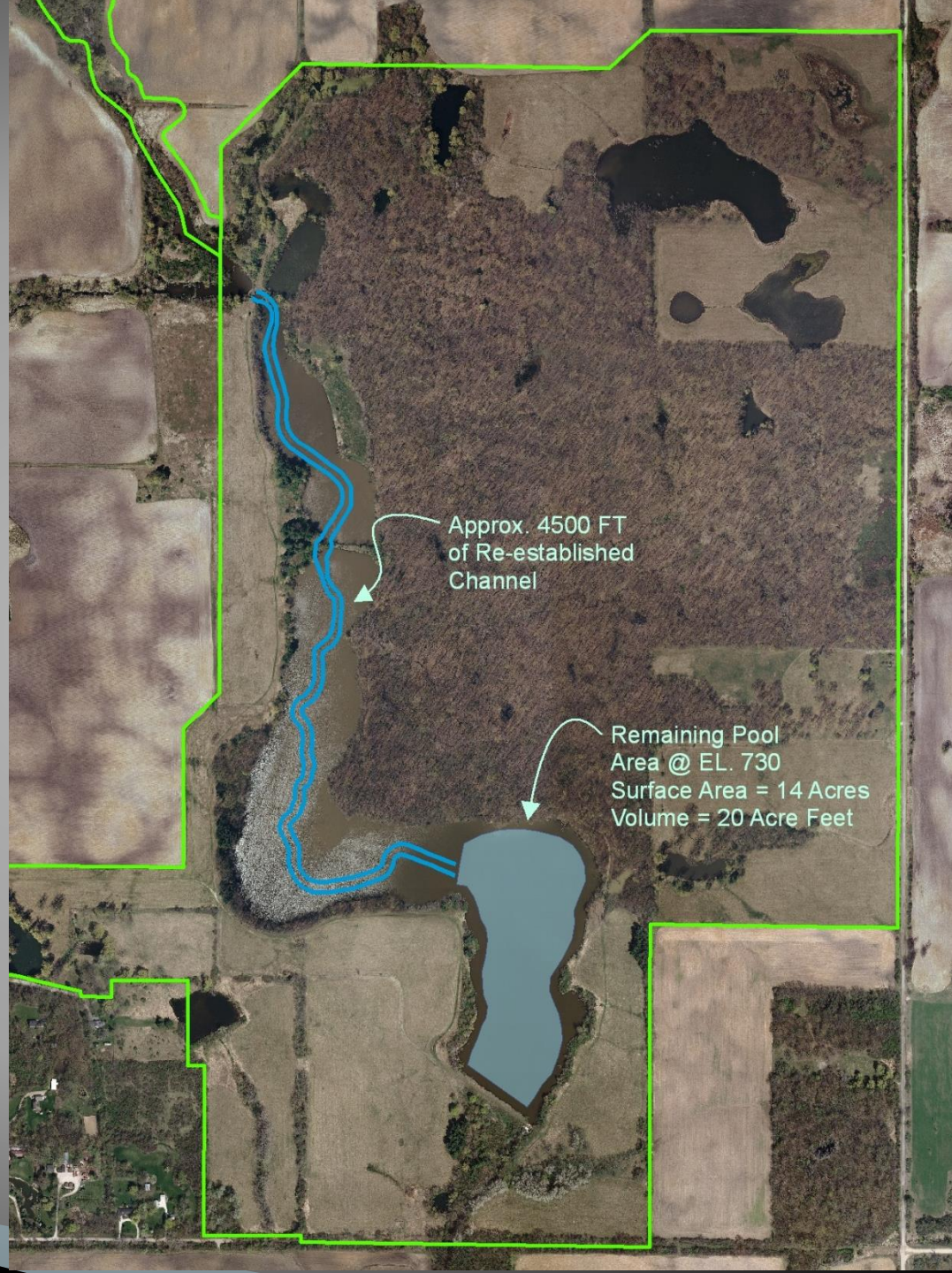
In 2008 Board funded the North Mill Creek Channel Restoration Project at \$4M.



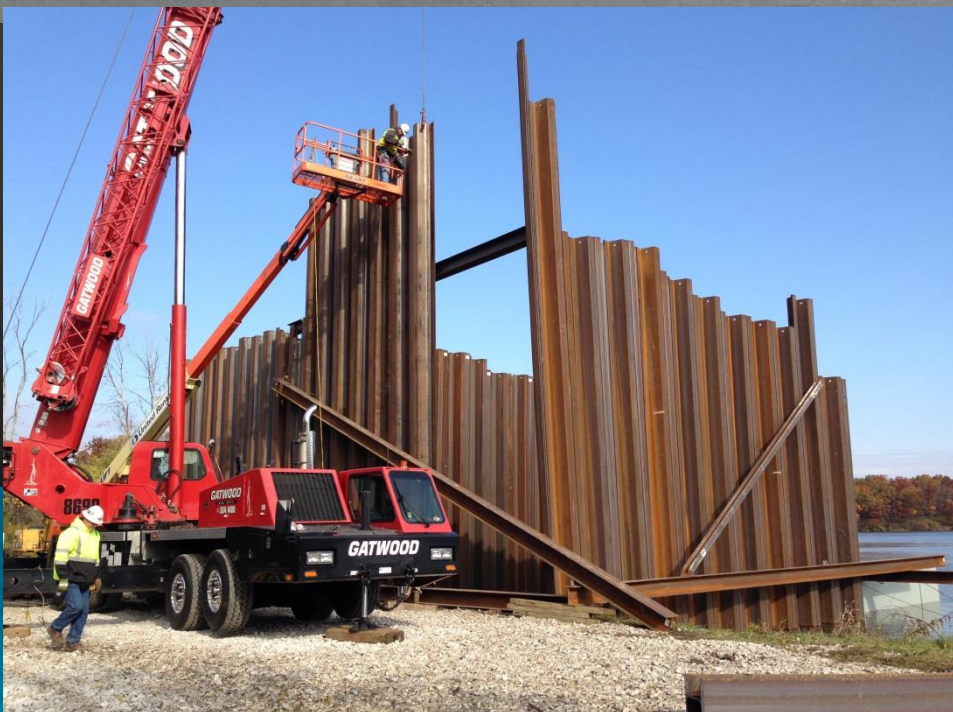


# Phase I

- ▶ Partial lake draining
- ▶ Cofferd dam to control lake elevation
- ▶ 4500 Ft of Channel
- ▶ 14- acre lake to catch sediment
- ▶ Seeding of new floodplain
- ▶ 2014 - 2015





























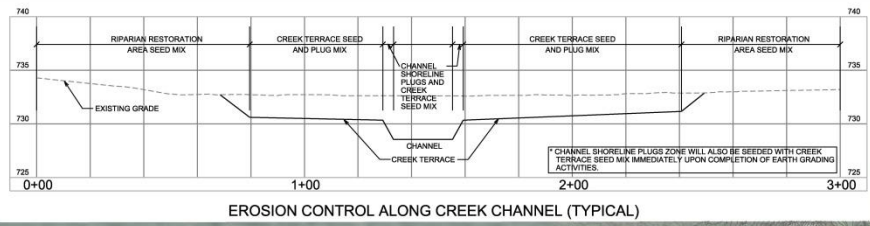


# Phase II

- ▶ Drain remaining 14 acres
- ▶ Create pool & riffles stream channel
- ▶ Address eroded slopes and dam face
- ▶ Diversify floodplain
- ▶ Remove concrete spillway & coffer dam
- ▶ Remove north low-head dam
- ▶ Fall 2017 – Summer 2019

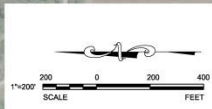
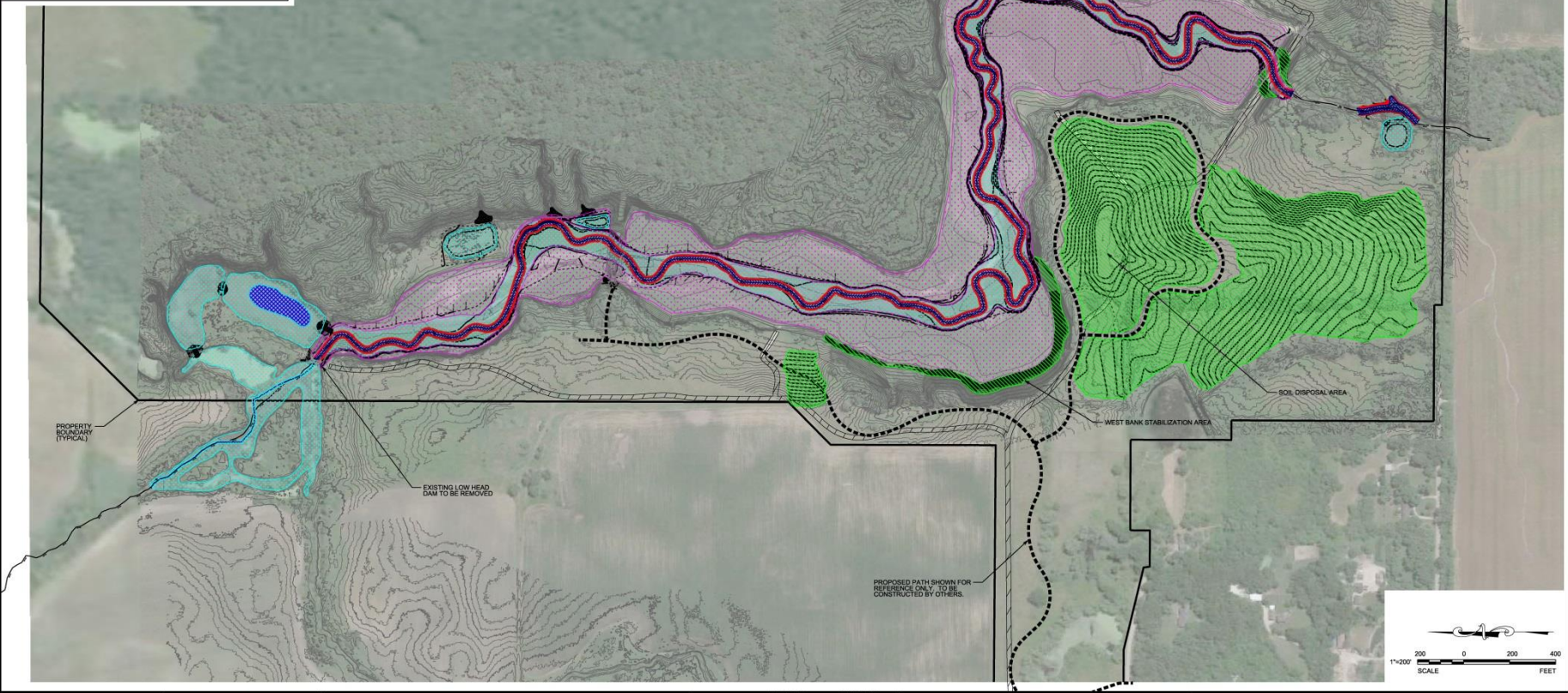


	OPEN WATER	
	CHANNEL AREA	4.0 AC
	CHANNEL SHORELINE PLUGS (INCLUDES BOTH SIDES OF CREEK)	15,500 LF
	RIPIARIAN RESTORATION AREA SEED MIX	32.2 AC
	CREEK TERRACE SEED MIX	18.0 AC
	CREEK TERRACE PLUG MIX	15.8 AC
	TOTAL	52.0 AC
	MESIC PRAIRIE SEED MIX	1.6 AC



NOTE: CONTRACTOR SHALL REFER TO CONSTRUCTION SPECIFICATIONS FOR SEEDING SCHEDULE AND TIMING

\*CHANNEL SHORELINE PLUGS ZONE WILL ALSO BE SEEDING WITH CREEK TERRACE SEED MIX IMMEDIATELY UPON COMPLETION OF EARTH GRADING ACTIVITIES.



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inter-fluve

REVISIONS			
NO.	DATE	DESCRIPTION	
1	08-09-17	ISSUED FOR APPROVAL	

PROJECT NO.	16155	DESIGNED BY:	CWH
FILE NAME:	16155_04_0_PlantingPlan	DRAWN BY:	CWH
ORIG. ISSUE DATE:	03-15-17	CHECKED BY:	DLM
SCALE:	1"=200'	PROJECT MANAGER:	DLM

**NORTH MILL CREEK  
CHANNEL RESTORATION**

ILLINOIS  
LAKE COUNTY

**OVERALL RESTORATION  
PLANTING PLAN**

**4.0**

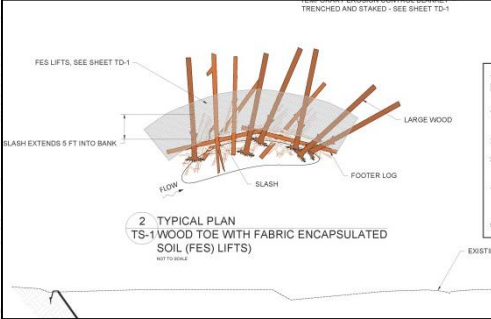
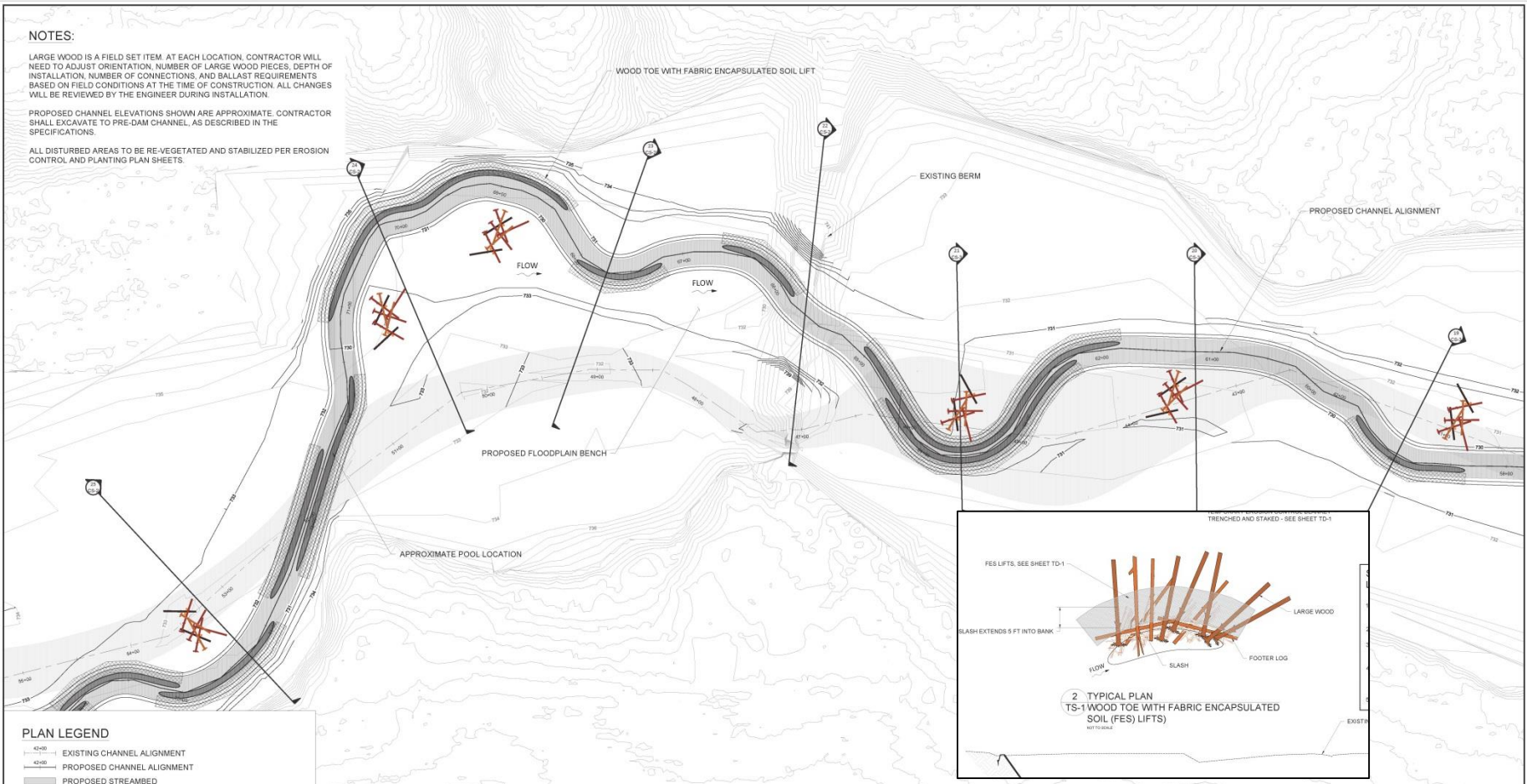


**NOTES:**

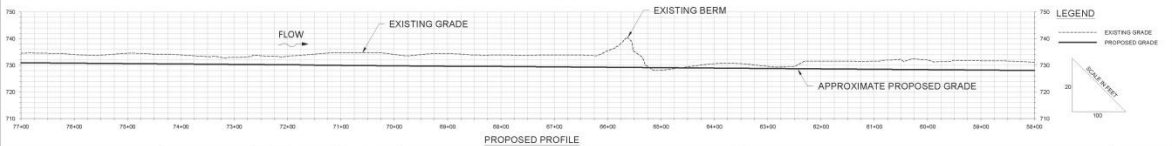
LARGE WOOD IS A FIELD SET ITEM. AT EACH LOCATION, CONTRACTOR WILL NEED TO ADJUST ORIENTATION, NUMBER OF LARGE WOOD PIECES, DEPTH OF INSTALLATION, NUMBER OF CONNECTIONS, AND BALLAST REQUIREMENTS BASED ON FIELD CONDITIONS AT THE TIME OF CONSTRUCTION. ALL CHANGES WILL BE REVIEWED BY THE ENGINEER DURING INSTALLATION.

PROPOSED CHANNEL ELEVATIONS SHOWN ARE APPROXIMATE. CONTRACTOR SHALL EXCAVATE TO PRE-DAM CHANNEL, AS DESCRIBED IN THE SPECIFICATIONS.

ALL DISTURBED AREAS TO BE RE-VEGETATED AND STABILIZED PER EROSION CONTROL AND PLANTING PLAN SHEETS.



- PLAN LEGEND**
- 42+00 — EXISTING CHANNEL ALIGNMENT
  - 42+00 — PROPOSED CHANNEL ALIGNMENT
  - ▨ PROPOSED STREAMBED
  - ▨ EXISTING STREAMBED
  - EXISTING 1 FT CONTOUR
  - PROPOSED 1 FT CONTOUR
  - ▨ WOOD TOE WITH FABRIC ENCAPSULATED SOIL LIFT
  - ▨ APPROXIMATE POOL LOCATION



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REVISIONS					
NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION

PROJECT NO. 16155  
DESIGNED BY:  
FILE NAME:  
DRAWN BY:  
ORIGINAL ISSUE DATE:  
CHECKED BY:  
SCALE:  
PROJECT MANAGER: DLM LAKE COUNTY

**NORTH MILL CREEK CHANNEL RESTORATION**

CHANNEL RESTORATION SHEET 2 OF 5

DRAWING NO. CR-2

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# North Mill Creek Channel Restoration

## Phase I

Total Cost \$1M

Funding Assistance  
\$472K

319 Grant from U.S.  
Environmental Protection  
Agency & Illinois  
Environmental Protection  
Agency

## Phase II

Total Cost \$4M

Funding Assistance  
\$1M

319 Grant from U.S.  
Environmental Protection  
Agency & Illinois  
Environmental Protection  
Agency

Ethel's Woods Ecosystem Services \$8M/year  
(flood control, water purification and groundwater recharge)



An aerial photograph showing a complex network of restored and natural creek channels. The channels are dark blue and meander through a landscape of brown, dormant trees and light brown, bare soil. The restoration work is evident in the multiple, parallel channels and the intricate, winding paths that have been created. The overall scene is a mix of natural and man-made waterways.

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Questions?