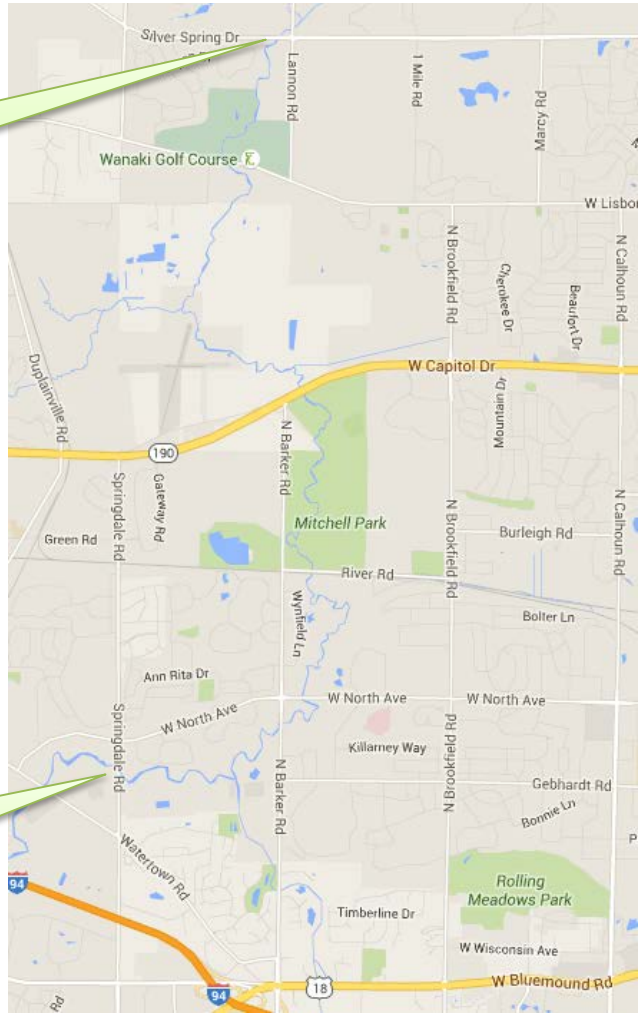
# In-Stream Construction

Strategies for Environmental Protection

# Project Locations

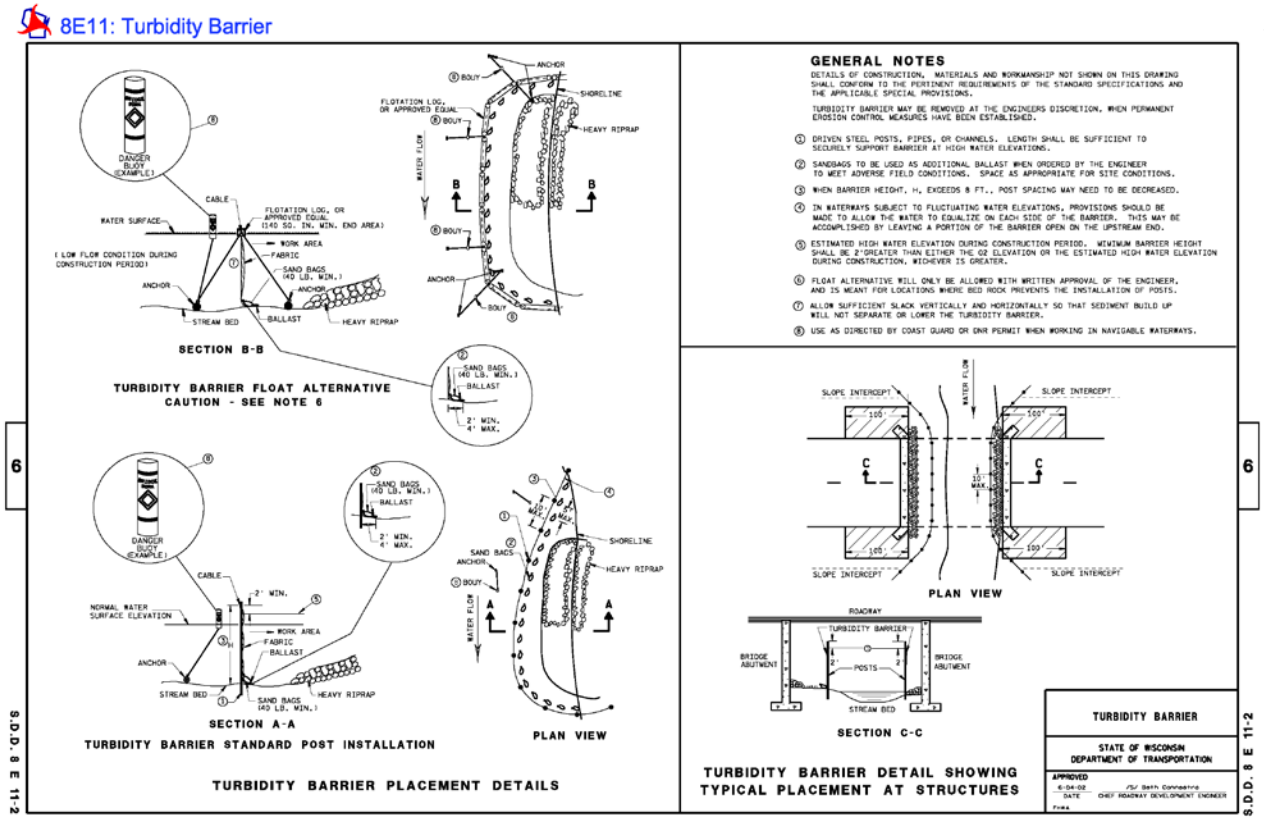
Silver Spring Drive
(2012)

Springdale Road
(2009)



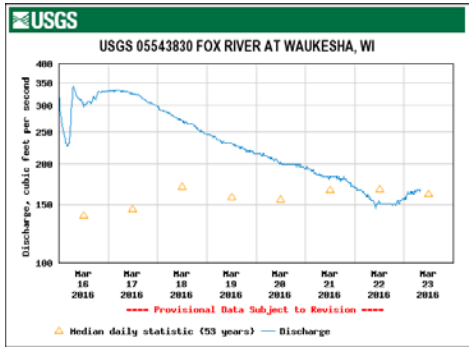
# Guidance

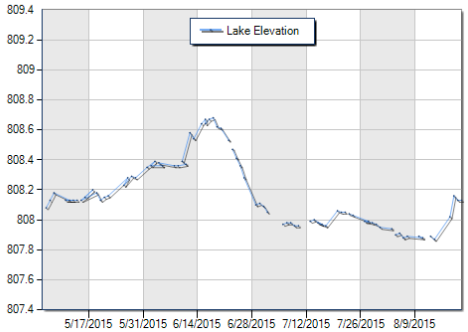
- WisDOT FDM Chapter 10-10-45
- WDNR Conservation Practice Standard 1069

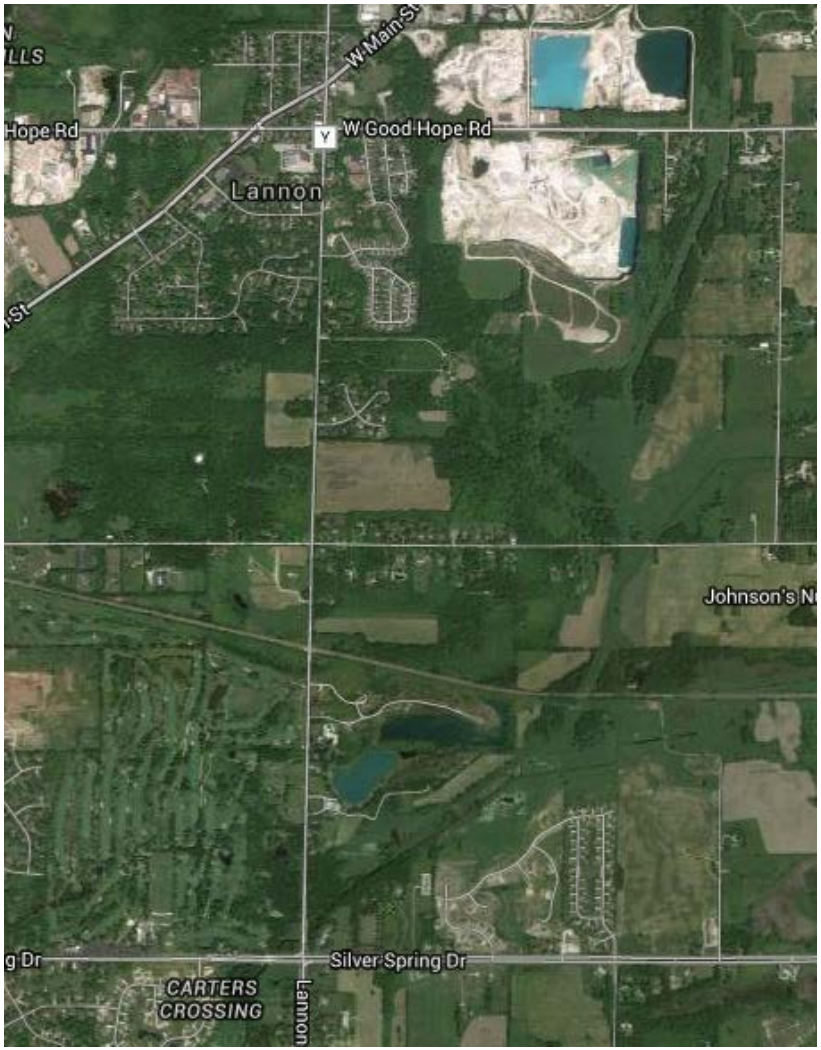


# Planning

- Check Gauge Stations
- Investigate
  - Talk to knowledgeable people
  - What are potential point contributors to flow
- Visit site prior to installation
  - Site Measurements

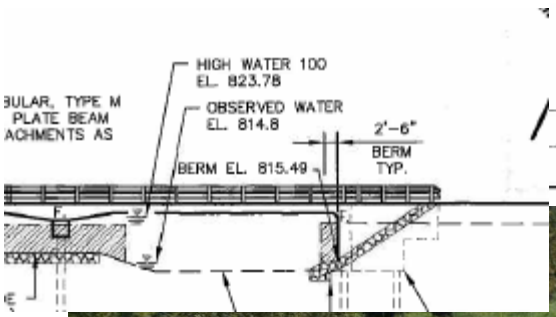


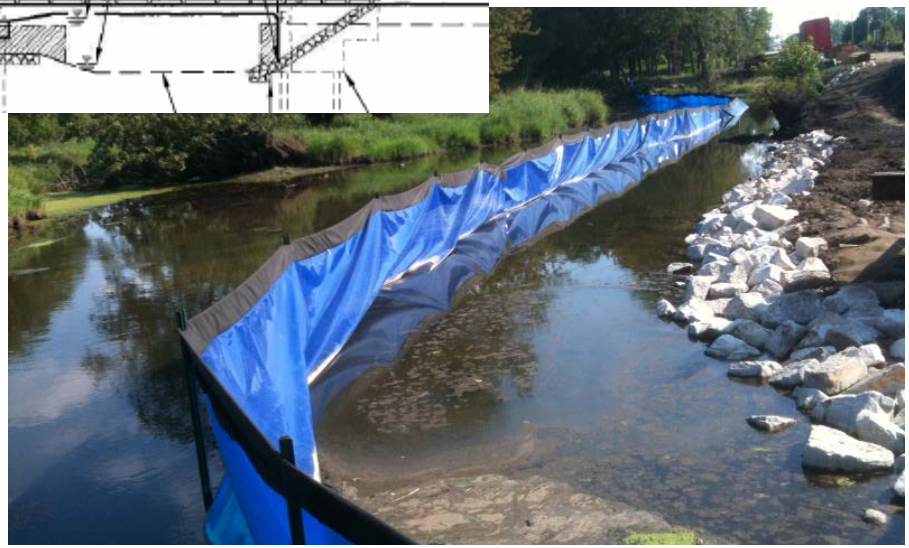
# Turbidity Barrier Height

- Q2 Elevation + 2 feet



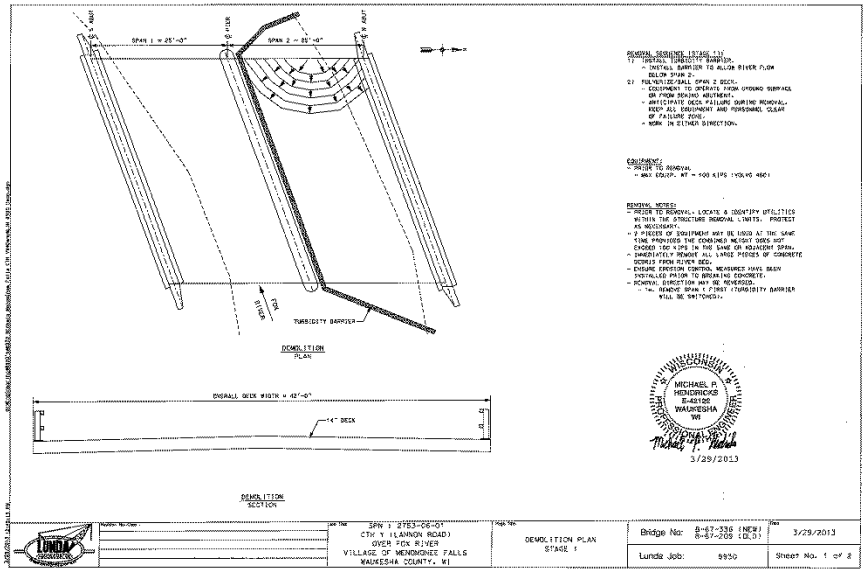

HYDRAULIC DATA

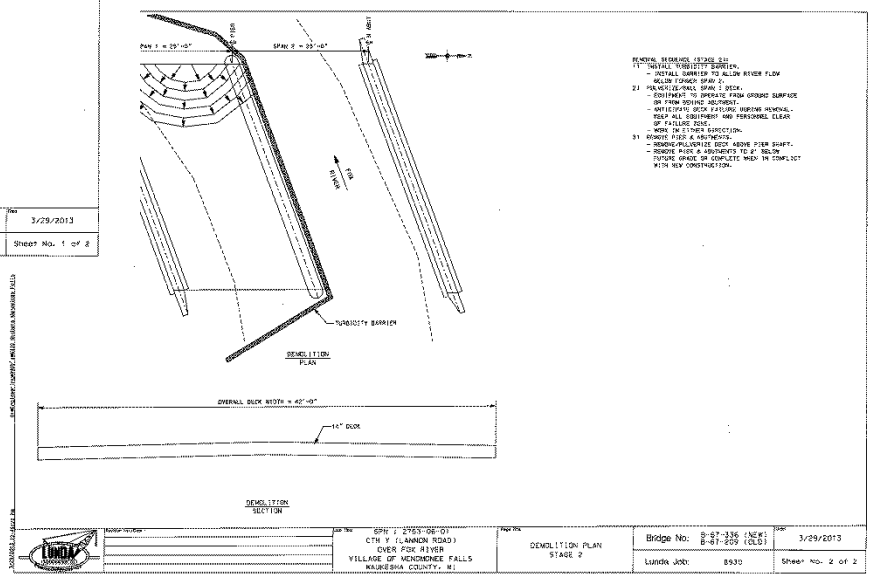
| | |
|---|---|
| $Q_{100}$ | 2,450 c.f.s. |
| $Q_{100}$ (THRU BRIDGE) | 2,450 c.f.s. |
| DRAINAGE AREA | 50.5 SQ. MI. |
| WATERWAY AREA | 1311 SQ. FT. |
| VELOCITY | 1.87 f.p.s. |
| HIGH WATER 100 ELEVATION | 823.78 FT |
| SCOUR CRITICAL CODE | 5 |
| $Q_2$ | 930 c.f.s. |
| $Q_2$ ELEVATION | 820.15 FT. |



⑤ ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION PERIOD. MIMIMUM BARRIER HEIGHT SHALL BE 2'GREATER THAN EITHER THE Q2 ELEVATION OR THE ESTIMATED HIGH WATER ELEVATION DURING CONSTRUCTION, WICHEVER IS GREATER.

# Staging & Placement




- Did you account for all stages?
- Are you wide enough?

# Installation

- Prior to disturbing activities
- Anchor and key into shoreline
- Max post spacing 10 feet
  - Greater heights should decrease post spacing
  - Soft bottoms require longer posts

# Redundancy

- Multiple Lines of Defense

# Turbidity Barrier Removal

- Water clarity behind the barrier is equal to the adjoining waterway
- Dispose of solids
- Remove all sand bags and posts
- Don’t reuse in a different waterway

# Limitations

- Flows exceeding 5 feet/sec
  - Decrease Post Spacing
  - Additional Weighting of Bottom
  - Temporary Precast Flow Diverters
  - Temporary Sheet Pile

# Limitations

- Meant to be "Impervious"
  - Don't Place Perpendicular to Flows
- Not a Dewatering Barrier

# Failure?

- Stop Work
- Correct the Failure
- Resume Work
- Notify DNR of Release
- Modify Protection

# Lessons

Investigate the Site

Establish Expectations & Communication Lines

Review the ECIP

Solicit Input from DNR

Facilitate Planning & Coordination between Contractors

Have On-Hand Additional Materials

Adapt to Observed Conditions

# Questions?

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