



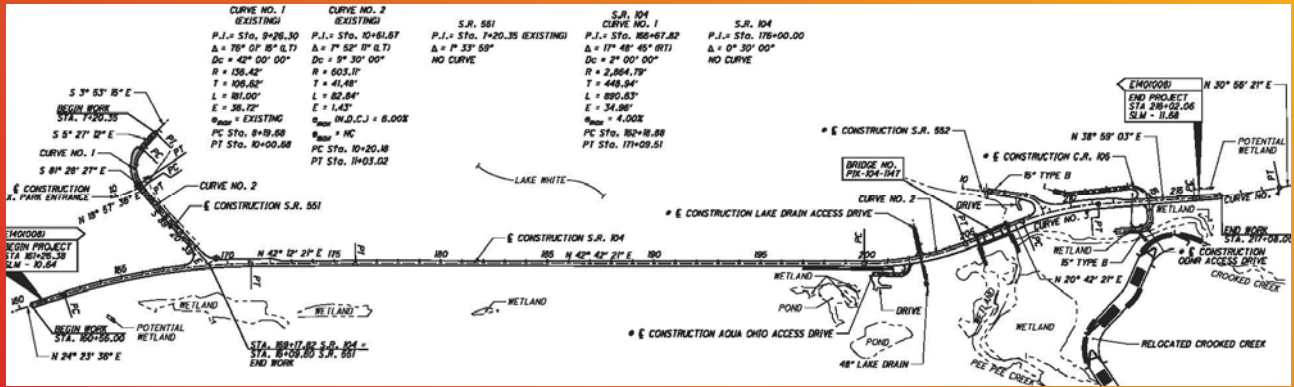
# Presentation Topics

1. Project Description
2. Site Introduction / Characteristics
3. Seepage Challenges
4. Dam-Related Improvements Overview
5. Spillway Improvements
6. Road Widening / Dam Armoring
7. Construction Update





# Project Description



# Site Characteristics



Dam Classification: Class I (High-Hazard)  
 Crest: Roadway (State Route 104)  
 Dam Length: 5,100 feet  
 Maximum Dam Height: 39 feet  
 Downstream Slope: 2.5 (H) to 1.0 (V)

Total Drainage Area: 35 square miles  
 Lake Surface Area: 400 acres  
 Storage Capacity: 1.9 billion gallons  
 Waterway: Crooked Creek / Pee Pee Creek  
 Adjacent River: Scioto River (south)



# Site Characteristics



## Spillway Info

Width: 140 feet

Height: 16 feet

Type: Stair-stepped concrete structure

Control: Remote operated hydraulic gates

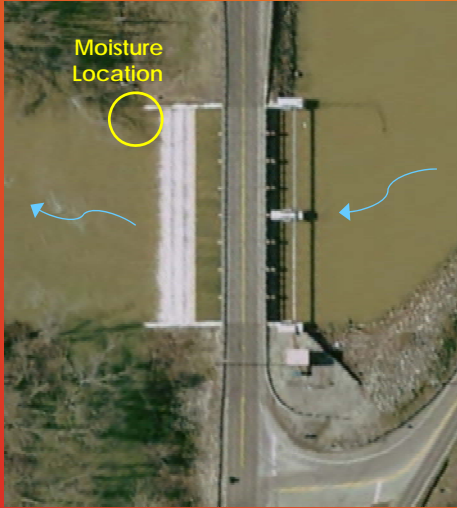


# 2006 Overtopping Event





# Seepage Challenges



July 22, 2014



# Seepage Challenges



August 29, 2014



# Seepage Challenges



August 31, 2014



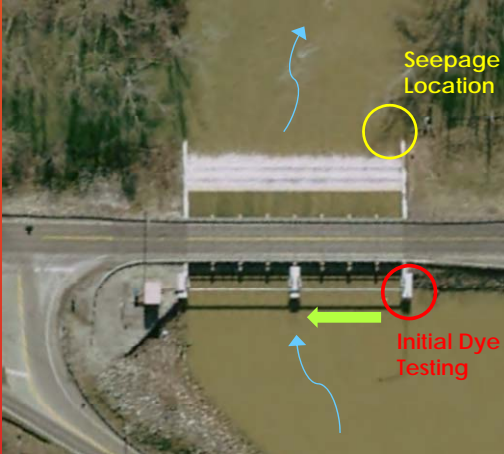
# Seepage Challenges



August 29, 2014



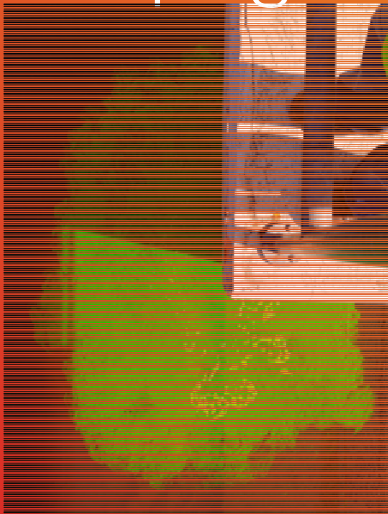
# Seepage Challenges



September 4, 2014



# Seepage Challenges



September 4, 2014





# Seepage Challenges



- Round the clock observations and monitoring complete.
- Roadway reopened to traffic.
- Seepage area protected.
- Pool level lowered.
- Siphons installed and ready for operation.
- Design of long-term repairs in the works.

September 17, 2014



## Lake White Dam Emergency Response

Figure E.1



Station 206+00  
South of Spillway

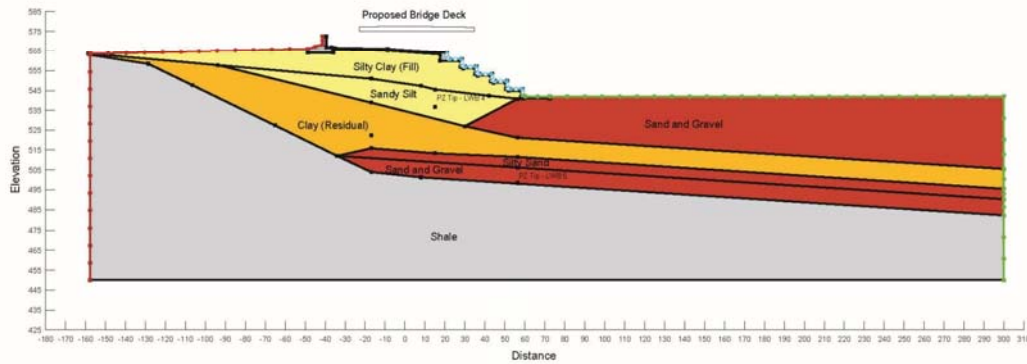
Loading Condition: Summer HW

Soil Layers & Loading Conditions

Headwater = Summer Pool = El. 560.3 ft

Tailwater = El. 542.0 ft

Material Name	Kh-Sat (ft/sec)	Kratio Kv/Kh
Silty Clay (Fill) and Sandy Silt	4.41e-008	0.25
Sand and Gravel and Silty Sand	3.28e-005	1
Clay (Residual)	1.1e-008	0.1
Shale	3.28e-009	1
Concrete	3.3e-012	1



Lake White Dam  
Emergency Response

Figure E.3



Station 206+00  
South of Spillway

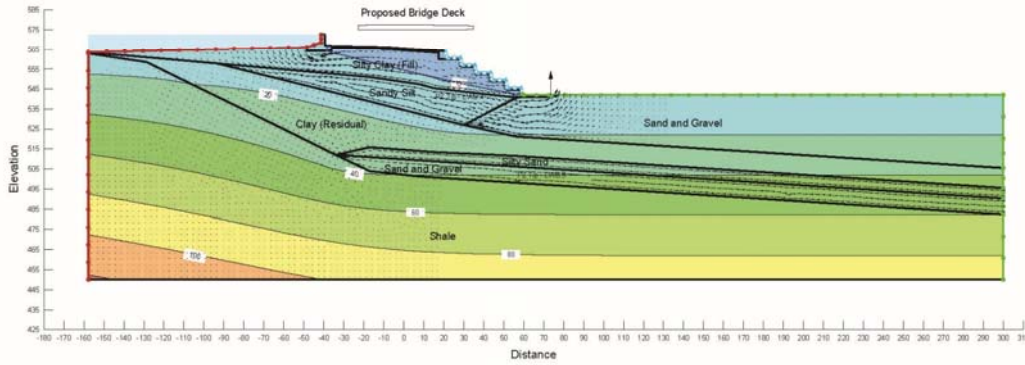
Loading Condition: Summer HW

Pressure Head (ft)

Headwater = Summer Pool = El. 560.3 ft

Tailwater = El. 542.0 ft

Material Name	Kh-Sat (ft/sec)	Kratio Kv/Kh
Silty Clay (Fill) and Sandy Silt	4.41e-008	0.25
Sand and Gravel and Silty Sand	3.28e-005	1
Clay (Residual)	1.1e-008	0.1
Shale	3.28e-009	1
Concrete	3.3e-012	1



Lake White Dam  
Emergency Response

Figure E.12



Station 206+00  
South of Spillway

Loading Conditions: Summer HW

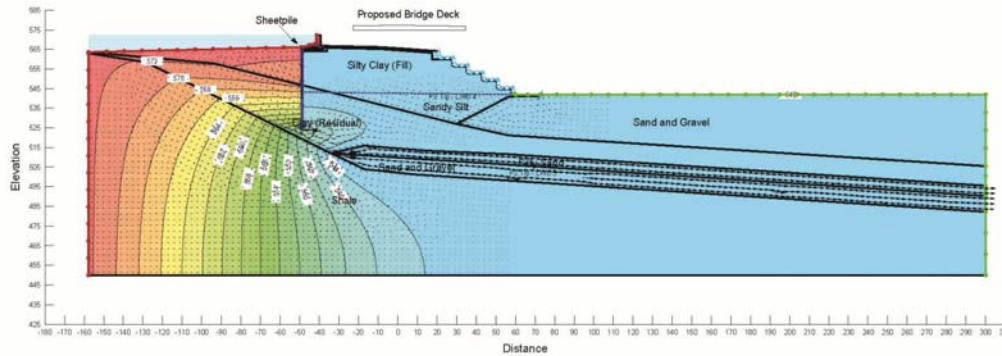
Total Head (ft)

Headwater = Summer Pool = El. 572.4 ft

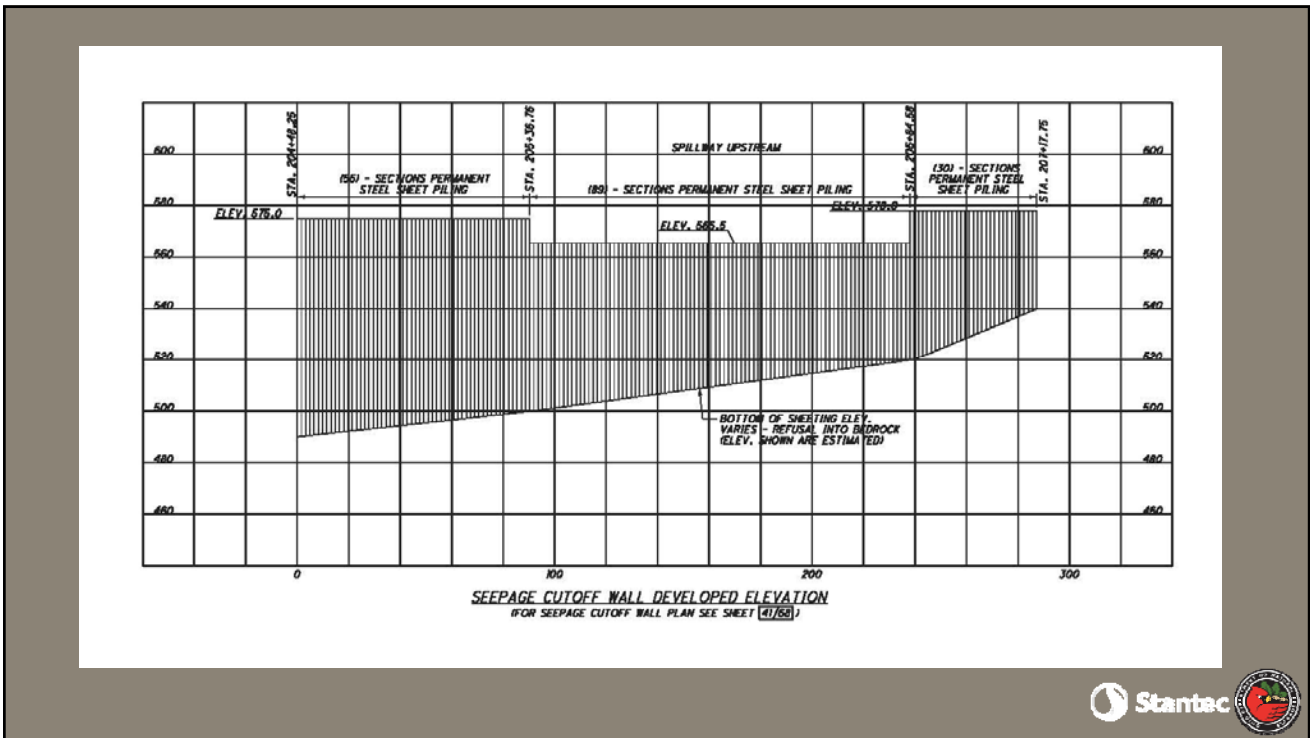
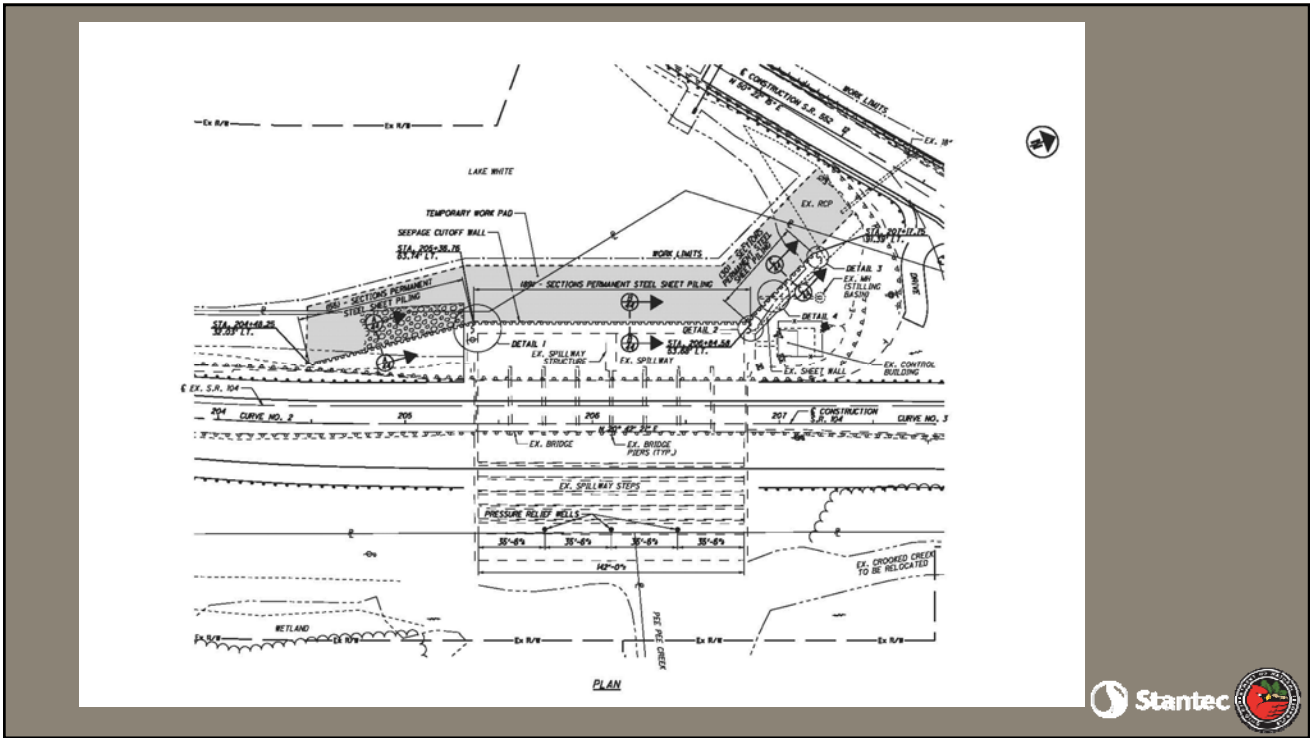
Tailwater = El. 542.0 ft

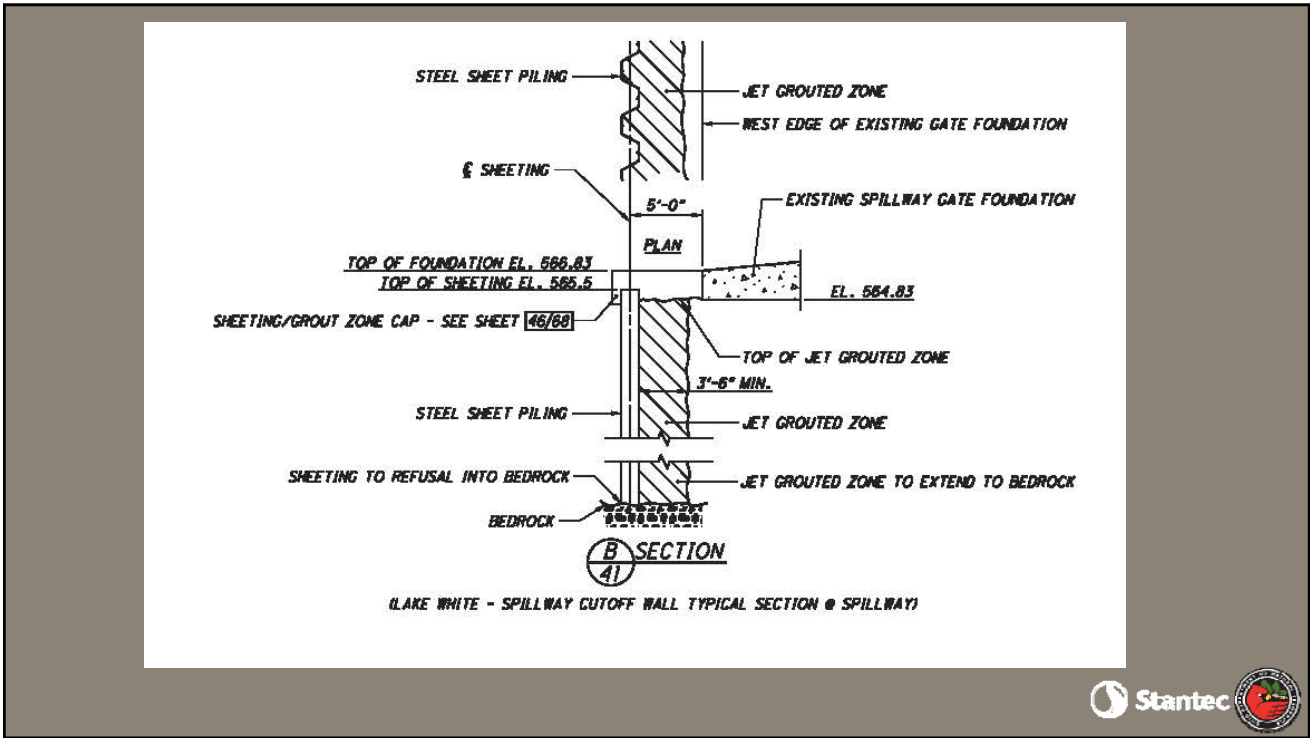
Sheet Pile Tip at El. 525.0 ft

Material Name	Kh-Sat (ft/sec)	Kratio Kv/Kh
Silty Clay (Fill) and Sandy Silt	4.41e-008	0.25
Sand and Gravel and Silty Sand	3.28e-005	1
Clay (Residual)	1.1e-008	0.1
Shale	3.28e-009	1
Concrete	3.3e-012	1









# Jet Grouting

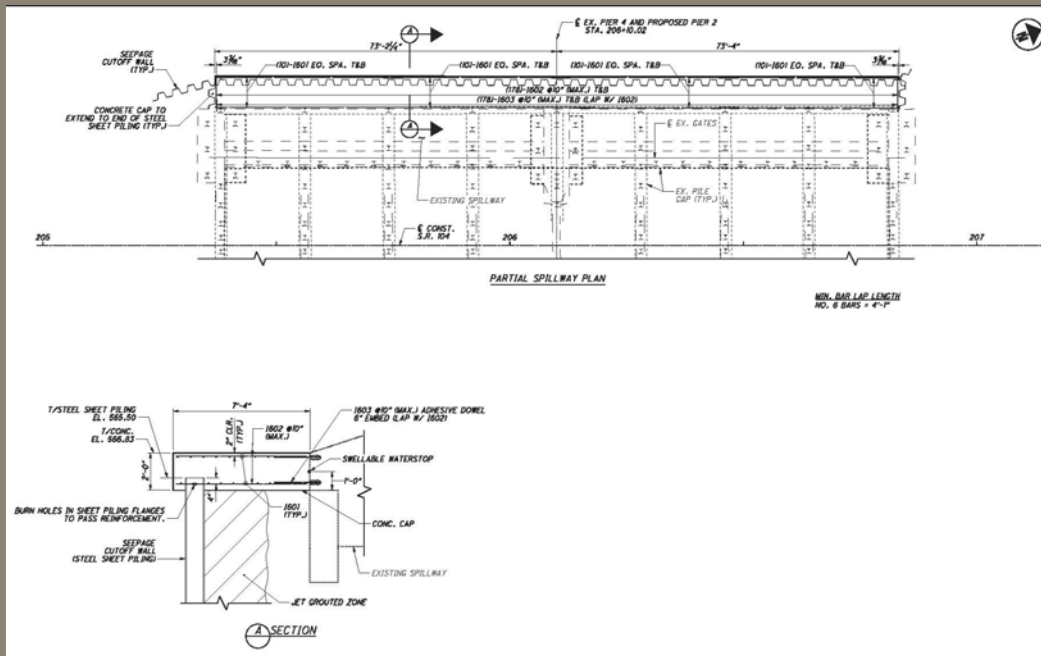


# Jet Grouting



# Jet Grouting





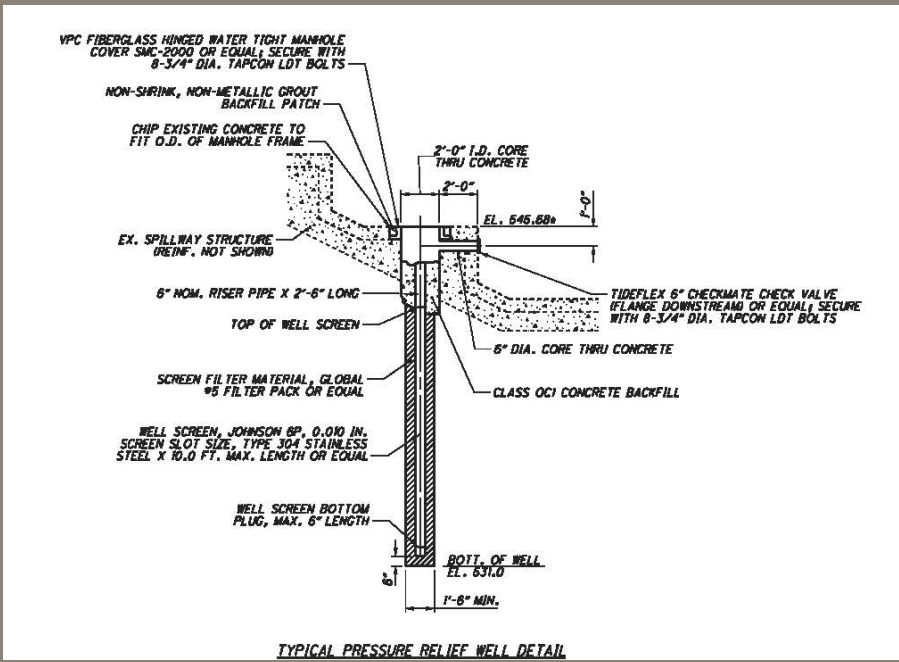


# Cutoff Wall Cap



# Cutoff Wall Cap





# Relief Wells



# Relief Wells - Tideflex



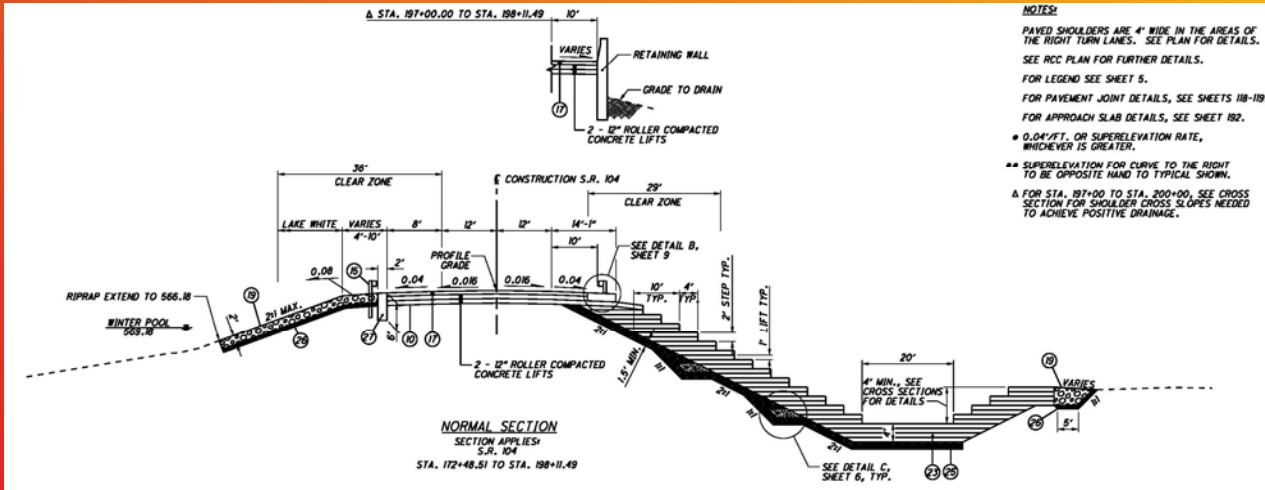
# Relief Wells



# Flowable Fill



# Dam Widening / Armoring



# Dam Widening / Armoring



# Dam Widening / Armoring



# Dam Widening / Armoring



# Dam Widening / Armoring



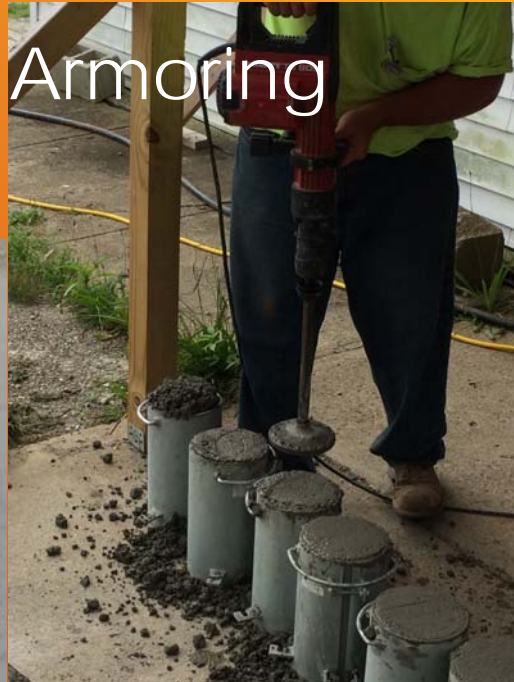
# Dam Widening / Armoring



# Dam Widening / Armoring



# Dam Widening / Armoring



# Dam Widening / Armoring





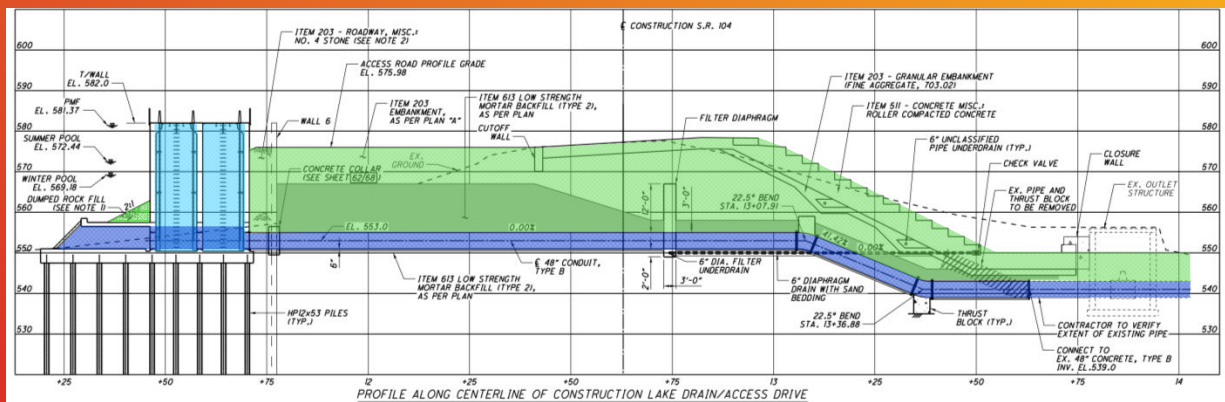
# Dam Widening / Armoring



12:14 JUN/ 6/2016



# Lake Drain



- New concrete structure.
- Dual-chamber, multiple gates, influent tower
- Outlet Pipe Size: 48-inch diameter



# Construction Update



# Construction Update



# Elevated Water



Thank You!  
QUESTIONS?

