Mel Price/Wood River Problem Seepage Area

Industry Day

December 3, 2013

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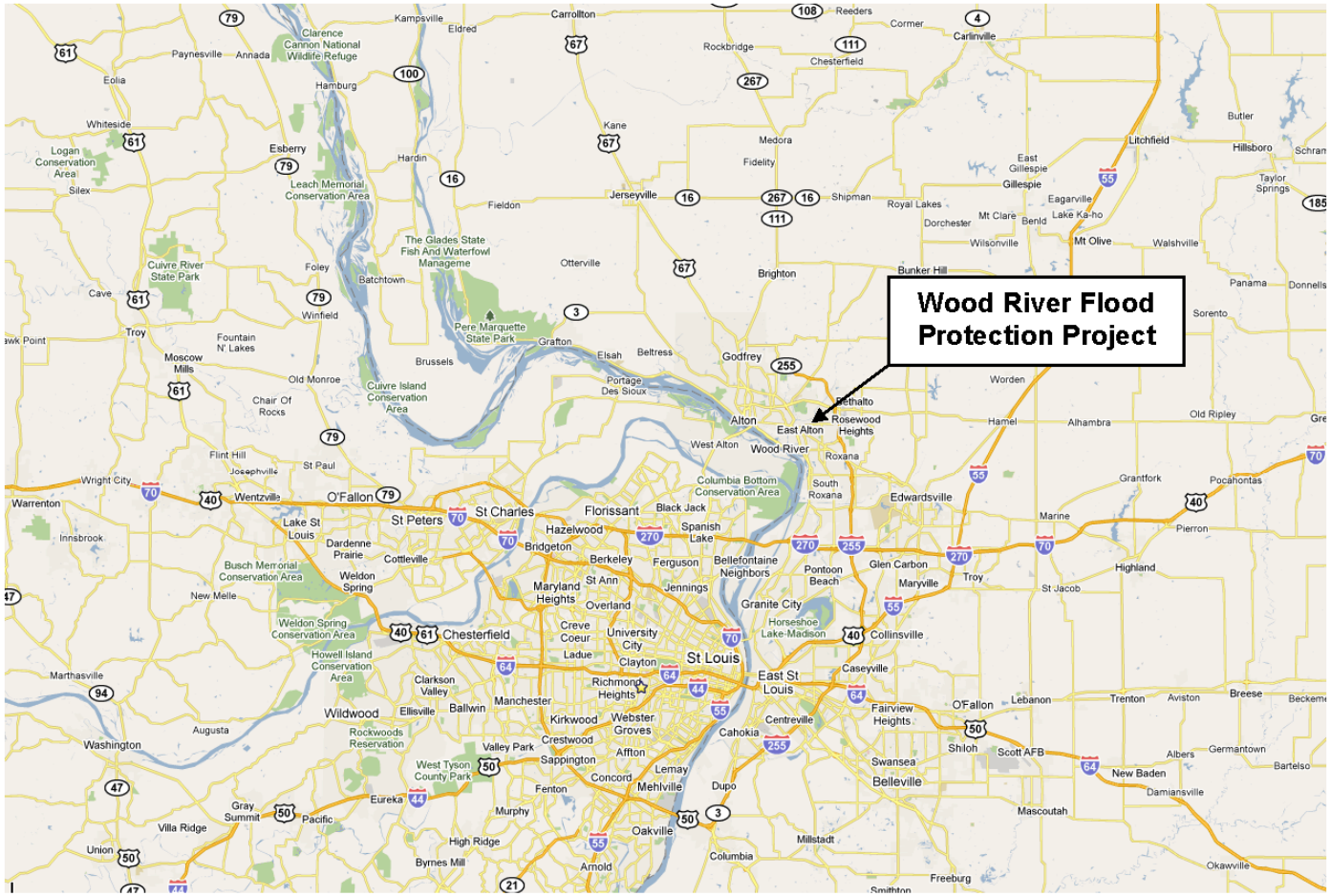
Mel Price/Wood River Problem Seepage Area - Industry Day

- **Overview**
  - Location
  - History
  - Program
  - Concept
- Conditions
- Contracting Information



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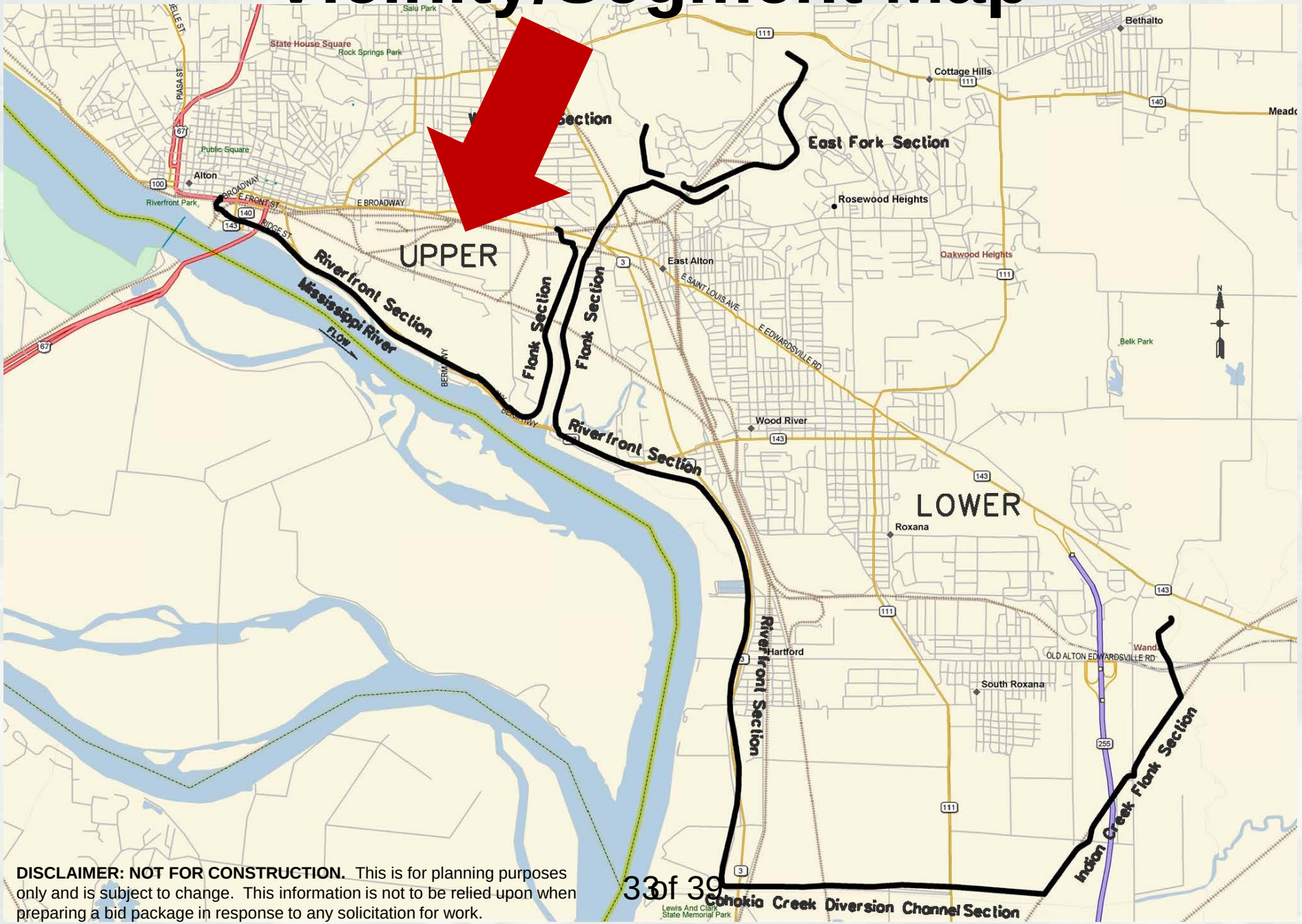
Vicinity/Segment Map



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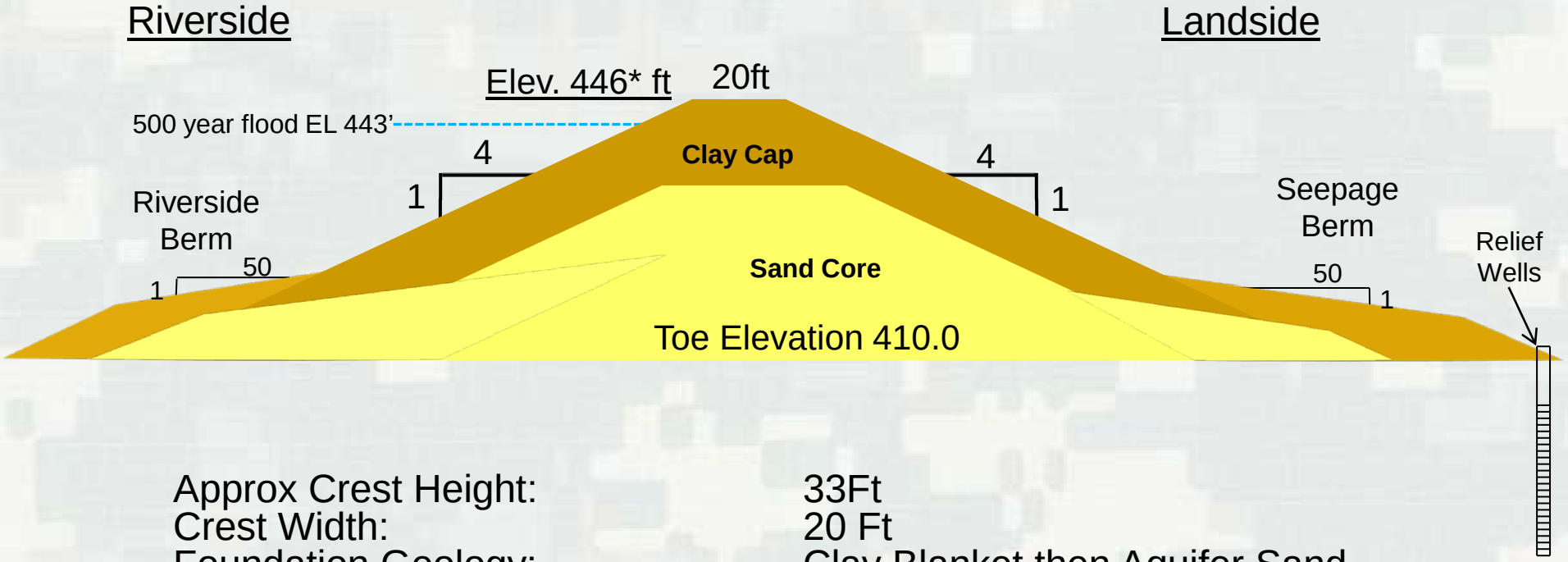
Typical Sections
Mainline Levee Embankment



Approx Crest Height:	33Ft
Crest Width:	20 Ft
Foundation Geology:	Clay Blanket then Aquifer Sand
Levee Materials /Zoning:	Hydraulic Fill and Clay Cap
Riverside Erosion Protection:	Grass

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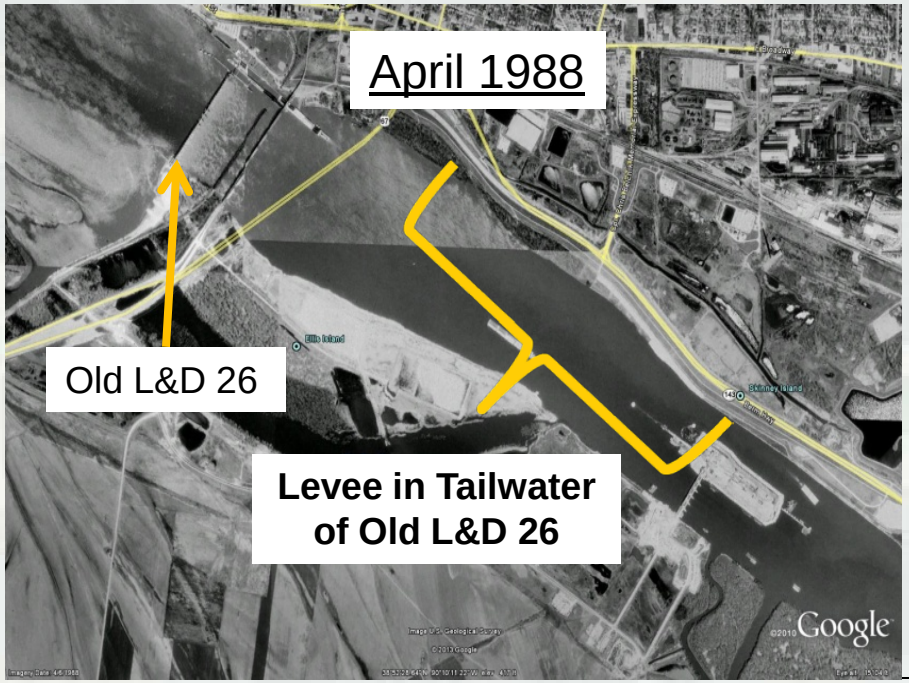
Mel Price Seepage Area

- Relocation of old Lock & Dam 26 two miles downstream to Mel Price Locks & Dam caused a permanent pool to be placed on the Upper Wood River Levee from Sta 0+00 to Sta 115+24.



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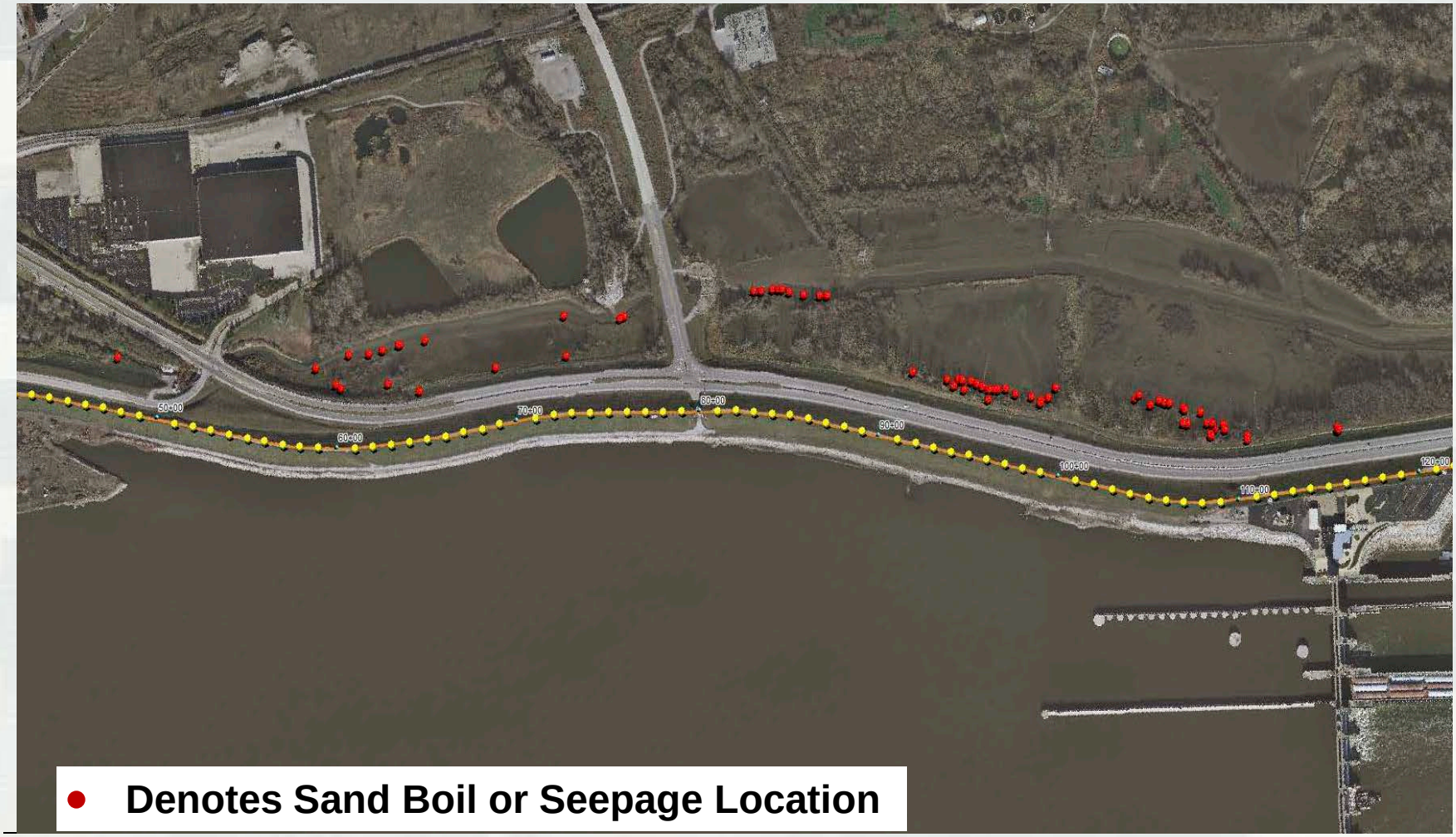

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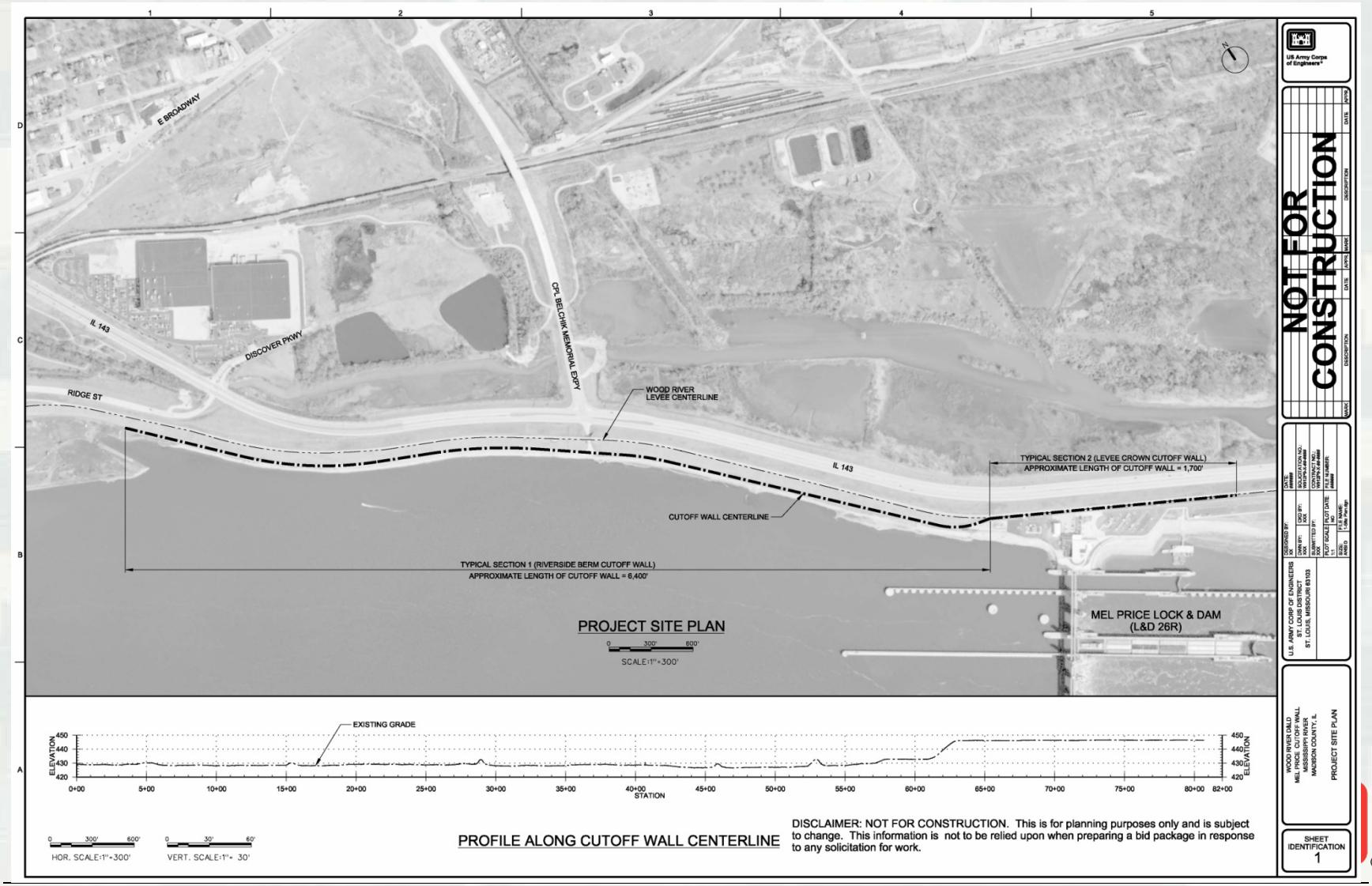
Proposed Cut-Off Wall Alignment



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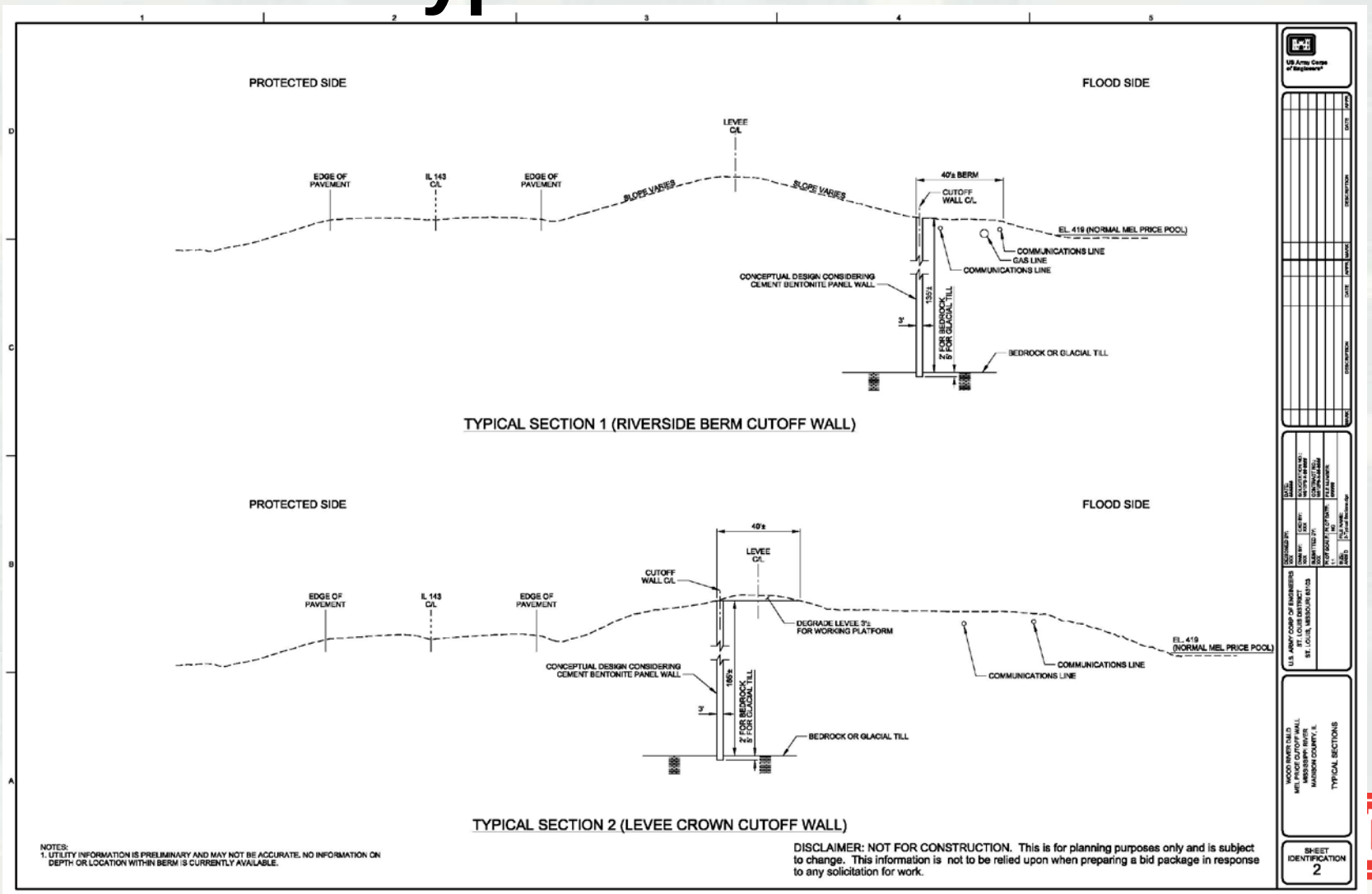
Proposed Cut-Off Wall
Typical Sections



Proposed Cut-Off Wall Location

- **Conditions**
  - Site
  - Utilities
  - Subsurface

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High Water Event Examples

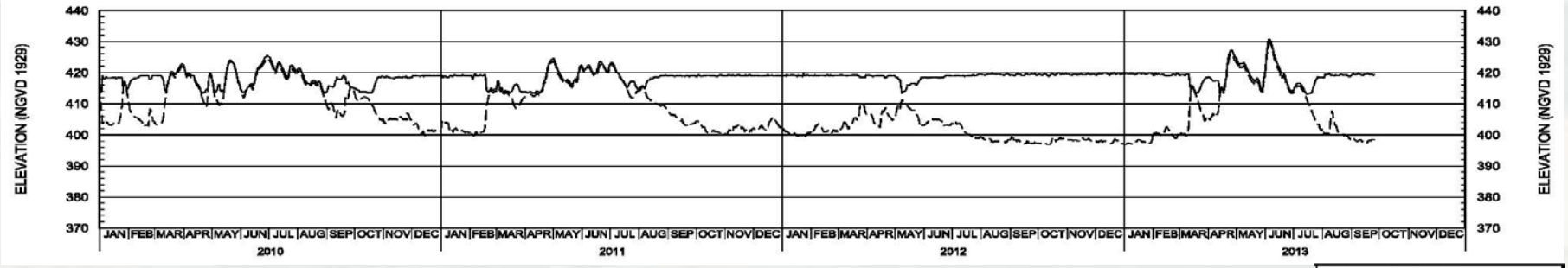
Station 95+47

2May13

3Jun13

Station 79+63

3Jun13



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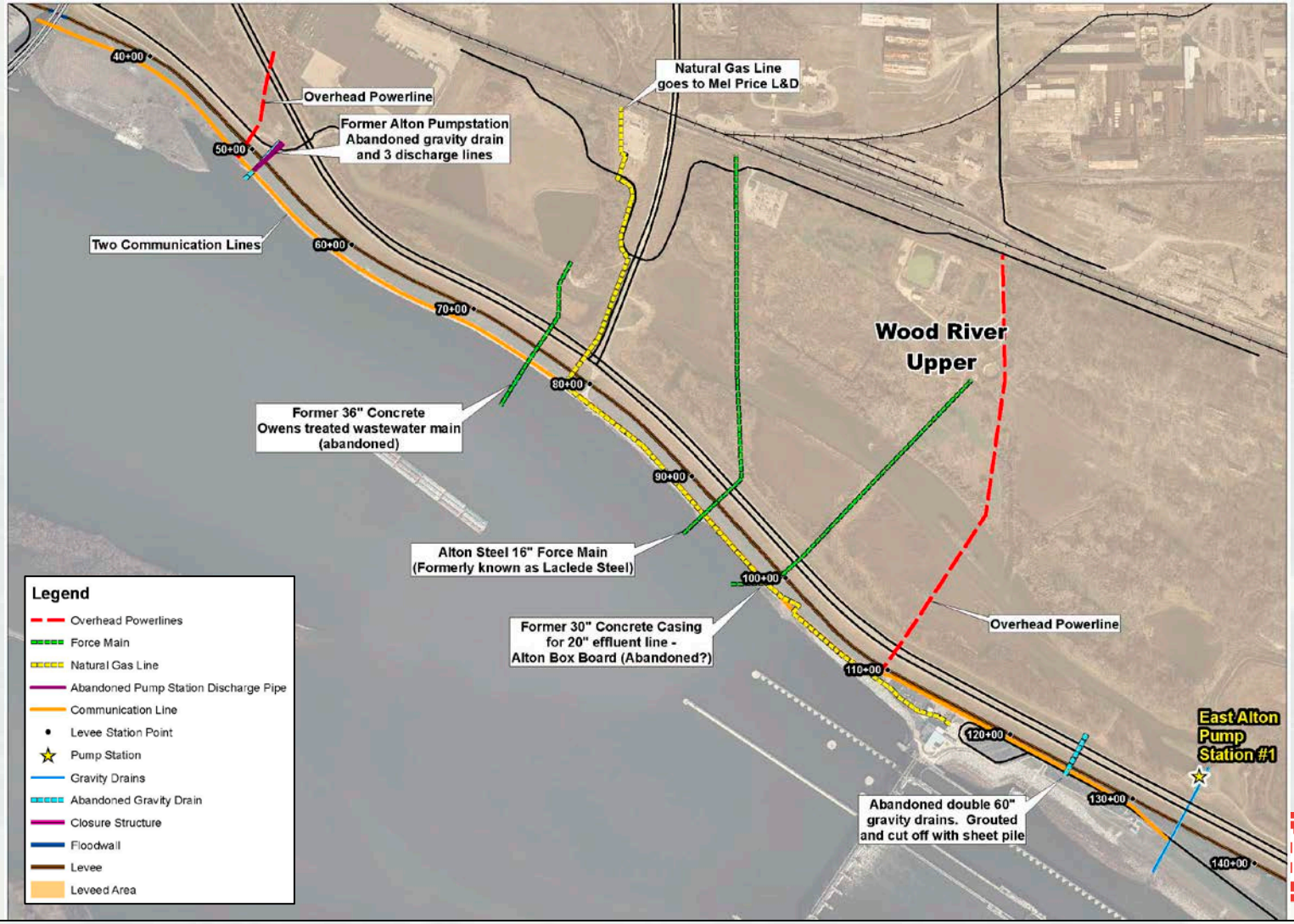
BUIL

SHEET LEGEND:

MEL PRICE POOL ELEVATION

MEL PRICE TAIL ELEVATION

Utilities



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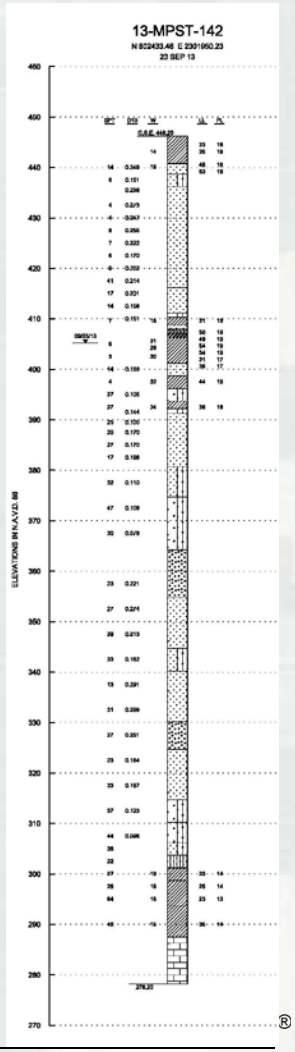
Mel Price/Wood River Problem Seepage Area – Typical Conditions

- **Subsurface Conditions**
  - Pumping Test
  - Exploration
  - Mel Price L&D construction

- **Subsurface Strata**
  - Levee Section
  - Alluvium
  - Groundwater
  - Glacial Deposits
  - Bedrock



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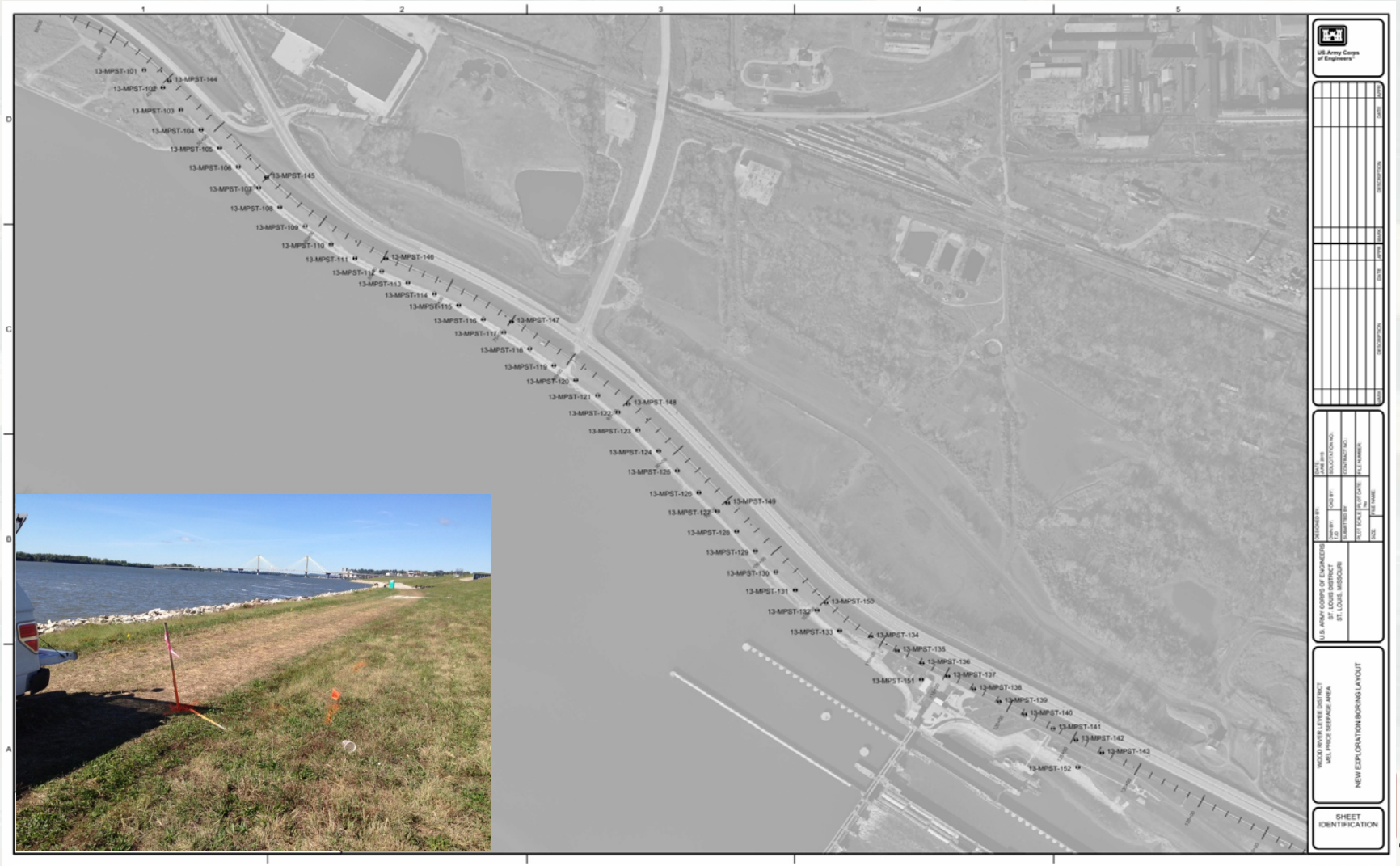
Boring Layout (Spaced 200 ft)



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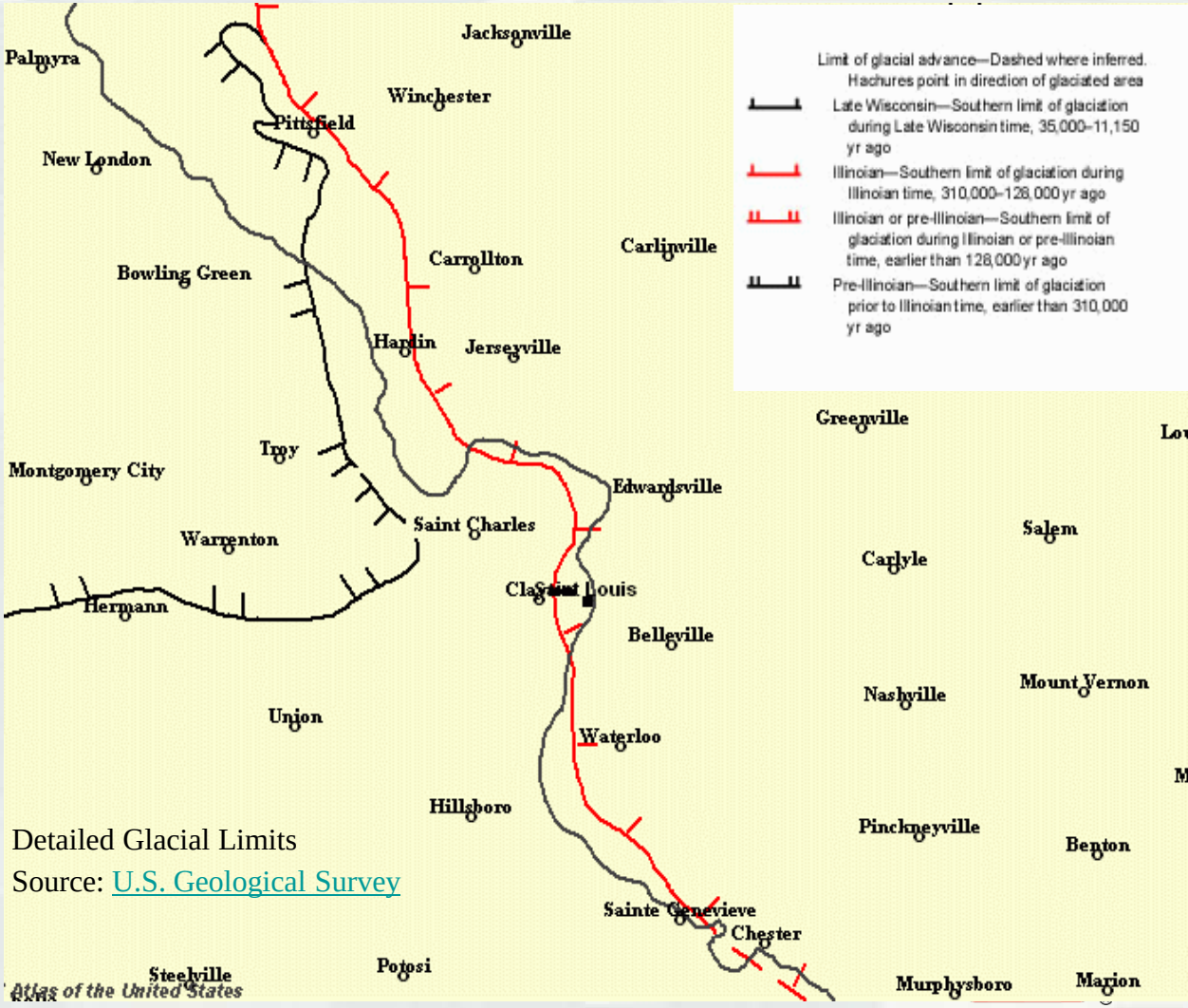
Glacial Deposits & Limits

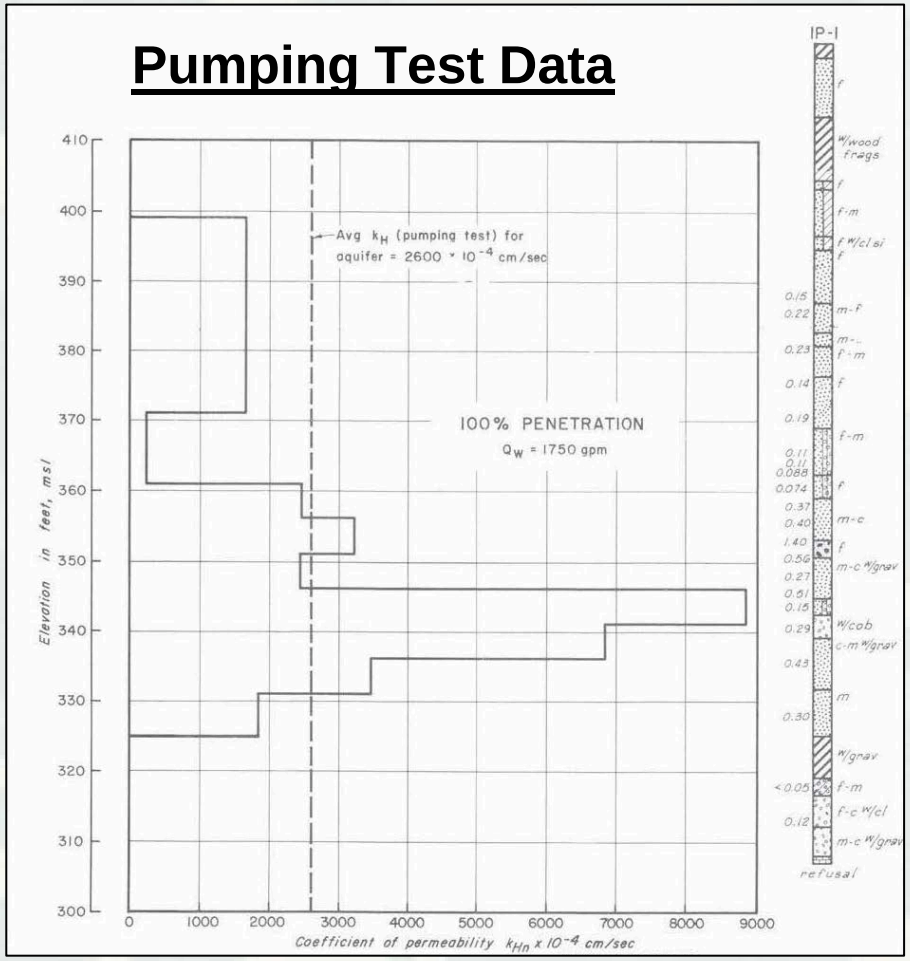
- **Glacial Deposits**
  - Clay
  - Silt
  - Sand
  - Gravel
  - Cobbles
  - Boulders



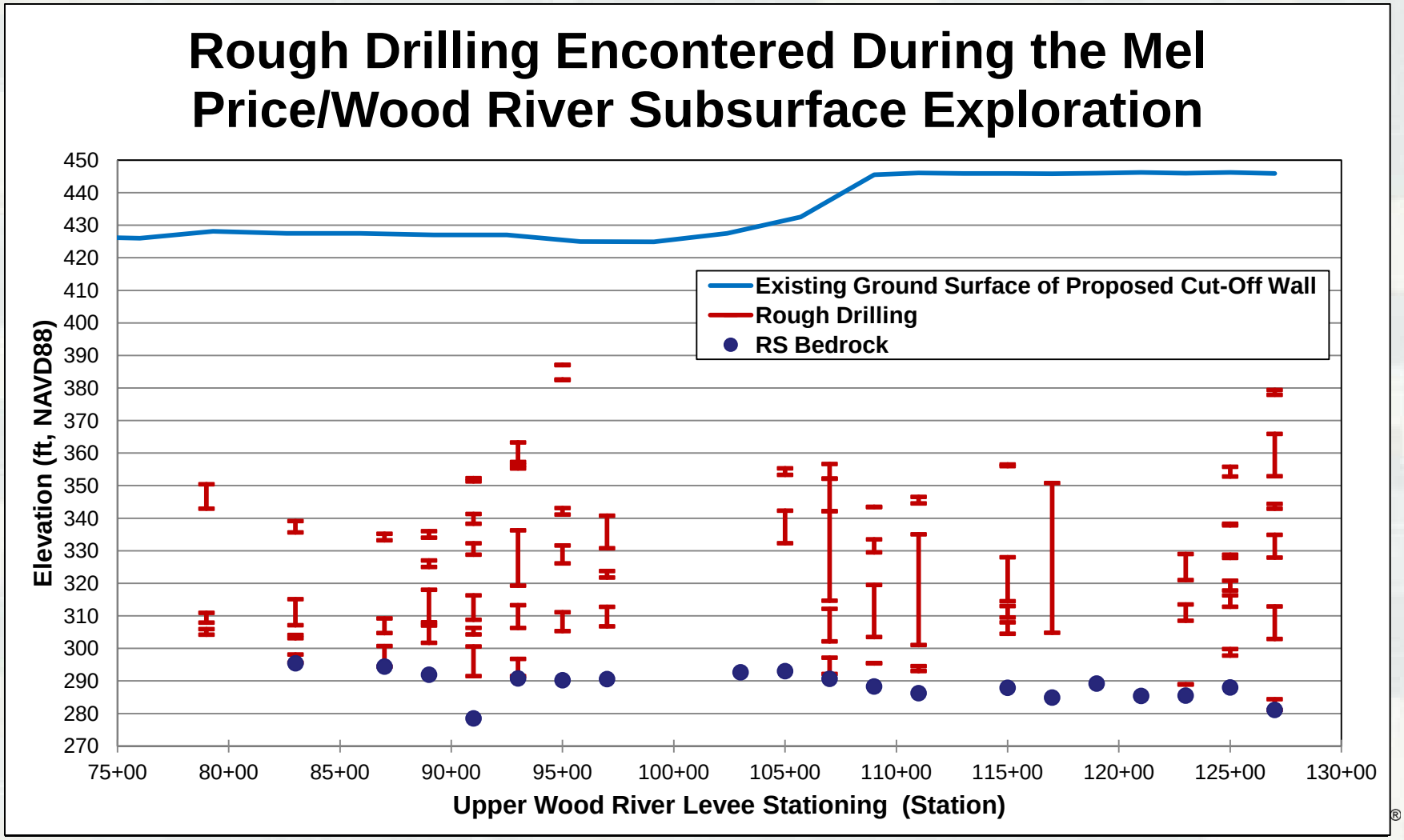
Detailed Glacial Limits
Source: U.S. Geological Survey

Rotary Drilling Circulation Losses

- **Poor circulation & fluid loss**
  - Typical 100s gallons
  - Alluvium & glacial deposits
  - Permeable cobbles & boulders
- **Total circulation loss**
  - Boring …13-MPST-136
- **Cobbles & boulder zones**
  - Most permeable
  - Greatest fluid losses



Rough Drilling Examples



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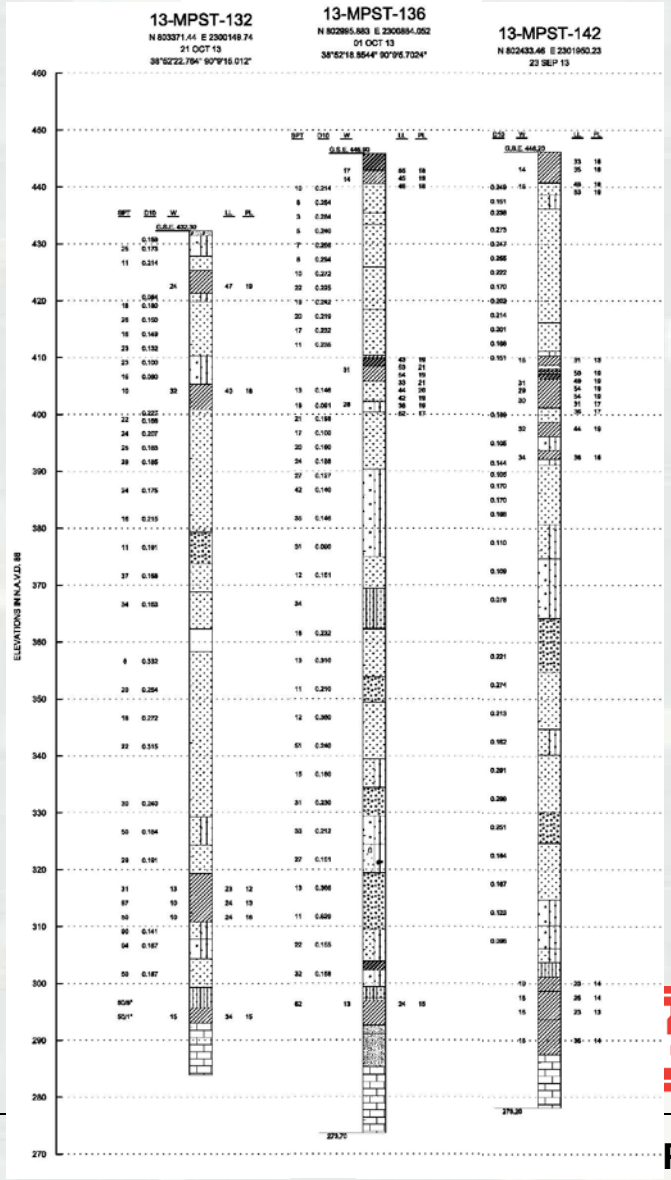
Glacial Till & Bedrock

- **Glacial Till Zones (typical)**
  - Typical thickness: 1 to 10 feet
  - Typical Depth: 115 to 155 feet
- **Bedrock Depths (typical)**
  - Riverside: 130 to 140 feet
  - Levee section: 150 to 160 feet



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RONG®

Construction Impact Examples

Mel Price L&D – Pile Driving Test

EXRTACTED PILE B-60 #4
WITH ENTRAPPED BOULDER

Construction Impact Examples

Mel Price L&D – Pile Driving

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Construction Impact Examples

Mel Price L&D – Pile Driving

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Construction Impact Examples

Mel Price L&D Pile Driving

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The Government is Investigating Using these Assumptions

- Panel Construction
- Panel Width
  - 20’ to 50’
- Panel Thickness
  - 2’ Min Required
- Cut-Off Wall Material
  - Cement-Bentonite
- 40’ Wide Riverside Berm is Sufficient Working Area
- Weight of Slurry
  - 72 pcf
- Working Platform at Existing Grade
- No Guidewall
- Tying the Cut-Off Wall:
  - 5’ into Fine-Grained Glacier Till or
  - 2’ into Competent Bedrock
- 28 Day Panel Strength
  - 50 to 100 psi
- Strength of Primary Panel before an Adjacent Secondary Panel is Excavated
  - 15 psi

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Contracting Information

- Proposed Acquisition Strategy: Unrestricted / IDIQ
- Source Selection: Lowest Price Technically Acceptable (LPTA)
- Magnitude: > $10 Million
- Joint Venture vs. Prime/Sub Relationship
- Limitation on Subcontracting: Specialty Construction 25%
- Sub-Contracting Plan Requirements
- Bonding Requirements: Bid Bond, Payment & Performance

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