

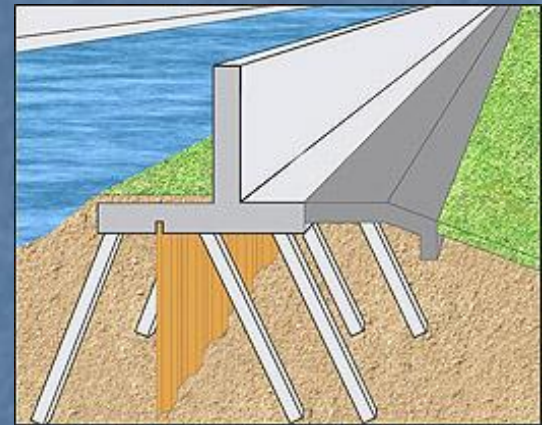
Pile Load Tests for New Orleans Storm Protection Projects

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Dan Brown and Associates, PLLC

STGEC 2010

■ Gulf Intracoastal Waterway West Closure Project

- 225-ft navigable sector gate
- 110-ft navigable sector gate
- 20,000 cfs pumping station
- Bayou aux Carpes Floodwall
- Relocated levee and tie-ins



■ LPV-145 Levee Improvement (T-walls)

- 5+ miles of T-wall

Project Roles

- Owner and Designer: U.S. Army Corps of Engineers (Team New Orleans)
- GIWW Contractor: Kiewit/Traylor Brothers JV
- LPV-145 Contractor: Kiewit/Massman/Traylor JV
- DBA worked for Kiewit Engineering Company and both JVs providing engineering support for test pile programs and other construction tasks



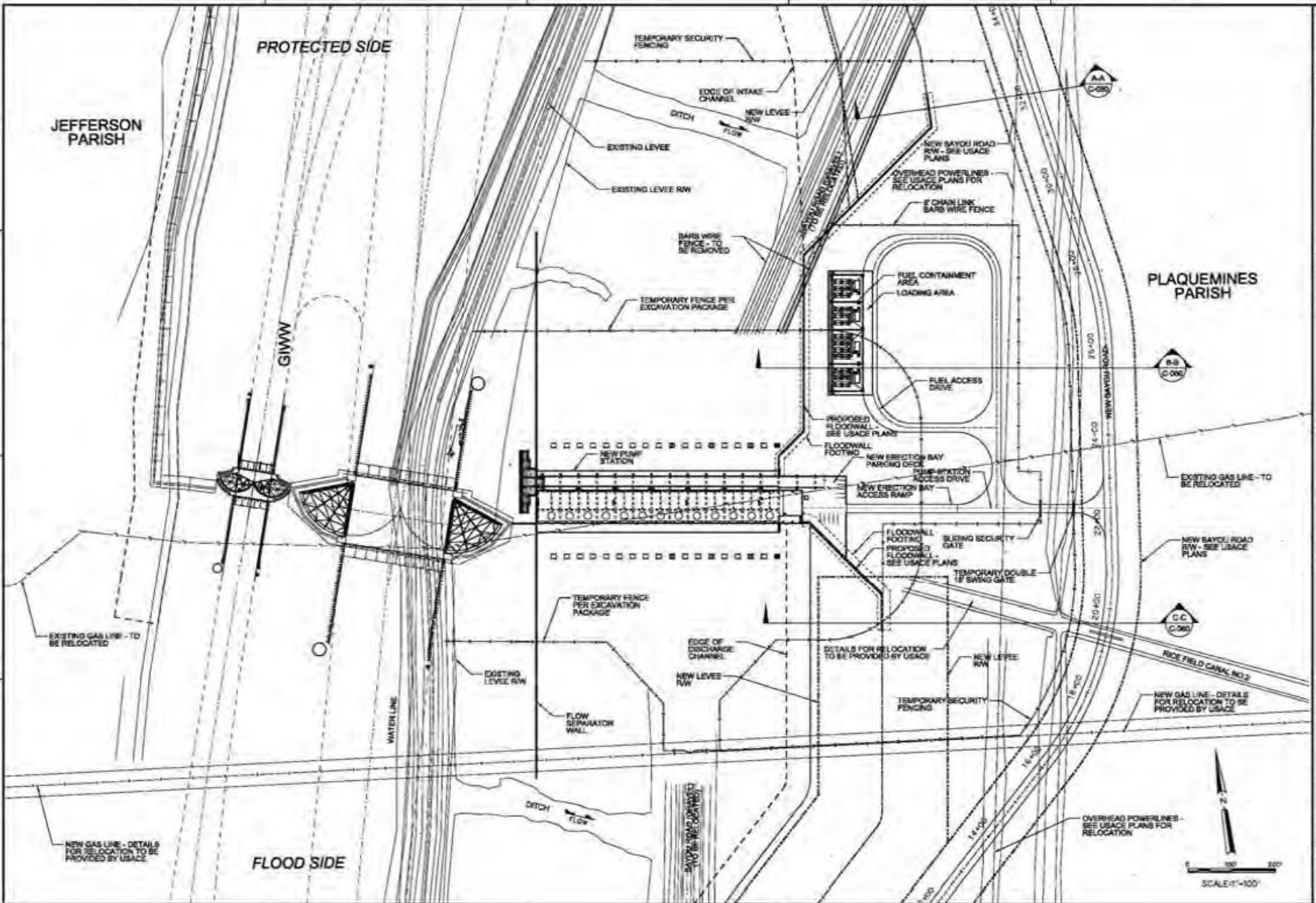
IHNC
Barrier

LPV-145
Project

Harvey
Canal

Algiers
Canal
(GIWW)

West Closure Complex



DATE	BY	CHKD	DESCRIPTION

DATE	BY	CHKD	DESCRIPTION

<p>U.S. Army Corps of Engineers MISSISSIPPI VALLEY DIVISION BARRY PLACEMIN DISTRICT</p>	
<p>Project Name Project No. Contract No. Date</p>	<p>Sheet No. of Sheets Date</p>
<p>Author Engineer Checker Draftsman</p>	<p>Scale Date</p>
<p>OVERALL SITE PLAN</p>	

SHEET IDENTIFICATION
C-020



Levee

Bayou Rd

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29°48'56.35" N 90°04'01.76" W elev 0 m

GIWW-WCC Test Pile Program

- 33 test piles
- Static Tests – axial, tension, lateral
- Dynamic Tests – Pile Driving Analyzer (PDA) during driving and restrikes over time on the load test piles
- Pile Types:
 - Open-ended pipe piles (24 total)
 - Dia = 18", 24", 30" 54"
 - L = 120' to 180'
 - Concrete piles (9 total)
 - 18" square; L = 102 to 134





NEW LIFE ENVIRONMENTAL SYSTEMS
304-940-0000

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304-940-0000

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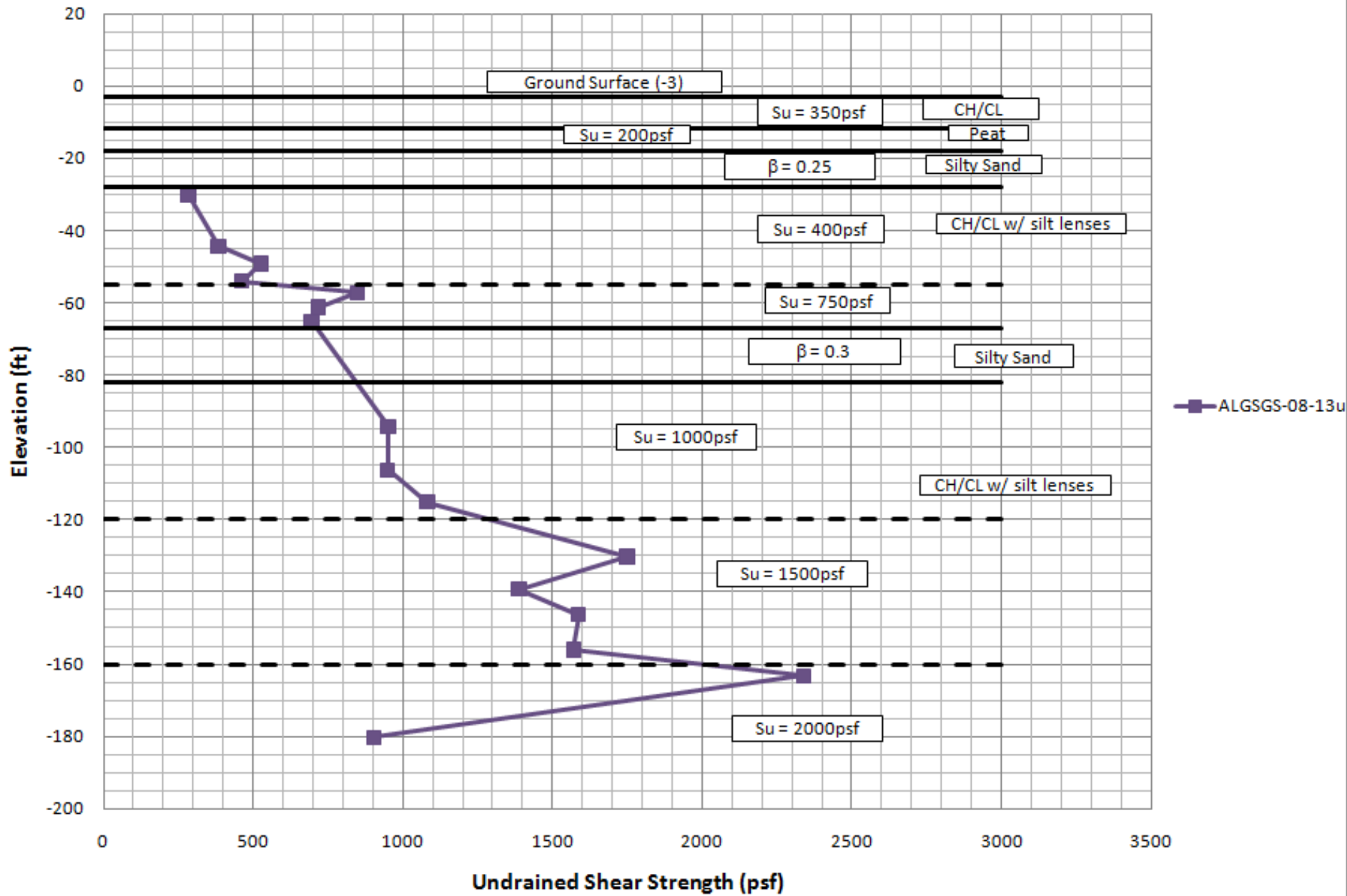
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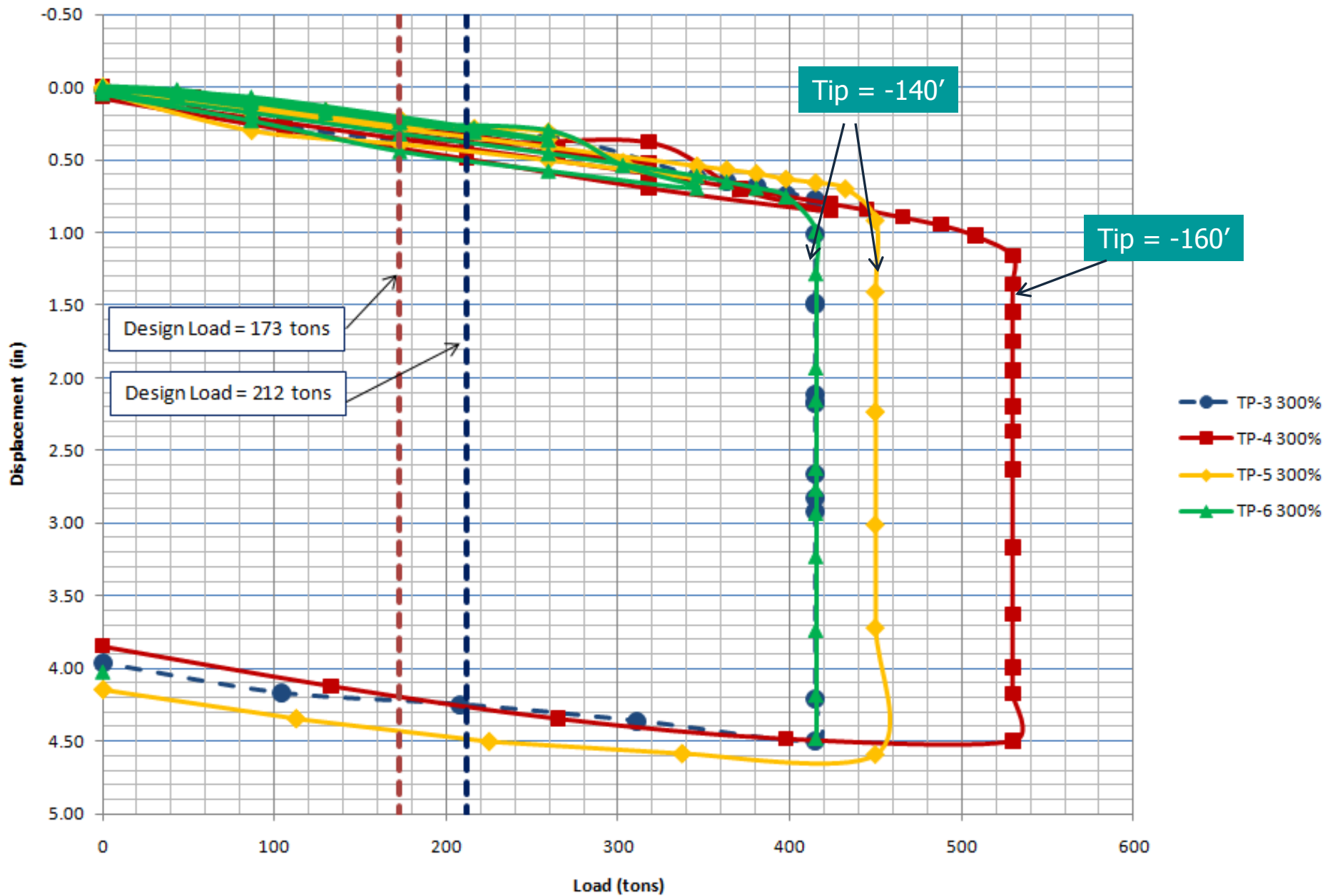
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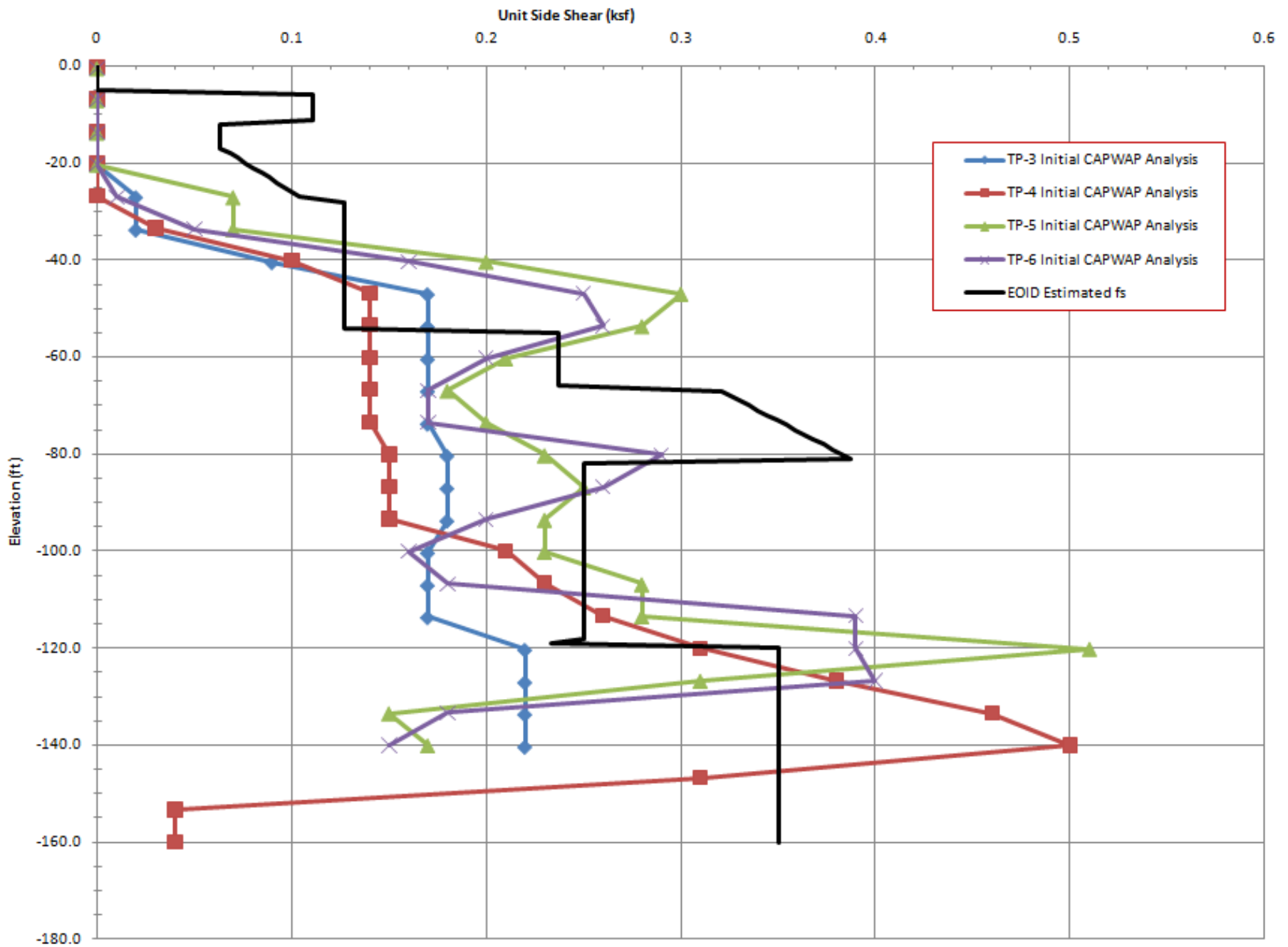
GIWW Soil Profile - Test Site 1



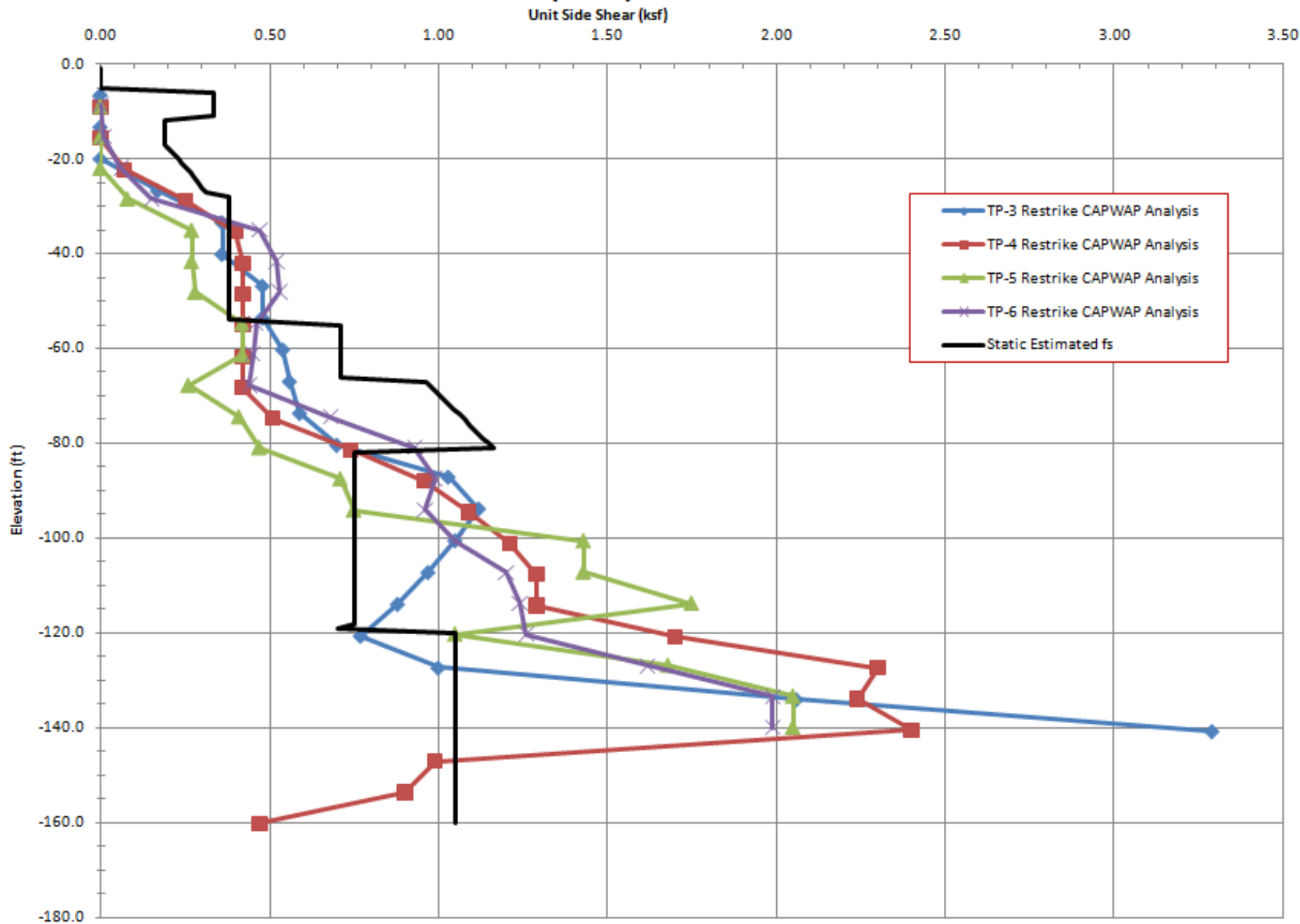
Displacement vs. Load



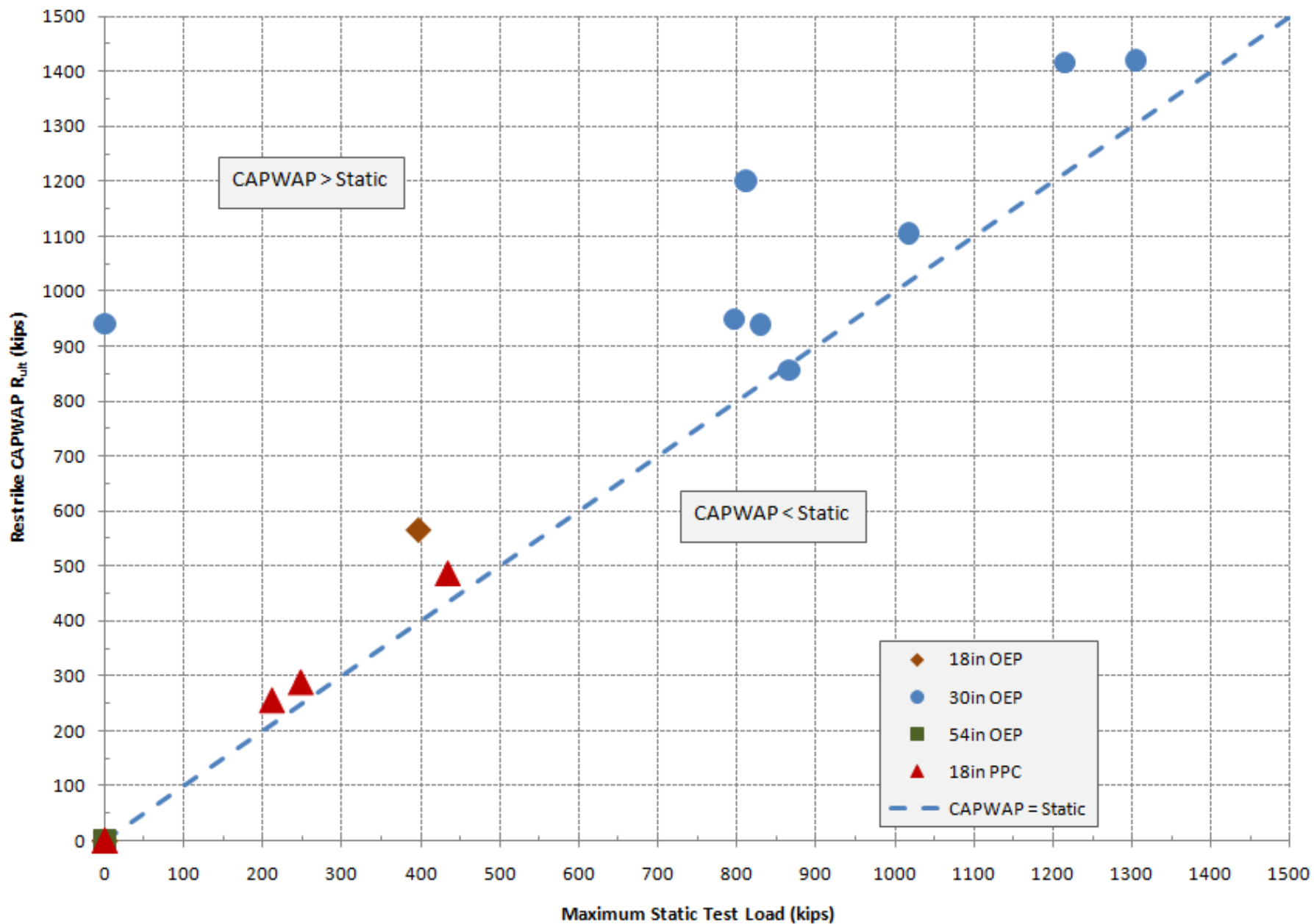
Test Site 1 EOID CAPWAP vs Estimated Unit Side Shear



Test Site 1 Restrike (static) CAPWAP vs Estimated Unit Side Shear



CAPWAP Restrike R_{ult} vs. Max. Static Load



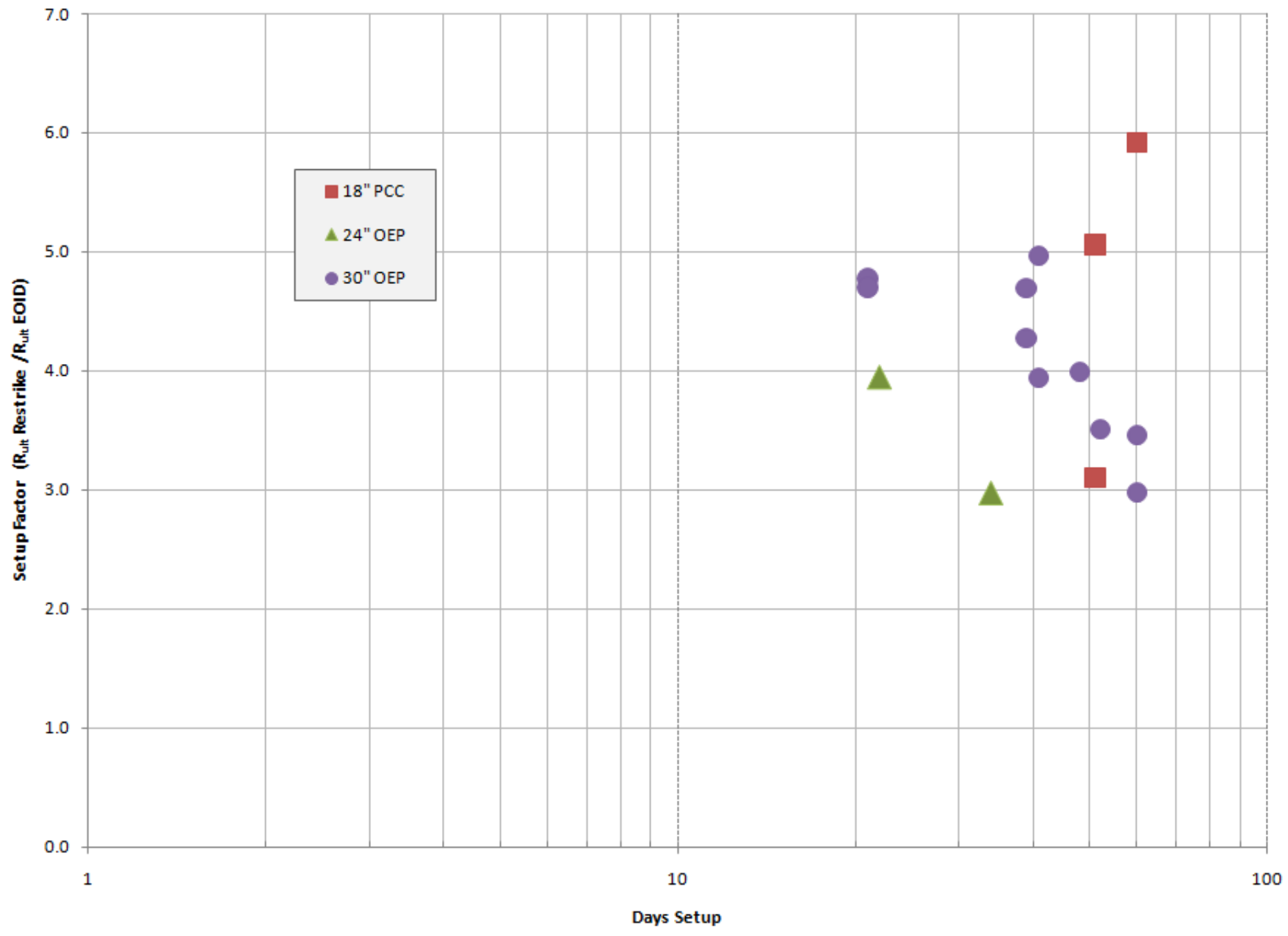




Photo: By Boh Brothers, courtesy of Kiewit



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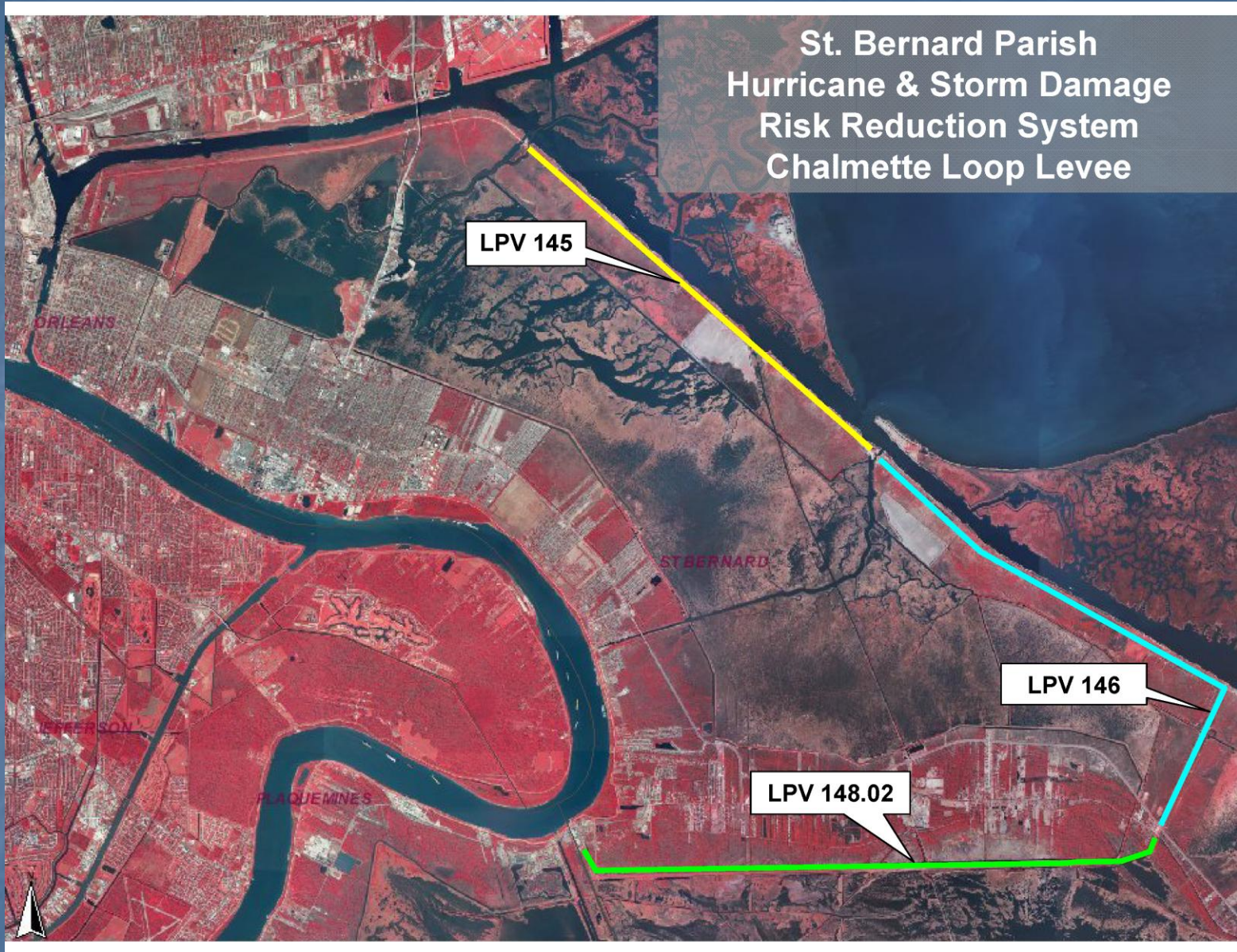


Photos: USACOE Team New Orleans
Photostream on flicker.com

LPV-145 Test Pile Program

- 4 Test Sites
- 11 test piles (axial and tension)
- 6 indicator piles (dynamic testing)
- HP 14x73, HP14x89, 24" Pipe Piles
 - Lengths 95' to 110' (planned)
- Restrikes on indicator piles, not test piles

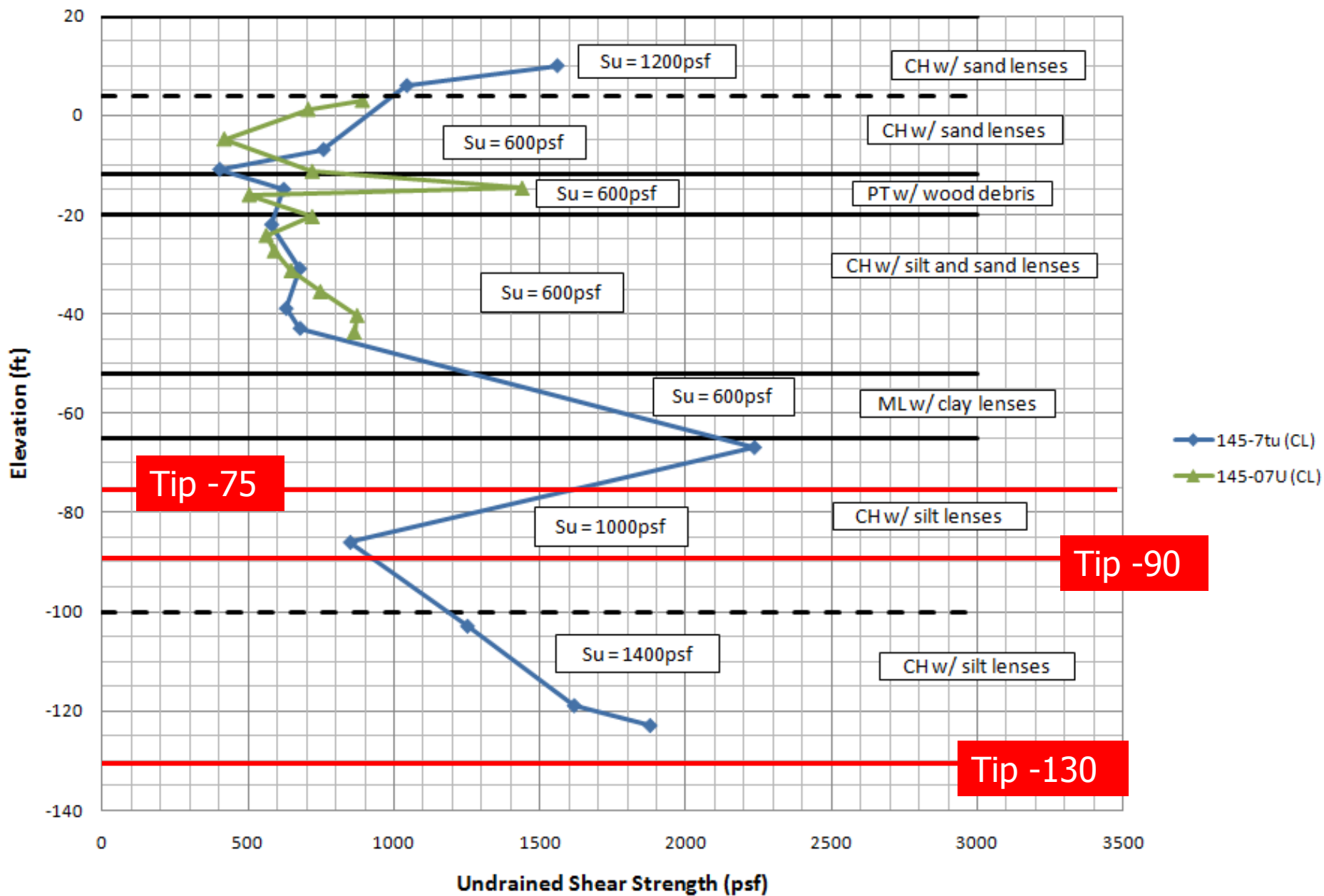
St. Bernard Parish
Hurricane & Storm Damage
Risk Reduction System
Chalmette Loop Levee





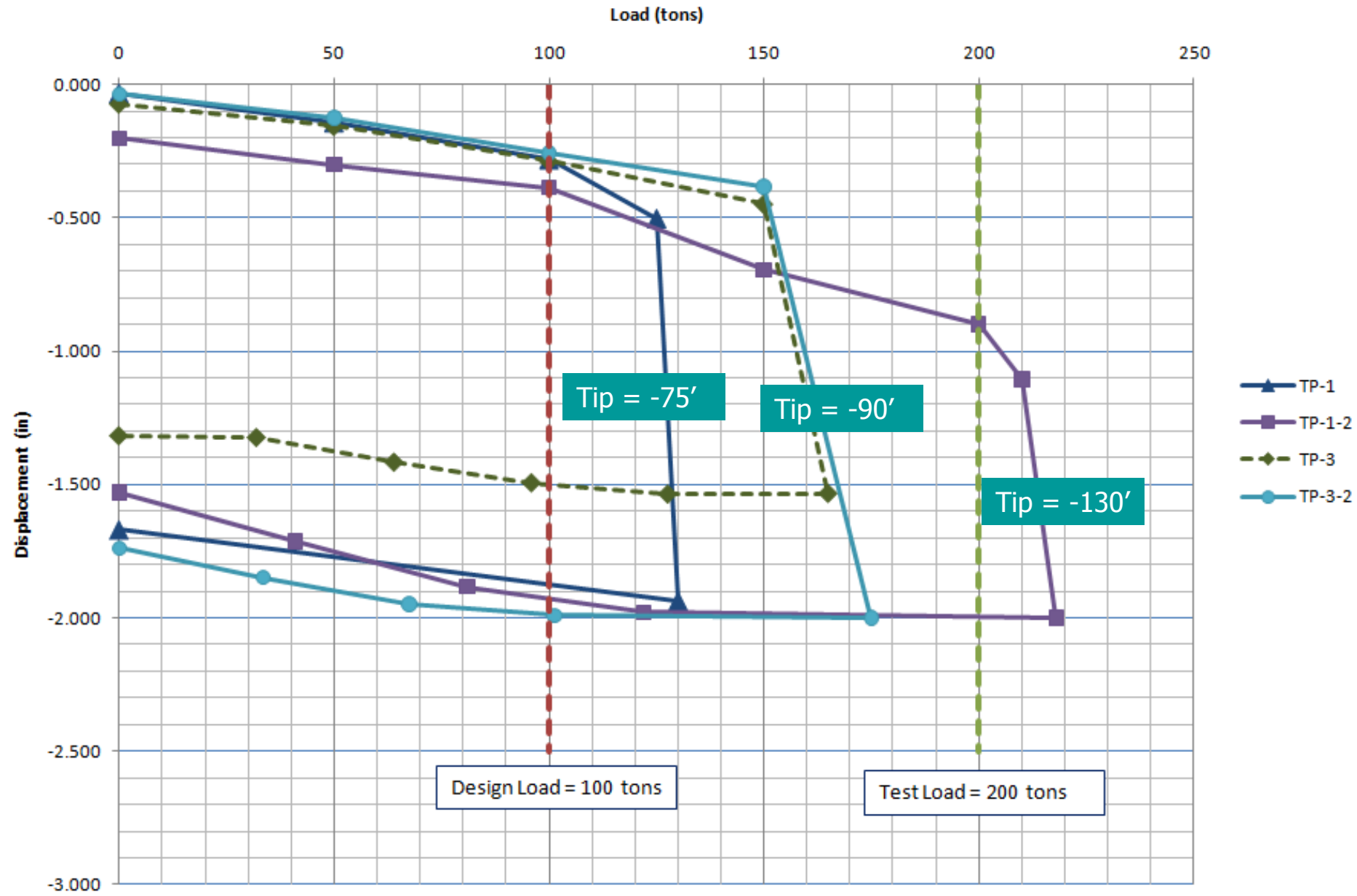


LPV - 145 Test Piles (Test Site 1)



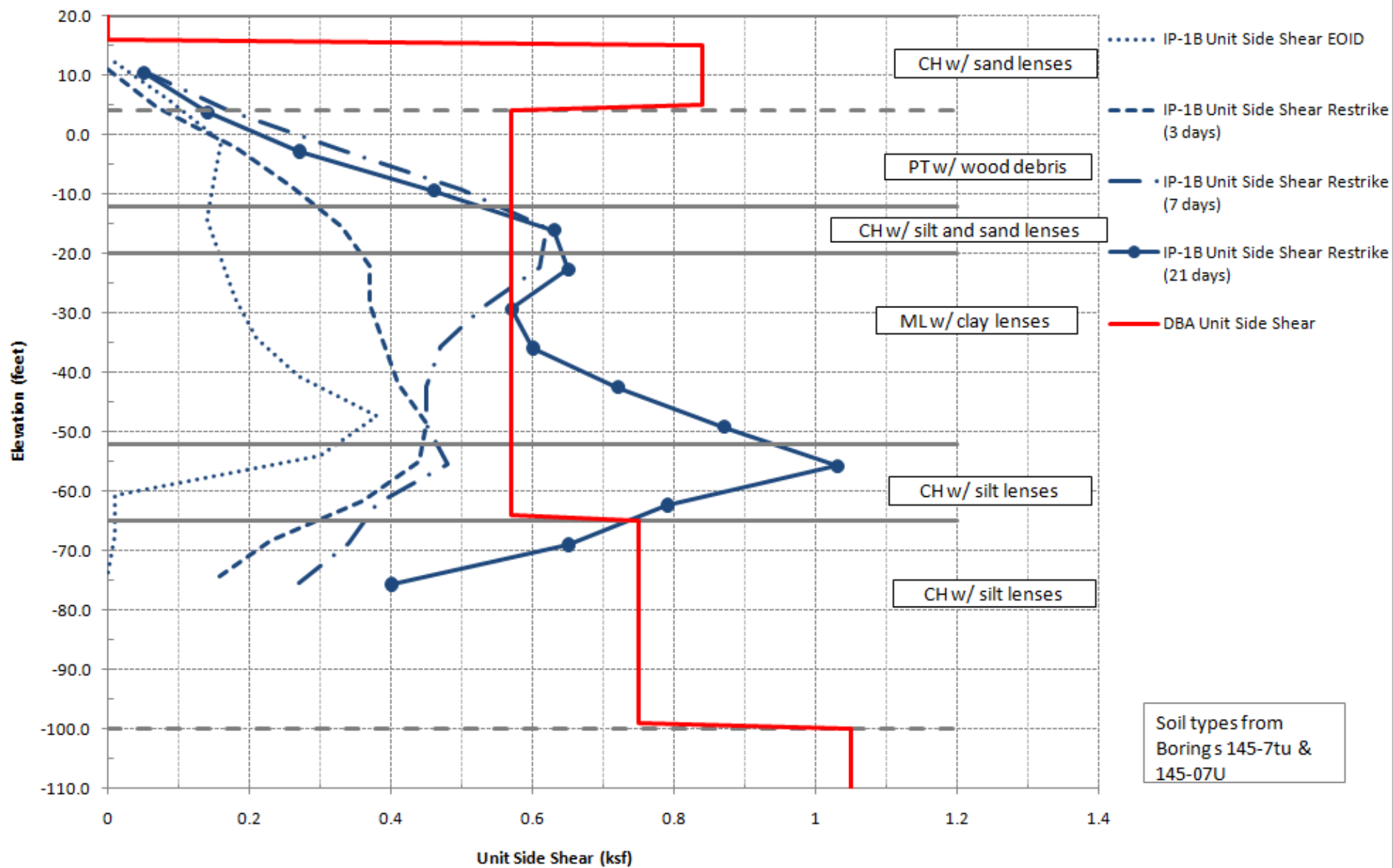
LPV-145 - Test Site 1

Compression Test Displacement vs. Load

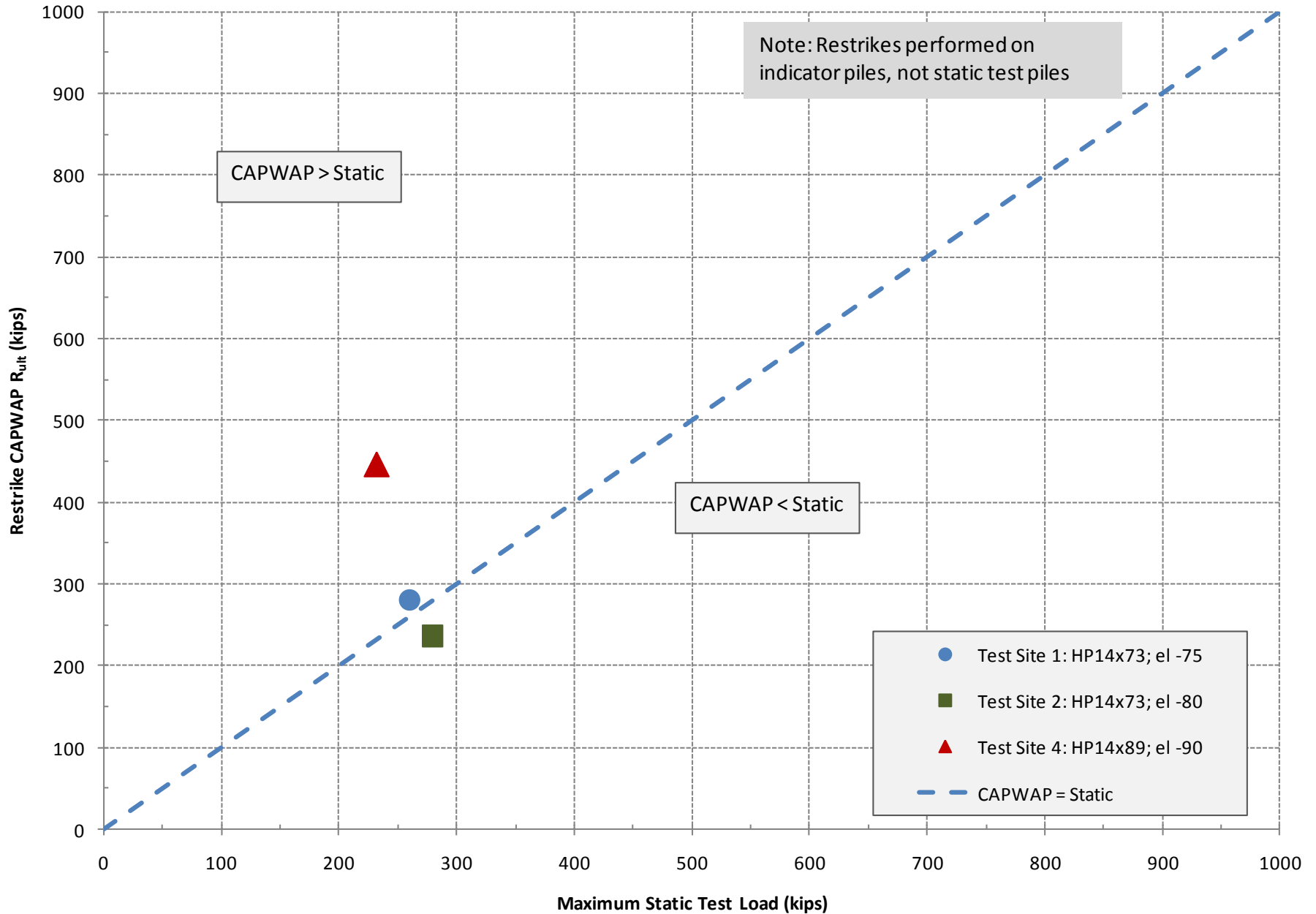


LPV-145 - Test Site 1

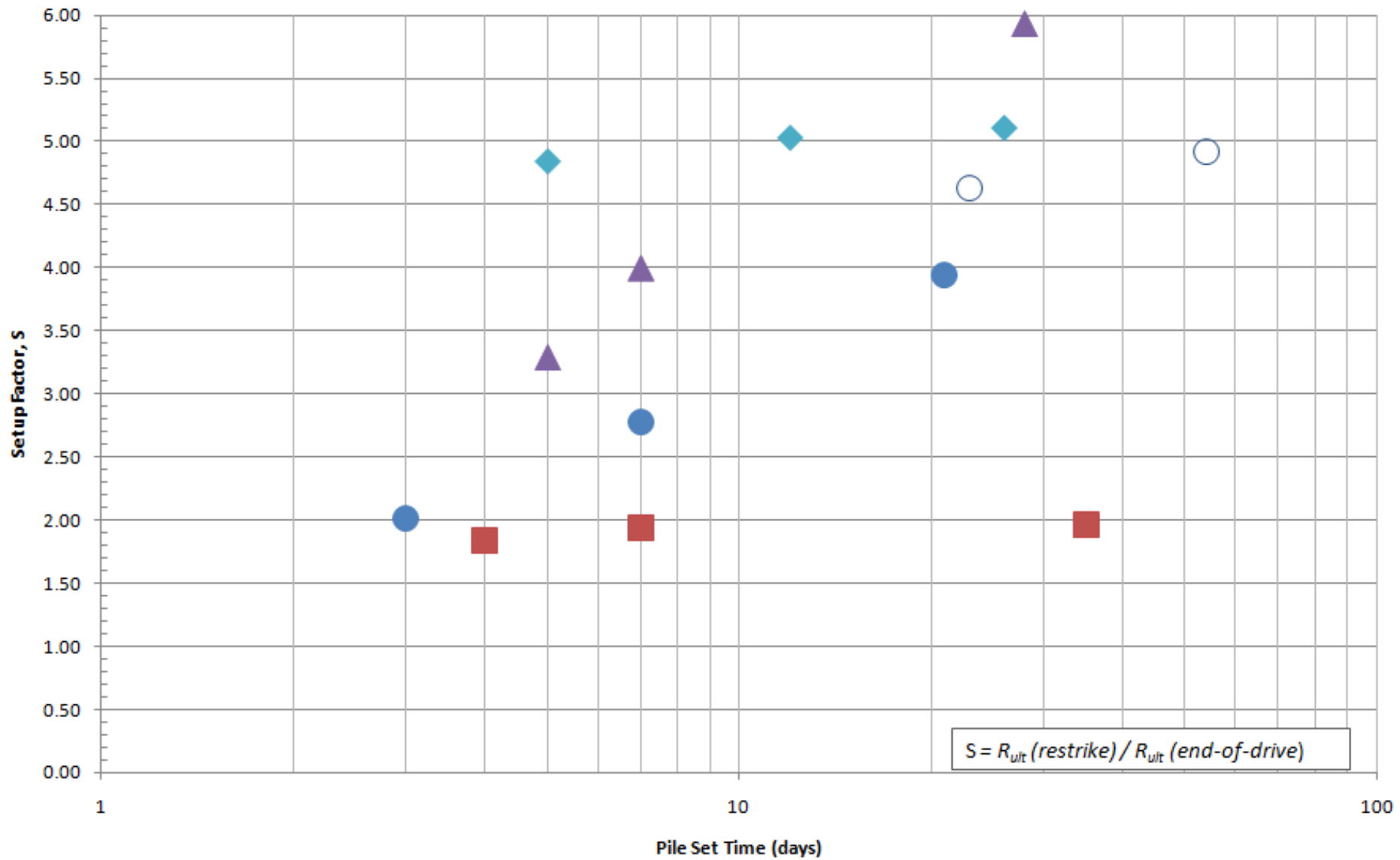
Unit Side Shear vs. Elevation



CAPWAP Restrike R_{ult} vs. Max. Static Load

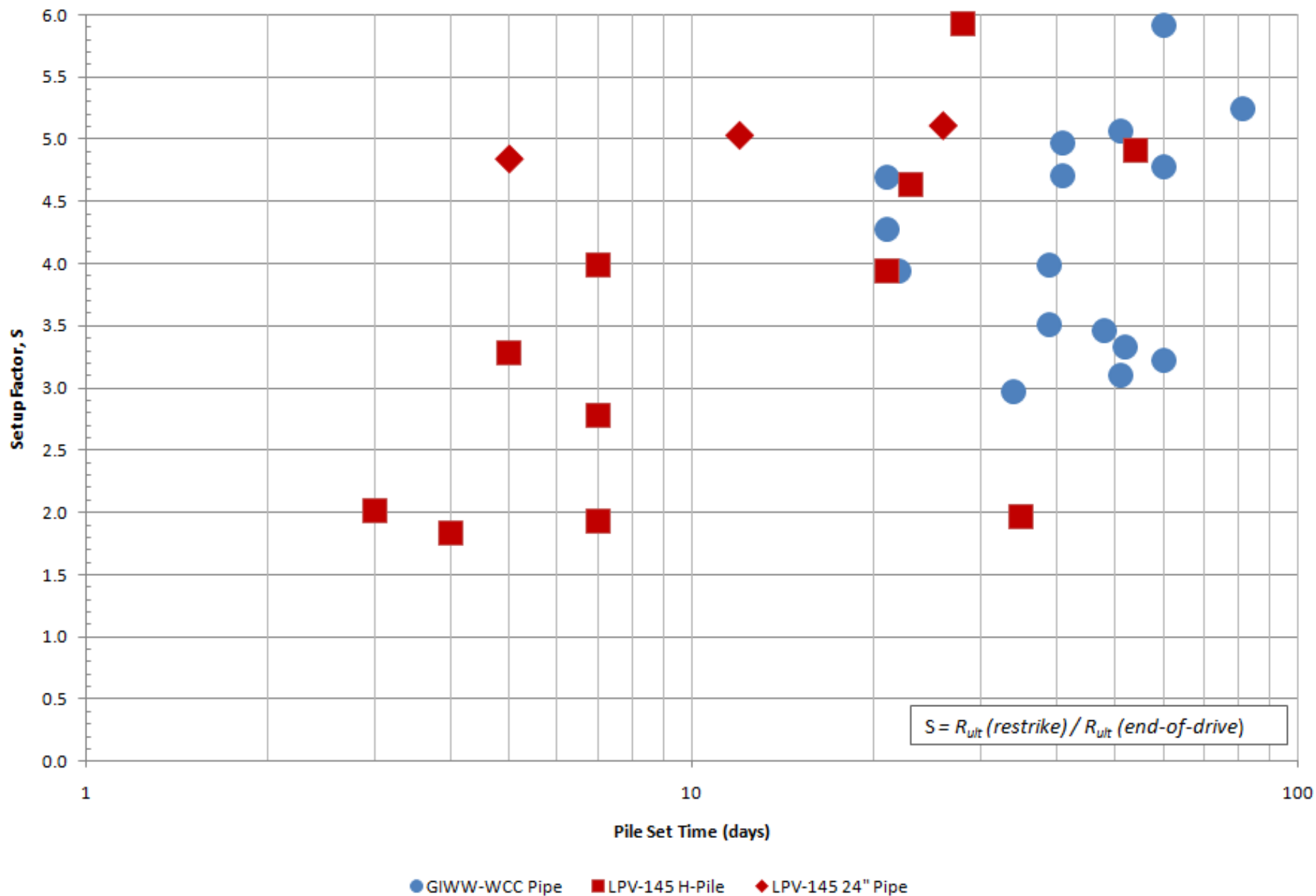


LPV-145 - Pile Setup - All Sites



- IP-1B - HP 14x72 (Test Site 1 - Dynamic)
- TP-3-2 - HP 14x72 (Test Site 1 - Static)
- IP-2 - HP 14x72 (test Site 2 - Dynamic)
- ▲ IP-6 - HP 14x89 (Test Site 4 - Dynamic)
- ◆ IP-5 - 24" Pipe Pile (Test Site 4 - Dynamic)

LPV-145 and GIWW-WCC - Pile Setup - All Sites



Photos: USACOE Team New Orleans Photostream on flicker.com



Questions?

