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Fayetteville Outer Loop Extension Project Location

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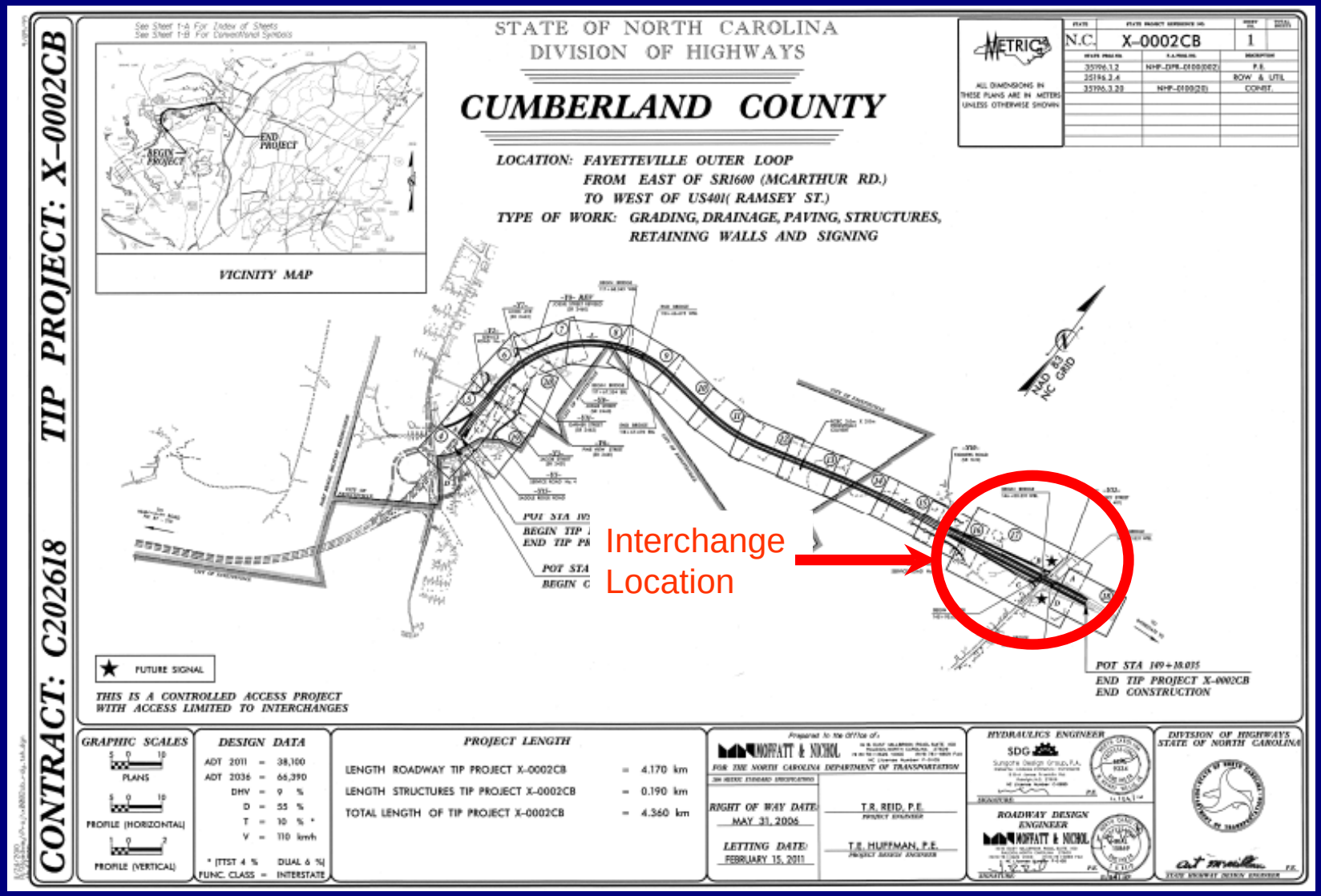

Single Point Urban Interchange (SPUI) Location

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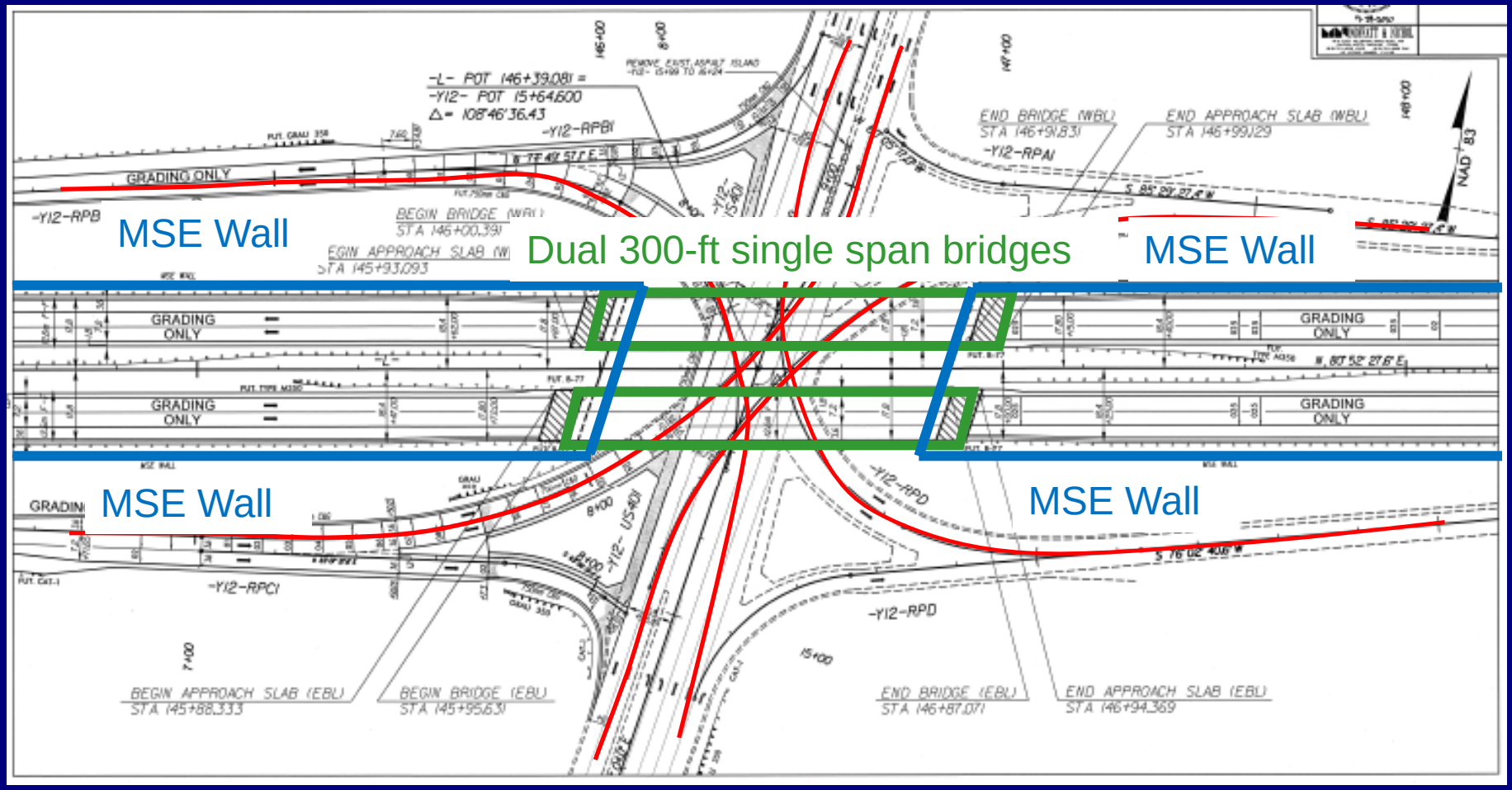

Single Point Urban Interchange (SPUI) Layout

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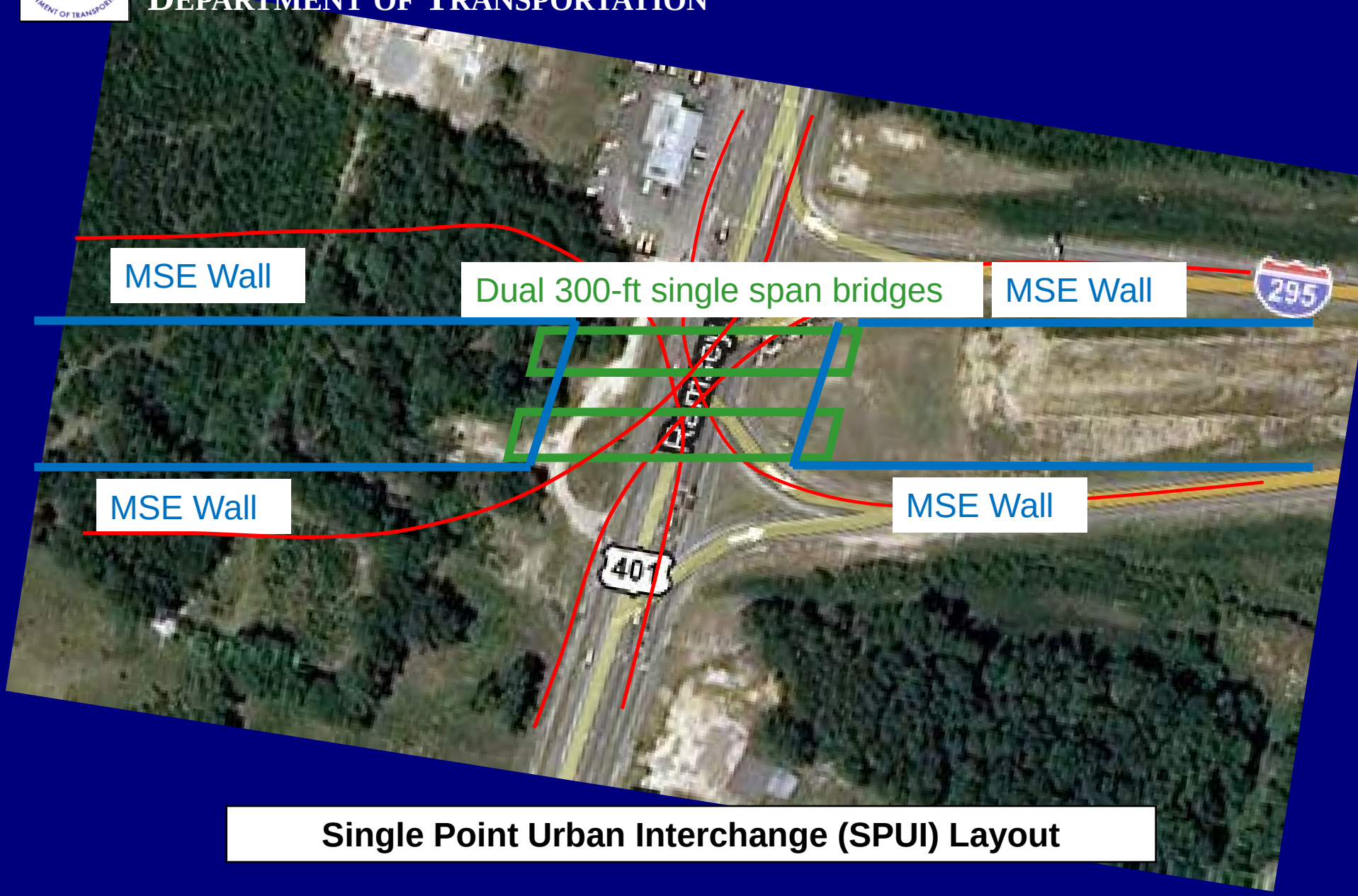

Single Point Urban Interchange (SPUI) Layout

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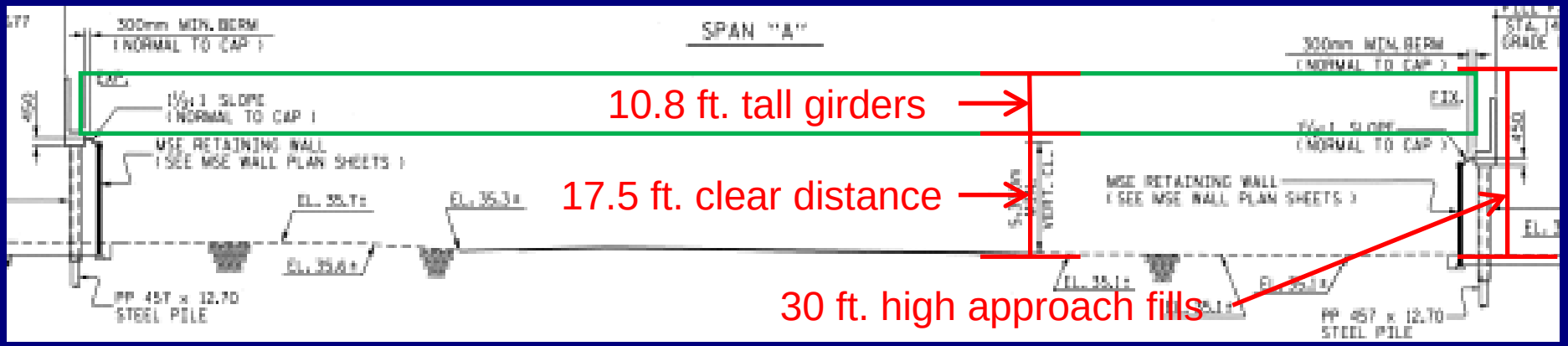
Dual 300-ft single span bridges



Single Point Urban Interchange (SPUI) Bridge

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Single Point Urban Interchange (SPUI) Bridge

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Single Point Urban Interchange (SPUI) Bridge

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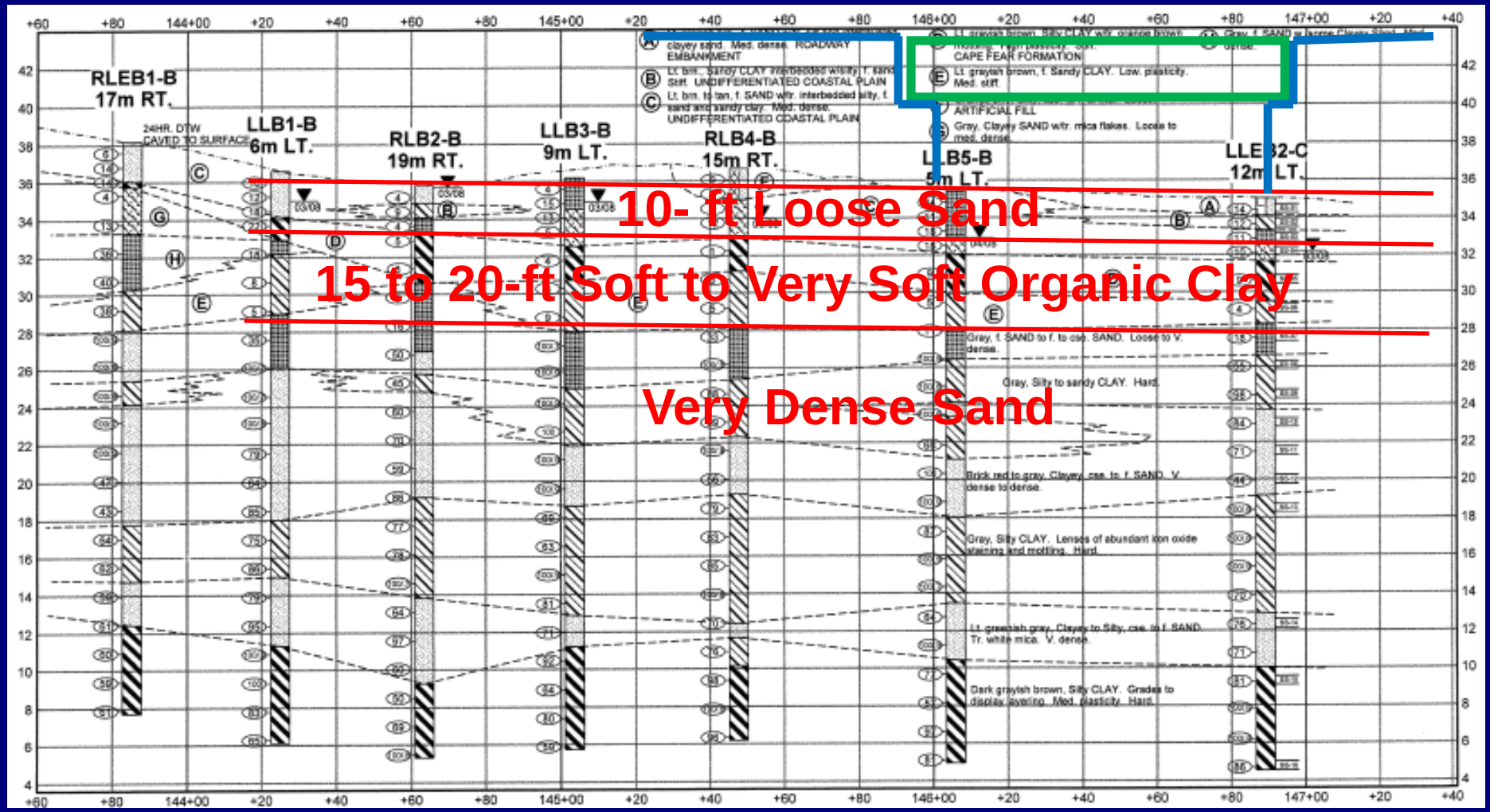

Subsurface Conditions Below Approaches

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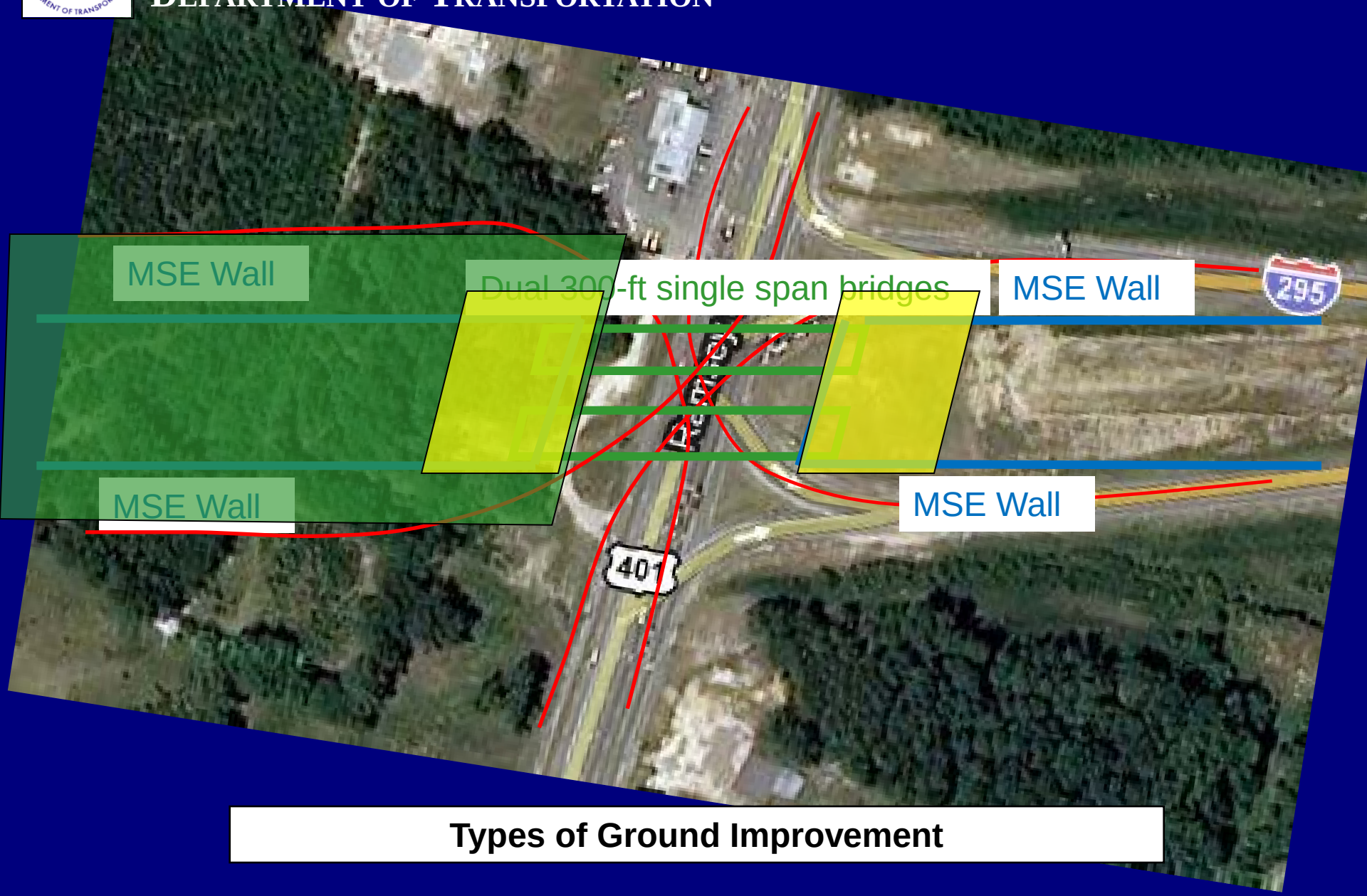

Types of Ground Improvement

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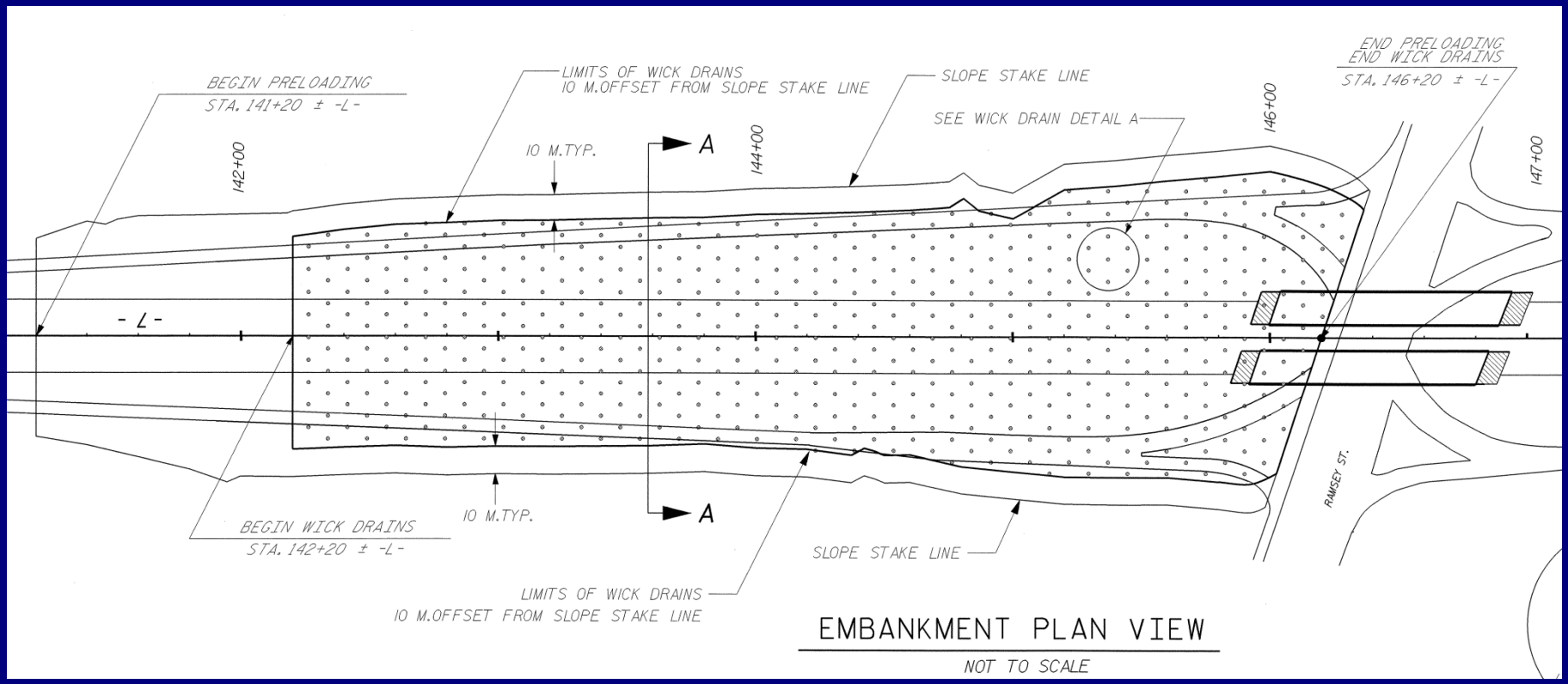
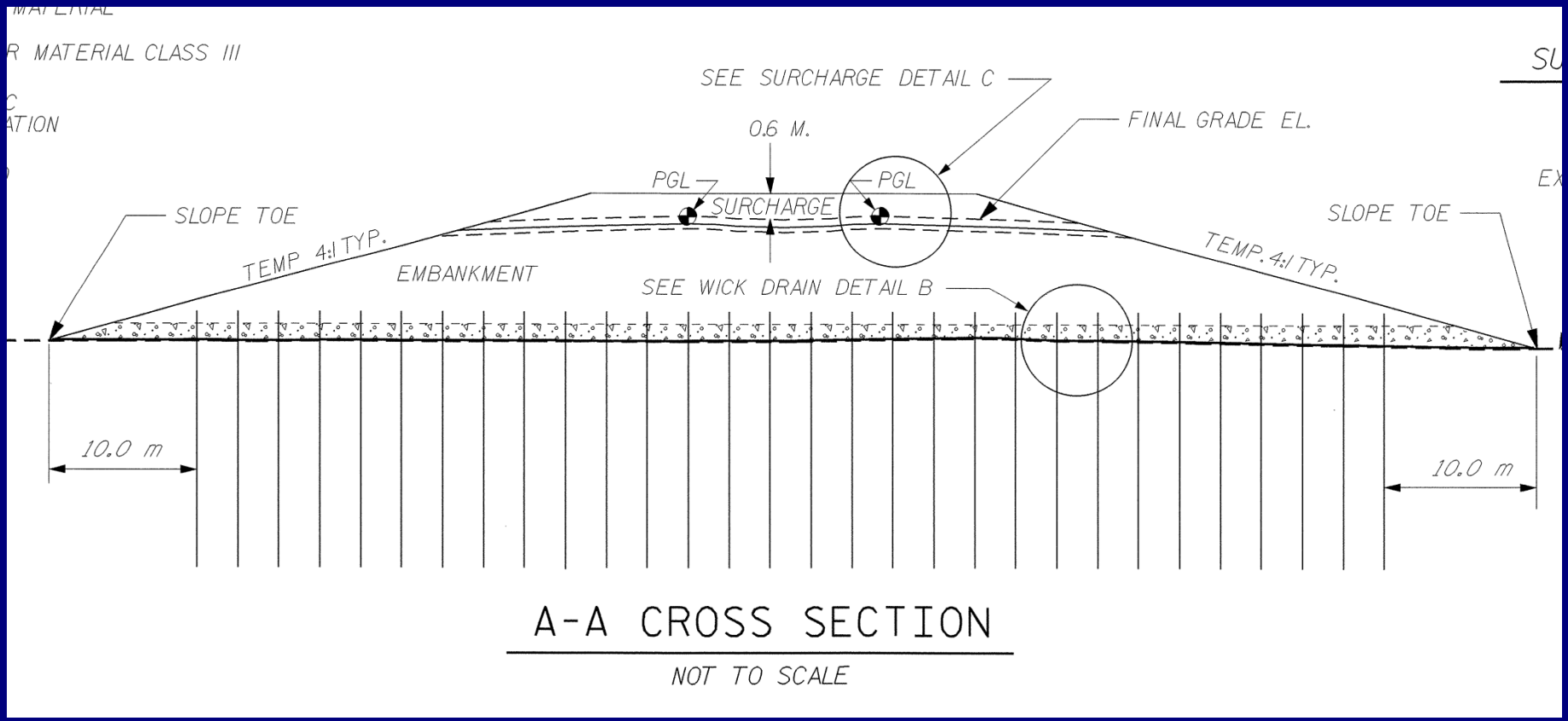


Limits of Wick Drains and 11 Month Surcharge



Limits of Wick Drains and 11 Month Surcharge

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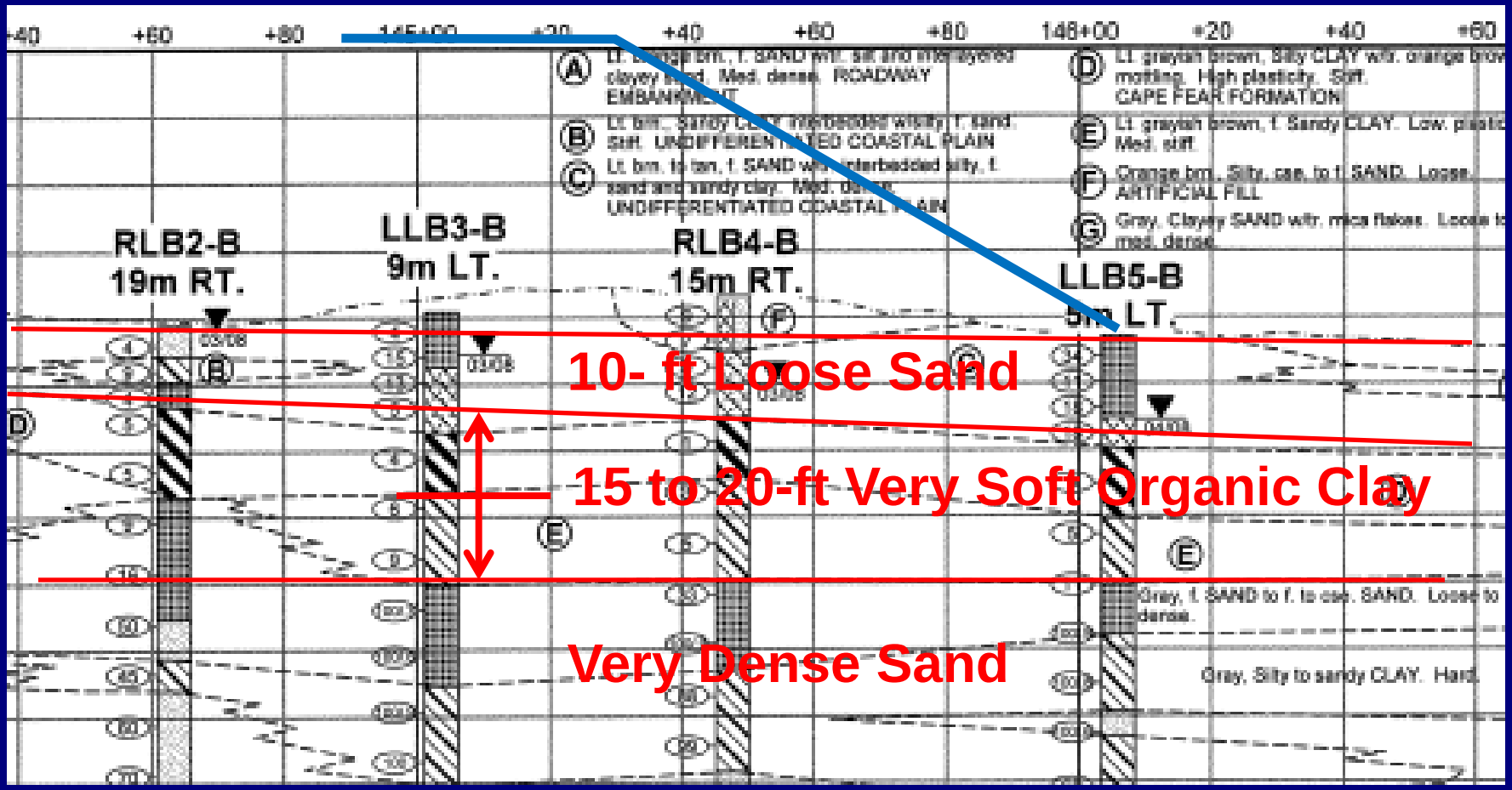

90% of Settlement expected to take 2 to 5 years – 10 to 28 inches total

Traditional Time Rate Consolidation

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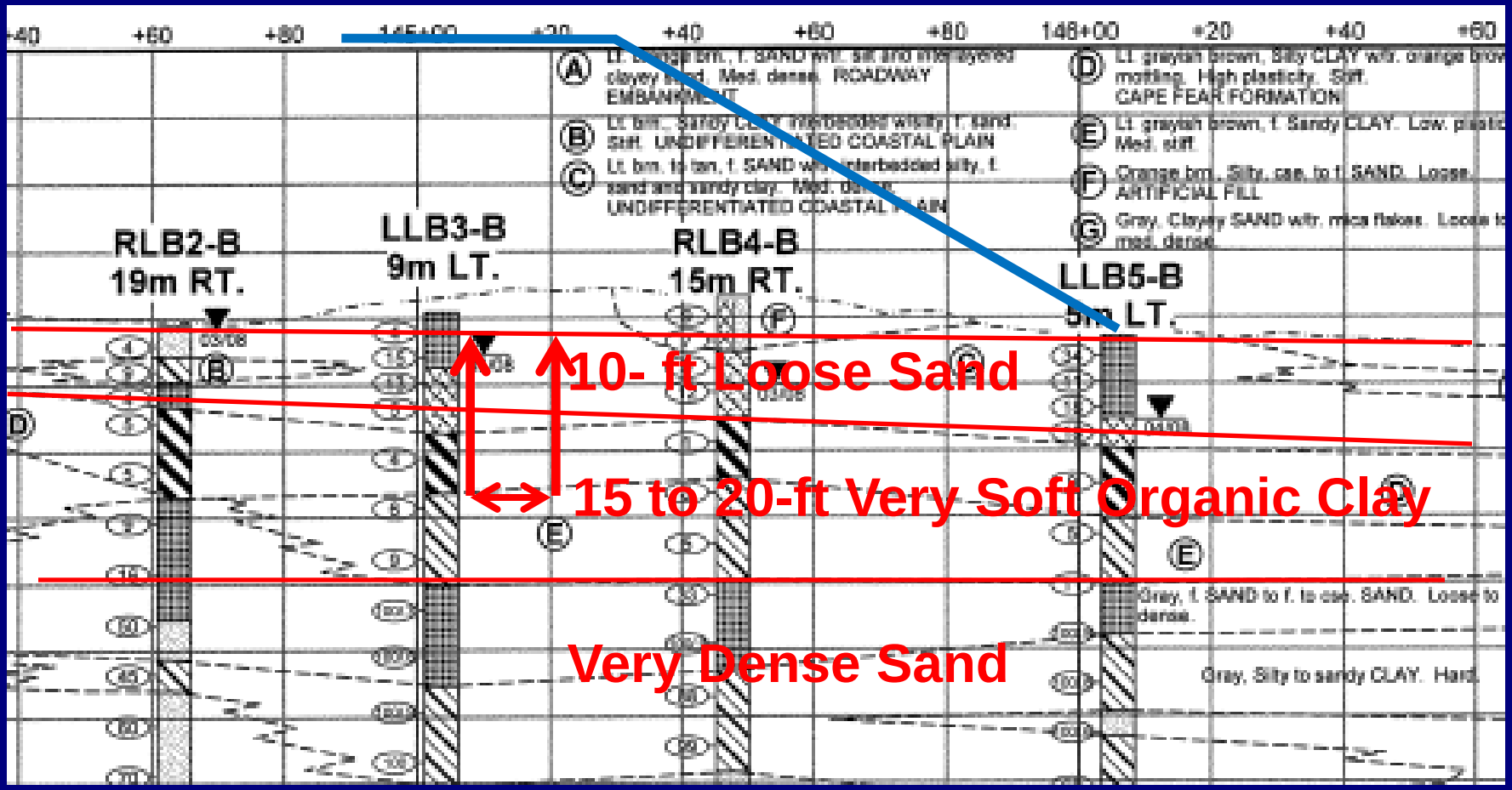

90% of Settlement expected to take 11 months – still 10 to 28 inches total

Wick Drain Consolidation

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Wick Drain Installation

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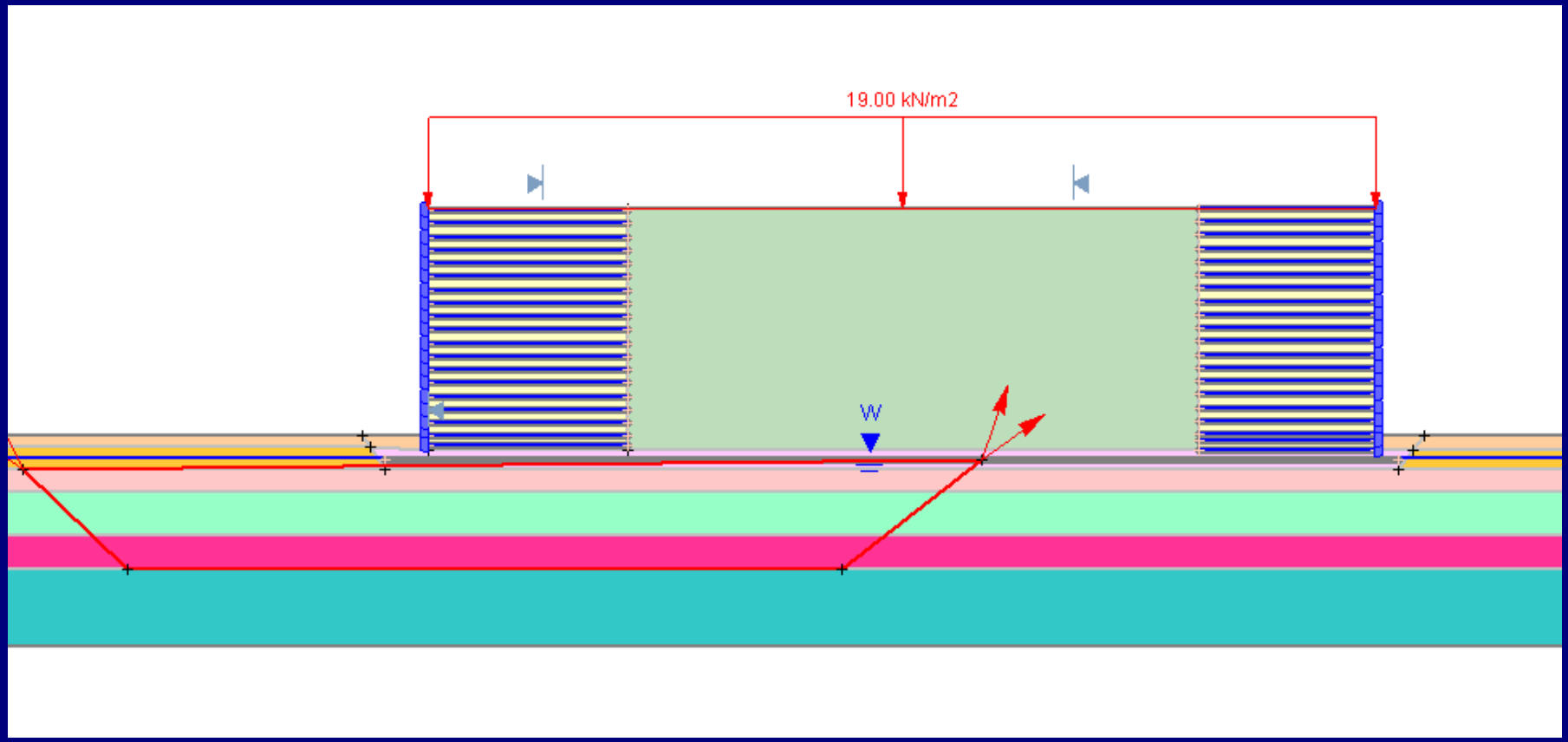

Global Stability of MSE Walls

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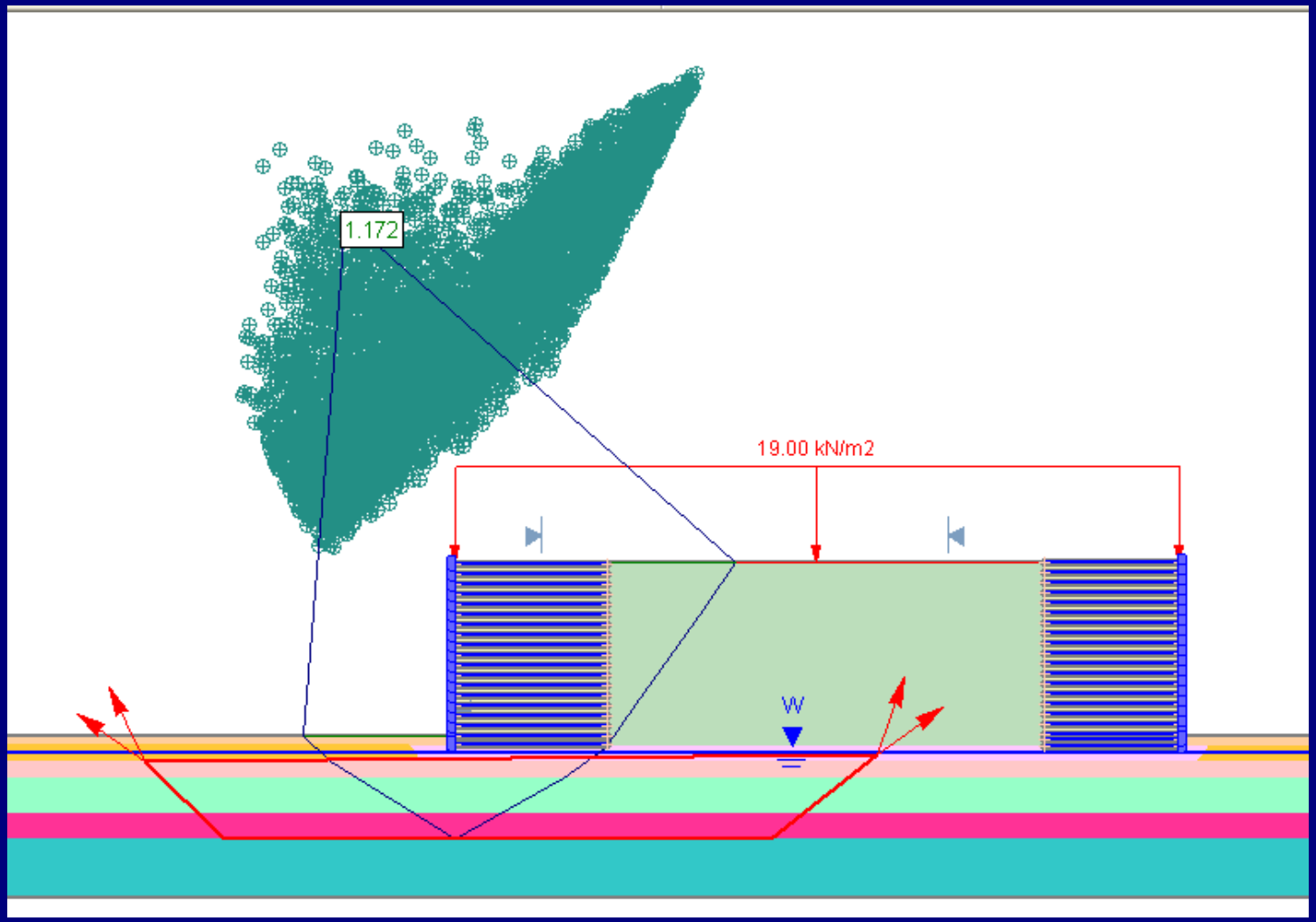
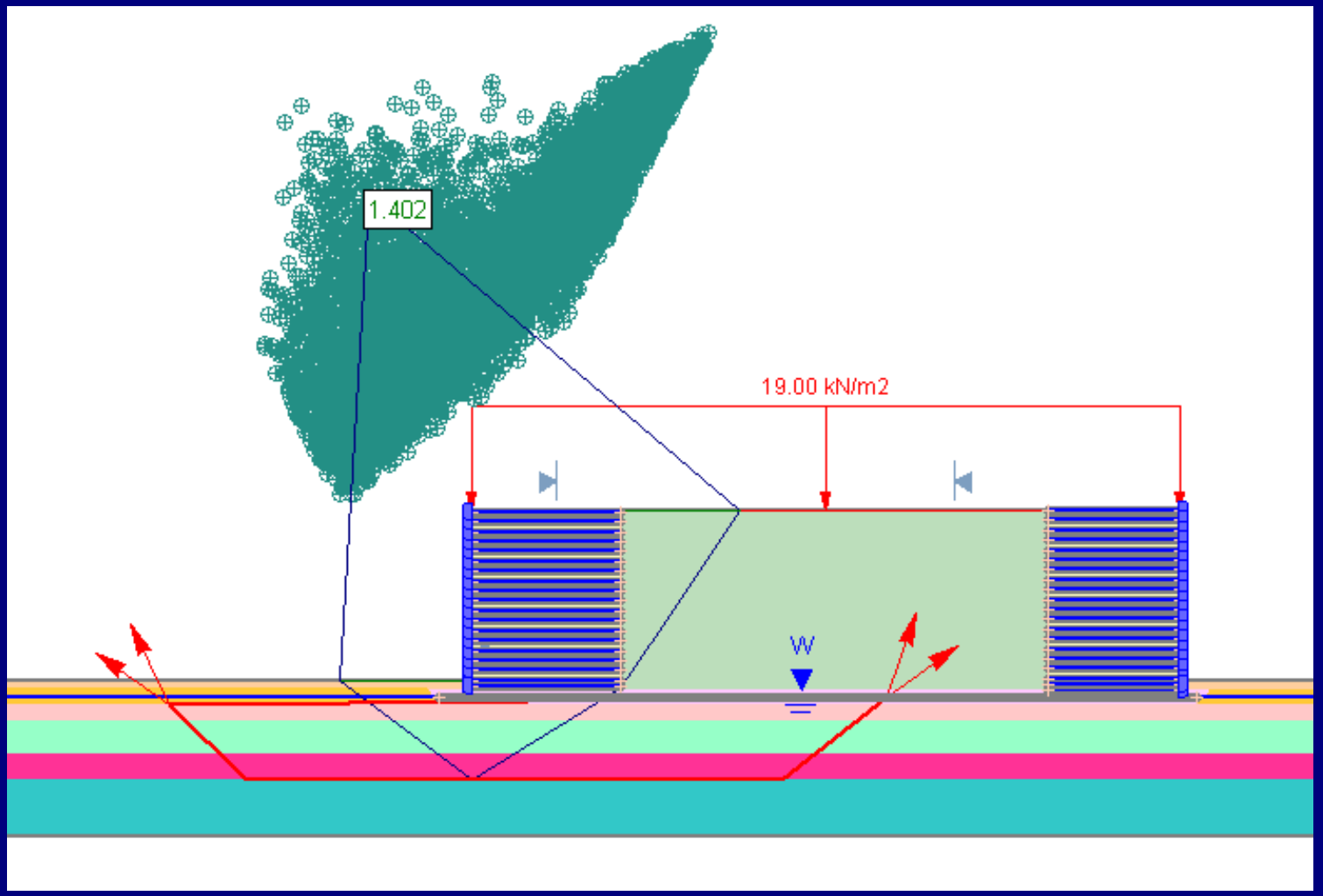


Unreinforced Global Stability



Local Bearing Capacity and Lateral Squeeze still an issue

High Strength Fabric Reinforced Global Stability

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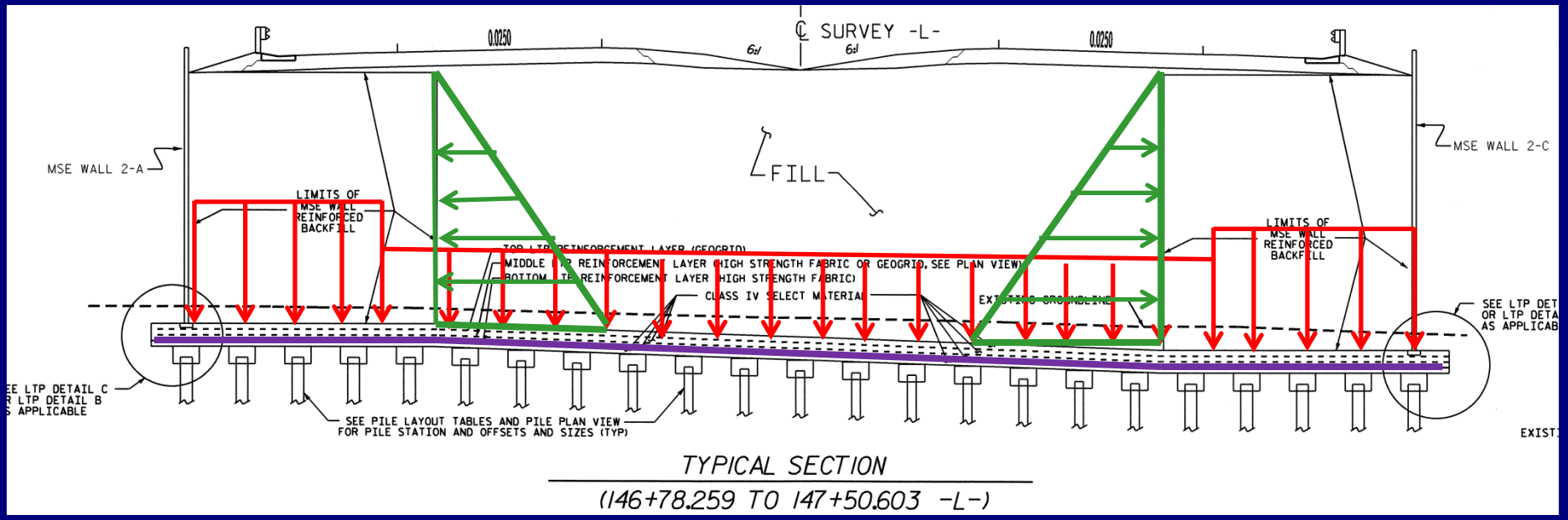

Section through Pile Supported MSE Walls

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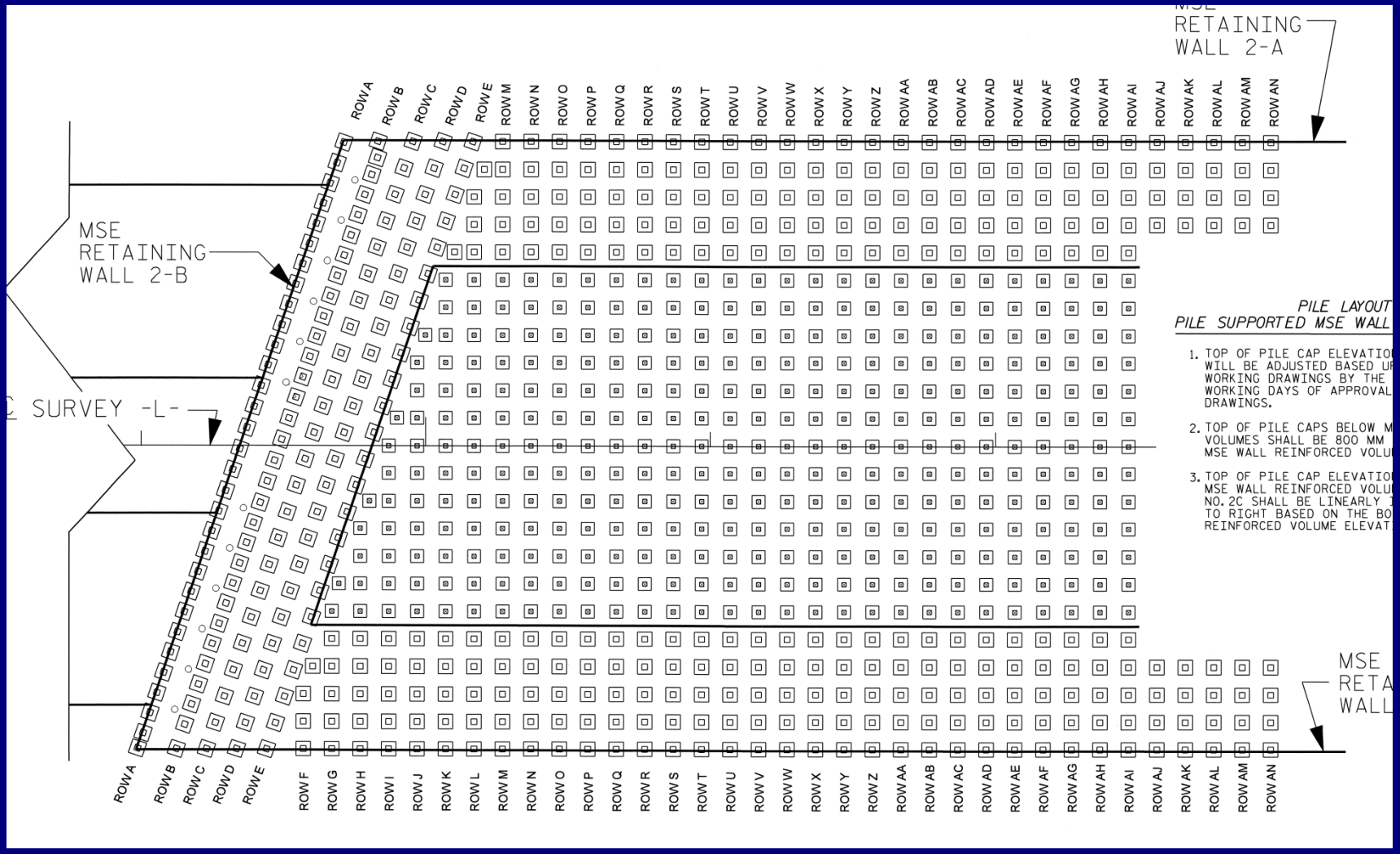
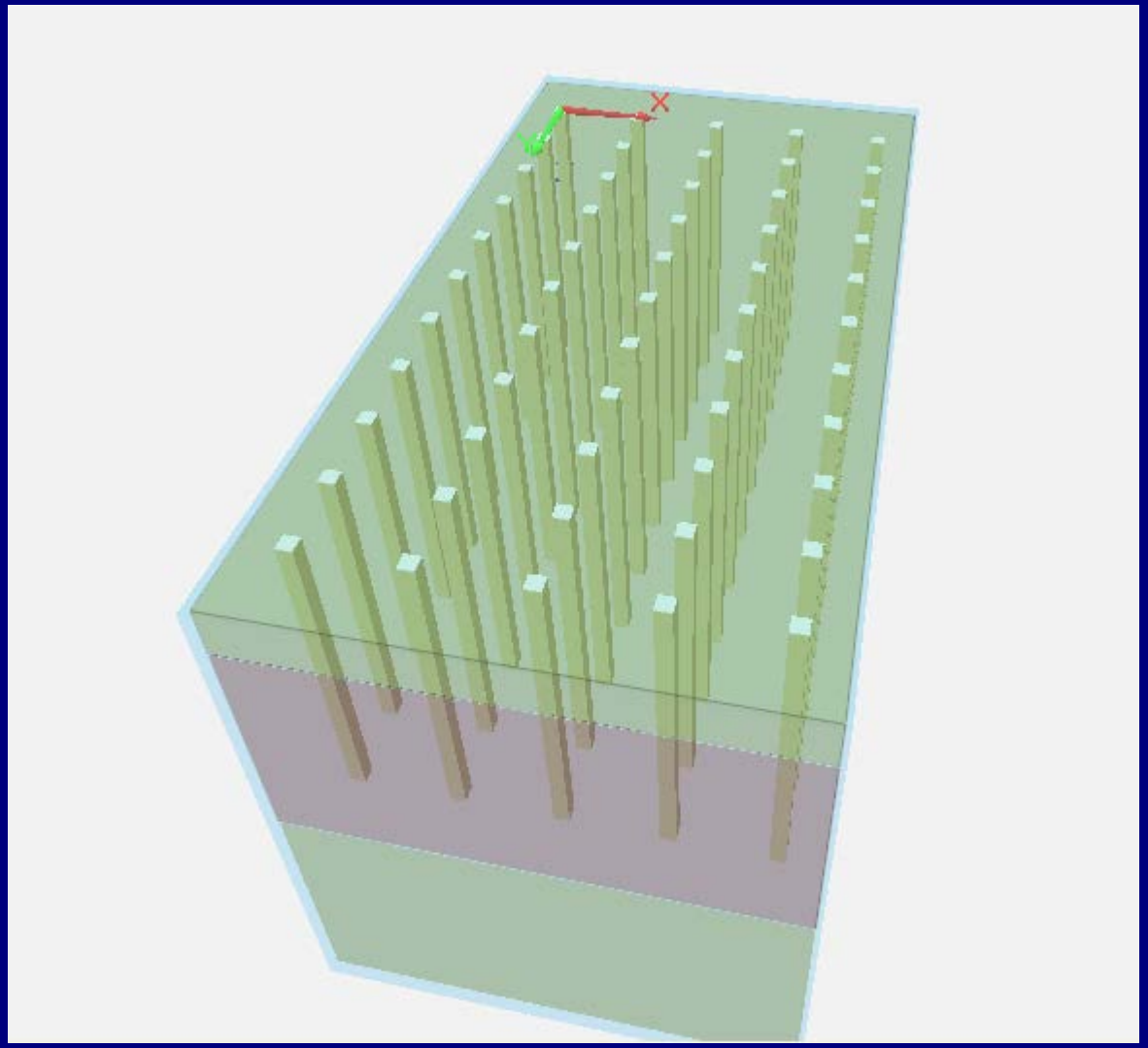


Plan View of Pile Supported MSE Walls



FB-Pier Model of Piles Below MSE Wall

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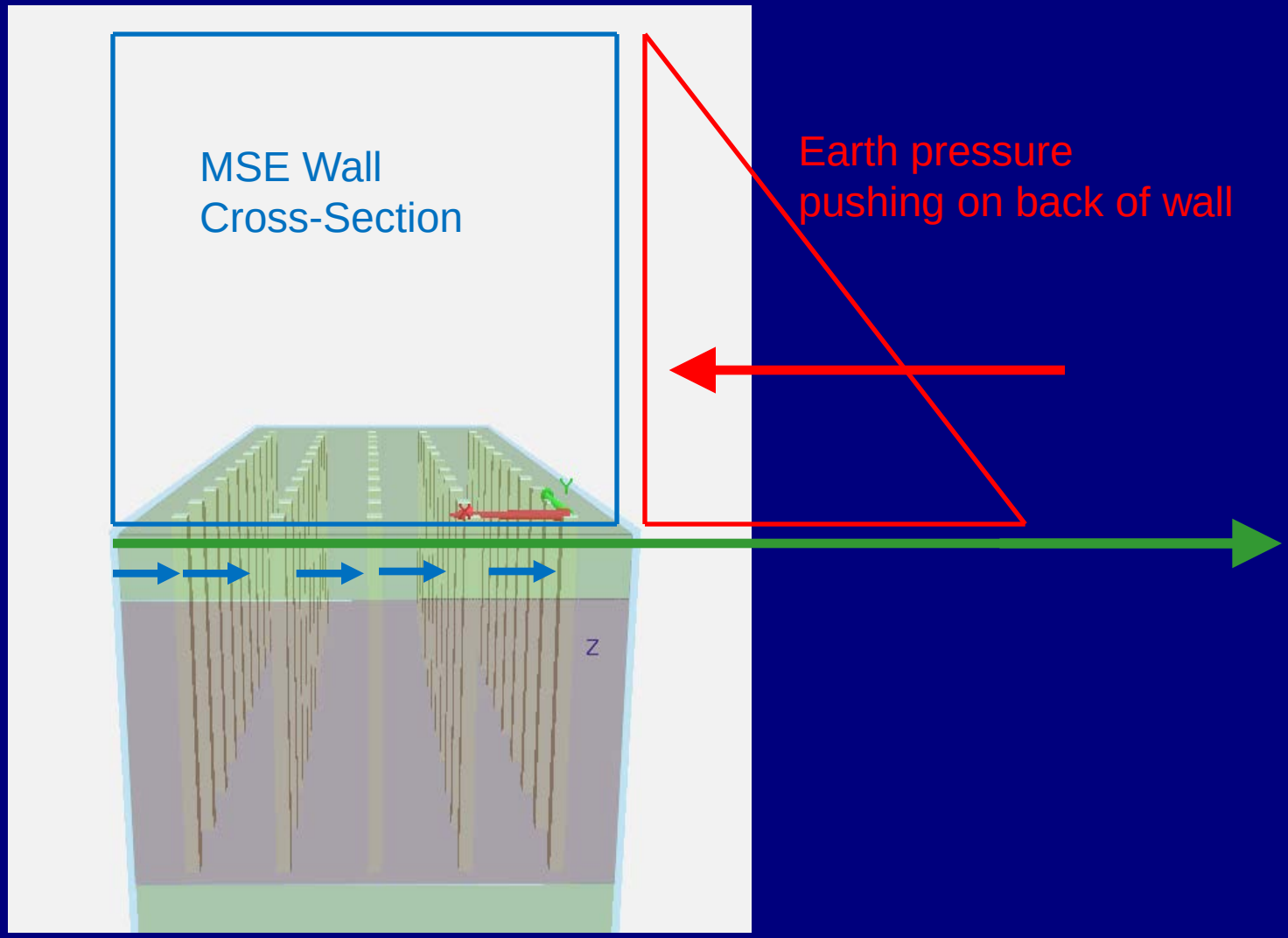
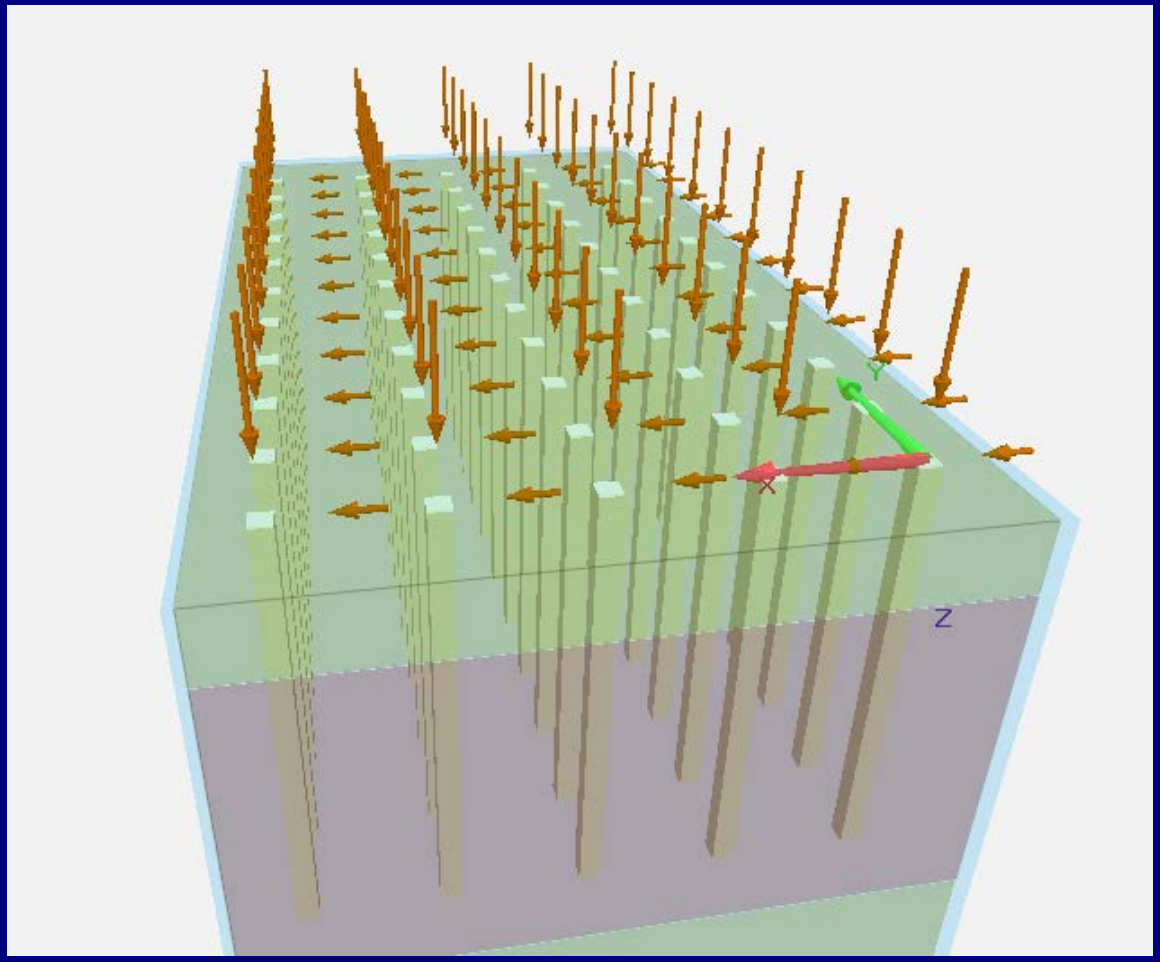


FB-Pier Model of Piles Below MSE Wall



Shear load shared about equally between fabric and piles at 1.5 inches of movement

FB-Pier Model of Piles Below MSE Wall

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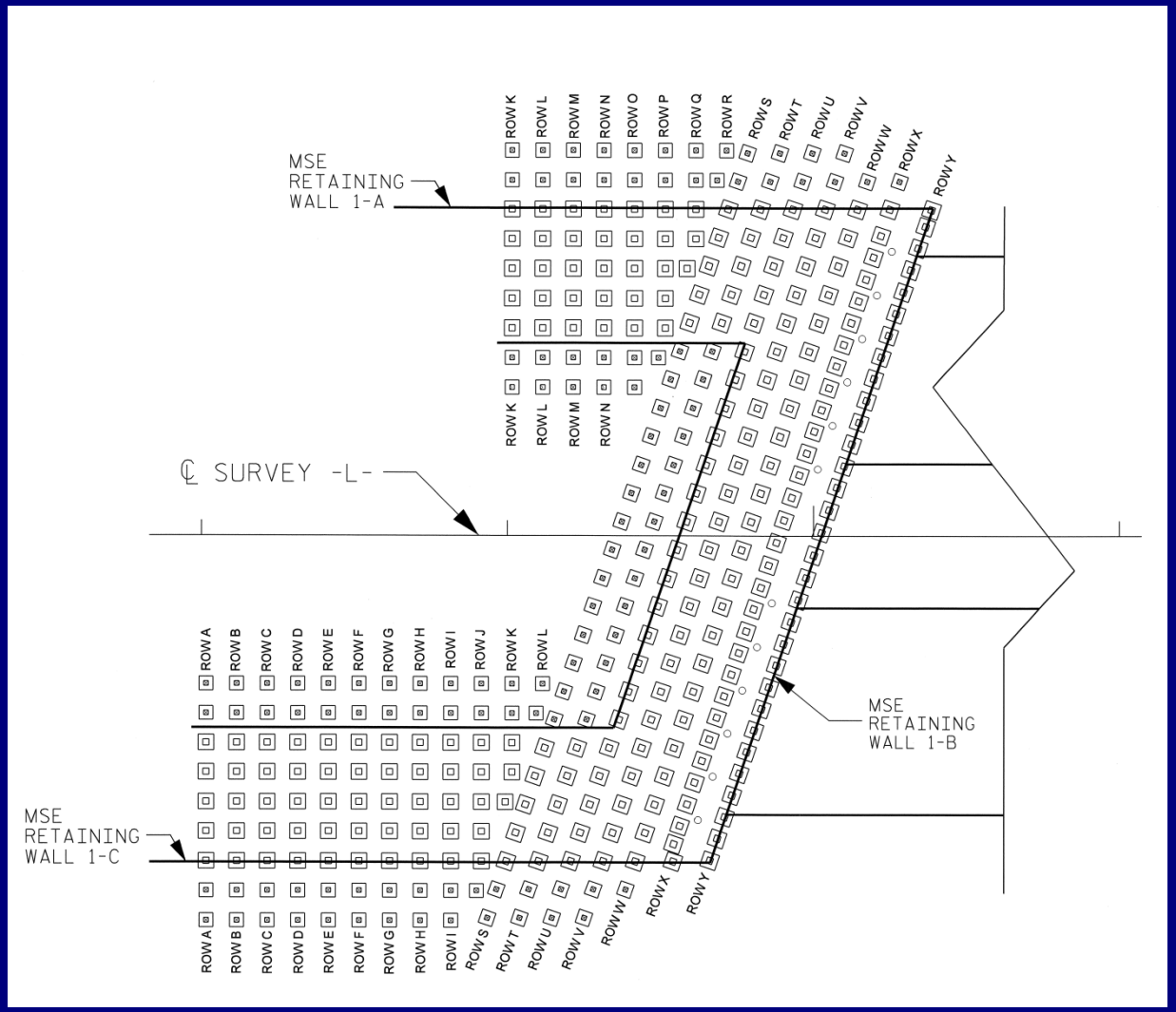
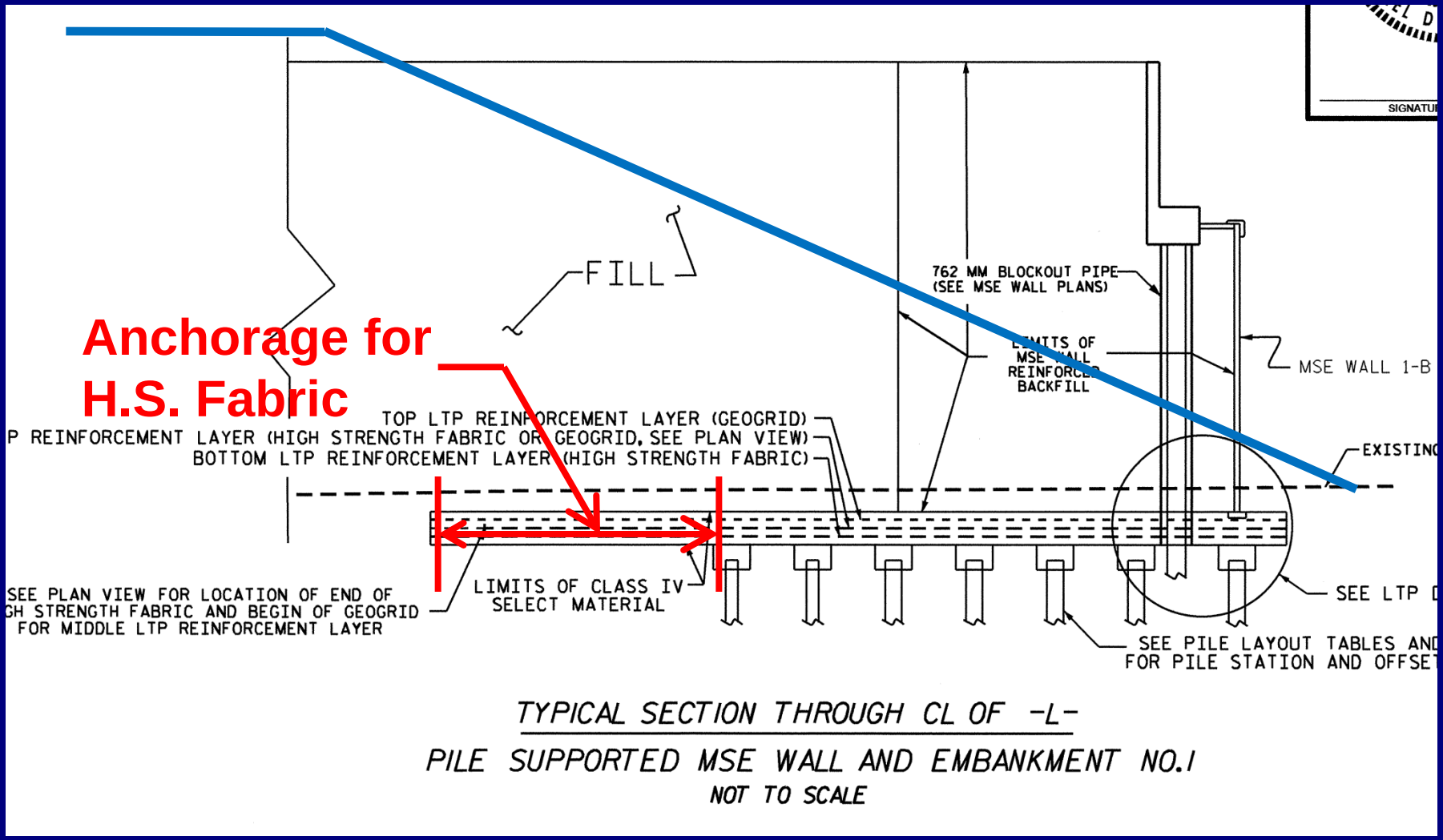
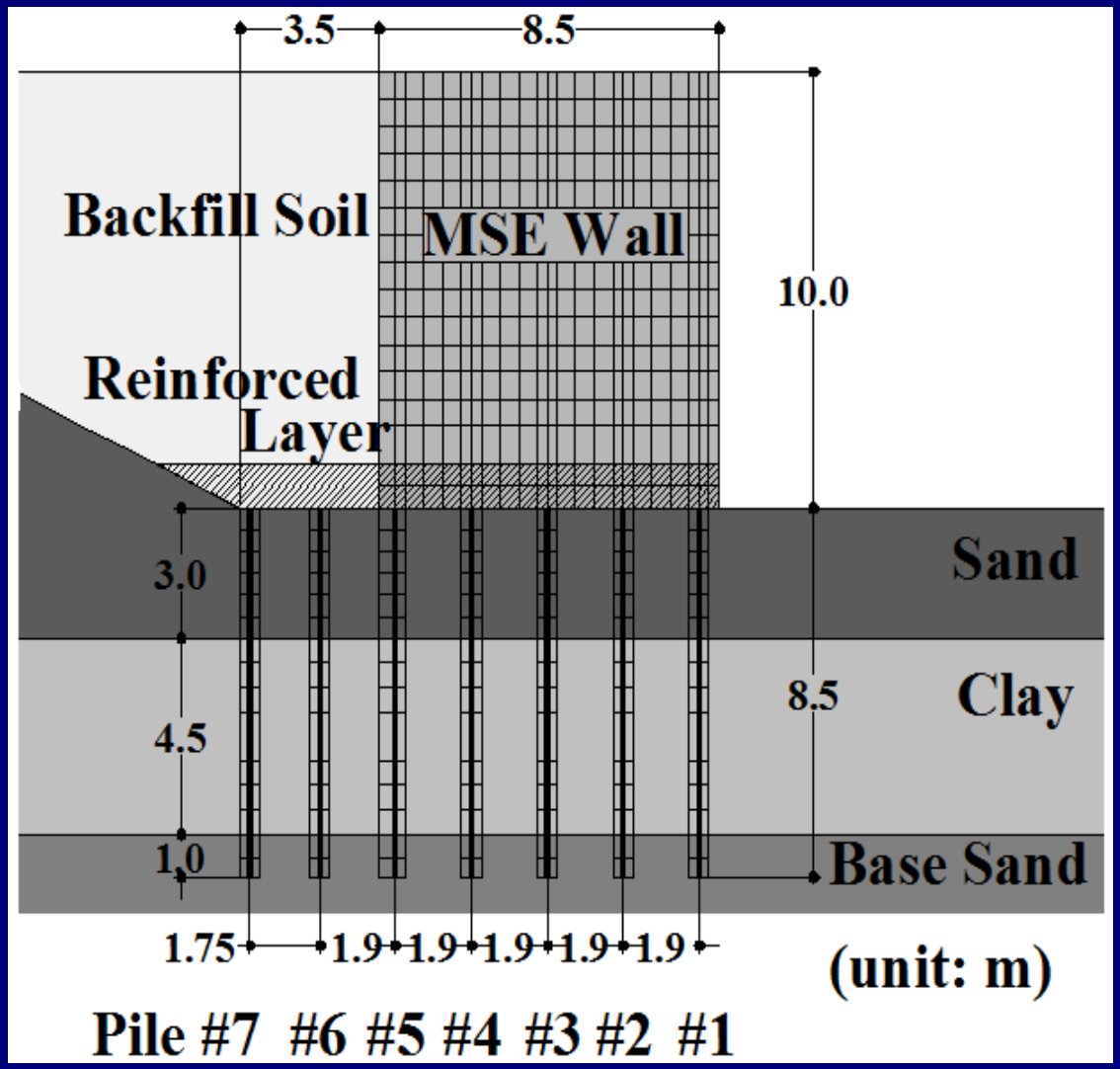


Pile Supported MSE Wall Plan View at Surcharge Location



Typical Section Through Wall at Surcharge



Finite Element Model of Piles and MSE Wall

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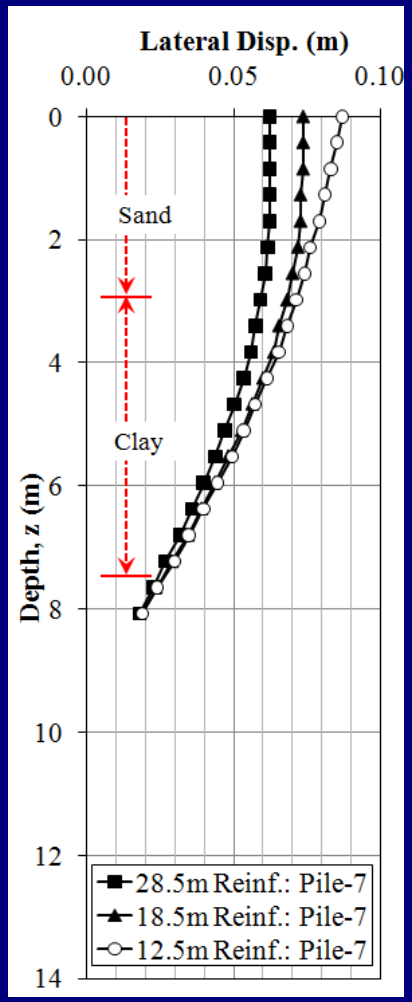
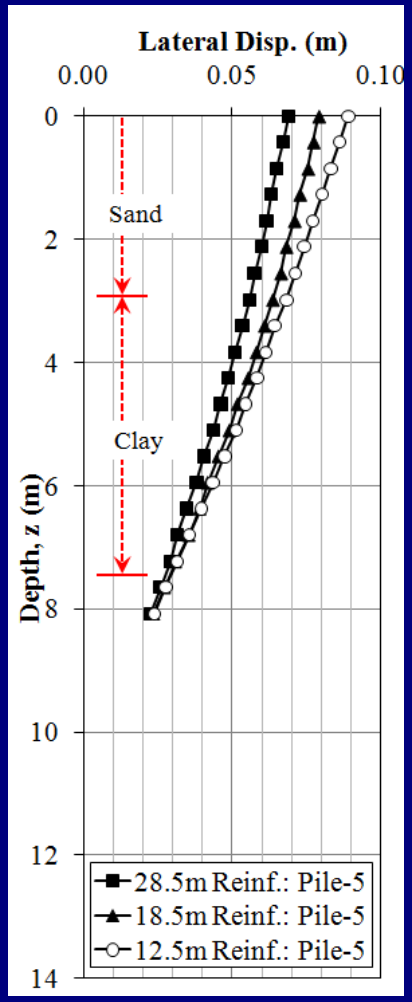
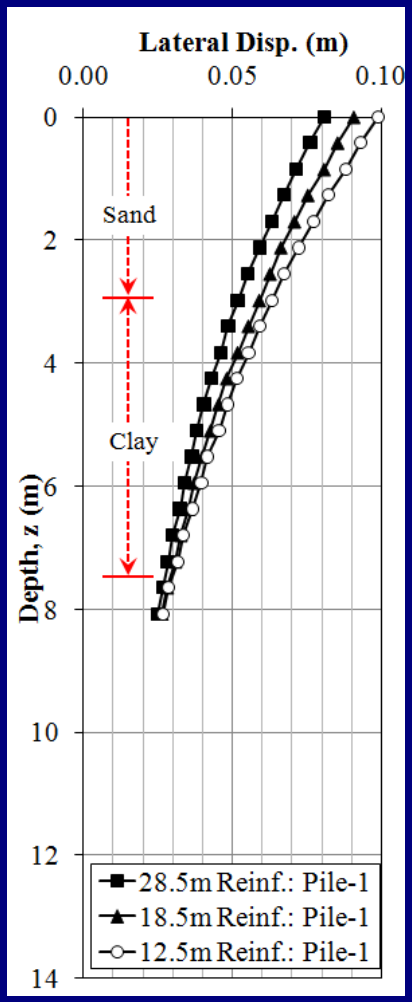
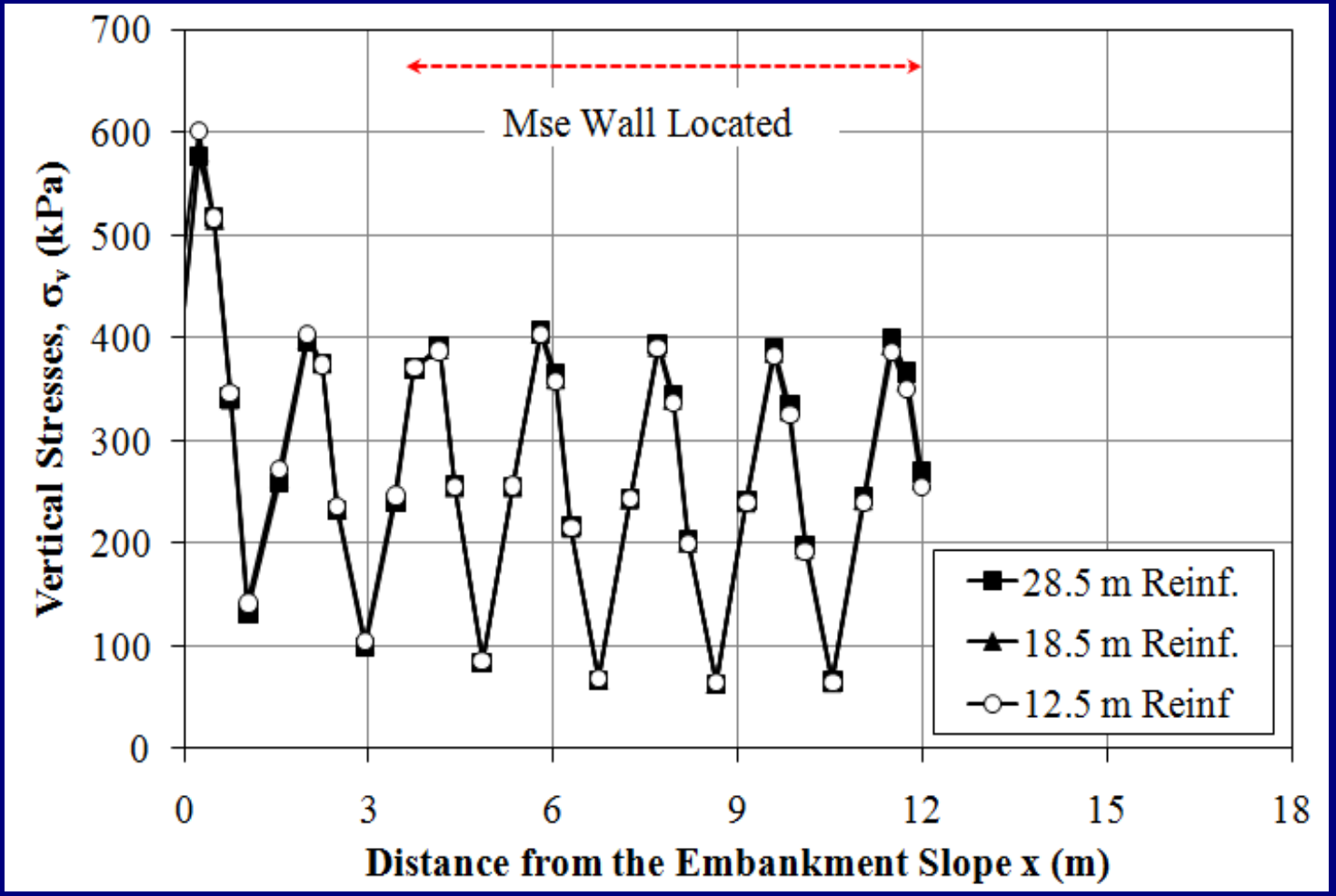






Pile Displacement Curves for Different Fabric Anchorage Lengths



Vertical Stress Distribution at bottom of LTP

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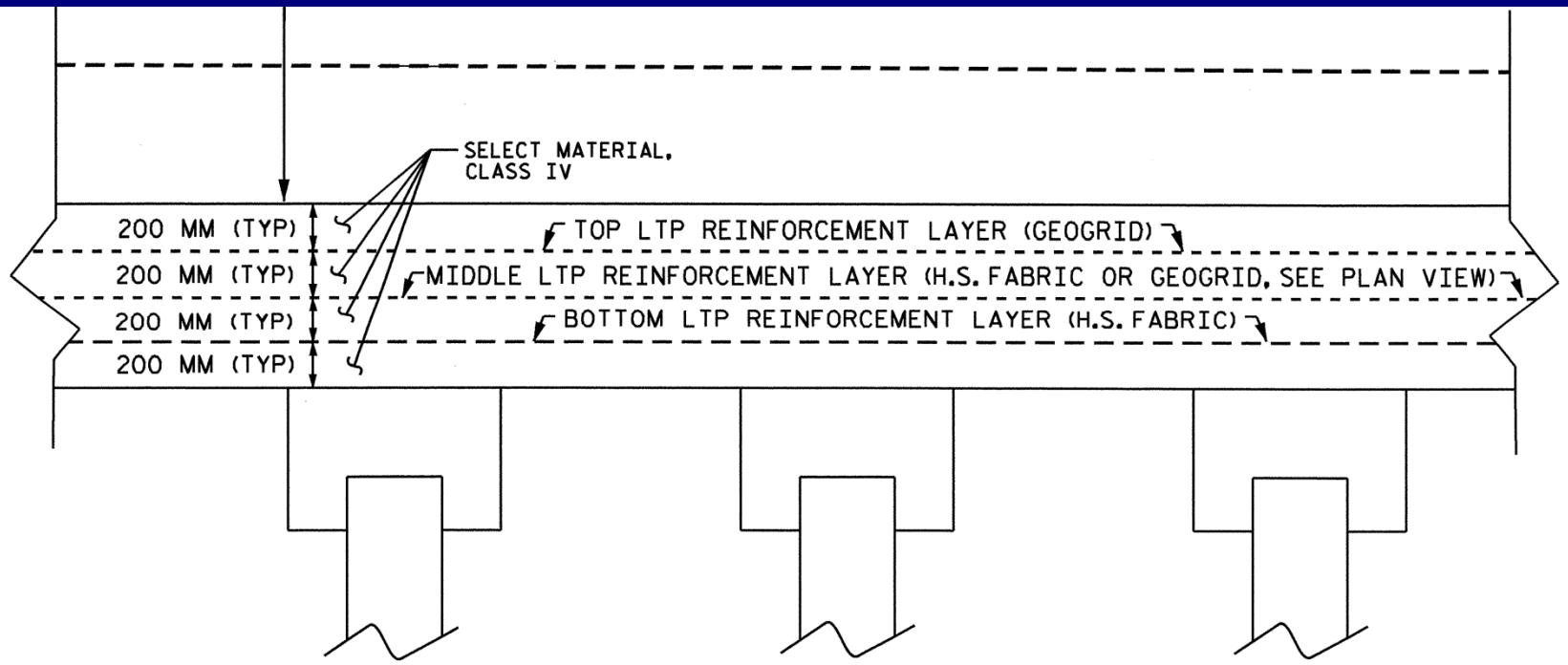
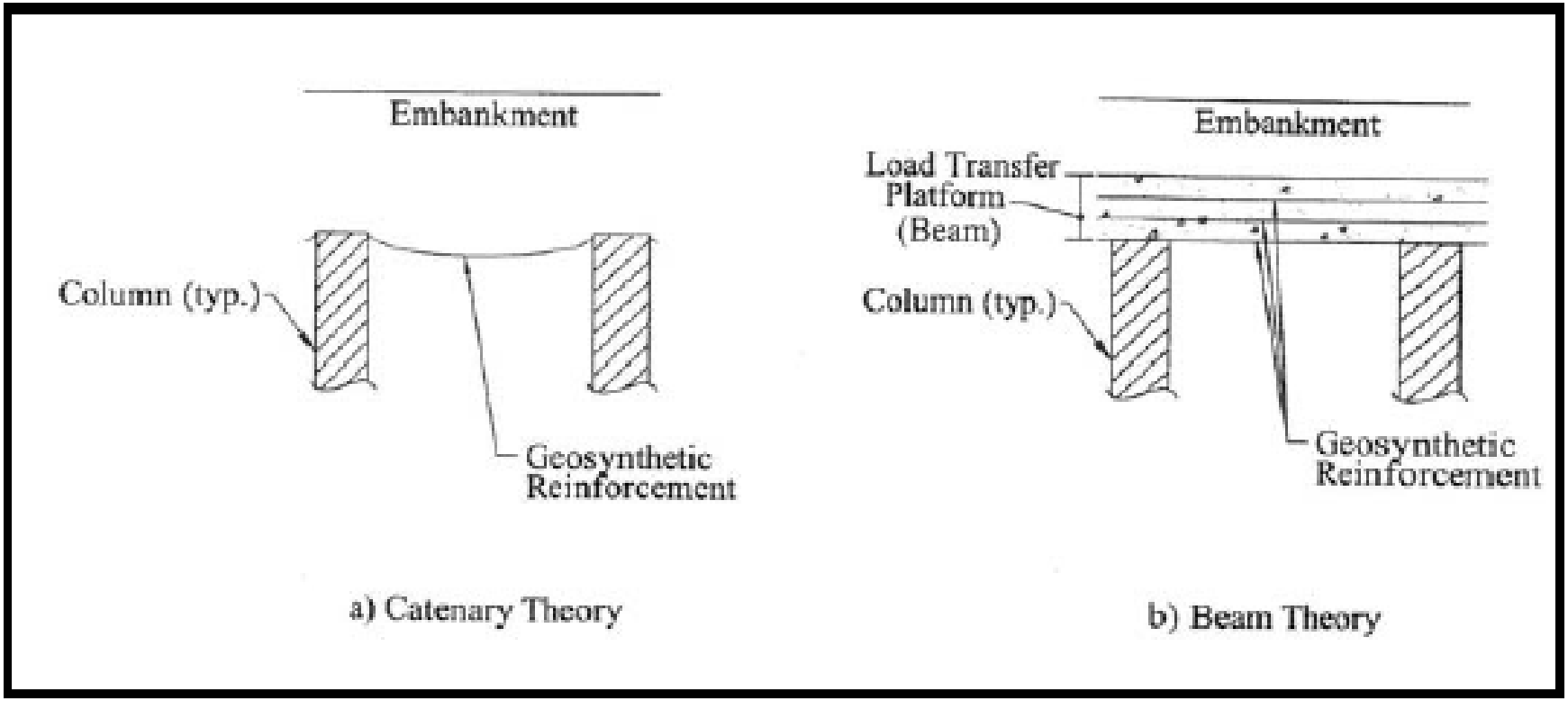


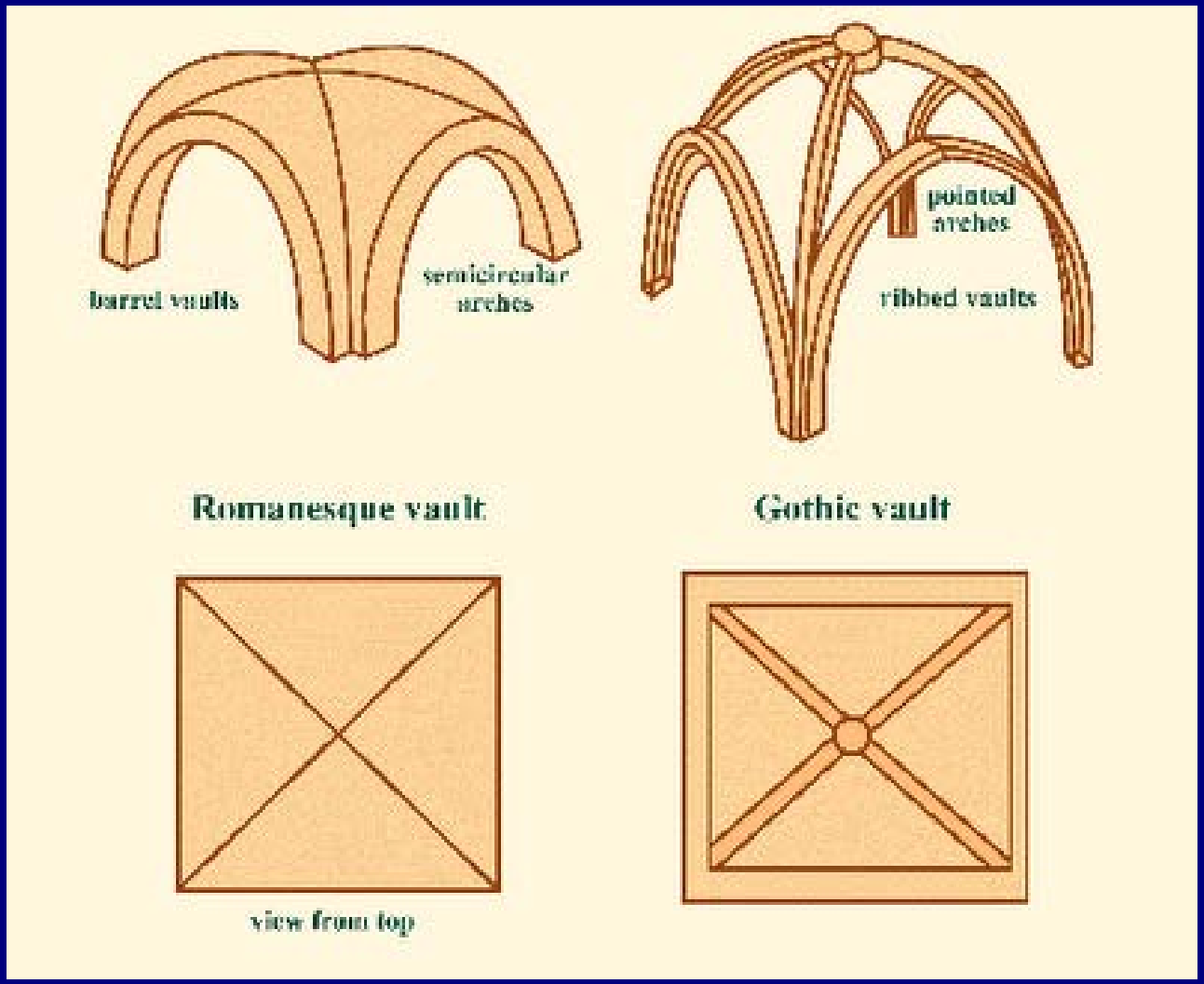
LOAD TRANSFER PLATFORM (LTP) DETAIL C

NTS

Load Transfer Platform Typical Section



LTP Design Concepts



Architectural Arches

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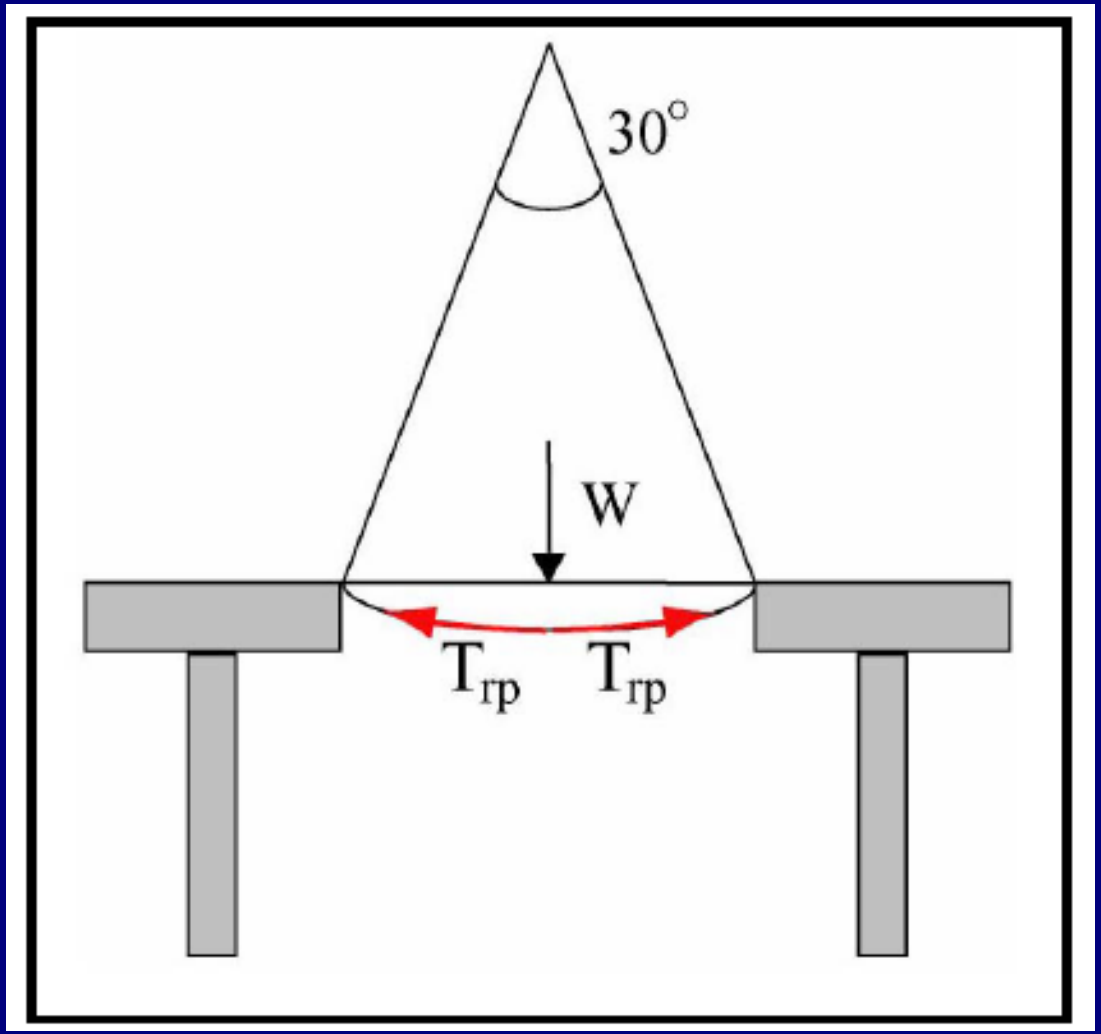
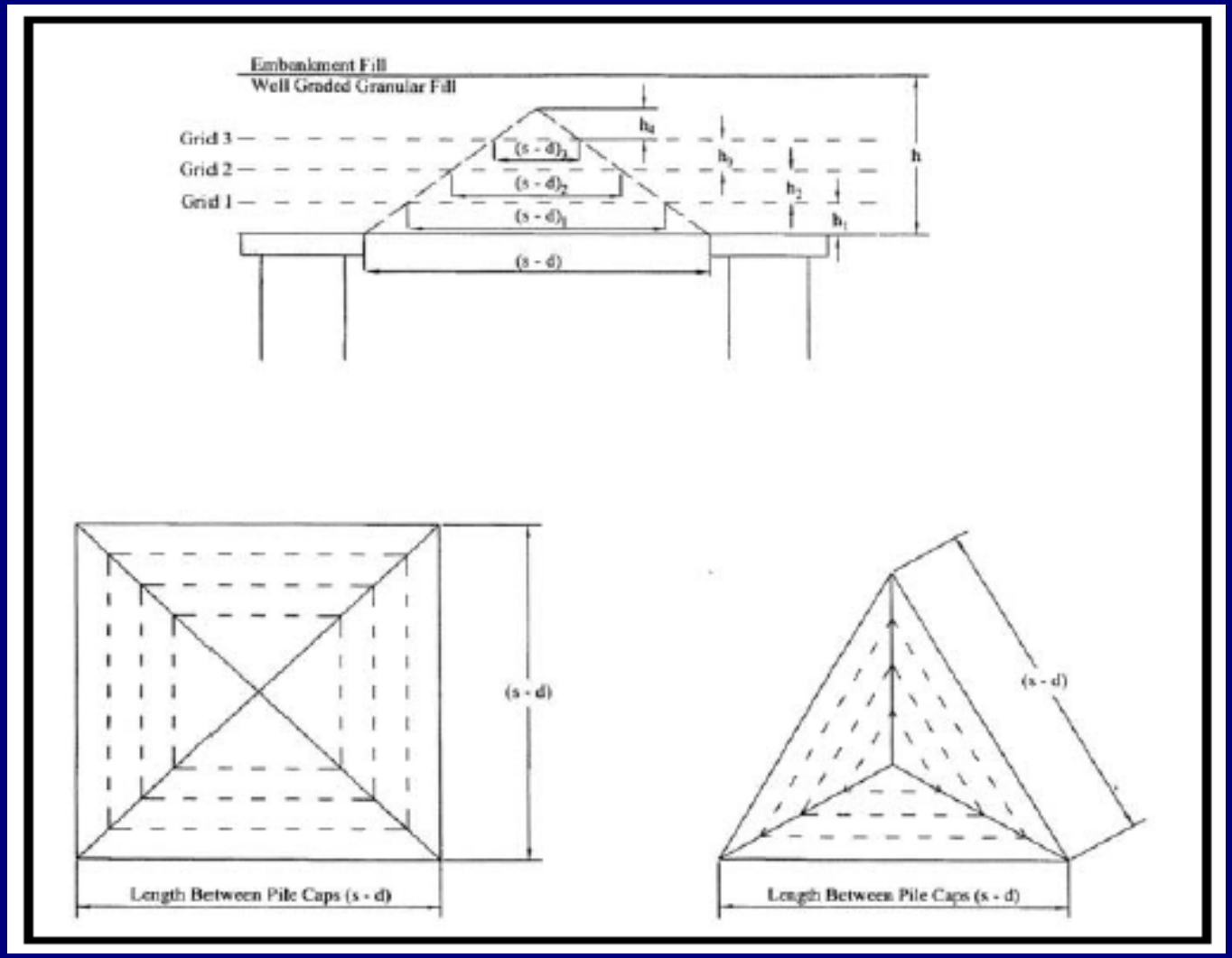


Catenary Method
Single Layer of High Strength Fabric with Sand Blanket



Beam Method
Uses Multiple Layers of Fabric and Geogrid Combined with ABC

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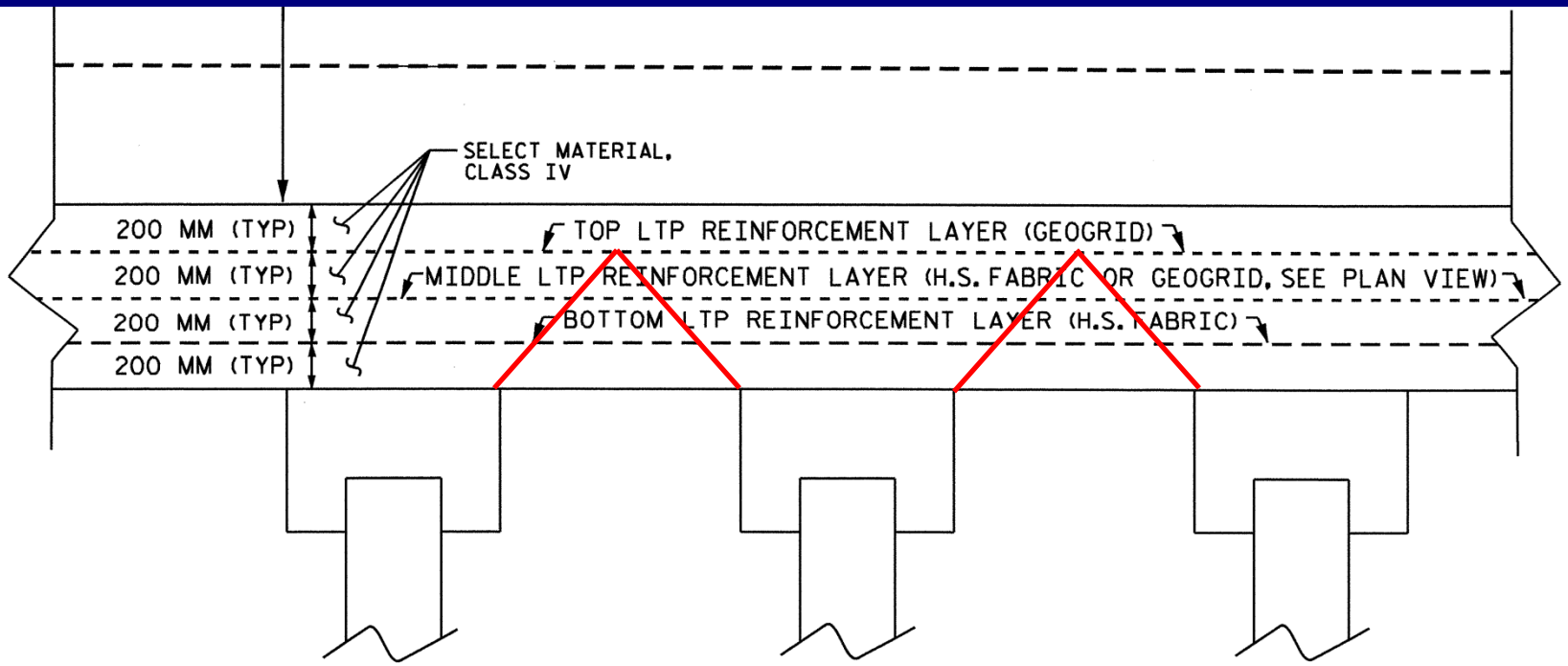

LOAD TRANSFER PLATFORM (LTP) DETAIL C

NTS

Load Transfer Platform Typical Section

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Construction Photos

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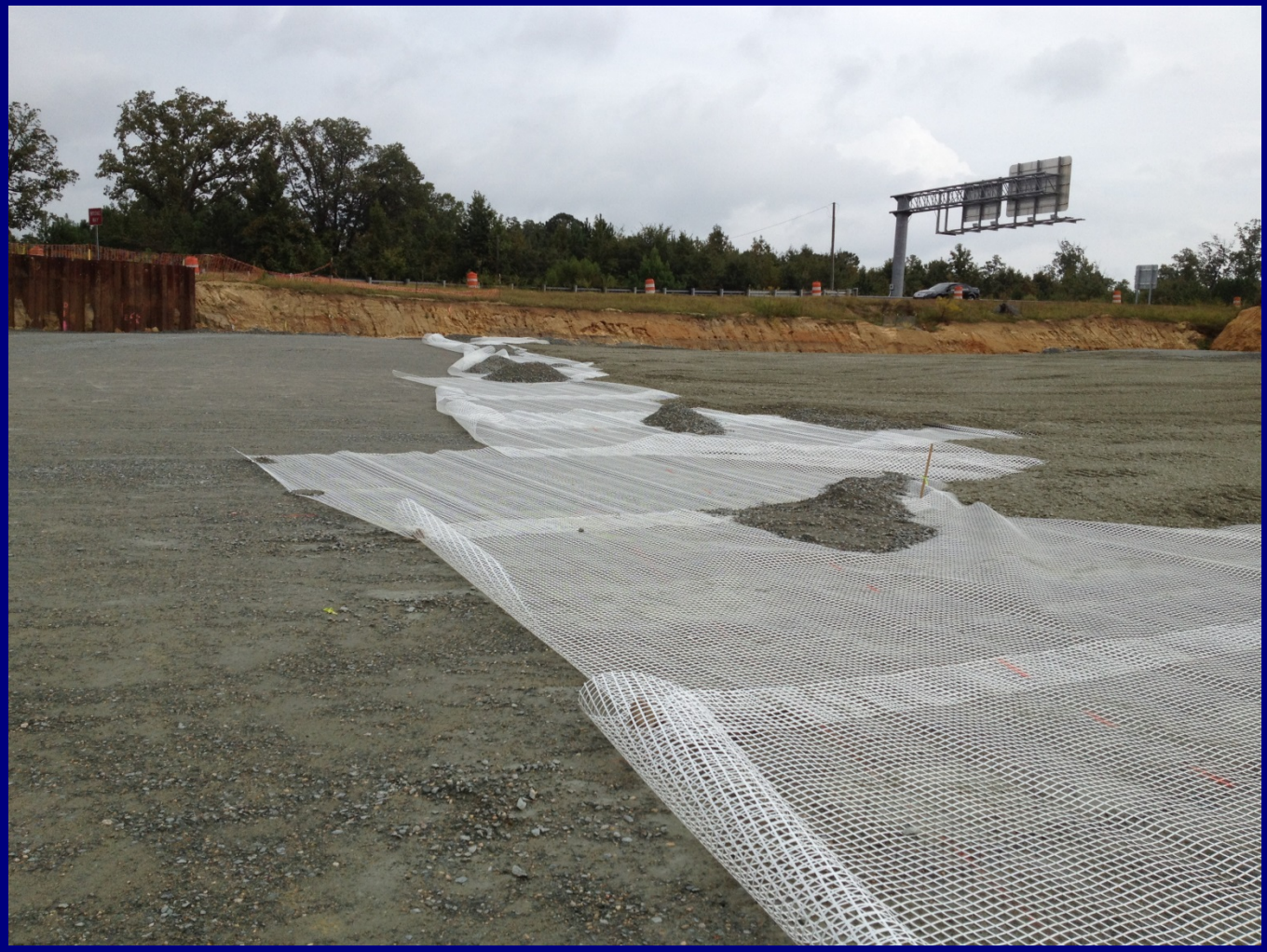

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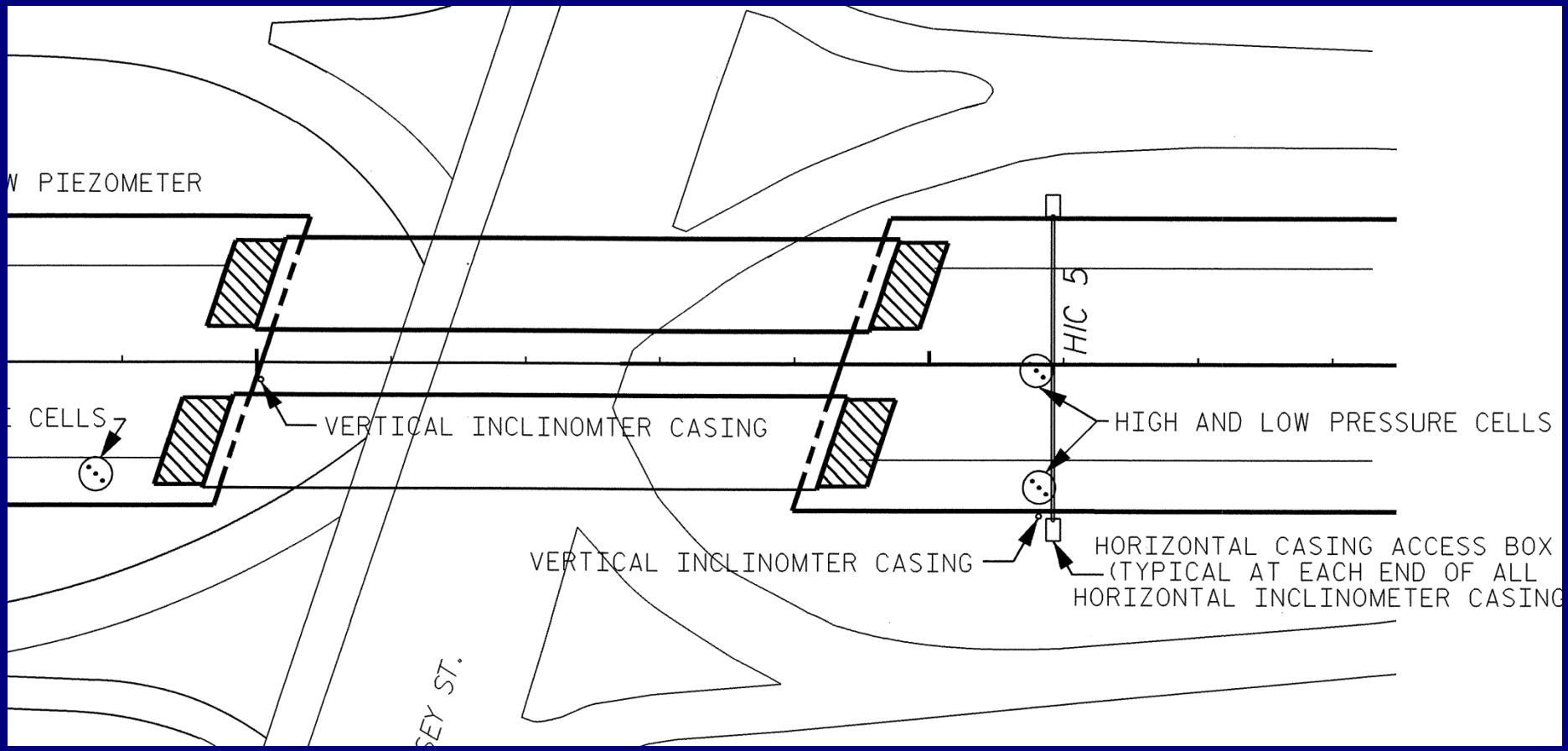
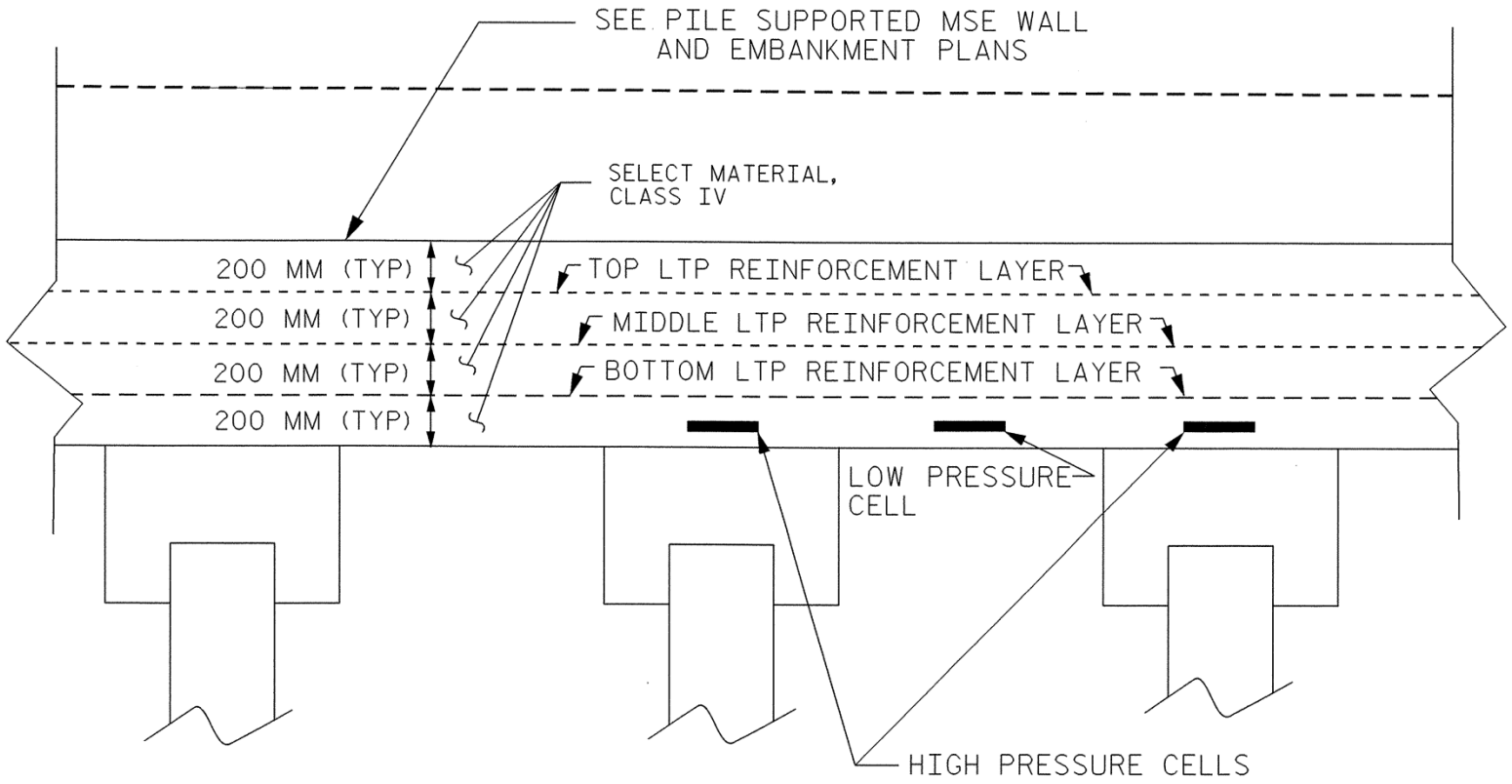


LTP Instrumentation



PRESSURE CELL LOCATION DETAIL
N.T.S.

LTP Instrumentation

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LTP Instrumentation

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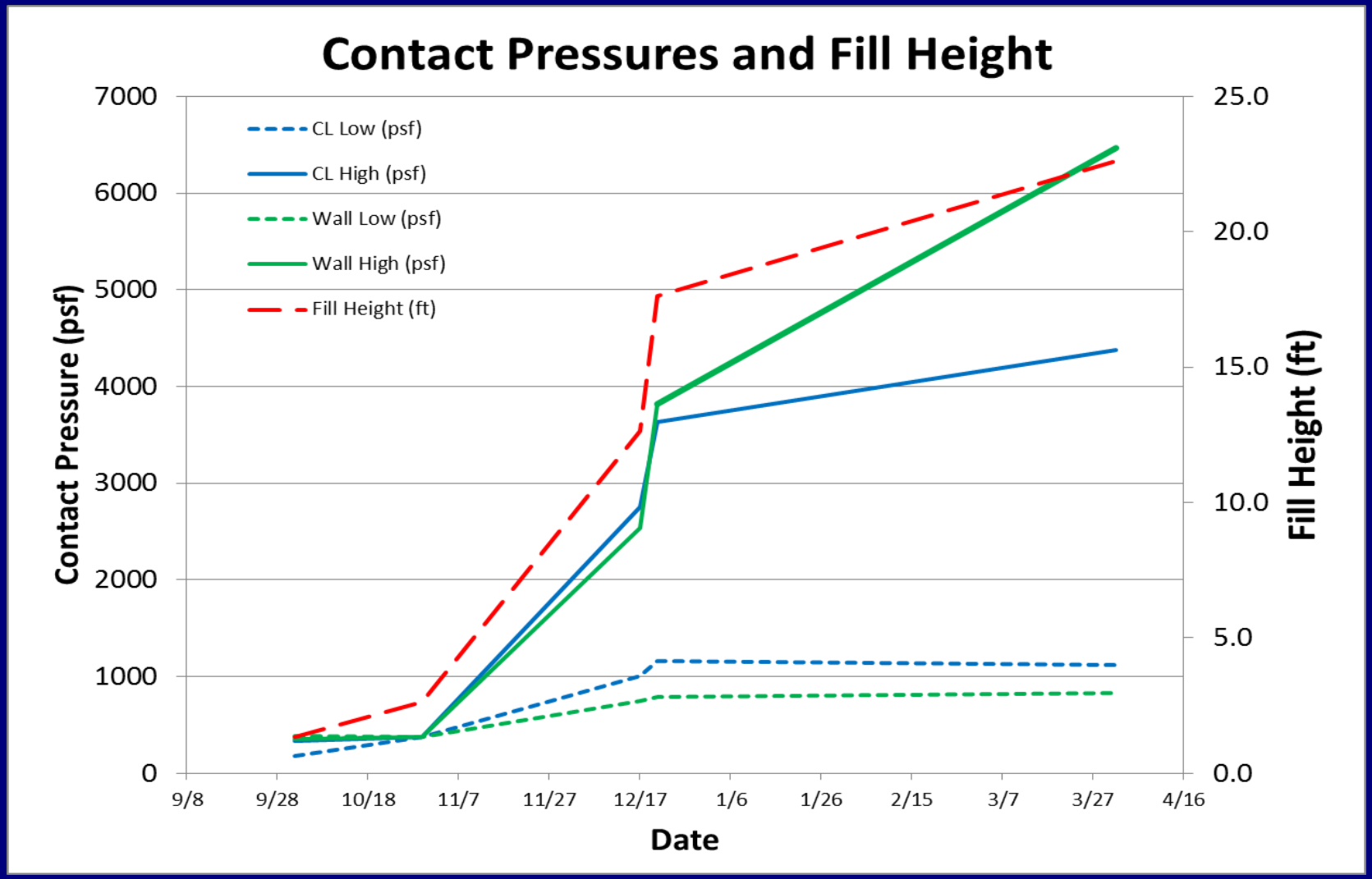
LTP Instrumentation



LTP Instrumentation

Wick Drains - 580,000 ft. - $0.31 / ft

12” Concrete Piles – 468 total – 12,300 ft - $33.50 / ft
16” Concrete Piles – 683 total – 17,900 ft - $44.50 / ft

Geogrid for LTP – 8,400 sqyd - $3.57 / sqyd
H.S. Fabric for LTP – 8,200 sqyd - $23.65 / sqyd

MSE Walls – 55,800 sqft - $48.60 / sqft

Questions ?