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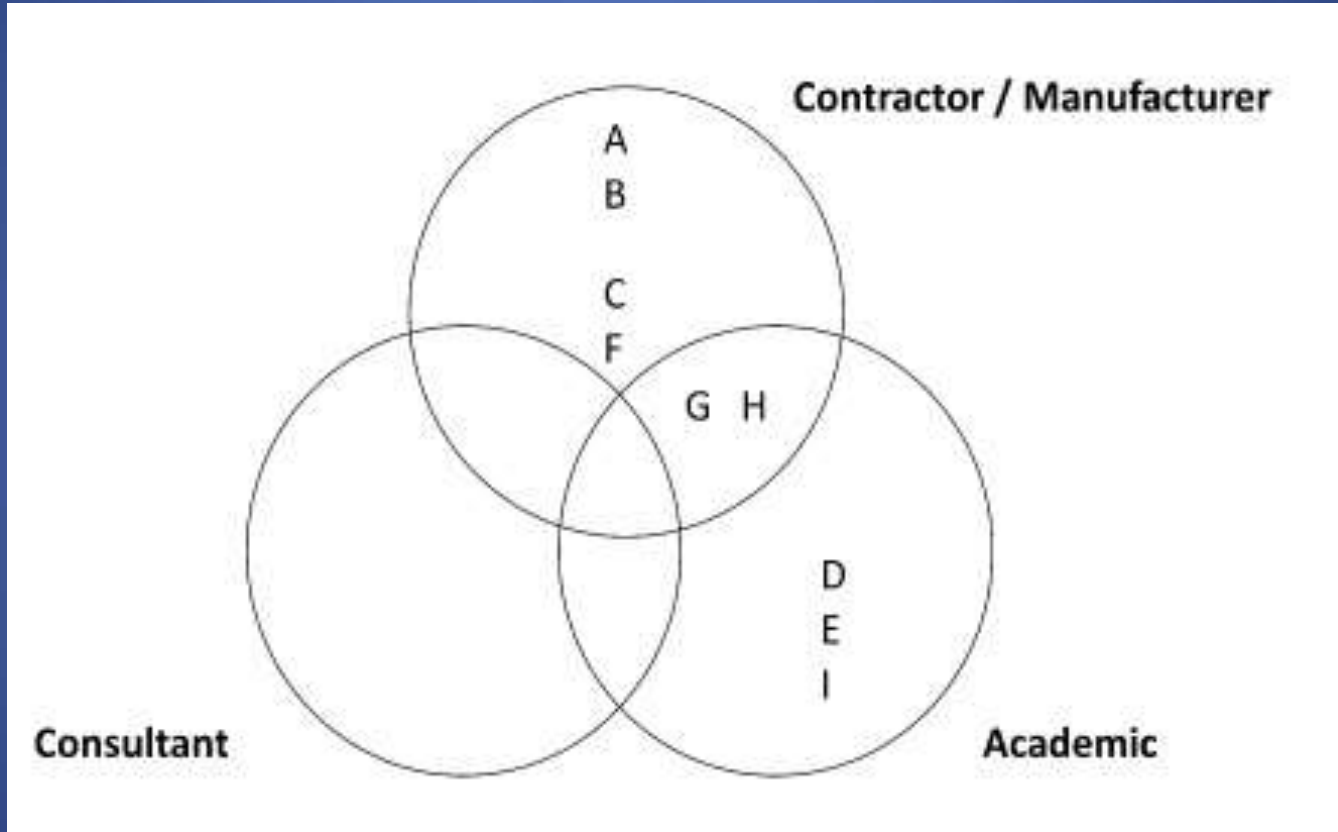
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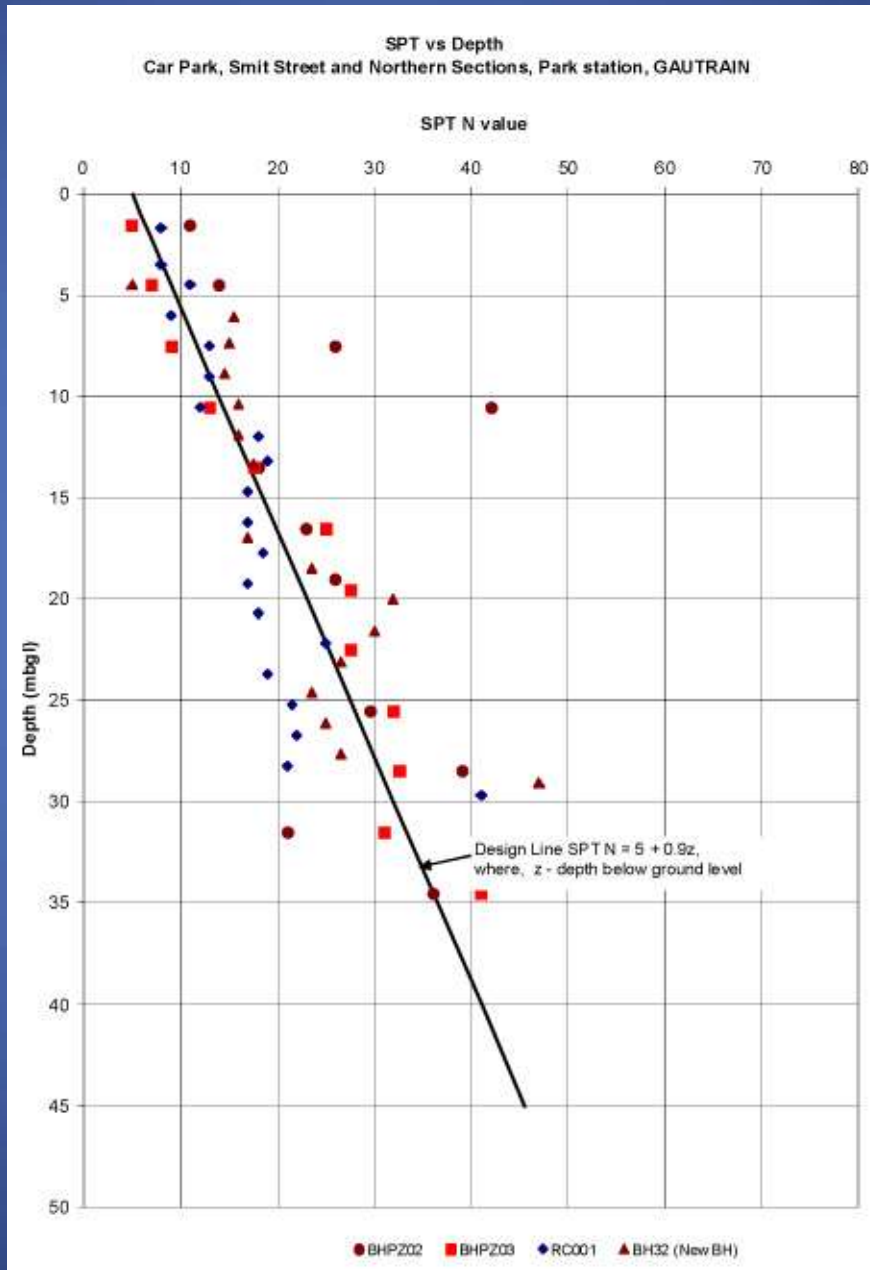
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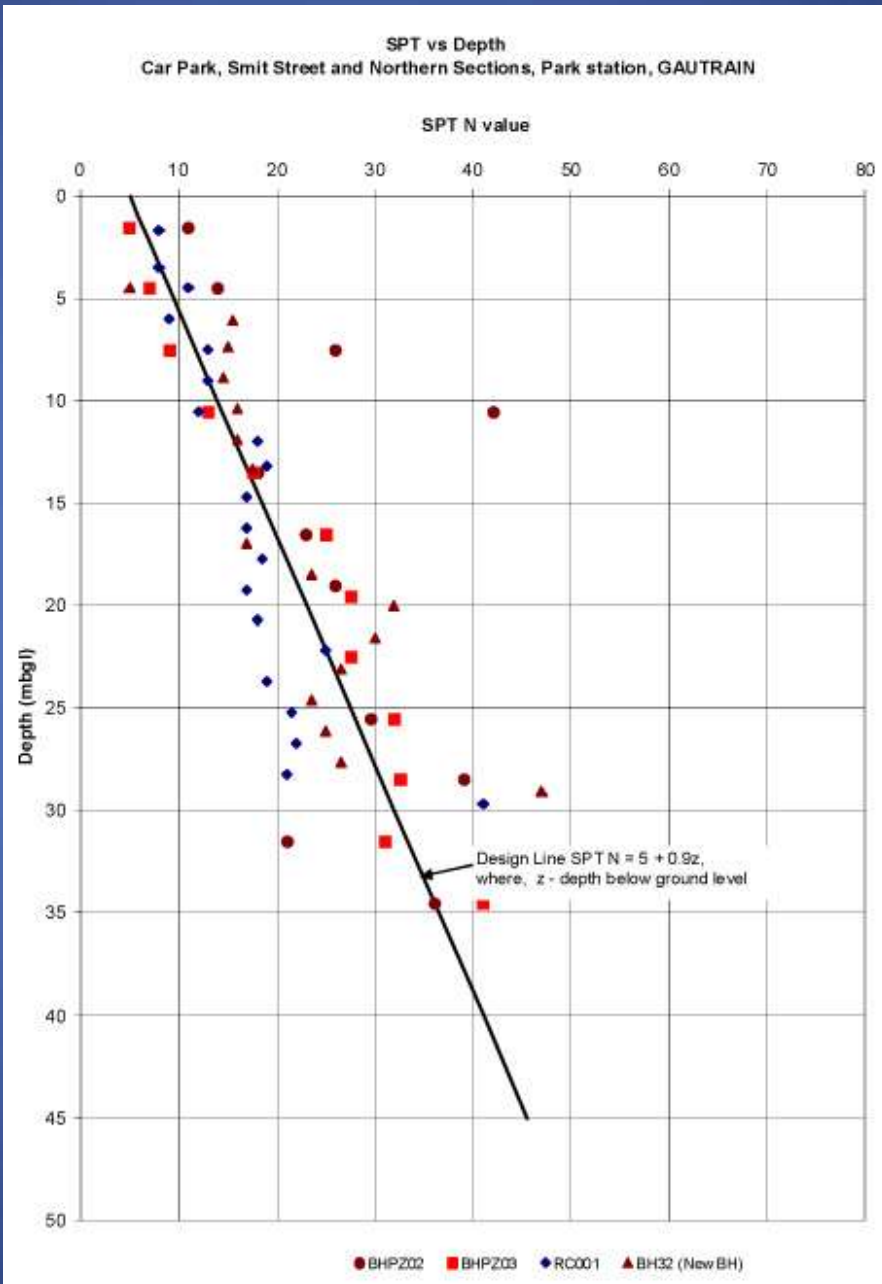
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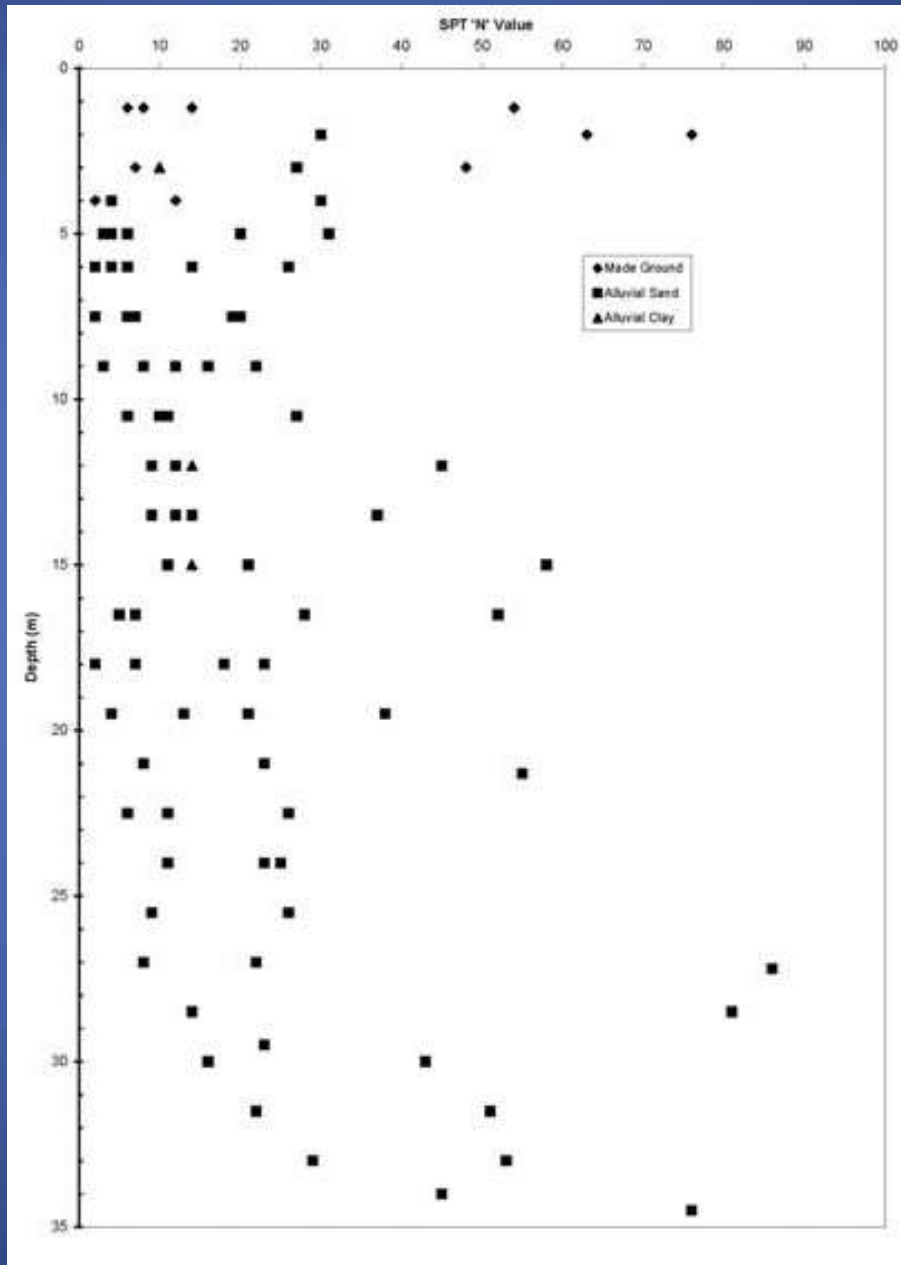
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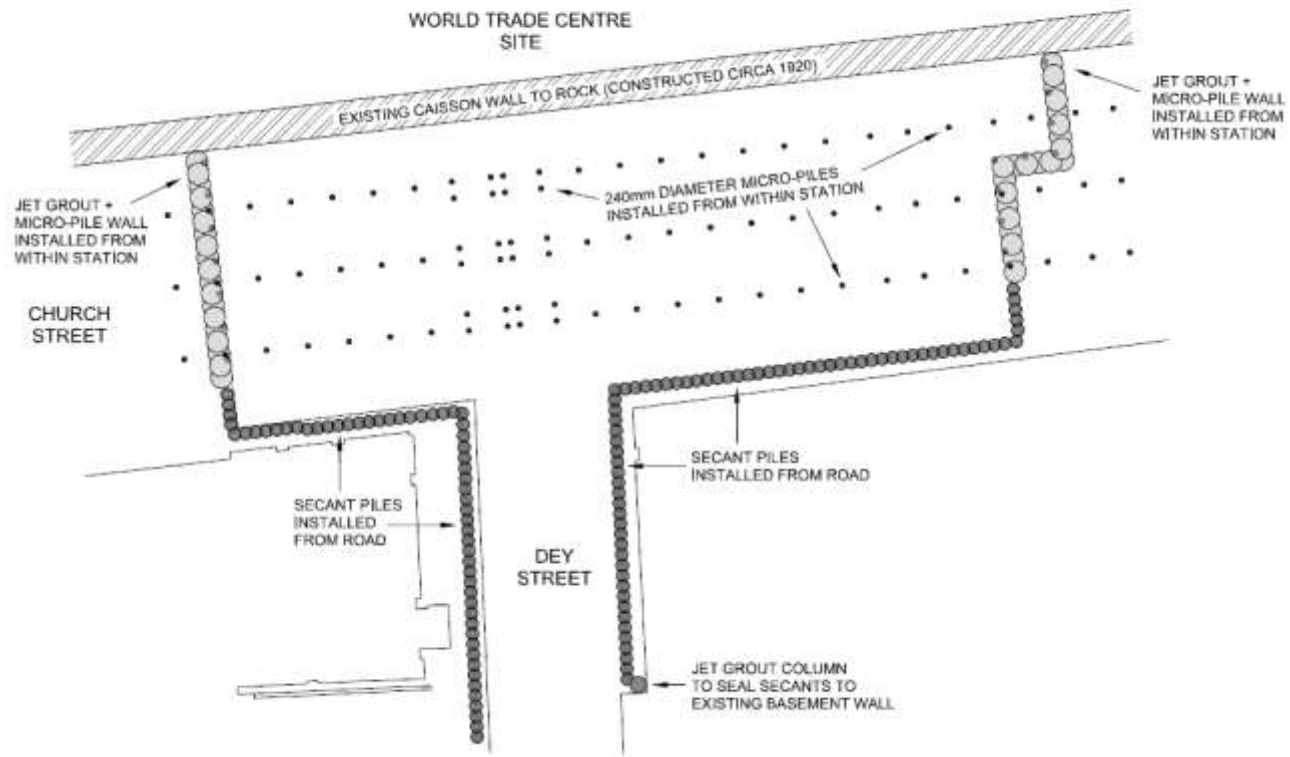


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FIGURE 1 - PLAN SHOWING SECANT PILES, MINI-PILES AND JET GROUT WALLS INSTALLED AT CORTLANDT STREET STATION



URBAN REGENERATION

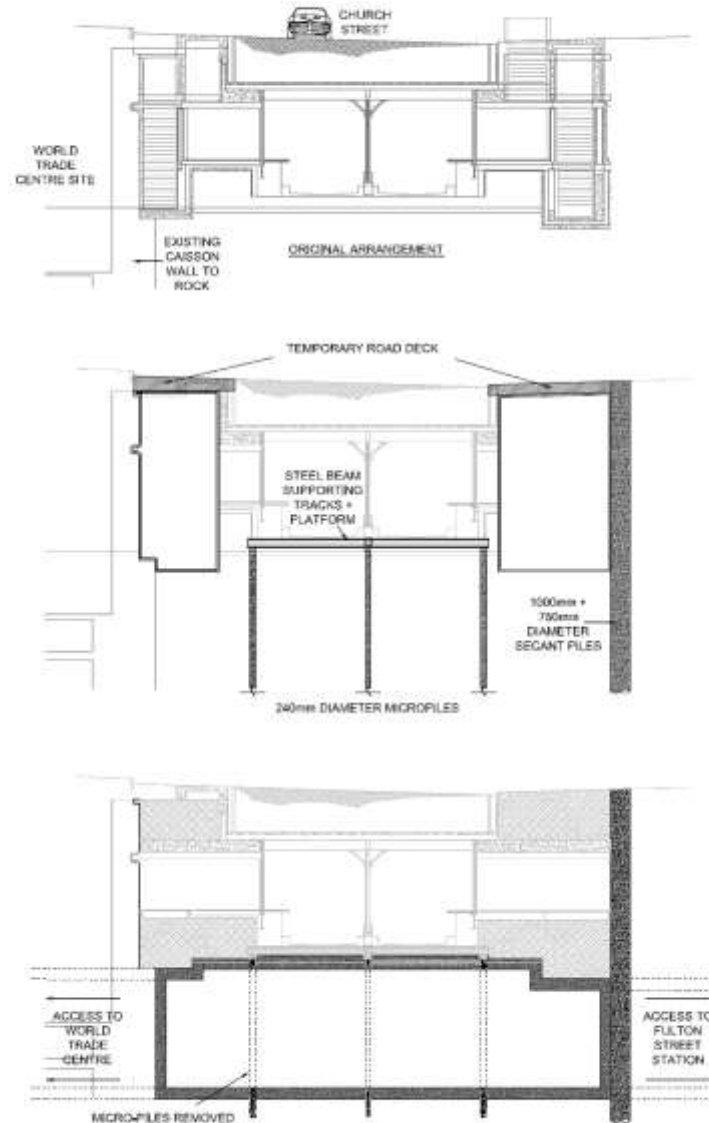


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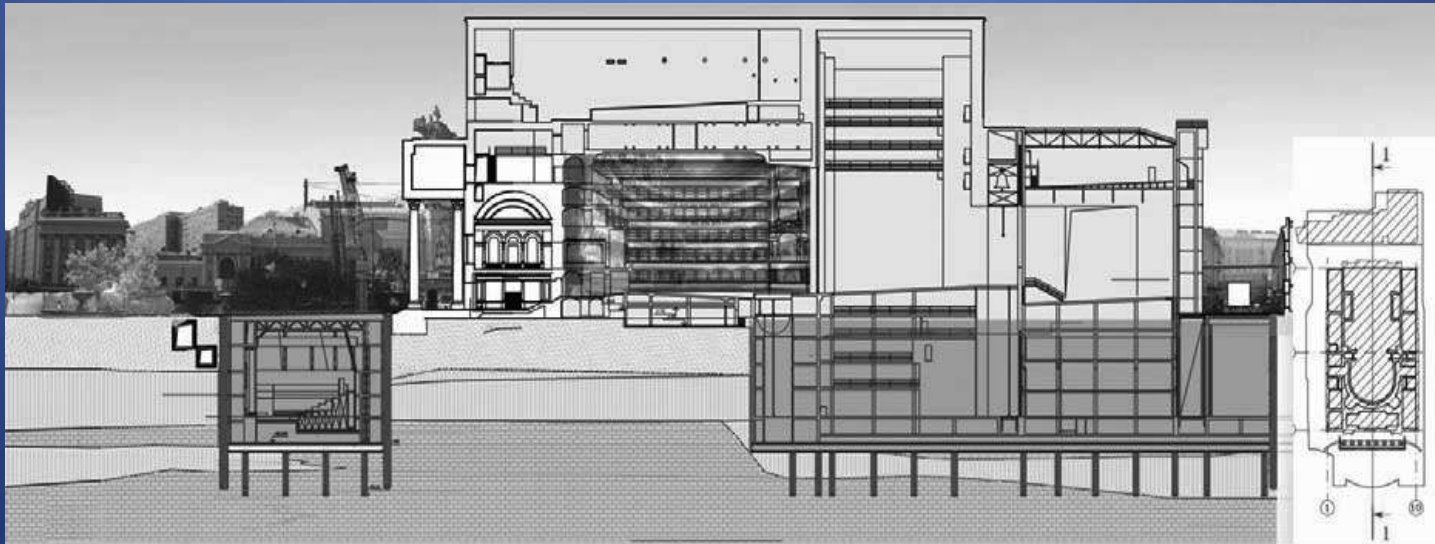
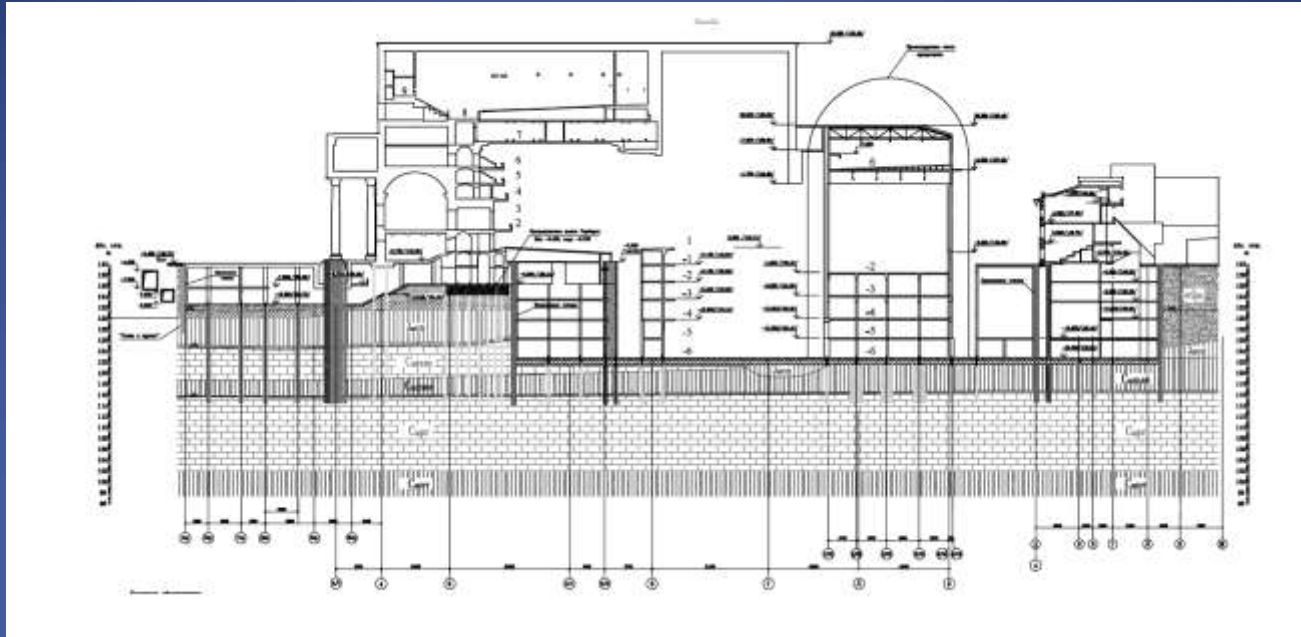


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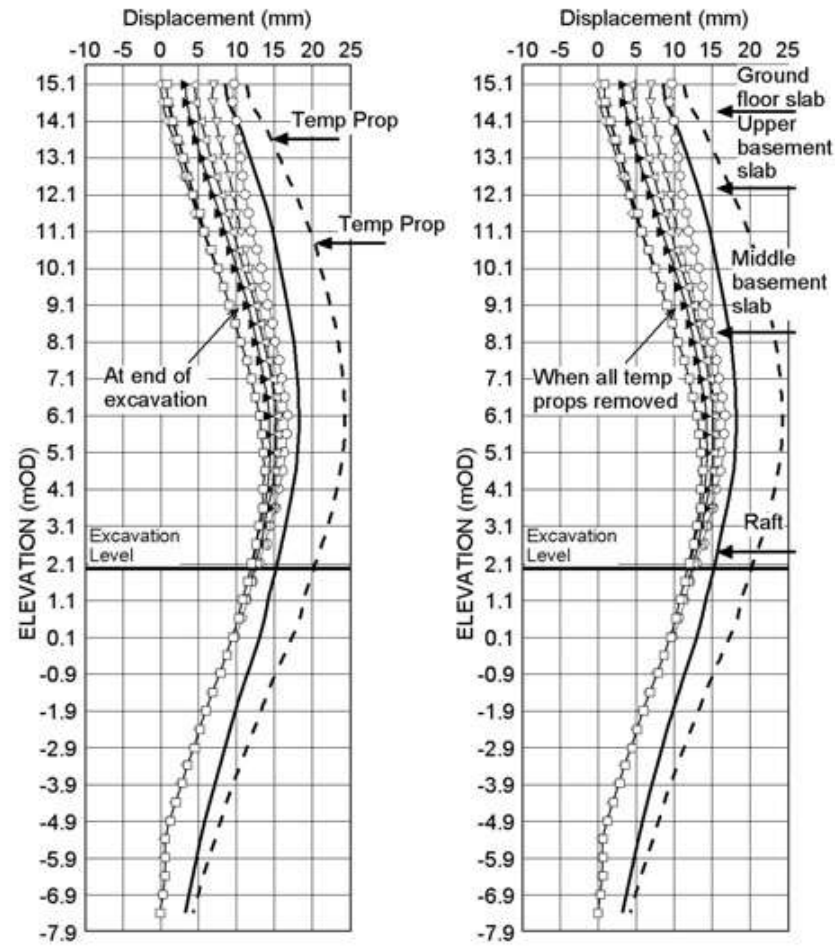
FIGURE 2 - CROSS SECTION THROUGH CORTLANDT STREET STATION SHOWING SEQUENCE OF WORK



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- 30-07-07 ◁ 11-09-07
- ◇ 06-08-07 ▽ 28-09-07
- ▶ 06-09-07 ○ 05-10-07

- - - Red Trigger
- Amber Trigger

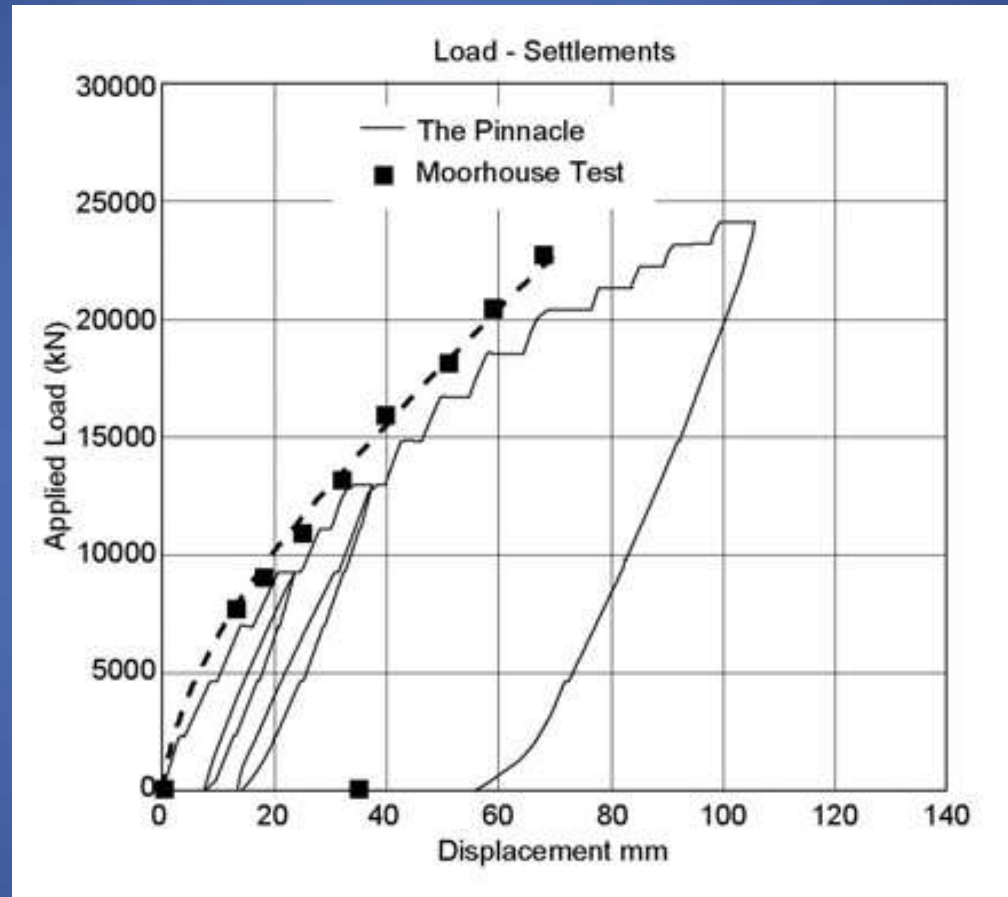
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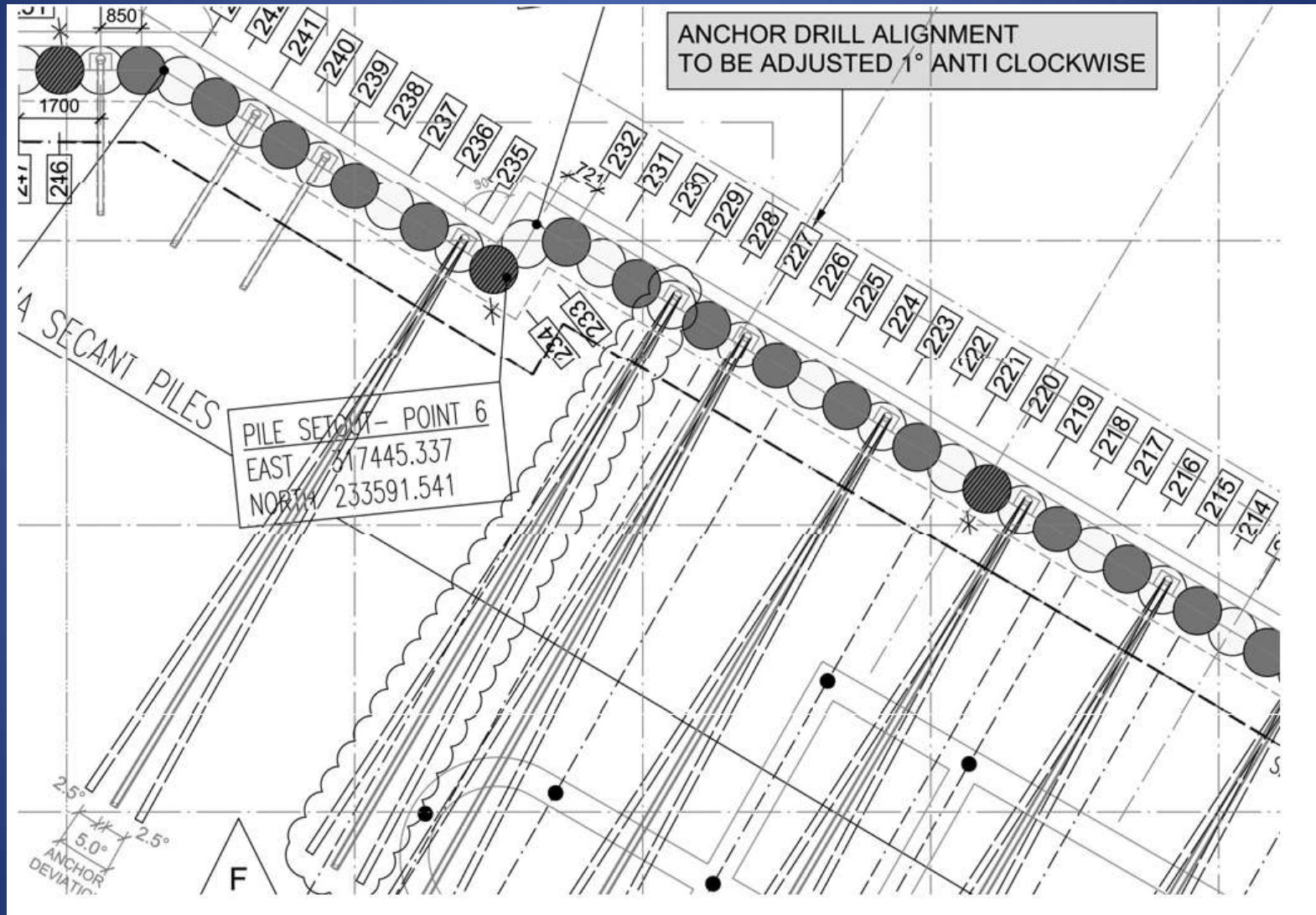
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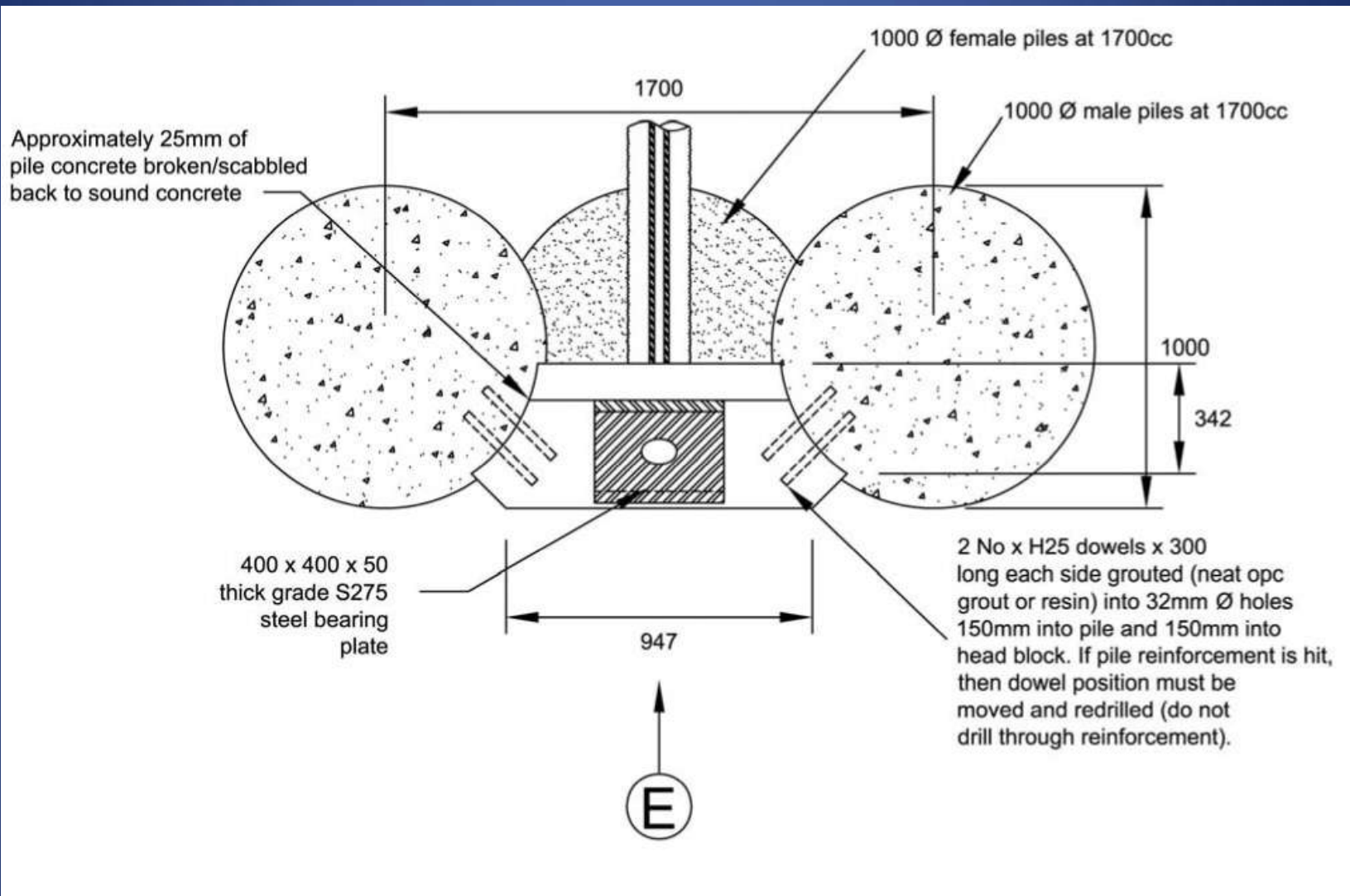
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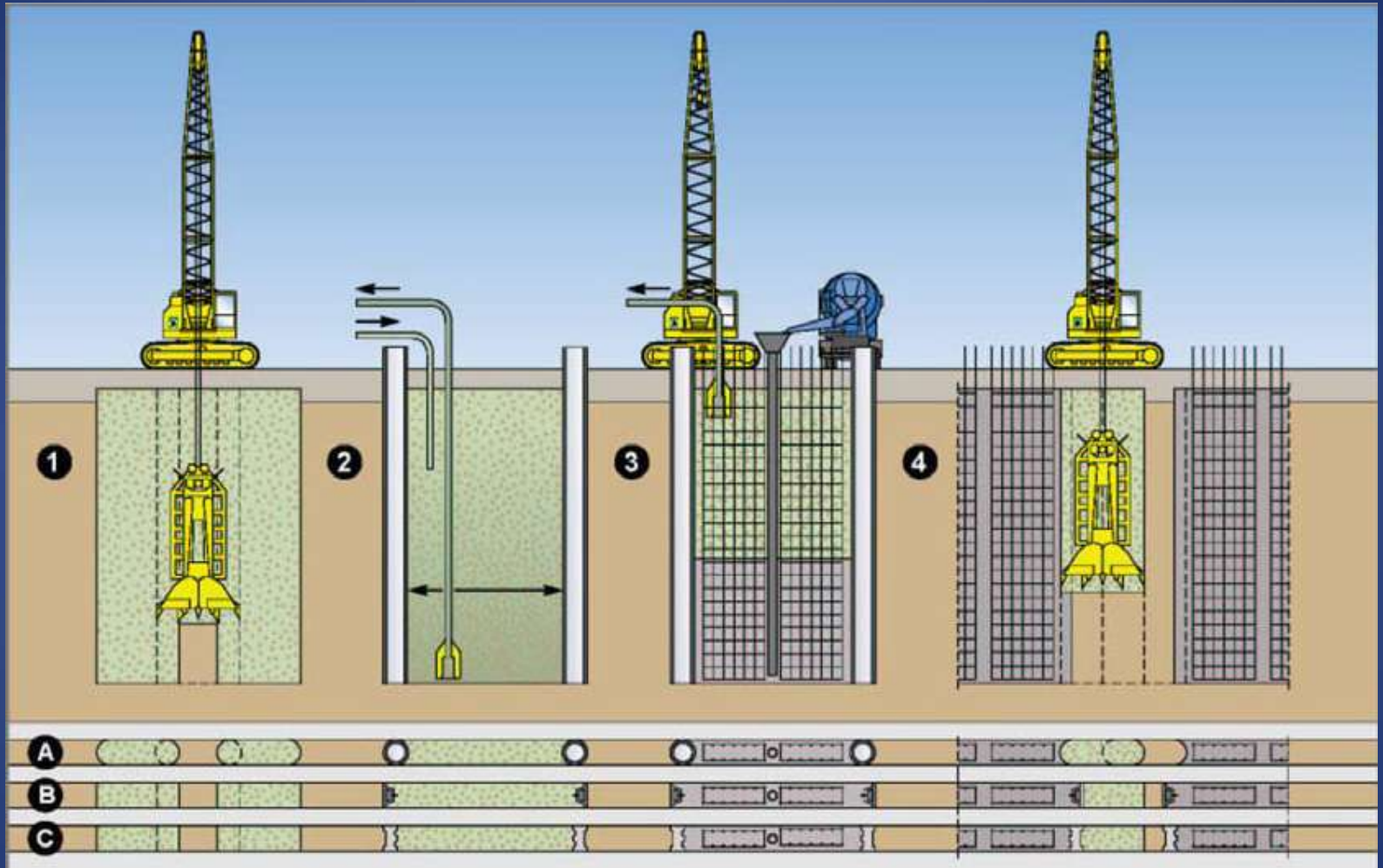
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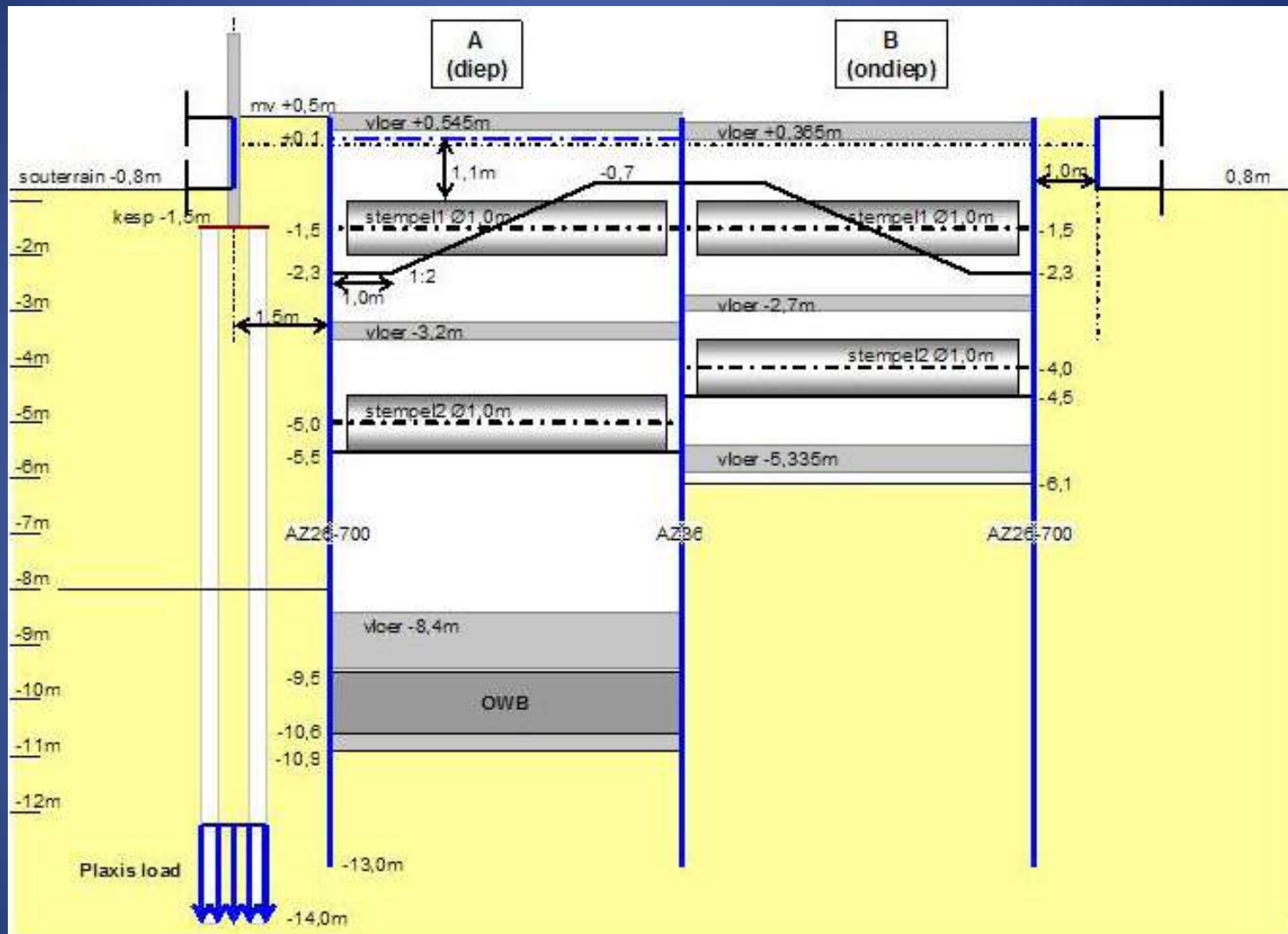
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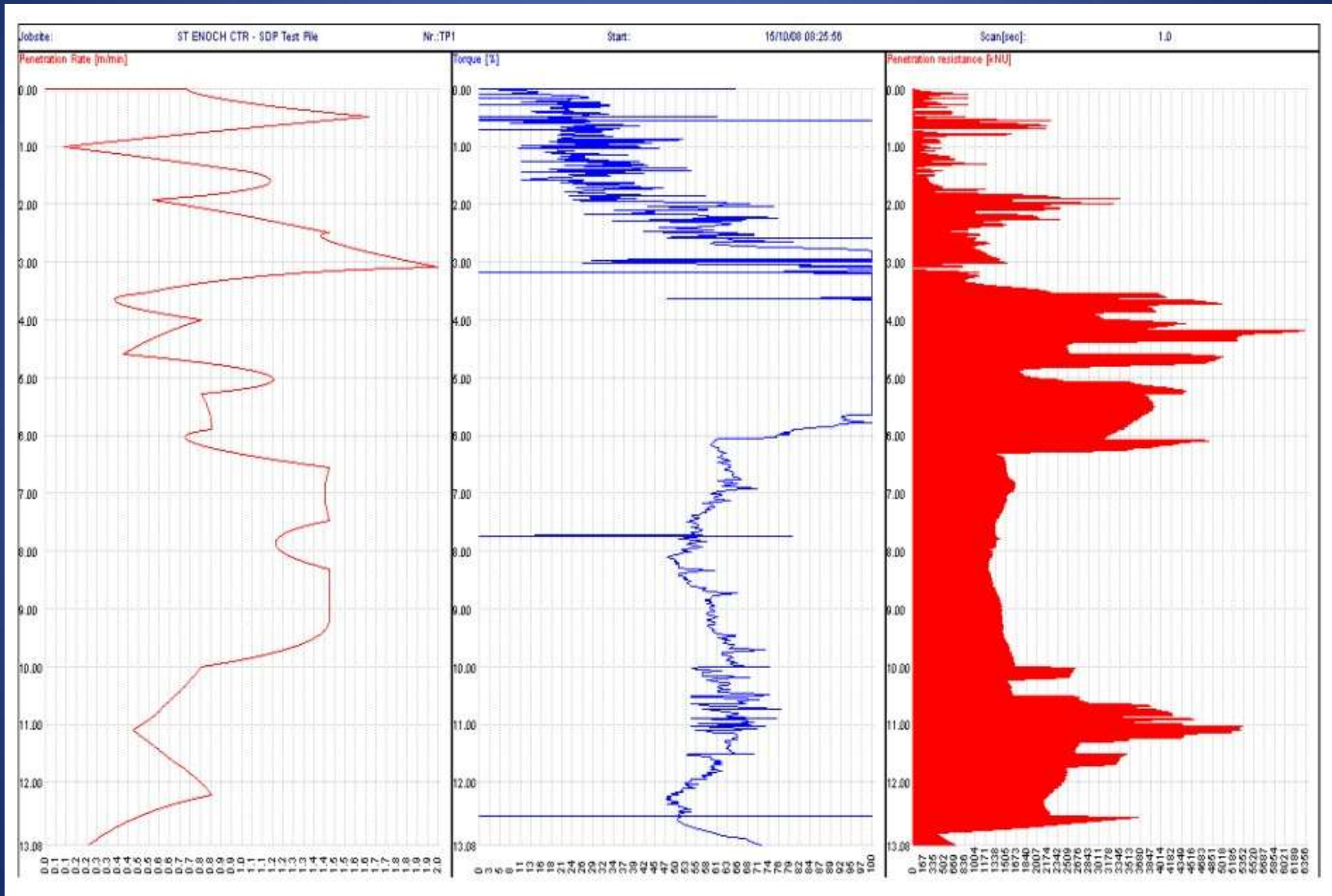
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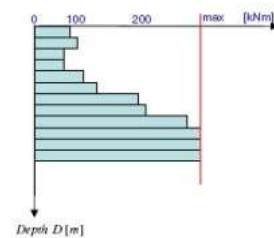
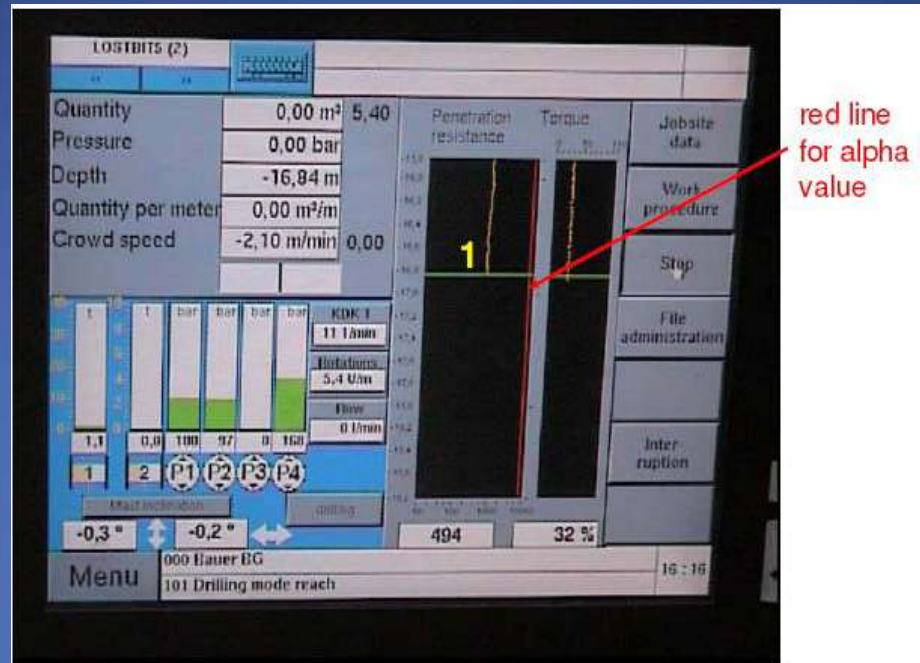
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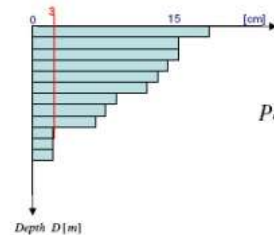


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Torque [Nm]

$$\alpha = \frac{\text{torque}}{\text{penetration}} = \frac{240 \text{ kNm}}{0,03 \text{ m / U}} = 8000 [-]$$



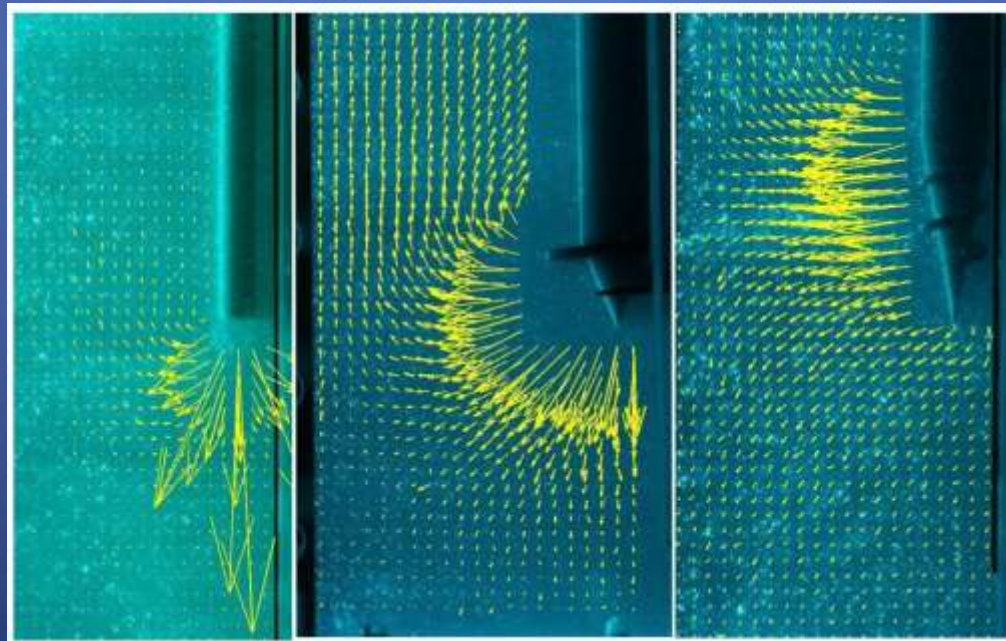
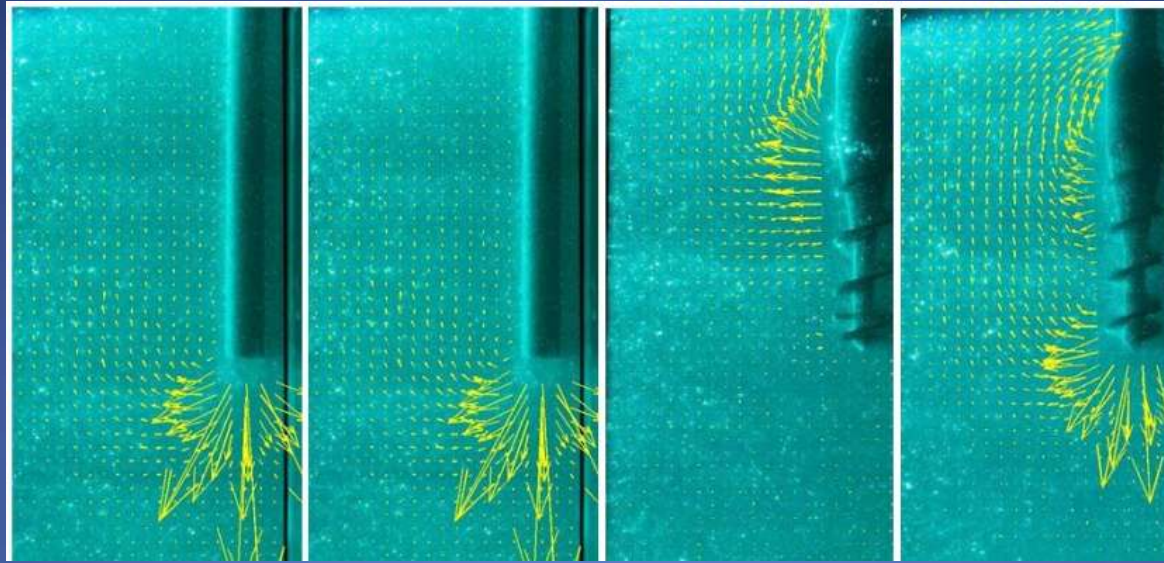
Penetration $\left[\frac{\text{m}}{\text{rotation}} \right]$

The Alpha value is an index for the penetration resistance and shows the bearing capacity of the soil.

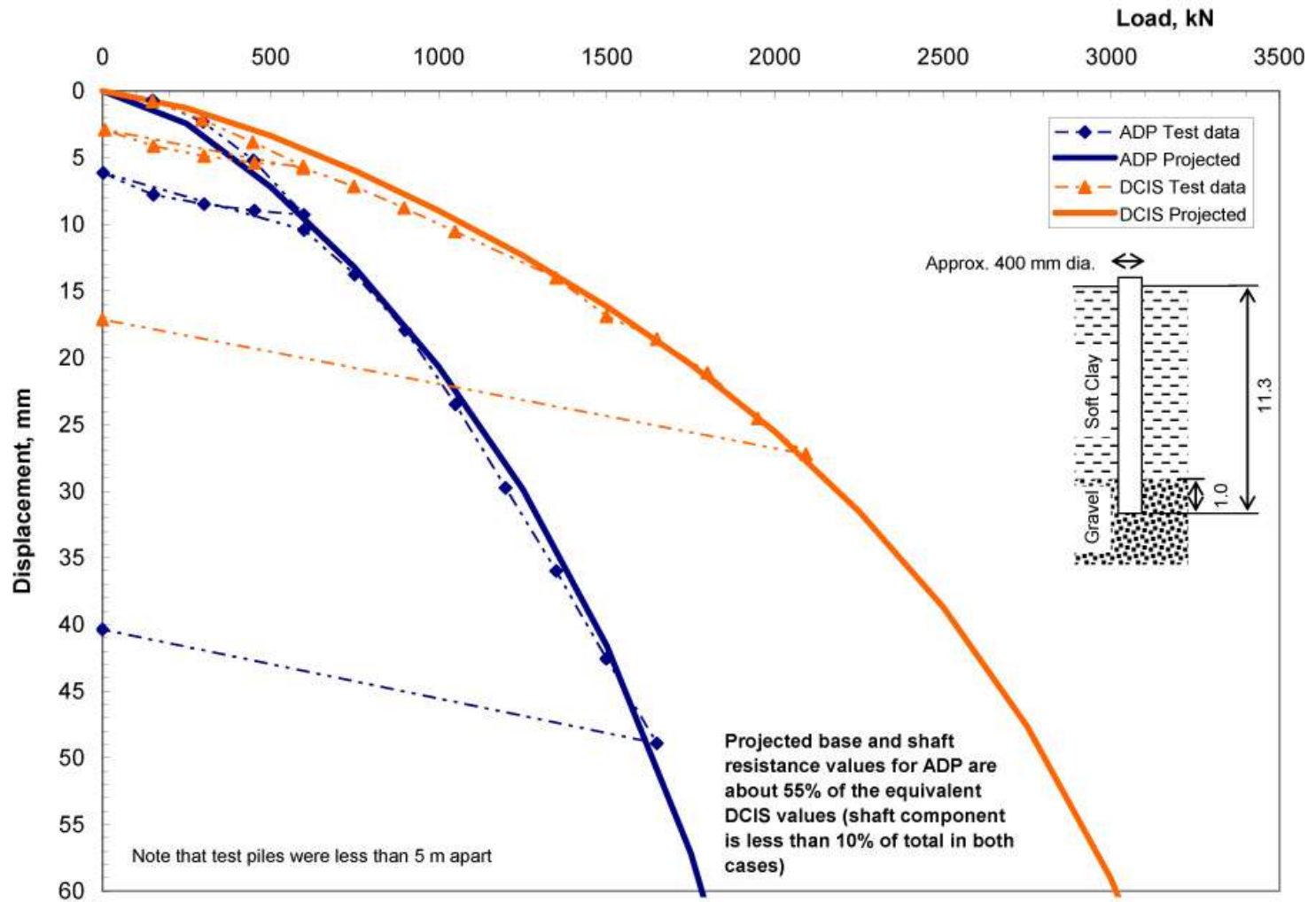
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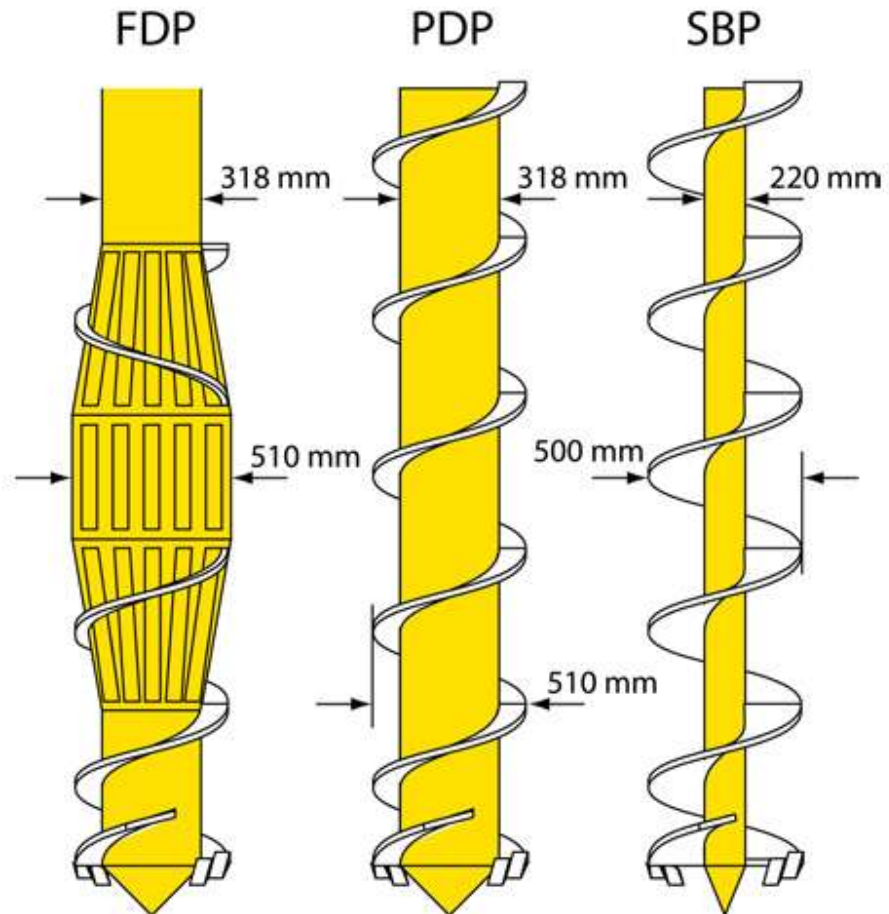
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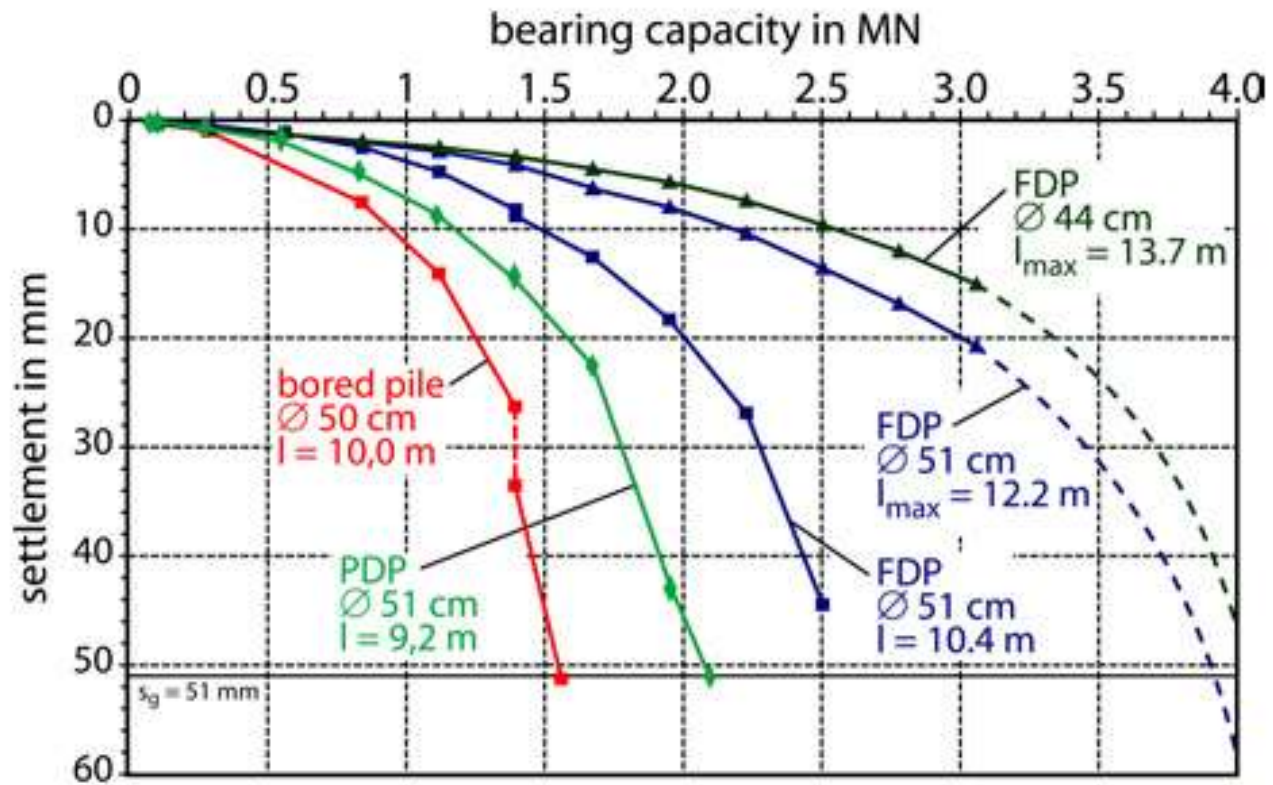
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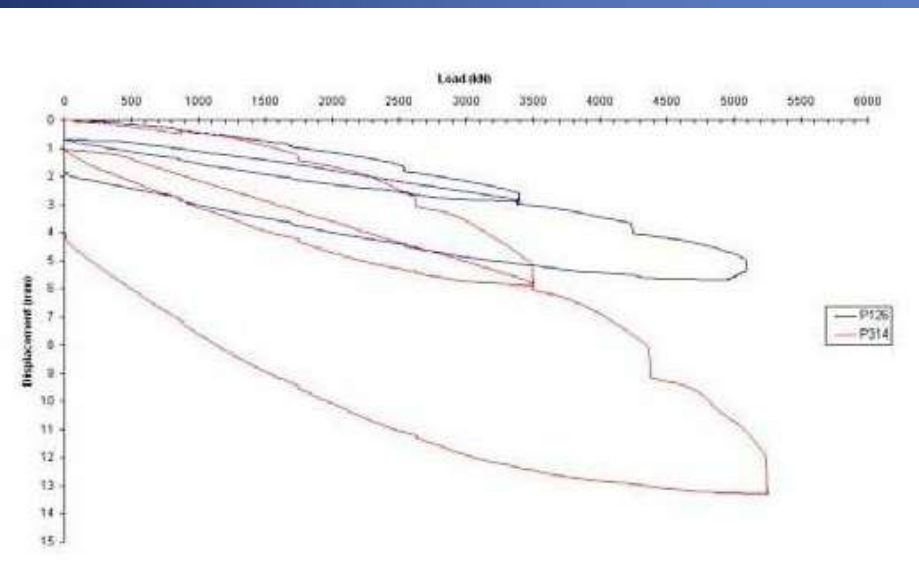
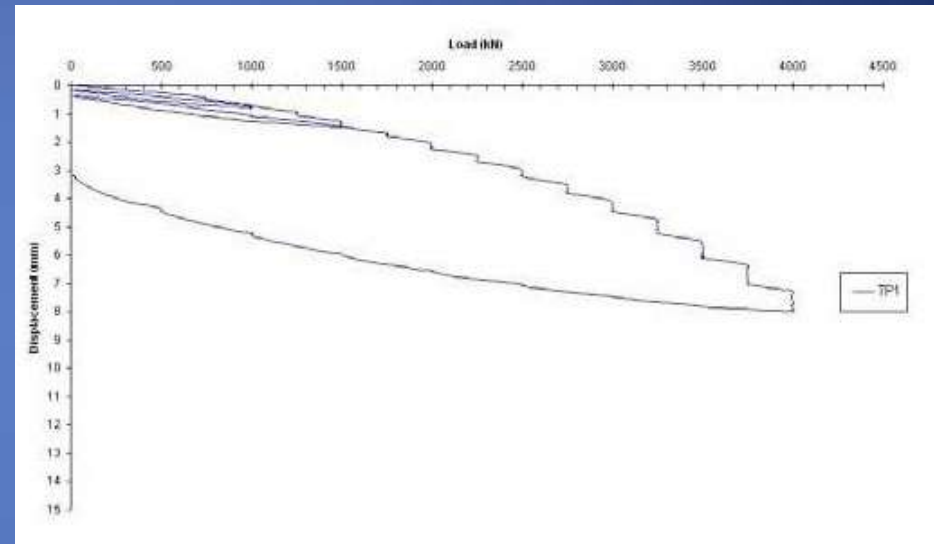
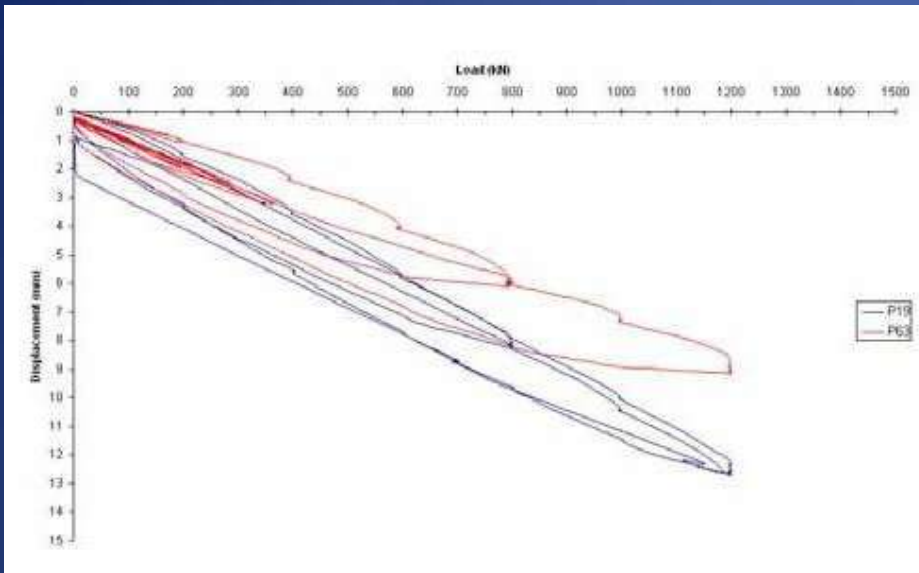
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Press-in Mechanism

- : Gyropress Force
- : Penetration Resistance
- : Reactive Lifting & Lateral Force
- : Reaction Force

Reactive Lifting Force

Reactive Lateral Force

Lateral Resistance

Reaction Force

Reaction Base

Extraction Resistance

Reaction Force

Reaction Piles

Completed Piles

Gyropress Grip

Press-in Force

Gyration Force

Minimum Soil Removal

Skin Friction on Pile Shaft
(Outer and Inner Surface)

Penetration Resistance

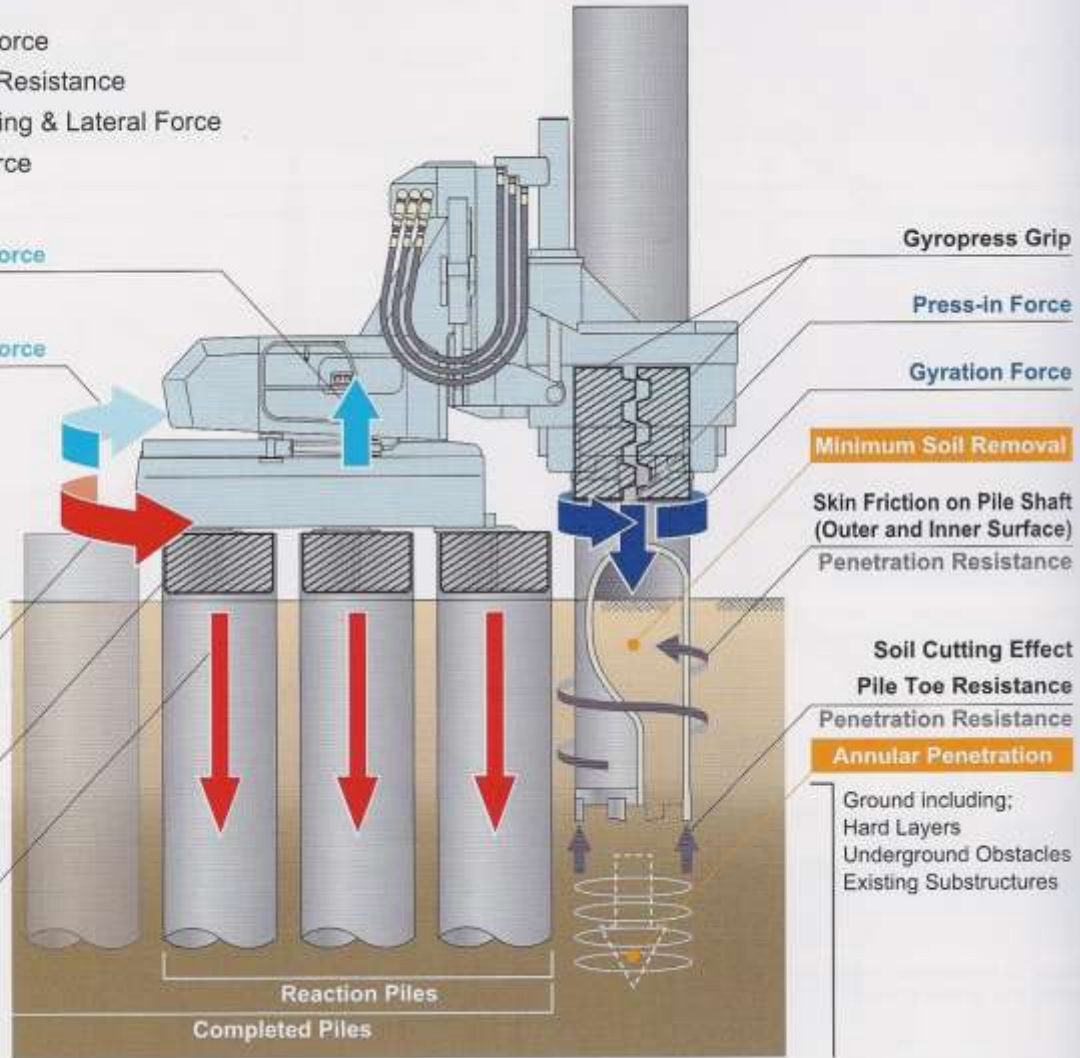
Soil Cutting Effect

Pile Toe Resistance

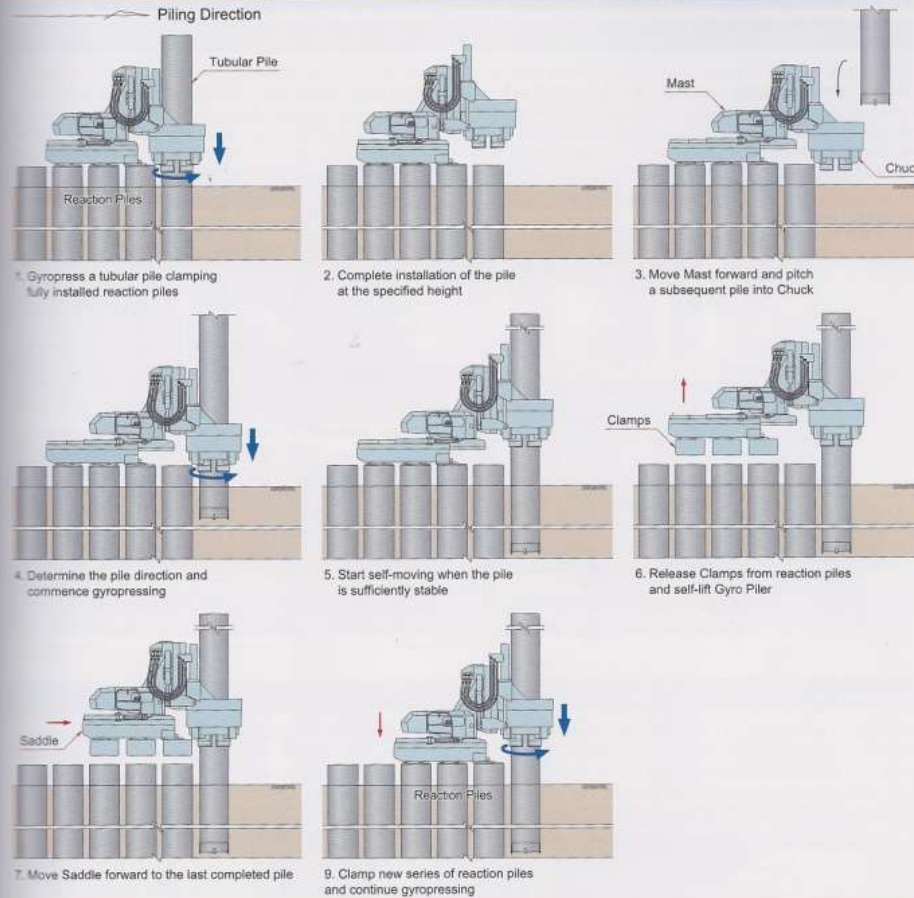
Penetration Resistance

Annular Penetration

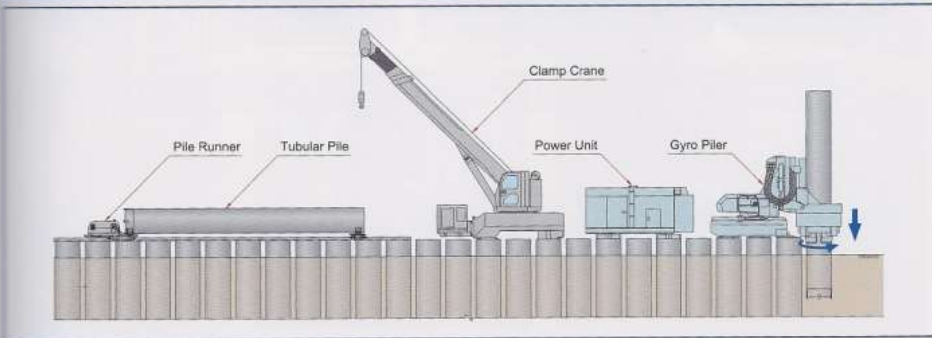
Ground including;
Hard Layers
Underground Obstacles
Existing Substructures



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Standard Machine Layout of GRB System



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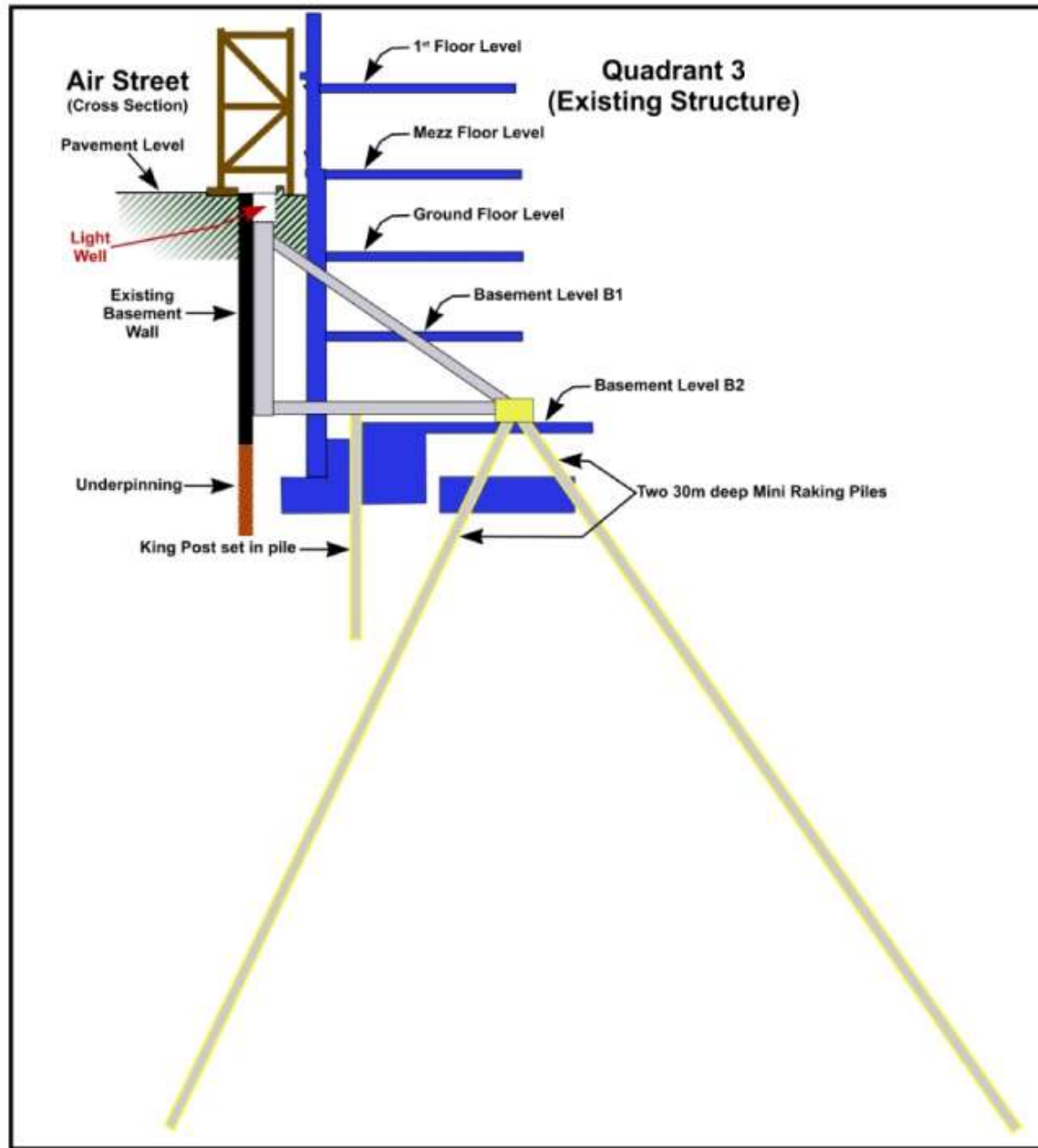
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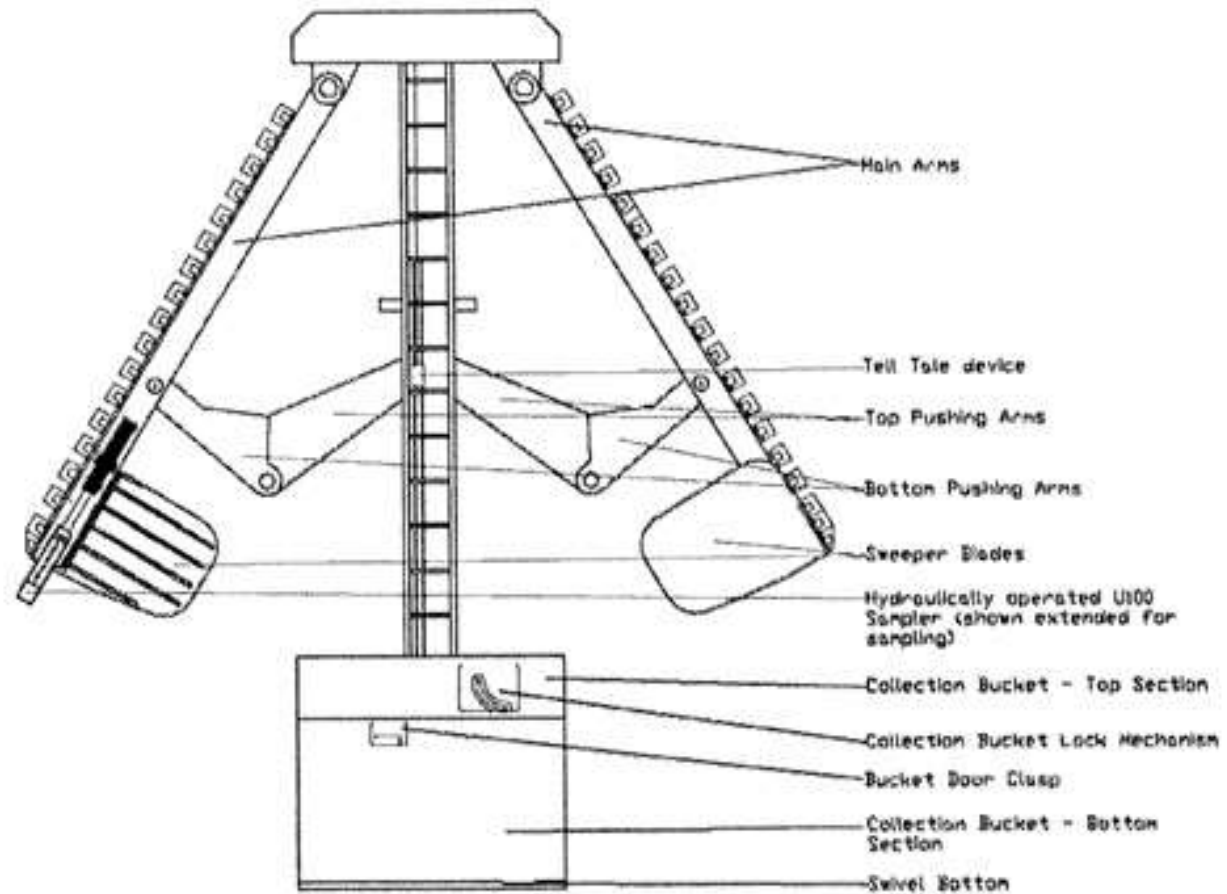
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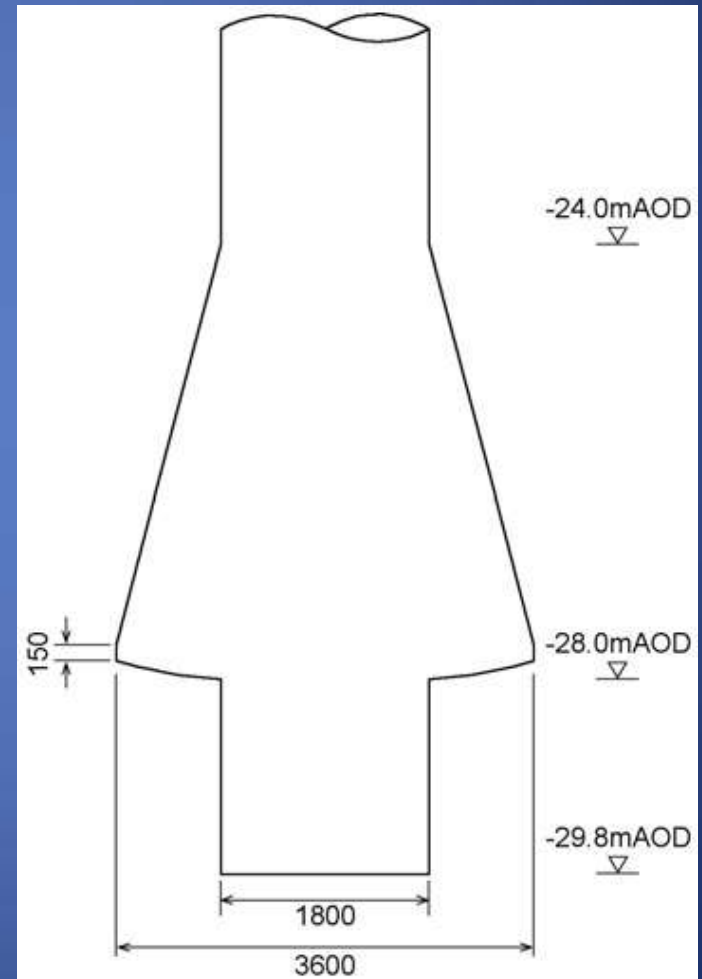
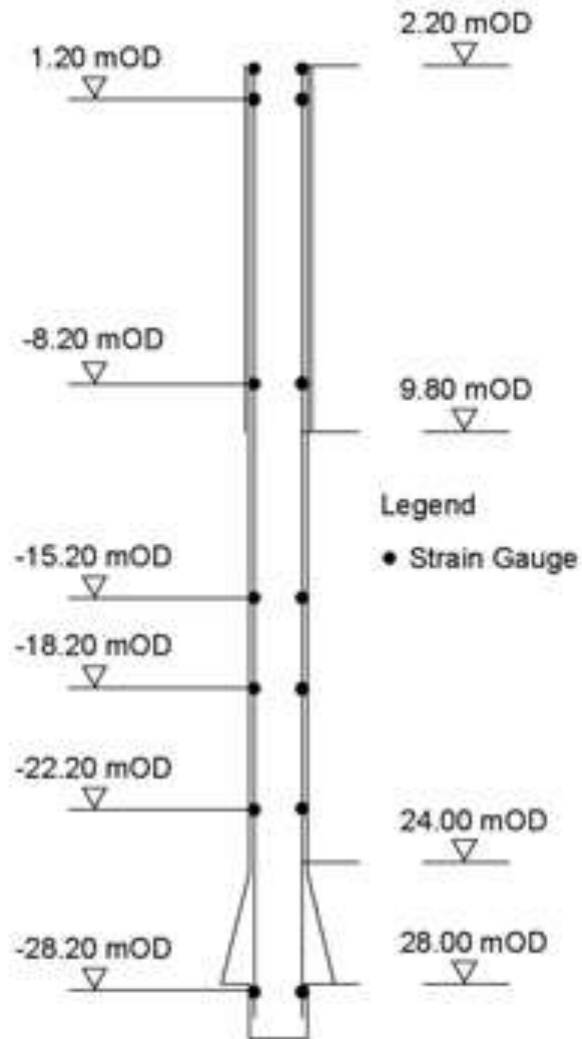


Stent 1800/5400 Under-Reaming Bucket

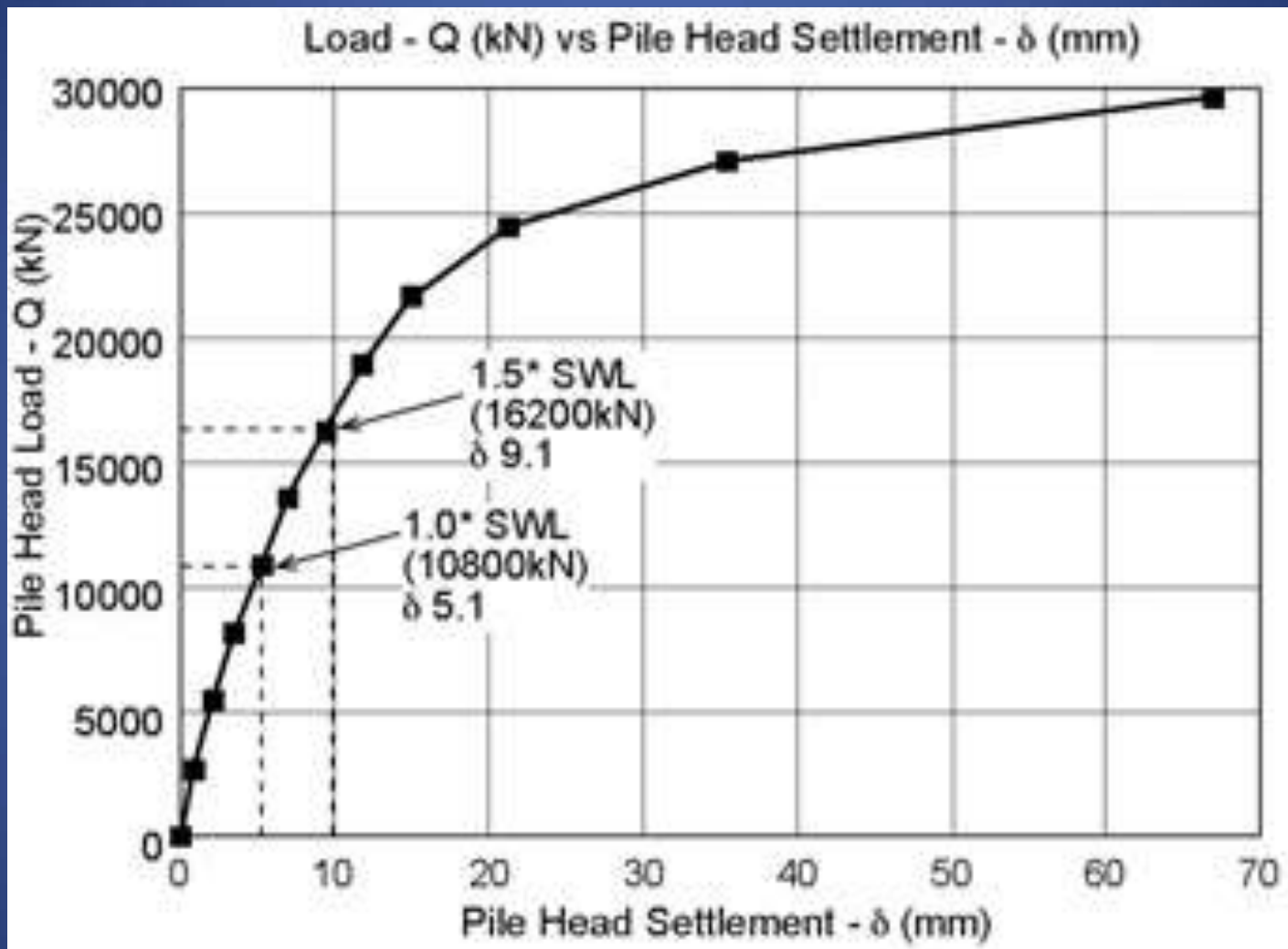
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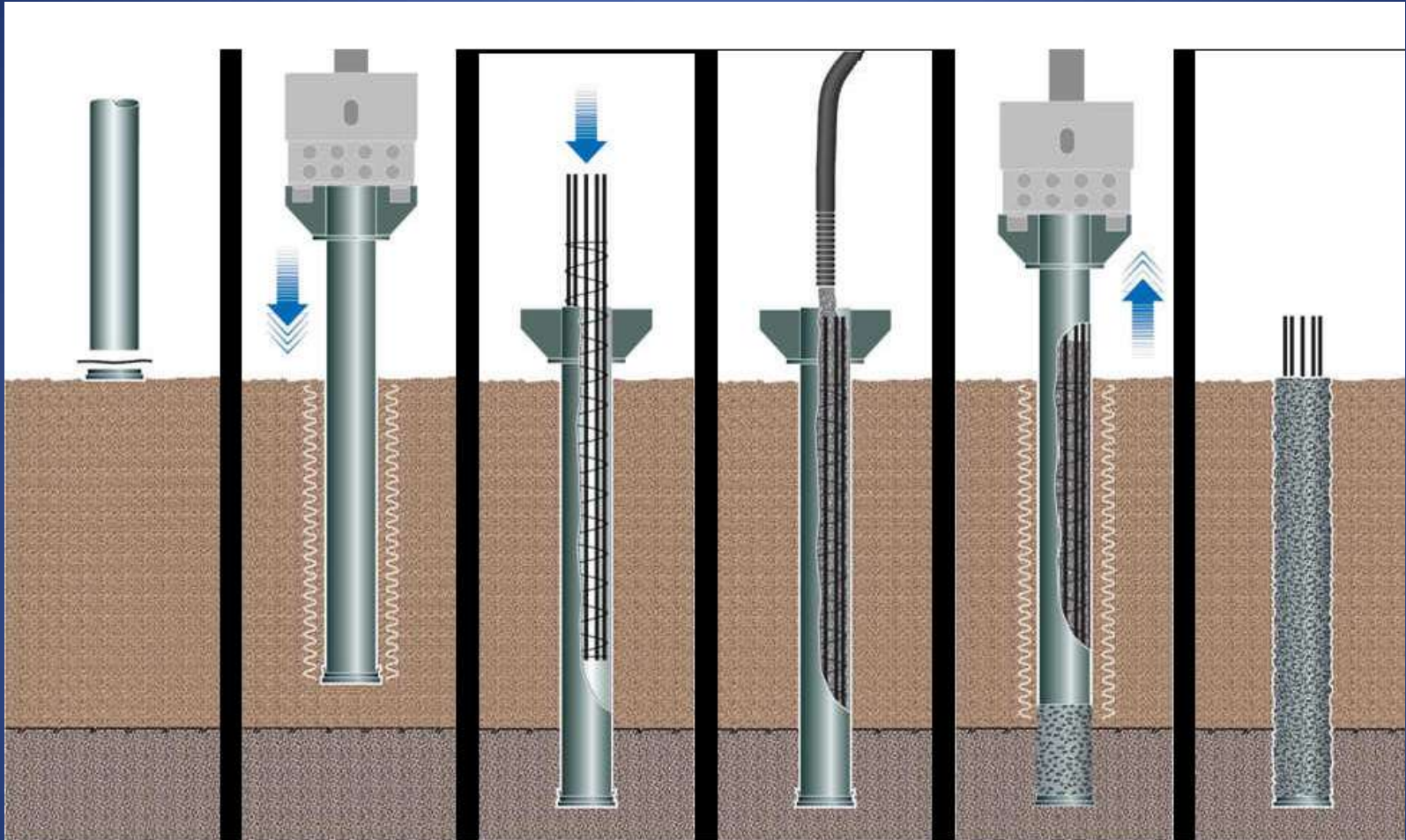
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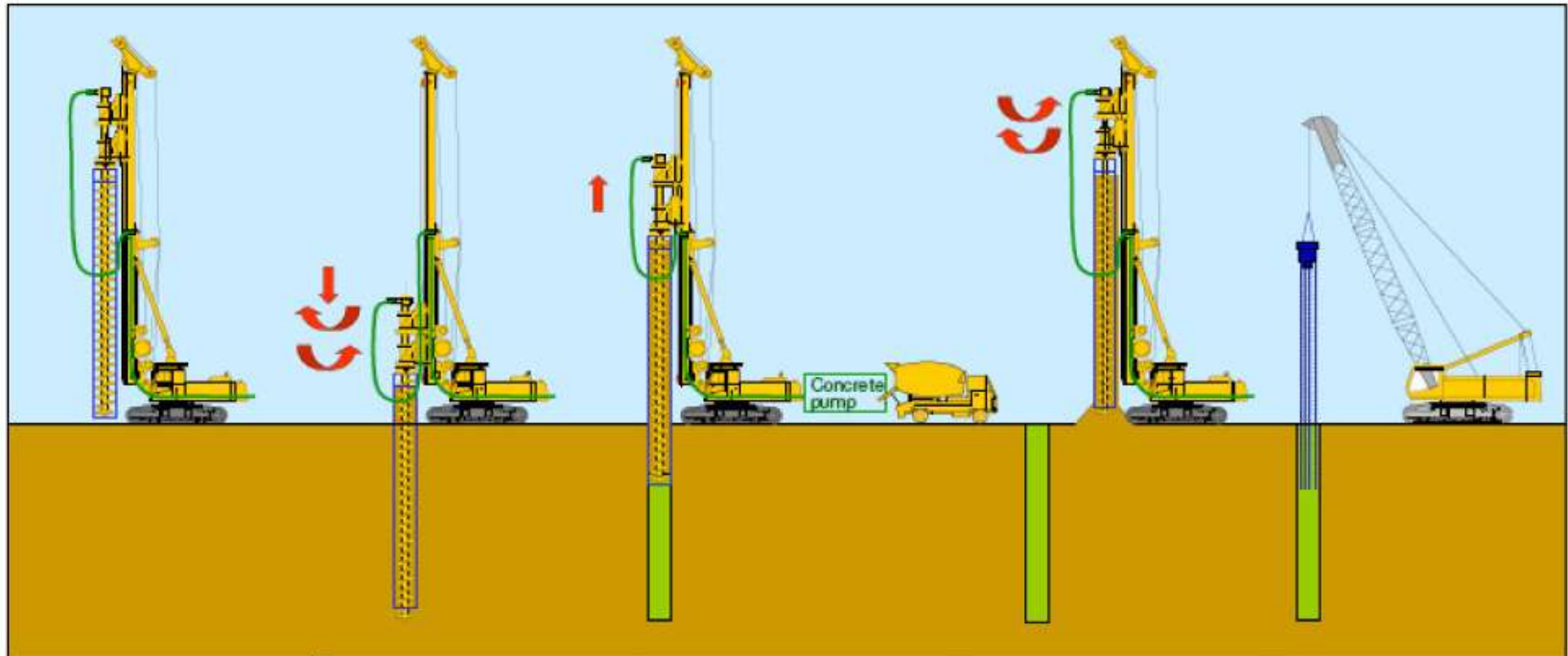
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The double rotary drive system consists of a counter rotating upper rotary drive connected to an auger and a lower one connected to the casing.

Rotate and push the tools into the ground. The soil is excavated by the auger and due to the counter-rotation is transported upwards in the casing.

After reaching the final depth the auger and casing are withdrawn and concrete is pumped through the hollow stem by the concrete pump.

Remove the rig from the borehole. Clean the casing filled with soil by changing the counter-rotation of the auger and casing.

Push or vibrate the reinforcement cage into the freshly poured pile.

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Standard CFA

Cased CFA

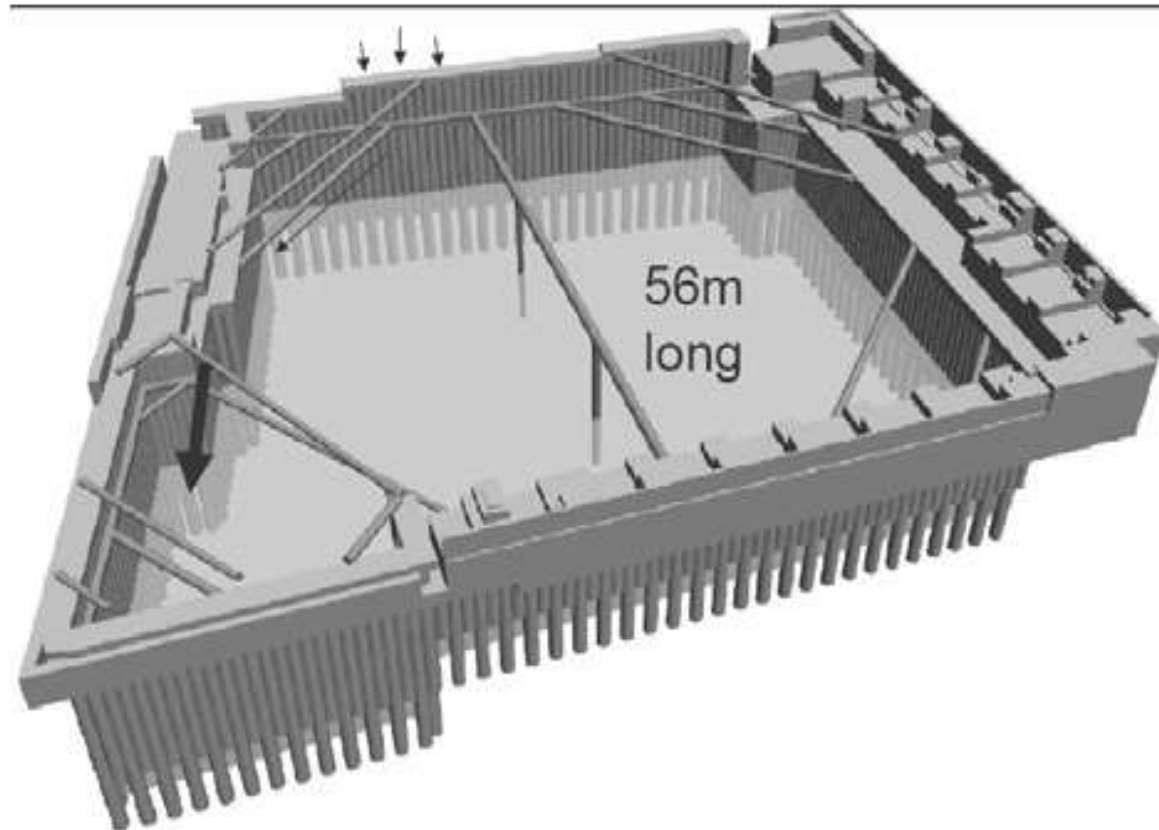
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