



# BRO ÖVER SUNDSVALLSFJÄRDEN

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E. PIHL & SØN





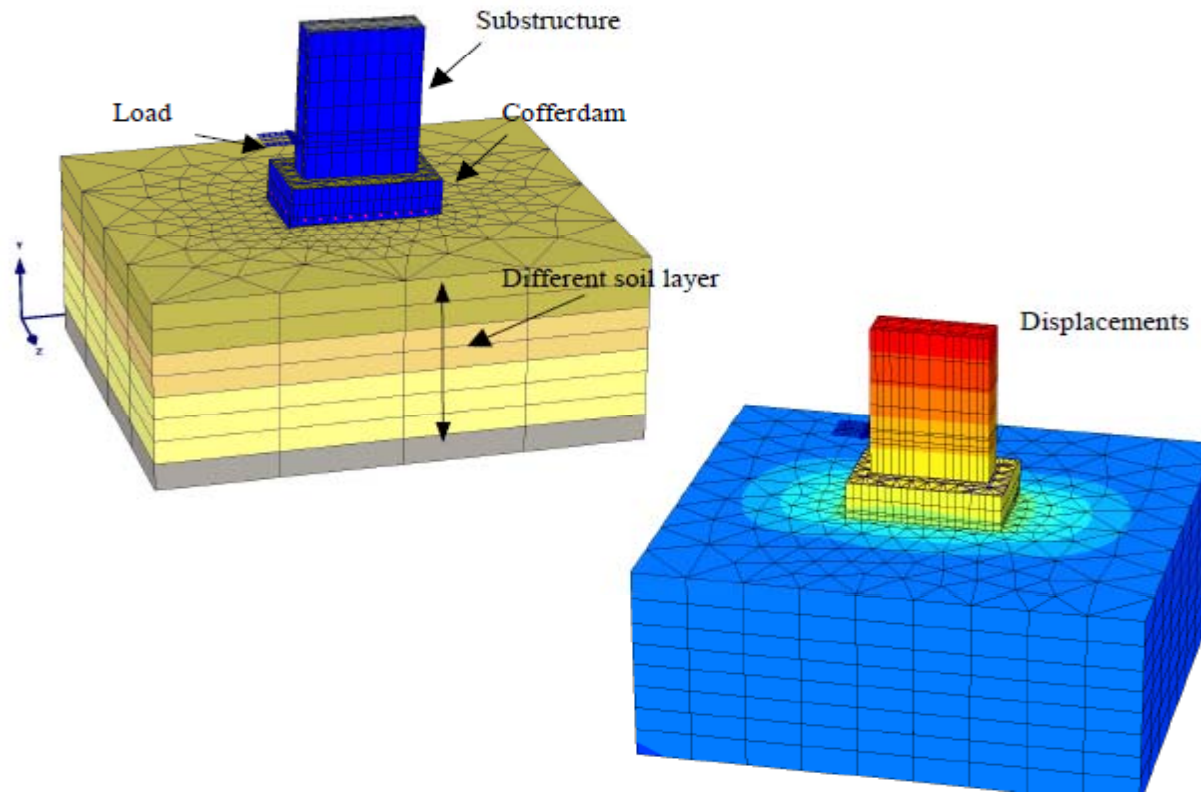


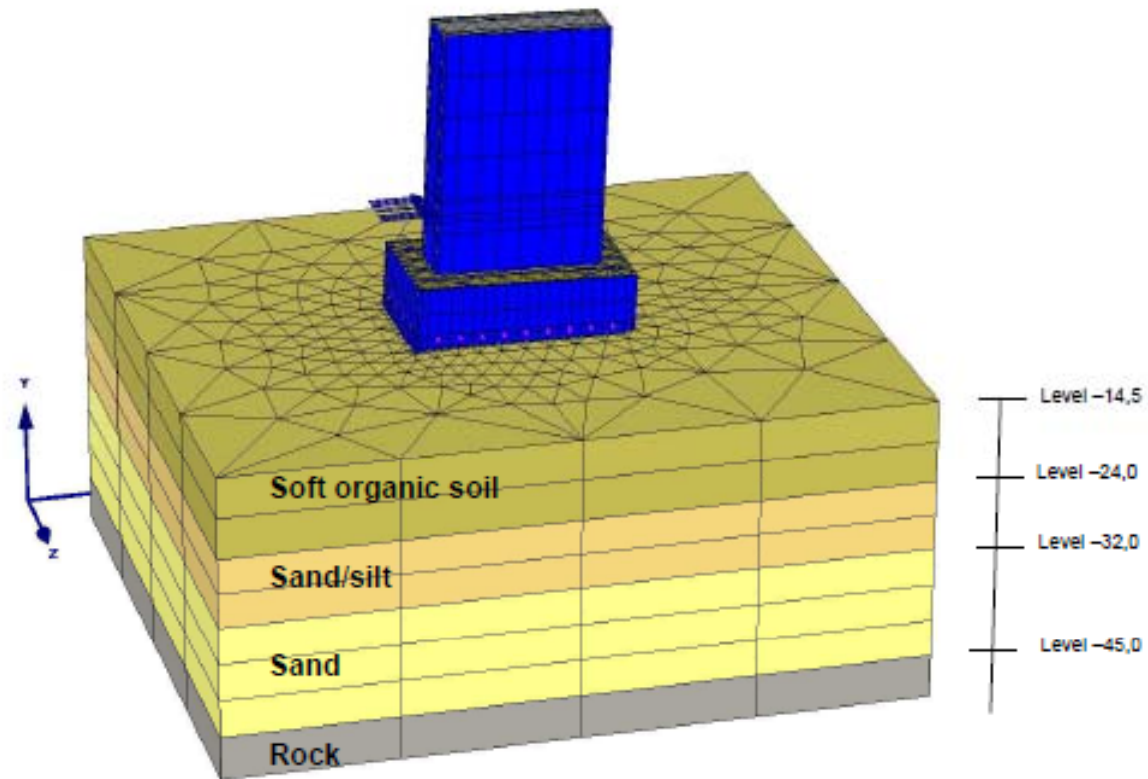
# Presentation of Technical Solution for Substructure of Bridge no. 22-1224-1



JV Sundsvallsbron

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**Deformed Mesh (scaled up 50,00 times)**

Maximum Value =  $50,95 \cdot 10^{-3}$  m

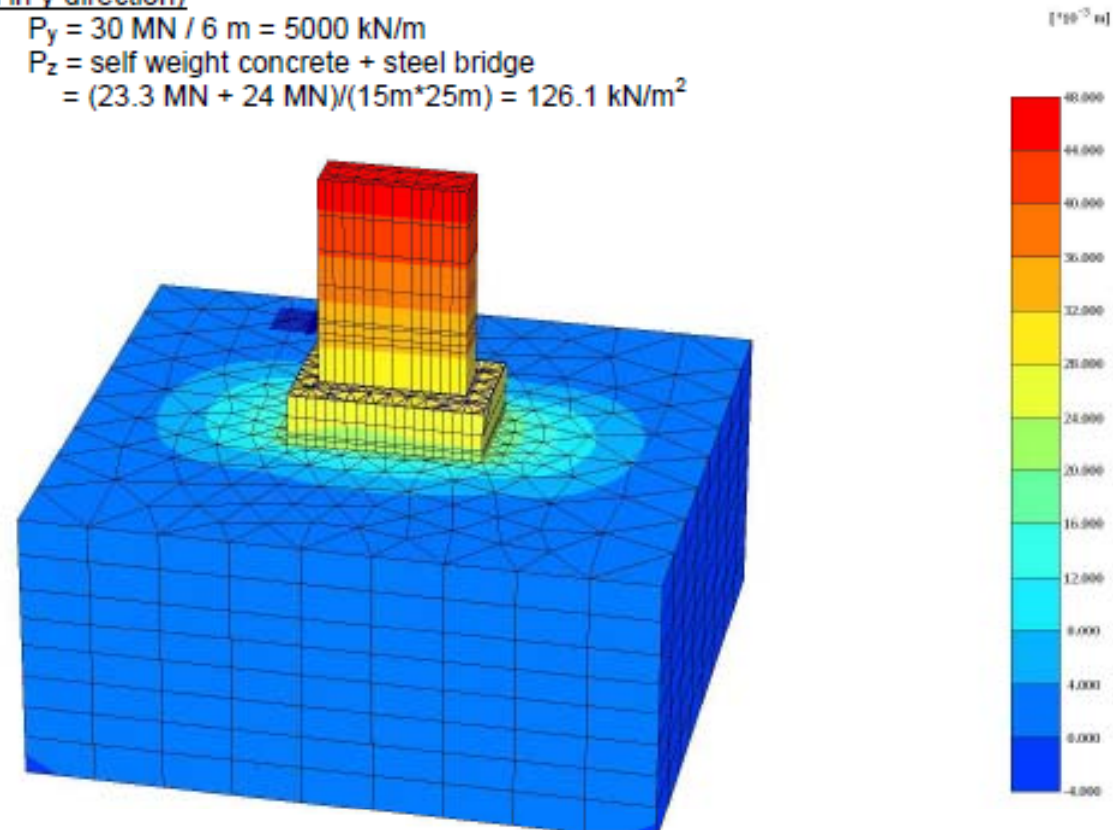
Minimum Value = 0,00 m

### Load Case 1.

Collision force (ship load in y-direction)

Ship load: (level -0.84)  $P_y = 30 \text{ MN} / 6 \text{ m} = 5000 \text{ kN/m}$

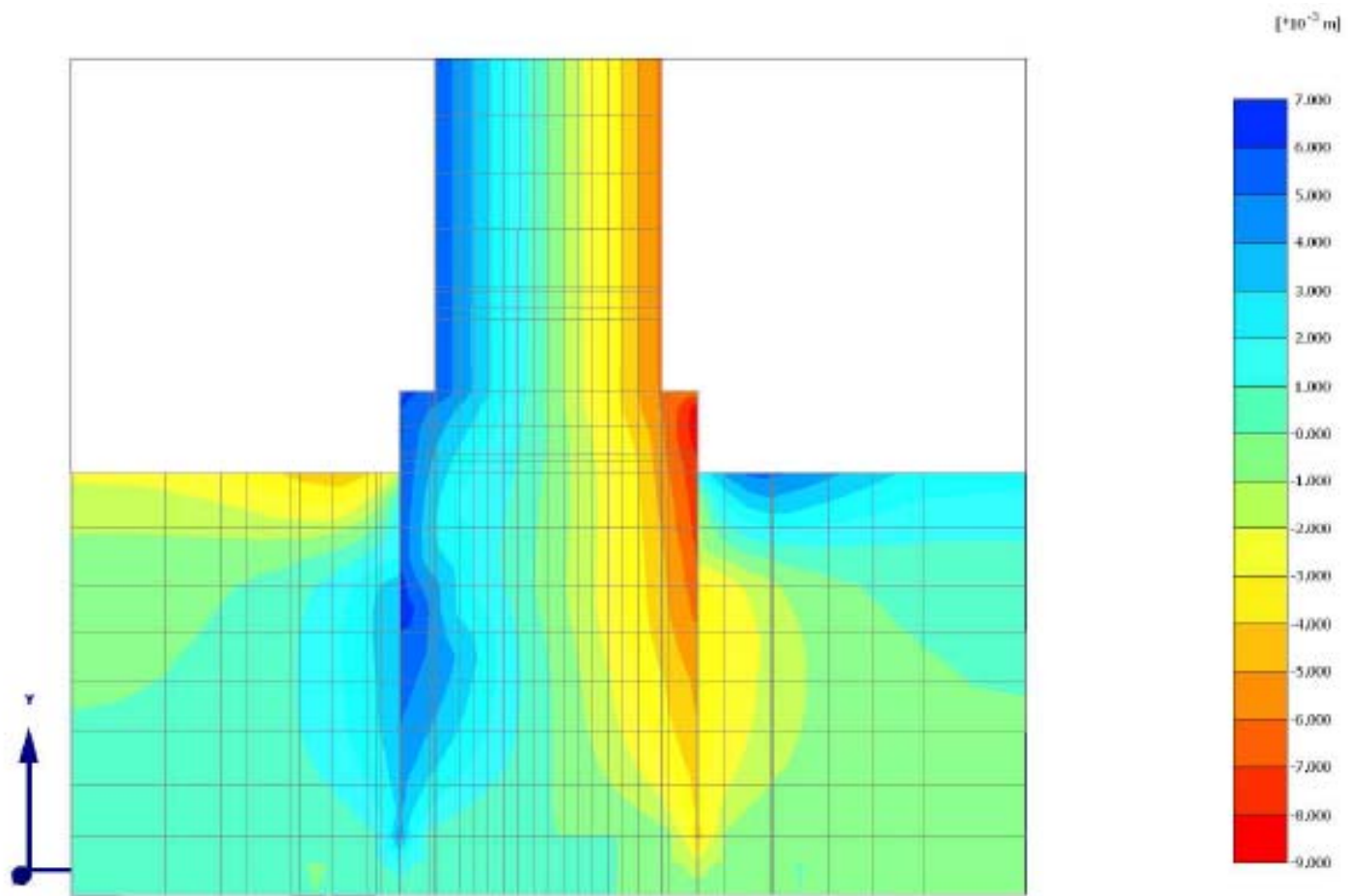
Self weight  $P_z = \text{self weight concrete} + \text{steel bridge}$   
 $= (23.3 \text{ MN} + 24 \text{ MN}) / (15\text{m} * 25\text{m}) = 126.1 \text{ kN/m}^2$



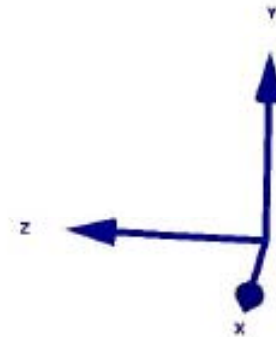
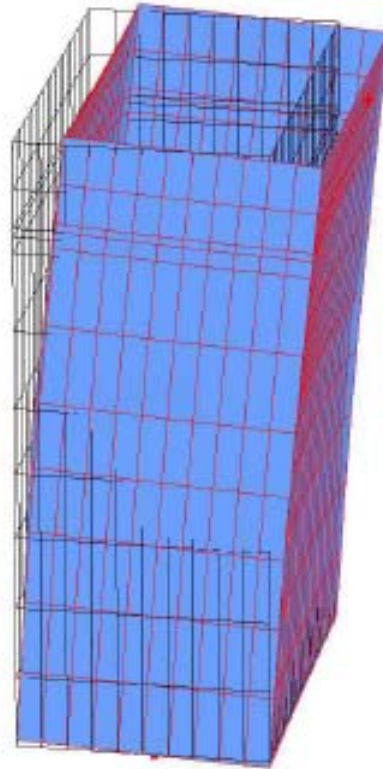
**Total Displacements  $u_x$**

Maximum Value =  $46,64 * 10^{-3}$  m (Element 554 at Node 825)

Minimum Value =  $-383,47 * 10^{-6}$  m (Element 11494 at Node 62696)



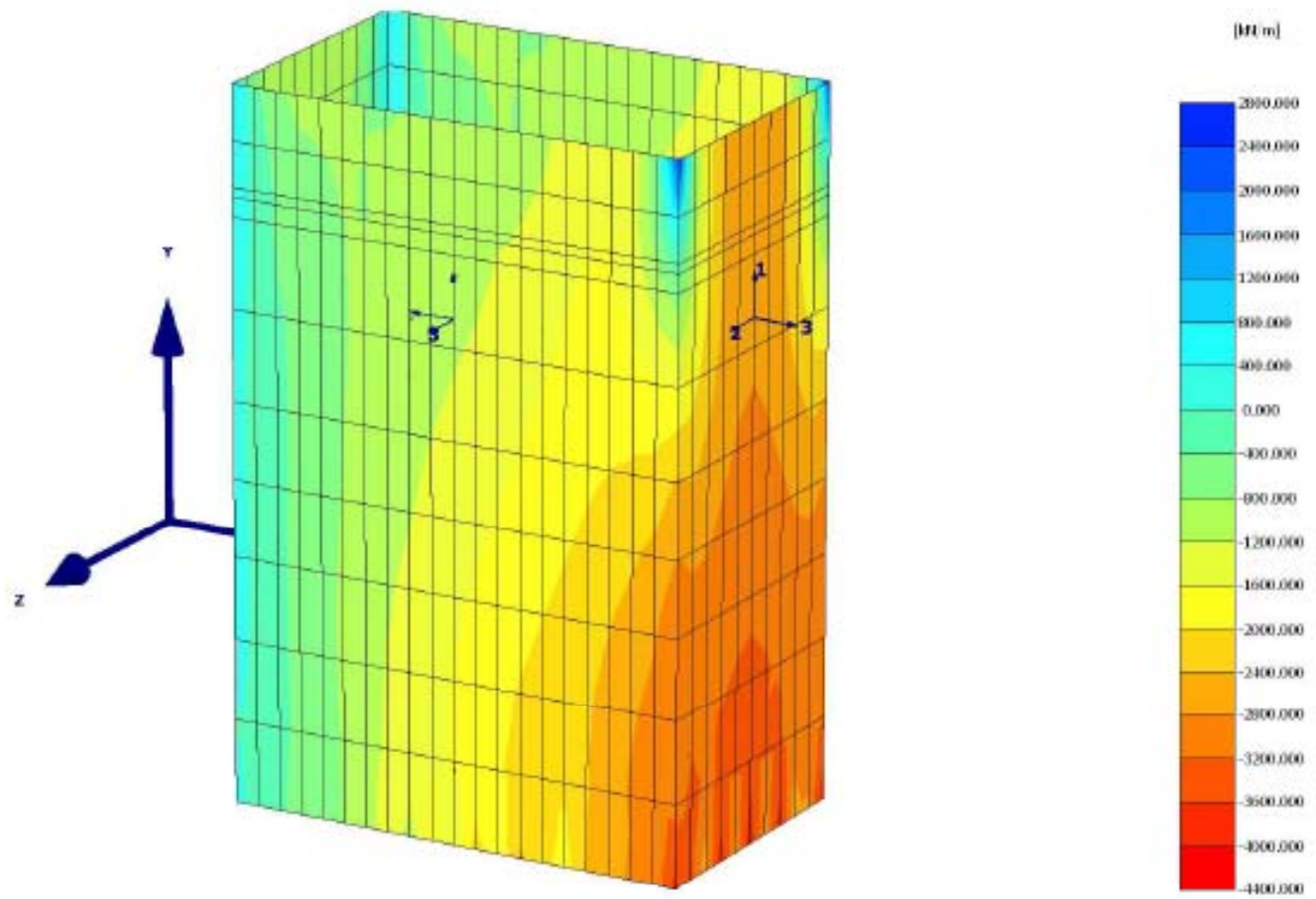
**Total Displacements  $u_y$**   
Maximum Value =  $6,91 \cdot 10^{-3}$  m  
Minimum Value =  $-8,77 \cdot 10^{-3}$  m



**Total Displacements  $|u|$  (scaled up 100,00 times)**

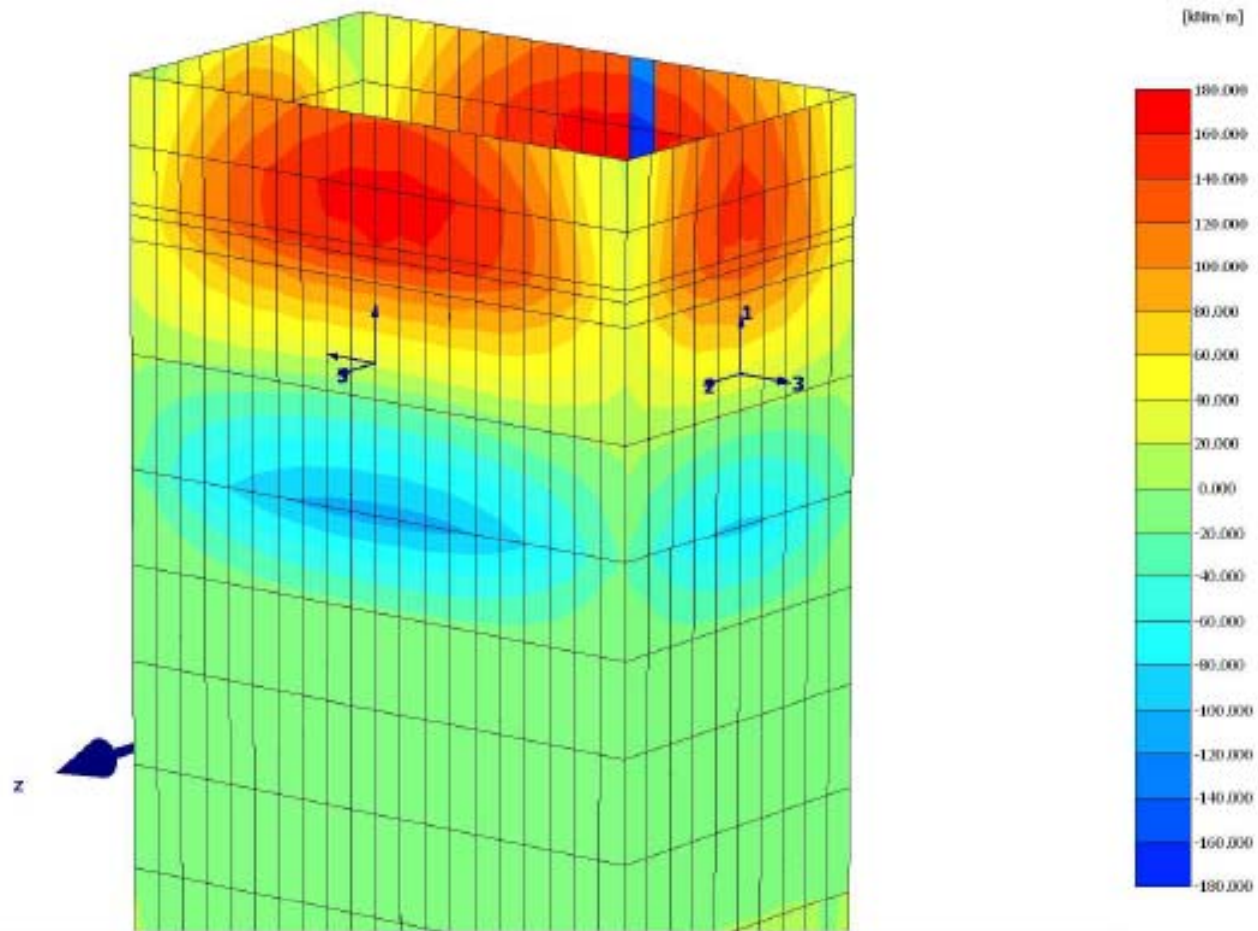
Maximum Value =  $30,90 \cdot 10^{-3}$  m (Element 836 at Node 15363)

Minimum Value =  $488,45 \cdot 10^{-6}$  m (Element 417 at Node 35765)



**Axial Forces  $N_1$**   
Maximum Value =  $2,50 \cdot 10^3$  kN/m (Element 845 at Node 15221)  
Minimum Value =  $-4,28 \cdot 10^3$  kN/m (Element 399 at Node 35456)





**Bending Moments  $M_{11}$**

Maximum Value = 170,25 kNm/m (Element 868 at Node 17926)

Minimum Value = -168,80 kNm/m (Element 838 at Node 17212)

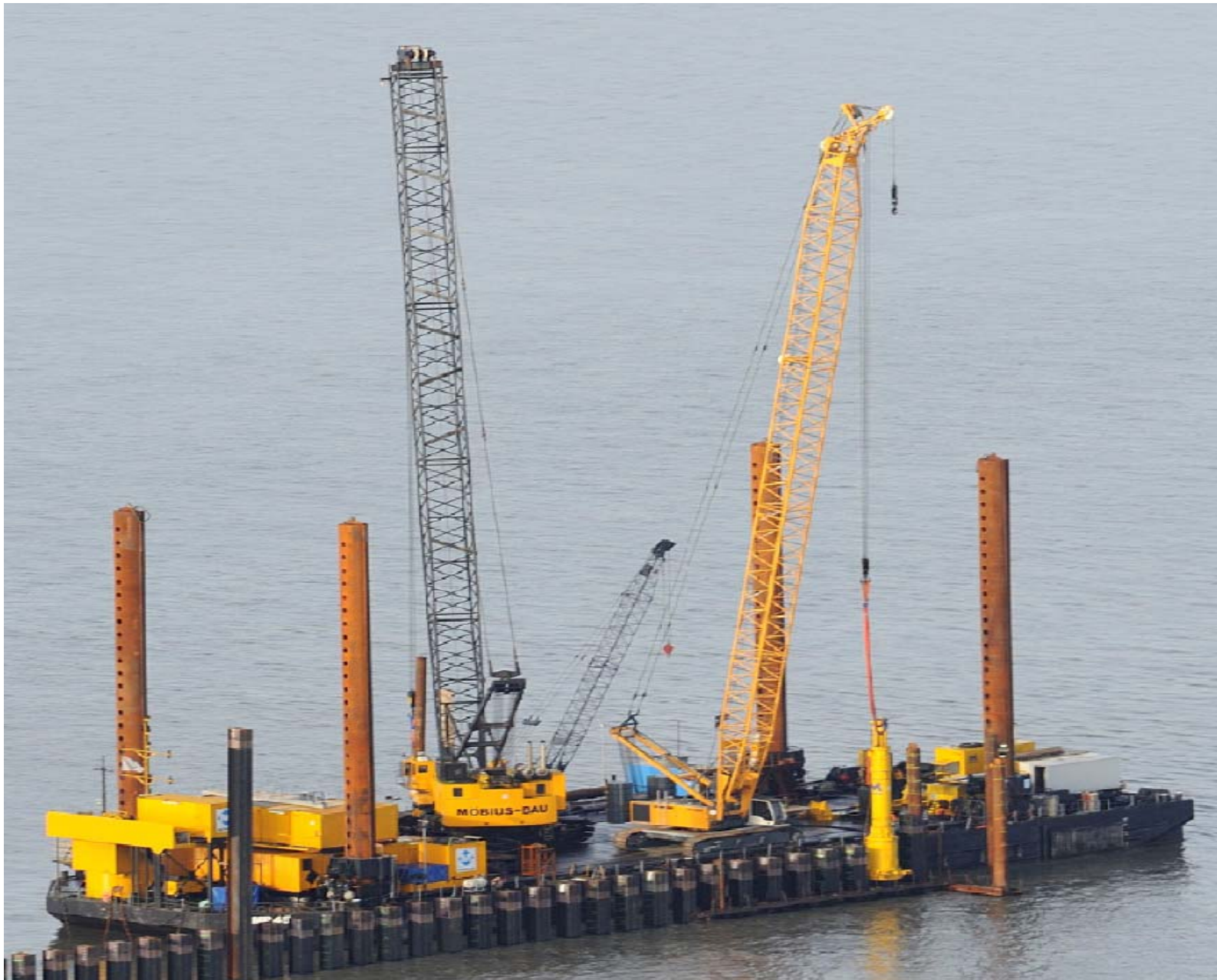
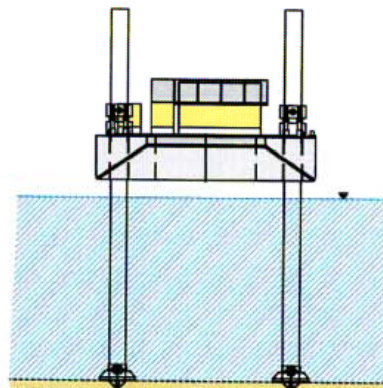
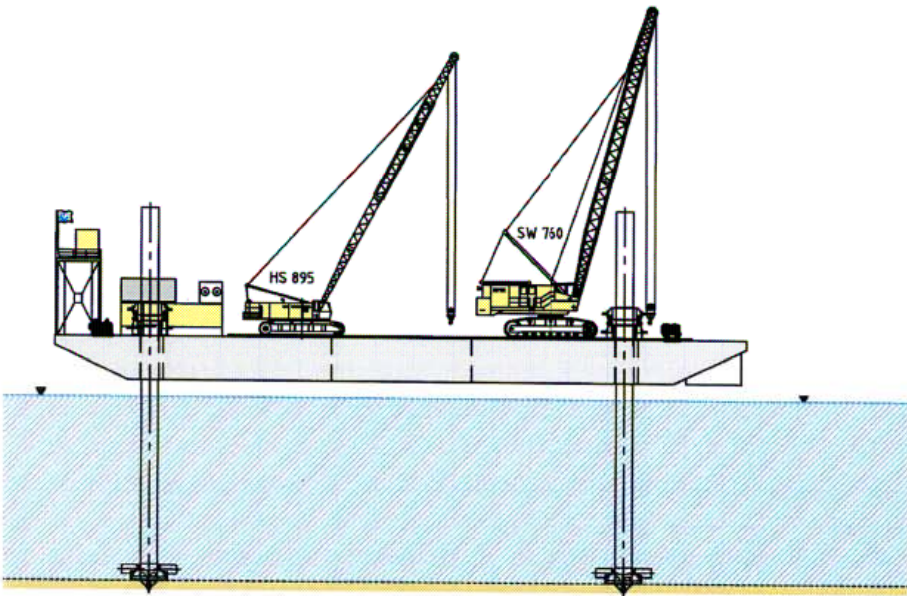
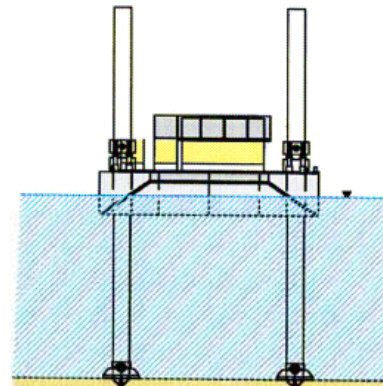
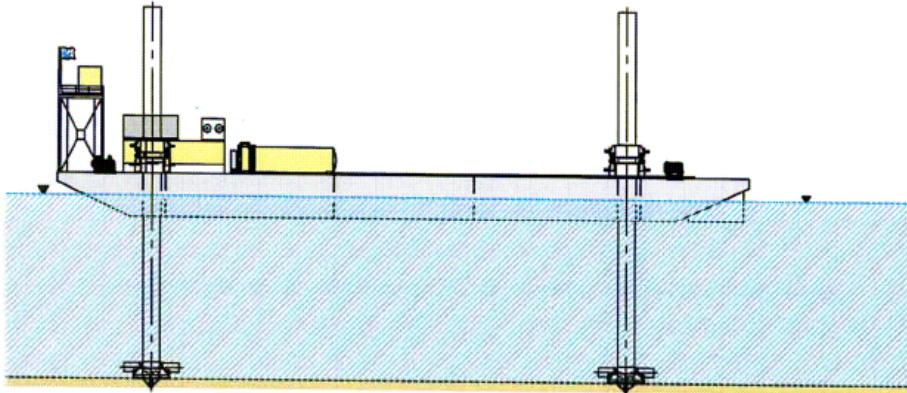
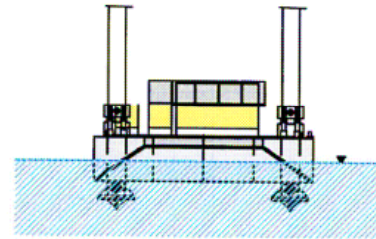
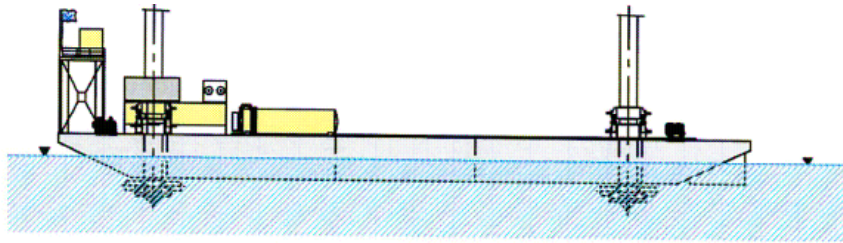


Photo 3: Driving rig Liebherr HS 895 and Weserhütte crane SW 760 installing piles from pontoon *MP 45*



Photo 4: Example of a driving template mounted on pontoon *MP 45*





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MP 45

Klasse: LR 100A1 pontoon, IceClass 1C

Length: 76,02m

Breath: 24,02m

Pontoon depth: 4,70m

4 spud  $\varnothing$ 1,82m; l=40m









TAK!

