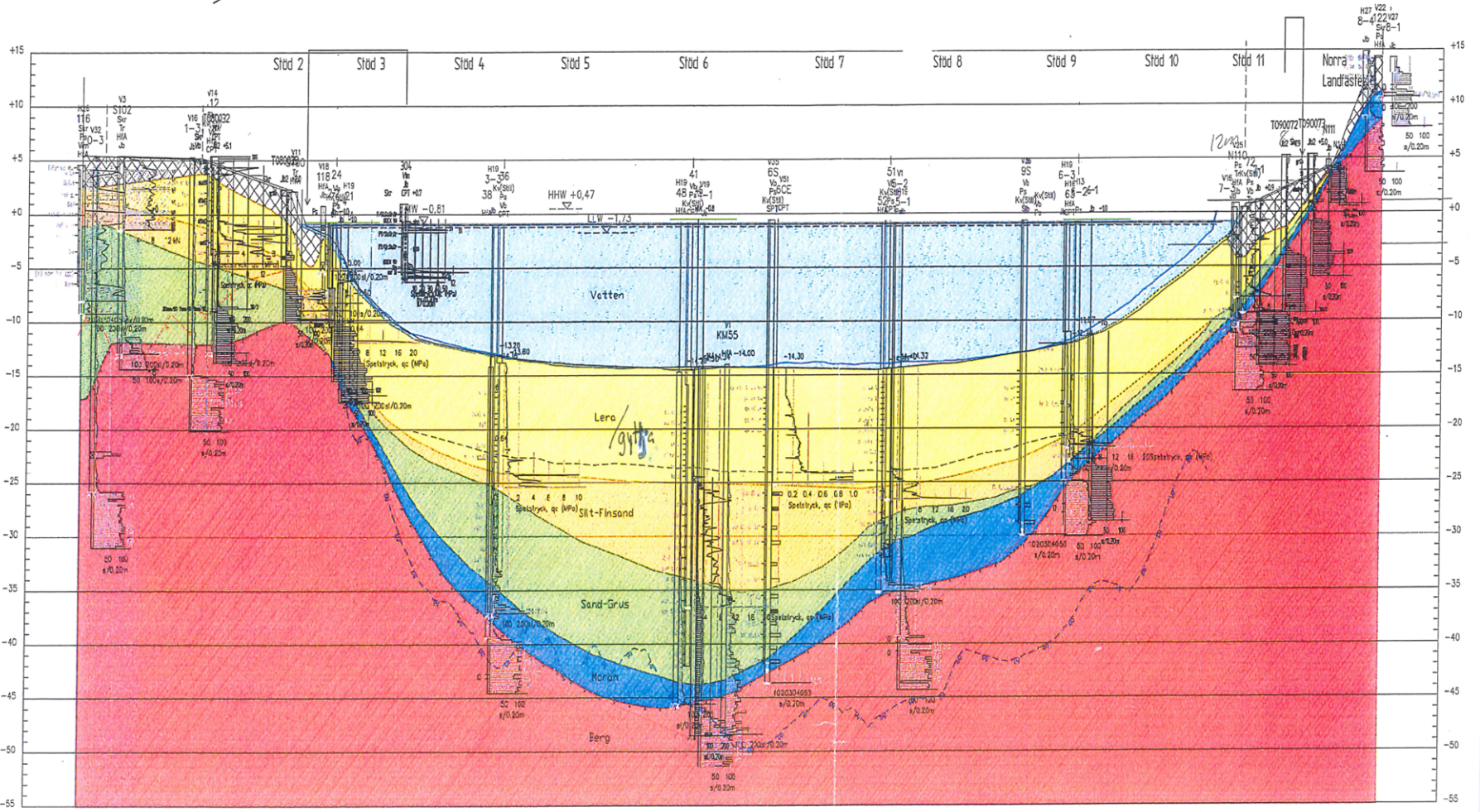




# BRO ÖVER SUNDSVALLSFJÄRDEN

FLEMMING J. NIELSEN

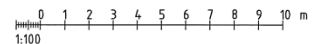
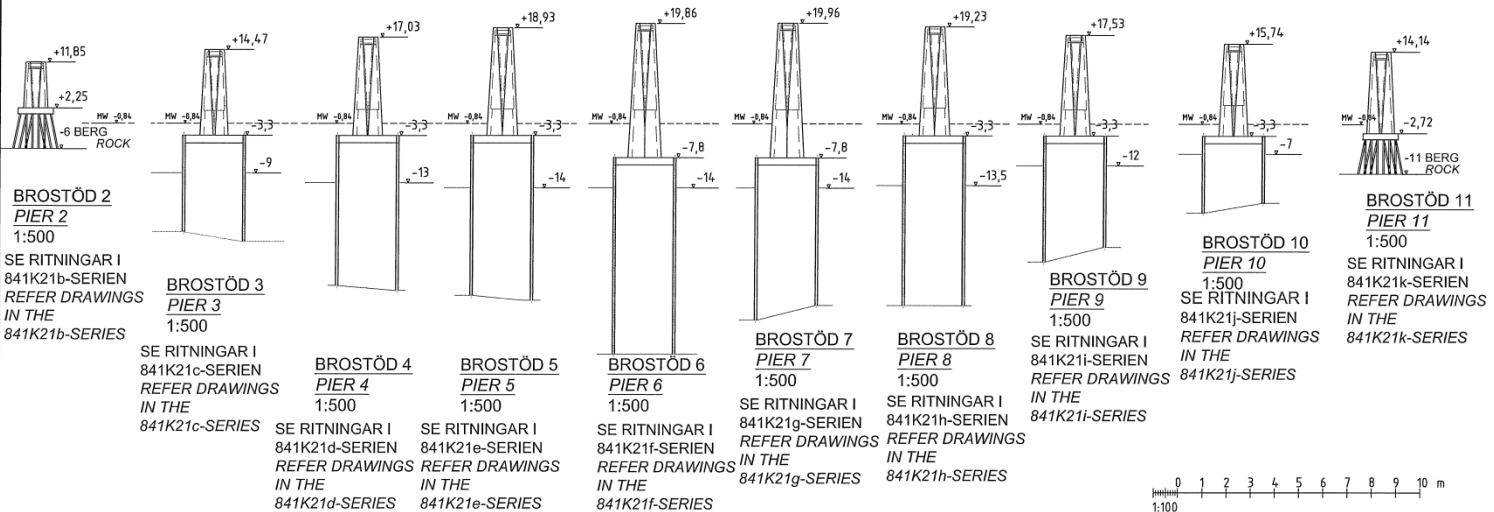
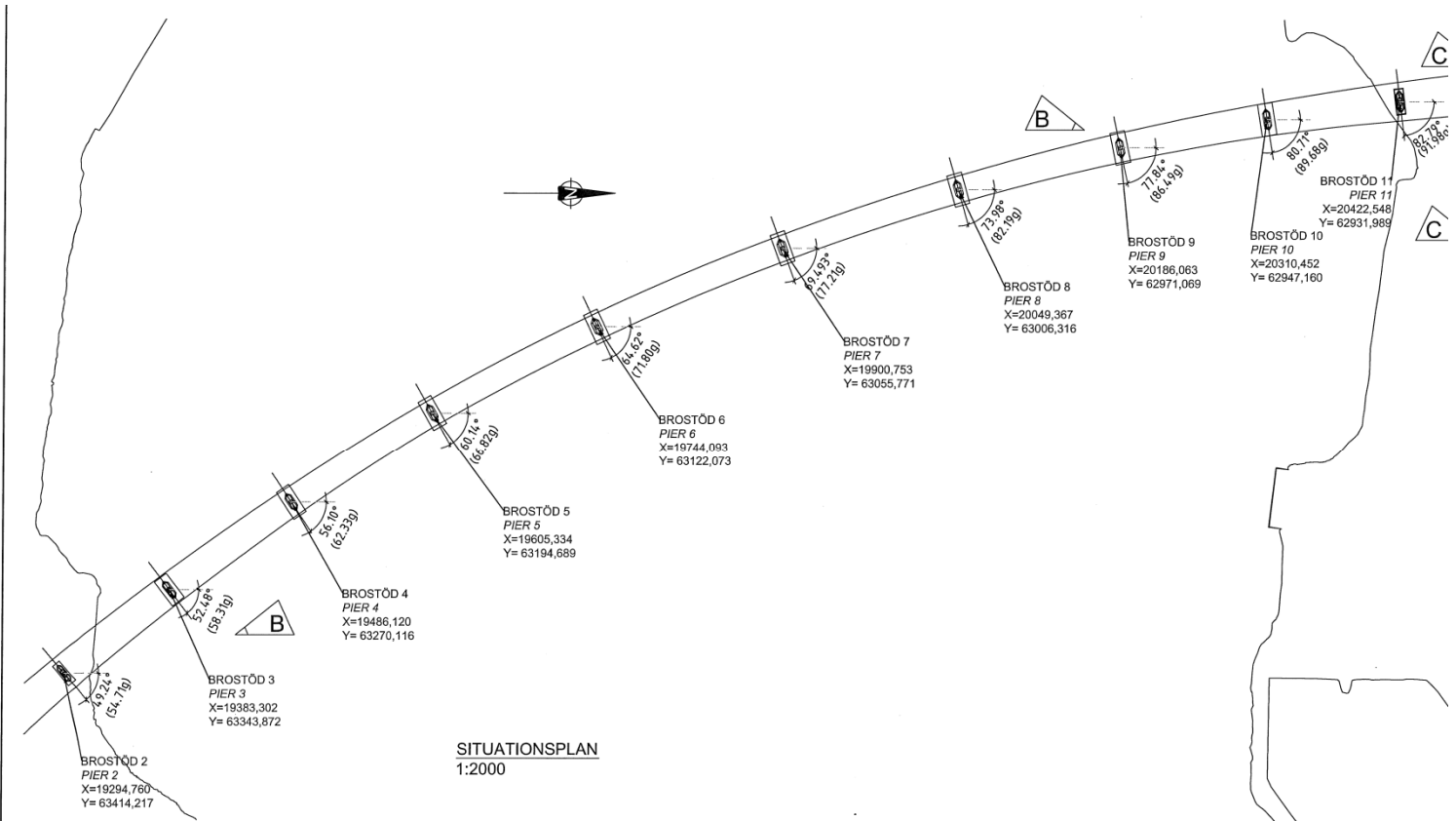
E. PIHL & SØN

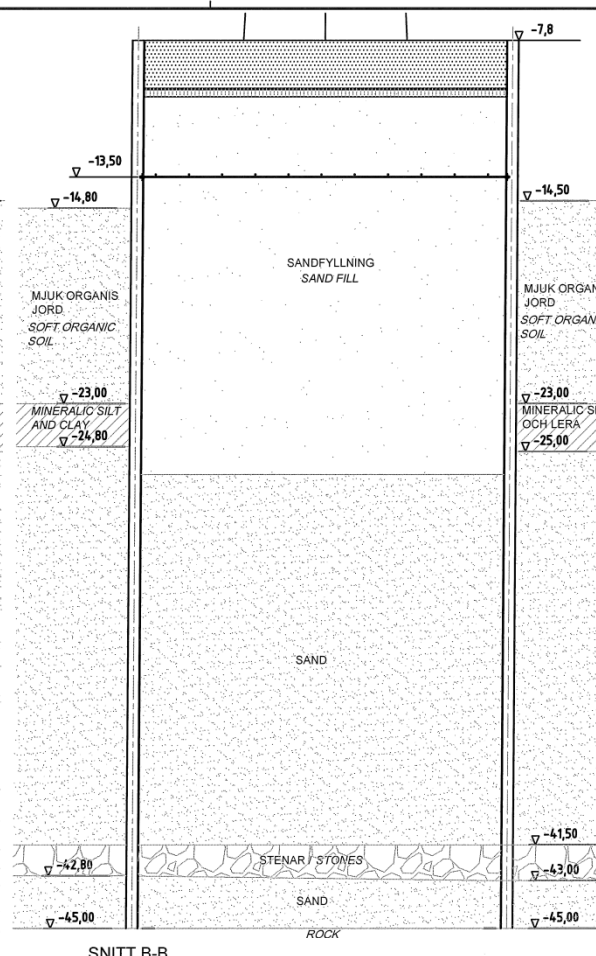
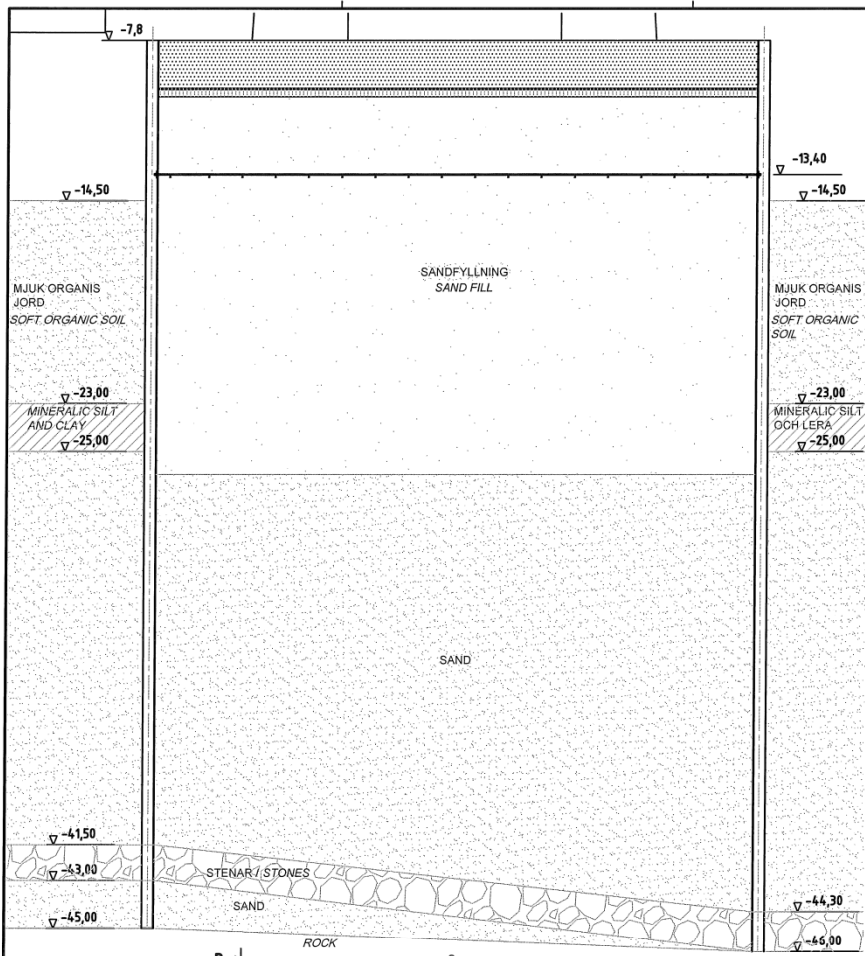


LÄNGDSEKTION  
H 1:200 L 1:2000

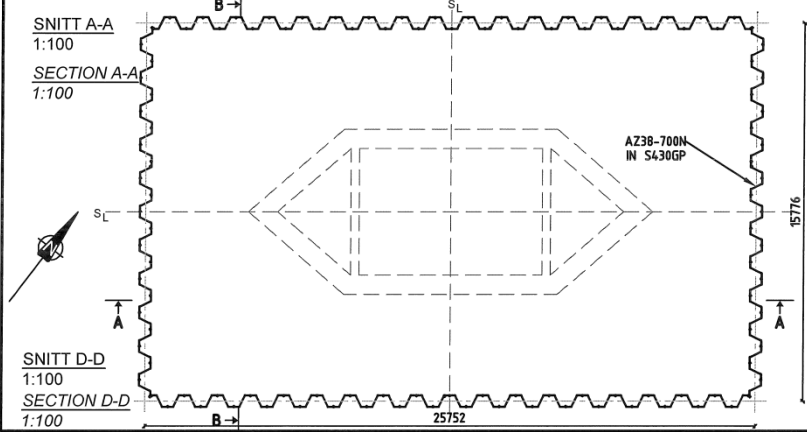
**FÖRKLARINGAR**  
 BORRHÅLSNUMMER 0-0 UTFÖRDA AV SCANDIACONSULT  
 BORRHÅLSNUMMER KM 00 UTFÖRDA AV KM  
 ÖVRIGA SONDERINGAR UTFÖRDA AV TYRÉNS HIFRAKONSULT AB  
 HHW, MW OCH LLW ENLIGT SMH, HÖJDSYSTEM RH00  
 NIVÅER ENLIGT SEISMISK UNDERSÖKNING UTFÖRD AV RAMBOLL  
 — BOTTEN  
 — ÖVERKANT SANSKIKT  
 — BERG  
 — TOLKAD BERGIVÅ (TYRÉNS 2009)

- VATTEN
- LERÅ
- SLIT-FINSAND
- SAND-GRUS
- MORÄN
- BERG



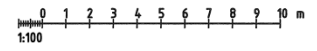


SNITT A-A  
1:100  
SECTION A-A  
1:100



SNITT B-B  
1:100  
SECTION B-B  
1:100

SNITT D-D  
1:100  
SECTION D-D  
1:100

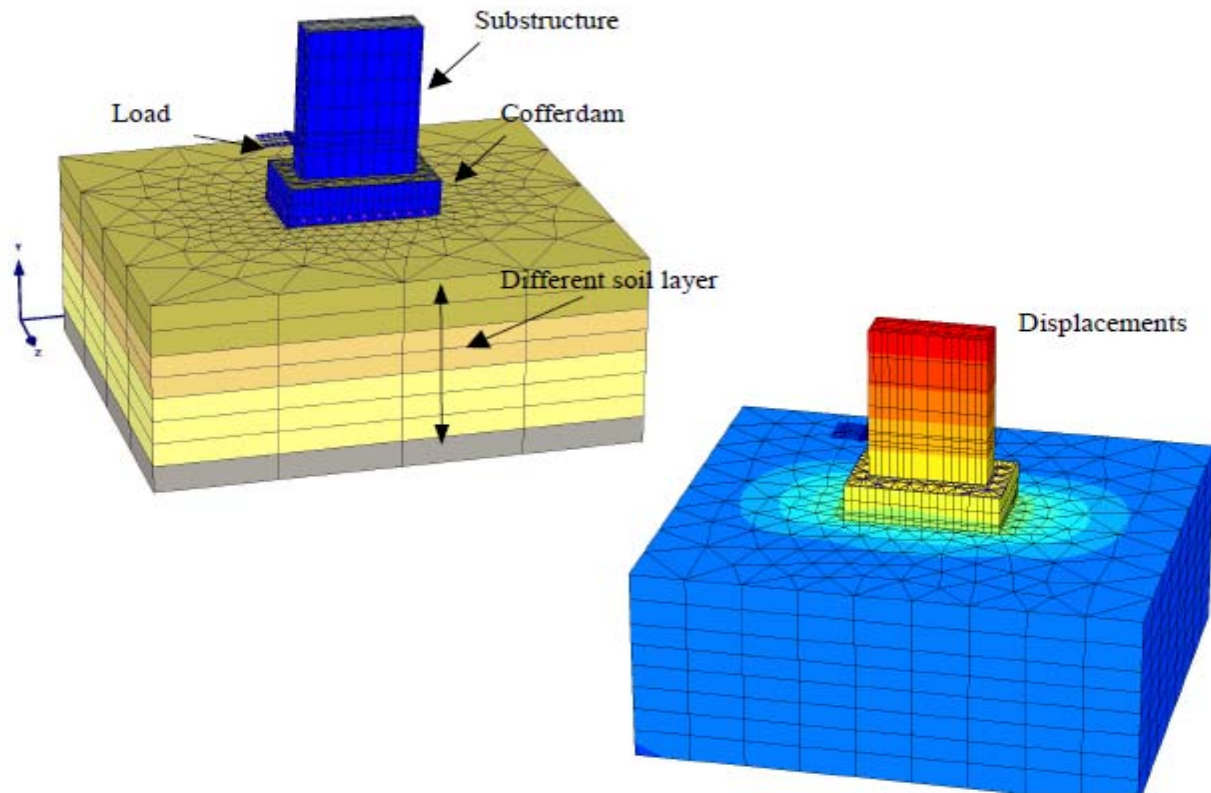


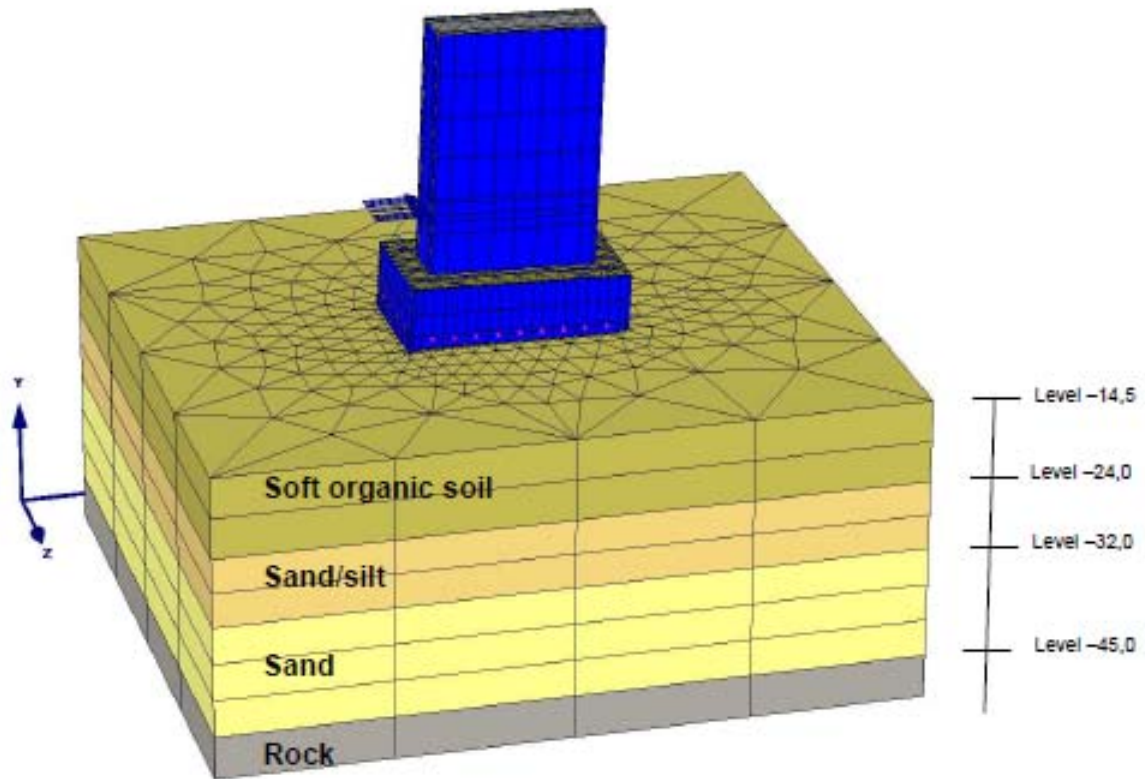
# Presentation of Technical Solution for Substructure of Bridge no. 22-1224-1



JV Sundsvallsbron

30-06-2011





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

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

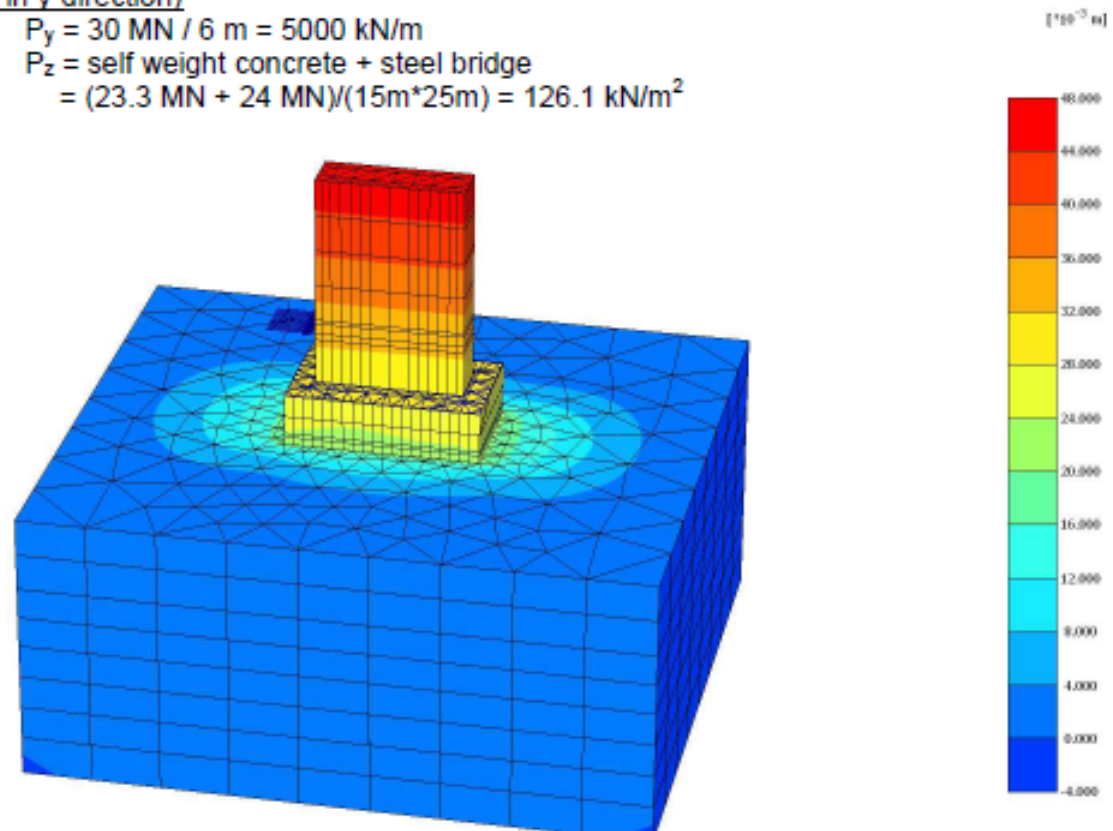
Minimum Value = 0,00 m

## Load Case 1.

Collision force (ship load in y-direction)

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

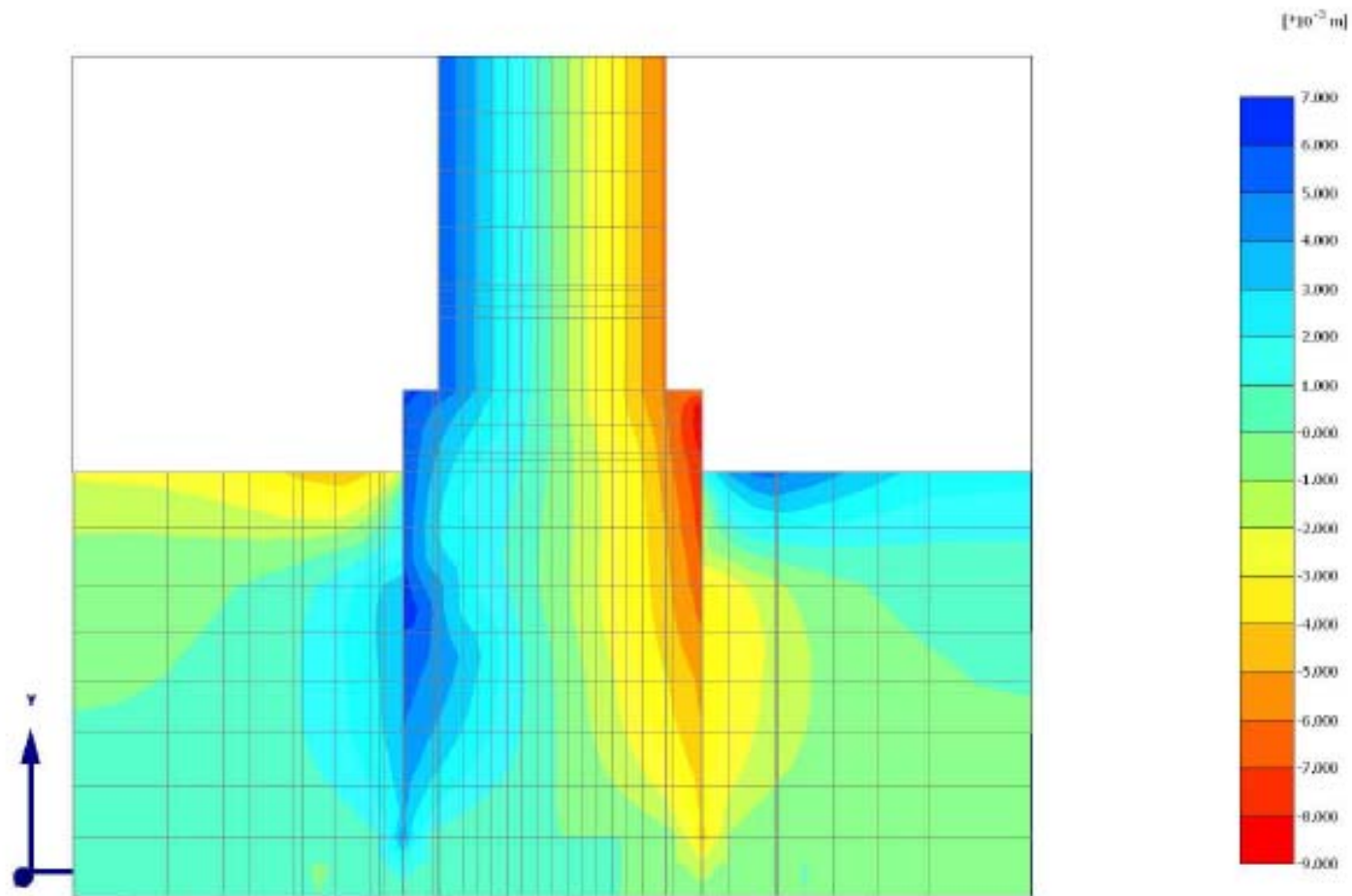
Self weight  $P_z = \text{self weight concrete} + \text{steel bridge}$   
 $= (23.3 \text{ MN} + 24 \text{ MN}) / (15\text{m} * 25\text{m}) = 126.1 \text{ kN/m}^2$



### Total Displacements $u_x$

Maximum Value =  $46,64 * 10^{-3}$  m (Element 554 at Node 625)

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

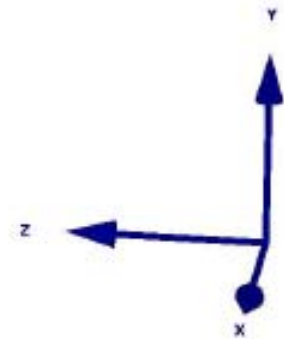
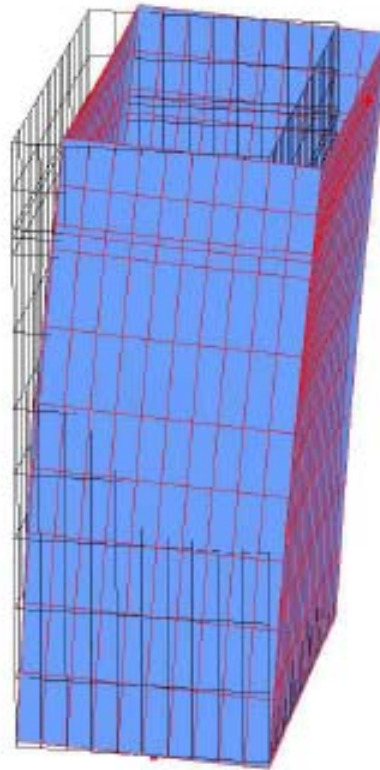


**Total Displacements  $u_y$**

Maximum Value =  $6,91 \cdot 10^{-3}$  m

Minimum Value =  $-8,77 \cdot 10^{-3}$  m

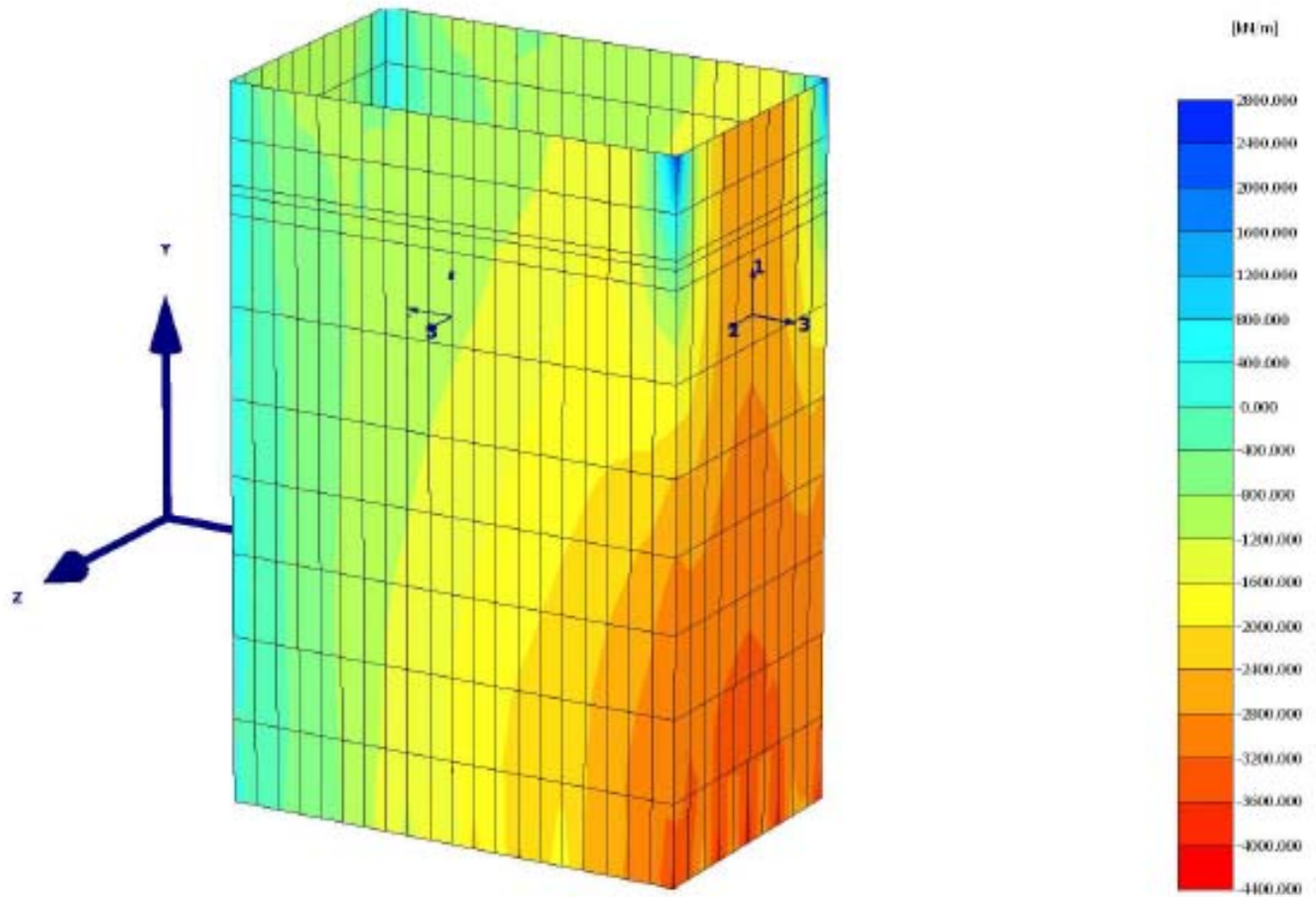




**Total Displacements  $|u|$  (scaled up 100,00 times)**

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

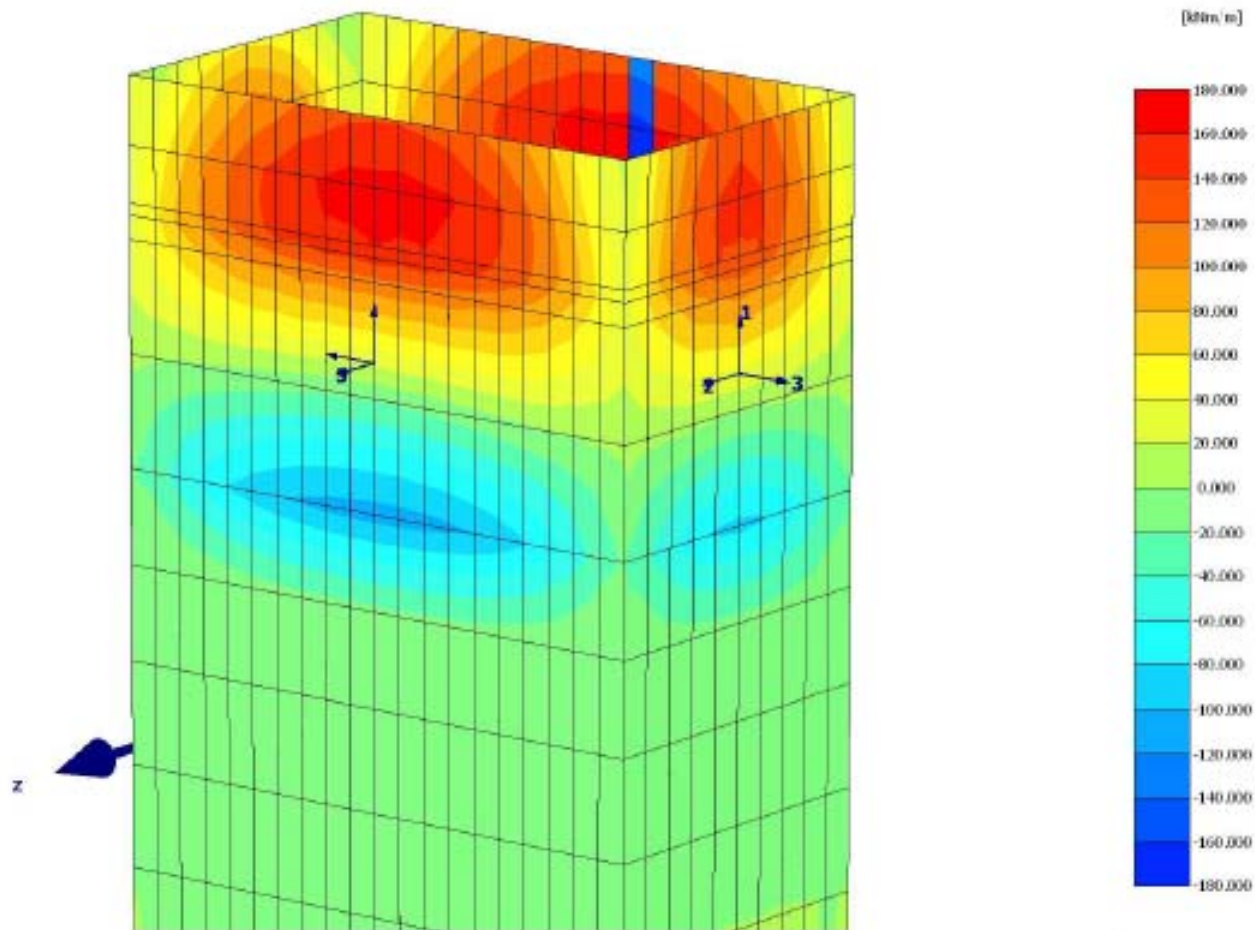
Minimum Value =  $488,45 \cdot 10^{-6}$  m (Element 417 at Node 35765)



**Axial Forces  $N_1$**

Maximum Value =  $2,50 \cdot 10^3$  kN/m (Element 845 at Node 15221)

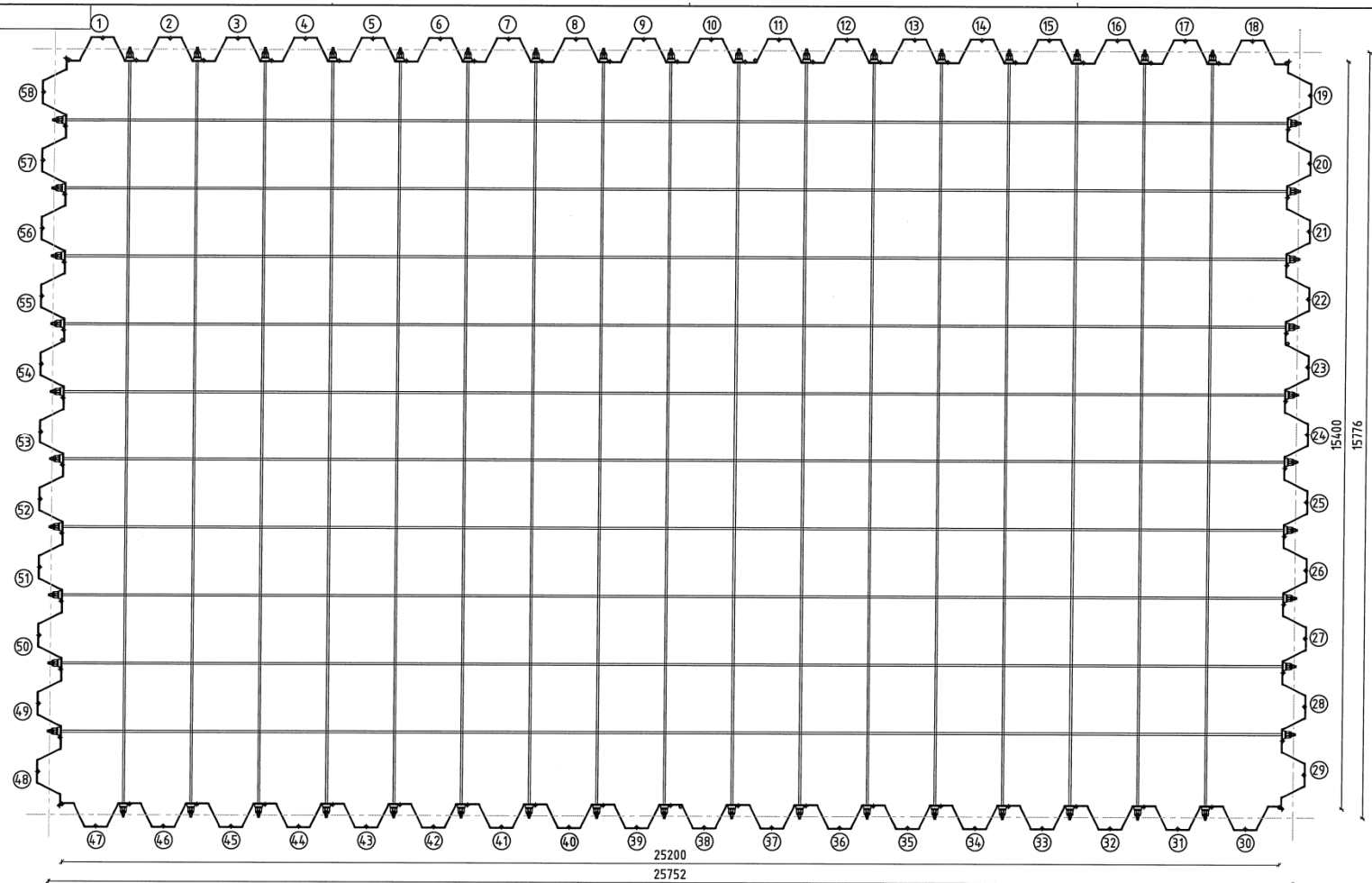
Minimum Value =  $-4,28 \cdot 10^3$  kN/m (Element 399 at Node 35456)



**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)

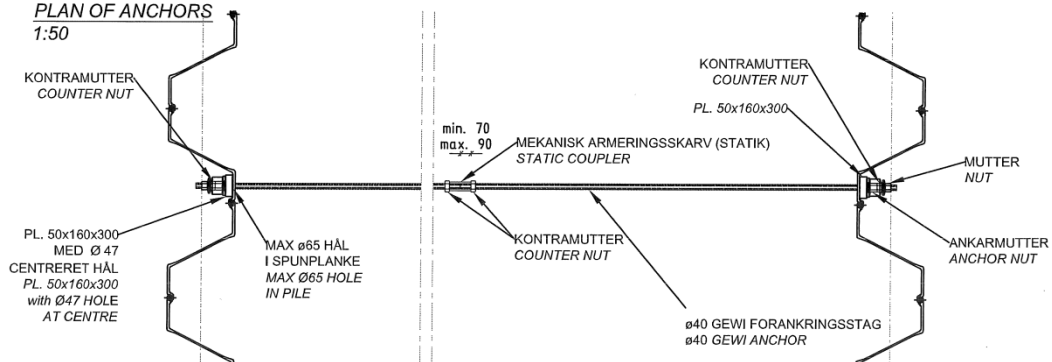


**FORANKRINGSPLAN**

1:50

**PLAN OF ANCHORS**

1:50



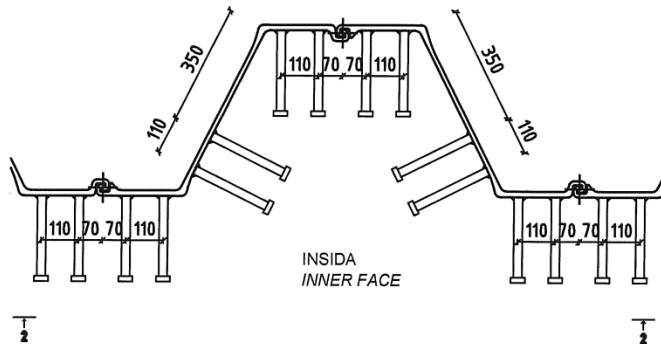
**FÖRANKRINGSSTAG**  
 16,0 m LÅNG: 17 STK.  
 26,0 m LÅNG: 10 STK.

**ANCHORS**  
 16,0 m LONG: 17 NOS  
 26,0 m LONG: 10 NOS

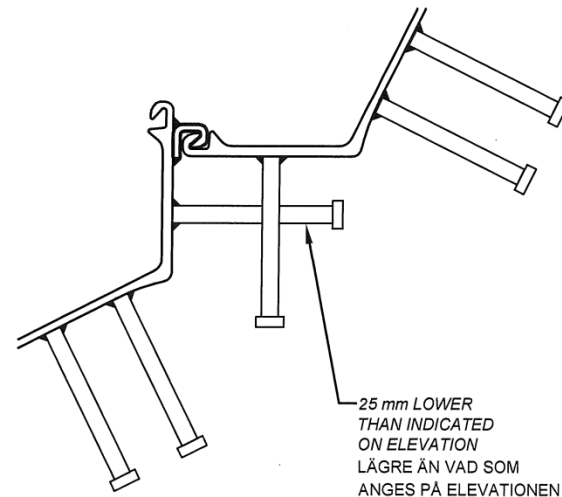
**ANTECKNINGAR**

1. ALLMÄNNA HÄNVISNINGAR, SE RITNING 841K21a1 - 841K21:

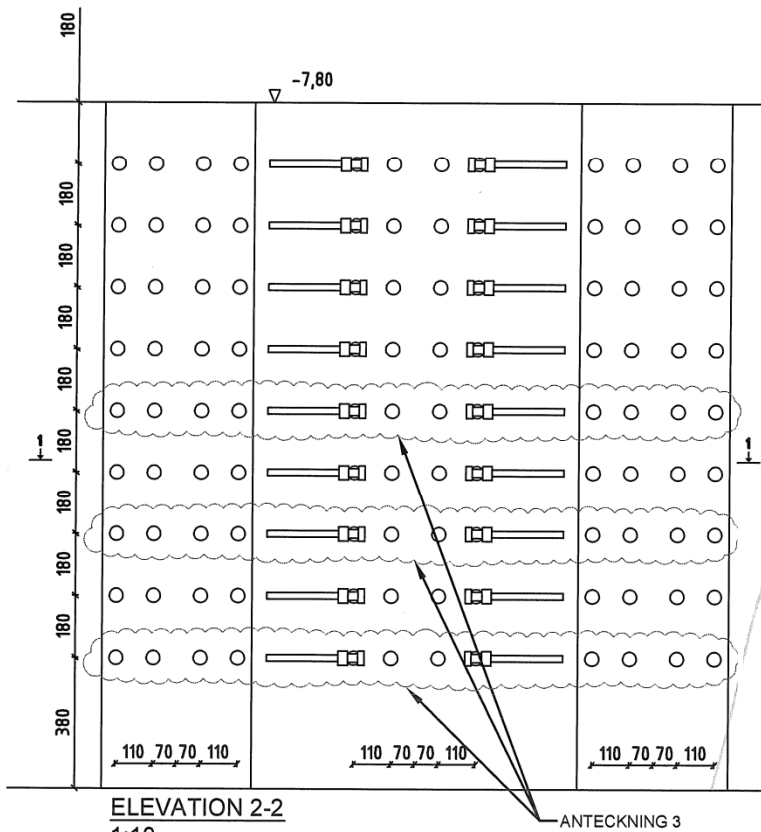
**NOTES**



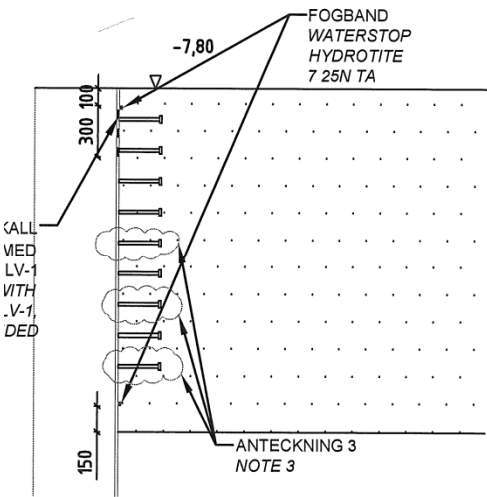
SNITT 1-1  
1:10  
SECTION 1-1  
1:10



HÖRN DETALJ  
1:5  
CORNER DETAIL  
1:5

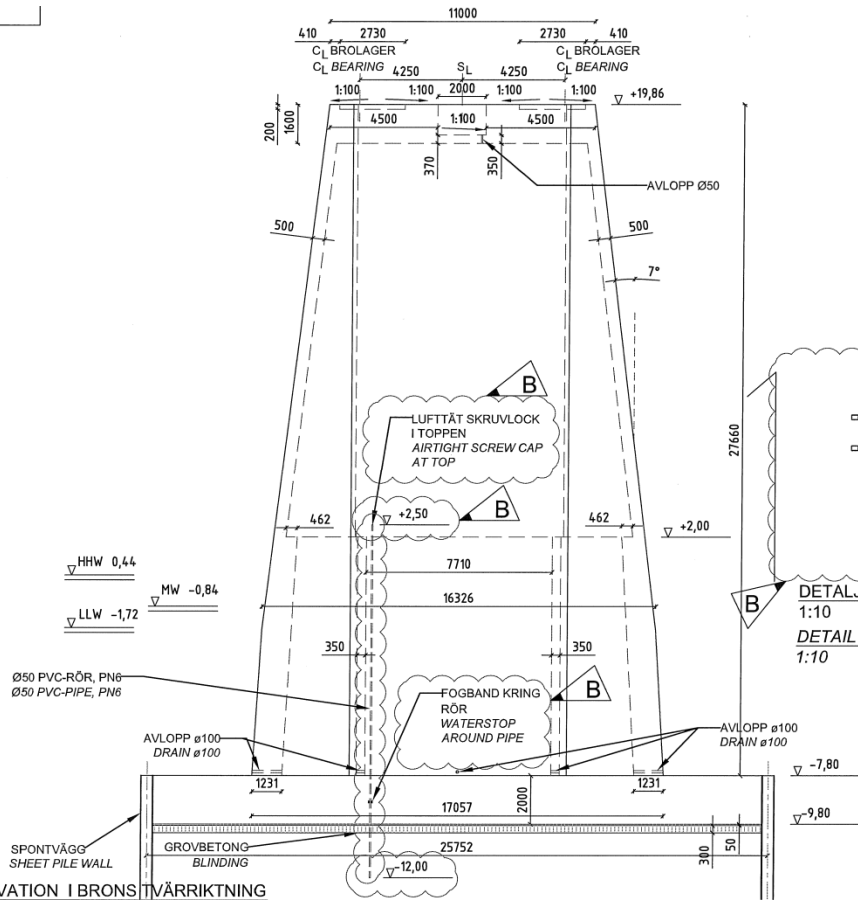


ELEVATION 2-2  
1:10



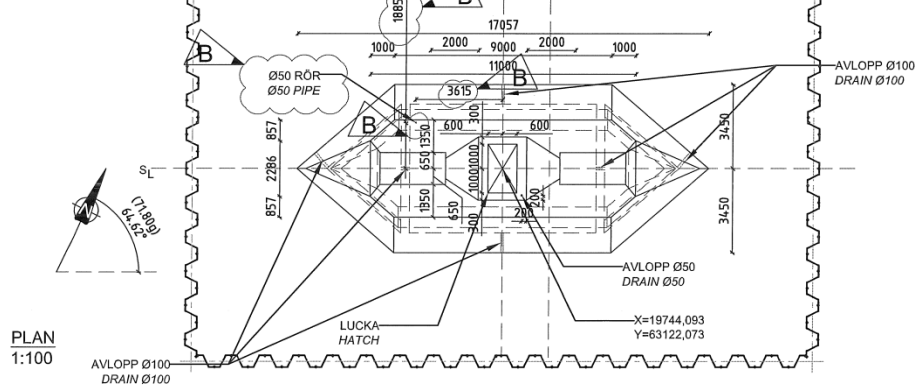
ALJ 1

AIL 1

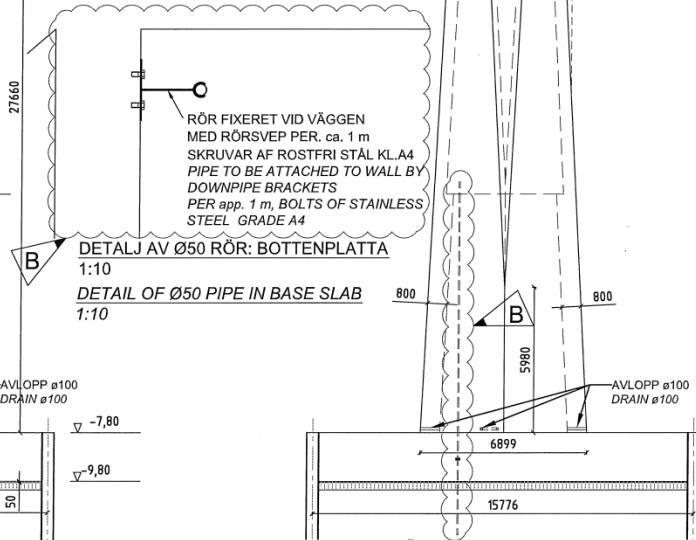


ELEVATION I BRONS TVÄRRIKTNING  
1:100

ELEVATION IN THE TRANSVERSAL DIRECTION OF THE BRIDGE  
1:100

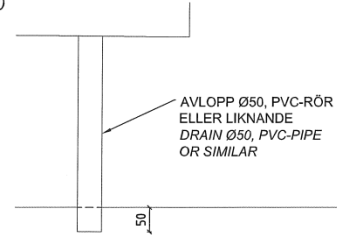


PLAN  
1:100



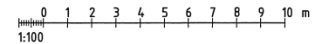
ELEVATION I BRONS LÄNGDRIKTNING  
1:100

ELEVATION IN THE LONGITUDINAL DIRECTION OF THE BRIDGE  
1:100



DETALJ AV AVLOPP I LAGERPALLE  
1:5

DETAIL OF DRAIN IN TOP SLAB  
1:5



SE RITNING 841K216  
REFER DRAWING 841K216

DETAIL J 1  
1:25

DETAIL 1  
1:25

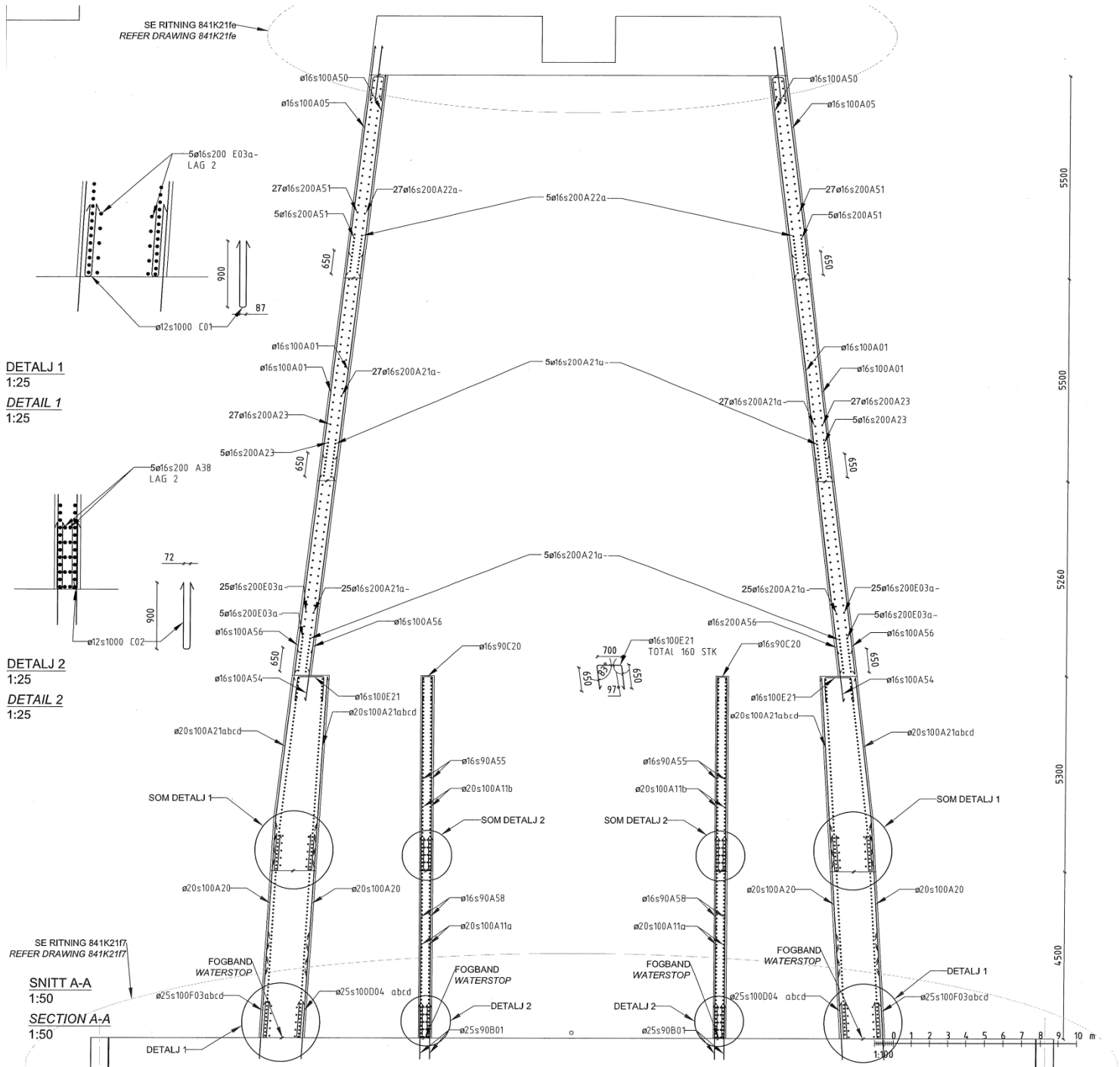
DETAIL J 2  
1:25

DETAIL 2  
1:25

SE RITNING 841K217  
REFER DRAWING 841K217

SNITT A-A  
1:50

SECTION A-A  
1:50



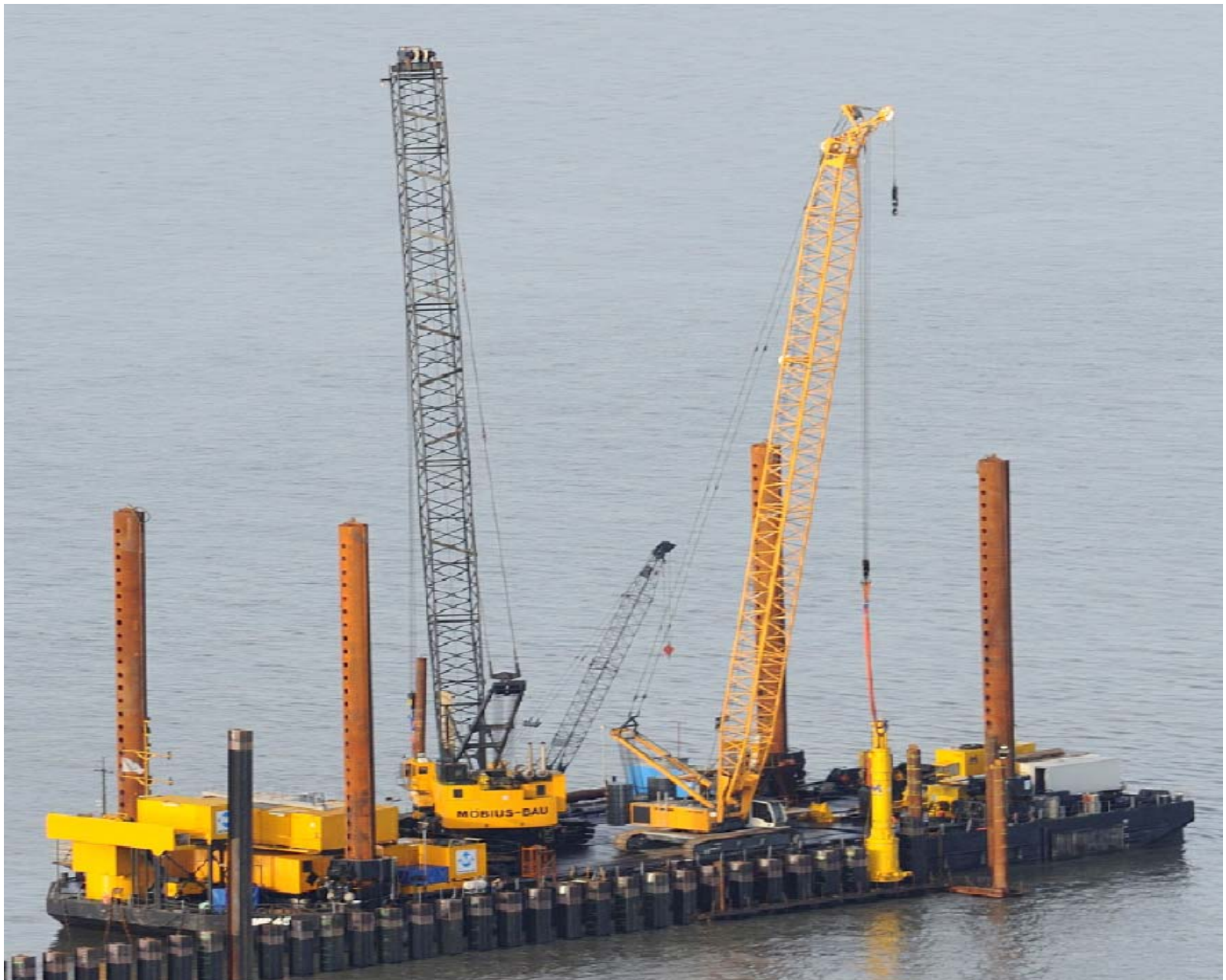
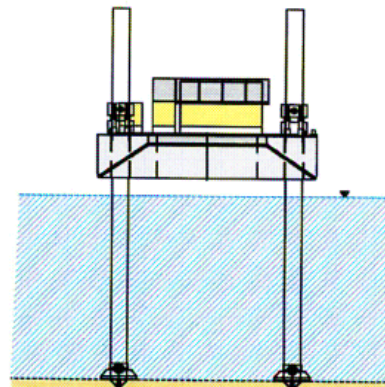
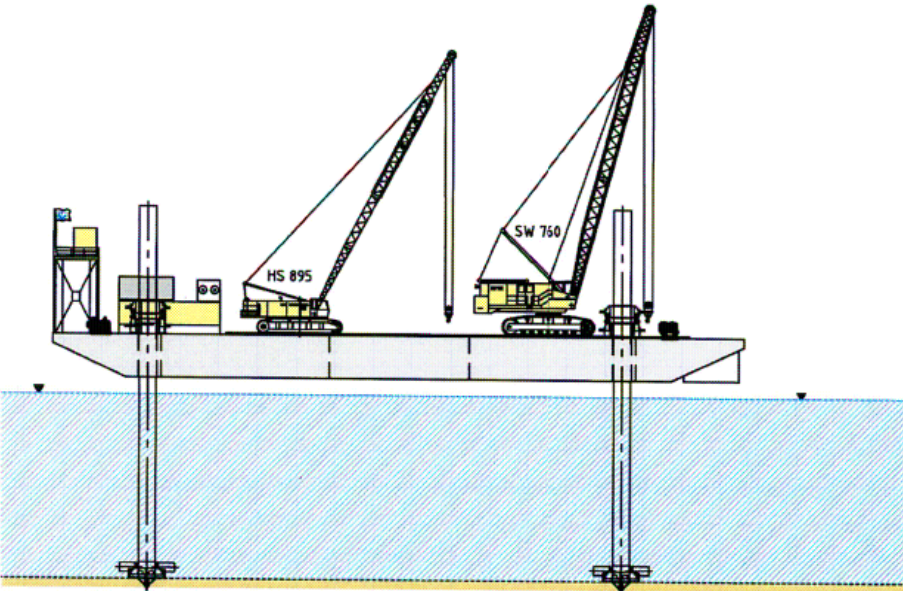
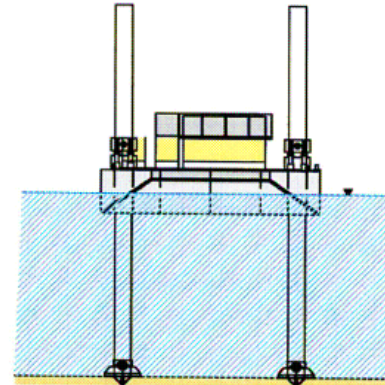
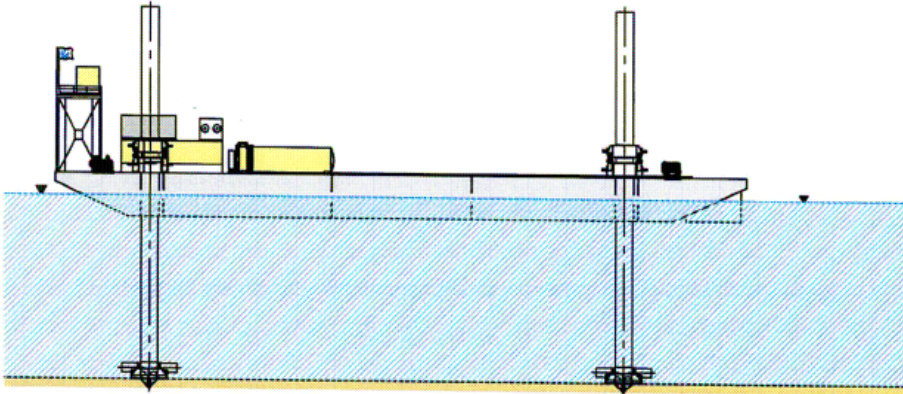
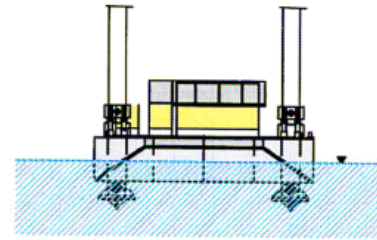
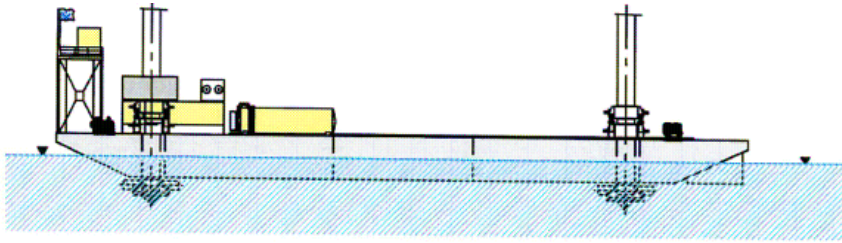


Photo 3: Driving rig Liebherr HS 895 and Weserhütte crane SW 760 installing piles from pontoon *MP 45*





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




**Josef Möbius**  
 Bau-Aktiengesellschaft  
 Hamburg

MP 45

Klasse: LR 100A1 pontoon, Ice Class 1C

Length: 76,02m

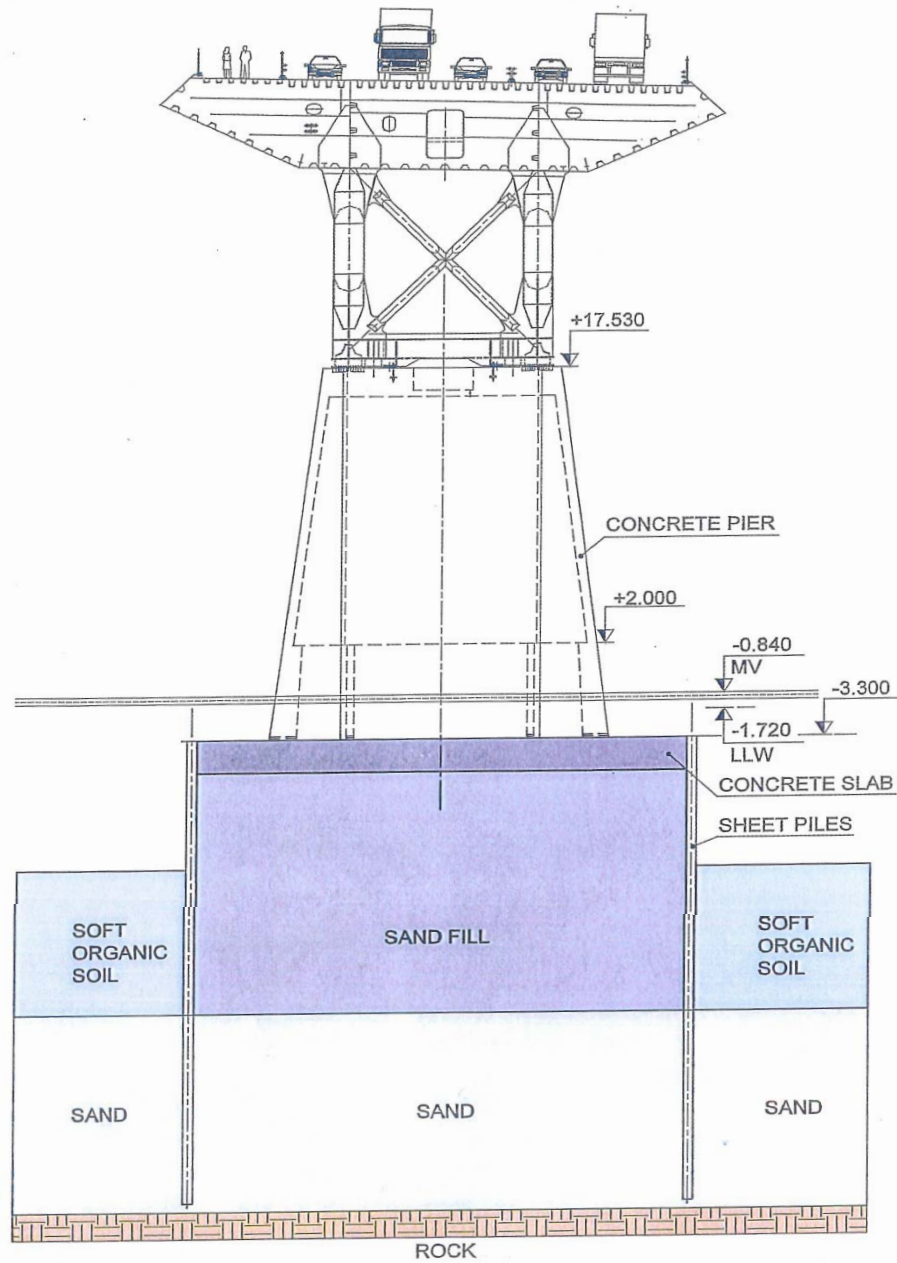
Breadth: 24,02m

Pontoon depth: 4,70m

4 spud  $\phi 1,82m$ ;  $l=4,0m$







CROSS SECTION BY PIER 9

TAK!

