

BEREKENING—ALLE BALKEN 20x30M.

Balk 1-2-3-4 20x30
 muregen balk 1-2 = $2,8 \times 0,11 \times 1000 = 560$
 plat $2,2 \times 190 = 150$
 balk $20 \times 30 \times 2500 = 1500$
 $2 \text{ balk } 1-2 = 1130 \text{ kg}$

muregen balk 3-4
 plat $\frac{3,2}{2} \times 190 = 323$
 balk $\frac{150}{2}$
 1033 kg

Middel balk 1 = $\frac{1}{4} q l^2 = 10100 \text{ kg}$
 $f_y = 0,0002 \times 0,11 \times 1000 = 0,355 \text{ m}$
 aemung $3 \phi 12 = 2,67 \text{ m}^2$
 $M_1 = \frac{1}{4} q l^2 = 20000 \text{ kg}$
 $f_y = 0,705$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_{1-2} = \frac{1}{4} q l^2 = \frac{1}{4} \times 3,39 \times 110 = 132000 \text{ kg}$
 $f_y = 4,65 \text{ cm}^2$
 $5 \phi 12 = 5,65 \text{ m}^2$

$M_2 = \frac{1}{4} q l^2 = 113000 \text{ kg}$
 $f_y = 3,90 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_{2-3} = \frac{1}{4} q l^2 = 132000 \text{ kg}$
 $f_y = 4,65 \text{ cm}^2$
 $5 \phi 12 = 5,65 \text{ m}^2$

$M_3 = \frac{1}{4} q l^2 = 95000 \text{ kg}$
 $f_y = 3,3 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_{3-4} = \frac{1}{4} q l^2 = 110000 \text{ kg}$
 $f_y = 3,86 \text{ cm}^2$
 $4 \phi 12 = 4,52 \text{ m}^2$

Balk 5 aemung 3,10 M 20x30
 muregen 560
 balk 150
 710 kg

Middel $\frac{1}{4} q l^2 = \frac{1}{4} \times 26000 \text{ kg}$
 $f_y = 1,5 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

M verkief $\frac{1}{2} q l^2 = 57000 \text{ kg}$
 $f_y = 2 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

reinfurp balk 1
 $M_1 = \frac{1}{4} q l^2 = 13150 \text{ kg}$
 $f_y = 0,5675 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

reinfurp balk 2
 $M_2 = \frac{1}{4} q l^2 = 2110 \text{ kg}$
 $f_y = 5,3$
 aemung $2 \phi 12$ beug $\phi 6-30 \text{ cm}$

reinfurp balk 3
 $M_3 = \frac{1}{4} q l^2 = 1010 \text{ kg}$
 $f_y = 5,6$ beug $\phi 6-30 \text{ cm}$

reinfurp balk 4
 $M_4 = \frac{1}{4} q l^2 = 910 \text{ kg}$
 $f_y = 5,6$ beug $\phi 6-30 \text{ cm}$

BALK 6-7 2 balken: 1130 kg $q = 7 = 10774 \text{ kg}$
 Middel balk 6 = $\frac{1}{4} q l^2 = 59500 \text{ kg}$
 $f_y = 2,10 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_6 = \frac{1}{4} q l^2 = 119000 \text{ kg}$
 $f_y = 4,2 \text{ cm}^2$
 $5 \phi 12 = 5,65 \text{ m}^2$

$M_7 = \frac{1}{4} q l^2 = 152000 \text{ kg}$
 $f_y = 5 \text{ cm}^2$
 $5 \phi 12 = 5,65 \text{ m}^2$

$M_7 = \frac{1}{4} q l^2 = 26100 \text{ kg}$
 $f_y = 0,97 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_7 = \frac{1}{4} q l^2 = 13100 \text{ kg}$
 $f_y = 0,465 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

reinfurp balk 6 $M_6 = \frac{1}{4} q l^2 = 2000 \text{ kg}$
 $f_y = 5$ beug $\phi 6-30 \text{ cm}$

reinfurp balk 7 $M_7 = \frac{1}{4} q l^2 = 910 \text{ kg}$
 $f_y = 2,16$ beug $\phi 6-30 \text{ cm}$

Balk 8 20x30
 $q = 700 \text{ kg/m}$
 $A = 1950 \text{ kg}$ $B = 2970 \text{ kg}$
 $M_{\text{muregen}} = 267000 \text{ kg}$
 $M_{\text{balk}} = \frac{1}{4} \times 267000 = 166800 \text{ kg}$
 $f_y = 5,6 \text{ cm}^2$
 $4 \phi 16 = 10,05 \text{ m}^2$

BETIGELS $\phi 6-30 \text{ cm}$.

reinfurp $D_{\text{balk}} = D_{\text{realk}} = 1100 \text{ kg}$
 $\tau = 2,75$
 beug $\phi 6-30 \text{ cm}$

$M_8 = \frac{1}{4} \times 267000 = 201000 \text{ kg}$
 $f_y = 7,06 \text{ cm}^2$
 $5 \phi 16 = 10,05 \text{ m}^2$
 beug $\phi 6-30 \text{ cm}$

reinfurp $D_{\text{balk}} = 1950 \text{ kg}$ $\tau = 4,05$
 $D_{\text{realk}} = 2260 \text{ kg}$ $\tau = 5,65$ $q_2 = 100$
 $D_{\text{realk}} = 2970 \text{ kg}$ $\tau = 7,4$ $100 \times 20 \times 6,6 = 112,2$
 $3 \phi 16 = 2,06 \text{ m}^2$
 $3 \phi 16 = 5,02 \text{ cm}^2$
 van beugel $3,55 \text{ m}^2$ neem 5 beug $\phi 6$ over

Balk 9-10 20x30M. $q = 1130 \text{ kg/m}$
 Middel $\frac{1}{4} q l^2 = 10100 \text{ kg}$
 $f_y = 0,575 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

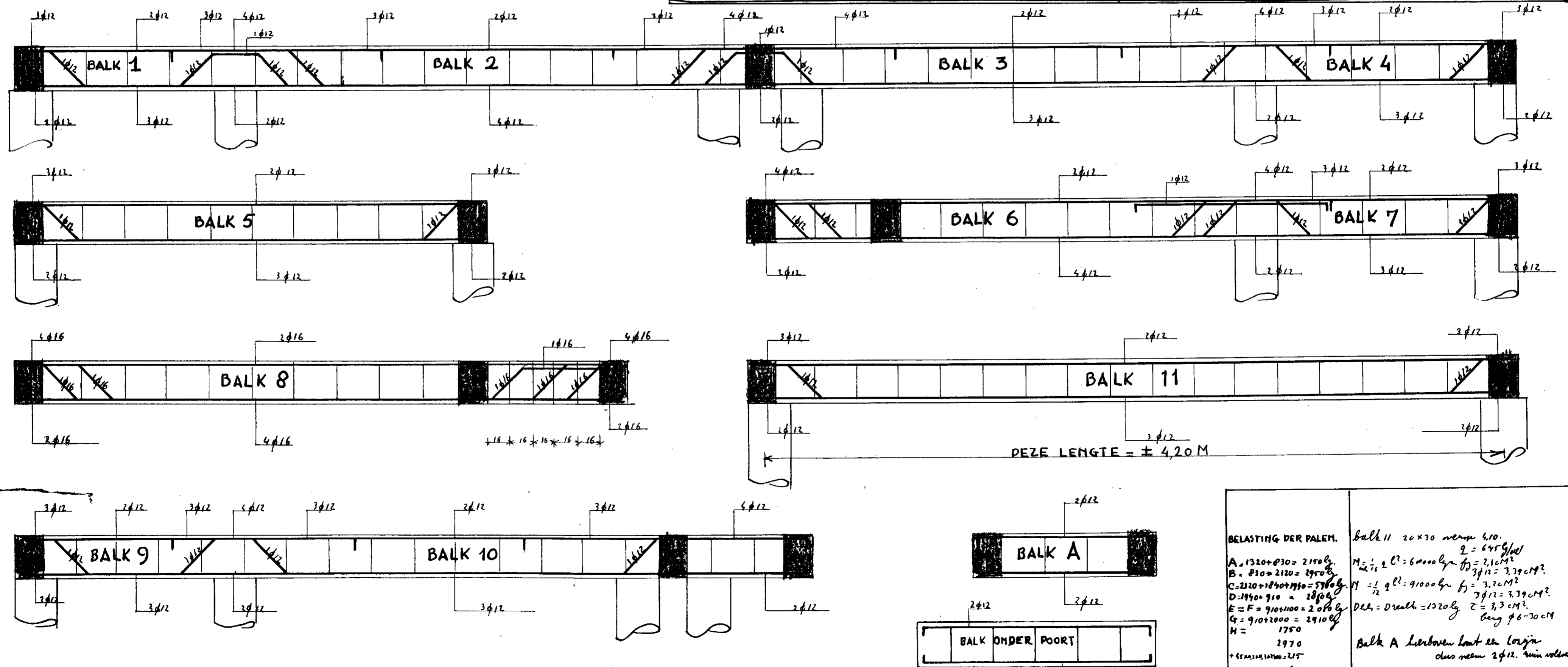
$M_9 = \frac{1}{4} q l^2 = 20100 \text{ kg}$
 $f_y = 0,705 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_{9-10} = \frac{1}{4} q l^2 = 109000 \text{ kg}$
 $f_y = 3,05 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M_{10} = \frac{1}{4} q l^2 = 90500 \text{ kg}$
 $f_y = 3,2 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

Middel $\frac{1}{4} q l^2 = 109000 \text{ kg}$
 $f_y = 3,05 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

reinfurp 9 $D_{\text{balk}} = D_{\text{realk}} = 830 \text{ kg}$ $\tau = 2,1$ beug $\phi 6-30$
 $10 D_{\text{realk}} = 1750 \text{ kg}$ $\tau = 4,36$ beug $\phi 6-30 \text{ cm}$



MENGVERHOUDING 1 PC-2Z 3 GR.

PULSPALEM $\phi 30$ MAX BELASTING 3000 KG.

BELASTING DER PALEM.
 A = $1320 + 830 = 2150 \text{ kg}$
 B = $830 + 2120 = 2950 \text{ kg}$
 C = $2120 + 1840 + 1750 = 5710 \text{ kg}$
 D = $1840 + 910 = 2800 \text{ kg}$
 E = F = $910 + 1000 = 2010 \text{ kg}$
 G = $910 + 2000 = 2910 \text{ kg}$
 H = 1750
 I = 2970
 + $550 + 1950 = 2150$
 muregen 560
 5495 kg
 K = $830 + 1750 = 2580 \text{ kg}$
 L = $1320 + 830 = 2150 \text{ kg}$

Balk 11 20x30 muregen 4,10.
 $q = 645 \text{ kg/m}$
 $M = \frac{1}{4} q l^2 = 60000 \text{ kg}$
 $f_y = 2,35 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$M = \frac{1}{4} q l^2 = 91000 \text{ kg}$
 $f_y = 3,2 \text{ cm}^2$
 $3 \phi 12 = 3,39 \text{ m}^2$

$D_{\text{balk}} = D_{\text{realk}} = 1520 \text{ kg}$
 $\tau = 3,3 \text{ cm}^2$
 beug $\phi 6-30 \text{ cm}$

Balk A hierboven komt een lozijn
 dus neem $2 \phi 12$ min volgend

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**HEEMSTEDE
INGEKOMEN
17. MRT. 1937**

Af. No.

Behoert bij beschikking van
Burgemeester en Wethouders van
HEEMSTEDE, den 17. MAART 1937
De Secretaris

Handwritten signature

**INGEKOMEN
16. MRT 1937
BOUWTOEZICHT
HEEMSTEDE**

**INGEKOMEN
22. FEB. 1937
BOUWTOEZICHT
HEEMSTEDE**