

Oergroten Stalruimte
Door rundvoss

Muizenogatweg /
Toldijk

Opdrachtgever
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Muizenogatweg / Toldijk

Berekening constructie

juni 2015

Muizengakweg

2

CC 1 veiligheidscoeff

$$\gamma_g = 0,9 / 1,08$$

$$\gamma_g = 1,35$$

referentieperiode 15 jr

Belastingaannames

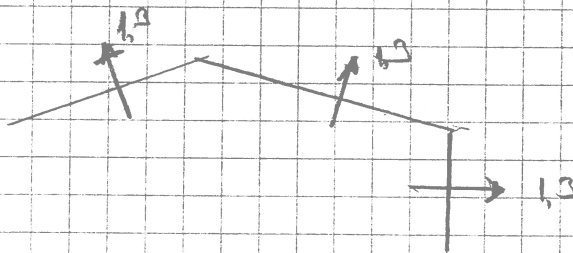
golfplaten, gordingen $\varphi = 20^\circ$

$$0,25 \text{ kN/m}^2 \text{ gr.u.}$$

sneeuw

$$0,56 \text{ kN/m}^2 \text{ gr.u.}$$

wind $h = 6,8$ stuwedruk = $0,87 \times 0,62 = 0,54 \text{ kN/m}^2$



Oloeren

boxen
roosters

$$3,6 \text{ kN/m}^2$$

$$2,4 \text{ kN/m}^2$$

geen grondwater

Stabiliteit

↓ zijgevel

3 scharnierenspanken

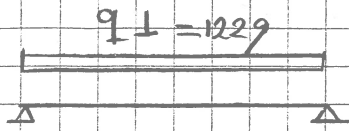
// zijgevel

2 windverbanden bestaand

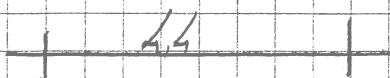
Muizangakweg 7

3.

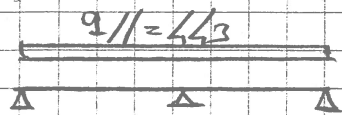
Gordingen 11/171 hoh 1,35 m



$$q_{q\perp} = 1,35 \times 0,25 \cos^2 20^\circ = 0,30 \text{ kN/m}$$
$$q_{q\parallel} = \sin 20^\circ \cos 20^\circ = 0,11$$

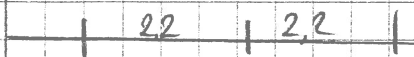


$$q_{q\perp} = 1,35 \times 0,56 \cos^2 20^\circ = 0,67 \text{ kN/m}$$
$$q_{q\parallel} = \sin 20^\circ \cos 20^\circ = 0,24$$



sterkte

$$q_{\perp} = 1,08 \cdot 300 + 1,35 \cdot 670 = 1229 \text{ N/m}$$
$$q_{\parallel} = 1,08 \cdot 110 + 1,35 \cdot 240 = 443$$



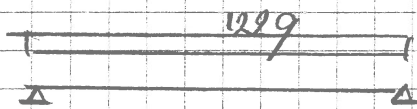
$$M_{\perp} = \frac{1}{8} \cdot 1229 \cdot 4,4^2 = 2974 \text{ Nm}$$
$$M_{\parallel} = \frac{1}{8} \cdot 443 \cdot 2,2^2 = 268$$

sterkte: $\sigma = 2974 / 346 + 268 / 144 = 8,6 + 1,9$

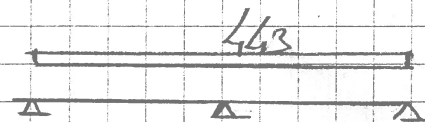
doorbuiging: $f_g = 120 \cdot 0,3 \cdot 4,4^4 / 29700 = 4,6$

$$f_g = \frac{0,67}{0,67} \cdot 4,6 = 10,1$$

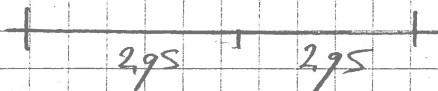
kruip: $0,67 \cdot 4,6 = 2,8$



$$\underline{\underline{17,5 \text{ mm}}}$$



11/246 hoh 1350



sterkte

$$M_{\perp} = \frac{1}{8} \cdot 1229 \cdot 5,9^2 = 5347 \text{ Nm}$$
$$M_{\parallel} = \frac{1}{8} \cdot 443 \cdot 2,95^2 = 482 \text{ Nm}$$

$$\sigma = 5347 / 716 + 482 / 207 = 7,5 + 2,3$$

doorbuiging: $f_g = 120 \cdot 0,3 \cdot 5,9^4 / 88000 = 5$

$$f_g = \frac{0,67}{0,67} \cdot 5 = 11$$

kruip: $\frac{3}{19} \text{ mm}$

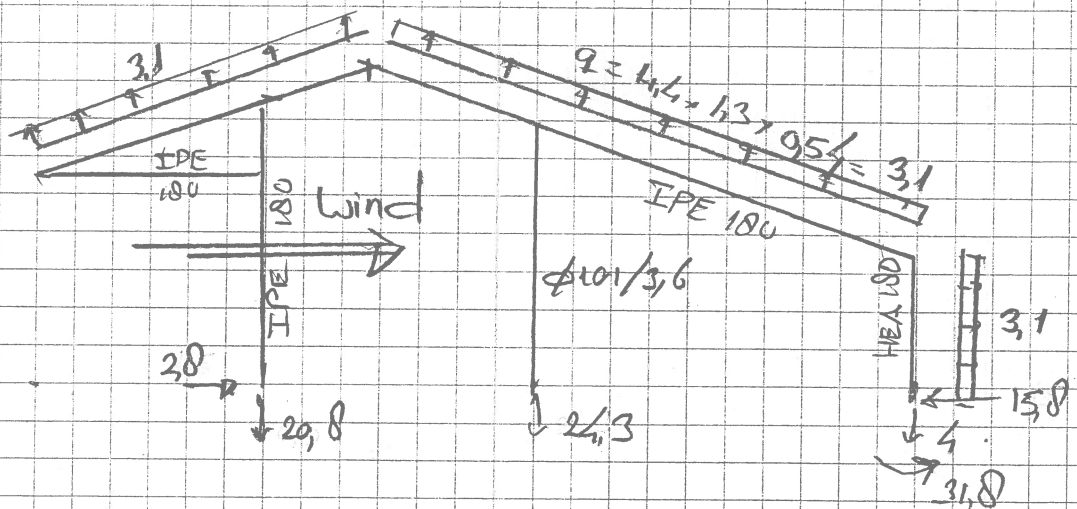
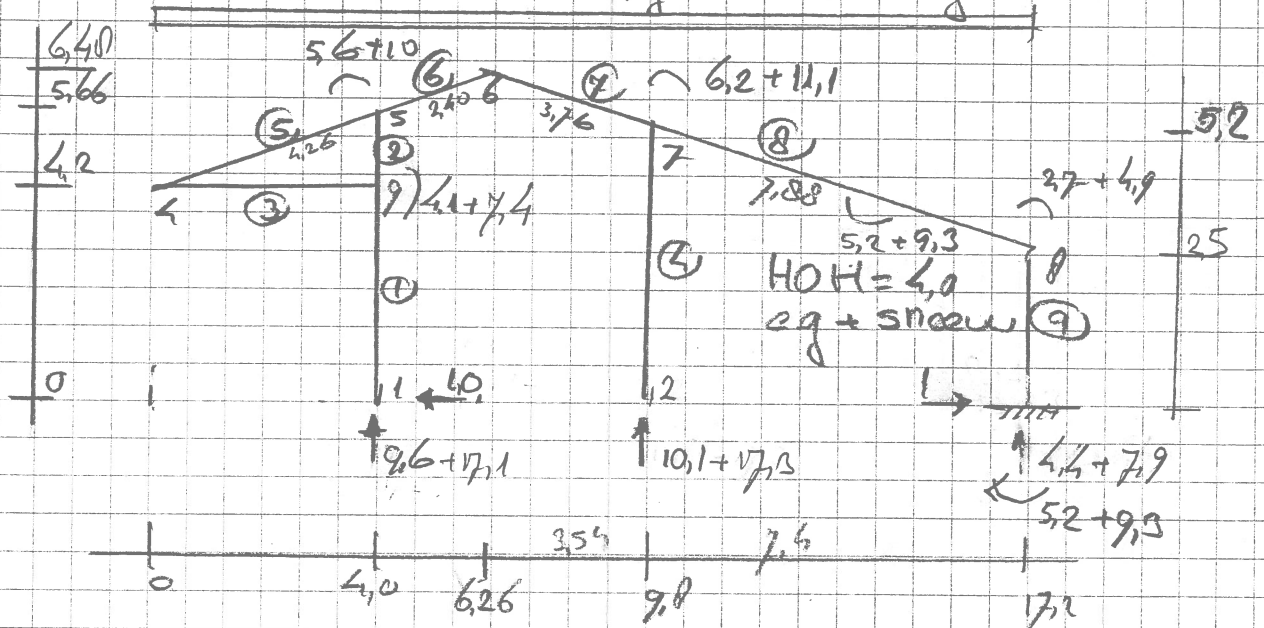
Muizangakweg

4

Spanken HOH 4,40

$$q_g = 4,4 > 0,56 = 0,5 \text{ kN/m}^2$$

$$q_g = 4,4 \times 0,25 + 0,9 = 1,4 \text{ "}$$



HEA 180

Inklomming staaf 9 maakgewend

$$M = -0,9 \times 5,2 + 1,35 \times 34,8 = 47,6 \text{ kNm}$$

$$\sigma = 47,6 / 294 = 0,162$$

$$u_c = 0,69$$

IPE 180

$$M_g \leq 1,08 \times \frac{1}{10} \times 1,4 \times 7,4^2 = 8,3 \text{ kNm}$$

$$M_{sh} \leq 1,35 \times \frac{1}{10} \times 2,5 \times 7,4^2 = 18,5 \text{ "}$$

$$26,8 \text{ kNm}$$

$$\sigma_b = 26,8 / 146 = 0,184$$

$$u_c = 0,78$$

φ 102-36

$$\lambda = 5200 / 34,7 = 150$$

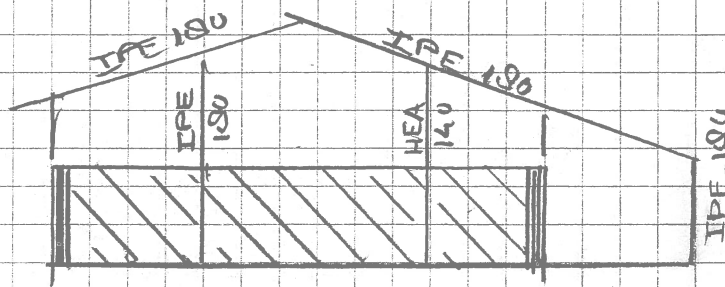
$$u = 0,33$$

$$\sigma = 0,33 \times 1110 = 366$$

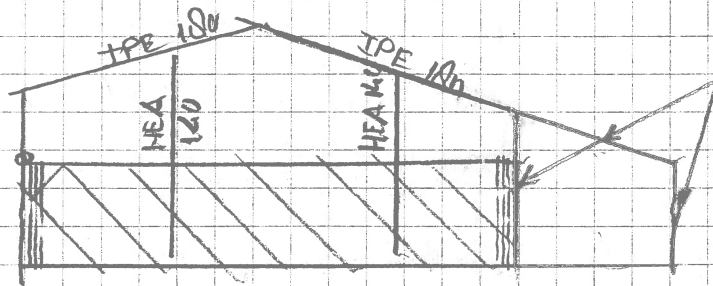
$$M = 408 \times 10,1 + 1,35 \times 17,3 = 34,3 \text{ kNm}$$

$$0,94$$

$$u_c = 0,4$$



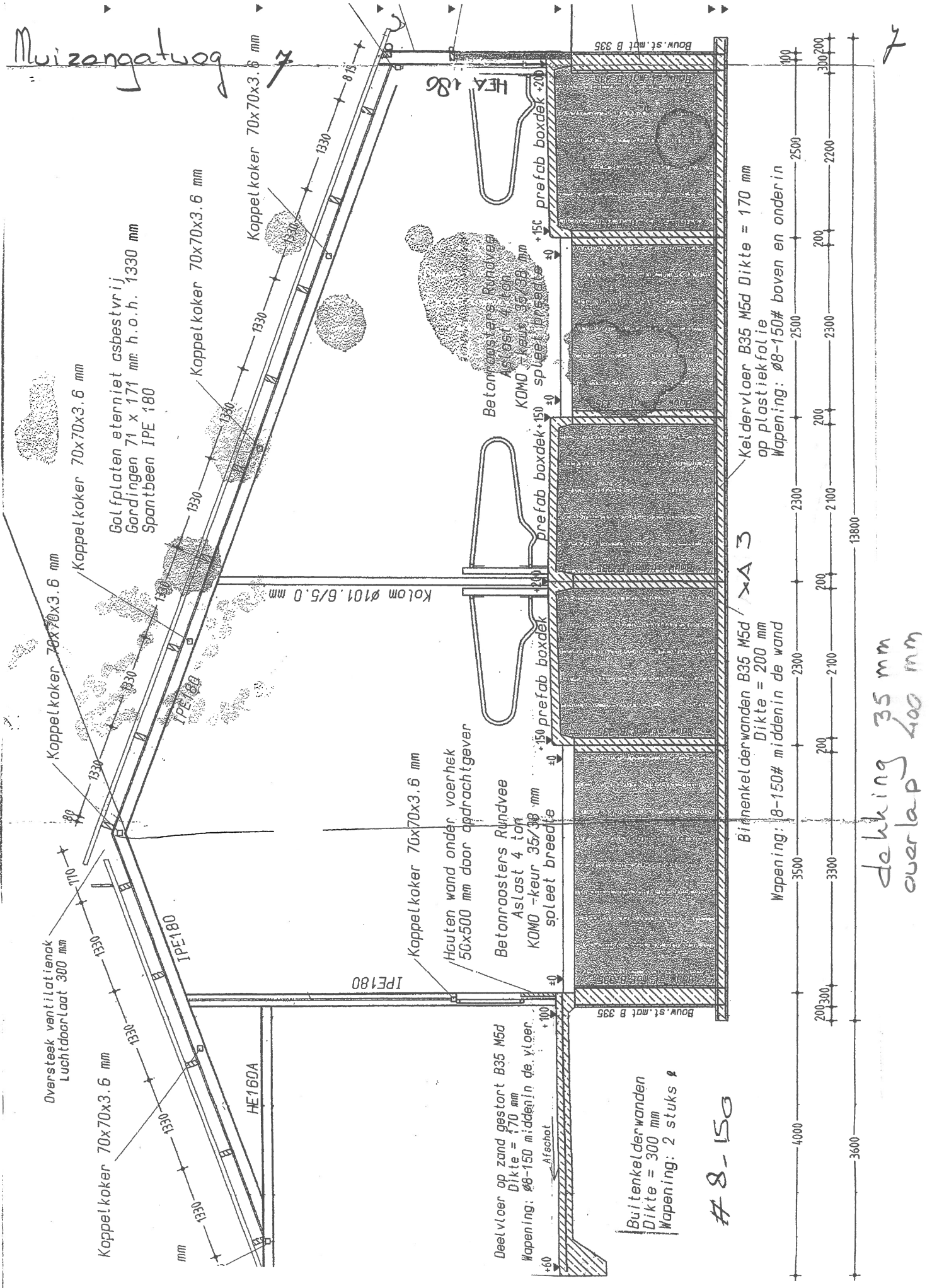
as 6B
bestand



IPE 180
bestand

as 7H

nieuw bestand



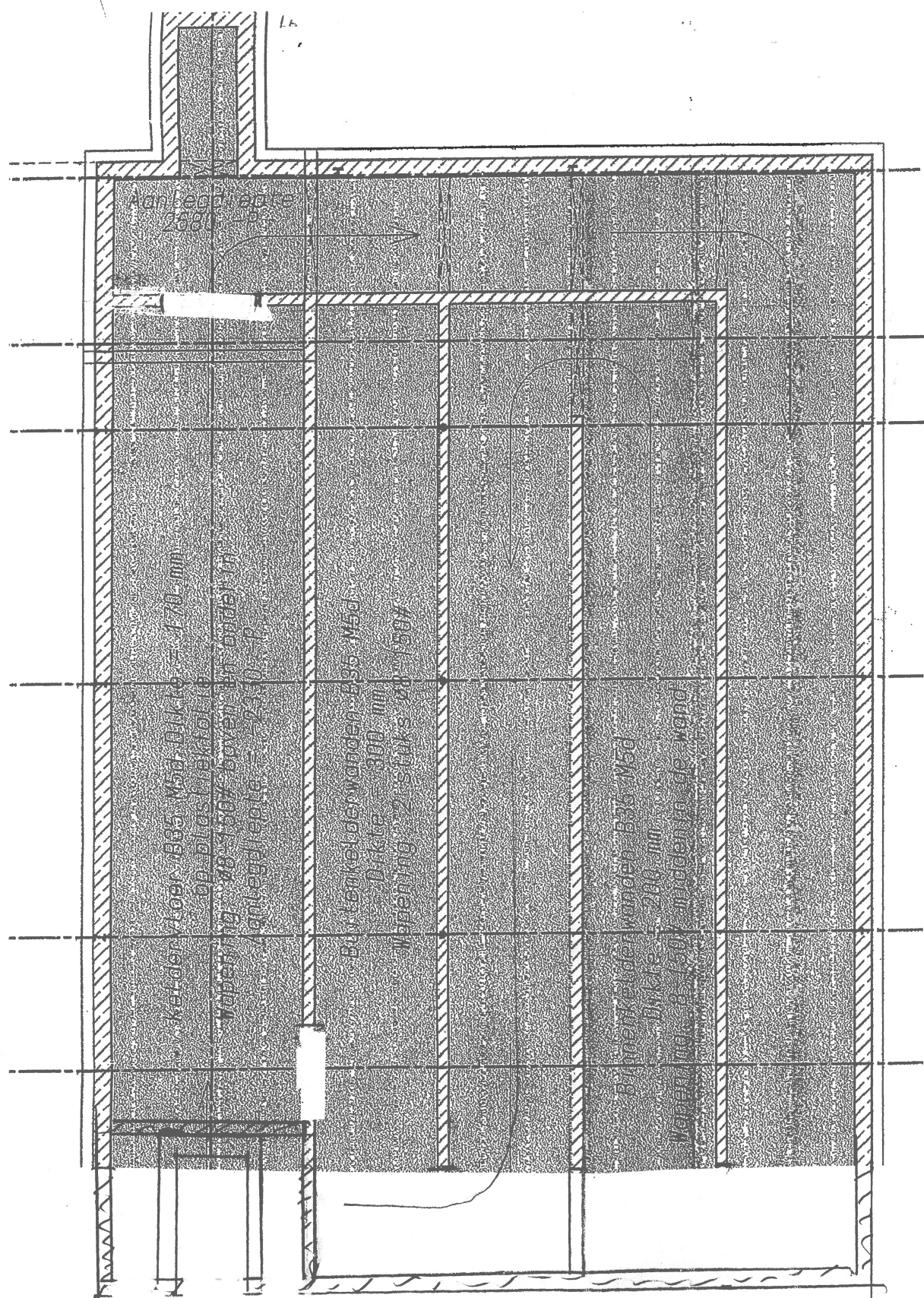
Buitenkelderwanden
Dikte = 300 mm
Wapening: 2 stuks Ø

8-150

dekking 35 mm
overlap 400 mm

7

bestand



Barbapia	
Mixolan	
Neder uit te werken	<u><u>13470</u></u>