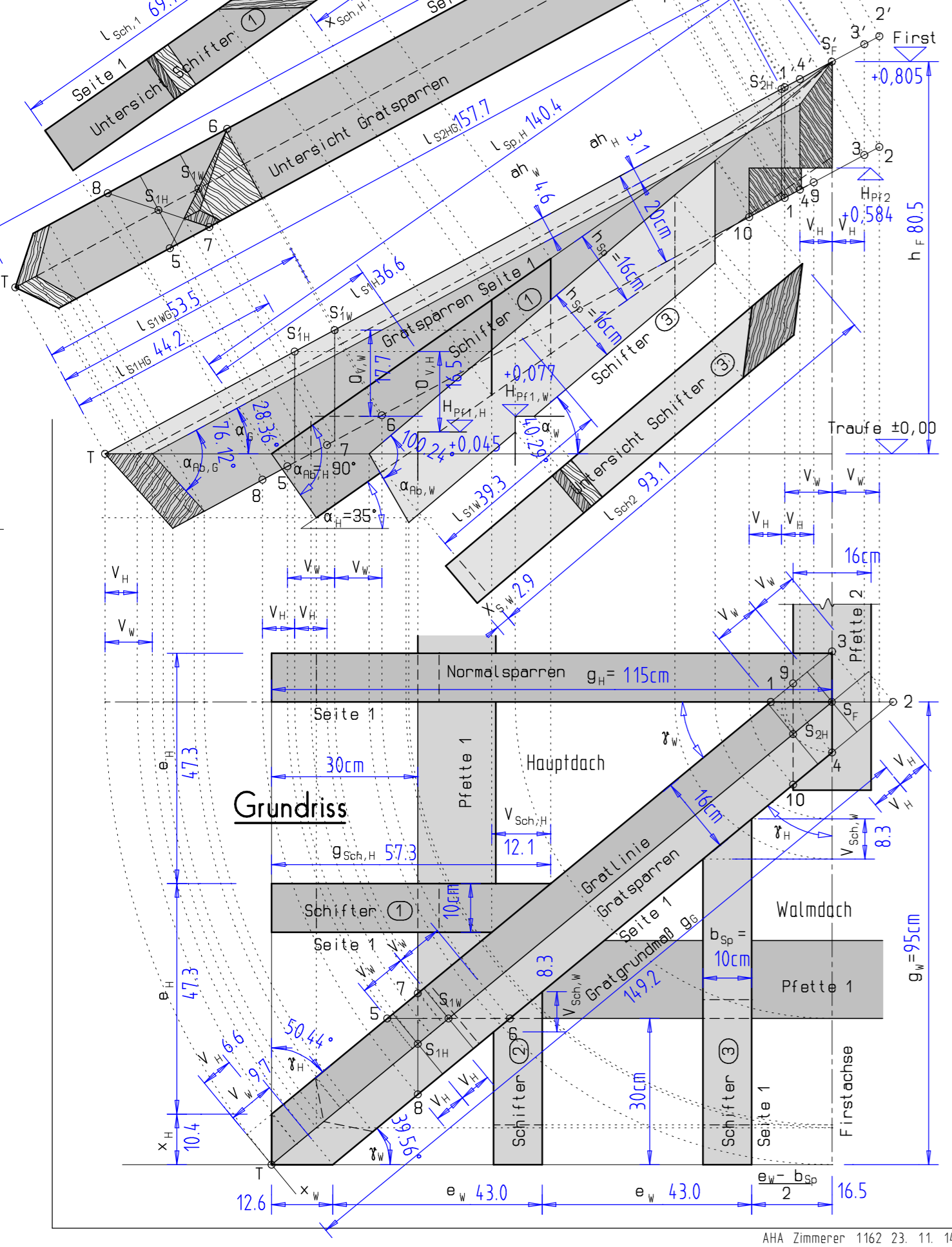


**Gratsparren und Schifter** eines Walmdaches bei verschiedener Dachneigung  
 $g_H = 115\text{cm}$ ,  $g_W = 95\text{cm}$ ,  $\alpha_H = 35^\circ$ ; Dachvorsprung 30cm  
 Sparren 10/16cm, Gratsparren 16/20  
 Sparrenabstand max: 50cm  
 Saumabschnitt Hauptdach 90°  
 Walmdach angepasst



Geg.:  $g_H = 115\text{cm}$ ,  $g_W = 95\text{cm}$ ,  $\alpha_H = 35^\circ$ ;  
 Sparren 10/16; Gratsparren 16/20; Pfetten 16/16;  
 Traufenabstand Pfette 1: 30cm.

**Normalprofil, Hauptdach**

$$h_F = 115 \times \tan 35^\circ = 80,52\text{cm}$$

$$t_{Sp} = \frac{16}{6} = 2,67\text{cm} \text{ gewählt } 2,5\text{cm}$$

$$0 = 16 - 2,5 = 13,5\text{cm}$$

$$O_{V,H} = \frac{13,5}{\cos 35^\circ} = 16,48\text{cm}$$

$$l_{Sp} = \frac{115}{\cos 35^\circ} = 140,39\text{cm} \quad l_{S1H} = \frac{30}{\cos 35^\circ} = 36,62\text{cm}$$

$$g_2 = 115 - 8 = 107\text{cm} \quad l_{S2H} = \frac{107}{\cos 35^\circ} = 130,62\text{cm}$$

$$H_{Pf1,H} = 30 \times \tan 35^\circ - 16,48 = 4,53\text{cm} = +0,045$$

$$H_{Pf2,H} = 107 \times \tan 35^\circ - 16,48 = 58,44\text{cm} = +0,584$$

**Normalprofil, Walmdach**

$$\alpha_W = \tan^{-1} \frac{80,52}{95} = 40,285^\circ$$

$$O_{V,W} = \frac{13,5}{\cos 40,285^\circ} = 17,70\text{cm}$$

$$l_{S1W} = \frac{30}{\cos 40,285^\circ} = 39,33\text{cm}$$

$$H_{Pf1,W} = 30 \times \tan 40,285^\circ - 17,70 = 7,73\text{cm} = +0,077$$

**Gratprofil**

$$\gamma_H = \tan^{-1} \frac{115}{95} = 50,440^\circ$$

$$\gamma_W = \tan^{-1} \frac{95}{115} = 39,560^\circ$$

$$g_6 = \frac{95}{\sin 39,56^\circ} \text{ oder } \frac{115}{\cos 39,56^\circ} = 149,16\text{cm}$$

$$\alpha_6 = \tan^{-1} \frac{80,52}{149,16} = 28,362^\circ$$

$$l_6 = \frac{149,16}{\cos 28,362^\circ} = 169,51\text{cm}$$

**Verstichmaße, Abgratungshöhe**

$$V_H = \frac{16 / 2}{\tan 50,44} = 6,61\text{cm}$$

$$ah_H = 6,61 \times \sin 28,362^\circ = 3,14\text{cm}$$

$$V_W = \frac{16 / 2}{\tan 39,56} = 9,68\text{cm}$$

$$ah_W = 9,68 \times \sin 28,362^\circ = 4,60\text{cm}$$

**Gratprofil, Pfette 1**

$$g_{G1H} = \frac{30}{\cos 39,560^\circ} = 38,91\text{cm}$$

$$l_{S1HG} = \frac{38,91}{\cos 28,362^\circ} = 44,22\text{cm}$$

$$g_{1WG} = \frac{30}{\sin 39,560^\circ} = 47,10\text{cm}$$

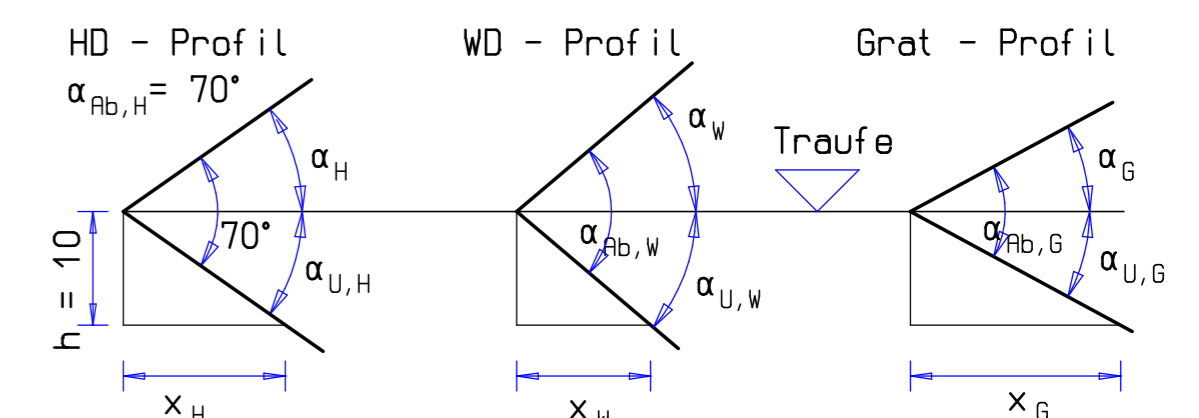
$$l_{S1WG} = \frac{47,10}{\cos 28,362^\circ} = 53,53\text{cm}$$

**Gratprofil, Pfette 2**

$$g_{2HG} = \frac{107}{\cos 39,560^\circ} = 138,79\text{cm}$$

$$l_{S2HG} = \frac{138,79}{\cos 28,362^\circ} = 157,72\text{cm}$$

**Saumabschnitte Hauptdach 70°**



$h = 10\text{cm}$  frei angenommen

$$\alpha_{U,H} = 70^\circ - 35^\circ = 35^\circ$$

$$x_H = \frac{10}{\tan 35^\circ} = 14,28\text{cm}$$

$$x_W = 14,28 \times \tan 39,560^\circ = 11,80\text{cm}$$

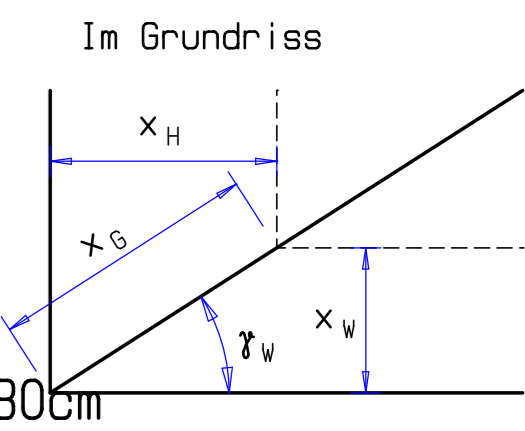
$$x_G = \frac{14,28}{\cos 39,560^\circ} = 18,52\text{cm}$$

$$\alpha_{U,W} = \tan^{-1} \frac{10}{11,80} = 44,758^\circ$$

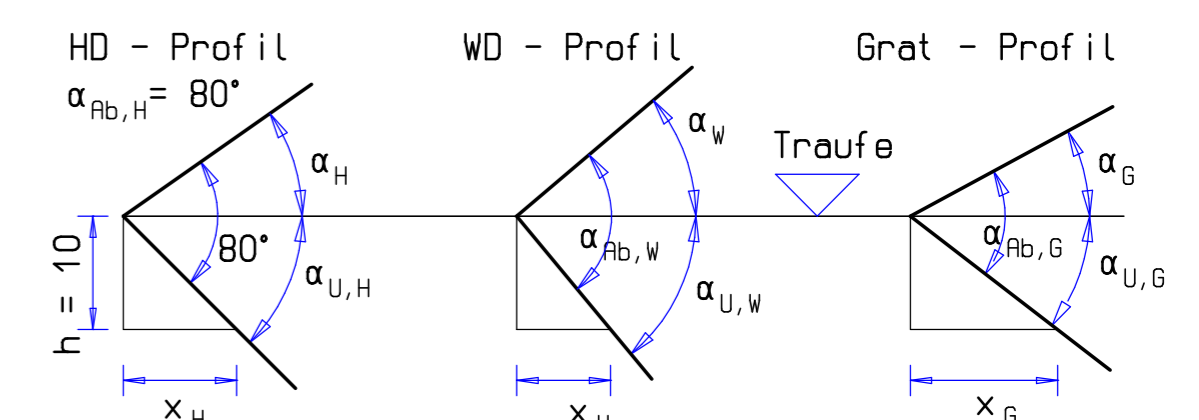
$$\alpha_{Ab,W} = 40,285 + 40,285 = 80,570^\circ$$

$$\alpha_{U,G} = \tan^{-1} \frac{10}{18,52} = 28,362^\circ$$

$$\alpha_{Ab,G} = 28,362 + 28,362 = 56,723^\circ$$



**Saumabschnitte Hauptdach 80°**



$h = 10\text{cm}$  frei angenommen

$$\alpha_{U,H} = 80^\circ - 35^\circ = 45^\circ$$

$$x_H = \frac{10}{\tan 45^\circ} = 10\text{cm}$$

$$x_W = 10 \times \tan 39,560^\circ = 8,26\text{cm}$$

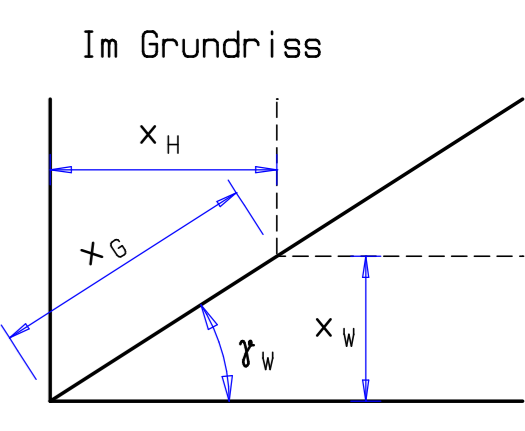
$$\alpha_{U,W} = \tan^{-1} \frac{10}{8,26} = 50,440^\circ$$

$$\alpha_{Ab,W} = 50,440 + 40,285 = 90,725^\circ$$

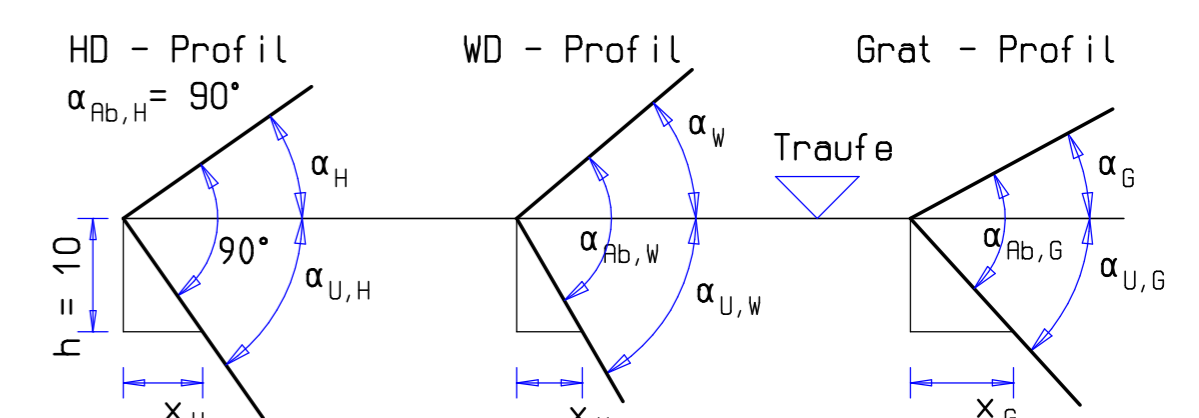
$$x_G = \frac{10}{\cos 39,560^\circ} = 12,97\text{cm}$$

$$\alpha_{U,G} = \tan^{-1} \frac{10}{12,97} = 37,631^\circ$$

$$\alpha_{Ab,G} = 37,631 + 28,362 = 65,993^\circ$$



**Saumabschnitte Hauptdach 90°**



$h = 10\text{cm}$  frei angenommen

$$\alpha_{U,H} = 90^\circ - 35^\circ = 55^\circ$$

$$x_H = \frac{10}{\tan 55^\circ} = 7,00\text{cm}$$

$$x_W = 7,0 \times \tan 39,560^\circ = 5,78\text{cm}$$

$$\alpha_{U,W} = \tan^{-1} \frac{10}{5,78} = 59,953^\circ$$

$$\alpha_{Ab,W} = 59,953 + 40,285 = 100,238^\circ$$

$$x_G = \frac{7,00}{\cos 39,560^\circ} = 9,08\text{cm}$$

$$\alpha_{U,G} = \tan^{-1} \frac{10}{9,08} = 47,753^\circ$$

$$\alpha_{Ab,G} = 47,753 + 28,362 = 76,115^\circ$$

