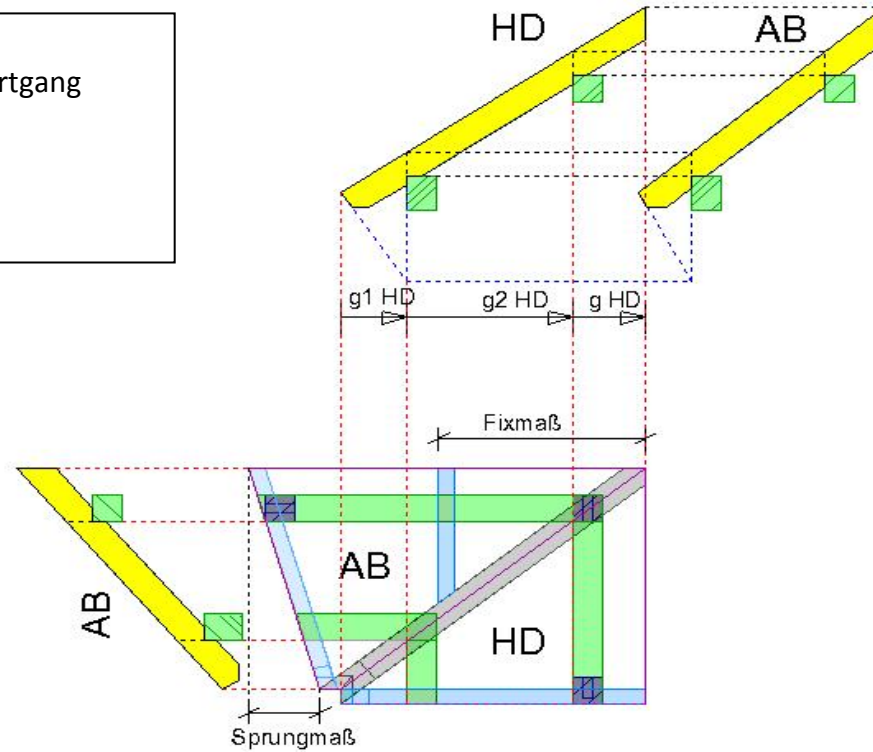
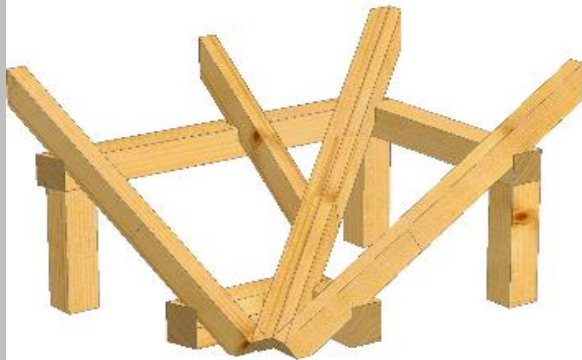


Modell 02 - Vertiefung

Kehlsparren ungleiche DN mit schrägem Ortgang
Dachvorsprung ungleich
MB und PF gleich hoch
sOh HD und AB gleich



Angaben zur Konstruktion:

Hauptdach:

g1 HD	=	10,00 cm
g2 HD	=	35,00 cm
g HD	=	46,00 cm
DN HD	=	34,00 °
wi Oh	=	3,30 cm
As. Sp.	=	90,00 °

Anbau:

DN Ab	=	40,00 °
gleiches sOh		
gleiche Mb/Pf OK		
Traufabschnitt angepasst		

Holzdimensionen:

Mauerbank	4,50 / 5,80
Pfette	4,50 / 4,50
Säule	4,50 / 4,50
Sparren	2,50 / 4,50
Gratsparren	4,00 / 5,80

Sprungmaß - schräger Ortgang	=	8,00 cm
Traufenlänge Ab	=	8,20 cm
Fixmaß Sch 1 Ab	=	31,30 cm

Hauptdachprofil:

$$g1 \text{ HD} = 10,00 \text{ cm}$$

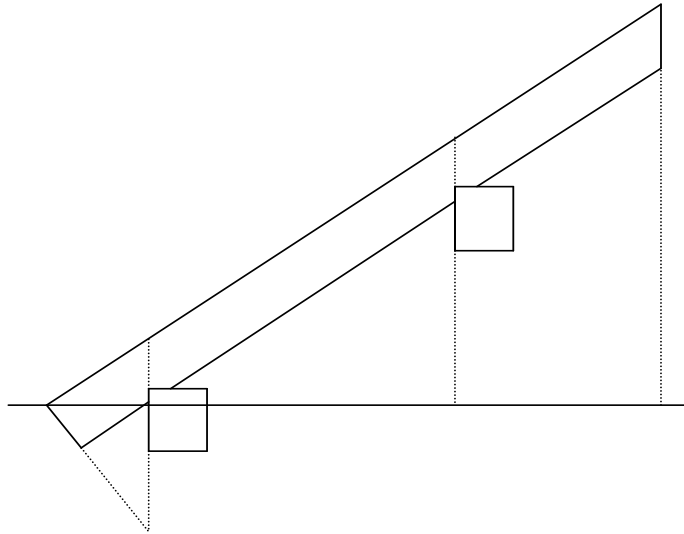
$$g2 \text{ HD} = 35,00 \text{ cm}$$

$$g \text{ HD} = 46,00 \text{ cm}$$

$$\text{DN HD} = 34,00^\circ$$

$$wi \text{ Oh} = 3,30 \text{ cm}$$

$$Aw \text{ Sp.} = 90,00^\circ$$



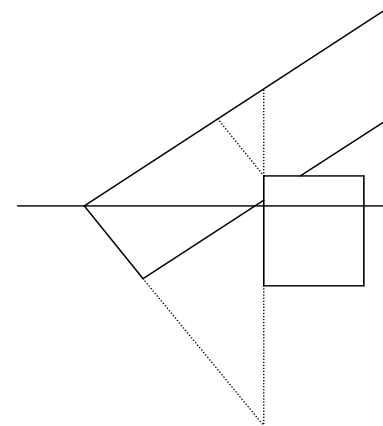
$$\begin{aligned} g1 \text{ HD} &= 10,00 \text{ cm} \\ g2 \text{ HD} &= 35,00 \text{ cm} \\ g \text{ HD} &= 46,00 \text{ cm} \end{aligned}$$

$$\begin{aligned} s1 \text{ HD} &= 10,00 : \cos 34,00 = \underline{\underline{12,062 \text{ cm}}} \\ s2 \text{ HD} &= 35,00 : \cos 34,00 = \underline{\underline{42,218 \text{ cm}}} \\ s \text{ HD} &= 46,00 : \cos 34,00 = \underline{\underline{55,486 \text{ cm}}} \end{aligned}$$

$$\begin{aligned} h1 \text{ HD} &= 10,00 \times \tan 34,00 = \underline{\underline{6,745 \text{ cm}}} \\ h2 \text{ HD} &= 35,00 \times \tan 34,00 = \underline{\underline{23,608 \text{ cm}}} \\ h \text{ HD} &= 46,00 \times \tan 34,00 = \underline{\underline{31,027 \text{ cm}}} \end{aligned}$$

Traufabschnitt:

$$\begin{aligned} sOh &= 3,30 : \cos 34,00 = \underline{\underline{3,981 \text{ cm}}} \\ Aw \text{ Sp.} &= 90,00^\circ \\ \beta &= 90,00 - 34,00 = \underline{\underline{56,00^\circ}} \\ hu &= 10,00 \times \tan 56,00 = \underline{\underline{14,83 \text{ cm}}} \end{aligned}$$



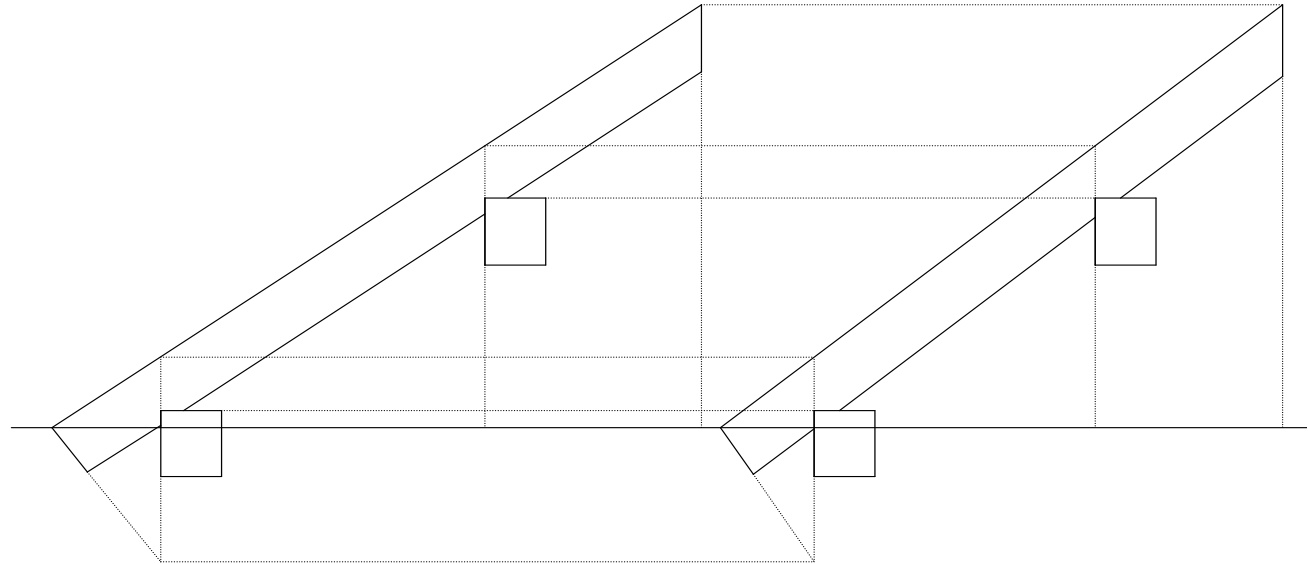
Anbauprofil:

DN Ab = 40,00 °

gleiches sOh

gleiche Mb/Pf OK

Abschnitt angepasst



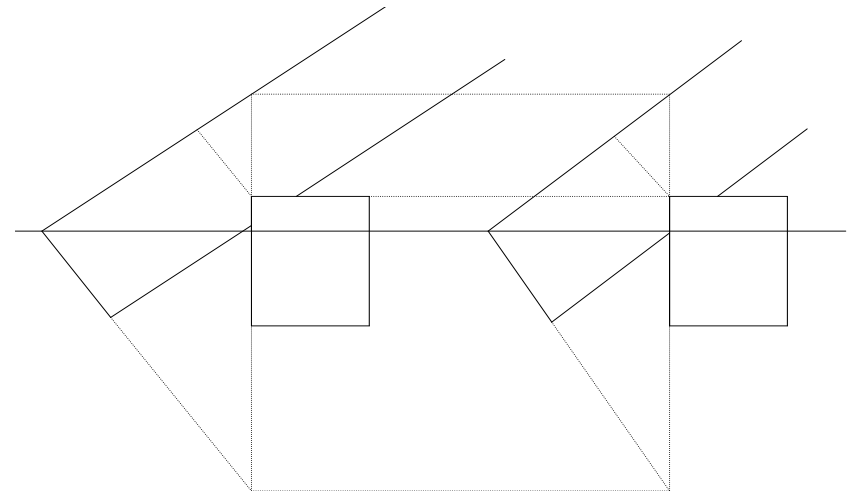
$$\begin{aligned} h1 \text{ Ab} &= 6,745 \text{ cm} \\ h2 \text{ Ab} &= 23,608 \text{ cm} \\ h \text{ Ab} &= 31,027 \text{ cm} \end{aligned}$$

$$\begin{aligned} g1 \text{ Ab} &= 6,75 : \tan 40,00 = \underline{\underline{8,038 \text{ cm}}} \\ g2 \text{ Ab} &= 23,61 : \tan 40,00 = \underline{\underline{28,135 \text{ cm}}} \\ g \text{ Ab} &= 31,03 : \tan 40,00 = \underline{\underline{36,977 \text{ cm}}} \end{aligned}$$

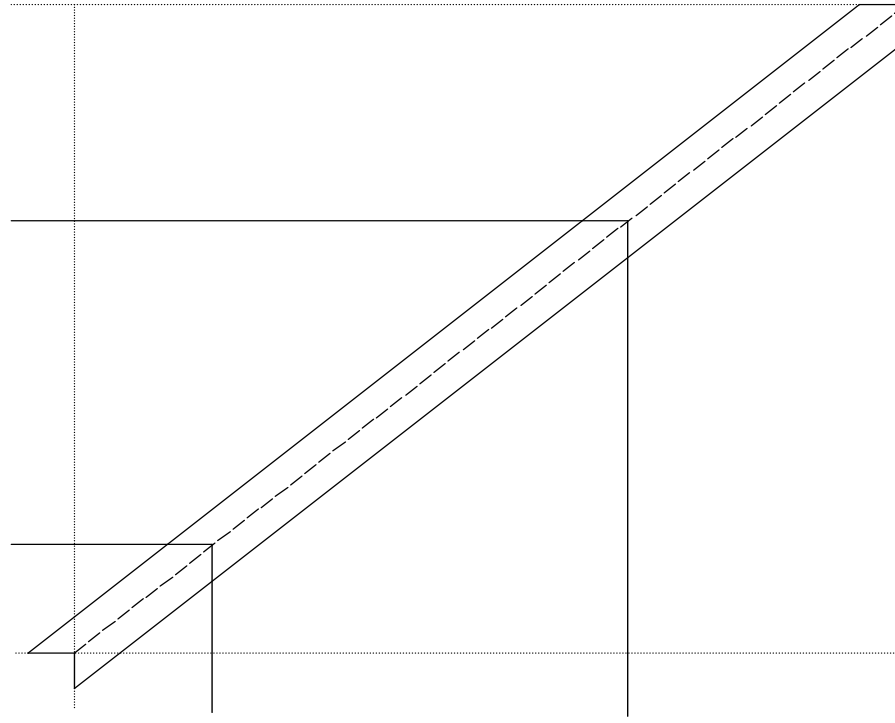
$$\begin{aligned} s1 \text{ Ab} &= 8,04 : \cos 40,00 = \underline{\underline{10,493 \text{ cm}}} \\ s2 \text{ Ab} &= 28,13 : \cos 40,00 = \underline{\underline{36,727 \text{ cm}}} \\ s \text{ Ab} &= 36,98 : \cos 40,00 = \underline{\underline{48,270 \text{ cm}}} \end{aligned}$$

Traufabschnitt Ab
angepasst

$$\begin{aligned} sOh &= 3,981 \text{ cm} \\ hu &= 14,83 \text{ cm} \\ \beta &= \tan^{-1} \frac{14,83}{8,038} = 61,5333 \text{ °} \\ Aw \text{ Sp.} &= 40,00 + 61,533 = \underline{\underline{101,533 \text{ °}}} \end{aligned}$$



Wersatz:



Kehlgrundwinkel:

$$\alpha_{\text{KGW HD}} = \text{Tan}^{-1} \frac{46,00}{36,977} = 51,206^\circ$$

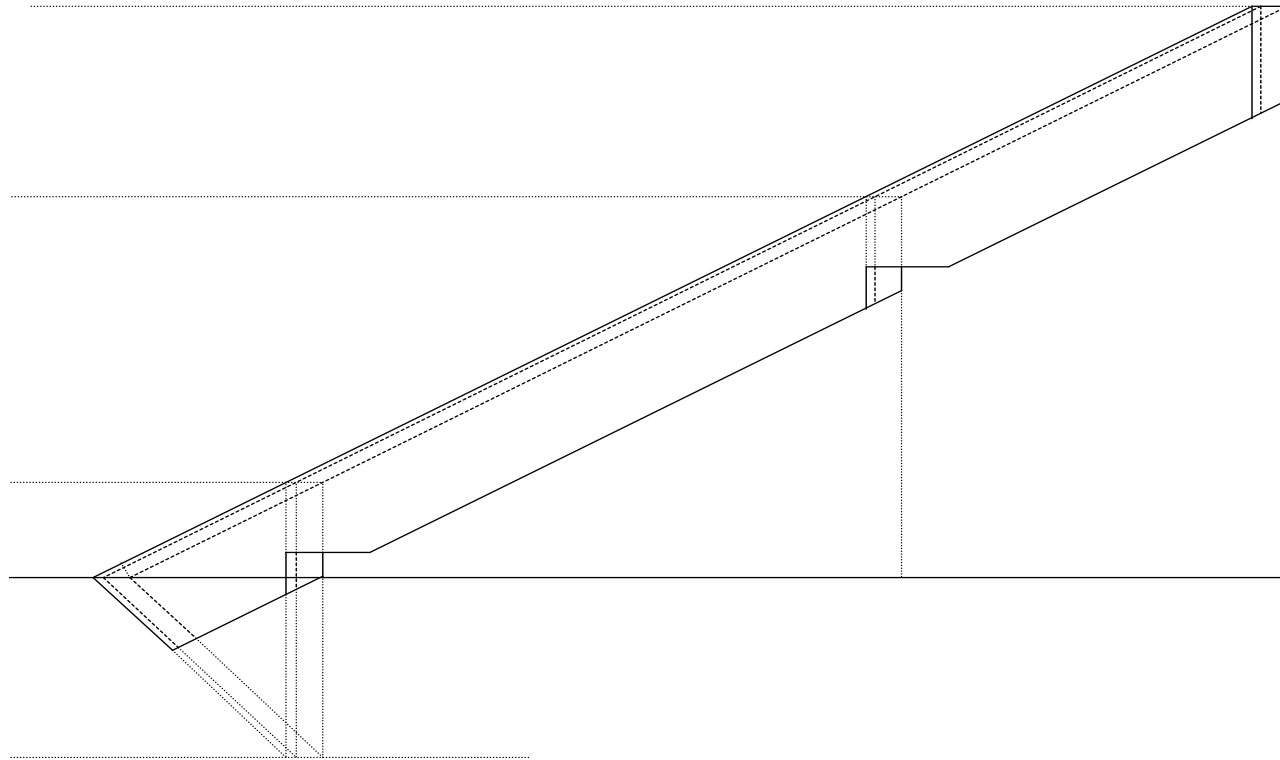
$$\alpha_{\text{KGW WD}} = \text{Tan}^{-1} \frac{36,98}{46,00} = 38,794^\circ$$

Kehlsparregrundmaße:

G1 HD	=	10,00	:	Sin	51,2060	=	12,830	cm
G2 HD	=	35,00	:	Sin	51,2060	=	44,906	cm
G HD	=	46,00	:	Sin	51,2060	=	59,019	cm

G1 Ab	=	8,04	:	Sin	38,7940	=	12,830	cm
G2 Ab	=	28,13	:	Sin	38,7940	=	44,906	cm
G Ab	=	36,98	:	Sin	38,7940	=	59,019	cm

Kehlsparrenprofil:

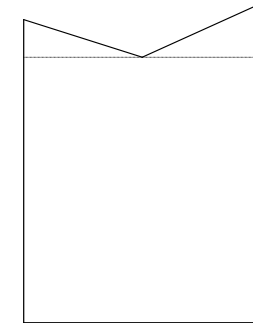
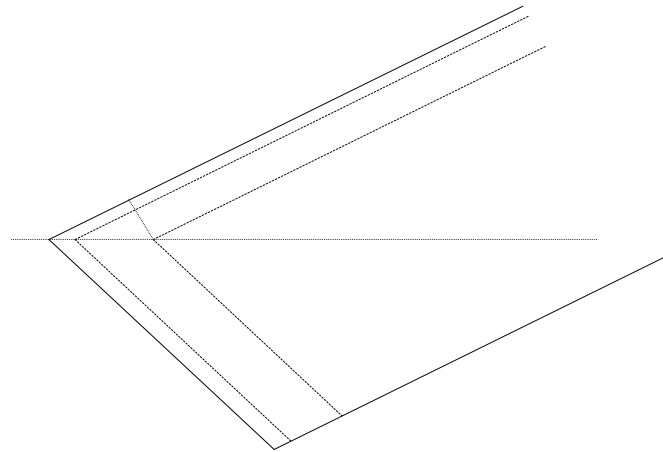
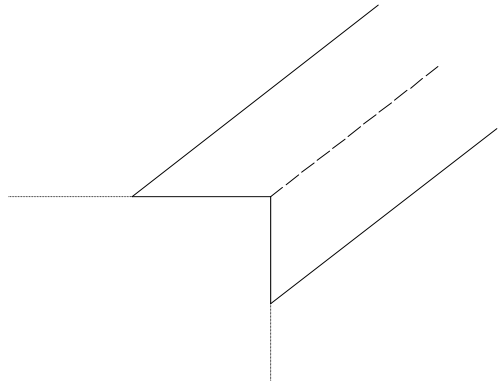


$$\alpha \text{ Kehle} = \text{Tan}^{-1} \frac{31,03}{59,019} = \underline{\underline{27,7316^\circ}}$$

S1 HD	=	12,83	:	Cos	27,732	=	14,495	cm
S2 HD	=	44,91	:	Cos	27,732	=	50,734	cm
S HD	=	59,02	:	Cos	27,732	=	66,678	cm

S1 Ab	=	12,83	:	Cos	27,732	=	14,495	cm
S2 Ab	=	44,91	:	Cos	27,732	=	50,734	cm
S Ab	=	59,02	:	Cos	27,732	=	66,678	cm

Verstich, Auskehlung, Maschinenwinkel:



$$\text{Vst HD} = 2,00 \quad /\text{Tan} \quad 51,2060 \quad = \quad \underline{\underline{1,6077 \text{ cm}}}$$

$$\text{Ausk HD} = 1,608 \quad \times \text{Sin} \quad 27,7316 \quad = \quad \underline{\underline{0,748 \text{ cm}}}$$

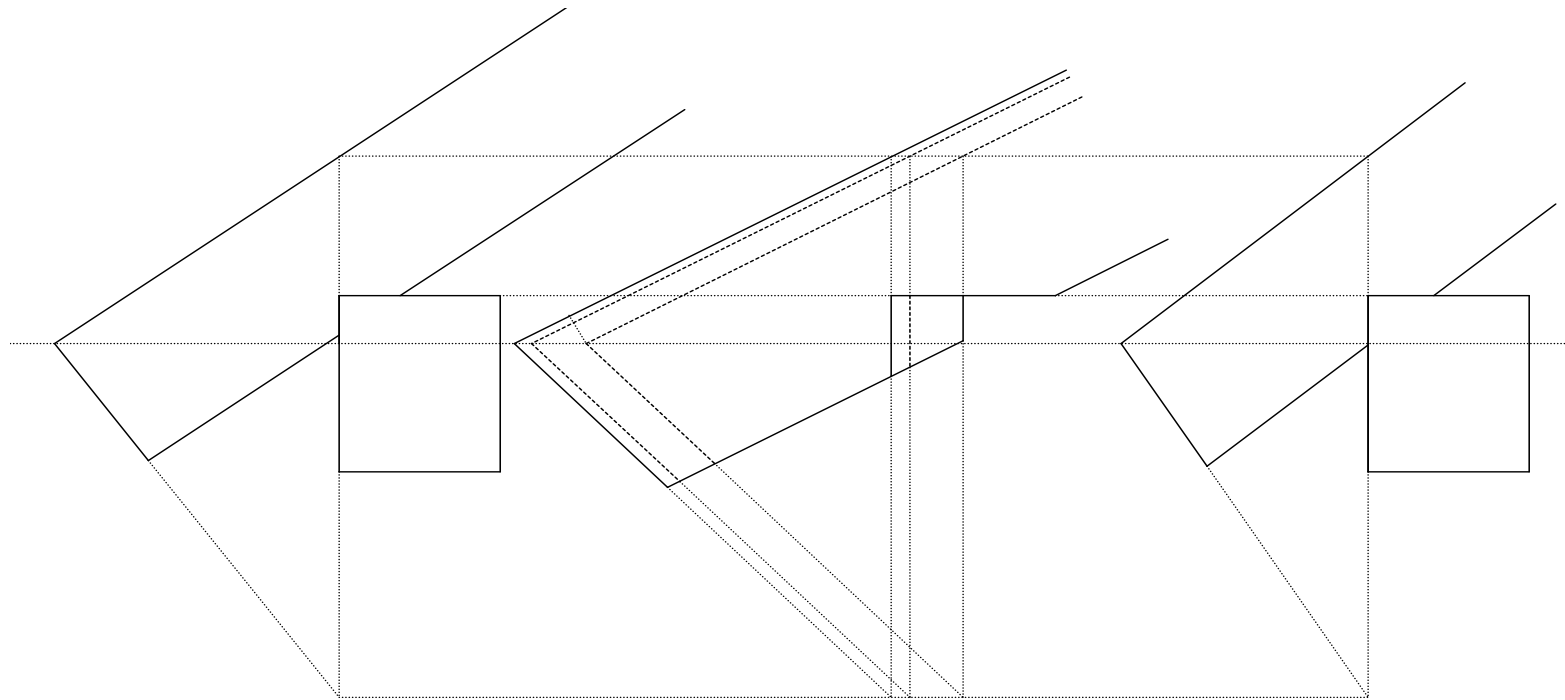
$$\alpha \text{ Mw} = \quad \text{Tan-1} \quad \frac{0,748}{2,000} \quad = \quad \underline{\underline{20,5085 \text{ }^\circ}}$$

$$\text{Vst Ab} = 2,00 \quad /\text{Tan} \quad 38,7940 \quad = \quad \underline{\underline{2,4880 \text{ cm}}}$$

$$\text{Ausk Ab} = 2,488 \quad \times \text{Sin} \quad 27,7316 \quad = \quad \underline{\underline{1,158 \text{ cm}}}$$

$$\alpha \text{ Mw} = \quad \text{Tan-1} \quad \frac{1,158}{2,000} \quad = \quad \underline{\underline{30,0656 \text{ }^\circ}}$$

Abschnittswinkel Kehle:



$$\beta_{HD} = 90,00 - 34,00 = \underline{\underline{56,00}} \text{ } ^\circ$$

$$hu_{HD} = 10,0 \times \tan 56,00 = \underline{\underline{14,826}} \text{ cm}$$

$$\beta_{Kehle} = \tan^{-1} \frac{14,826}{12,830} = \underline{\underline{49,1266}} \text{ } ^\circ$$

$$Aw_{Kehle HD} = 27,7316 + 49,1266 = \underline{\underline{76,8581}} \text{ } ^\circ$$

$$\beta_{Ab} = 101,53 - 40,00 = \underline{\underline{61,53}} \text{ } ^\circ$$

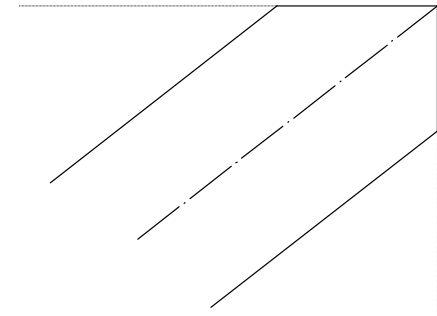
$$hu_{Ab} = 8,038 \times \tan 61,53 = \underline{\underline{14,826}} \text{ cm}$$

$$\beta_{Kehle} = \tan^{-1} \frac{14,826}{12,830} = \underline{\underline{49,1266}} \text{ } ^\circ$$

$$Aw_{Kehle Ab} = 27,7316 + 49,1266 = \underline{\underline{76,8581}} \text{ } ^\circ$$

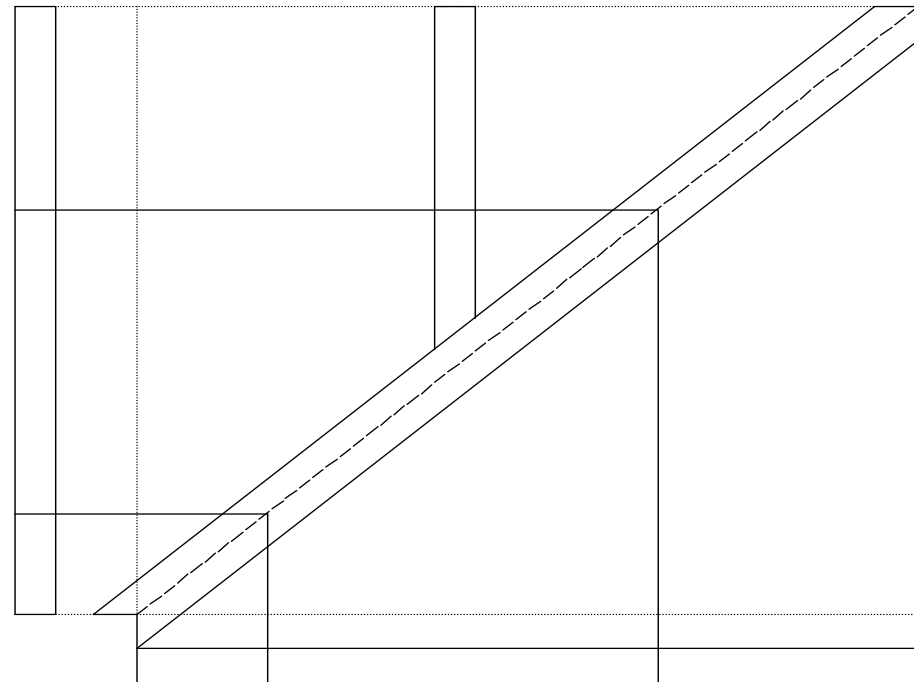
Schifter:

g Ab = 36,977 cm
DN Ab = 40,00 °
 α GGW Ab = 38,7940 °
Traufenlänge Ab = 8,20 cm
Firstlänge Ab = 54,20 cm
Fixmaß Sch 1 Ab = 31,30 cm
Sparren: 2,50 / 4,50
Gratsp.: 4,00 / 5,80



Anbau Schifter:

A Ab =	2,00	: Sin	38,7940	=	3,192	cm
Tm Sch1 =	31,30	-	3,192	=	28,108	cm
Gm Sch 1 =	28,108	x Tan	38,794	=	22,594	cm
Sch 1 =	22,594	: cos	40,00	=	29,495	cm
Vst Gm =	2,50	xTan	38,7940	=	<u>2,010</u>	cm



schräger Ortgang:

Position : Anbauseite

Sprungmaß= 8,00 cm

g1 Ab = 8,038 cm

g2 Ab = 28,135 cm

g Ab = 36,977 cm

h Ab = 31,027 cm

Sparrendim.= 2,50 / 4,50

$$Gw = \text{Tan}^{-1} \frac{8,00}{36,98} = \underline{\underline{12,2078}} \text{ } ^\circ$$

$$G1 = 8,038 : \text{Cos } 12,2078 = 8,2245 \text{ cm}$$

$$G2 = 28,135 : \text{Cos } 12,2078 = 28,786 \text{ cm}$$

$$G = 36,977 : \text{Cos } 12,2078 = 37,833 \text{ cm}$$

$$\alpha O = \text{Tan}^{-1} \frac{31,0274}{37,8325} = \underline{\underline{39,3560}} \text{ } ^\circ$$

$$S1 = 8,224 : \text{Cos } 39,3560 = 10,637 \text{ cm}$$

$$S2 = 28,786 : \text{Cos } 39,3560 = 37,228 \text{ cm}$$

$$S = 37,833 : \text{Cos } 39,3560 = 48,928 \text{ cm}$$

$$\text{Verstich} = 2,50 \times \text{Tan } 12,2078 = 0,5409 \text{ cm}$$

$$\text{Abgratung} = 0,54 \times \text{Sin } 39,3560 = 0,343 \text{ cm}$$

$$\alpha \text{ Maschinenwinkel} = \text{Tan}^{-1} \frac{0,343}{0,541} = 32,3803 \text{ } ^\circ$$

$$\beta \text{ Ab} = 0,00 - \text{####} = \text{#####} \text{ } ^\circ$$

$$h_u \text{ Ab} = 0,000 \times \text{Tan } \text{\#BEZUG!} = \text{\#BEZUG!} \text{ cm}$$

$$\beta \text{ Kehle} = \tan^{-1} \frac{\#BEZUG!}{0,000} = \#BEZUG!^\circ$$

$$Aw \text{ Kehle } Ab = 0,0000 + \#BEZUG! = \#BEZUG!^\circ$$