



SOFiCAD - Workshop 2005

Alignment

Release 16.4

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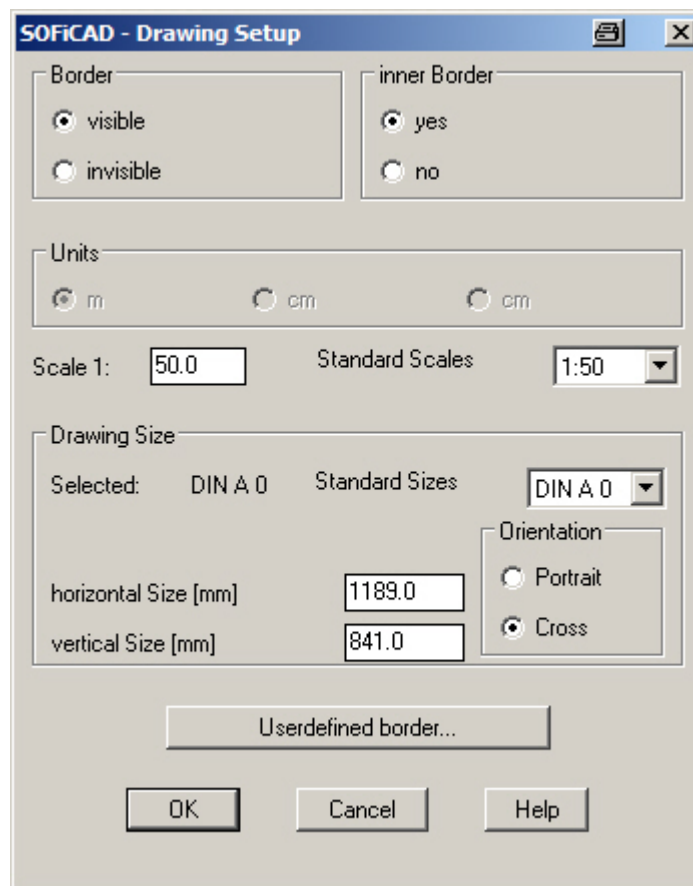
Preface

This paper serves to show the design of a footbridge step by step. An initial file is available for each step. The result of a section will be stored in a file which again serves as initial file for the next section.

For the single sections the data can be entered via the keyboard, as shown in the documentation - additionally we have files which can be imported.

Setting up the drawing

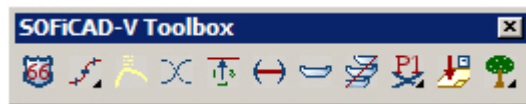
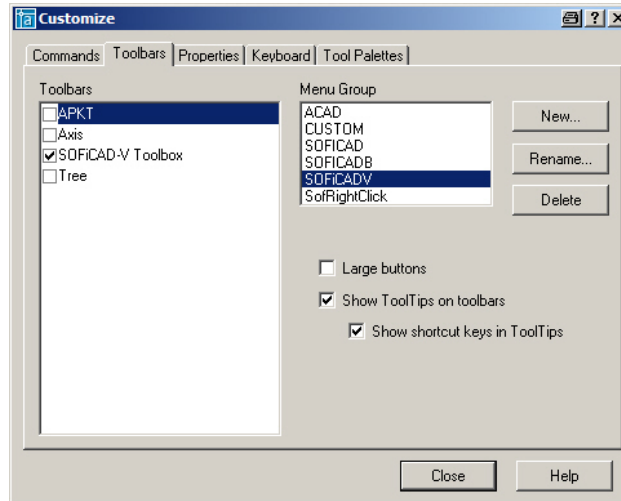
Select the template **SOFiCAD_classic.dwt**. Working with SOFiCAD-V in the layout area is being prepared shortly.



Standard scale 1:50
Paper size DIN A0

Toolbox

When loading SOFiCAD-V, the toolbox will either be loaded as well - if not you can do so via View -> Toolbox.



Standard cross sections

A standard cross section will be required for the example - it can be inserted with the file Q1.dwg.

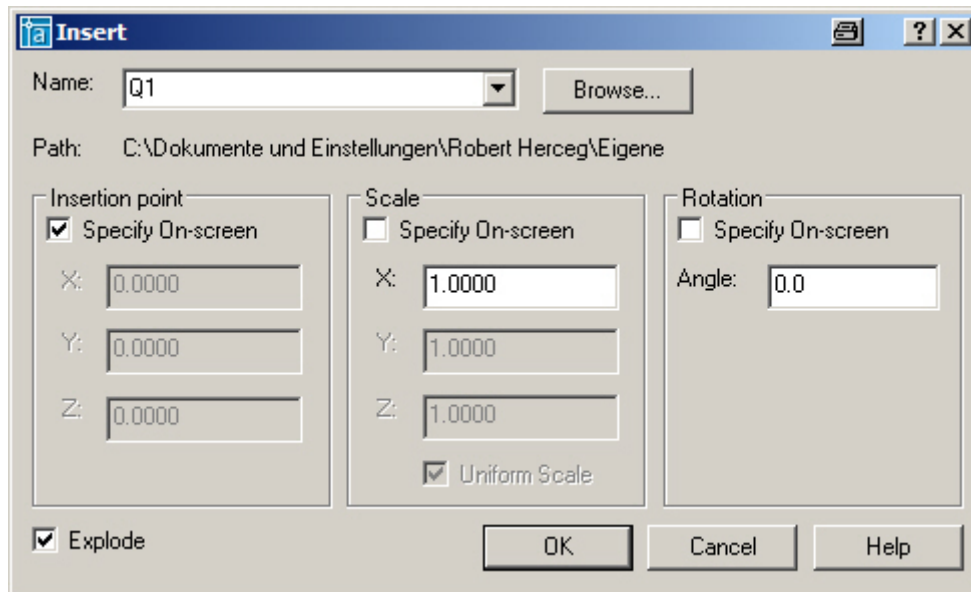
AutoCAD DesignCenter



AutoCAD DesignCenter

or

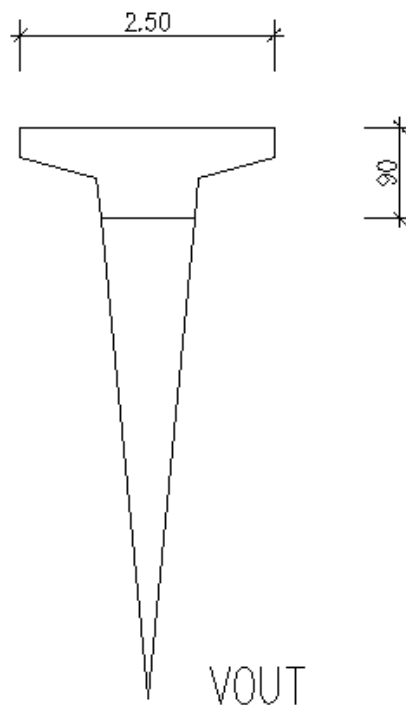
Insert -> Block



Search the file Q1.DWG with "**search**"

Disassemble the block into its original components with the command "original".

Drop the cross section at the right side on the sheet.



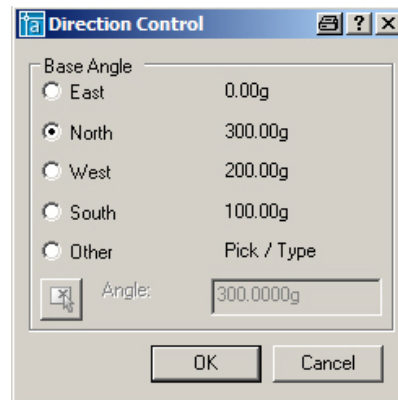
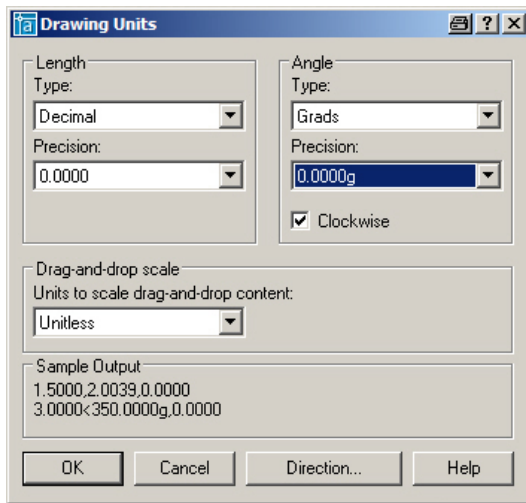
The two lines form a section point with the name VOUT - with it the distances for the haunch can be interpolated in X-direction.

Setting drawing units

Format -> Units

Angle type: Grads
Running direction: Clockwise

Direction: North



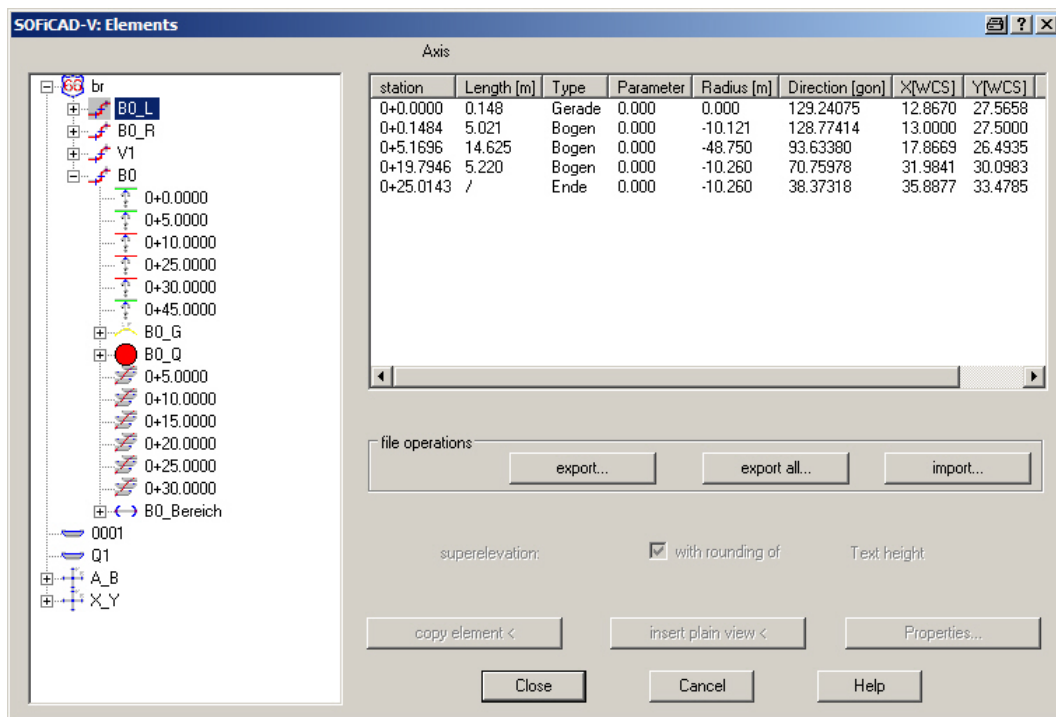
DWG File: "V_Workshop_01 Zeichnung einrichten.dwg"

System tree



Systembaum Alignment → System tree

The system tree is the central element of SOFiCAD-V. Anything belonging to an alignment will be managed via the system tree. The system tree allows looking at data, importing or exporting elements. Properties of cross sections can be viewed, section views can be generated or deleted and cross sections can be copied. An explorer on the left side allows navigating in the elements - the corresponding data are displayed on the right side.



To get acquainted with the system tree, please select the file “**V_Workshop_10 Absteckpunkte.dwg**”, - where all the elements have been worked in.

Axes

Alignment

At first, please select a name for the alignment. Any further element correlates to it. The structure will be shown in the system tree with this name. Up to 10 alignments can be defined in one plan.



or Alignment → Define Alignment

Alignment name: *br*

Alignment insertion point (end): (bottom right in plan)

Draw axis

An alignment can be compiled of several axes. Each of them receives a name. Possible axis elements are clothoides, lines and arches in any order. Every element must be entered via its parameters (length, A, radius...) as fixed element.

Viewed from the stationary direction left bent arches are entered with negative and right bent arches with positive sign for the radius.

The display of the axis is done as poly line, a clothoides will be approximated with a sufficient amount of circular elements.



or Alignment → Draw axis

Axis name: *B0*

Starting point (end+mit+sch+ein+ext): *8,25*

Tangent direction (end+mit+sch+ein+ext): *100*

Stretch kilometers in km: *0*

[Straight/Arch/clothoides/End/Back]: *G*

Length in m: *5*

[Straight/Arch/clothoides/End/Back]: *b*

Radius in m: *-50*

Length in m<5.0000> or [Angel]: *40*

[Straight/Arch/clothoides/End/Back]: *e*

The axis can also be imported, which is done via the system tree.



B0.acs

V_Workshop_02 Achsen.dwg

Drawing gradients



Gradiente zeichnen

Alignment → Draw gradient

Gradient name: *B0_G*

Starting point of gradient (end+mit+sch+ein+ext): show

Starting station in km<0.0000>: *return*

Height notation starting station in m: *525*

Current station 0+0.0000. Select option <Polygon>[Polygon/coordinates]: *return*

Length of part in m: *17.5*

Longitudinal inclination of part in %: *8*

Current station 0+17.5000. select option <Polygon>[Polygon/coordinates/End]: *return*

Length of part in m: *17.5*

Longitudinal inclination of part in %: *-8*

Rounding off radius in m<1000.0000>: *250*

Current station 0+35.0000. select option <Polygon>[Polygon/coordinates/End]: *e*

The gradient can also be read in via the system tree: *B0_G.grd*

The gradient will be required to design the course of the haunch,

Therefore copy the gradient and place it at the same place.

Please turn off the layer T_GRAD, that the gradient indexes will not disturb.

DWG File: “V_Workshop_03 Gradiente.dwg”

Draw cross fall inclination band

The footbridge should also receive a cross fall inclination.



Querneigungsband zeichnen

Alignment → Draw cross fall band

Name of cross fall band: *B0_Q*

Starting point cross fall band (end+mit+sch+ein+ext): below gradient

Type of inclination

<One-sided inclination>[One-sided inclination/roof profile/Asymmetrically]: *return*

Starting station in km<0.0000>: *return*

Cross fall station 0+0.0000 in %: *2.5*

Length of part in m: *35*

Cross fall inclination station 0+35.0000 in %: *2.5*

Length of part in m or [End]: *e*

The cross fall inclination band will not further be required. By turning off the layer T_QNB it will be hidden.

DWG File: “V_Workshop_04 Querneigungsband.dwg”

Inserting stations

Our bridge should start at the station 0.050 km and end at station 0.030 km. The haunch should start 5m from the end.

Stations can be inserted with the command:



Station(en) einfügen

Station of the inserting point in km or [Show/Interval]: *0.01*
Station of the inserting point in km or [Show/Interval]: *0.03*
Station of the inserting point in km or [Show/Interval]: *0.025*
Station of the inserting point in km or [Show/Interval]: *return*

DWG File: “V_Workshop_05 Stationen.dwg”

Standard cross section

Define Standard cross section

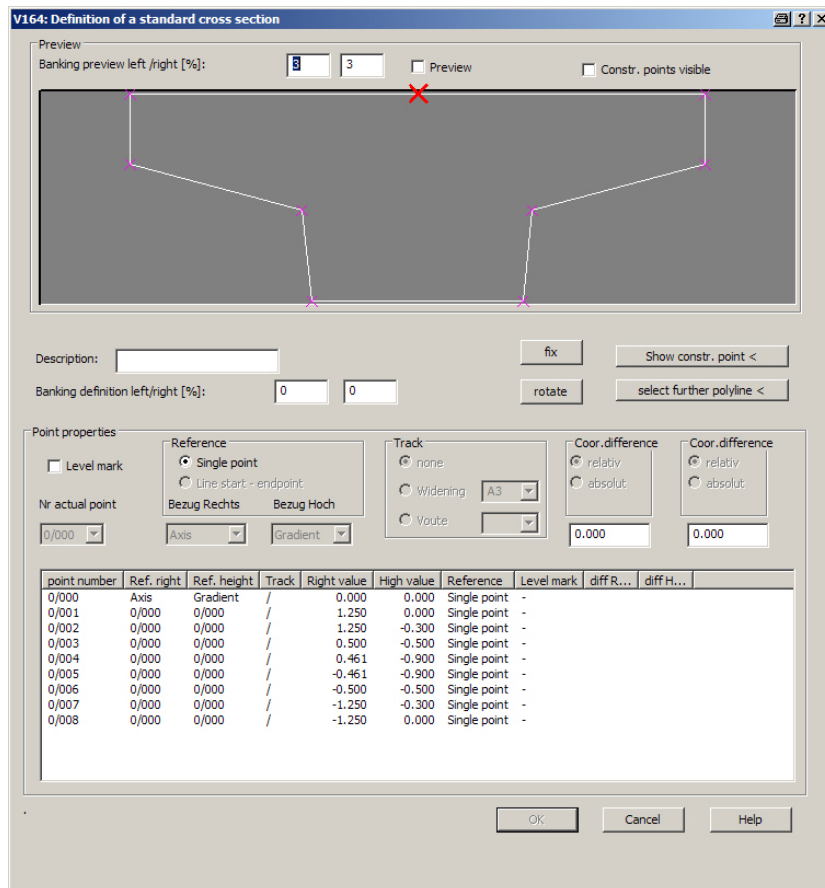
A cross section must be present as closed poly line.



Regelquerschnitt definieren

Alignment → define standard cross section

The command **Define standard cross section** allows selecting a poly line. The cross section receives a name and will be attached with its insertion point to the axis. The insertion point can still be changed when defining the cross section. Block-outs can be defined via additional closed poly lines. These points receive properties in order to describe the cross sections behavior along the axis. The corresponding cross section will be labeled in the system tree and it can then be viewed and / or changed.



Define standard cross section

Select poly line: *click on the inserted cross section*

Insertion point (end): *Click on center point of top line*

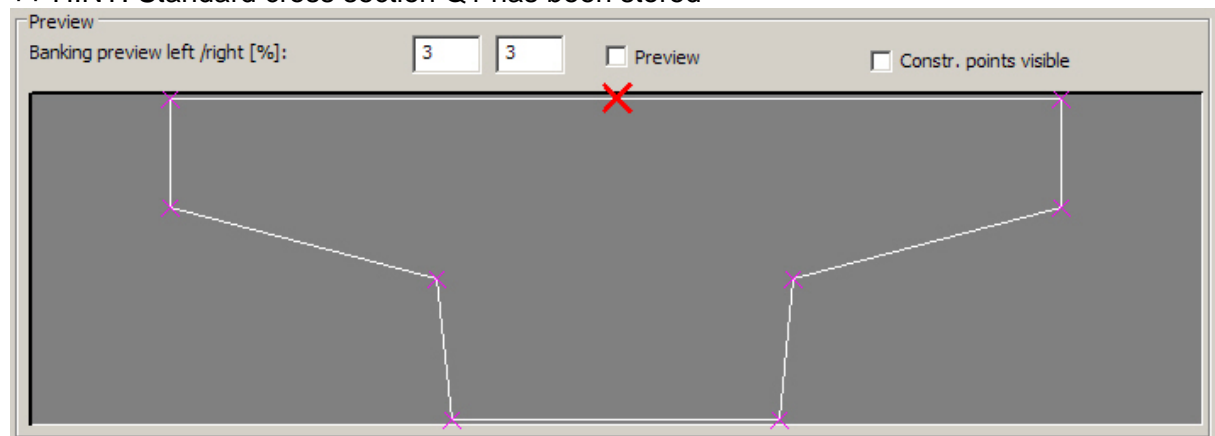
It is absolutely required to assign the design point for the haunch.

Name of the design point (only capital letters): *VOUT*

Show design point (end+mit+sch+ein+ext): *Click on section point of bottom line*

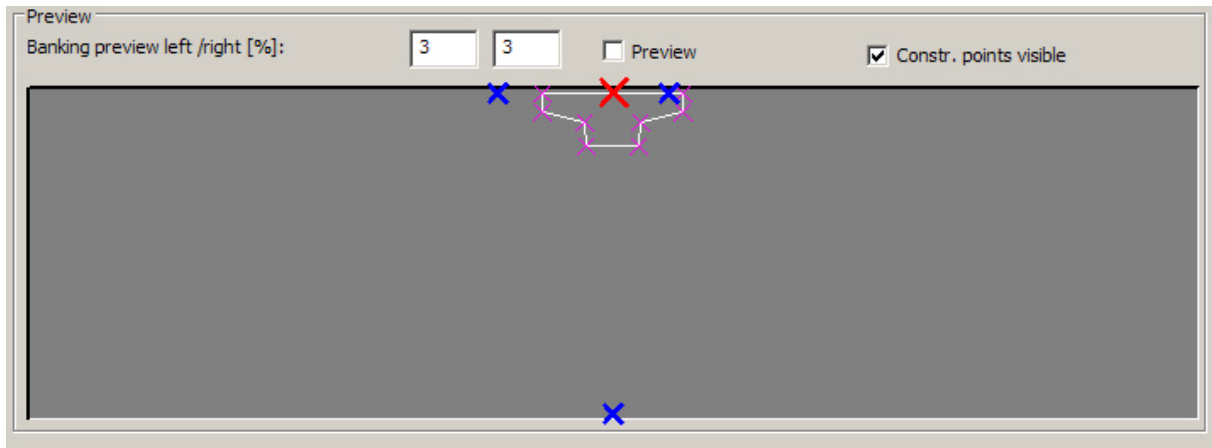
The cross section must receive a name - otherwise the dialogue box cannot be exited.

++ HINT: Standard cross section Q1 has been stored



Constr. points visible

allows making the haunch section point visible.



The two outer points 001 and 008 should be corresponding to the cross section inclination band.
 For it we have the settings INCL and INCR

V164: Definition of a standard cross section

Preview
 Banking preview left /right [%]: Preview Constr. points visible

Description:

Banking definition left/right [%]:

Point properties

Level mark

Nr actual point:

Reference: Single point Line start - endpoint

Start point: End point:

Track: none Widening Voute

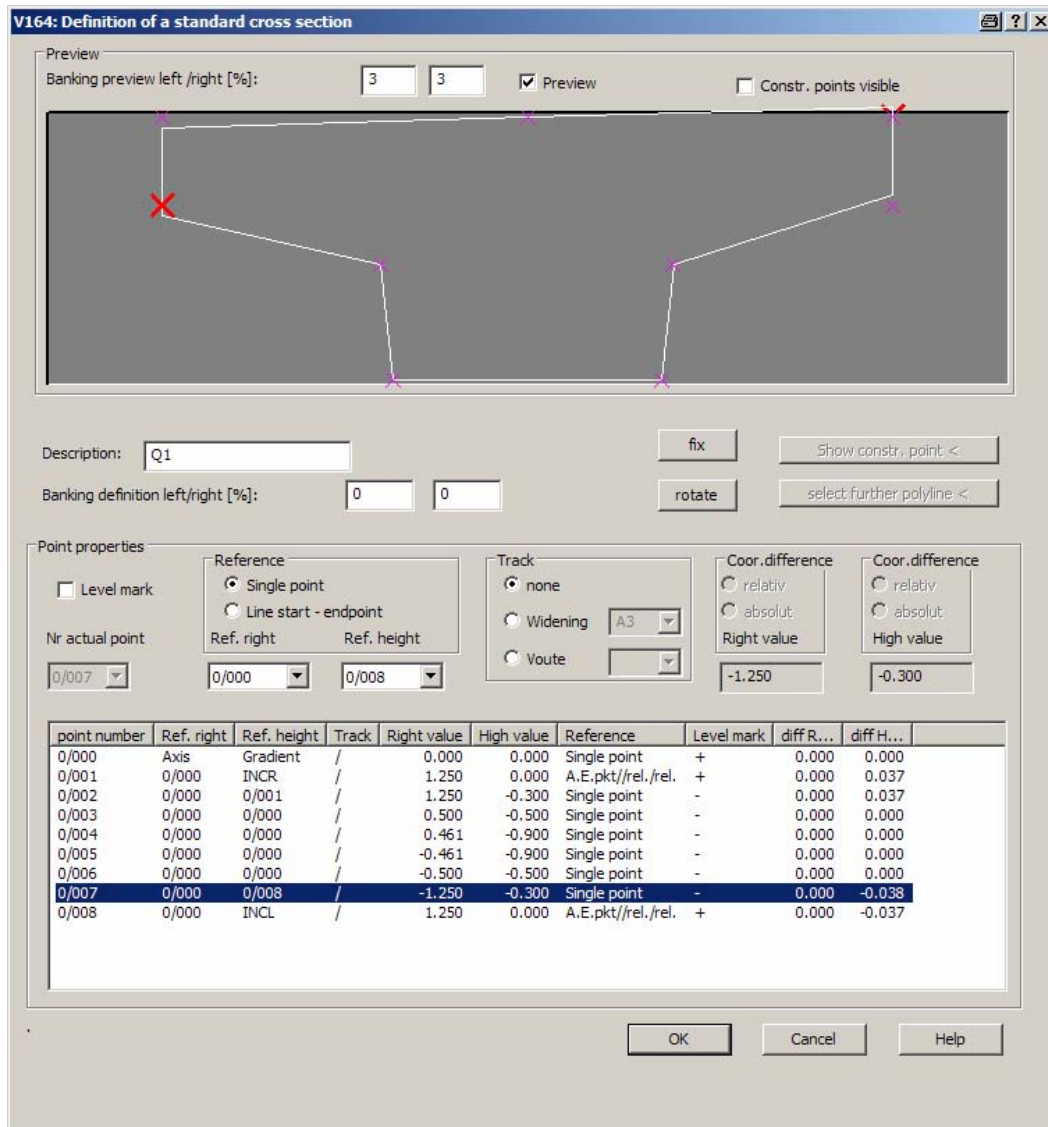
Coord. difference: relativ absolut Lotmaß:

Coord. difference: relativ absolut perp.:

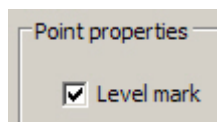
point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0,000	0,000	Single point	+	0,000	0,000
0/001	0/000	INCR	/	1,250	0,000	A.E.pkt./rel./rel.	+	0,000	0,037
0/002	0/000	0/001	/	1,250	-0,300	Single point	-	0,000	0,037
0/003	0/000	0/000	/	0,500	-0,500	Single point	-	0,000	0,000
0/004	0/000	0/000	/	0,461	-0,900	Single point	-	0,000	0,000
0/005	0/000	0/000	/	-0,461	-0,900	Single point	-	0,000	0,000
0/006	0/000	0/000	/	-0,500	-0,500	Single point	-	0,000	0,000
0/007	0/000	0/008	/	-1,250	-0,300	Single point	-	0,000	-0,038
0/008	0/000	INCL	/	1,250	0,000	A.E.pkt./rel./rel.	+	0,000	-0,037

Preview Allows checking the cross sections behavior.

The points below it should also be moved. For it they need a link to the points above it. For point 007:



For selected points height notations shall be written out later.



The entries for the single points will be displayed in a table:

Point properties

Level mark

Nr actual point: 0/007

Reference: Single point, Line start - endpoint

Ref. right: 0/000, Ref. height: 0/008

Track: none, Widening (A3), Voite

Coord. difference: relativ, absolut

Right value: -1.250, High value: -0.300

point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0.000	0.000	Single point	+	0.000	0.000
0/001	0/000	INCR	/	1.250	0.000	A.E.pkt//rel./rel.	+	0.000	0.037
0/002	0/000	0/001	/	1.250	-0.300	Single point	-	0.000	0.037
0/003	0/000	0/000	/	0.500	-0.500	Single point	-	0.000	0.000
0/004	0/000	0/000	/	0.461	-0.900	Single point	-	0.000	0.000
0/005	0/000	0/000	/	-0.461	-0.900	Single point	-	0.000	0.000
0/006	0/000	0/000	/	-0.500	-0.500	Single point	-	0.000	0.000
0/007	0/000	0/008	/	-1.250	-0.300	Single point	-	0.000	-0.038
0/008	0/000	INCL	/	1.250	0.000	A.E.pkt//rel./rel.	+	0.000	-0.037

Define area



Bereich definieren

The cross sections can be assigned to the axis via the definition of areas

Region Info / Edit

Name: B0, First station: 0+0.0000, End station: 0+45.0000

Main axis: B0

Region: B0 Bereich, 0.005000 (0+5.0000), 0.030000 (0+30.0000)

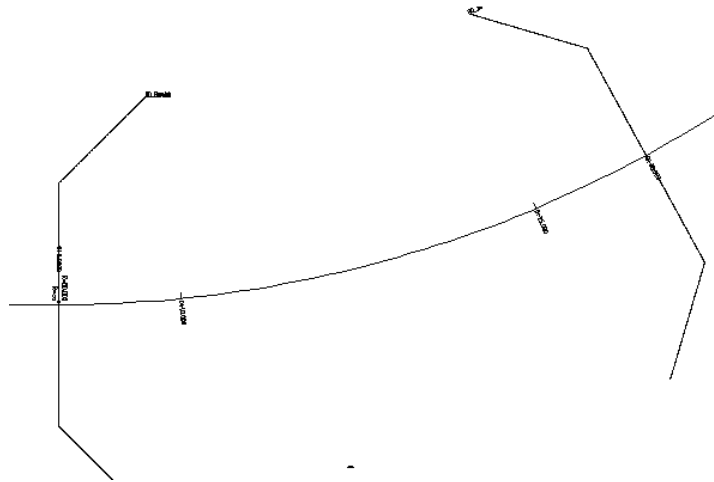
Standard cross section: Q1

Axis selection: []

aus standard cross section | from region | horizontal /...

Exportieren ... OK Cancel Help

The points for the beginning and the end of the area can be entered (0.05 and 0.03) or displayed.



DWG Files: “V_Workshop_06 Bereich.dwg”

Inserting cross sections

Cross sections shall be inserted from the bridges beginning to its end at every 5m.

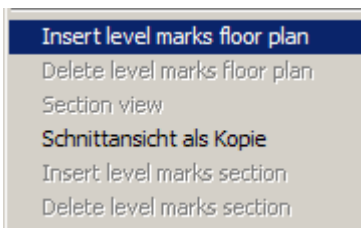


Regelquerschnitt einfügen

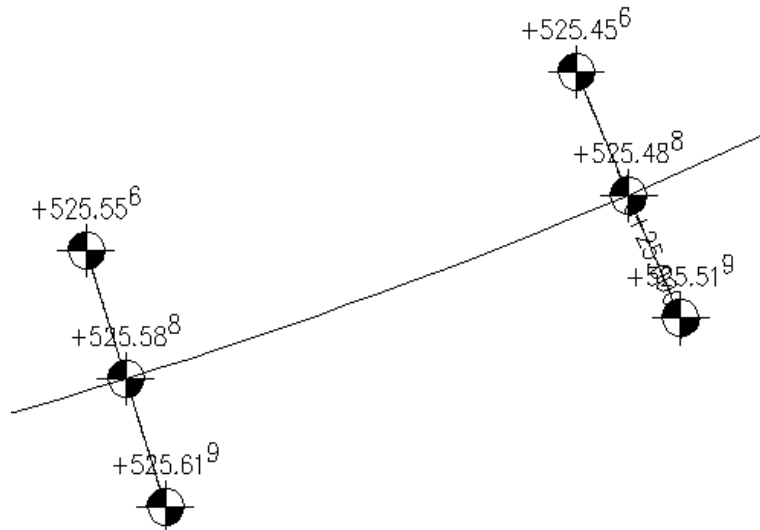
Alignment → Insert standard cross section

Station or [Show/Interval]: /
 Starting station or [Show]: .005
 Final station or [Show]: .03
 Insertion interval in m<10.0000>: 5

The heights for the inserted cross sections can also be shown. The points were cross off when defining the cross section.
 Click on inserted cross section, press the right-mouse button. The right-click menu opens:



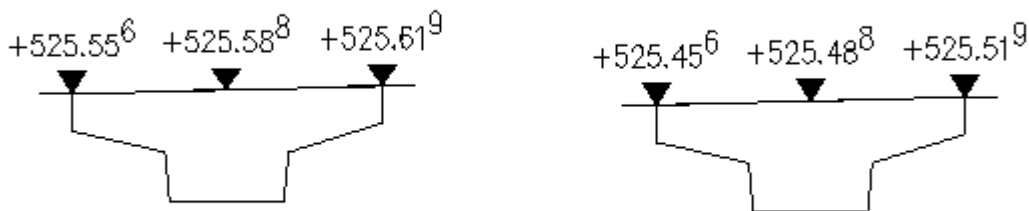
The height notations can be activated.



DWG File: “V_Workshop_07 Querschnitte einfügen.dwg“

Insert section view

The right-click menu allows selecting the command select “**section view**”.



DWG File: “V_Workshop_08 Schnittansicht einfügen.dwg“

Data delivery to SOFiPLUS

A double click on area boundaries leads to the dialog box. The command



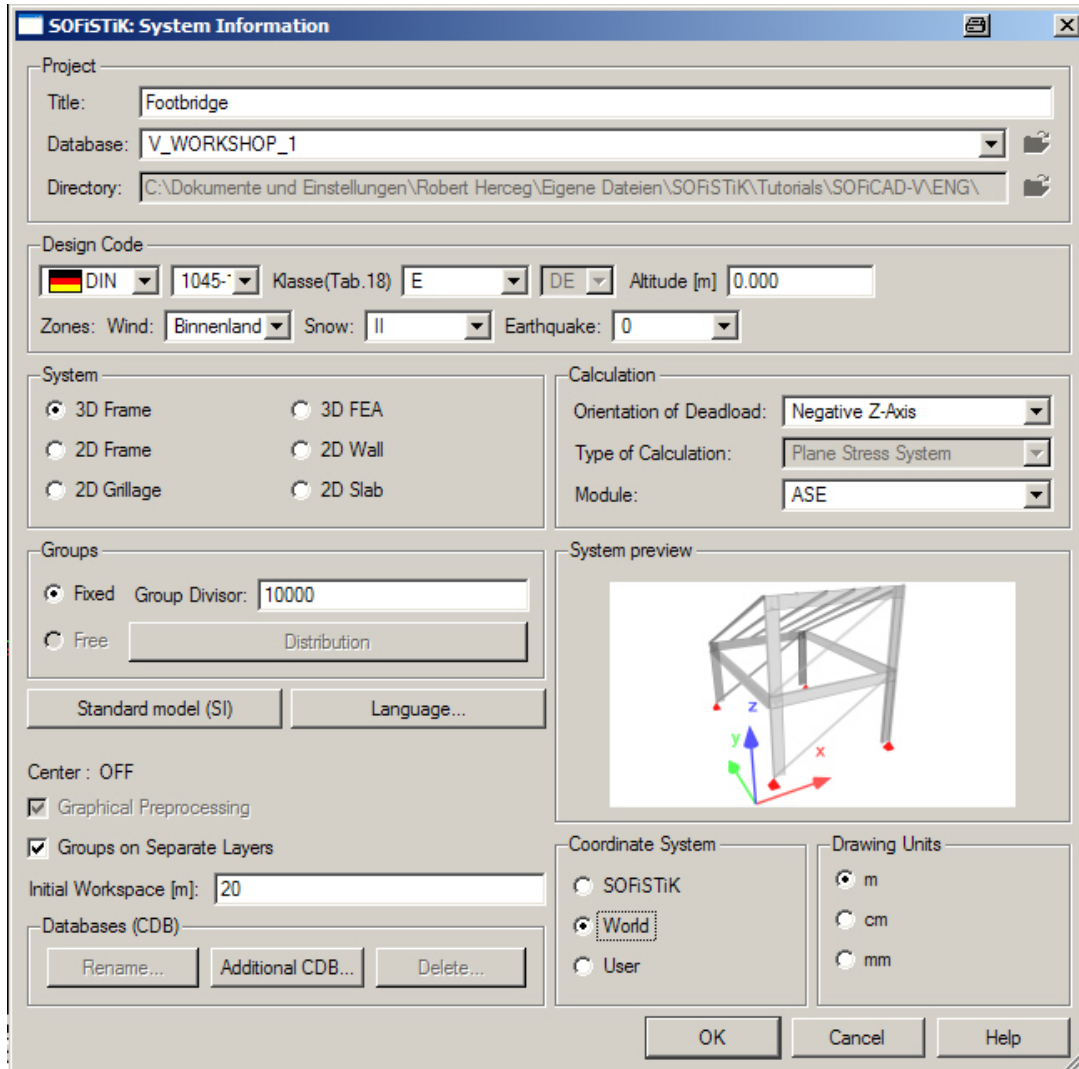
writes the data into the SOFiSTiK CDB. You will be asked for a name of the CDB. The name should correspond to the name of the SOFiPLUS-DWG. I.e.: c_workshop_01.cdb

With SOFiPLUS the drawing c_workshop_01.dwg will be opened. The command

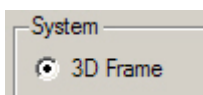


Statische Position

Assigns the system type:



In this case we use a 3D Truss system:

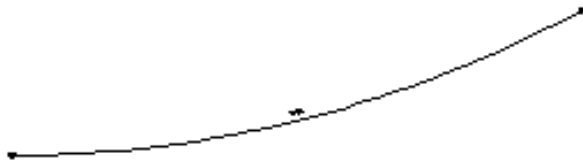


ASE is required as analysis model.

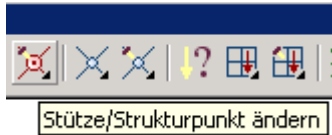


The command "**importachsen**" (entered via the key board) asks for the CDB with the SOFi-CAD data.

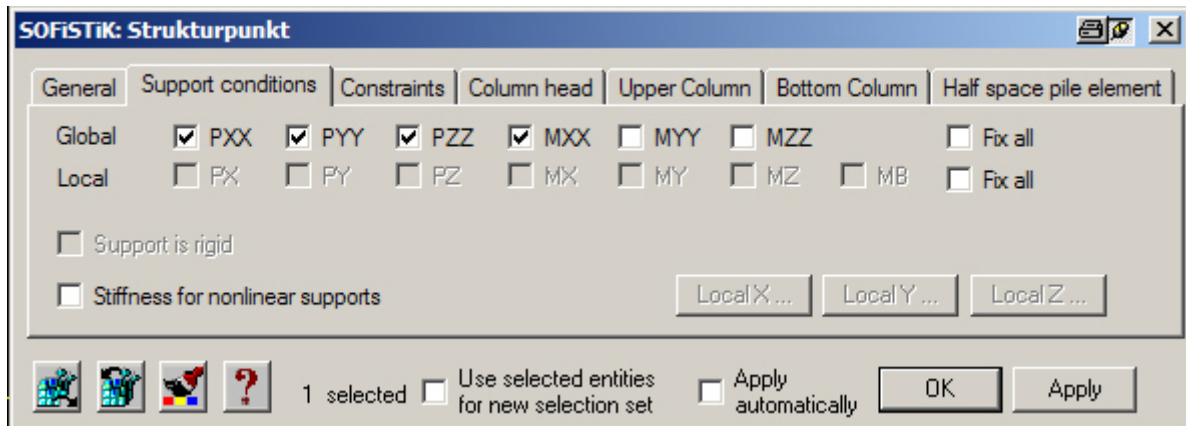
The truss system appears on the screen.



For the truss beginning and end the bearing attributes must be entered.



For the truss beginning we check PXX, PYY, PZZ and MXX.

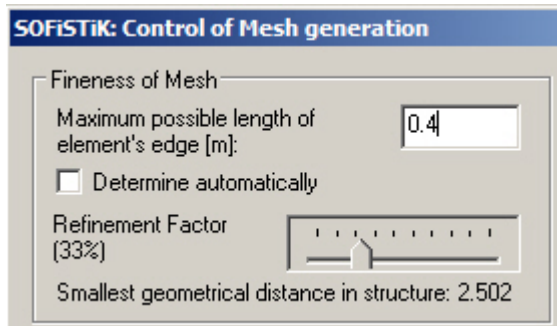


For the end we check PYY and PZZ.



The command **Netzgenerierung & Lastaufbringung** starts the mesh generation.

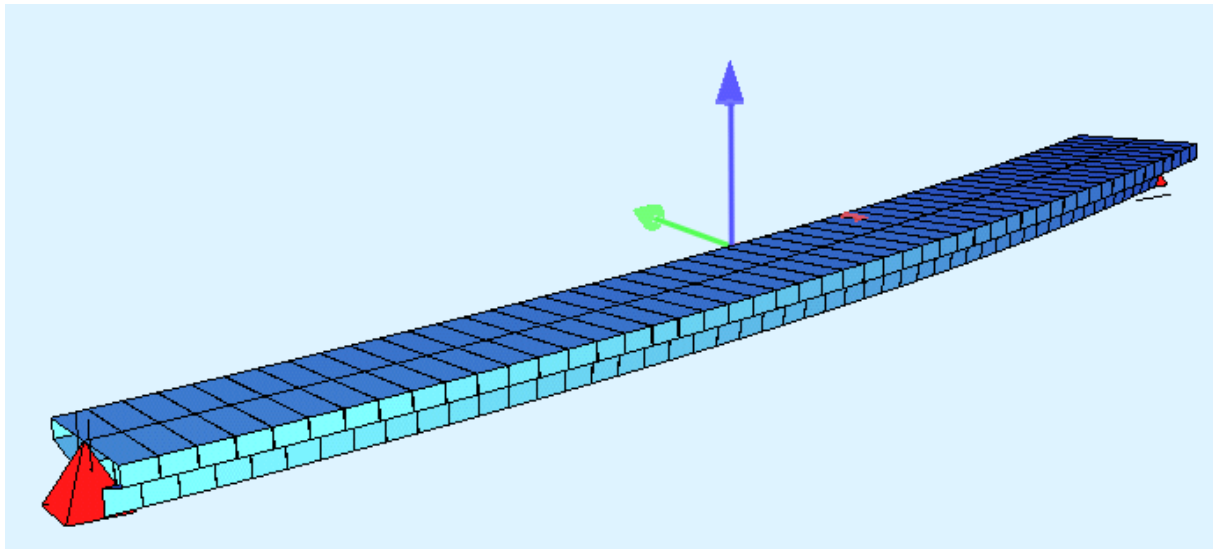
The mesh coarseness should be entered as 0.5 in this case.



OK generates the system.



The system can be viewed with the Animator.



Design haunches

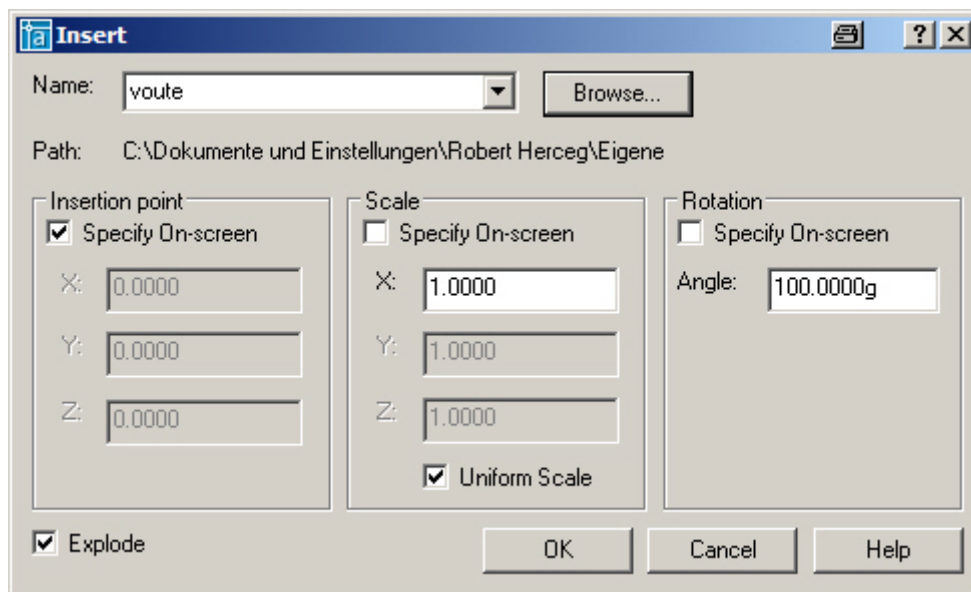
DWG File: “V_Workshop_09 Voutenkonstruktion.dwg”

Starting from the gradient, the haunch can be designed.

In this case we introduce the haunches course from the file Voute.dwg.

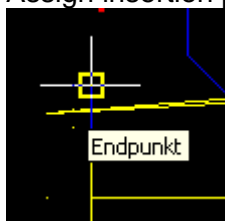
Turn on the layer for the gradient.

Via insert get the file Voute.dwg.



Disassemble into original.

Assign insertion point on screen.



Insert it at the top left boundary if the gradient
 Turn off the gradient layer again.
 The bottom boundary of the haunch is already a poly line.



The command **Achse aus Polylinie** can generate a poly line from this axis.

Axis name: V1

Select object: *Click on poly line*

Route in km: 0

The haunch should be assigned a gradient to give the haunch a height.



Open gradient:

Gradiente zeichnen

Axis or [V1/B0]: V1

Gradient name: V1_G

Gradient starting point (end+mit+sch+ein+ext): *Show point below the axis V1*

Starting station in km<0.0000>: *return*

Starting station height notation in m: 523.184

Current station 0+0.0000. Select option <Polygon>[Polygon/Coordinates]: *return*

Length of part in m: 40

Longitudinal inclination of part in %: 0

Current station 0+40.0000. Select option <Polygon>[Polygon/Coordinates/Ende]: *e*

The height notation 523.184 for the starting station results from

525.00-1.80-part of course of arch

The axis must be assigned in the cross section

Point properties

Level mark

Nr actual point: 0/004

Reference: Single point, Line start - endpoint

Track: none, Widening (A3), Voete (A2)

Coord. difference: relativ, absolut

Right value: -0.039, High value: 4.726

point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0.000	0.000	Single point	+	-	-
0/001	0/000	INCR	/	1.250	0.000	A.E.pkt//rel./rel.	+	-	-
0/002	0/000	0/001	/	1.250	-0.300	Single point	-	-	-
0/003	0/000	0/000	/	0.000	0.707	A.E.pkt//rel./rel.	-	-	-
0/004	0/003	VOUT	/A2	-0.039	4.726	Single point	-	-	-
0/005	0/006	VOUT	/A2	0.402	0.000	A.E.pkt//rel./rel.	-	-	-
0/006	0/000	0/000	/	0.000	0.707	A.E.pkt//rel./rel.	-	-	-
0/007	0/000	0/008	/	-1.250	-0.300	Single point	-	-	-
0/008	0/000	INCL	/	1.250	0.000	A.E.pkt//rel./rel.	+	-	-

For point 004 the lane will be assigned as Variable 2. Further more for this point the starting point 003 and the ending point VOUT must be assigned. The same must be made for the point 005.

Additionally the points 004 and 005 the height notation must be assigned in order to generate a longitudinal section.

The result:

point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0.000	0.000	Single point	+	-	-
0/001	0/000	INCR	/	1.250	0.000	A.E.pkt//rel./rel.	+	-	-
0/002	0/000	0/001	/	1.250	-0.300	Single point	-	-	-
0/003	0/000	0/000	/	0.000	0.707	A.E.pkt//rel./rel.	-	-	-
0/004	0/003	VOUT	/A2	-0.039	4.726	Single point	-	-	-
0/005	0/006	VOUT	/A2	0.402	0.000	A.E.pkt//rel./rel.	-	-	-
0/006	0/000	0/000	/	0.000	0.707	A.E.pkt//rel./rel.	-	-	-
0/007	0/000	0/008	/	-1.250	-0.300	Single point	-	-	-
0/008	0/000	INCL	/	1.250	0.000	A.E.pkt//rel./rel.	+	-	-

In the dialog box the variables A2 must be assigned to the Axis V1.

aus standard cross section	from region	horizontal /...
A2	keine	Voute

Assign via Show

Region Info / Edit

Name: _____ First station: _____ End station: _____

Main axis: B0 0+0.0000 0+45.0000

Region: B0_Bereich 0.005000 < 0.030000 <
0+5.0000 0+30.0000

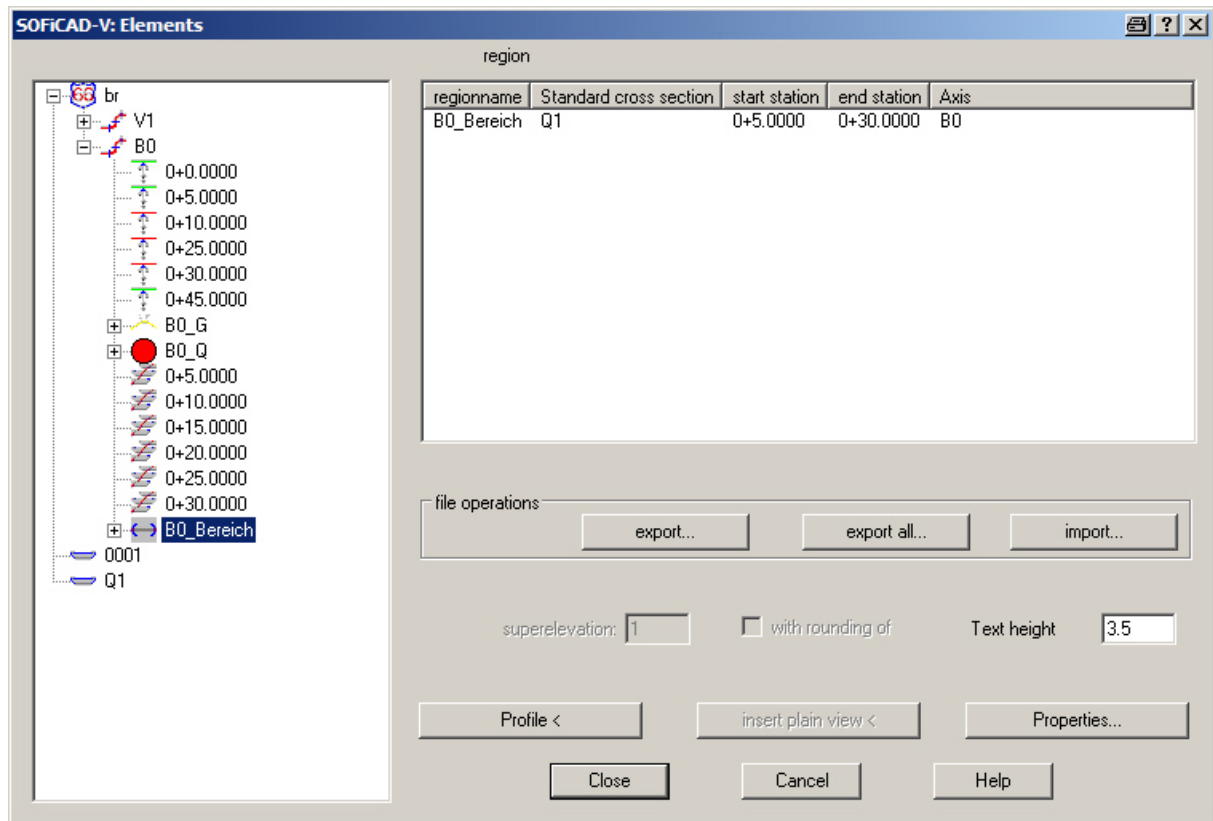
Standard cross section: Q1

Axis selection: V1

aus standard cross section	from region	horizontal /...
A2	V1	Voute

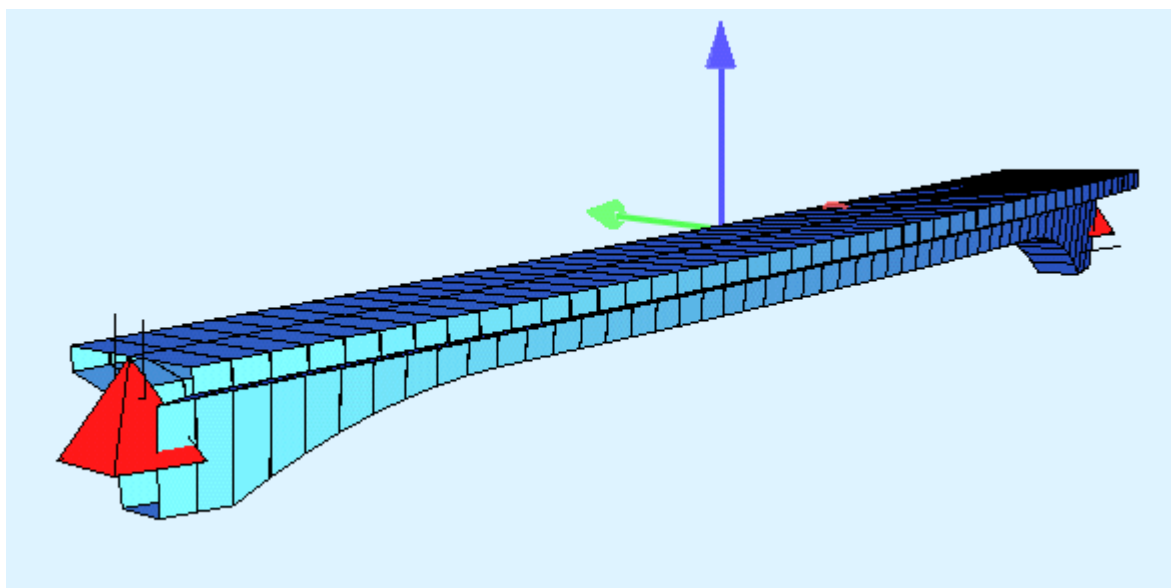
Exportieren ... OK Cancel Help

Insert longitudinal section:
Click on area B0_area in the system tree.



Click on command **Longitudinal section**.
 ++ HINT Export Haunch A2
 Select Vertex <0000>[0000/0001/0004/0005/0008]: 0004
 insert in gradient? [<Ja>/Nein]: return

The result for this state can also be viewed in SOFiPLUS.



DWG File: "V_Workshop_10 Voutenkonstruktion.dwg"

Lane enlargement

Lane boundaries can be generated by moving the axis. Starting from the start and the end the enlargement can be designed.

V_Workshop_11 Aufweitung.dwg

This drawing already contains the enlarged lane boundaries.

The line courses must be changed to poly lines.

Command : **Change -> Object -> Poly line**

Select poly line or [several objects]: *for left and right boundary*

The selected object is not a poly line

Should it be changed into a poly line? <J> j

Enter option [Close/Link/Width/Edit/curve/Adjust/curve line/Delete/Line type/Back]

Select objects: 1 found

Select objects: 1 found, 2 total

Select objects: 1 found 3 total

Select objects: 1 found 4 total

Select objects: *return*

3 Segment(s) of poly line added

Enter option [Close/Link/Width/Edit/curve/Adjust/curve line/ line type/back]: *return*

The poly lines are re-converted into axes.



Axis name: *B0_L*

Select object: *Poly line left*

Route in km: *0*

Axis name: *B0_R*

Select object: *Poly line right*

Route in km: *0*

The cross section must be informed of the boundary axes position.

The points 001 and 008 receive the variable A3 for the right axis and A5 for the left axis.

Point properties

Level mark

Nr actual point: 0/001

Reference: Single point, Line start - endpoint

Start point: 0/000, End point: INCR

Track: none, Widening (A5), Voite

Coord. difference: relativ, absolut, Lotmaß: 1.250

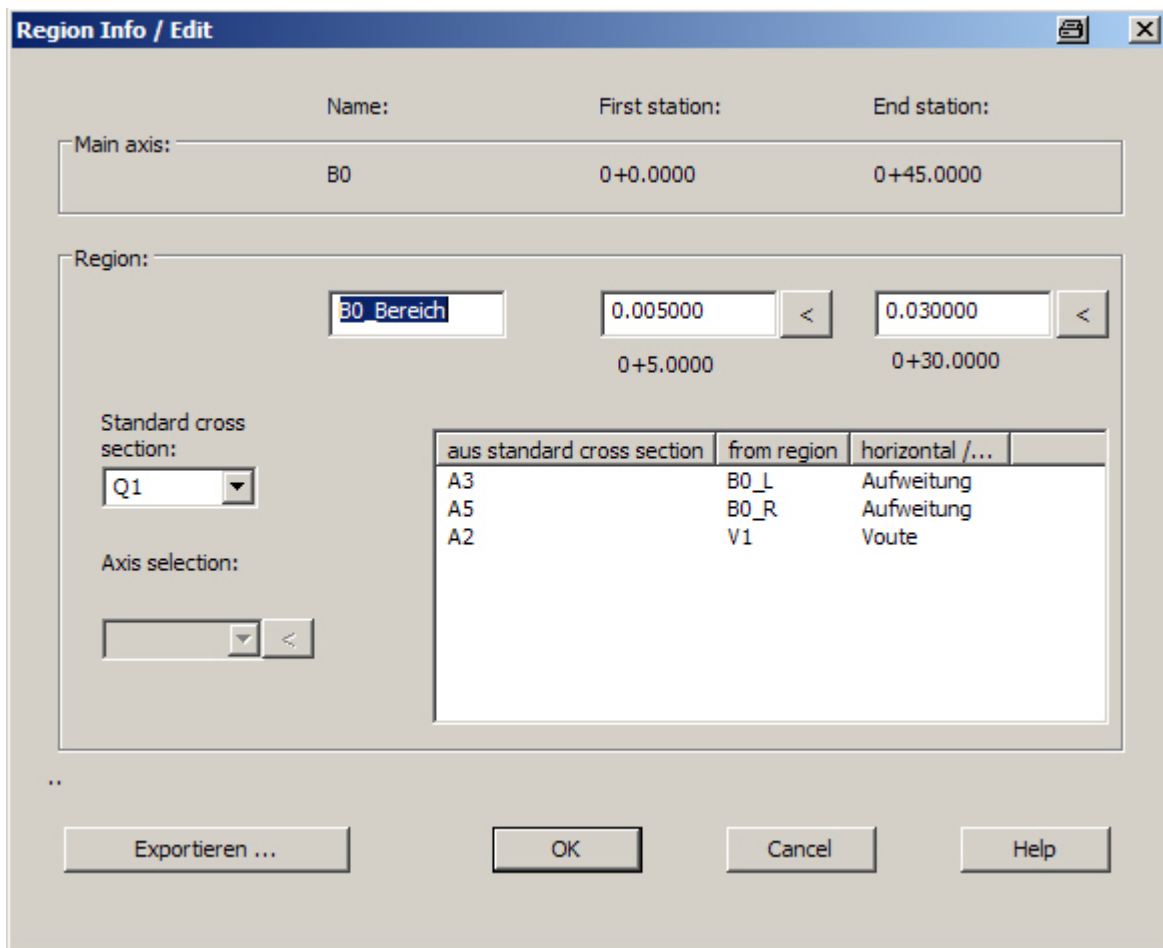
Coord. difference: relativ, absolut, perp.: 0.000

point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0.000	0.000	Single point	+		
0/001	0/000	INCR	A5 /	1.250	0.000	A.E.pkt//rel./rel.	+		
0/002	0/001	0/001	/	0.000	-0.300	Single point	-		
0/003	0/000	0/000	/	0.500	-0.500	Single point	-		
0/004	0/003	VOUT	/A2	0.402	0.000	A.E.pkt//rel./rel.	+		
0/005	0/006	VOUT	/A2	0.402	0.000	A.E.pkt//rel./rel.	+		
0/006	0/000	0/000	/	-0.500	-0.500	Single point	-		
0/007	0/008	0/008	/	0.000	-0.300	Single point	-		
0/008	0/000	INCL	A3 /	1.250	0.000	A.E.pkt//rel./rel.	+		

Further more points 002 follow horizontally the point 001 and 007 the point 008.
 In the following the table with any setting:

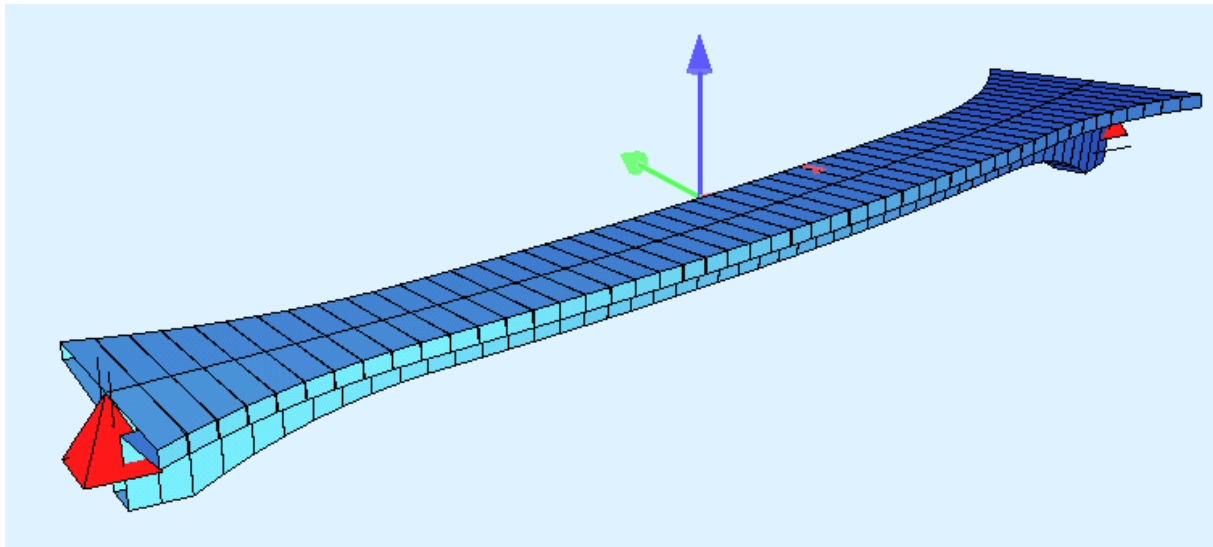
point number	Ref. right	Ref. height	Track	Right value	High value	Reference	Level mark	diff R...	diff H...
0/000	Axis	Gradient	/	0,000	0,000	Single point	+		
0/001	0/000	INCR	A5 /	1,250	0,000	A.E.pkt//rel./rel.	+		
0/002	0/001	0/001	/	0,000	-0,300	Single point	-		
0/003	0/000	0/000	/	0,500	-0,500	Single point	-		
0/004	0/003	VOUT	/A2	0,402	0,000	A.E.pkt//rel./rel.	+		
0/005	0/006	VOUT	/A2	0,402	0,000	A.E.pkt//rel./rel.	+		
0/006	0/000	0/000	/	-0,500	-0,500	Single point	-		
0/007	0/008	0/008	/	0,000	-0,300	Single point	-		
0/008	0/000	INCL	A3 /	1,250	0,000	A.E.pkt//rel./rel.	+		

The axes must be assigned to the variables A3 and A5 in the dialog box.



A3 is left - A5 right

Also for the enlargement, the result can be displayed in SOFiPLUS.



Slab book / Slab plan

The cross sections can be highlighted in the system tree. The results appear in the right window.

The command **export** writes the values into a .dhp file.

SOFICAD-V: Elements

cross-section

station	Standard cross section	Axis	Banking left [%]	Trans.incline right [%]	0/000	0/001
0+5.0000	Q1	B0	2.5000	2.5000	525.288	525.350
0+10.0000	Q1	B0	2.5000	2.5000	525.487	525.519
0+20.0000	Q1	B0	2.5000	2.5000	525.587	525.619
0+25.0000	Q1	B0	2.5000	2.5000	525.487	525.519
0+30.0000	Q1	B0	2.5000	2.5000	525.288	525.350

file operations: export... export all... import...

superelevation: with rounding of Text height

copy element < insert plain view < Properties...

Close Cancel Help

#DECKENHÖHENPLAN#

\$CSEC_STATION \$ASS_STCS \$ASS_ACHSE \$CR_FALL \$CR_FALL_RIGHT \$KOTE \$KOTE \$KOTE \$KOTE \$KOTE

```
;Station Q Achse Q-l[%] Q-r[%] 0/000 0/001 0/004 0/005 0/008
0+5.0000 Q1 B0 2.5000 2.5000 525.288 525.350 523.487 523.487 525.225
0+10.0000 Q1 B0 2.5000 2.5000 525.487 525.519 524.589 524.589 525.456
0+15.0000 Q1 B0 2.5000 2.5000 525.587 525.619 524.689 524.689 525.556
```

```

0+20.0000 Q1 B0 2.5000 2.5000 525.587 525.619 524.689 524.689 525.556
0+25.0000 Q1 B0 2.5000 2.5000 525.487 525.519 524.589 524.589 525.456
0+30.0000 Q1 B0 2.5000 2.5000 525.288 525.350 523.487 523.487 525.225
#

```

The text editor allows formatting the values.

The top line labels the following data as **slab height plan**.

The second line lists the order of the columns via key words. The key words are listed in a user definition file SOFiCAD.BDD. The format as well as the order can be defined. The values then appear in the defined form in the system tree and in the exported files.

```

; Schlüsselwörter und Positionen der QUERSCHNITTS-Parameter 711-720
;
; (alle nur modus 0!)
;
; Schlüsselwort für "Station" in Querschnitt der Im-/Exportdatei
711 0 String "$CSEC_STATION"
; Position von "Station" ; notwendig
712 0 Integer 1
; Schlüsselwort für "ass.Regelquerschnitt" in Querschnitt der Im-/Exportdatei
713 0 String "$ASS_STCS"
; Position von "ass.Regelquerschnitt" ; optional
714 0 Integer 2
; Schlüsselwort für "ass.Achse" in Querschnitt der Im-/Exportdatei
715 0 String "$ASS_ACHSE"
; Position von "ass.Achse" ; notwendig
716 0 Integer 3
; Schlüsselwort für "Querneigung links" in Querschnitt der Im-/Exportdatei
717 0 String "$SCR_FALL"
; Position von "Querneigung links" ; optional
718 0 Integer 4
; Schlüsselwort für "Kote" in Querschnitt der Im-/Exportdatei
719 0 String "$KOTE"
; Position von "Kote" ; optional
720 0 Integer 6
; Schlüsselwort für "Querneigung rechts" in Querschnitt der Im-/Exportdatei
721 0 String "$SCR_FALL_RIGHT"
; Position von "Querneigung rechts" ; optional
722 0 Integer 5

```

DWG File: "V_Workshop_13 Deckenbuch.dwg"

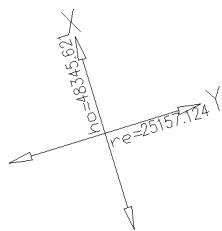
Alignment

Reference system and alignment points



Absteckpunkte definieren Alignment → Define Alignment points

Should the points relate to an axis?? [<Yes>/No]:
Select axis or [B0/V1/B0_R/B0_L]: B0
System new
Name of high axis (one letter) <X>:
Name of right axis (one letter) <Y>:
Original of local system (end+mit+sch+ein+ext) or [Constant]: k
Addition constant of right value: 25157.124
Addition constant of high value: 48345.621
Situation of local system (end+mit+sch+ein+ext):
Point on new high axis (end+mit+sch+ein+ext) or [Second point]:
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters): : 01
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters): <2>: 02
Show alignment points (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters <3>: 03
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters): <4>: 04
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters): <5>: 05
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:
Name of shown point (max. 10 characters): <6>: 06
Show alignment point (end+mit+sch+ein+ext) or [Coordinates]:



A second reference system A_B (a construction site reference system) with the points 101 through 111 will be generated.

Analyze reference system



Koordinatensystem auswerten

Alignment → Analyze reference system

Show coordinate cross of local system or [X-Y/A-B]: A-B

Analyze the system A_B

Modify selection set of points to be analyzed *Add points 01 and 02*

Select object: 1 found

Select objects: 1 found 13 total

Select objects:

Read into pla? [Yes/<No>]: j

Starting point (end+mit+pkt+sch+ein+ext):

Text height in mm<3.500>:

Koordinaten im lokalen System A_B

Punkte des Systems A_B

Nr	B	A	Station	Abrückmaß	Höhe
101	2.4969	-0.1249	0+5.000	2.500	525.350
102	2.2727	0.3635	0+5.456	2.254	525.366
103	2.0698	0.8612	0+5.926	2.033	525.383
104	1.8885	1.3672	0+6.408	1.838	525.400
105	1.7292	1.8805	0+6.902	1.670	525.417
106	1.5921	2.4002	0+7.404	1.530	525.434
107	1.4776	2.9253	0+7.915	1.417	525.452
108	1.3858	3.4549	0+8.431	1.332	525.469
109	1.3170	3.9879	0+8.952	1.276	525.486
110	1.2711	4.5234	0+9.476	1.249	525.502
111	1.2484	5.0604	0+10.000	1.250	525.519

Punkte des Systems X_Y

Nr	Y	X	Station	Abrückmaß	Höhe
01	0.0000	0.0000	0+5.000	0.000	525.288
02	0.0000	4.9979	0+10.000	0.000	525.487

DWG File: "V_Workshop_14 Absteckpunkte.dwg"