

Section cuts drawn within the graphical user interface

Test Problem	
Name:	Section cuts drawn within the graphical user interface
Description:	Draw section cuts within the graphical user interface using either 2D or 3D views.
Program:	SAP2000
Version:	14.1.0
Model ID:	na

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The process for drawing [section cuts](#) within the graphical user interface is demonstrated using a cantilevered frame system (Figure 1) which has 1m segments extending along the positive global Z axis, then X, then Y. A point load of $F_x = 1\text{kN}$, $F_y = 10\text{kN}$, and $F_z = 100\text{kN}$ is applied to the free end. After analysis is run, section cuts are drawn to obtain section-cut forces.

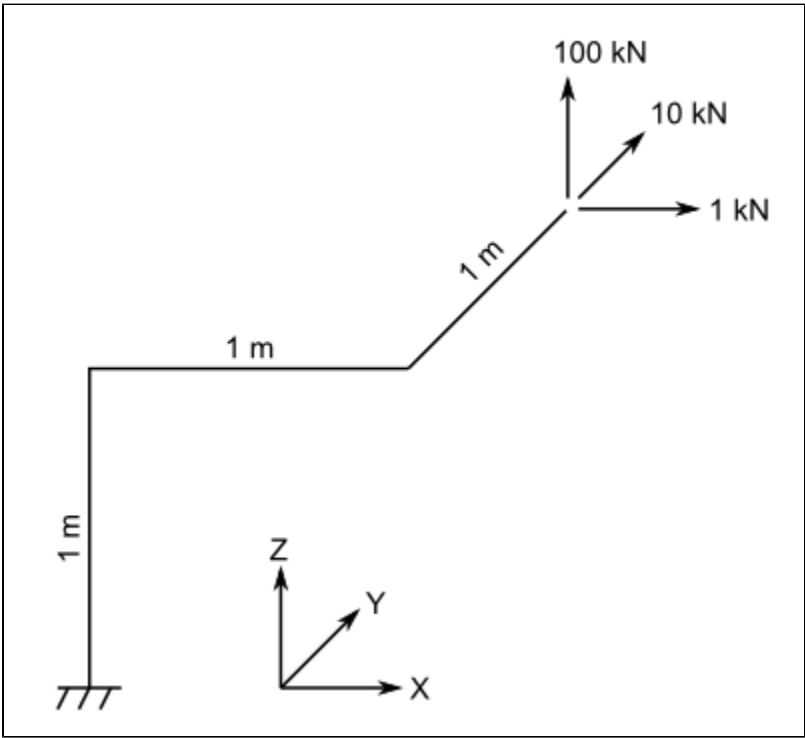


Figure 1 - Geometry and Loading of the Test Model

Section cut in 2D View

For section cuts drawn in a 2D View, the software automatically projects a quadrilateral cutting plane into the depth of the display. This depth is specified through Options > Dimensions and Tolerances > 2D View Cutting Planes +/- . Relevant parameters are shown in Figures 2 and 3:

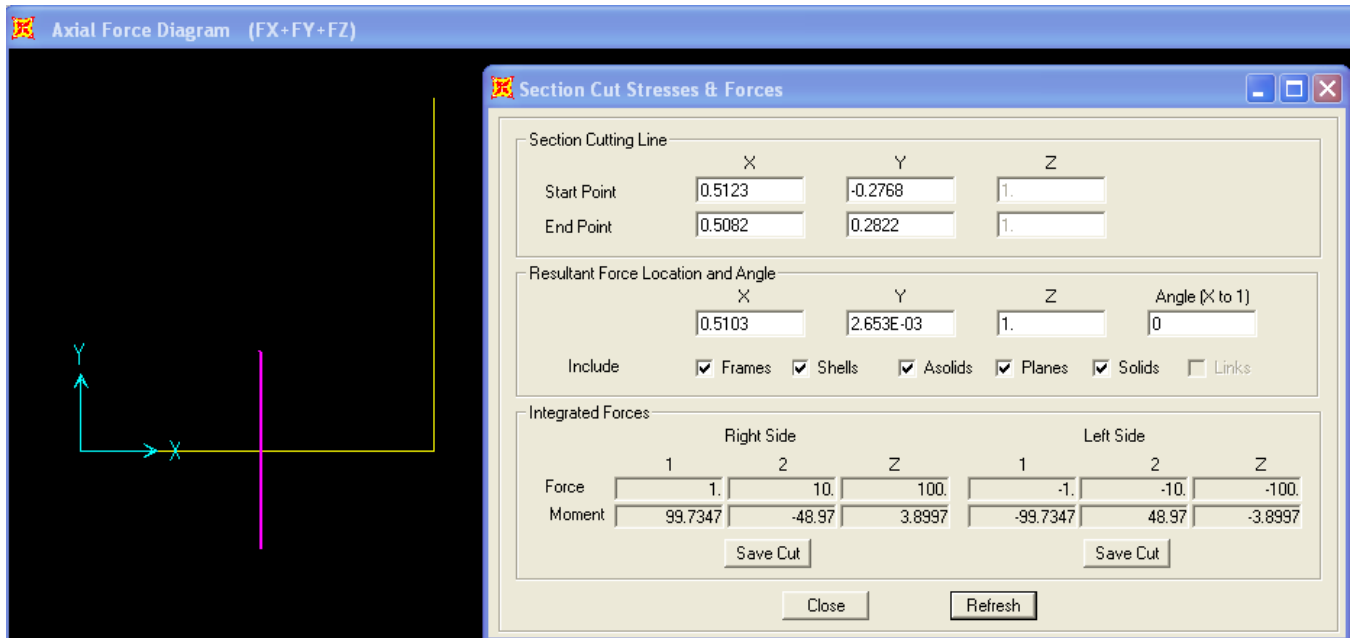


Figure 2 - Section cut in 2D View

Section Cut Data
Edit

Section Cut Name
SCUT3

Coordinate System
GLOBAL

Units
KN, m, C

Section Cut Defined By

☐ Group
☒ Quadrilateral Cutting Planes

Section Cut Group

Group
SCUT3

Section Cut Result Type

☒ Analysis (F1, F2, F3, M1, M2, M3)
☐ Design (P, V2, V3, T, M2, M3)

Results Reported at this Location

☐ Default
☒ User Defined

X Coordinate
0.5103
Y Coordinate
2.653E-03
Z Coordinate
1.

Section Cut Local Axes Orientation - Analysis

Rotation about Z
0.
Rotation about Y'
0.
Rotation about X''
0.

☐ Advanced Axes
Advanced

Results Reported Are On This Side of Elements

☒ Positive 3 Axis Side of Quadrilateral
☐ Negative 3 Axis Side of Quadrilateral

Quadrilateral Cutting Planes

Number of Quadrilaterals
1

Currently Displayed Quadrilateral: 1

Point	X	Y	Z
1	0.5123	-0.2768	0.9
2	0.5082	0.2822	0.9
3	0.5082	0.2822	1.1
4	0.5123	-0.2768	1.1

Check For Legal Quadrilateral

Section cut results are reported for all elements that are fully cut by quadrilaterals and have their associated objects included in the section cut group.

OK

Cancel

Figure 3 - Section-cut data

Attachments

- [SAP2000 V14.1.0 model](#) (zipped .SDB file)
- [Section cuts defined by groups and cutting planes](#) (.PDF)