Ingenieurbüro Volker Knobloch
Andersenstr. 16
74078 Heilbronn

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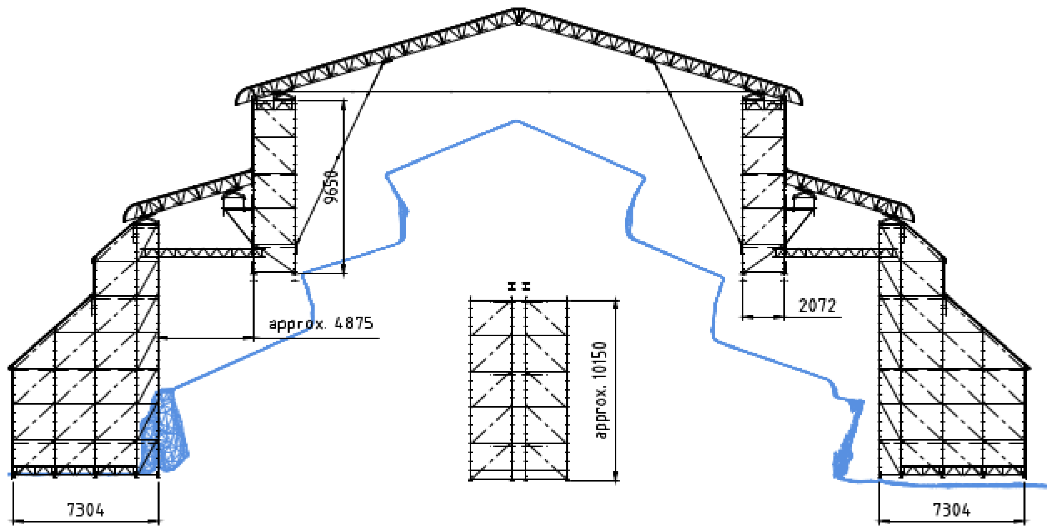
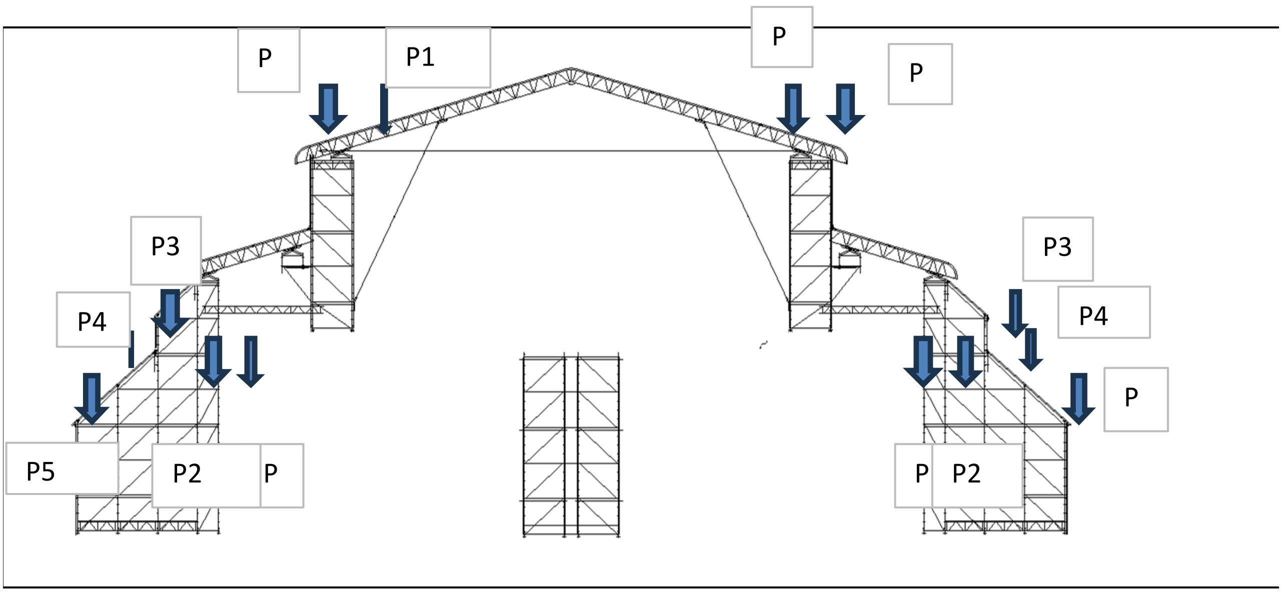
Pos.2: Roof Section c - c





1. Dead Load

Roof g= 0,23 kN/m

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P1:	G=	3	kN
P2:	G=	2,5	kN
P3:	G=	5	kN
P4:	G=	4	kN
P5:	G=	3	kN

2. Snow

q=0,25 * 2,57= 0,643 kN/m²

3. Live Load (no snow)

q*= 2 kn/m²

q= 2,57 * 2= 5,14 kN

4. Wind

qb,o=	0,47	kN/m²
z=	25	m
qp=	1,12	kN/m²

force coefficent	cf=	0,8	
time coefficient	ct=	0,7	
width	b=	2,57	
	q=	1,6119	kN/m
Total wind load	h=	20	m
	W1=	32,238	kN

qp= 1,12 kN/m²

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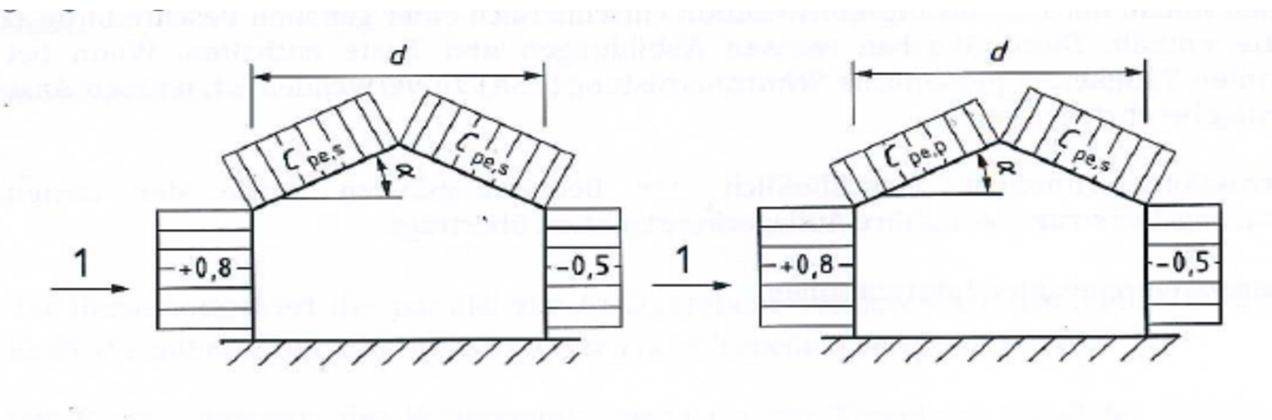
force coefficent	cf=	-0,5	
time coefficient	ct=	0,7	
width	b=	2,57	
	q=	-1,007	kN/m
Total wind load	h=	20	m
	W2=	20,149	kN

W= W1+W2= 52,387 kN

Wind load roof:



Saddle roof — pressre coefficient saddle roof according to EN 16508

Saddle roof

Staudruck	q=	1,12	kN/m²
Standzeitfaktor	ct=	0,7	
Neigung alpha=	18	°	
Breite	b=	2,57	m
d=	28	m	

Siehe Bild A.4, DIN EN 16508

Ka= (alpha-10)/100 0,080

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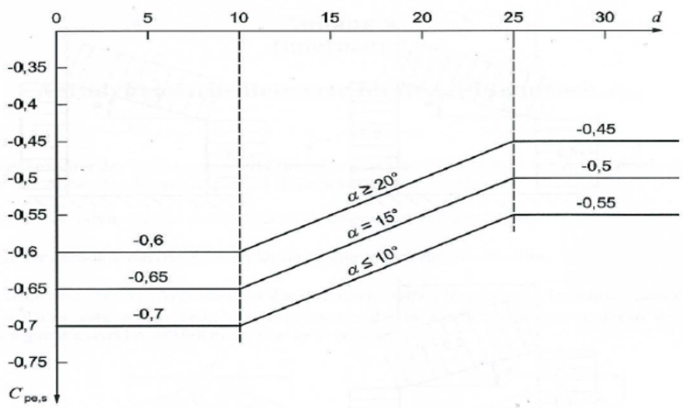
DIN EN 16508:2016-02
EN 16508:2015 (D)



$$c_{pe,s} = \begin{cases} -0{,}7 + K_\alpha & \text{für } d \leq 10\text{ m} \\ +0{,}01\ d - 0{,}8 + K_\alpha & \text{für } 10\text{ m} < d < 25\text{ m} \\ -0{,}55 + K_\alpha & \text{für } d \geq 25\text{ m} \end{cases}$$

$$K_\alpha = \frac{\alpha - 10}{100} \quad \text{und} \quad 0 \leq K_\alpha \leq 0{,}1$$

Bild A.4 — Diagramm der $c_{pe,s}$-Werte

cpe, s -0,47
Gerüst komplett geschlossen.
cpe,s= -0,47

sog q4= ct * (cpe,s) * b * q= -0,95 kN/m

DIN EN 16508:2016-02
EN 16508:2015 (D)

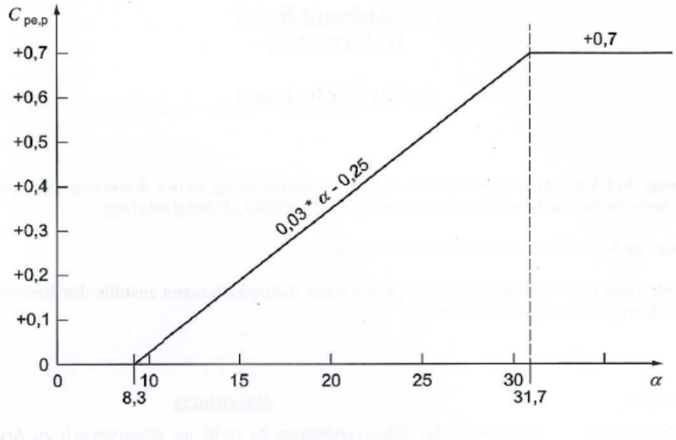


Bild A.5 — Diagramm der $c_{pe,p}$-Werte

cpe,p= 0,03 * alpha - 0,25= 0,29

druck q5= ct * cpe,p * b * q= 0,58 kN/m

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5. Earthquake

Mass of schaffolding

	M=			55000 kg
Fb=	Sd(T1) * M * lamda=			
Fb=	0,0014 * M=		77,00 kN	

H,k from Wind	H,k=	54	< Fb

Equivalent seismic load on each side

q,k=	Fb / 2 /h=	1,93 kN/m

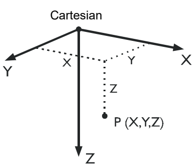
height	h=	20 m

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-Dach-1
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
63	-	Cartesian	0.000	4.640	10.000	Supported
64	-	Cartesian	0.000	-18.060	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
70	-	Cartesian	0.000	-20.130	10.000	Supported
86	-	Cartesian	0.000	4.640	12.000	
87	-	Cartesian	0.000	-18.060	12.000	
94	-	Cartesian	0.000	6.710	12.000	Supported
95	-	Cartesian	0.000	-20.130	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported
108	-	Cartesian	0.000	-18.060	14.000	Supported
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
112	-	Cartesian	0.000	-18.060	16.000	Supported
113	-	Cartesian	0.000	-20.130	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported
117	-	Cartesian	0.000	-20.130	16.000	Supported
122	-	Cartesian	0.000	4.640	18.000	Supported
123	-	Cartesian	0.000	-18.060	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported
126	-	Cartesian	0.000	-20.130	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported
132	-	Cartesian	0.000	-18.060	20.000	Supported

1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
134	-	Cartesian	0.000	6.710	20.000	Supported
135	-	Cartesian	0.000	-20.130	20.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
165	-	Cartesian	0.000	-30.240	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
168	-	Cartesian	0.000	-28.170	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
174	-	Cartesian	0.000	-32.310	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
177	-	Cartesian	0.000	-30.240	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
180	-	Cartesian	0.000	-28.170	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
186	-	Cartesian	0.000	-32.310	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
189	-	Cartesian	0.000	-30.240	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
192	-	Cartesian	0.000	-32.310	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
195	-	Cartesian	0.000	-30.240	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
198	-	Cartesian	0.000	-28.170	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
204	-	Cartesian	0.000	-32.310	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
207	-	Cartesian	0.000	-30.240	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
210	-	Cartesian	0.000	-28.170	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
216	-	Cartesian	0.000	-28.170	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
222	-	Cartesian	0.000	-28.170	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
228	-	Cartesian	0.000	-28.170	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported
234	-	Cartesian	0.000	-26.100	16.000	Supported
239	-	Cartesian	0.000	12.680	18.000	Supported
240	-	Cartesian	0.000	-26.100	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
246	-	Cartesian	0.000	-26.100	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
252	-	Cartesian	0.000	-26.100	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
258	-	Cartesian	0.000	-26.100	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
264	-	Cartesian	0.000	-26.100	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
270	-	Cartesian	0.000	-26.100	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
276	-	Cartesian	0.000	-26.100	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
282	-	Cartesian	0.000	-25.010	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
288	-	Cartesian	0.000	-25.010	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
294	-	Cartesian	0.000	-25.010	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
300	-	Cartesian	0.000	-25.010	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
306	-	Cartesian	0.000	-25.010	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
312	-	Cartesian	0.000	-25.010	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
318	-	Cartesian	0.000	-25.010	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported
325	-	Cartesian	0.000	-25.010	30.000	Supported
327	-	Cartesian	0.000	-6.710	5.640	Supported
328	-	Cartesian	0.000	-17.446	9.128	Supported
329	-	Cartesian	0.000	-14.762	8.256	Supported
330	-	Cartesian	0.000	-12.078	7.384	Supported
331	-	Cartesian	0.000	-9.394	6.512	Supported
332	-	Cartesian	0.000	-4.026	6.512	Supported
333	-	Cartesian	0.000	-1.342	7.384	Supported
334	-	Cartesian	0.000	1.342	8.256	Supported
335	-	Cartesian	0.000	4.026	9.128	Supported
336	-	Cartesian	0.000	5.675	10.000	
337	-	Cartesian	0.000	5.658	9.658	Supported
338	-	Cartesian	0.000	-19.078	9.658	Supported

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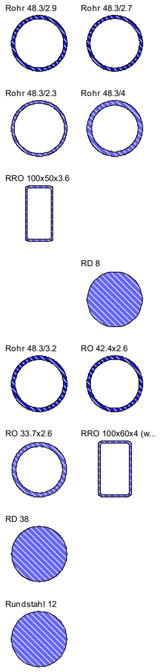
Project: 2023 | Model: K-Dach-1 | Date: 19.09.2023

1.2 MATERIALS

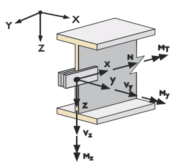
Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40 4.14	10.70 2.07	10.70 2.07	0.00	0.00	48.3	48.3
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18 3.87	10.09 1.92	10.09 1.92	0.00	0.00	48.3	48.3
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
	Diagonale							
4	Rohr 48.3/4							
	1	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel							
	1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	2 Gitterträger Stahl h=75cm							
	1	1.00 9.00	12000.00 4.50	1.00 4.50	0.00	0.00	0.0	0.0
8	RD 8 | DIN 1013-1							
	1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2							
	2	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93 3.25	6.46 1.62	6.46 1.62	0.00	0.00	42.4	42.4
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19 2.54	3.09 1.27	3.09 1.27	0.00	0.00	33.7	33.7
	Diagonale_TG60							
12	RRO 100x60x4 (Hot Formed)							
	1	156.00 12.00	158.00 3.23	70.50 6.98	0.00	0.00	60.0	100.0
13	RD 38							
	1	20.47 11.30	10.24 9.49	10.24 9.49	0.00	0.00	38.0	38.0
14	GI-KDXL Kederdach XL							
	2	1.00 17.00	20900.00 9.00	20900.00 9.00	0.00	0.00	50.0	1000.0
15	Rundstahl 12							
	1	0.20 1.13	0.10 0.95	0.10 0.95	0.00	0.00	12.0	12.0

1.4 MEMBER HINGES



Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

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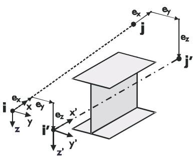
1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

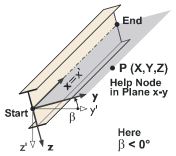


Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc.	Cross-Section Alignment		Transverse offset from cross-section of another obj.				Axial offset from adjacent	
No.	y-Axis	z-Axis	Object Type	Object No.	y-Axis	z-Axis	Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
1	Beam	337	69	Angle	0.00	4	4	-	-	-	-	1.106	YZ
168	Beam	63	69	Angle	0.00	5	5	-	-	3	-	2.045	Y
169	Beam	70	64	Angle	0.00	5	5	-	-	1	-	2.020	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
230	Beam	64	87	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
235	Beam	70	95	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
242	Beam	95	87	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
245	Beam	70	87	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
255	Beam	87	108	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
260	Beam	95	113	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
267	Beam	113	108	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
270	Beam	95	108	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
277	Beam	108	112	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
282	Beam	113	117	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
289	Beam	117	112	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
292	Beam	113	112	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
299	Beam	112	123	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
304	Beam	117	126	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
311	Beam	126	123	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
314	Beam	117	123	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
321	Beam	123	132	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
326	Beam	126	135	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
333	Beam	135	132	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
336	Beam	126	132	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
464	Beam	177	165	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
471	Beam	174	177	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
474	Beam	174	165	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
481	Beam	186	174	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
486	Beam	189	177	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y

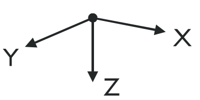
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
493	Beam	186	189	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
496	Beam	186	177	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
503	Beam	192	186	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
508	Beam	195	189	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
515	Beam	192	195	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
518	Beam	192	189	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
525	Beam	204	192	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
530	Beam	207	195	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
537	Beam	204	207	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
540	Beam	204	195	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z
564	Beam	180	168	Angle	90.00	1	1	-	-	-	-	2.000	Z
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
579	Beam	198	180	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
586	Beam	165	198	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
589	Beam	165	180	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
594	Beam	210	198	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
601	Beam	177	210	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
604	Beam	177	198	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
609	Beam	216	210	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
616	Beam	189	216	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
619	Beam	189	210	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
624	Beam	222	216	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
631	Beam	195	222	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
634	Beam	195	216	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
639	Beam	228	222	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
646	Beam	207	228	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
649	Beam	207	222	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
659	Beam	240	234	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
666	Beam	168	240	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
669	Beam	168	234	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
674	Beam	246	240	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
681	Beam	180	246	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
684	Beam	180	240	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
689	Beam	252	246	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
696	Beam	198	252	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ
699	Beam	198	246	Angle	0.00	3	3	2	2	2	-	2.723	YZ
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
704	Beam	258	252	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
711	Beam	210	258	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
714	Beam	210	252	Angle	0.00	3	3	2	2	2	-	2.723	YZ
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
719	Beam	264	258	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
726	Beam	216	264	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
729	Beam	216	258	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
734	Beam	270	264	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
741	Beam	222	270	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
744	Beam	222	264	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
749	Beam	276	270	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
756	Beam	228	276	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
759	Beam	228	270	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
768	Beam	234	282	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
771	Beam	288	282	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
778	Beam	240	288	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
781	Beam	240	282	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
786	Beam	294	288	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
793	Beam	246	294	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
796	Beam	246	288	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
801	Beam	300	294	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
808	Beam	252	300	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
811	Beam	252	294	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
816	Beam	306	300	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
823	Beam	258	306	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
826	Beam	258	300	Angle	0.00	3	3	2	2	2	-	2.123	YZ
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
831	Beam	312	306	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
838	Beam	264	312	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
841	Beam	264	306	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
846	Beam	318	312	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
853	Beam	270	318	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
856	Beam	270	312	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
861	Beam	325	318	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
868	Beam	276	325	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
871	Beam	276	318	Angle	0.00	3	3	2	2	2	-	2.123	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
880	Truss (N only)	294	135	Angle	0.00	12	12	-	-	-	-	4.880	Y
881	Truss (N only)	282	117	Angle	0.00	12	12	-	-	-	-	4.880	Y
884	Beam	70	338	Angle	0.00	4	4	-	-	-	-	1.106	YZ
885	Beam	327	332	Angle	0.00	14	14	-	-	-	-	2.822	YZ
886	Beam	328	329	Angle	0.00	14	14	-	-	-	-	2.822	YZ
887	Beam	329	330	Angle	0.00	14	14	-	-	-	-	2.822	YZ
888	Beam	330	331	Angle	0.00	14	14	-	-	-	-	2.822	YZ
889	Beam	331	327	Angle	0.00	14	14	-	-	-	-	2.822	YZ
890	Beam	332	333	Angle	0.00	14	14	-	-	-	-	2.822	YZ
891	Beam	333	334	Angle	0.00	14	14	-	-	-	-	2.822	YZ
892	Beam	334	335	Angle	0.00	14	14	-	-	-	-	2.822	YZ
893	Beam	335	337	Angle	0.00	14	14	-	3	-	-	1.716	YZ
894	Tension	338	337	Angle	0.00	15	15	-	-	-	-	24.736	Y
895	Beam	234	113	Angle	0.00	14	14	-	-	-	-	6.296	YZ
896	Beam	233	111	Angle	0.00	14	14	-	-	-	-	6.296	YZ
897	Tension	132	330	Angle	0.00	15	15	-	-	-	-	13.962	YZ
898	Tension	131	333	Angle	0.00	15	15	-	-	-	-	13.962	YZ
899	Beam	63	337	Angle	0.00	4	4	-	-	-	-	1.074	YZ
900	Beam	338	328	Angle	0.00	14	14	3	-	-	-	1.716	YZ
901	Beam	64	338	Angle	0.00	4	4	-	-	-	-	1.074	YZ
902	Tension	294	117	Angle	0.00	8	8	-	-	-	-	6.310	YZ
903	Tension	282	135	Angle	0.00	8	8	-	-	-	-	6.310	YZ
904	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
905	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ

1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	Rotation [°] about Y	Rotation [°] about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	203,204, 206,207, 227,228, 275,276, 323,325	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
2	312	XYZ	0.00	0.00	0.00	☐	☐	Spring	☐	☐	☐	☒

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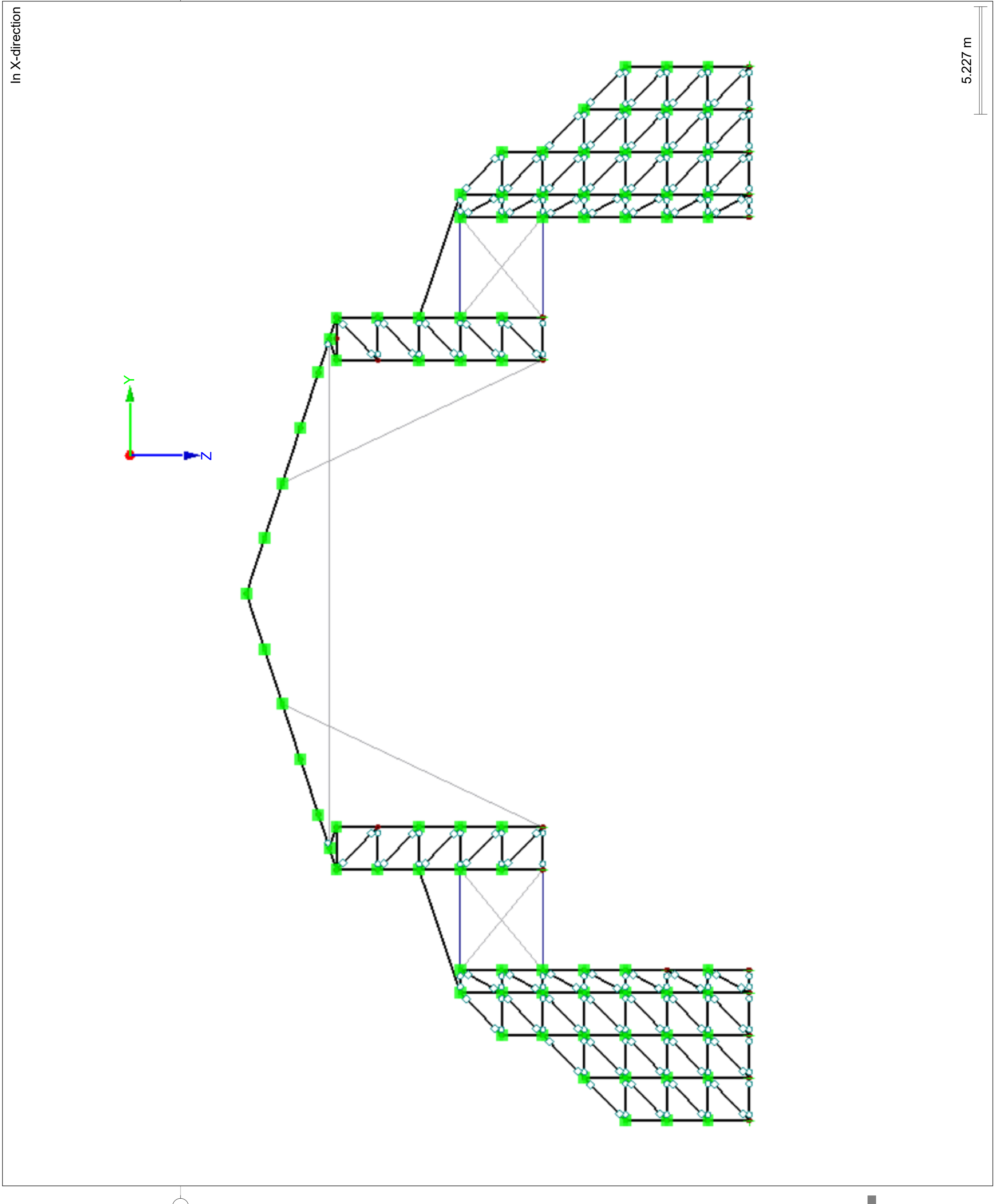
1.8 NODAL SUPPORTS

Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☐	☒
	63,64,69,70,94,95,107,108,110-113,116,117,122,123,125,126,164,165,167,168,173,174,176,177,179,180,185,186,188, 189,191,192,194,195,197,198,209,210,215,216,221,222,233,234,239,240,245,246,251,252,257,258,263,264,269,270, 281,282,287,288,293,294,299,300,305,306,311,317,318,327-335,337,338											
4	132	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
5	131,134,135	XYZ	0.00	0.00	0.00	☐	Spring	☐	Spring	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

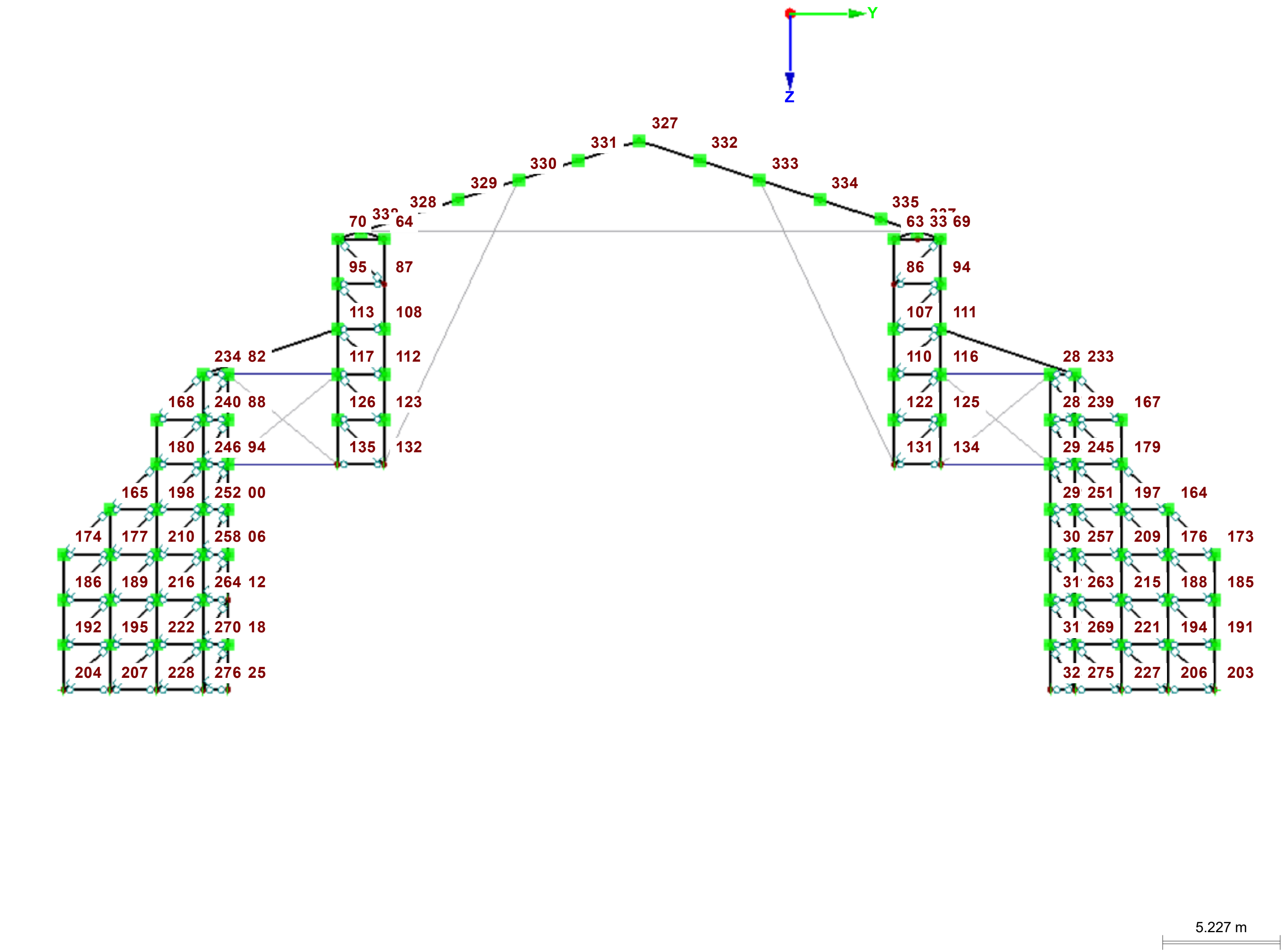
Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	203,204,206,207,227,228, 275,276,323,325	5000.000	5000.000	5000.000	-	-	-
2	312	-	1000.000	-	-	-	-
4	132	5000.000	1000.000	5000.000	-	-	-
5	131,134,135	5000.000	-	5000.000	-	-	-

MODEL



Node Numbering

In X-direction



RSTAB 8.31.01 - Space Frame Structures

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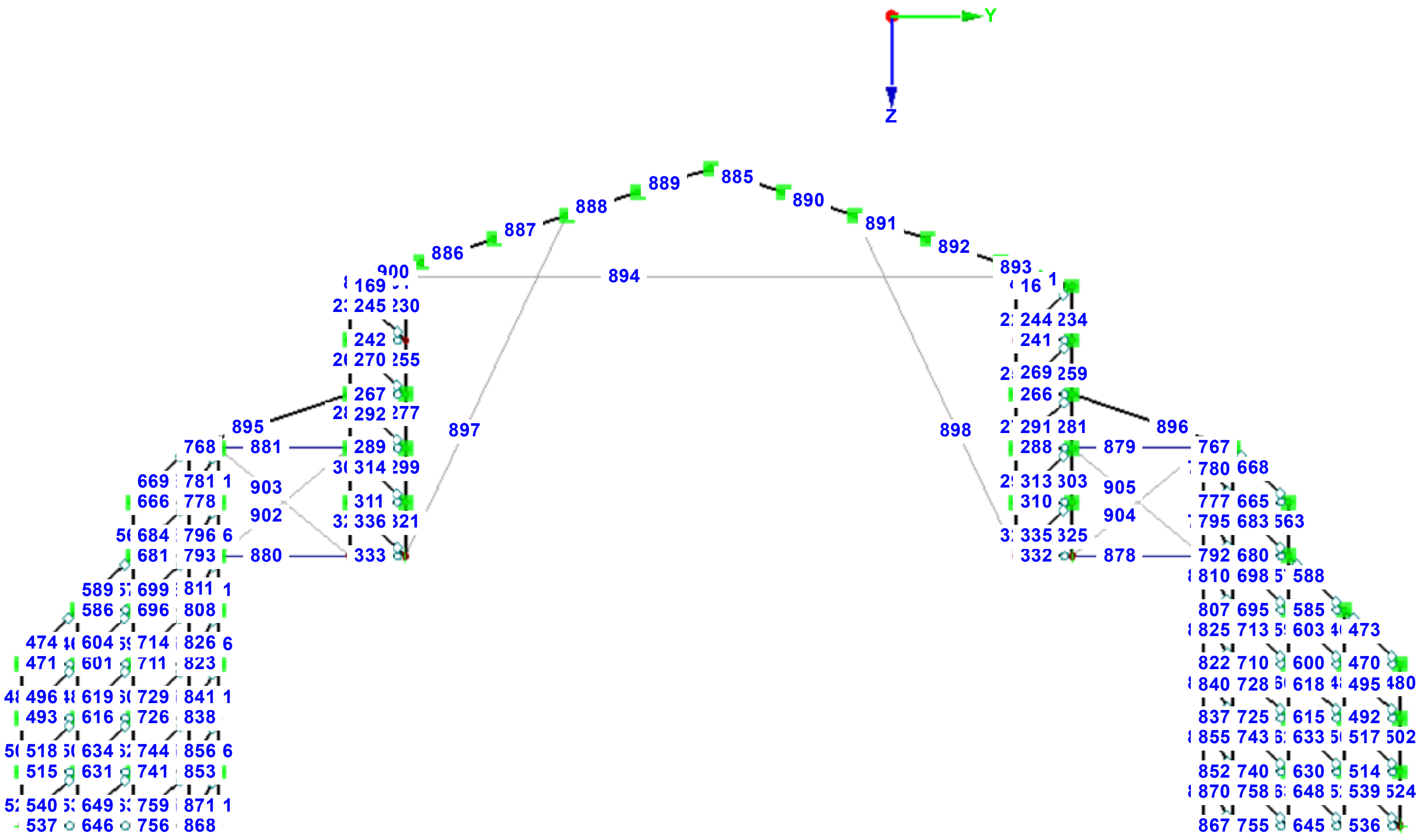
Member Numbering

In X-direction



■ MODEL

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Model: K-Dach-1

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MODEL

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind - 1	Wind	☐			
LC4	Wind - 2	Wind	☐			
LC5	Snow	Imposed	☐			
LC6	Earthquake	Accidental	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Live Load	Method of analysis	: ■	Geometrically linear analysis
LC3	Wind - 1	Method of analysis	: ■	Geometrically linear analysis
LC4	Wind - 2	Method of analysis	: ■	Geometrically linear analysis
LC5	Snow	Method of analysis	: ■	Geometrically linear analysis
LC6	Earthquake	Method of analysis	: ■	Geometrically linear analysis

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
CO2		Bem-2	1	1.35	LC1	EG
			2	1.50	LC5	Snow
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind - 1
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
CO5		Bem-5	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
			3	1.50	LC5	Snow
CO6		Eathquake	1	1.00	LC1	EG
			2	1.00	LC6	Earthquake

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	Bem-5	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO6	Eathquake	Method of analysis	: ■ Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4 or CO5 or CO6

LC1
EG

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	164	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
2	165	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	63,64,69,70,173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
6	234,282	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
7	174	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
8	168	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000

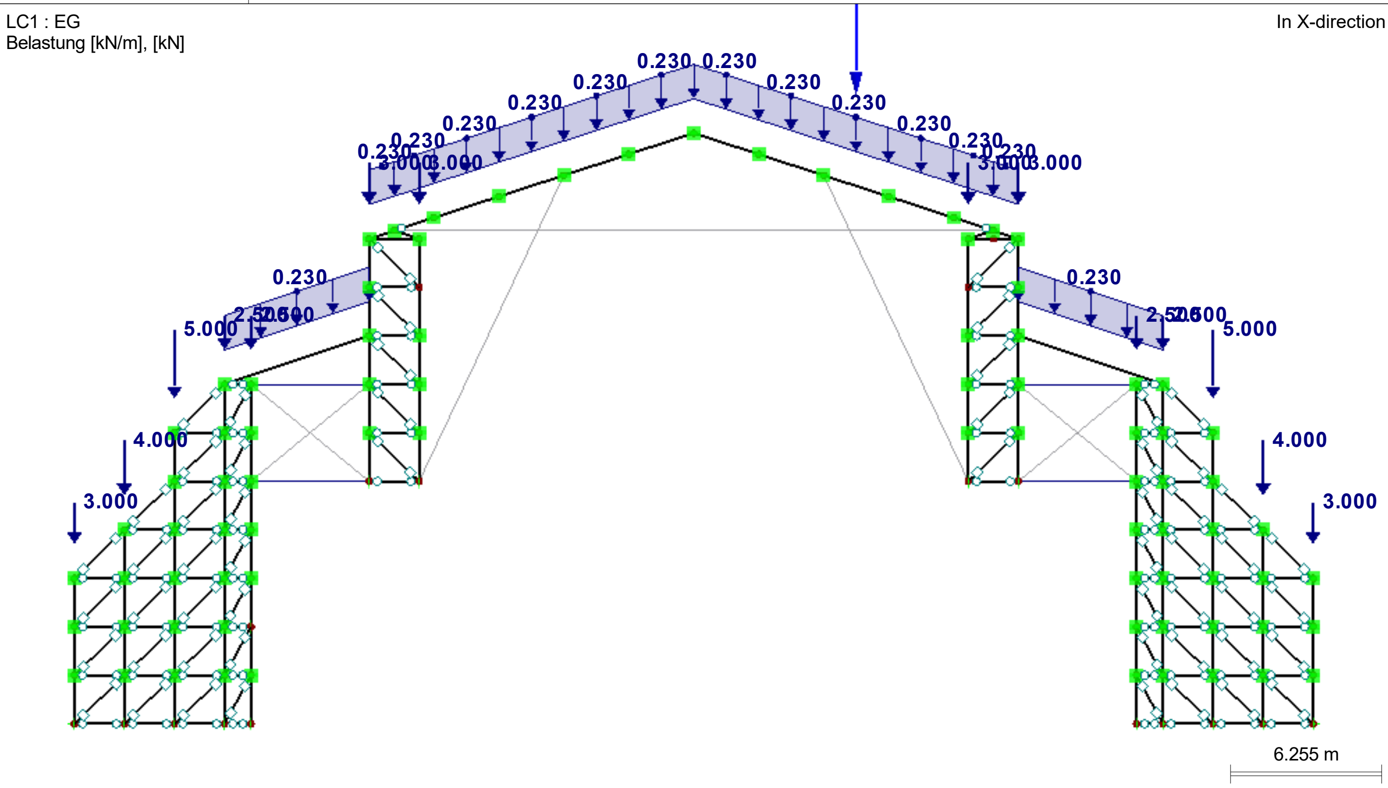
3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884-893, 895,896,900	Force	Uniform	Z	True Length	p	0.230	kN/m

LC1: EG

LC1 : EG
Belastung [kN/m], [kN]
In X-direction



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

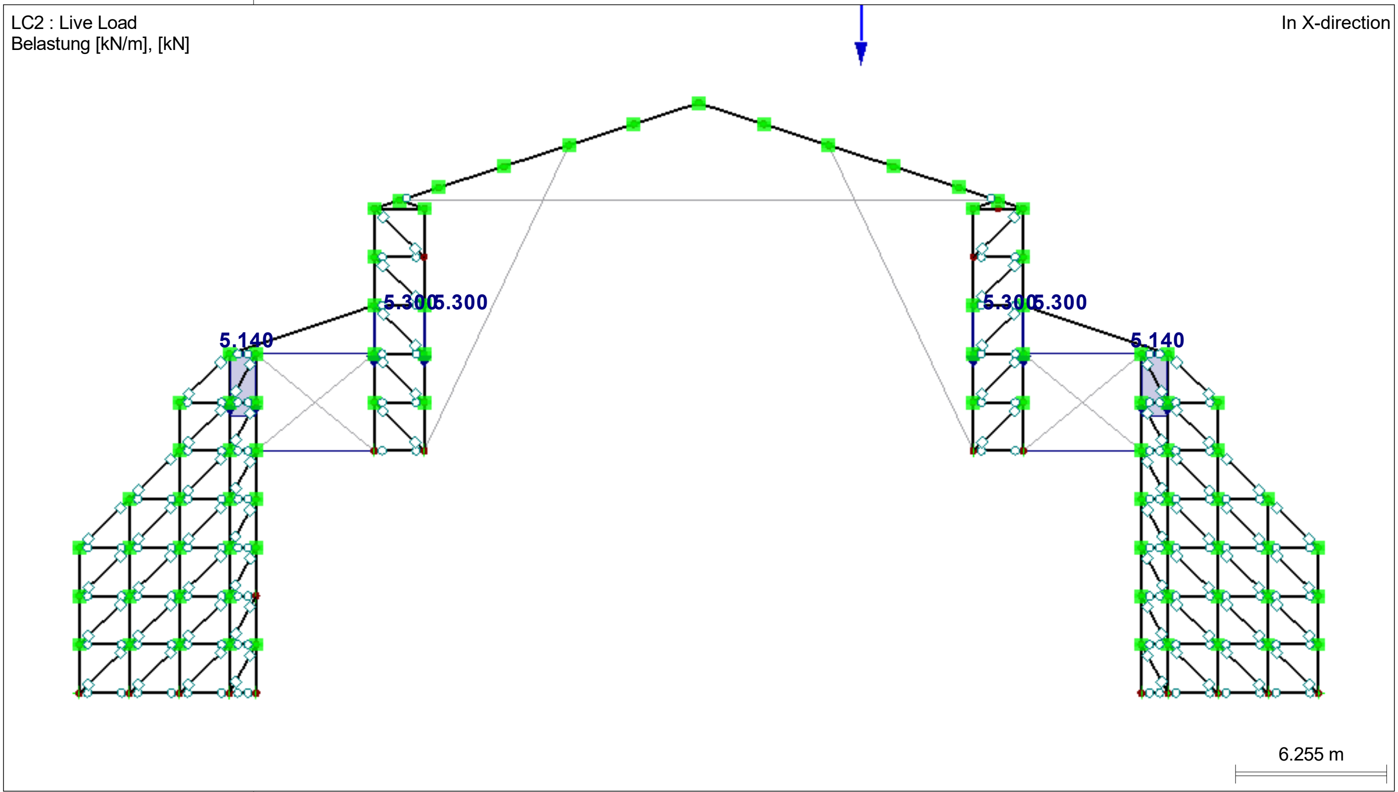
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	122,125	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000
2	123,126	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000

3.2 MEMBER LOADS

LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	5.140	kN/m
2	Members	793	Force	Uniform	Z	True Length	p	5.140	kN/m

■ LC2: LIVE LOAD



LC3
Wind - 1

■ 3.2 MEMBER LOADS

LC3: Wind - 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,578,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	235,260,282,464,481,503,525,564,659	Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,884,886, 892,893, 895,896,900	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,887-891	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	579	Force	Uniform	Y	True Length	p	1.620	kN/m

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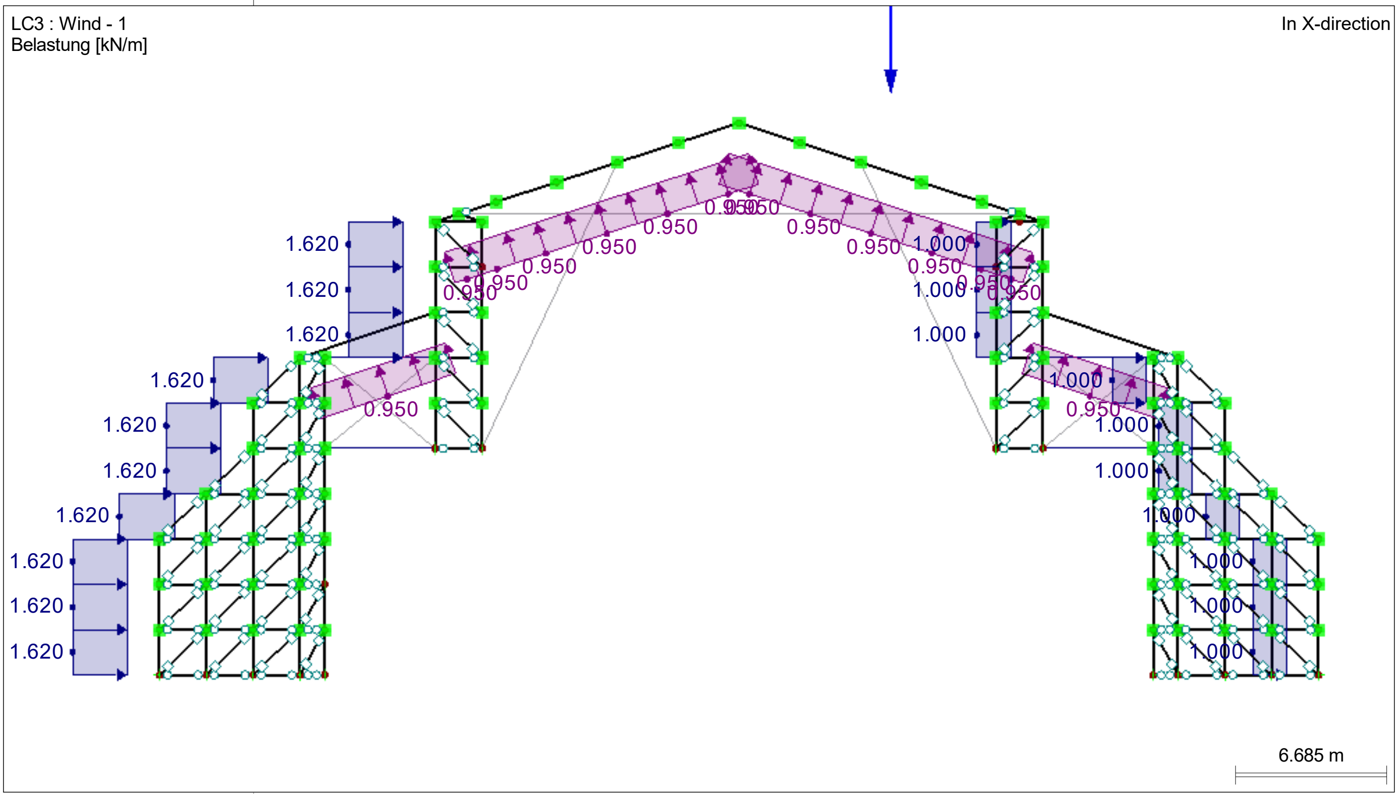
Project: 2023 | Model: K-Dach-1 | Date: 19.09.2023

LC3: WIND - 1



LC4
Wind - 2

3.2 MEMBER LOADS

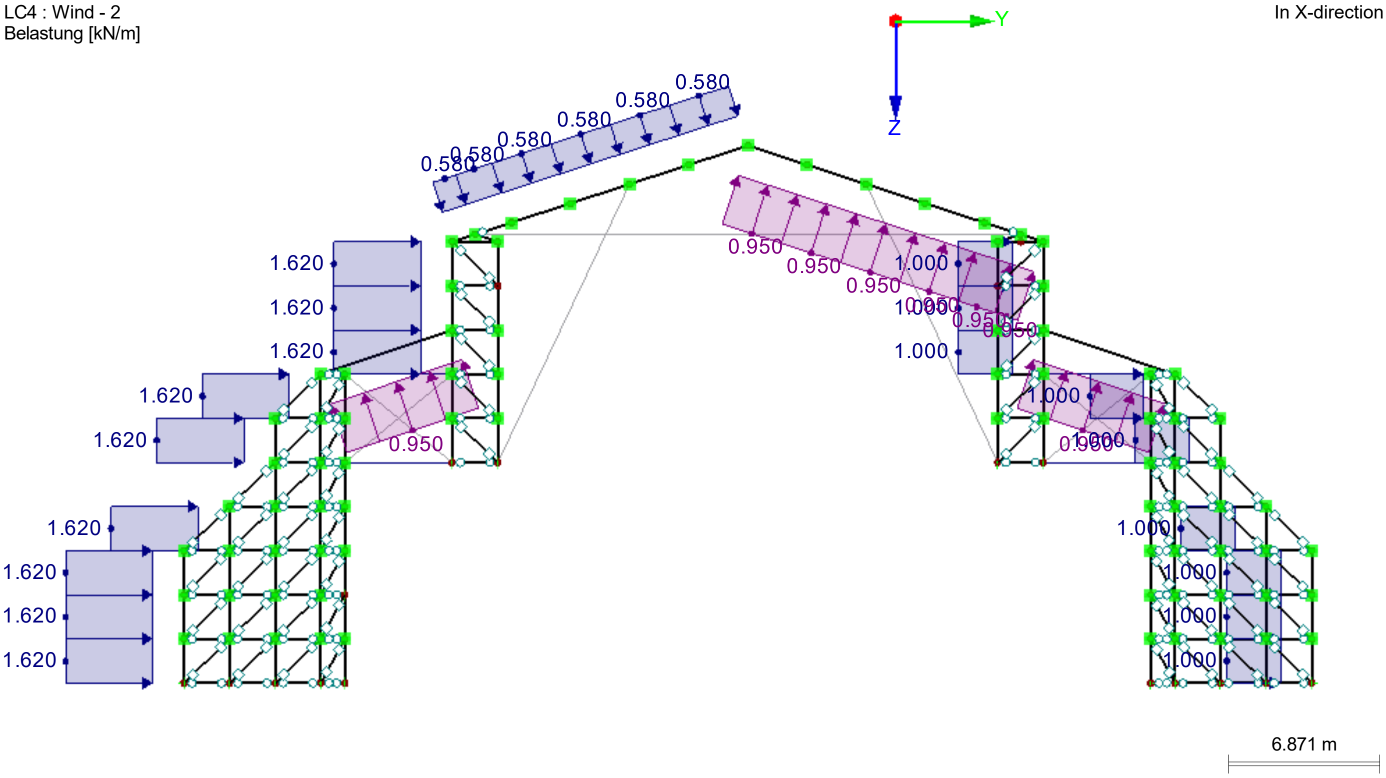
LC4: Wind - 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	235,260,282,464,481,503,525,564,659	Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,892,893, 895,896	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,890,891	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	884,886,900	Force	Uniform	z	True Length	p	0.580	kN/m
6	Members	887-889	Force	Uniform	z	True Length	p	0.580	kN/m

LC4: WIND - 2

LC4 : Wind - 2
Belastung [kN/m]

In X-direction



LC5
Snow

3.2 MEMBER LOADS

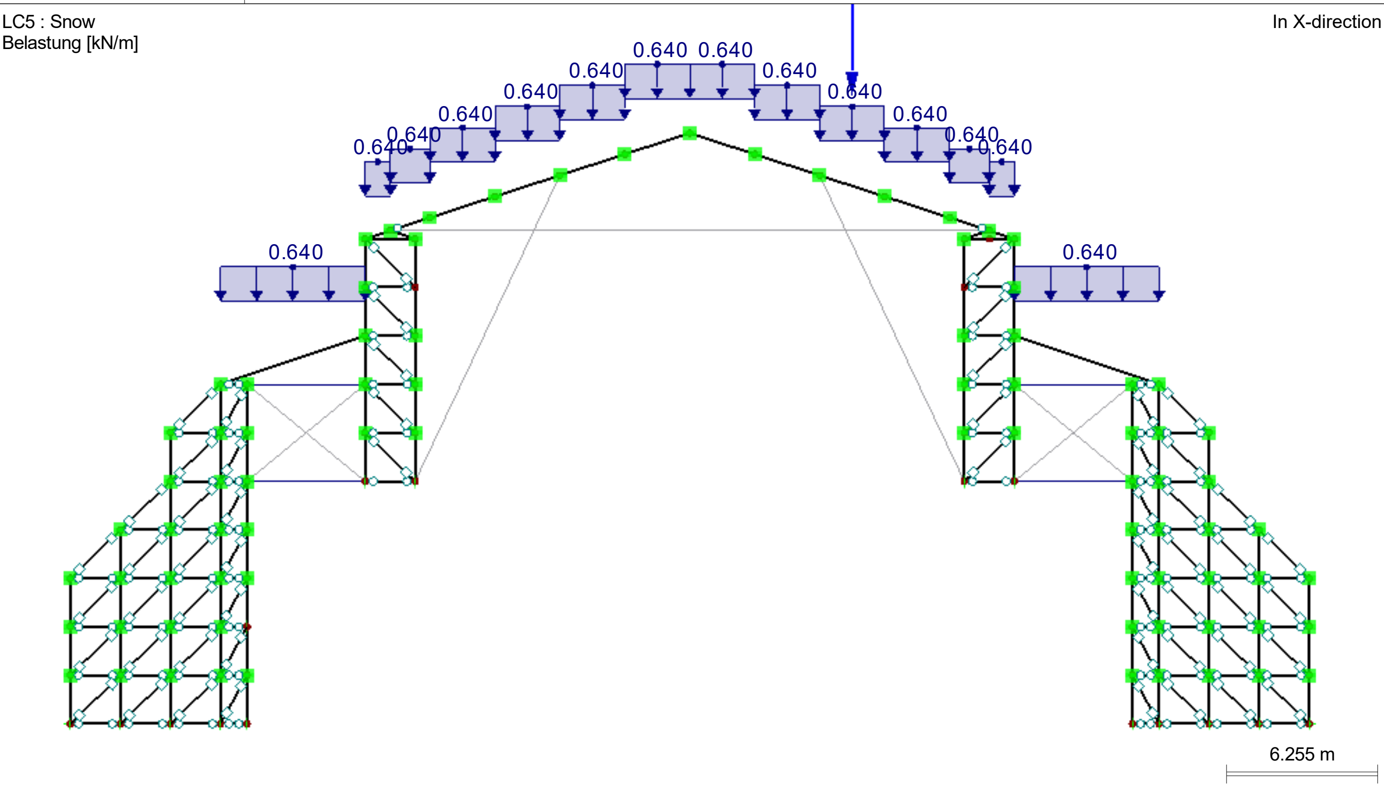
LC5: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884-893, 895,896,900	Force	Uniform	Z	Projection Z	p	0.640	kN/m

LC5: SNOW

LC5 : Snow
Belastung [kN/m]

In X-direction



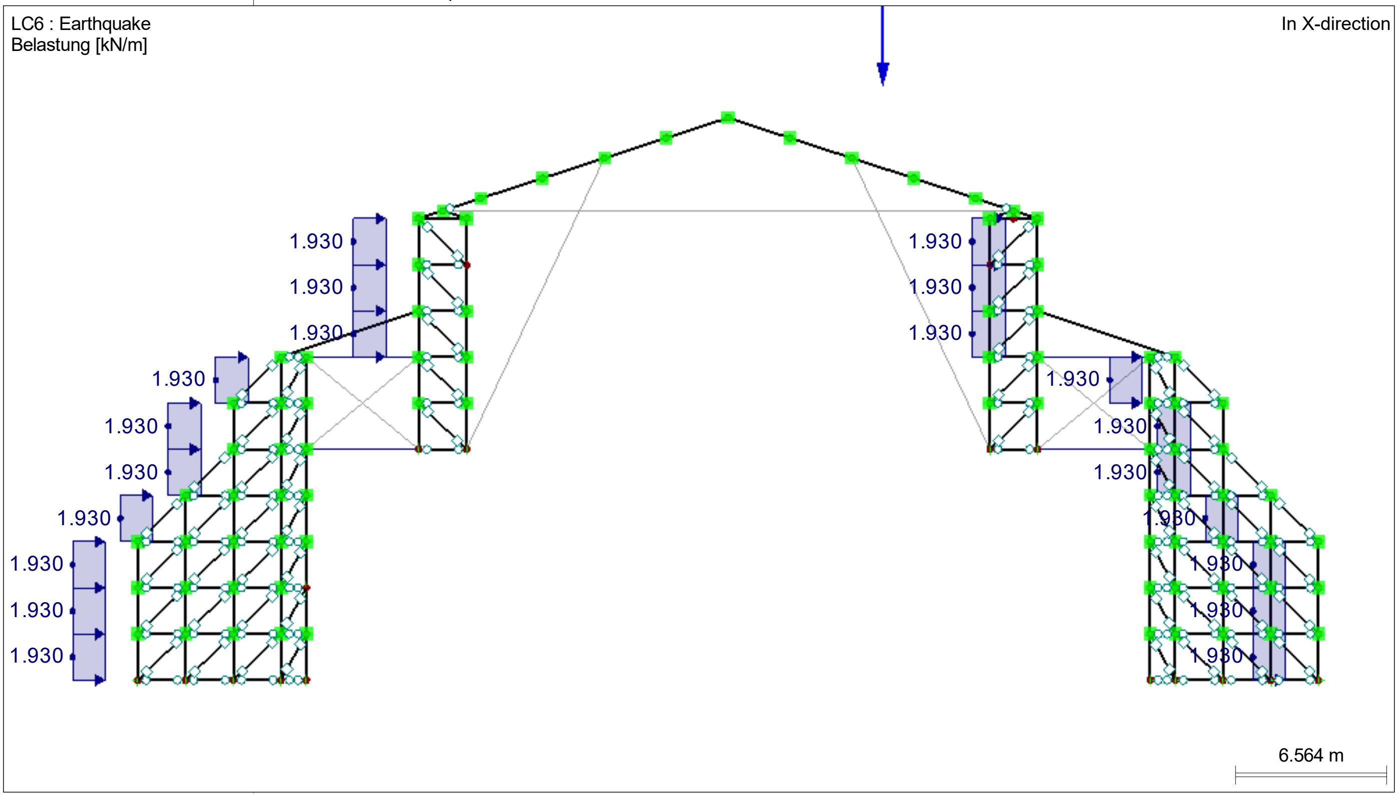
LC6
Earthquake

3.2 MEMBER LOADS

LC6: Earthquake

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members		Force	Uniform	Y	True Length	p	1.930	kN/m
	234,259,281,463,480,502,524,563,578,658								
2	Members		Force	Uniform	Y	True Length	p	1.930	kN/m
	235,260,282,464,481,503,525,564,659								
5	Members	579	Force	Uniform	Y	True Length	p	1.930	kN/m

LC6: EARTHQUAKE



■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
LC1 - EG			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	-0.00	kN	
Sum of loads in Z	55.39	kN	
Sum of support reactions in Z	55.39	kN	Deviation -0.00%
Resultant of reactions about X	-0.08	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	-0.53	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	Member No. 242, x: 1.313 m
Max displacement in Y	2.4	mm	Member No. 1, x: 0.000 m
Max displacement in Z	8.9	mm	Member No. 885, x: 0.000 m
Max vectorial displacement	8.9	mm	Member No. 885, x: 0.000 m
Max rotation about X	-1.1	mrad	Member No. 893, x: 1.716 m
Max rotation about Y	0.1	mrad	Member No. 470, x: 2.020 m
Max rotation about Z	0.1	mrad	Member No. 230, x: 2.000 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	3		
LC2 - Live Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	-0.00	kN	
Sum of loads in Z	31.89	kN	
Sum of support reactions in Z	31.89	kN	Deviation 0.00%
Resultant of reactions about X	-0.04	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	-0.30	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	Member No. 564, x: 1.400 m
Max displacement in Y	-1.6	mm	Member No. 800, x: 0.700 m
Max displacement in Z	3.3	mm	Member No. 792, x: 0.520 m
Max vectorial displacement	3.4	mm	Member No. 792, x: 0.520 m
Max rotation about X	-7.2	mrad	Member No. 792, x: 0.988 m
Max rotation about Y	0.1	mrad	Member No. 666, x: 0.000 m
Max rotation about Z	0.1	mrad	Member No. 242, x: 2.020 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	3		
LC3 - Wind - 1			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	52.40	kN	
Sum of support reactions in Y	52.40	kN	Deviation 0.00%
Sum of loads in Z	-36.84	kN	
Sum of support reactions in Z	-36.84	kN	Deviation 0.00%
Resultant of reactions about X	-100.71	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	0.35	kNm	At center of gravity of model
Resultant of reactions about Z	0.50	kNm	At center of gravity of model
Max displacement in X	-1.6	mm	Member No. 638, x: 1.200 m
Max displacement in Y	65.3	mm	Member No. 281, x: 0.900 m
Max displacement in Z	5.2	mm	Member No. 539, x: 2.723 m
Max vectorial displacement	65.4	mm	Member No. 281, x: 0.900 m
Max rotation about X	12.3	mrad	Member No. 525, x: 0.200 m
Max rotation about Y	4.7	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	2.4	mrad	Member No. 648, x: 2.723 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC4 - Wind - 2			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	53.83	kN	
Sum of support reactions in Y	53.83	kN	Deviation -0.00%
Sum of loads in Z	-16.31	kN	
Sum of support reactions in Z	-16.31	kN	Deviation 0.00%
Resultant of reactions about X	-154.77	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	0.16	kNm	At center of gravity of model
Resultant of reactions about Z	0.51	kNm	At center of gravity of model
Max displacement in X	-1.8	mm	Member No. 638, x: 1.200 m
Max displacement in Y	85.6	mm	Member No. 234, x: 0.900 m
Max displacement in Z	22.8	mm	Member No. 888, x: 0.423 m
Max vectorial displacement	85.6	mm	Member No. 234, x: 0.900 m
Max rotation about X	16.3	mrad	Member No. 260, x: 1.200 m
Max rotation about Y	5.5	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	-3.2	mrad	Member No. 242, x: 2.020 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC5 - Snow			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	-0.00	kN	
Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	24.82	kN	
	Sum of support reactions in Z	24.82	kN	Deviation -0.00%
	Resultant of reactions about X	-0.03	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
	Resultant of reactions about Y	-0.24	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.1	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	6.7	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	20.9	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	20.9	mm	Member No. 885, x: 0.000 m
	Max rotation about X	-2.9	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.2	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	0.4	mrad	Member No. 242, x: 2.020 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC6 - Earthquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	77.20	kN	
	Sum of support reactions in Y	77.20	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	-0.00	kN	
	Resultant of reactions about X	-148.45	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.74	kNm	At center of gravity of model
	Max displacement in X	-3.1	mm	Member No. 638, x: 1.200 m
	Max displacement in Y	126.7	mm	Member No. 563, x: 0.800 m
	Max displacement in Z	24.7	mm	Member No. 888, x: 2.258 m
	Max vectorial displacement	126.7	mm	Member No. 563, x: 0.800 m
	Max rotation about X	24.0	mrad	Member No. 524, x: 1.700 m
	Max rotation about Y	9.3	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	4.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	122.61	kN	
	Sum of support reactions in Z	122.61	kN	Deviation -0.00%
	Max displacement in X	0.1	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	-3.1	mm	Member No. 884, x: 1.106 m
	Max displacement in Z	14.3	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	14.3	mm	Member No. 885, x: 0.000 m
	Max rotation about X	-11.0	mrad	Member No. 793, x: 0.988 m
	Max rotation about Y	0.2	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-0.3	mrad	Member No. 229, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	112.00	kN	
	Sum of support reactions in Z	112.00	kN	Deviation -0.00%
	Max displacement in X	0.3	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	14.3	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	46.5	mm	
	Max vectorial displacement	46.5	mm	
	Max rotation about X	-6.2	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.5	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	0.9	mrad	Member No. 242, x: 2.020 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	78.60	kN	
	Sum of support reactions in Y	78.60	kN	Deviation 0.00%
	Sum of loads in Z	-5.41	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Z	-5.41	kN	Deviation -0.00%
	Max displacement in X	-2.5	mm	Member No. 529, x: 1.200 m
	Max displacement in Y	102.2	mm	Member No. 281, x: 0.900 m
	Max displacement in Z	8.7	mm	Member No. 539, x: 2.723 m
	Max vectorial displacement	102.2	mm	Member No. 281, x: 0.900 m
	Max rotation about X	20.0	mrad	Member No. 524, x: 1.700 m
	Max rotation about Y	7.6	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	3.9	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	80.75	kN	
	Sum of support reactions in Y	80.75	kN	Deviation 0.00%
	Sum of loads in Z	50.31	kN	
	Sum of support reactions in Z	50.31	kN	Deviation -0.00%
	Max displacement in X	3.3	mm	Member No. 277, x: 0.900 m
	Max displacement in Y	139.7	mm	Member No. 234, x: 1.000 m
	Max displacement in Z	42.0	mm	Member No. 888, x: 0.847 m
	Max vectorial displacement	139.7	mm	Member No. 234, x: 1.000 m
	Max rotation about X	26.3	mrad	Member No. 235, x: 1.600 m
	Max rotation about Y	9.3	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	4.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO5 - Bem-5			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	80.75	kN	
	Sum of support reactions in Y	80.75	kN	Deviation 0.00%
	Sum of loads in Z	87.54	kN	
	Sum of support reactions in Z	87.54	kN	Deviation -0.00%
	Max displacement in X	4.3	mm	Member No. 277, x: 0.900 m
	Max displacement in Y	163.3	mm	Member No. 234, x: 1.300 m
	Max displacement in Z	60.9	mm	Member No. 888, x: 1.834 m
	Max vectorial displacement	163.3	mm	Member No. 234, x: 1.300 m
	Max rotation about X	30.1	mrad	Member No. 235, x: 1.600 m
	Max rotation about Y	10.0	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	5.1	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO6 - Eathquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	77.20	kN	
	Sum of support reactions in Y	77.20	kN	Deviation -0.00%
	Sum of loads in Z	55.39	kN	
	Sum of support reactions in Z	55.39	kN	Deviation -0.00%
	Max displacement in X	-3.4	mm	Member No. 529, x: 1.200 m
	Max displacement in Y	131.2	mm	Member No. 563, x: 0.800 m
	Max displacement in Z	31.4	mm	Member No. 889, x: 0.141 m
	Max vectorial displacement	131.2	mm	Member No. 563, x: 0.800 m
	Max rotation about X	26.6	mrad	Member No. 524, x: 1.700 m
	Max rotation about Y	10.1	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	5.1	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	4.3	mm	CO5, Member No. 277, x: 0.900 m
	Max displacement in Y	163.3	mm	CO5, Member No. 234, x: 1.300 m
	Max displacement in Z	60.9	mm	CO5, Member No. 888, x: 1.834 m
	Max vectorial displacement	163.3	mm	CO5, Member No. 234, x: 1.300 m
	Max rotation about X	30.1	mrad	CO5, Member No. 235, x: 1.600 m

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max rotation about Y	10.1	mrad	CO6, Member No. 536, x: 0.000 m
	Max rotation about Z	5.1	mrad	CO6, Member No. 648, x: 2.723 m
	Number of 1D finite elements (member elements)	217		
	Number of FE mesh nodes	100		
	Number of equations	600		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate Release Nonlinearities	☒		
	Activate failed members	☒		
	Other Settings	Max number of iterations		: 100
		Number of divisions for member results		: 10
		Member divisions, cables, foundation or tapered members		: 10
		Number of member divisions for searching maximum values		: 20
	Options	☐ Activate shear stiffness of members (Ay, Az)		
		☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
		☒ Apply temperature/deformation load actions without stiffness modifications		
	Precision and Tolerance	☐ Change default setting		
	Nonlinear effects - Activate	☐ Support and elastic foundations		
		☒ Failing members due to member type		
		☒ Member hinges		
		☐ Member elastic foundation		
		☐ Member nonlinearities		
	Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
		Maximum number of reactivations		: 3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
860	LC6	MAX N	0.000	▷ 19.43	-0.01	0.24	0.00	-0.22	-0.08
321	CO5	MIN N	0.100	▷ -39.88	0.01	0.09	0.00	0.02	0.10
524	CO5	MAX V_y	0.700	-22.97	▷ 0.39	-0.59	0.00	-0.35	0.00
235	CO5	MIN V_y	1.000	-8.25	▷ -0.32	0.23	0.00	-0.66	0.01
260	CO5	MAX V_z	2.000	4.73	-0.16	▷ 3.31	0.00	1.85	0.10
564	CO3	MIN V_z	0.000	-3.73	-0.04	▷ -2.96	0.00	1.20	-0.06
255	CO5	MAX M_T	0.000	-26.48	0.25	0.37	▷ 0.05	-0.37	0.22
230	CO5	MIN M_T	2.000	-17.73	0.00	0.35	▷ -0.05	0.14	-0.12
260	CO5	MAX M_y	2.000	4.73	-0.16	3.31	0.00	▷ 1.85	0.10
564	CO4	MIN M_y	1.100	-5.14	-0.07	-0.10	0.00	▷ -0.77	0.00
235	CO5	MAX M_z	2.000	-8.19	-0.26	2.70	0.01	0.85	▷ 0.31
529	CO6	MIN M_z	2.000	-4.05	0.22	0.35	-0.01	0.43	▷ -0.39
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
767	CO5	MAX N	0.208	▷ 13.58	0.00	0.08	0.00	0.00	0.00
333	CO5	MIN N	0.000	▷ -23.09	0.00	0.00	0.00	0.04	0.00
242	CO5	MAX V_y	2.020	8.56	▷ 0.32	-0.56	0.06	-0.49	-0.33
241	LC6	MIN V_y	0.000	4.83	▷ -0.10	0.14	-0.02	-0.14	-0.15
793	CO1	MAX V_z	0.000	-0.18	0.00	▷ 4.03	0.00	-0.28	0.00
792	CO1	MIN V_z	1.040	-0.18	0.00	▷ -4.03	0.00	-0.28	0.00
267	CO5	MAX M_T	0.000	12.72	0.00	-0.05	▷ 0.08	-0.01	0.00
289	CO5	MIN M_T	1.717	-1.37	0.00	-0.07	▷ -0.03	0.05	0.00
793	CO1	MAX M_y	0.520	-0.23	0.00	0.02	0.00	▷ 0.77	0.00
242	CO5	MIN M_y	2.020	8.56	0.32	-0.56	0.06	▷ -0.49	-0.33
242	CO5	MAX M_z	0.000	8.56	0.28	-0.57	0.06	0.52	▷ 0.21
242	CO5	MIN M_z	2.020	8.56	0.32	-0.56	0.06	-0.49	▷ -0.33
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
269	CO5	MAX N	0.000	▷ 6.80	0.00	0.00	0.02	0.00	0.00
270	CO5	MIN N	0.000	▷ -17.77	0.00	0.00	0.05	0.00	0.00
245	CO4	MAX V_y	0.000	-9.82	▷ 0.00	0.00	0.00	0.00	0.00
270	CO5	MIN V_y	2.723	-17.77	▷ 0.00	0.00	0.05	0.00	0.00
270	CO2	MAX V_z	0.000	1.42	0.00	▷ 0.00	0.00	0.00	0.00
270	CO5	MIN V_z	0.000	-17.77	0.00	▷ 0.00	0.05	0.00	0.00
270	CO5	MAX M_T	0.000	-17.77	0.00	0.00	▷ 0.05	0.00	0.00
292	CO5	MIN M_T	0.000	1.59	0.00	0.00	▷ -0.02	0.00	0.00
244	CO6	MAX M_y	2.723	-5.62	0.00	0.00	0.00	▷ 0.00	0.00
270	CO5	MIN M_y	2.723	-17.77	0.00	0.00	0.05	▷ 0.00	0.00
633	CO5	MAX M_z	0.000	-10.87	0.00	0.00	-0.01	0.00	▷ 0.00
270	CO5	MIN M_z	0.000	-17.77	0.00	0.00	0.05	0.00	▷ 0.00
	Section No. 4: Rohr 48.3/4 (Rohr)								
1	CO3	MAX N	0.000	▷ 13.10	-0.10	-0.40	-0.02	-0.01	-0.05
901	CO5	MIN N	0.000	▷ -41.77	-0.16	0.24	-0.03	-0.21	-0.12
884	CO5	MAX V_y	0.664	-35.41	▷ 0.24	0.39	0.04	0.20	-0.01
901	CO5	MIN V_y	0.591	-41.77	▷ -0.22	0.36	-0.03	-0.03	0.00
884	CO5	MAX V_z	0.000	-35.65	0.17	▷ 1.66	0.04	-0.52	0.14

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
1	CO2	MIN V_z	1.106	-26.67	0.02	-0.92	0.01	-0.25	-0.02
884	CO5	MAX M_T	0.000	-35.65	0.17	1.66	0.04	-0.52	0.14
1	LC6	MIN M_T	0.000	-0.38	-0.14	0.12	-0.03	-0.01	-0.06
1	CO3	MAX M_y	1.106	13.03	-0.11	0.96	-0.02	0.28	0.06
884	CO5	MIN M_y	0.000	-35.65	0.17	1.66	0.04	-0.52	0.14
884	CO5	MAX M_z	0.000	-35.65	0.17	1.66	0.04	-0.52	0.14
901	CO5	MIN M_z	0.000	-41.77	-0.16	0.24	-0.03	-0.21	-0.12
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974								
169	CO5	MAX N	0.505	39.48	0.00	-0.14	0.03	0.02	0.00
168	CO3	MIN N	2.045	-7.01	0.00	0.35	-0.04	0.45	0.00
169	CO5	MAX V_y	0.000	39.48	0.00	-0.14	0.03	0.09	0.00
168	CO6	MIN V_y	2.045	10.71	0.00	0.58	-0.05	0.83	0.00
168	CO6	MAX V_z	2.045	10.71	0.00	0.58	-0.05	0.83	0.00
169	CO5	MIN V_z	2.020	39.48	0.00	-0.16	0.03	-0.20	0.00
169	CO5	MAX M_T	0.505	39.48	0.00	-0.14	0.03	0.02	0.00
168	LC6	MIN M_T	0.000	7.06	0.00	0.57	-0.05	-0.35	0.00
168	CO6	MAX M_y	2.045	10.71	0.00	0.58	-0.05	0.83	0.00
169	CO3	MIN M_y	0.000	-1.72	0.00	0.34	0.00	-0.67	0.00
168	CO6	MAX M_z	2.045	10.71	0.00	0.58	-0.05	0.83	0.00
169	CO5	MIN M_z	2.020	39.48	0.00	-0.16	0.03	-0.20	0.00
	Section No. 8: RD 8 | DIN 1013-1								
902	CO5	MAX N	0.000	20.88	0.00	0.00	0.00	0.00	0.00
904	LC2	MIN N	0.000	0.02	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_y	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MIN V_y	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_z	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MIN V_z	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX M_T	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MIN M_T	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX M_y	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MIN M_y	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX M_z	0.000	10.20	0.00	0.00	0.00	0.00	0.00
902	LC3	MIN M_z	0.000	10.20	0.00	0.00	0.00	0.00	0.00
	Section No. 12: RRO 100x60x4 (warmgefertigt)								
879	CO5	MAX N	0.000	0.86	0.00	0.00	0.00	0.00	0.00
880	CO5	MIN N	0.000	-23.08	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_y	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_y	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_z	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_z	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX M_T	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MIN M_T	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX M_y	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MIN M_y	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX M_z	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
878	LC1	MIN M_z	0.000	-0.22	0.00	0.00	0.00	0.00	0.00
	Section No. 14: GI-KDXL Kederdach XL								
895	CO5	MAX N	6.296	20.76	-0.15	0.85	0.00	-0.82	0.78
893	CO5	MIN N	1.716	-27.27	0.00	0.63	0.00	0.00	0.00
896	LC6	MAX V_y	0.000	-1.97	0.05	-0.16	0.00	0.75	0.25
895	CO5	MIN V_y	6.296	20.76	-0.15	0.85	0.00	-0.82	0.78
900	CO5	MAX V_z	0.000	-26.41	-0.03	16.75	0.00	0.00	0.00
889	CO5	MIN V_z	2.822	-16.48	0.00	-15.34	0.00	13.69	0.00
900	CO5	MAX M_T	0.000	-26.41	-0.03	16.75	0.00	0.00	0.00
893	LC6	MIN M_T	0.000	-6.28	0.00	-0.55	0.00	0.94	0.00
887	CO5	MAX M_y	2.822	-23.79	0.00	1.59	0.00	67.64	0.00
891	CO4	MIN M_y	1.552	-11.67	0.00	0.07	0.00	-19.56	0.00
895	CO5	MAX M_z	6.296	20.76	-0.15	0.85	0.00	-0.82	0.78
895	CO5	MIN M_z	0.000	18.32	-0.15	-0.83	0.00	-0.88	-0.17
	Section No. 15: Rundstahl 12								
894	CO5	MAX N	0.000	25.90	0.00	0.00	0.00	0.00	0.00
898	LC2	MIN N	0.000	0.01	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_y	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MIN V_y	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_z	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MIN V_z	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX M_T	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MIN M_T	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX M_y	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MIN M_y	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX M_z	0.000	4.14	0.00	0.00	0.00	0.00	0.00
894	LC1	MIN M_z	0.000	4.14	0.00	0.00	0.00	0.00	0.00

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
63	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.10	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.03	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	-0.09	0.00	0.00	0.00	0.00	0.07	Eathquake
64	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.11	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.10	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.03	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	-0.04	Bem-3
	CO4	-0.20	0.00	0.00	0.00	0.00	-0.12	Bem-4
	CO5	-0.26	0.00	0.00	0.00	0.00	-0.15	Bem-5
	CO6	-0.12	0.00	0.00	0.00	0.00	-0.07	Eathquake
69	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.14	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.03	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	-0.30	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.07	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.22	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.14	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	-0.27	Eathquake
70	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.27	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.03	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.24	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.07	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.00	0.15	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.45	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	0.54	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.27	Eathquake
94	LC1	0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.09	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.03	Snow
	LC6	-0.18	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	0.03	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	0.07	Bem-2
	CO3	-0.14	0.00	0.00	0.00	0.00	-0.08	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.18	Bem-4
	CO5	0.10	0.00	0.00	0.00	0.00	0.31	Bem-5
	CO6	-0.16	0.00	0.00	0.00	0.00	-0.08	Eathquake
95	LC1	0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.07	0.00	0.00	0.00	0.00	0.27	Wind - 1
	LC4	-0.18	0.00	0.00	0.00	0.00	0.46	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.03	Snow
	LC6	-0.16	0.00	0.00	0.00	0.00	0.46	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	-0.03	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	-0.07	Bem-2
	CO3	-0.11	0.00	0.00	0.00	0.00	0.42	Bem-3
	CO4	-0.33	0.00	0.00	0.00	0.00	0.76	Bem-4
	CO5	-0.41	0.00	0.00	0.00	0.00	0.88	Bem-5
	CO6	-0.19	0.00	0.00	0.00	0.00	0.50	Eathquake
107	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.06	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	-0.03	Snow
	LC6	0.13	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	-0.06	Bem-2
	CO3	0.10	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	-0.16	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.27	Bem-5
	CO6	0.12	0.00	0.00	0.00	0.00	0.07	Eathquake
108	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.24	Wind - 1
	LC4	0.07	0.00	0.00	0.00	0.00	-0.40	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
108	LC5	-0.01	0.00	0.00	0.00	0.00	0.03	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.40	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	0.06	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	-0.36	Bem-3
	CO4	0.13	0.00	0.00	0.00	0.00	-0.63	Bem-4
	CO5	0.17	0.00	0.00	0.00	0.00	-0.71	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	-0.42	Eathquake
110	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.02	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.04	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	-0.04	Bem-3
	CO4	-0.04	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.07	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	-0.04	Eathquake
111	LC1	0.00	0.00	0.00	0.00	0.00	-0.03	EG
	LC2	0.01	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.07	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	-0.06	Bem-1
	CO2	0.03	0.00	0.00	0.00	0.00	-0.15	Bem-2
	CO3	-0.05	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.15	Bem-4
	CO5	0.10	0.00	0.00	0.00	0.00	-0.36	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.06	Eathquake
112	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.06	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.09	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	-0.02	Snow
	LC6	0.09	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	-0.03	Bem-2
	CO3	0.10	0.00	0.00	0.00	0.00	0.01	Bem-3
	CO4	0.18	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	0.21	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	0.11	0.00	0.00	0.00	0.00	0.02	Eathquake
113	LC1	0.00	0.00	0.00	0.00	0.00	0.03	EG
	LC2	0.01	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.07	0.00	0.00	0.00	0.00	-0.20	Wind - 1
	LC4	-0.14	0.00	0.00	0.00	0.00	-0.37	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.07	Snow
	LC6	-0.14	0.00	0.00	0.00	0.00	-0.35	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	0.06	Bem-1
	CO2	0.04	0.00	0.00	0.00	0.00	0.15	Bem-2
	CO3	-0.12	0.00	0.00	0.00	0.00	-0.33	Bem-3
	CO4	-0.24	0.00	0.00	0.00	0.00	-0.67	Bem-4
	CO5	-0.28	0.00	0.00	0.00	0.00	-0.80	Bem-5
	CO6	-0.16	0.00	0.00	0.00	0.00	-0.42	Eathquake
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.09	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.09	Eathquake
117	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.10	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.10	Eathquake
122	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
122	CO3	0.04	0.00	0.00	0.00	0.00	-0.09	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	-0.08	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	-0.09	Eathquake
123	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	-0.07	Wind - 1
	LC4	-0.07	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.08	0.00	0.00	0.00	0.00	-0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.09	0.00	0.00	0.00	0.00	-0.11	Bem-3
	CO4	-0.14	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	-0.16	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	-0.10	0.00	0.00	0.00	0.00	-0.10	Eathquake
125	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.09	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.08	Eathquake
126	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.05	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.05	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.10	Eathquake
131	LC1	0.00	0.00	4.46	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.26	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	-7.32	0.00	0.00	-0.06	Wind - 1
	LC4	-0.04	0.00	-5.94	0.00	0.00	-0.06	Wind - 2
	LC5	0.01	0.00	3.80	0.00	0.00	0.01	Snow
	LC6	-0.05	0.00	4.50	0.00	0.00	-0.08	Earthquake
	CO1	0.00	0.00	13.86	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	11.57	0.00	0.00	0.02	Bem-2
	CO3	-0.06	0.00	-5.81	0.00	0.00	-0.09	Bem-3
	CO4	-0.06	0.00	-4.26	0.00	0.00	-0.09	Bem-4
	CO5	-0.05	0.00	-1.43	0.00	0.00	-0.07	Bem-5
	CO6	-0.05	0.00	7.98	0.00	0.00	-0.08	Eathquake
132	LC1	0.00	-0.09	4.46	0.00	0.00	0.00	EG
	LC2	0.00	0.10	5.26	0.00	0.00	0.00	Live Load
	LC3	0.05	20.68	-4.92	0.00	0.00	-0.07	Wind - 1
	LC4	0.05	19.97	8.41	0.00	0.00	-0.07	Wind - 2
	LC5	0.01	-0.36	3.79	0.00	0.00	-0.01	Snow
	LC6	0.07	26.27	8.64	0.00	0.00	-0.10	Earthquake
	CO1	0.00	0.01	13.86	0.00	0.00	-0.01	Bem-1
	CO2	0.01	-0.69	11.55	0.00	0.00	-0.02	Bem-2
	CO3	0.08	30.52	-1.98	0.00	0.00	-0.10	Bem-3
	CO4	0.09	29.42	21.95	0.00	0.00	-0.10	Bem-4
	CO5	0.09	27.94	35.08	0.00	0.00	-0.09	Bem-5
	CO6	0.08	25.86	15.54	0.00	0.00	-0.10	Eathquake
134	LC1	0.00	0.00	5.19	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.28	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-11.12	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	-8.92	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	5.80	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	-8.22	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	14.95	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	15.84	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	-12.66	0.00	0.00	0.00	Bem-3
	CO4	0.01	0.00	-6.10	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	2.65	0.00	0.00	0.00	Bem-5
	CO6	0.01	0.00	-2.92	0.00	0.00	0.00	Eathquake
135	LC1	0.00	0.00	5.20	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.27	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-3.54	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.59	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	5.84	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	3.14	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	14.95	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	15.91	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	-1.84	0.00	0.00	0.00	Bem-3
	CO4	-0.01	0.00	5.91	0.00	0.00	0.00	Bem-4
	CO5	-0.01	0.00	11.52	0.00	0.00	0.00	Bem-5
	CO6	-0.01	0.00	6.93	0.00	0.00	0.00	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.06	Eathquake
165	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.02	Eathquake
167	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	0.05	Eathquake
168	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	0.08	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.07	Eathquake
173	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.09	0.00	0.00	0.00	0.00	-0.12	Wind - 1
	LC4	-0.11	0.00	0.00	0.00	0.00	-0.16	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.17	0.00	0.00	0.00	0.00	-0.24	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.14	0.00	0.00	0.00	0.00	-0.19	Bem-3
	CO4	-0.19	0.00	0.00	0.00	0.00	-0.25	Bem-4
	CO5	-0.21	0.00	0.00	0.00	0.00	-0.27	Bem-5
	CO6	-0.19	0.00	0.00	0.00	0.00	-0.25	Eathquake
174	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	-0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	-0.07	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	-0.05	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.07	Eathquake
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.02	Eathquake
177	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.03	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
177	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.03	Eathquake
179	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.10	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.17	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.23	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.17	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.27	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.29	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.24	Eathquake
180	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.14	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.16	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.18	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.13	Eathquake
185	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	-0.15	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	-0.18	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	-0.29	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	-0.23	Bem-3
	CO4	0.10	0.00	0.00	0.00	0.00	-0.29	Bem-4
	CO5	0.12	0.00	0.00	0.00	0.00	-0.32	Bem-5
	CO6	0.10	0.00	0.00	0.00	0.00	-0.30	Eathquake
186	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.10	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.14	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.12	Eathquake
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.02	Eathquake
189	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.12	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.11	Eathquake
191	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.10	0.00	0.00	0.00	0.00	-0.17	Wind - 1
	LC4	-0.12	0.00	0.00	0.00	0.00	-0.21	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.20	0.00	0.00	0.00	0.00	-0.35	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
191	CO3	-0.17	0.00	0.00	0.00	0.00	-0.27	Bem-3
	CO4	-0.21	0.00	0.00	0.00	0.00	-0.33	Bem-4
	CO5	-0.22	0.00	0.00	0.00	0.00	-0.36	Bem-5
	CO6	-0.23	0.00	0.00	0.00	0.00	-0.36	Eathquake
192	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.03	Eathquake
194	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.15	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.18	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.30	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.24	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	-0.29	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	-0.31	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	-0.32	0.00	0.00	0.00	0.00	0.06	Eathquake
195	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.05	Eathquake
197	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.08	0.00	0.00	0.00	0.00	-0.07	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	-0.08	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	-0.03	Eathquake
198	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	-0.08	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	-0.08	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	0.05	Eathquake
203	LC1	0.00	0.05	3.41	0.00	0.00	-0.01	EG
	LC2	0.00	0.01	-0.09	0.00	0.00	0.00	Live Load
	LC3	0.15	3.69	12.71	0.00	0.00	-0.22	Wind - 1
	LC4	0.18	4.33	15.76	0.00	0.00	-0.26	Wind - 2
	LC5	0.01	0.12	0.53	0.00	0.00	-0.01	Snow
	LC6	0.30	7.34	25.46	0.00	0.00	-0.43	Earthquake
	CO1	0.00	0.09	4.50	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.25	5.44	0.00	0.00	-0.02	Bem-2
	CO3	0.24	5.66	22.89	0.00	0.00	-0.34	Bem-3
	CO4	0.29	6.61	29.16	0.00	0.00	-0.40	Bem-4
	CO5	0.31	7.04	31.20	0.00	0.00	-0.43	Bem-5
	CO6	0.32	7.41	29.60	0.00	0.00	-0.44	Eathquake
204	LC1	0.00	-0.03	3.31	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.02	0.00	0.00	0.00	Live Load
	LC3	-0.05	1.83	-5.23	0.00	0.00	-0.09	Wind - 1
	LC4	-0.05	1.80	-4.85	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	-0.02	0.10	0.00	0.00	0.00	Snow
	LC6	-0.06	2.22	-6.60	0.00	0.00	-0.10	Earthquake
	CO1	0.00	-0.09	4.50	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.07	4.62	0.00	0.00	0.01	Bem-2
	CO3	-0.07	2.71	-4.79	0.00	0.00	-0.12	Bem-3
	CO4	-0.07	2.66	-2.75	0.00	0.00	-0.12	Bem-4
	CO5	-0.07	2.62	-2.49	0.00	0.00	-0.12	Bem-5
	CO6	-0.06	2.18	-3.24	0.00	0.00	-0.10	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
206	LC1	0.00	0.04	4.06	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.11	0.00	0.00	0.00	Live Load
	LC3	0.12	3.53	4.01	0.00	0.00	-0.23	Wind - 1
	LC4	0.14	4.14	5.51	0.00	0.00	-0.27	Wind - 2
	LC5	0.00	0.12	0.30	0.00	0.00	-0.01	Snow
	LC6	0.24	7.01	8.08	0.00	0.00	-0.46	Earthquake
	CO1	0.00	0.09	5.66	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.24	5.96	0.00	0.00	-0.02	Bem-2
	CO3	0.19	5.42	9.96	0.00	0.00	-0.36	Bem-3
	CO4	0.23	6.35	14.17	0.00	0.00	-0.43	Bem-4
	CO5	0.25	6.76	15.19	0.00	0.00	-0.46	Bem-5
	CO6	0.25	7.11	12.47	0.00	0.00	-0.47	Eathquake
207	LC1	0.00	-0.02	4.02	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.15	0.00	0.00	0.00	Live Load
	LC3	-0.04	1.68	-1.79	0.00	0.00	-0.10	Wind - 1
	LC4	-0.04	1.65	-2.13	0.00	0.00	-0.10	Wind - 2
	LC5	0.00	-0.03	0.15	0.00	0.00	0.00	Snow
	LC6	-0.05	2.04	-2.45	0.00	0.00	-0.12	Earthquake
	CO1	0.00	-0.09	5.66	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.07	5.65	0.00	0.00	0.01	Bem-2
	CO3	-0.06	2.50	0.93	0.00	0.00	-0.14	Bem-3
	CO4	-0.06	2.44	2.18	0.00	0.00	-0.14	Bem-4
	CO5	-0.06	2.41	2.30	0.00	0.00	-0.14	Bem-5
	CO6	-0.05	2.01	1.53	0.00	0.00	-0.12	Eathquake
209	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.06	Eathquake
210	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.06	Eathquake
215	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.06	Eathquake
216	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.07	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.11	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.09	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.09	Eathquake
221	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.16	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.18	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.31	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.24	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.28	0.00	0.00	0.00	0.00	0.08	Bem-4
	CO5	-0.30	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.32	0.00	0.00	0.00	0.00	0.09	Eathquake
222	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
222	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.07	Eathquake
227	LC1	0.00	0.03	4.36	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.68	0.00	0.00	0.00	Live Load
	LC3	0.11	3.23	0.19	0.00	0.00	-0.23	Wind - 1
	LC4	0.13	3.80	0.67	0.00	0.00	-0.27	Wind - 2
	LC5	0.01	0.11	0.44	0.00	0.00	-0.01	Snow
	LC6	0.23	6.44	0.37	0.00	0.00	-0.46	Earthquake
	CO1	0.00	0.08	6.92	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.22	6.57	0.00	0.00	-0.02	Bem-2
	CO3	0.17	4.99	4.16	0.00	0.00	-0.34	Bem-3
	CO4	0.21	5.85	7.10	0.00	0.00	-0.41	Bem-4
	CO5	0.22	6.24	8.04	0.00	0.00	-0.44	Bem-5
	CO6	0.23	6.56	4.90	0.00	0.00	-0.46	Eathquake
228	LC1	0.00	-0.01	4.37	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.68	0.00	0.00	0.01	Live Load
	LC3	-0.03	1.51	-2.39	0.00	0.00	-0.10	Wind - 1
	LC4	-0.03	1.48	-3.35	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	-0.03	0.45	0.00	0.00	0.00	Snow
	LC6	-0.04	1.83	-3.32	0.00	0.00	-0.11	Earthquake
	CO1	0.00	-0.08	6.92	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.05	6.60	0.00	0.00	0.00	Bem-2
	CO3	-0.05	2.24	0.14	0.00	0.00	-0.14	Bem-3
	CO4	-0.05	2.19	0.50	0.00	0.00	-0.14	Bem-4
	CO5	-0.05	2.16	0.52	0.00	0.00	-0.14	Bem-5
	CO6	-0.04	1.80	0.74	0.00	0.00	-0.11	Eathquake
233	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.19	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.19	Eathquake
234	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	-0.01	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.03	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	-0.06	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	-0.03	Eathquake
239	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.06	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.11	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	0.09	0.00	0.00	0.00	0.00	0.11	Eathquake
240	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.12	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.14	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.18	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.22	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.22	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.16	Eathquake
245	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.12	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.20	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.02	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.29	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.03	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
245	CO3	-0.02	0.00	0.00	0.00	0.00	0.19	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	0.31	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	0.35	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.29	Eathquake
246	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	-0.05	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.04	Eathquake
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	0.13	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	0.15	Eathquake
252	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.08	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.08	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	0.07	Eathquake
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.10	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.13	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.22	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.16	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.20	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.23	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.23	Eathquake
258	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.14	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.10	Eathquake
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.12	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.14	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.25	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.18	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.22	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.24	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.25	Eathquake
264	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.01	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.13	0.00	0.00	0.00	0.00	0.15	Wind - 1
	LC4	-0.15	0.00	0.00	0.00	0.00	0.18	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.25	0.00	0.00	0.00	0.00	0.31	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.19	0.00	0.00	0.00	0.00	0.23	Bem-3
	CO4	-0.22	0.00	0.00	0.00	0.00	0.27	Bem-4
	CO5	-0.24	0.00	0.00	0.00	0.00	0.30	Bem-5
	CO6	-0.25	0.00	0.00	0.00	0.00	0.31	Eathquake
270	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.13	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.10	Eathquake
275	LC1	0.00	0.02	3.38	0.00	0.00	0.00	EG
	LC2	0.00	0.02	2.21	0.00	0.00	0.00	Live Load
	LC3	0.07	2.80	-4.90	0.00	0.00	-0.10	Wind - 1
	LC4	0.08	3.29	-5.40	0.00	0.00	-0.12	Wind - 2
	LC5	0.00	0.10	1.06	0.00	0.00	0.00	Snow
	LC6	0.13	5.58	-7.87	0.00	0.00	-0.20	Earthquake
	CO1	0.00	0.07	7.88	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.18	6.15	0.00	0.00	0.00	Bem-2
	CO3	0.10	4.35	-4.82	0.00	0.00	-0.15	Bem-3
	CO4	0.12	5.10	-3.78	0.00	0.00	-0.17	Bem-4
	CO5	0.13	5.43	-2.30	0.00	0.00	-0.18	Bem-5
	CO6	0.13	5.71	-4.68	0.00	0.00	-0.19	Eathquake
276	LC1	0.00	-0.01	3.42	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	2.17	0.00	0.00	0.00	Live Load
	LC3	-0.02	1.30	-2.35	0.00	0.00	-0.04	Wind - 1
	LC4	-0.01	1.27	-3.36	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	-0.02	1.23	0.00	0.00	0.00	Snow
	LC6	-0.02	1.57	-2.07	0.00	0.00	-0.05	Earthquake
	CO1	0.00	-0.07	7.88	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.04	6.47	0.00	0.00	0.00	Bem-2
	CO3	-0.02	1.92	-0.54	0.00	0.00	-0.06	Bem-3
	CO4	-0.02	1.88	-0.67	0.00	0.00	-0.06	Bem-4
	CO5	-0.02	1.85	0.22	0.00	0.00	-0.06	Bem-5
	CO6	-0.02	1.55	1.17	0.00	0.00	-0.05	Eathquake
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.04	Eathquake
282	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.05	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	-0.06	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.08	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	0.02	Eathquake
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.06	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.10	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	0.11	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	0.11	0.00	0.00	0.00	0.00	0.01	Eathquake
288	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.06	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
288	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.08	Eathquake
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.15	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.16	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.12	Eathquake
294	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.01	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.01	Eathquake
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.10	Eathquake
300	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.03	Eathquake
305	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.13	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.13	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.13	Eathquake
306	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.06	Eathquake
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.14	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
311	CO3	0.04	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.14	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.14	Eathquake
312	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	8.28	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.00	7.81	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	-0.07	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	10.18	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.11	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	12.36	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.00	11.67	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.00	11.42	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.00	10.14	0.00	0.00	0.00	0.02	Eathquake
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.08	0.00	0.00	0.00	0.00	0.10	Wind - 1
	LC4	-0.09	0.00	0.00	0.00	0.00	0.11	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.15	0.00	0.00	0.00	0.00	0.19	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.11	0.00	0.00	0.00	0.00	0.15	Bem-3
	CO4	-0.13	0.00	0.00	0.00	0.00	0.17	Bem-4
	CO5	-0.14	0.00	0.00	0.00	0.00	0.18	Bem-5
	CO6	-0.15	0.00	0.00	0.00	0.00	0.19	Eathquake
318	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.05	Eathquake
323	LC1	0.00	0.02	2.83	0.00	0.00	0.00	EG
	LC2	0.00	0.02	2.50	0.00	0.00	0.00	Live Load
	LC3	0.00	2.64	-10.24	0.00	0.00	0.00	Wind - 1
	LC4	0.00	3.10	-12.31	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.09	0.47	0.00	0.00	0.00	Snow
	LC6	-0.01	5.25	-19.85	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.06	7.54	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.17	4.47	0.00	0.00	0.00	Bem-2
	CO3	-0.01	4.10	-13.82	0.00	0.00	0.00	Bem-3
	CO4	-0.01	4.81	-15.50	0.00	0.00	0.00	Bem-4
	CO5	-0.01	5.13	-15.55	0.00	0.00	0.00	Bem-5
	CO6	-0.01	5.40	-17.68	0.00	0.00	0.00	Eathquake
325	LC1	0.00	-0.01	2.92	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	2.40	0.00	0.00	0.00	Live Load
	LC3	0.00	1.22	0.05	0.00	0.00	0.00	Wind - 1
	LC4	0.00	1.19	-0.98	0.00	0.00	0.00	Wind - 2
	LC5	0.00	-0.02	0.85	0.00	0.00	0.00	Snow
	LC6	0.01	1.48	0.19	0.00	0.00	0.00	Earthquake
	CO1	0.00	-0.06	7.53	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.04	5.20	0.00	0.00	0.00	Bem-2
	CO3	0.01	1.81	2.76	0.00	0.00	0.00	Bem-3
	CO4	0.01	1.77	2.41	0.00	0.00	0.00	Bem-4
	CO5	0.01	1.75	2.59	0.00	0.00	0.00	Bem-5
	CO6	0.00	1.46	3.07	0.00	0.00	0.00	Eathquake
327	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
328	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
329	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
330	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
331	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
332	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
333	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
334	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
335	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
337	LC1	-0.01	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.11	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
337	LC5	-0.02	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.23	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.05	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.16	0.00	0.00	0.00	0.00	-0.02	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.20	0.00	0.00	0.00	0.00	-0.02	Eathquake
338	LC1	-0.01	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.06	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.18	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	-0.02	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.16	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.05	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.09	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.34	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.43	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.19	0.00	0.00	0.00	0.00	0.01	Eathquake
Σ Supp.	LC1	0.00	0.00	55.39				
Σ Loads	LC1	0.00	0.00	55.39				
Σ Supp.	LC2	0.00	0.00	31.89				
Σ Loads	LC2	0.00	0.00	31.89				
Σ Supp.	LC3	0.00	52.40	-36.84				
Σ Loads	LC3	0.00	52.40	-36.84				
Σ Supp.	LC4	0.00	53.83	-16.31				
Σ Loads	LC4	0.00	53.83	-16.31				
Σ Supp.	LC5	0.00	0.00	24.82				
Σ Loads	LC5	0.00	0.00	24.82				
Σ Supp.	LC6	0.00	77.20	0.00				
Σ Loads	LC6	0.00	77.20	0.00				
Σ Supp.	CO1	0.00	0.00	122.61				
Σ Loads	CO1	0.00	0.00	122.61				
Σ Supp.	CO2	0.00	0.00	112.00				
Σ Loads	CO2	0.00	0.00	112.00				
Σ Supp.	CO3	0.00	78.60	-5.41				
Σ Loads	CO3	0.00	78.60	-5.41				
Σ Supp.	CO4	0.00	80.75	50.31				
Σ Loads	CO4	0.00	80.75	50.31				
Σ Supp.	CO5	0.00	80.75	87.54				
Σ Loads	CO5	0.00	80.75	87.54				
Σ Supp.	CO6	0.00	77.20	55.39				
Σ Loads	CO6	0.00	77.20	55.39				

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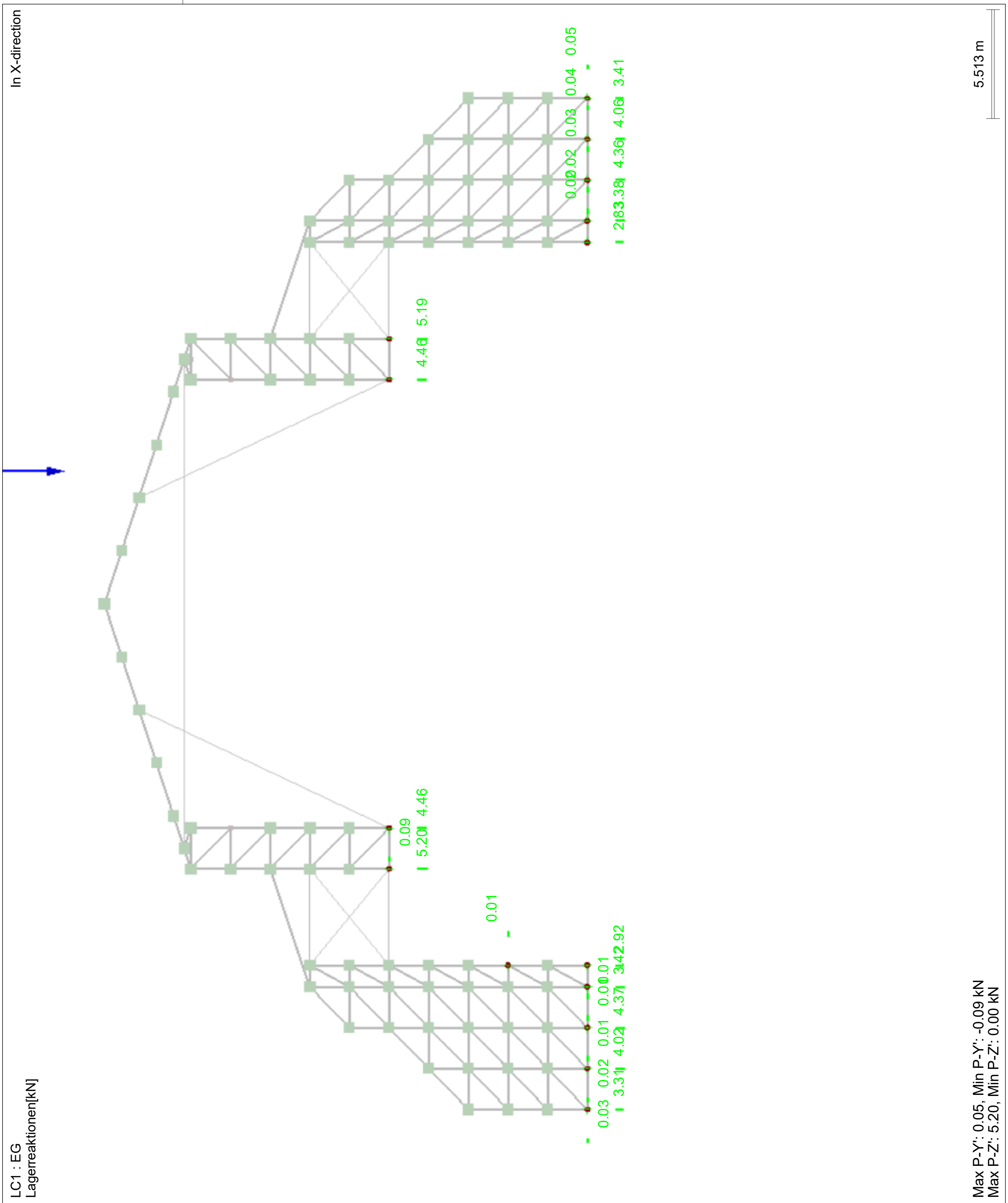

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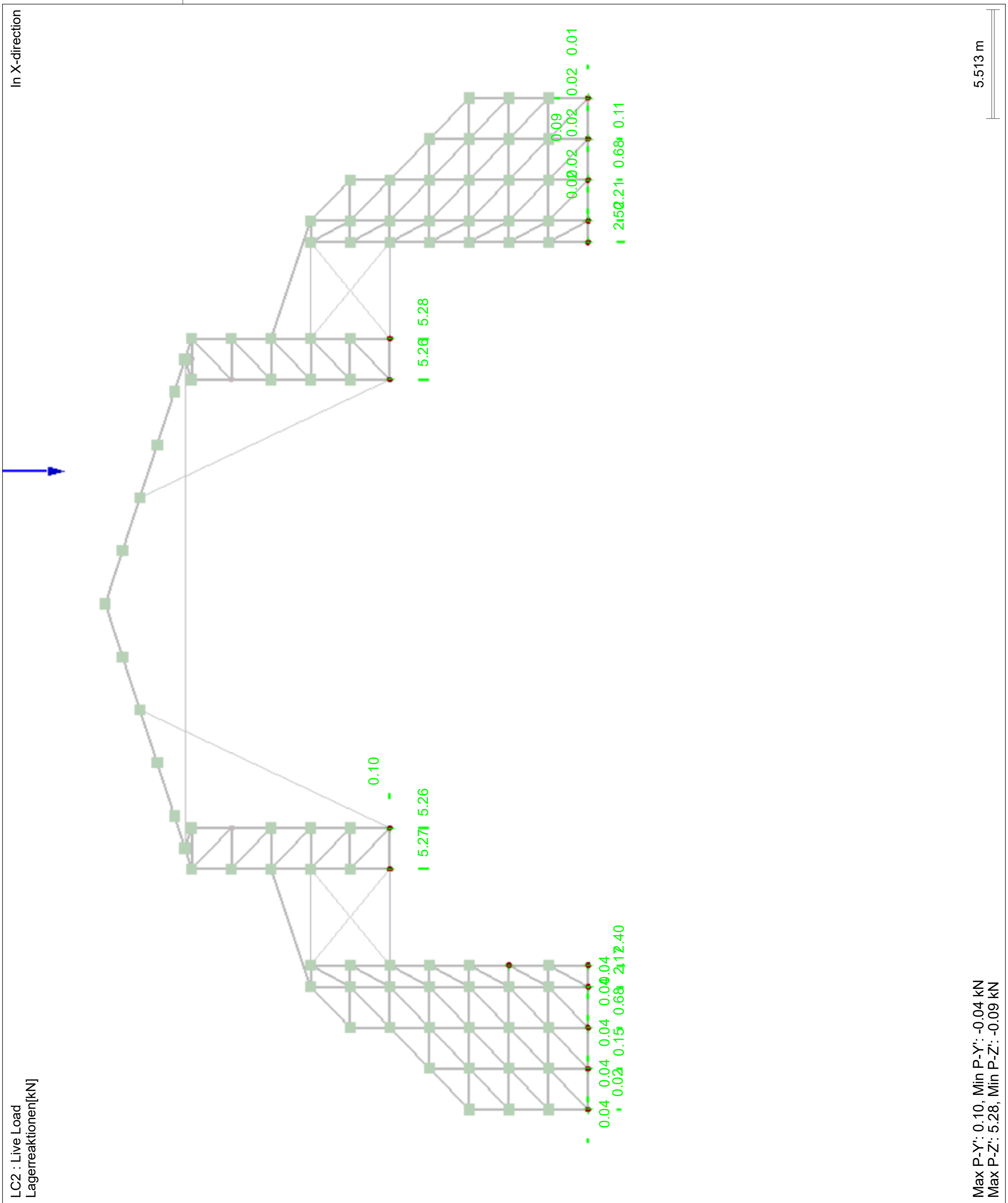

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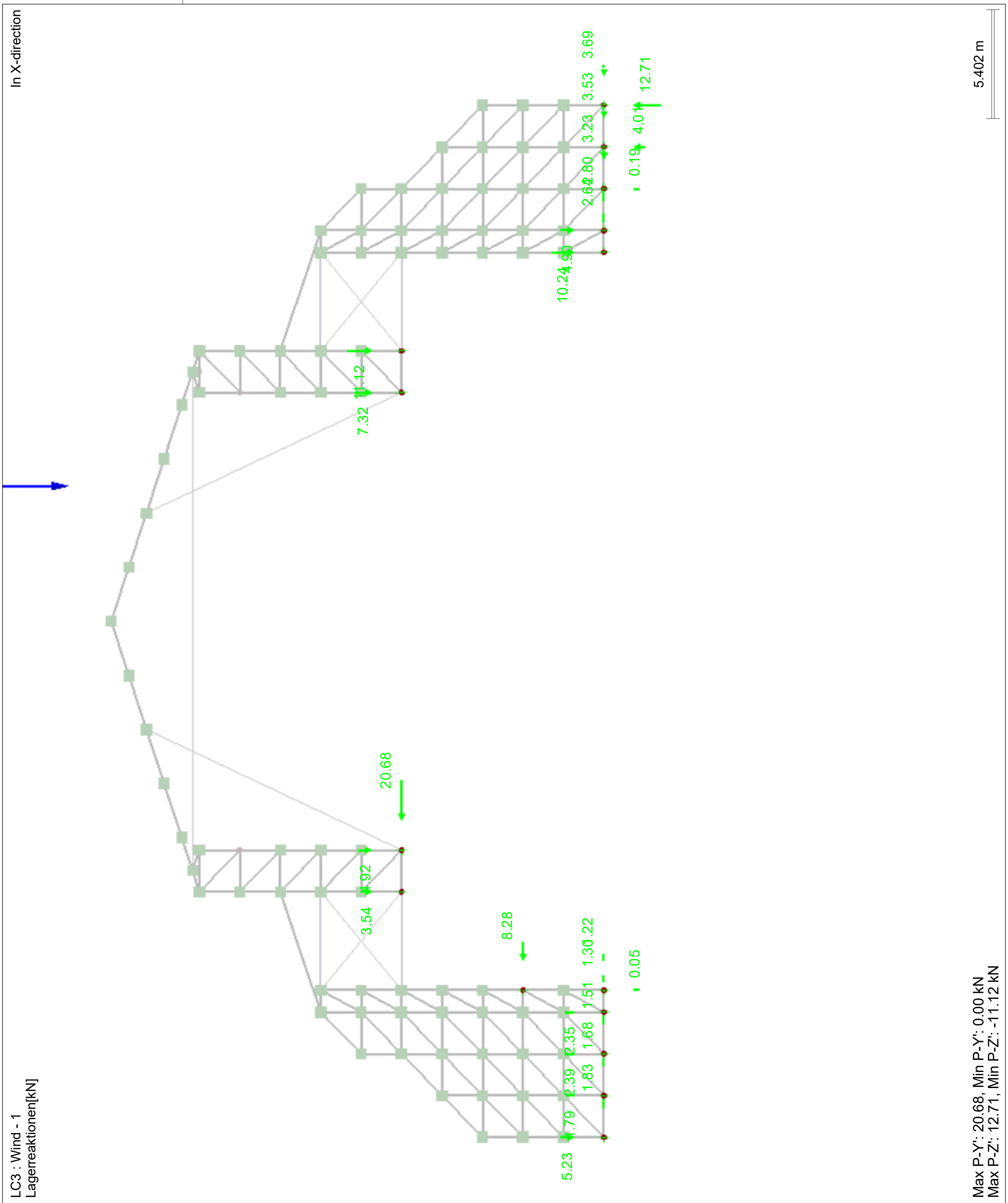

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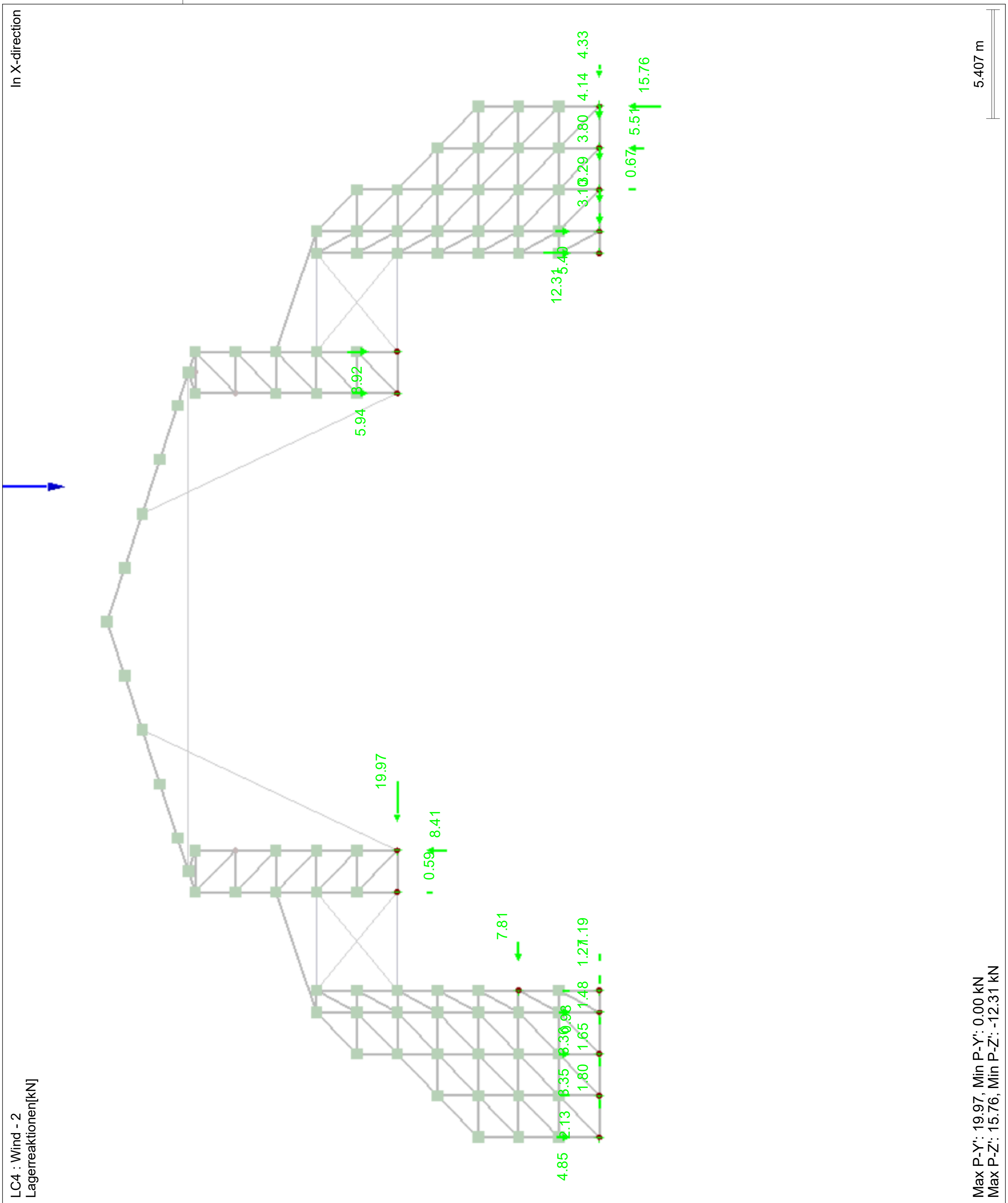

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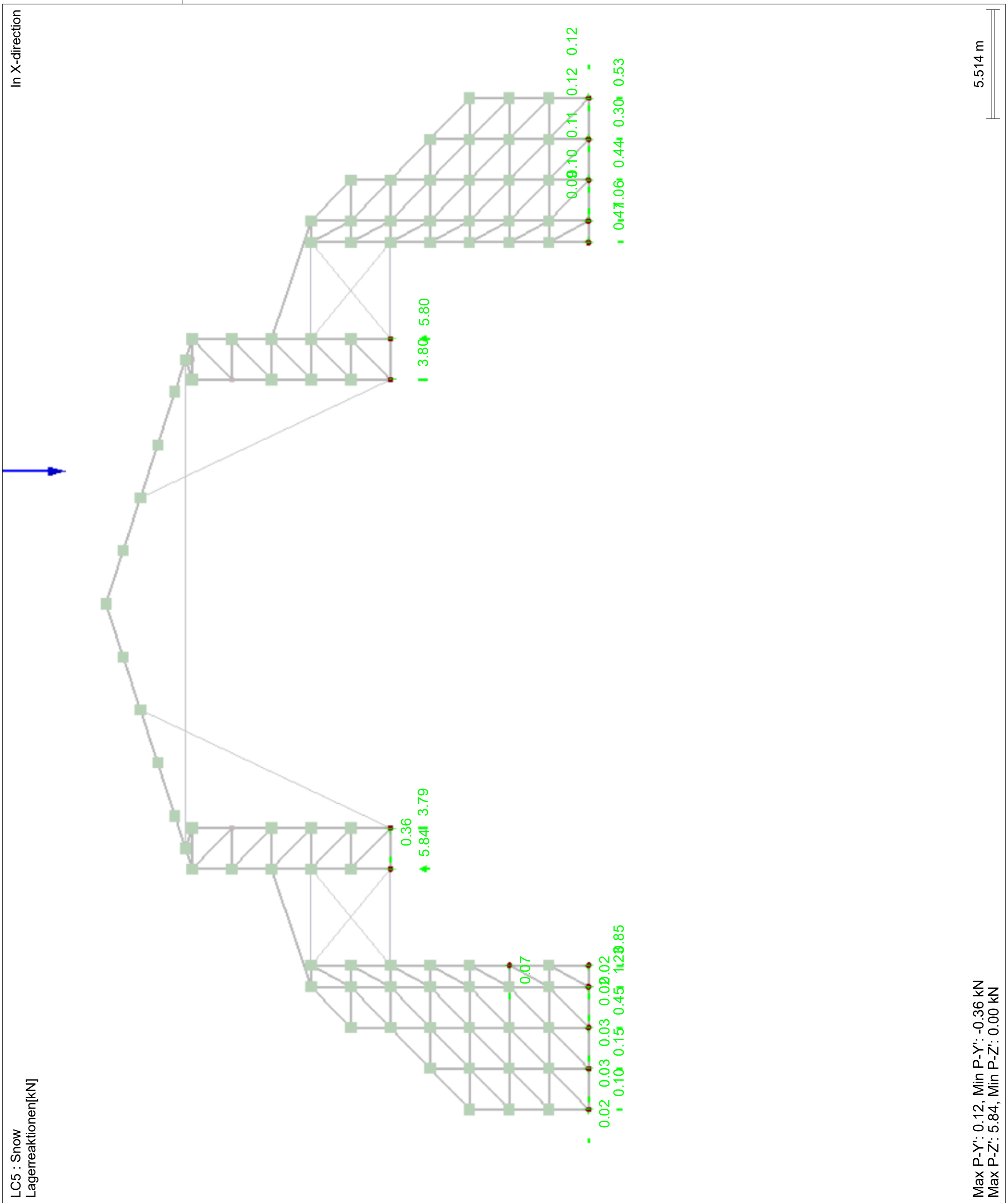

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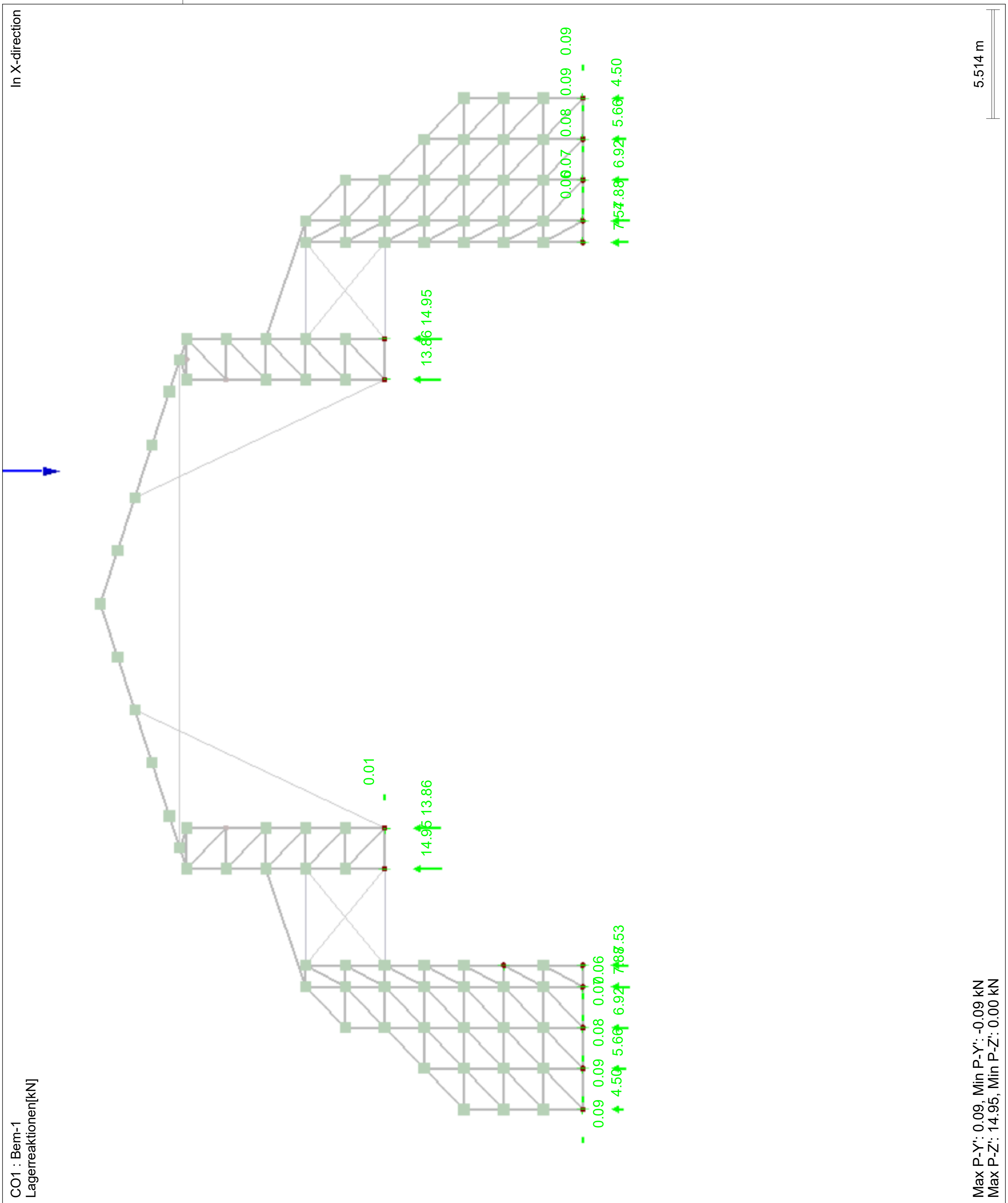

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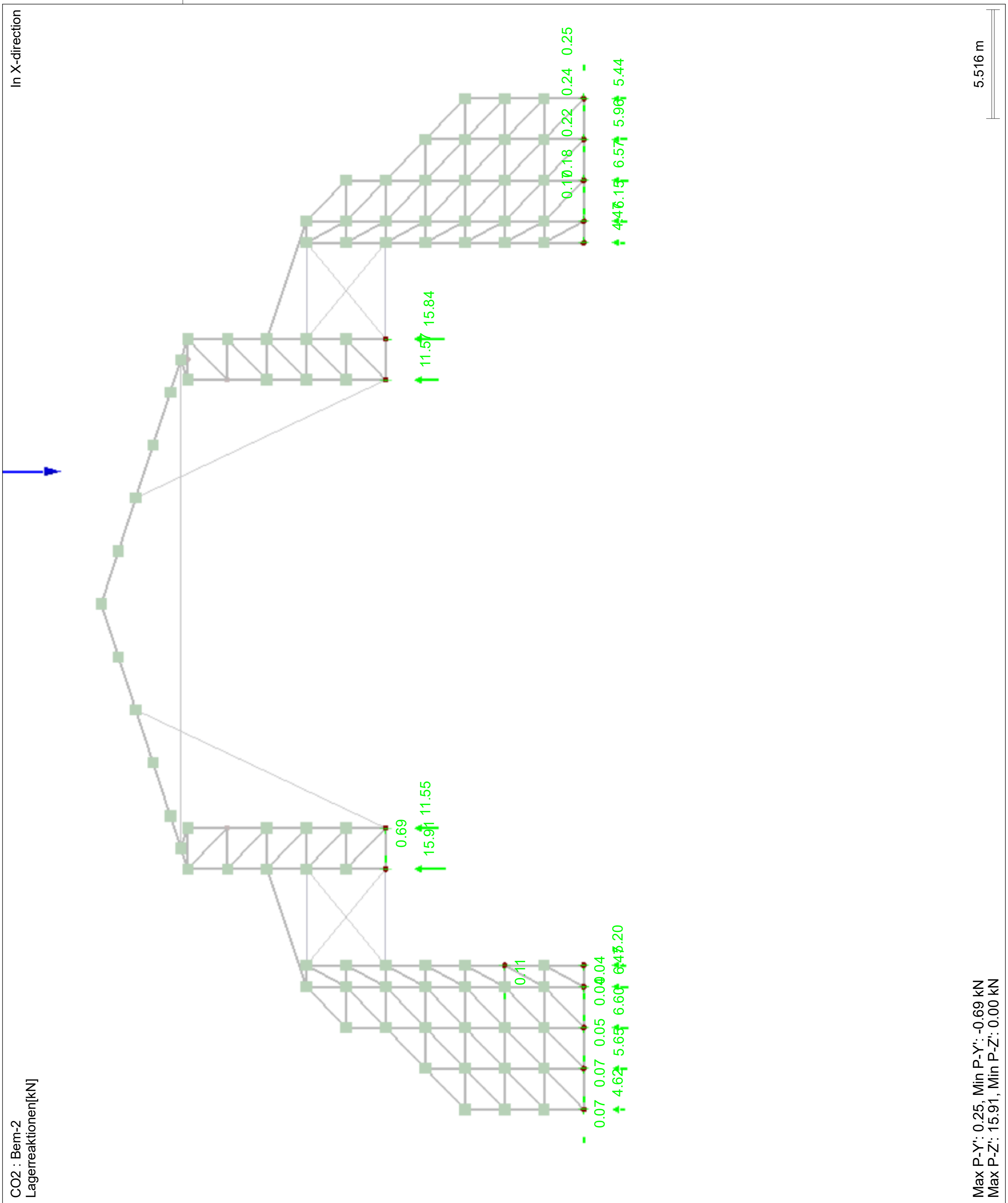

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RESULTS

Project: 2023 Model: K-Dach-1 Date: 19.09.2023

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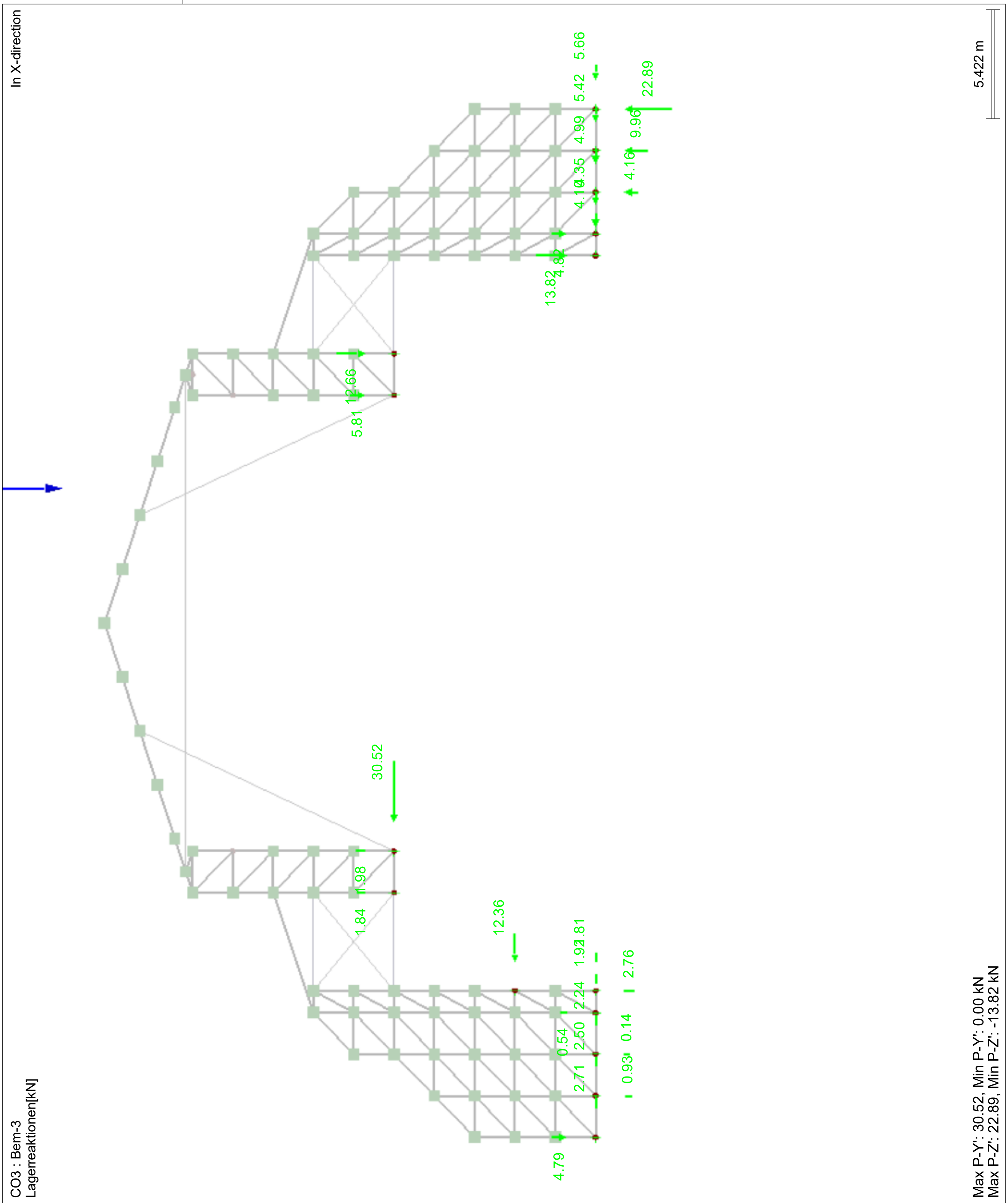

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Project: 2023 Model: K-Dach-1 Date: 19.09.2023

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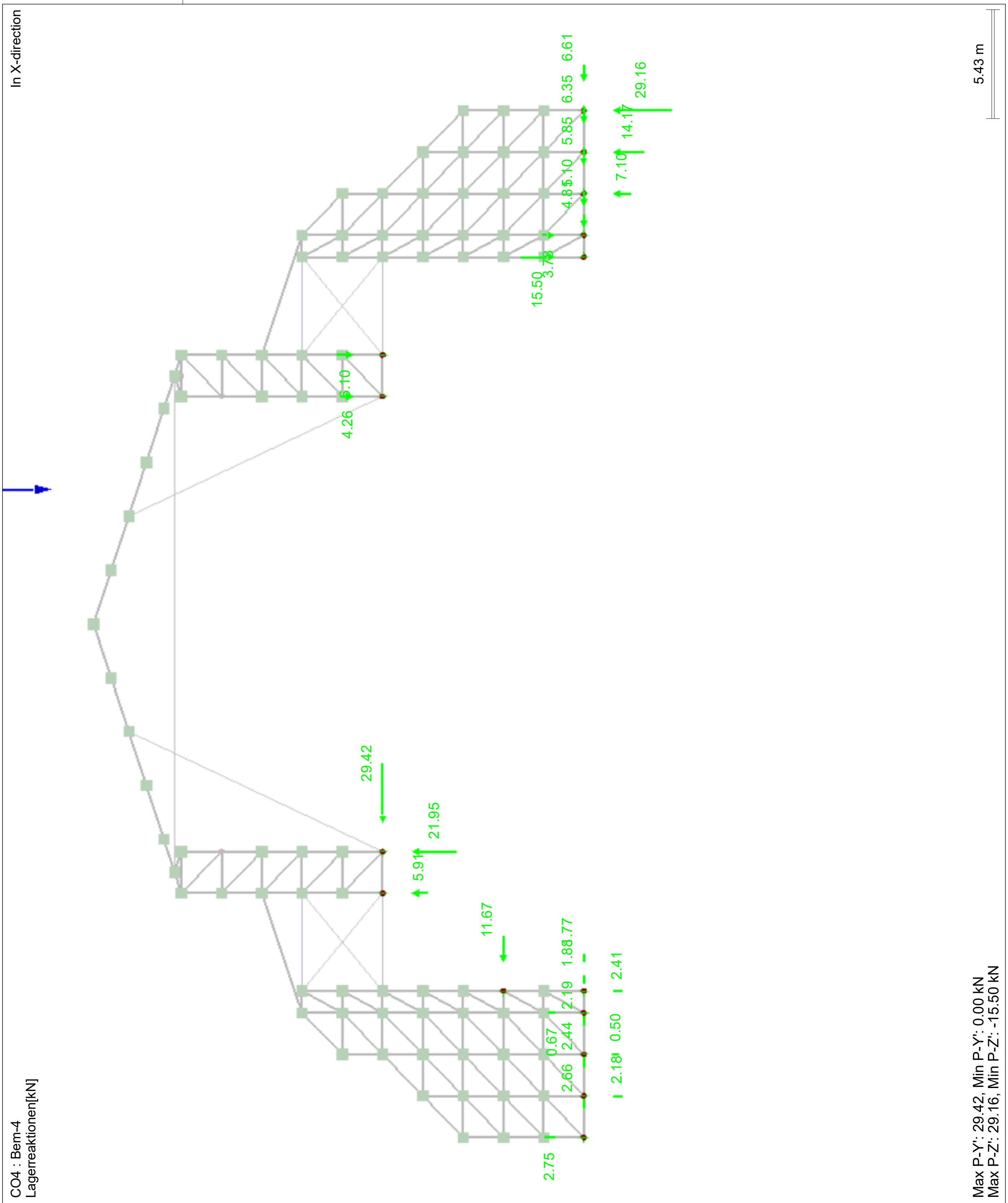

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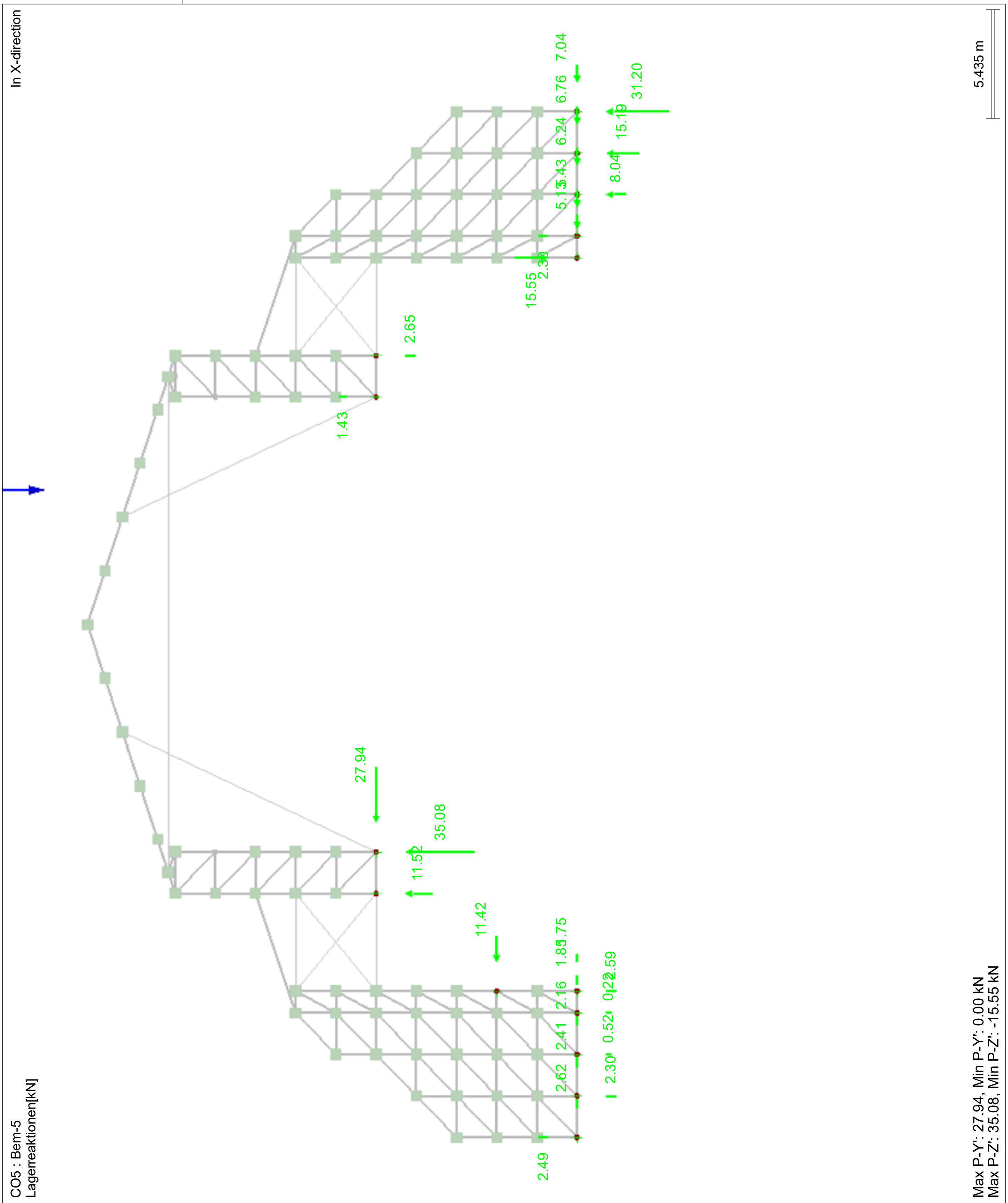

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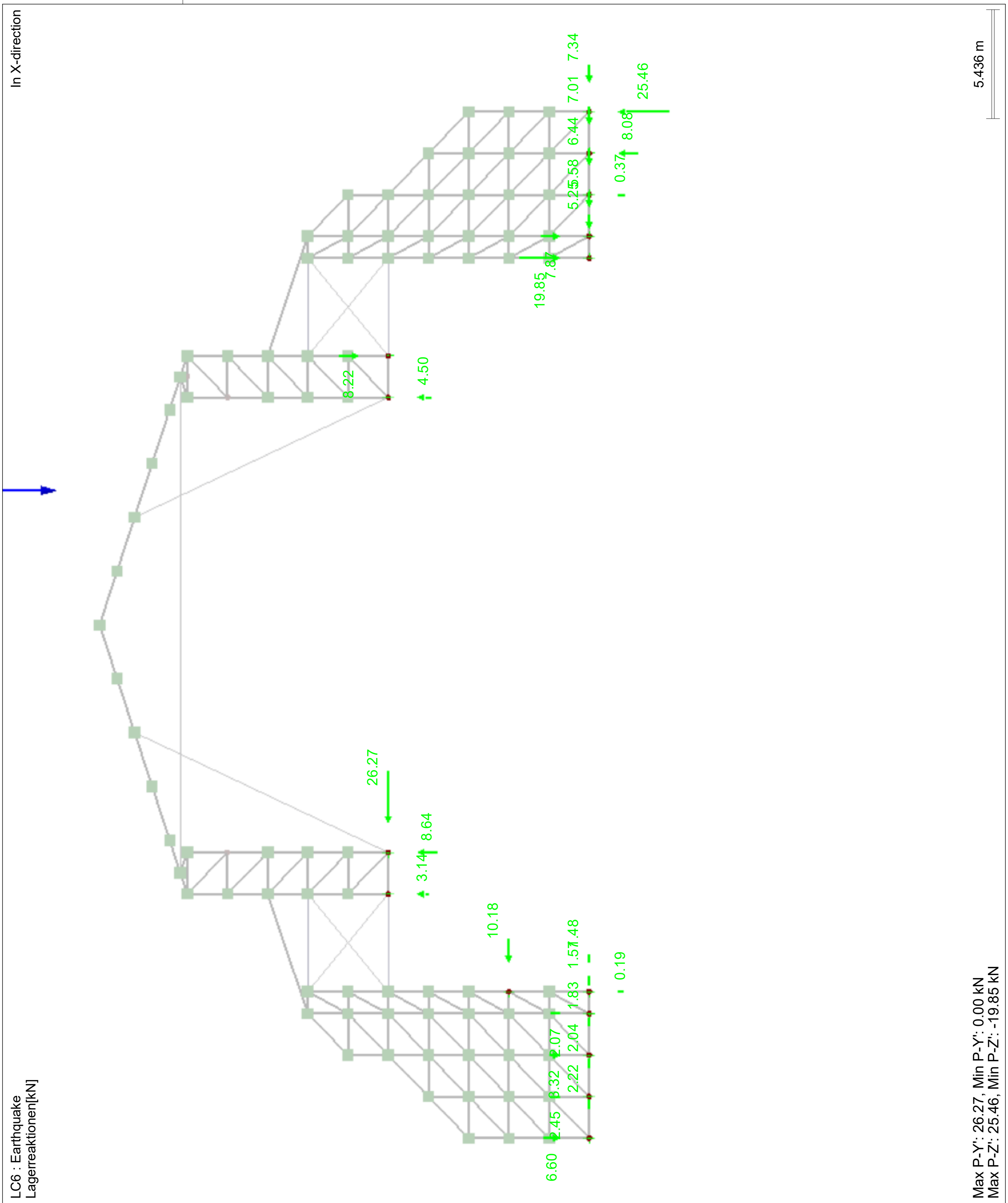

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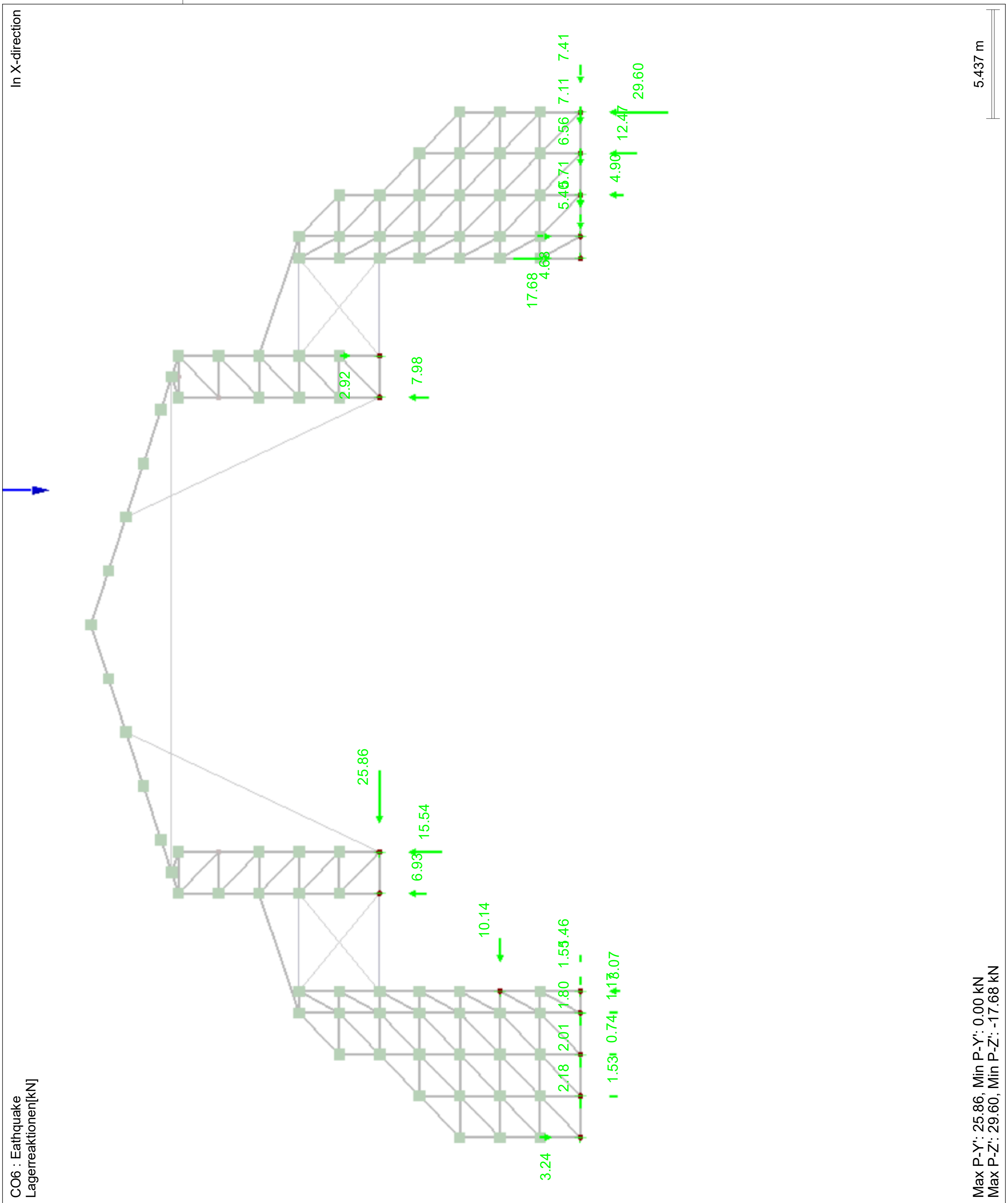

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
860	RC1		1.000	MAX N	17.26	-0.02	0.22	0.00	0.02	-0.06	CO 6
321	RC1		0.100	MIN N	-39.88	0.01	0.09	0.00	0.02	0.10	CO 5
524	RC1		0.700	MAX V_y	-22.97	0.39	-0.59	0.00	-0.35	0.00	CO 5
235	RC1		1.000	MIN V_y	-8.25	-0.32	0.23	0.00	-0.66	0.01	CO 5
260	RC1		2.000	MAX V_z	4.73	-0.16	3.31	0.00	1.85	0.10	CO 5
564	RC1		0.000	MIN V_z	-3.73	-0.04	-2.96	0.00	1.20	-0.06	CO 3
255	RC1		0.000	MAX M_T	-26.48	0.25	0.37	0.05	-0.37	0.22	CO 5
230	RC1		2.000	MIN M_T	-17.73	0.00	0.35	-0.05	0.14	-0.12	CO 5
260	RC1		2.000	MAX M_y	4.73	-0.16	3.31	0.00	1.85	0.10	CO 5
564	RC1		1.100	MIN M_y	-5.14	-0.07	-0.10	0.00	-0.77	0.00	CO 4
235	RC1		2.000	MAX M_z	-8.19	-0.26	2.70	0.01	0.85	0.31	CO 5
529	RC1		2.000	MIN M_z	-4.05	0.22	0.35	-0.01	0.43	-0.39	CO 6
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
767	RC1		0.208	MAX N	13.58	0.00	0.08	0.00	0.00	0.00	CO 5
333	RC1		0.000	MIN N	-23.09	0.00	0.00	0.00	0.04	0.00	CO 5
242	RC1		2.020	MAX V_y	8.56	0.32	-0.56	0.06	-0.49	-0.33	CO 5
241	RC1		0.000	MIN V_y	4.33	-0.10	0.13	-0.02	-0.12	-0.13	CO 6
793	RC1		0.000	MAX V_z	-0.18	0.00	4.03	0.00	-0.28	0.00	CO 1
792	RC1		1.040	MIN V_z	-0.18	0.00	-4.03	0.00	-0.28	0.00	CO 1
267	RC1		0.000	MAX M_T	12.72	0.00	-0.05	0.08	-0.01	0.00	CO 5
289	RC1		1.717	MIN M_T	-1.37	0.00	-0.07	-0.03	0.05	0.00	CO 5
793	RC1		0.520	MAX M_y	-0.23	0.00	0.02	0.00	0.77	0.00	CO 1
242	RC1		2.020	MIN M_y	8.56	0.32	-0.56	0.06	-0.49	-0.33	CO 5
242	RC1		0.000	MAX M_z	8.56	0.28	-0.57	0.06	0.52	0.21	CO 5
242	RC1		2.020	MIN M_z	8.56	0.32	-0.56	0.06	-0.49	-0.33	CO 5
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
269	RC1		0.000	MAX N	6.80	0.00	0.00	0.02	0.00	0.00	CO 5
270	RC1		0.000	MIN N	-17.77	0.00	0.00	0.05	0.00	0.00	CO 5
244	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
270	RC1		0.000	MAX M_T	-17.77	0.00	0.00	0.05	0.00	0.00	CO 5
292	RC1		0.000	MIN M_T	1.59	0.00	0.00	-0.02	0.00	0.00	CO 5
244	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
270	RC1		0.000	MIN M_z	-17.77	0.00	0.00	0.05	0.00	0.00	CO 5
	Section No. 4: Rohr 48.3/4 (Rohr)										
1	RC1		0.000	MAX N	13.10	-0.10	-0.40	-0.02	-0.01	-0.05	CO 3
901	RC1		0.000	MIN N	-41.77	-0.16	0.24	-0.03	-0.21	-0.12	CO 5
884	RC1		0.664	MAX V_y	-35.41	0.24	0.39	0.04	0.20	-0.01	CO 5
901	RC1		0.591	MIN V_y	-41.77	-0.22	0.36	-0.03	-0.03	0.00	CO 5
884	RC1		0.000	MAX V_z	-35.65	0.17	1.66	0.04	-0.52	0.14	CO 5
1	RC1		1.106	MIN V_z	-26.67	0.02	-0.92	0.01	-0.25	-0.02	CO 2
884	RC1		0.000	MAX M_T	-35.65	0.17	1.66	0.04	-0.52	0.14	CO 5
901	RC1		1.074	MIN M_T	-41.77	-0.18	0.32	-0.03	0.14	0.10	CO 5
1	RC1		1.106	MAX M_y	13.03	-0.11	0.96	-0.02	0.28	0.06	CO 3
884	RC1		0.000	MIN M_y	-35.65	0.17	1.66	0.04	-0.52	0.14	CO 5
884	RC1		0.000	MAX M_z	-35.65	0.17	1.66	0.04	-0.52	0.14	CO 5
901	RC1		0.000	MIN M_z	-41.77	-0.16	0.24	-0.03	-0.21	-0.12	CO 5
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974										
169	RC1		0.505	MAX N	39.48	0.00	-0.14	0.03	0.02	0.00	CO 5
168	RC1		2.045	MIN N	-7.01	0.00	0.35	-0.04	0.45	0.00	CO 3
169	RC1		0.000	MAX V_y	39.48	0.00	-0.14	0.03	0.09	0.00	CO 5
168	RC1		2.045	MIN V_y	10.71	0.00	0.58	-0.05	0.83	0.00	CO 6
168	RC1		2.045	MAX V_z	10.71	0.00	0.58	-0.05	0.83	0.00	CO 6
169	RC1		2.020	MIN V_z	39.48	0.00	-0.16	0.03	-0.20	0.00	CO 5
169	RC1		0.505	MAX M_T	39.48	0.00	-0.14	0.03	0.02	0.00	CO 5
168	RC1		0.409	MIN M_T	10.71	0.00	0.55	-0.05	-0.08	0.00	CO 6
168	RC1		2.045	MAX M_y	10.71	0.00	0.58	-0.05	0.83	0.00	CO 6
169	RC1		0.000	MIN M_y	-1.72	0.00	0.34	0.00	-0.67	0.00	CO 3
168	RC1		2.045	MAX M_z	10.71	0.00	0.58	-0.05	0.83	0.00	CO 6
169	RC1		2.020	MIN M_z	39.48	0.00	-0.16	0.03	-0.20	0.00	CO 5
	Section No. 8: RD 8 | DIN 1013-1										
902	RC1		0.000	MAX N	20.88	0.00	0.00	0.00	0.00	0.00	CO 5
902	RC1		0.000	MIN N	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
879	RC1		0.000	MAX N	0.86	0.00	0.00	0.00	0.00	0.00	CO 5
880	RC1		0.000	MIN N	-23.08	0.00	0.00	0.00	0.00	0.00	CO 5
878	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
878	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 14: Gl-KDXL Kederdach XL										
895	RC1		6.296	MAX N	▷ 20.76	-0.15	0.85	0.00	-0.82	0.78	CO 5
893	RC1		1.716	MIN N	▷ -27.27	0.00	0.63	0.00	0.00	0.00	CO 5
896	RC1		4.407	MAX V_y	-2.73	▷ 0.04	-0.43	0.00	0.98	0.06	CO 6
895	RC1		6.296	MIN V_y	20.76	▷ -0.15	0.85	0.00	-0.82	0.78	CO 5
900	RC1		0.000	MAX V_z	-26.41	-0.03	▷ 16.75	0.00	0.00	0.00	CO 5
889	RC1		2.822	MIN V_z	-16.48	0.00	▷ -15.34	0.00	13.69	0.00	CO 5
900	RC1		0.000	MAX M_T	-26.41	-0.03	16.75	▷ 0.00	0.00	0.00	CO 5
893	RC1		1.716	MIN M_T	-9.48	0.00	-2.15	▷ 0.00	0.00	0.00	CO 6
887	RC1		2.822	MAX M_y	-23.79	0.00	1.59	0.00	▷ 67.64	0.00	CO 5
891	RC1		1.552	MIN M_y	-11.67	0.00	0.07	0.00	▷ -19.56	0.00	CO 4
895	RC1		6.296	MAX M_z	20.76	-0.15	0.85	0.00	-0.82	▷ 0.78	CO 5
895	RC1		0.000	MIN M_z	18.32	-0.15	-0.83	0.00	-0.88	▷ -0.17	CO 5
	Section No. 15: Rundstahl 12										
894	RC1		0.000	MAX N	▷ 25.90	0.00	0.00	0.00	0.00	0.00	CO 5
894	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
894	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
63	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	-0.03	CO 5
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	0.07	CO 6
		Max $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	0.07	CO 6
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.03	CO 5
64	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $P_{X'}$	-0.26	0.00	0.00	0.00	0.00	-0.15	CO 5
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	-0.26	0.00	0.00	0.00	0.00	-0.15	CO 5
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.27	CO 6
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.14	CO 5
		Min $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	-0.27	CO 6
70	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	0.54	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 1
		Max $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	0.54	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.07	CO 2
94	RC1	Max $P_{X'}$	0.10	0.00	0.00	0.00	0.00	0.31	CO 5
		Min $P_{X'}$	-0.16	0.00	0.00	0.00	0.00	-0.08	CO 6
		Max $M_{Z'}$	0.10	0.00	0.00	0.00	0.00	0.31	CO 5
		Min $M_{Z'}$	-0.14	0.00	0.00	0.00	0.00	-0.08	CO 3
95	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.07	CO 2
		Min $P_{X'}$	-0.41	0.00	0.00	0.00	0.00	0.88	CO 5
		Max $M_{Z'}$	-0.41	0.00	0.00	0.00	0.00	0.88	CO 5
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.07	CO 2
107	RC1	Max $P_{X'}$	0.12	0.00	0.00	0.00	0.00	0.07	CO 6
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.06	CO 2
		Max $M_{Z'}$	0.10	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.27	CO 5
108	RC1	Max $P_{X'}$	0.17	0.00	0.00	0.00	0.00	-0.71	CO 5
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.06	CO 2
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.06	CO 2
		Min $M_{Z'}$	0.17	0.00	0.00	0.00	0.00	-0.71	CO 5
110	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.04	CO 3
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	0.03	CO 5
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.04	CO 2
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.04	CO 3
111	RC1	Max $P_{X'}$	0.10	0.00	0.00	0.00	0.00	-0.36	CO 5
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	0.06	CO 6
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.10	CO 3

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■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
111		Min $M_{Z'}$	0.10	0.00	0.00	0.00	0.00	-0.36	CO 5
112	RC1	Max $P_{X'}$	0.21	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 2
		Max $M_{Z'}$	0.21	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 2
113	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.15	CO 2
		Min $P_{X'}$	-0.28	0.00	0.00	0.00	0.00	-0.80	CO 5
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.15	CO 2
		Min $M_{Z'}$	-0.28	0.00	0.00	0.00	0.00	-0.80	CO 5
116	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.09	CO 4
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
117	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.11	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.11	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
122	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.08	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.09	CO 4
123	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 2
		Min $P_{X'}$	-0.16	0.00	0.00	0.00	0.00	-0.10	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	-0.11	CO 3
125	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
126	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	0.10	CO 4
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
131	RC1	Max $P_{X'}$	0.01	0.00	11.57	0.00	0.00	0.02	CO 2
		Min $P_{X'}$	-0.06	0.00	-4.26	0.00	0.00	-0.09	CO 4
		Max $P_{Z'}$	0.00	0.00	13.86	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	-0.06	0.00	-5.81	0.00	0.00	-0.09	CO 3
		Max $M_{Z'}$	0.01	0.00	11.57	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	-0.06	0.00	-4.26	0.00	0.00	-0.09	CO 4
132	RC1	Max $P_{X'}$	0.09	27.94	35.08	0.00	0.00	-0.09	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.08	30.52	-1.98	0.00	0.00	-0.10	CO 3
		Min $P_{Y'}$	0.01	-0.69	11.55	0.00	0.00	-0.02	CO 2
		Max $P_{Z'}$	0.09	27.94	35.08	0.00	0.00	-0.09	CO 5
		Min $P_{Z'}$	0.08	30.52	-1.98	0.00	0.00	-0.10	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.08	30.52	-1.98	0.00	0.00	-0.10	CO 3
134	RC1	Max $P_{X'}$	0.01	0.00	-12.66	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	0.00	0.00	15.84	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	0.00	15.84	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.01	0.00	-12.66	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	0.00	-6.10	0.00	0.00	0.00	CO 4
135	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	0.00	-1.84	0.00	0.00	0.00	CO 3
		Max $P_{Z'}$	0.00	0.00	15.91	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	-0.01	0.00	-1.84	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	0.00	11.52	0.00	0.00	0.00	CO 5
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.12	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	-0.12	CO 5
165	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 4
167	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Max $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.01	CO 5
168	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	-0.10	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	-0.10	CO 5
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.21	0.00	0.00	0.00	0.00	-0.27	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.21	0.00	0.00	0.00	0.00	-0.27	CO 5
174	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.07	CO 3

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
174		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 2
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.07	CO 3
176	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
177	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.04	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.24	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.29	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
180	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.18	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.18	CO 5
185	RC1	Max $P_{X'}$	0.12	0.00	0.00	0.00	0.00	-0.32	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.12	0.00	0.00	0.00	0.00	-0.32	CO 5
186	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.14	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	-0.14	CO 3
188	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
189	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 3
191	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.23	0.00	0.00	0.00	0.00	-0.36	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.22	0.00	0.00	0.00	0.00	-0.36	CO 5
192	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	-0.04	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	-0.04	CO 3
194	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.32	0.00	0.00	0.00	0.00	0.06	CO 6
		Max $M_{Z'}$	-0.32	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
195	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
197	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	-0.08	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	-0.08	CO 5
198	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	0.02	CO 5
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
203	RC1	Max $P_{X'}$	0.32	7.41	29.60	0.00	0.00	-0.44	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.32	7.41	29.60	0.00	0.00	-0.44	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.31	7.04	31.20	0.00	0.00	-0.43	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.32	7.41	29.60	0.00	0.00	-0.44	CO 6
204	RC1	Max $P_{X'}$	0.00	-0.07	4.62	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.07	2.71	-4.79	0.00	0.00	-0.12	CO 3
		Max $P_{Y'}$	-0.07	2.71	-4.79	0.00	0.00	-0.12	CO 3
		Min $P_{Y'}$	0.00	-0.09	4.50	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.00	-0.07	4.62	0.00	0.00	0.01	CO 2
		Min $P_{Z'}$	-0.07	2.71	-4.79	0.00	0.00	-0.12	CO 3
		Max $M_{Z'}$	0.00	-0.07	4.62	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.07	2.71	-4.79	0.00	0.00	-0.12	CO 3
206	RC1	Max $P_{X'}$	0.25	7.11	12.47	0.00	0.00	-0.47	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.25	7.11	12.47	0.00	0.00	-0.47	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.25	6.76	15.19	0.00	0.00	-0.46	CO 5

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node			Support Forces [kN]			Support Moments [kNm]			Corresponding
No.	RC		$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	Load Cases
206		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.25	7.11	12.47	0.00	0.00	-0.47	CO 6
207	RC1	Max $P_{X'}$	0.00	-0.09	5.66	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.06	2.50	0.93	0.00	0.00	-0.14	CO 3
		Max $P_{Y'}$	-0.06	2.50	0.93	0.00	0.00	-0.14	CO 3
		Min $P_{Y'}$	0.00	-0.09	5.66	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.00	-0.09	5.66	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	-0.09	5.66	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	-0.06	2.50	0.93	0.00	0.00	-0.14	CO 3
209	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
210	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
215	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
216	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.11	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.11	CO 3
221	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.32	0.00	0.00	0.00	0.00	0.09	CO 6
		Max $M_{Z'}$	-0.32	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
222	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.08	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.09	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
227	RC1	Max $P_{X'}$	0.23	6.56	4.90	0.00	0.00	-0.46	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.23	6.56	4.90	0.00	0.00	-0.46	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.22	6.24	8.04	0.00	0.00	-0.44	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.23	6.56	4.90	0.00	0.00	-0.46	CO 6
228	RC1	Max $P_{X'}$	0.00	-0.08	6.92	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.05	2.24	0.14	0.00	0.00	-0.14	CO 3
		Max $P_{Y'}$	-0.05	2.24	0.14	0.00	0.00	-0.14	CO 3
		Min $P_{Y'}$	0.00	-0.08	6.92	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.00	-0.08	6.92	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	-0.08	6.92	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	-0.05	2.24	0.14	0.00	0.00	-0.14	CO 3
233	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.19	CO 6
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.04	CO 5
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.19	CO 6
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.01	CO 1
234	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	-0.06	CO 5
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	-0.06	CO 5
239	RC1	Max $P_{X'}$	0.11	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.11	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
240	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.22	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.22	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.35	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.35	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
246	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.02	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.05	CO 5
251	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	0.13	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.15	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
252	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
252		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	0.06	CO 5
		Max $M_{Z'}$	-0.08	0.00	0.00	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
257	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.23	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.23	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
258	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
263	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.25	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.25	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
264	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.01	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.01	CO 6
269	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.25	0.00	0.00	0.00	0.00	0.31	CO 6
		Max $M_{Z'}$	-0.25	0.00	0.00	0.00	0.00	0.31	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
270	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.13	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.13	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
275	RC1	Max $P_{X'}$	0.13	5.71	-4.68	0.00	0.00	-0.19	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.13	5.71	-4.68	0.00	0.00	-0.19	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.07	7.88	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.10	4.35	-4.82	0.00	0.00	-0.15	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.13	5.71	-4.68	0.00	0.00	-0.19	CO 6
276	RC1	Max $P_{X'}$	0.00	-0.07	7.88	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.02	1.85	0.22	0.00	0.00	-0.06	CO 5
		Max $P_{Y'}$	-0.02	1.92	-0.54	0.00	0.00	-0.06	CO 3
		Min $P_{Y'}$	0.00	-0.07	7.88	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	0.00	-0.07	7.88	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	-0.02	1.88	-0.67	0.00	0.00	-0.06	CO 4
		Max $M_{Z'}$	0.00	-0.07	7.88	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	-0.02	1.92	-0.54	0.00	0.00	-0.06	CO 3
281	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 3
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.04	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.04	CO 6
282	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	0.03	CO 5
		Max $M_{Z'}$	-0.08	0.00	0.00	0.00	0.00	0.03	CO 5
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.00	CO 3
287	RC1	Max $P_{X'}$	0.11	0.00	0.00	0.00	0.00	0.01	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	0.03	CO 4
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.00	CO 2
288	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
293	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.00	0.12	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.16	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
294	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.02	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
299	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.11	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
300	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Max $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
305	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.13	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.13	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
306	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3

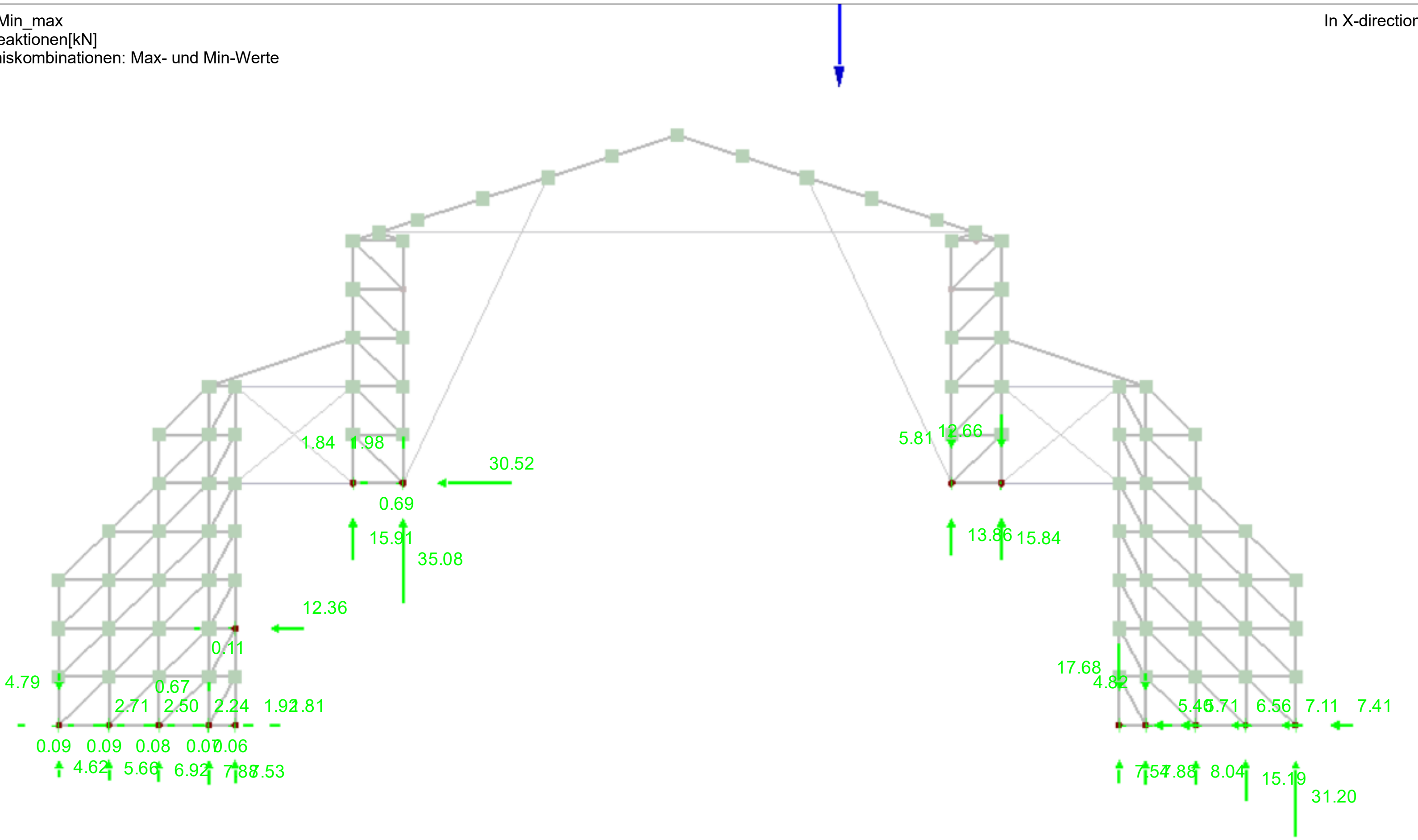
■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
306		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
311	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.14	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.14	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
312	RC1	Max $P_{Y'}$	0.00	12.36	0.00	0.00	0.00	0.02	CO 3
		Min $P_{Y'}$	0.00	-0.11	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	11.42	0.00	0.00	0.00	0.02	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
317	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.15	0.00	0.00	0.00	0.00	0.19	CO 6
		Max $M_{Z'}$	-0.15	0.00	0.00	0.00	0.00	0.19	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
318	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
323	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	5.40	-17.68	0.00	0.00	0.00	CO 6
		Max $P_{Y'}$	-0.01	5.40	-17.68	0.00	0.00	0.00	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.06	7.54	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	-0.01	5.40	-17.68	0.00	0.00	0.00	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	5.40	-17.68	0.00	0.00	0.00	CO 6
325	RC1	Max $P_{X'}$	0.01	1.81	2.76	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.01	1.81	2.76	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.06	7.53	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	0.00	-0.06	7.53	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	1.75	2.59	0.00	0.00	0.00	CO 5
327	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
328	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
329	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
330	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
331	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
332	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
333	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
334	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
335	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
337	RC1	Max $P_{X'}$	0.20	0.00	0.00	0.00	0.00	-0.02	CO 6
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	0.20	0.00	0.00	0.00	0.00	-0.02	CO 6
338	RC1	Max $P_{X'}$	0.43	0.00	0.00	0.00	0.00	0.01	CO 5
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.43	0.00	0.00	0.00	0.00	0.01	CO 5
		Min $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.00	CO 2

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max P-Y': 30.52, Min P-Y': -0.69 kN
Max P-Z': 35.08, Min P-Z': -17.68 kN

5.582 m

■ LAGERREAKTIONEN

Volker Knobloch
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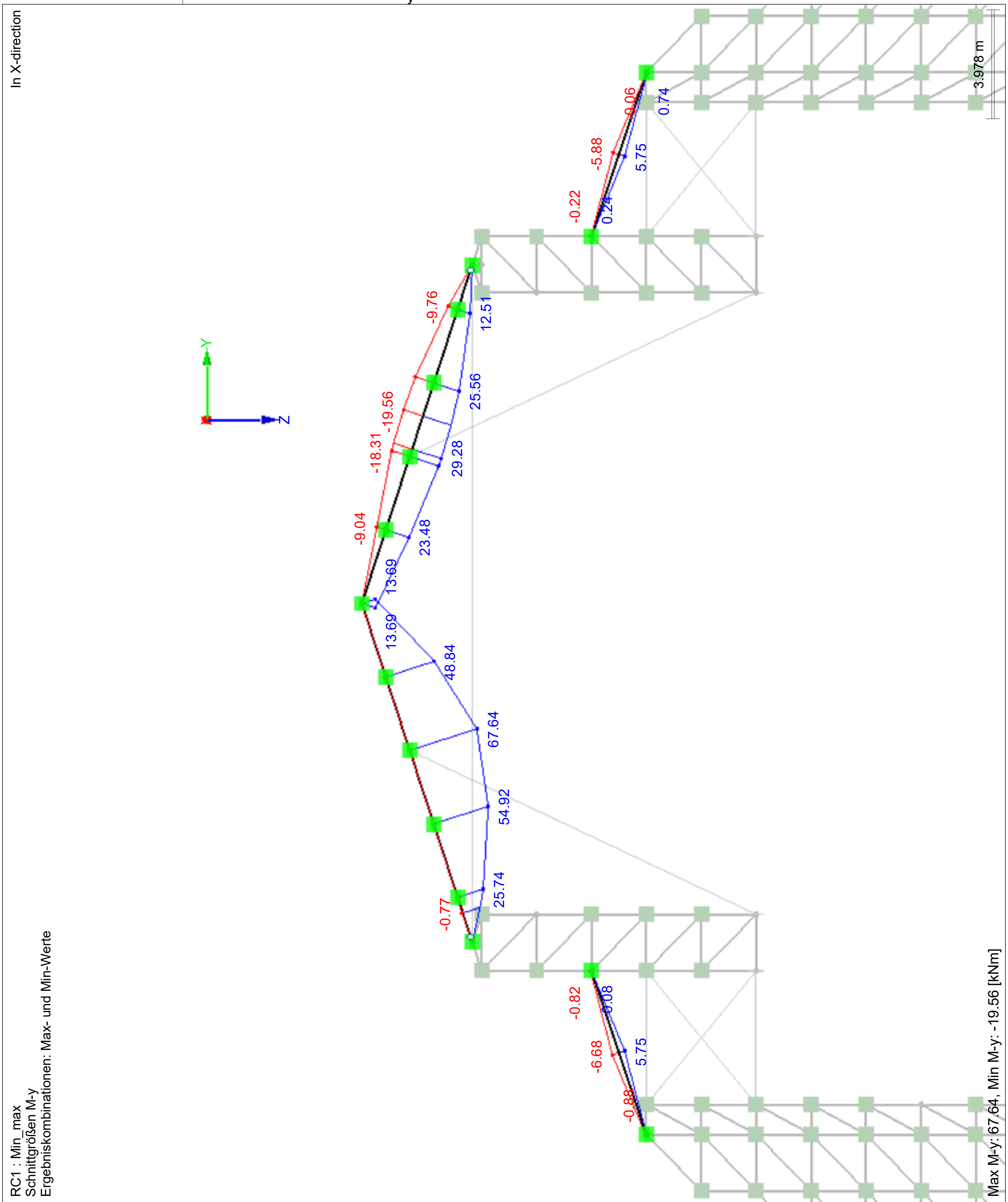
Project: 2023
Model: K-Dach-1
Date: 19.09.2023

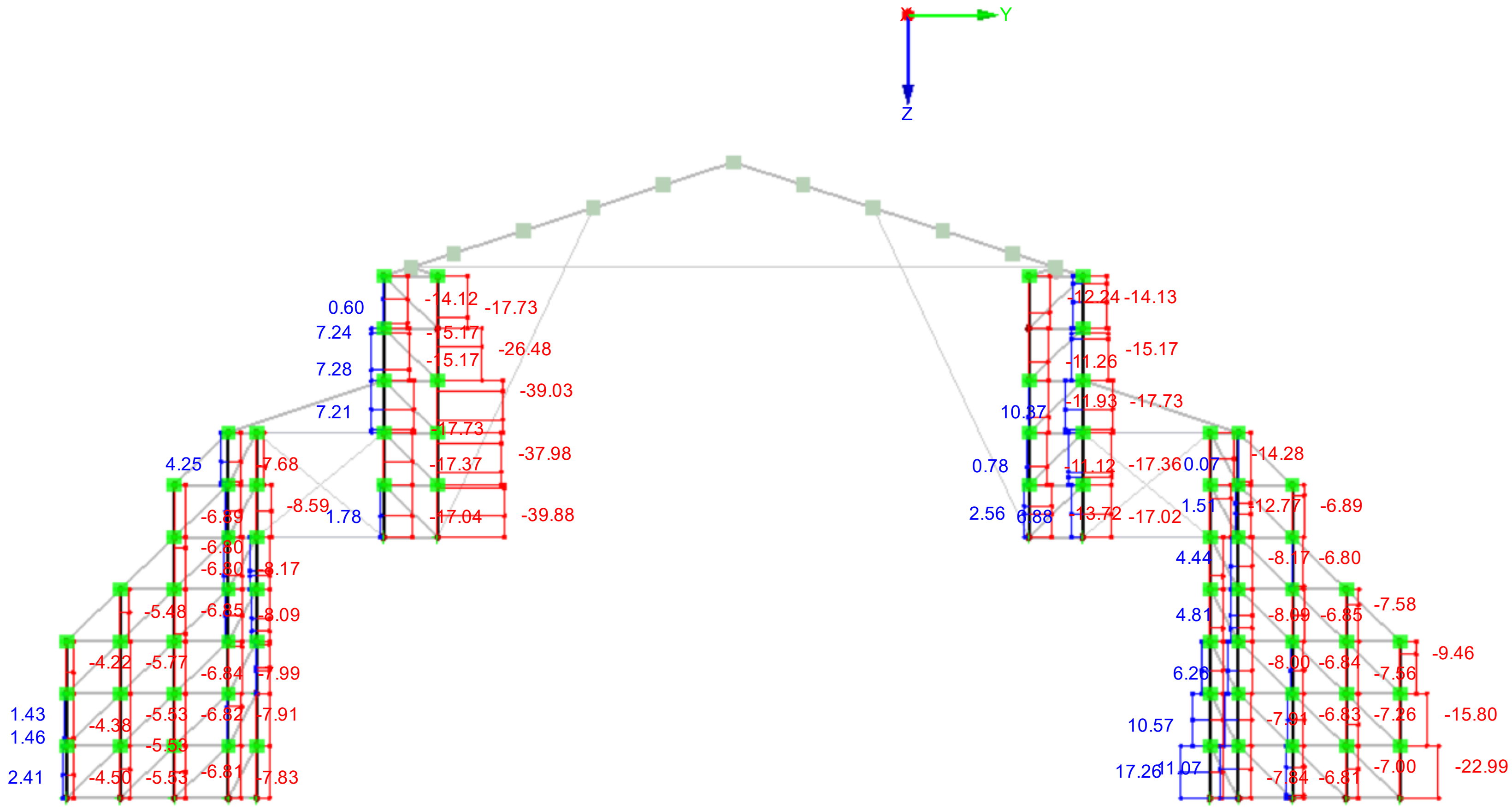
RESULTS

INTERNAL FORCES M_y



RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 17.26, Min N: -39.88 [kN]

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INTERNAL FORCES N

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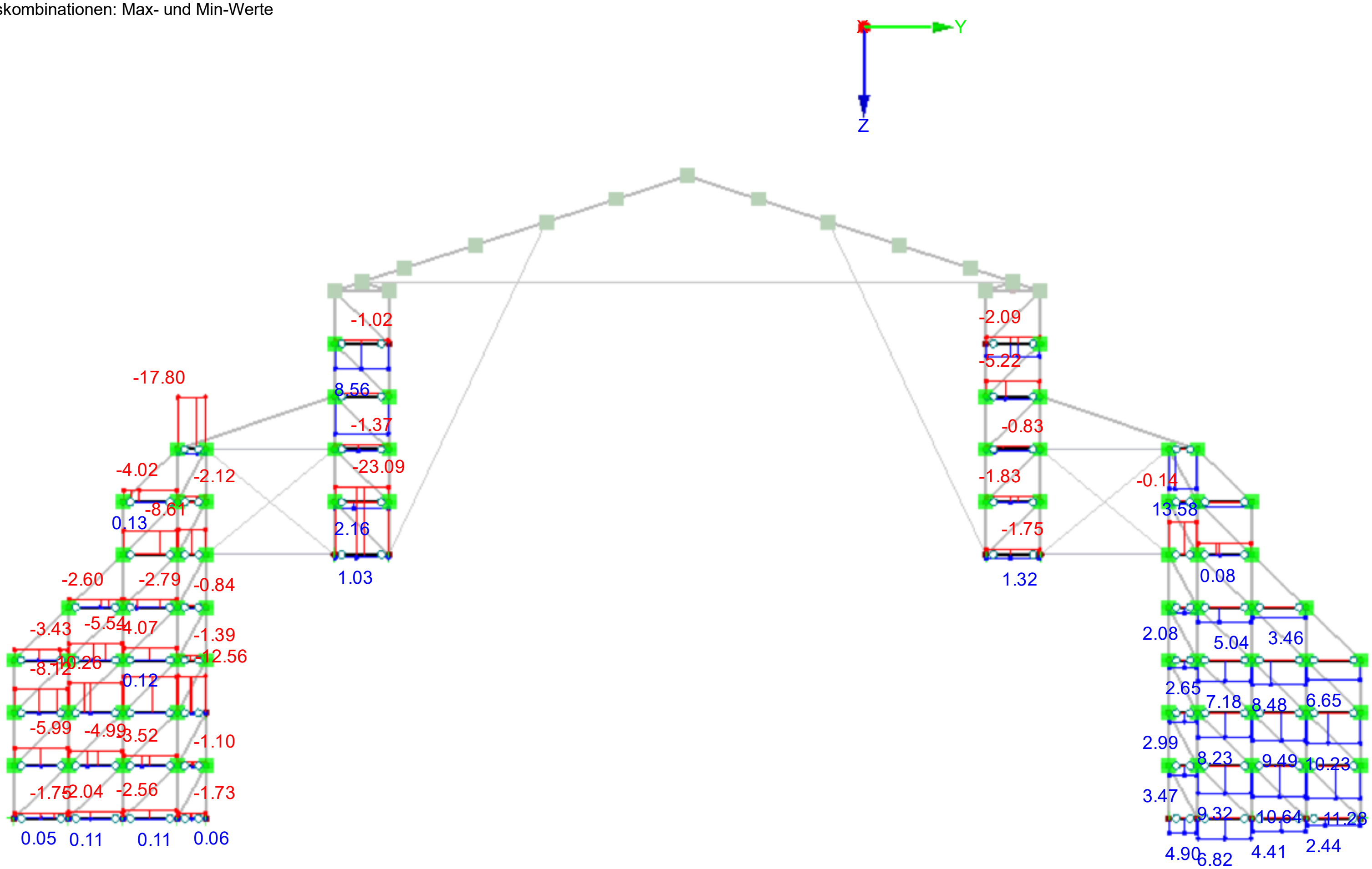
RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



5.227 m

Max N: 13.58, Min N: -23.09 [kN]

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■ INTERNAL FORCES N

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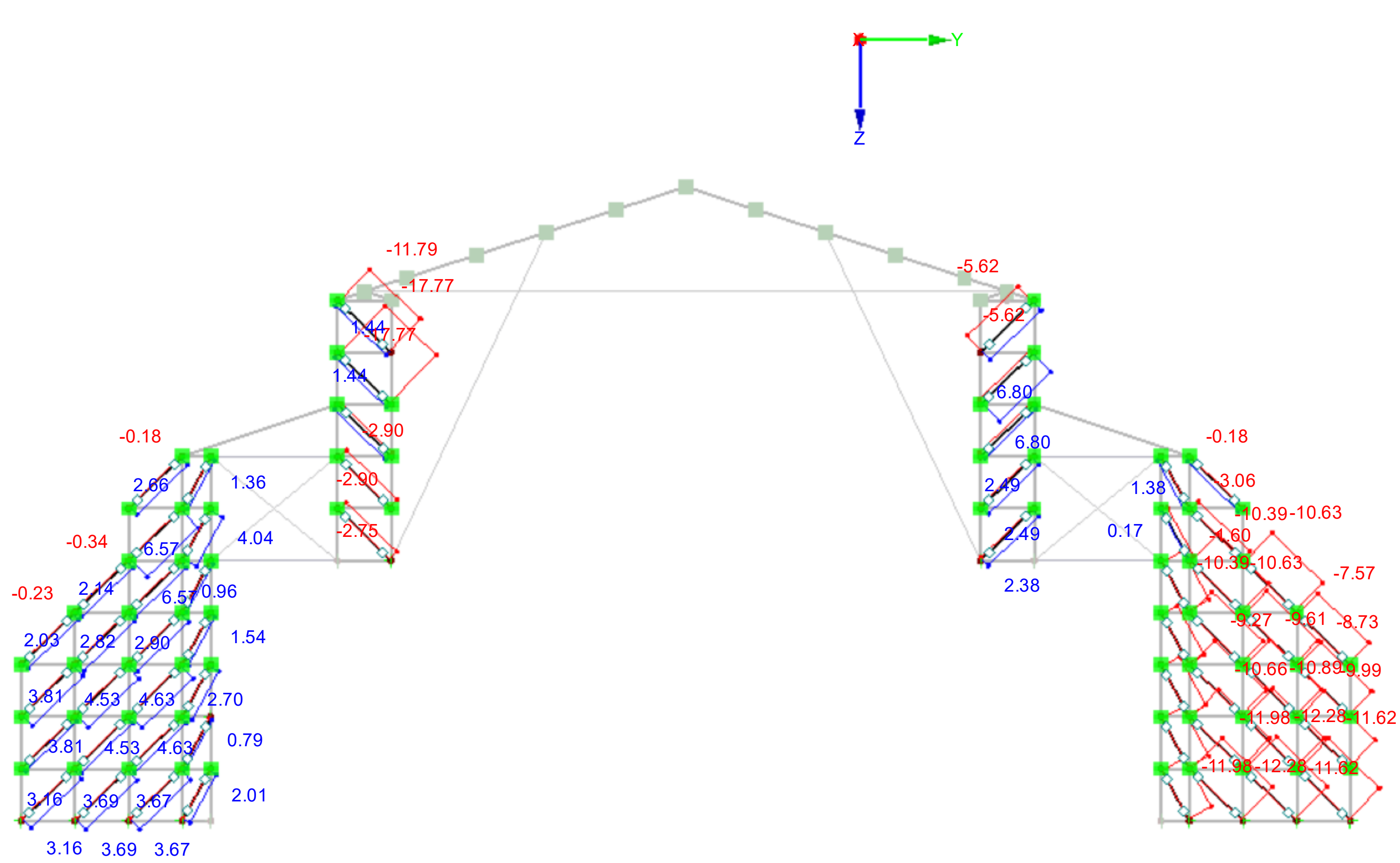
RESULTS

page:65

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 6.80, Min N: -17.77 [kN]

5.31 m

INTERNAL FORCES N

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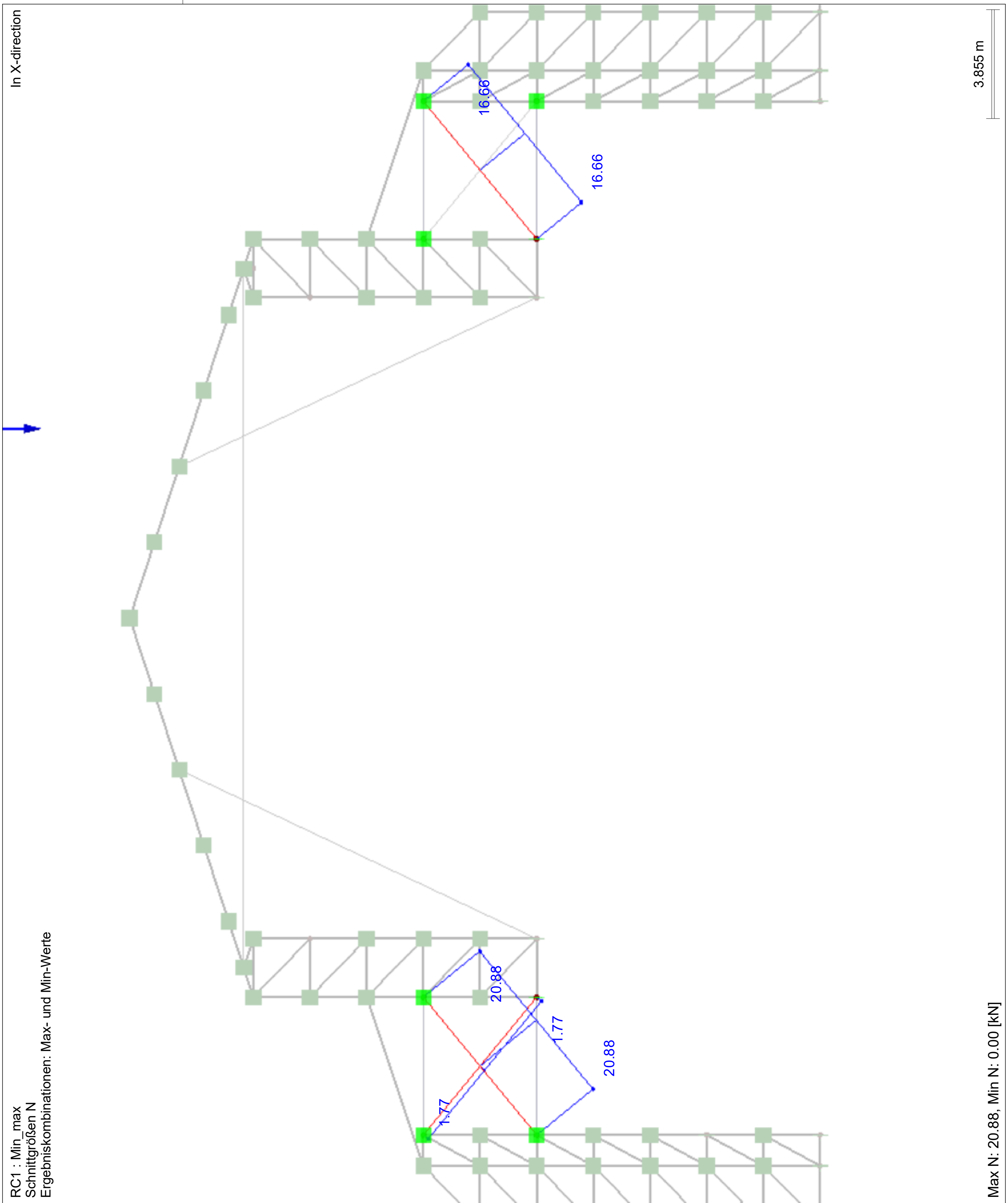
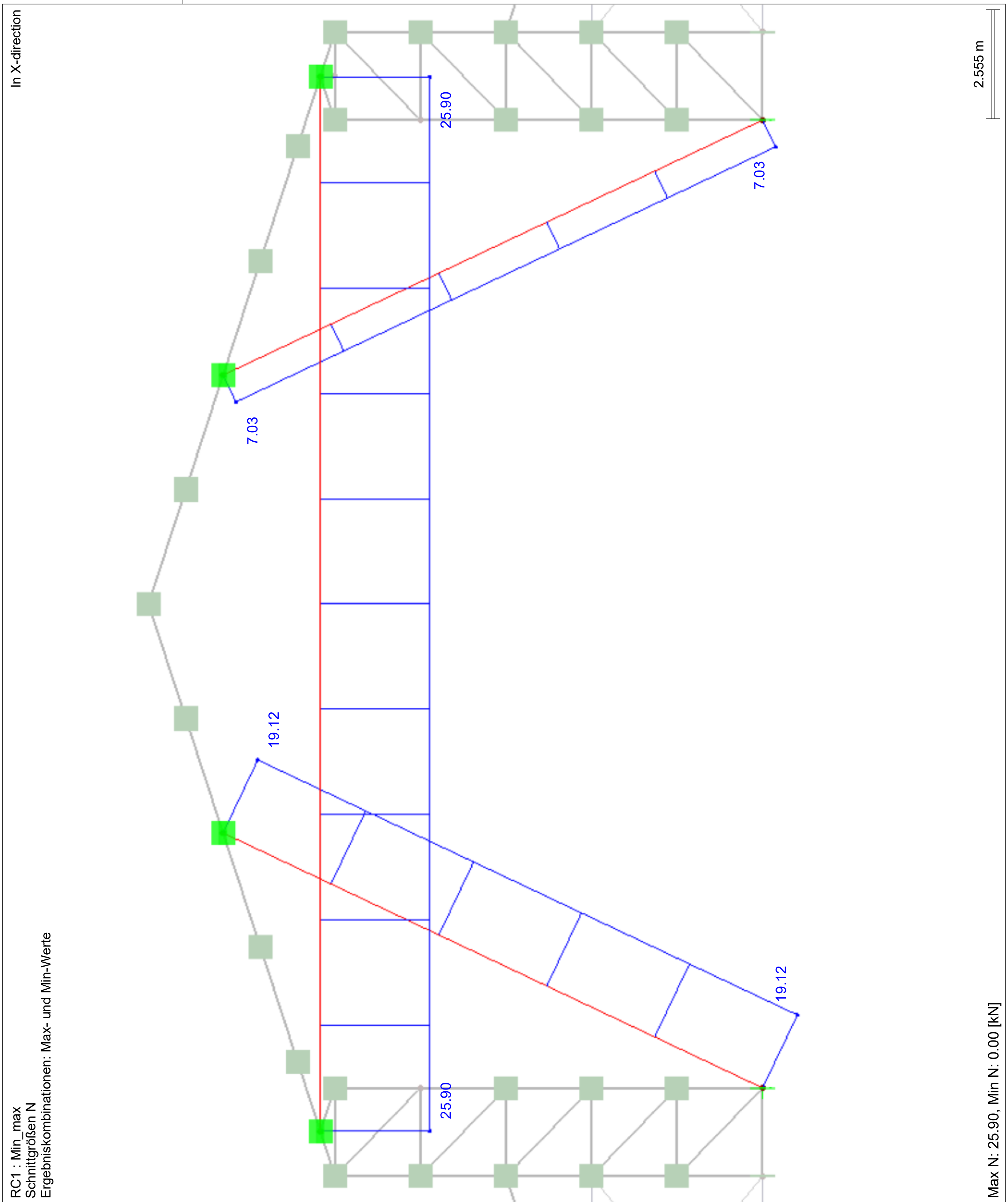
RESULTS

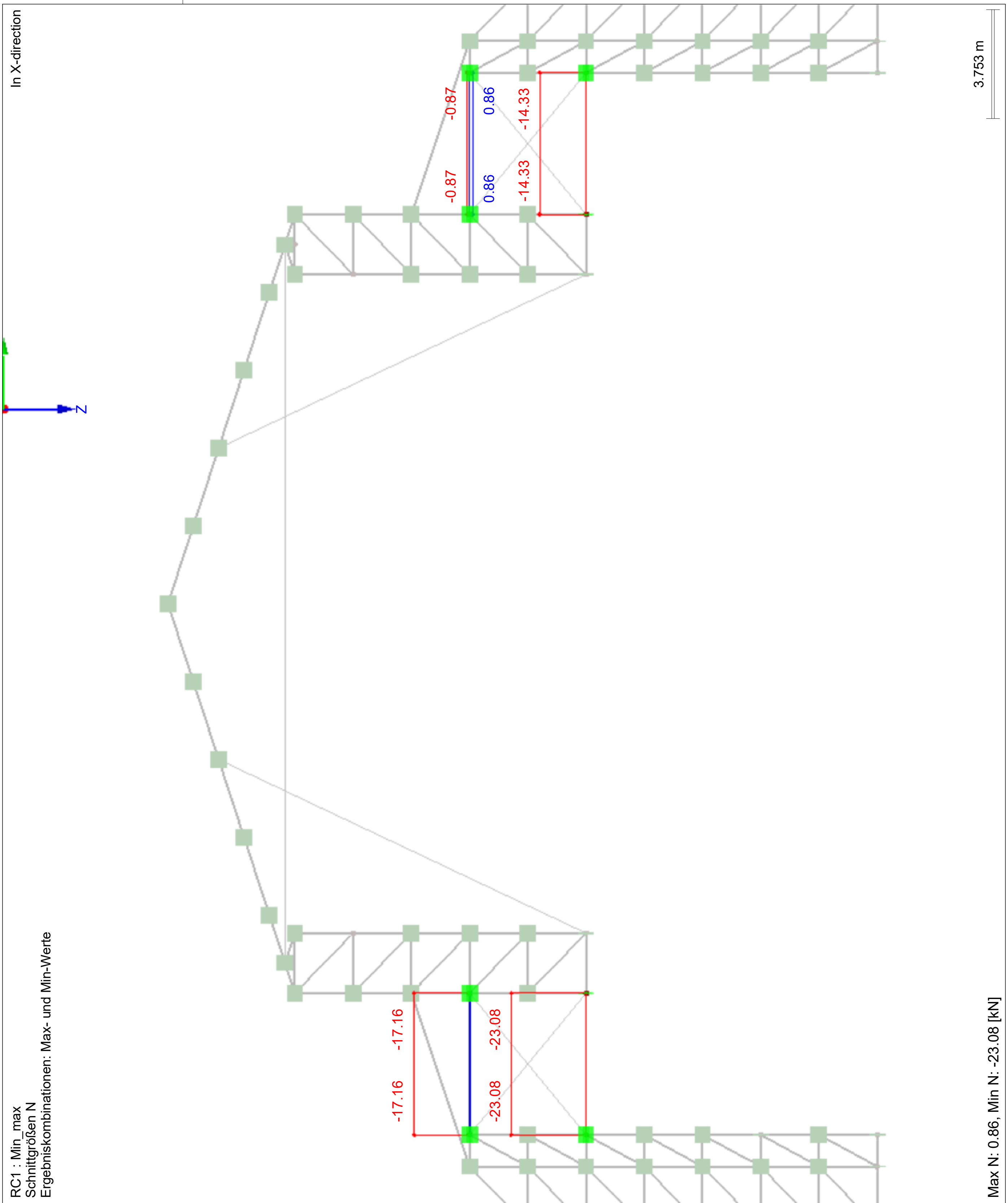
INTERNAL FORCES N



INTERNAL FORCES N

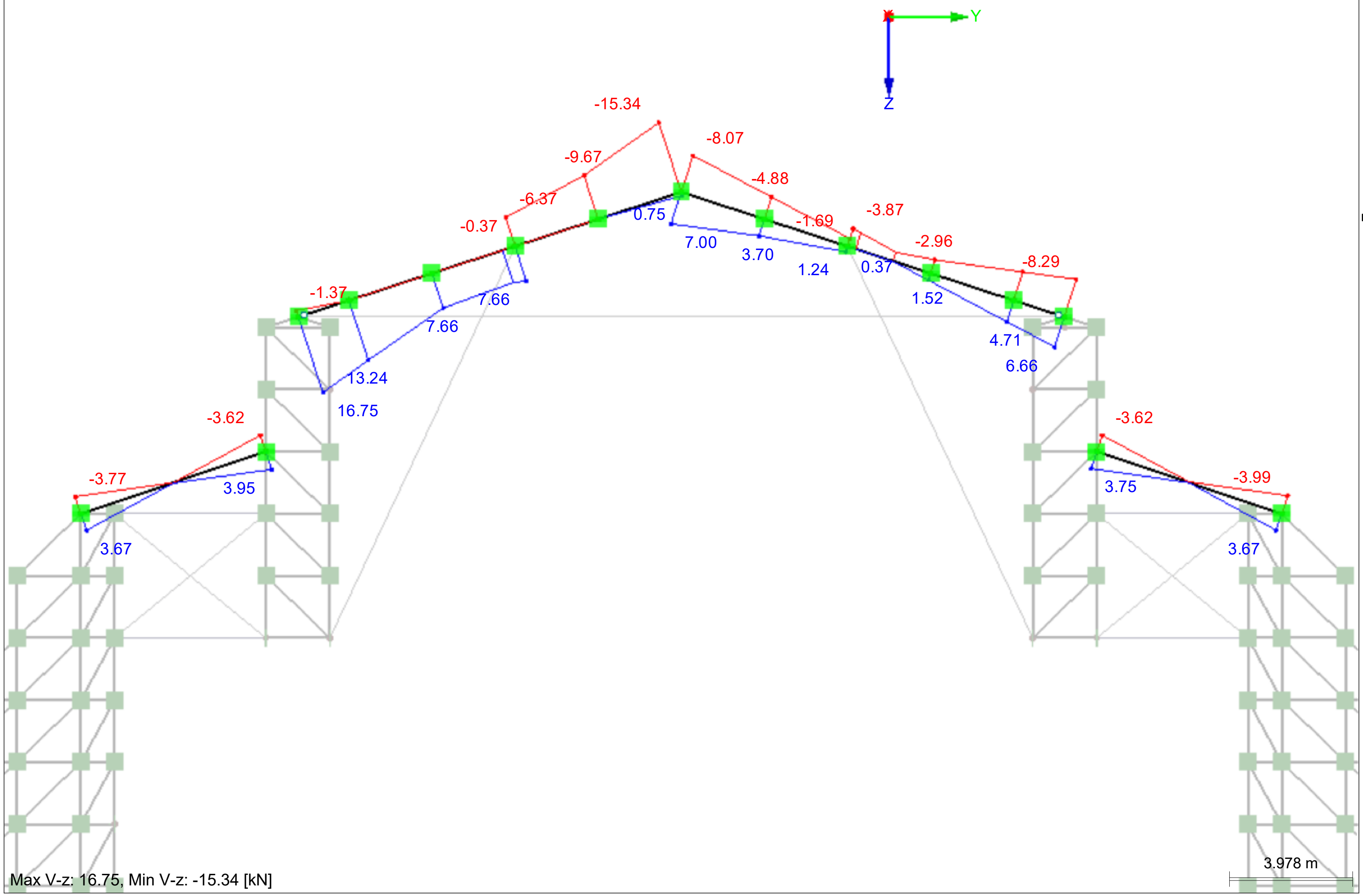


INTERNAL FORCES N



RC1 : Min_max
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max V-z: 16.75, Min V-z: -15.34 [kN]

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INTERNAL FORCES V_z

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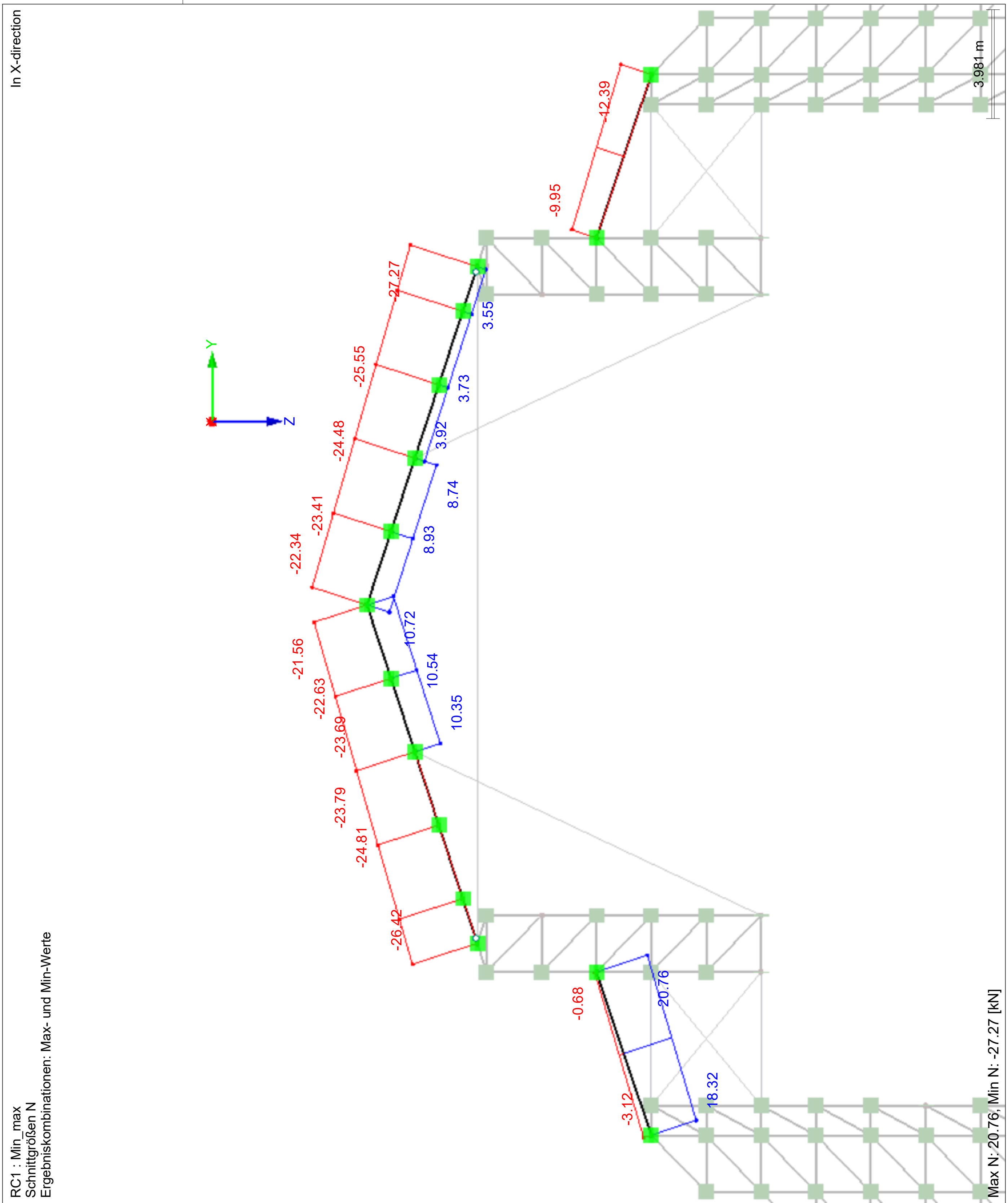
RESULTS

INTERNAL FORCES N



STEEL EC3
CA1
Bemessung nach Eurocode 3

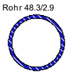
1.1 GENERAL DATA

Members to design:	229,230,234,235,254,255,259,260,276,277,281,282,298,299,303,304, 320,321,325,326,463,464,480,481,485,486,502,503,507,508,524,525, 529,530,563,564,578,579,593,594,608,609,623,624,638,639,658,659, 673,674,688,689,703,704,718,719,733,734,748,749,770,771,785,786, 800,801,815,816,830,831,845,846,860,861
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design	
Result combinations to design:	RC1 Min_max

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm^2]	Shear Modulus G [kN/cm^2]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm^2]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

1.3 CROSS-SECTIONS

Rohr 48.3/2.9


Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	1.11	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
230	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
235	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
255	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
260	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
277	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
282	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
299	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
304	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
321	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
326	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
464	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
481	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
486	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
503	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
508	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
525	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
530	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
564	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
579	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
594	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
609	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
624	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
639	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
659	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
674	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
689	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
704	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
719	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
734	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
749	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
771	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
786	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
801	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
816	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
831	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
846	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
861	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.900	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
230	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.54	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	EK1	0.09	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.09	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.11	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.200	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.200	EK1	0.38	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
235	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.04	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.800	EK1	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.09	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	0.000	EK1	0.49	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.900	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
255	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.14	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.700	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.05	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.74	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.51	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
260	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.600	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.05	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.800	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.45	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.35	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.200	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.26	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
277	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	EK1	0.21	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.600	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	1.700	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.10	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.400	EK1	1.11	> 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.13	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.13	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.08	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.100	EK1	0.11	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.06	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	EK1	0.39	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
282	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.800	EK1	0.14	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.14	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.23	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.23	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.25	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
299	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.20	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.600	EK1	0.00	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.800	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.23	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.23	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.500	EK1	0.97	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.600	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
304	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.700	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.700	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.700	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.01	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.100	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.000	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.700	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.30	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.30	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
321	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.200	EK1	0.21	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.08	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.30	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.30	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.200	EK1	0.92	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.30	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
326	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.12	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.600	EK1	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
464	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.28	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	EK1	0.41	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.03	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.100	EK1	0.19	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.600	EK1	0.44	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
481	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.200	EK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.200	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
486	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.49	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
503	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.12	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.400	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
508	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.000	EK1	0.03	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.700	EK1	0.18	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.700	EK1	0.15	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.79	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
525	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.500	EK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.500	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.500	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.800	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.04	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.28	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
530	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.900	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.19	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	EK1	0.39	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						2
564	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.28	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.19	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.200	EK1	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.900	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.05	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
579	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
594	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	EK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.400	EK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.01	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	1.600	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
609	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
624	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.07	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.400	EK1	0.07	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.04	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.400	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.04	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
639	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.11	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.11	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.05	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.000	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	EK1	0.28	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
659	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.300	EK1	0.10	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.10	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.07	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.300	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
674	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						2
689	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.00	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	1.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
704	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.300	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.200	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.300	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
719	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	1.000	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.800	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
734	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.600	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.700	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.200	EK1	0.11	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
749	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	0.000	EK1	0.31	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.31	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
771	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
786	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
801	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6

2.4 DESIGN BY MEMBER

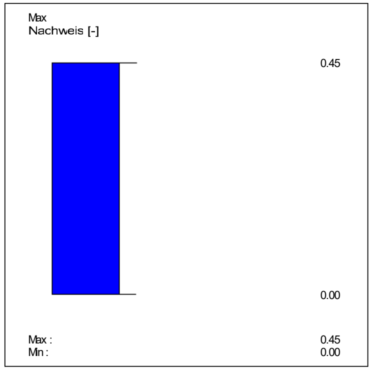
Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						6.2.6, 6.2.7 and 6.2.9
	0.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
816	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
831	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.400	EK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.100	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.400	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.900	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
846	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.700	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6

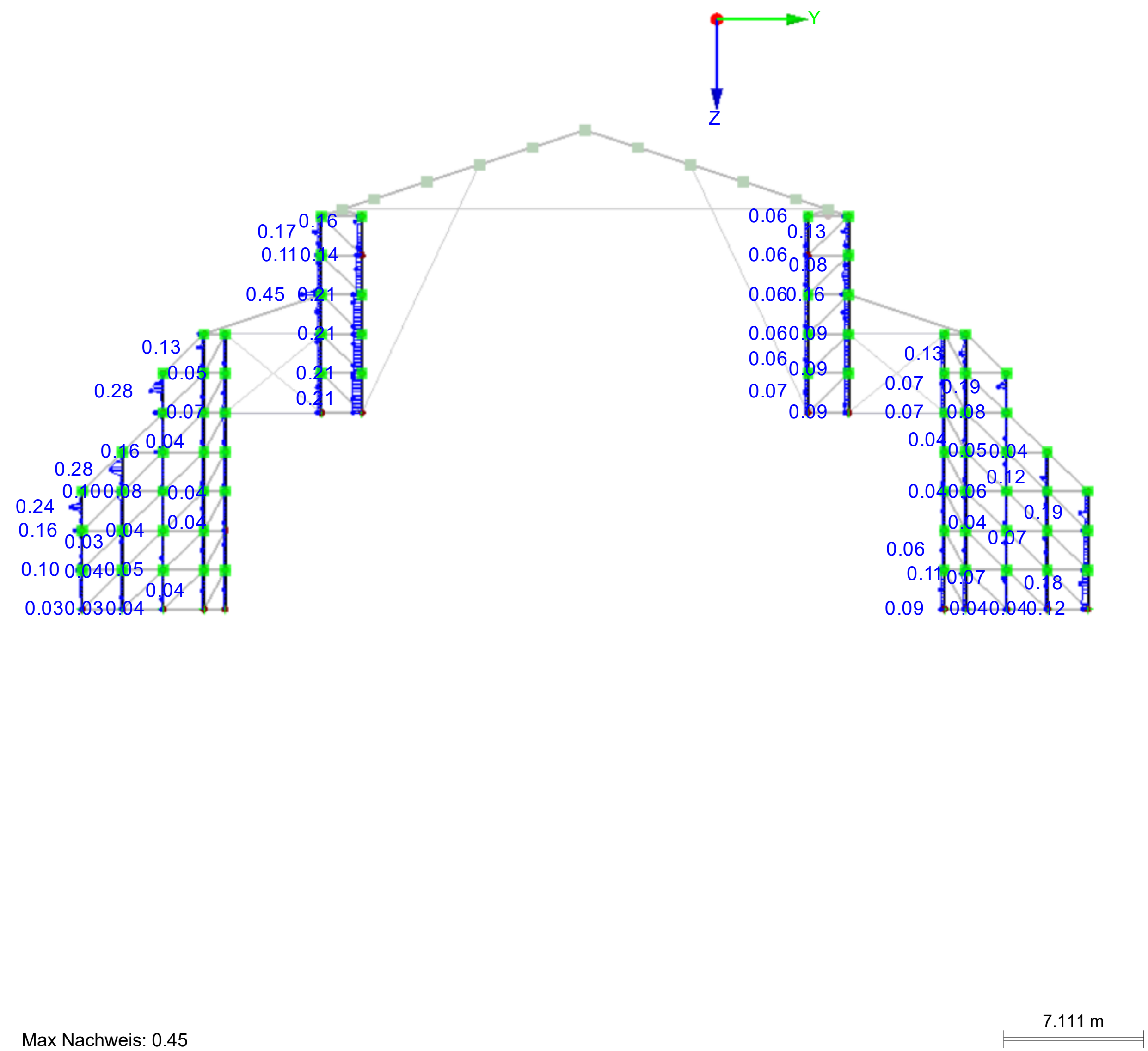
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.09	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
861	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis

In X-direction





Max Nachweis: 0.45

NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS

Project: 2023
Model: K-Dach-1
Date: 19.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RS-STAHLEC3

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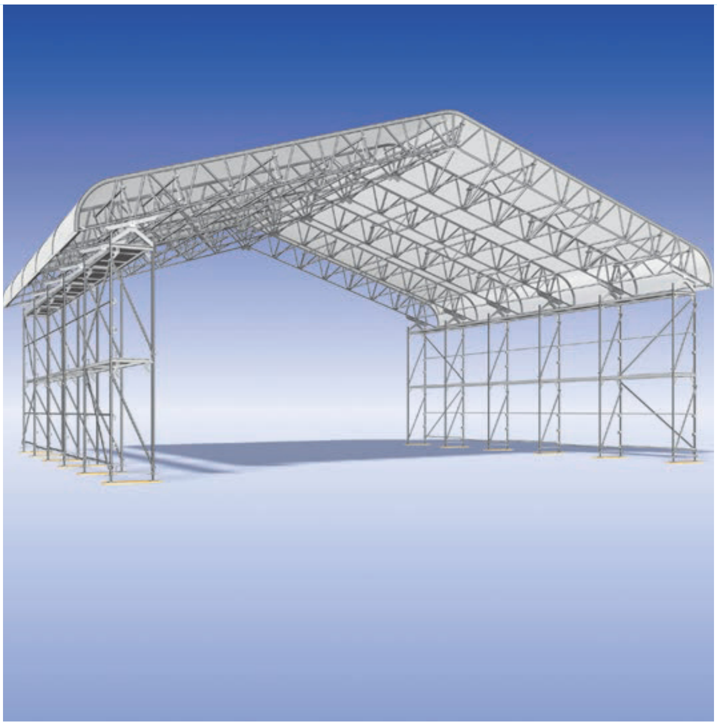
LAYHER KEDER ROOF XL
INSTRUCTIONS FOR ASSEMBLY AND USE

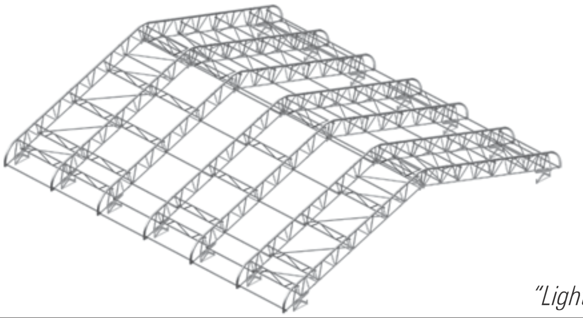


Edition 01.2014
Ref. No. 8114.261

Quality management certified according to DIN EN ISO 9001:2008 by TÜV-CERT

Bracing variants

"Light" variant:
Braces are fitted every 2.0 m, seen from the ridge. In the last horizontal brace before the ridge, no 2.0 m diagonals can be installed; they are replaced by a ledger (5972.257) and two 1.0 m diagonals (5939.100) each fitted to the bottom chord. The following 2.0 m diagonals (5939.200) are fastened to the truss posts above the snap-on claw of the brace at the bottom chord. This procedure is repeated until the opposite eaves side is reached. If no 2.0 m diagonal can be installed in the last horizontal brace on the eaves side, it must be replaced by a 1.0 m diagonal (5939.100).



"Light"

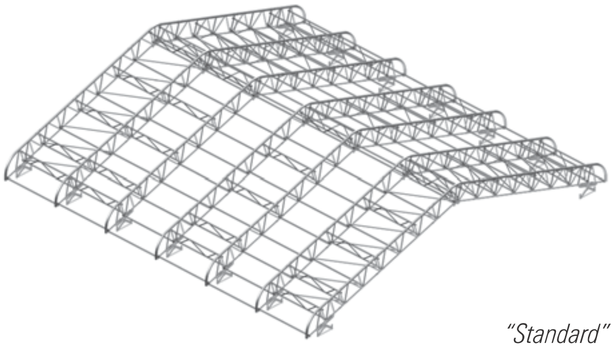
⚠ WARNING

Missing stiffening bays reduce the stability and can lead to collapse of the roof.

"Standard" variant:
Braces are fitted every 2.0 m, seen from the ridge. A ledger (5972.257) is fitted between them in such a way that it is pushed up against the bottom chord. Then the 1.0 m diagonals (5939.100) are fitted between brace and ledger. This operation is repeated as far as the eaves side until the bracing bay is completely assembled. The procedure is similar on the opposite side.

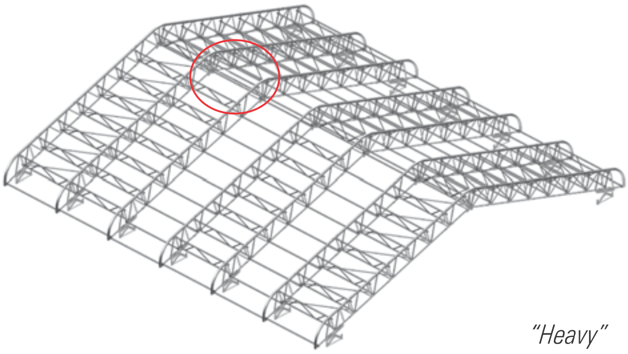
⚠ WARNING

Missing stiffening bays reduce the stability and can lead to collapse of the roof.



"Standard"

"Heavy" variant:
Braces are fitted every 1.0 m, seen from the ridge. In this case, all snap-on claws in the truss, bracing and end bays must point in the direction of the ridge! Once the first two braces have been fitted, the first diagonal (5939.100) is fastened between the braces above the snap-on claws at the bottom chord. This operation is repeated as far as the ridge until the bracing bay is completely assembled. The procedure is similar on the opposite side.
Remarks: If a truss bay is fitted in front of the bracing bay, two ledgers must be fitted to the ridge section instead of a brace.



"Heavy"

⚠ WARNING

Missing stiffening bays reduce the stability and can lead to collapse of the roof.

9. INDIVIDUAL VERIFICATION

For individual verification of the structural strength of a roof structure, the lattice-like roof trusses can be modelled in simplified form as bending beams (see Fig. 34). The effective cross-sectional values A_{eff} and I_{yeff} as per Fig. 35 can be assumed here for the beam elements. Deformation components as a result of the shear stiffness are not covered by this.

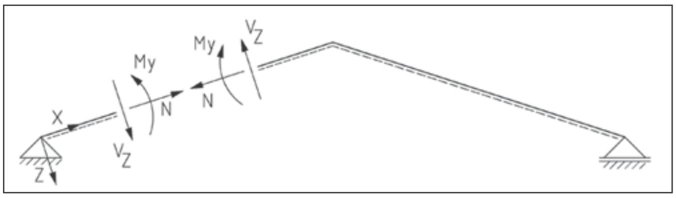


Fig. 34

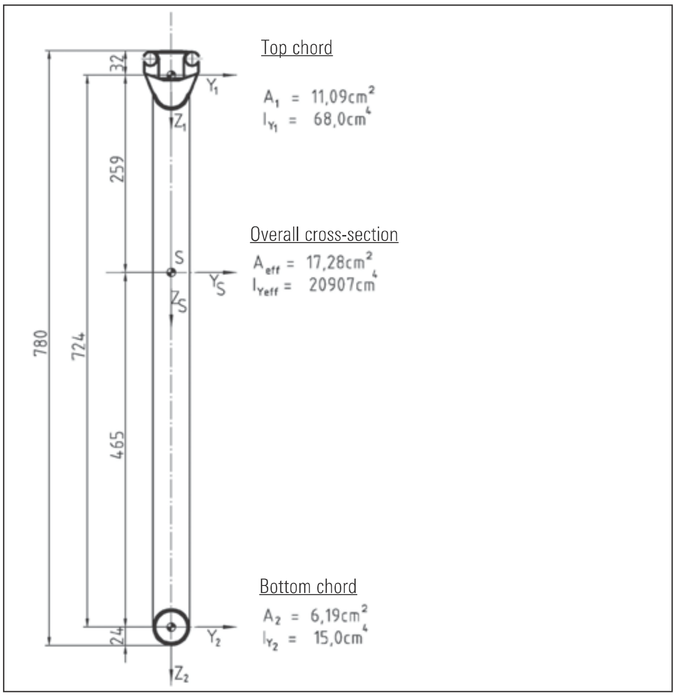


Fig. 35

The stress capabilities $V_{z,R,d}$ and $M_{y,R,d}$ of the replacement bending beam are listed in Table 5. The stress capability of the belt forces (see Table 5) is verified with the simultaneous effect of normal force and bending moment. For this verification, the normal force stresses in the top and bottom chords are determined from the beam section sizes N and M_y according to Fig. 36 and compared with the stress capability values of the top and bottom chords.

		Compression force	Tension force	Replacement beam: Bending moments (z_S = 0.724 m)		Replacement beam: Shear force
		max. $N^-_{R,d}$ [kN]	max. $N^+_{R,d}$ [kN]	max. $M^+_{y,R,d}$ [kNm]	max. $M^-_{y,R,d}$ [kNm]	$V_{Z,R,d}$ [kN]
Diagonal strut		-29.1	29.1	-	-	25.0
Heavy	Top chord with s_K = 1.0 m	-113.4	113.4	66.9	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Standard	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Light	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-13.7	-
	Bottom chord with s_K = 2.0 m	-18.9	92.4			

Table 5

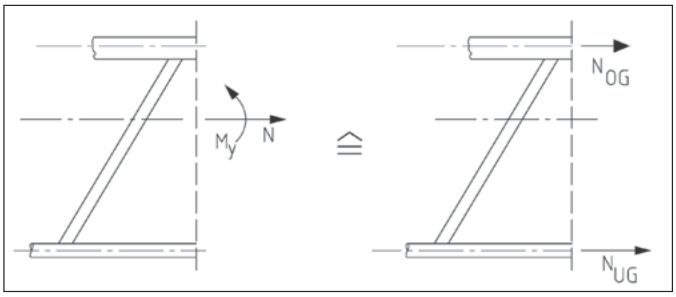


Fig. 36

$N_{OG} = 0.64 * N - M_y / 72.4$

$N_{UG} = 0.36 * N + M_y / 72.4 \quad M_y$ [kNcm]

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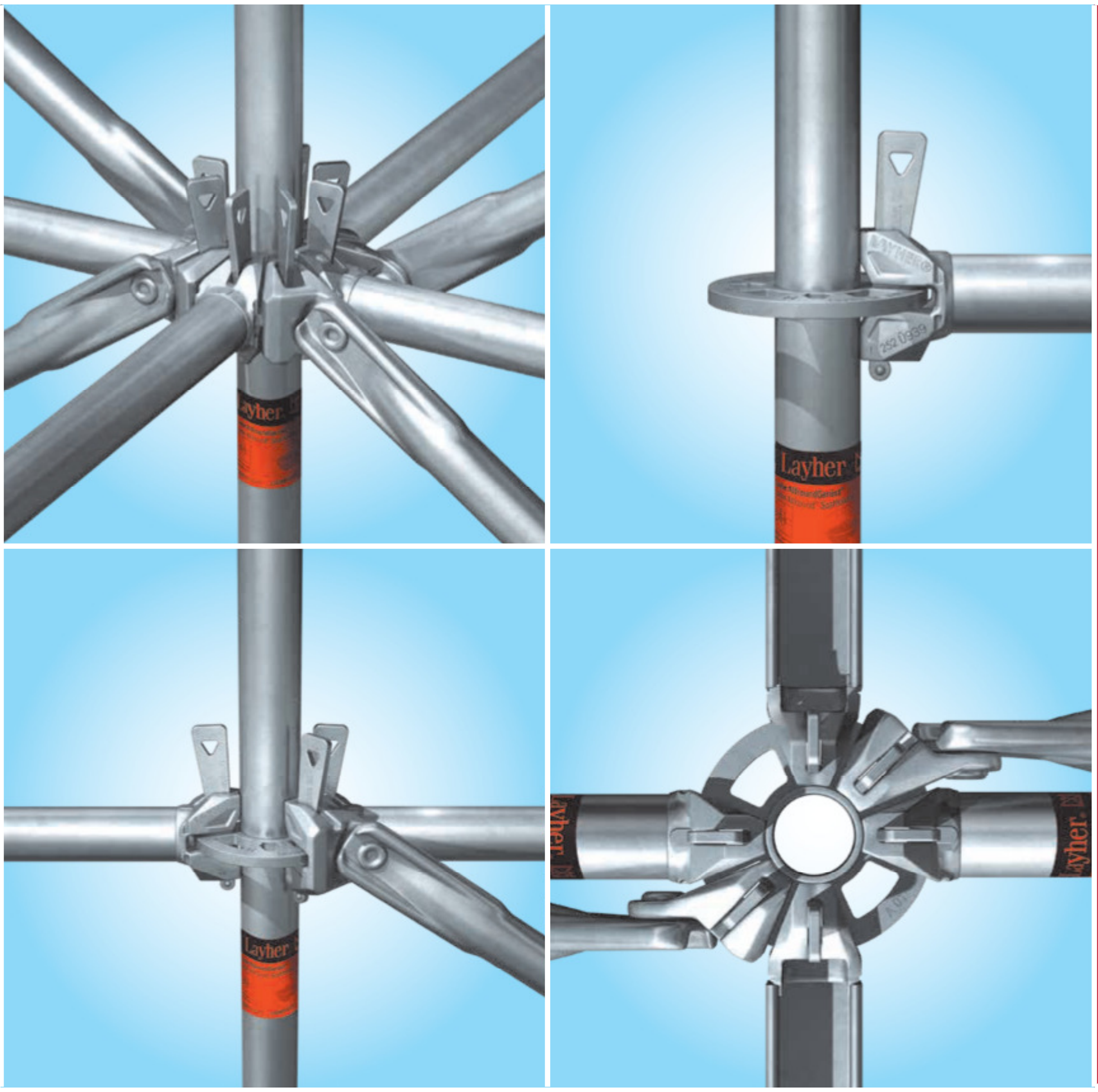
LAYHER ALLROUND SCAFFOLDING®
TECHNICAL BROCHURE



Edition 05.2022
Ref. No. 8116.207

Quality management certified according to DIN EN ISO 9001

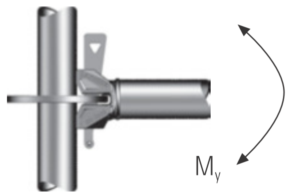
DESIGN RESISTANCES PER GERMAN APPROVAL

DESIGN RESISTANCES IN ALLROUND LEDGER CONNECTION

DESIGN RESISTANCES OF DIAGONAL BRACES TO NORMAL FORCE

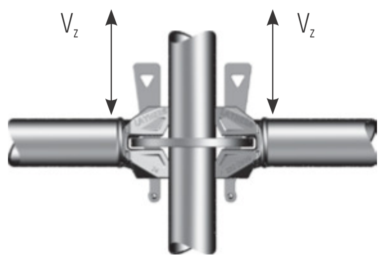
Z-8.22-939: LIGHTWEIGHT

Bending moment



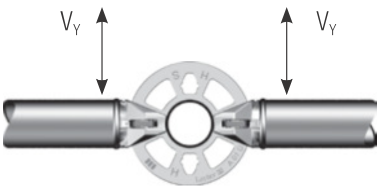
Bending moment
$M_{y,\,Rd} = \pm$ 120.0 kNcm

Vertical shear force

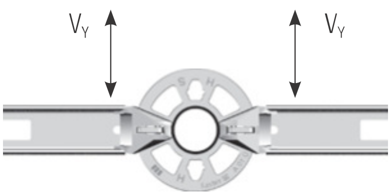


Vertical shear force single connection
$V_{z,\,Rd} = \pm$ 31.7 kN
Vertical shear force per rosette
$\sum V_{z,\,Rd} = \pm$ 117.0 kN

Horizontal shear force

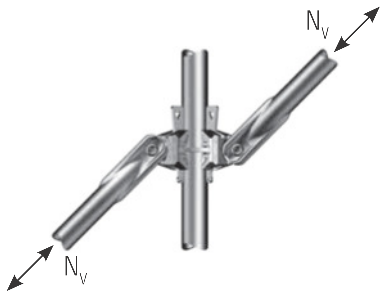


O-ledger: $V_{y,\,Rd} = \pm$ 16.6 kN

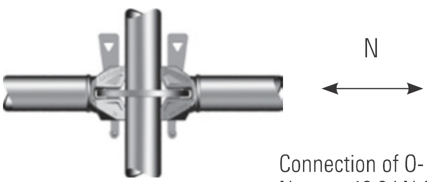


U-ledger: $V_{y,\,Rd} = \pm$ 16.6 kN

Normal force, diagonal brace



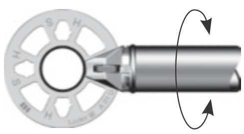
Normal force



Connection of O- and U-ledgers:
$N_{Rd} = \pm$ 42.3 kN for connection in small hole

$N_{Rd} = \pm$ 35.1 kN for connection in large hole

Torsional moment



$M_{T,\,Rd} = \pm$ 52.5 kNcm

Design resistances of vertical diagonal braces LW for bay height 2.0 m									
Bay length [m]	0.73	1.036	1.09	1.40	1.57	2.07	2.57	3.07	4.14
Compression $N_{V,Rd}$ [kN]	-18.6	-19.9	-20.1	-18.6	-17.6	-14.4	-11.7	-9.5	-6.0
Tension $N_{V,Rd}$ [kN]	+20.9	+24.2	+24.7	+25.6	+26.3	+28.5	+30.9	+32.2	+29.7

Design resistances of vertical diagonal braces LW for bay height 1.5 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-19.4	-21.3	-22.5	-17.8	-13.9	-10.8
Tension $N_{V,Rd}$ [kN]	+23.0	+25.6	+28.3	+31.6	+31.3	+29.9

Design resistances of vertical diagonal braces LW for bay height 1.0 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-21.0	-23.2	-18.7	-17.1	-15.9	-12.1
Tension $N_{V,Rd}$ [kN]	+25.3	+28.2	+32.2	+30.0	+28.7	+28.1

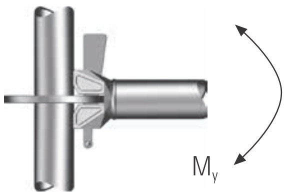
Design resistances of vertical diagonal braces LW for bay height 0.5 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-21.1	-17.2	-16.1	-15.7	-15.5	-13.0
Tension $N_{V,Rd}$ [kN]	+30.4	+30.1	+28.2	+27.4	+27.1	+26.9

Permissible forces and moments are obtained by dividing the design resistance by 1.5 (= γ_F). The index R_d stands for design resistance.

Z-8.22-64: K2000+

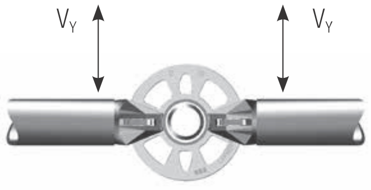
Variant K2000+ is a former generation of Allround Scaffolding

Bending moment

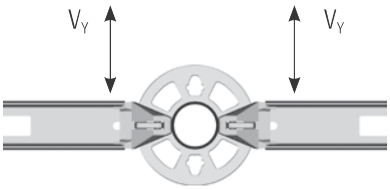


Bending moment
$M_{y,\,Rd} = \pm\ 101.0$ kNcm

Horizontal shear force

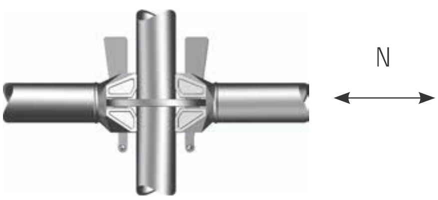


O-ledger $V_{y,\,Rd} = \pm\ 10.0$ kN



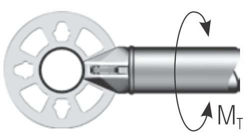
U-ledger: $V_{y,\,Rd} = \pm\ 5.9$ kN

Normal force



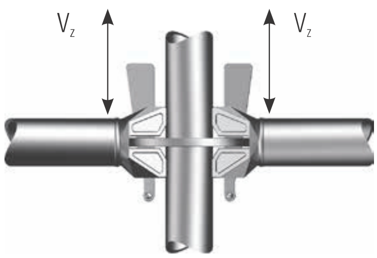
Connection of O- and U-ledgers:
$N_{Rd} = \pm\ 31.0$ kN for connection in large and small hole

Torsional moment



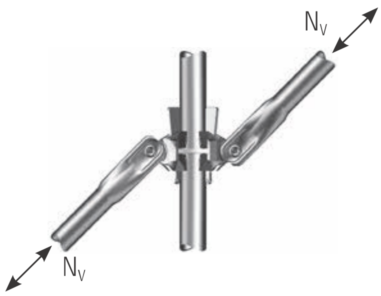
$M_{T,\,Rd} = \pm\ 52.5$ kNcm

Vertical shear force



Vertical shear force single connection
$V_{z,\,Rd} = \pm\ 26.4$ kN
Vertical shear force per rosette
$\sum V_{z,\,Rd} = \pm\ 105.6$ kN

Normal force, diagonal brace



Design resistances of vertical diagonal braces K2000+ for bay height 2.0 m									
Bay length [m]	0.73	1.036	1.09	1.40	1.57	2.07	2.57	3.07	4.14
Compression $N_{V,Rd}$ [kN]	-16.6	-17.9	-17.7	-16.3	-15.4	-12.8	-10.5	-8.5	-5.4
Tension $N_{V,Rd}$ [kN]	+18.0	+20.8	+21.2	+22.0	+22.6	+24.5	+26.7	+27.6	+25.5

Design resistances of vertical diagonal braces K2000+ for bay height 1.5 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-17.8	-20.4	-19.3	-15.5	-12.3	-9.7
Tension $N_{V,Rd}$ [kN]	+19.8	+22.0	+24.4	+27.3	+26.8	+25.6

Design resistances of vertical diagonal braces K2000+ for bay height 1.0 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-20.0	-23.1	-18.7	-17.1	-14.0	-10.8
Tension $N_{V,Rd}$ [kN]	+21.7	+24.3	+27.6	+25.7	+24.6	+24.1

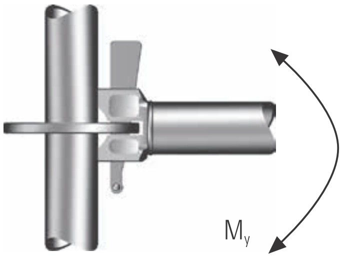
Design resistances of vertical diagonal braces K2000+ for bay height 0.5 m						
Bay length [m]	0.73	1.09	1.57	2.07	2.57	3.07
Compression $N_{V,Rd}$ [kN]	-21.1	-17.2	-16.1	-15.7	-15.2	-11.5
Tension $N_{V,Rd}$ [kN]	+26.2	+25.8	+24.1	+23.5	+23.2	+23.1

Permissible forces and moments are obtained by dividing the design resistance by 1.5 (= γ_F). The index R_d stands for design resistance.

Z-8.22-64: Variant II

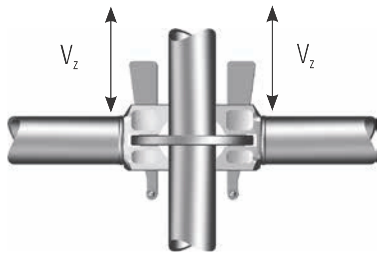
Variant II is a former generation of Allround Scaffolding

Bending moment



Bending moment
$M_{y,\,Rd} = \pm 68.0$ kNcm

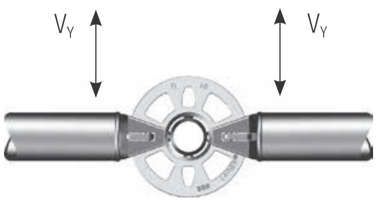
Vertical shear force



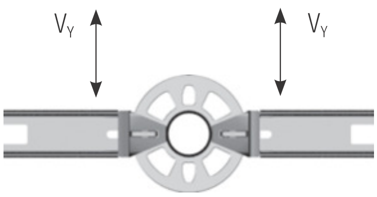
Vertical shear force single connection
$V_{z,\,Rd} = \pm 17.4$ kN

Vertical shear force per rosette
$\sum V_{z,\,Rd} = \pm 69.5$ kN

Horizontal shear force

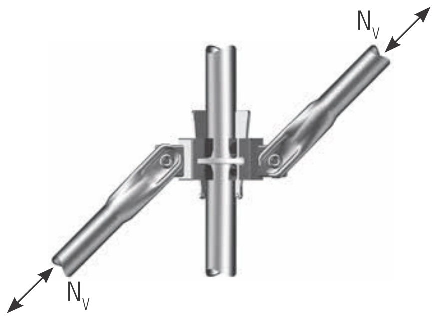


O-ledger: $V_{y,\,Rd} = \pm 6.7$ kN



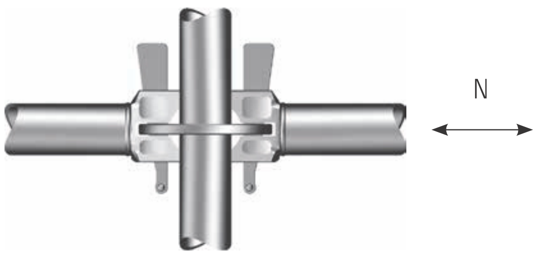
U-ledger: $V_{y,\,Rd} = \pm 5.9$ kN

Normal force, diagonal brace



Design resistances of vertical diagonal braces, Variant II for bay height 2.0 m								
Bay length [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07	4.14
Compression $N_{V,Rd}$ [kN]	-8.4							-5.3
Tension $N_{V,Rd}$ [kN]	+8.4							

Normal force



Connection of O- and U-ledgers:
$N_{Rd} = \pm 22.7$ kN for connection in large and small hole

Permissible forces and the permissible moment are obtained by dividing the design resistance by 1.5 (= γ_F). The index R_d stands for design resistance.

COMMON USE

COMPONENTS OF DIFFERENT ALLROUND SCAFFOLDING GENERATIONS

The components of different generations of Allround Scaffolding may be used together without restriction.
This is regulated in the German general building authority approvals Z-8.22-64 and Z-8.22-949.

In accordance with these approvals, the following regulations apply for the structural analysis of scaffolding structures containing components from different Allround Scaffolding generations:

Combination Allround Scaffolding components	Design resistances		Stiffnesses	
	Ledger connections	Vertical diagonal braces	Ledger connections [3]	Vertical diagonal braces
Variant II + K2000+	as Variant II	as Variant II [1]	as K2000+	as (Variant II and K2000+) [4]
LW + Variant II + K2000+ and LW + Variant II	as Variant II	as Variant II [2]	as Variant II	
LW + K2000+	as K2000+		as K2000+	

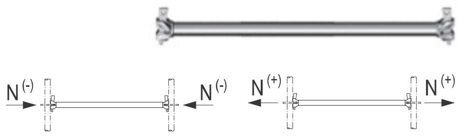
[1] If vertical diagonal braces K2000+ are used with standards of Variant II, the values approved for them in accordance with Z-8.22-64 may be used alternatively.
[2] If only vertical diagonal braces LW and / or K2000+ are used, the values approved for them may be used alternatively, see [1] and Z-8.22-949
[3] The ledger connections may – as in all Allround Scaffolding structures – also assumed to be articulated.
[4] Note: Vertical diagonal braces Variant II and vertical diagonal braces K2000+ have the same stiffnesses.

The use of Allround Scaffolding components of the first generation, Variant I, is also permissible together with Allround Scaffolding components of Variant II, K2000+ and LW without restriction. Regulations regarding the stiffnesses and design resistances of the ledger connections and diagonal braces can be found in the above approvals.

LOADING TABLES FOR ALLROUND STEEL

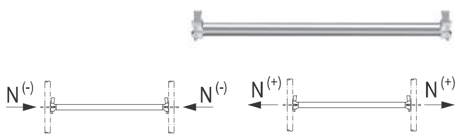
ALL SPECIFIED LOADS ARE SAFE WORKING LOADS.

O-ledger LW



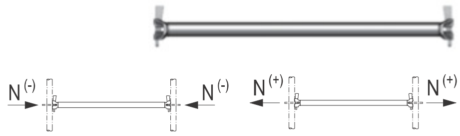
Permissible normal force O-ledger LW				
Ledger length [m]	Compression N (-) [kN]		Tension N (+) [kN]	
	Connection in small hole	Connection in large hole	Connection in small hole	Connection in large hole
≤ 1.57	-28.2	-23.4	+28.2	+23.4
2.07	-27.3	-23.4		
2.57	-18.1			
3.07	-12.9			

O-ledger Variant II



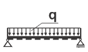
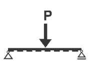
Permissible normal force O-ledger Variant II		
Ledger length [m]	Compression N (-) [kN]	Tension N (+) [kN]
≤ 2.57	-15.1	+15.1
3.07	-13.8	

O-ledger K2000+



Permissible normal force O-ledger K2000+		
Ledger length [m]	Compression N (-) [kN]	Tension N (+) [kN]
≤ 2.07	-20.7	+20.7
2.57	-19.1	
3.07	-13.8	

U-interchangeable ledger LW / U-interchangeable ledger LW reinforced

	Permissible load of U-interchangeable ledger LW / U-interchangeable ledger LW reinforced							
	Ledger type	U-LW		U-LW-V				
	Length [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
	Uniformly distributed line load (q) [kN/m]	33.3	14.4	23.3	14.6	10.6	6.8	4.7
	Concentrated load (P) in bay centre [kN]	11.3	7.5	18.3	16.2	12.2	9.8	8.2

O-ledger LW
on LW standards

Permissible load of O-ledger LW							
Ledger length (system dimension) [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Uniformly distributed line load (q) [kN/m]	29.2	14.1	8.8	7.0	4.1	2.7	1.9
Concentrated load (P) in bay centre [kN]	10.1	7.1	5.7	5.1	4.0	3.3	2.7

O-ledger LW
on K2000+ standards

Permissible load of O-ledger LW							
Ledger length (system dimension) [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Uniformly distributed line load (q) [kN/m]	29.2	14.1	8.8	7.0	4.1	2.3	1.5
Concentrated load (P) in bay centre [kN]	10.1	7.1	5.7	5.1	4.0	3.3	2.7

O-ledger K2000+
on K2000+ standards

Permissible load of O-ledger K2000+							
Ledger length (system dimension) [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Uniformly distributed line load (q) [kN/m]	22.1	10.4	6.5	5.3	3.1	2.1	1.5
Concentrated load (P) in bay centre [kN]	7.4	5.2	4.2	3.8	3.0	2.4	2.1

O-ledger Variant II
on standards Variant II

Permissible load of O-ledger Variant II							
Ledger length (system dimension) [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Uniformly distributed line load (q) [kN/m]	22.1	8.8	4.6	3.5	1.8	1.1	0.7
Concentrated load (P) in bay centre [kN]	7.4	5.2	4.1	3.5	2.4	1.8	1.4

U- and O-bridging ledgers
on standards LW, K2000+ and Variant II

Permissible load of U- / O-bridging ledgers								
Ledger type [m]	U 1.57	U 2.07	U 2.57	U 3.07	O 1.57	O 2.07	O 2.57	O 3.07
Uniformly distributed line load (q) [kN/m]	15.2	8.7	5.1	3.6	14.5	8.6	5.4	3.6
Concentrated load (P) in bay centre [kN]	8.0	6.9	5.3	5.2	10.6	6.9	4.6	3.6

O- and U-bridging ledgers are available in Variant K2000+ and Variant II

Diagonal braces, H = 2,0 m

Permissible load of vertical diagonal braces LW, H = 2.,0 m							
Bay length [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Compression force [kN]	-12.4	-13.4	-12.4	-11.7	-9.6	-7.8	-6.3
Tension force [kN]	+13.9	+16.5	+17.1	+17.5	+19.0	+20.6	+21.5

Permissible load of vertical diagonal braces K2000+, H = 2.0 m							
Bay length [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Compression force [kN]	-11.1	-11.8	-10.9	-10.3	-8.5	-7.0	-5.7
Tension force [kN]	+12.0	+14.1	+14.7	+15.1	+16.3	+17.8	+18.4

Permissible load of vertical diagonal braces Variant II = 2.0 m							
Bay length [m]	0.73	1.09	1.40	1.57	2.07	2.57	3.07
Tension / compression force [kN]	±5.6	±5.6	±5.6	±5.6	±5.6	±5.6	±5.6

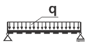
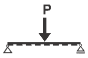
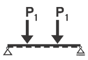
U-ledger / U-ledger reinforced / O-ledger reinforced / U-ledger LW
on standards LW, K2000+ and Variant II

Permissible load of U-ledger (U), reinforced ledger (V), O-ledger (O)							
Ledger type	U/U-LW	U-V	U-V	O-V	O-V	U-LW	U-LW
Length [m]	0.73	1.09	1.40	1.09	1.29	1.09	1.40
Uniformly distributed line load (q) [kN/m]	19.0	17.3	10.4	21.8	15.6	17.5	10.8
Concentrated load (P) in bay centre [kN]	6.1	8.8	6.8	11.0	9.3	8.6	6.4

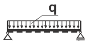
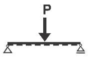
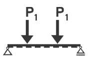
U-ledger reinforced LW / O-ledger reinforced LW
on standards LW and K2000+

Permissible load of U- / O-ledger LW reinforced											
Ledger type	U-LW-V					O-LW-V					
Length [m]	1.40	1.57	2.07	2.57	3.07	1.09	1.40	1.57	2.07	2.57	3.07
Uniformly distributed line load (q) [kN/m]	19.8	17.7	13.0	8.4	5.0	21.4	17.1	16.1	11.1	8.5	6.0
Concentrated load (P) in bay centre [kN]	19.2	17.1	12.9	10.4	8.7	19.6	19.4	17.3	13.2	10.7	9.0

ALLROUND O-LATTICE BEAM LW

	Permissible load of Allround O-lattice beam LW							
	Beam length [m]	2.07	2.57	3.07	4.14	5.14	6.14	7.71
	Bracing of top chord	A	B	C	D	E	F	G
	Uniformly distributed line load (q) [kN/m]	21.6 [A1]	11.3 [B1]	5.5 [C1]	8.5	3.6 [E1]	3.4 [F1]	1.3 [G1]
		21.6 [A2]	17.7 [B2]	14.1 [C2]		7.7 [E2]	6.2 [F2]	4.5 [G2]
	Concentrated load (P) in bay centre [kN]	26.9 [A1]	14.2 [B1]	8.3 [C1]	25.8	13.6 [E1]	10.3 [F1]	5.1 [G1]
		35.3 [A2]	37.2 [B2]	[13.9[1] / 32.4[2]] [C2]		27.3 [E2]	21.7 [F2]	17.1 [G2]
	Two concentrated loads (P_1) in the one-third points [kN]	–	–	–	–	–	–	3.9 [G1]
								12.8 [G2]

ALLROUND O-LATTICE BEAMS K2000+ AND VARIANT II

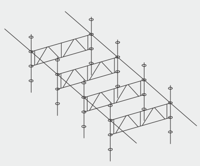
	Permissible load of Allround O-lattice beams K2000+ and Variant II							
	Beam length [m]	2.07	2.57	3.07	4.14	5.14	6.14	7.71
	Bracing of top chord	A1	B	C	D	E	F	G
	Uniformly distributed line load (q) [kN/m]	16.7	11.0 [B1]	5.5 [C1]	7.3	3.6 [E1]	3.4 [F1]	1.3 [G1]
			12.7 [B2]	10.1 [C2]		5.5 [E2]	4.5 [F2]	3.3 [G2]
	Concentrated load (P) in bay centre [kN]	25.4	14.2 [B1]	8.3 [C1]	25.8	13.6 [E1]	10.3 [F1]	5.1 [G1]
			26.7 [B2]	[11.2[1] / 23.3[2]] [C2]		23.4 [E2]	18.8 [F2]	14.8 [G2]
	Two concentrated loads (P_1) in the one-third points [kN]	–	–	–	–	–	–	3.9 [G1]
								11.1 [G2]

[1] Concentrated load exactly in the centre of the lattice beam (= between the two central posts)
[2] Concentrated load above one of the central posts

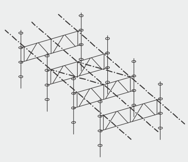
BRACING OF THE LATTICE BEAMS WITH TUBES AND COUPLERS

Lattice beam 2.07 m

A1: No bracing

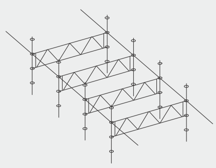


A2 : In the centre, at post* or at top chord**

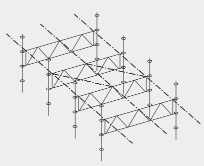


Lattice beam 2.57 m

B1: No bracing

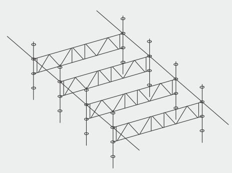


B2: In the centre, at top chord**

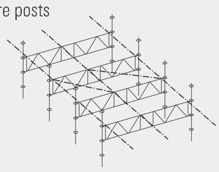


Lattice beam 3.07 m

C1: No bracing

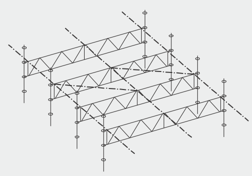


C2: At one of the centre posts* or at top chord** between the centre posts



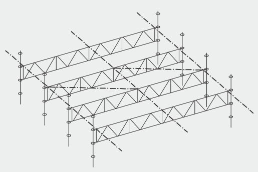
Lattice beam 4.14 m

D: In the centre: at post* or at top chord**

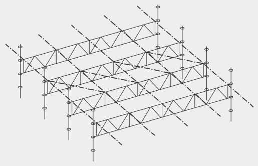


Lattice beam 5.14 m

E1: In the centre, at post* or at top chord**

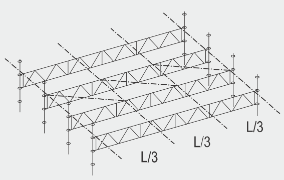


E2 : at the posts*

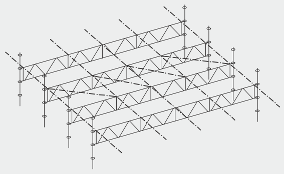


Lattice beam 6.14 m

F1: At top chord** in the one-third points

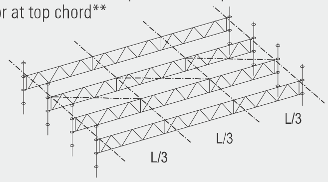


F2: at the posts*

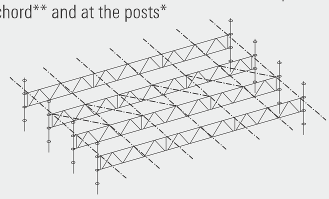


Lattice beam 7.71 m

G1: In the one-third points: at the posts* or at top chord**



G2: In 6 intervals each of 1.285 m, at the top chord** and at the posts*



* Bracing at the posts means: longitudinal tubes at the posts, connected directly underneath the top chord. The horizontally / diagonally running tubes are connected to the longitudinal tubes.

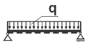
** Bracing at the top chord means: longitudinal tubes connected to the top chord. The horizontally / diagonally running tubes are connected to the longitudinal tubes.

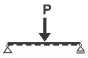
Horizontally / diagonally running tubes in at least every 5th bay.

The sketches illustrate the principle. Support scaffolding including its bracing and side protection is not illustrated.

ALLROUND U-LATTICE BEAM LW, K2000+

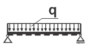
Permissible loads when the lattice beams are completely covered with U-decks secured with lift-off preventer

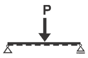




Permissible load of Allround U-lattice beams LW and K2000+												
Beam type	Allround U-lattice beams LW						Allround U-lattice beams K2000+					
Beam length [m]	2.07	2.57	3.07	4.14	5.14	6.14	2.07	2.57	3.07	4.14	5.14	6.14
Uniformly distributed line load (q) [kN/m]	20.0	16.5	13.7	10.1	7.8	6.1	17.3	12.5	10.2	7.3	5.2	4.3
Concentrated load (P) in bay centre [kN]	33.9	37.2	15.8[1] / 32.4[2]	34.7	28.4	23.4	25.1	26.6	8.2[1] / 19.5[2]	16.2	15.9	10.9

Permissible loads when the lattice beams are braced with tubes and couplers or when the lattice beams are not braced





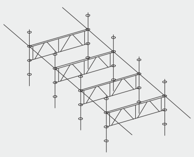
Permissible load of Allround U-lattice beams LW and K2000+												
Beam type	Allround U-lattice beams LW						Allround U-lattice beams K2000+					
Beam length [m]	2.07	2.57	3.07	4.14	5.14	6.14	2.07	2.57	3.07	4.14	5.14	6.14
Bracing of top chord	A	B	C	D	E	F	A	B	C	D	E	F
Uniformly distributed line load (q) [kN/m]	20.0	14.9	7.6 [C1] 13.7 [C2]	10.7	5.0 [E1] 7.8 [E2]	2.5 [F1] 6.1 [F2]	17.3	12.5	7.5 [C1] 10.2 [C2]	7.3	4.6 [E1] 5.2 [E2]	2.4 [F1] 4.3 [F2]
Concentrated load (P) in bay centre [kN]	33.9	19.2	(11.7[1,2]) [C1] (15.8[1] / 32.4[2]) [C2]	33.8	18.9 [E1] 28.4 [E2]	11.4 [F1] 23.4 [F2]	25.1	17.9	(8.2[1] / 11.3[2]) [C1] (8.2[1] / 19.5[2]) [C2]	16.2	15.9 [E1, E2]	10.9 [F1, F2]

[1] Concentrated load exactly in the centre of the lattice beam (= between the two central posts)
[2] Concentrated load above one of the central posts

BRACING OF THE LATTICE BEAMS WITH TUBES AND COUPLERS

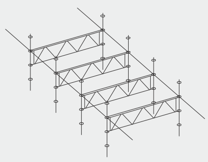
Lattice beam 2.07 m

A: No bracing



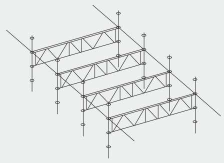
Lattice beam 2.57 m

B: No bracing

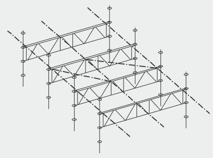


Lattice beam 3.07 m

C1: No bracing

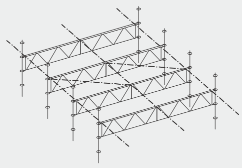


C2: At one of the centre posts*



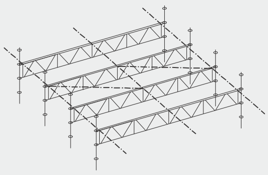
Lattice beam 4.14 m

D: In the centre, at the post*

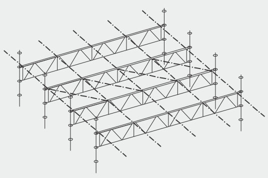


Lattice beam 5.14 m

E1: In the centre, at the post*

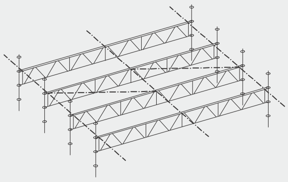


E2 : At all posts*

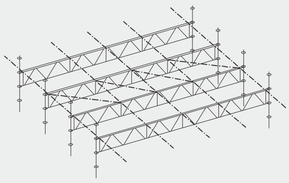


Lattice beam 6.14 m

F1: In the centre, at the post*



F2: At all posts*

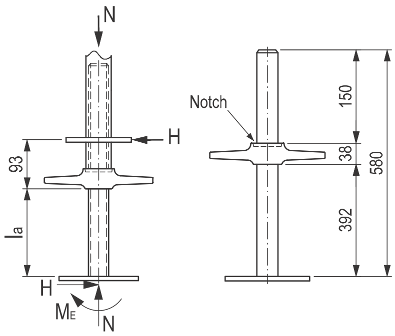


* Bracing at the posts means: longitudinal tubes at the posts, connected directly underneath the top chord. The horizontally / diagonally running tubes are connected to the longitudinal tubes.

Horizontally / diagonally running tubes in at least every 5th bay.

The sketches illustrate the principle. Support scaffolding including its bracing and side protection is not illustrated.

BASE PLATE 60 SOLID LOADING TABLE



Equivalent section properties
of the thread

$A = 8.80\ cm^2$
$W_{el} = 3.84\ cm^3$
$W_{pl} = 4.79\ cm^3$
$I = 6.51\ cm^4$

Material: EN 10025-2-S355J2
→ Rolled thread: $f_{y,k} = 360.0\ N/mm^2$

Permissible load of base plate 60 solid

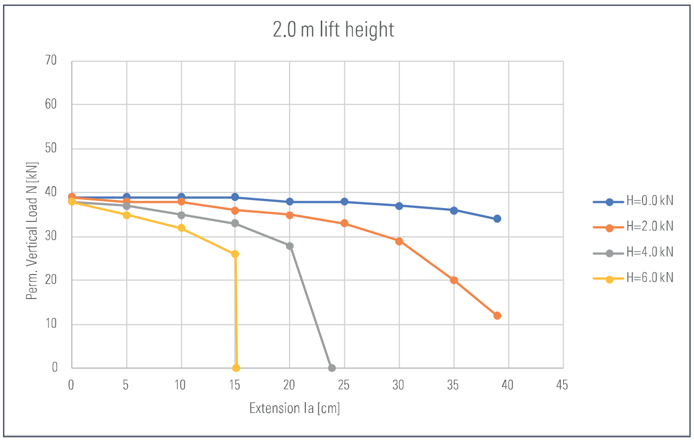
Extension l_a [cm]	Permissible vertical load N [kN] in case of a simultaneously acting horizontal load H [kN] for different lift heights																					Perm. horizontal load H [kN], when N = 0 kN
	H = 0.0			H = 1.0			H = 2.0			H = 3.0			H = 4.0			H = 5.0			H = 6.0			
	Level [m]																					
	2.0	1.5	1.0	2.0	1.5	1.0	2.0	1.5	1.0	2.0	1.5	1.0	2.0	1.5	1.0	2.0	1.5	1.0	2.0	1.5	1.0	
0	39[1]	54[2]	69	39[1]	54[2]	68	39[1]	53	67	39[1]	53	65	38	52	64	38	51	62	38	50	61	43.6
5	39[1]	54[2]	68	39[1]	53	66	38	52	64	38	50	61	37	48	59	36	47	56	35	45	53	14.1
10	39[1]	53	67	38	52	64	38	49	61	36	47	57	35	45	53	33	42	49	32	40	44	8.4
15	39[1]	53	66	38	50	61	36	47	57	35	43	52	33	41	46	29	38	40	26	34	31	6.0
20	38	51	64	37	48	58	35	44	52	31	41	46	28	36	39	–	–	29	–	–	–	4.7
25	38	50	61	36	45	54	33	41	47	28	37	39	–	–	–	–	–	–	–	–	–	3.8
30	37	48	57	34	43	50	29	38	41	11	15	27	–	–	–	–	–	–	–	–	–	3.2
35	36	45	53	30	40	44	20	27	31	–	–	–	–	–	–	–	–	–	–	–	–	2.8
39	34	42	48	27	35	36	12	13	18	–	–	–	–	–	–	–	–	–	–	–	–	2.5

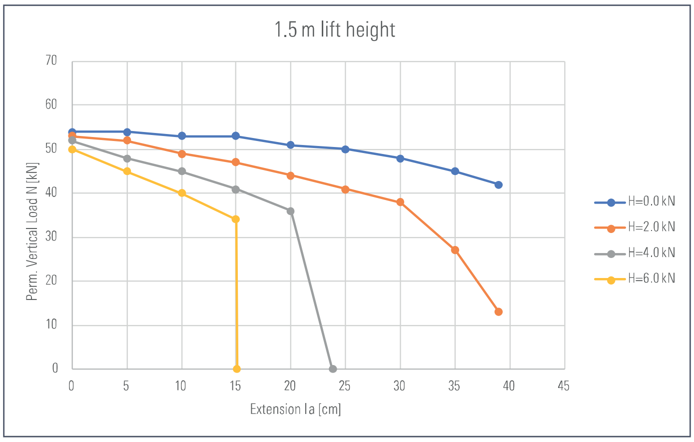
The permissible vertical loads are calculated by application of the calculation model according to DIN EN 12811-1, para. 10.2.3.2. To consider the bending stiffness of the Allround standard, the effects from second-order theory and the maximum load-bearing capacity of the standards, birdcage scaffolding with modular dimension 2.57 x 2.57 m and different lift heights was considered.

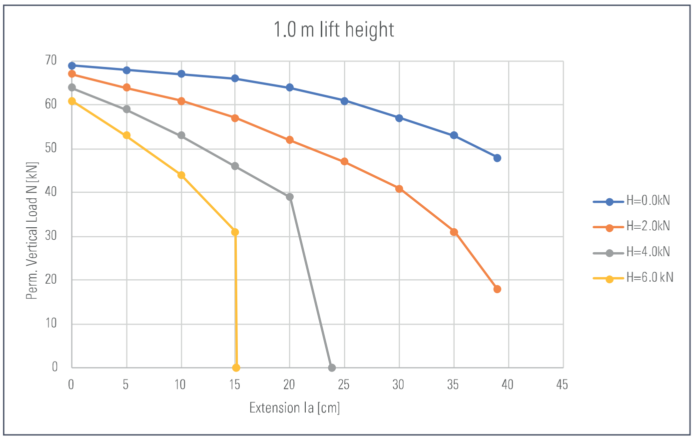
(–) With this combination of spindle extension and horizontal load, the load-bearing capacity of the spindle is exceeded.

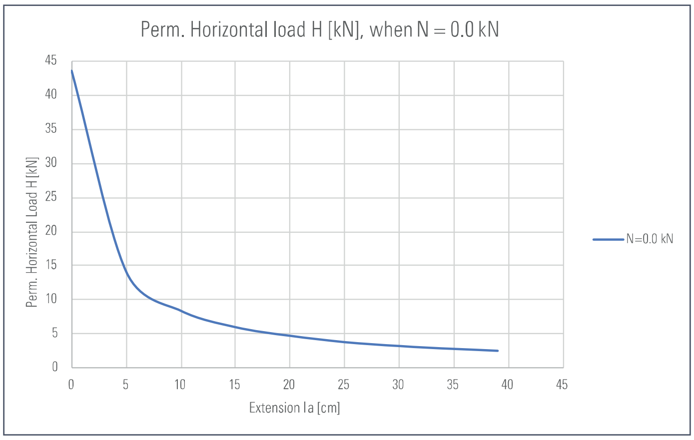
[1] Here the permissible vertical load of the standard at 2.0 m lift height is reached (39 kN)
[2] Here the permissible vertical load of the standard at 1.5 m lift height is reached (54 kN)

GRAPHIC DISPLAY OF TABLE VALUES









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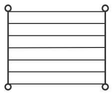
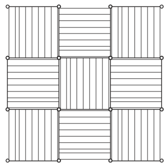
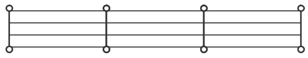
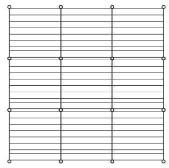
TYPES OF DECK LEVELS IN ALLROUND SCAFFOLDING

Decks on the ledger on one side*		Decks on the ledger on both sides*	
Tower scaffolding	Birdcage scaffolding: Decks alternating	Facade scaffolding	Birdcage scaffolding: Decks unidirectional
			

* Ledger = support ledger on which the decks are laid

LOAD CLASSES OF DECK LEVELS IN ALLROUND SCAFFOLDING

Load classes for deck levels in Allround Scaffolding

Ledger connection to standard/type	Ledger type	Ledger length [m]	perm. line load of ledger [kN/m]	Steel decks on the ledger on one side												Steel decks on the ledger on both sides											
				permissible load class with deck length [m]												permissible load class with deck length [m]											
				1.57			2.07			2.57			3.07			1.57			2.07			2.57			3.07		
				NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL	NL	6 m²	PL
Allround standards LW, K2000+ or Variant II	O ledger K2000+	0.73	22.07	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+
		1.09	10.44	6	6	6	6	6	6	6	6	5	5^+	5^+	4^+	6	6	5	5	5	4	4	4	4	4	4	–
		1.40	6.54	6	6	6	6	6	5	5	5	4	4	4	4	4	4	4	3	3	–	3	3	–	2	3	–
		1.57	5.26	6	6	5	5	5	4	4	4	4	4	4	–	4	4	–	3	3	–	2	2	–	2	2	–
		2.07	3.12	4	4	4	3	3	–	3	3	–	2	2	–	2	2	–	1	1	–	1	1	–	1	1	–
		2.57	2.06	3	3	–	2	2	–	1	1	–	1	1	–	1	1	–	1	1	–	–	–	–	–	–	–
		3.07	1.46	2	2	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allround standards K2000+ or Variant II	O-ledger LW	0.73	29.24	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}
		1.09	14.09	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	5	5	5	5	4	4	4
		1.40	8.76	6	6	6	6	6	6	6	6	5	5	5	4^+	5	5	5	4	4	4	4	4	–	3	3	–
		1.57	7.03	6	6	6	6	6	5	5	5	5	4	4	4	4	4	4	4	4	–	3	3	–	3	3	–
		2.07	4.09	5	5	5	4	4	4	3	3	–	3	3	–	3	3	–	2	2	–	1	1	–	1	1	–
		2.57	2.33	3	3	–	3	3	–	2	2	–	1	1	–	1	1	–	1	1	–	–	–	–	–	–	–
		3.07	1.48	2	2	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Allround standards LW	O-ledger LW	0.73	29.24	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}
		1.09	14.09	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	5	5	5	5	4	4	4
		1.40	8.76	6	6	6	6	6	6	6	6	5	5	5	4^+	5	5	5	4	4	4	4	4	–	3	3	–
		1.57	7.03	6	6	6	6	6	5	5	5	5	4	4	4	4	4	4	4	4	–	3	3	–	3	3	–
		2.07	4.09	5	5	5	4	4	4	3	3	–	3	3	–	3	3	–	2	2	–	1	1	–	1	1	–
		2.57	2.65	4	4	–	3	3	–	2	2	–	2	2	–	1	2	–	1	1	–	1	1	–	–	–	–
		3.07	1.85	3	3	–	2	2	–	1	1	–	1	1	–	1	1	–	–	–	–	–	–	–	–	–	–
Allround standards LW, K2000+ or Variant II	O-ledger reinforced	1.09	21.82	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+
	O-bridging ledger	1.57	14.46	6	6	6	6	6	6	6	6	5	5^+	5^+	4^{++}	6	6	6	6	6	5	5	5	5	5	5	4
		2.07	8.63	6	6	6	6	6	6	6	6	5	5	5	4^+	5	5	5	4	4	4	4	4	–	3	4	–
		2.57	5.37	6	6	5	5	5	5	4	4	4	4	4	4	4	4	–	3	3	–	2	3	–	2	2	–
		3.07	3.53	4	4	4	4	4	–	3	3	–	3	3	–	3	3	–	1	2	–	1	1	–	1	1	–
	U-ledger	0.73	19.01	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5^+	5^+	4^+
	U-ledger, reinforced	1.09	17.34	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+	6	6	6	6	6	6	6	6	5	5	5^+	4^+
		1.40	10.42	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+	6	6	5	5	5	4	4	4	4	4	4	–
	U-bridging ledger	1.57	15.16	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	5	5	5	5	5	5	4
		2.07	8.65	6	6	6	6	6	6	6	6	5	5	5	4^+	5	5	5	4	4	4	4	4	–	3	4	–
		2.57	5.12	6	6	5	5	5	4	4	4	4	4	4	–	4	4	–	3	3	–	2	3	–	1	2	–
		3.07	3.59	4	4	4	4	4	–	3	3	–	3	3	–	3	3	–	2	2	–	1	1	–	1	1	–
Allround standards LW or K2000+ or Variant II	U-ledger LW	1.09	17.55	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5	5	4^+
		1.40	10.84	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+	6	6	5	5	5	5	4	4	4	4	4	4
	U-ledger LW reinforced	1.40	19.80	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5^+	5^+	4^+
		1.57	17.70	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5	5^+	4^+
		2.07	13.00	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	5	5	5	4	4	5	4
		2.57	8.40	6	6	6	6	6	6	6	6	5	5	5	4^+	5	5	5	4	4	4	4	4	–	3	4	–
		3.07	5.00	6	6	5	5	5	4	4	4	4	4	4	–	3	4	–	3	3	–	2	3	–	1	2	–
	O-ledger LW reinforced	1.09	21.40	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5^+	5^+	4^+
		1.40	17.10	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	6	6	6	5	5	5	4^+
		1.57	16.10	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^{++}	6	6	6	6	6	5	6	6	5	5	5	4^+
		2.07	11.10	6	6	6	6	6	6	6	6	5^+	5^+	5^+	4^+	6	6	5	5	5	5	4	5	4	4	4	4
		2.57	8.50	6	6	6	6	6	6	6	6	5	5	5	4	5	5	5	4	4	4	4	4	[illegible]	[illegible]	4	–
		3.07	6.00	6	6	5	5	5	5	4	5	4	4	4	4	4	4	4	3	4	–	3	3	–	2	3	–

APPLICATION OF THE TABLE FOR LOAD CLASSES OF DECK LEVELS IN ALLROUND SCAFFOLDING

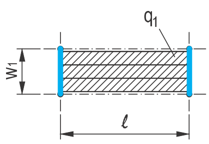
Designation	Explanation	Sketch or example

NL

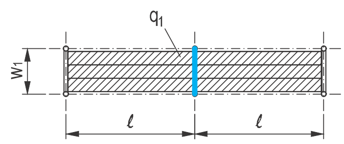
Nominal load q_1 as per EN 12811-1, Table 3
evenly distributed over the entire area:

Load class	Associated nominal load q_1 [kN/m²]
1	0.75
2	1.50
3	2.00
4	3.00
5	4.50
6	6.00

Steel decks on one side:



Steel decks on both sides:

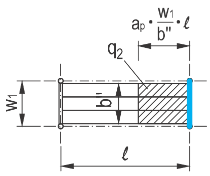


TL

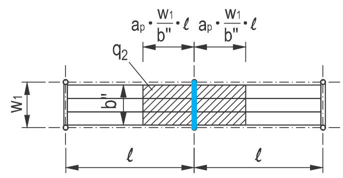
Partial area load q_2 as per EN 12811-1, Table 3
acting on 40% or 50% of the platform area of each scaffolding bay:

Load class	Associated partial area load q_2 [kN/m²]	Partial area factor a_p	Meaning
1	–	–	no partial area load specified
2	–	–	
3	–	–	
4	5.00	0.4	q_2 acts on 40% of the deck area of each scaffolding bay
5	7.50	0.4	
6	10.00	0.5	q_2 acts on 50% of the deck area of each scaffolding bay

Steel decks on one side:



Steel decks on both sides:



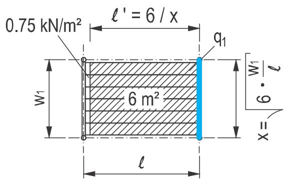
w_1, ℓ = axis dimensions of upright
b" = entire deck width in scaffolding bay

6 m²

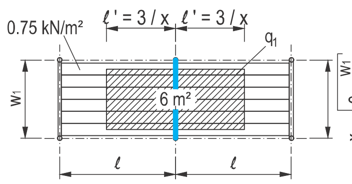
Limiting of the nominal load to an area of 6 m² as per EN 12811-1, 6.2.2.6: The load on the supporting components of a birdcage scaffolding may be calculated by assuming that the nominal load q_1 acts on an area of 6 m² in combination with a load of 0.75 kN/m² over the remaining area.

The load area of 6 m² is arranged such that it has for the ledger the least favourable effect.

Steel decks on one side:



Steel decks on both sides:



+

The load-bearing capacity of the steel decks matches the load class indicated in front of the symbol "+". The load-bearing capacity of the ledger is one load class higher.

NL	
5+	The steel decks can support the nominal load of load class 5 (4.5 kN/m²). The load-bearing capacity of the ledger matches the nominal load of load class 6 (6.0 kN/m²).

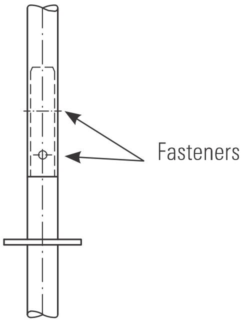
6 m²	
5+	The steel decks can support the nominal load of the load class 5 (4.5 kN/m²) on an area of 6 m² plus 0.75 kN/m² on the remaining area. The load-bearing capacity of the ledger matches the nominal load of load class 6 (6.0 kN/m²) on an area of 6 m² plus 0.75 kN/m² on the remaining area.

+ +

The load-bearing capacity of the steel decks matches the load class indicated in front of the symbol "+ +". The load-bearing capacity of the ledger is two load classes higher.

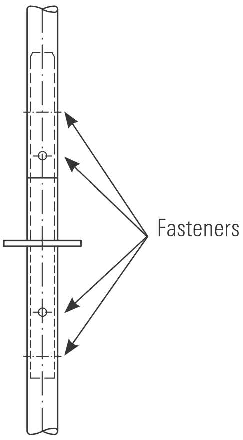
PL	
4++	The steel decks can support the partial area load of load class 4 (5.0 kN/m² on 40% of the deck area of each scaffolding bay). The load-bearing capacity of the ledger matches the partial area load of load class 6 (10.0 kN/m² on 50% of the deck area of each scaffolding bay).

TRANSFER OF TENSION OF STANDARD JOINT



Fasteners: Hinged pins or special bolts M12-8.8 with nut

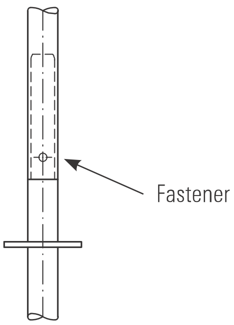
Permissible tension force of Allround Standard LW with integrated spigot [kN]			
Standard below	Number of fasteners	Standard above	
		Allround LW	Allround K2000+ or Variant II
Allround LW with integrally cast spigot	1	36.4	29.5
	2	69.3	59.0



Fasteners: Hinged pins or special bolts M12-8.8 with nut

Permissible tension force of Allround Standard LW with bolt-in spigot [kN]			
Standard below, without spigot	Number of fasteners above / below	Standard above	
		Allround LW	Allround K2000+ or Variant II
Allround LW	1 / 1	29.5	
	2 / 2	56.1	
Allround K2000+ or Variant II	1 / 1	32.6	29.5
	2 / 2	56.1	56.1

Permissible tension force of Allround Standard Aluminium with bolt-in spigot [kN]		
Standard below, without spigot	Number of fasteners above / below	Standard above: Allround Aluminium
Allround Aluminium	2 / 2	42.2

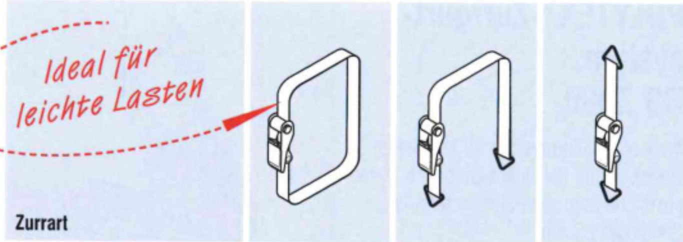


Fastener: Hinged pin or special bolt M12-8.8 with nut or locking pin red, dia 11 mm

Permissible tension force of Allround Standard with pressed-in spigot, K2000+ and Variant II:
6.7 kN

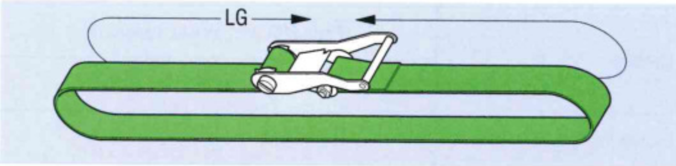
POLYTEX®-Zurrgurt-system RS 4000

Stabiles Zurrsystem für mittlere Lasten im Industrie- und Handwerksbereich.
Mit Transportsicherung des Ratschenhebels.
Gurtbreite 35 mm
Vorspannkraft S_{TF} 100 daN

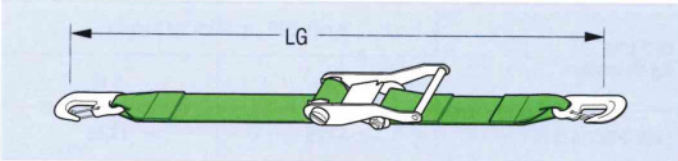


Zulässige Zurrkraft LC (daN)	2000	2000	1000
Bruchkraft BF (daN)	4000	4000	2000

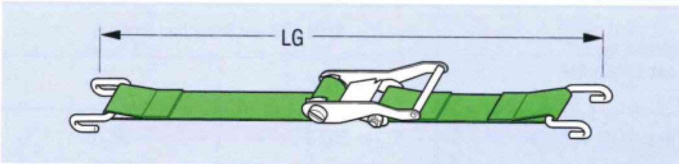
einteilig	Preis EUR per Stück für Länge LG	
	4 m	6 m
Bestell-Nr. 123464	15,10	16,80



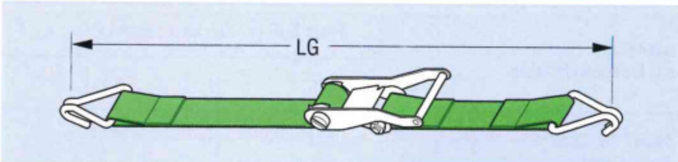
zweiteilig mit Ösenhaken	Preis EUR per Stück für Länge LG	
	4 m	6 m
Bestell-Nr. 123486	24,60	26,30



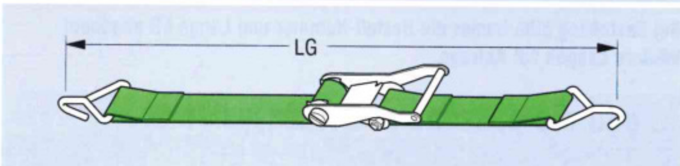
zweiteilig mit Klauenhaken	Preis EUR per Stück für Länge LG	
	4 m	6 m
Bestell-Nr. 123475	24,60	26,30



zweiteilig mit Klauendrahthaken	Preis EUR per Stück für Länge LG	
	4 m	6 m
Bestell-Nr. 123472	24,50	26,20

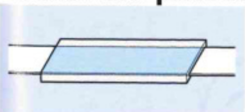


zweiteilig mit Klauenspitzhaken	Preis EUR per Stück für Länge LG	
	4 m	6 m
Bestell-Nr. 123481	26,85	28,55

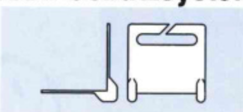


Bei Bestellung bitte immer die Bestell-Nummer und Länge LG angeben!
Weitere Längen auf Anfrage.

... und die passenden Schutzsysteme:



POLYTEX®-Abrieb-Schutz-schlauch
Preis siehe Seite 118



POLYTEX®-Kantenschutzwinkel Kunststoff
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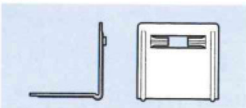


POLYTEX®-Kantenschutzwinkel Stahl
Preis siehe Seite 230

Dimensioning

<u>Layher Kederdach</u> schwer

Positiv bending moment

Md= 68 kNm
Nd= -24 kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= -109,3 kN

N,Og,Rd= -113 kN

eta= 0,97 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= 85,3 kN

N,Og,Rd= 92,4 kN

eta= 0,92 < 1,0

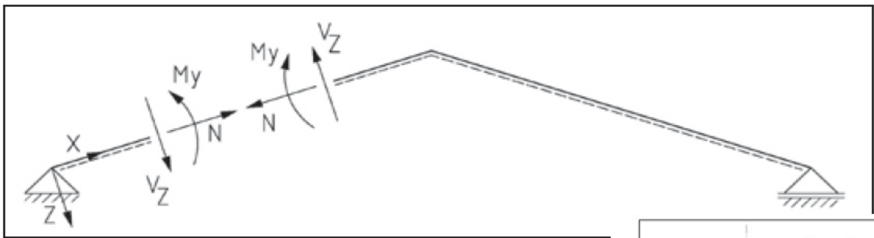


Bild 34

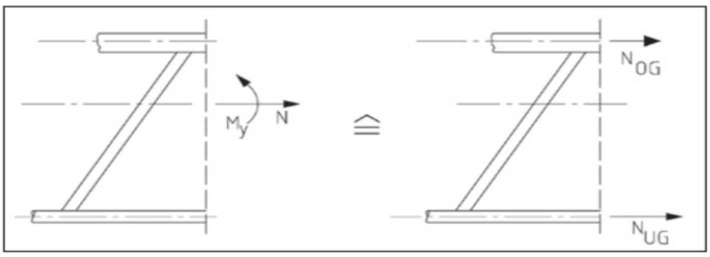


Bild 36

$N_{OG} = 0,64 * N - M_y / 72,4$
$N_{UG} = 0,36 * N + M_y / 72,4$ M_y [kNcm]

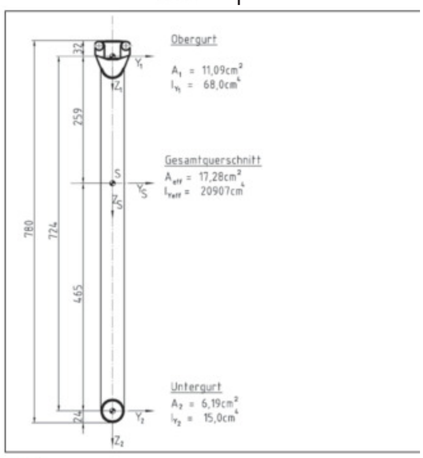


Bild 35

Positiv bending moment

Md= -21 kNm
Nd= 11 kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= 36,046 kN

N,Og,Rd= 113,4 kN

eta= 0,32 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= -25,05 kN

N,Og,Rd= -67 kN

eta= 0,37 < 1,0

		Compression force	Tension force	Replacement beam: Bending moments (z_S = 0.724 m)		Replacement beam: Shear force
		max. $N^-_{R.d}$ [kN]	max. $N^+_{R.d}$ [kN]	max. $M^+_{y.R.d}$ [kNm]	max. $M^-_{y.R.d}$ [kNm]	$V_{Z.R.d}$ [kN]
Diagonal strut		-29.1	29.1	-	-	25.0
Heavy	Top chord with s_K = 1.0 m	-113.4	113.4	66.9	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Standard	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Light	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-13.7	-
	Bottom chord with s_K = 2.0 m	-18.9	92.4			

Tension chord

Nd=	26	kN
N,k=	18,571	kN
Nzul=	20	kN (as loop)

Tension chord 4000 kg

Ratchet tie-down strap

Bracing

Nd=	20	kN	
N,k=	13,333	kN	
Nzul=	20	kN	loop

Tension chord 4000 kg

Ratchet tie-down strap

Shoring scaffold

Allround Standard

Nd= 11 kN

Nd= -40 kN

eta= 0,45 < 1,0

Allround ledger

Nd=	13	kN	< NRd=	42,3 kN
Nd=	-24	kN	< NRd=	-42,3 kN

Allround diagonal (2,07/2,0m)

Nd=	13	kN	< NRd=	28,5 kN
Nd=	-17	kN	< NRd=	-14,4 kN

2x diagonals

Scaffold ground

Allround Standard

Nd= 16 kN

Nd= -23 kN

eta= 0,3 < 1,0

Allround ledger

Nd=	14	kN	< NRd=	42,3 kN
Nd=	-18	kN	< NRd=	-42,3 kN

Allround diagonal (2,07/2,0m)

Nd=	8	kN	< NRd=	28,5	kN
Nd=	-12	kN	< NRd=	-14,4	kN

Connecting scaffold

Nd= -23 kN < NRd

Bracing

Nd=	21	kN	
N,k=	14	kN	
Nzul=	2000	kN	loop

Tension chord 4000 kg

Ratchet tie-down strap

Ballast for stability

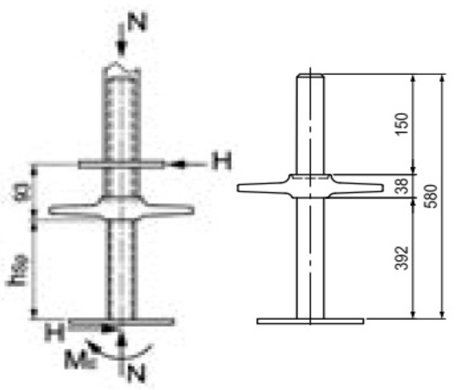
outside	B=	5	kN (500kg)
inside	B=	20	kN (2000kg)

Ingenieurbüro Volker Knobloch
Andersenstr. 16
74078 Heilbronn

Tel. 07066/9179841
Fax. 07066/9179849

Base plate solid

BASE PLATE 60 SOLID



Substitute cross-sectional values of the spindle

A = 8.80 cm^2
W_{el} = 3.84 cm^3
W_{pl} = 4.79 cm^3
I = 6.51 cm^4

Material: EN 10025-2-S355J2
→ Rolled thread: $f_{u,b}$ = 360,0 N/mm^2

Tab. 14 Base plate loading

Spindle extension length h_{Sp} [cm]	Permissible vertical spindle load N [kN]* with simultaneous effect of a horizontal load H [kN]																									
	H = 0		H = 0.5		H = 1.0		H = 1.5		H = 2.0		H = 2.5		H = 3.0		H = 3.5		H = 4.0		H = 4.5		H = 5.0		H = 5.5		H = 6.0	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
0	54	69	54	69	54	68	54	67	53	–	53	–	53	–	52	–	52	–	51	–	51	–	50	–	50	–
5	54	68	53	–	53	–	52	–	52	–	51	–	50	–	49	–	48	–	48	–	47	–	46	–	45	–
10	53	–	53	–	52	–	49	–	49	–	48	–	47	–	46	–	45	–	44	–	42	–	41	–	40	–
15	53	–	51	–	50	–	48	–	47	–	47	–	44	–	43	–	41	–	39	–	38	–	36	–	34	–
20	51	–	50	–	48	–	46	–	44	–	42	–	40	–	38	–	36	–	35	–	–	–	–	–	–	–
25	50	–	48	–	45	–	43	–	41	–	39	–	37	–	34	–	–	–	–	–	–	–	–	–	–	–

Nd=	30	kN
Nk=	21,4	kN
Hd=	7,4	kN
Hk=	5,3	kN
Hk=	5	kN
hsp=	15	kN
Nzul=	38	kN

Proof stability against gliding

Nd=	4,9+12,5+29,6=	47	kN
Ballast		10	kN
		57	kN

Hd= 5,4+5,7+6,6+7,1+7,4= 32,2 kN

friction coefficient mü= 0,6 Wood - Soil

Hd= 32,2 kN < mü * Nd= 34,2 kN

Load distribution under base plate shoring scaffold

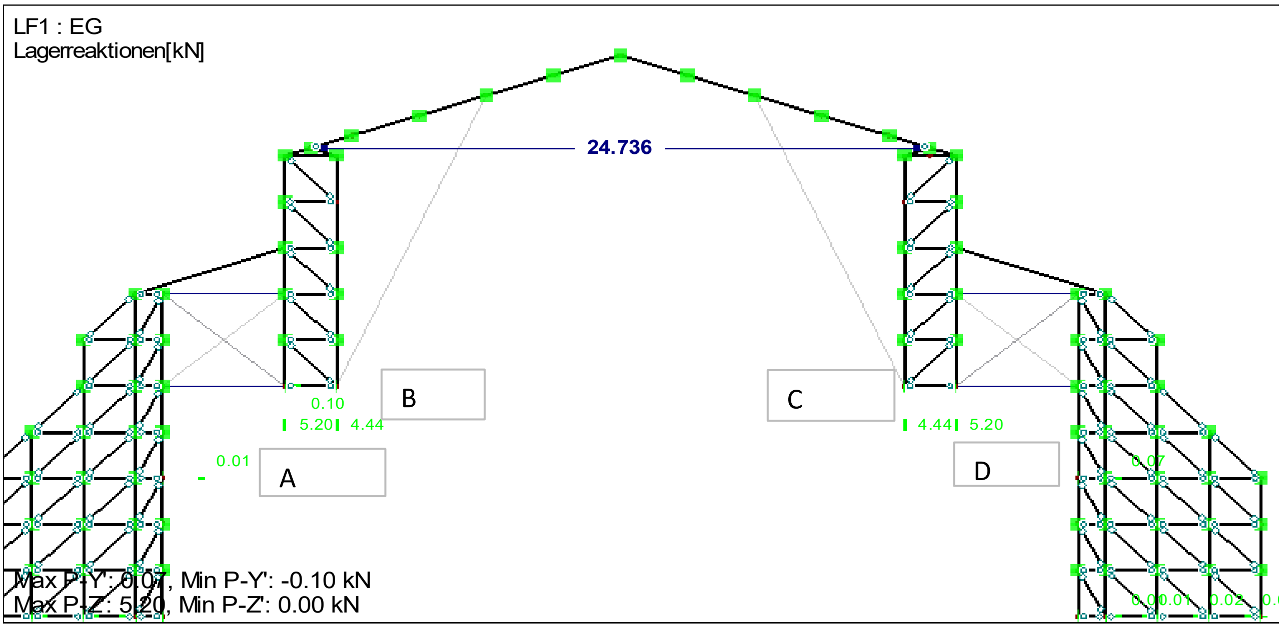
Nk=	42	kN
a=	0,6	m
b=	0,5	m
sigma=	140	kN/m²

Load distribution under base plate remaining scaffold

Nk=	20	kN
a=	0,5	m
b=	0,5	m
sigma=	80	kN/m²

Reaction forces

vertical [kN]



			A	B	C	D	
Dead Load			5,2	4,5	4,5	5,2	
Snow			5,9	3,8	3,8	5	
Live Load			5,3	5,3	5,3	5,3	
Wind 1			-3,6	-5	-7,3	-11,2	
Wind 2			0,6	8,4	-6	-9	
Earthquake			3,2	8,6	4,5	-8,2	

max	design		15,9	35	14	16	
min	design		-2	-2	-6	-12,7	

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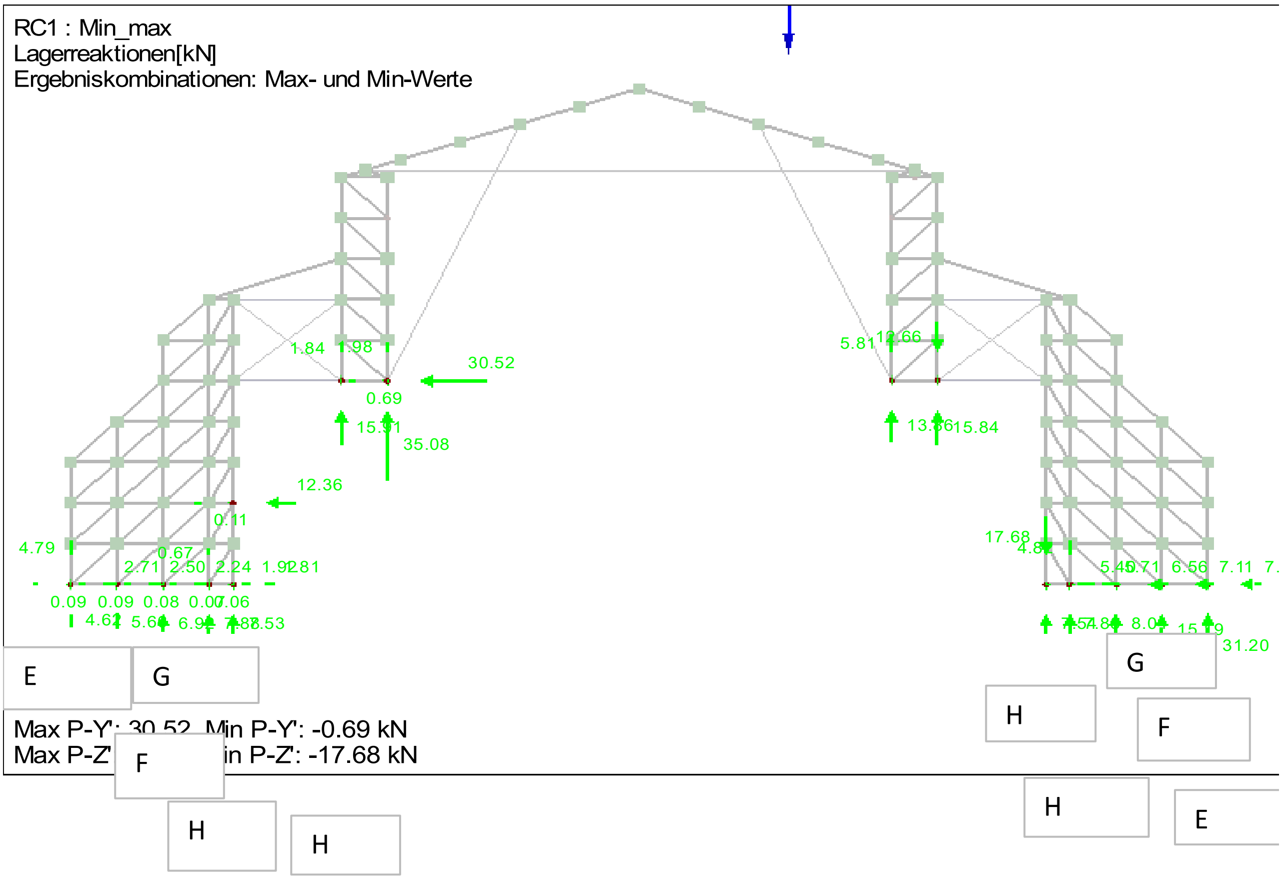
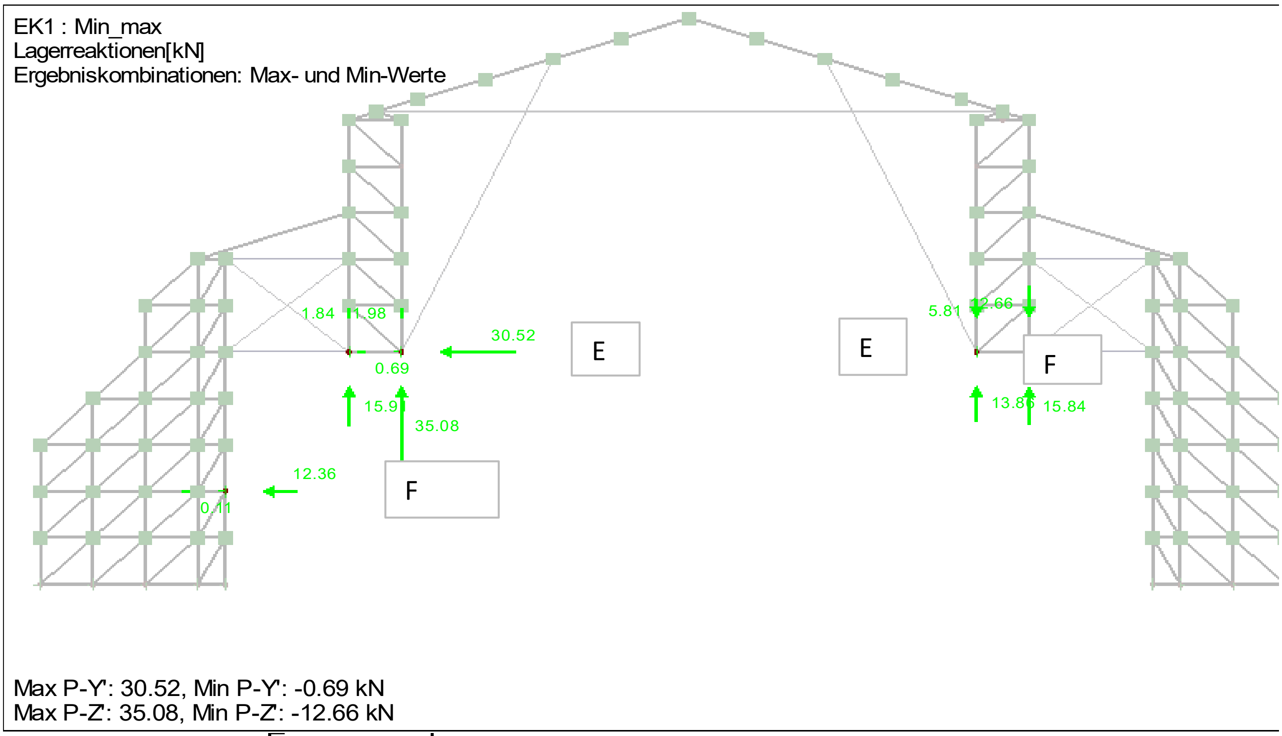


			E	F	G	H	
Dead Load			3,3	4,1	4,4	4	
Snow			0	0	0,7	2,5	
Live Load			0	0	0,5	1,1	
Wind 1			-5,98	-1,8	-2,4	-2,4	
Wind 1			12,8	4	0,2	8	
Wind 2			4,9	2,2	3,5	2,5	
Wind 2			15,8	5,5	0,7	8	
Earthquake			-6,6	2,5	-3,5	-2	
Earthquake			25,5	8,1	0,4	-15	

max	design		31,2	15,2	8	9	
min	design		-5	0	0	-13	

Horizontal reaction forces [kN]



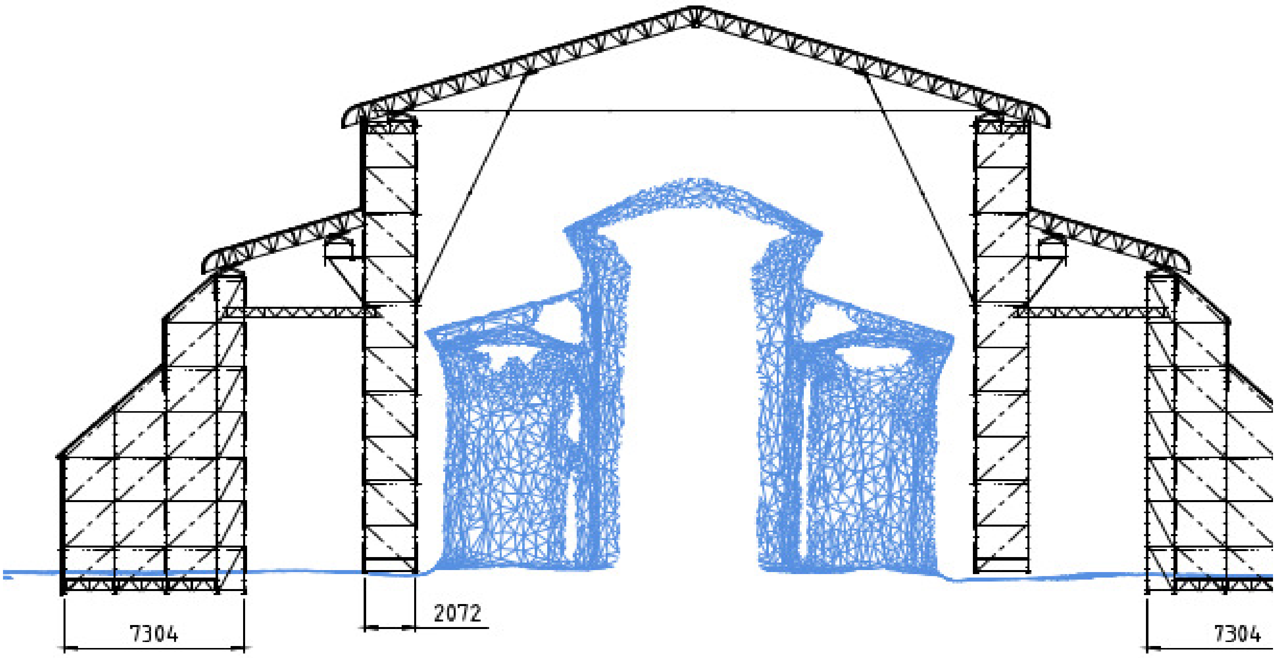
E only pressure

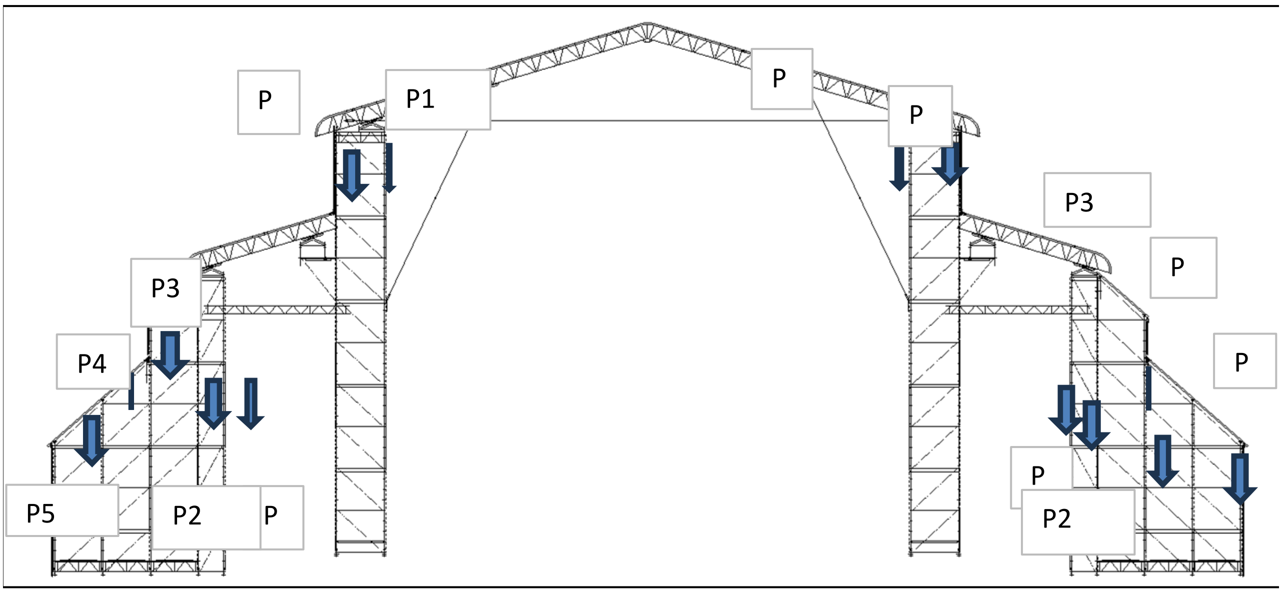
E,d= 30,5 kN

F

E,d= 14 kN pressure

Pos.3: Roof Section h - h





1. Dead Load

Roof g= 0,23 kN/m

P1:	G=	6	kN
P2:	G=	2,5	kN
P3:	G=	5	kN
P4:	G=	4	kN
P5:	G=	3	kN

2. Snow

q=0,25 * 2,57= 0,643 kN/m²

3. Live Load (no snow)

q*= 2 kn/m²

q= 2,57 * 2= 5,14 kN

4. Wind

qb,o=	0,47	kN/m²
z=	25	m
qp=	1,12	kN/m²

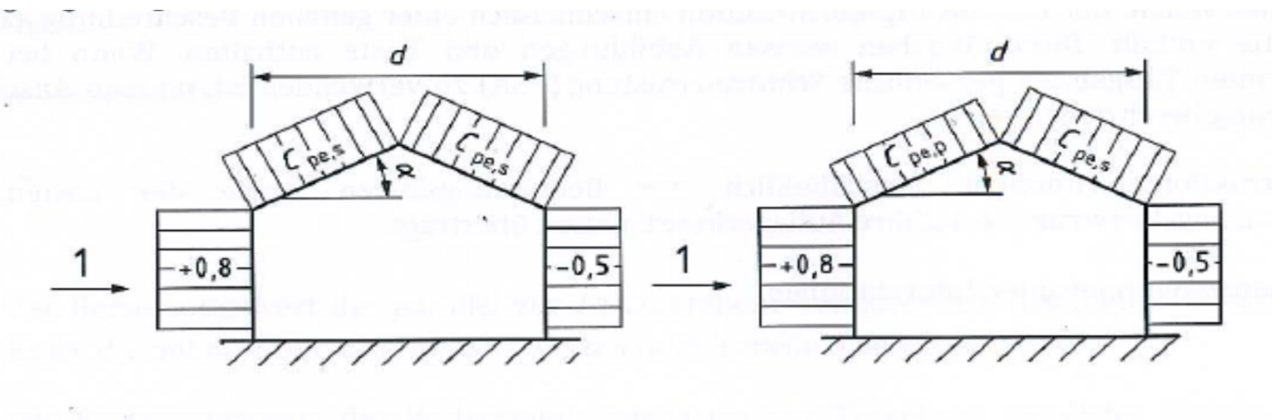
force coefficent	cf=	0,8	
time coefficient	ct=	0,7	
width	b=	2,57	
	q=	1,6119	kN/m
Total wind load	h=	32	m
	W1=	51,581	kN

qp= 1,12 kN/m²

force coefficent	cf=	-0,5
time coefficient	ct=	0,7
width	b=	2,57
	q=	-1,007 kN/m
Total wind load	h=	32 m
	W2=	32,238 kN

W= W1+W2= 83,819 kN

Wind load roof:



Saddle roof — pressre coefficient saddle roof according to EN 16508

Saddle roof

Staudruck	q=	1,12 kN/m²
Standzeitfaktor	ct=	0,7
Neigung alpha=	18 °	
Breite	b=	2,57 m
d=	28 m	

Siehe Bild A.4, DIN EN 16508

Ka= (alpha-10)/100 0,080

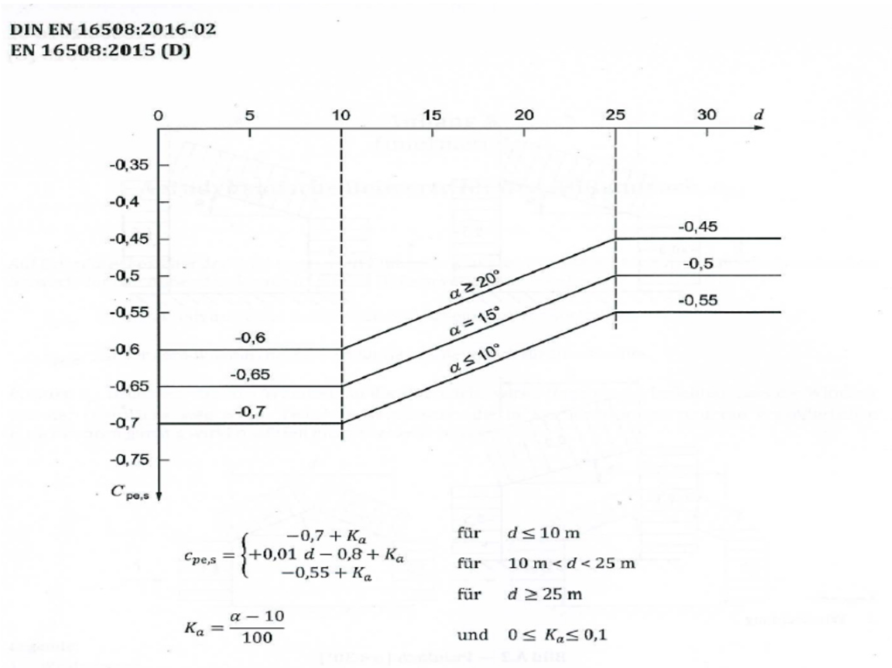


Bild A.4 — Diagramm der $c_{pe,s}$-Werte

cpe, s -0,47
Gerüst komplett geschlossen.
cpe,s= -0,47

sog q4= ct * (cpe,s) * b * q= -0,95 kN/m

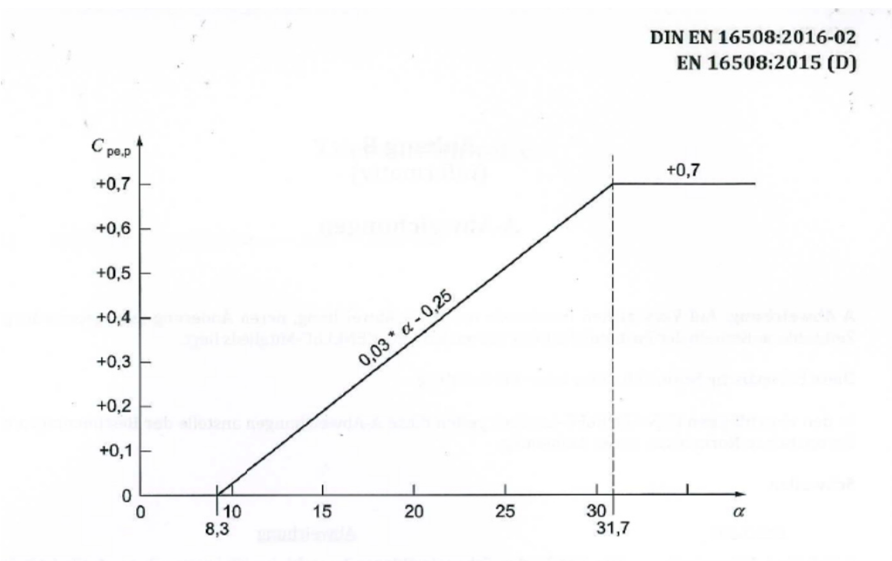


Bild A.5 — Diagramm der $c_{pe,p}$-Werte

cpe,p= 0,03 * alpha - 0,25= 0,29

druck q5= ct * cpe,p * b * q= 0,58 kN/m

5. Earthquake

Mass of schaffolding

	M=		64000 kg
Fb=	Sd(T1) * M * lamda=		
Fb=	0,0014 * M=	89,60 kN	

H,k from Wind	H,k=	54 < Fb	

Equivalent seismic load on each side

	q,k=	Fb / 2 /h=	2,24 kN/m
height	h=	20 m	

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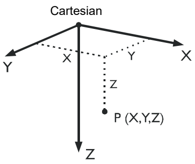
Project:	2023	Model:	K-Dach-2	Date:	19.09.2023

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-Dach-2
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
63	-	Cartesian	0.000	4.640	10.000	Supported
64	-	Cartesian	0.000	-18.060	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
70	-	Cartesian	0.000	-20.130	10.000	Supported
86	-	Cartesian	0.000	4.640	12.000	
87	-	Cartesian	0.000	-18.060	12.000	
94	-	Cartesian	0.000	6.710	12.000	Supported
95	-	Cartesian	0.000	-20.130	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported
108	-	Cartesian	0.000	-18.060	14.000	Supported
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
112	-	Cartesian	0.000	-18.060	16.000	Supported
113	-	Cartesian	0.000	-20.130	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported
117	-	Cartesian	0.000	-20.130	16.000	Supported
122	-	Cartesian	0.000	4.640	18.000	Supported
123	-	Cartesian	0.000	-18.060	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported
126	-	Cartesian	0.000	-20.130	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported

1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
132	-	Cartesian	0.000	-18.060	20.000	Supported
133	-	Cartesian	0.000	-18.060	22.000	Supported
134	-	Cartesian	0.000	6.710	20.000	Supported
135	-	Cartesian	0.000	-20.130	20.000	Supported
136	-	Cartesian	0.000	-20.130	22.000	Supported
137	-	Cartesian	0.000	-18.060	24.000	Supported
138	-	Cartesian	0.000	-20.130	24.000	Supported
139	-	Cartesian	0.000	4.640	22.000	Supported
140	-	Cartesian	0.000	-18.060	26.000	Supported
141	-	Cartesian	0.000	-20.130	26.000	Supported
142	-	Cartesian	0.000	6.710	22.000	Supported
143	-	Cartesian	0.000	4.640	24.000	Supported
144	-	Cartesian	0.000	-18.060	28.000	Supported
145	-	Cartesian	0.000	-20.130	28.000	Supported
146	-	Cartesian	0.000	6.710	24.000	Supported
148	-	Cartesian	0.000	-18.060	30.000	Supported
149	-	Cartesian	0.000	-20.130	30.000	Supported
150	-	Cartesian	0.000	4.640	26.000	
151	-	Cartesian	0.000	6.710	26.000	Supported
154	-	Cartesian	0.000	4.640	28.000	Supported
155	-	Cartesian	0.000	6.710	28.000	Supported
158	-	Cartesian	0.000	4.640	30.000	Supported
159	-	Cartesian	0.000	6.710	30.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
165	-	Cartesian	0.000	-30.240	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
168	-	Cartesian	0.000	-28.170	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
174	-	Cartesian	0.000	-32.310	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
177	-	Cartesian	0.000	-30.240	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
180	-	Cartesian	0.000	-28.170	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
186	-	Cartesian	0.000	-32.310	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
189	-	Cartesian	0.000	-30.240	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
192	-	Cartesian	0.000	-32.310	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
195	-	Cartesian	0.000	-30.240	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
198	-	Cartesian	0.000	-28.170	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
204	-	Cartesian	0.000	-32.310	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
207	-	Cartesian	0.000	-30.240	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
210	-	Cartesian	0.000	-28.170	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
216	-	Cartesian	0.000	-28.170	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
222	-	Cartesian	0.000	-28.170	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
228	-	Cartesian	0.000	-28.170	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported
234	-	Cartesian	0.000	-26.100	16.000	Supported
239	-	Cartesian	0.000	12.680	18.000	Supported
240	-	Cartesian	0.000	-26.100	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
246	-	Cartesian	0.000	-26.100	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
252	-	Cartesian	0.000	-26.100	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
258	-	Cartesian	0.000	-26.100	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
264	-	Cartesian	0.000	-26.100	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
270	-	Cartesian	0.000	-26.100	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
276	-	Cartesian	0.000	-26.100	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
282	-	Cartesian	0.000	-25.010	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
288	-	Cartesian	0.000	-25.010	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
294	-	Cartesian	0.000	-25.010	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
300	-	Cartesian	0.000	-25.010	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
306	-	Cartesian	0.000	-25.010	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
312	-	Cartesian	0.000	-25.010	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
318	-	Cartesian	0.000	-25.010	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported
325	-	Cartesian	0.000	-25.010	30.000	Supported
327	-	Cartesian	0.000	-6.710	5.640	Supported

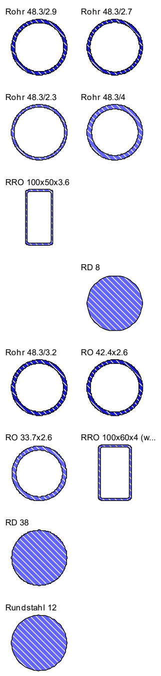
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
328	-	Cartesian	0.000	-17.446	9.128	Supported
329	-	Cartesian	0.000	-14.762	8.256	Supported
330	-	Cartesian	0.000	-12.078	7.384	Supported
331	-	Cartesian	0.000	-9.394	6.512	Supported
332	-	Cartesian	0.000	-4.026	6.512	Supported
333	-	Cartesian	0.000	-1.342	7.384	Supported
334	-	Cartesian	0.000	1.342	8.256	Supported
335	-	Cartesian	0.000	4.026	9.128	Supported
336	-	Cartesian	0.000	5.675	10.000	
337	-	Cartesian	0.000	5.658	9.658	Supported
338	-	Cartesian	0.000	-19.078	9.658	Supported

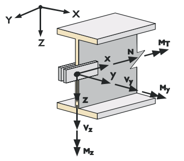
1.2 MATERIALS

Matl. No.	Modulus E [kN/cm^2]	Modulus G [kN/cm^2]	Spec. Weight γ [kN/m^3]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11 21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12 21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm^4] A [cm^2]	I_y [cm^4] A_y [cm^2]	I_z [cm^4] A_z [cm^2]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9 2 Stiel	21.40 4.14	10.70 2.07	10.70 2.07	0.00	0.00	48.3	48.3
2	Rohr 48.3/2.7 2 Riegel	20.18 3.87	10.09 1.92	10.09 1.92	0.00	0.00	48.3	48.3
3	Rohr 48.3/2.3 1 Diagonale	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
4	Rohr 48.3/4 1 Rohr	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
5	RRO 100x50x3.6 | DIN 59410:1974 1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel 1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	2 Gitterträger Stahl h=75cm 1	1.00 9.00	12000.00 4.50	1.00 4.50	0.00	0.00	0.0	0.0
8	RD 8 | DIN 1013-1 1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2 2 Riegel_TG60_1	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
10	RO 42.4x2.6 | DIN 2448 2 Riegel_TG60_2	12.93 3.25	6.46 1.62	6.46 1.62	0.00	0.00	42.4	42.4
11	RO 33.7x2.6 | DIN 2448 1 Diagonale_TG60	6.19 2.54	3.09 1.27	3.09 1.27	0.00	0.00	33.7	33.7
12	RRO 100x60x4 (Hot Formed) 1	156.00 12.00	158.00 3.23	70.50 6.98	0.00	0.00	60.0	100.0
13	RD 38 1	20.47 11.30	10.24 9.49	10.24 9.49	0.00	0.00	38.0	38.0
14	GI-KDXL Kederdach XL 2	1.00 17.00	20900.00 9.00	20900.00 9.00	0.00	0.00	50.0	1000.0
15	Rundstahl 12 1	0.20 1.13	0.10 0.95	0.10 0.95	0.00	0.00	12.0	12.0

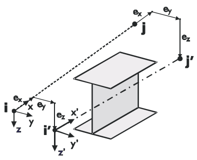


1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

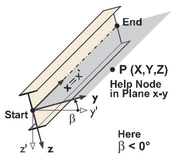


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	337	69	Angle	0.00	4	4	-	-	-	-	1.106	YZ
168	Beam	63	69	Angle	0.00	5	5	-	-	3	-	2.045	Y
169	Beam	70	64	Angle	0.00	5	5	-	-	1	-	2.020	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
230	Beam	64	87	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
235	Beam	70	95	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
242	Beam	95	87	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
245	Beam	70	87	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
255	Beam	87	108	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
260	Beam	95	113	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
267	Beam	113	108	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
270	Beam	95	108	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
277	Beam	108	112	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
282	Beam	113	117	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
289	Beam	117	112	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
292	Beam	113	112	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
299	Beam	112	123	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
304	Beam	117	126	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
311	Beam	126	123	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
314	Beam	117	123	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
321	Beam	123	132	Angle	90.00	1	1	-	-	-	-	2.000	Z

1.7 MEMBERS

Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
322	Beam	132	133	Angle	90.00	1	1	-	-	-	-	2.000	Z
323	Beam	133	137	Angle	90.00	1	1	-	-	-	-	2.000	Z
324	Beam	137	140	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
326	Beam	126	135	Angle	90.00	1	1	-	-	-	-	2.000	Z
327	Beam	135	136	Angle	90.00	1	1	-	-	-	-	2.000	Z
328	Beam	136	138	Angle	90.00	1	1	-	-	-	-	2.000	Z
329	Beam	138	141	Angle	90.00	1	1	-	-	-	-	2.000	Z
330	Beam	140	144	Angle	90.00	1	1	-	-	-	-	2.000	Z
331	Beam	141	145	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
333	Beam	135	132	Angle	0.00	2	2	1	1	1	-	2.020	Y
334	Beam	136	133	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
336	Beam	126	132	Angle	0.00	3	3	2	2	2	-	2.723	YZ
337	Beam	135	133	Angle	0.00	3	3	2	2	2	-	2.723	YZ
338	Beam	138	137	Angle	0.00	2	2	1	1	1	-	2.020	Y
339	Beam	136	137	Angle	0.00	3	3	2	2	2	-	2.723	YZ
340	Beam	141	140	Angle	0.00	2	2	1	1	1	-	2.020	Y
341	Beam	138	140	Angle	0.00	3	3	2	2	2	-	2.723	YZ
342	Beam	145	144	Angle	0.00	2	2	1	1	1	-	2.020	Y
343	Beam	141	144	Angle	0.00	3	3	2	2	2	-	2.723	YZ
344	Beam	144	148	Angle	90.00	1	1	-	-	-	-	2.000	Z
345	Beam	145	149	Angle	90.00	1	1	-	-	-	-	2.000	Z
346	Beam	149	148	Angle	0.00	2	2	1	1	1	-	2.020	Y
347	Beam	145	148	Angle	0.00	3	3	2	2	2	-	2.723	YZ
348	Beam	139	131	Angle	90.00	1	1	-	-	-	-	2.000	Z
349	Beam	142	134	Angle	90.00	1	1	-	-	-	-	2.000	Z
350	Beam	139	142	Angle	0.00	2	2	1	1	1	-	2.020	Y
351	Beam	139	134	Angle	0.00	3	3	2	2	2	-	2.723	YZ
352	Beam	143	139	Angle	90.00	1	1	-	-	-	-	2.000	Z
353	Beam	146	142	Angle	90.00	1	1	-	-	-	-	2.000	Z
354	Beam	143	146	Angle	0.00	2	2	1	1	1	-	2.020	Y
355	Beam	143	142	Angle	0.00	3	3	2	2	2	-	2.723	YZ
356	Beam	150	143	Angle	90.00	1	1	-	-	-	-	2.000	Z
357	Beam	151	146	Angle	90.00	1	1	-	-	-	-	2.000	Z
358	Beam	150	151	Angle	0.00	2	2	1	1	1	-	2.020	Y
359	Beam	150	146	Angle	0.00	3	3	2	2	2	-	2.723	YZ
360	Beam	154	150	Angle	90.00	1	1	-	-	-	-	2.000	Z
361	Beam	155	151	Angle	90.00	1	1	-	-	-	-	2.000	Z
362	Beam	154	155	Angle	0.00	2	2	1	1	1	-	2.020	Y
363	Beam	154	151	Angle	0.00	3	3	2	2	2	-	2.723	YZ
364	Beam	158	154	Angle	90.00	1	1	-	-	-	-	2.000	Z
365	Beam	159	155	Angle	90.00	1	1	-	-	-	-	2.000	Z
366	Beam	158	159	Angle	0.00	2	2	1	1	1	-	2.020	Y
367	Beam	158	155	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
464	Beam	177	165	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
471	Beam	174	177	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
474	Beam	174	165	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
481	Beam	186	174	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
486	Beam	189	177	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y
493	Beam	186	189	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
496	Beam	186	177	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
503	Beam	192	186	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
508	Beam	195	189	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
515	Beam	192	195	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
518	Beam	192	189	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
525	Beam	204	192	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
530	Beam	207	195	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
537	Beam	204	207	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
540	Beam	204	195	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z
564	Beam	180	168	Angle	90.00	1	1	-	-	-	-	2.000	Z
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
579	Beam	198	180	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
586	Beam	165	198	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
589	Beam	165	180	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
594	Beam	210	198	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
601	Beam	177	210	Angle	0.00	2	2	1	1	1	-	2.020	Y

1.7 MEMBERS

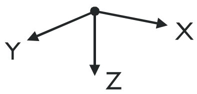
Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
604	Beam	177	198	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
609	Beam	216	210	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
616	Beam	189	216	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
619	Beam	189	210	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
624	Beam	222	216	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
631	Beam	195	222	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
634	Beam	195	216	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
639	Beam	228	222	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
646	Beam	207	228	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
649	Beam	207	222	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
659	Beam	240	234	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
666	Beam	168	240	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
669	Beam	168	234	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
674	Beam	246	240	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
681	Beam	180	246	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
684	Beam	180	240	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
689	Beam	252	246	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
696	Beam	198	252	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ
699	Beam	198	246	Angle	0.00	3	3	2	2	2	-	2.723	YZ
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
704	Beam	258	252	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
711	Beam	210	258	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
714	Beam	210	252	Angle	0.00	3	3	2	2	2	-	2.723	YZ
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
719	Beam	264	258	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
726	Beam	216	264	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
729	Beam	216	258	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
734	Beam	270	264	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
741	Beam	222	270	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
744	Beam	222	264	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z
749	Beam	276	270	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
756	Beam	228	276	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
759	Beam	228	270	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
768	Beam	234	282	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
771	Beam	288	282	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
778	Beam	240	288	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
781	Beam	240	282	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
786	Beam	294	288	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
793	Beam	246	294	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
796	Beam	246	288	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
801	Beam	300	294	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
808	Beam	252	300	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
811	Beam	252	294	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
816	Beam	306	300	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
823	Beam	258	306	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
826	Beam	258	300	Angle	0.00	3	3	2	2	2	-	2.123	YZ

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
831	Beam	312	306	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
838	Beam	264	312	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
841	Beam	264	306	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
846	Beam	318	312	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
853	Beam	270	318	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
856	Beam	270	312	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
861	Beam	325	318	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
868	Beam	276	325	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
871	Beam	276	318	Angle	0.00	3	3	2	2	2	-	2.123	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
880	Truss (N only)	294	135	Angle	0.00	12	12	-	-	-	-	4.880	Y
881	Truss (N only)	282	117	Angle	0.00	12	12	-	-	-	-	4.880	Y
882	Truss (N only)	312	141	Angle	0.00	12	12	-	-	-	-	4.880	Y
883	Truss (N only)	325	149	Angle	0.00	12	12	-	-	-	-	4.880	Y
884	Beam	70	338	Angle	0.00	4	4	-	-	-	-	1.106	YZ
885	Beam	327	332	Angle	0.00	14	14	-	-	-	-	2.822	YZ
886	Beam	328	329	Angle	0.00	14	14	-	-	-	-	2.822	YZ
887	Beam	329	330	Angle	0.00	14	14	-	-	-	-	2.822	YZ
888	Beam	330	331	Angle	0.00	14	14	-	-	-	-	2.822	YZ
889	Beam	331	327	Angle	0.00	14	14	-	-	-	-	2.822	YZ
890	Beam	332	333	Angle	0.00	14	14	-	-	-	-	2.822	YZ
891	Beam	333	334	Angle	0.00	14	14	-	-	-	-	2.822	YZ
892	Beam	334	335	Angle	0.00	14	14	-	-	-	-	2.822	YZ
893	Beam	335	337	Angle	0.00	14	14	-	3	-	-	1.716	YZ
894	Tension	338	337	Angle	0.00	15	15	-	-	-	-	24.736	Y
895	Beam	234	113	Angle	0.00	14	14	-	-	-	-	6.296	YZ
896	Beam	233	111	Angle	0.00	14	14	-	-	-	-	6.296	YZ
897	Tension	123	330	Angle	0.00	15	15	-	-	-	-	12.185	YZ
898	Tension	122	333	Angle	0.00	15	15	-	-	-	-	12.185	YZ
899	Beam	63	337	Angle	0.00	4	4	-	-	-	-	1.074	YZ
900	Beam	338	328	Angle	0.00	14	14	3	-	-	-	1.716	YZ
901	Beam	64	338	Angle	0.00	4	4	-	-	-	-	1.074	YZ
902	Tension	294	117	Angle	0.00	8	8	-	-	-	-	6.310	YZ
903	Tension	282	135	Angle	0.00	8	8	-	-	-	-	6.310	YZ
904	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
905	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ
906	Truss (N only)	151	311	Angle	0.00	12	12	-	-	-	-	4.880	Y
907	Truss (N only)	159	323	Angle	0.00	12	12	-	-	-	-	4.880	Y
908	Tension	135	312	Angle	0.00	8	8	-	-	-	-	7.734	YZ
909	Tension	325	141	Angle	0.00	8	8	-	-	-	-	6.310	YZ
910	Tension	312	149	Angle	0.00	8	8	-	-	-	-	6.310	YZ
911	Tension	294	141	Angle	0.00	8	8	-	-	-	-	7.734	YZ
912	Tension	151	293	Angle	0.00	8	8	-	-	-	-	7.734	YZ
913	Tension	134	311	Angle	0.00	8	8	-	-	-	-	7.734	YZ
914	Tension	151	323	Angle	0.00	8	8	-	-	-	-	6.310	YZ
915	Tension	159	311	Angle	0.00	8	8	-	-	-	-	6.310	YZ

1.8 NODAL SUPPORTS



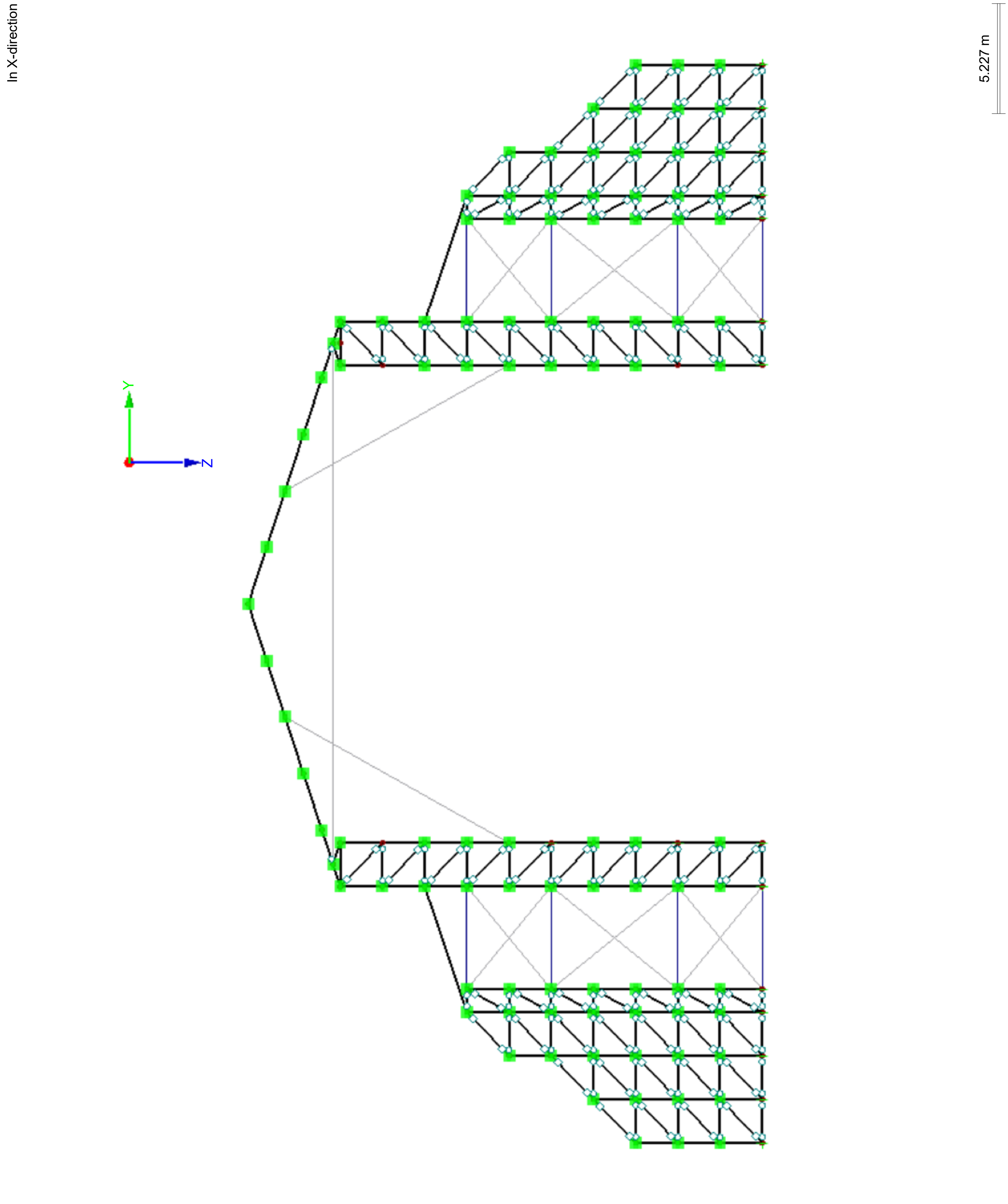
Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	148,149, 158,159, 203,204, 206,207, 227,228, 275,276, 323,325	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
2	132,140	XYZ	0.00	0.00	0.00	☐	☐	Spring	☐	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☐	☒
	63,64,69,70,94,95,107,108,110-113,116,117,122,123,125,126,131,133-139,141-146,151,154,155,164,165,167,168,173, 174,176,177,179,180,185,186,188,189,191,192,194,195,197,198,209,210,215,216,221,222,233,234,239,240,245,246, 251,252,257,258,263,264,269,270,281,282,287,288,293,294,299,300,305,306,311,312,317,318,327-335,337,338											

1.8.2 NODAL SUPPORTS - SPRINGS

Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	148,149,158,159,203,204, 206,207,227,228,275,276, 323,325	5000.000	5000.000	5000.000	-	-	-
2	132,140	-	1000.000	-	-	-	-

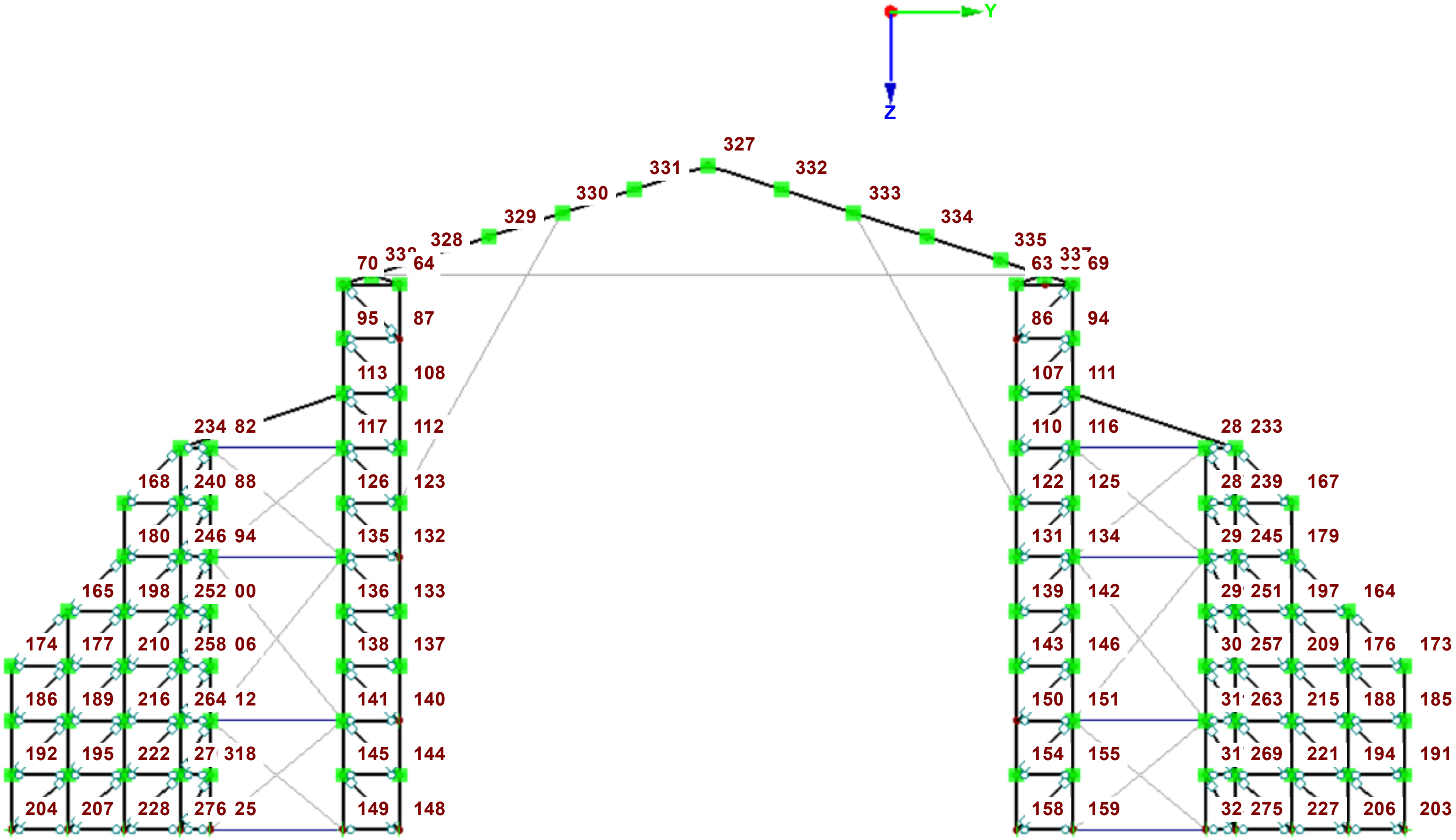
MODEL

In X-direction



Node Numbering

In X-direction



5.227 m

■ MODEL

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023

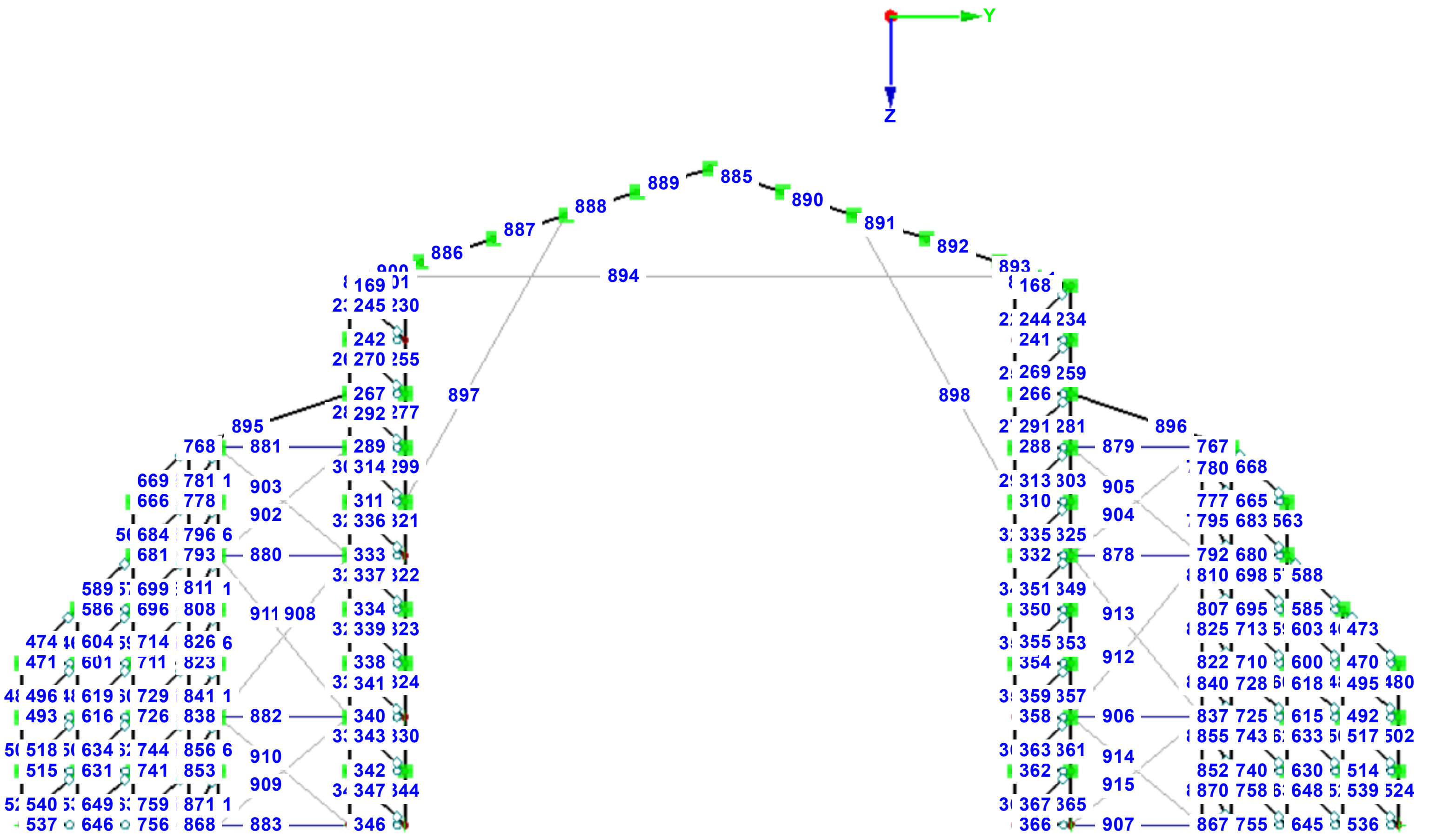
Model: K-Dach-2

Date: 19.09.2023

MODEL

Member Numbering

In X-direction



5.227 m

Volker Knobloch
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Project: 2023

Model: K-Dach-2

Date: 19.09.2023

MODEL

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Active	Self-Weight - Factor in Direction X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind - 1	Wind	☐			
LC4	Wind - 2	Wind	☐			
LC5	Snow	Imposed	☐			
LC6	Earthquake	Earthquake	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	:	Geometrically linear analysis
LC2	Live Load	Method of analysis	:	Geometrically linear analysis
LC3	Wind - 1	Method of analysis	:	Geometrically linear analysis
LC4	Wind - 2	Method of analysis	:	Geometrically linear analysis
LC5	Snow	Method of analysis	:	Geometrically linear analysis
LC6	Earthquake	Method of analysis	:	Geometrically linear analysis

2.1.4 LOAD CASES - PARAMETERS FOR CQC RULE

Load Case	Load Case Description	Angular Frequency [rad/s	Lehr's damping [-]
LC6	Earthquake	1.00	0.000

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
CO2		Bem-2	1	1.35	LC1	EG
			2	1.50	LC5	Snow
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind - 1
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
CO5		Bem-5	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
			3	1.50	LC5	Snow
CO6		Earthquake	1	1.00	LC1	EG
			2	1.00	LC6	Earthquake

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T

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2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Activate stiffness factors of:	: ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) : ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	Bem-5	Method of analysis Options	: ■ Second order analysis (P-Delta) : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V_y and V_z ☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) : ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO6	Earthquake	Method of analysis Options	: ■ Second order analysis (P-Delta) : ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V_y and V_z ☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) : ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4 or CO5 or CO6

LC1
EG

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

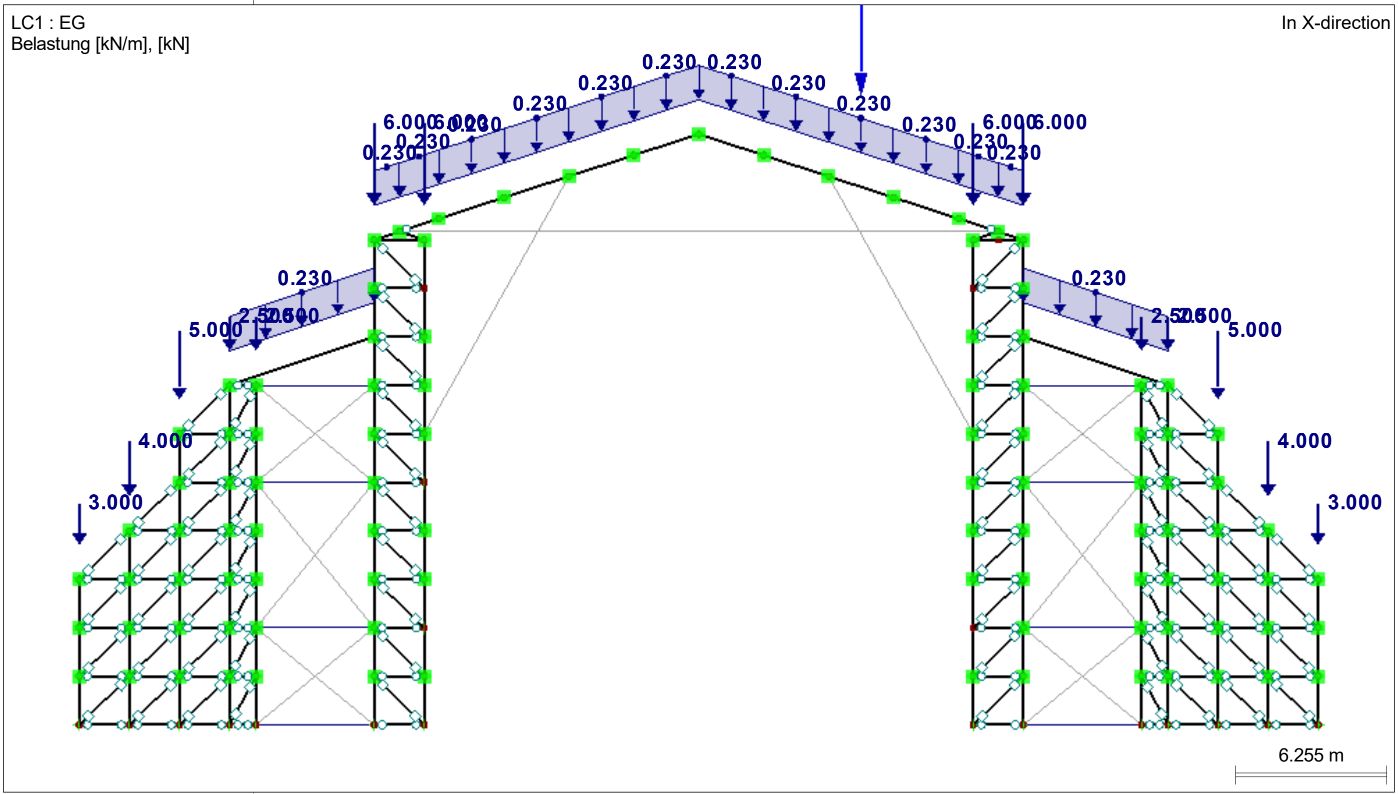
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	164	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
2	165	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
6	234,282	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
7	174	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
8	168	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
9	64,70	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000
10	63,69	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884-893, 895,896,900	Force	Uniform	Z	True Length	p	0.230	kN/m

LC1: EG



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

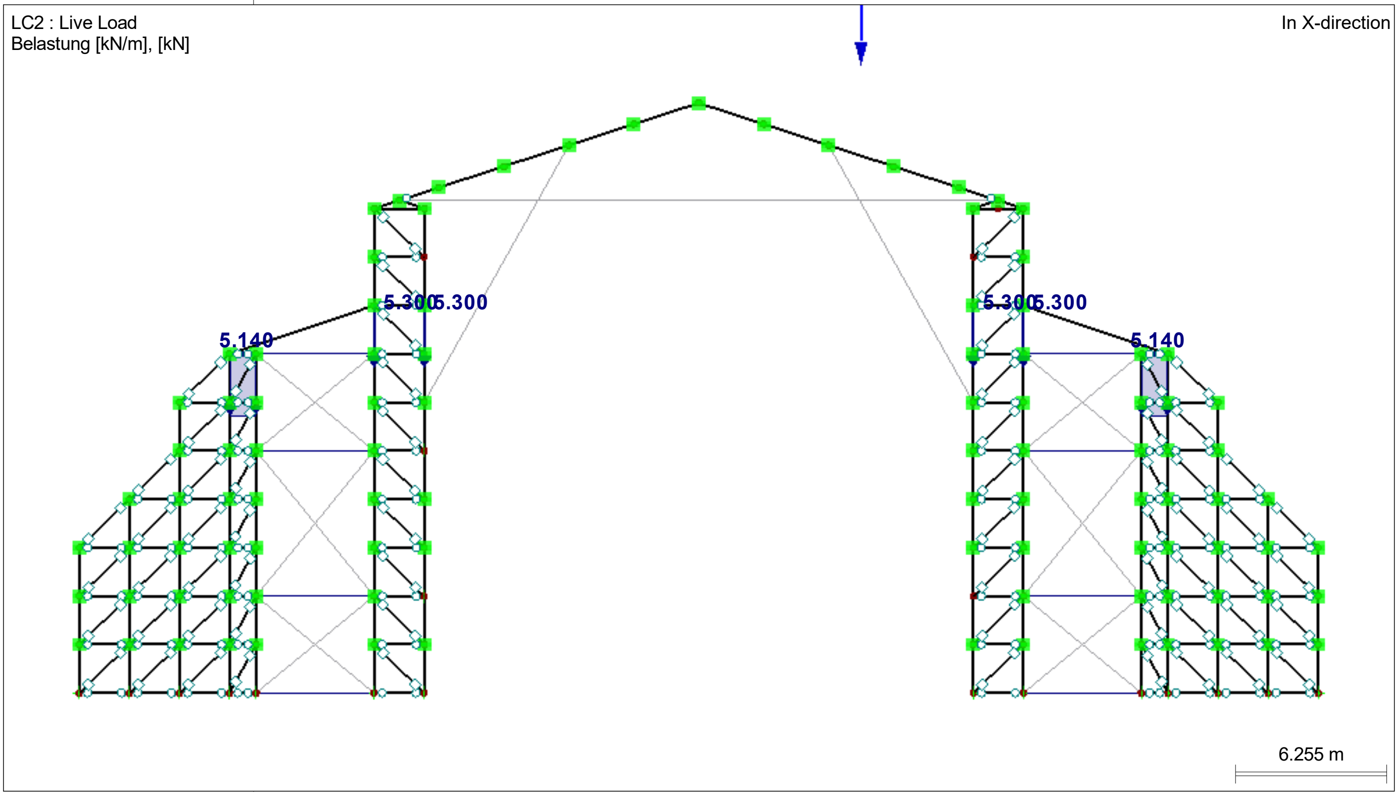
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	122,125	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000
2	123,126	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000

3.2 MEMBER LOADS

LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	5.140	kN/m
2	Members	793	Force	Uniform	Z	True Length	p	5.140	kN/m

LC2: LIVE LOAD



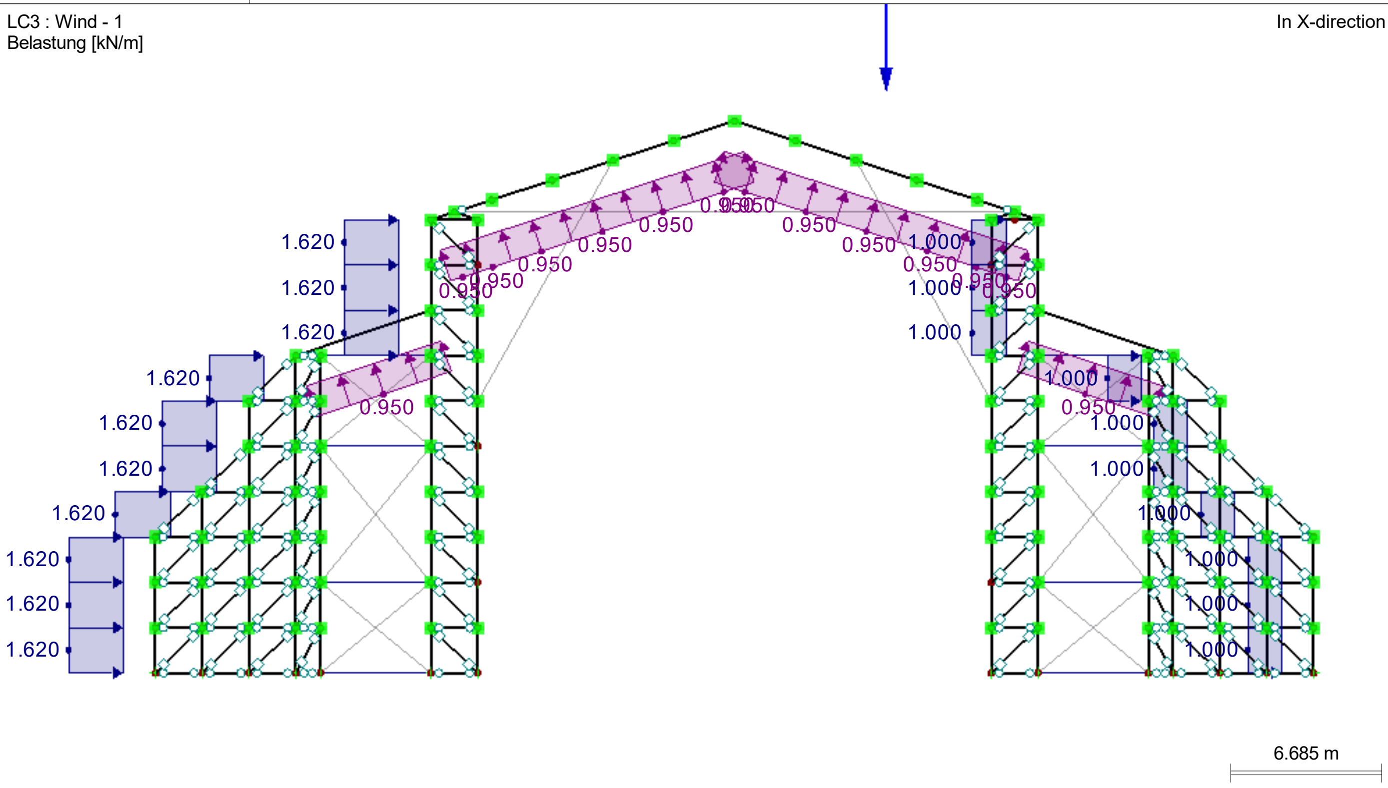
LC3
Wind - 1

3.2 MEMBER LOADS

LC3: Wind - 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,578,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	235,260,282,464,481,503,525,564,659	Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,884,886, 892,893, 895,896,900	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,887-891	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	579	Force	Uniform	Y	True Length	p	1.620	kN/m

LC3: WIND - 1



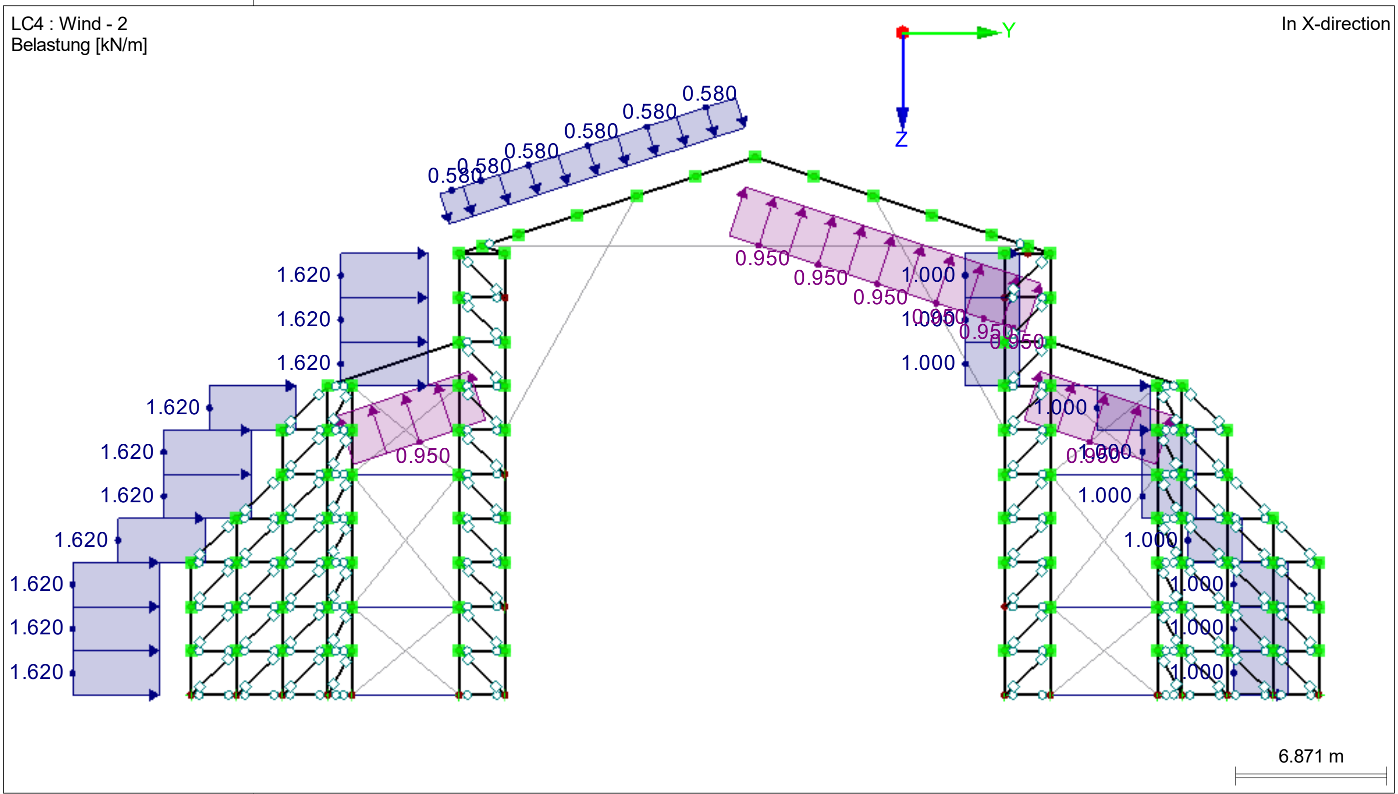
LC4
Wind - 2

3.2 MEMBER LOADS

LC4: Wind - 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,578,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	235,260,282,464,481,503,525,564,579,659	Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,892,893, 895,896	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,890,891	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	884,886,900	Force	Uniform	z	True Length	p	0.580	kN/m
6	Members	887-889	Force	Uniform	z	True Length	p	0.580	kN/m

LC4: WIND - 2



LC5
Snow

3.2 MEMBER LOADS

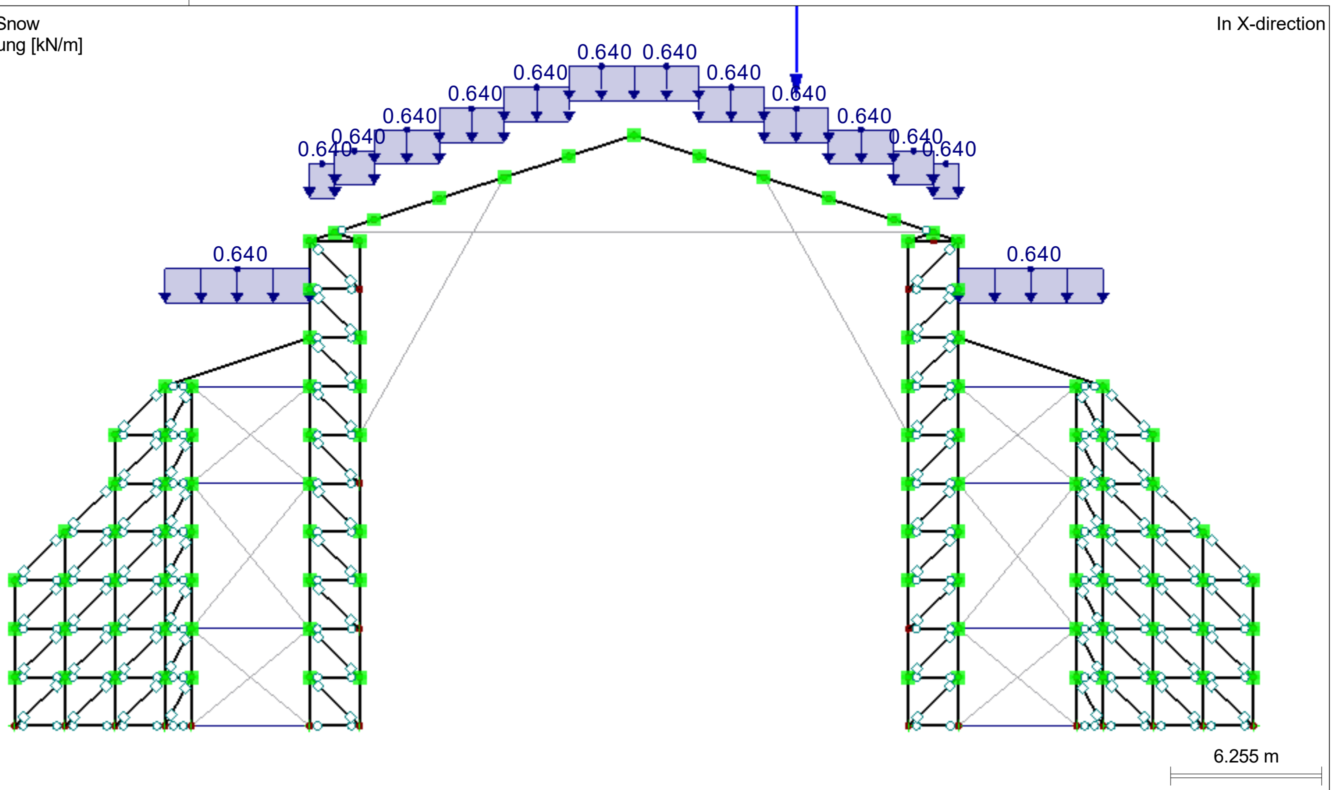
LC5: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884-893, 895,896,900	Force	Uniform	Z	Projection Z	p	0.640	kN/m

LC5: SNOW

LC5 : Snow
Belastung [kN/m]

In X-direction



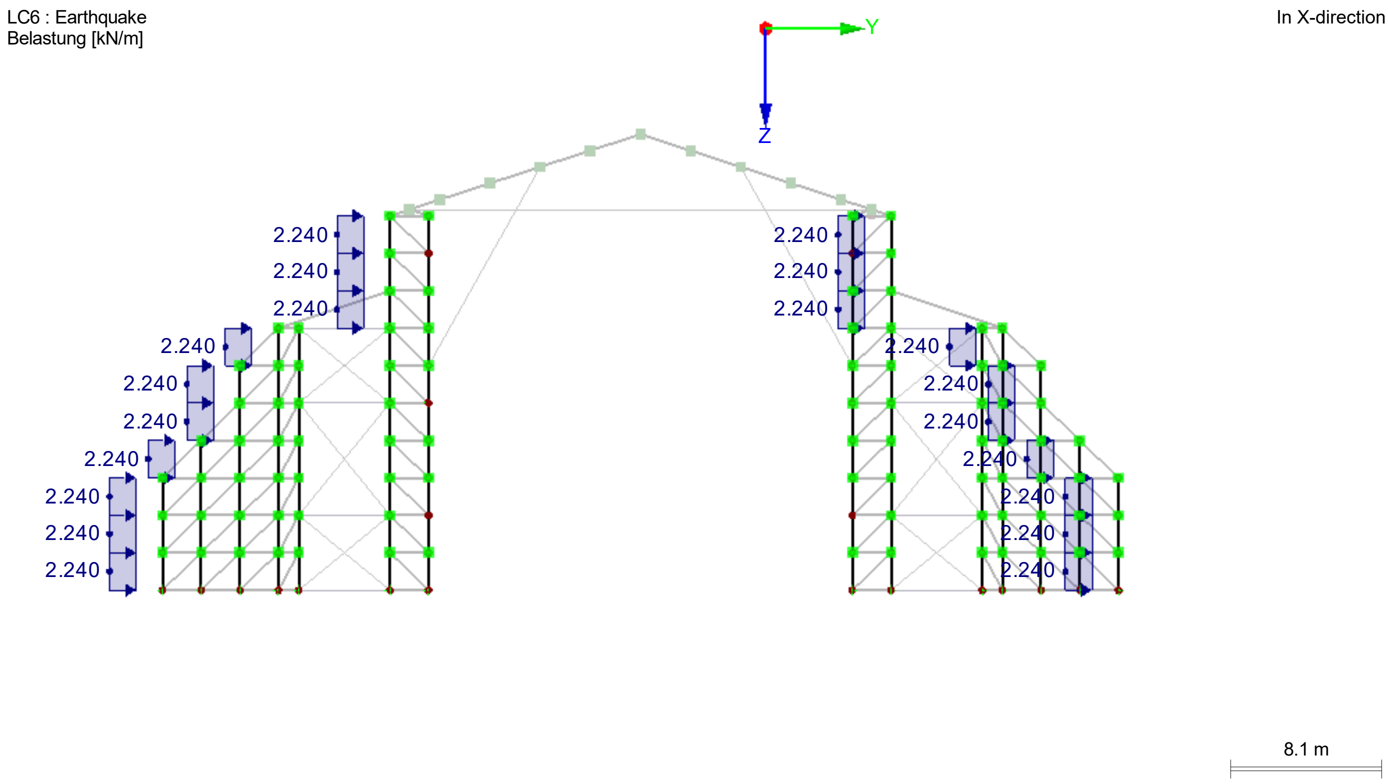
LC6
Earthquake

3.2 MEMBER LOADS

LC6: Earthquake

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,578,658	Force	Uniform	Y	True Length	p	2.240	kN/m
2	Members	235,260,282,464,481,503,525,564,659	Force	Uniform	Y	True Length	p	2.240	kN/m
5	Members	579	Force	Uniform	Y	True Length	p	2.240	kN/m

LC6: EARTHQUAKE



■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	67.39	kN	
	Sum of support reactions in Z	67.39	kN	Deviation -0.00%
	Resultant of reactions about X	-0.08	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	-0.62	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.1	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	-2.1	mm	Member No. 884, x: 1.106 m
	Max displacement in Z	10.3	mm	
	Max vectorial displacement	10.3	mm	
	Max rotation about X	1.1	mrad	Member No. 900, x: 0.000 m
	Max rotation about Y	0.2	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-0.3	mrad	Member No. 241, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC2 - Live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	31.89	kN	
	Sum of support reactions in Z	31.89	kN	Deviation 0.00%
	Resultant of reactions about X	-0.04	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	-0.29	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	Member No. 241, x: 0.707 m
	Max displacement in Y	-1.5	mm	Member No. 800, x: 0.700 m
	Max displacement in Z	3.4	mm	Member No. 793, x: 0.520 m
	Max vectorial displacement	3.4	mm	Member No. 792, x: 0.520 m
	Max rotation about X	7.2	mrad	Member No. 793, x: 0.052 m
	Max rotation about Y	0.1	mrad	Member No. 646, x: 2.020 m
	Max rotation about Z	-0.1	mrad	Member No. 241, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC3 - Wind - 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	52.40	kN	
	Sum of support reactions in Y	52.40	kN	Deviation 0.00%
	Sum of loads in Z	-36.84	kN	
	Sum of support reactions in Z	-36.84	kN	Deviation 0.00%
	Resultant of reactions about X	-17.88	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	0.34	kNm	At center of gravity of model
	Resultant of reactions about Z	0.48	kNm	At center of gravity of model
	Max displacement in X	-1.3	mm	Member No. 321, x: 1.300 m
	Max displacement in Y	39.5	mm	Member No. 235, x: 1.000 m
	Max displacement in Z	-12.6	mm	Member No. 890, x: 2.117 m
	Max vectorial displacement	39.5	mm	Member No. 235, x: 1.000 m
	Max rotation about X	12.0	mrad	Member No. 525, x: 0.200 m
	Max rotation about Y	-2.5	mrad	Member No. 304, x: 2.000 m
	Max rotation about Z	-1.3	mrad	Member No. 358, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC4 - Wind - 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	59.07	kN	
	Sum of support reactions in Y	59.07	kN	Deviation 0.00%
	Sum of loads in Z	-16.31	kN	
	Sum of support reactions in Z	-16.31	kN	Deviation 0.00%
	Resultant of reactions about X	-76.71	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	0.15	kNm	At center of gravity of model
	Resultant of reactions about Z	0.54	kNm	At center of gravity of model
	Max displacement in X	-1.0	mm	Member No. 242, x: 1.515 m
	Max displacement in Y	67.5	mm	Member No. 892, x: 0.564 m
	Max displacement in Z	17.6	mm	Member No. 887, x: 2.681 m
	Max vectorial displacement	68.2	mm	Member No. 887, x: 2.540 m
	Max rotation about X	13.4	mrad	Member No. 260, x: 1.300 m
	Max rotation about Y	2.9	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	-1.9	mrad	Member No. 242, x: 2.020 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC5 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	24.82	kN	
	Sum of support reactions in Z	24.82	kN	Deviation -0.00%
	Resultant of reactions about X	-0.03	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	-0.23	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.2	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	5.8	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	21.1	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	21.1	mm	Member No. 885, x: 0.000 m
	Max rotation about X	-2.8	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.3	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-0.6	mrad	Member No. 229, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC6 - Earthquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	89.60	kN	
	Sum of support reactions in Y	89.60	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	-0.00	kN	
	Resultant of reactions about X	-30.65	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:19.66 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.82	kNm	At center of gravity of model
	Max displacement in X	-1.9	mm	Member No. 638, x: 1.200 m
	Max displacement in Y	82.6	mm	Member No. 234, x: 0.800 m
	Max displacement in Z	17.6	mm	Member No. 888, x: 1.270 m
	Max vectorial displacement	82.7	mm	Member No. 234, x: 0.800 m
	Max rotation about X	19.7	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	5.3	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	-3.0	mrad	Member No. 358, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	138.81	kN	
	Sum of support reactions in Z	138.81	kN	Deviation -0.00%
	Max displacement in X	0.2	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	-3.2	mm	Member No. 884, x: 1.106 m
	Max displacement in Z	16.9	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	16.9	mm	Member No. 885, x: 0.000 m
	Max rotation about X	10.9	mrad	Member No. 793, x: 0.052 m
	Max rotation about Y	0.4	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-0.6	mrad	Member No. 241, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		$N, V_y, V_z, M_y, M_z, M_T$
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	128.20	kN	
	Sum of support reactions in Z	128.20	kN	Deviation -0.00%
	Max displacement in X	0.4	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	12.4	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	48.7	mm	
	Max vectorial displacement	48.7	mm	
	Max rotation about X	-6.1	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.8	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-1.3	mrad	Member No. 241, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		$N, V_y, V_z, M_y, M_z, M_T$
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	78.60	kN	
	Sum of support reactions in Y	78.60	kN	Deviation 0.00%
	Sum of loads in Z	5.39	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Z	5.39	kN	Deviation 0.00%
	Max displacement in X	-1.7	mm	Member No. 321, x: 1.300 m
	Max displacement in Y	60.8	mm	Member No. 235, x: 1.000 m
	Max displacement in Z	-14.3	mm	Member No. 890, x: 2.540 m
	Max vectorial displacement	60.8	mm	Member No. 235, x: 1.000 m
	Max rotation about X	18.3	mrad	Member No. 464, x: 0.300 m
	Max rotation about Y	3.7	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	-2.1	mrad	Member No. 358, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	88.61	kN	
	Sum of support reactions in Y	88.61	kN	Deviation 0.00%
	Sum of loads in Z	66.51	kN	
	Sum of support reactions in Z	66.51	kN	Deviation -0.00%
	Max displacement in X	-2.4	mm	Member No. 242, x: 1.616 m
	Max displacement in Y	112.6	mm	Member No. 893, x: 1.287 m
	Max displacement in Z	36.3	mm	Member No. 888, x: 0.282 m
	Max vectorial displacement	114.4	mm	Member No. 888, x: 0.282 m
	Max rotation about X	21.5	mrad	Member No. 260, x: 1.300 m
	Max rotation about Y	5.7	mrad	Member No. 267, x: 2.020 m
	Max rotation about Z	2.9	mrad	Member No. 270, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO5 - Bem-5			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	88.61	kN	
	Sum of support reactions in Y	88.61	kN	Deviation 0.00%
	Sum of loads in Z	103.74	kN	
	Sum of support reactions in Z	103.74	kN	Deviation -0.00%
	Max displacement in X	-3.4	mm	Member No. 242, x: 1.717 m
	Max displacement in Y	136.6	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	56.8	mm	Member No. 888, x: 1.411 m
	Max vectorial displacement	137.1	mm	Member No. 888, x: 1.270 m
	Max rotation about X	23.9	mrad	Member No. 260, x: 1.300 m
	Max rotation about Y	7.3	mrad	Member No. 267, x: 2.020 m
	Max rotation about Z	-4.7	mrad	Member No. 229, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO6 - Earthquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	89.60	kN	
	Sum of support reactions in Y	89.60	kN	Deviation 0.00%
	Sum of loads in Z	67.39	kN	
	Sum of support reactions in Z	67.39	kN	Deviation -0.00%
	Max displacement in X	-2.1	mm	Member No. 638, x: 1.200 m
	Max displacement in Y	90.9	mm	Member No. 234, x: 0.900 m
	Max displacement in Z	25.9	mm	Member No. 888, x: 2.117 m
	Max vectorial displacement	90.9	mm	Member No. 234, x: 0.900 m
	Max rotation about X	21.6	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	5.8	mrad	Member No. 638, x: 2.000 m
	Max rotation about Z	-3.0	mrad	Member No. 356, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	-3.4	mm	CO5, Member No. 242, x: 1.717 m
	Max displacement in Y	136.6	mm	CO5, Member No. 1, x: 0.000 m
	Max displacement in Z	56.8	mm	CO5, Member No. 888, x: 1.411 m
	Max vectorial displacement	137.1	mm	CO5, Member No. 888, x: 1.270 m
	Max rotation about X	23.9	mrad	CO5, Member No. 260, x: 1.300 m

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max rotation about Y	7.3	mrad	CO5, Member No. 267, x: 2.020 m
	Max rotation about Z	-4.7	mrad	CO5, Member No. 229, x: 0.000 m
	Number of 1D finite elements (member elements)	269		
	Number of FE mesh nodes	120		
	Number of equations	720		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate Release Nonlinearities	☒		
	Activate failed members	☒		

	Other Settings	Max number of iterations	:	100
		Number of divisions for member results	:	10
		Member divisions, cables, foundation or tapered members	:	10
		Number of member divisions for searching maximum values	:	20
	Options	☐ Activate shear stiffness of members (Ay, Az)		
		☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
		☒ Apply temperature/deformation load actions without stiffness modifications		
	Precision and Tolerance	☐ Change default setting		
	Nonlinear effects - Activate	☐ Support and elastic foundations		
		☒ Failing members due to member type		
		☒ Member hinges		
		☐ Member elastic foundation		
		☐ Member nonlinearities		
	Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
		Maximum number of reactivations	:	3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
364	LC4	MAX N	0.000	▷ 16.65	-0.06	-0.05	0.00	0.06	-0.08
344	CO5	MIN N	1.700	▷ -36.73	0.00	0.01	0.00	0.01	-0.03
277	CO5	MAX V_y	1.700	-35.65	▷ 0.26	-0.30	0.00	-0.02	-0.01
235	CO5	MIN V_y	0.900	-15.58	▷ -0.24	-0.20	0.00	-0.62	0.00
260	CO5	MAX V_z	2.000	-5.71	-0.14	▷ 2.91	0.00	1.57	0.09
564	CO5	MIN V_z	0.000	-4.59	-0.09	▷ -3.01	0.00	1.28	-0.11
254	CO5	MAX M_T	0.000	-5.19	-0.17	-0.29	▷ 0.04	0.40	-0.21
229	CO5	MIN M_T	2.000	-11.09	-0.05	-0.09	▷ -0.04	-0.28	0.00
260	CO5	MAX M_y	2.000	-5.71	-0.14	2.91	0.00	▷ 1.57	0.09
464	CO4	MIN M_y	1.100	-5.94	0.03	0.00	0.00	▷ -0.78	0.00
235	CO5	MAX M_z	2.000	-15.54	-0.15	2.60	0.01	0.81	▷ 0.23
255	CO5	MIN M_z	2.000	-26.08	0.02	0.13	0.02	0.37	▷ -0.21
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
767	CO5	MAX N	0.572	▷ 16.16	0.00	-0.15	0.03	0.00	0.00
333	CO5	MIN N	0.000	▷ -21.72	-0.03	-0.04	0.01	0.08	-0.05
242	CO5	MAX V_y	2.020	5.37	▷ 0.20	-0.38	0.04	-0.34	-0.22
333	CO5	MIN V_y	1.010	-21.72	▷ -0.06	-0.09	0.01	0.01	0.00
793	CO1	MAX V_z	0.000	-0.28	0.00	▷ 4.04	0.00	-0.29	0.00
792	CO1	MIN V_z	1.040	-0.21	0.00	▷ -4.03	0.00	-0.28	0.00
267	CO5	MAX M_T	0.000	9.74	0.00	-0.06	▷ 0.06	0.01	0.00
289	CO5	MIN M_T	1.515	-0.63	0.00	-0.06	▷ -0.02	0.06	0.00
793	CO1	MAX M_y	0.520	-0.32	0.00	0.03	0.00	▷ 0.77	0.00
536	CO6	MIN M_y	2.020	0.65	0.00	-0.29	-0.01	▷ -0.40	0.00
241	CO5	MAX M_z	0.000	-5.62	0.13	-0.32	0.05	0.33	▷ 0.21
242	CO5	MIN M_z	2.020	5.37	0.20	-0.38	0.04	-0.34	▷ -0.22
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
269	CO5	MAX N	0.000	▷ 11.74	0.00	0.00	0.03	0.00	0.00
270	CO5	MIN N	0.000	▷ -13.56	0.00	0.00	0.04	0.00	0.00
245	CO5	MAX V_y	0.000	-7.46	▷ 0.00	0.00	0.00	0.00	0.00
244	CO5	MIN V_y	0.000	8.03	▷ 0.00	0.00	0.00	0.00	0.00
245	CO1	MAX V_z	0.000	1.06	0.00	▷ 0.00	0.00	0.00	0.00
269	CO5	MIN V_z	0.000	11.74	0.00	▷ 0.00	0.03	0.00	0.00
270	CO5	MAX M_T	0.000	-13.56	0.00	0.00	▷ 0.04	0.00	0.00
292	CO5	MIN M_T	0.000	0.69	0.00	0.00	▷ -0.01	0.00	0.00
336	CO5	MAX M_y	0.000	-4.88	0.00	0.00	0.01	▷ 0.00	0.00
336	CO3	MIN M_y	2.723	-8.71	0.00	0.00	0.02	▷ 0.00	0.00
743	CO6	MAX M_z	0.000	-4.89	0.00	0.00	-0.01	0.00	▷ 0.00
270	CO5	MIN M_z	0.000	-13.56	0.00	0.00	0.04	0.00	▷ 0.00
	Section No. 4: Rohr 48.3/4 (Rohr)								
1	CO3	MAX N	0.000	▷ 15.45	-0.06	-0.37	-0.01	-0.03	-0.03
901	CO5	MIN N	0.000	▷ -38.42	-0.11	0.23	-0.02	-0.19	-0.08
884	CO5	MAX V_y	0.664	-35.58	▷ 0.15	0.39	0.02	0.19	-0.01
901	CO5	MIN V_y	0.591	-38.42	▷ -0.15	0.33	-0.02	-0.02	0.00
884	CO5	MAX V_z	0.000	-35.83	0.11	▷ 1.65	0.03	-0.53	0.08

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member		Node	Location	Forces [kN]			Moments [kNm]		
No.	LC/CO	No.	x [m]	N	V_y	V_z	M_T	M_y	M_z
1	CO2	MIN V_z	1.106	-26.96	0.04	▷ -0.92	0.01	-0.25	-0.03
1	CO5	MAX M_T	0.000	-13.52	0.13	-0.13	▷ 0.03	0.04	0.06
901	CO5	MIN M_T	1.074	-38.42	-0.12	0.29	▷ -0.02	0.13	0.07
1	CO3	MAX M_y	1.106	15.38	-0.06	0.99	-0.01	▷ 0.29	0.04
884	CO5	MIN M_y	0.000	-35.83	0.11	1.65	0.03	▷ -0.53	0.08
884	CO5	MAX M_z	0.000	-35.83	0.11	1.65	0.03	-0.53	▷ 0.08
1	CO5	MIN M_z	1.106	-13.94	0.13	0.15	0.03	0.05	▷ -0.09
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974								
169	CO5	MAX N	1.616	▷ 36.41	0.00	0.03	0.01	-0.05	0.00
168	CO3	MIN N	2.045	▷ -10.96	0.00	0.26	-0.03	0.35	0.00
169	CO3	MAX V_y	0.000	-6.11	▷ 0.00	0.47	-0.02	-0.82	0.00
168	CO6	MIN V_y	2.045	8.68	▷ 0.00	0.45	-0.02	0.74	0.00
169	CO3	MAX V_z	1.717	-6.11	0.00	▷ 0.49	-0.02	0.01	0.00
168	CO5	MIN V_z	0.000	9.04	0.00	▷ -0.05	0.04	0.27	0.00
168	CO5	MAX M_T	2.045	9.04	0.00	-0.03	▷ 0.04	0.19	0.00
168	LC6	MIN M_T	0.000	4.94	0.00	0.45	▷ -0.03	-0.20	0.00
168	CO6	MAX M_y	2.045	8.68	0.00	0.45	-0.02	▷ 0.74	0.00
169	CO3	MIN M_y	0.000	-6.11	0.00	0.47	-0.02	▷ -0.82	0.00
168	CO6	MAX M_z	2.045	8.68	0.00	0.45	-0.02	0.74	▷ 0.00
168	CO5	MIN M_z	0.716	9.04	0.00	-0.04	0.04	0.23	▷ 0.00
	Section No. 8: RD 8 | DIN 1013-1								
915	CO6	MAX N	0.000	▷ 24.27	0.00	0.00	0.00	0.00	0.00
912	LC2	MIN N	0.000	▷ 0.09	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_y	0.000	10.62	▷ 0.00	0.00	0.00	0.00	0.00
902	LC3	MIN V_y	0.000	10.62	▷ 0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_z	0.000	10.62	0.00	▷ 0.00	0.00	0.00	0.00
902	LC3	MIN V_z	0.000	10.62	0.00	▷ 0.00	0.00	0.00	0.00
902	LC3	MAX M_T	0.000	10.62	0.00	0.00	▷ 0.00	0.00	0.00
902	LC3	MIN M_T	0.000	10.62	0.00	0.00	▷ 0.00	0.00	0.00
902	LC3	MAX M_y	0.000	10.62	0.00	0.00	0.00	▷ 0.00	0.00
902	LC3	MIN M_y	0.000	10.62	0.00	0.00	0.00	▷ 0.00	0.00
902	LC3	MAX M_z	0.000	10.62	0.00	0.00	0.00	0.00	▷ 0.00
902	LC3	MIN M_z	0.000	10.62	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 12: RRO 100x60x4 (warmgefertigt)								
879	CO5	MAX N	0.000	▷ 1.74	0.00	0.00	0.00	0.00	0.00
880	CO5	MIN N	0.000	▷ -25.33	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_y	0.000	-0.55	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_y	0.000	-0.55	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_z	0.000	-0.55	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MIN V_z	0.000	-0.55	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MAX M_T	0.000	-0.55	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MIN M_T	0.000	-0.55	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MAX M_y	0.000	-0.55	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MIN M_y	0.000	-0.55	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MAX M_z	0.000	-0.55	0.00	0.00	0.00	0.00	▷ 0.00
878	LC1	MIN M_z	0.000	-0.55	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 14: GI-KDXL Kederdach XL								
895	CO5	MAX N	6.296	▷ 16.45	-0.12	0.91	0.00	-0.51	0.53
893	CO5	MIN N	1.716	▷ -26.91	0.00	0.94	0.00	0.00	0.00
895	CO2	MAX V_y	6.296	-1.48	▷ 0.03	-3.62	0.00	0.12	-0.17
896	CO5	MIN V_y	2.204	-16.45	▷ -0.16	-0.27	0.00	-0.70	0.00
900	CO5	MAX V_z	0.000	-25.66	-0.02	▷ 15.88	0.00	0.00	0.00
889	CO5	MIN V_z	2.822	-16.35	0.00	▷ -14.89	0.00	9.82	0.00
895	CO5	MAX M_T	6.296	16.45	-0.12	0.91	▷ 0.00	-0.51	0.53
895	CO5	MIN M_T	0.000	14.01	-0.12	-0.77	▷ 0.00	-0.93	-0.22
887	CO5	MAX M_y	2.822	-23.01	0.00	0.74	0.00	▷ 61.28	0.00
891	CO4	MIN M_y	1.270	-10.29	0.00	0.03	0.00	▷ -21.23	0.00
896	CO5	MAX M_z	6.296	-14.87	-0.16	0.82	0.00	0.43	▷ 0.64
896	CO5	MIN M_z	0.000	-17.31	-0.16	-0.86	0.00	0.55	▷ -0.34
	Section No. 15: Rundstahl 12								
894	CO5	MAX N	0.000	▷ 22.10	0.00	0.00	0.00	0.00	0.00
897	LC2	MIN N	0.000	▷ 0.04	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_y	0.000	3.96	▷ 0.00	0.00	0.00	0.00	0.00
894	LC1	MIN V_y	0.000	3.96	▷ 0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_z	0.000	3.96	0.00	▷ 0.00	0.00	0.00	0.00
894	LC1	MIN V_z	0.000	3.96	0.00	▷ 0.00	0.00	0.00	0.00
894	LC1	MAX M_T	0.000	3.96	0.00	0.00	▷ 0.00	0.00	0.00
894	LC1	MIN M_T	0.000	3.96	0.00	0.00	▷ 0.00	0.00	0.00
894	LC1	MAX M_y	0.000	3.96	0.00	0.00	0.00	▷ 0.00	0.00
894	LC1	MIN M_y	0.000	3.96	0.00	0.00	0.00	▷ 0.00	0.00
894	LC1	MAX M_z	0.000	3.96	0.00	0.00	0.00	0.00	▷ 0.00
894	LC1	MIN M_z	0.000	3.96	0.00	0.00	0.00	0.00	▷ 0.00

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
63	LC1	0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.03	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.08	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	0.14	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.02	Earthquake
64	LC1	0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	-0.07	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.05	0.00	0.00	0.00	0.00	-0.02	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.04	0.00	0.00	0.00	0.00	0.03	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	-0.12	0.00	0.00	0.00	0.00	-0.07	Bem-4
	CO5	-0.17	0.00	0.00	0.00	0.00	-0.09	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	-0.03	Earthquake
69	LC1	0.00	0.00	0.00	0.00	0.00	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.10	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.04	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	-0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.10	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.22	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	0.37	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	-0.06	Earthquake
70	LC1	0.00	0.00	0.00	0.00	0.00	-0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.16	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.04	Snow
	LC6	0.07	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.10	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.08	0.00	0.00	0.00	0.00	0.27	Bem-4
	CO5	0.08	0.00	0.00	0.00	0.00	0.34	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	0.11	Earthquake
94	LC1	0.02	0.00	0.00	0.00	0.00	0.03	EG
	LC2	0.01	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.07	0.00	0.00	0.00	0.00	0.21	Wind - 2
	LC5	0.03	0.00	0.00	0.00	0.00	0.05	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	0.05	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.00	0.11	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.15	0.00	0.00	0.00	0.00	0.40	Bem-4
	CO5	0.25	0.00	0.00	0.00	0.00	0.57	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.18	Earthquake
95	LC1	0.02	0.00	0.00	0.00	0.00	-0.03	EG
	LC2	0.01	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.18	Wind - 1
	LC4	-0.11	0.00	0.00	0.00	0.00	0.34	Wind - 2
	LC5	0.03	0.00	0.00	0.00	0.00	-0.05	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	0.34	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	-0.05	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.00	-0.11	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.26	Bem-3
	CO4	-0.20	0.00	0.00	0.00	0.00	0.57	Bem-4
	CO5	-0.27	0.00	0.00	0.00	0.00	0.67	Bem-5
	CO6	-0.08	0.00	0.00	0.00	0.00	0.37	Earthquake
107	LC1	-0.01	0.00	0.00	0.00	0.00	-0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.18	Wind - 2
	LC5	-0.02	0.00	0.00	0.00	0.00	-0.04	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-1
	CO2	-0.04	0.00	0.00	0.00	0.00	-0.09	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.06	0.00	0.00	0.00	0.00	-0.34	Bem-4
	CO5	-0.11	0.00	0.00	0.00	0.00	-0.48	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	-0.16	Earthquake
108	LC1	-0.01	0.00	0.00	0.00	0.00	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	-0.16	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.30	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
108	LC5	-0.02	0.00	0.00	0.00	0.00	0.04	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	-0.30	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	0.04	Bem-1
	CO2	-0.04	0.00	0.00	0.00	0.00	0.09	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	-0.23	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.47	Bem-4
	CO5	0.08	0.00	0.00	0.00	0.00	-0.53	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	-0.31	Earthquake
110	LC1	-0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.04	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.02	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.01	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.05	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-3
	CO4	-0.07	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	-0.11	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.01	Earthquake
111	LC1	0.01	0.00	0.00	0.00	0.00	-0.05	EG
	LC2	0.01	0.00	0.00	0.00	0.00	-0.02	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	0.09	0.00	0.00	0.00	0.00	-0.18	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.08	Snow
	LC6	0.07	0.00	0.00	0.00	0.00	-0.14	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	-0.10	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	-0.21	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	-0.07	Bem-3
	CO4	0.17	0.00	0.00	0.00	0.00	-0.43	Bem-4
	CO5	0.24	0.00	0.00	0.00	0.00	-0.69	Bem-5
	CO6	0.09	0.00	0.00	0.00	0.00	-0.27	Earthquake
112	LC1	-0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.10	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.12	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	-0.02	Snow
	LC6	0.11	0.00	0.00	0.00	0.00	-0.02	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	-0.05	Bem-2
	CO3	0.14	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.21	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.18	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	0.12	0.00	0.00	0.00	0.00	-0.01	Earthquake
113	LC1	0.01	0.00	0.00	0.00	0.00	0.05	EG
	LC2	0.01	0.00	0.00	0.00	0.00	0.02	Live Load
	LC3	-0.09	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	-0.15	0.00	0.00	0.00	0.00	-0.18	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.08	Snow
	LC6	-0.14	0.00	0.00	0.00	0.00	-0.15	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	0.10	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	0.21	Bem-2
	CO3	-0.14	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.24	0.00	0.00	0.00	0.00	-0.37	Bem-4
	CO5	-0.25	0.00	0.00	0.00	0.00	-0.54	Bem-5
	CO6	-0.15	0.00	0.00	0.00	0.00	-0.22	Earthquake
116	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.11	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.14	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.08	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.09	Earthquake
117	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.08	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	0.07	0.00	0.00	0.00	0.00	-0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.07	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.12	0.00	0.00	0.00	0.00	-0.05	Bem-3
	CO4	0.10	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.05	Earthquake
122	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.11	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.10	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.02	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
122	CO3	0.01	0.00	0.00	0.00	0.00	-0.14	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	-0.08	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	-0.07	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	-0.09	Earthquake
123	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.09	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.09	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.09	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.13	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	-0.15	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.13	0.00	0.00	0.00	0.00	-0.04	Bem-5
	CO6	-0.10	0.00	0.00	0.00	0.00	-0.05	Earthquake
125	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.08	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.09	Earthquake
126	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.24	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.20	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.24	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.33	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.27	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.18	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.22	Earthquake
131	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	-0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.02	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	-0.08	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	-0.06	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	-0.09	Earthquake
132	LC1	0.00	0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.17	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	15.42	0.00	0.00	0.00	-0.22	Wind - 1
	LC4	0.00	16.96	0.00	0.00	0.00	-0.19	Wind - 2
	LC5	0.00	-0.15	0.00	0.00	0.00	-0.01	Snow
	LC6	0.00	22.40	0.00	0.00	0.00	-0.23	Earthquake
	CO1	0.00	0.27	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	-0.22	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.00	23.12	0.00	0.00	0.00	-0.31	Bem-3
	CO4	0.00	25.82	0.00	0.00	0.00	-0.26	Bem-4
	CO5	0.00	25.21	0.00	0.00	0.00	-0.24	Bem-5
	CO6	0.00	22.73	0.00	0.00	0.00	-0.22	Earthquake
133	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	-0.08	Bem-3
	CO4	0.08	0.00	0.00	0.00	0.00	-0.05	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.06	Earthquake
134	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.15	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
135	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.08	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	-0.06	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.11	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.09	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.05	Earthquake
136	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	0.01	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.05	Earthquake
137	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	-0.07	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	-0.05	Earthquake
138	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.05	Earthquake
139	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.10	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	-0.12	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.15	Earthquake
140	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.04	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	6.49	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.00	6.85	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	-0.05	0.00	0.00	0.00	-0.01	Snow
	LC6	0.00	9.21	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.06	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	-0.06	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.00	9.75	0.00	0.00	0.00	-0.08	Bem-3
	CO4	0.00	10.37	0.00	0.00	0.00	-0.05	Bem-4
	CO5	0.00	10.17	0.00	0.00	0.00	-0.05	Bem-5
	CO6	0.00	9.30	0.00	0.00	0.00	-0.06	Earthquake
141	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.01	0.00	0.00	0.00	0.00	0.05	Earthquake
142	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.08	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
142	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.01	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.01	0.00	0.00	0.00	0.00	0.15	Earthquake
143	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.10	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	-0.17	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.15	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.14	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	-0.17	Earthquake
144	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.08	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.05	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.06	Earthquake
145	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.06	Earthquake
146	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.14	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.14	Earthquake
148	LC1	0.00	-0.07	7.40	0.00	0.00	0.00	EG
	LC2	0.00	-0.05	5.23	0.00	0.00	0.00	Live Load
	LC3	0.03	1.68	-0.30	0.00	0.00	-0.06	Wind - 1
	LC4	0.03	1.52	10.86	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	-0.08	3.89	0.00	0.00	0.00	Snow
	LC6	0.04	2.09	13.25	0.00	0.00	-0.07	Earthquake
	CO1	0.00	-0.17	17.84	0.00	0.00	0.00	Bem-1
	CO2	0.01	-0.21	15.78	0.00	0.00	-0.01	Bem-2
	CO3	0.05	2.32	6.43	0.00	0.00	-0.08	Bem-3
	CO4	0.03	2.02	27.74	0.00	0.00	-0.05	Bem-4
	CO5	0.02	1.78	37.47	0.00	0.00	-0.04	Bem-5
	CO6	0.04	1.88	21.74	0.00	0.00	-0.06	Earthquake
149	LC1	0.00	-0.09	7.07	0.00	0.00	0.00	EG
	LC2	0.00	-0.06	4.84	0.00	0.00	0.00	Live Load
	LC3	0.00	1.75	0.34	0.00	0.00	0.00	Wind - 1
	LC4	0.00	1.61	5.47	0.00	0.00	0.00	Wind - 2
	LC5	0.00	-0.10	4.59	0.00	0.00	0.00	Snow
	LC6	-0.01	2.19	8.84	0.00	0.00	0.00	Earthquake
	CO1	0.00	-0.20	16.87	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.26	16.61	0.00	0.00	0.00	Bem-2
	CO3	-0.01	2.42	5.47	0.00	0.00	0.00	Bem-3
	CO4	0.00	2.15	16.22	0.00	0.00	0.00	Bem-4
	CO5	0.00	1.92	21.89	0.00	0.00	0.00	Bem-5
	CO6	0.00	1.98	14.76	0.00	0.00	0.00	Earthquake
151	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.12	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.22	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
151	CO3	0.02	0.00	0.00	0.00	0.00	0.16	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.18	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.18	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.23	Earthquake
154	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.10	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	-0.12	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.22	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	-0.15	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	-0.18	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	-0.17	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.22	Earthquake
155	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.11	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.20	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.14	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.16	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	0.16	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	0.20	Earthquake
158	LC1	0.00	0.06	7.42	0.00	0.00	0.00	EG
	LC2	0.00	0.02	5.32	0.00	0.00	0.00	Live Load
	LC3	-0.05	2.66	-15.44	0.00	0.00	-0.09	Wind - 1
	LC4	-0.06	3.54	-18.66	0.00	0.00	-0.11	Wind - 2
	LC5	0.00	0.12	3.80	0.00	0.00	0.00	Snow
	LC6	-0.12	6.39	-18.96	0.00	0.00	-0.20	Earthquake
	CO1	0.00	0.11	17.99	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.25	15.65	0.00	0.00	0.01	Bem-2
	CO3	-0.08	4.21	-16.39	0.00	0.00	-0.14	Bem-3
	CO4	-0.10	5.50	-19.43	0.00	0.00	-0.16	Bem-4
	CO5	-0.09	5.84	-16.79	0.00	0.00	-0.16	Bem-5
	CO6	-0.12	6.53	-12.61	0.00	0.00	-0.20	Earthquake
159	LC1	0.00	0.08	7.09	0.00	0.00	0.00	EG
	LC2	0.00	0.02	4.93	0.00	0.00	0.00	Live Load
	LC3	0.01	2.78	-13.91	0.00	0.00	0.00	Wind - 1
	LC4	0.01	3.72	-14.51	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.14	4.50	0.00	0.00	0.00	Snow
	LC6	0.02	6.71	-17.50	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.14	17.01	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.30	16.50	0.00	0.00	0.00	Bem-2
	CO3	0.01	4.39	-14.68	0.00	0.00	0.00	Bem-3
	CO4	0.01	5.78	-11.70	0.00	0.00	0.00	Bem-4
	CO5	0.01	6.17	-5.70	0.00	0.00	0.00	Bem-5
	CO6	0.02	6.85	-9.82	0.00	0.00	0.00	Earthquake
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	-0.03	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
165	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.03	Earthquake
167	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.04	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	-0.11	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.05	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
168	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	-0.04	Wind - 1
	LC4	0.06	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.07	0.00	0.00	0.00	0.00	-0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	-0.07	Bem-3
	CO4	0.10	0.00	0.00	0.00	0.00	-0.11	Bem-4
	CO5	0.10	0.00	0.00	0.00	0.00	-0.11	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	-0.09	Earthquake
173	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	-0.06	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.10	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	-0.09	Bem-3
	CO4	-0.10	0.00	0.00	0.00	0.00	-0.13	Bem-4
	CO5	-0.11	0.00	0.00	0.00	0.00	-0.14	Bem-5
	CO6	-0.11	0.00	0.00	0.00	0.00	-0.13	Earthquake
174	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	-0.04	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	-0.05	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.06	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	-0.05	Earthquake
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.03	Earthquake
177	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.03	Earthquake
179	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.02	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.05	Earthquake
180	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.12	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	-0.13	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	-0.18	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.19	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	-0.22	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	-0.22	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	-0.19	Earthquake
185	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.11	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
185	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.18	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.13	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.17	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.18	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.19	Earthquake
186	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.11	Earthquake
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	-0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.05	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	-0.06	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	-0.08	Earthquake
189	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.11	Earthquake
191	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.09	0.00	0.00	0.00	0.00	-0.13	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	-0.10	Bem-3
	CO4	-0.09	0.00	0.00	0.00	0.00	-0.14	Bem-4
	CO5	-0.10	0.00	0.00	0.00	0.00	-0.15	Bem-5
	CO6	-0.11	0.00	0.00	0.00	0.00	-0.15	Earthquake
192	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.03	Earthquake
194	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.08	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.13	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.10	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.13	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	-0.14	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	-0.15	0.00	0.00	0.00	0.00	0.06	Earthquake
195	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
195	CO3	0.05	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.05	Earthquake
197	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.01	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.04	Earthquake
198	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.06	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.08	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.09	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	-0.10	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	-0.10	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.09	0.00	0.00	0.00	0.00	0.07	Earthquake
203	LC1	0.00	0.05	3.27	0.00	0.00	0.00	EG
	LC2	0.00	0.02	-0.07	0.00	0.00	0.00	Live Load
	LC3	0.06	2.35	5.57	0.00	0.00	-0.10	Wind - 1
	LC4	0.08	3.03	7.70	0.00	0.00	-0.12	Wind - 2
	LC5	0.00	0.08	0.13	0.00	0.00	0.00	Snow
	LC6	0.14	5.52	12.78	0.00	0.00	-0.22	Earthquake
	CO1	0.00	0.10	4.33	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.19	4.63	0.00	0.00	-0.01	Bem-2
	CO3	0.10	3.68	11.88	0.00	0.00	-0.16	Bem-3
	CO4	0.14	4.69	16.65	0.00	0.00	-0.20	Bem-4
	CO5	0.14	4.97	17.46	0.00	0.00	-0.21	Bem-5
	CO6	0.15	5.63	16.74	0.00	0.00	-0.23	Earthquake
204	LC1	0.00	-0.06	3.29	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	2.09	-4.22	0.00	0.00	-0.08	Wind - 1
	LC4	-0.04	2.06	-4.57	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	-0.06	0.06	0.00	0.00	0.00	Snow
	LC6	-0.06	2.78	-6.06	0.00	0.00	-0.11	Earthquake
	CO1	0.00	-0.14	4.45	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.15	4.53	0.00	0.00	0.01	Bem-2
	CO3	-0.06	3.02	-3.36	0.00	0.00	-0.11	Bem-3
	CO4	-0.06	2.94	-2.50	0.00	0.00	-0.11	Bem-4
	CO5	-0.06	2.80	-2.37	0.00	0.00	-0.11	Bem-5
	CO6	-0.06	2.67	-2.85	0.00	0.00	-0.10	Earthquake
206	LC1	0.00	0.05	4.00	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.12	0.00	0.00	0.00	Live Load
	LC3	0.05	2.31	1.92	0.00	0.00	-0.11	Wind - 1
	LC4	0.07	3.00	3.09	0.00	0.00	-0.14	Wind - 2
	LC5	0.00	0.09	0.18	0.00	0.00	0.00	Snow
	LC6	0.12	5.44	4.64	0.00	0.00	-0.25	Earthquake
	CO1	0.00	0.10	5.59	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.19	5.68	0.00	0.00	-0.01	Bem-2
	CO3	0.08	3.62	6.70	0.00	0.00	-0.17	Bem-3
	CO4	0.11	4.64	10.35	0.00	0.00	-0.22	Bem-4
	CO5	0.12	4.93	10.97	0.00	0.00	-0.24	Bem-5
	CO6	0.13	5.55	8.92	0.00	0.00	-0.26	Earthquake
207	LC1	0.00	-0.06	4.01	0.00	0.00	0.00	EG
	LC2	0.00	-0.05	0.15	0.00	0.00	0.00	Live Load
	LC3	-0.04	2.00	-1.54	0.00	0.00	-0.09	Wind - 1
	LC4	-0.04	1.96	-1.87	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	-0.06	0.15	0.00	0.00	0.00	Snow
	LC6	-0.05	2.64	-2.24	0.00	0.00	-0.13	Earthquake
	CO1	0.00	-0.14	5.64	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.16	5.64	0.00	0.00	0.01	Bem-2
	CO3	-0.05	2.87	1.32	0.00	0.00	-0.13	Bem-3
	CO4	-0.06	2.78	2.54	0.00	0.00	-0.14	Bem-4
	CO5	-0.05	2.62	2.69	0.00	0.00	-0.14	Bem-5
	CO6	-0.05	2.52	1.70	0.00	0.00	-0.12	Earthquake
209	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	0.07	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
210	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.07	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.08	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	0.08	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.07	Earthquake
215	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	-0.05	Earthquake
216	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.07	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.10	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.11	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.09	Earthquake
221	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	-0.08	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.14	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.10	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	-0.13	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	-0.14	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	-0.16	0.00	0.00	0.00	0.00	0.09	Earthquake
222	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.08	Earthquake
227	LC1	0.00	0.05	4.40	0.00	0.00	0.00	EG
	LC2	0.00	0.03	0.68	0.00	0.00	0.00	Live Load
	LC3	0.05	2.30	1.65	0.00	0.00	-0.10	Wind - 1
	LC4	0.06	3.01	3.05	0.00	0.00	-0.14	Wind - 2
	LC5	0.00	0.10	0.57	0.00	0.00	-0.01	Snow
	LC6	0.11	5.45	4.85	0.00	0.00	-0.25	Earthquake
	CO1	0.00	0.11	6.96	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.20	6.80	0.00	0.00	-0.01	Bem-2
	CO3	0.07	3.59	6.50	0.00	0.00	-0.16	Bem-3
	CO4	0.10	4.65	10.75	0.00	0.00	-0.21	Bem-4
	CO5	0.11	4.95	12.06	0.00	0.00	-0.23	Bem-5
	CO6	0.12	5.54	9.40	0.00	0.00	-0.26	Earthquake
228	LC1	0.00	-0.05	4.41	0.00	0.00	0.00	EG
	LC2	0.00	-0.06	0.69	0.00	0.00	0.01	Live Load
	LC3	-0.03	1.94	-3.19	0.00	0.00	-0.09	Wind - 1
	LC4	-0.03	1.88	-3.86	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	-0.07	0.56	0.00	0.00	0.00	Snow
	LC6	-0.04	2.52	-4.35	0.00	0.00	-0.12	Earthquake
	CO1	0.00	-0.15	6.99	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.17	6.78	0.00	0.00	0.01	Bem-2
	CO3	-0.05	2.77	-0.86	0.00	0.00	-0.13	Bem-3
	CO4	-0.05	2.63	-0.07	0.00	0.00	-0.14	Bem-4
	CO5	-0.05	2.45	0.38	0.00	0.00	-0.13	Bem-5
	CO6	-0.04	2.39	-0.15	0.00	0.00	-0.12	Earthquake
233	LC1	-0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	-0.11	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
233	LC5	-0.01	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	-0.05	Bem-3
	CO4	-0.09	0.00	0.00	0.00	0.00	-0.18	Bem-4
	CO5	-0.14	0.00	0.00	0.00	0.00	-0.22	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.06	Earthquake
234	LC1	-0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	0.01	0.00	0.00	0.00	0.00	-0.07	Earthquake
239	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.14	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.14	Earthquake
240	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.12	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.13	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.17	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.19	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	0.21	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	0.21	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.18	Earthquake
245	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.02	Earthquake
246	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.09	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.10	Earthquake
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.08	Earthquake
252	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.06	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.09	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
252	CO3	-0.09	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.10	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	-0.10	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.09	0.00	0.00	0.00	0.00	0.07	Earthquake
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.13	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	0.13	Earthquake
258	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.10	Earthquake
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.05	Earthquake
264	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.03	Earthquake
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.07	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.13	0.00	0.00	0.00	0.00	0.16	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.09	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.12	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	-0.13	0.00	0.00	0.00	0.00	0.14	Bem-5
	CO6	-0.14	0.00	0.00	0.00	0.00	0.16	Earthquake
270	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.10	Earthquake
275	LC1	0.00	0.05	3.81	0.00	0.00	0.00	EG
	LC2	0.00	0.03	2.30	0.00	0.00	0.00	Live Load
	LC3	0.04	2.32	0.72	0.00	0.00	-0.06	Wind - 1
	LC4	0.05	3.07	2.59	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.10	1.60	0.00	0.00	0.00	Snow
	LC6	0.09	5.55	5.82	0.00	0.00	-0.13	Earthquake
	CO1	0.00	0.11	8.57	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.22	7.49	0.00	0.00	0.00	Bem-2
	CO3	0.06	3.62	4.26	0.00	0.00	-0.09	Bem-3
	CO4	0.08	4.72	8.90	0.00	0.00	-0.12	Bem-4
	CO5	0.09	5.03	11.80	0.00	0.00	-0.13	Bem-5
	CO6	0.09	5.61	9.40	0.00	0.00	-0.14	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
276	LC1	0.00	-0.06	3.81	0.00	0.00	0.00	EG
	LC2	0.00	-0.05	2.32	0.00	0.00	0.00	Live Load
	LC3	-0.02	1.92	-4.47	0.00	0.00	-0.05	Wind - 1
	LC4	-0.02	1.81	-4.88	0.00	0.00	-0.05	Wind - 2
	LC5	0.00	-0.08	1.58	0.00	0.00	0.00	Snow
	LC6	-0.03	2.44	-4.35	0.00	0.00	-0.07	Earthquake
	CO1	0.00	-0.16	8.59	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.18	7.47	0.00	0.00	0.00	Bem-2
	CO3	-0.03	2.70	-3.06	0.00	0.00	-0.07	Bem-3
	CO4	-0.03	2.49	-2.12	0.00	0.00	-0.07	Bem-4
	CO5	-0.03	2.27	-0.42	0.00	0.00	-0.06	Bem-5
	CO6	-0.03	2.27	-0.49	0.00	0.00	-0.06	Earthquake
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.06	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.10	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	0.10	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	0.05	Earthquake
282	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.08	0.00	0.00	0.00	0.00	0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	-0.09	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	-0.08	0.00	0.00	0.00	0.00	0.04	Earthquake
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.11	Earthquake
288	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.11	Earthquake
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.10	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.08	Earthquake
294	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.01	Earthquake
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
299	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.10	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.09	Earthquake
300	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.04	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.07	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	-0.07	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	0.04	Earthquake
305	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.12	Earthquake
306	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.08	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.07	Earthquake
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.09	Earthquake
312	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	-0.01	0.00	0.00	0.00	0.00	0.02	Earthquake
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.09	0.00	0.00	0.00	0.00	0.13	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	0.09	Bem-3
	CO4	-0.09	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	-0.10	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	-0.10	0.00	0.00	0.00	0.00	0.14	Earthquake
318	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
318	CO3	0.03	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.06	Earthquake
323	LC1	0.00	0.06	3.69	0.00	0.00	0.00	EG
	LC2	0.00	0.02	2.67	0.00	0.00	0.00	Live Load
	LC3	0.00	2.42	2.67	0.00	0.00	0.00	Wind - 1
	LC4	0.00	3.21	5.55	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.11	1.64	0.00	0.00	0.00	Snow
	LC6	-0.01	5.79	10.27	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.12	8.95	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.24	7.34	0.00	0.00	0.00	Bem-2
	CO3	0.00	3.77	6.83	0.00	0.00	0.00	Bem-3
	CO4	0.00	4.93	12.69	0.00	0.00	0.00	Bem-4
	CO5	0.00	5.25	15.72	0.00	0.00	0.00	Bem-5
	CO6	-0.01	5.85	13.18	0.00	0.00	0.00	Earthquake
325	LC1	0.00	-0.07	3.71	0.00	0.00	0.00	EG
	LC2	0.00	-0.05	2.72	0.00	0.00	0.00	Live Load
	LC3	0.00	1.97	-6.64	0.00	0.00	0.00	Wind - 1
	LC4	0.00	1.84	-6.27	0.00	0.00	0.00	Wind - 2
	LC5	0.00	-0.08	1.59	0.00	0.00	0.00	Snow
	LC6	0.01	2.48	-6.96	0.00	0.00	0.00	Earthquake
	CO1	0.00	-0.17	9.02	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.20	7.28	0.00	0.00	0.00	Bem-2
	CO3	0.01	2.76	-5.66	0.00	0.00	0.00	Bem-3
	CO4	0.01	2.49	-3.52	0.00	0.00	0.00	Bem-4
	CO5	0.01	2.24	-1.42	0.00	0.00	0.00	Bem-5
	CO6	0.01	2.28	-2.53	0.00	0.00	0.00	Earthquake
327	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
328	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
329	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
330	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
331	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
332	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
333	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
334	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
335	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
337	LC1	-0.02	0.00	0.00	0.00	0.00	0.00	EG
	LC2	-0.01	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.07	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.07	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	-0.03	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.09	0.00	0.00	0.00	0.00	-0.01	Earthquake
	CO1	-0.04	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.08	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.09	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.14	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	-0.25	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	-0.01	Earthquake
338	LC1	-0.02	0.00	0.00	0.00	0.00	0.00	EG
	LC2	-0.01	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.11	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	-0.03	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	-0.04	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.08	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.20	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.27	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.00	Earthquake
Σ Supp.	LC1	0.00	0.00	67.39				
Σ Loads	LC1	0.00	0.00	67.39				
Σ Supp.	LC2	0.00	0.00	31.89				
Σ Loads	LC2	0.00	0.00	31.89				
Σ Supp.	LC3	0.00	52.40	-36.84				
Σ Loads	LC3	0.00	52.40	-36.84				
Σ Supp.	LC4	0.00	59.07	-16.31				
Σ Loads	LC4	0.00	59.07	-16.31				
Σ Supp.	LC5	0.00	0.00	24.82				
Σ Loads	LC5	0.00	0.00	24.82				
Σ Supp.	LC6	0.00	89.60	0.00				
Σ Loads	LC6	0.00	89.60	0.00				
Σ Supp.	CO1	0.00	0.00	138.81				
Σ Loads	CO1	0.00	0.00	138.81				
Σ Supp.	CO2	0.00	0.00	128.20				
Σ Loads	CO2	0.00	0.00	128.20				

■ 4.4 NODES - SUPPORT FORCES

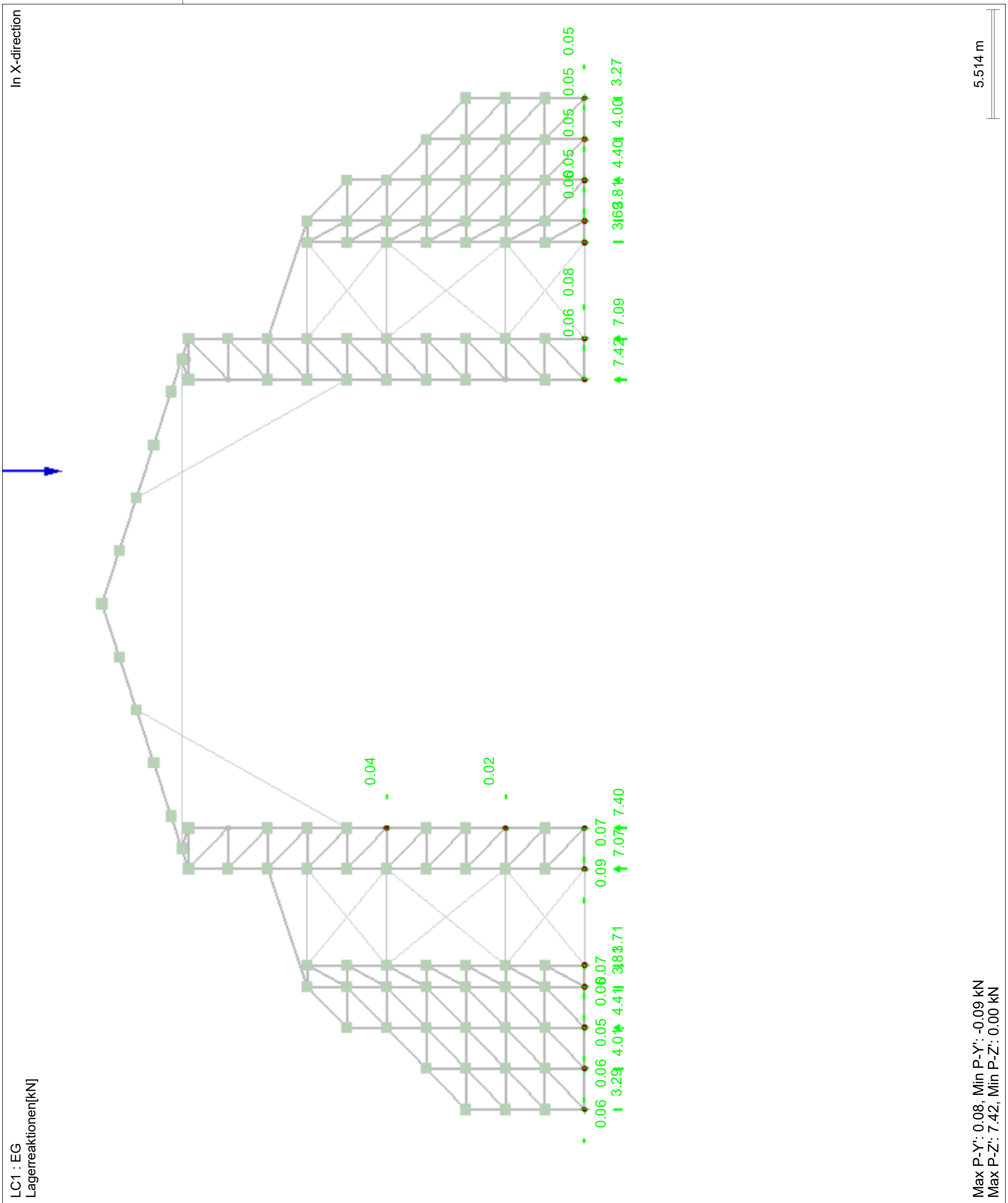
Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
Σ Supp.	CO3	0.00	78.60	5.39				
Σ Loads	CO3	0.00	78.60	5.39				
Σ Supp.	CO4	0.00	88.61	66.51				
Σ Loads	CO4	0.00	88.61	66.51				
Σ Supp.	CO5	0.00	88.61	103.74				
Σ Loads	CO5	0.00	88.61	103.74				
Σ Supp.	CO6	0.00	89.60	67.39				
Σ Loads	CO6	0.00	89.60	67.39				

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

Project: 2023 | Model: K-Dach-2 | Date: 19.09.2023

LAGERREAKTIONEN



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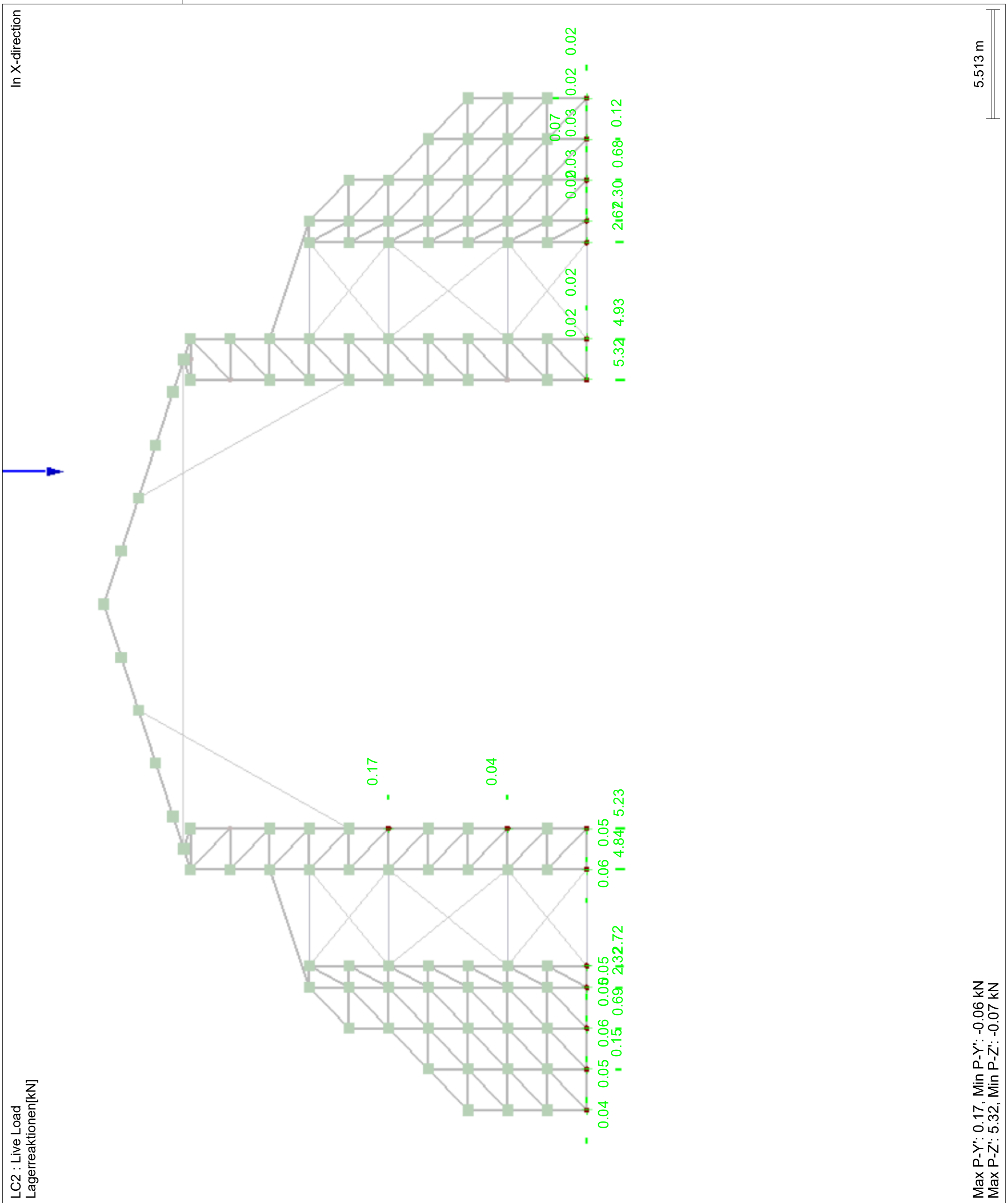
■ LAGERREAKTIONEN



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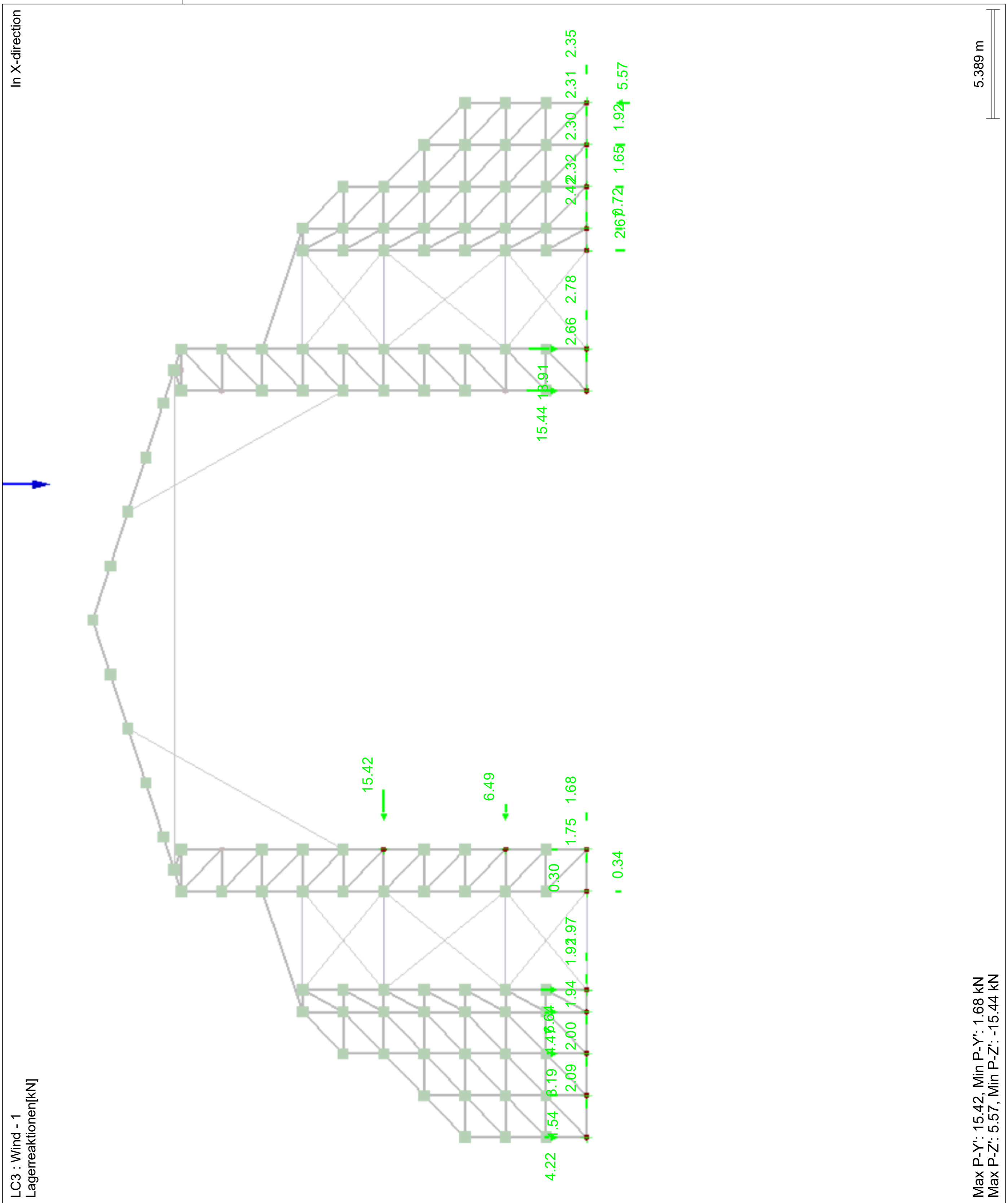

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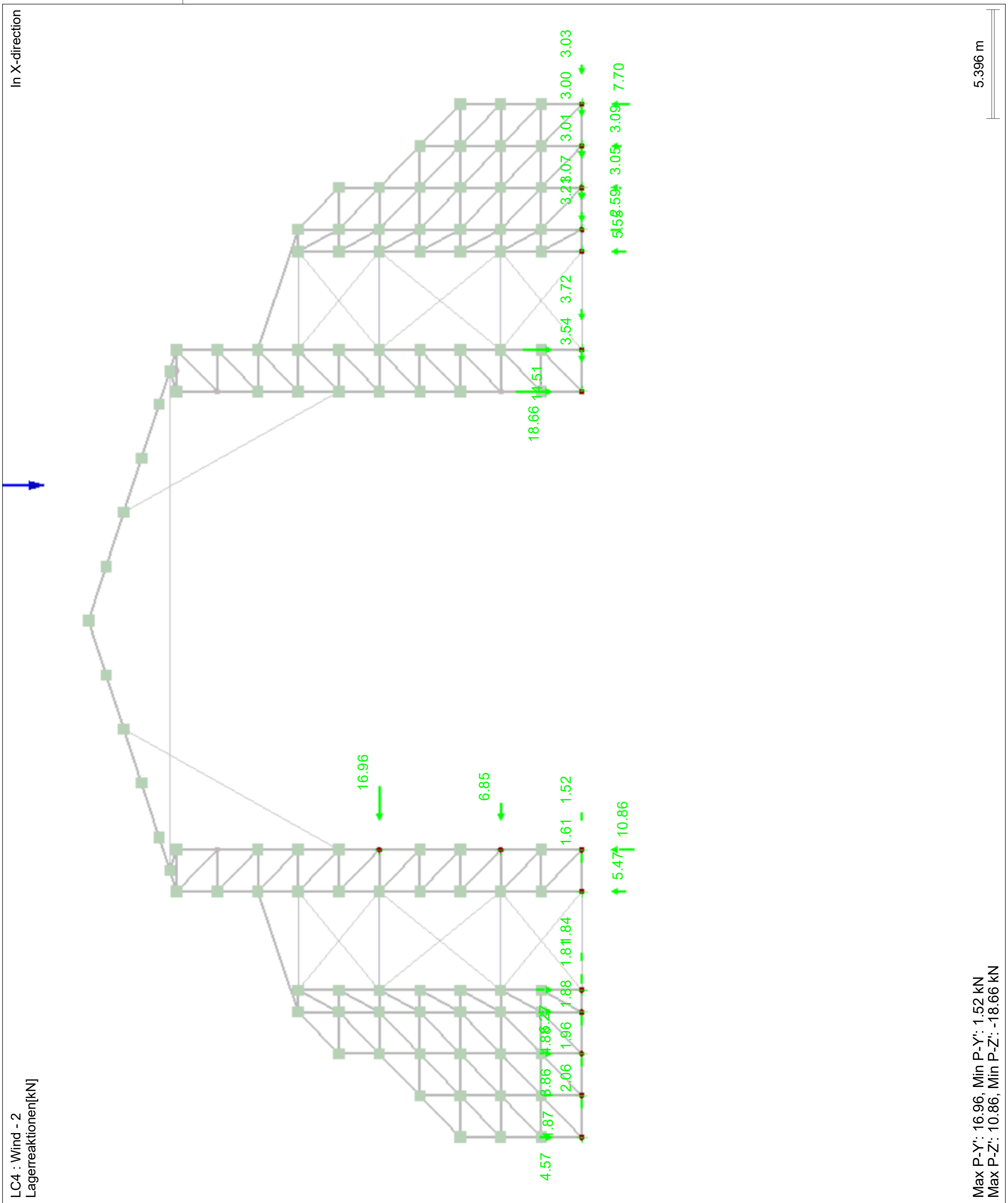
Project: 2023 | Model: K-Dach-2 | Date: 19.09.2023

■ LAGERREAKTIONEN



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Andersenstraße 16, 74078 HEILBRONN
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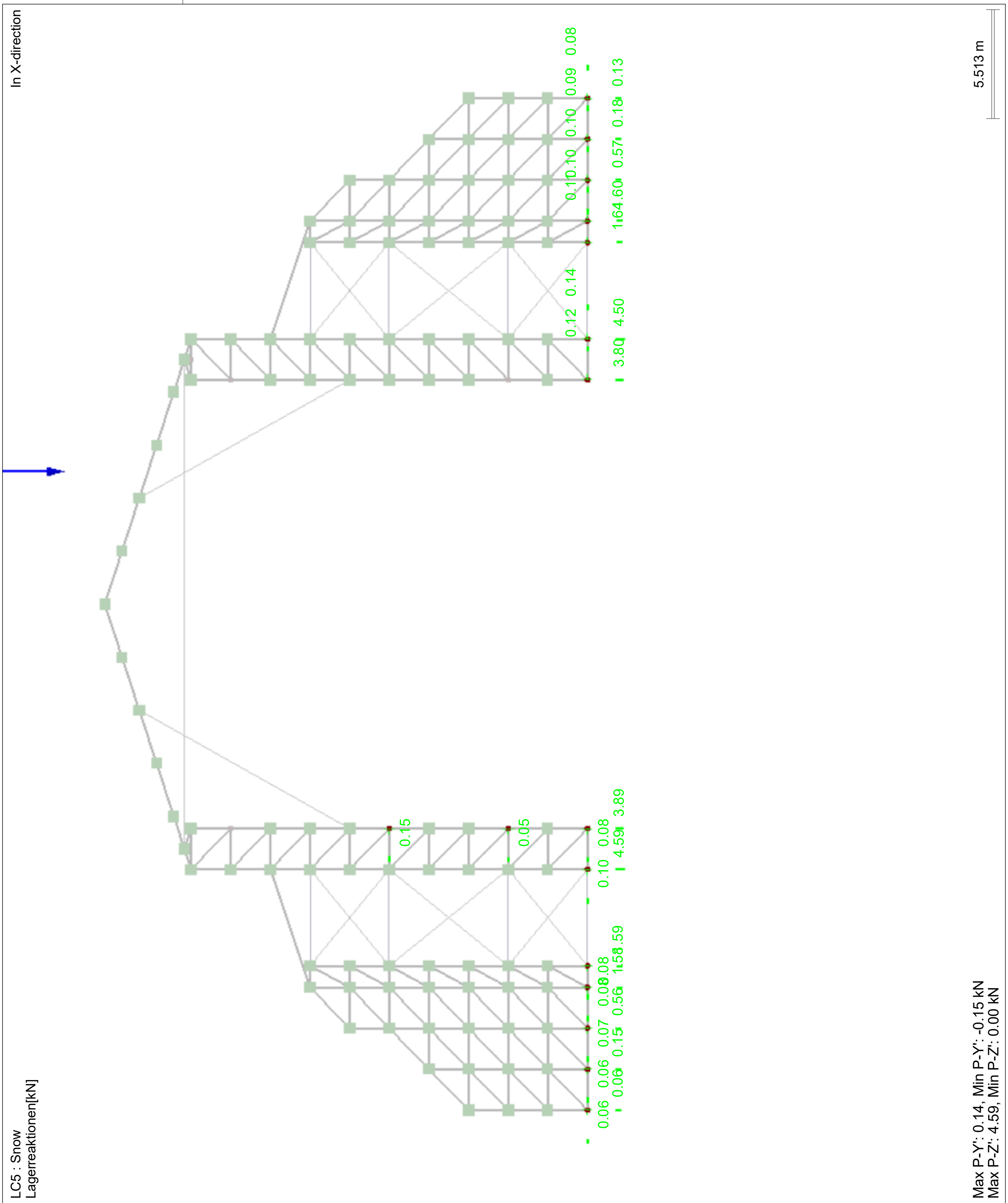
RESULTS

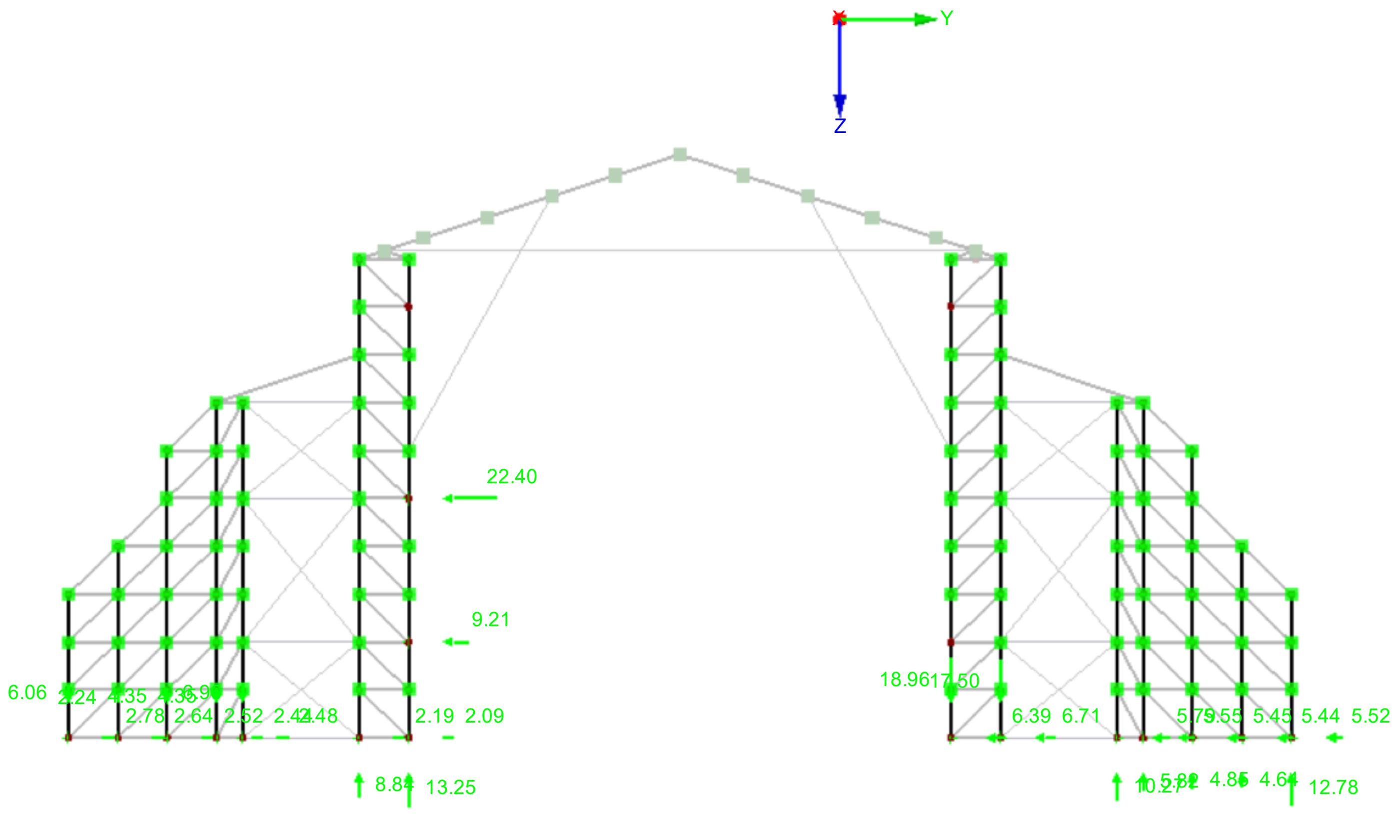
Project: 2023 Model: K-Dach-2 Date: 19.09.2023

LAGERREAKTIONEN



LC6 : Earthquake
Lagerreaktionen[kN]

In X-direction



Max P-Y': 22.40, Min P-Y': 0.00 kN
Max P-Z': 13.25, Min P-Z': -18.96 kN

6.322 m

RSTAB 8.31.01 - Space Frame Structures

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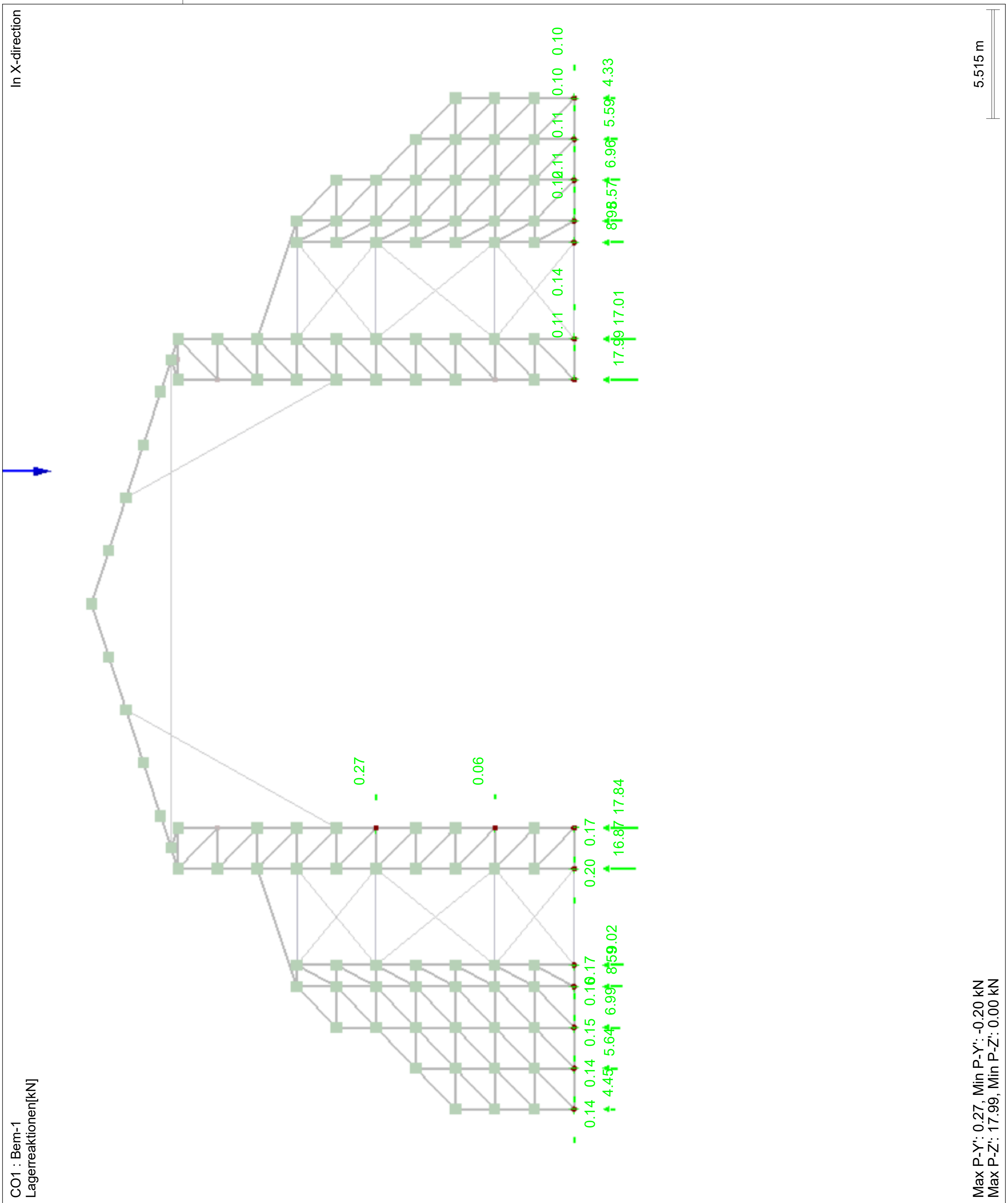
LAGERREAKTIONEN

Project: 2023
Model: K-Dach-2
Date: 19.09.2023

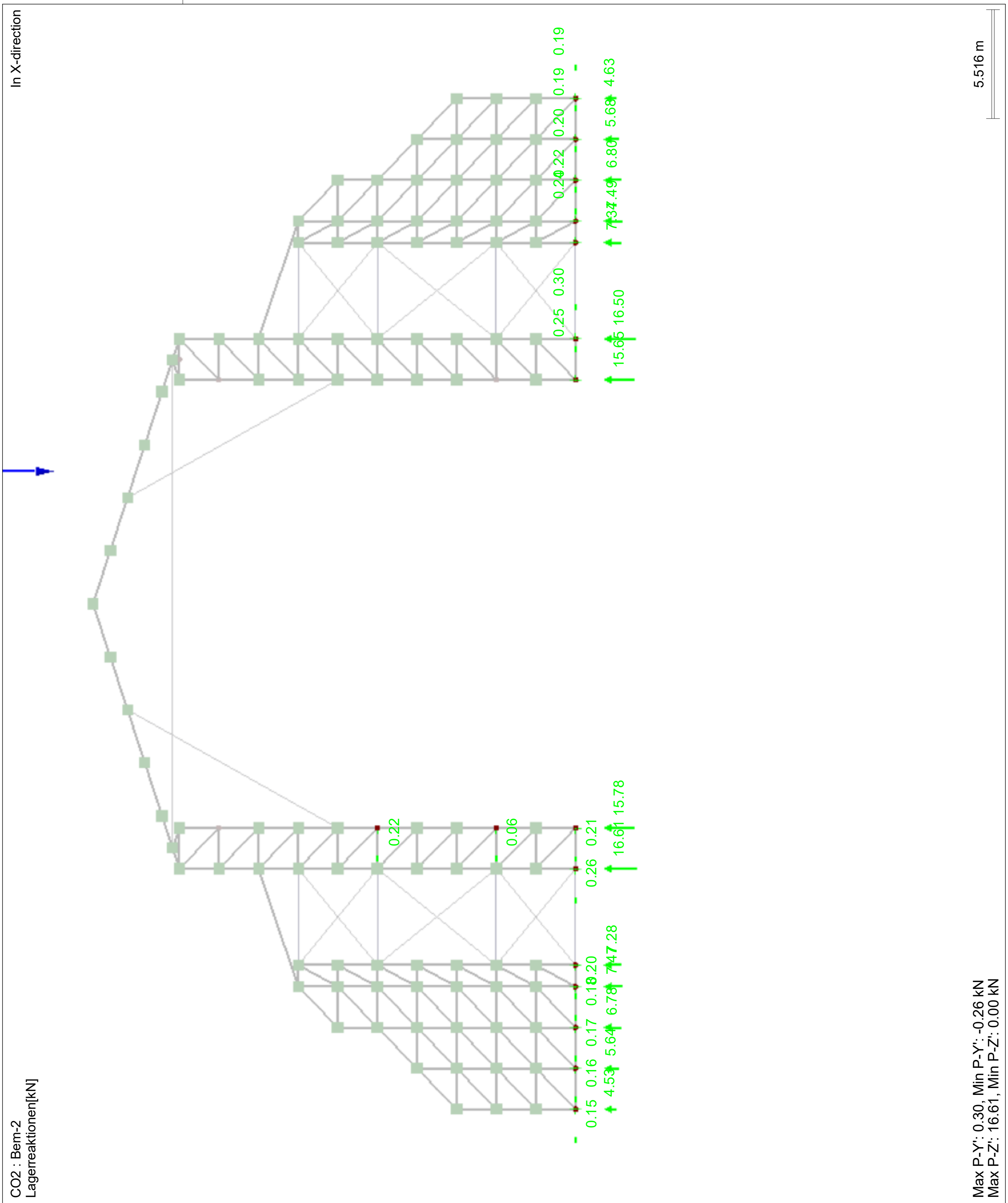
Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

LAGERREAKTIONEN



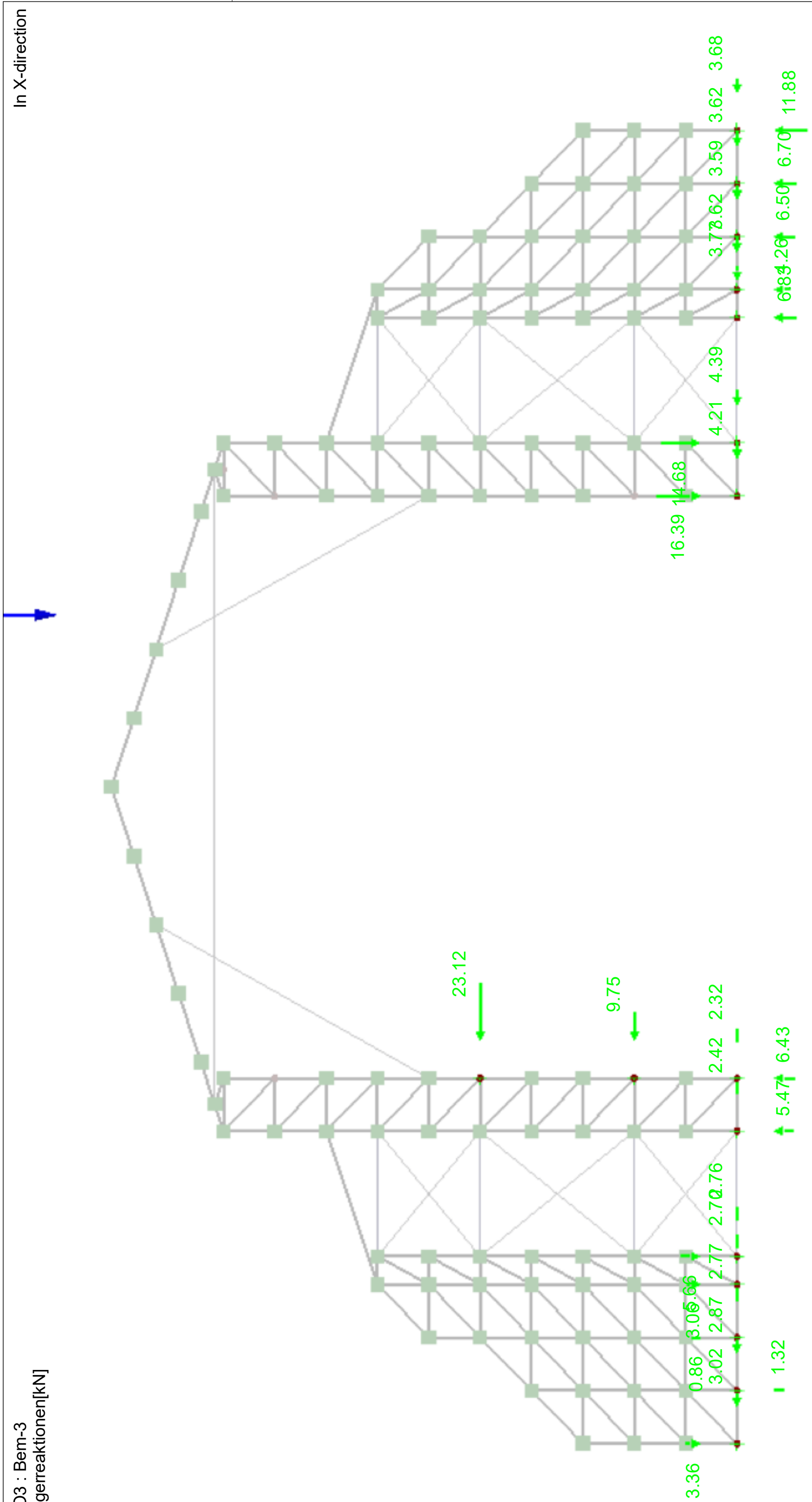
LAGERREAKTIONEN



■ LAGERREAKTIONEN

In X-direction

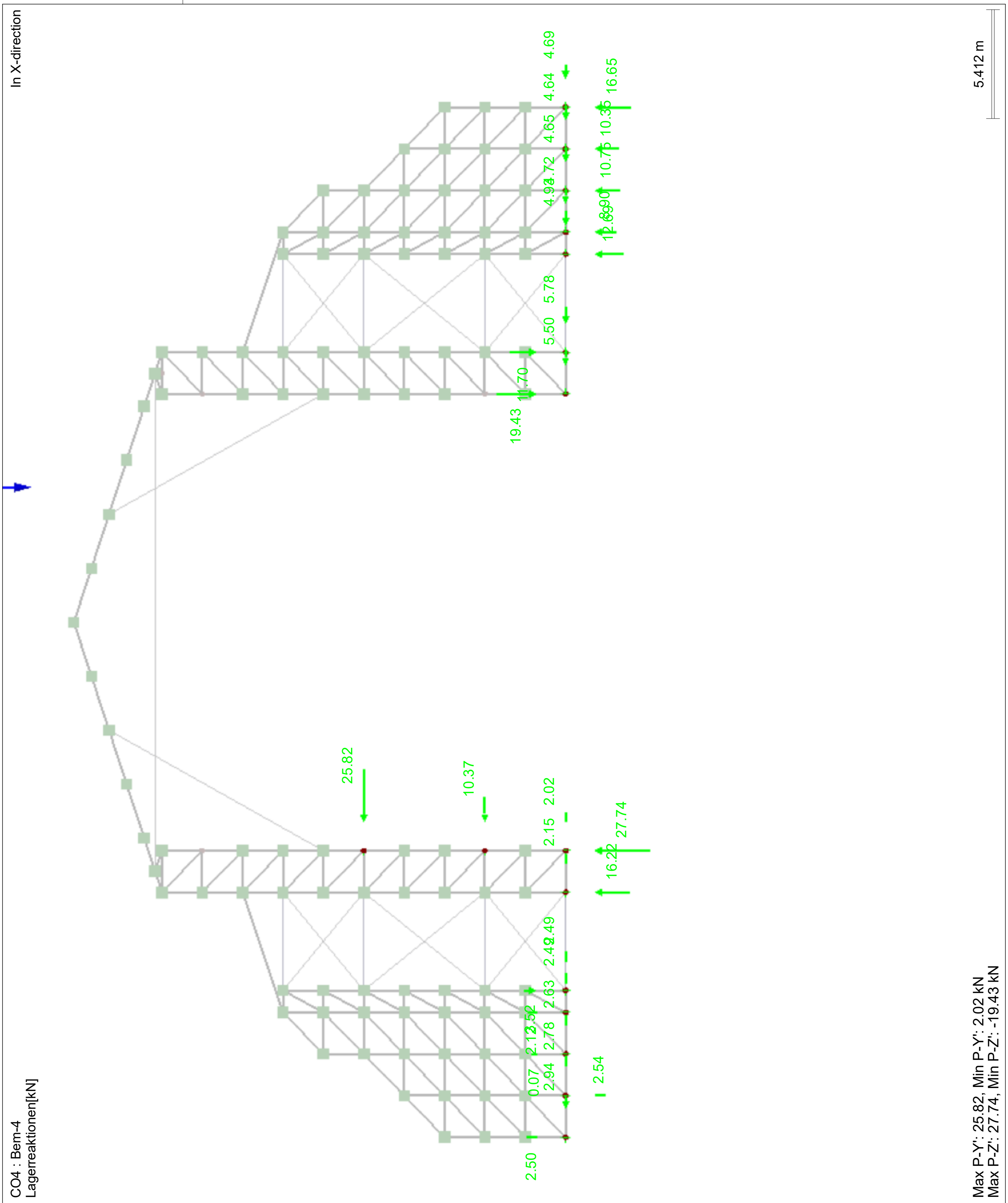
5.402 m



CO3 : Bem-3
Lagerreaktionen[kN]

Max P-Y': 23.12, Min P-Y': 2.32 kN
Max P-Z': 11.88, Min P-Z': -16.39 kN

LAGERREAKTIONEN



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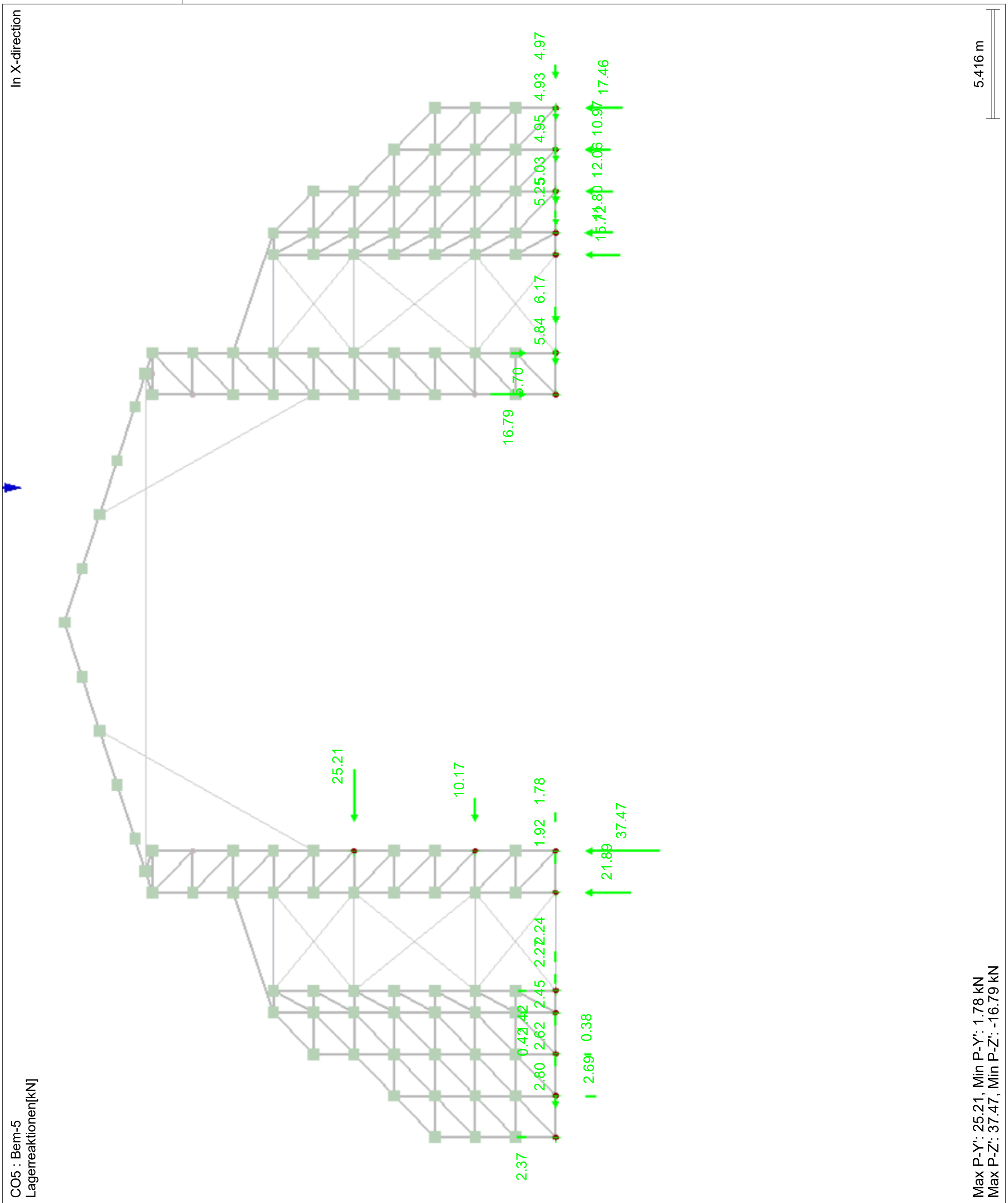
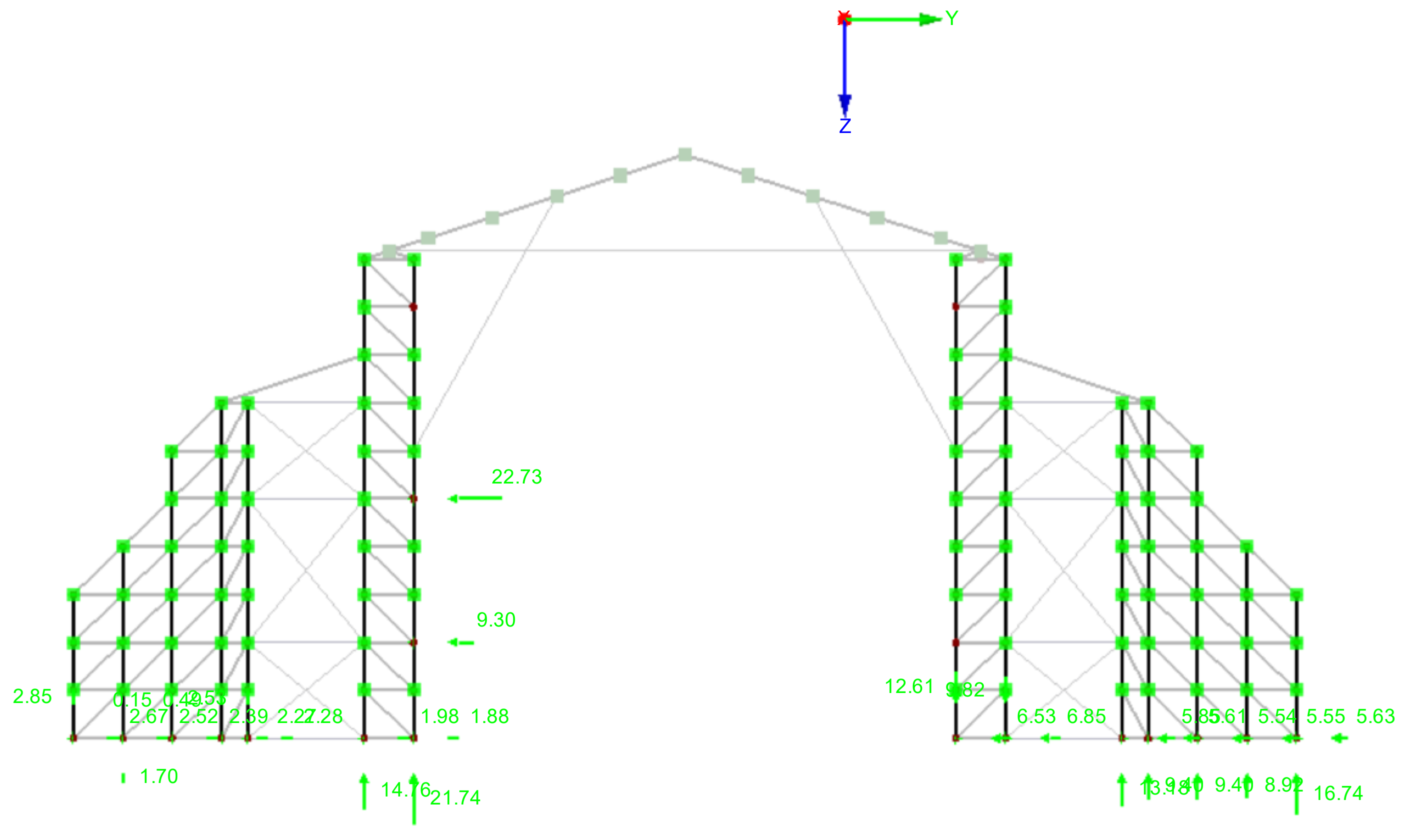


CO6 : Earthquake
Lagerreaktionen[kN]

In X-direction



Max P-Y': 22.73, Min P-Y': 0.00 kN
Max P-Z': 21.74, Min P-Z': -12.61 kN

6.322 m

■ LAGERREAKTIONEN

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■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
364	RC1		1.200	MAX N	▷ 16.42	-0.08	-0.06	0.00	0.00	0.00	CO 4
344	RC1		1.700	MIN N	▷ -36.73	0.00	0.01	0.00	0.01	-0.03	CO 5
277	RC1		1.700	MAX V_y	-35.65	▷ 0.26	-0.30	0.00	-0.02	-0.01	CO 5
235	RC1		0.900	MIN V_y	-15.58	▷ -0.24	-0.20	0.00	-0.62	0.00	CO 5
260	RC1		2.000	MAX V_z	-5.71	-0.14	▷ 2.91	0.00	1.57	0.09	CO 5
564	RC1		0.000	MIN V_z	-4.59	-0.09	▷ -3.01	0.00	1.28	-0.11	CO 5
254	RC1		0.000	MAX M_T	-5.19	-0.17	-0.29	▷ 0.04	0.40	-0.21	CO 5
229	RC1		2.000	MIN M_T	-11.09	-0.05	-0.09	▷ -0.04	-0.28	0.00	CO 5
260	RC1		2.000	MAX M_y	-5.71	-0.14	2.91	0.00	▷ 1.57	0.09	CO 5
464	RC1		1.100	MIN M_y	-5.94	0.03	0.00	0.00	▷ -0.78	0.00	CO 4
235	RC1		2.000	MAX M_z	-15.54	-0.15	2.60	0.01	0.81	▷ 0.23	CO 5
255	RC1		2.000	MIN M_z	-26.08	0.02	0.13	0.02	0.37	▷ -0.21	CO 5
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
767	RC1		0.572	MAX N	▷ 16.16	0.00	-0.15	0.03	0.00	0.00	CO 5
333	RC1		0.000	MIN N	▷ -21.72	-0.03	-0.04	0.01	0.08	-0.05	CO 5
242	RC1		2.020	MAX V_y	5.37	▷ 0.20	-0.38	0.04	-0.34	-0.22	CO 5
333	RC1		1.010	MIN V_y	-21.72	▷ -0.06	-0.09	0.01	0.01	0.00	CO 5
793	RC1		0.000	MAX V_z	-0.28	0.00	▷ 4.04	0.00	-0.29	0.00	CO 1
792	RC1		1.040	MIN V_z	-0.21	0.00	▷ -4.03	0.00	-0.28	0.00	CO 1
267	RC1		0.000	MAX M_T	9.74	0.00	-0.06	▷ 0.06	0.01	0.00	CO 5
289	RC1		1.515	MIN M_T	-0.63	0.00	-0.06	▷ -0.02	0.06	0.00	CO 5
793	RC1		0.520	MAX M_y	-0.32	0.00	0.03	0.00	▷ 0.77	0.00	CO 1
536	RC1		2.020	MIN M_y	0.65	0.00	-0.29	-0.01	▷ -0.40	0.00	CO 6
241	RC1		0.000	MAX M_z	-5.62	0.13	-0.32	0.05	0.33	▷ 0.21	CO 5
242	RC1		2.020	MIN M_z	5.37	0.20	-0.38	0.04	-0.34	▷ -0.22	CO 5
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
269	RC1		0.000	MAX N	▷ 11.74	0.00	0.00	0.03	0.00	0.00	CO 5
270	RC1		0.000	MIN N	▷ -13.56	0.00	0.00	0.04	0.00	0.00	CO 5
244	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
270	RC1		0.000	MAX M_T	-13.56	0.00	0.00	▷ 0.04	0.00	0.00	CO 5
292	RC1		0.000	MIN M_T	0.69	0.00	0.00	▷ -0.01	0.00	0.00	CO 5
244	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
244	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
244	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
270	RC1		0.000	MIN M_z	-13.56	0.00	0.00	0.04	0.00	▷ 0.00	CO 5
	Section No. 4: Rohr 48.3/4 (Rohr)										
1	RC1		0.000	MAX N	▷ 15.45	-0.06	-0.37	-0.01	-0.03	-0.03	CO 3
901	RC1		0.000	MIN N	▷ -38.42	-0.11	0.23	-0.02	-0.19	-0.08	CO 5
884	RC1		0.664	MAX V_y	-35.58	▷ 0.15	0.39	0.02	0.19	-0.01	CO 5
901	RC1		0.591	MIN V_y	-38.42	▷ -0.15	0.33	-0.02	-0.02	0.00	CO 5
884	RC1		0.000	MAX V_z	-35.83	0.11	▷ 1.65	0.03	-0.53	0.08	CO 5
1	RC1		1.106	MIN V_z	-26.96	0.04	▷ -0.92	0.01	-0.25	-0.03	CO 2
1	RC1		0.000	MAX M_T	-13.52	0.13	-0.13	▷ 0.03	0.04	0.06	CO 5
901	RC1		1.074	MIN M_T	-38.42	-0.12	0.29	▷ -0.02	0.13	0.07	CO 5
1	RC1		1.106	MAX M_y	15.38	-0.06	0.99	-0.01	▷ 0.29	0.04	CO 3
884	RC1		0.000	MIN M_y	-35.83	0.11	1.65	0.03	▷ -0.53	0.08	CO 5
884	RC1		0.000	MAX M_z	-35.83	0.11	1.65	0.03	-0.53	▷ 0.08	CO 5
1	RC1		1.106	MIN M_z	-13.94	0.13	0.15	0.03	0.05	▷ -0.09	CO 5
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974										
169	RC1		1.616	MAX N	▷ 36.41	0.00	0.03	0.01	-0.05	0.00	CO 5
168	RC1		2.045	MIN N	▷ -10.96	0.00	0.26	-0.03	0.35	0.00	CO 3
169	RC1		0.000	MAX V_y	-6.11	▷ 0.00	0.47	-0.02	-0.82	0.00	CO 3
168	RC1		2.045	MIN V_y	8.68	▷ 0.00	0.45	-0.02	0.74	0.00	CO 6
169	RC1		1.717	MAX V_z	-6.11	0.00	▷ 0.49	-0.02	0.01	0.00	CO 3
168	RC1		0.000	MIN V_z	9.04	0.00	▷ -0.05	0.04	0.27	0.00	CO 5
168	RC1		2.045	MAX M_T	9.04	0.00	-0.03	▷ 0.04	0.19	0.00	CO 5
168	RC1		0.000	MIN M_T	-10.96	0.00	0.27	▷ -0.03	-0.20	0.00	CO 3
168	RC1		2.045	MAX M_y	8.68	0.00	0.45	-0.02	▷ 0.74	0.00	CO 6
169	RC1		0.000	MIN M_y	-6.11	0.00	0.47	-0.02	▷ -0.82	0.00	CO 3
168	RC1		2.045	MAX M_z	8.68	0.00	0.45	-0.02	0.74	▷ 0.00	CO 6
168	RC1		0.716	MIN M_z	9.04	0.00	-0.04	0.04	0.23	▷ 0.00	CO 5
	Section No. 8: RD 8 | DIN 1013-1										
915	RC1		0.000	MAX N	▷ 24.27	0.00	0.00	0.00	0.00	0.00	CO 6
902	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
902	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
902	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
902	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
902	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
902	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
879	RC1		0.000	MAX N	▷ 1.74	0.00	0.00	0.00	0.00	0.00	CO 5
880	RC1		0.000	MIN N	▷ -25.33	0.00	0.00	0.00	0.00	0.00	CO 5
878	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	

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■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
878	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 14: GI-KDXL Kederdach XL										
895	RC1		6.296	MAX N	▷ 16.45	-0.12	0.91	0.00	-0.51	0.53	CO 5
893	RC1		1.716	MIN N	▷ -26.91	0.00	0.94	0.00	0.00	0.00	CO 5
895	RC1		6.296	MAX V_y	-1.48	▷ 0.03	-3.62	0.00	0.12	-0.17	CO 2
896	RC1		2.204	MIN V_y	-16.45	▷ -0.16	-0.27	0.00	-0.70	0.00	CO 5
900	RC1		0.000	MAX V_z	-25.66	-0.02	▷ 15.88	0.00	0.00	0.00	CO 5
889	RC1		2.822	MIN V_z	-16.35	0.00	▷ -14.89	0.00	9.82	0.00	CO 5
895	RC1		6.296	MAX M_T	16.45	-0.12	0.91	▷ 0.00	-0.51	0.53	CO 5
895	RC1		0.000	MIN M_T	14.01	-0.12	-0.77	▷ 0.00	-0.93	-0.22	CO 5
887	RC1		2.822	MAX M_y	-23.01	0.00	0.74	0.00	▷ 61.28	0.00	CO 5
891	RC1		1.270	MIN M_y	-10.29	0.00	0.03	0.00	▷ -21.23	0.00	CO 4
896	RC1		6.296	MAX M_z	-14.87	-0.16	0.82	0.00	0.43	▷ 0.64	CO 5
896	RC1		0.000	MIN M_z	-17.31	-0.16	-0.86	0.00	0.55	▷ -0.34	CO 5
	Section No. 15: Rundstahl 12										
894	RC1		0.000	MAX N	▷ 22.10	0.00	0.00	0.00	0.00	0.00	CO 5
894	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
894	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
63	RC1	Max $P_{X'}$	0.14	0.00	0.00	0.00	0.00	-0.10	CO 5
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Min $M_{Z'}$	0.14	0.00	0.00	0.00	0.00	-0.10	CO 5
64	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.03	CO 2
		Min $P_{X'}$	-0.17	0.00	0.00	0.00	0.00	-0.09	CO 5
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.03	CO 2
		Min $M_{Z'}$	-0.17	0.00	0.00	0.00	0.00	-0.09	CO 5
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.10	CO 2
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	-0.06	CO 6
		Max $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	0.37	CO 5
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	-0.12	CO 3
70	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	0.27	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.05	CO 1
		Max $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	0.34	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.10	CO 2
94	RC1	Max $P_{X'}$	0.25	0.00	0.00	0.00	0.00	0.57	CO 5
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	0.03	CO 3
		Max $M_{Z'}$	0.25	0.00	0.00	0.00	0.00	0.57	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
95	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.11	CO 2
		Min $P_{X'}$	-0.27	0.00	0.00	0.00	0.00	0.67	CO 5
		Max $M_{Z'}$	-0.27	0.00	0.00	0.00	0.00	0.67	CO 5
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.11	CO 2
107	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.03	CO 3
		Min $P_{X'}$	-0.11	0.00	0.00	0.00	0.00	-0.48	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.11	0.00	0.00	0.00	0.00	-0.48	CO 5
108	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	-0.53	CO 5
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.23	CO 3
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.09	CO 2
		Min $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	-0.53	CO 5
110	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 3
		Min $P_{X'}$	-0.11	0.00	0.00	0.00	0.00	0.08	CO 5
		Max $M_{Z'}$	-0.11	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 3
111	RC1	Max $P_{X'}$	0.24	0.00	0.00	0.00	0.00	-0.69	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
111		Min $M_{Z'}$	0.24	0.00	0.00	0.00	0.00	-0.69	CO 5
112	RC1	Max $P_{X'}$	0.21	0.00	0.00	0.00	0.00	0.02	CO 4
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.05	CO 2
		Max $M_{Z'}$	0.18	0.00	0.00	0.00	0.00	0.03	CO 5
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.05	CO 2
113	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.21	CO 2
		Min $P_{X'}$	-0.25	0.00	0.00	0.00	0.00	-0.54	CO 5
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.21	CO 2
		Min $M_{Z'}$	-0.25	0.00	0.00	0.00	0.00	-0.54	CO 5
116	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.08	CO 4
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 2
117	RC1	Max $P_{X'}$	0.12	0.00	0.00	0.00	0.00	-0.05	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $M_{Z'}$	0.12	0.00	0.00	0.00	0.00	-0.05	CO 3
122	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.07	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.14	CO 3
123	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Min $P_{X'}$	-0.15	0.00	0.00	0.00	0.00	0.02	CO 4
		Max $M_{Z'}$	-0.13	0.00	0.00	0.00	0.00	0.05	CO 3
		Min $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	-0.05	CO 6
125	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	0.02	CO 3
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.09	CO 6
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 2
126	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.33	CO 3
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.18	CO 5
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.33	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
131	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.02	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.09	CO 6
132	RC1	Max $P_{Y'}$	0.00	25.82	0.00	0.00	0.00	-0.26	CO 4
		Min $P_{Y'}$	0.00	-0.22	0.00	0.00	0.00	-0.02	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	23.12	0.00	0.00	0.00	-0.31	CO 3
133	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	-0.05	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.08	CO 3
134	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.10	CO 3
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.15	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
135	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.11	0.00	0.00	0.00	0.00	0.10	CO 3
		Max $M_{Z'}$	-0.11	0.00	0.00	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.02	CO 5
136	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
137	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.07	CO 3
138	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.04	CO 4
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
139	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	-0.10	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	-0.15	CO 6
140	RC1	Max $P_{Y'}$	0.00	10.37	0.00	0.00	0.00	-0.05	CO 4
		Min $P_{Y'}$	0.00	-0.06	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	9.75	0.00	0.00	0.00	-0.08	CO 3
141	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
142	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	0.11	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.15	CO 6

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
142		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
143	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.17	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	-0.17	CO 6
144	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.08	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.08	CO 3
145	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.08	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.08	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
146	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.14	CO 6
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.14	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
148	RC1	Max $P_{X'}$	0.05	2.32	6.43	0.00	0.00	-0.08	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.05	2.32	6.43	0.00	0.00	-0.08	CO 3
		Min $P_{Y'}$	0.01	-0.21	15.78	0.00	0.00	-0.01	CO 2
		Max $P_{Z'}$	0.02	1.78	37.47	0.00	0.00	-0.04	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.05	2.32	6.43	0.00	0.00	-0.08	CO 3
149	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	2.42	5.47	0.00	0.00	0.00	CO 3
		Max $P_{Y'}$	-0.01	2.42	5.47	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.26	16.61	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	1.92	21.89	0.00	0.00	0.00	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	2.42	5.47	0.00	0.00	0.00	CO 3
151	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.18	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.23	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
154	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	-0.22	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	-0.22	CO 6
155	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	0.20	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	0.20	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
158	RC1	Max $P_{X'}$	0.00	0.25	15.65	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.12	6.53	-12.61	0.00	0.00	-0.20	CO 6
		Max $P_{Y'}$	-0.12	6.53	-12.61	0.00	0.00	-0.20	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.11	17.99	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	-0.10	5.50	-19.43	0.00	0.00	-0.16	CO 4
		Max $M_{Z'}$	0.00	0.25	15.65	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.12	6.53	-12.61	0.00	0.00	-0.20	CO 6
159	RC1	Max $P_{X'}$	0.02	6.85	-9.82	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	0.00	0.30	16.50	0.00	0.00	0.00	CO 2
		Max $P_{Y'}$	0.02	6.85	-9.82	0.00	0.00	0.00	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.14	17.01	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.01	4.39	-14.68	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.02	6.85	-9.82	0.00	0.00	0.00	CO 6
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 5
165	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.04	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
167	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	-0.11	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	-0.11	CO 5
168	RC1	Max $P_{X'}$	0.10	0.00	0.00	0.00	0.00	-0.11	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	0.10	0.00	0.00	0.00	0.00	-0.11	CO 4
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.11	0.00	0.00	0.00	0.00	-0.14	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
173		Min $M_{Z'}$	-0.11	0.00	0.00	0.00	0.00	-0.14	CO 5
174	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	-0.06	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.06	CO 4
176	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 6
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
177	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
179	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	-0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	-0.05	CO 6
180	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.22	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	-0.22	CO 5
185	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	-0.18	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.19	CO 6
186	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 4
188	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.08	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.08	CO 6
189	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 4
191	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.11	0.00	0.00	0.00	0.00	-0.15	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	-0.15	CO 5
192	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	-0.03	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	-0.03	CO 4
194	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.15	0.00	0.00	0.00	0.00	0.06	CO 6
		Max $M_{Z'}$	-0.15	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
195	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
197	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.04	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.04	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
198	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.10	0.00	0.00	0.00	0.00	0.08	CO 5
		Max $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
203	RC1	Max $P_{X'}$	0.15	5.63	16.74	0.00	0.00	-0.23	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.15	5.63	16.74	0.00	0.00	-0.23	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.14	4.97	17.46	0.00	0.00	-0.21	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.15	5.63	16.74	0.00	0.00	-0.23	CO 6
204	RC1	Max $P_{X'}$	0.00	-0.15	4.53	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.06	2.94	-2.50	0.00	0.00	-0.11	CO 4
		Max $P_{Y'}$	-0.06	3.02	-3.36	0.00	0.00	-0.11	CO 3
		Min $P_{Y'}$	0.00	-0.15	4.53	0.00	0.00	0.01	CO 2
		Max $P_{Z'}$	0.00	-0.15	4.53	0.00	0.00	0.01	CO 2
		Min $P_{Z'}$	-0.06	3.02	-3.36	0.00	0.00	-0.11	CO 3
		Max $M_{Z'}$	0.00	-0.15	4.53	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.06	2.94	-2.50	0.00	0.00	-0.11	CO 4
206	RC1	Max $P_{X'}$	0.13	5.55	8.92	0.00	0.00	-0.26	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.13	5.55	8.92	0.00	0.00	-0.26	CO 6

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
206		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.12	4.93	10.97	0.00	0.00	-0.24	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.13	5.55	8.92	0.00	0.00	-0.26	CO 6
207	RC1	Max $P_{X'}$	0.00	-0.14	5.64	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.06	2.78	2.54	0.00	0.00	-0.14	CO 4
		Max $P_{Y'}$	-0.05	2.87	1.32	0.00	0.00	-0.13	CO 3
		Min $P_{Y'}$	0.00	-0.16	5.64	0.00	0.00	0.01	CO 2
		Max $P_{Z'}$	0.00	-0.16	5.64	0.00	0.00	0.01	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	-0.16	5.64	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.06	2.78	2.54	0.00	0.00	-0.14	CO 4
209	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.07	CO 6
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.07	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
210	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
215	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.05	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.05	CO 6
216	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.11	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.11	CO 4
221	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.16	0.00	0.00	0.00	0.00	0.09	CO 6
		Max $M_{Z'}$	-0.16	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
222	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.09	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
227	RC1	Max $P_{X'}$	0.12	5.54	9.40	0.00	0.00	-0.26	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.12	5.54	9.40	0.00	0.00	-0.26	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.11	4.95	12.06	0.00	0.00	-0.23	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.12	5.54	9.40	0.00	0.00	-0.26	CO 6
228	RC1	Max $P_{X'}$	0.00	-0.15	6.99	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.05	2.63	-0.07	0.00	0.00	-0.14	CO 4
		Max $P_{Y'}$	-0.05	2.77	-0.86	0.00	0.00	-0.13	CO 3
		Min $P_{Y'}$	0.00	-0.17	6.78	0.00	0.00	0.01	CO 2
		Max $P_{Z'}$	0.00	-0.15	6.99	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	-0.05	2.77	-0.86	0.00	0.00	-0.13	CO 3
		Max $M_{Z'}$	0.00	-0.15	6.99	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	-0.05	2.63	-0.07	0.00	0.00	-0.14	CO 4
233	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.14	0.00	0.00	0.00	0.00	-0.22	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.14	0.00	0.00	0.00	0.00	-0.22	CO 5
234	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	-0.10	CO 5
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.01	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.10	CO 5
239	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.14	CO 6
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.14	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
240	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.21	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.21	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.02	CO 6
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.05	CO 5
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.01	CO 3
246	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	-0.09	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	-0.10	CO 5
251	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.08	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.08	CO 6

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
251		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
252	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.10	0.00	0.00	0.00	0.00	0.08	CO 5
		Max $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
257	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.13	CO 6
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.13	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
258	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.12	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.12	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
263	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.05	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
264	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 6
269	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.14	0.00	0.00	0.00	0.00	0.16	CO 6
		Max $M_{Z'}$	-0.14	0.00	0.00	0.00	0.00	0.16	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
270	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.11	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.11	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
275	RC1	Max $P_{X'}$	0.09	5.61	9.40	0.00	0.00	-0.14	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.09	5.61	9.40	0.00	0.00	-0.14	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.09	5.03	11.80	0.00	0.00	-0.13	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.09	5.61	9.40	0.00	0.00	-0.14	CO 6
276	RC1	Max $P_{X'}$	0.00	-0.16	8.59	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.03	2.70	-3.06	0.00	0.00	-0.07	CO 3
		Max $P_{Y'}$	-0.03	2.70	-3.06	0.00	0.00	-0.07	CO 3
		Min $P_{Y'}$	0.00	-0.18	7.47	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	-0.16	8.59	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	-0.03	2.70	-3.06	0.00	0.00	-0.07	CO 3
		Max $M_{Z'}$	0.00	-0.16	8.59	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	-0.03	2.70	-3.06	0.00	0.00	-0.07	CO 3
281	RC1	Max $P_{X'}$	0.10	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.10	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
282	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	0.04	CO 5
		Max $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	0.04	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
287	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.11	CO 4
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.12	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
288	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.12	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.12	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
293	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.08	CO 6
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.10	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
294	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.01	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.01	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
299	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.10	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
300	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	0.04	CO 5
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.04	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
305	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.12	CO 6
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.12	CO 6

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
305		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
306	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.08	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
311	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.09	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
312	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.02	CO 3
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.02	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
317	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.10	0.00	0.00	0.00	0.00	0.14	CO 6
		Max $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	0.14	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
318	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.07	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
323	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	5.85	13.18	0.00	0.00	0.00	CO 6
		Max $P_{Y'}$	-0.01	5.85	13.18	0.00	0.00	0.00	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	5.25	15.72	0.00	0.00	0.00	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	5.85	13.18	0.00	0.00	0.00	CO 6
325	RC1	Max $P_{X'}$	0.01	2.76	-5.66	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.01	2.76	-5.66	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.20	7.28	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	-0.17	9.02	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.01	2.76	-5.66	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	2.76	-5.66	0.00	0.00	0.00	CO 3
327	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
328	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
329	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
330	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
331	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
332	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
333	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
334	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
335	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 3
337	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	-0.01	CO 3
		Min $P_{X'}$	-0.25	0.00	0.00	0.00	0.00	0.02	CO 5
		Max $M_{Z'}$	-0.25	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.01	CO 6
338	RC1	Max $P_{X'}$	0.27	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.20	0.00	0.00	0.00	0.00	0.00	CO 4

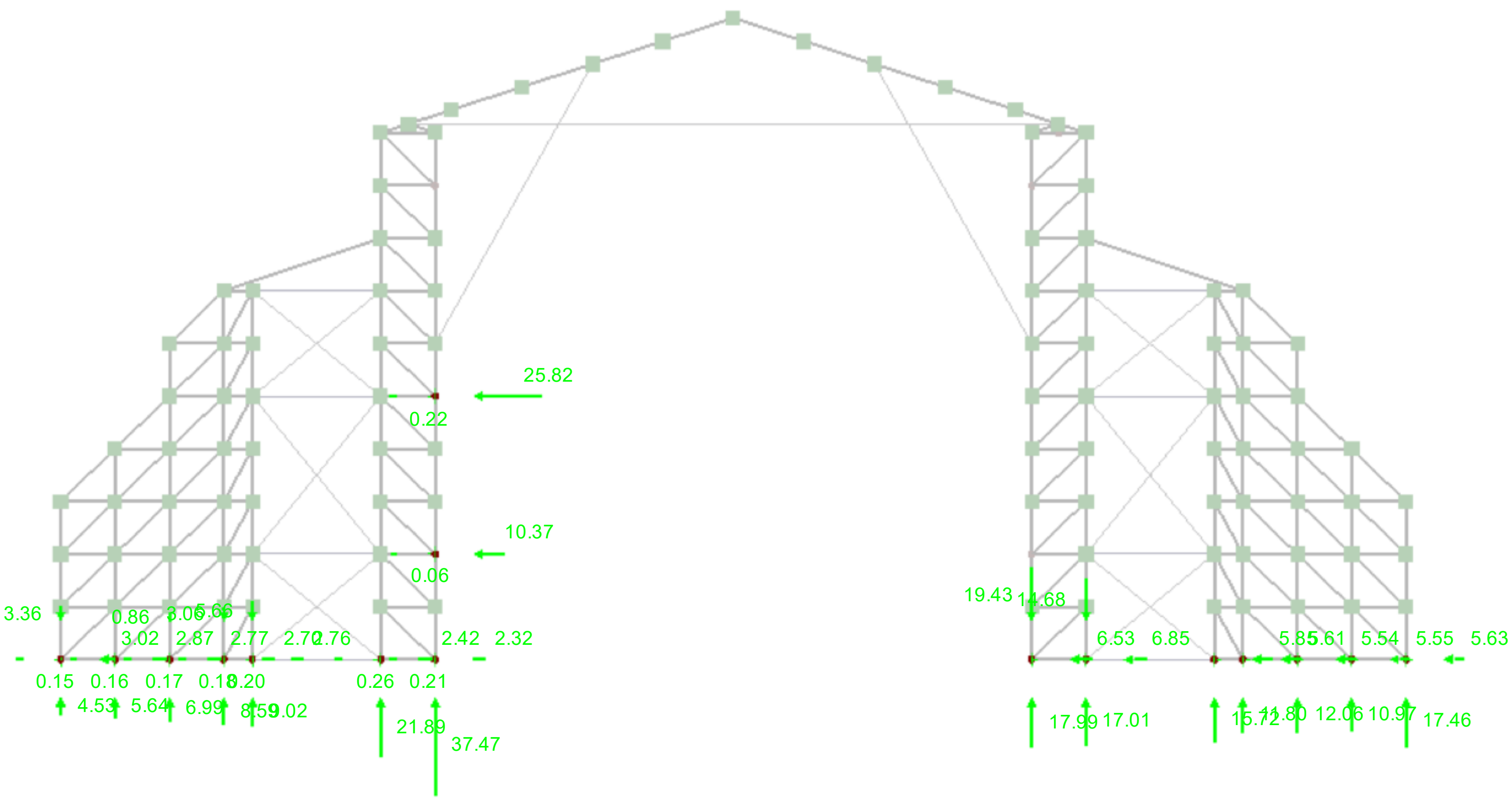
■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
338		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.01	CO 3

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max P-Y': 25.82, Min P-Y': -0.26 kN
Max P-Z': 37.47, Min P-Z': -19.43 kN

5.567 m

LAGERREAKTIONEN

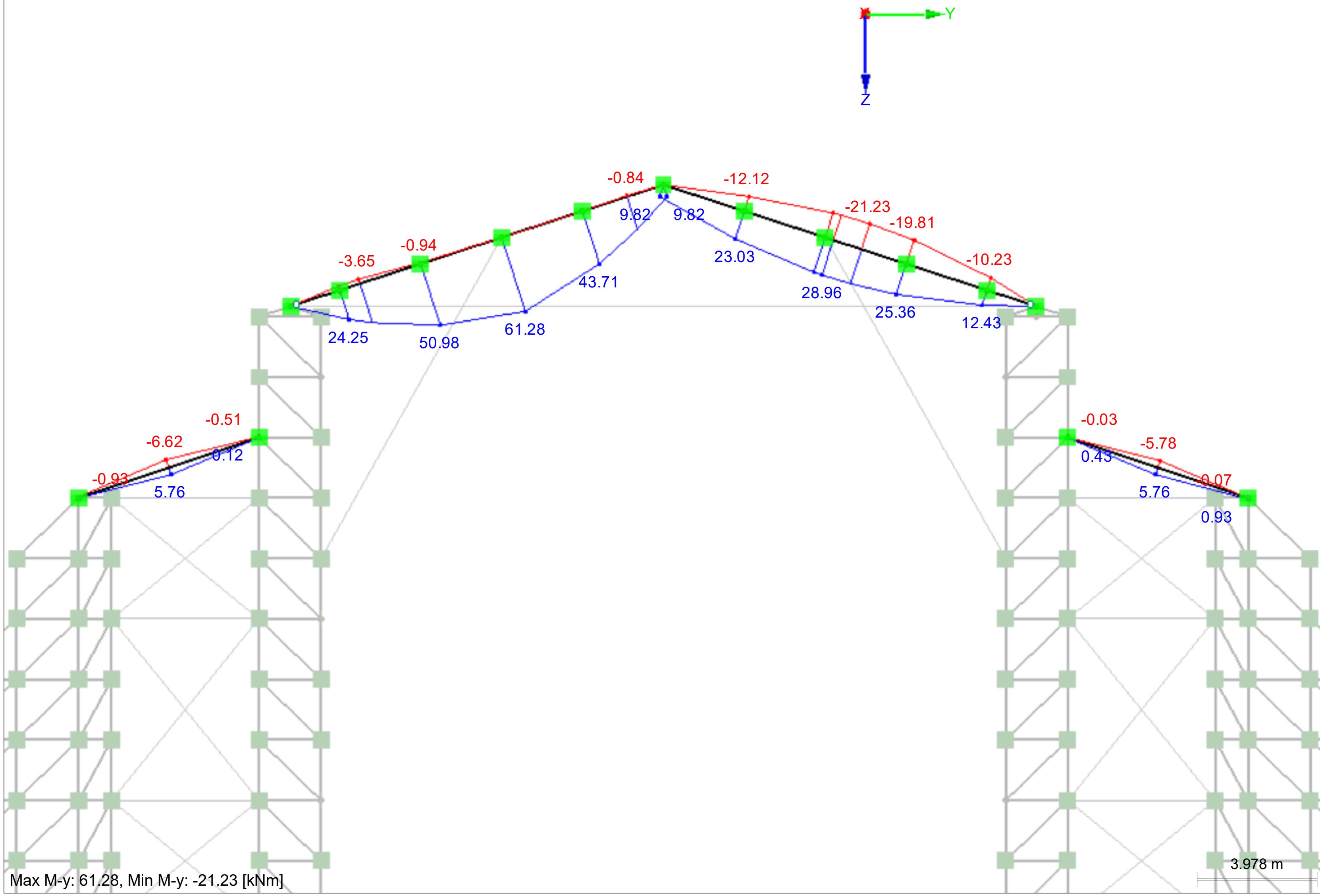
Project: 2023
Model: K-Dach-2
Date: 19.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

RC1 : Min_max
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max M-y: 61.28, Min M-y: -21.23 [kNm]

INTERNAL FORCES M_y

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Project: 2023
Model: K-Dach-2
Date: 19.09.2023

RESULTS

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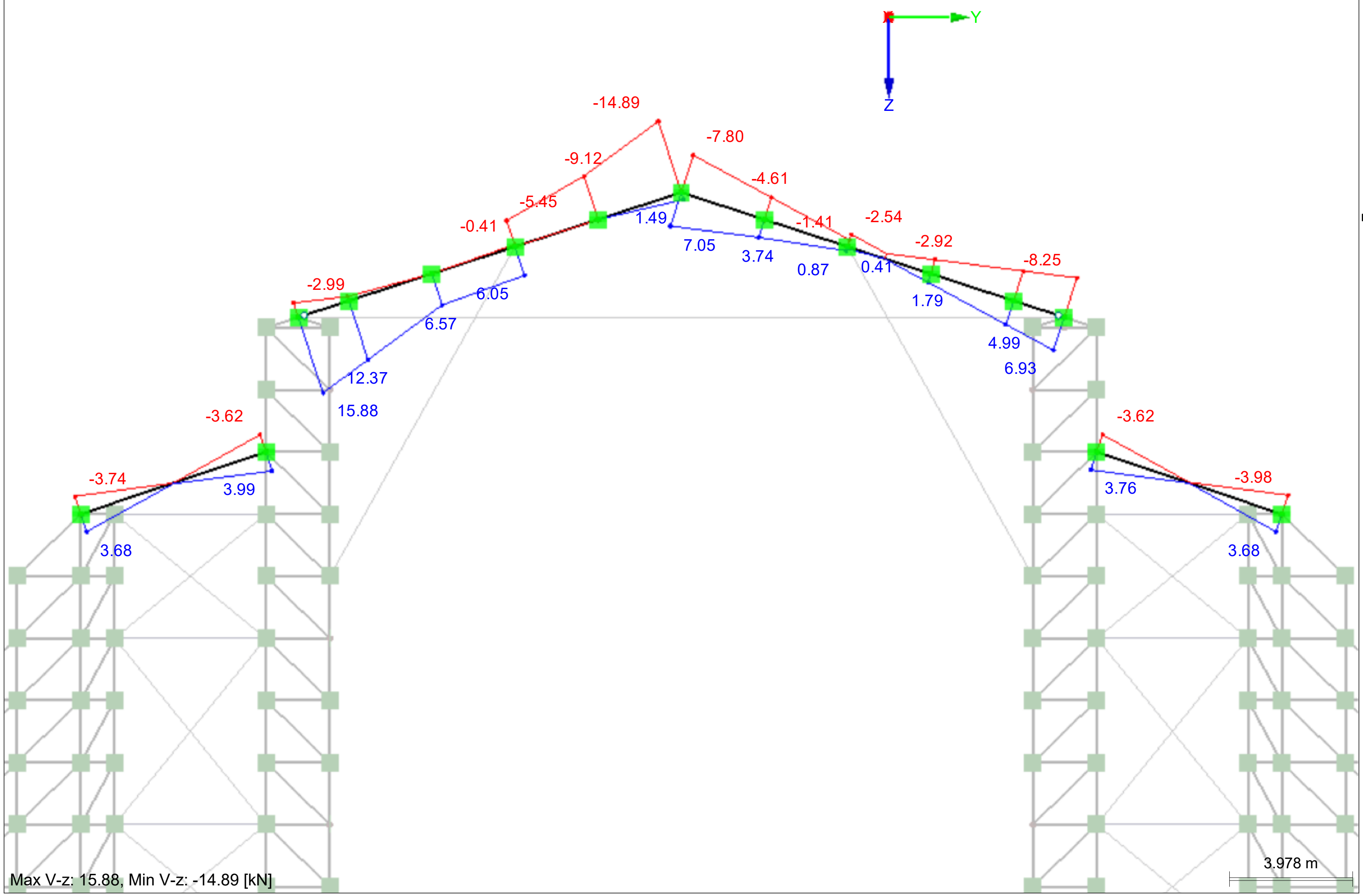
RC1 : Min_max
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max V-z: 15.88, Min V-z: -14.89 [kN]

INTERNAL FORCES V_z

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023
Model: K-Dach-2
Date: 19.09.2023

RESULTS

Volker Knobloch
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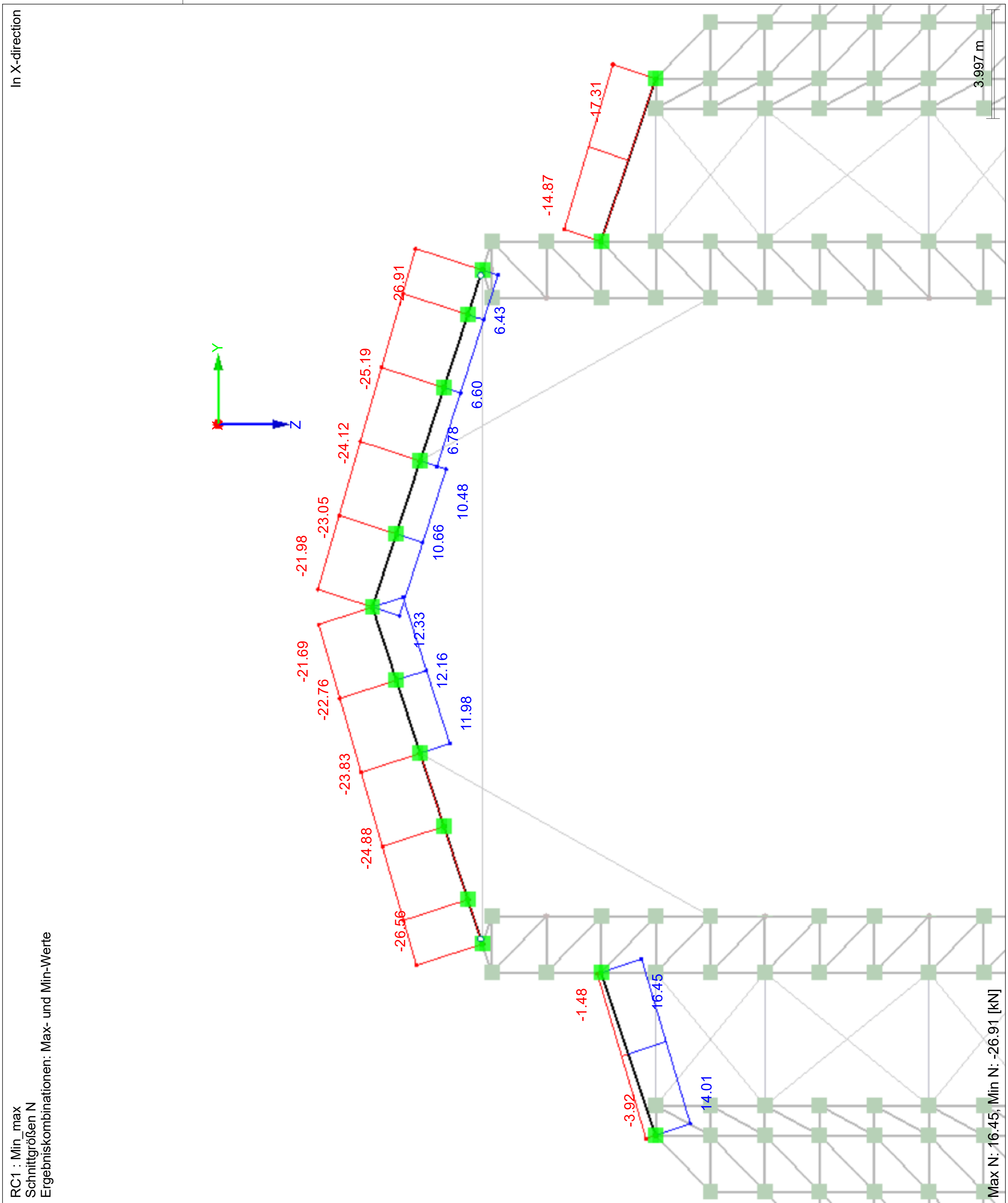
Tel: 07066/9179841 - Fax: 07066/9179849

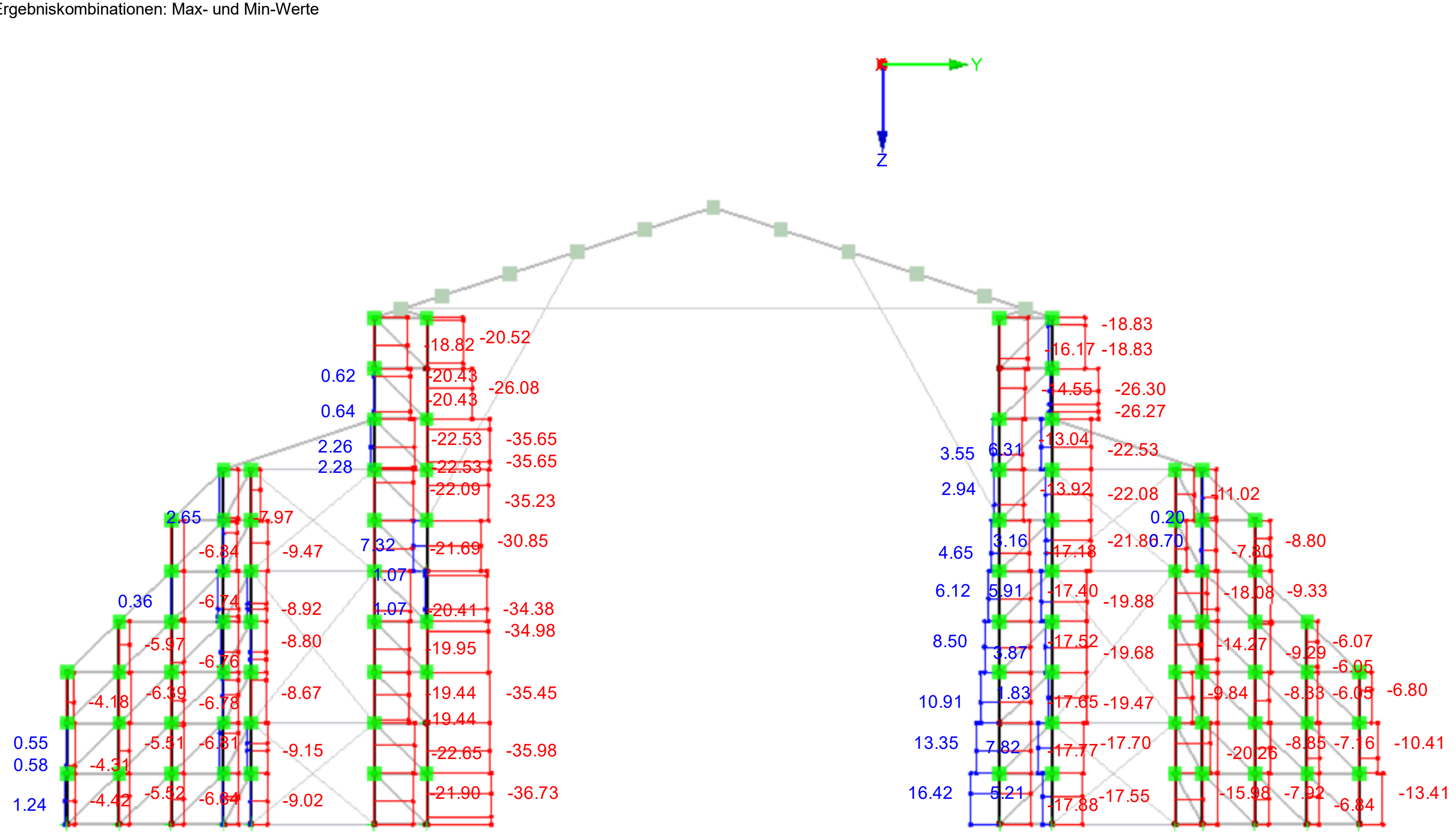
Project: 2023 Model: K-Dach-2 Date: 19.09.2023

INTERNAL FORCES N



RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 16.42, Min N: -36.73 [kN]

5.293 m

RSTAB 8.31.01 - Space Frame Structures

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■ INTERNAL FORCES N

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Project: 2023

Model: K-Dach-2

Date: 19.09.2023

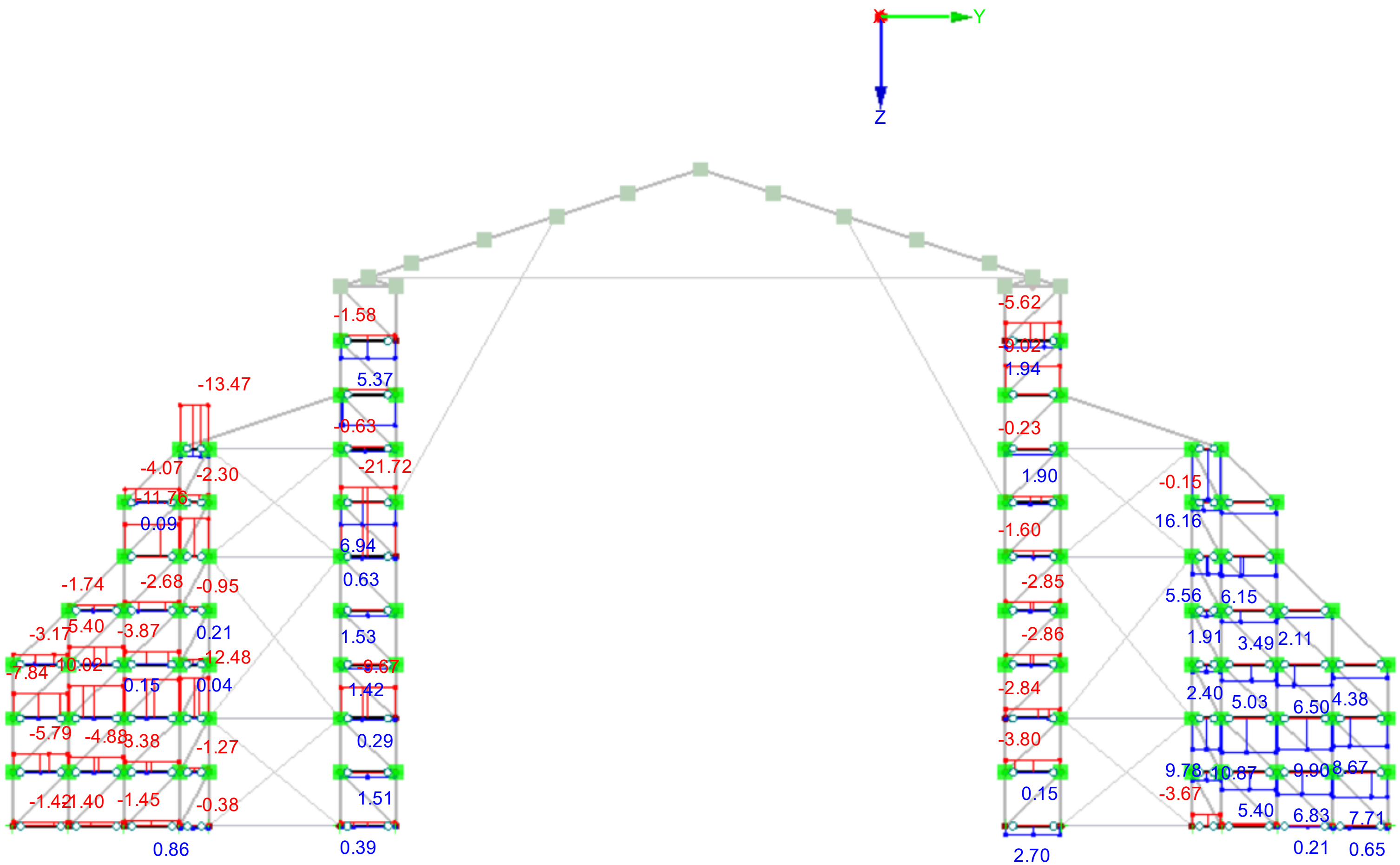
RESULTS

Page: 66/91

Sheet: 1

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



5.227 m

Max N: 16.16, Min N: -21.72 [kN]

INTERNAL FORCES N

Volker Knobloch
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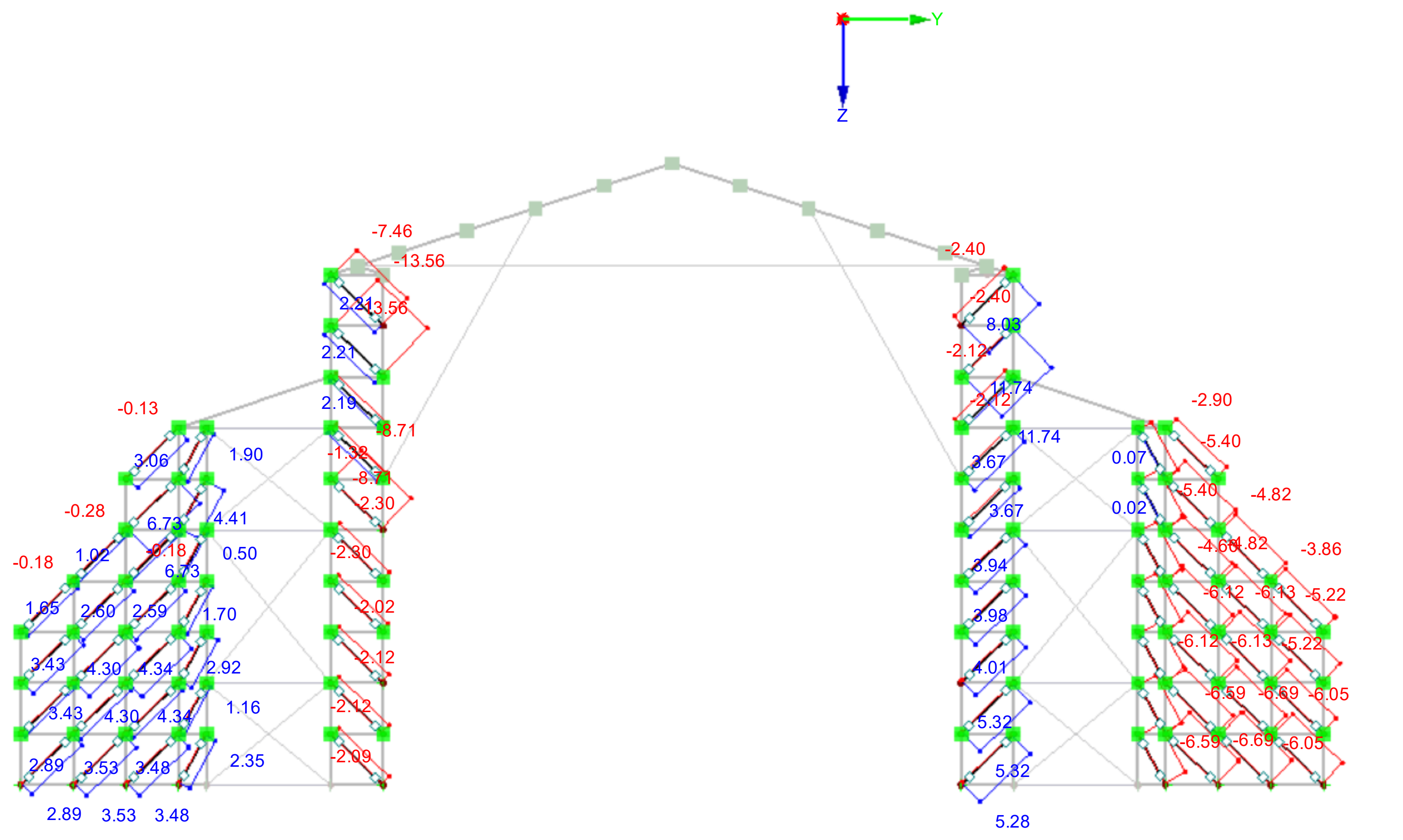
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023
Model: K-Dach-2
Date: 19.09.2023

RESULTS

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



5.273 m

Max N: 11.74, Min N: -13.56 [kN]

RSTAB 8.31.01 - Space Frame Structures

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INTERNAL FORCES N

Project: 2023

Model: K-Dach-2

Date: 19.09.2023

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RESULTS

Volker Knobloch
Andersensstraße 16, 74078 HEILBRONN
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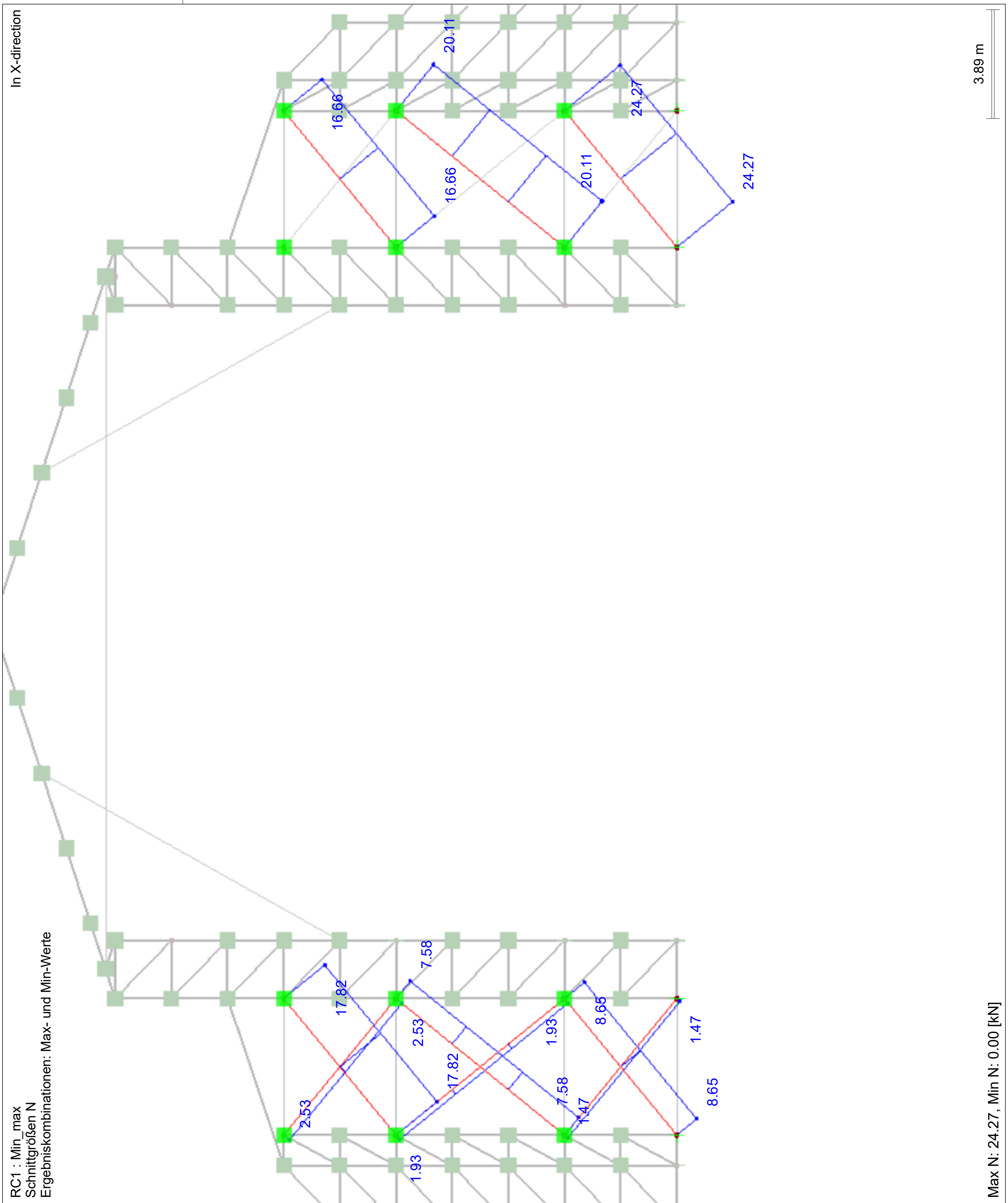
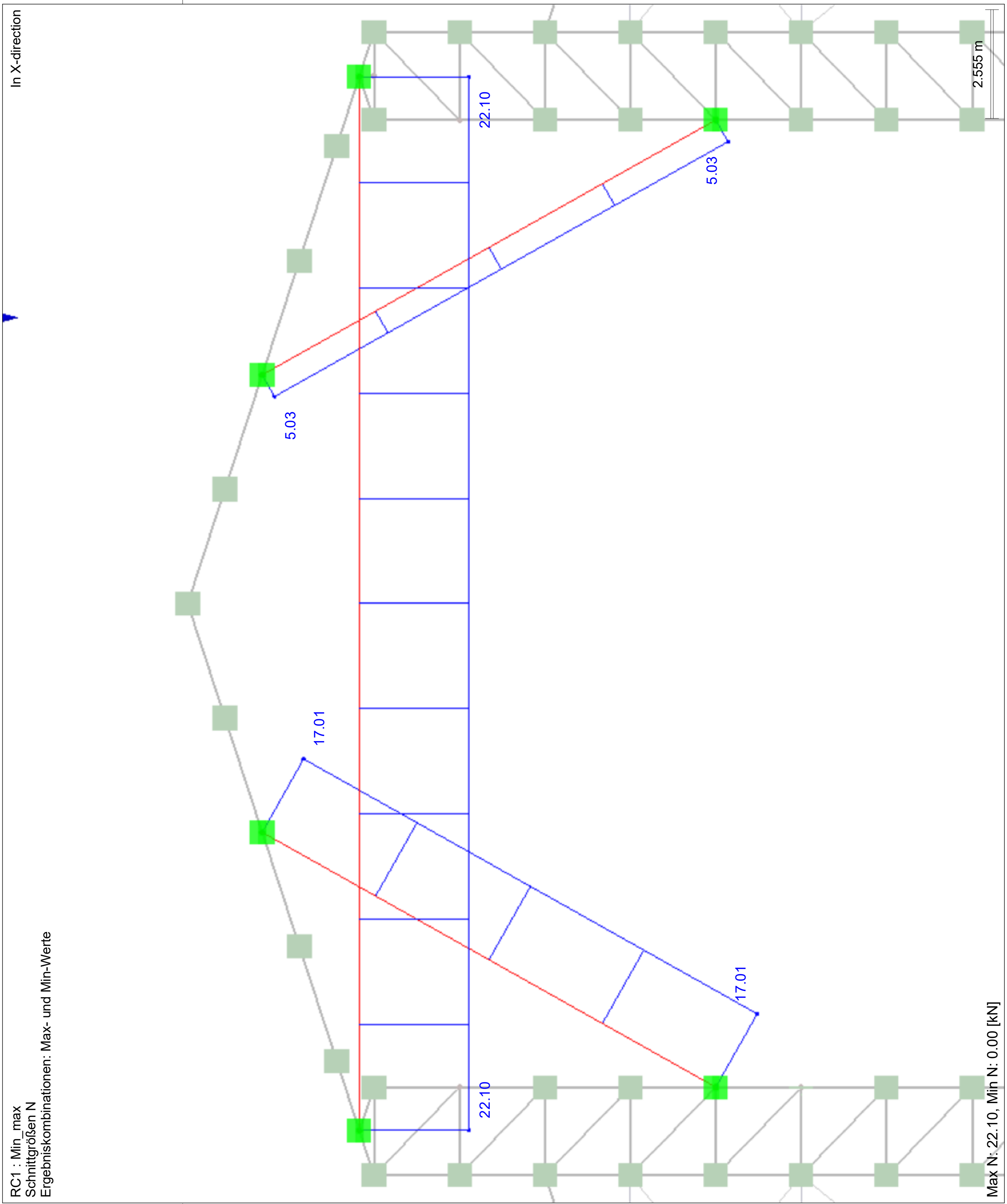
RESULTS

Project: 2023 Model: K-Dach-2 Date: 19.09.2023

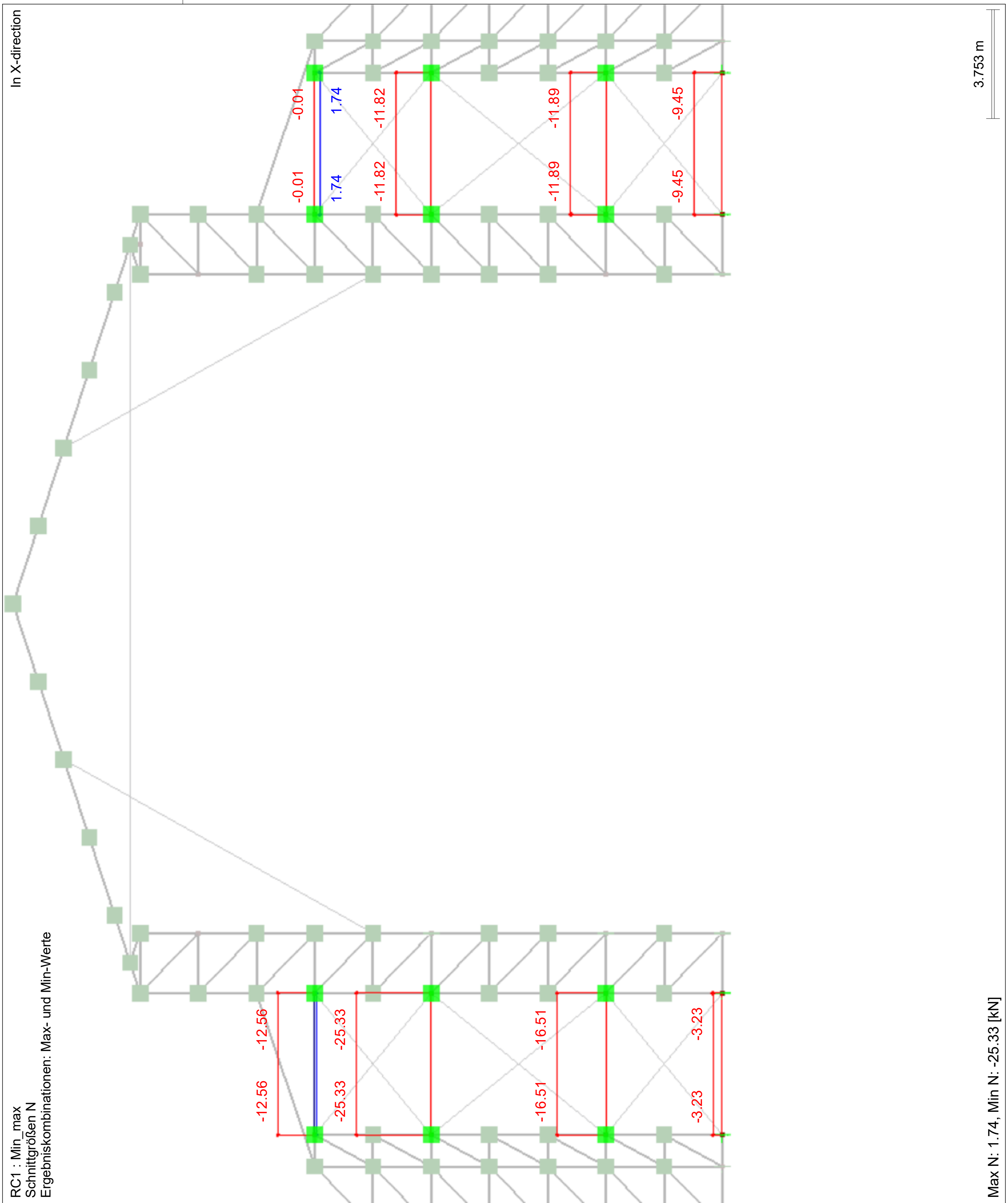
INTERNAL FORCES N



INTERNAL FORCES N



INTERNAL FORCES N



STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

Members to design:	229,230,234,235,254,255,259,260,276,277,281,282,298,299,303,304, 320-331,344,345,348,349,352,353,356,357,360,361,364,365,463,464, 480,481,485,486,502,503,507,508,524,525,529,530,563,564,578,579, 593,594,608,609,623,624,638,639,658,659,673,674,688,689,703,704, 718,719,733,734,748,749,770,771,785,786,800,801,815,816,830,831, 845,846,860,861
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design Result combinations to design:	RC1 Min_max

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm^2]	Shear Modulus G [kN/cm^2]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm^2]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

Rohr 48.3/2.9

1.3 CROSS-SECTIONS

Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	0.97	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
230	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
235	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
255	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
260	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
277	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
282	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
299	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
304	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
321	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
322	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
323	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
324	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
326	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
327	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
328	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
329	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
330	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
331	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
344	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
345	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
348	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
349	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
352	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
353	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
356	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
357	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
360	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
361	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
364	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
365	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
464	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
481	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
486	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
503	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
508	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
525	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
530	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
564	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
579	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
594	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
609	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
624	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
639	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
659	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
674	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
689	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
704	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
719	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
734	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
749	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
771	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
786	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
801	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
816	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
831	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
846	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
861	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.11	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	1.900	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
230	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.800	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.400	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.900	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.100	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.100	EK1	0.55	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.100	EK1	0.02	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.800	EK1	0.15	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.09	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.64	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
235	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.04	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.900	EK1	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.07	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.66	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.200	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.400	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.34	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
255	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.14	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.800	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.600	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.69	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.14	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.400	EK1	0.02	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.800	EK1	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.18	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.85	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
260	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.700	EK1	0.03	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.600	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.33	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.48	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.02	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.30	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
277	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	EK1	0.19	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.700	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.700	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	1.700	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.400	EK1	0.97	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.14	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.12	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.49	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.49	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.62	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
282	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.900	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.39	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.13	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.49	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.49	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.48	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.700	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.30	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.30	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
299	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.19	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.500	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.07	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.30	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.30	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.600	EK1	0.87	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.300	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.48	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.48	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.49	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
304	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.12	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.400	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.48	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.48	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.53	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.700	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
321	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.16	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.200	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.70	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
322	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.500	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.200	EK1	0.18	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.200	EK1	0.80	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
323	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.18	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.07	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.500	EK1	0.77	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
324	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.19	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

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Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	0.000	EK1	0.76	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.76	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.05	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.47	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.47	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.49	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
326	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.600	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.47	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.47	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
327	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.43	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.43	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.47	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
328	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.43	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.43	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
329	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.42	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.42	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.07	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
330	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.19	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.77	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 a

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Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						and 6.3.1.2
	0.000	EK1	0.77	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
331	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.400	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.49	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.49	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.38	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
344	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.19	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.07	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.700	EK1	0.80	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
345	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.600	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.600	EK1	0.47	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.600	EK1	0.47	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
348	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
349	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.43	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.43	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.31	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
352	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1

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Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
353	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.42	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.42	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
356	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
357	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.42	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.42	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.41	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
360	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.07	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
361	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
364	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	EK1	0.09	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.300	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

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Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	0.000	EK1	0.39	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.39	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
365	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.20	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.800	EK1	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
464	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.29	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	EK1	0.44	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.22	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.14	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.700	EK1	0.38	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
481	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.200	EK1	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.200	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
486	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
503	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.28	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.28	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	EK1	0.31	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.12	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.300	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
508	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.000	EK1	0.04	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.600	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.57	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
525	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.500	EK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.500	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.400	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
530	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.900	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.22	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.700	EK1	0.38	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
564	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.23	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.22	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.300	EK1	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.23	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.12	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.35	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
579	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.15	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.15	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.17	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.100	EK1	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.18	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.200	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.200	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
594	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
609	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
624	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.600	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.24	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
639	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.10	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.10	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.04	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.800	EK1	0.14	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
659	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
674	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
689	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	EK1	0.00	≤ 1	CS100)	Negligible internal forces
	0.200	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.200	EK1	0.00	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.600	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.200	EK1	0.00	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.600	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						and 6.3.1.2
	2.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
704	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
719	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.800	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.07	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.200	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
734	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.600	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.600	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.200	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
749	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.000	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
771	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.400	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.400	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
786	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.26	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
801	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.34	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
816	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.200	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.000	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.200	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

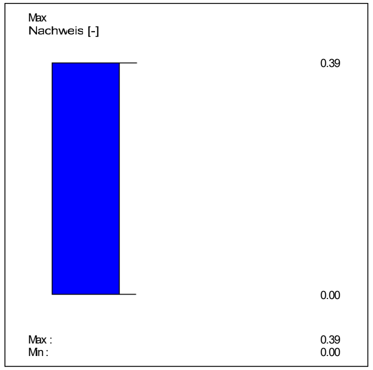
Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.25	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
831	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.300	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.700	EK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.700	EK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.47	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
846	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.800	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.400	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.800	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.400	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.300	EK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.300	EK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.40	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
861	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 o

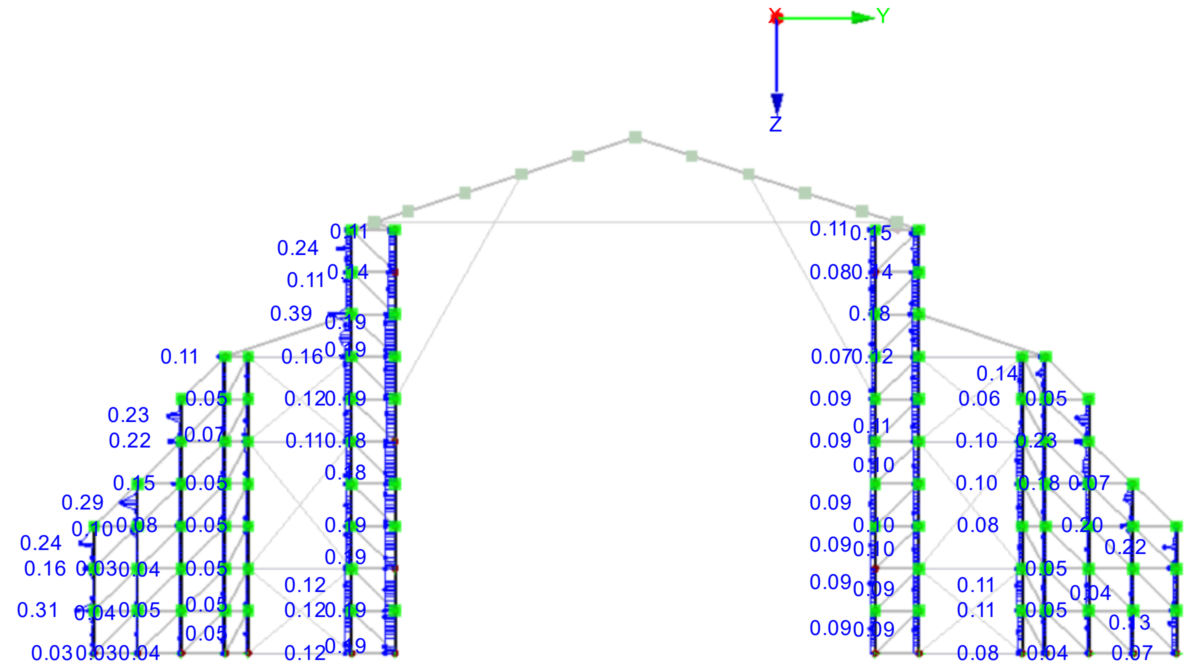
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						or 2
	0.900	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis

In X-direction





7.145 m

Max Nachweis: 0.39

■ NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/917984 1 - Fax: 07066/9179849

Project: 2023
Model: K-Dach-2
Date: 19.09.2023

RS-STAHLEC3

Dimensioning

<u>Layher Kederdach</u> schwer

Positiv bending moment

Md=	62	kNm
Nd=	-24	kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= -101 kN

N,Og,Rd= -113 kN

eta= 0,89 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= 77,0 kN

N,Og,Rd= 92,4 kN

eta= 0,83 < 1,0

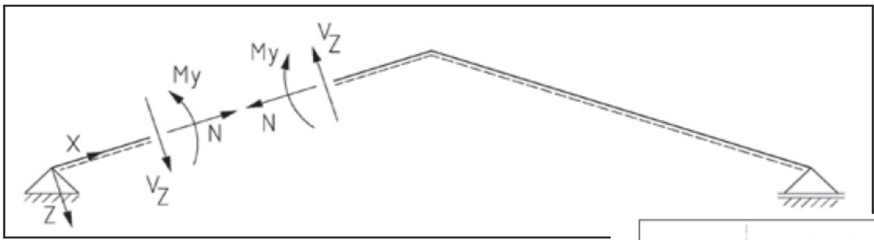


Bild 34

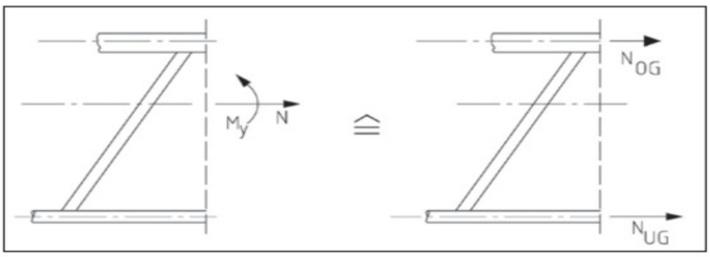


Bild 36

$N_{OG} = 0{,}64 * N - M_y / 72{,}4$
$N_{UG} = 0{,}36 * N + M_y / 72{,}4$ M_y [kNcm]

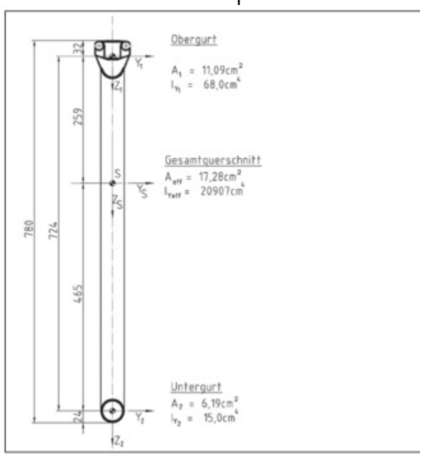


Bild 35

Ingenieurbüro Volker Knobloch
Andersenstr. 16
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Positiv bending moment

Md= -22 kNm
Nd= 12 kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= 38,067 kN

N,Og,Rd= 113,4 kN

eta= 0,34 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= -26,07 kN

N,Og,Rd= -67 kN

eta= 0,39 < 1,0

		Compression force	Tension force	Replacement beam: Bending moments (z_S = 0.724 m)		Replacement beam: Shear force
		max. $N^-_{R.d}$ [kN]	max. $N^+_{R.d}$ [kN]	max. $M^+_{y.R.d}$ [kNm]	max. $M^-_{y.R.d}$ [kNm]	$V_{Z.R.d}$ [kN]
Diagonal strut		-29.1	29.1	-	-	25.0
Heavy	Top chord with s_K = 1.0 m	-113.4	113.4	66.9	-48.8	-
Heavy	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Standard	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-48.8	-
Standard	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Light	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-13.7	-
Light	Bottom chord with s_K = 2.0 m	-18.9	92.4			

Tension chord

Nd=	22	kN
N,k=	15,714	kN
Nzul=	20	kN (as loop)

Tension chord 4000 kg

Ratchet tie-down strap

Bracing

Nd=	17	kN	
N,k=	11,333	kN	
Nzul=	20	kN	loop

Tension chord 4000 kg

Ratchet tie-down strap

Shoring scaffold

Allround Standard

Nd=	17	kN
Nd=	-37	kN

eta=	0,39	< 1,0

Allround ledger

Nd=	10	kN	< NRd=	42,3	kN
Nd=	-22	kN	< NRd=	-42,3	kN

Allround diagonal (2,07/2,0m)

Nd=	12	kN	< NRd=	28,5	kN
Nd=	-13,5	kN	< NRd=	-14,4	kN

Scaffold ground

Allround Standard

Nd=	4	kN
Nd=	-21	kN

eta=	0,3	< 1,0

Allround ledger

Nd=	16,2	kN	< NRd=	42,3	kN
Nd=	-13,5	kN	< NRd=	-42,3	kN

Allround diagonal (2,07/2,0m)

Nd=	7 kN	< NRd=	28,5 kN
Nd=	-7 kN	< NRd=	-14,4 kN

Connecting scaffold

Nd= -26 kN < NRd

Bracing

Nd=	25 kN	
N,k=	16,667 kN	
Nzul=	2000 kN	loop

Tension chord 4000 kg

Ratchet tie-down strap

Ballast for stability

outside	B=	5 kN (500kg)
inside	B=	30 kN (3000kg)

Ingenieurbüro Volker Knobloch
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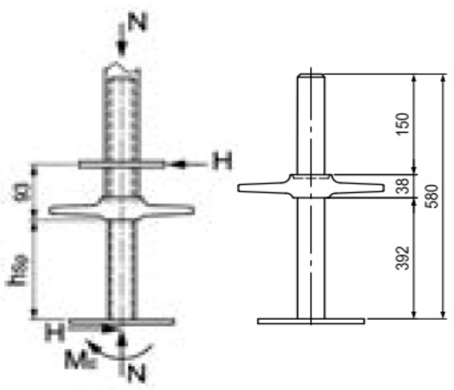
Base plate solid

BASE PLATE 60 SOLID



Substitute cross-sectional values of the spindle

A	= 8.80 cm^2
W_{el}	= 3.84 cm^3
W_{pl}	= 4.79 cm^3
I	= 6.51 cm^4

Material: EN 10025-2-S355J2

→ Rolled thread: $f_{u,b}$ = 360,0 N/mm²

Tab. 14 Base plate loading

Spindle extension length h_{Sp} [cm]	Permissible vertical spindle load N [kN]* with simultaneous effect of a horizontal load H [kN]																									
	H = 0		H = 0.5		H = 1.0		H = 1.5		H = 2.0		H = 2.5		H = 3.0		H = 3.5		H = 4.0		H = 4.5		H = 5.0		H = 5.5		H = 6.0	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
0	54	69	54	69	54	68	54	67	53	–	53	–	53	–	52	–	52	–	51	–	51	–	50	–	50	–
5	54	68	53	–	53	–	52	–	52	–	51	–	50	–	49	–	48	–	48	–	47	–	46	–	45	–
10	53	–	53	–	52	–	49	–	49	–	48	–	47	–	46	–	45	–	44	–	42	–	41	–	40	–
15	53	–	51	–	50	–	48	–	47	–	47	–	44	–	43	–	41	–	39	–	38	–	36	–	34	–
20	51	–	50	–	48	–	46	–	44	–	42	–	40	–	38	–	36	–	35	–	–	–	–	–	–	–
25	50	–	48	–	45	–	43	–	41	–	39	–	37	–	34	–	–	–	–	–	–	–	–	–	–	–

Nd=	38,0 kN	Nd=	18,0 kN
Nk=	27,1 kN	Nk=	12,9 kN
Hd=	3,0 kN	Hd=	6,0 kN
Hk=	2,1 kN	Hk=	4,3 kN
Hk=	2,5 kN	Hk=	4,5 kN
hsp=	15,0 kN	hsp=	15,0 kN
Nzul=	47,0 kN	Nzul=	39,0 kN

Proof stability against gliding

Earthquake

Nd=	13,2+9,4+9,4+8,9+16,8			57,7	kN
Ballast				12	kN
				69,7	kN
Hd=	6,6+6,9+5,9+5,7+5,6+5,6+5,6=			41,9	kN
friction coefficient		mü=	0,6	Wood - Soil	
	Hd=	41,9 kN < mü * Nd=	41,82 kN		

Wind

Nd=	12,7+8,9+10,7+10,4+16,7=			59,4	kN
Ballast				12	kN
				71,4	kN
Hd=	5,5+5,8+4,9+4,8+4,7+4,7+4,7=			35,1	kN
friction coefficient		mü=	0,6	Wood - Soil	
	Hd=	35,1 kN < mü * Nd=	42,84 kN		

Load distribution under base plate shoring scaffold

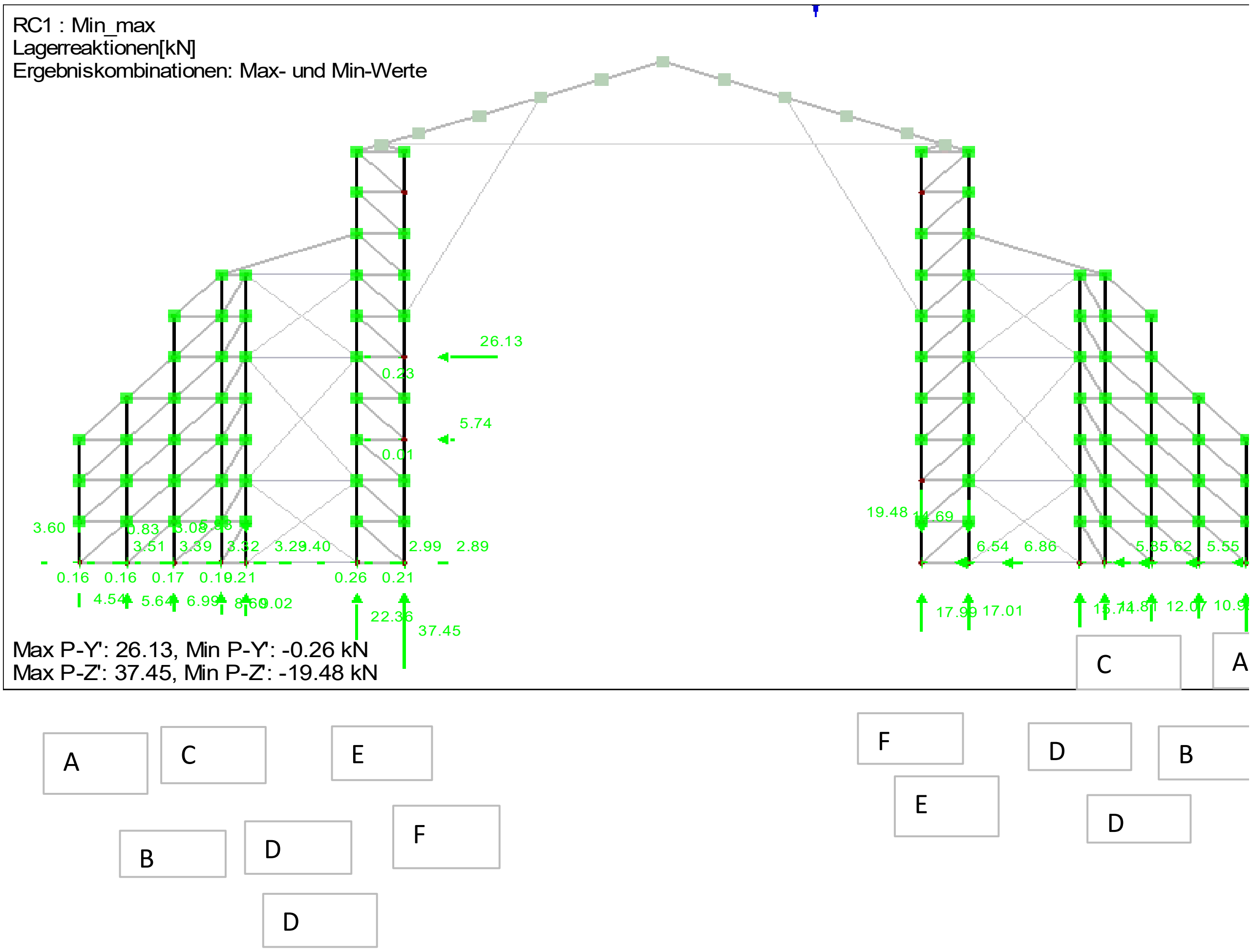
Nk=	42	kN
a=	0,6	m
b=	0,5	m
sigma=	140	kN/m²

Load distribution under base plate remaining scaffold

Nk=	30	kN
a=	0,5	m
b=	0,5	m
sigma=	120	kN/m²

Reaction forces

vertical [kN]



			A	B	C	D	E	F
			[kN]	[kN]	[kN]	[kN]	[kN]	[kN]
Dead Load			3,3	4	4,5	4	7,5	7,5
Snow			0	0	0,6	1,6	4,6	4
Live Load			0	0	0,7	3	5	5,5
Wind 1			-4,4	-1,5	-3,2	-5,5	0,7	-0,5
Wind 1			5,6	2	2	2	-14	-15,5
Wind 2			-4,8	-1,8	-3,9	-5,5	5,8	11
Wind 2			7,7	3,1	3,1	4	-14,6	-18,9
Earthquake			-6,3	-2,2	-4,4	-6	9,5	13,2
Earthquake			12,8	4,7	4,7	8	-17,5	-19
max	design		17,5	11	12	14	23	38
min	design		-5	0	-1	-4	-14,7	-19,5

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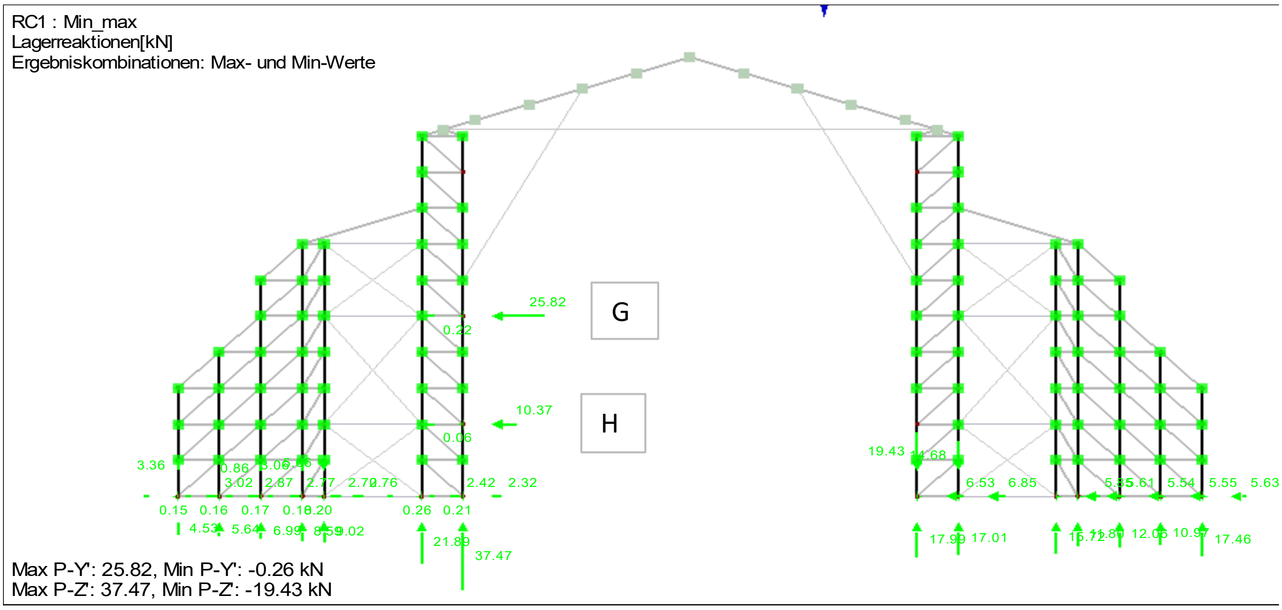
Horizontal reaction forces [kN]



E only pressure

E,d= 26 kN

F

E,d= 11 kN pressure

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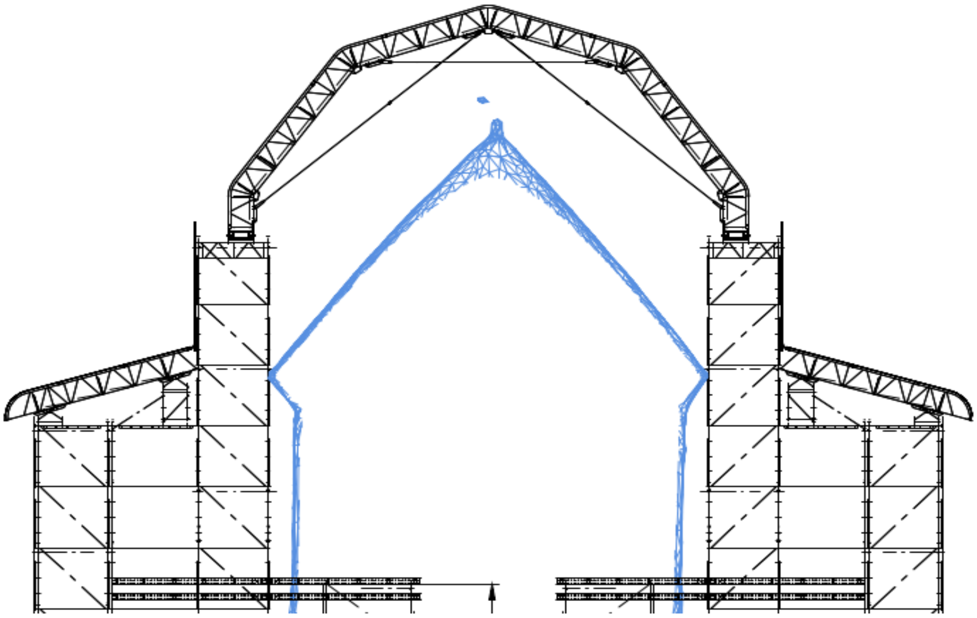
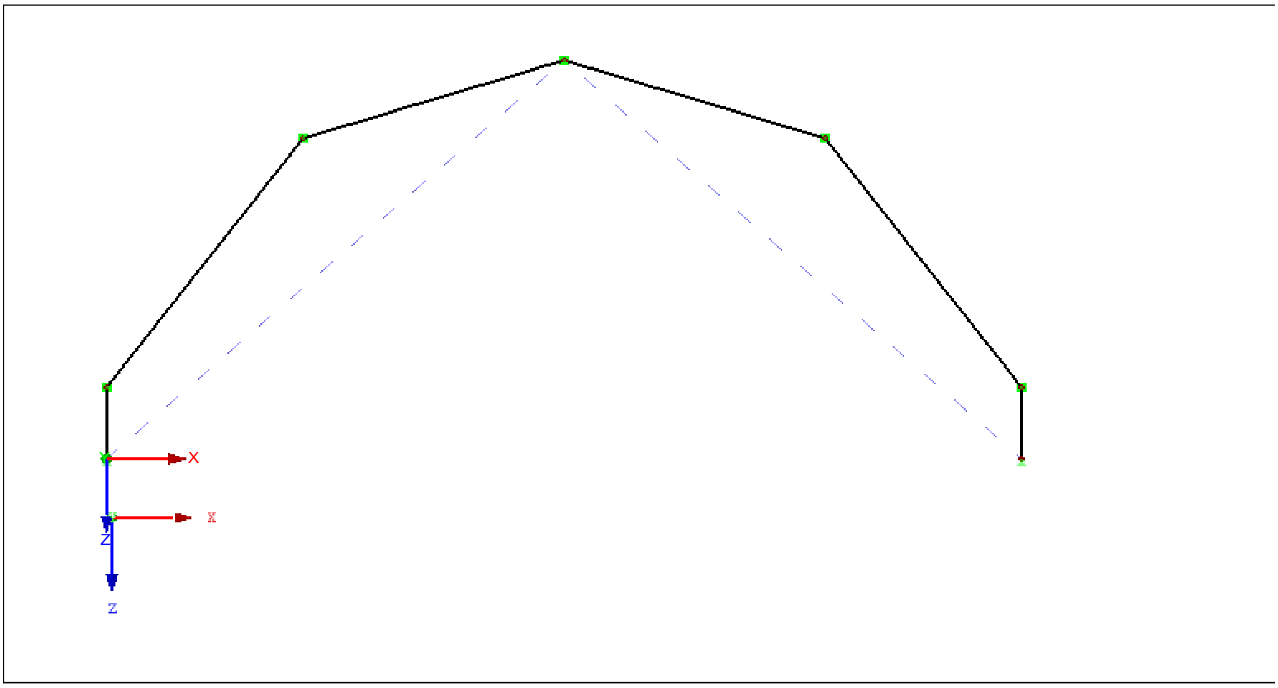
Pos.4: Roof dome





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1. Dead Load

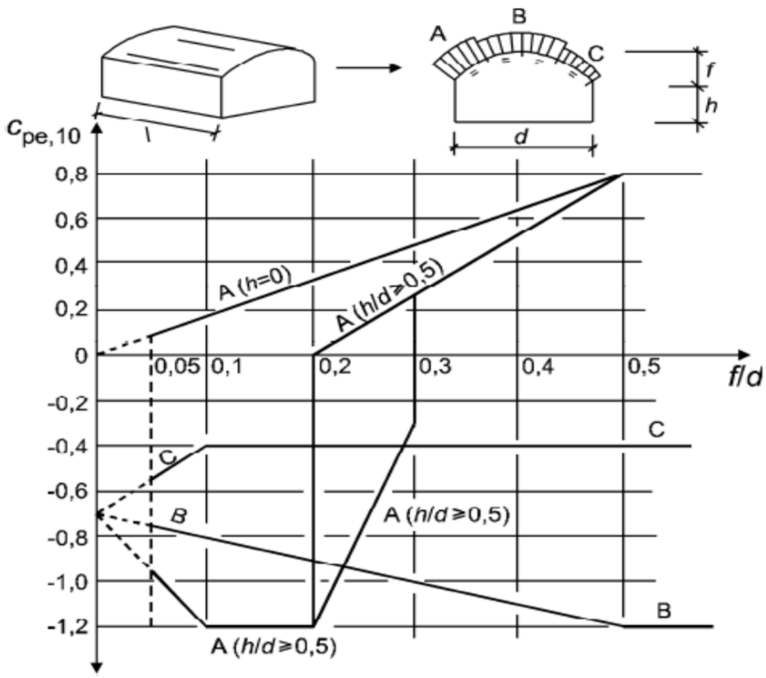
Mass according to drawing				G=	41	kN
	Width	14,75	m			
	Length	17,73	m			
				g=	0,16	kN/m²
width	(2,57+2,07)/2			b=	2,32	m
				g=	0,3637	kN/m

2. Snow

s,k= 0,25 kN/m²

width	(2,57+2,07)/2	b=	2,32	m
		g=	0,58	kN/m

3. Wind



Area A	qp=	1,27	kN/m²
	ct=	0,7	
	b=	2,32	m
	cf=	0,8	
	q=	1,65	kN/m
Area B	qp=	1,27	kN/m²
	ct=	0,7	
	b=	2,32	m
	cf=	-1,2	
	q=	-2,475	kN/m
Area C	qp=	1,27	kN/m²
	ct=	0,7	
	b=	2,32	m
	cf=	-0,4	
	q=	-0,825	kN/m

4. Earthquake

Mass of Roof width 2,32m

M= 16 * 14,75*2,32= 548 kg

Fb= Sd(T1) * M * lamda=
Fb= 0,00113 * M= 0,62 kN

H,k from Wind H,k= 14,46 kN

The horizontal wind load is much higher than the seismic load.

The seismic load case has not to be proven.

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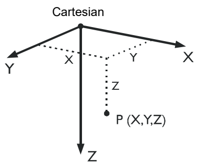
Project:	2023	Model:	K-1-D1	Date:	19.09.2023
			Kloster Dach - 1		

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-1-D1
	Model description	:	Kloster Dach - 1
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: EN 1990 National Annex: DIN - Deutschland
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

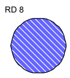


Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
1	-	Cartesian	0.000	0.000	0.000	Supported
2	-	Cartesian	0.000	0.000	-1.300	Supported
3	-	Cartesian	3.290	0.000	-5.830	Supported
4	-	Cartesian	7.660	0.000	-7.250	Supported
5	-	Cartesian	15.320	0.000	0.000	Supported
6	-	Cartesian	15.320	0.000	-1.300	Supported
7	-	Cartesian	12.030	0.000	-5.830	Supported

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235-320 | Layher					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	GI-KDXL Kederdach XL							
	1	1.00	20900.00	20900.00	0.00	0.00	50.0	1000.0
		17.00	9.00	9.00				
2	RD 8							
	1	0.04	0.02	0.02	0.00	0.00	8.0	8.0
		0.50	0.42	0.42				

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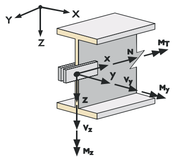
Project: 2023 | Model: K-1-D1 | Kloster Dach - 1 | Date: 19.09.2023



1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	4850.000	☐	☐	☒	☒
	Nonlinearity	-	Diagram...	-	-	Diagram...	Diagram...
	Riegel LW						
2	Local x,y,z	☐	4850.000	☐	☐	☒	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante K2000+						
3	Local x,y,z	☐	☐	☐	☐	35.000	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante II						
4	Local x,y,z	☐	4850.000	☒	☐	☒	5.100
	Nonlinearity	-	-	Diagram...	-	Diagram...	-
	AR Doppelkeilkopfkupplung K2000+						
5	Local x,y,z	☐	☐	☐	☐	0.100	5.100
	Nonlinearity	-	-	-	-	-	-
	Kurzer Riegel <W06						
6	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Gelenk My und Mz						
7	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	-	-
	Gelenk My						
8	Local x,y,z	☐	20000.000	20000.000	☐	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Normalkupplung						
9	Local x,y,z	☐	5000.000	5000.000	0.010	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Drehkupplung						
10	Local x,y,z	☐	☐	☐	☐	0.010	0.010
	Nonlinearity	-	-	-	-	-	-
	Gelenke My und Mz mit geringer Steifigkeit						
11	Local x,y,z	☐	☐	☐	☐	100.000	100.000
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß (Übergreifungsstoß c=10.000kNcm/rad)						
12	Local x,y,z	☐	0.100	0.100	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Anschluss KD Fahrwagen						
13	Local x,y,z	10000.000	☐	☐	☐	☒	☒
	Nonlinearity	Partial activity...	-	-	-	-	-
	EV-Traverse mit Normalkraftbegrenzung						
14	Local x,y,z	☐	☒	☒	☐	0.010	0.010
	Nonlinearity	-	Diagram...	Diagram...	-	-	-
	TX Bolzenanschluss						
15	Local x,y,z	☐	☐	☐	☐	58.800	58.800
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß K2000 (gestauchter RV c=5.880kNcm/rad)						
16	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß LW (angeformter Stoßbolzen, ni-li Drehfeder)						
17	Local x,y,z	☐	☐	☐	☐	45.700	45.700
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß TG 60 (gestauchter RV c=4.570kNcm/rad)						

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

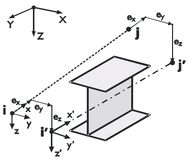
Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
13	u_x+	Tearing from release force	11.400	-	
	u_x-	Tearing from release force	11.400	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$u_{y'}$	0.000	0.000	
		0.000	3.000	
		0.000	6.000	
		0.000	9.000	
		0.000	12.000	
		0.000	15.000	
		0.001	> 16.600	Yielding
	$\varphi_{y'}$	0.0000	0.000	
		0.0017	0.200	
		0.0042	0.400	
		0.0081	0.600	
		0.0149	0.800	
		0.0303	1.000	
		0.0485	1.100	
		0.0702	1.160	
		0.0968	> 1.200	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0100	0.100	
		0.0250	0.200	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
		0.0468	0.290	
		0.0750	0.360	
		0.1007	> 0.401	Yielding
2	$\varphi_{y'}$	0.0000	0.000	
		0.0026	0.200	
		0.0065	0.400	
		0.0127	0.600	
		0.0207	0.750	
		0.0318	0.870	
		0.0442	0.950	
		0.0592	> 1.010	Yielding
3	$\varphi_{y'}$	0.0000	0.000	
		0.0014	0.100	
		0.0030	0.200	
		0.0050	0.300	
		0.0075	0.400	
		0.0107	0.500	
		0.0148	0.600	
		0.0192	> 0.680	Yielding
4	$u_{z'}$	0.000	0.000	
		0.000	5.100	
		0.002	> 5.110	Stopping
	$\varphi_{y'}$	0.0000	0.000	
		0.0068	0.150	
		0.0155	0.300	
		0.0274	0.450	
		0.0415	0.580	
		0.0566	> 0.682	Yielding
11	$\varphi_{y'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
	$\varphi_{z'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
14	$u_{y'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
	$u_{z'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
16	$\varphi_{y'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$, $e_{i,X}$	$e_{i,y}$, $e_{i,Y}$	$e_{i,z}$, $e_{i,Z}$	Member End - Eccentricity $e_{j,x}$, $e_{j,X}$	$e_{j,y}$, $e_{j,Y}$	$e_{j,z}$, $e_{j,Z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel
2	Global	78.0	0.0	0.0	-78.0	0.0	0.0	AR_Diagonale (für 2D Berechnung)
3	Local	43.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK
4	Local	0.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK_dreifach
5	Local	60.0	0.0	0.0	0.0	0.0	0.0	AR_SLT_XL_Riegel
6	Local	25.0	0.0	0.0	0.0	0.0	0.0	AR_Riegel_Anfang (einseitig)
7	Local	0.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel_Ende (einseitig)

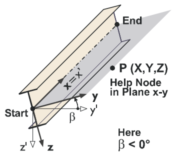
1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐
5	Middle	Middle	None	0	Middle	Middle	☐	☐
6	Middle	Middle	None	0	Middle	Middle	☐	☐

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

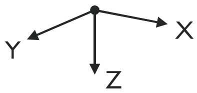
Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
7	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	1	2	Angle	0.00	1	1	-	-	-	-	1.300	Z
2	Beam	2	3	Angle	0.00	1	1	-	-	-	-	5.599	XZ
3	Beam	3	4	Angle	0.00	1	1	-	-	-	-	4.595	XZ
4	Beam	6	5	Angle	0.00	1	1	-	-	-	-	1.300	Z
5	Beam	7	6	Angle	0.00	1	1	-	-	-	-	5.599	XZ
6	Beam	4	7	Angle	0.00	1	1	-	-	-	-	4.595	XZ
7	Tension	1	4	Angle	0.00	2	2	-	-	-	-	10.547	XZ
8	Tension	4	5	Angle	0.00	2	2	-	-	-	-	10.547	XZ
9	Tension	3	7	Angle	0.00	2	2	-	-	-	-	8.740	X

1.8 NODAL SUPPORTS

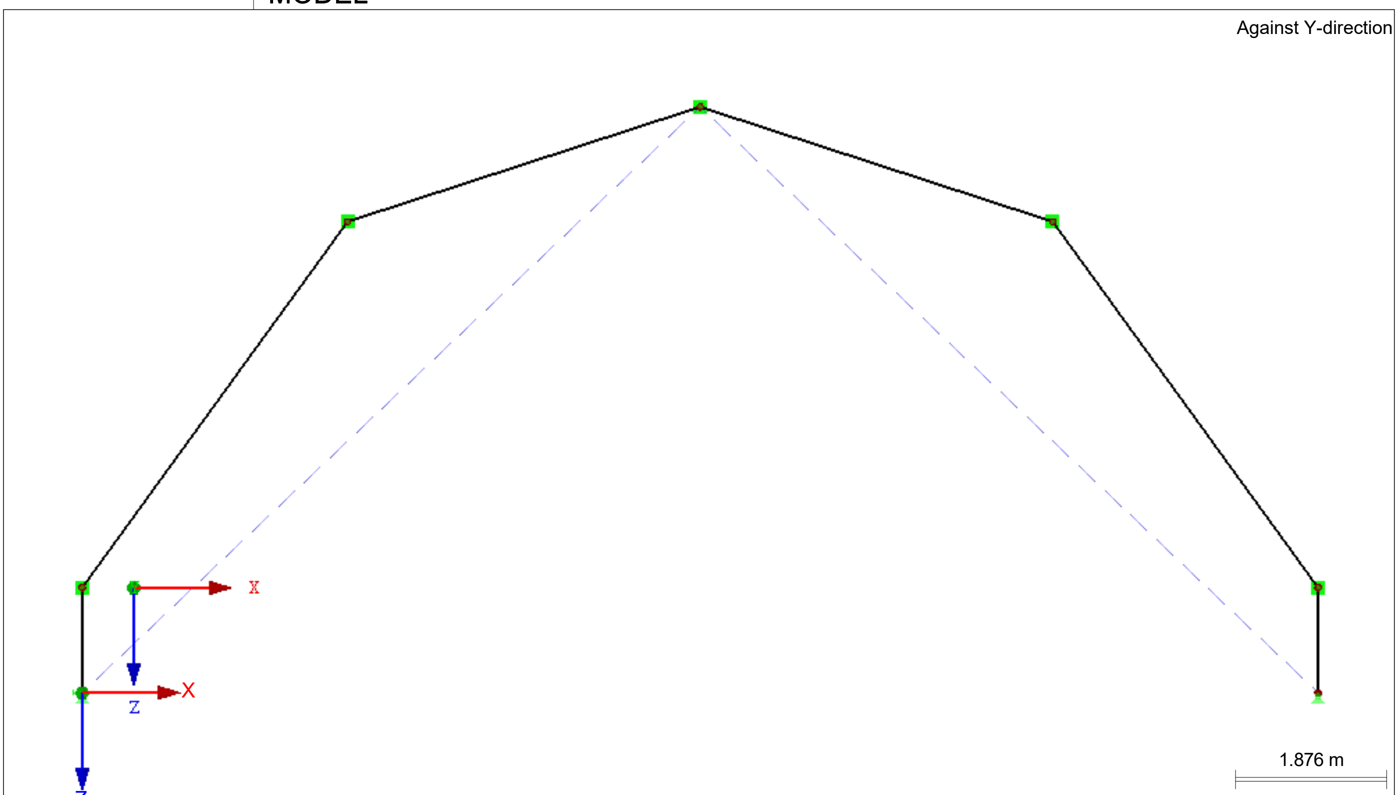


Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	1	XYZ	0.00	0.00	0.00	☐	Spring	☒	☒	☐	☐	☒
3	2-4,6,7	XYZ	0.00	0.00	0.00	☐	☐	☒	☐	☒	☐	☒
4	5	XYZ	0.00	0.00	0.00	☐	☐	☒	☒	☐	☐	☒

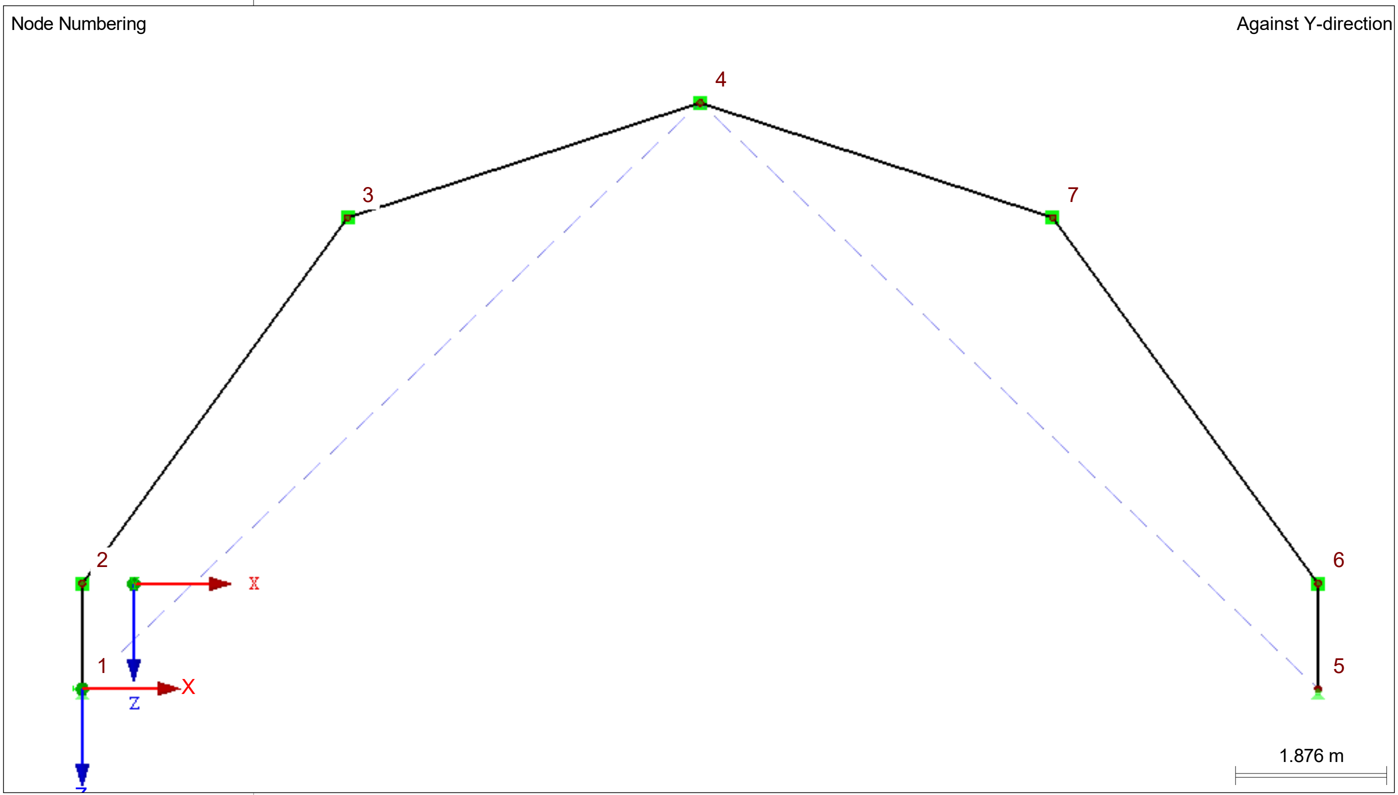
1.8.2 NODAL SUPPORTS - SPRINGS

Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	1	500.000	-	-	-	-	-

MODEL

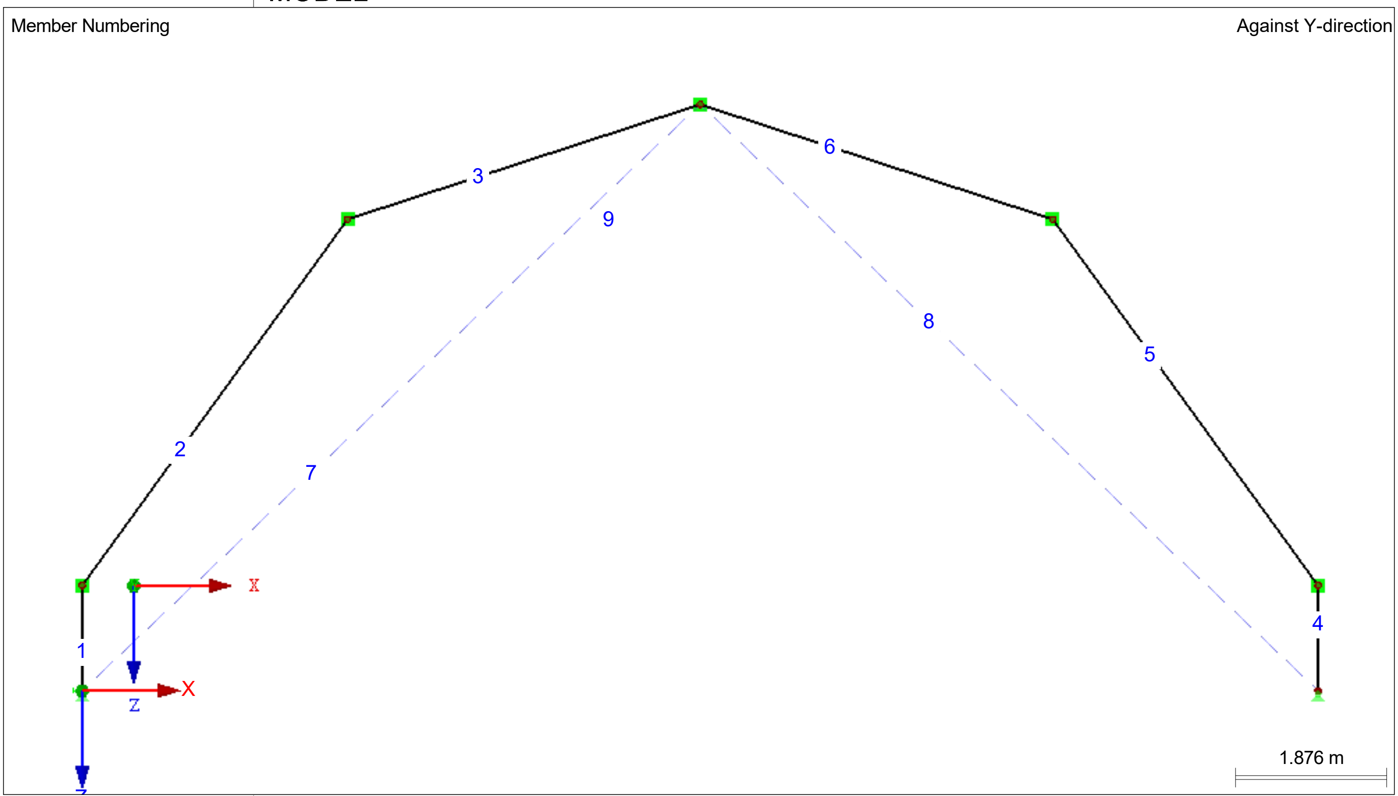


MODEL



Node Numbering
Against Y-direction
4
3
7
2
6
X
1
5
X
Z
1.876 m

MODEL



Member Numbering
Against Y-direction
6
3
9
8
5
2
7
X
1
4
X
Z
1.876 m

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 | DIN Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC11	Self-weight	Permanent	☐			
LC21	Verkehrslast	Imposed - Category F: traffic area - vehicle weight ≤ 30 kN	☐			
LC31	Wind	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters	
LC11	Self-weight	Method of analysis	: ■ Geometrically linear analysis
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC21	Verkehrslast	Method of analysis	: ■ Geometrically linear analysis
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC31	Wind	Method of analysis	: ■ Geometrically linear analysis
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO101		Bem-1	1	1.50	LC11	Self-weight
			2	1.50	LC21	Verkehrslast
CO102		Bem-2	1	1.50	LC11	Self-weight
			2	1.50	LC21	Verkehrslast
			3	1.05	LC31	Wind
CO103		Bem-3	1	1.50	LC11	Self-weight
			2	1.50	LC21	Verkehrslast
			3	1.50	LC31	Wind
CO104		Bem-4	1	0.90	LC11	Self-weight
			2	1.50	LC31	Wind

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
CO101	Bem-1	Method of analysis	: ■ Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO102	Bem-2	Method of analysis	: ■ Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO103	Bem-3	Method of analysis	: ■ Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO104	Bem-4	Method of analysis	: ■ Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO101 or CO102 or CO103 or CO104

LC11
Self-weight

3.2 MEMBER LOADS

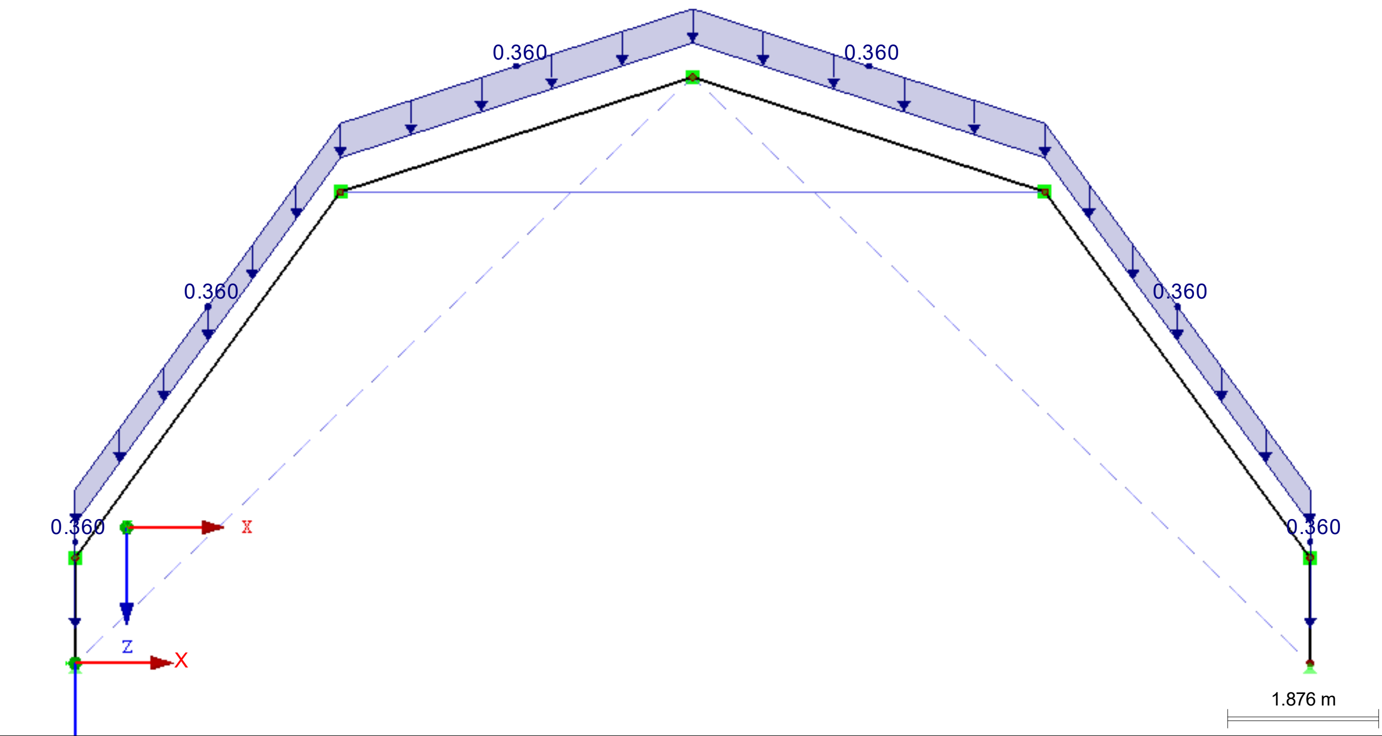
LC11: Self-weight

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1-6	Force	Uniform	Z	True Length	p	0.360	kN/m

LC11: EIGENGEWICHT

LC11 : Eigengewicht
Belastung [kN/m]

Against Y-direction



LC21
Verkehrslast

3.2 MEMBER LOADS

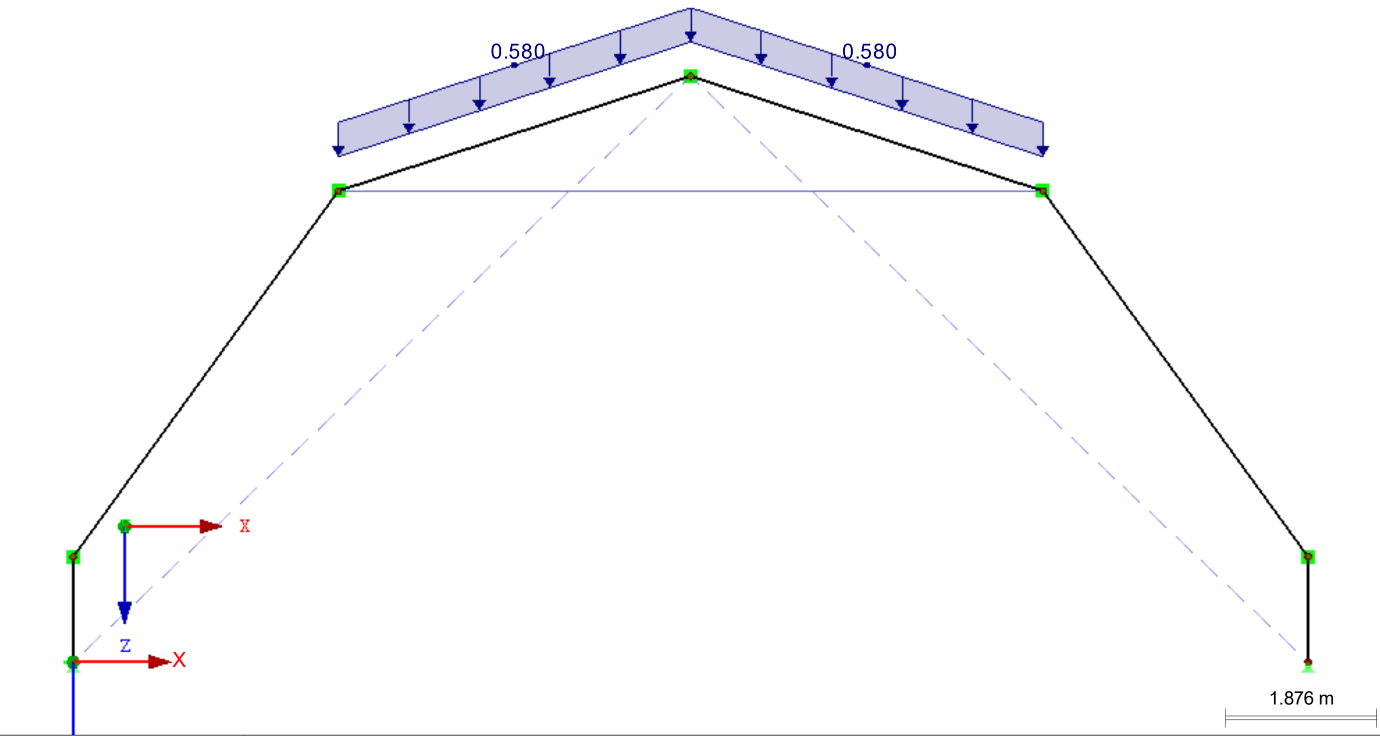
LC21: Verkehrslast

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	3,6	Force	Uniform	Z	True Length	p	0.580	kN/m

LC21: VERKEHRSLAST

LC21 : Verkehrslast
Belastung [kN/m]

Against Y-direction



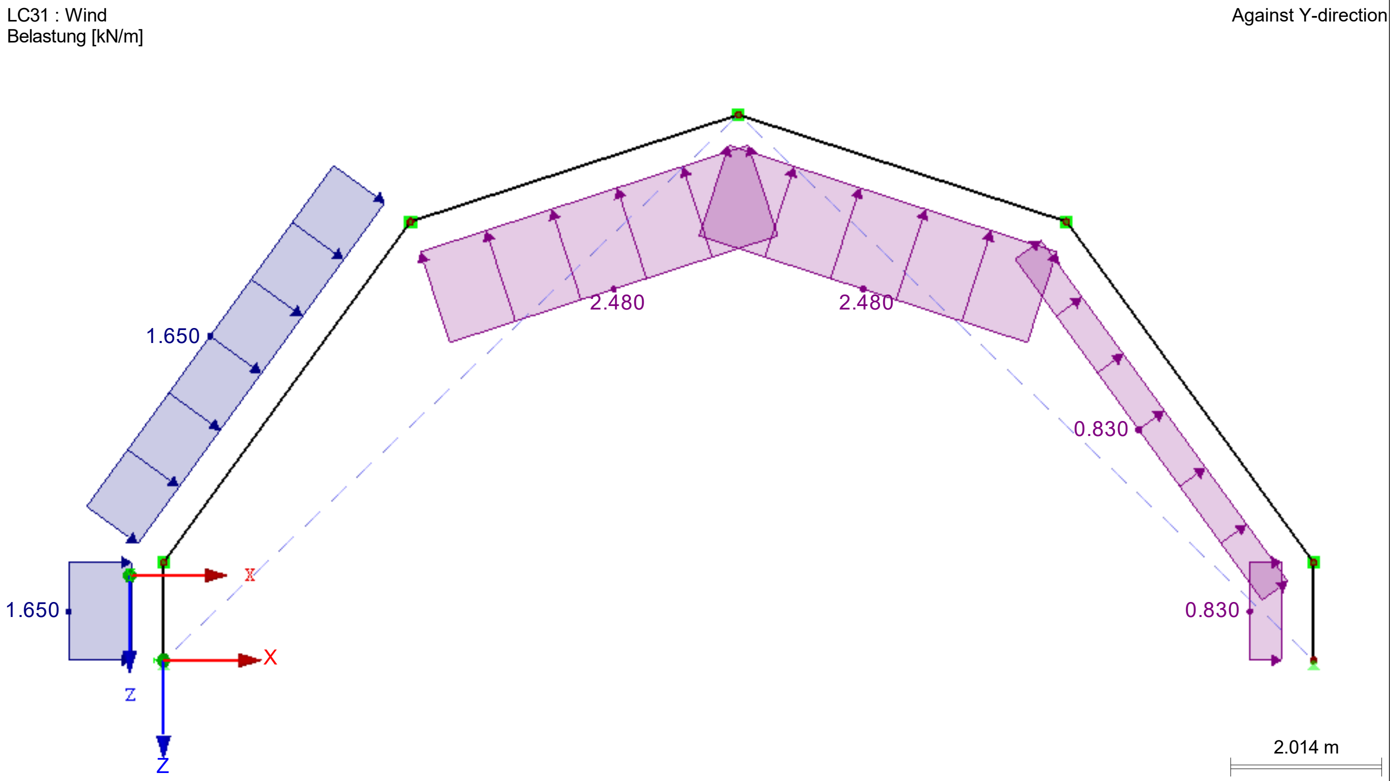
LC31
Wind

3.2 MEMBER LOADS

LC31: Wind

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,2	Force	Uniform	z	True Length	p	1.650	kN/m
2	Members	3,6	Force	Uniform	z	True Length	p	-2.480	kN/m
3	Members	4,5	Force	Uniform	z	True Length	p	-0.830	kN/m

LC31: WIND



LC31 : Wind
Belastung [kN/m]
Against Y-direction
1.650
1.650
2.480
2.480
0.830
0.830
X
Z
X
Z
2.014 m

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■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC11 - Self-weight			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	8.28	kN	
	Sum of support reactions in Z	8.28	kN	Deviation 0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:7.66, Y:0.00, Z:-4.42 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	16.8	mm	Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	6.7	mm	Member No. 6, x: 0.000 m
	Max vectorial displacement	16.8	mm	Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	1.4	mrad	Member No. 5, x: 5.039 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☒		
	Number of load increments	1		
	Number of iterations	1		
	LC21 - Verkehrslast			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	5.33	kN	
	Sum of support reactions in Z	5.33	kN	Deviation 0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:7.66, Y:0.00, Z:-4.42 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	18.2	mm	Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	7.5	mm	Member No. 6, x: 0.000 m
	Max vectorial displacement	18.2	mm	Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-1.5	mrad	Member No. 2, x: 0.840 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☒		
	Number of load increments	1		
	Number of iterations	1		
	LC31 - Wind			
	Sum of loads in X	14.46	kN	
	Sum of support reactions in X	14.46	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-18.98	kN	
	Sum of support reactions in Z	-18.98	kN	Deviation 0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:7.66, Y:0.00, Z:-4.42 m)
	Resultant of reactions about Y	70.82	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	31.2	mm	Member No. 2, x: 2.239 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-8.2	mm	Member No. 6, x: 2.068 m
	Max vectorial displacement	31.2	mm	Member No. 2, x: 2.239 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-2.4	mrad	Member No. 5, x: 5.319 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☒		
	Number of load increments	1		
	Number of iterations	2		
	CO101 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	20.41	kN	
	Sum of support reactions in Z	20.41	kN	Deviation 0.00%
	Max displacement in X	52.9	mm	Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	21.4	mm	Member No. 6, x: 0.000 m
	Max vectorial displacement	52.9	mm	Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-4.4	mrad	Member No. 2, x: 0.840 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	3		
	Calculate critical load factor	☐		
	CO102 - Bem-2			
	Sum of loads in X	15.18	kN	
	Sum of support reactions in X	15.18	kN	Deviation 0.00%

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■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	0.48	kN	
	Sum of support reactions in Z	0.48	kN	Deviation 0.00%
	Max displacement in X	73.7	mm	Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	16.0	mm	Member No. 3, x: 3.216 m
	Max vectorial displacement	73.7	mm	Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-5.8	mrad	Member No. 1, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	3		
	Calculate critical load factor	☐		
	CO103 - Bem-3			
	Sum of loads in X	21.69	kN	
	Sum of support reactions in X	21.69	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-8.06	kN	
	Sum of support reactions in Z	-8.06	kN	Deviation 0.00%
	Max displacement in X	82.7	mm	Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	14.2	mm	Member No. 3, x: 2.068 m
	Max vectorial displacement	82.7	mm	Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-6.4	mrad	Member No. 1, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	3		
	Calculate critical load factor	☐		
	CO104 - Bem-4			
	Sum of loads in X	21.69	kN	
	Sum of support reactions in X	21.69	kN	Deviation 0.00%
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-21.02	kN	
	Sum of support reactions in Z	-21.02	kN	Deviation 0.00%
	Max displacement in X	52.2	mm	Member No. 2, x: 3.919 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-5.6	mm	Member No. 6, x: 2.987 m
	Max vectorial displacement	52.3	mm	Member No. 2, x: 3.919 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-3.1	mrad	Member No. 1, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	82.7	mm	CO103, Member No. 4, x: 1.300 m
	Max displacement in Y	0.0	mm	
	Max displacement in Z	21.4	mm	CO101, Member No. 6, x: 0.000 m
	Max vectorial displacement	82.7	mm	CO103, Member No. 4, x: 1.300 m
	Max rotation about X	0.0	mrad	
	Max rotation about Y	-6.4	mrad	CO103, Member No. 1, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Number of 1D finite elements (member elements)	9		
	Number of FE mesh nodes	7		
	Number of equations	42		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate failed members	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐Activate shear stiffness of members (Ay, Az)		
	☒Modify stiffness (material, cross-sections, members, load cases and combinations)		

■ 4.0 RESULTS - SUMMARY

		☒Apply temperature/deformation load actions without stiffness modifications
	Precision and Tolerance	☐Change default setting
	Nonlinear effects - Activate	☐Support and elastic foundations ☒Failing members due to member type ☐Member hinges ☐Member elastic foundation ☐Member nonlinearities
	Reactivation of failed members	☒Check deformation of failing members and reactivate where appropriate Maximum number of reactivations : 3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: GI-KDXL Kederdach XL								
2	CO104	MAX N	5.599	▹ 14.40	0.00	-7.14	0.00	21.73	0.00
4	CO101	MIN N	1.300	▹ -13.02	0.00	2.92	0.00	0.00	0.00
1	LC11	MAX V_y	0.000	-5.07	▹ 0.00	-0.98	0.00	0.00	0.00
1	LC11	MIN V_y	0.000	-5.07	▹ 0.00	-0.98	0.00	0.00	0.00
1	CO104	MAX V_z	0.000	5.53	0.00	▹ 17.07	0.00	0.00	0.00
3	CO104	MIN V_z	0.000	7.45	0.00	▹ -14.24	0.00	21.73	0.00
1	LC11	MAX M_T	0.000	-5.07	0.00	-0.98	▹ 0.00	0.00	0.00
1	LC11	MIN M_T	0.000	-5.07	0.00	-0.98	▹ 0.00	0.00	0.00
2	CO103	MAX M_y	3.919	6.81	0.00	-0.10	0.00	▹ 38.44	0.00
6	LC31	MIN M_y	2.527	6.83	0.00	0.23	0.00	▹ -19.89	0.00
1	LC11	MAX M_z	0.000	-5.07	0.00	-0.98	0.00	0.00	▹ 0.00
1	LC11	MIN M_z	0.000	-5.07	0.00	-0.98	0.00	0.00	▹ 0.00
	Section No. 2: RD 8								
7	CO103	MAX N	0.000	▹ 9.19	0.00	0.00	0.00	0.00	0.00
8	CO103	MIN N	0.000	▹ 0.60	0.00	0.00	0.00	0.00	0.00
7	LC11	MAX V_y	0.000	1.35	▹ 0.00	0.00	0.00	0.00	0.00
7	LC11	MIN V_y	0.000	1.35	▹ 0.00	0.00	0.00	0.00	0.00
7	LC11	MAX V_z	0.000	1.35	0.00	▹ 0.00	0.00	0.00	0.00
7	LC11	MIN V_z	0.000	1.35	0.00	▹ 0.00	0.00	0.00	0.00
7	LC11	MAX M_T	0.000	1.35	0.00	0.00	▹ 0.00	0.00	0.00
7	LC11	MIN M_T	0.000	1.35	0.00	0.00	▹ 0.00	0.00	0.00
7	LC11	MAX M_y	0.000	1.35	0.00	0.00	0.00	▹ 0.00	0.00
7	LC11	MIN M_y	0.000	1.35	0.00	0.00	0.00	▹ 0.00	0.00
7	LC11	MAX M_z	0.000	1.35	0.00	0.00	0.00	0.00	▹ 0.00
7	LC11	MIN M_z	0.000	1.35	0.00	0.00	0.00	0.00	▹ 0.00

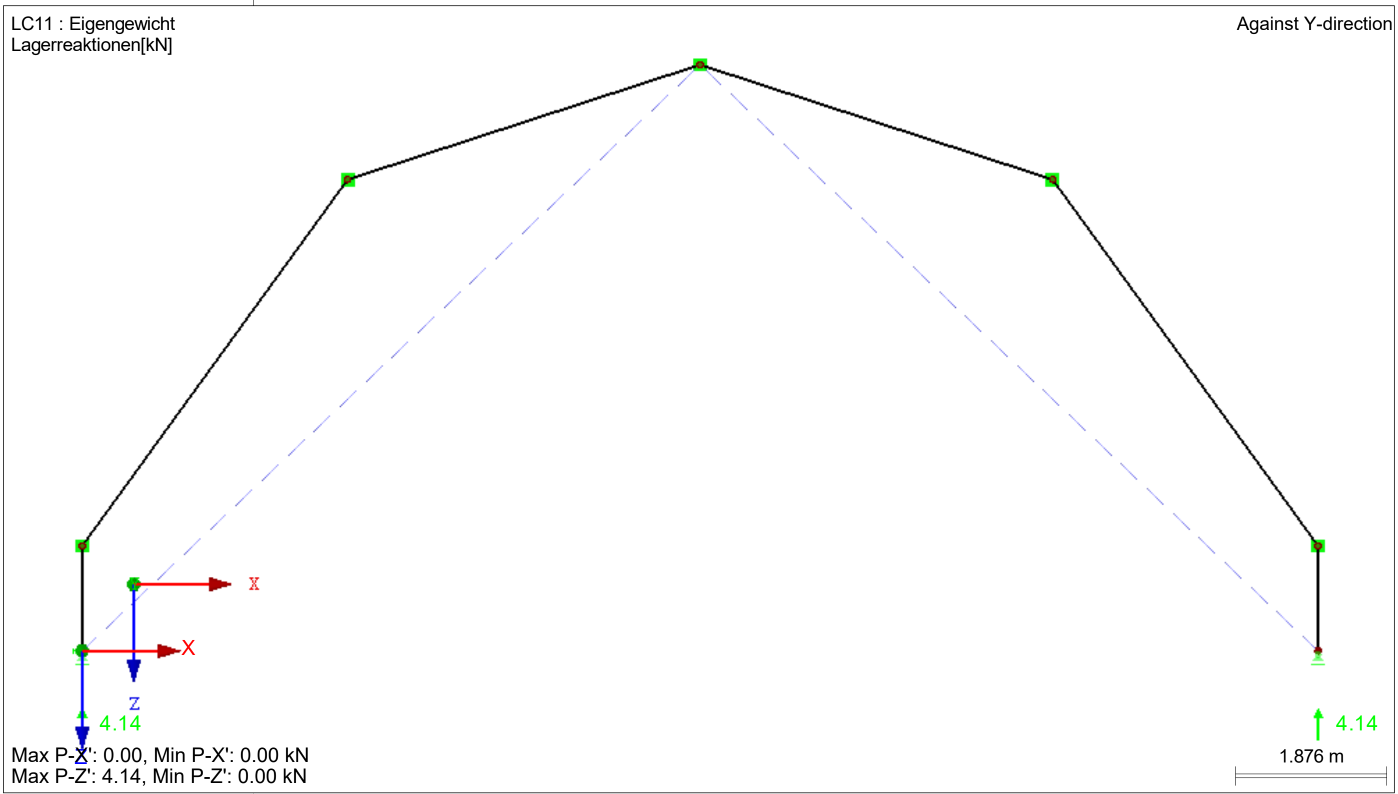
■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
1	LC11	0.00	0.00	4.14	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	2.67	0.00	0.00	0.00	Verkehrslast
	LC31	14.46	0.00	-9.04	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	10.20	0.00	0.00	0.00	Bem-1
	CO102	15.18	0.00	0.72	0.00	0.00	0.00	Bem-2
	CO103	21.69	0.00	-3.34	0.00	0.00	0.00	Bem-3
	CO104	21.69	0.00	-9.82	0.00	0.00	0.00	Bem-4
2	LC11	0.00	0.00	0.00	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	0.00	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
3	LC11	0.00	0.00	0.00	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	0.00	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
4	LC11	0.00	0.00	0.00	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	0.00	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
5	LC11	0.00	0.00	4.14	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	2.67	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	-9.94	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	10.20	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	-0.24	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	-4.72	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	-11.20	0.00	0.00	0.00	Bem-4
6	LC11	0.00	0.00	0.00	0.00	0.00	0.00	Self-weight

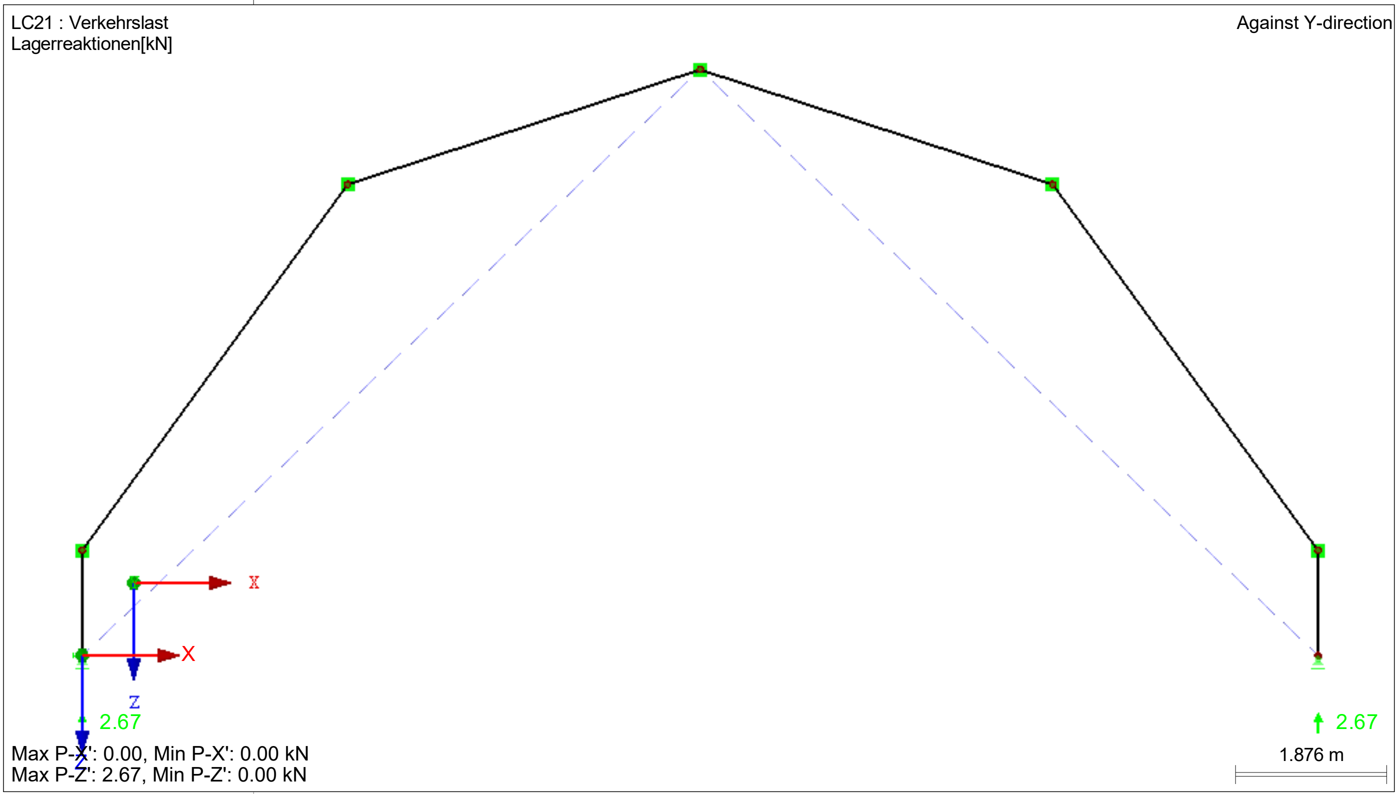
■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
6	LC21	0.00	0.00	0.00	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
7	LC11	0.00	0.00	0.00	0.00	0.00	0.00	Self-weight
	LC21	0.00	0.00	0.00	0.00	0.00	0.00	Verkehrslast
	LC31	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO101	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO102	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO103	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO104	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
Σ Supp.	LC11	0.00	0.00	8.28				
Σ Loads	LC11	0.00	0.00	8.28				
Σ Supp.	LC21	0.00	0.00	5.33				
Σ Loads	LC21	0.00	0.00	5.33				
Σ Supp.	LC31	14.46	0.00	-18.98				
Σ Loads	LC31	14.46	0.00	-18.98				
Σ Supp.	CO101	0.00	0.00	20.41				
Σ Loads	CO101	0.00	0.00	20.41				
Σ Supp.	CO102	15.18	0.00	0.48				
Σ Loads	CO102	15.18	0.00	0.48				
Σ Supp.	CO103	21.69	0.00	-8.06				
Σ Loads	CO103	21.69	0.00	-8.06				
Σ Supp.	CO104	21.69	0.00	-21.02				
Σ Loads	CO104	21.69	0.00	-21.02				

■ LAGERREAKTIONEN



LAGERREAKTIONEN



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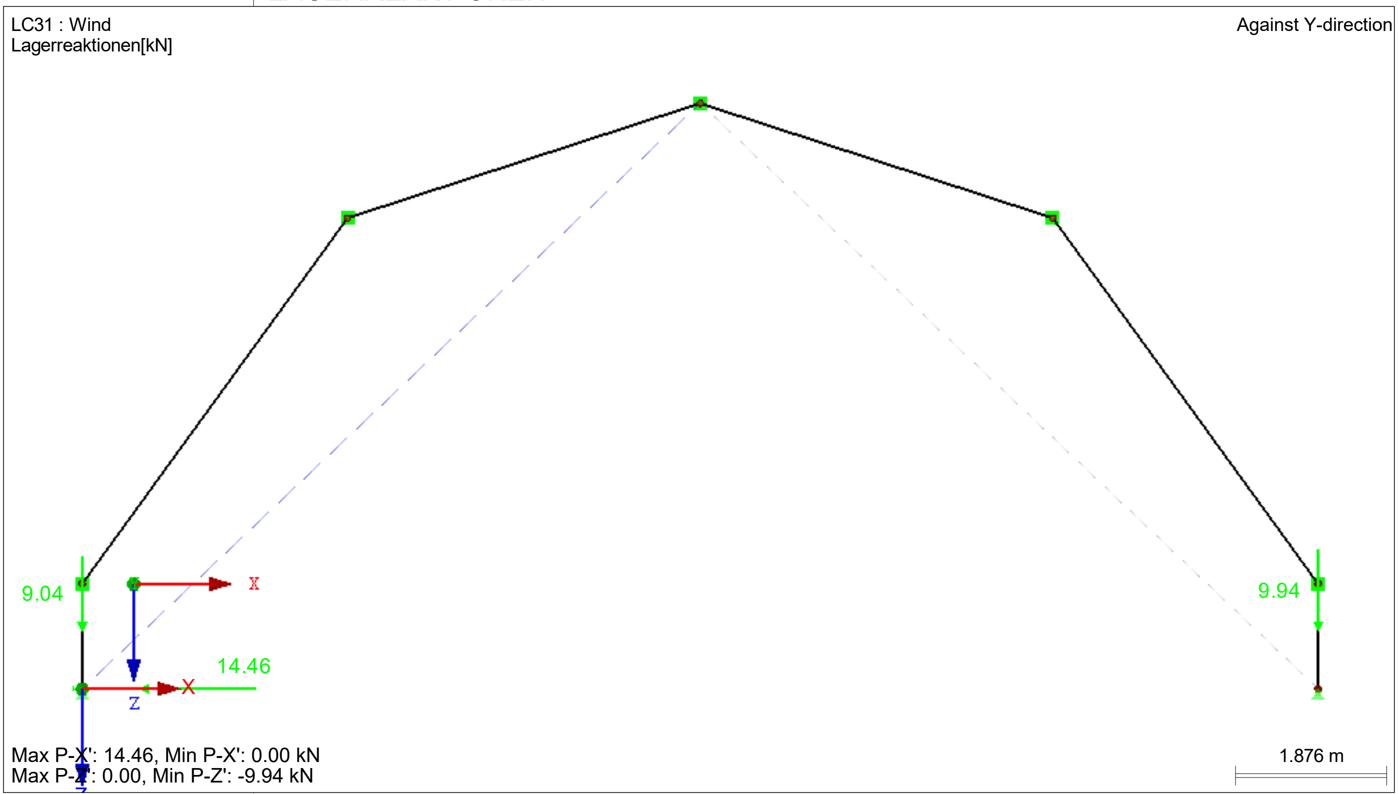
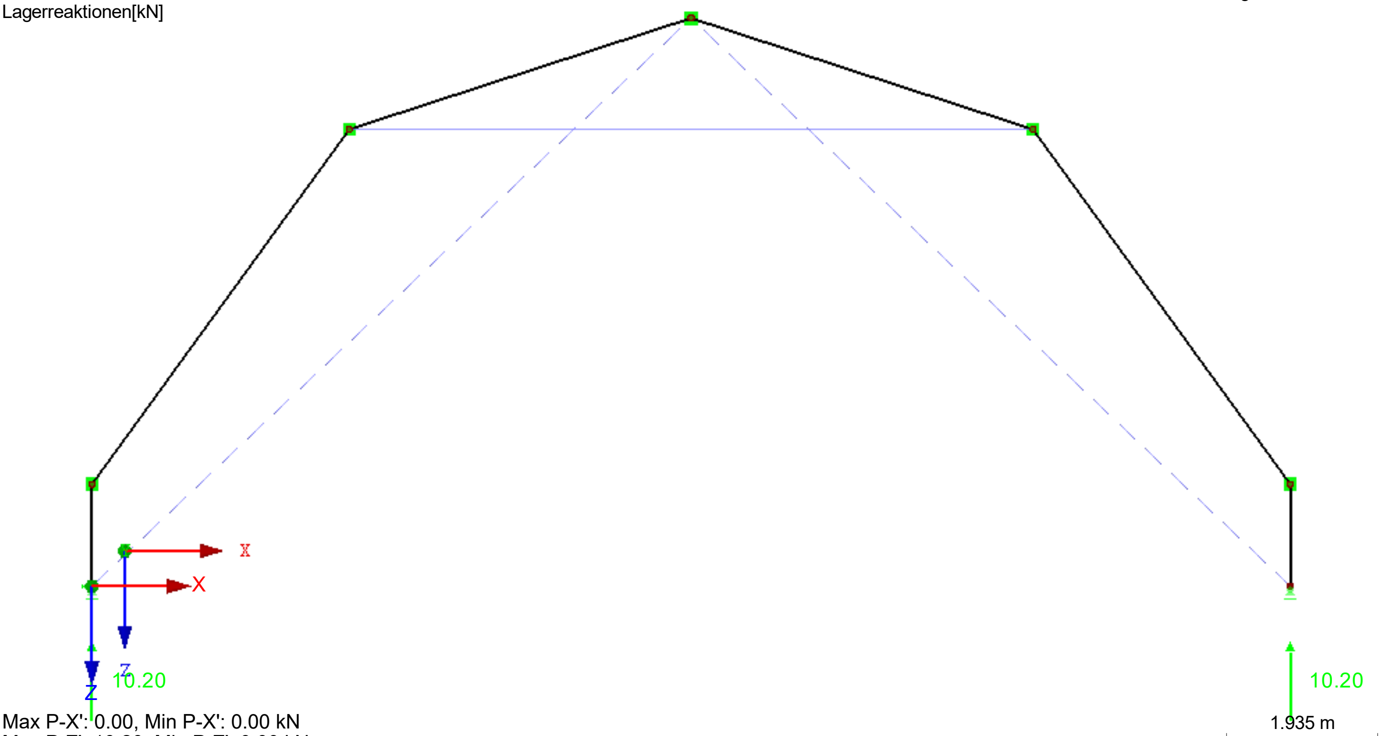


LAGERREAKTIONEN

CO101 : Bem-1
Lagerreaktionen[kN]

Against Y-direction

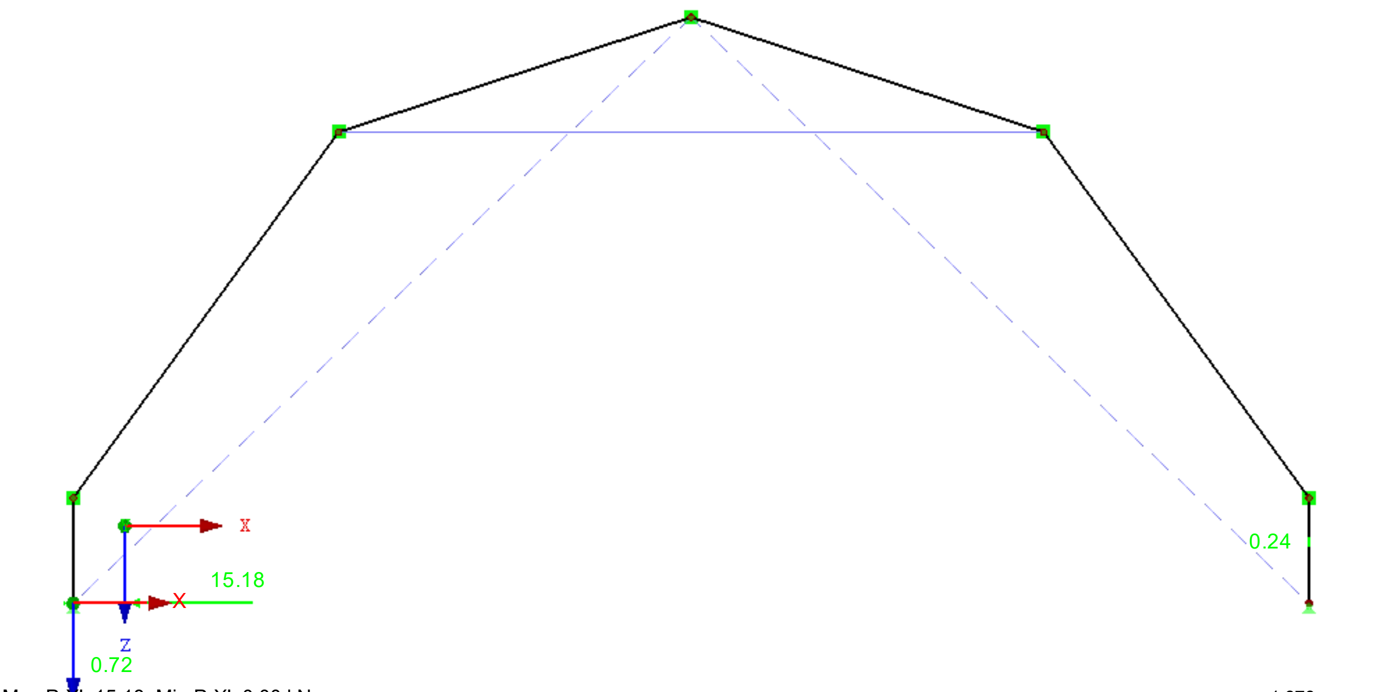


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Z': 10.20, Min P-Z': 0.00 kN

LAGERREAKTIONEN

CO102 : Bem-2
Lagerreaktionen[kN]

Against Y-direction

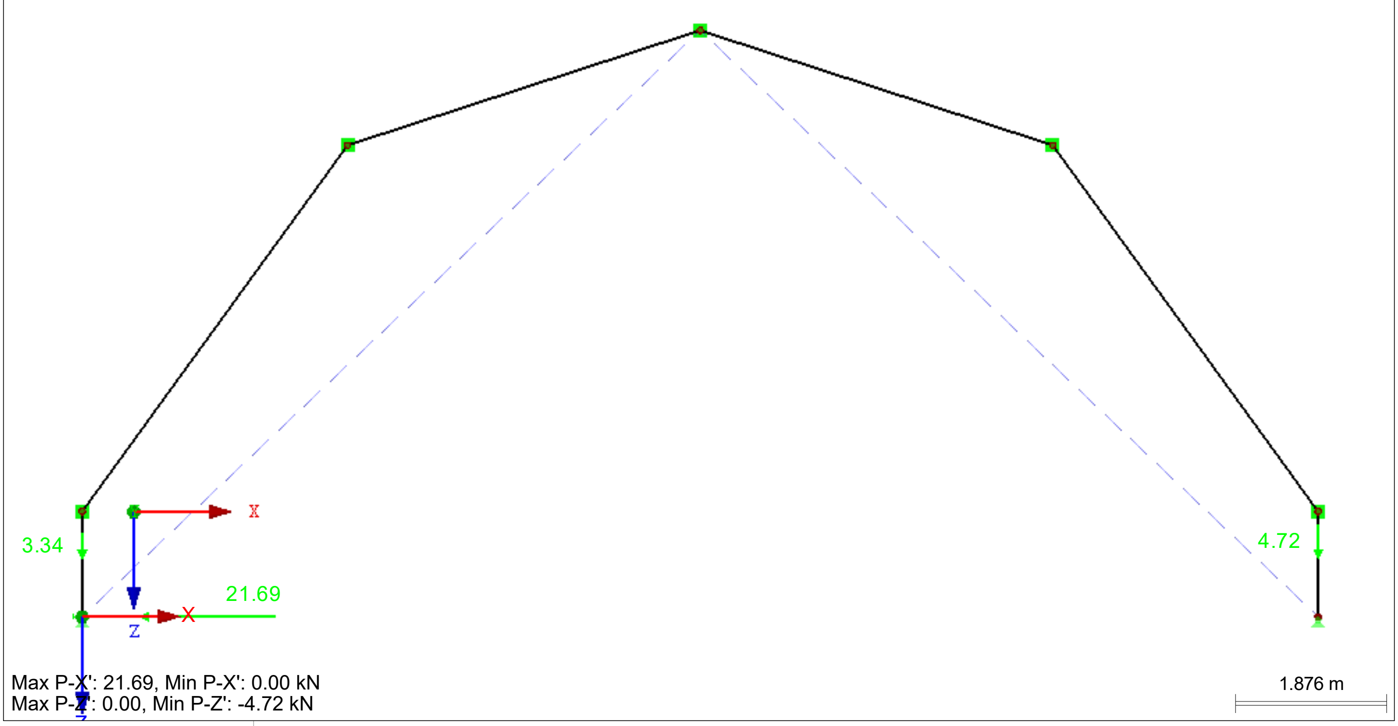


Max P-X': 15.18, Min P-X': 0.00 kN
Max P-Z': 0.72, Min P-Z': -0.24 kN

LAGERREAKTIONEN

CO103 : Bem-3
Lagerreaktionen[kN]

Against Y-direction

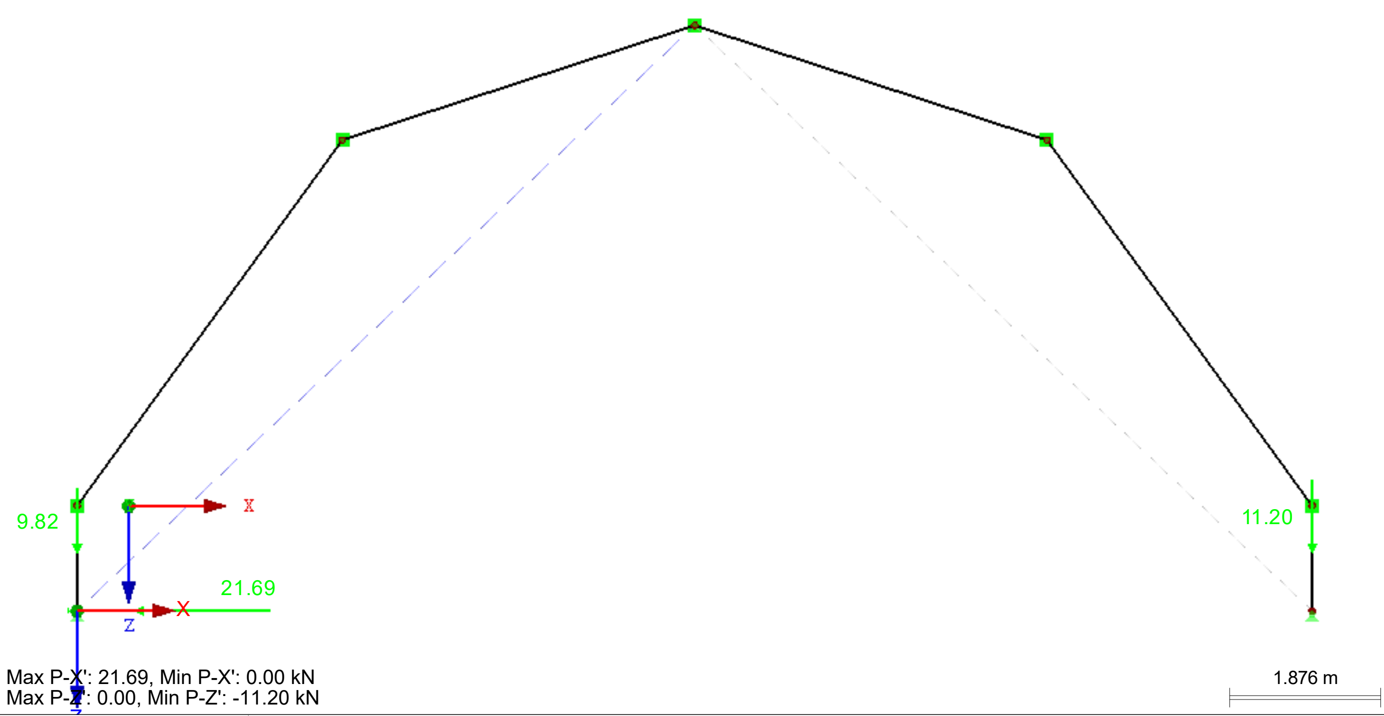


Max P-X': 21.69, Min P-X': 0.00 kN
Max P-Z': 0.00, Min P-Z': -4.72 kN

LAGERREAKTIONEN

CO104 : Bem-4
Lagerreaktionen[kN]

Against Y-direction



Max P-X': 21.69, Min P-X': 0.00 kN
Max P-Z': 0.00, Min P-Z': -11.20 kN

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■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

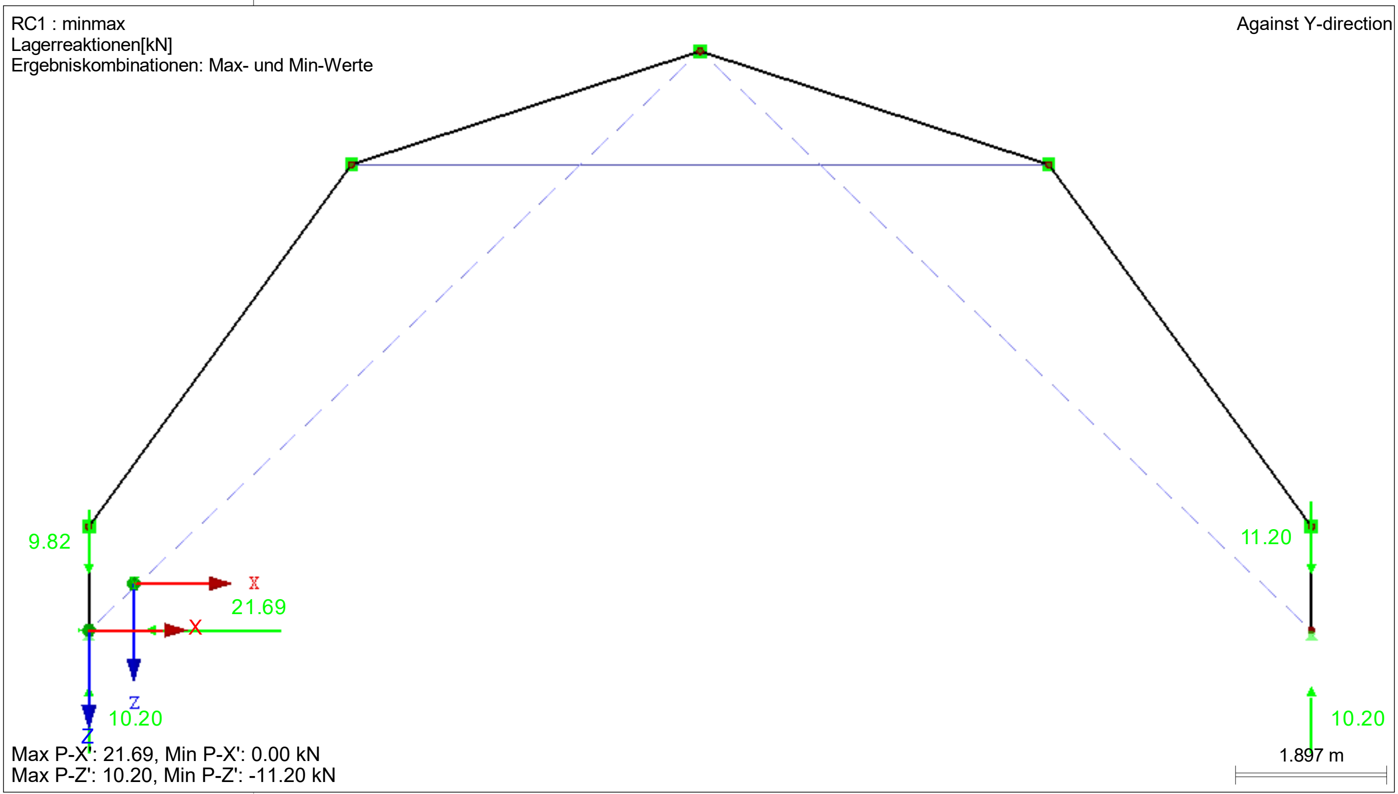
Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: GI-KDXL Kederdach XL										
2	RC1		5.599	MAX N	14.40	0.00	-7.14	0.00	21.73	0.00	CO 104
4	RC1		1.300	MIN N	-13.02	0.00	2.92	0.00	0.00	0.00	CO 101
1	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MAX V_z	5.53	0.00	17.07	0.00	0.00	0.00	CO 104
3	RC1		0.000	MIN V_z	7.45	0.00	-14.24	0.00	21.73	0.00	CO 104
1	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
2	RC1		3.919	MAX M_y	6.81	0.00	-0.10	0.00	38.44	0.00	CO 103
6	RC1		2.757	MIN M_y	9.97	0.00	0.37	0.00	-19.62	0.00	CO 104
1	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 2: RD 8										
7	RC1		0.000	MAX N	9.19	0.00	0.00	0.00	0.00	0.00	CO 103
7	RC1		0.000	MIN N	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

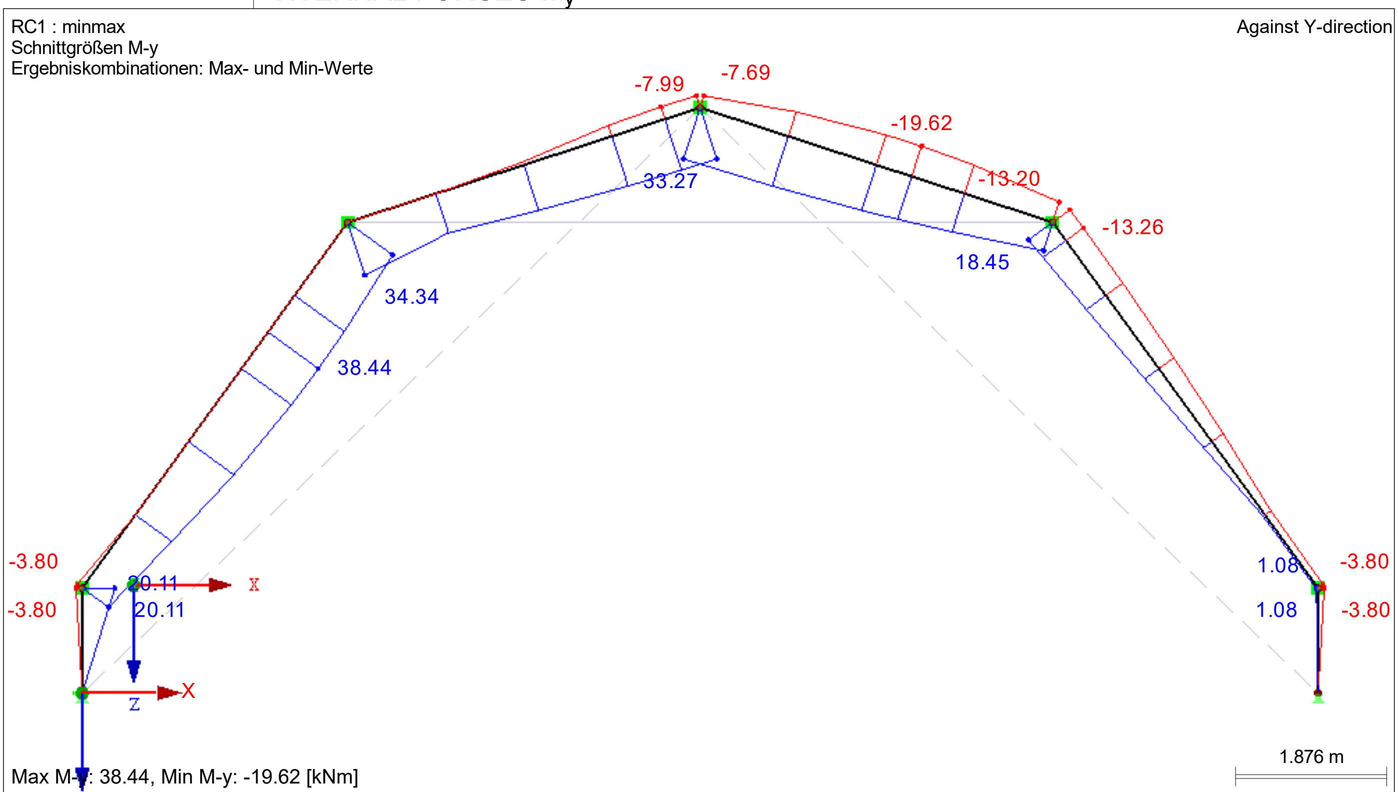
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
1	RC1	Max $P_{X'}$	21.69	0.00	-3.34	0.00	0.00	0.00	CO 103
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	10.20	0.00	0.00	0.00	CO 101
		Min $P_{Z'}$	21.69	0.00	-9.82	0.00	0.00	0.00	CO 104
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
2	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
3	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
4	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
5	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	10.20	0.00	0.00	0.00	CO 101
		Min $P_{Z'}$	0.00	0.00	-11.20	0.00	0.00	0.00	CO 104
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
6	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
7	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	

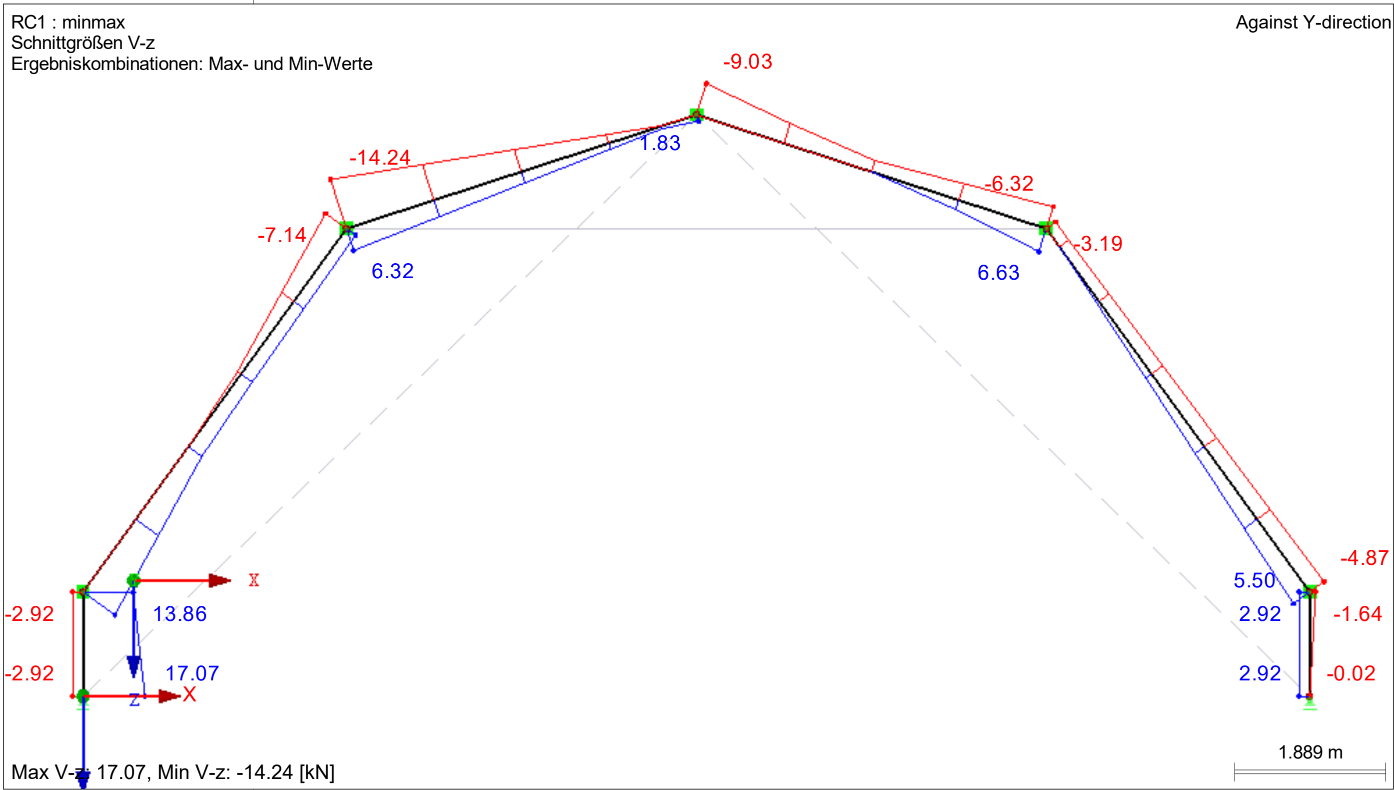
LAGERREAKTIONEN



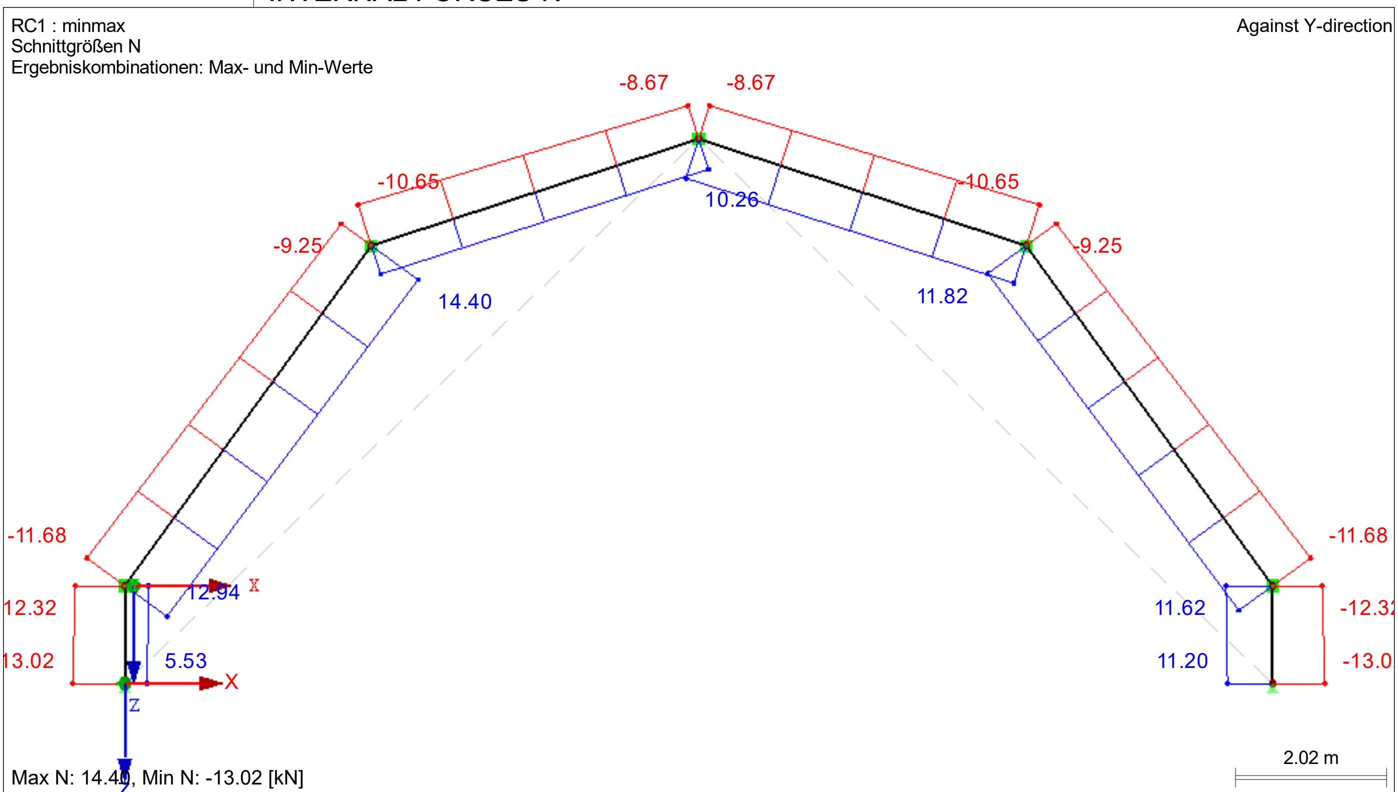
INTERNAL FORCES M_y



INTERNAL FORCES V_z



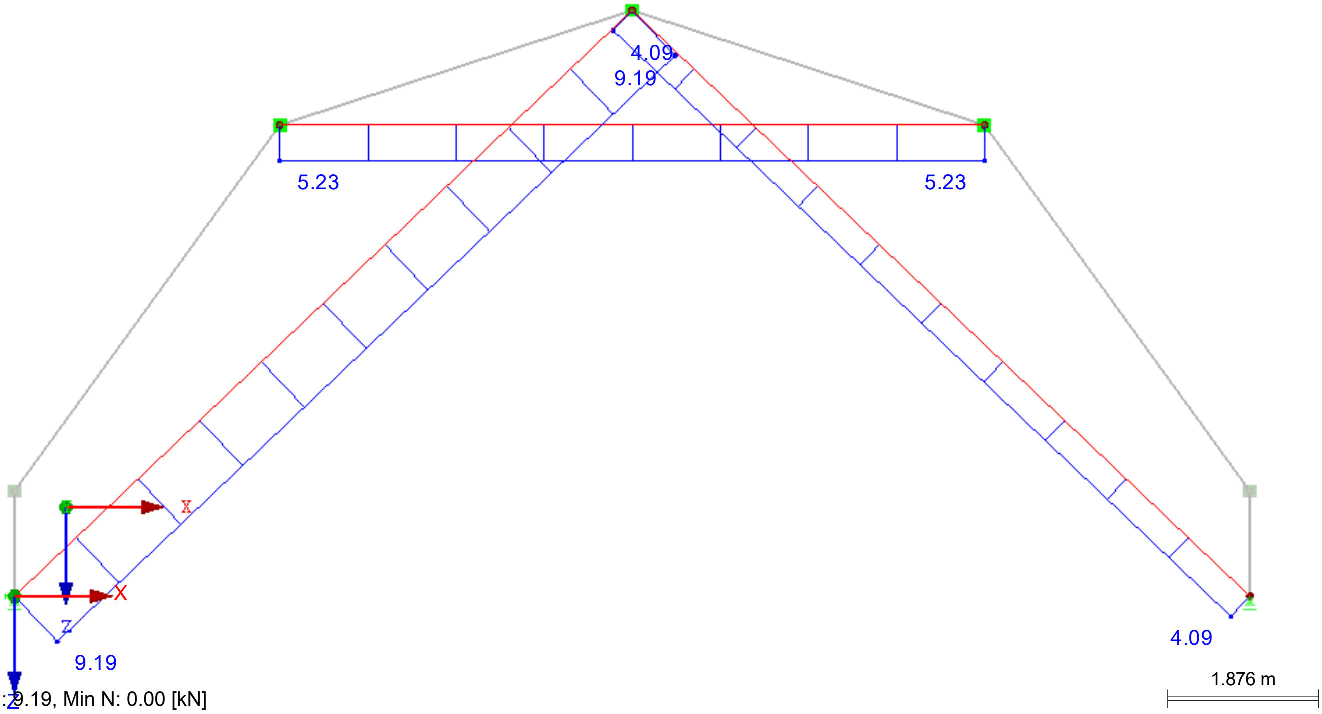
INTERNAL FORCES N



■ INTERNAL FORCES N

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Against Y-direction



Max N: 9.19, Min N: 0.00 [kN]

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Dimensioning

Layher Kederdach standart

Positiv bending moment

Md=	40	kNm
Nd=	8	kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= -50,13 kN

N,Og,Rd= -60 kN

eta= 0,84 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= 58,1 kN

N,Og,Rd= 92,4 kN

eta= 0,63 < 1,0

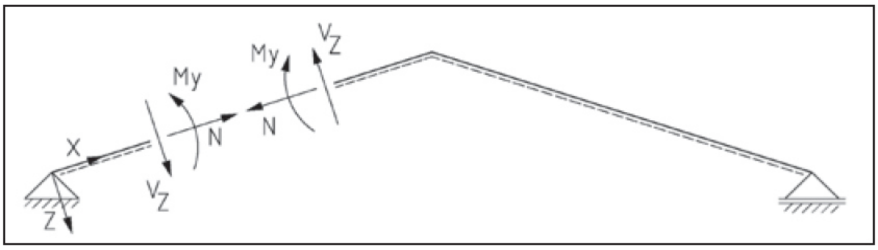

Bild 34

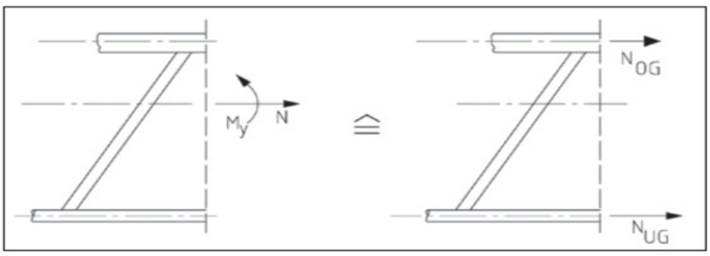

Bild 36

$N_{OG} = 0{,}64 * N - M_y / 72{,}4$
$N_{UG} = 0{,}36 * N + M_y / 72{,}4$ M_y [kNcm]

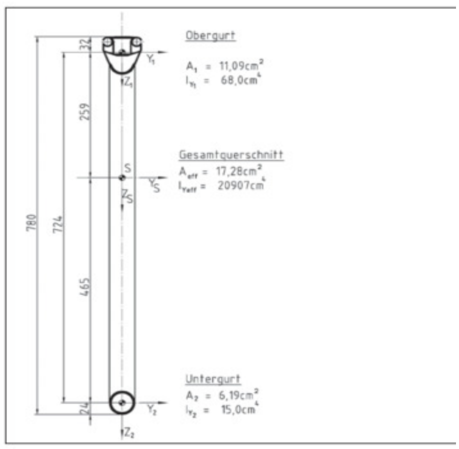

Bild 35

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Positiv bending moment

Md= -20 kNm
Nd= 9 kN

Proof of upper chord

N,OG= 0,64 * N - My / 0,724= 33,384 kN

N,Og,Rd= 113,4 kN

eta= 0,29 < 1,0

Proof of lower chord

N,OG= 0,36 * N -+My / 0,724= -24,38 kN

N,Og,Rd= -67 kN

eta= 0,36 < 1,0

		Com-pression force	Tension force	Replacement beam: Bending moments (z_S = 0.724 m)		Replacement beam: Shear force
		max. $N^-_{R.d}$ [kN]	max. $N^+_{R.d}$ [kN]	max. $M^+_{y.R.d}$ [kNm]	max. $M^-_{y.R.d}$ [kNm]	$V_{Z.R.d}$ [kN]
Diagonal strut		-29.1	29.1	-	-	25.0
Heavy	Top chord with s_K = 1.0 m	-113.4	113.4	66.9	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Standard	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-48.8	-
	Bottom chord with s_K = 1.0 m	-67.4	92.4			
Light	Top chord with s_K = 2.0 m	-60.0	113.4	43.4	-13.7	-
	Bottom chord with s_K = 2.0 m	-18.9	92.4			

Bracing:

Nd=	10	kN
N,k=	7,1429	kN
Nzul=	10	kN

Tension chord 4000 kg

Ratchet tie-down strap

Reaction forces: [kN]

vertical:

Dead Load	A,g,k=	4,2	kN	
Snow Load	A,q,k=	2,7	kN	
Wind	A,q,k=	9	kN	(+/-)

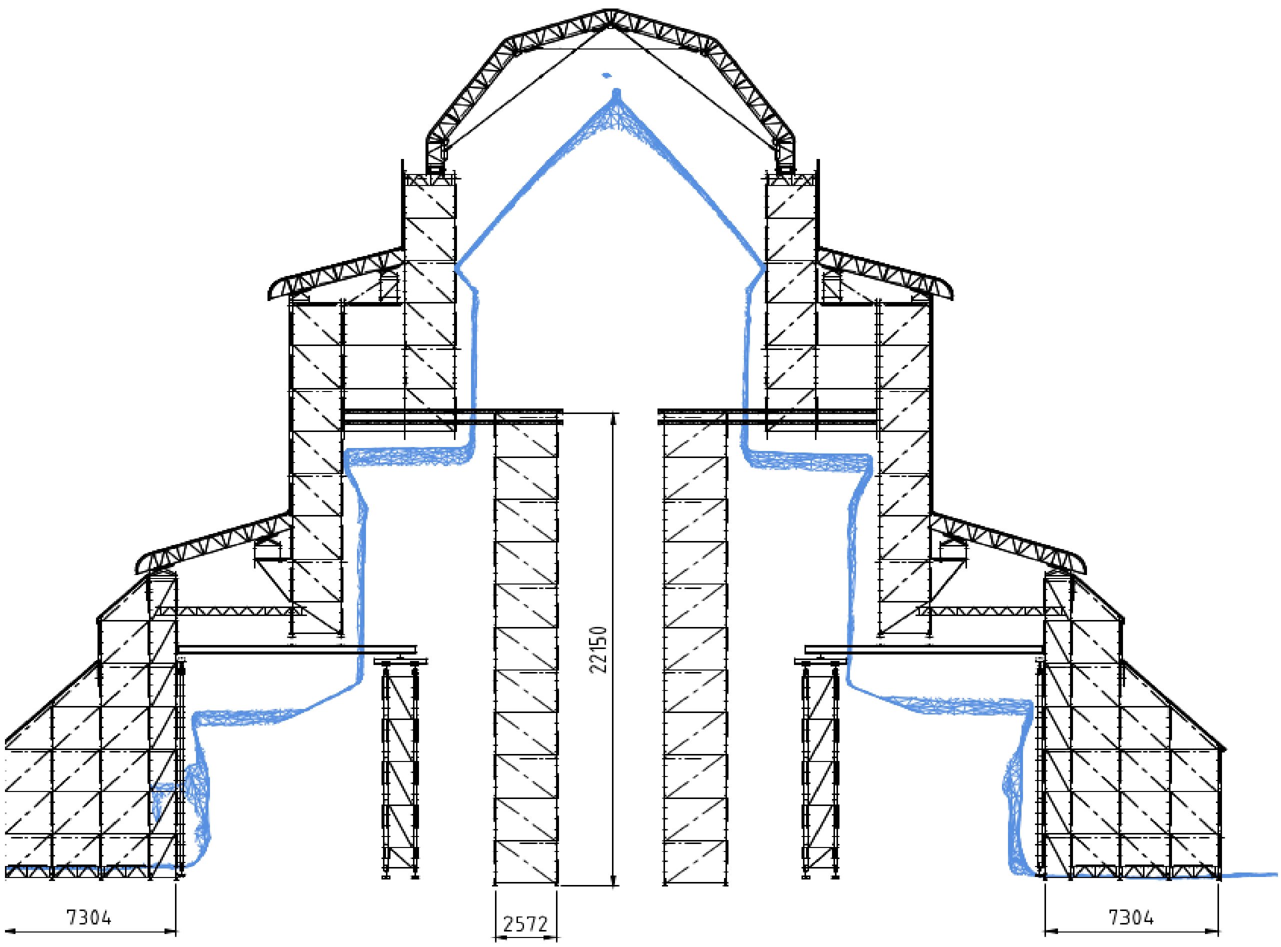
horizontal:

Wind	A,q,k=	14,5	kN	(+/-)

Pos.5: Scaffold dome - 1 windward

Section F-F
Scale 1:200

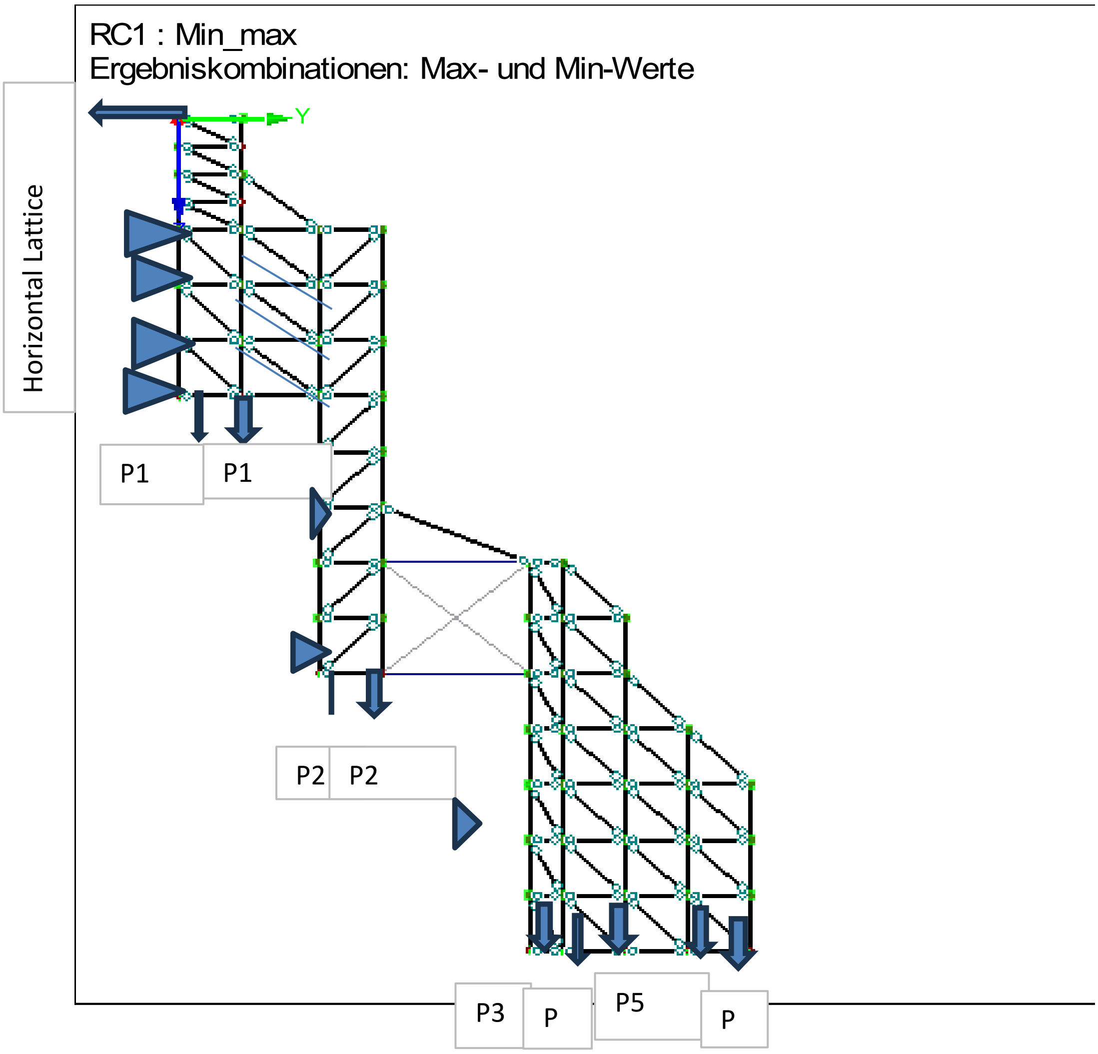
according to Knobloch Consulting Engineers.



The proof for the scaffold at the dome will be proven in parts:

1. windward
2. lee side
3. Horizontal lattice girder at the top
4. Stabel wall

a. windward


RC1 : Min_max
Ergebniskombinationen: Max- und Min-Werte
Y
Horizontal Lattice
P1
P1
P2
P2
P3
P
P5
P

Dead Load

P1:	G=	4 kN
P2:	G=	6 kN
P3:	G=	2,5 kN
P4:	G=	5 kN
P5:	G=	4 kN
P6:	G=	3 kN
Roof	G=	4,2 kN

Live Load (no snow)

q*= 1 kN/m²

q=	1 * 2,32	4,6 kN
Q=	2 * 2,32*2,07/2=	4,8 kN

Wind

qb,o=	0,47 kN/m²
z=	30 m
qp=	1,2 kN/m²

force coefficent	cf=	0,8
time coefficient	ct=	0,7
width	b=	2,32
	q=	1,56 kN/m
Gesamtwindlast	h=	32 m
	W=	49,9 kN

Wind roof 14,5 kN

4. Earthquake

Mass of schaffolding

	M=	42000 kg
Fb=	Sd(T1) * M * lamda=	
Fb=	0,00113 * M=	47,5 kN

H,k from Wind	H,k=	58 kN

The horizontal wind load is much higher than the seismic load.

The seismic load case has not to be proven.

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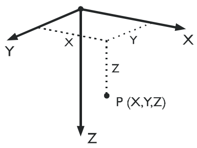
CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-1-TS-1b
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
2	-	Cartesian	0.000	0.000	0.000	Supported
4	-	Cartesian	0.000	0.000	1.000	Supported
5	-	Cartesian	0.000	0.000	3.000	
8	-	Cartesian	0.000	2.070	0.000	Supported
9	-	Cartesian	0.000	0.000	2.000	Supported
11	-	Cartesian	0.000	2.070	1.000	
12	-	Cartesian	0.000	2.070	3.000	
20	-	Cartesian	0.000	2.070	2.000	Supported
26	-	Cartesian	0.000	0.000	4.000	Supported
32	-	Cartesian	0.000	2.070	4.000	Supported
38	-	Cartesian	0.000	0.000	6.000	Supported
44	-	Cartesian	0.000	2.070	6.000	Supported
50	-	Cartesian	0.000	0.000	8.000	Supported
51	-	Cartesian	0.000	4.640	8.000	Supported
56	-	Cartesian	0.000	2.070	8.000	Supported
57	-	Cartesian	0.000	6.710	8.000	Supported
62	-	Cartesian	0.000	0.000	10.000	Supported
63	-	Cartesian	0.000	4.640	10.000	Supported
68	-	Cartesian	0.000	2.070	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
74	-	Cartesian	0.000	4.640	6.000	Supported
78	-	Cartesian	0.000	6.710	6.000	Supported
86	-	Cartesian	0.000	4.640	12.000	Supported
89	-	Cartesian	0.000	4.640	4.000	Supported
93	-	Cartesian	0.000	6.710	4.000	Supported
94	-	Cartesian	0.000	6.710	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported

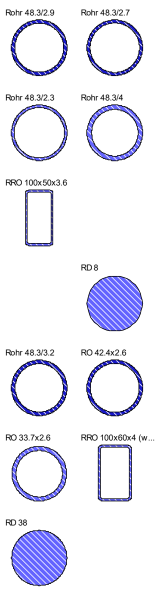
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
122	-	Cartesian	0.000	4.640	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported
134	-	Cartesian	0.000	6.710	20.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported
239	-	Cartesian	0.000	12.680	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

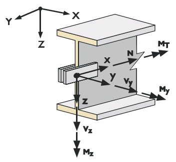
1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40 4.14	10.70 2.07	10.70 2.07	0.00	0.00	48.3	48.3
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18 3.87	10.09 1.92	10.09 1.92	0.00	0.00	48.3	48.3
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
	Diagonale							
4	Rohr 48.3/4							
	1	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel							
	1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	GI-KDXL Kederdach XL							
	1	1.00 17.00	20900.00 9.00	20900.00 9.00	0.00	0.00	50.0	1000.0
8	RD 8 | DIN 1013-1							
	1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2							
	2	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3

1.3 CROSS-SECTIONS

Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93	6.46	6.46	0.00	0.00	42.4	42.4
		3.25	1.62	1.62				
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19	3.09	3.09	0.00	0.00	33.7	33.7
		2.54	1.27	1.27				
	Diagonale_TG60							
12	RRO 100x60x4 (Hot Formed)							
	1	156.00	158.00	70.50	0.00	0.00	60.0	100.0
		12.00	3.23	6.98				
13	RD 38							
	1	20.47	10.24	10.24	0.00	0.00	38.0	38.0
		11.30	9.49	9.49				

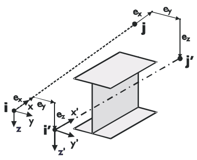


1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

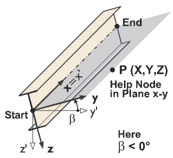


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	5	9	Angle	90.00	1	1	-	-	-	-	1.000	Z
2	Beam	4	2	Angle	90.00	1	1	-	-	-	-	1.000	Z
3	Beam	11	8	Angle	90.00	1	1	-	-	-	-	1.000	Z
4	Beam	12	20	Angle	90.00	1	1	-	-	-	-	1.000	Z
8	Beam	9	4	Angle	90.00	1	1	-	-	-	-	1.000	Z
13	Beam	26	5	Angle	90.00	1	1	-	-	-	-	1.000	Z
18	Beam	38	26	Angle	90.00	1	1	-	-	-	-	2.000	Z
23	Beam	50	38	Angle	90.00	1	1	-	-	-	-	2.000	Z
28	Beam	62	50	Angle	90.00	1	1	-	-	-	-	2.000	Z
34	Beam	20	11	Angle	90.00	1	1	-	-	-	-	1.000	Z
35	Beam	32	12	Angle	90.00	1	1	-	-	-	-	1.000	Z
50	Beam	44	32	Angle	90.00	1	1	-	-	-	-	2.000	Z
55	Beam	56	44	Angle	90.00	1	1	-	-	-	-	2.000	Z
60	Beam	68	56	Angle	90.00	1	1	-	-	-	-	2.000	Z

1.7 MEMBERS

Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
67	Beam	63	51	Angle	90.00	1	1	-	-	-	-	2.000	Z
74	Beam	69	57	Angle	90.00	1	1	-	-	-	-	2.000	Z
81	Beam	51	74	Angle	90.00	1	1	-	-	-	-	2.000	Z
89	Beam	2	8	Angle	0.00	2	2	1	1	1	-	2.020	Y
90	Beam	4	11	Angle	0.00	2	2	1	1	1	-	2.020	Y
91	Beam	5	12	Angle	0.00	2	2	1	1	1	-	2.020	Y
103	Beam	9	20	Angle	0.00	2	2	1	1	1	-	2.020	Y
115	Beam	26	32	Angle	0.00	2	2	1	1	1	-	2.020	Y
127	Beam	38	44	Angle	0.00	2	2	1	1	1	-	2.020	Y
139	Beam	50	56	Angle	0.00	2	2	1	1	1	-	2.020	Y
151	Beam	62	68	Angle	0.00	2	2	1	1	1	-	2.020	Y
163	Beam	51	57	Angle	0.00	2	2	1	1	1	-	2.020	Y
168	Beam	63	69	Angle	0.00	2	2	1	1	1	-	2.020	Y
171	Beam	63	57	Angle	0.00	3	3	4	4	-	-	2.878	YZ
178	Beam	68	63	Angle	0.00	2	2	1	1	1	-	2.520	Y
181	Beam	56	51	Angle	0.00	2	2	1	1	1	-	2.520	Y
186	Beam	57	78	Angle	90.00	1	1	-	-	-	-	2.000	Z
191	Beam	74	78	Angle	0.00	2	2	1	1	1	-	2.020	Y
196	Beam	51	78	Angle	0.00	3	3	4	4	-	-	2.878	YZ
201	Beam	44	74	Angle	0.00	2	2	1	1	1	-	2.520	Y
206	Beam	74	89	Angle	90.00	1	1	-	-	-	-	2.000	Z
211	Beam	78	93	Angle	90.00	1	1	-	-	-	-	2.000	Z
216	Beam	89	93	Angle	0.00	2	2	1	1	1	-	2.020	Y
221	Beam	74	93	Angle	0.00	3	3	4	4	-	-	2.878	YZ
226	Beam	32	89	Angle	0.00	2	2	1	1	1	-	2.520	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ

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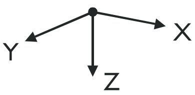
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	Rotation β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
877	Beam	32	74	Angle	0.00	3	3	4	4	-	-	3.257	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
880	Beam	44	51	Angle	0.00	3	3	4	4	-	-	3.257	YZ
881	Beam	56	63	Angle	0.00	3	3	4	4	-	-	3.257	YZ
882	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
883	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ
885	Beam	2	11	Angle	0.00	3	3	4	4	-	-	2.299	YZ
886	Beam	9	12	Angle	0.00	3	3	4	4	-	-	2.299	YZ
887	Beam	89	20	Angle	0.00	3	3	4	4	-	-	3.257	YZ
888	Beam	44	26	Angle	0.00	3	3	4	4	-	-	2.878	YZ
889	Beam	56	38	Angle	0.00	3	3	4	4	-	-	2.878	YZ
890	Beam	68	50	Angle	0.00	3	3	4	4	-	-	2.878	YZ
891	Beam	281	111	Angle	0.00	7	7	3	3	-	-	5.274	YZ
892	Beam	4	20	Angle	0.00	3	3	4	4	-	-	2.299	YZ
893	Beam	5	32	Angle	0.00	3	3	4	4	-	-	2.299	YZ

1.8 NODAL SUPPORTS

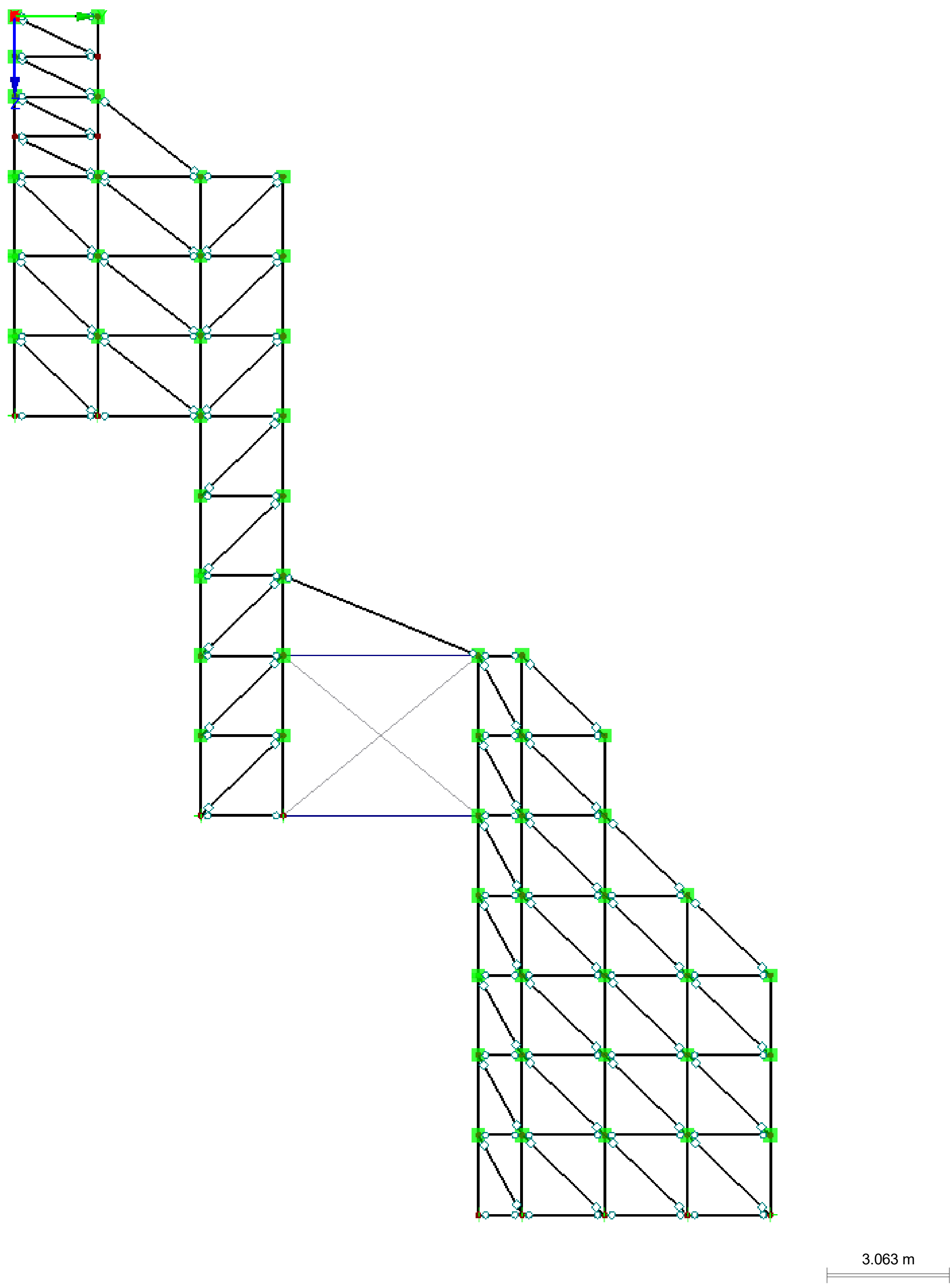


Support No.	Nodes No.	Sequen.	Rotation [°] about X	Rotation [°] about Y	Rotation [°] about Z	Column in Z	$u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	203,206, 227,275,323	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
2	107,305	XYZ	0.00	0.00	0.00	☐	☒	Spring	☐	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☒	☒
	2,4,8,9,20,32,44,51,56,57,63,69,74,78,86,89,93,94,110,111,116,122,125,164,167,173,176,179,185,188,191,194,197, 209,215,221,233,239,245,251,257,263,269,281,287,293,299,311,317											
4	68,134	XYZ	0.00	0.00	0.00	☐	Spring	☐	Spring	☐	☐	☒
5	62,131	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
6	26,38,50	XYZ	0.00	0.00	0.00	☐	☒	Spring	☐	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	203,206,227,275,323	5000.000	5000.000	5000.000	-	-	-
2	107,305	-	1000.000	-	-	-	-
4	68,134	5000.000	-	5000.000	-	-	-
5	62,131	5000.000	5000.000	5000.000	-	-	-
6	26,38,50	-	1000.000	-	-	-	-

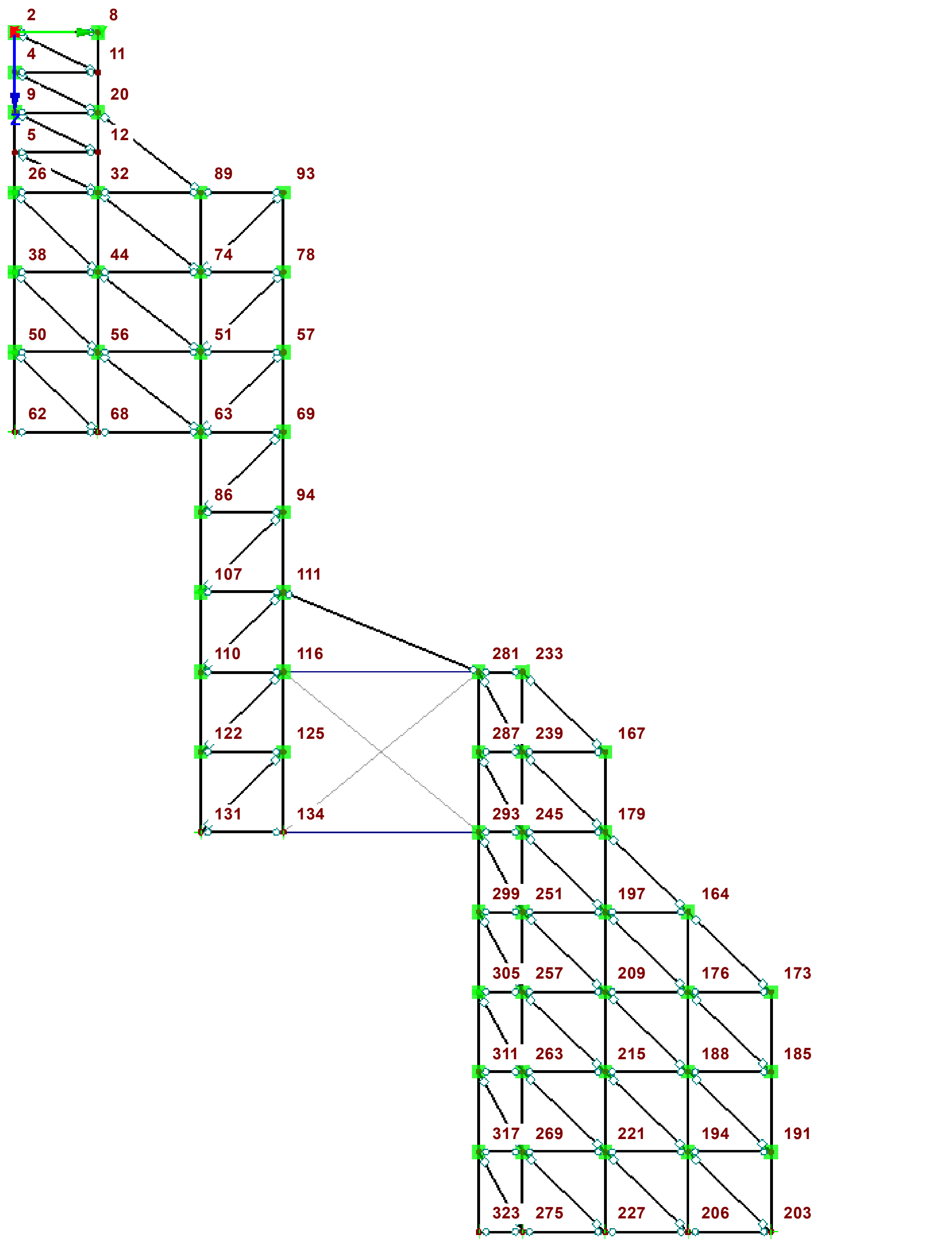
MODEL



MODEL

Node Numbering

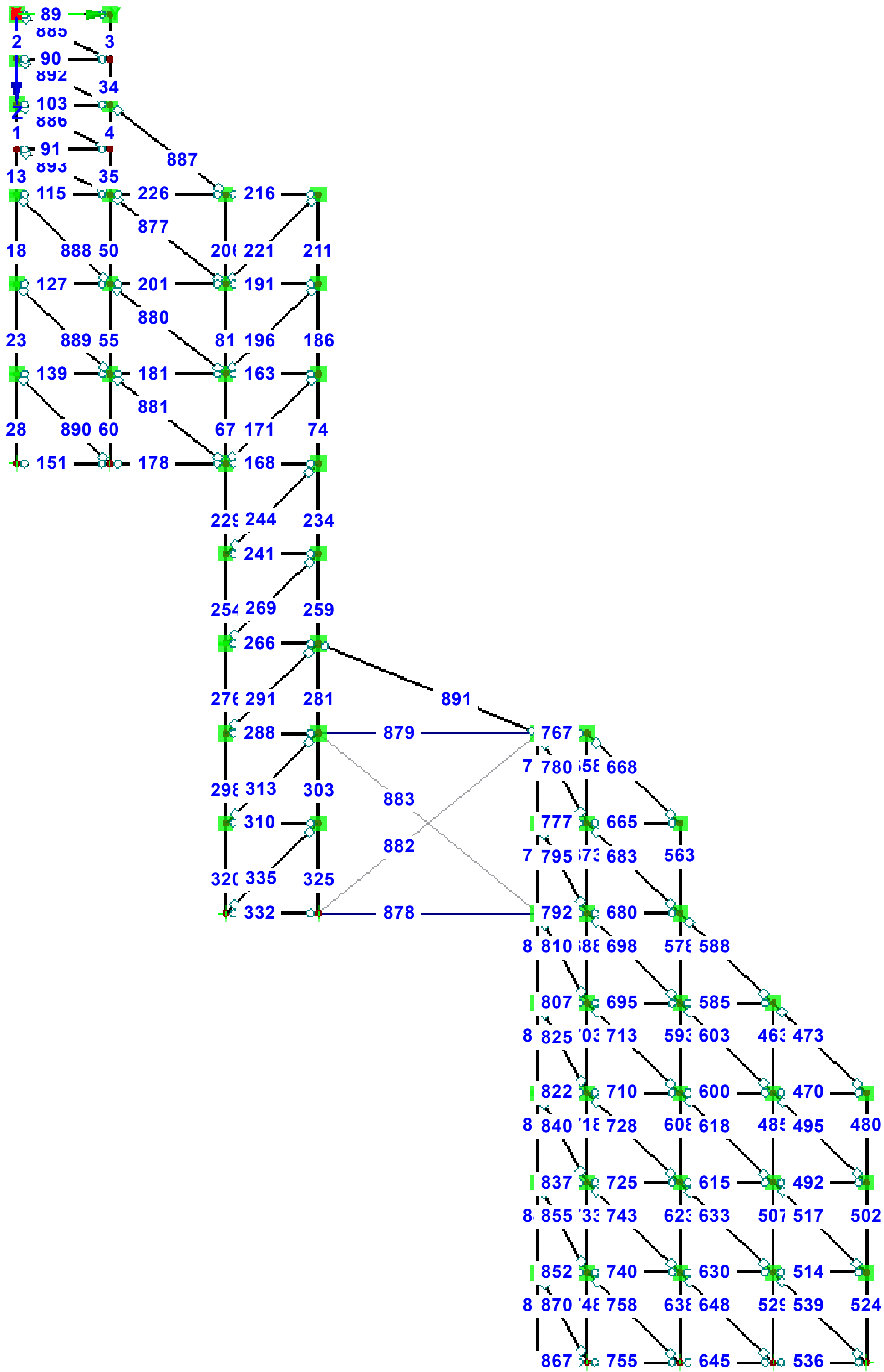
In X-direction



MODEL

Member Numbering

In X-direction



3.063 m

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind	Wind	☐			
LC4	Snow	Snow / ice	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Live Load	Method of analysis	: ■	Geometrically linear analysis
LC3	Wind	Method of analysis	: ■	Geometrically linear analysis
LC4	Snow	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	0.90	LC3	Wind
CO2		Bem-2	1	1.35	LC1	EG
			2	0.90	LC2	Live Load
			3	1.50	LC3	Wind
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	1.50	LC4	Snow

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4

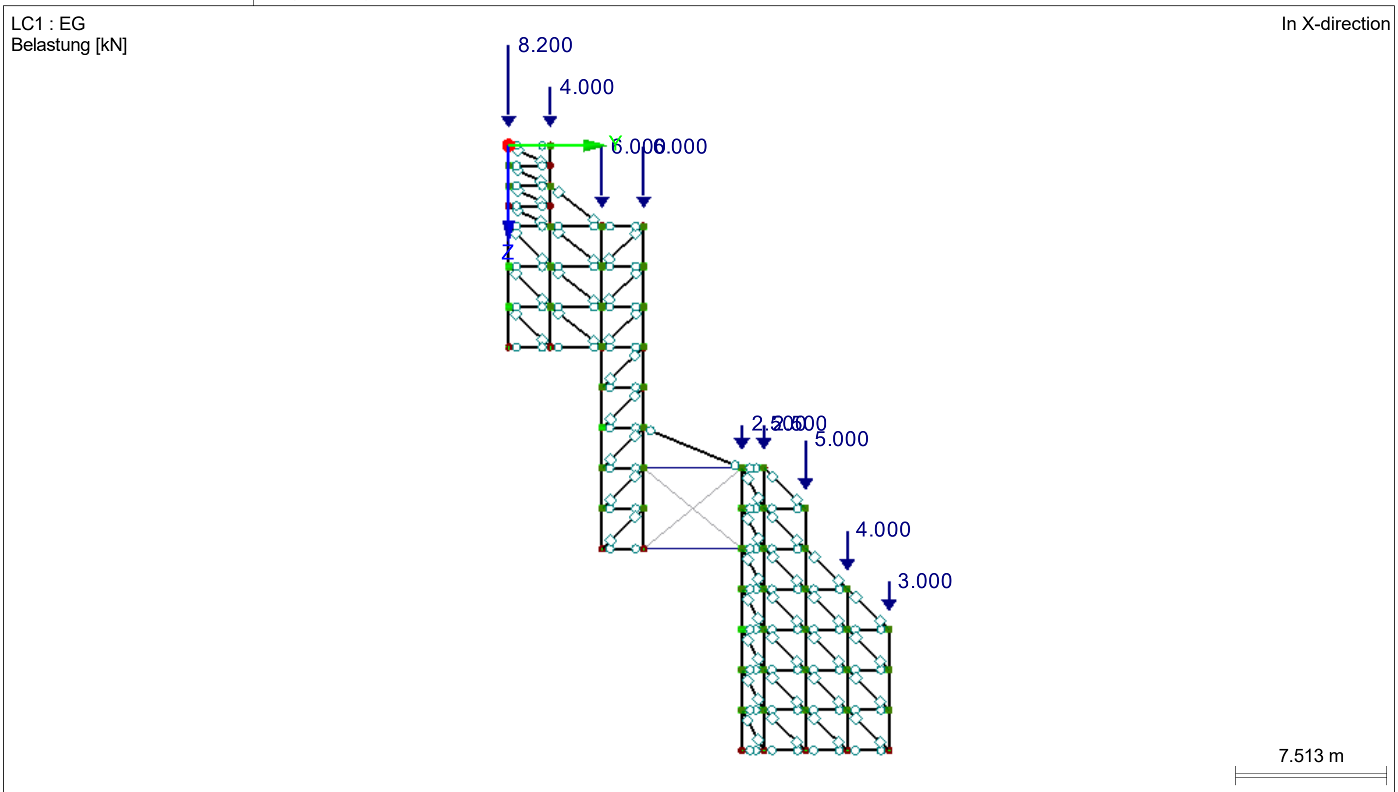
LC1
EG

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	8,164	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
2	89,93	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
6	2	0 | Global XYZ	0.000	0.000	8.200	0.000	0.000	0.000

LC1: EG



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	9,20,122,125	0 | Global XYZ	0.000	0.000	4.800	0.000	0.000	0.000

3.2 MEMBER LOADS

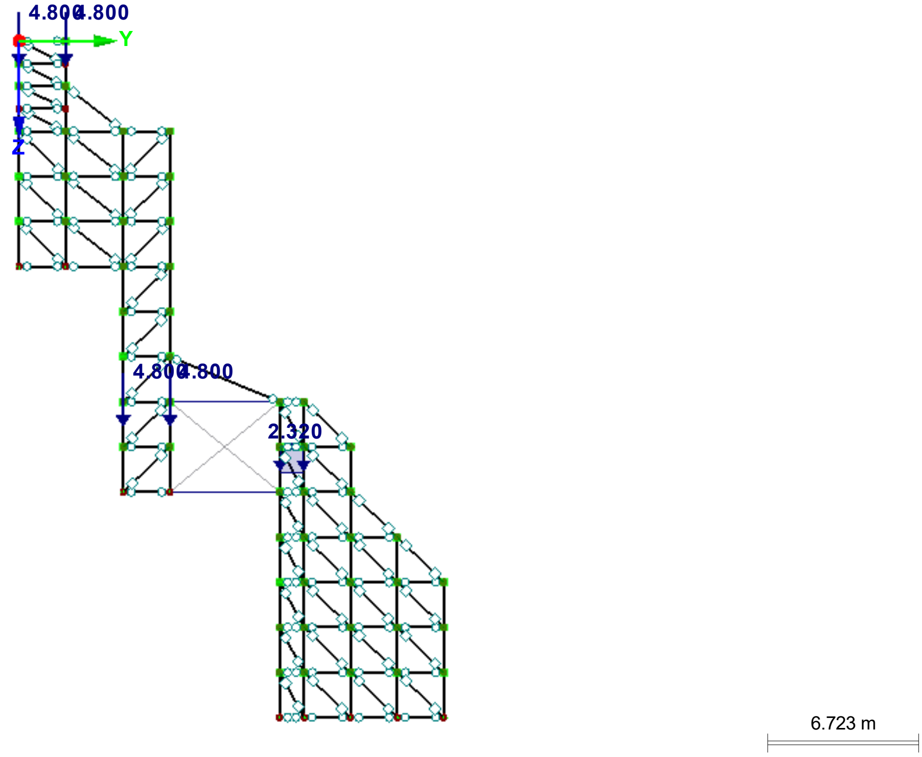
LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	2.320	kN/m

LC2: LIVE LOAD

LC2 : Live Load
Belastung [kN/m], [kN]

In X-direction



LC3
Wind

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Wind

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
3	2	0 | Global XYZ	0.000	-14.000	0.000	0.000	0.000	0.000

3.2 MEMBER LOADS

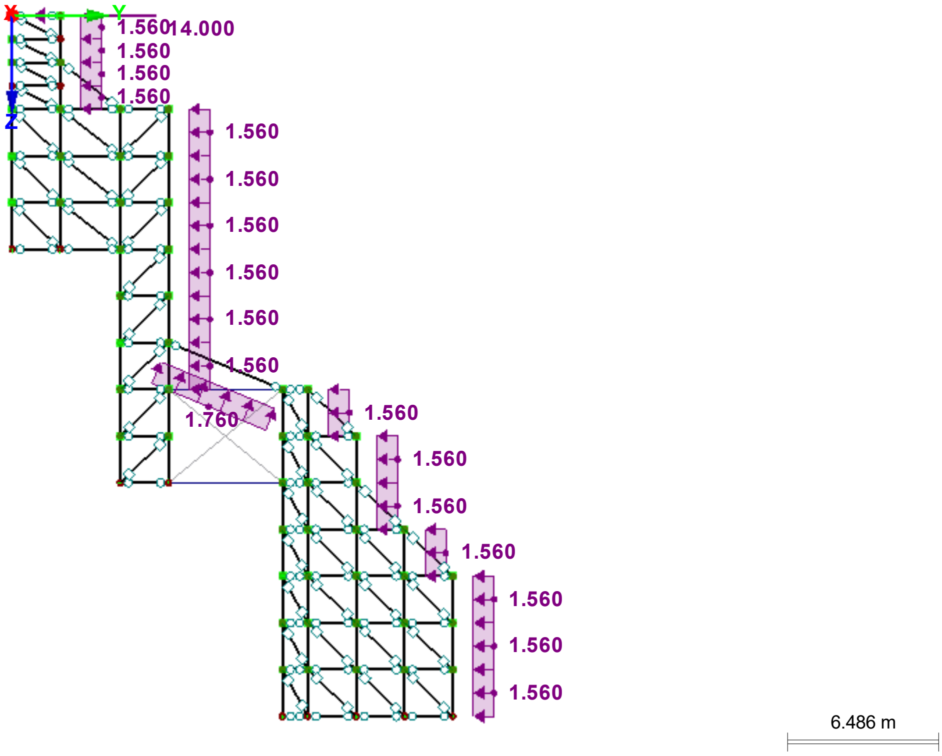
LC3: Wind

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	3,4,34,35,74,186,211,234,259,281,463,480,502,524,563,658	Force	Uniform	Y	True Length	p	-1.560	kN/m
2	Members	578	Force	Uniform	Y	True Length	p	-1.560	kN/m
3	Members	891	Force	Uniform	z	True Length	p	-1.760	kN/m

LC3: WIND

LC3 : Wind
Belastung [kN/m], [kN]

In X-direction



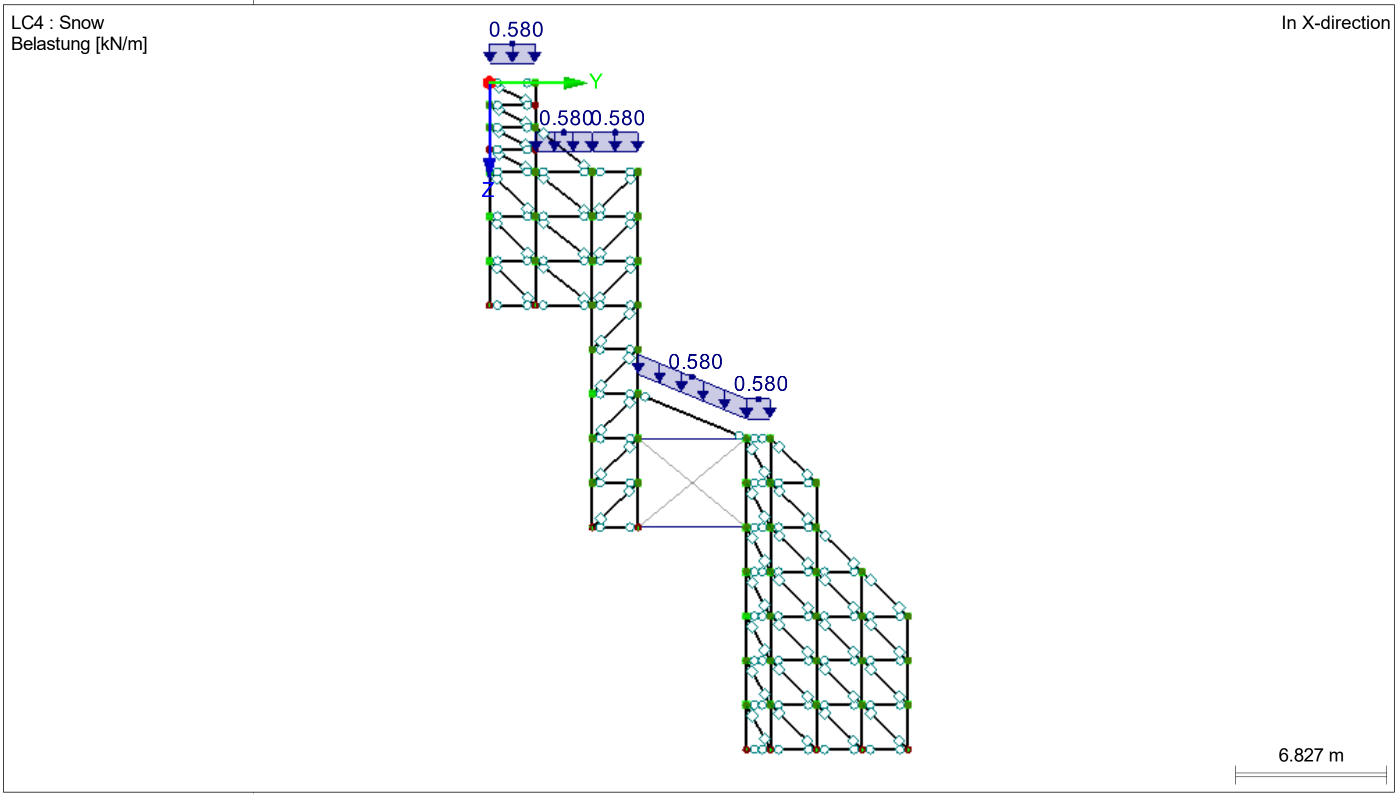
LC4
Snow

3.2 MEMBER LOADS

LC4: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	89,216,226, 767,891	Force	Uniform	Z	True Length	p	0.580	kN/m

LC4: SNOW


LC4 : Snow
Belastung [kN/m]
In X-direction
0.580
Y
Z
0.580
0.580
0.580
0.580
6.827 m

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	41.20	kN	
	Sum of support reactions in Z	41.20	kN	Deviation 0.00%
	Resultant of reactions about X	-40.72	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.37	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 524, x: 1.333 m
	Max displacement in Y	-0.5	mm	Member No. 885, x: 0.000 m
	Max displacement in Z	2.3	mm	Member No. 2, x: 1.000 m
	Max vectorial displacement	2.4	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-0.3	mrad	Member No. 34, x: 0.850 m
	Max rotation about Y	0.1	mrad	Member No. 536, x: 2.020 m
	Max rotation about Z	0.0	mrad	Member No. 539, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC2 - Live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	21.61	kN	
	Sum of support reactions in Z	21.61	kN	Deviation 0.00%
	Resultant of reactions about X	-103.27	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.19	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 638, x: 1.333 m
	Max displacement in Y	0.5	mm	Member No. 785, x: 1.300 m
	Max displacement in Z	1.5	mm	Member No. 792, x: 0.520 m
	Max vectorial displacement	1.5	mm	Member No. 792, x: 0.520 m
	Max rotation about X	-3.3	mrad	Member No. 792, x: 0.936 m
	Max rotation about Y	0.1	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	0.0	mrad	Member No. 758, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC3 - Wind			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-57.28	kN	
	Sum of support reactions in Y	-57.28	kN	Deviation -0.00%
	Sum of loads in Z	-8.59	kN	
	Sum of support reactions in Z	-8.59	kN	Deviation -0.00%
	Resultant of reactions about X	-297.10	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	0.08	kNm	At center of gravity of model
	Resultant of reactions about Z	-0.51	kNm	At center of gravity of model
	Max displacement in X	0.4	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	-70.0	mm	Member No. 3, x: 1.000 m
	Max displacement in Z	8.5	mm	Member No. 892, x: 0.000 m
	Max vectorial displacement	70.3	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-20.5	mrad	Member No. 8, x: 0.650 m
	Max rotation about Y	-1.5	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	-0.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC4 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	7.47	kN	
	Sum of support reactions in Z	7.47	kN	Deviation -0.00%
	Resultant of reactions about X	-19.98	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.07	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 748, x: 1.333 m
	Max displacement in Y	0.8	mm	Member No. 211, x: 1.300 m
	Max displacement in Z	7.1	mm	Member No. 226, x: 1.260 m
	Max vectorial displacement	7.1	mm	Member No. 226, x: 1.260 m
	Max rotation about X	7.5	mrad	Member No. 226, x: 0.378 m
	Max rotation about Y	0.1	mrad	Member No. 748, x: 2.000 m
	Max rotation about Z	0.0	mrad	Member No. 870, x: 2.123 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-51.55	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	-51.55	kN	Deviation 0.00%
	Sum of loads in Z	80.31	kN	
	Sum of support reactions in Z	80.31	kN	Deviation -0.00%
	Max displacement in X	0.4	mm	Member No. 638, x: 1.333 m
	Max displacement in Y	-65.6	mm	Member No. 3, x: 1.000 m
	Max displacement in Z	12.9	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	66.4	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-19.5	mrad	Member No. 8, x: 0.650 m
	Max rotation about Y	-1.3	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	-0.7	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	-85.92	kN	
	Sum of support reactions in Y	-85.92	kN	Deviation -0.00%
	Sum of loads in Z	62.19	kN	
	Sum of support reactions in Z	62.19	kN	Deviation 0.00%
	Max displacement in X	0.7	mm	Member No. 638, x: 1.333 m
	Max displacement in Y	-108.5	mm	Member No. 3, x: 1.000 m
	Max displacement in Z	17.3	mm	Member No. 892, x: 0.000 m
	Max vectorial displacement	109.3	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-32.3	mrad	Member No. 8, x: 0.650 m
	Max rotation about Y	-2.3	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	-1.2	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-85.92	kN	
	Sum of support reactions in Y	-85.92	kN	Deviation 0.00%
	Sum of loads in Z	24.20	kN	
	Sum of support reactions in Z	24.20	kN	Deviation -0.00%
	Max displacement in X	0.7	mm	Member No. 638, x: 1.333 m
	Max displacement in Y	-107.4	mm	Member No. 3, x: 1.000 m
	Max displacement in Z	15.0	mm	Member No. 892, x: 0.000 m
	Max vectorial displacement	107.9	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-31.9	mrad	Member No. 8, x: 0.650 m
	Max rotation about Y	-2.3	mrad	Member No. 638, x: 2.000 m
	Max rotation about Z	-1.2	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	99.24	kN	
	Sum of support reactions in Z	99.24	kN	Deviation -0.00%
	Max displacement in X	-0.0	mm	Member No. 748, x: 1.333 m
	Max displacement in Y	1.3	mm	Member No. 211, x: 1.200 m
	Max displacement in Z	15.0	mm	Member No. 226, x: 1.260 m
	Max vectorial displacement	15.0	mm	Member No. 226, x: 1.260 m
	Max rotation about X	11.5	mrad	Member No. 226, x: 0.378 m
	Max rotation about Y	0.1	mrad	Member No. 755, x: 0.000 m
	Max rotation about Z	0.1	mrad	Member No. 539, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	0.7	mm	CO2, Member No. 638, x: 1.333 m
	Max displacement in Y	-108.5	mm	CO2, Member No. 3, x: 1.000 m
	Max displacement in Z	17.3	mm	CO2, Member No. 892, x: 0.000 m

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Max vectorial displacement	109.3	mm	CO2, Member No. 2, x: 1.000 m
Max rotation about X	-32.3	mrad	CO2, Member No. 8, x: 0.650 m
Max rotation about Y	-2.3	mrad	CO2, Member No. 645, x: 0.000 m
Max rotation about Z	-1.2	mrad	CO2, Member No. 758, x: 2.723 m
Number of 1D finite elements (member elements)	149		
Number of FE mesh nodes	66		
Number of equations	396		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		
Activate Release Nonlinearities	☒		
Activate failed members	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☒ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
	Maximum number of reactivations	:	3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
281	CO3	MAX N	0.100	10.84	0.00	1.74	0.00	-0.21	0.00
13	CO2	MIN N	0.000	-46.41	0.00	0.49	0.00	-0.32	0.00
254	CO3	MAX V_y	0.000	8.77	0.03	0.15	0.00	-0.11	0.03
638	CO2	MIN V_y	0.667	-7.32	-0.08	-0.11	0.00	0.04	0.00
211	CO2	MAX V_z	0.000	-2.53	0.00	2.78	0.00	-1.05	0.00
563	CO2	MIN V_z	2.000	-7.72	0.00	-2.83	0.00	-1.17	0.00
529	CO2	MAX M_T	0.000	-7.70	-0.07	-0.11	0.00	0.09	-0.05
524	CO3	MIN M_T	2.000	-3.13	-0.06	-2.12	0.00	-0.33	0.09
463	CO2	MAX M_y	0.900	-6.77	0.00	0.02	0.00	0.73	0.00
563	CO2	MIN M_y	2.000	-7.72	0.00	-2.83	0.00	-1.17	0.00
638	CO3	MAX M_z	2.000	-5.16	-0.06	-0.10	0.00	-0.10	0.10
638	CO2	MIN M_z	0.000	-7.32	-0.07	-0.09	0.00	0.11	-0.05
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
216	CO2	MAX N	0.000	3.89	0.00	-0.07	0.00	-0.01	0.00
90	CO2	MIN N	2.020	-23.04	0.00	0.36	0.00	0.61	0.00
867	CO3	MAX V_y	0.000	-1.53	0.00	0.14	-0.02	-0.08	0.00
536	CO2	MIN V_y	0.000	-1.61	0.00	0.22	0.00	-0.11	0.00
792	CO1	MAX V_z	0.000	-6.84	0.00	1.84	0.00	-0.14	0.00
792	CO1	MIN V_z	1.040	-6.84	0.00	-1.84	0.00	-0.14	0.00
536	CO2	MAX M_T	0.202	-1.60	0.00	0.22	0.00	-0.06	0.00
867	CO3	MIN M_T	0.000	-1.53	0.00	0.14	-0.02	-0.08	0.00
90	CO2	MAX M_y	2.020	-23.04	0.00	0.36	0.00	0.61	0.00
90	CO2	MIN M_y	0.000	-23.04	0.00	0.37	0.00	-0.61	0.00
867	CO3	MAX M_z	0.000	-1.53	0.00	0.14	-0.02	-0.08	0.00
867	CO3	MIN M_z	1.040	-1.53	0.00	0.14	-0.02	0.07	0.00
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
892	CO2	MAX N	0.000	25.22	0.00	0.00	0.00	0.00	0.00
221	CO2	MIN N	0.000	-8.10	0.00	0.00	0.00	0.00	0.00
648	CO3	MAX V_y	0.000	2.99	0.00	0.00	-0.01	0.00	0.00
269	CO3	MIN V_y	0.000	-2.07	0.00	0.00	0.00	0.00	0.00
795	CO3	MAX V_z	0.000	2.22	0.00	0.00	0.00	0.00	0.00
892	CO2	MIN V_z	0.000	25.22	0.00	0.00	0.00	0.00	0.00
539	CO4	MAX M_T	0.000	-0.15	0.00	0.00	0.00	0.00	0.00
758	CO2	MIN M_T	0.000	3.11	0.00	0.00	-0.01	0.00	0.00
840	CO4	MAX M_y	0.000	-0.18	0.00	0.00	0.00	0.00	0.00
758	CO2	MIN M_y	0.000	3.11	0.00	0.00	-0.01	0.00	0.00
335	CO4	MAX M_z	0.000	-0.13	0.00	0.00	0.00	0.00	0.00
870	CO2	MIN M_z	0.000	2.20	0.00	0.00	-0.01	0.00	0.00
	Section No. 7: GI-KDXL Kederdach XL								
891	LC4	MAX N	5.274	0.48	0.00	-1.42	0.00	0.00	0.00
891	CO4	MIN N	0.000	-1.84	0.00	2.12	0.00	0.00	0.00
891	LC1	MAX V_y	0.000	-0.18	0.00	0.00	0.00	0.00	0.00
891	LC1	MIN V_y	0.000	-0.18	0.00	0.00	0.00	0.00	0.00

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■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	
891	CO2	MAX V_z	5.274	-0.35	0.00	▷ 6.96	0.00	0.00	0.00	
891	CO2	MIN V_z	0.000	-0.35	0.00	▷ -6.96	0.00	0.00	0.00	
891	LC1	MAX M_T	0.000	-0.18	0.00	0.00	▷ 0.00	0.00	0.00	
891	LC1	MIN M_T	0.000	-0.18	0.00	0.00	▷ 0.00	0.00	0.00	
891	CO4	MAX M_y	2.637	-0.97	0.00	0.00	0.00	▷ 2.80	0.00	
891	CO2	MIN M_y	2.637	-0.35	0.00	0.00	0.00	▷ -9.18	0.00	
891	LC1	MAX M_z	0.000	-0.18	0.00	0.00	0.00	0.00	▷ 0.00	
891	LC1	MIN M_z	0.000	-0.18	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 8: RD 8 | DIN 1013-1									
883	CO3	MAX N	0.000	▷ 3.22	0.00	0.00	0.00	0.00	0.00	
883	LC4	MIN N	0.000	▷ 0.01	0.00	0.00	0.00	0.00	0.00	
882	LC1	MAX V_y	0.000	0.23	▷ 0.00	0.00	0.00	0.00	0.00	
882	LC1	MIN V_y	0.000	0.23	▷ 0.00	0.00	0.00	0.00	0.00	
882	LC1	MAX V_z	0.000	0.23	0.00	▷ 0.00	0.00	0.00	0.00	
882	LC1	MIN V_z	0.000	0.23	0.00	▷ 0.00	0.00	0.00	0.00	
882	LC1	MAX M_T	0.000	0.23	0.00	0.00	▷ 0.00	0.00	0.00	
882	LC1	MIN M_T	0.000	0.23	0.00	0.00	▷ 0.00	0.00	0.00	
882	LC1	MAX M_y	0.000	0.23	0.00	0.00	0.00	▷ 0.00	0.00	
882	LC1	MIN M_y	0.000	0.23	0.00	0.00	0.00	▷ 0.00	0.00	
882	LC1	MAX M_z	0.000	0.23	0.00	0.00	0.00	0.00	▷ 0.00	
882	LC1	MIN M_z	0.000	0.23	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)									
879	CO4	MAX N	0.000	▷ 0.21	0.00	0.00	0.00	0.00	0.00	
878	CO3	MIN N	0.000	▷ -14.34	0.00	0.00	0.00	0.00	0.00	
878	LC1	MAX V_y	0.000	-0.12	▷ 0.00	0.00	0.00	0.00	0.00	
878	LC1	MIN V_y	0.000	-0.12	▷ 0.00	0.00	0.00	0.00	0.00	
878	LC1	MAX V_z	0.000	-0.12	0.00	▷ 0.00	0.00	0.00	0.00	
878	LC1	MIN V_z	0.000	-0.12	0.00	▷ 0.00	0.00	0.00	0.00	
878	LC1	MAX M_T	0.000	-0.12	0.00	0.00	▷ 0.00	0.00	0.00	
878	LC1	MIN M_T	0.000	-0.12	0.00	0.00	▷ 0.00	0.00	0.00	
878	LC1	MAX M_y	0.000	-0.12	0.00	0.00	0.00	▷ 0.00	0.00	
878	LC1	MIN M_y	0.000	-0.12	0.00	0.00	0.00	▷ 0.00	0.00	
878	LC1	MAX M_z	0.000	-0.12	0.00	0.00	0.00	0.00	▷ 0.00	
878	LC1	MIN M_z	0.000	-0.12	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
2	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
4	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
8	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
9	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
20	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
26	LC1	0.00	0.03	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.08	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-14.21	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.08	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
26	CO1	0.00	-12.97	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-21.49	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	-21.37	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.04	0.00	0.00	0.00	0.00	Bem-4
32	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
38	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-7.97	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.05	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	-7.21	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-11.99	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	-11.97	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.07	0.00	0.00	0.00	0.00	Bem-4
44	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
50	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-4.33	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.01	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	-3.88	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-6.49	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	-6.50	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.03	0.00	0.00	0.00	0.00	Bem-4
51	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
56	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
57	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
62	LC1	0.00	-0.02	7.12	0.00	0.00	0.00	EG
	LC2	0.00	0.02	4.73	0.00	0.00	0.00	Live Load
	LC3	0.00	-6.53	18.57	0.00	0.00	0.00	Wind
	LC4	0.00	-0.11	0.70	0.00	0.00	0.00	Snow
	CO1	0.00	-5.78	33.72	0.00	0.00	0.00	Bem-1
	CO2	0.00	-9.67	42.22	0.00	0.00	0.00	Bem-2
	CO3	0.00	-9.74	34.58	0.00	0.00	0.00	Bem-3
	CO4	0.00	-0.15	17.77	0.00	0.00	0.00	Bem-4
63	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
68	LC1	0.00	0.00	5.87	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.76	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-3.82	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	1.31	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	11.47	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	6.22	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	-0.65	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	17.03	0.00	0.00	0.00	Bem-4
69	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.08	0.08	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
69	CO1	0.00	0.00	0.00	0.00	0.08	0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.12	0.12	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.12	0.12	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
74	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
78	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
86	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	-0.09	-0.08	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	-0.01	0.00	0.00	0.00	-0.08	-0.08	Bem-1
	CO2	-0.02	0.00	0.00	0.00	-0.14	-0.12	Bem-2
	CO3	-0.02	0.00	0.00	0.00	-0.13	-0.12	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
89	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
93	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
94	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.05	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.07	-0.07	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.07	-0.08	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
107	LC1	0.00	-0.09	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.28	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-2.84	0.00	0.00	0.00	0.05	Wind
	LC4	0.00	-0.08	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	-3.25	0.00	0.00	0.00	0.04	Bem-1
	CO2	0.00	-4.80	0.00	0.00	0.00	0.07	Bem-2
	CO3	0.00	-4.48	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.00	-0.58	0.00	0.00	0.00	0.00	Bem-4
110	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	-0.03	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.01	0.00	0.00	0.00	-0.01	-0.01	Bem-1
	CO2	0.02	0.00	0.00	0.00	-0.03	-0.02	Bem-2
	CO3	0.02	0.00	0.00	0.00	-0.03	-0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.01	Bem-4
111	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.02	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.03	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-4
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
122	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
122	CO1	0.00	0.00	0.00	0.00	0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.01	Bem-4
125	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
131	LC1	0.00	0.05	5.57	0.00	0.00	0.00	EG
	LC2	0.00	0.21	4.81	0.00	0.00	0.00	Live Load
	LC3	0.00	-9.77	-8.12	0.00	0.00	0.00	Wind
	LC4	0.00	-0.06	1.47	0.00	0.00	0.00	Snow
	CO1	0.00	-8.26	7.26	0.00	0.00	0.01	Bem-1
	CO2	0.00	-14.22	-0.55	0.00	0.00	0.01	Bem-2
	CO3	0.00	-14.47	-7.29	0.00	0.00	0.01	Bem-3
	CO4	0.00	0.22	16.96	0.00	0.00	0.00	Bem-4
134	LC1	0.00	0.00	5.42	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.50	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-9.23	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	1.82	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	5.52	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	-2.79	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	-9.20	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	16.91	0.00	0.00	0.00	Bem-4
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
167	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
173	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
179	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.10	0.10	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.10	0.10	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.16	0.16	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.16	0.16	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
185	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.02	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
191	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.01	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
191	CO1	0.04	0.00	0.00	0.00	0.02	0.01	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.02	0.02	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.02	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
194	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.07	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.04	0.00	0.00	0.00	0.06	-0.04	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.10	-0.06	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.10	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
197	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.05	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
203	LC1	0.00	0.02	3.29	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.03	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.61	-1.25	0.00	0.00	0.07	Wind
	LC4	0.00	0.02	0.01	0.00	0.00	0.00	Snow
	CO1	-0.04	-1.38	3.36	0.00	0.00	0.06	Bem-1
	CO2	-0.07	-2.35	2.59	0.00	0.00	0.10	Bem-2
	CO3	-0.07	-2.38	1.09	0.00	0.00	0.10	Bem-3
	CO4	0.00	0.09	4.50	0.00	0.00	-0.01	Bem-4
206	LC1	0.00	0.01	3.96	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.08	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.47	0.26	0.00	0.00	0.08	Wind
	LC4	0.00	0.02	0.05	0.00	0.00	0.00	Snow
	CO1	-0.04	-1.26	5.72	0.00	0.00	0.06	Bem-1
	CO2	-0.07	-2.15	5.83	0.00	0.00	0.11	Bem-2
	CO3	-0.07	-2.18	3.97	0.00	0.00	0.11	Bem-3
	CO4	0.00	0.08	5.55	0.00	0.00	-0.01	Bem-4
209	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
215	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
221	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.07	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.04	0.00	0.00	0.00	0.06	-0.04	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.11	-0.07	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.10	-0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
227	LC1	0.00	0.01	4.19	0.00	0.00	0.00	EG
	LC2	0.00	0.03	0.34	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.32	-0.53	0.00	0.00	0.08	Wind
	LC4	0.00	0.02	0.21	0.00	0.00	0.00	Snow
	CO1	-0.04	-1.14	5.67	0.00	0.00	0.07	Bem-1
	CO2	-0.07	-1.94	5.15	0.00	0.00	0.12	Bem-2
	CO3	-0.08	-1.97	2.97	0.00	0.00	0.12	Bem-3
	CO4	0.00	0.07	6.48	0.00	0.00	0.00	Bem-4
233	LC1	0.00	0.00	0.00	0.00	0.01	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.04	0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
239	LC1	0.00	0.00	0.00	0.00	0.01	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.07	-0.06	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.07	-0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.11	-0.10	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.11	-0.10	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
245	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.11	0.08	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
245	CO1	0.00	0.00	0.00	0.00	-0.10	0.07	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.16	0.12	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.16	0.12	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.04	-0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.04	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.06	-0.06	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.03	0.00	0.00	0.00	0.06	-0.05	Bem-1
	CO2	0.06	0.00	0.00	0.00	0.10	-0.09	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.10	-0.09	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
275	LC1	0.00	0.00	3.03	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.07	0.00	0.00	0.00	Live Load
	LC3	-0.04	-1.15	-1.55	0.00	0.00	0.04	Wind
	LC4	0.00	0.02	0.70	0.00	0.00	0.00	Snow
	CO1	-0.03	-0.99	4.39	0.00	0.00	0.03	Bem-1
	CO2	-0.06	-1.69	2.84	0.00	0.00	0.06	Bem-2
	CO3	-0.06	-1.72	0.49	0.00	0.00	0.06	Bem-3
	CO4	0.00	0.07	6.71	0.00	0.00	0.00	Bem-4
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.06	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.06	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.10	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.10	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.02	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	0.00	0.00	0.00	0.02	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.03	-0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.03	-0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
305	LC1	0.00	-0.03	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-5.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.01	0.00	0.00	0.00	0.00	Snow
	CO1	0.00	-4.51	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-7.53	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	-7.53	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
311	CO1	0.00	0.00	0.00	0.00	0.03	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.07	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	CO1	0.01	0.00	0.00	0.00	0.06	-0.03	Bem-1
	CO2	0.02	0.00	0.00	0.00	0.10	-0.06	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.11	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
323	LC1	0.00	0.00	2.74	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.29	0.00	0.00	0.00	Live Load
	LC3	-0.01	-1.09	-2.92	0.00	0.00	0.00	Wind
	LC4	0.00	0.02	1.19	0.00	0.00	0.00	Snow
	CO1	-0.01	-0.93	3.20	0.00	0.00	0.00	Bem-1
	CO2	-0.02	-1.59	0.69	0.00	0.00	0.00	Bem-2
	CO3	-0.02	-1.62	-1.76	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.06	7.34	0.00	0.00	0.00	Bem-4
Σ Supp.	LC1	0.00	0.00	41.20				
Σ Loads	LC1	0.00	0.00	41.20				
Σ Supp.	LC2	0.00	0.00	21.61				
Σ Loads	LC2	0.00	0.00	21.61				
Σ Supp.	LC3	0.00	-57.28	-8.59				
Σ Loads	LC3	0.00	-57.28	-8.59				
Σ Supp.	LC4	0.00	0.00	7.47				
Σ Loads	LC4	0.00	0.00	7.47				
Σ Supp.	CO1	0.00	-51.55	80.31				
Σ Loads	CO1	0.00	-51.55	80.31				
Σ Supp.	CO2	0.00	-85.92	62.19				
Σ Loads	CO2	0.00	-85.92	62.19				
Σ Supp.	CO3	0.00	-85.92	24.20				
Σ Loads	CO3	0.00	-85.92	24.20				
Σ Supp.	CO4	0.00	0.00	99.24				
Σ Loads	CO4	0.00	0.00	99.24				

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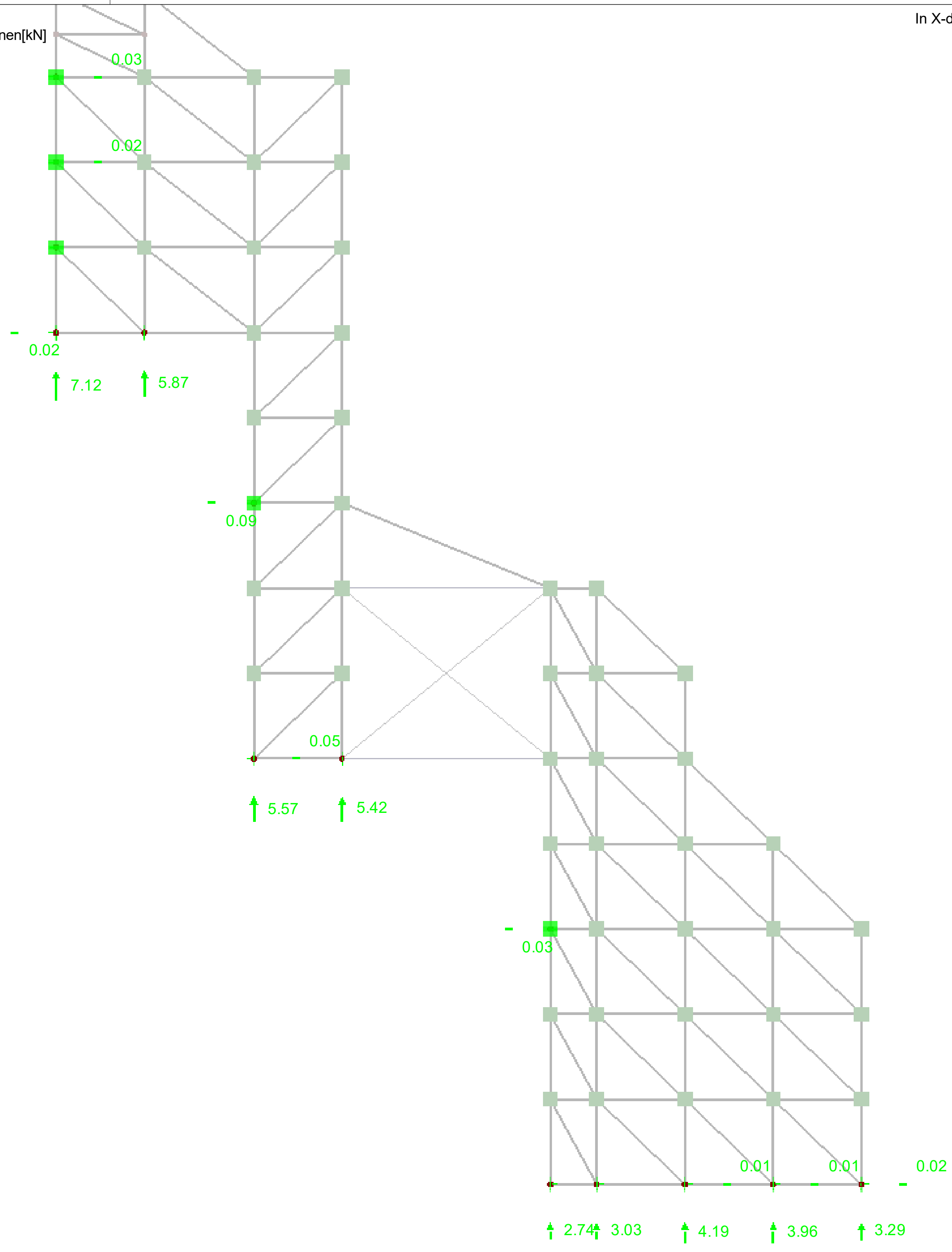
■ LAGERREAKTIONEN

LC1 : EG
Lagerreaktionen[kN]

In X-direction



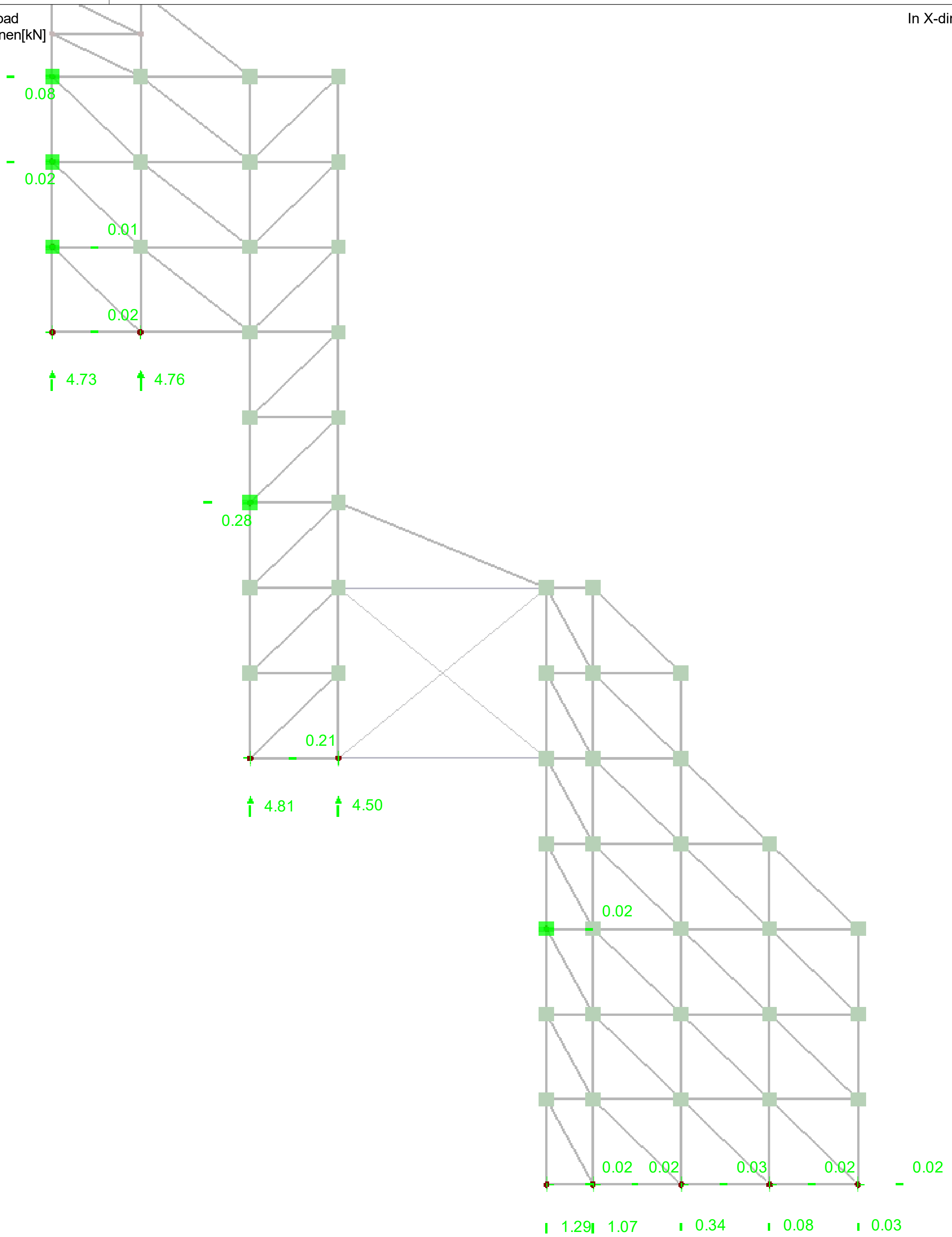
Max P-Y': 0.05, Min P-Y': -0.09 kN
Max P-Z': 7.12, Min P-Z': 0.00 kN

2.78 m

LAGERREAKTIONEN

LC2 : Live Load
Lagerreaktionen[kN]

In X-direction



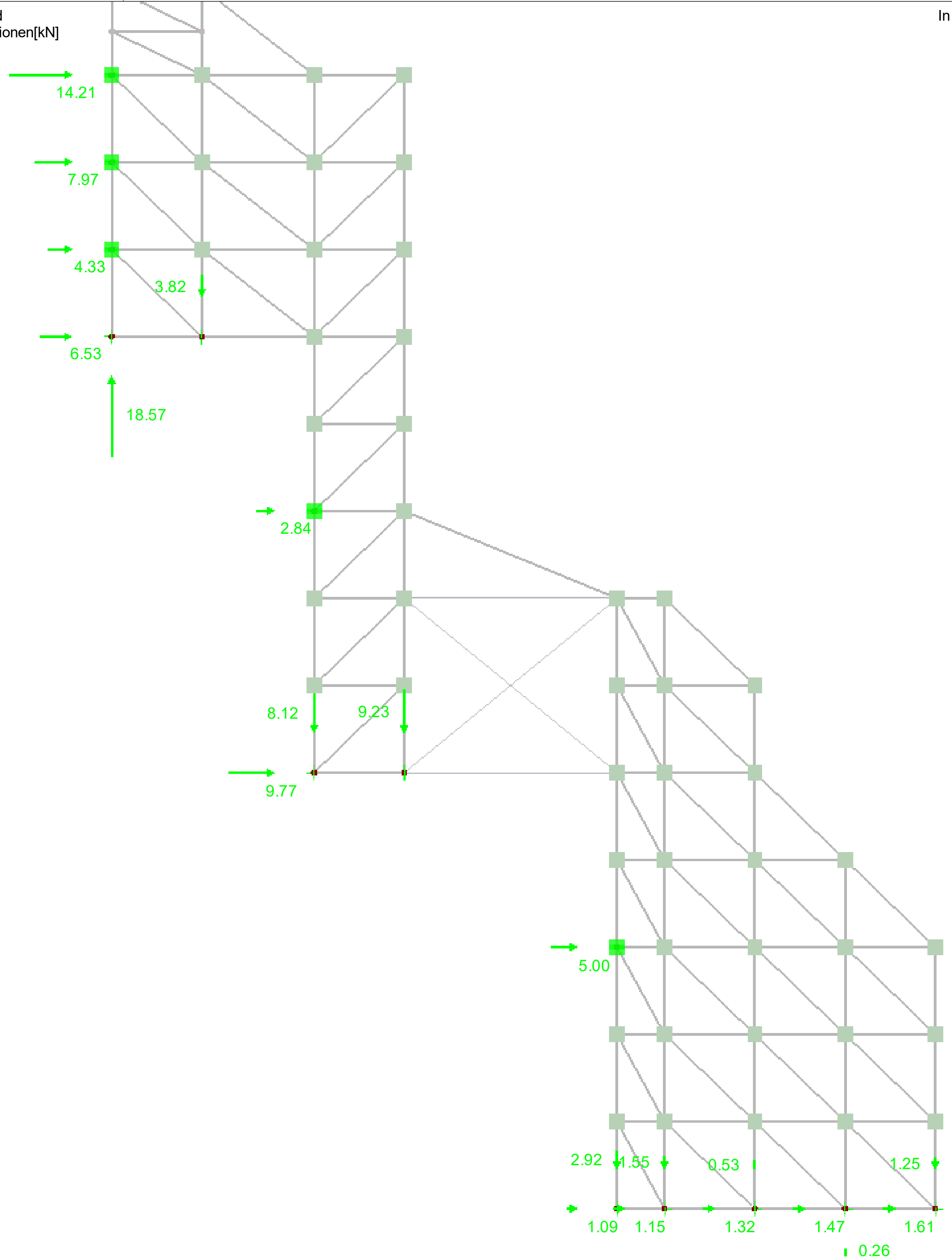
Max P-Y': 0.21, Min P-Y': -0.28 kN
Max P-Z': 4.81, Min P-Z': 0.00 kN

2.757 m

LAGERREAKTIONEN

LC3 : Wind
Lagerreaktionen[kN]

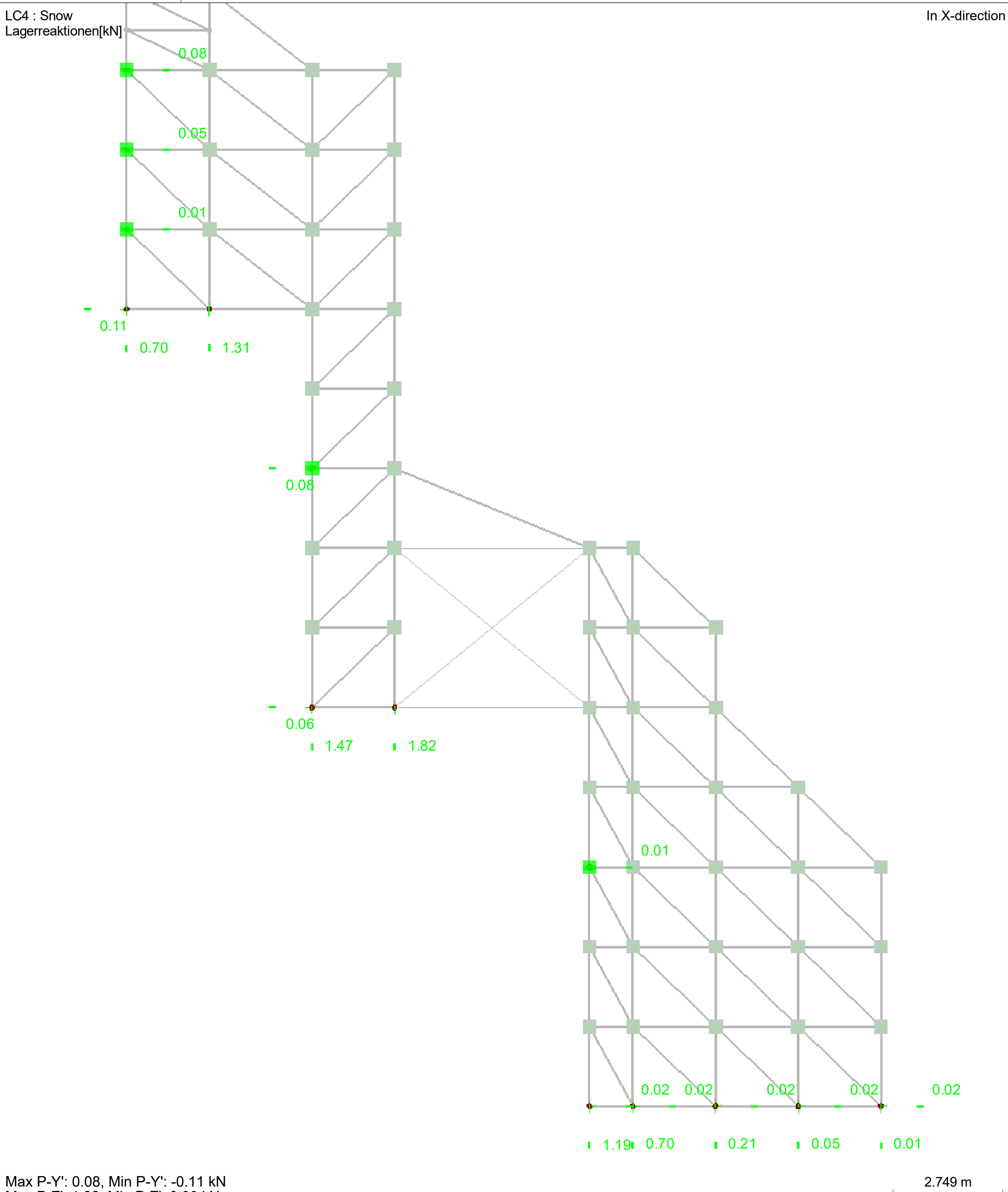
In X-direction



Max P-Y': 0.00, Min P-Y': -14.21 kN
Max P-Z': 18.57, Min P-Z': -9.23 kN

2.751 m

LAGERREAKTIONEN

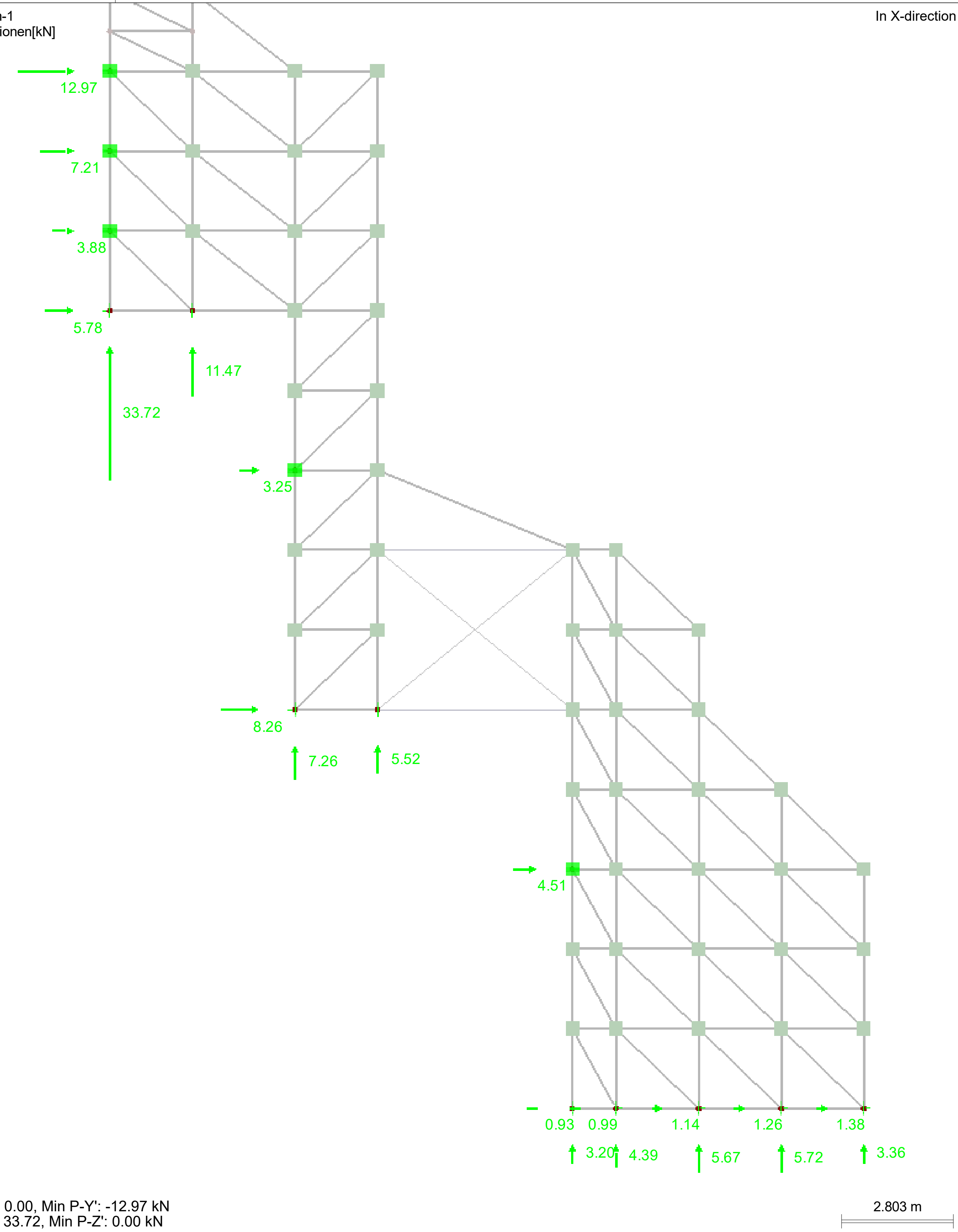


Max P-Y': 0.08, Min P-Y': -0.11 kN
Max P-Z': 1.82, Min P-Z': 0.00 kN

■ LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

In X-direction

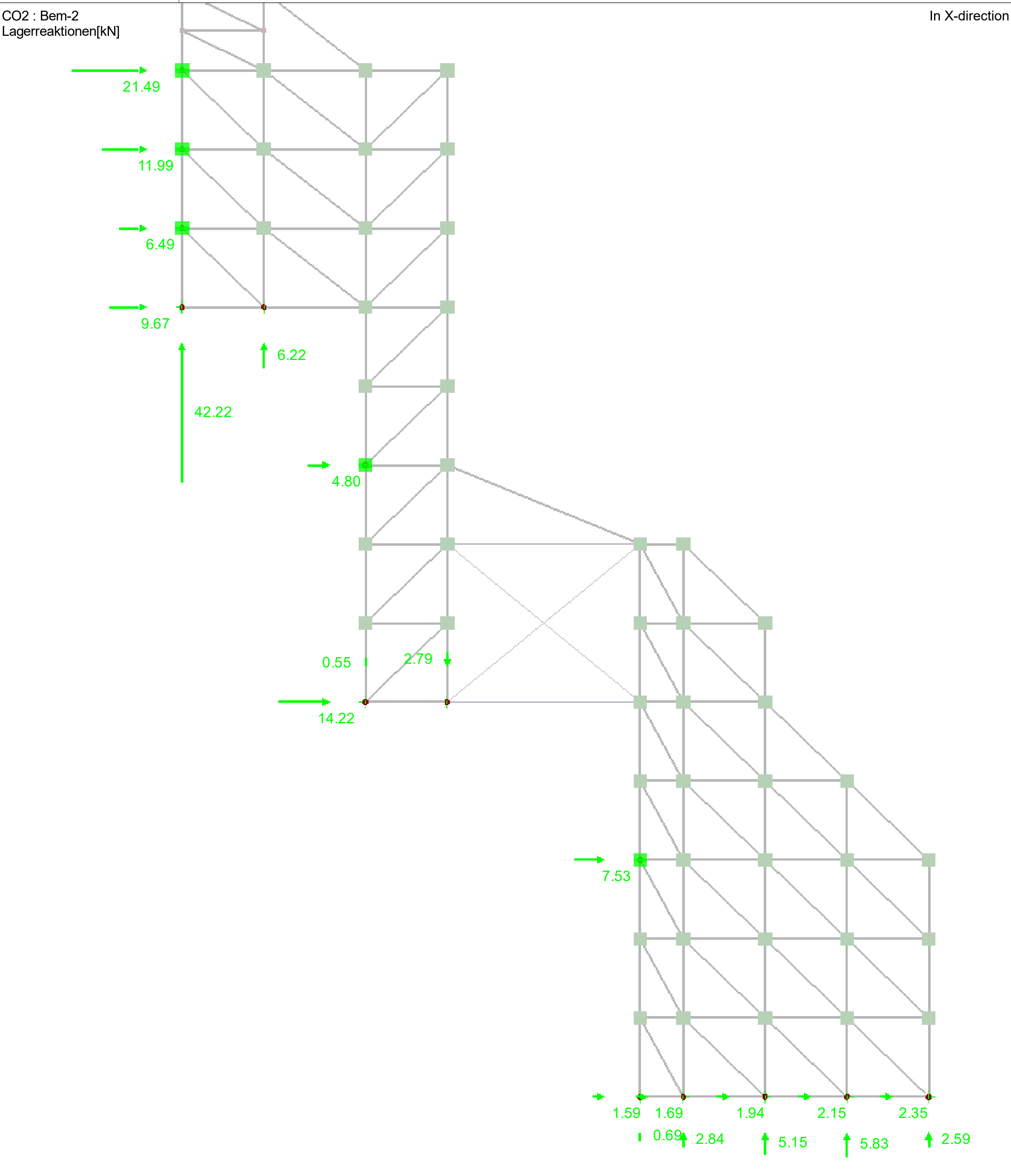


Max P-Y': 0.00, Min P-Y': -12.97 kN
Max P-Z': 33.72, Min P-Z': 0.00 kN

LAGERREAKTIONEN

CO2 : Bem-2
Lagerreaktionen[kN]

In X-direction



Max P-Y': 0.00, Min P-Y': -21.49 kN
Max P-Z': 42.22, Min P-Z': -2.79 kN

2.796 m

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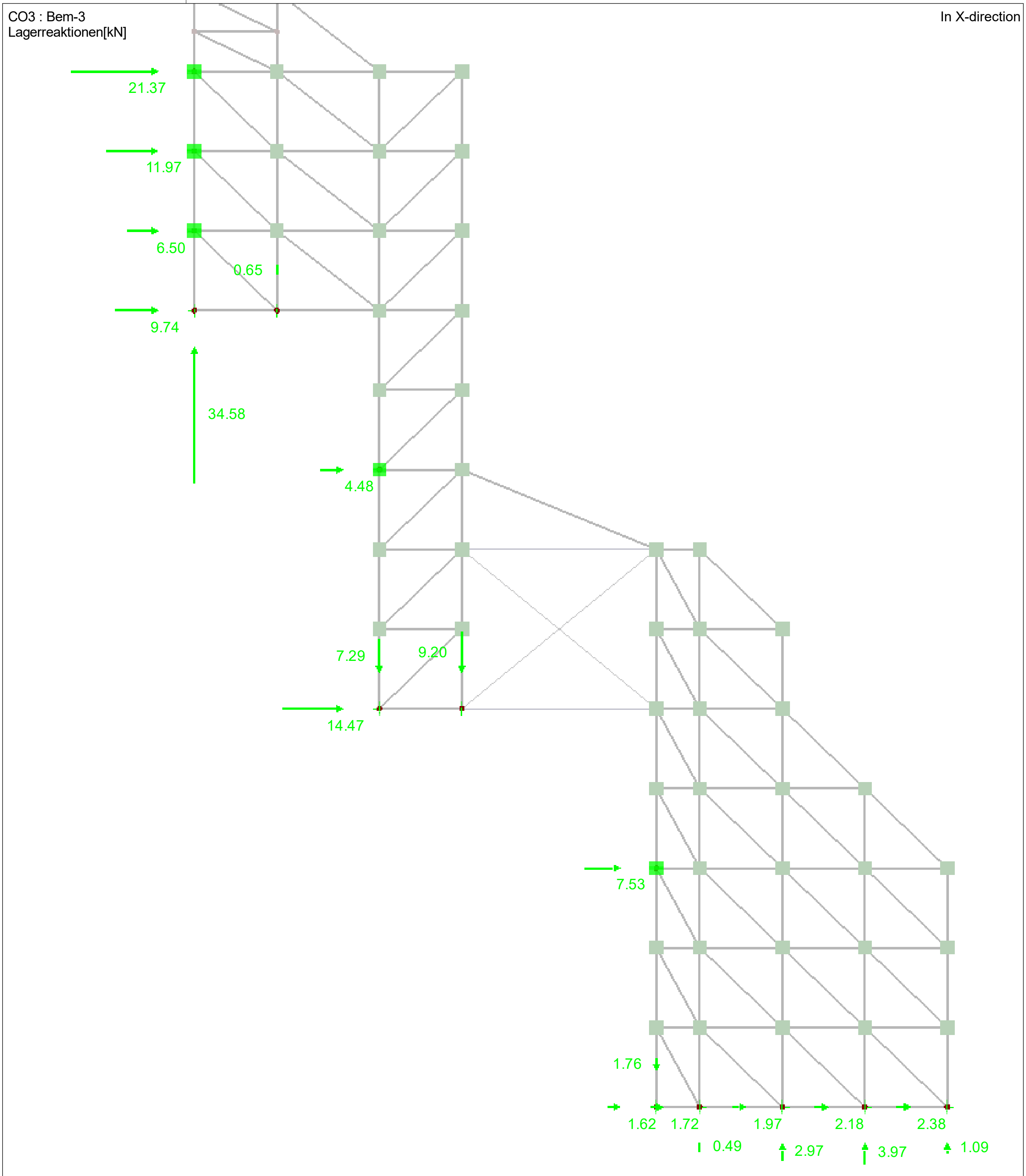
■ LAGERREAKTIONEN

CO3 : Bem-3
Lagerreaktionen[kN]

In X-direction



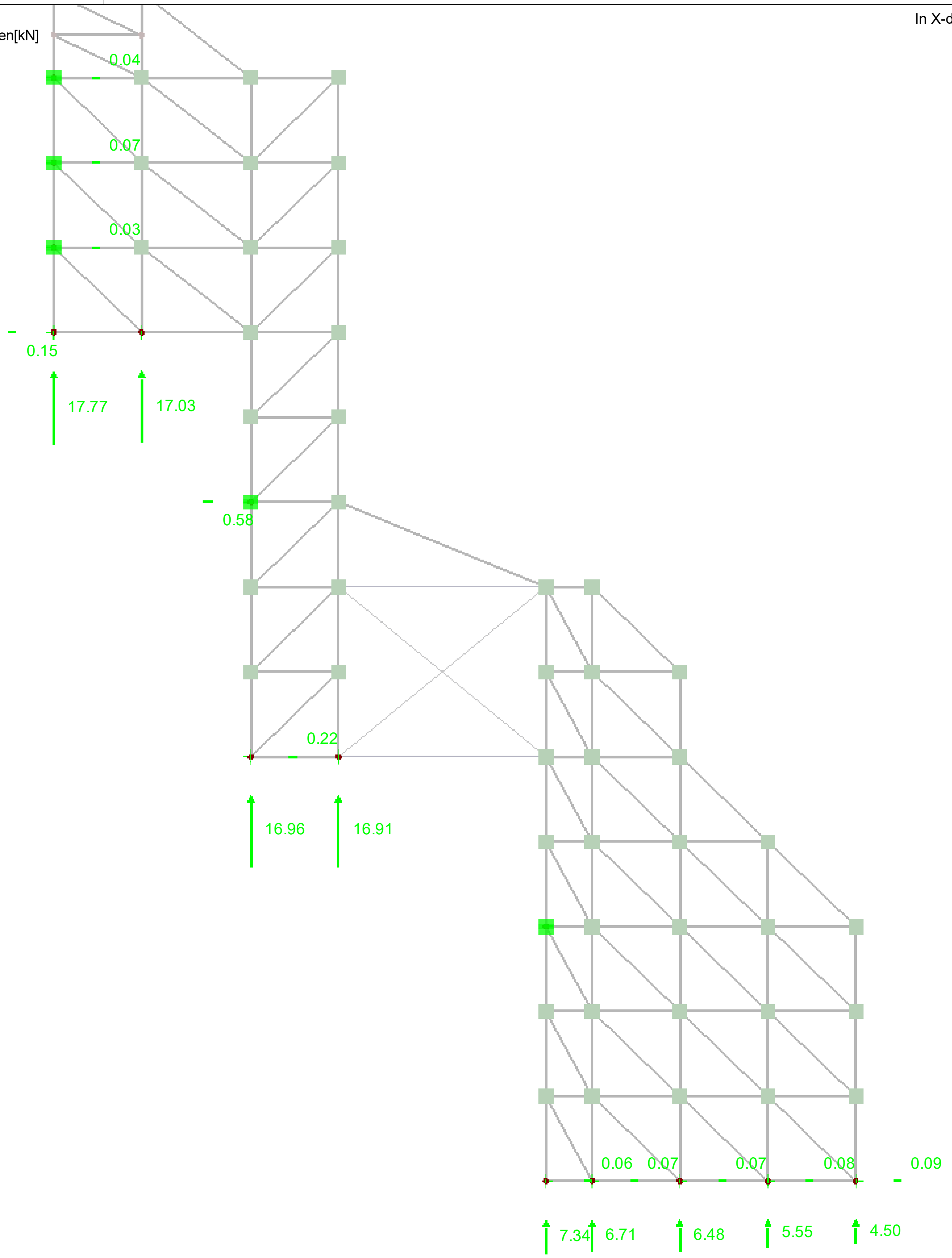
Max P-Y': 0.00, Min P-Y': -21.37 kN
Max P-Z': 34.58, Min P-Z': -9.20 kN

2.787 m

LAGERREAKTIONEN

CO4 : Bem-4
Lagerreaktionen[kN]

In X-direction



Max P-Y': 0.22, Min P-Y': -0.58 kN
Max P-Z': 17.77, Min P-Z': 0.00 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
281	RC1		0.100	MAX N	10.84	0.00	1.74	0.00	-0.21	0.00	CO 3
13	RC1		0.000	MIN N	-46.41	0.00	0.49	0.00	-0.32	0.00	CO 2
254	RC1		0.000	MAX V_y	8.77	0.03	0.15	0.00	-0.11	0.03	CO 3
638	RC1		0.667	MIN V_y	-7.32	-0.08	-0.11	0.00	0.04	0.00	CO 2
211	RC1		0.000	MAX V_z	-2.53	0.00	2.78	0.00	-1.05	0.00	CO 2
563	RC1		2.000	MIN V_z	-7.72	0.00	-2.83	0.00	-1.17	0.00	CO 2
529	RC1		0.000	MAX M_T	-7.70	-0.07	-0.11	0.00	0.09	-0.05	CO 2
524	RC1		2.000	MIN M_T	-3.13	-0.06	-2.12	0.00	-0.33	0.09	CO 3
463	RC1		0.900	MAX M_y	-6.77	0.00	0.02	0.00	0.73	0.00	CO 2
563	RC1		2.000	MIN M_y	-7.72	0.00	-2.83	0.00	-1.17	0.00	CO 2
638	RC1		2.000	MAX M_z	-5.16	-0.06	-0.10	0.00	-0.10	0.10	CO 3
638	RC1		0.000	MIN M_z	-7.32	-0.07	-0.09	0.00	0.11	-0.05	CO 2
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
216	RC1		0.000	MAX N	3.89	0.00	-0.07	0.00	-0.01	0.00	CO 2
90	RC1		2.020	MIN N	-23.04	0.00	0.36	0.00	0.61	0.00	CO 2
867	RC1		0.000	MAX V_y	-1.53	0.00	0.14	-0.02	-0.08	0.00	CO 3
536	RC1		0.000	MIN V_y	-1.61	0.00	0.22	0.00	-0.11	0.00	CO 2
792	RC1		0.000	MAX V_z	-6.84	0.00	1.84	0.00	-0.14	0.00	CO 1
792	RC1		1.040	MIN V_z	-6.84	0.00	-1.84	0.00	-0.14	0.00	CO 1
536	RC1		0.303	MAX M_T	-1.60	0.00	0.22	0.00	-0.04	0.00	CO 2
867	RC1		0.000	MIN M_T	-1.53	0.00	0.14	-0.02	-0.08	0.00	CO 3
90	RC1		2.020	MAX M_y	-23.04	0.00	0.36	0.00	0.61	0.00	CO 2
90	RC1		0.000	MIN M_y	-23.04	0.00	0.37	0.00	-0.61	0.00	CO 2
867	RC1		0.000	MAX M_z	-1.53	0.00	0.14	-0.02	-0.08	0.00	CO 3
867	RC1		1.040	MIN M_z	-1.53	0.00	0.14	-0.02	0.07	0.00	CO 3
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
892	RC1		0.000	MAX N	25.22	0.00	0.00	0.00	0.00	0.00	CO 2
221	RC1		0.000	MIN N	-8.10	0.00	0.00	0.00	0.00	0.00	CO 2
171	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
539	RC1		0.000	MAX M_T	-0.15	0.00	0.00	0.00	0.00	0.00	CO 4
758	RC1		0.000	MIN M_T	3.11	0.00	0.00	-0.01	0.00	0.00	CO 2
171	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 7: GI-KDXL Kederdach XL										
891	RC1		0.000	MAX N	0.17	0.00	-6.96	0.00	0.00	0.00	CO 3
891	RC1		0.000	MIN N	-1.84	0.00	2.12	0.00	0.00	0.00	CO 4
891	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		5.274	MAX V_z	-0.35	0.00	6.96	0.00	0.00	0.00	CO 2
891	RC1		0.000	MIN V_z	-0.35	0.00	-6.96	0.00	0.00	0.00	CO 2
891	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		2.637	MAX M_y	-0.97	0.00	0.00	0.00	2.80	0.00	CO 4
891	RC1		2.637	MIN M_y	-0.35	0.00	0.00	0.00	-9.18	0.00	CO 2
891	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 8: RD 8 | DIN 1013-1										
883	RC1		0.000	MAX N	3.22	0.00	0.00	0.00	0.00	0.00	CO 3
882	RC1		0.000	MIN N	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
879	RC1		0.000	MAX N	0.21	0.00	0.00	0.00	0.00	0.00	CO 4
878	RC1		0.000	MIN N	-14.34	0.00	0.00	0.00	0.00	0.00	CO 3
878	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
2	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
4	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
8	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
9	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
20	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
26	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-21.49	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
32	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
38	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.07	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-11.99	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
44	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
50	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.03	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-6.50	0.00	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
51	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
56	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
57	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
62	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
62		Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-9.74	34.58	0.00	0.00	0.00	CO 3
		Max $P_{Z'}$	0.00	-9.67	42.22	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
63	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
68	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	17.03	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	-0.65	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.12	0.12	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.12	0.12	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
74	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
78	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
86	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	-0.13	-0.12	CO 3
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	-0.02	0.00	0.00	0.00	-0.14	-0.12	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	-0.14	-0.12	CO 2
89	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
93	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
94	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.07	-0.08	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.07	-0.08	CO 3
107	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-4.80	0.00	0.00	0.00	0.07	CO 2
		Max $M_{Z'}$	0.00	-4.48	0.00	0.00	0.00	0.08	CO 3
		Min $M_{Z'}$	0.00	-0.58	0.00	0.00	0.00	0.00	CO 4
110	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	-0.03	-0.02	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 4
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 4
		Min $M_{Y'}$	0.02	0.00	0.00	0.00	-0.03	-0.02	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 4
		Min $M_{Z'}$	0.02	0.00	0.00	0.00	-0.03	-0.02	CO 3
111	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.03	0.02	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.03	0.02	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
116	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
116		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 2
122	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
125	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 2
131	RC1	Max $P_{X'}$	0.00	-14.22	-0.55	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.22	16.96	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-14.47	-7.29	0.00	0.00	0.01	CO 3
		Max $P_{Z'}$	0.00	0.22	16.96	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	-14.47	-7.29	0.00	0.00	0.01	CO 3
		Max $M_{Z'}$	0.00	-14.22	-0.55	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
134	RC1	Max $P_{X'}$	0.00	0.00	-2.79	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	16.91	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	-9.20	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 2
167	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
176	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.16	0.16	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.16	0.16	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
185	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
188	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
191	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 4
		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 4
194	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
194		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 2
197	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
203	RC1	Max $P_{X'}$	0.00	0.09	4.50	0.00	0.00	-0.01	CO 4
		Min $P_{X'}$	-0.07	-2.38	1.09	0.00	0.00	0.10	CO 3
		Max $P_{Y'}$	0.00	0.09	4.50	0.00	0.00	-0.01	CO 4
		Min $P_{Y'}$	-0.07	-2.38	1.09	0.00	0.00	0.10	CO 3
		Max $P_{Z'}$	0.00	0.09	4.50	0.00	0.00	-0.01	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.07	-2.38	1.09	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	0.00	0.09	4.50	0.00	0.00	-0.01	CO 4
206	RC1	Max $P_{X'}$	0.00	0.08	5.55	0.00	0.00	-0.01	CO 4
		Min $P_{X'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Max $P_{Y'}$	0.00	0.08	5.55	0.00	0.00	-0.01	CO 4
		Min $P_{Y'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Max $P_{Z'}$	-0.07	-2.15	5.83	0.00	0.00	0.11	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Min $M_{Z'}$	0.00	0.08	5.55	0.00	0.00	-0.01	CO 4
209	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
215	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 3
221	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.10	-0.07	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.11	-0.07	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.08	0.00	0.00	0.00	0.10	-0.07	CO 3
227	RC1	Max $P_{X'}$	0.00	0.07	6.48	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	-0.08	-1.97	2.97	0.00	0.00	0.12	CO 3
		Max $P_{Y'}$	0.00	0.07	6.48	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	-0.08	-1.97	2.97	0.00	0.00	0.12	CO 3
		Max $P_{Z'}$	0.00	0.07	6.48	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.08	-1.97	2.97	0.00	0.00	0.12	CO 3
		Min $M_{Z'}$	0.00	0.07	6.48	0.00	0.00	0.00	CO 4
233	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
239	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.11	-0.10	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.11	-0.10	CO 2
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.16	0.12	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.16	0.12	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
251	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.04	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.04	CO 2
257	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.04	CO 3

■ 4.4 NODES - SUPPORT FORCES

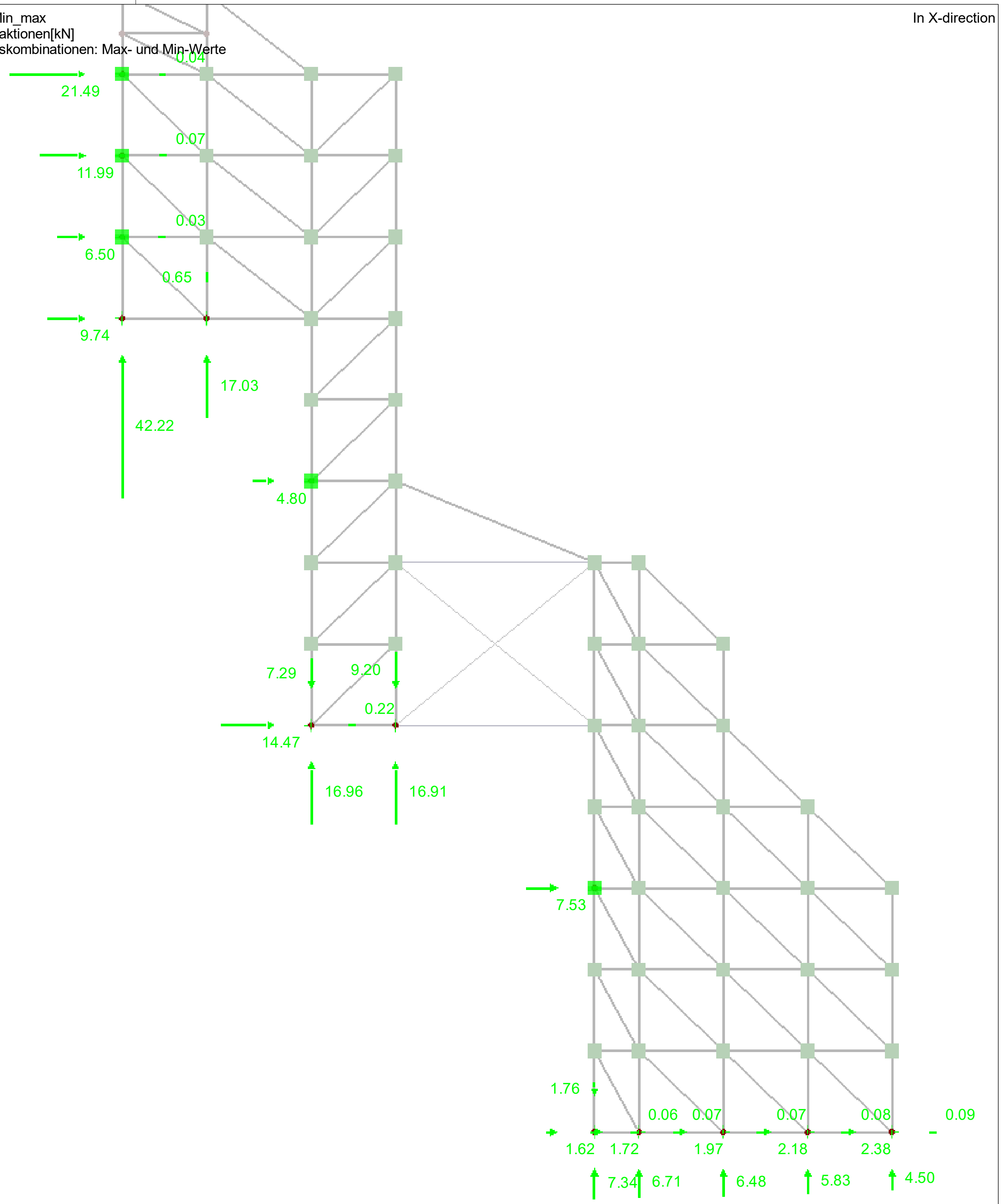
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
257		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.04	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
263	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
269	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Y'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 3
275	RC1	Max $P_{X'}$	0.00	0.07	6.71	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	-0.06	-1.72	0.49	0.00	0.00	0.06	CO 3
		Max $P_{Y'}$	0.00	0.07	6.71	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	-0.06	-1.72	0.49	0.00	0.00	0.06	CO 3
		Max $P_{Z'}$	0.00	0.07	6.71	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.06	-1.72	0.49	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.07	6.71	0.00	0.00	0.00	CO 4
281	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
287	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.10	-0.05	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.10	-0.05	CO 3
293	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
299	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.03	-0.02	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.03	-0.02	CO 3
305	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-7.53	0.00	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
311	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.03	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.03	CO 3
317	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.10	-0.06	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Y'}$	0.02	0.00	0.00	0.00	0.11	-0.06	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Min $M_{Z'}$	0.02	0.00	0.00	0.00	0.11	-0.06	CO 3
323	RC1	Max $P_{X'}$	0.00	0.06	7.34	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	-0.02	-1.62	-1.76	0.00	0.00	0.00	CO 3
		Max $P_{Y'}$	0.00	0.06	7.34	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	-0.02	-1.62	-1.76	0.00	0.00	0.00	CO 3
		Max $P_{Z'}$	0.00	0.06	7.34	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	-0.02	-1.62	-1.76	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	-0.02	-1.62	-1.76	0.00	0.00	0.00	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	

LAGERREAKTIONEN

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



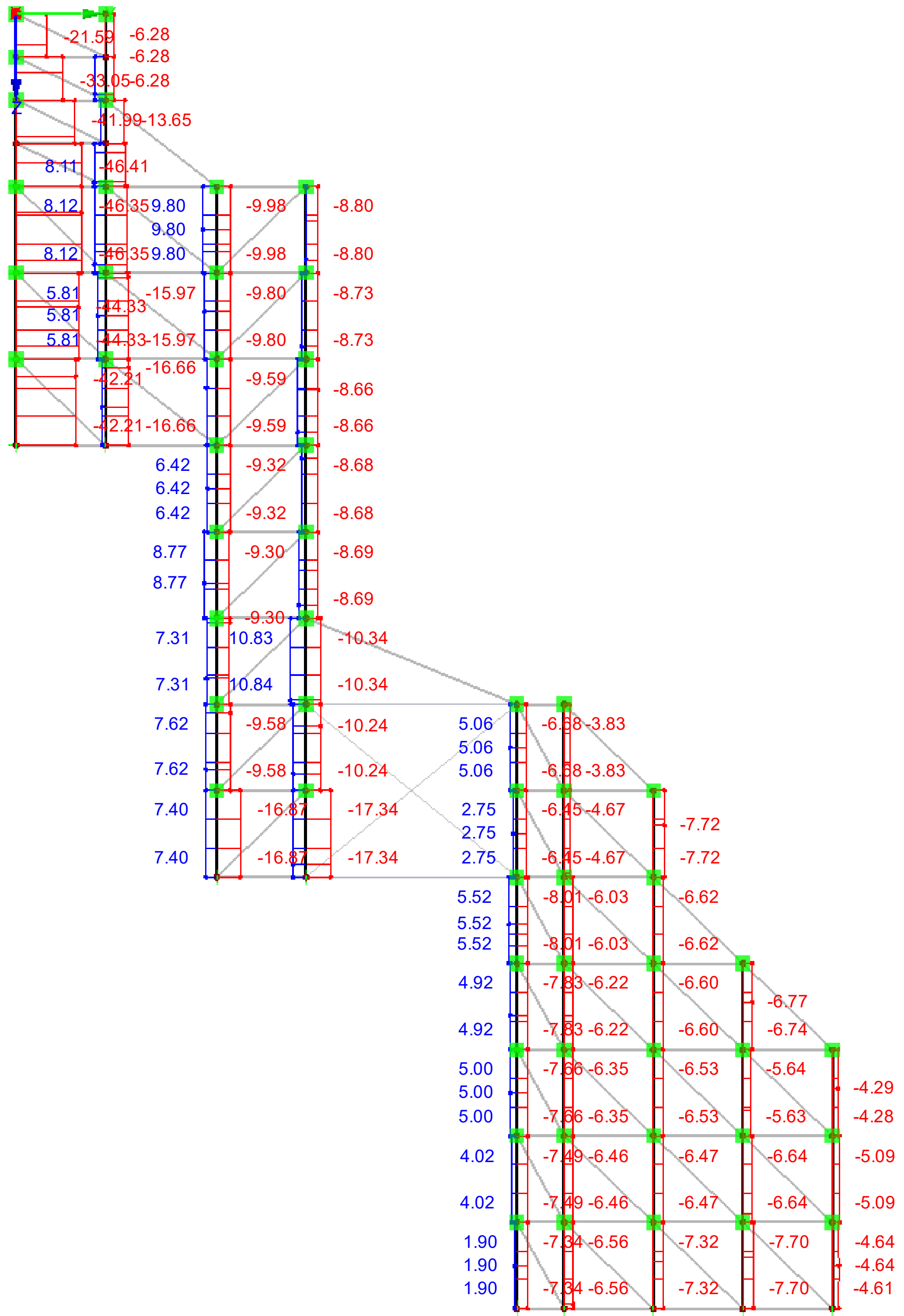
Max P-Y': 0.22, Min P-Y': -21.49 kN
Max P-Z': 42.22, Min P-Z': -9.20 kN

2.808 m

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

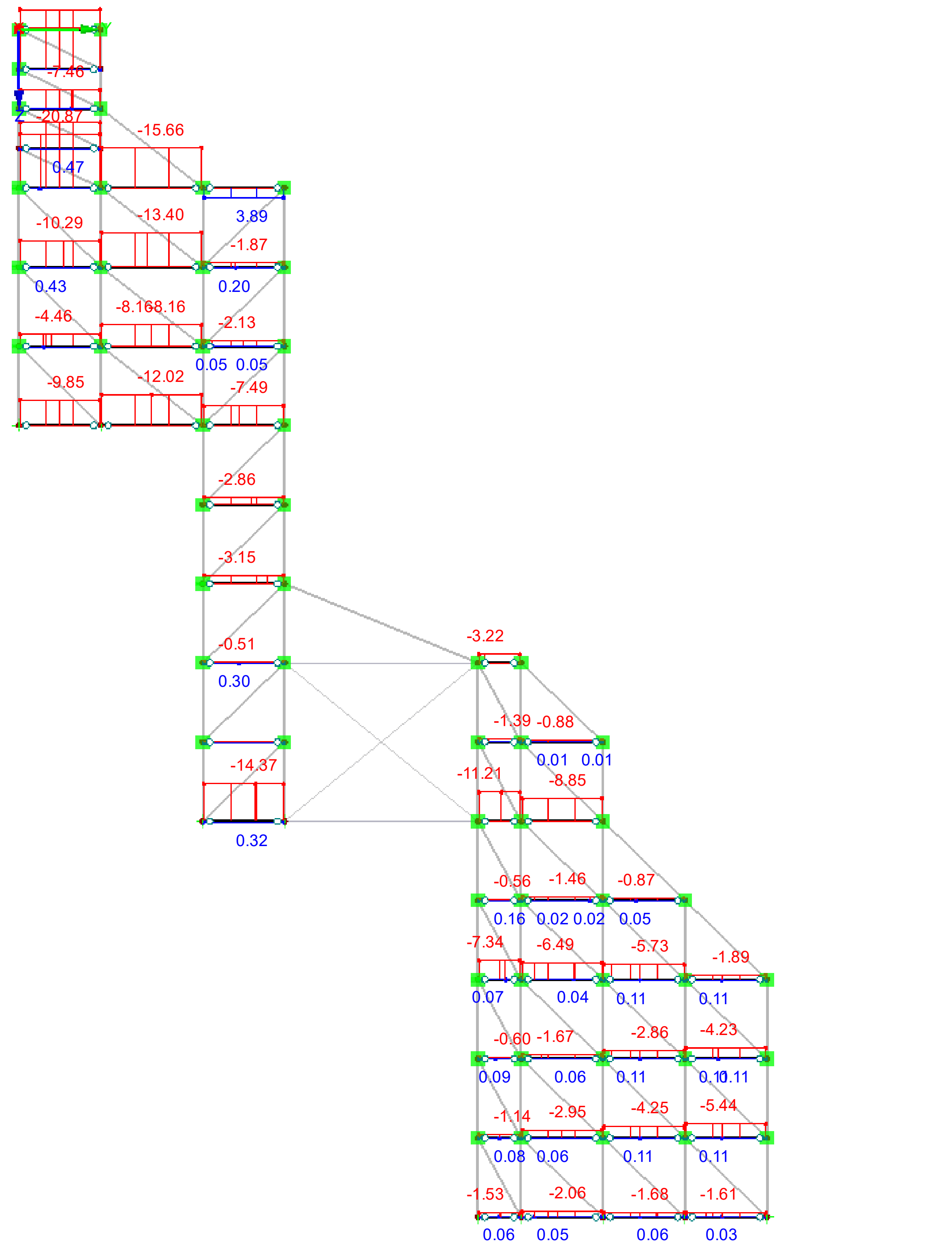


Max N: 10.84, Min N: -46.41 [kN]

■ INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

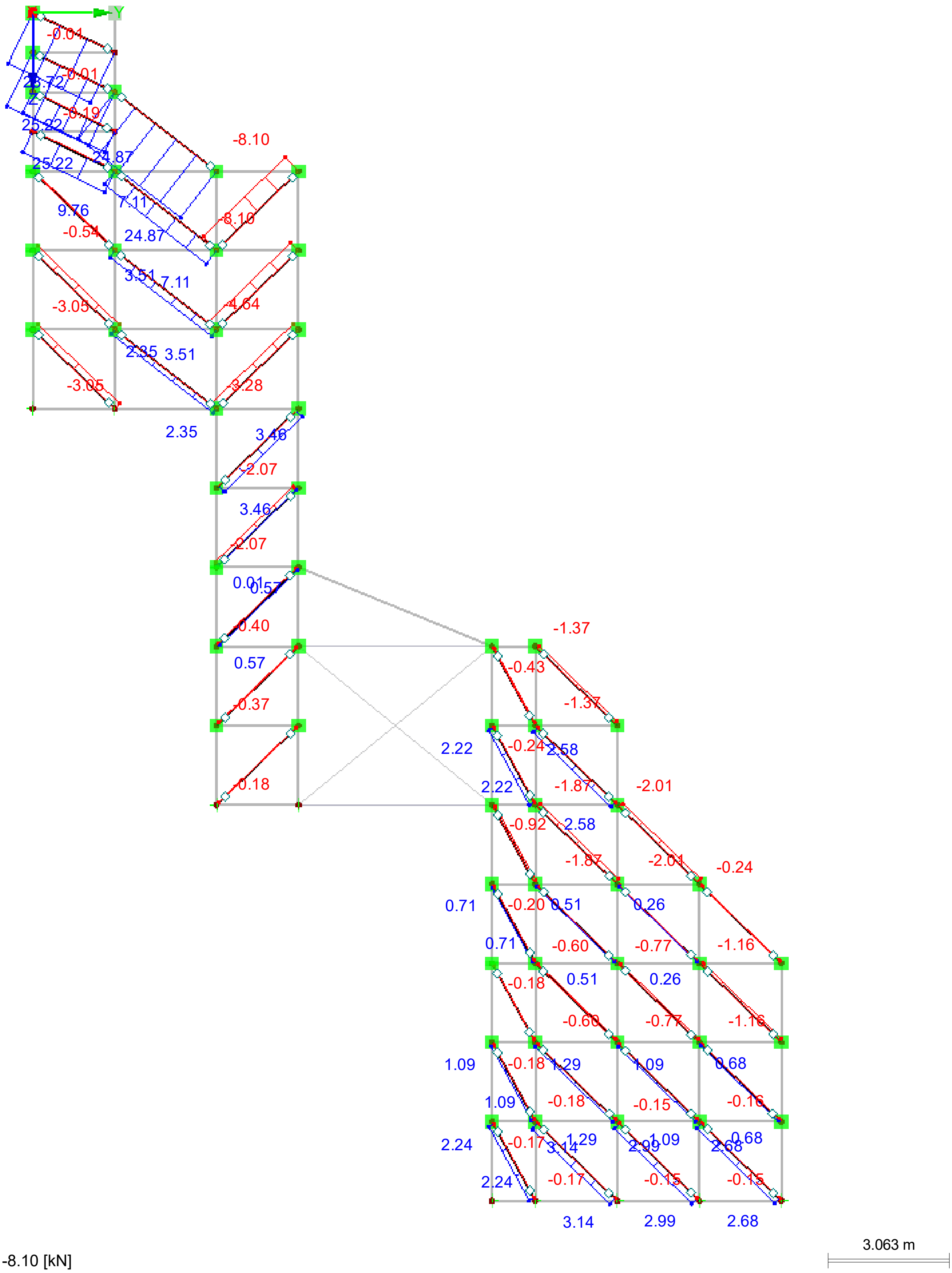


Max N: 3.89, Min N: -23.04 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

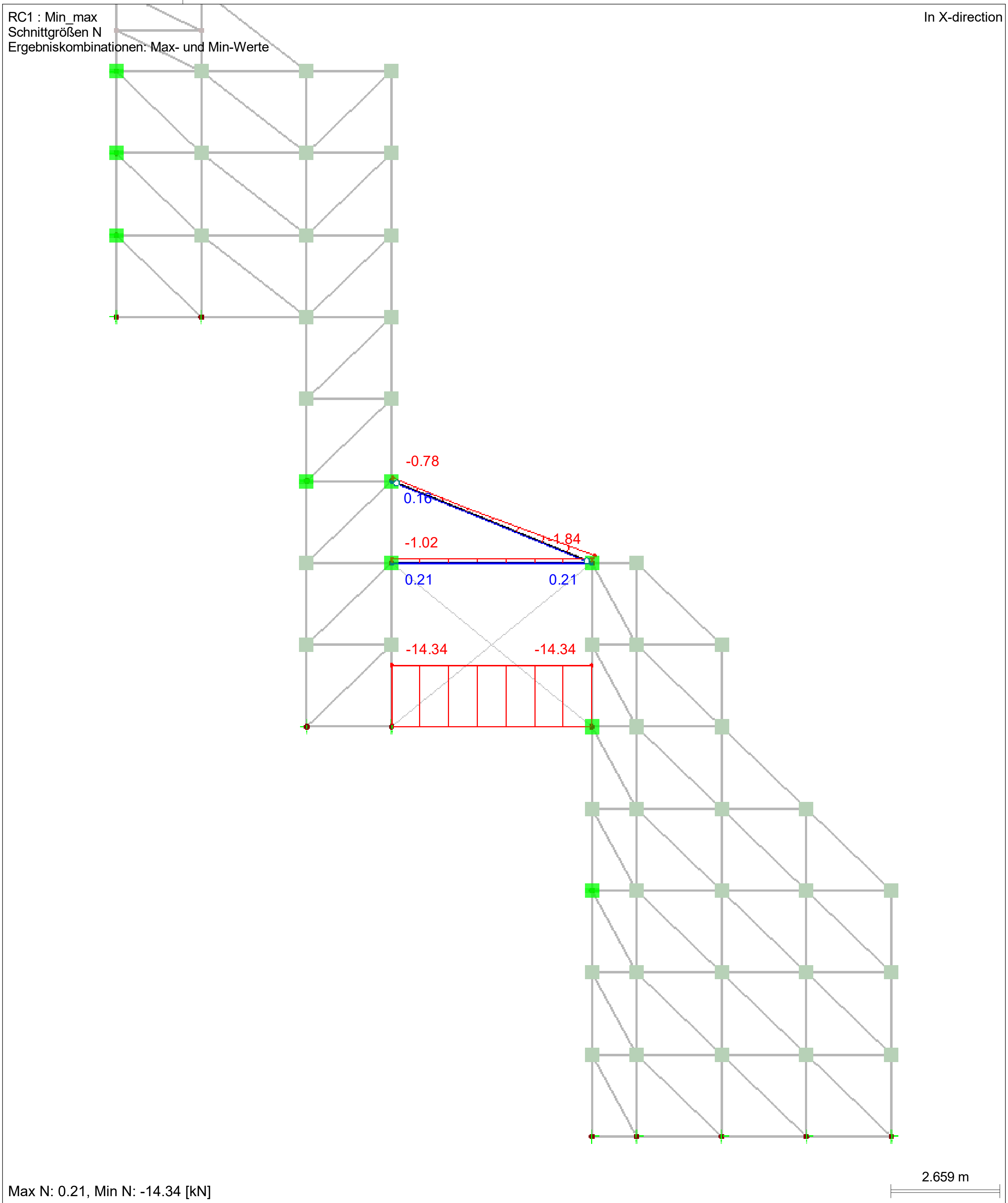
In X-direction



Max N: 25.22, Min N: -8.10 [kN]

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

INTERNAL FORCES N



STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

Members to design:	2,3,8,13,18,23,28,34,35,50,55,60,67,74,81,186,206,211,229,234,254, 259,276,281,298,303,320,325,463,480,485,502,507,524,529,563,578, 593,608,623,638,658,673,688,703,718,733,748,770,785,800,815,830, 845,860
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design Load combinations to design:	CO1 Bem-1 CO2 Bem-2 CO3 Bem-3 CO4 Bem-4

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

1.3 CROSS-SECTIONS

Rohr 48.3/2.9


Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	1.15	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
2	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
3	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
8	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
13	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
18	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
23	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
28	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
34	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
35	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
50	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
55	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
60	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
67	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
74	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
81	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
186	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
206	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
211	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

1.5 EFFECTIVE LENGTHS - MEMBERS

Member No.	Buckling Possible	Buckling About Axis y Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Buckling About Axis z Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Lateral-Torsional Buckling Possible	k_z	k_w	L_w [m]	L_T [m]
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
2	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.300	LK2	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK2	0.19	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.25	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
3	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.850	LK2	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
8	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.17	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.650	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.33	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.40	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
13	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.24	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.550	LK3	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.21	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.41	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
18	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.400	LK2	0.24	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.300	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.400	LK2	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.40	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.40	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.400	LK2	1.15	> 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
23	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.333	LK2	0.23	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	LK2	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.400	LK3	0.79	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.400	LK3	0.79	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.333	LK2	0.98	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
28	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	LK2	0.22	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.800	LK2	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	LK1	0.73	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK1	0.73	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK2	0.92	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
34	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.150	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.38	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK4	0.05	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
35	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.22	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
50	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.200	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
55	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.800	LK4	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	LK4	0.34	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK4	0.34	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
60	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.800	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	LK4	0.36	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK4	0.36	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
67	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.300	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	1.333	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK3	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
74	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.333	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.34	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.333	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.333	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
81	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
186	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.33	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
206	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	2.000	LK4	0.23	≤ 1	ST364)	6.2.9.1 Stability analysis - Bending and compression acc. to 6.3.3, Method 2
211	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.38	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.38	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK2	0.38	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	LK2	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.35	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	LK3	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.400	LK3	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	LK3	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.34	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	LK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	0.600	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.900	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	LK1	0.00	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.700	LK1	0.00	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	LK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	LK4	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	LK4	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK4	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.100	LK3	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.35	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.22	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.22	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	0.500	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	LK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	LK3	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.800	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	LK4	0.22	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK4	0.22	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.36	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.36	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	LK3	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.37	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.37	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.27	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.44	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.33	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.35	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.31	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.26	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.667	LK2	0.14	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.000	LK2	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.43	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.800	LK2	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.42	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.30	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.500	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.500	LK2	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK3	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK2	0.25	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.16	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	LK3	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2

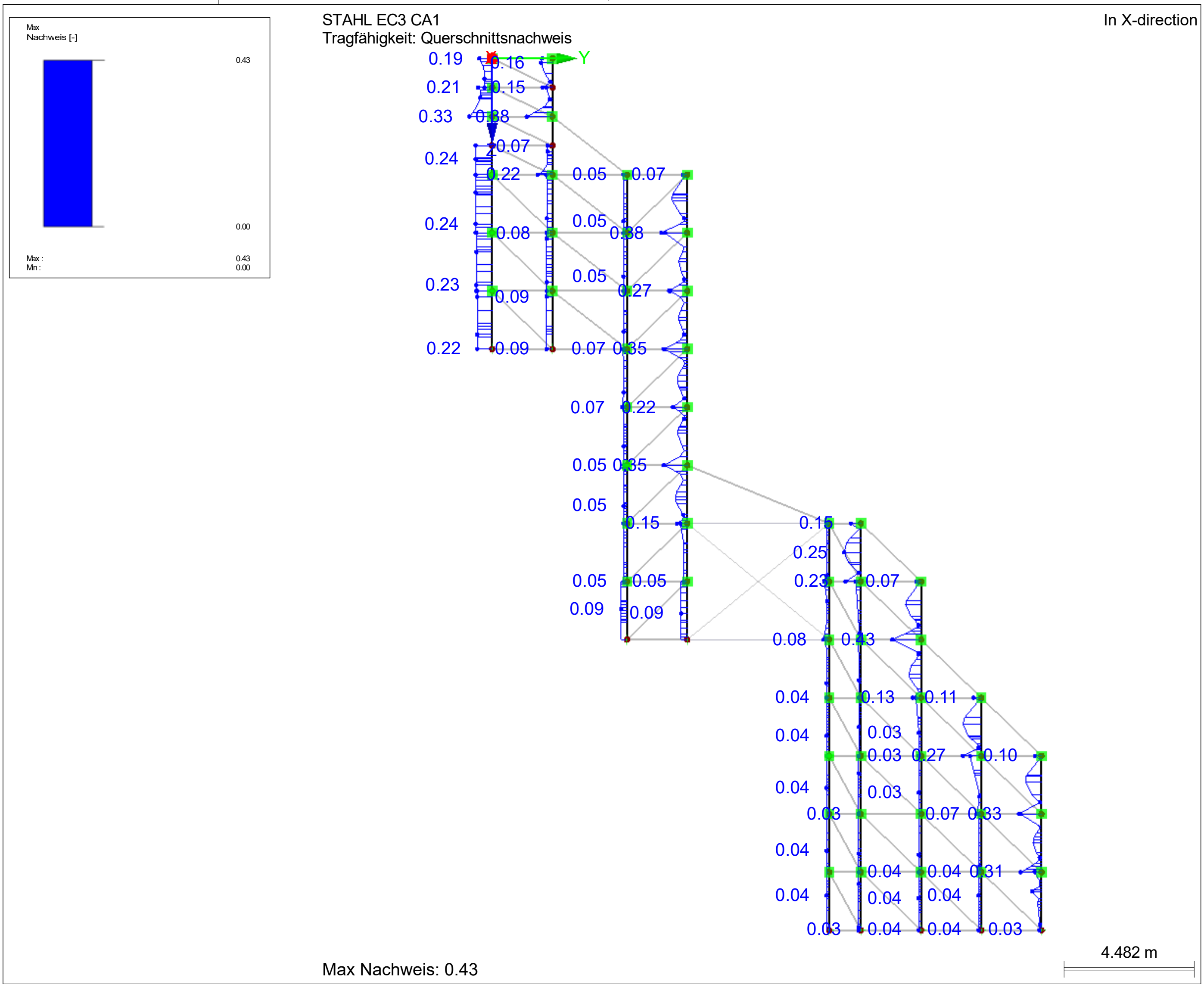
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.16	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.200	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK1	0.04	≤ 1	ST301)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	2.000	LK1	0.04	≤ 1	ST311)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.05	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS



Dimensioning

<u>Shoring scaffold</u>

Allround Standard

Nd=	11 kN			
Nd=	-47 kN			
eta=	0,43 < 1,0			

Allround ledger

Nd=	4 kN	< NRd=	42,3 kN
Nd=	-23 kN	< NRd=	-42,3 kN

Allround diagonal (2,07/2,0m)

Nd=	13 kN	< NRd=	28,5 kN
Nd=	-13 kN	< NRd=	-14,4 kN

At some parts there are 2 diagonals

Connecting scaffold

Nd=	-15 kN	< NRd

Bracing

Nd=	4 kN	
N,k=	2,6667 kN	
Nzul=	1000 kN	direct

Tension chord 4000 kg

Ratchet tie-down strap

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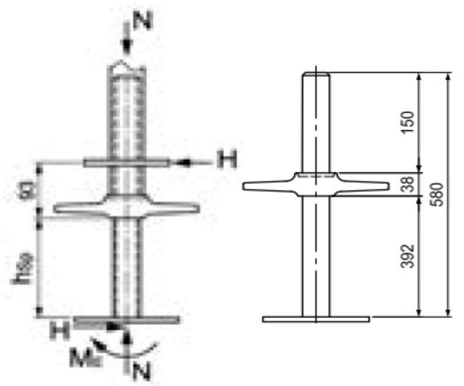
Fax. 07066/9179849

Base plate solid

BASE PLATE 60 SOLID



Substitute cross-sectional values of the spindle

A	$= 8.80\ cm^2$
W_{el}	$= 3.84\ cm^3$
W_{pl}	$= 4.79\ cm^3$
I	$= 6.51\ cm^4$

Material: EN 10025-2-S355J2

→ Rolled thread: $f_{u,b} = 360{,}0\ N/mm^2$

Tab. 14 Base plate loading

Spindle extension length h_{Sp} [cm]	Permissible vertical spindle load N [kN]* with simultaneous effect of a horizontal load H [kN]																									
	H = 0		H = 0.5		H = 1.0		H = 1.5		H = 2.0		H = 2.5		H = 3.0		H = 3.5		H = 4.0		H = 4.5		H = 5.0		H = 5.5		H = 6.0	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
0	54	69	54	69	54	68	54	67	53	–	53	–	53	–	52	–	52	–	51	–	51	–	50	–	50	–
5	54	68	53	–	53	–	52	–	52	–	51	–	50	–	49	–	48	–	48	–	47	–	46	–	45	–
10	53	–	53	–	52	–	49	–	49	–	48	–	47	–	46	–	45	–	44	–	42	–	41	–	40	–
15	53	–	51	–	50	–	48	–	47	–	47	–	44	–	43	–	41	–	39	–	38	–	36	–	34	–
20	51	–	50	–	48	–	46	–	44	–	42	–	40	–	38	–	36	–	35	–	–	–	–	–	–	–
25	50	–	48	–	45	–	43	–	41	–	39	–	37	–	34	–	–	–	–	–	–	–	–	–	–	–

Nd=	10,0	kN
Nk=	7,1	kN
Hd=	3,0	kN
Hk=	2,1	kN
Hk=	2,5	kN
hsp=	15,0	kN
Nzul=	47,0	kN

Proof stability against gliding

Wind

Nd=	0,5+3+4+1=	8,5	kN
Ballast		12	kN
		20,5	kN
Hd=	1,7+1,7+2+2,2+2,4=	10	kN

friction coefficient mü= 0,6 Wood - Soil

Hd= 10 kN < mü * Nd= 12,3 kN

Load distribution under base plate remaining scaffold

Nk=	20	kN
a=	0,5	m
b=	0,5	m
sigma=	80	kN/m²

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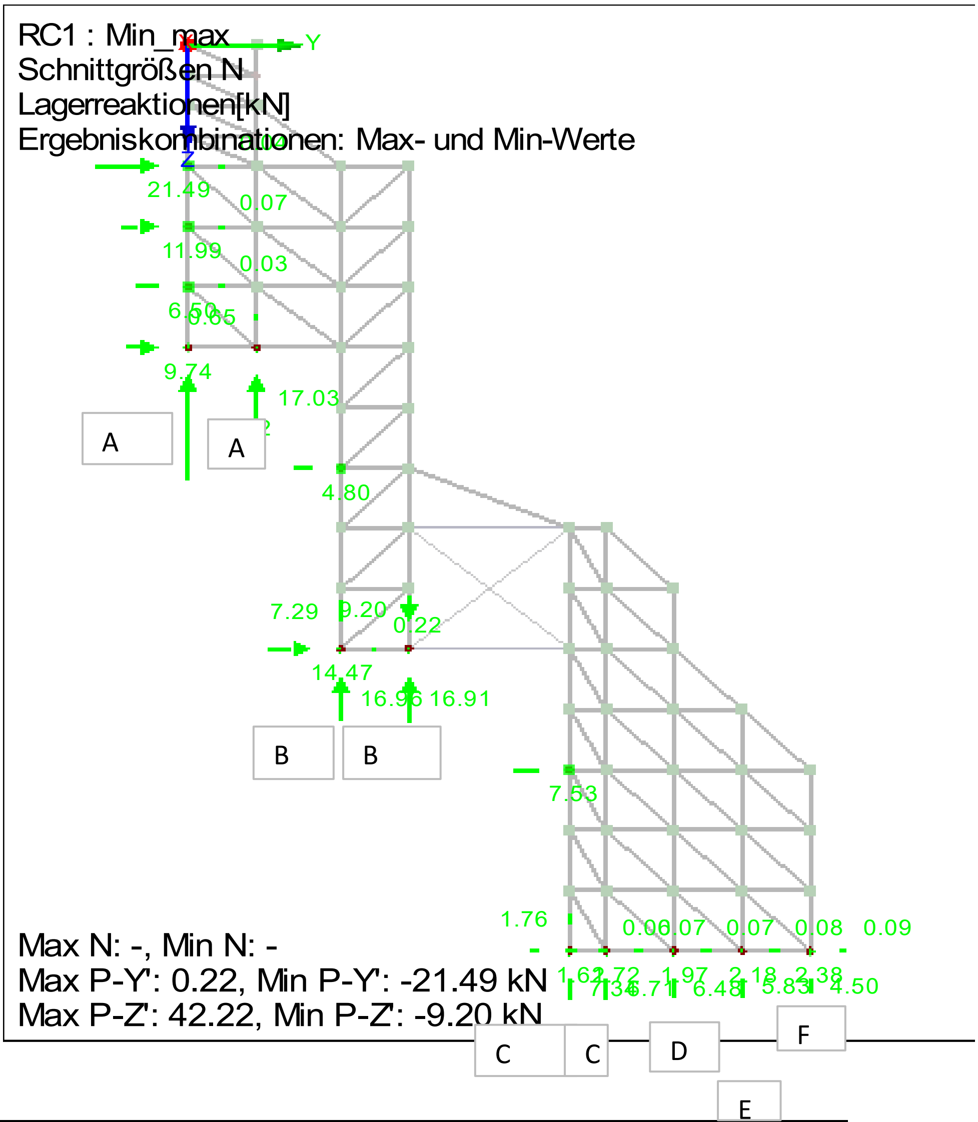
vertical reaction forces [kN]



			A	B	C	D	E	F
Dead Load			7	6	3	4,2	4	3,5
Snow			1	2	1	0,5	0	0
Live Load			5	5	2	1	0	0
Wind 1			18,5	-9	-3	-1	-1	-1
			-4					
max	design		43	17	8	7	6	5
max	design		17	0	0	0	0	0
min	design		0	-8	-2	0	0	0

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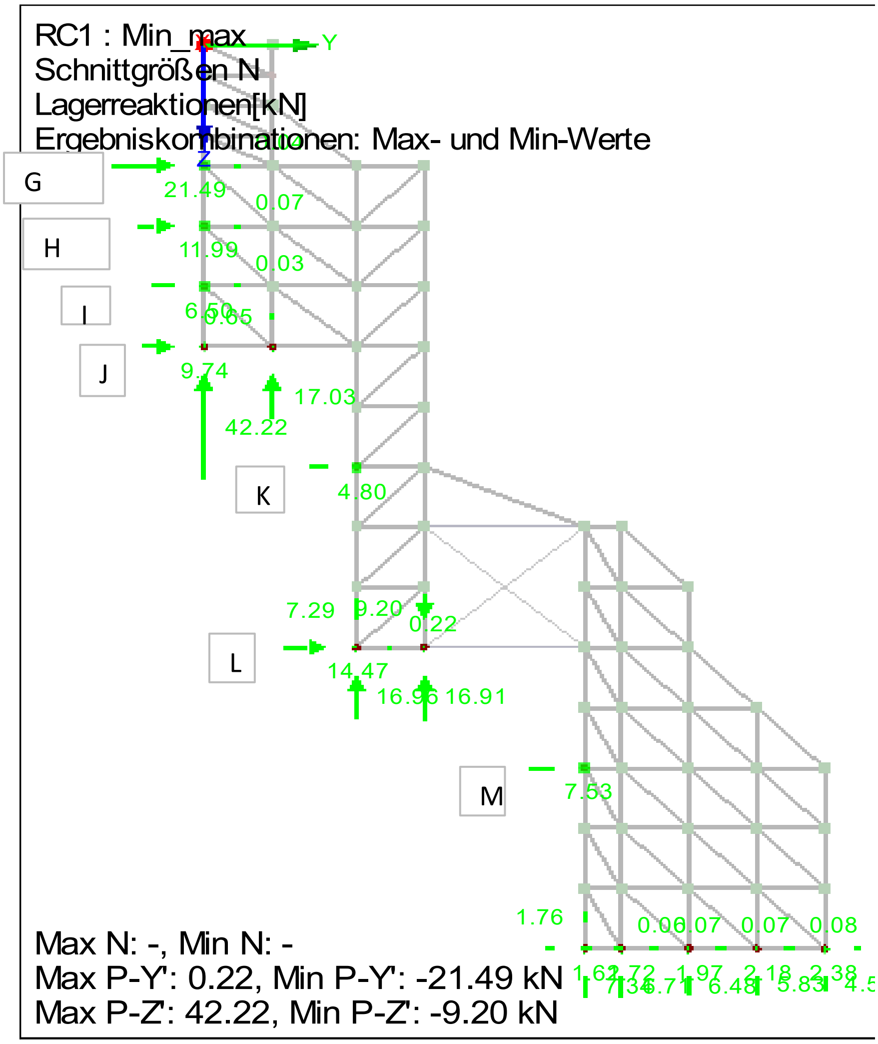
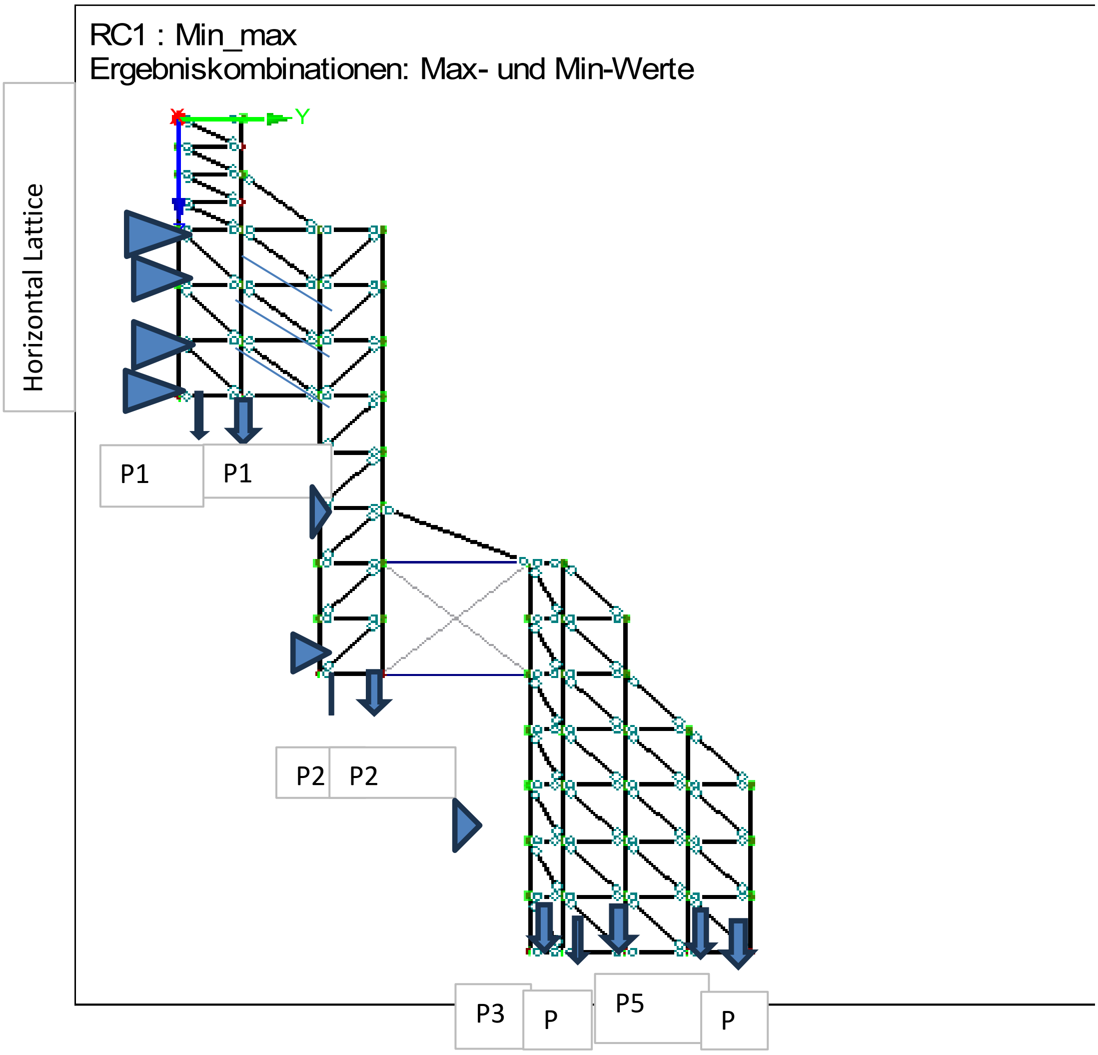
horizontal reaction forces [kN]



	G	H	I	J	K	L	M	N
Design	21,5	12	6,5	9,8	4,8	14,5	7,6	

b. Lee side


RC1 : Min_max
Ergebniskombinationen: Max- und Min-Werte
Y
Horizontal Lattice
P1
P1
P2
P2
P3
P
P5
P

Dead Load

P1:	G=	4	kN
P2:	G=	6	kN
P3:	G=	2,5	kN
P4:	G=	5	kN
P5:	G=	4	kN
P6:	G=	3	kN
Roof	G=	4,2	kN

Live Load (no snow)

q*= 1 kN/m²

q=	1 * 2,32	4,6	kN
Q=	2 * 2,32*2,07/2=	4,8	kN

Wind

qb,o=	0,47	kN/m²
z=	30	m
qp=	1,2	kN/m²

force coefficent	cf=	-0,5	
time coefficient	ct=	0,7	
width	b=	2,32	
	q=	-0,97	kN/m
Gesamtwindlast	h=	32	m
	W=	-31,2	kN

4. Earthquake

Mass of schaffolding

	M=			42000 kg
Fb=	Sd(T1) * M * lamda=			
Fb=	0,00113 * M=		47,5 kN	

H,k from Wind H,k= 34 < Fb

Equivalent seismic load on each side

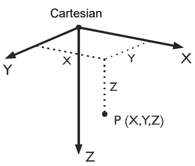
q,k= Fb / 2 /h= 0,79 kN/m

height h= 30 m

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-1-TS-2b
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²



1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
2	-	Cartesian	0.000	0.000	0.000	Supported
4	-	Cartesian	0.000	0.000	1.000	Supported
5	-	Cartesian	0.000	0.000	3.000	
8	-	Cartesian	0.000	2.070	0.000	Supported
9	-	Cartesian	0.000	0.000	2.000	Supported
11	-	Cartesian	0.000	2.070	1.000	
12	-	Cartesian	0.000	2.070	3.000	
20	-	Cartesian	0.000	2.070	2.000	Supported
26	-	Cartesian	0.000	0.000	4.000	Supported
32	-	Cartesian	0.000	2.070	4.000	Supported
38	-	Cartesian	0.000	0.000	6.000	Supported
44	-	Cartesian	0.000	2.070	6.000	Supported
50	-	Cartesian	0.000	0.000	8.000	Supported
51	-	Cartesian	0.000	4.640	8.000	Supported
56	-	Cartesian	0.000	2.070	8.000	Supported
57	-	Cartesian	0.000	6.710	8.000	Supported
62	-	Cartesian	0.000	0.000	10.000	Supported
63	-	Cartesian	0.000	4.640	10.000	Supported
68	-	Cartesian	0.000	2.070	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
74	-	Cartesian	0.000	4.640	6.000	Supported
78	-	Cartesian	0.000	6.710	6.000	Supported
86	-	Cartesian	0.000	4.640	12.000	Supported
89	-	Cartesian	0.000	4.640	4.000	Supported
93	-	Cartesian	0.000	6.710	4.000	Supported
94	-	Cartesian	0.000	6.710	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported

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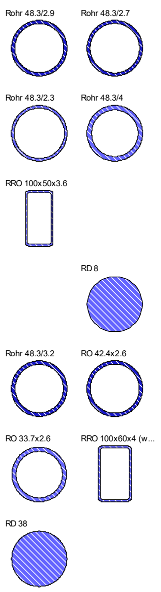
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported
122	-	Cartesian	0.000	4.640	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported
134	-	Cartesian	0.000	6.710	20.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported
239	-	Cartesian	0.000	12.680	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

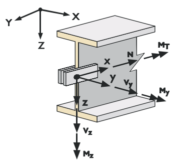
1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40 / 4.14	10.70 / 2.07	10.70 / 2.07	0.00	0.00	48.3	48.3
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18 / 3.87	10.09 / 1.92	10.09 / 1.92	0.00	0.00	48.3	48.3
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63 / 3.32	8.81 / 1.65	8.81 / 1.65	0.00	0.00	48.3	48.3
	Diagonale							
4	Rohr 48.3/4							
	1	27.54 / 5.57	13.77 / 2.77	13.77 / 2.77	0.00	0.00	48.3	48.3
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00 / 10.20	129.00 / 2.22	42.90 / 6.38	0.00	0.00	50.0	100.0
6	spindel spindel							
	1	1.00 / 3.84	3.74 / 2.00	3.74 / 2.00	0.00	0.00	0.0	0.0
7	GI-KDXL Kederdach XL							
	1	1.00 / 17.00	20900.00 / 9.00	20900.00 / 9.00	0.00	0.00	50.0	1000.0
8	RD 8 | DIN 1013-1							
	1	0.04 / 0.50	0.02 / 0.42	0.02 / 0.42	0.00	0.00	8.0	8.0

1.3 CROSS-SECTIONS

Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
9	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93	6.46	6.46	0.00	0.00	42.4	42.4
		3.25	1.62	1.62				
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19	3.09	3.09	0.00	0.00	33.7	33.7
		2.54	1.27	1.27				
	Diagonale_TG60							
12	RRO 100x60x4 (Hot Formed)							
	1	156.00	158.00	70.50	0.00	0.00	60.0	100.0
		12.00	3.23	6.98				
13	RD 38							
	1	20.47	10.24	10.24	0.00	0.00	38.0	38.0
		11.30	9.49	9.49				

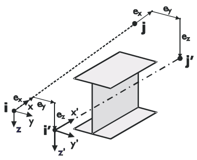


1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

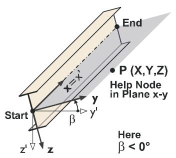


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	5	9	Angle	90.00	1	1	-	-	-	-	1.000	Z
2	Beam	4	2	Angle	90.00	1	1	-	-	-	-	1.000	Z
3	Beam	11	8	Angle	90.00	1	1	-	-	-	-	1.000	Z
4	Beam	12	20	Angle	90.00	1	1	-	-	-	-	1.000	Z
8	Beam	9	4	Angle	90.00	1	1	-	-	-	-	1.000	Z
13	Beam	26	5	Angle	90.00	1	1	-	-	-	-	1.000	Z
18	Beam	38	26	Angle	90.00	1	1	-	-	-	-	2.000	Z
23	Beam	50	38	Angle	90.00	1	1	-	-	-	-	2.000	Z
28	Beam	62	50	Angle	90.00	1	1	-	-	-	-	2.000	Z
34	Beam	20	11	Angle	90.00	1	1	-	-	-	-	1.000	Z
35	Beam	32	12	Angle	90.00	1	1	-	-	-	-	1.000	Z

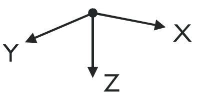
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
50	Beam	44	32	Angle	90.00	1	1	-	-	-	-	2.000	Z
55	Beam	56	44	Angle	90.00	1	1	-	-	-	-	2.000	Z
60	Beam	68	56	Angle	90.00	1	1	-	-	-	-	2.000	Z
67	Beam	63	51	Angle	90.00	1	1	-	-	-	-	2.000	Z
74	Beam	69	57	Angle	90.00	1	1	-	-	-	-	2.000	Z
81	Beam	51	74	Angle	90.00	1	1	-	-	-	-	2.000	Z
89	Beam	2	8	Angle	0.00	2	2	1	1	1	-	2.020	Y
90	Beam	4	11	Angle	0.00	2	2	1	1	1	-	2.020	Y
91	Beam	5	12	Angle	0.00	2	2	1	1	1	-	2.020	Y
103	Beam	9	20	Angle	0.00	2	2	1	1	1	-	2.020	Y
115	Beam	26	32	Angle	0.00	2	2	1	1	1	-	2.020	Y
127	Beam	38	44	Angle	0.00	2	2	1	1	1	-	2.020	Y
139	Beam	50	56	Angle	0.00	2	2	1	1	1	-	2.020	Y
151	Beam	62	68	Angle	0.00	2	2	1	1	1	-	2.020	Y
163	Beam	51	57	Angle	0.00	2	2	1	1	1	-	2.020	Y
168	Beam	63	69	Angle	0.00	2	2	1	1	1	-	2.020	Y
171	Beam	63	57	Angle	0.00	3	3	4	4	-	-	2.878	YZ
178	Beam	68	63	Angle	0.00	2	2	1	1	1	-	2.520	Y
181	Beam	56	51	Angle	0.00	2	2	1	1	1	-	2.520	Y
186	Beam	57	78	Angle	90.00	1	1	-	-	-	-	2.000	Z
191	Beam	74	78	Angle	0.00	2	2	1	1	1	-	2.020	Y
196	Beam	51	78	Angle	0.00	3	3	4	4	-	-	2.878	YZ
201	Beam	44	74	Angle	0.00	2	2	1	1	1	-	2.520	Y
206	Beam	74	89	Angle	90.00	1	1	-	-	-	-	2.000	Z
211	Beam	78	93	Angle	90.00	1	1	-	-	-	-	2.000	Z
216	Beam	89	93	Angle	0.00	2	2	1	1	1	-	2.020	Y
221	Beam	74	93	Angle	0.00	3	3	4	4	-	-	2.878	YZ
226	Beam	32	89	Angle	0.00	2	2	1	1	1	-	2.520	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	Rotation β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
877	Beam	32	74	Angle	0.00	3	3	4	4	-	-	3.257	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
880	Beam	44	51	Angle	0.00	3	3	4	4	-	-	3.257	YZ
881	Beam	56	63	Angle	0.00	3	3	4	4	-	-	3.257	YZ
882	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
883	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ
885	Beam	2	11	Angle	0.00	3	3	4	4	-	-	2.299	YZ
886	Beam	9	12	Angle	0.00	3	3	4	4	-	-	2.299	YZ
887	Beam	89	20	Angle	0.00	3	3	4	4	-	-	3.257	YZ
888	Beam	44	26	Angle	0.00	3	3	4	4	-	-	2.878	YZ
889	Beam	56	38	Angle	0.00	3	3	4	4	-	-	2.878	YZ
890	Beam	68	50	Angle	0.00	3	3	4	4	-	-	2.878	YZ
891	Beam	281	111	Angle	0.00	7	7	3	3	-	-	5.274	YZ
892	Beam	4	20	Angle	0.00	3	3	4	4	-	-	2.299	YZ
893	Beam	5	32	Angle	0.00	3	3	4	4	-	-	2.299	YZ

1.8 NODAL SUPPORTS



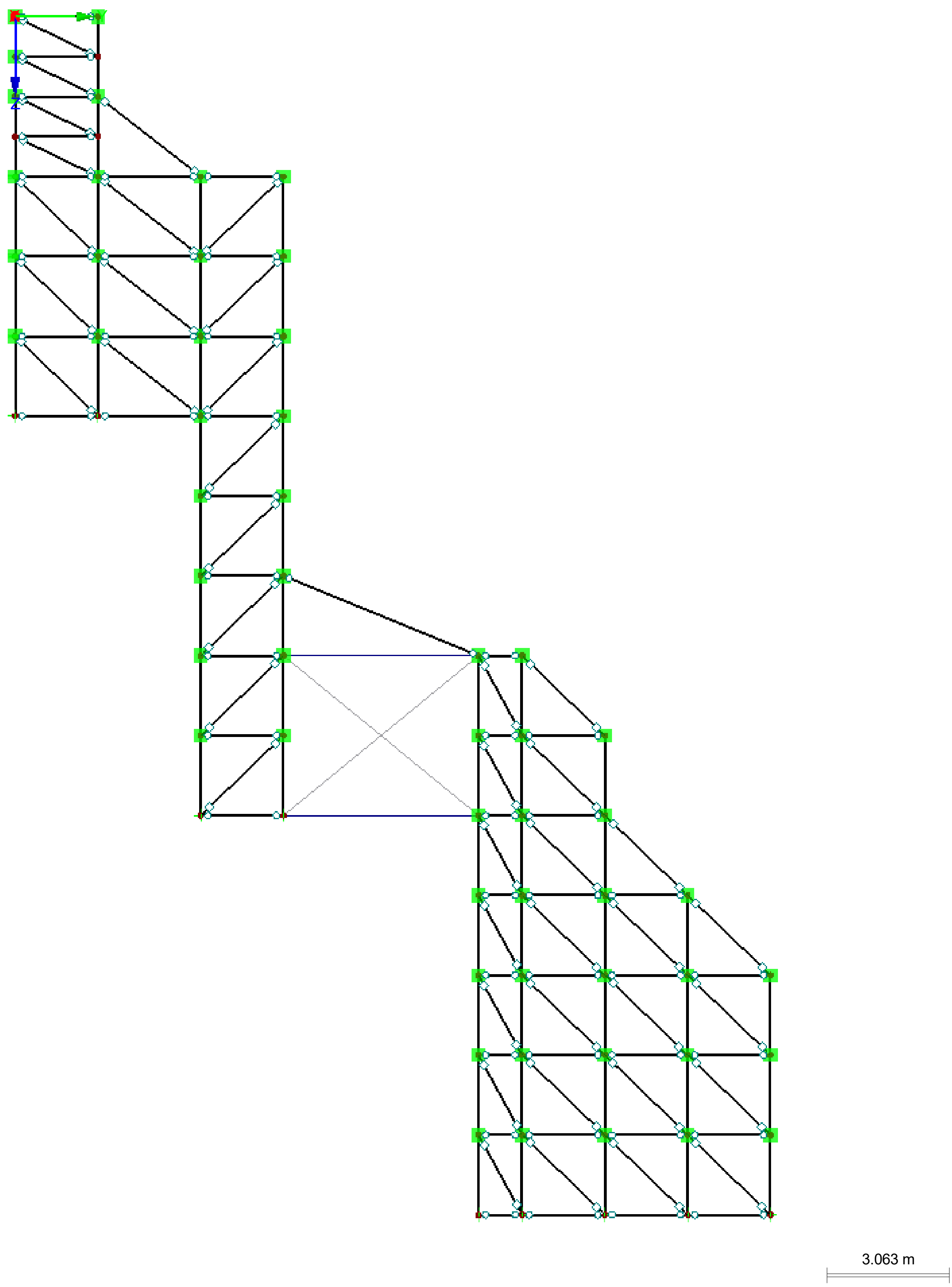
Support No.	Nodes No.	Sequen.	Rotation [°] about X	Rotation [°] about Y	Rotation [°] about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	203,206, 227,275,323	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☒	☒
	2,4,8,9,20,32,44,51,56,57,63,69,74,78,86,89,93,94,107,110,111,116,122,125,164,167,173,176,179,185,188,191,194, 197,209,215,221,233,239,245,251,257,263,269,281,287,293,299,305,311,317											
4	68,134	XYZ	0.00	0.00	0.00	☐	Spring	☐	Spring	☐	☐	☒
5	62,131	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
6	26,38,50	XYZ	0.00	0.00	0.00	☐	☒	Spring	☐	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	203,206,227,275,323	5000.000	5000.000	5000.000	-	-	-
4	68,134	5000.000	-	5000.000	-	-	-
5	62,131	5000.000	5000.000	5000.000	-	-	-
6	26,38,50	-	1000.000	-	-	-	-

MODEL

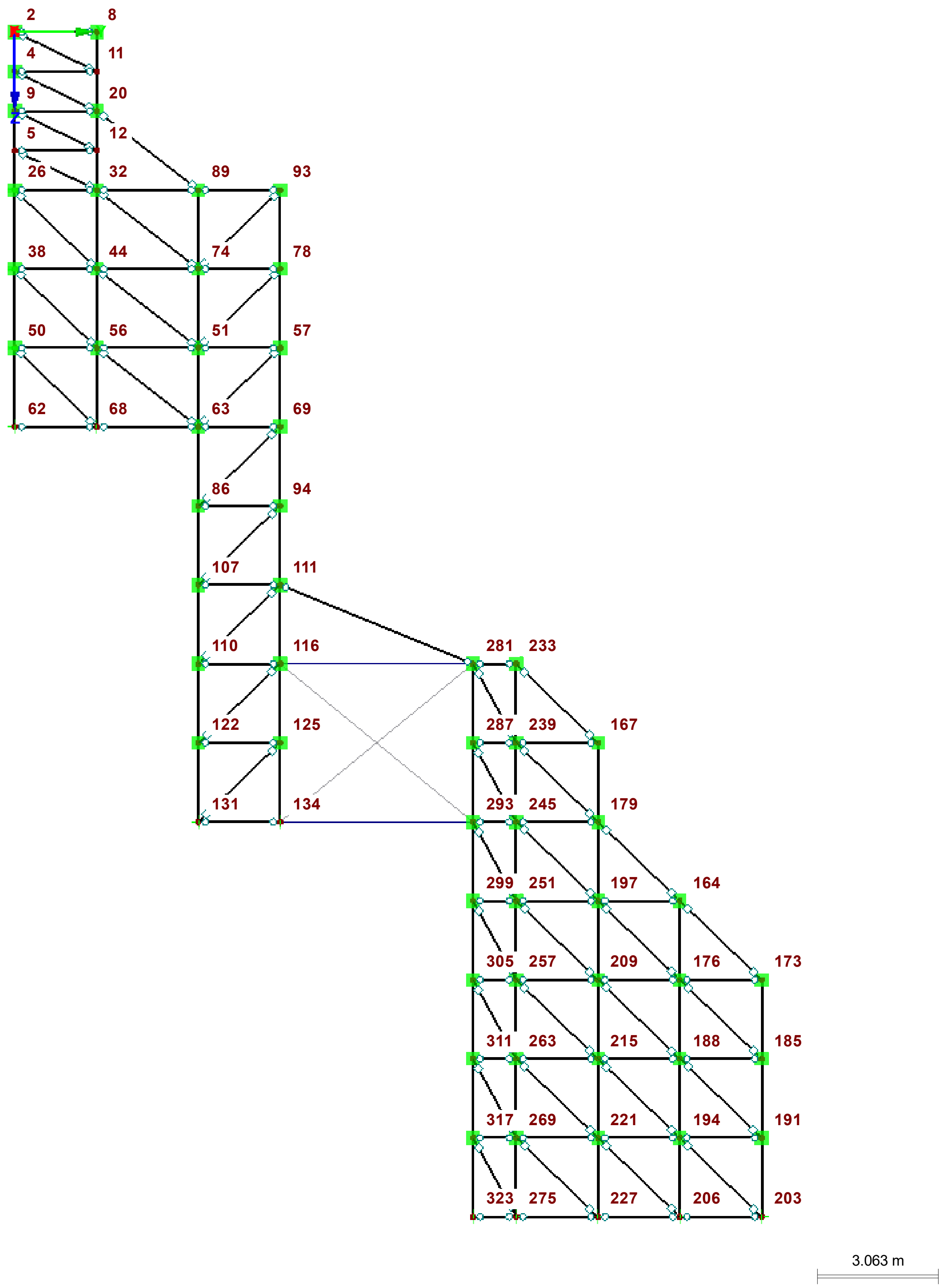
In X-direction



MODEL

Node Numbering

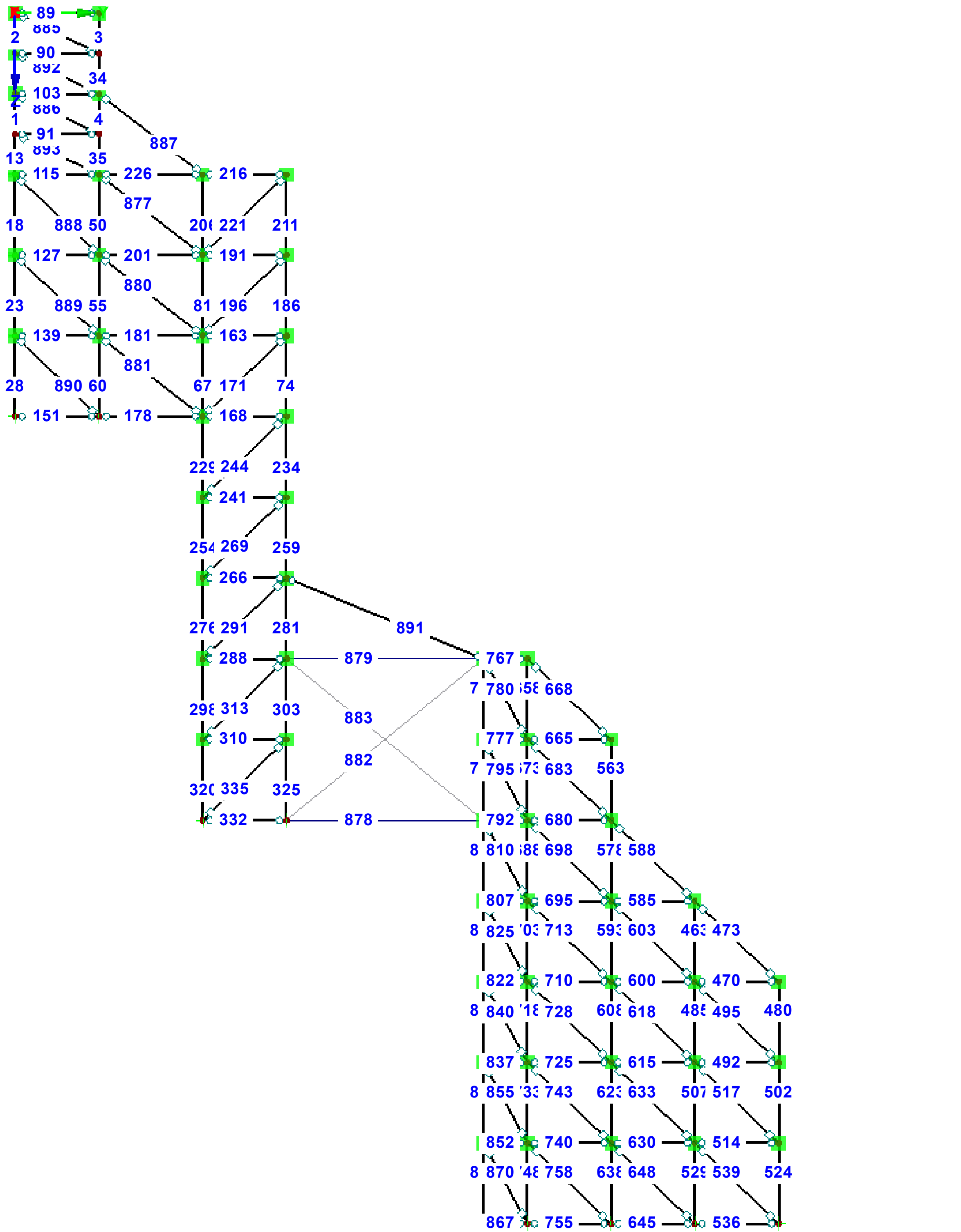
In X-direction



■ MODEL

Member Numbering

In X-direction



2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind	Wind	☐			
LC4	Snow	Snow / ice	☐			
LC5	Earthquake	Earthquake	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	:	Geometrically linear analysis
LC2	Live Load	Method of analysis	:	Geometrically linear analysis
LC3	Wind	Method of analysis	:	Geometrically linear analysis
LC4	Snow	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Earthquake	Method of analysis	:	Geometrically linear analysis

2.1.4 LOAD CASES - PARAMETERS FOR CQC RULE

Load Case	Load Case Description	Angular Frequency [rad/s	Lehr's damping [-]
LC5	Earthquake	1.00	0.000

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	0.90	LC3	Wind
CO2		Bem-2	1	1.35	LC1	EG
			2	0.90	LC2	Live Load
			3	1.50	LC3	Wind
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	1.50	LC4	Snow
CO5		Earthquake	1	1.00	LC1	EG
			2	1.00	LC5	Earthquake

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	Earthquake	Method of analysis	: Second order analysis (P-Delta)
		Options	: ☒ Consider favorable effects due to tension
			: ☒ Refer internal forces to deformed system for:
			☒ Normal forces N
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4

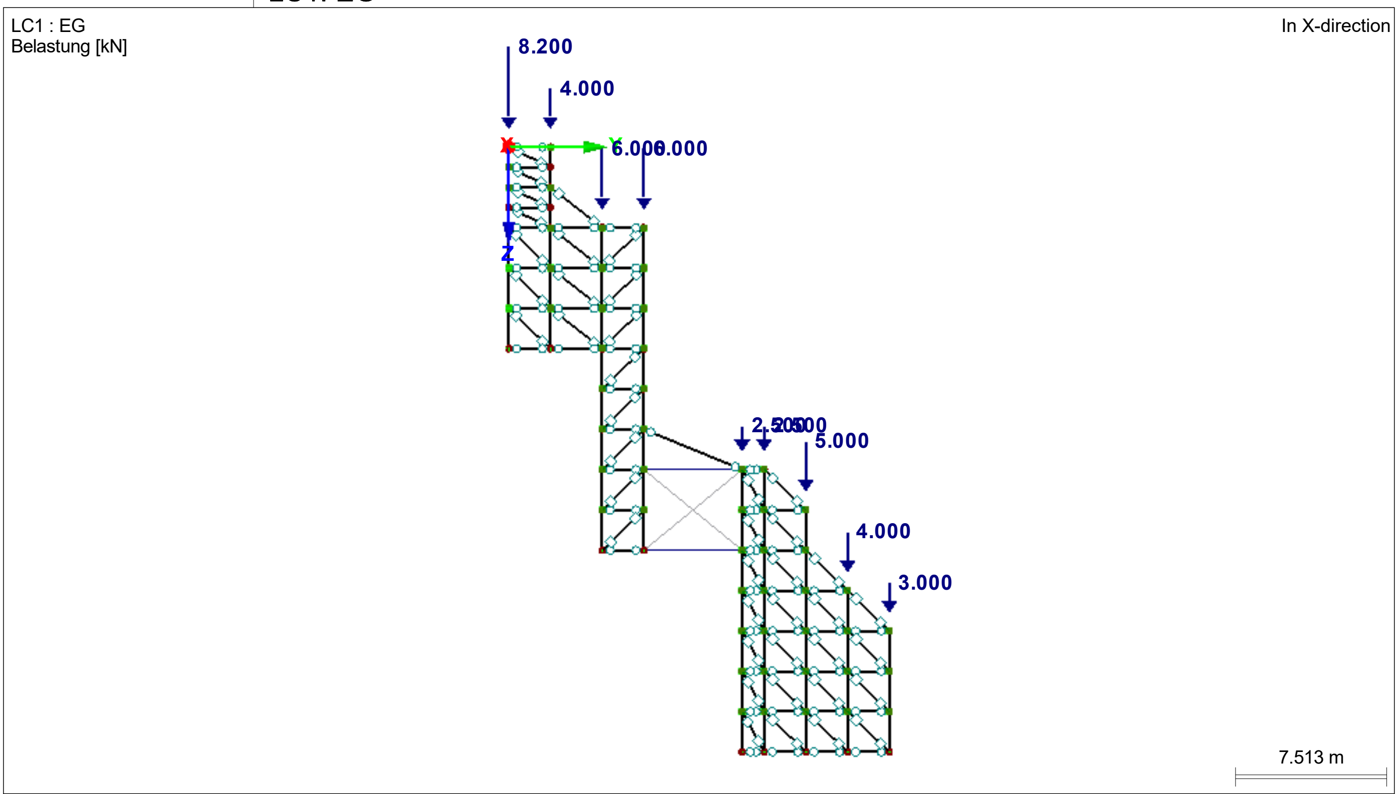
3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

LC1
EG

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	8,164	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
2	89,93	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
6	2	0 | Global XYZ	0.000	0.000	8.200	0.000	0.000	0.000

LC1: EG



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	9,20,122,125	0 | Global XYZ	0.000	0.000	4.800	0.000	0.000	0.000

3.2 MEMBER LOADS

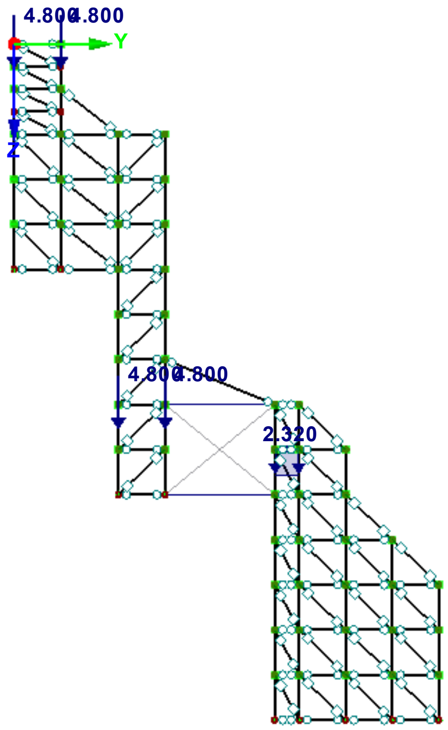
LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	2.320	kN/m

LC2: LIVE LOAD

LC2 : Live Load
Belastung [kN/m], [kN]

In X-direction



6.723 m

LC3
Wind

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Wind

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
2	2	0 | Global XYZ	0.000	0.000	9.000	0.000	0.000	0.000

3.2 MEMBER LOADS

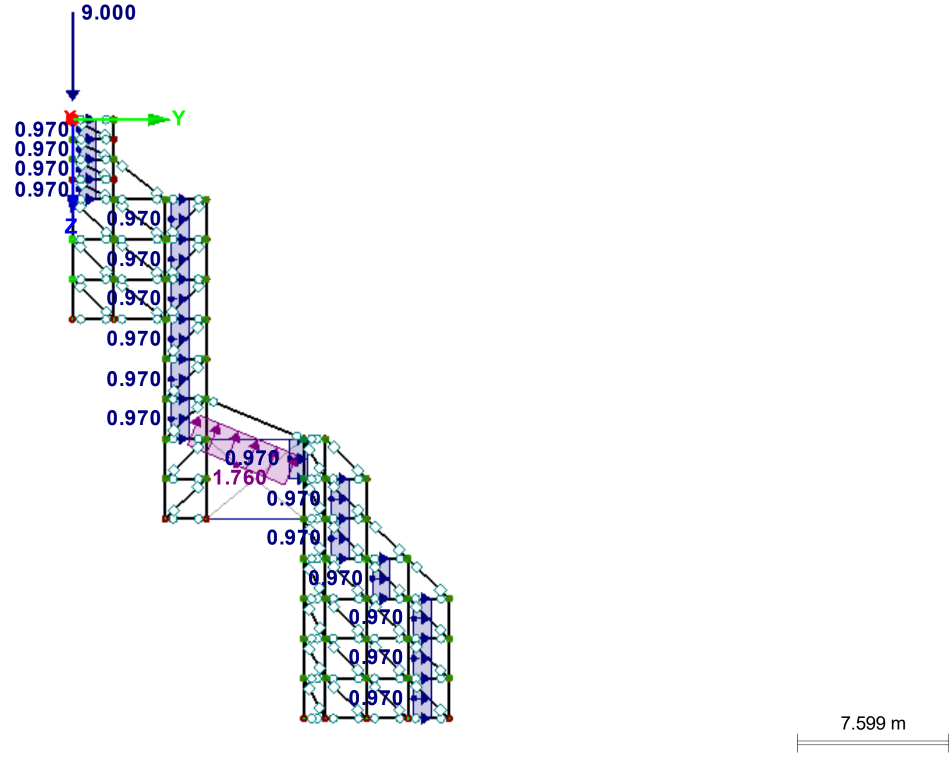
LC3: Wind

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	463,480, 502,524, 563,658	Force	Uniform	Y	True Length	p	0.970	kN/m
2	Members	578	Force	Uniform	Y	True Length	p	0.970	kN/m
3	Members	891	Force	Uniform	z	True Length	p	-1.760	kN/m
4	Members	3,4,34,35, 74,186,211, 234,259,281	Force	Uniform	Y	True Length	p	0.970	kN/m

LC3: WIND

LC3 : Wind
Belastung [kN/m], [kN]

In X-direction



LC4
Snow

3.2 MEMBER LOADS

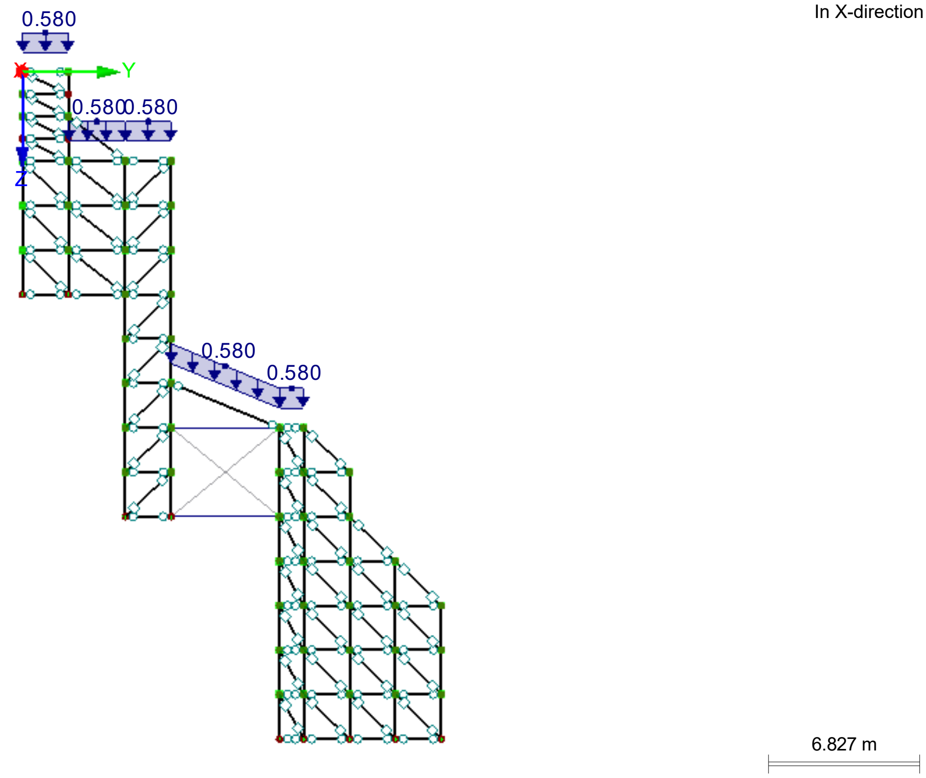
LC4: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	89,216,226, 767,891	Force	Uniform	Z	True Length	p	0.580	kN/m

LC4: SNOW

LC4 : Snow
Belastung [kN/m]

In X-direction



LC5
Earthquake

3.2 MEMBER LOADS

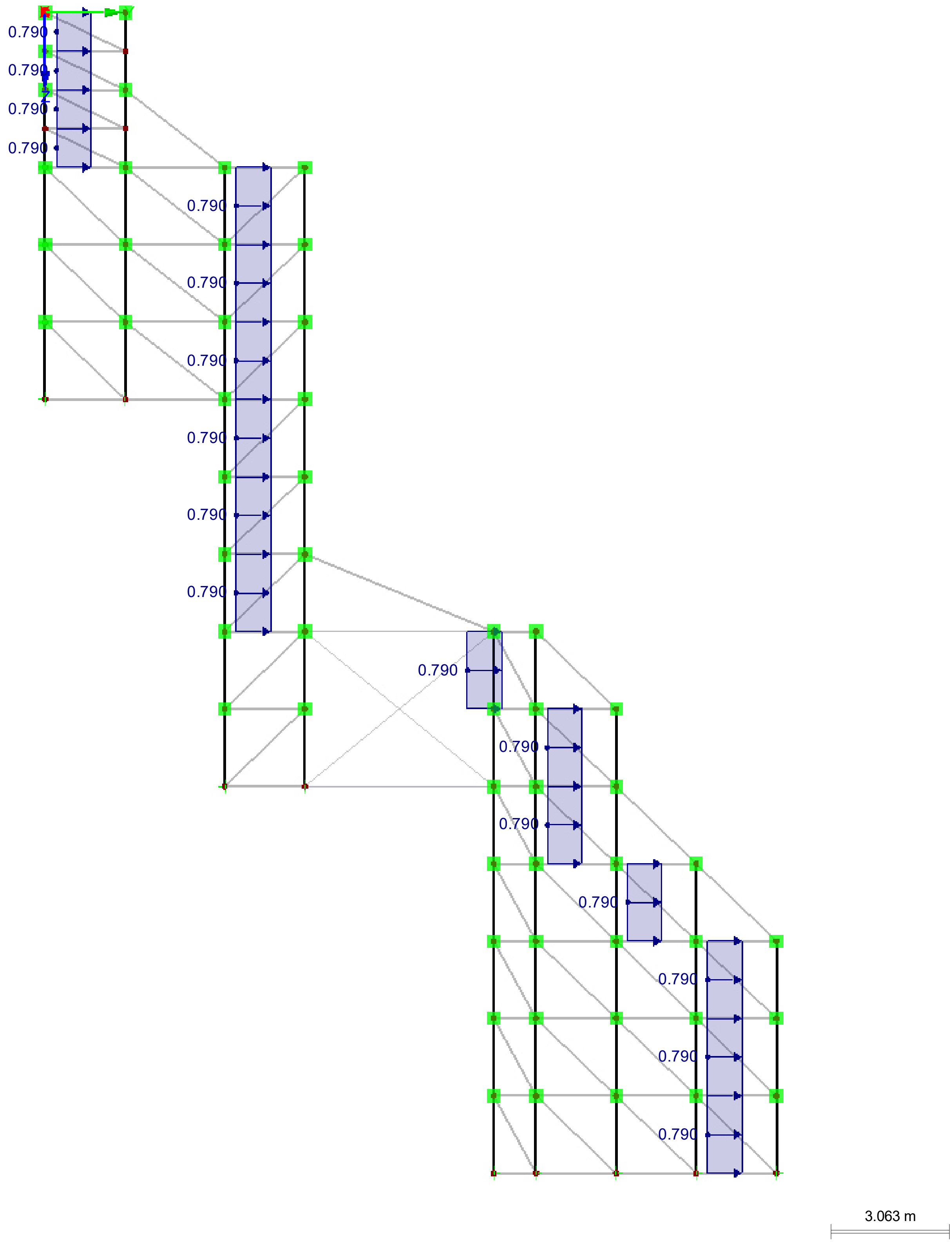
LC5: Earthquake

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	4,35,463, 480,502, 524,563,658	Force	Uniform	Y	True Length	p	0.790	kN/m
2	Members	578	Force	Uniform	Y	True Length	p	0.790	kN/m
4	Members	3,34,74, 186,211, 234,259,281	Force	Uniform	Y	True Length	p	0.790	kN/m

■ LC5: EARTHQUAKE

LC5 : Earthquake
Belastung [kN/m]

In X-direction



■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	41.20	kN	
	Sum of support reactions in Z	41.20	kN	Deviation 0.00%
	Resultant of reactions about X	-40.72	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.37	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 524, x: 1.333 m
	Max displacement in Y	-0.5	mm	Member No. 885, x: 0.000 m
	Max displacement in Z	2.3	mm	Member No. 2, x: 1.000 m
	Max vectorial displacement	2.4	mm	Member No. 2, x: 1.000 m
	Max rotation about X	-0.3	mrad	Member No. 34, x: 0.850 m
	Max rotation about Y	0.1	mrad	Member No. 536, x: 2.020 m
	Max rotation about Z	0.0	mrad	Member No. 539, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC2 - Live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	21.61	kN	
	Sum of support reactions in Z	21.61	kN	Deviation 0.00%
	Resultant of reactions about X	-103.27	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.19	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 638, x: 1.333 m
	Max displacement in Y	-0.6	mm	Member No. 891, x: 5.274 m
	Max displacement in Z	1.5	mm	Member No. 792, x: 0.520 m
	Max vectorial displacement	1.5	mm	Member No. 792, x: 0.520 m
	Max rotation about X	-3.3	mrad	Member No. 792, x: 0.988 m
	Max rotation about Y	0.1	mrad	Member No. 645, x: 0.000 m
	Max rotation about Z	0.0	mrad	Member No. 758, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC3 - Wind			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	32.62	kN	
	Sum of support reactions in Y	32.62	kN	Deviation 0.00%
	Sum of loads in Z	0.41	kN	
	Sum of support reactions in Z	0.41	kN	Deviation 0.00%
	Resultant of reactions about X	-32.91	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.29	kNm	At center of gravity of model
	Max displacement in X	-0.4	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	13.2	mm	Member No. 658, x: 0.900 m
	Max displacement in Z	-2.6	mm	Member No. 244, x: 2.723 m
	Max vectorial displacement	13.2	mm	Member No. 658, x: 0.900 m
	Max rotation about X	7.7	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	1.4	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	0.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC4 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	7.47	kN	
	Sum of support reactions in Z	7.47	kN	Deviation 0.00%
	Resultant of reactions about X	-19.98	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	-0.07	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.0	mm	Member No. 748, x: 1.333 m
	Max displacement in Y	0.8	mm	Member No. 211, x: 1.300 m
	Max displacement in Z	7.1	mm	Member No. 226, x: 1.260 m
	Max vectorial displacement	7.1	mm	Member No. 226, x: 1.260 m
	Max rotation about X	7.5	mrad	Member No. 226, x: 0.378 m
	Max rotation about Y	0.1	mrad	Member No. 755, x: 0.000 m
	Max rotation about Z	-0.0	mrad	Member No. 335, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC5 - Earthquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	23.70	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	23.70	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	0.00	kN	
	Resultant of reactions about X	35.91	kNm	At center of gravity of model (X:-0.01, Y:9.11, Z:16.52 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.21	kNm	At center of gravity of model
	Max displacement in X	-0.3	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	9.3	mm	Member No. 463, x: 1.000 m
	Max displacement in Z	1.5	mm	Member No. 470, x: 1.111 m
	Max vectorial displacement	9.3	mm	Member No. 463, x: 1.000 m
	Max rotation about X	6.2	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	1.1	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	0.6	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	29.36	kN	
	Sum of support reactions in Y	29.36	kN	Deviation 0.00%
	Sum of loads in Z	88.41	kN	
	Sum of support reactions in Z	88.41	kN	Deviation 0.00%
	Max displacement in X	-0.4	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	12.1	mm	Member No. 658, x: 0.900 m
	Max displacement in Z	6.7	mm	Member No. 2, x: 1.000 m
	Max vectorial displacement	12.2	mm	Member No. 658, x: 0.900 m
	Max rotation about X	7.1	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	1.4	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	0.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	48.93	kN	
	Sum of support reactions in Y	48.93	kN	Deviation 0.00%
	Sum of loads in Z	75.69	kN	
	Sum of support reactions in Z	75.69	kN	Deviation 0.00%
	Max displacement in X	-0.7	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	20.3	mm	Member No. 658, x: 0.900 m
	Max displacement in Z	6.9	mm	Member No. 2, x: 1.000 m
	Max vectorial displacement	20.4	mm	Member No. 658, x: 0.900 m
	Max rotation about X	11.9	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	2.3	mrad	Member No. 529, x: 2.000 m
	Max rotation about Z	1.2	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	48.93	kN	
	Sum of support reactions in Y	48.93	kN	Deviation -0.00%
	Sum of loads in Z	37.70	kN	
	Sum of support reactions in Z	37.70	kN	Deviation 0.00%
	Max displacement in X	-0.6	mm	Member No. 529, x: 1.333 m
	Max displacement in Y	20.4	mm	Member No. 658, x: 0.900 m
	Max displacement in Z	4.6	mm	Member No. 2, x: 1.000 m
	Max vectorial displacement	20.4	mm	Member No. 658, x: 0.900 m
	Max rotation about X	11.8	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	2.2	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	1.1	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Sum of loads in Z	99.24	kN	
Sum of support reactions in Z	99.24	kN	Deviation -0.00%
Max displacement in X	-0.1	mm	Member No. 320, x: 0.700 m
Max displacement in Y	1.3	mm	Member No. 211, x: 1.200 m
Max displacement in Z	15.0	mm	Member No. 226, x: 1.260 m
Max vectorial displacement	15.0	mm	Member No. 226, x: 1.260 m
Max rotation about X	11.5	mrad	Member No. 226, x: 0.378 m
Max rotation about Y	0.2	mrad	Member No. 332, x: 0.000 m
Max rotation about Z	-0.1	mrad	Member No. 335, x: 0.000 m
Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
Stiffness reduction multiplied by coefficient	☒		
Consider favorable effects of tensile forces	☒		
Divide results by CO factor	☐		
Number of load increments	1		
Number of iterations	5		
Calculate critical load factor	☐		
CO5 - Earthquake			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	-0.00	kN	
Sum of loads in Y	23.70	kN	
Sum of support reactions in Y	23.70	kN	Deviation 0.00%
Sum of loads in Z	41.20	kN	
Sum of support reactions in Z	41.20	kN	Deviation 0.00%
Max displacement in X	-0.3	mm	Member No. 529, x: 1.333 m
Max displacement in Y	9.4	mm	Member No. 463, x: 1.000 m
Max displacement in Z	3.1	mm	Member No. 216, x: 1.212 m
Max vectorial displacement	9.5	mm	Member No. 463, x: 1.000 m
Max rotation about X	6.3	mrad	Member No. 524, x: 1.800 m
Max rotation about Y	1.2	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	0.6	mrad	Member No. 648, x: 2.723 m
Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
Stiffness reduction multiplied by coefficient	☒		
Consider favorable effects of tensile forces	☒		
Divide results by CO factor	☐		
Number of load increments	1		
Number of iterations	4		
Calculate critical load factor	☐		
Summary			
Max displacement in X	-0.7	mm	CO2, Member No. 529, x: 1.333 m
Max displacement in Y	20.4	mm	CO3, Member No. 658, x: 0.900 m
Max displacement in Z	15.0	mm	CO4, Member No. 226, x: 1.260 m
Max vectorial displacement	20.4	mm	CO2, Member No. 658, x: 0.900 m
Max rotation about X	11.9	mrad	CO2, Member No. 524, x: 1.800 m
Max rotation about Y	2.3	mrad	CO2, Member No. 529, x: 2.000 m
Max rotation about Z	1.2	mrad	CO2, Member No. 648, x: 2.723 m
Number of 1D finite elements (member elements)	149		
Number of FE mesh nodes	66		
Number of equations	396		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		
Activate Release Nonlinearities	☒		
Activate failed members	☒		

Other Settings	Max number of iterations : 100 Number of divisions for member results : 10 Member divisions, cables, foundation or tapered members : 10 Number of member divisions for searching maximum values : 20
Options	☐ Activate shear stiffness of members (Ay, Az) ☒ Modify stiffness (material, cross-sections, members, load cases and combinations) ☒ Apply temperature/deformation load actions without stiffness modifications
Precision and Tolerance	☐ Change default setting
Nonlinear effects - Activate	☐ Support and elastic foundations ☒ Failing members due to member type ☒ Member hinges ☐ Member elastic foundation ☐ Member nonlinearities
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate Maximum number of reactivations : 3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
281	LC3	MAX N	0.000	▷ 4.43	0.00	-0.88	0.00	0.18	0.00
1	CO2	MIN N	0.000	▷ -26.72	0.00	0.04	0.00	-0.04	0.00
529	CO2	MAX V_y	0.667	-3.15	▷ 0.08	0.11	0.00	-0.02	0.00
320	CO2	MIN V_y	1.333	-11.75	▷ -0.07	-0.05	0.00	0.00	0.00
563	CO3	MAX V_z	2.000	-4.91	0.00	▷ 1.81	0.00	0.79	0.00
578	CO3	MIN V_z	0.000	-8.29	0.00	▷ -1.72	0.00	0.78	0.00
320	CO3	MAX M_T	0.000	-4.90	-0.05	-0.04	▷ 0.00	0.06	-0.08
524	CO2	MIN M_T	2.000	-4.83	0.06	1.34	▷ 0.00	0.23	-0.09
563	CO2	MAX M_y	2.000	-7.13	0.00	1.80	0.00	▷ 0.79	0.00
463	CO2	MIN M_y	0.900	-4.55	0.00	-0.04	0.00	▷ -0.45	0.00
529	CO2	MAX M_z	0.000	-3.15	0.07	0.10	0.00	-0.09	▷ 0.05
529	CO2	MIN M_z	2.000	-3.15	0.07	0.10	0.00	0.12	▷ -0.10
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
332	CO2	MAX N	0.909	▷ 19.32	0.00	-0.05	0.01	0.00	0.00
310	CO3	MIN N	0.000	▷ -2.19	0.00	-0.06	0.00	0.08	0.00
332	CO4	MAX V_y	0.000	-0.06	▷ 0.00	0.00	0.00	0.00	0.00
867	CO2	MIN V_y	1.040	1.34	▷ 0.00	-0.11	0.02	-0.05	0.00
792	CO4	MAX V_z	0.000	-0.18	0.00	▷ 1.79	0.00	-0.11	0.00
792	CO4	MIN V_z	1.040	-0.18	0.00	▷ -1.83	0.00	-0.13	0.00
867	CO2	MAX M_T	1.040	1.34	0.00	-0.11	▷ 0.02	-0.05	0.00
332	CO4	MIN M_T	0.000	-0.06	0.00	0.00	▷ 0.00	0.00	0.00
226	CO4	MAX M_y	1.260	-0.21	0.00	0.00	0.00	▷ 0.38	0.00
226	CO4	MIN M_y	2.520	-0.21	0.00	-1.10	0.00	▷ -0.31	0.00
867	CO2	MAX M_z	1.040	1.34	0.00	-0.11	0.02	-0.05	▷ 0.00
867	CO2	MIN M_z	0.000	1.34	0.00	-0.11	0.02	0.06	▷ 0.00
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
313	CO3	MAX N	0.000	▷ 3.02	0.00	0.00	0.00	0.00	0.00
244	CO3	MIN N	0.000	▷ -3.96	0.00	0.00	0.00	0.00	0.00
539	CO4	MAX V_y	0.000	-0.14	▷ 0.00	0.00	0.00	0.00	0.00
758	CO2	MIN V_y	2.723	-2.67	▷ 0.00	0.00	0.01	0.00	0.00
795	CO3	MAX V_z	0.000	-2.15	0.00	▷ 0.00	0.00	0.00	0.00
810	CO2	MIN V_z	0.000	1.66	0.00	▷ 0.00	0.00	0.00	0.00
648	CO2	MAX M_T	0.000	-3.09	0.00	0.00	▷ 0.01	0.00	0.00
335	CO4	MIN M_T	0.000	-0.25	0.00	0.00	▷ 0.00	0.00	0.00
810	LC3	MAX M_y	0.000	1.12	0.00	0.00	0.00	▷ 0.00	0.00
648	CO2	MIN M_y	2.723	-3.09	0.00	0.00	0.01	▷ 0.00	0.00
335	CO4	MAX M_z	0.000	-0.25	0.00	0.00	0.00	0.00	▷ 0.00
758	CO2	MIN M_z	0.000	-2.67	0.00	0.00	0.01	0.00	▷ 0.00
	Section No. 7: GI-KDXL Kederdach XL								
891	LC4	MAX N	5.274	▷ 0.54	0.00	-1.42	0.00	0.00	0.00
891	CO2	MIN N	2.901	▷ -5.40	0.00	0.70	0.00	-9.09	0.00
891	LC1	MAX V_y	0.000	-0.11	▷ 0.00	0.00	0.00	0.00	0.00
891	LC1	MIN V_y	0.000	-0.11	▷ 0.00	0.00	0.00	0.00	0.00
891	CO2	MAX V_z	5.274	-5.39	0.00	▷ 6.96	0.00	0.00	0.00
891	CO2	MIN V_z	0.000	-5.39	0.00	▷ -6.96	0.00	0.00	0.00
891	LC1	MAX M_T	0.000	-0.11	0.00	0.00	▷ 0.00	0.00	0.00
891	LC1	MIN M_T	0.000	-0.11	0.00	0.00	▷ 0.00	0.00	0.00
891	CO4	MAX M_y	2.637	-0.48	0.00	0.00	0.00	▷ 2.80	0.00
891	CO2	MIN M_y	2.637	-5.40	0.00	0.00	0.00	▷ -9.18	0.00
891	LC1	MAX M_z	0.000	-0.11	0.00	0.00	0.00	0.00	▷ 0.00
891	LC1	MIN M_z	0.000	-0.11	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 8: RD 8 | DIN 1013-1								
882	CO2	MAX N	0.000	▷ 10.63	0.00	0.00	0.00	0.00	0.00
883	LC4	MIN N	0.000	▷ 0.07	0.00	0.00	0.00	0.00	0.00
882	LC1	MAX V_y	0.000	0.17	▷ 0.00	0.00	0.00	0.00	0.00
882	LC1	MIN V_y	0.000	0.17	▷ 0.00	0.00	0.00	0.00	0.00
882	LC1	MAX V_z	0.000	0.17	0.00	▷ 0.00	0.00	0.00	0.00
882	LC1	MIN V_z	0.000	0.17	0.00	▷ 0.00	0.00	0.00	0.00
882	LC1	MAX M_T	0.000	0.17	0.00	0.00	▷ 0.00	0.00	0.00
882	LC1	MIN M_T	0.000	0.17	0.00	0.00	▷ 0.00	0.00	0.00
882	LC1	MAX M_y	0.000	0.17	0.00	0.00	0.00	▷ 0.00	0.00
882	LC1	MIN M_y	0.000	0.17	0.00	0.00	0.00	▷ 0.00	0.00
882	LC1	MAX M_z	0.000	0.17	0.00	0.00	0.00	0.00	▷ 0.00
882	LC1	MIN M_z	0.000	0.17	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 12: RRO 100x60x4 (warmgefertigt)								
878	CO3	MAX N	0.000	▷ 11.19	0.00	0.00	0.00	0.00	0.00
878	CO4	MIN N	0.000	▷ -0.30	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_y	0.000	-0.15	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_y	0.000	-0.15	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_z	0.000	-0.15	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MIN V_z	0.000	-0.15	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MAX M_T	0.000	-0.15	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MIN M_T	0.000	-0.15	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MAX M_y	0.000	-0.15	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MIN M_y	0.000	-0.15	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MAX M_z	0.000	-0.15	0.00	0.00	0.00	0.00	▷ 0.00
878	LC1	MIN M_z	0.000	-0.15	0.00	0.00	0.00	0.00	▷ 0.00

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
2	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
4	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
8	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
9	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
20	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
26	LC1	0.00	0.03	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.07	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	2.54	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.08	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	2.72	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	2.22	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	3.80	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	3.85	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.06	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	2.76	0.00	0.00	0.00	0.00	Earthquake
32	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
38	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	2.15	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.05	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	1.99	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	1.94	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	3.24	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	3.25	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.07	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	2.01	0.00	0.00	0.00	0.00	Earthquake
44	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
44	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
50	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	1.80	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.01	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	1.45	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	1.63	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	2.71	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	2.70	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.02	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	1.46	0.00	0.00	0.00	0.00	Earthquake
51	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
56	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
57	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
62	LC1	0.00	-0.04	7.12	0.00	0.00	0.00	EG
	LC2	0.00	-0.02	4.72	0.00	0.00	0.00	Live Load
	LC3	0.00	6.22	4.75	0.00	0.00	0.00	Wind
	LC4	0.00	-0.12	0.70	0.00	0.00	0.00	Snow
	LC5	0.00	3.97	-1.85	0.00	0.00	0.00	Earthquake
	CO1	0.00	5.52	20.97	0.00	0.00	0.00	Bem-1
	CO2	0.00	9.25	20.97	0.00	0.00	0.00	Bem-2
	CO3	0.00	9.30	13.52	0.00	0.00	0.00	Bem-3
	CO4	0.00	-0.25	17.75	0.00	0.00	0.00	Bem-4
	CO5	0.00	3.93	5.27	0.00	0.00	0.00	Earthquake
63	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
68	LC1	0.00	0.00	5.87	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.77	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	1.75	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	1.31	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	-0.04	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	16.66	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	14.86	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	7.93	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	17.04	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	5.84	0.00	0.00	0.00	Earthquake
69	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.09	-0.09	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.06	-0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.08	-0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.13	-0.14	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.14	-0.14	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.06	-0.07	Earthquake
74	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
74	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
78	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
86	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	0.09	0.09	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.06	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.08	0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.13	0.14	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.14	0.14	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.06	0.07	Earthquake
89	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
93	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
94	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.01	-0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
107	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
110	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	-0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.03	-0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.02	0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
111	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.01	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.03	0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.04	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.02	-0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.07	0.07	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
116	LC5	0.00	0.00	0.00	0.00	0.03	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.06	0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.10	0.11	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.10	0.11	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.03	0.03	Earthquake
122	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	-0.04	-0.07	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.02	0.00	0.00	0.00	-0.02	-0.03	Earthquake
	CO1	0.04	0.00	0.00	0.00	-0.03	-0.06	Bem-1
	CO2	0.06	0.00	0.00	0.00	-0.06	-0.11	Bem-2
	CO3	0.06	0.00	0.00	0.00	-0.06	-0.11	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.02	0.00	0.00	0.00	-0.02	-0.03	Earthquake
125	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.07	0.07	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.03	0.03	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.06	0.06	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.10	0.11	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.10	0.11	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.03	0.03	Earthquake
131	LC1	0.00	-0.04	5.59	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.87	0.00	0.00	0.00	Live Load
	LC3	-0.04	14.28	-1.47	0.00	0.00	-0.07	Wind
	LC4	0.00	-0.11	1.48	0.00	0.00	0.00	Snow
	LC5	-0.02	8.97	0.13	0.00	0.00	-0.03	Earthquake
	CO1	-0.04	12.79	13.53	0.00	0.00	-0.06	Bem-1
	CO2	-0.06	21.36	9.73	0.00	0.00	-0.11	Bem-2
	CO3	-0.06	21.37	2.84	0.00	0.00	-0.11	Bem-3
	CO4	0.01	-0.24	17.08	0.00	0.00	0.01	Bem-4
	CO5	-0.02	8.93	5.72	0.00	0.00	-0.03	Earthquake
134	LC1	0.00	0.00	5.47	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.66	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	-6.03	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	1.86	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	-1.03	0.00	0.00	0.00	Earthquake
	CO1	-0.01	0.00	9.03	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	2.67	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	-3.97	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	17.22	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	4.49	0.00	0.00	0.00	Earthquake
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.02	0.02	Earthquake
167	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	-0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.02	-0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
173	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.02	0.02	Earthquake
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
179	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
179	LC3	0.00	0.00	0.00	0.00	0.12	-0.12	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.09	-0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.10	-0.10	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.17	-0.17	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.17	-0.17	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.08	-0.08	Earthquake
185	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	-0.01	Earthquake
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.02	0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.02	Earthquake
191	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.03	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	-0.04	0.00	0.00	0.00	0.00	-0.04	Bem-1
	CO2	-0.07	0.00	0.00	0.00	0.01	-0.06	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.01	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	-0.03	Earthquake
194	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.05	0.00	0.00	0.00	-0.05	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.04	0.00	0.00	0.00	-0.04	0.02	Earthquake
	CO1	-0.05	0.00	0.00	0.00	-0.05	0.02	Bem-1
	CO2	-0.07	0.00	0.00	0.00	-0.07	0.03	Bem-2
	CO3	-0.07	0.00	0.00	0.00	-0.07	0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.04	0.00	0.00	0.00	-0.04	0.02	Earthquake
197	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.05	0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.04	0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.08	0.08	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.08	0.08	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.04	0.05	Earthquake
203	LC1	0.00	0.02	3.28	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.02	0.00	0.00	0.00	Live Load
	LC3	0.04	1.35	1.63	0.00	0.00	-0.07	Wind
	LC4	0.00	0.02	0.01	0.00	0.00	0.00	Snow
	LC5	0.03	1.09	1.20	0.00	0.00	-0.05	Earthquake
	CO1	0.04	1.27	5.94	0.00	0.00	-0.06	Bem-1
	CO2	0.07	2.06	6.92	0.00	0.00	-0.10	Bem-2
	CO3	0.07	2.04	5.42	0.00	0.00	-0.10	Bem-3
	CO4	0.00	0.08	4.47	0.00	0.00	-0.01	Bem-4
	CO5	0.04	1.11	4.49	0.00	0.00	-0.06	Earthquake
206	LC1	0.00	0.01	3.96	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.07	0.00	0.00	0.00	Live Load
	LC3	0.05	1.26	-0.15	0.00	0.00	-0.07	Wind
	LC4	0.00	0.02	0.04	0.00	0.00	0.00	Snow
	LC5	0.04	1.02	-0.23	0.00	0.00	-0.06	Earthquake
	CO1	0.05	1.18	5.32	0.00	0.00	-0.07	Bem-1
	CO2	0.07	1.91	5.19	0.00	0.00	-0.12	Bem-2
	CO3	0.07	1.89	3.35	0.00	0.00	-0.11	Bem-3
	CO4	0.00	0.07	5.52	0.00	0.00	-0.01	Bem-4
	CO5	0.04	1.03	3.74	0.00	0.00	-0.06	Earthquake
209	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.03	Earthquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
215	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.03	Earthquake
221	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	-0.06	0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.04	0.00	0.00	0.00	-0.04	0.03	Earthquake
	CO1	-0.04	0.00	0.00	0.00	-0.06	0.04	Bem-1
	CO2	-0.07	0.00	0.00	0.00	-0.09	0.06	Bem-2
	CO3	-0.06	0.00	0.00	0.00	-0.09	0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.03	0.00	0.00	0.00	-0.05	0.03	Earthquake
227	LC1	0.00	0.00	4.17	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.29	0.00	0.00	0.00	Live Load
	LC3	0.04	1.13	0.87	0.00	0.00	-0.07	Wind
	LC4	0.00	0.02	0.20	0.00	0.00	0.00	Snow
	LC5	0.04	0.92	0.56	0.00	0.00	-0.06	Earthquake
	CO1	0.04	1.05	6.89	0.00	0.00	-0.06	Bem-1
	CO2	0.07	1.71	7.26	0.00	0.00	-0.10	Bem-2
	CO3	0.06	1.69	5.11	0.00	0.00	-0.10	Bem-3
	CO4	0.00	0.07	6.38	0.00	0.00	0.00	Bem-4
	CO5	0.03	0.92	4.76	0.00	0.00	-0.05	Earthquake
233	LC1	0.00	0.00	0.00	0.00	0.01	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	-0.01	Earthquake
239	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.05	0.06	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.04	0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.04	0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.08	0.09	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.08	0.09	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.04	Earthquake
245	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.12	-0.09	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.09	-0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.11	-0.09	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.19	-0.15	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.19	-0.15	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.10	-0.08	Earthquake
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.02	0.00	Earthquake
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.05	Bem-3

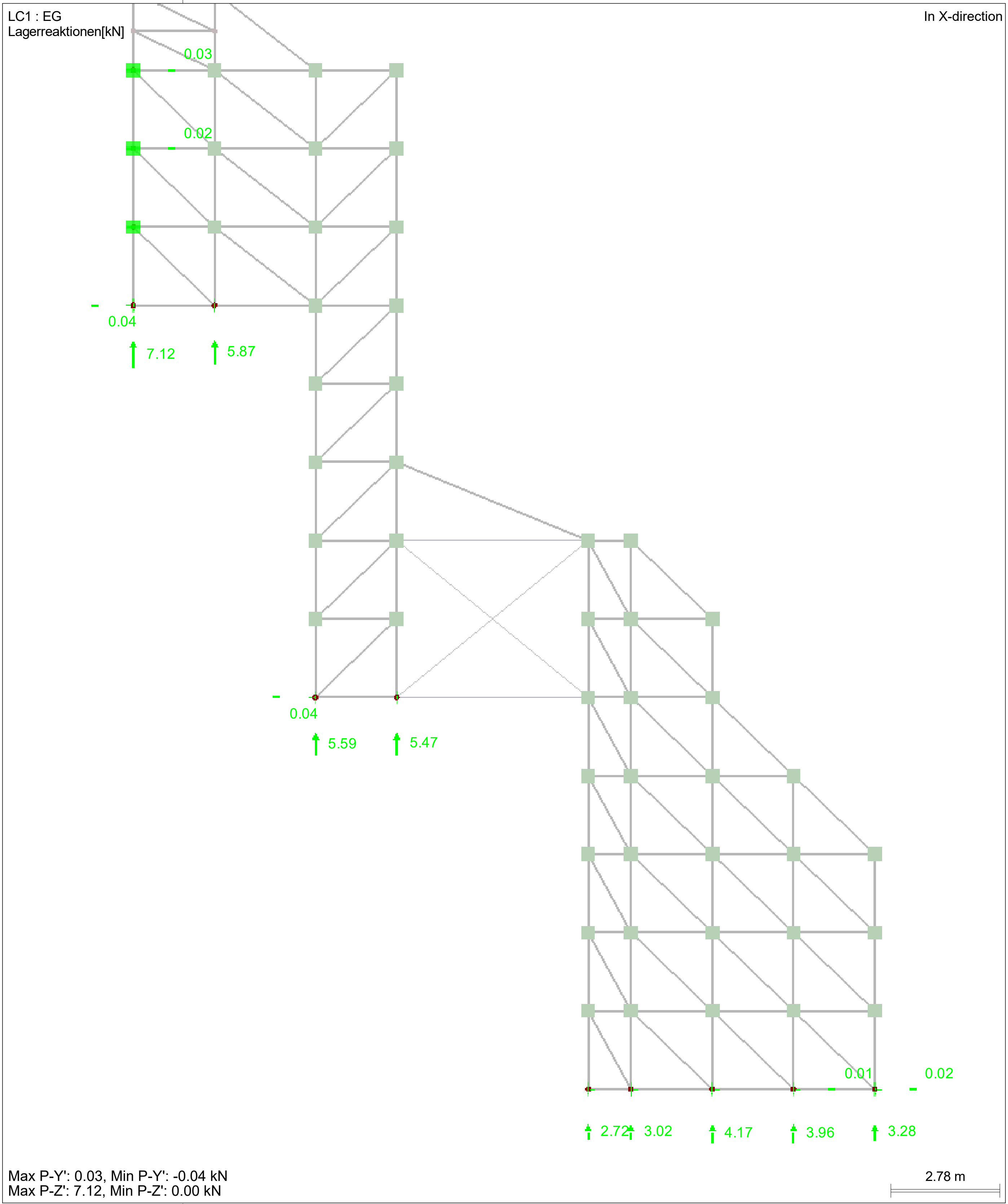
■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
263	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.02	0.02	Earthquake
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	-0.05	0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.03	0.00	0.00	0.00	-0.04	0.04	Earthquake
	CO1	-0.03	0.00	0.00	0.00	-0.04	0.05	Bem-1
	CO2	-0.05	0.00	0.00	0.00	-0.07	0.08	Bem-2
	CO3	-0.05	0.00	0.00	0.00	-0.07	0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.03	0.00	0.00	0.00	-0.04	0.04	Earthquake
275	LC1	0.00	0.00	3.02	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.02	0.00	0.00	0.00	Live Load
	LC3	0.03	0.98	-0.09	0.00	0.00	-0.03	Wind
	LC4	0.00	0.02	0.68	0.00	0.00	0.00	Snow
	LC5	0.03	0.80	0.54	0.00	0.00	-0.03	Earthquake
	CO1	0.03	0.91	5.48	0.00	0.00	-0.03	Bem-1
	CO2	0.05	1.48	4.79	0.00	0.00	-0.05	Bem-2
	CO3	0.05	1.46	2.50	0.00	0.00	-0.05	Bem-3
	CO4	0.00	0.06	6.61	0.00	0.00	0.00	Bem-4
	CO5	0.03	0.80	3.54	0.00	0.00	-0.03	Earthquake
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.03	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.03	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.00	Earthquake
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.06	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.05	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.06	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.09	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.09	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.05	0.03	Earthquake
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.05	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.04	-0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.04	-0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.07	-0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.07	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.04	-0.02	Earthquake
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.01	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.02	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	0.00	Earthquake
305	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Earthquake
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.03	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.02	Earthquake
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	-0.06	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.01	0.00	0.00	0.00	-0.05	0.03	Earthquake
	CO1	-0.01	0.00	0.00	0.00	-0.05	0.03	Bem-1

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
317	CO2	-0.01	0.00	0.00	0.00	-0.09	0.05	Bem-2
	CO3	-0.01	0.00	0.00	0.00	-0.08	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	-0.01	0.00	0.00	0.00	-0.05	0.03	Earthquake
323	LC1	0.00	0.00	2.72	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.21	0.00	0.00	0.00	Live Load
	LC3	0.01	0.92	-0.85	0.00	0.00	0.00	Wind
	LC4	0.00	0.02	1.17	0.00	0.00	0.00	Snow
	LC5	0.01	0.76	0.70	0.00	0.00	0.00	Earthquake
	CO1	0.01	0.85	4.60	0.00	0.00	0.00	Bem-1
	CO2	0.01	1.39	3.29	0.00	0.00	0.00	Bem-2
	CO3	0.01	1.38	0.98	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.06	7.17	0.00	0.00	0.00	Bem-4
	CO5	0.01	0.75	3.36	0.00	0.00	0.00	Earthquake
Σ Supp.	LC1	0.00	0.00	41.20				
Σ Loads	LC1	0.00	0.00	41.20				
Σ Supp.	LC2	0.00	0.00	21.61				
Σ Loads	LC2	0.00	0.00	21.61				
Σ Supp.	LC3	0.00	32.62	0.41				
Σ Loads	LC3	0.00	32.62	0.41				
Σ Supp.	LC4	0.00	0.00	7.47				
Σ Loads	LC4	0.00	0.00	7.47				
Σ Supp.	LC5	0.00	23.70	0.00				
Σ Loads	LC5	0.00	23.70	0.00				
Σ Supp.	CO1	0.00	29.36	88.41				
Σ Loads	CO1	0.00	29.36	88.41				
Σ Supp.	CO2	0.00	48.93	75.69				
Σ Loads	CO2	0.00	48.93	75.69				
Σ Supp.	CO3	0.00	48.93	37.70				
Σ Loads	CO3	0.00	48.93	37.70				
Σ Supp.	CO4	0.00	0.00	99.24				
Σ Loads	CO4	0.00	0.00	99.24				
Σ Supp.	CO5	0.00	23.70	41.20				
Σ Loads	CO5	0.00	23.70	41.20				

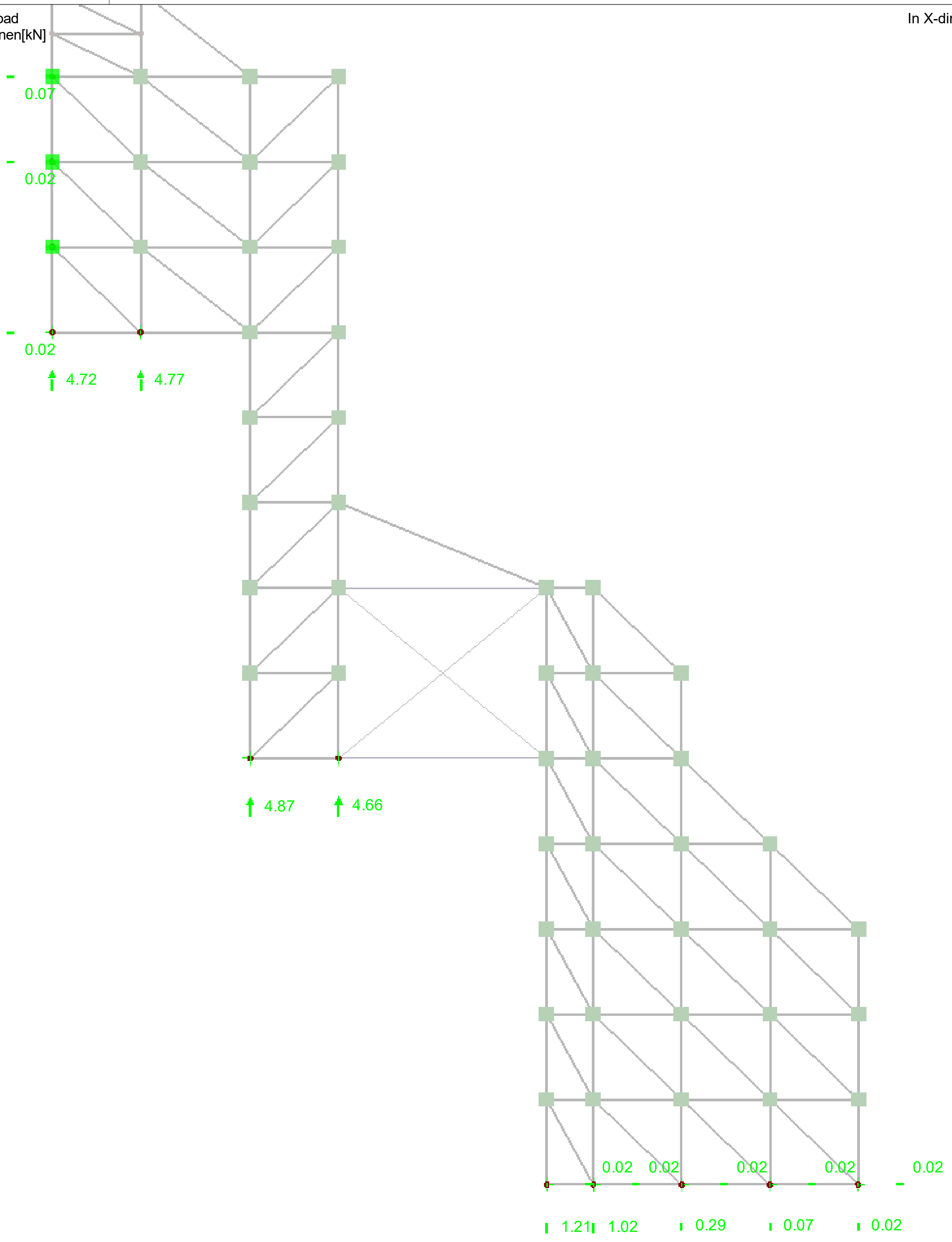
LAGERREAKTIONEN



LAGERREAKTIONEN

LC2 : Live Load
Lagerreaktionen[kN]

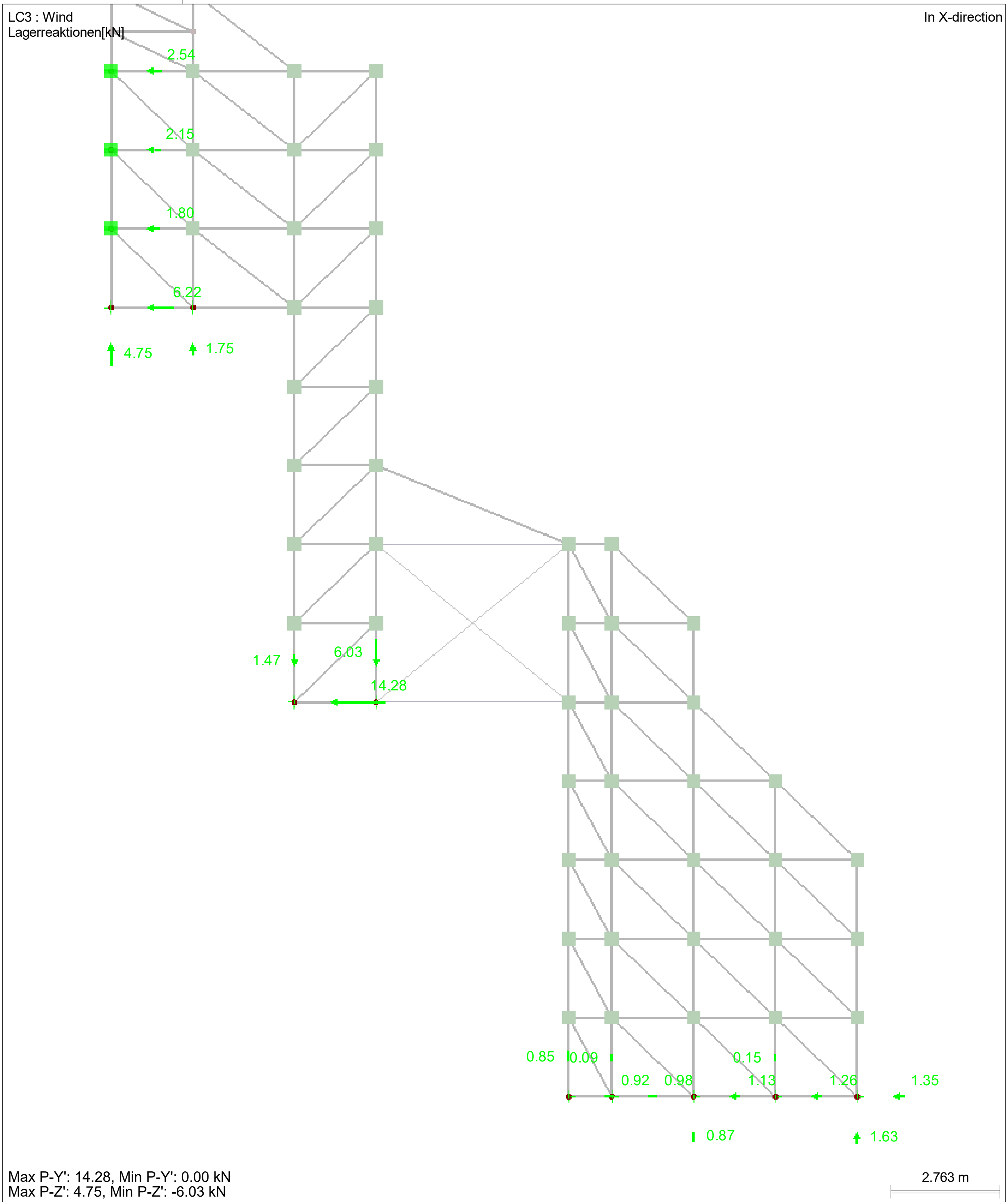
In X-direction



Max P-Y': 0.02, Min P-Y': -0.07 kN
Max P-Z': 4.87, Min P-Z': 0.00 kN

2.756 m

■ LAGERREAKTIONEN



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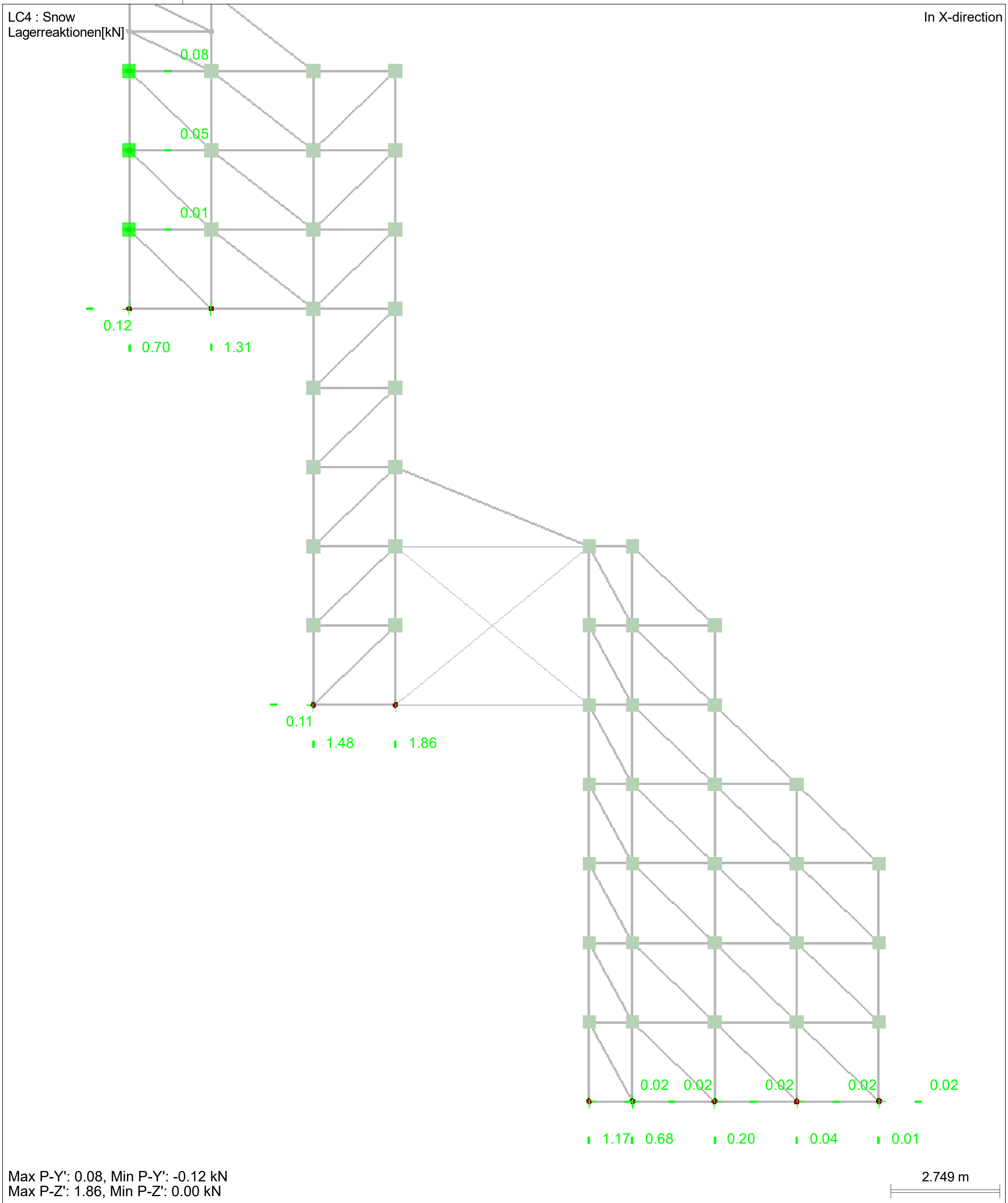
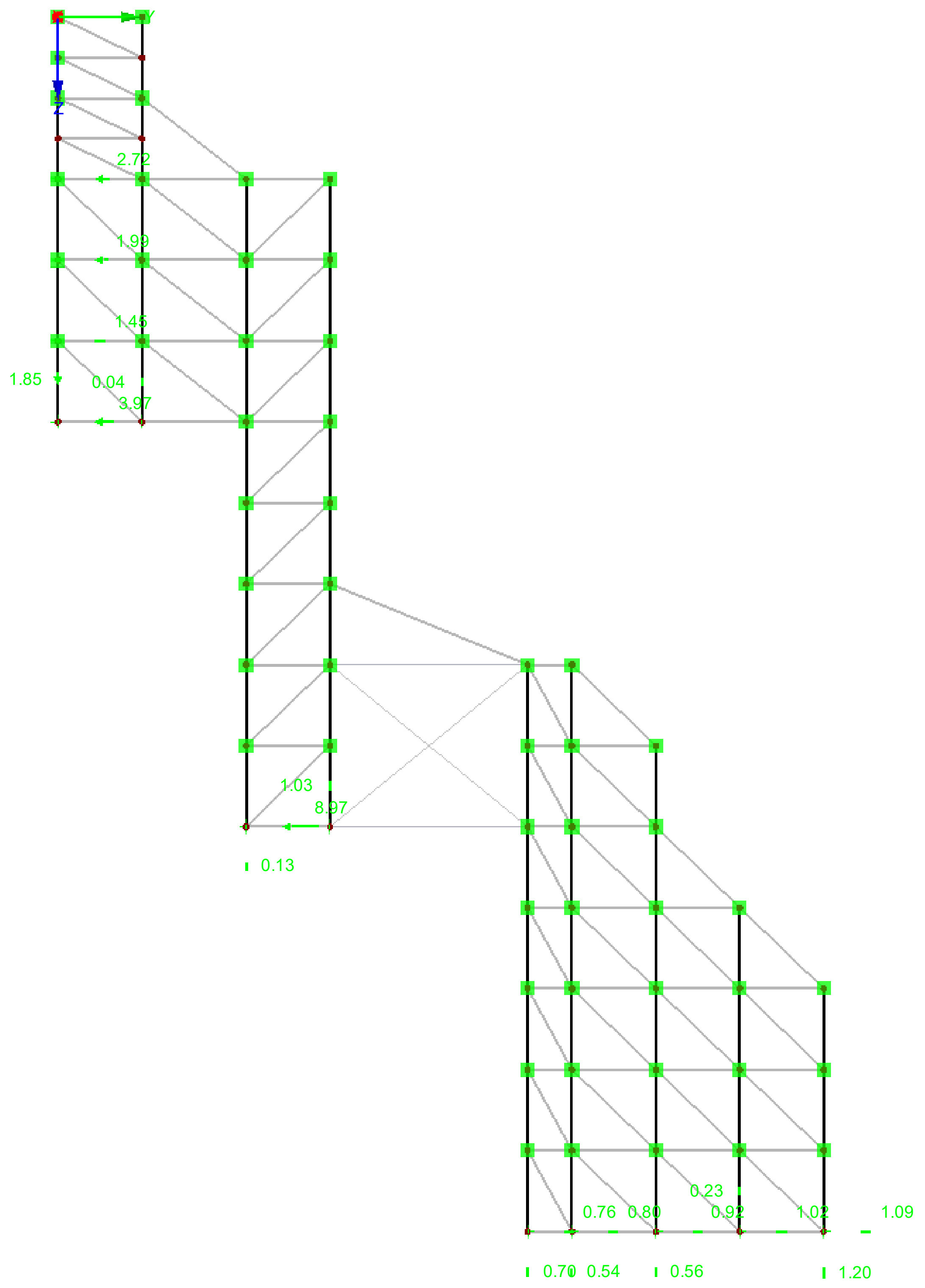


LAGERREAKTIONEN

LC5 : Earthquake
Lagerreaktionen[kN]

In X-direction



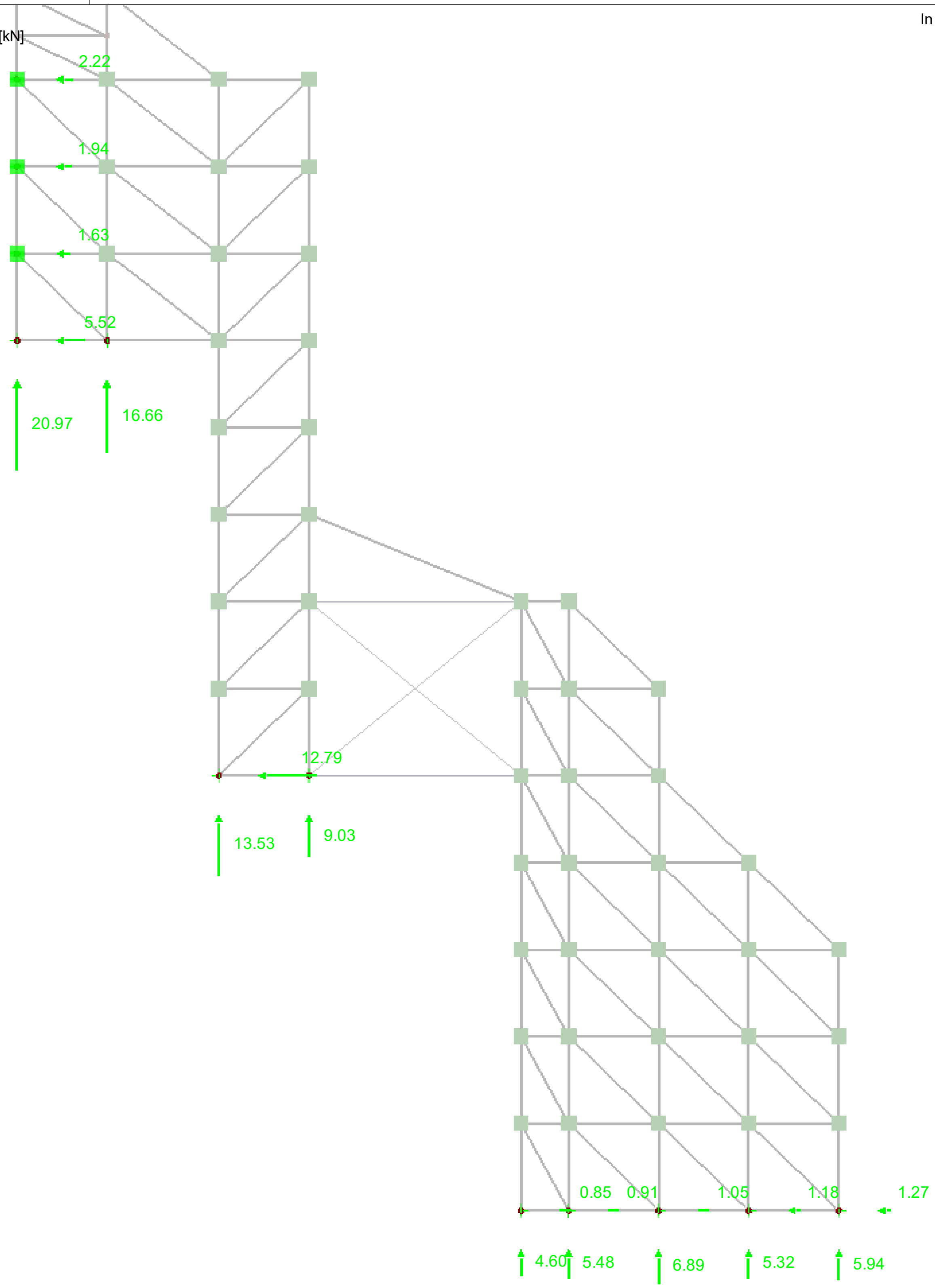
Max P-Y': 8.97, Min P-Y': 0.00 kN
Max P-Z': 1.20, Min P-Z': -1.85 kN

3.162 m

LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

In X-direction

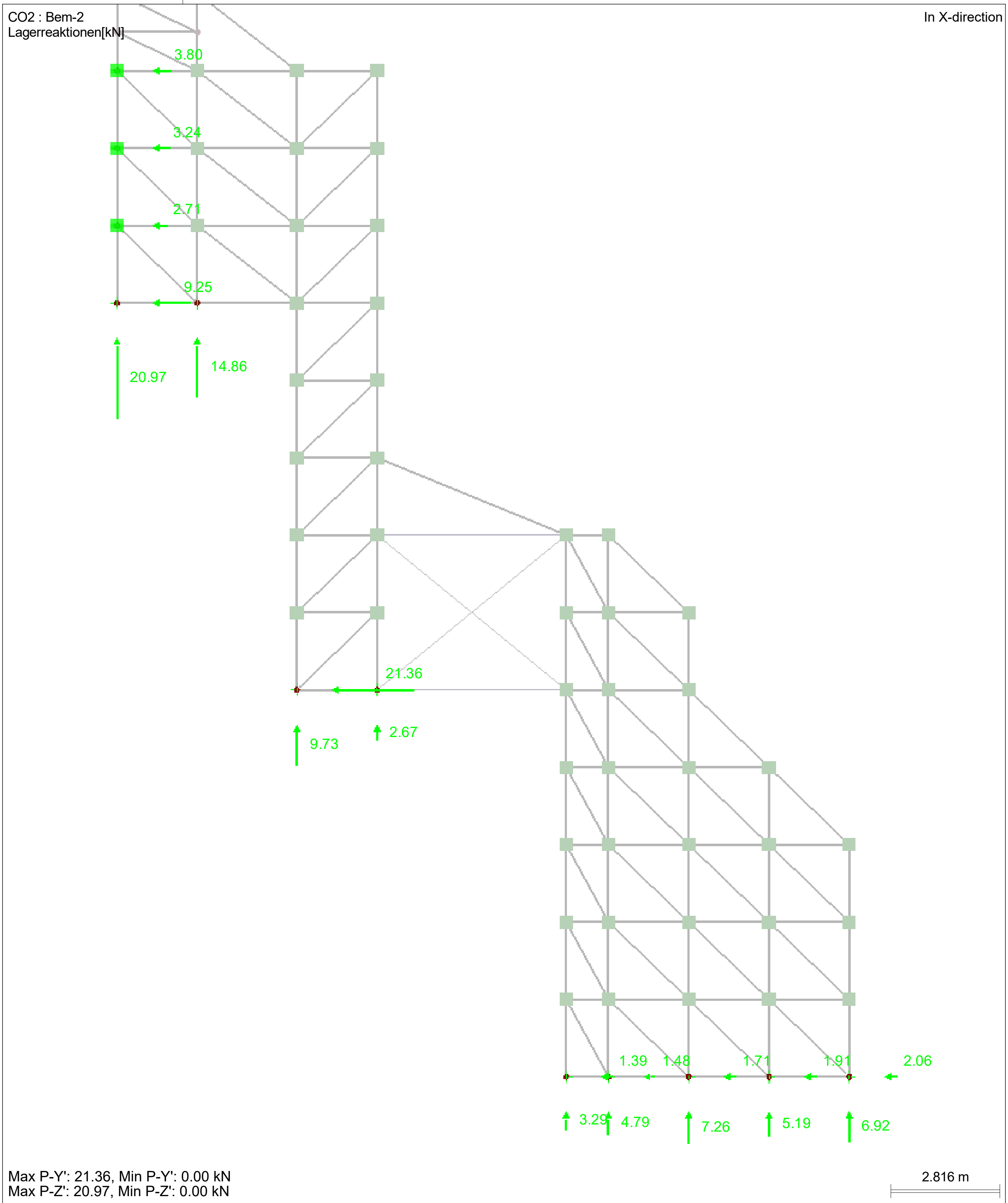


Max P-Y': 12.79, Min P-Y': 0.00 kN
Max P-Z': 20.97, Min P-Z': 0.00 kN

2.812 m

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

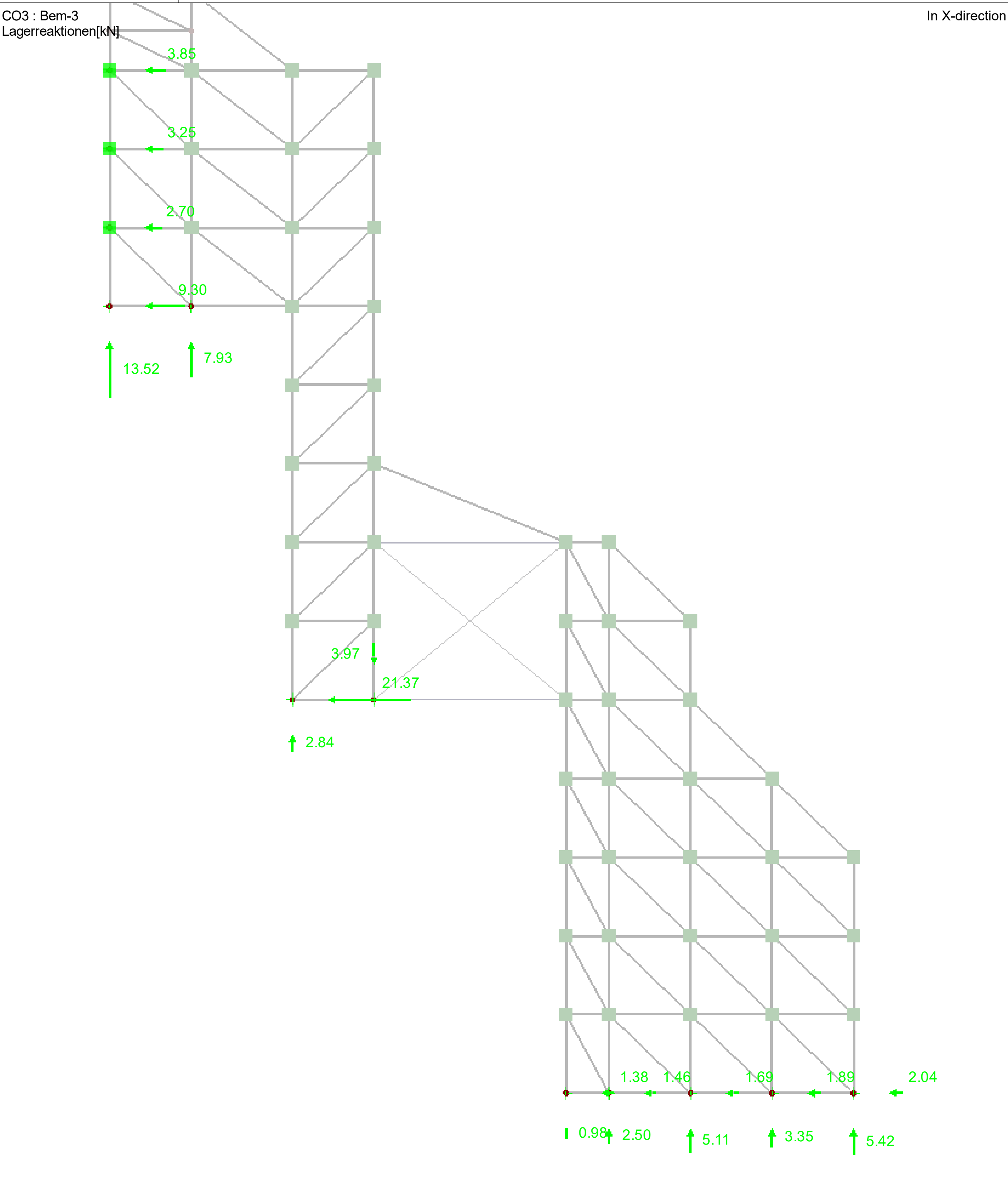
LAGERREAKTIONEN



■ LAGERREAKTIONEN

CO3 : Bem-3
Lagerreaktionen[kN]

In X-direction



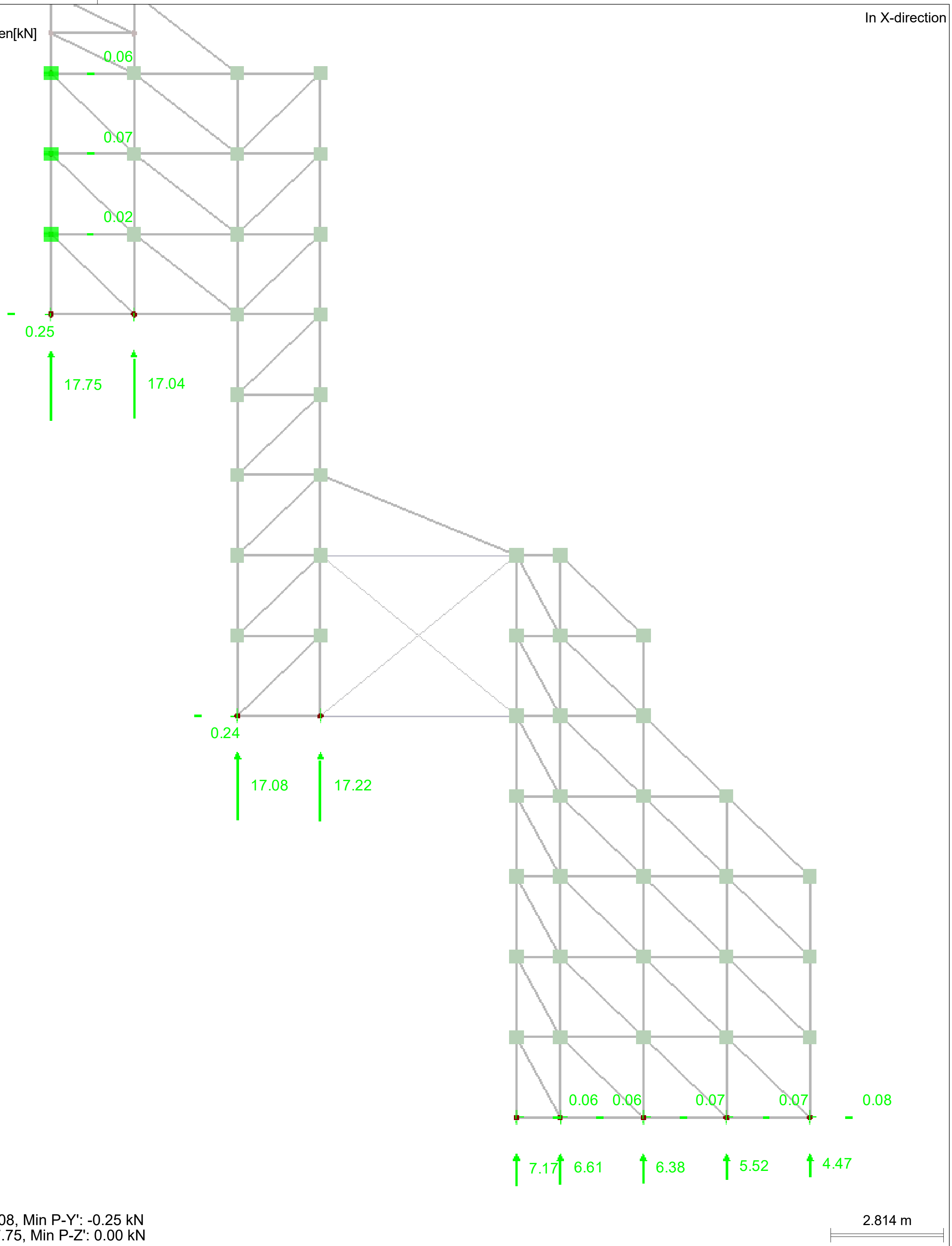
Max P-Y': 21.37, Min P-Y': 0.00 kN
Max P-Z': 13.52, Min P-Z': -3.97 kN

2.799 m

LAGERREAKTIONEN

CO4 : Bem-4
Lagerreaktionen[kN]

In X-direction

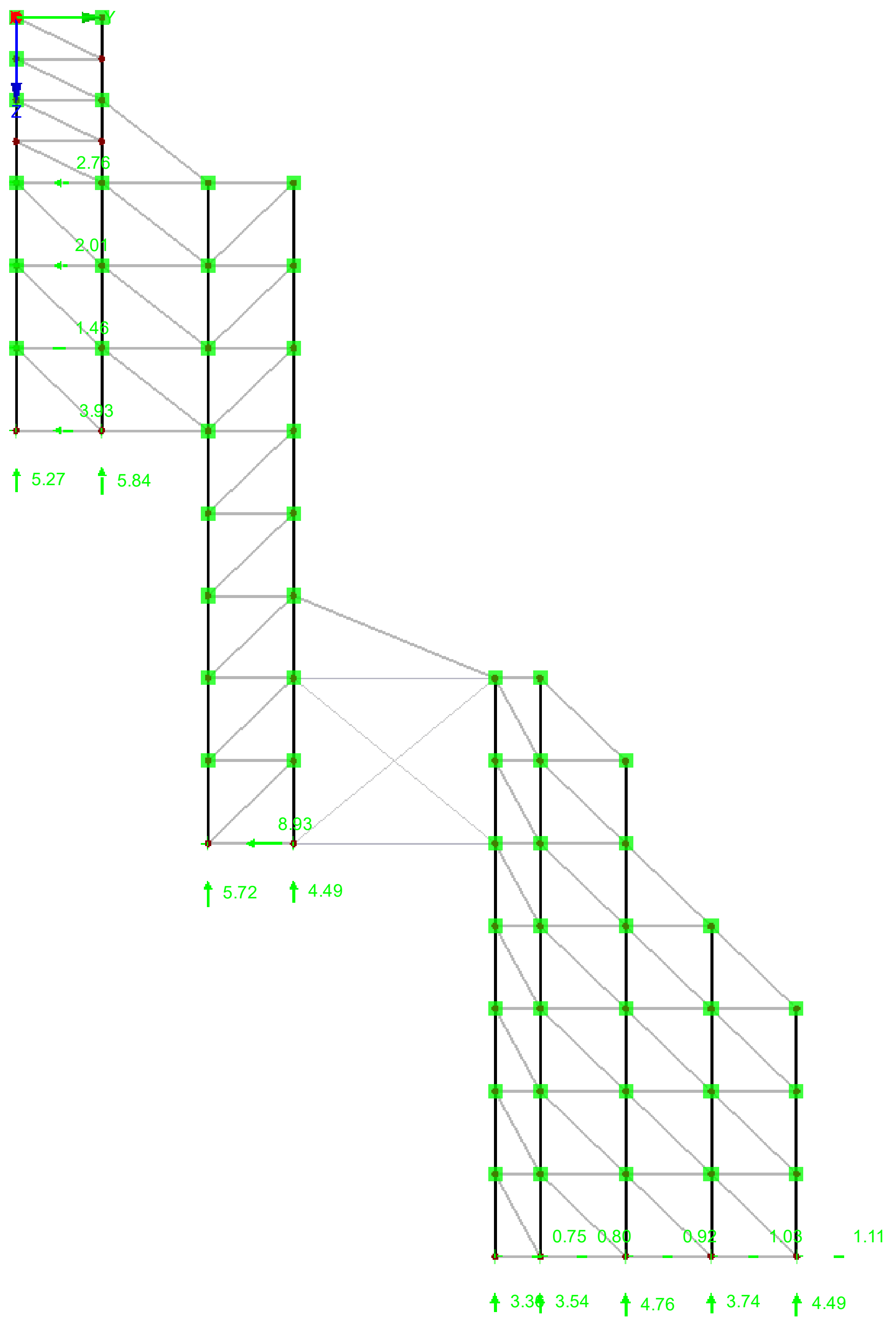


Max P-Y': 0.08, Min P-Y': -0.25 kN
Max P-Z': 17.75, Min P-Z': 0.00 kN

LAGERREAKTIONEN

CO5 : Earthquake
Lagerreaktionen[kN]

In X-direction



Max P-Y': 8.93, Min P-Y': 0.00 kN
Max P-Z': 5.84, Min P-Z': 0.00 kN

3.191 m

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
281	RC1		0.100	MAX N	1.76	0.00	-1.16	0.00	0.14	0.00	CO 3
1	RC1		0.000	MIN N	-26.72	0.00	0.04	0.00	-0.04	0.00	CO 2
529	RC1		0.667	MAX V_y	-3.15	0.08	0.11	0.00	-0.02	0.00	CO 2
320	RC1		1.333	MIN V_y	-11.75	-0.07	-0.05	0.00	0.00	0.00	CO 2
563	RC1		2.000	MAX V_z	-4.91	0.00	1.81	0.00	0.79	0.00	CO 3
578	RC1		0.000	MIN V_z	-8.29	0.00	-1.72	0.00	0.78	0.00	CO 3
320	RC1		0.000	MAX M_T	-4.90	-0.05	-0.04	0.00	0.06	-0.08	CO 3
524	RC1		2.000	MIN M_T	-4.83	0.06	1.34	0.00	0.23	-0.09	CO 2
563	RC1		2.000	MAX M_y	-7.13	0.00	1.80	0.00	0.79	0.00	CO 2
463	RC1		0.900	MIN M_y	-4.55	0.00	-0.04	0.00	-0.45	0.00	CO 2
529	RC1		0.000	MAX M_z	-3.15	0.07	0.10	0.00	-0.09	0.05	CO 2
529	RC1		2.000	MIN M_z	-3.15	0.07	0.10	0.00	0.12	-0.10	CO 2
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
332	RC1		0.909	MAX N	19.32	0.00	-0.05	0.01	0.00	0.00	CO 2
310	RC1		0.000	MIN N	-2.19	0.00	-0.06	0.00	0.08	0.00	CO 3
89	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
867	RC1		1.040	MIN V_y	1.34	0.00	-0.11	0.02	-0.05	0.00	CO 2
792	RC1		0.000	MAX V_z	-0.18	0.00	1.79	0.00	-0.11	0.00	CO 4
792	RC1		1.040	MIN V_z	-0.18	0.00	-1.83	0.00	-0.13	0.00	CO 4
867	RC1		1.040	MAX M_T	1.34	0.00	-0.11	0.02	-0.05	0.00	CO 2
332	RC1		0.000	MIN M_T	-0.06	0.00	0.00	0.00	0.00	0.00	CO 4
226	RC1		1.260	MAX M_y	-0.21	0.00	0.00	0.00	0.38	0.00	CO 4
226	RC1		2.520	MIN M_y	-0.21	0.00	-1.10	0.00	-0.31	0.00	CO 4
867	RC1		1.040	MAX M_z	1.34	0.00	-0.11	0.02	-0.05	0.00	CO 2
867	RC1		0.000	MIN M_z	1.34	0.00	-0.11	0.02	0.06	0.00	CO 2
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
313	RC1		0.000	MAX N	3.02	0.00	0.00	0.00	0.00	0.00	CO 3
244	RC1		0.000	MIN N	-3.96	0.00	0.00	0.00	0.00	0.00	CO 3
171	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
648	RC1		0.000	MAX M_T	-3.09	0.00	0.00	0.01	0.00	0.00	CO 2
335	RC1		0.000	MIN M_T	-0.25	0.00	0.00	0.00	0.00	0.00	CO 4
171	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 7: GI-KDXL Kederdach XL										
891	RC1		5.274	MAX N	0.39	0.00	-2.12	0.00	0.00	0.00	CO 4
891	RC1		2.901	MIN N	-5.40	0.00	0.70	0.00	-9.09	0.00	CO 2
891	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		5.274	MAX V_z	-5.39	0.00	6.96	0.00	0.00	0.00	CO 2
891	RC1		0.000	MIN V_z	-5.39	0.00	-6.96	0.00	0.00	0.00	CO 2
891	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		2.637	MAX M_y	-0.48	0.00	0.00	0.00	2.80	0.00	CO 4
891	RC1		2.637	MIN M_y	-5.40	0.00	0.00	0.00	-9.18	0.00	CO 2
891	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 8: RD 8 | DIN 1013-1										
882	RC1		0.000	MAX N	10.63	0.00	0.00	0.00	0.00	0.00	CO 2
882	RC1		0.000	MIN N	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
878	RC1		0.000	MAX N	11.19	0.00	0.00	0.00	0.00	0.00	CO 3
878	RC1		0.000	MIN N	-0.30	0.00	0.00	0.00	0.00	0.00	CO 4
878	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
2	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
4	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
8	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
9	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
20	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
26	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	3.85	0.00	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
32	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
38	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	3.25	0.00	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
44	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
50	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	2.71	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
51	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
56	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
57	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
62	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
62		Max $P_{Y'}$	0.00	9.30	13.52	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.25	17.75	0.00	0.00	0.00	CO 4
		Max $P_{Z'}$	0.00	9.25	20.97	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
63	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
68	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	17.04	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.14	-0.14	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.14	-0.14	CO 3
74	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
78	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
86	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.14	0.14	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.14	0.14	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
89	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
93	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
94	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.02	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.02	CO 3
107	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.02	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.02	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
110	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.02	0.02	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	-0.04	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.02	0.02	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	-0.04	CO 3
111	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
116	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
116		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.10	0.11	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.10	0.11	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
122	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	-0.06	-0.11	CO 3
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 4
		Max $M_{Y'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 4
		Min $M_{Y'}$	0.06	0.00	0.00	0.00	-0.06	-0.11	CO 3
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 4
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	-0.06	-0.11	CO 3
125	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.10	0.11	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
		Max $M_{Y'}$	0.01	0.00	0.00	0.00	0.10	0.11	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.10	0.11	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	-0.01	CO 4
131	RC1	Max $P_{X'}$	0.01	-0.24	17.08	0.00	0.00	0.01	CO 4
		Min $P_{X'}$	-0.06	21.37	2.84	0.00	0.00	-0.11	CO 3
		Max $P_{Y'}$	-0.06	21.37	2.84	0.00	0.00	-0.11	CO 3
		Min $P_{Y'}$	0.01	-0.24	17.08	0.00	0.00	0.01	CO 4
		Max $P_{Z'}$	0.01	-0.24	17.08	0.00	0.00	0.01	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.01	-0.24	17.08	0.00	0.00	0.01	CO 4
		Min $M_{Z'}$	-0.06	21.37	2.84	0.00	0.00	-0.11	CO 3
134	RC1	Max $P_{X'}$	0.00	0.00	17.22	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	-0.01	0.00	2.67	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	0.00	17.22	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	-0.01	0.00	-3.97	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	0.00	-3.97	0.00	0.00	0.00	CO 3
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
167	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.02	-0.02	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.02	-0.02	CO 3
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 4
176	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.17	-0.17	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.17	-0.17	CO 3
185	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
188	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
191	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.01	-0.06	CO 2
		Max $M_{Y'}$	-0.07	0.00	0.00	0.00	0.01	-0.06	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.07	0.00	0.00	0.00	0.01	-0.06	CO 2
194	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	-0.07	0.03	CO 2

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
194		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	-0.07	0.00	0.00	0.00	-0.07	0.03	CO 2
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	-0.07	0.03	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
197	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.08	0.08	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.08	0.08	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
203	RC1	Max $P_{X'}$	0.07	2.06	6.92	0.00	0.00	-0.10	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.07	2.06	6.92	0.00	0.00	-0.10	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.07	2.06	6.92	0.00	0.00	-0.10	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.07	2.06	6.92	0.00	0.00	-0.10	CO 2
206	RC1	Max $P_{X'}$	0.07	1.91	5.19	0.00	0.00	-0.12	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.07	1.91	5.19	0.00	0.00	-0.12	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.07	5.52	0.00	0.00	-0.01	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.07	1.91	5.19	0.00	0.00	-0.12	CO 2
209	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
215	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
221	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	-0.09	0.06	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	-0.07	0.00	0.00	0.00	-0.09	0.06	CO 2
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	-0.09	0.06	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
227	RC1	Max $P_{X'}$	0.07	1.71	7.26	0.00	0.00	-0.10	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.07	1.71	7.26	0.00	0.00	-0.10	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.07	1.71	7.26	0.00	0.00	-0.10	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.07	1.71	7.26	0.00	0.00	-0.10	CO 2
233	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
239	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.08	0.09	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.08	0.09	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 4
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.19	-0.15	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.19	-0.15	CO 3
251	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.01	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.01	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
257	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.02	CO 3

■ 4.4 NODES - SUPPORT FORCES

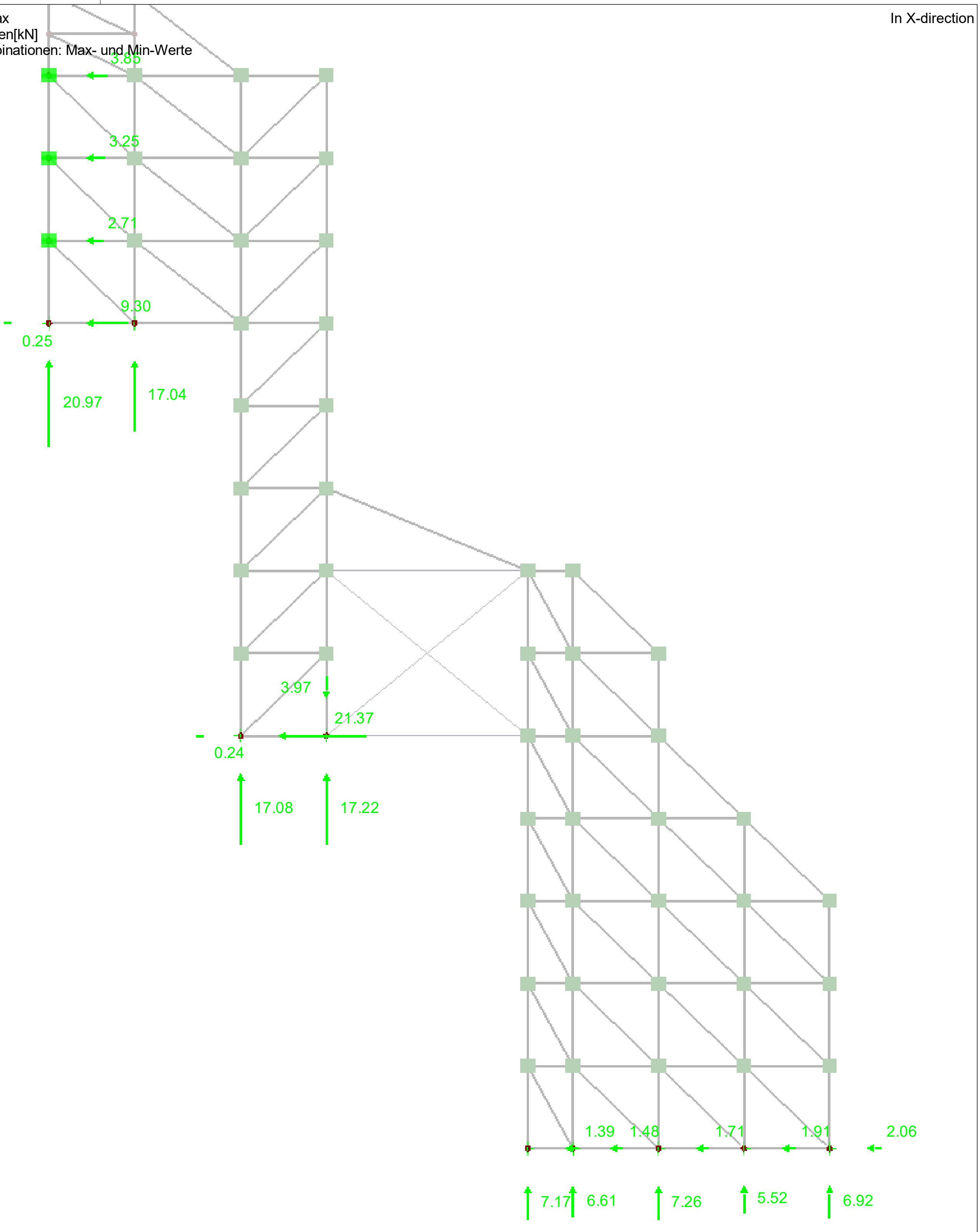
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
257		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	0.00	CO 4
263	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.05	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
269	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	-0.07	0.08	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	-0.05	0.00	0.00	0.00	-0.07	0.08	CO 2
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	-0.07	0.08	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
275	RC1	Max $P_{X'}$	0.05	1.48	4.79	0.00	0.00	-0.05	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.05	1.48	4.79	0.00	0.00	-0.05	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.06	6.61	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.05	1.48	4.79	0.00	0.00	-0.05	CO 2
281	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.01	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.01	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
287	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.09	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.09	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
293	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.07	-0.04	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.07	-0.04	CO 3
299	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.02	-0.01	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.02	-0.01	CO 3
305	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
311	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.03	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.03	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
317	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	-0.09	0.05	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	-0.01	0.00	0.00	0.00	-0.09	0.05	CO 2
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	-0.09	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
323	RC1	Max $P_{X'}$	0.01	1.39	3.29	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.01	1.39	3.29	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.06	7.17	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	1.39	3.29	0.00	0.00	0.00	CO 2

LAGERREAKTIONEN

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max P-Y': 21.37, Min P-Y': -0.25 kN
Max P-Z': 20.97, Min P-Z': -3.97 kN

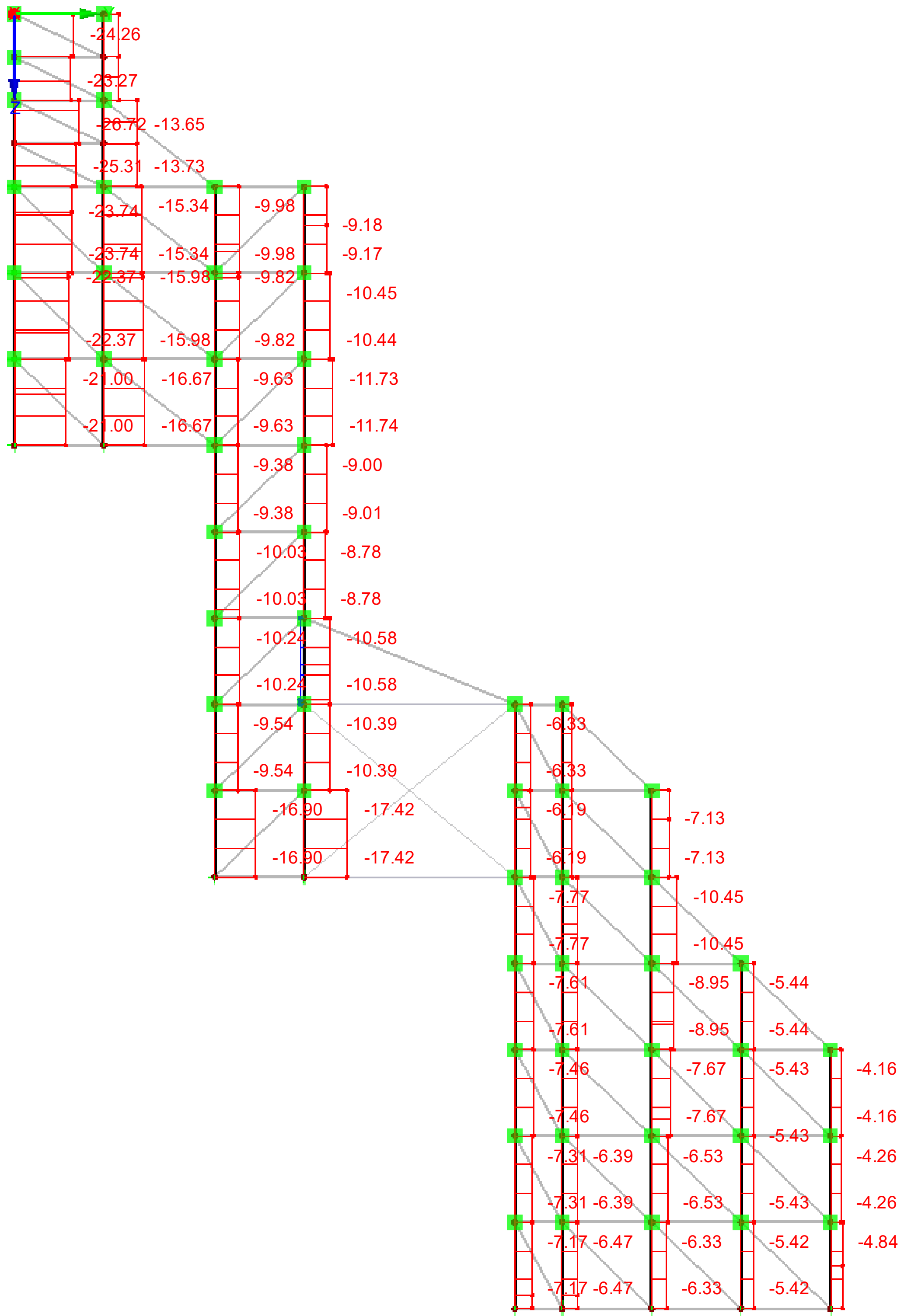
Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023 Model: K-1-TS-2b Date: 20.09.2023

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



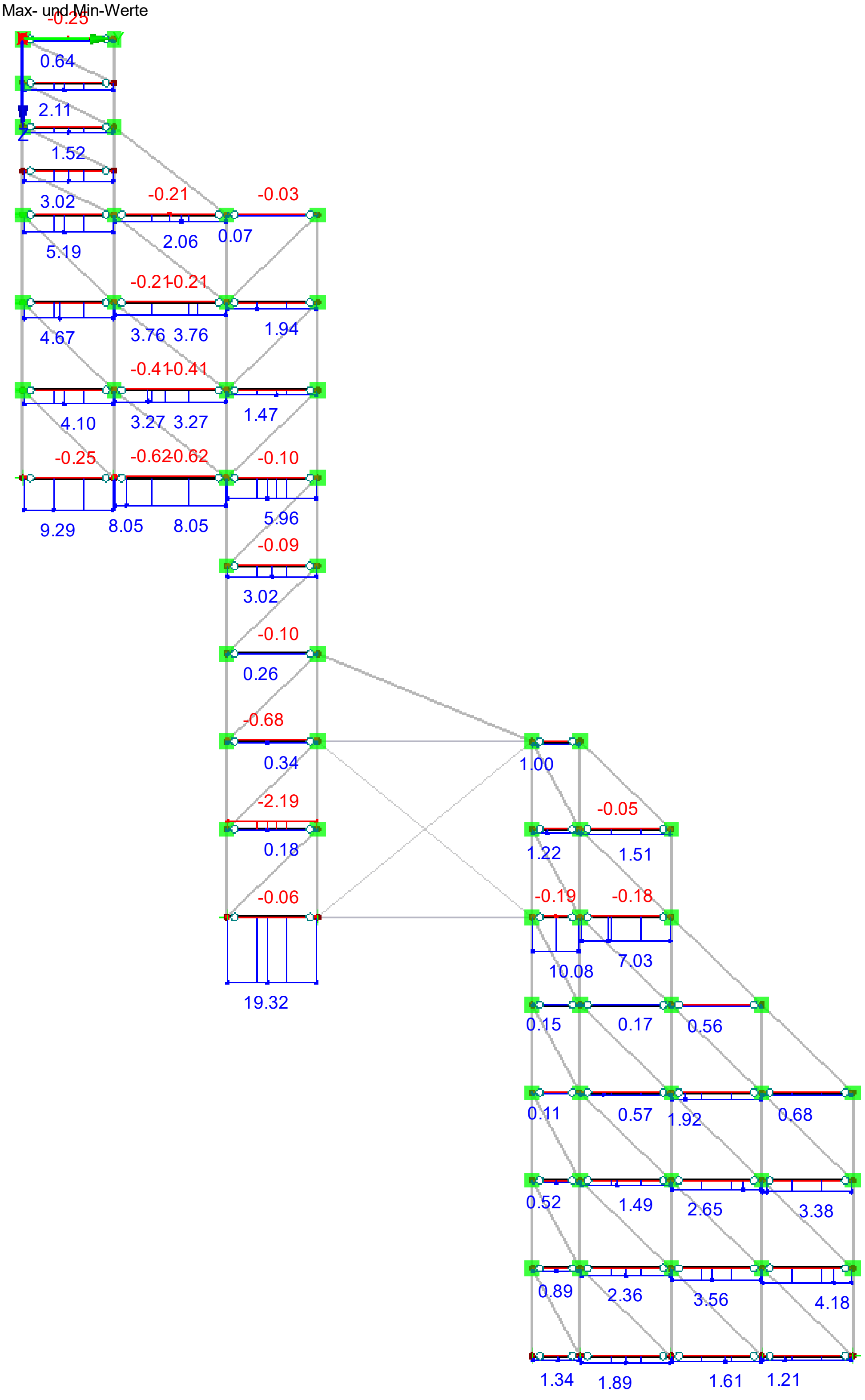
Max N: 1.76, Min N: -26.72 [kN]

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

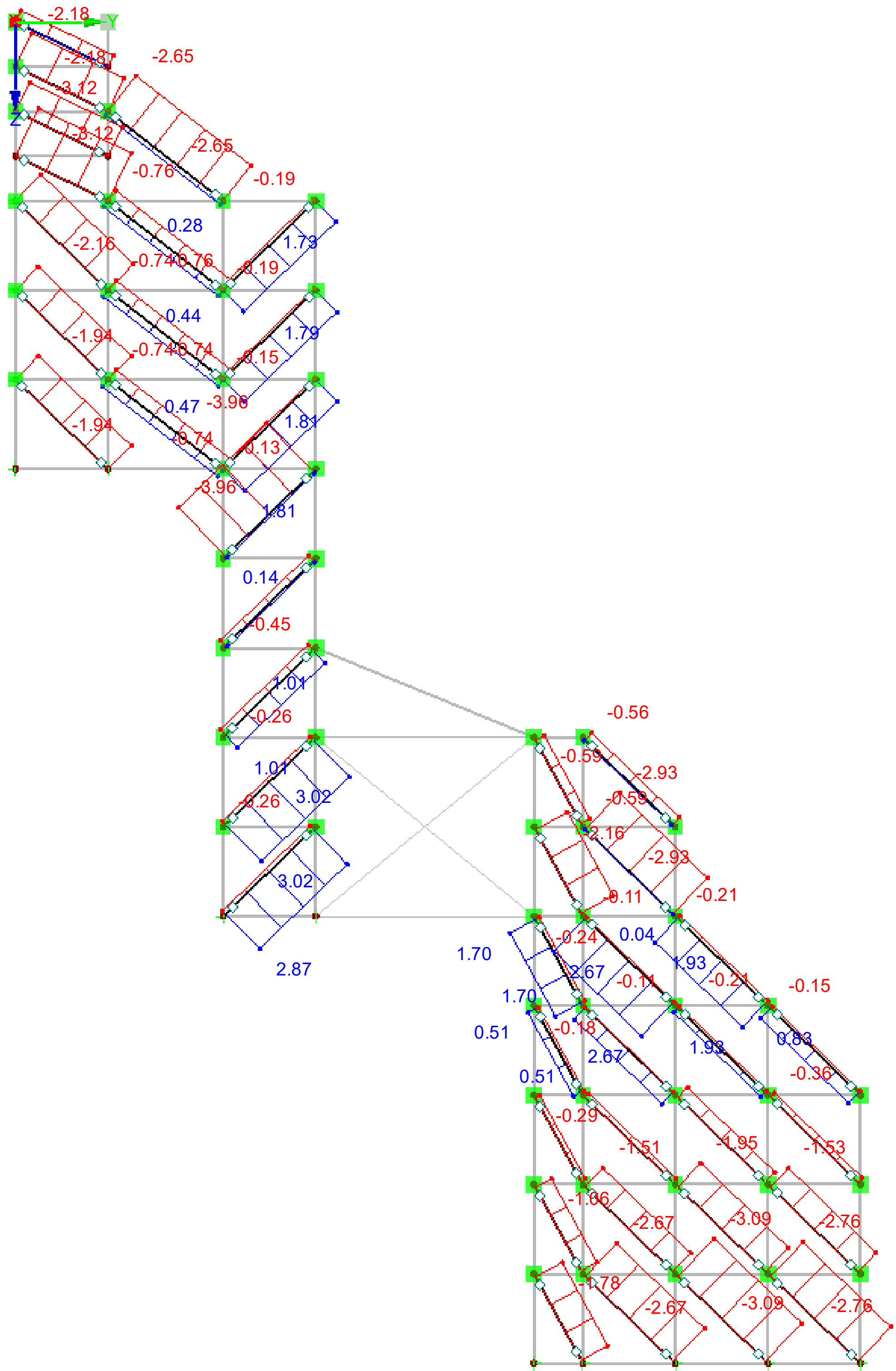


Max N: 19.32, Min N: -2.19 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

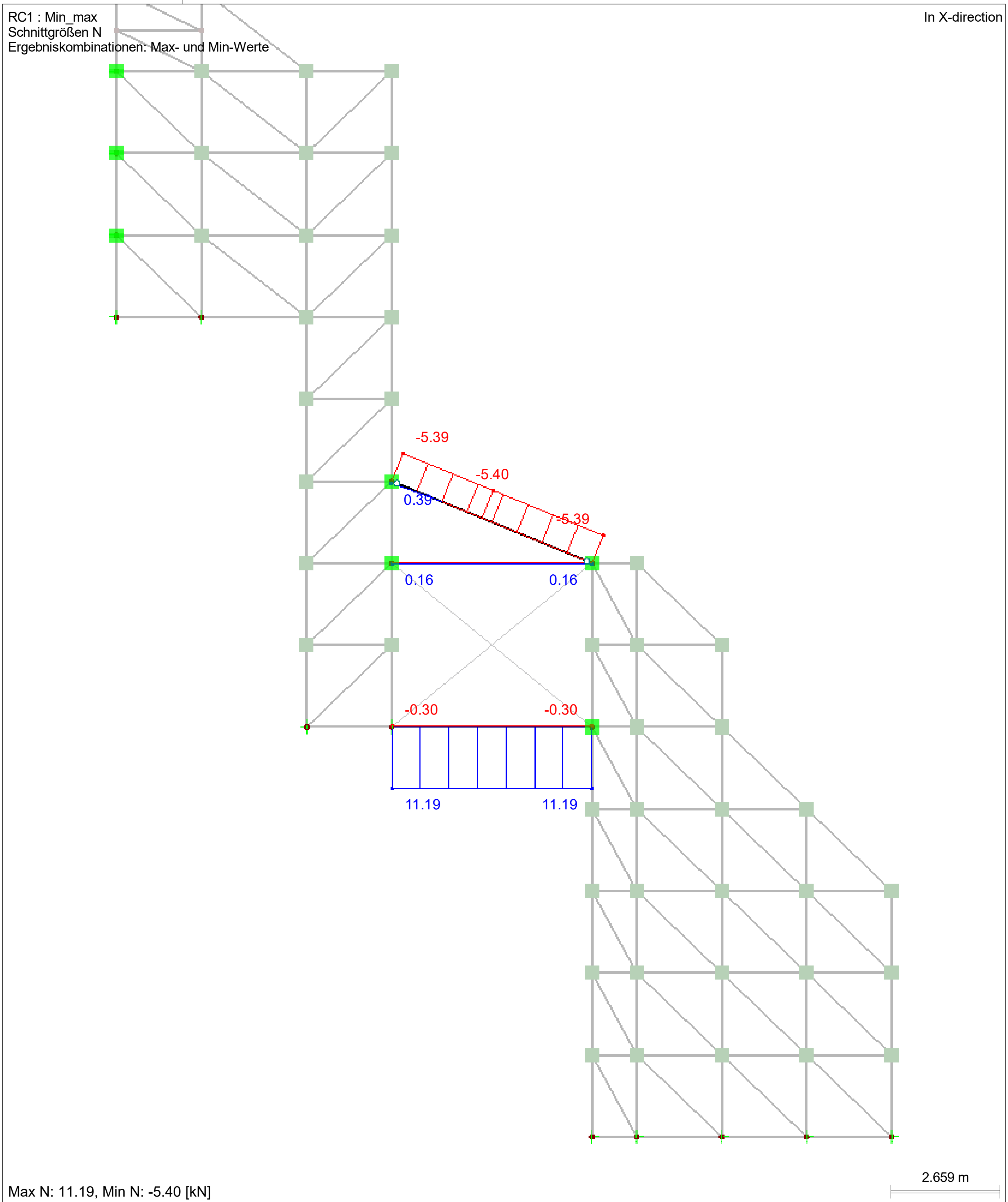
In X-direction



Max N: 3.02, Min N: -3.96 [kN]

3.07 m

INTERNAL FORCES N



STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

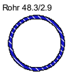
Members to design:	1-3,8,13,18,23,28,34,35,50,55,60,67,74,81,186,206,211,229,234,254, 259,276,281,298,303,320,325,463,480,485,502,507,524,529,563,578, 593,608,623,638,658,673,688,703,718,733,748,770,785,800,815,830, 845,860
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design Load combinations to design:	CO1 Bem-1 CO2 Bem-2 CO3 Bem-3 CO4 Bem-4 CO5 Earthquake

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

1.3 CROSS-SECTIONS

Rohr 48.3/2.9



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	0.52	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
1	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
2	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
3	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
8	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
13	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
18	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
23	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
28	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
34	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
35	☒	☒	1.00	1.000	☒	1.00	1.000	☐	1.0	1.0	1.000	1.000
50	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
55	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
60	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
67	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
74	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
81	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
186	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
206	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
211	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
1	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.14	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK5	0.05	≤ 1	ST301)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK1	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK5	0.05	≤ 1	ST311)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK1	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
2	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.13	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.200	LK4	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK4	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK5	0.06	≤ 1	ST301)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK5	0.06	≤ 1	ST311)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2(4)
	0.000	LK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
3	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK4	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	LK2	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
8	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK2	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
13	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.13	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.500	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK2	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.000	LK2	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
18	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.500	LK2	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.700	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.333	LK1	0.50	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.333	LK1	0.50	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.500	LK2	0.52	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
23	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	LK2	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.900	LK2	0.48	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK2	0.48	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						and 6.3.1.2
28	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.45	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.45	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
34	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.07	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
35	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK4	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
50	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
55	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	LK4	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.900	LK4	0.34	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK4	0.34	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
60	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.36	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.36	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
67	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
74	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.23	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.333	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.333	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
81	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.900	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
186	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.21	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						6.2.9.1
	2.000	LK2	0.34	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
206	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
211	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	LK2	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.20	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.20	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.24	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.20	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.19	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.19	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.31	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.22	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.22	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.20	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.23	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.23	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 a

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						and 6.3.1.2
	0.900	LK5	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	LK4	0.21	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.500	LK4	0.21	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.22	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.22	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK5	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK4	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.36	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.36	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.09	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.38	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.38	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	LK2	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.21	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.20	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.667	LK2	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.800	LK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.04	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.000	LK2	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	LK2	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.667	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.29	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.600	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.667	LK2	0.31	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.29	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

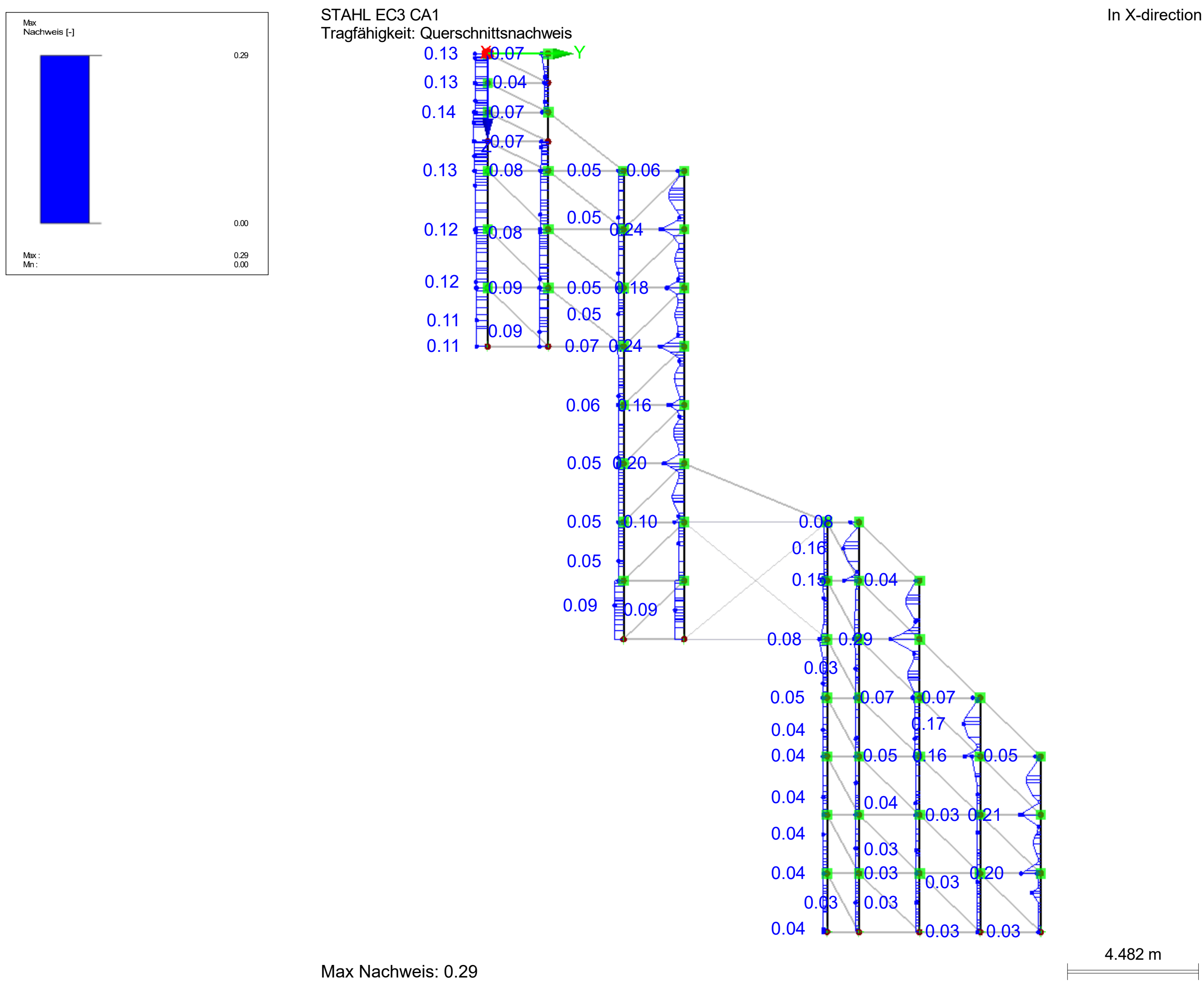
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	LK2	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	LK2	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.300	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK2	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS



Max Nachweis: 0.29

Dimensioning

Shoring scaffold

Allround Standard

Nd= 3 kN

Nd= -27 kN

eta= 0,3 < 1,0

Allround ledger

Nd=	20 kN	< NRd=	42,3 kN
Nd=	-20 kN	< NRd=	-42,3 kN

Allround diagonal (2,07/2,0m)

Nd=	4 kN	< NRd=	28,5 kN
Nd=	-4 kN	< NRd=	-14,4 kN

Connecting scaffold

Nd= -12 kN < NRd

Bracing

Nd= 11 kN
N,k= 7,3333 kN

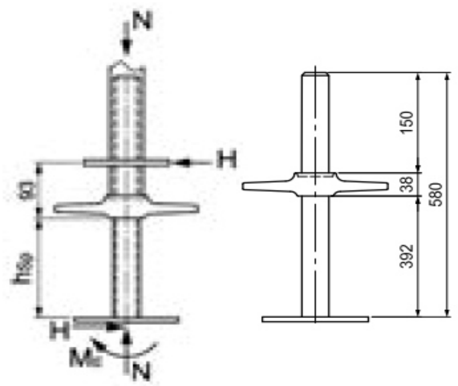
Nzul= 1000 kN direct

Tension chord 4000 kg

Ratchet tie-down strap

Base plate   solid

BASE PLATE 60 SOLID



Substitute cross-sectional values of the spindle

$A = 8.80\ cm^2$
$W_{el} = 3.84\ cm^3$
$W_{pl} = 4.79\ cm^3$
$I = 6.51\ cm^4$

Material: EN 10025-2-S355J2
→ Rolled thread: $f_{u,b} = 360,0\ N/mm^2$

Tab. 14 Base plate loading

Spindle extension length h_{Sp} [cm]	Permissible vertical spindle load N [kN]* with simultaneous effect of a horizontal load H [kN]																									
	H = 0		H = 0.5		H = 1.0		H = 1.5		H = 2.0		H = 2.5		H = 3.0		H = 3.5		H = 4.0		H = 4.5		H = 5.0		H = 5.5		H = 6.0	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
0	54	69	54	69	54	68	54	67	53	–	53	–	53	–	52	–	52	–	51	–	51	–	50	–	50	–
5	54	68	53	–	53	–	52	–	52	–	51	–	50	–	49	–	48	–	48	–	47	–	46	–	45	–
10	53	–	53	–	52	–	49	–	49	–	48	–	47	–	46	–	45	–	44	–	42	–	41	–	40	–
15	53	–	51	–	50	–	48	–	47	–	47	–	44	–	43	–	41	–	39	–	38	–	36	–	34	–
20	51	–	50	–	48	–	46	–	44	–	42	–	40	–	38	–	36	–	35	–	–	–	–	–	–	–
25	50	–	48	–	45	–	43	–	41	–	39	–	37	–	34	–	–	–	–	–	–	–	–	–	–	–

Nd=	10,0	kN
Nk=	7,1	kN
Hd=	3,0	kN
Hk=	2,1	kN
Hk=	2,5	kN
hsp=	15,0	kN
Nzul=	47,0	kN

Proof stability against gliding

Wind

Nd=	0,9+2,5+5,1+3,4+5,4=		17,3	kN
Ballast			12	kN
			29,3	kN
Hd=	1,4+1,5+1,7+1,9+2,1=		8,6	kN

friction coefficient mü= 0,6 Wood - Soil

Hd= 8,6 kN < mü * Nd= 17,58 kN

Earthquake

Nd=	3,3+3,6+4,8+3,7+4,5=		19,9	kN
Ballast			12	kN
			31,9	kN
Hd=	,8+,8+1+1+1,1=		4,7	kN

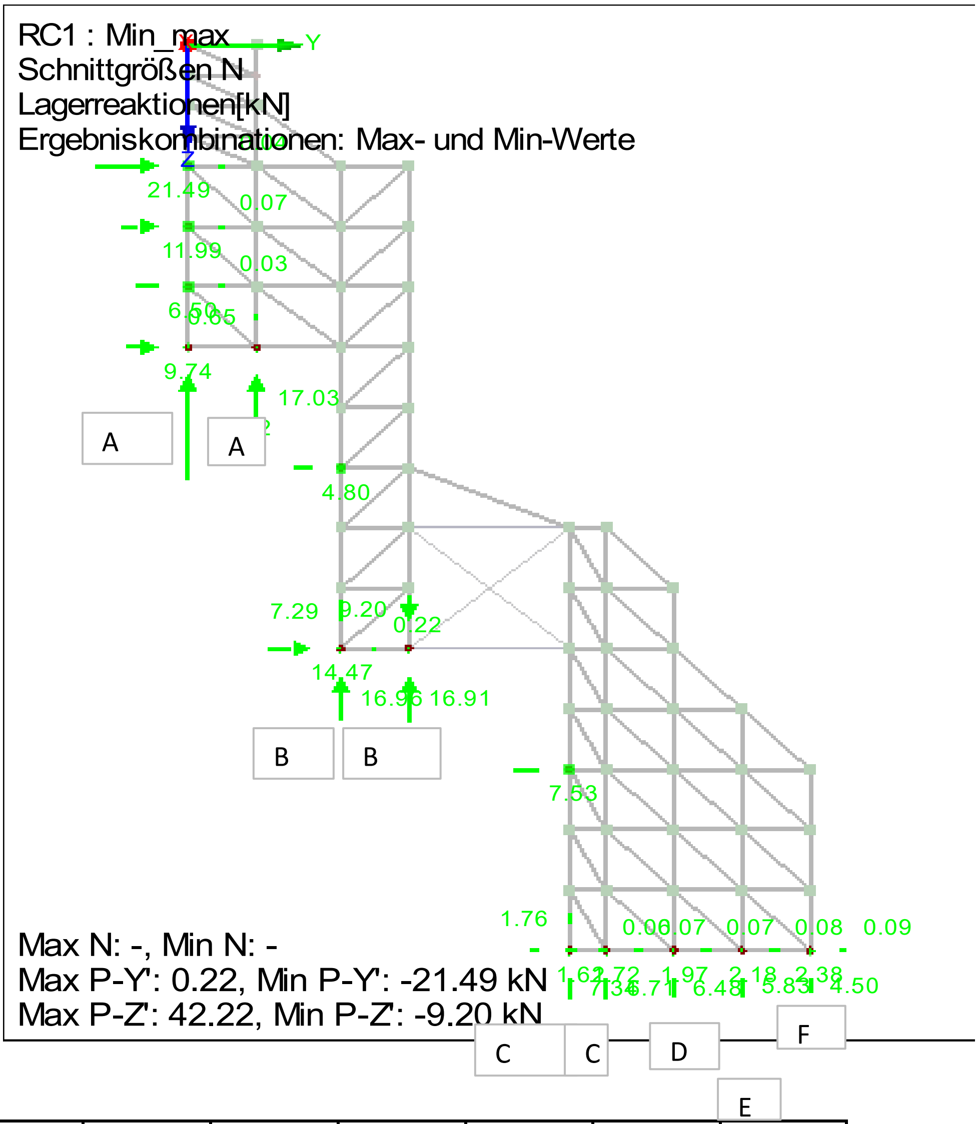
friction coefficient mü= 0,6 Wood - Soil

Hd= 4,7 kN < mü * Nd= 19,14 kN

Load distribution under base plate remaining scaffold

Nk=	20	kN
a=	0,5	m
b=	0,5	m
sigma=	80	kN/m²

vertical reaction forces [kN]



			A	B	C	D	E	F
Dead Load			7	6	3	4,2	4	3,5
Snow			1	2	1	0,5	0	0
Live Load			5	5	2	1	0	0
Wind 1			4	-5	-1	1	-1	2
Earthquake			6	5	4	5	4	5
max	design		19	18	8	8	6	7

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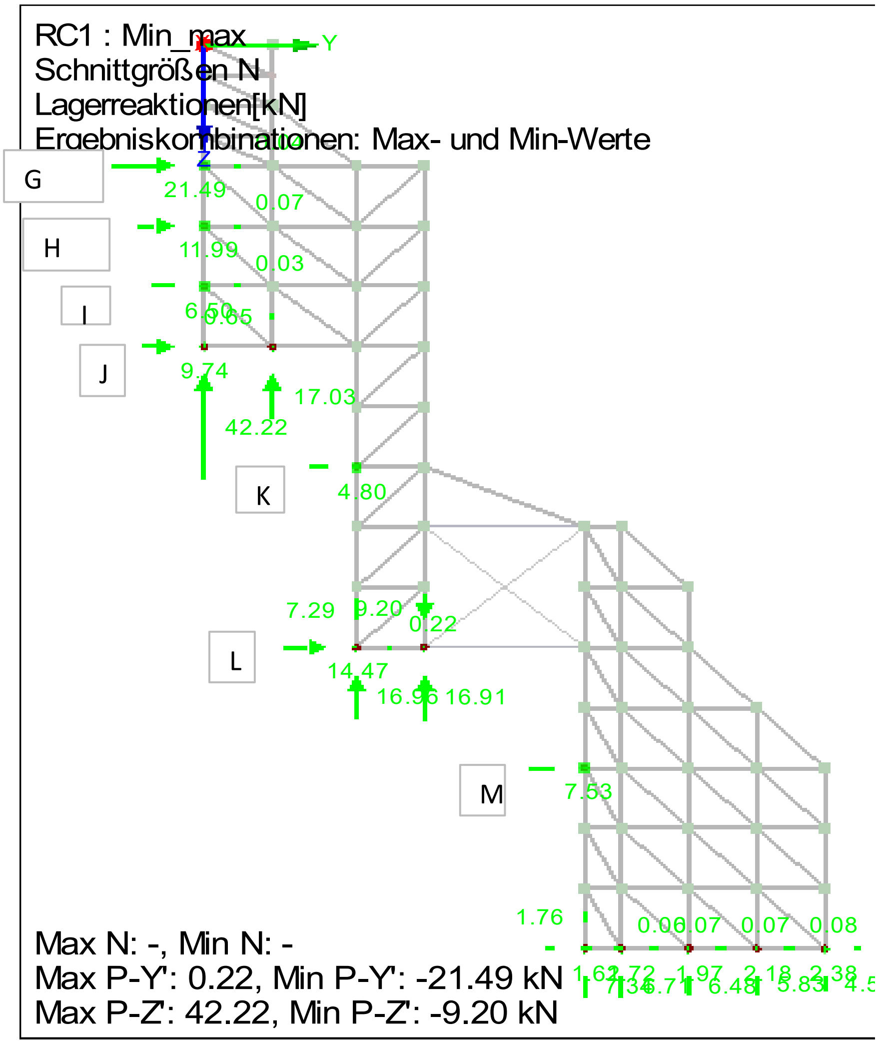
max	design			0	0	0	0	0
min	design		0	-4	0	0	0	0

horizontal reaction forces [kN]



	G	H	I	J	K	L	M	N
Design	3,9	3,3	2,7	9,3	0	21,3	0	

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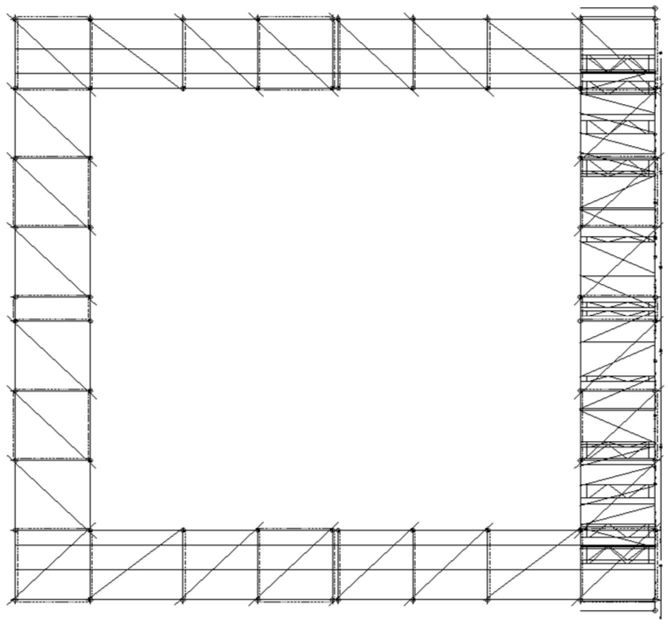
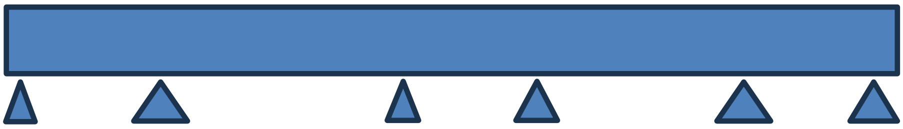
c. Horizontal lattice girder



Horizontal girder



2,07 4,64 4,14 4,64 2,07

Hd,max= 12 kN

qd= 12/2,32= 5,17 kN/m

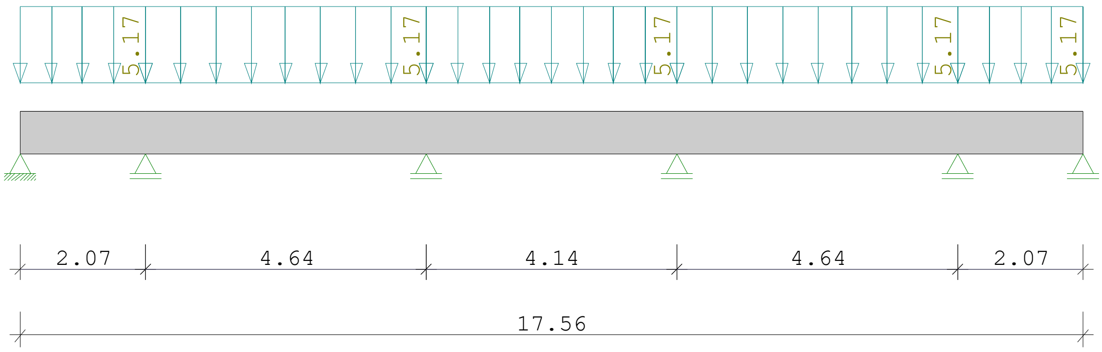
Md= 9,0 kNm
Dd= Md / 2,07= 4,3 kN
< NRd

Vd= 12,2 kN
Dd= 1,42*Vd= 17,3 kN
2 diagonals in the first/last bay

Vd= 12,2 kN
Dd= 1,42*Vd= 17,3 kN

Position: Monestary-Gelati-LG1

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 125



Durchlaufträger über 5 Felder
E-Modul E =210000 N/mm2

System Feld	Länge L (m)		Querschnittswerte QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	2.07	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
2	4.64	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
3	4.14	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
4	4.64	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
5	2.07	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a 3=Einzelmoment bei a 4=Trapezlast von a - a+b 5=Dreieckslast über L 6=Trapezlast über L

Feld	Typ	EG	Gr	g_l/r	p_l/r	Faktor	Abstand	Länge	ausPOS	Phi
1	1			5.17	0.00	1.00				
2	1			5.17	0.00	1.00				
3	1			5.17	0.00	1.00				
4	1			5.17	0.00	1.00				
5	1			5.17	0.00	1.00				

In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf
die Nummer der zug. Überlagerung (siehe unten).

Feldmomente Maximum (kNm , kN)

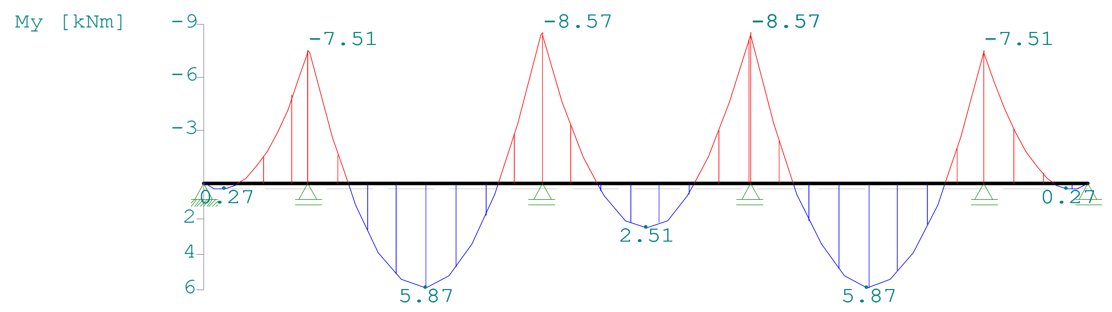
Feld				Mf	M li	M re	Q li	Q re	komb
1	x0	=	0.33	0.29	0.00	-7.51	1.72	-8.98	1
2	x0	=	2.28	5.88	-7.51	-8.57	11.77	-12.22	1
3	x0	=	2.07	2.51	-8.57	-8.57	10.70	-10.70	1
4	x0	=	2.36	5.88	-8.57	-7.51	12.22	-11.77	1
5	x0	=	1.74	0.29	-7.51	0.00	8.98	-1.72	1

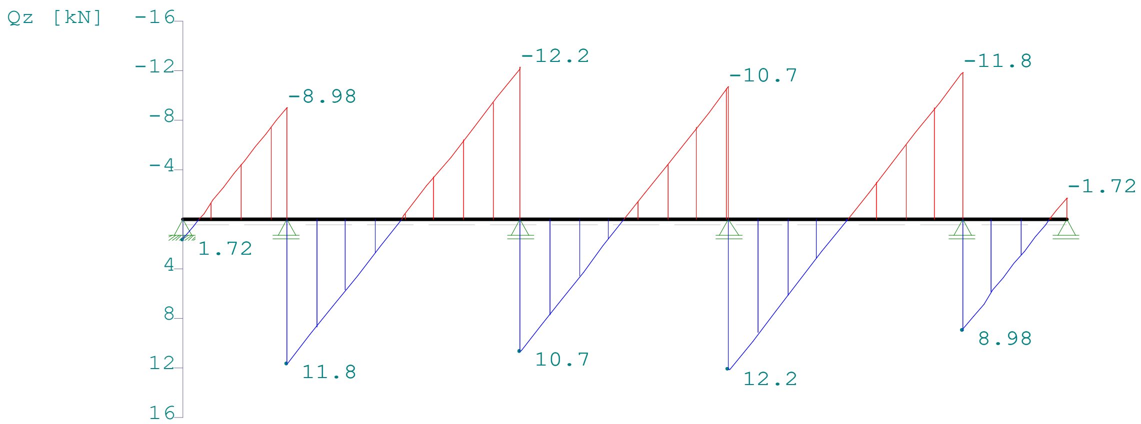
Stützmomente Maximum (kNm , kN)

Stütze	M li	M re	Q li	+ Q re	= max V	min V	komb
1	0.00	0.00	0.00	1.72	1.72	1.72	1
2	-7.51	-7.51	-8.98	11.77	20.75	20.75	1
3	-8.57	-8.57	-12.22	10.70	22.92	22.92	1
4	-8.57	-8.57	-10.70	12.22	22.92	22.92	1
5	-7.51	-7.51	-11.77	8.98	20.75	20.75	1
6	0.00	0.00	-1.72	0.00	1.72	1.72	1

Auflagerkräfte						(kN)
Stütze	aus g	max p	min p	Vollast	max	min
1	1.72	0.00	0.00	1.72	1.72	1.72
2	20.75	0.00	0.00	20.75	20.75	20.75
3	22.92	0.00	0.00	22.92	22.92	22.92
4	22.92	0.00	0.00	22.92	22.92	22.92
5	20.75	0.00	0.00	20.75	20.75	20.75
6	1.72	0.00	0.00	1.72	1.72	1.72
Summe:	90.79	0.00	0.00	90.79	90.79	90.79

Maßstab 1 : 150





In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

Belastung (kN,m) Lasttyp: 1=Gleichlast über L, 2=Einzellast bei a, 3=Einzelmoment bei a, 4=Trapezlast von a - a+b, 5=Dreieckslast über L, 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	p1	g2	p2	Faktor	Abstand	Länge
1	1	1	1	5.17	0.00			1.00		
2	2	1	1	5.17	0.00			1.00		
3	3	1	1	5.17	0.00			1.00		
4	4	1	1	5.17	0.00			1.00		
5	5	1	1	5.17	0.00			1.00		

Gerechnete Kombinationen aus 5 Lasten

Last	K1
	g
1	.
2	.
3	.
4	.
5	.

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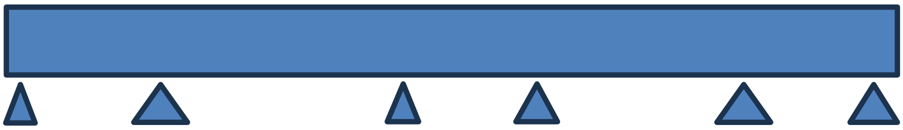
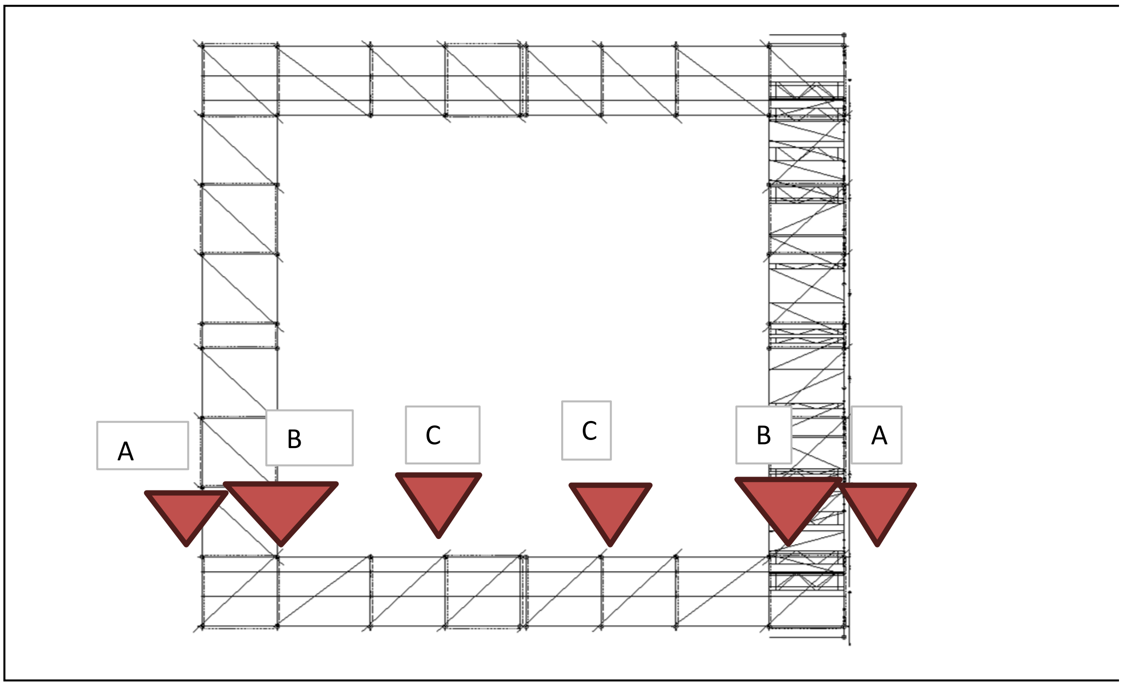
d. Dome as Bearing

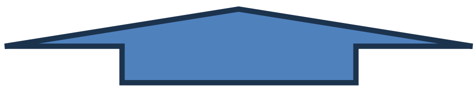
Horizontal girder



		2,07	4,64		4,14	4,64		2,07
A	B			C		C	B	A
	Hd,max=				1 kN			

qd= 1/2,32= 0,43 kN/m



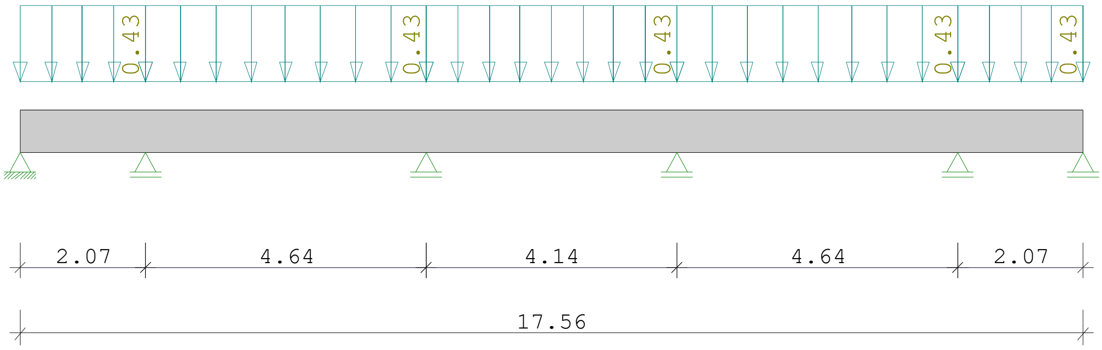


Reaction forces Hd=1kN - qd=0,43kN

A	0,14 kN
B	1,7 kN
C	1,9 kN

Position: Monestary-Gelati-LG2

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 125



Durchlaufträger über 5 Felder
E-Modul E =210000 N/mm2

System Feld	Länge L (m)		Querschnittswerte QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	2.07	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
2	4.64	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
3	4.14	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
4	4.64	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm
5	2.07	konstant	1	3600.0	1.0	1.0	Gitterträger 45cm

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a
3=Einzelmoment bei a 4=Trapezlast von a - a+b
5=Dreieckslast über L 6=Trapezlast über L

Feld	Typ	EG	Gr	g_l/r	p_l/r	Faktor	Abstand	Länge	ausPOS	Phi
1	1			0.43	0.00	1.00				
2	1			0.43	0.00	1.00				
3	1			0.43	0.00	1.00				
4	1			0.43	0.00	1.00				
5	1			0.43	0.00	1.00				

In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf die Nummer der zug. Überlagerung (siehe unten).

Feldmomente Maximum (kNm , kN)

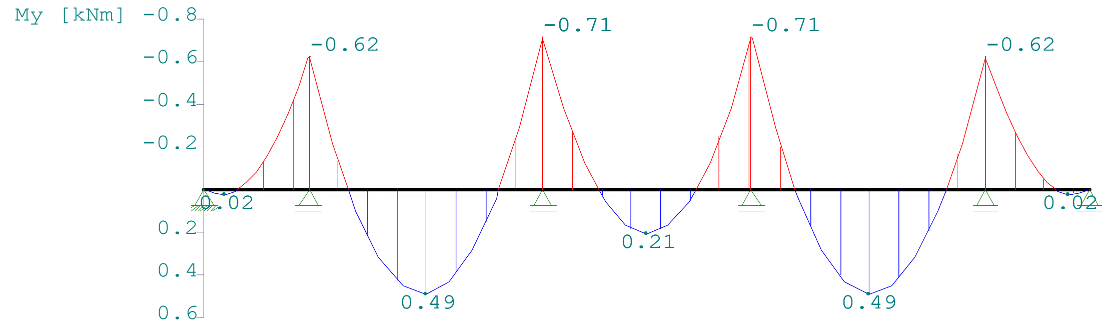
Feld		Mf	M li	M re	Q li	Q re	komb
1	x0 = 0.33	0.02	0.00	-0.62	0.14	-0.75	1
2	x0 = 2.28	0.49	-0.62	-0.71	0.98	-1.02	1
3	x0 = 2.07	0.21	-0.71	-0.71	0.89	-0.89	1
4	x0 = 2.36	0.49	-0.71	-0.62	1.02	-0.98	1
5	x0 = 1.74	0.02	-0.62	0.00	0.75	-0.14	1

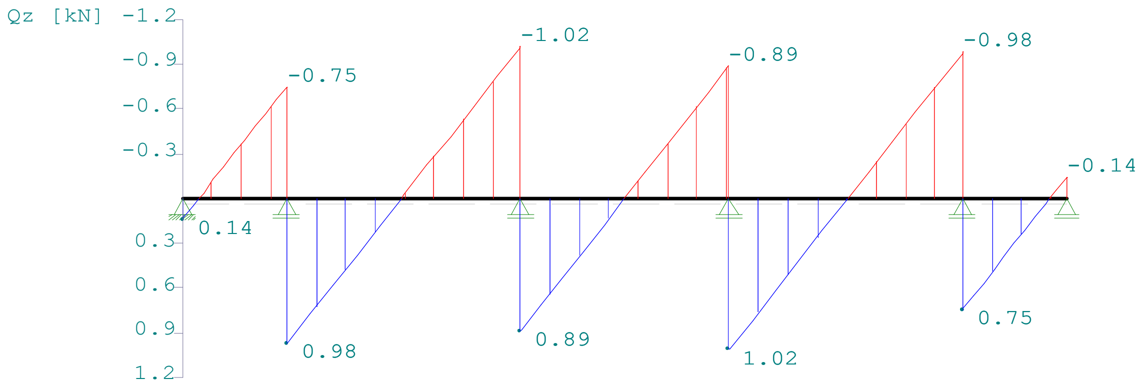
Stützmomente Maximum (kNm , kN)

Stütze	M li	M re	Q li	+ Q re	= max V	min V	komb
1	0.00	0.00	0.00	0.14	0.14	0.14	1
2	-0.62	-0.62	-0.75	0.98	1.73	1.73	1
3	-0.71	-0.71	-1.02	0.89	1.91	1.91	1
4	-0.71	-0.71	-0.89	1.02	1.91	1.91	1
5	-0.62	-0.62	-0.98	0.75	1.73	1.73	1
6	0.00	0.00	-0.14	0.00	0.14	0.14	1

Auflagerkräfte						(kN)
Stütze	aus g	max p	min p	Vollast	max	min
1	0.14	0.00	0.00	0.14	0.14	0.14
2	1.73	0.00	0.00	1.73	1.73	1.73
3	1.91	0.00	0.00	1.91	1.91	1.91
4	1.91	0.00	0.00	1.91	1.91	1.91
5	1.73	0.00	0.00	1.73	1.73	1.73
6	0.14	0.00	0.00	0.14	0.14	0.14
Summe:	7.55	0.00	0.00	7.55	7.55	7.55

Maßstab 1 : 150





In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

Belastung (kN,m) Lasttyp: 1=Gleichlast über L; 2=Einzellast bei a; 3=Einzelmoment bei a; 4=Trapezlast von a - a+b; 5=Dreieckslast über L; 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	p1	g2	p2	Faktor	Abstand	Länge
1	1	1	1	0.43	0.00			1.00		
2	2	1	1	0.43	0.00			1.00		
3	3	1	1	0.43	0.00			1.00		
4	4	1	1	0.43	0.00			1.00		
5	5	1	1	0.43	0.00			1.00		

Gerechnete Kombinationen aus 5 Lasten

Last	K1
	g
1	.
2	.
3	.
4	.
5	.

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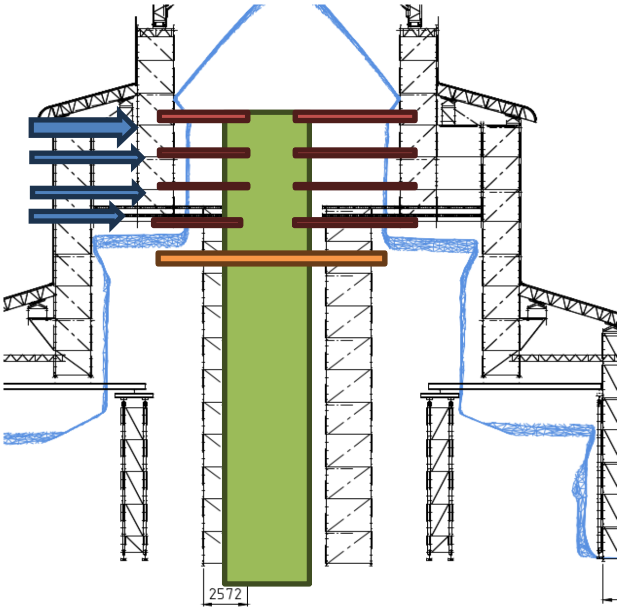
Load bearing tower in Dome

P1
P2
P3
P4

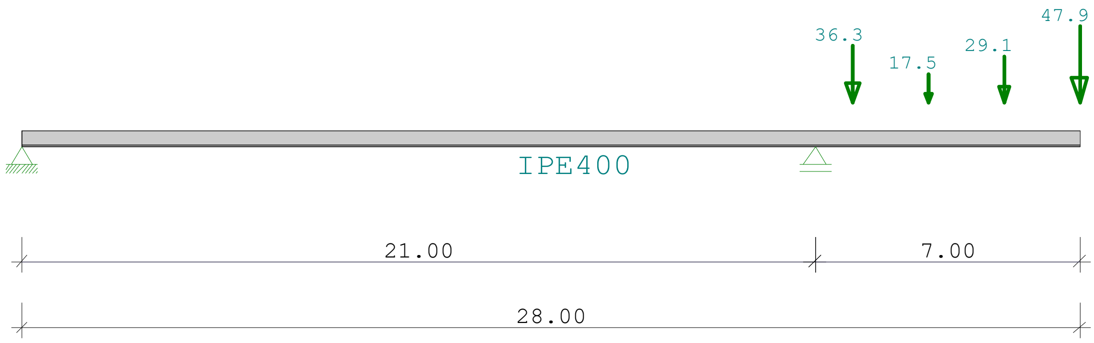


	a. [kN]	b. [kN]	a+b [kN]	factor	Force
P1	21,5	3,7	25,2	1,9	47,9 kN
P2	12	3,3	15,3	1,9	29,1 kN
P3	6,5	2,7	9,2	1,9	17,5 kN
P4	9,8	9,3	19,1	1,9	36,3 kN

Heavy duty tower with 4 rows of ledgers:

Position: Monestary-Gelati-Bearing

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 200



Durchlaufträger
E-Modul E =210000 N/mm2

System	Länge		Querschnittswerte				
Feld	L (m)		QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	21.00	konstant	1	23130.0	1160.0	1160.0	IPE400
Kragarm rechts	7.00	konstant	1	23130.0	1160.0	1160.0	IPE400

Belastung (kN,m) Lasttyp: 1=Gleichlast über L, 2=Einzellast bei a, 3=Einzelmoment bei a, 4=Trapezlast von a - a+b, 5=Dreieckslast über L, 6=Trapezlast über L

Feld	Typ	EG	Gr	g_l/r	p_l/r	Faktor	Abstand	Länge	ausPOS	Phi
Kragarm Krre	2			36.30	0.00	1.00	1.00			
	2			17.50	0.00	1.00	3.00			
	2			29.10	0.00	1.00	5.00			
	2			47.90	0.00	1.00	7.00			

In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf die Nummer der zug. Überlagerung (siehe unten).

Feldmomente Maximum (kNm , kN)

Feld		Mf	M li	M re	Q li	Q re	komb
1	x0 = 0.00	0.00	0.00	-569.60	-27.12	-27.12	1

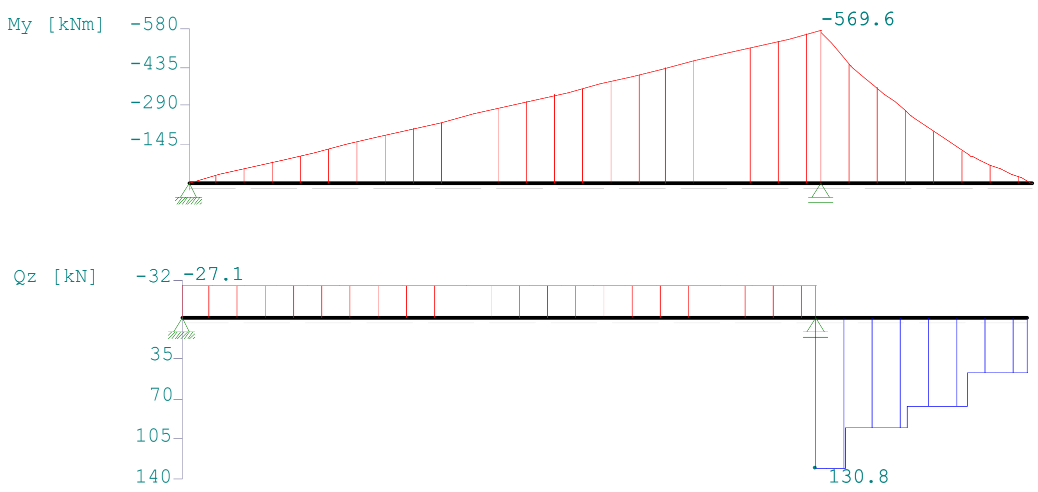
Stützmomente Maximum (kNm , kN)

Stütze	M li	M re	Q li	+ Q re	= max V	min V	komb
1	0.00	0.00	0.00	-27.12	-27.12	-27.12	1
2	-569.60	-569.60	-27.12	130.80	157.92	157.92	1

Auflagerkräfte (kN)

Stütze	aus g	max p	min p	Vollast	max	min
1	-27.12	0.00	0.00	-27.12	-27.12	-27.12
2	157.92	0.00	0.00	157.92	157.92	157.92
Summe:	130.80	0.00	0.00	130.80	130.80	130.80

Maßstab 1 : 250



In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

Belastung (kN,m) Lasttyp: 1=Gleichlast über L, 2=Einzellast bei a, 3=Einzelmoment bei a, 4=Trapezlast von a - a+b, 5=Dreieckslast über L, 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	p1	g2	p2	Faktor	Abstand	Länge
Kragarm										
1	Krre	2	1	36.30	0.00			1.00	1.00	
2		2	1	17.50	0.00			1.00	3.00	
3		2	1	29.10	0.00			1.00	5.00	
4		2	1	47.90	0.00			1.00	7.00	

Gerechnete Kombinationen aus 4 Lasten

Last	K1
	g
1	.
2	.
3	.
4	.

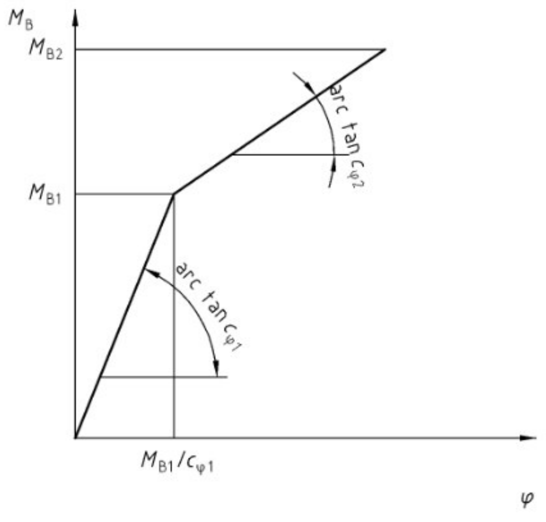
Anhang C
(normativ)

Charakteristische Werte von Widerständen für Kupplungen

Charakteristische Werte von Widerständen für Kupplungen nach prEN 74-1, die Stahl- oder Aluminiumrohre mit einem Durchmesser von 48,3 mm verbinden, sind in Tabelle C.1 angegeben. Die zugehörigen Bemessungswerte der Steifigkeiten sind in den Tabellen C.2 und C.3 angegeben.

Tabelle C.1 — Charakteristische Werte der Widerstände für Kupplungen

Kupplungstyp	Widerstand	Charakteristische Werte			
		Klasse A	Klasse B	Klasse AA	Klasse BB
Normalkupplung (RA)	Rutschkraft $F_{s,k}$ in kN	10,0	15,0	15,0	25,0
	Drehwinkelmoment $M_{B,k}$ in kNm	–	0,8	-	-
	Kopfabreißkraft $F_{p,k}$ in kN	20,0	30,0	-	-
	Torsionsmoment $M_{T,k}$ in kNm	–	0,13	-	-
Stoßkupplung mit Reibschluss (SF)	Rutschkraft $F_{s,k}$ in kN	6,0	9,0	-	-
	Biegemoment $M_{B,k}$ in kNm	-	2,4	-	-
Drehkupplung (SW)	Rutschkraft $F_{s,k}$ in kN	10,0	15,0	-	-
Parallelkupplung (PA)	Rutschkraft $F_{s,k}$ in kN	10,0	15,0	-	-



Dabei ist:

M_B	Drehwinkelmoment (kNm/rad);
φ	Drehwinkel inrad;
$c_{\varphi 1}, c_{\varphi 2}$	Drehwinkelsteifigkeit.

Bild C.1 — M_B-φ Beziehung für Normalkupplungen der Klasse B

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Md=		570	kNm	e=	4,14	m		137,7	kN
				2*2,07					
	4	rows						34,4	kN
Vd=		131	kN						
Dd=		186,02	kN	1,42*Vd		Diagonal:			
	2	bays				Dd=		23,253	kN
						< DRd			
Ad=		160	kN						
			4	rows		Nd=		40	kN
			12	rigid coupler					
				F,s,Rd= n * 15/1,1=				163,64	kN

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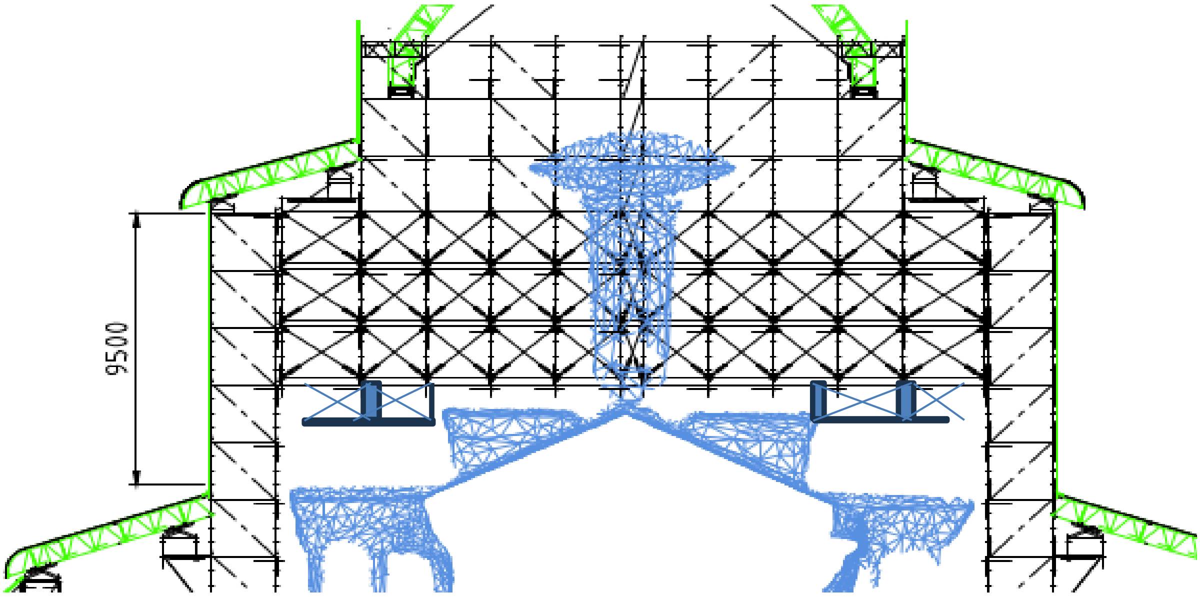
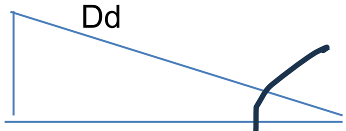
FW outside



	a. [kN]	b. [kN]	a+b [kN]	factor	Force
P1	21,5	3,7	25,2	1,84	46,4 kN
P2	12	3,3	15,3	1,84	28,2 kN
P3	6,5	2,7	9,2	1,84	16,9 kN
P4	9,8	9,3	19,1	1,84	35,1 kN
					126,6 kN

Dd

1,5



2,07 alpha Hd= 63,3 kN

alpha= 35,929 °

2 Diagonals

Dd= 78,167 kN

Bracing AR - FW

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Offset

Md= Hd * 1,5= 189,89 kNm

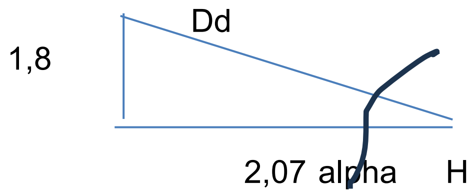
Nd= Md / (2,07+2,57)= 40,924 kN

The connection will be build with special parts of the Layher FW system.

See further details.

Load distribution through Allround FW System:

Hd= 126 kN

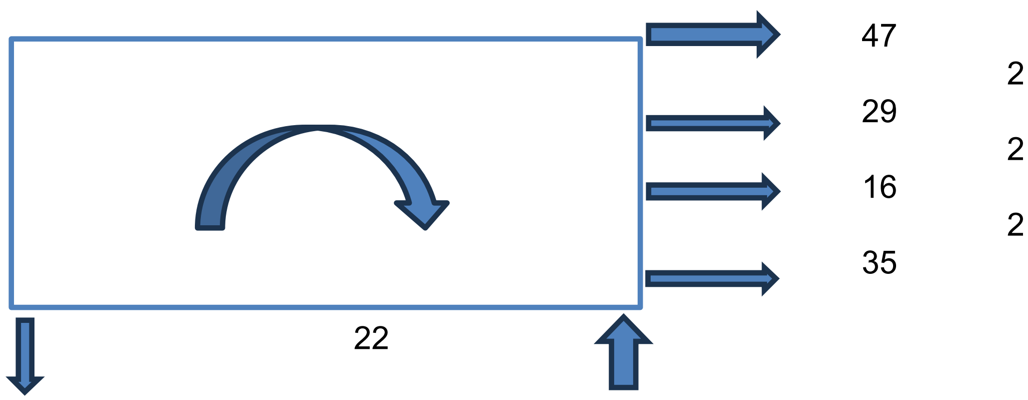


Hd= 126,0 kN

alpha= 41,009 °

10 Diagonals

Dd= 16,7 kN << DRd



Md= 430,0 kNm
Z=-D= Md / 22= 19,5 kN

Dead load of beam 72 kN >>Z

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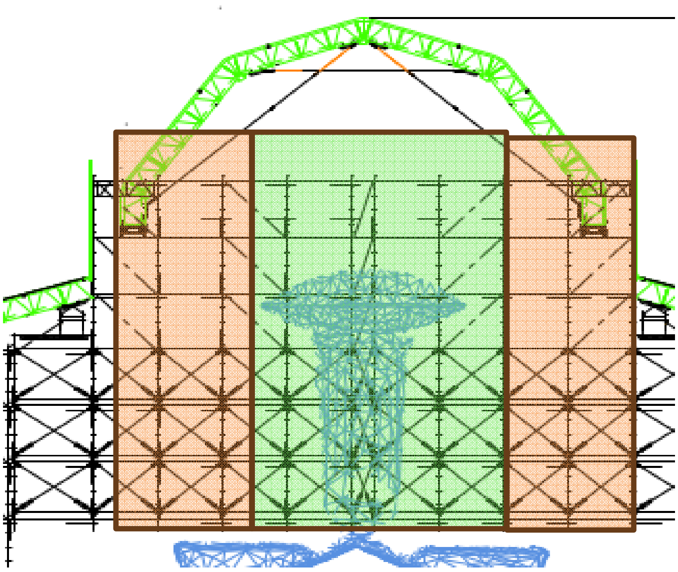
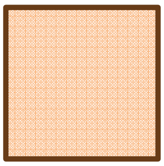
Pos.6: Scaffold dome 2





Area 1

width	b=	4	m
height	h=	14	m
A=		56	m²

Wind

qb,o=	0,47	kN/m²
z=	30	m
qp=	1,2	kN/m²

force coefficent	cf=	1,3	
time coefficient	ct=	0,7	
	A=	56	
	Q,k=	61	kN

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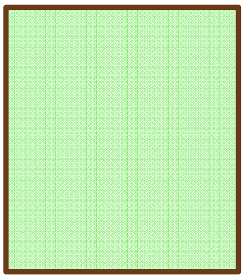


Area 2

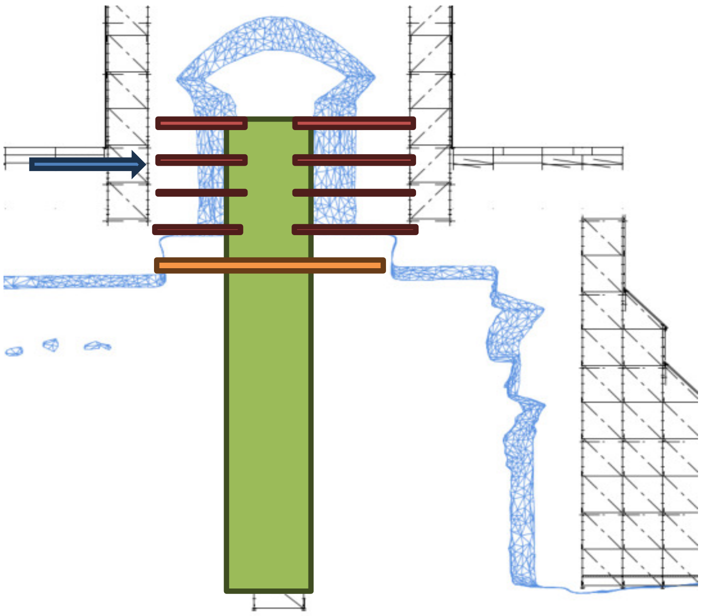
width	b=	9	m
height	h=	14	m
A=		126	m²

<u>Wind</u>

qb,o=	0,47	kN/m²
z=	30	m
qp=	1,2	kN/m²

force coefficent	cf=	1,3	
time coefficient	ct=	0,7	
	A=	126	m²
	Q,k=	138	kN

Load bearing tower in Dome

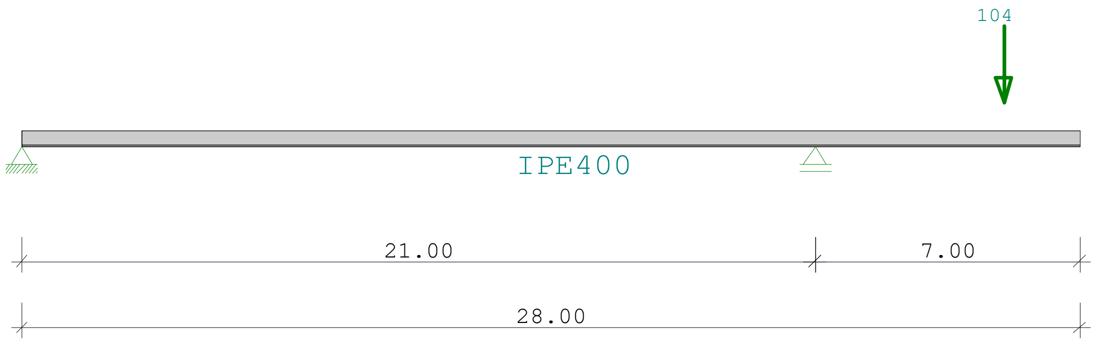


2 Towers

Qd= 138 / 2 * 1,5= 103,5 kN

Position: Monestary-Gelati-Bearing-2

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 200



Durchlaufträger
E-Modul E =210000 N/mm2

System	Länge		Querschnittswerte				
Feld	L (m)		QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	21.00	konstant	1	23130.0	1160.0	1160.0	IPE400
Kragarm rechts	7.00	konstant	1	23130.0	1160.0	1160.0	IPE400

Belastung (kN,m) Lasttyp: 1=Gleichlast über L, 2=Einzellast bei a, 3=Einzelmoment bei a, 4=Trapezlast von a - a+b, 5=Dreieckslast über L, 6=Trapezlast über L

Feld	Typ EG Gr	g_l/r	p_l/r	Faktor	Abstand	Länge	ausPOS	Phi
Kragarm Krre	2	104.00	0.00	1.00	5.00			

In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf die Nummer der zug. Überlagerung (siehe unten).

Feldmomente Maximum (kNm , kN)

Feld		Mf	M li	M re	Q li	Q re	komb
1	x0 = 0.00	0.00	0.00	-520.00	-24.76	-24.76	1

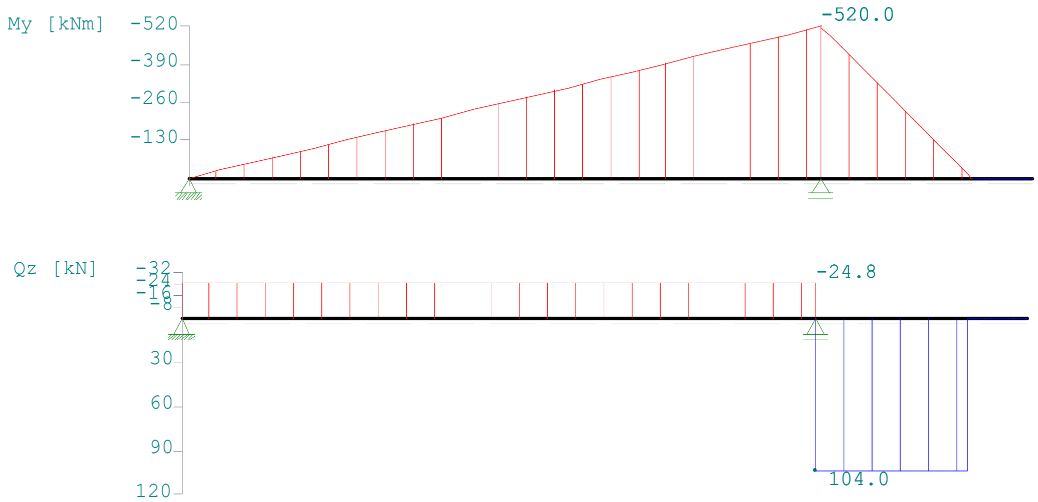
Stützmomente Maximum (kNm , kN)

Stütze	M li	M re	Q li +	Q re	= max V	min V	komb
1	0.00	0.00	0.00	-24.76	-24.76	-24.76	1
2	-520.00	-520.00	-24.76	104.00	128.76	128.76	1

Auflagerkräfte (kN)

Stütze	aus g	max p	min p	Vollast	max	min
1	-24.76	0.00	0.00	-24.76	-24.76	-24.76
2	128.76	0.00	0.00	128.76	128.76	128.76
Summe:	104.00	0.00	0.00	104.00	104.00	104.00

Maßstab 1 : 250



In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a
3=Einzelmoment bei a 4=Trapezlast von a - a+b
5=Dreieckslast über L 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	p1	g2	p2	Faktor	Abstand	Länge
Kragarm										
1	Krre	2	1	104.00	0.00			1.00	5.00	

Gerechnete Kombinationen aus 1 Lasten

Last	K1
1	g .

Heavy duty tower with 4 rows of ledgers:

Md=	520	kNm	e=	4,14	m	125,6	kN
			2*2,07				
	4	rows				31,4	kN
Vd=	104	kN					
Dd=	147,68	kN	1,42*Vd		Diagonal:		
	2	bays			Dd=	18,46	kN
					< DRd		
Ad=	129	kN					
		4	rows		Nd=	32,25	kN
		12	rigid coupler				
			F,s,Rd= n * 15/1,1=			163,64	kN

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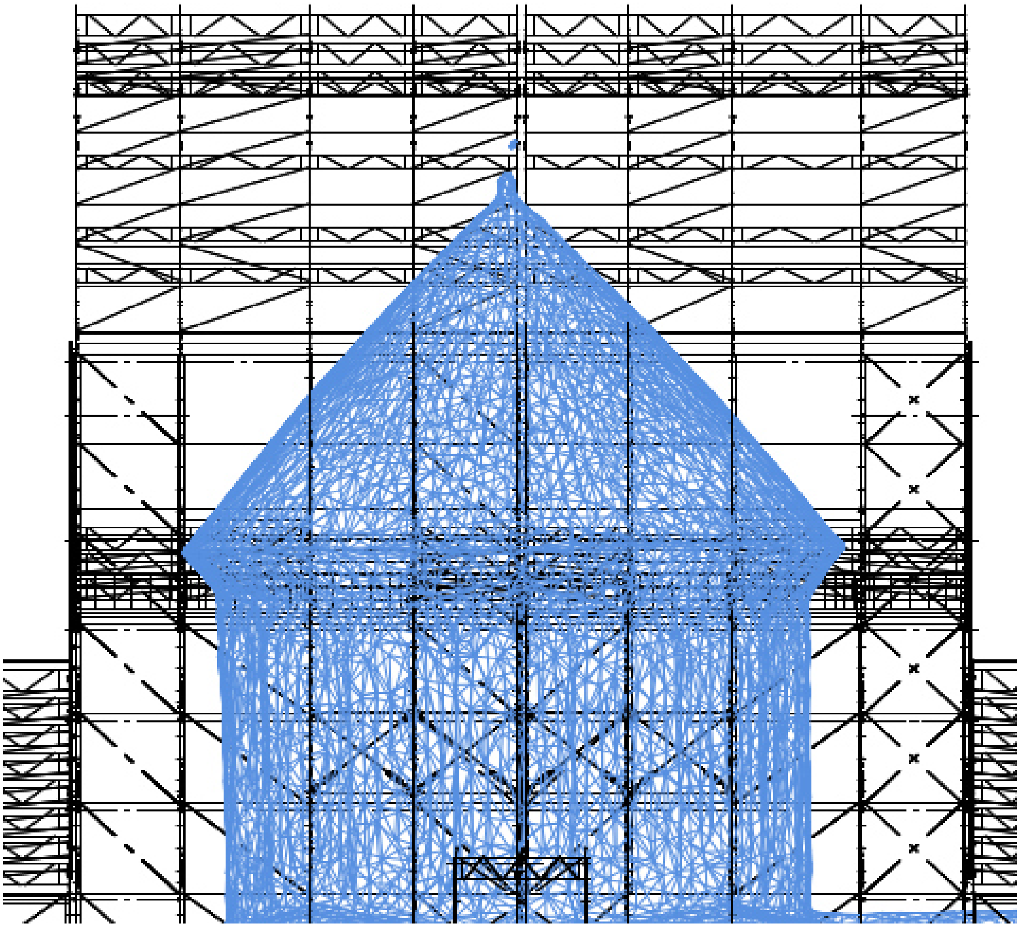
FW outside

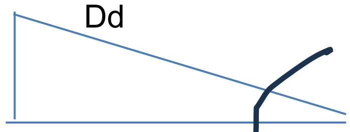


Load distribution through Allround FW System:

Hd= 1,5*61= 91,5 kN

Dd

1,8



2,07 alpha Hd= 126,0 kN

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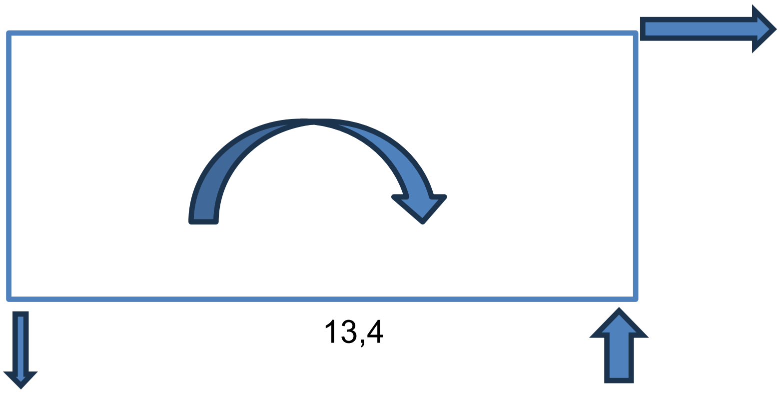
alpha= 41,009 °

12 Diagonals (2x6)

Dd= 13,9 kN << DRd



Md= 644,0 kNm

Z=-D= Md / 2 * 13,4= 24,0 kN

Deadload of beam G= 60 kN

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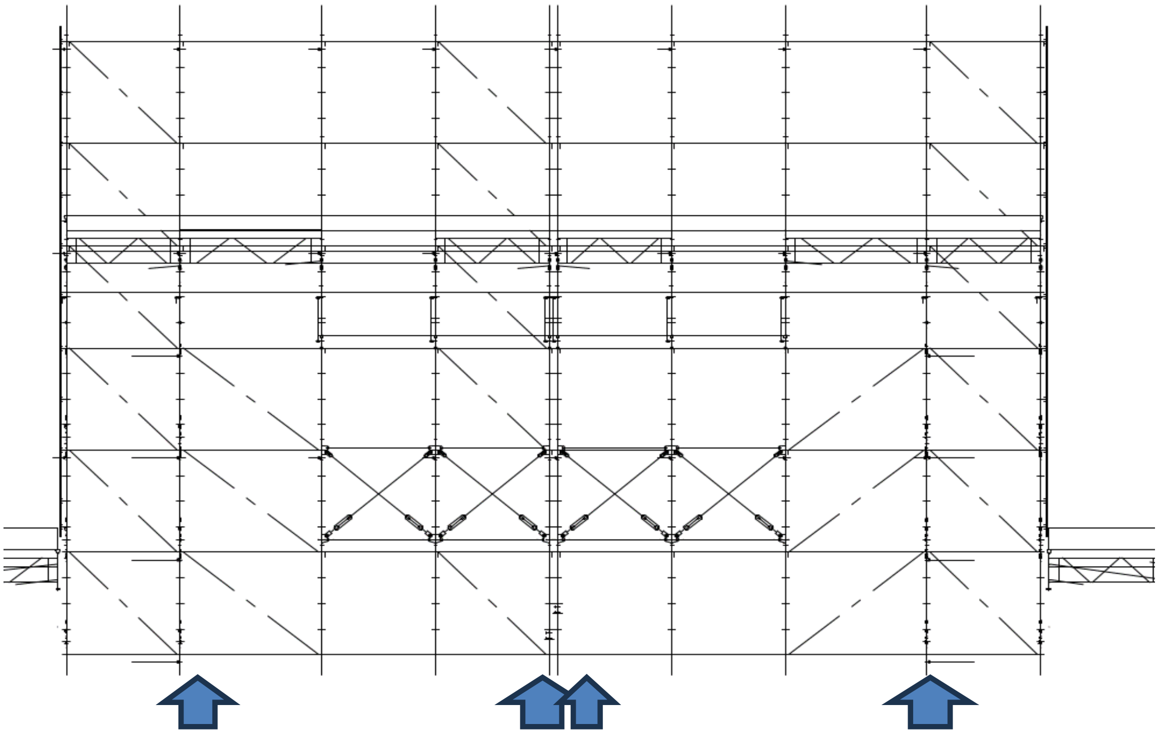
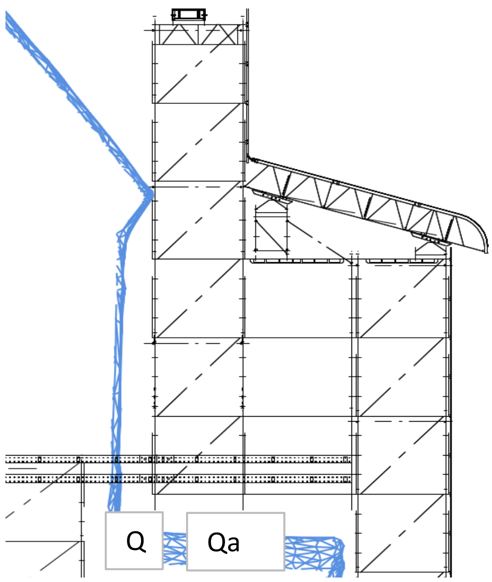
Pos.7: Allround FW - Träger - Shoring Dome scaffolding



Q1 Q2 Q3 Q3 Q2 Q1
2,07 2,07
2,57 2,07 2,07 2,57



Loads:

See chapter 5

Load case 1		Load case 2	
Q1,i=	43,0 kN	Q1,i=	19,0 kN
Q1,a=	6,0 kN	Q1,a=	19,0 kN
Q2,i=	38,4 kN	Q2,i=	17,0 kN
Q2,a=	5,4 kN	Q2,a=	17,0 kN
Q3,i=	19,1 kN	Q3,i=	8,4 kN
Q3,a=	2,7 kN	Q3,a=	8,4 kN

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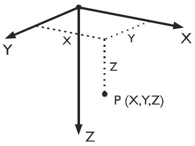
Project: 2023 Model: K-1-FW-dome-1 Date: 21.09.2023

MODEL - GENERAL DATA

General	Model name	:	K-1-FW-dome-1
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

Cartesian



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
41	-	Cartesian	4.140	0.000	0.000	
42	-	Cartesian	4.140	0.000	-1.000	
43	-	Cartesian	4.140	0.000	-2.000	
44	-	Cartesian	4.140	0.000	-2.500	Supported
45	-	Cartesian	4.140	2.070	0.000	
46	-	Cartesian	4.140	2.070	-1.000	
47	-	Cartesian	4.140	2.070	-2.000	
48	-	Cartesian	4.140	2.070	-2.500	
49	-	Cartesian	4.140	0.000	0.500	Supported
50	-	Cartesian	4.140	2.070	0.500	Supported
58	-	Cartesian	6.210	0.000	0.000	
59	-	Cartesian	6.210	0.000	-1.000	
60	-	Cartesian	6.210	0.000	-2.000	
61	-	Cartesian	6.210	0.000	-2.500	
62	-	Cartesian	6.210	2.070	0.000	
63	-	Cartesian	6.210	2.070	-1.000	
64	-	Cartesian	6.210	2.070	-2.000	
65	-	Cartesian	6.210	2.070	-2.500	
66	-	Cartesian	6.210	0.000	0.500	
67	-	Cartesian	6.210	2.070	0.500	
75	-	Cartesian	8.280	0.000	0.000	
76	-	Cartesian	8.280	0.000	-1.000	
77	-	Cartesian	8.280	0.000	-2.000	
78	-	Cartesian	8.280	0.000	-2.500	
79	-	Cartesian	8.280	2.070	0.000	
80	-	Cartesian	8.280	2.070	-1.000	
81	-	Cartesian	8.280	2.070	-2.000	
82	-	Cartesian	8.280	2.070	-2.500	
83	-	Cartesian	8.280	0.000	0.500	
84	-	Cartesian	8.280	2.070	0.500	
92	-	Cartesian	10.850	0.000	0.000	
93	-	Cartesian	10.850	0.000	-1.000	
94	-	Cartesian	10.850	0.000	-2.000	
95	-	Cartesian	10.850	0.000	-2.500	Supported
96	-	Cartesian	10.850	2.070	0.000	
97	-	Cartesian	10.850	2.070	-1.000	
98	-	Cartesian	10.850	2.070	-2.000	
99	-	Cartesian	10.850	2.070	-2.500	
100	-	Cartesian	10.850	0.000	0.500	Supported
101	-	Cartesian	10.850	2.070	0.500	Supported
159	-	Cartesian	4.140	0.000	-0.200	
162	-	Cartesian	4.140	2.070	-0.200	
164	-	Cartesian	6.210	0.000	-0.200	
166	-	Cartesian	6.210	2.070	-0.200	
168	-	Cartesian	8.280	0.000	-0.200	
170	-	Cartesian	8.280	2.070	-0.200	
172	-	Cartesian	10.850	0.000	-0.200	
174	-	Cartesian	10.850	2.070	-0.200	

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN EN 1993-1-1:2010-12					
	21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
2	Baustahl S 235 mit erh. Streckgrenze_					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					
3	Steel S 355 | DIN EN 1993-1-1:2010-12					
	21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
4	Prestressing Steel Bar St 900/1030 | DIN EN 1992-1-1/NA/A1:2015-12					
	20500.00	7884.62	78.50	1.00E-05	1.00	Isotropic Linear Elastic

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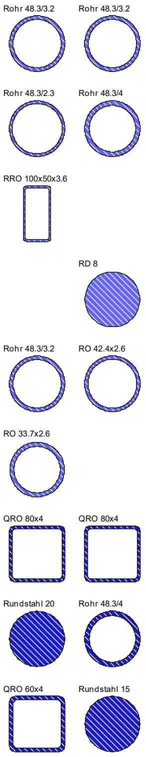
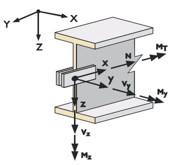


1.3 CROSS-SECTIONS

Section No.	Matl. No.	J [cm^4] A [cm^2]	I_y [cm^4] A_y [cm^2]	I_z [cm^4] A_z [cm^2]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	 Height h
1	Rohr 48.3/3.2 2 Stiel	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
2	Rohr 48.3/3.2 2 Riegel	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
3	Rohr 48.3/2.3 1 Diagonale	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
4	Rohr 48.3/4 1 Rohr	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
5	RRO 100x50x3.6 | DIN 59410:1974 1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel 1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	G1 Gitterträger H=45cm S 1	1.00 10.00	4500.00 5.00	5.00 5.00	0.00	0.00	50.0	100.0
8	RD 8 | DIN 1013-1 1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2 2 Riegel_TG60_1	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
10	RO 42.4x2.6 | DIN 2448 2 Riegel_TG60_2	12.93 3.25	6.46 1.62	6.46 1.62	0.00	0.00	42.4	42.4
11	RO 33.7x2.6 | DIN 2448 1 Diagonale_TG60	6.19 2.54	3.09 1.27	3.09 1.27	0.00	0.00	33.7	33.7
12	U-Doppel U-Doppel 2	1.00 10.00	400.00 5.00	10.00 5.00	0.00	0.00	40.0	80.0
13	QRO 80x4 | DIN 59410:1974 3 Brückenträger_Pfosten	177.00 12.00	115.00 5.12	115.00 5.12	0.00	0.00	80.0	80.0
15	QRO 80x4 | DIN 59410:1974 3 Brückenträger_Riegel	177.00 12.00	115.00 5.12	115.00 5.12	0.00	0.00	80.0	80.0
16	Rundstahl 20 4 Brückenträger-Diagonale	1.57 3.14	0.79 2.64	0.79 2.64	0.00	0.00	20.0	20.0
17	Rohr 48.3/4 3 Pfosten_Fachwerkträger	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
18	QRO 60x4 | DIN 59410:1974 3 Gurt_Fachwerkträger	71.20 8.82	45.90 3.79	45.90 3.79	0.00	0.00	60.0	60.0
19	Rundstahl 15 4 Diagonale_FWT	0.50 1.77	0.25 1.48	0.25 1.48	0.00	0.00	15.0	15.0



1.4 MEMBER HINGES

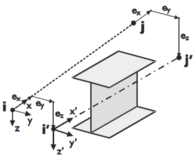
Release No.	Reference System	Force Release or Spring [kN/m] u_x	 u_y	 u_z	Moment Release or Spring [kNm/rad] φ_x	 φ_y	 φ_z
1	Local x,y,z	☐	1000000.000	☐	☐	☒	☐
	Nonlinearity	-	Partial activity...	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1200.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	5000.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
5	Local x,y,z	2500.000	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
1	u_y+	Yielding from release force	12.000	-	
	u_y-	Yielding from release force	12.000	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.700	
		0.0400	0.900	
		0.0600	> 1.000	Tearing
5	$\varphi_{y'}$	0.0000	0.000	
		0.0000	> 0.000	Tearing

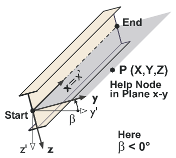


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



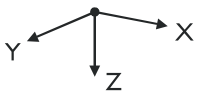
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
175	Beam	41	159	Angle	0.00	17	17	-	-	-	-	0.200	Z
176	Beam	42	43	Angle	0.00	17	17	-	-	-	-	1.000	Z
189	Beam	45	162	Angle	0.00	17	17	-	-	-	-	0.200	Z
190	Beam	46	47	Angle	0.00	17	17	-	-	-	-	1.000	Z
195	Beam	58	164	Angle	0.00	17	17	-	-	-	-	0.200	Z
196	Beam	59	60	Angle	0.00	17	17	-	-	-	-	1.000	Z
197	Beam	164	159	Angle	0.00	18	18	4	4	-	-	2.070	X
198	Beam	60	43	Angle	0.00	18	18	4	4	-	-	2.070	X
199	Tension	164	43	Angle	0.00	19	19	-	-	-	-	2.743	XZ
200	Tension	60	159	Angle	0.00	19	19	-	-	-	-	2.743	XZ
201	Beam	62	166	Angle	0.00	17	17	-	-	-	-	0.200	Z
202	Beam	63	64	Angle	0.00	17	17	-	-	-	-	1.000	Z
203	Beam	166	162	Angle	0.00	18	18	4	4	-	-	2.070	X
204	Beam	64	47	Angle	0.00	18	18	4	4	-	-	2.070	X
205	Tension	166	47	Angle	0.00	19	19	-	-	-	-	2.743	XZ
206	Tension	64	162	Angle	0.00	19	19	-	-	-	-	2.743	XZ
207	Beam	75	168	Angle	0.00	17	17	-	-	-	-	0.200	Z
208	Beam	76	77	Angle	0.00	17	17	-	-	-	-	1.000	Z
209	Beam	168	164	Angle	0.00	18	18	4	4	-	-	2.070	X
210	Beam	77	60	Angle	0.00	18	18	4	4	-	-	2.070	X
211	Tension	168	60	Angle	0.00	19	19	-	-	-	-	2.743	XZ
212	Tension	77	164	Angle	0.00	19	19	-	-	-	-	2.743	XZ
213	Beam	79	170	Angle	0.00	17	17	-	-	-	-	0.200	Z
214	Beam	80	81	Angle	0.00	17	17	-	-	-	-	1.000	Z
215	Beam	170	166	Angle	0.00	18	18	4	4	-	-	2.070	X
216	Beam	81	64	Angle	0.00	18	18	4	4	-	-	2.070	X
217	Tension	170	64	Angle	0.00	19	19	-	-	-	-	2.743	XZ
218	Tension	81	166	Angle	0.00	19	19	-	-	-	-	2.743	XZ
219	Beam	92	172	Angle	0.00	17	17	-	-	-	-	0.200	Z
220	Beam	93	94	Angle	0.00	17	17	-	-	-	-	1.000	Z
221	Beam	172	168	Angle	0.00	18	18	4	4	-	-	2.570	X
222	Beam	94	77	Angle	0.00	18	18	4	4	-	-	2.570	X
225	Beam	159	42	Angle	0.00	17	17	-	-	-	-	0.800	Z
228	Beam	43	44	Angle	0.00	1	1	-	-	-	-	0.500	Z
233	Beam	162	46	Angle	0.00	17	17	-	-	-	-	0.800	Z
236	Beam	47	48	Angle	0.00	1	1	-	-	-	-	0.500	Z
243	Beam	41	49	Angle	0.00	1	1	-	-	-	-	0.500	Z
244	Beam	45	50	Angle	0.00	1	1	-	-	-	-	0.500	Z
247	Beam	44	48	Angle	0.00	2	2	1	1	1	-	2.020	Y
250	Beam	41	45	Angle	0.00	2	2	1	1	1	-	2.020	Y
259	Beam	164	59	Angle	0.00	17	17	-	-	-	-	0.800	Z
260	Beam	60	61	Angle	0.00	1	1	-	-	-	-	0.500	Z
261	Beam	44	61	Angle	0.00	12	12	1	1	1	-	2.020	X

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
262	Beam	166	63	Angle	0.00	17	17	-	-	-	-	0.800	Z
263	Beam	64	65	Angle	0.00	1	1	-	-	-	-	0.500	Z
264	Beam	48	65	Angle	0.00	12	12	1	1	1	-	2.020	X
265	Beam	58	66	Angle	0.00	1	1	-	-	-	-	0.500	Z
266	Beam	62	67	Angle	0.00	1	1	-	-	-	-	0.500	Z
267	Beam	61	65	Angle	0.00	2	2	1	1	1	-	2.020	Y
268	Beam	58	62	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	41	58	Angle	0.00	2	2	1	1	1	-	2.020	X
272	Beam	44	65	Angle	0.00	4	4	5	5	-	-	2.927	XY
273	Beam	168	76	Angle	0.00	17	17	-	-	-	-	0.800	Z
274	Beam	77	78	Angle	0.00	1	1	-	-	-	-	0.500	Z
275	Beam	61	78	Angle	0.00	12	12	1	1	1	-	2.020	X
276	Beam	170	80	Angle	0.00	17	17	-	-	-	-	0.800	Z
277	Beam	81	82	Angle	0.00	1	1	-	-	-	-	0.500	Z
278	Beam	65	82	Angle	0.00	12	12	1	1	1	-	2.020	X
279	Beam	75	83	Angle	0.00	1	1	-	-	-	-	0.500	Z
280	Beam	79	84	Angle	0.00	1	1	-	-	-	-	0.500	Z
281	Beam	78	82	Angle	0.00	2	2	1	1	1	-	2.020	Y
282	Beam	75	79	Angle	0.00	2	2	1	1	1	-	2.020	Y
283	Beam	58	75	Angle	0.00	2	2	1	1	1	-	2.020	X
286	Beam	61	82	Angle	0.00	4	4	5	5	-	-	2.927	XY
287	Tension	172	77	Angle	0.00	19	19	-	-	-	-	3.138	XZ
288	Tension	94	168	Angle	0.00	19	19	-	-	-	-	3.138	XZ
289	Beam	96	174	Angle	0.00	17	17	-	-	-	-	0.200	Z
290	Beam	97	98	Angle	0.00	17	17	-	-	-	-	1.000	Z
291	Beam	174	170	Angle	0.00	18	18	4	4	-	-	2.570	X
292	Beam	98	81	Angle	0.00	18	18	4	4	-	-	2.570	X
293	Tension	174	81	Angle	0.00	19	19	-	-	-	-	3.138	XZ
294	Tension	98	170	Angle	0.00	19	19	-	-	-	-	3.138	XZ
295	Beam	172	93	Angle	0.00	17	17	-	-	-	-	0.800	Z
296	Beam	94	95	Angle	0.00	1	1	-	-	-	-	0.500	Z
297	Beam	78	95	Angle	0.00	12	12	1	1	1	-	2.520	X
298	Beam	174	97	Angle	0.00	17	17	-	-	-	-	0.800	Z
299	Beam	98	99	Angle	0.00	1	1	-	-	-	-	0.500	Z
300	Beam	82	99	Angle	0.00	12	12	1	1	1	-	2.520	X
301	Beam	92	100	Angle	0.00	1	1	-	-	-	-	0.500	Z
302	Beam	96	101	Angle	0.00	1	1	-	-	-	-	0.500	Z
303	Beam	95	99	Angle	0.00	2	2	1	1	1	-	2.020	Y
304	Beam	92	96	Angle	0.00	2	2	1	1	1	-	2.020	Y
305	Beam	75	92	Angle	0.00	2	2	1	1	1	-	2.520	X
308	Beam	78	99	Angle	0.00	4	4	5	5	-	-	3.300	XY
336	Beam	41	62	Angle	0.00	4	4	5	5	-	-	2.927	XY
337	Beam	58	79	Angle	0.00	4	4	5	5	-	-	2.927	XY
338	Beam	75	96	Angle	0.00	4	4	5	5	-	-	3.300	XY
341	Beam	45	62	Angle	0.00	2	2	1	1	1	-	2.020	X
342	Beam	62	79	Angle	0.00	2	2	1	1	1	-	2.020	X
343	Beam	79	96	Angle	0.00	2	2	1	1	1	-	2.520	X

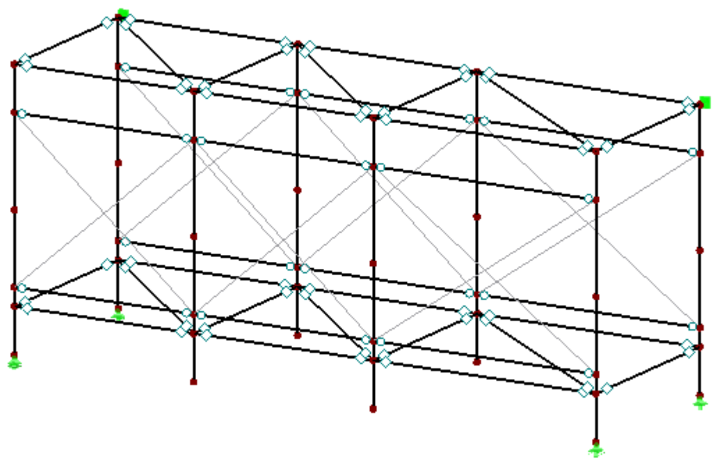
1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	100	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☐	☐
4	50	XYZ	0.00	0.00	0.00	☐	☐	☐	☒	☐	☐	☐
5	44,95	XYZ	0.00	0.00	0.00	☐	☐	☒	☐	☐	☐	☐
6	49	XYZ	0.00	0.00	0.00	☐	☐	☒	☒	☐	☐	☐
7	101	XYZ	0.00	0.00	0.00	☐	☒	☐	☒	☐	☐	☐

MODEL

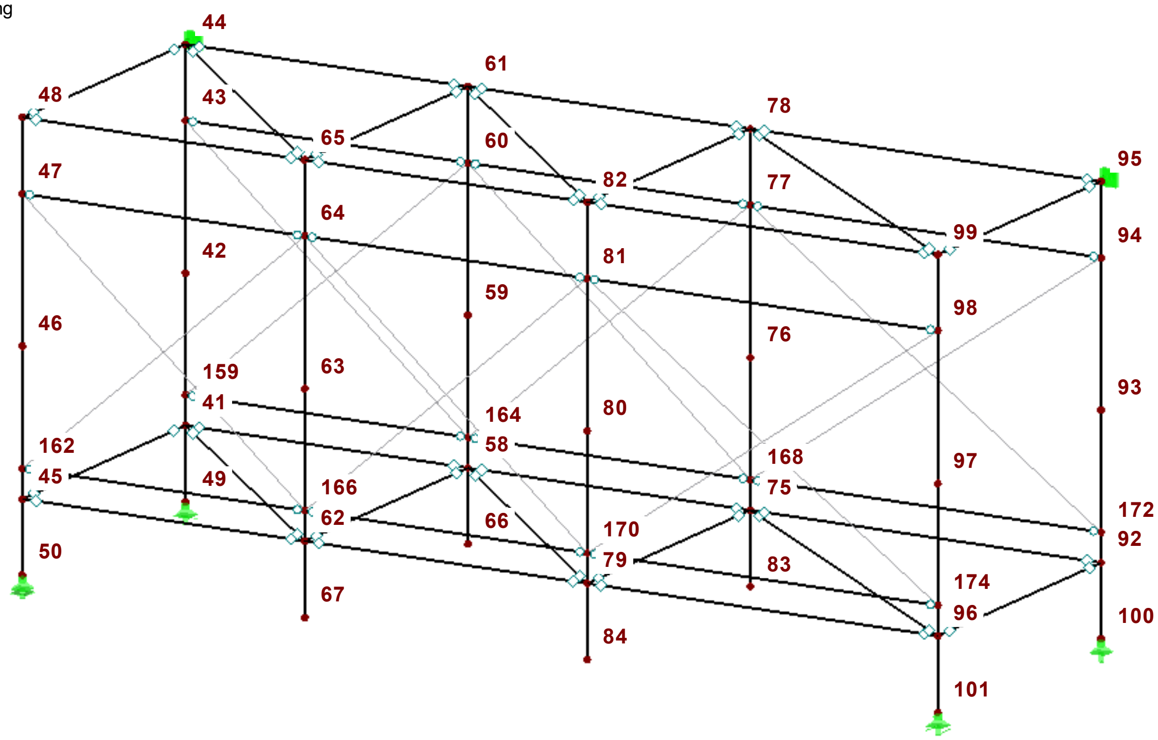
Isometric



MODEL

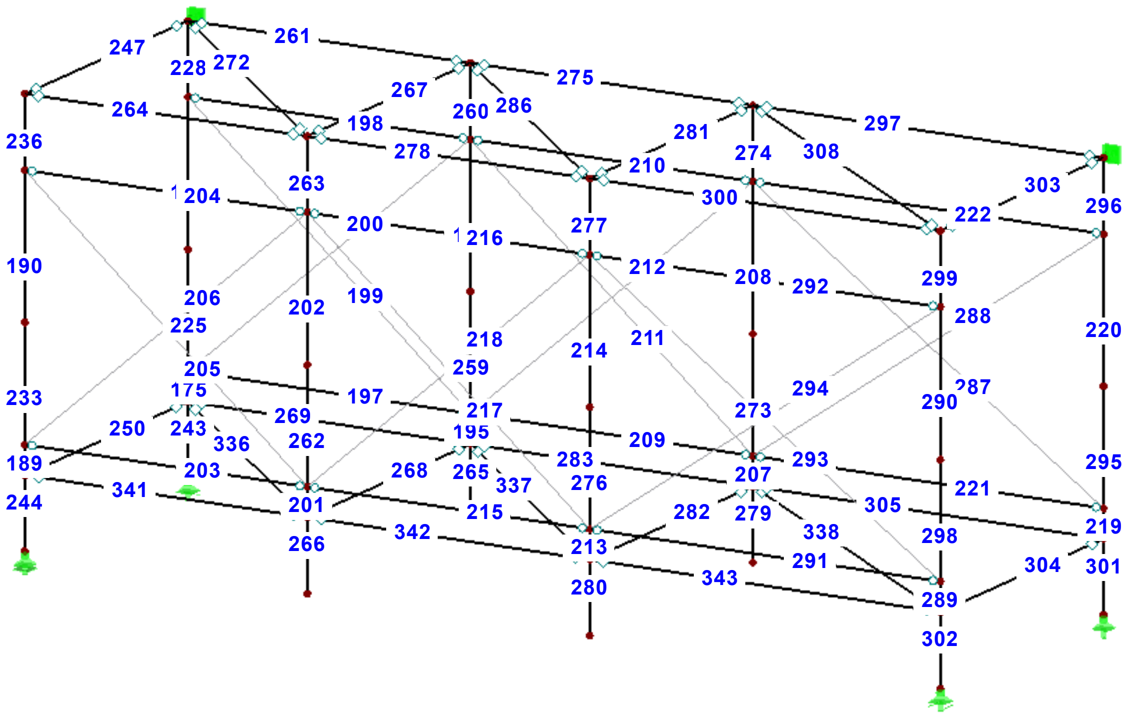
Node Numbering

Isometric



MODEL

Member Numbering Isometric



2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	Load case 1	Permanent	☐			
LC2	Load case 2	Permanent/Imposed	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	Load case 1	Method of analysis	:	Geometrically linear analysis
LC2	Load case 2	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		LC1	1	1.00	LC1	Load case 1
CO2		LC2	1	1.00	LC2	Load case 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	LC1	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	LC2	Method of analysis	:	Second order analysis (P-Delta)

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
		Options	: ☒ Consider favorable effects due to tension : ☒ Refer internal forces to deformed system for: ☒ Normal forces N ☒ Shear forces V_y and V_z ☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM) : ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) : ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2

LC1
Load case 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: Load case 1

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	61	0 | Global XYZ	0.000	0.000	43.000	0.000	0.000	0.000
2	78	0 | Global XYZ	0.000	0.000	38.400	0.000	0.000	0.000
3	95	0 | Global XYZ	0.000	0.000	19.100	0.000	0.000	0.000
4	65	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000
5	82	0 | Global XYZ	0.000	0.000	5.400	0.000	0.000	0.000
6	99	0 | Global XYZ	0.000	0.000	2.700	0.000	0.000	0.000

LC2
Load case 2

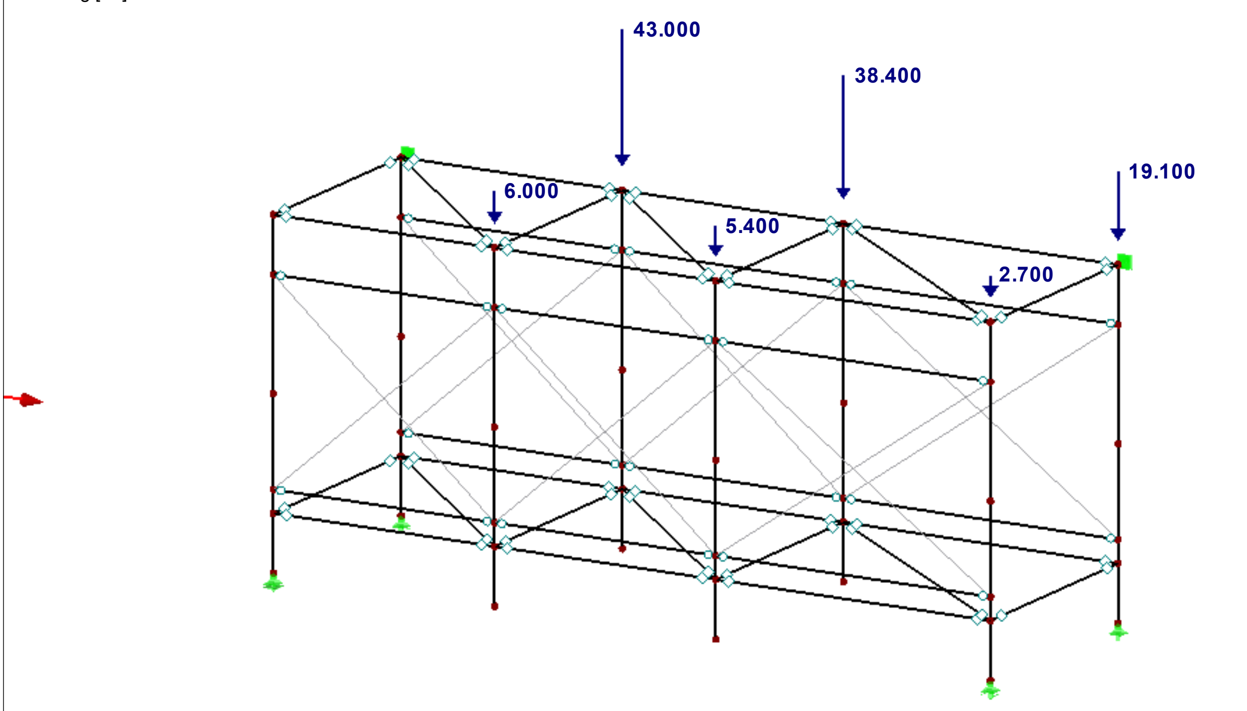
3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Load case 2

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	61,65	0 | Global XYZ	0.000	0.000	19.000	0.000	0.000	0.000
2	95,99	0 | Global XYZ	0.000	0.000	8.400	0.000	0.000	0.000
3	78,82	0 | Global XYZ	0.000	0.000	17.000	0.000	0.000	0.000

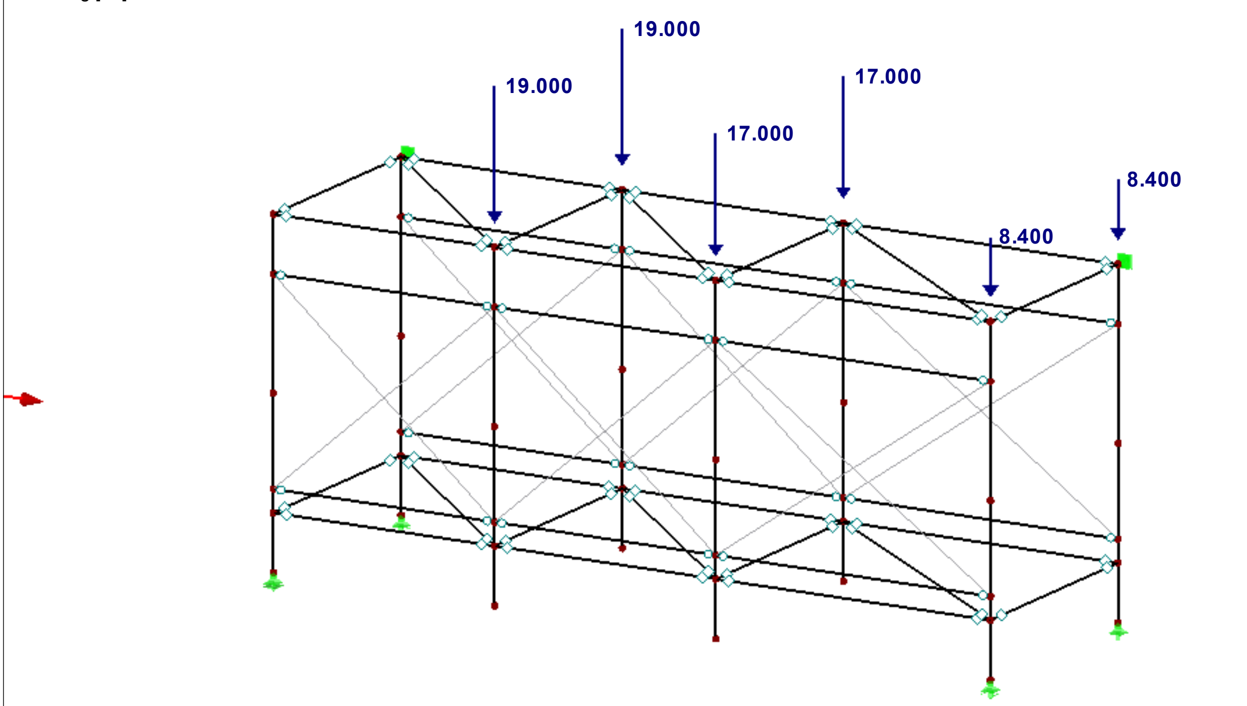
CO1: LC1

CO1 : LC1
Belastung [kN]
Isometric



CO2: LC2

CO2 : LC2
Belastung [kN]
Isometric



■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - Load case 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	114.60	kN	
	Sum of support reactions in Z	114.60	kN	Deviation 0.00%
	Resultant of reactions about X	-89.42	kNm	At center of gravity of model (X:7.45, Y:1.03, Z:-1.27 m)
	Resultant of reactions about Y	-49.75	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	1.7	mm	Member No. 176, x: 0.800 m
	Max displacement in Y	1.2	mm	Member No. 266, x: 0.500 m
	Max displacement in Z	12.8	mm	Member No. 275, x: 2.020 m
	Max vectorial displacement	12.8	mm	Member No. 275, x: 2.020 m
	Max rotation about X	-5.9	mrad	Member No. 281, x: 1.010 m
	Max rotation about Y	-6.0	mrad	Member No. 269, x: 1.010 m
	Max rotation about Z	-0.1	mrad	Member No. 250, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC2 - Load case 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	88.80	kN	
	Sum of support reactions in Z	88.80	kN	Deviation 0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:7.45, Y:1.03, Z:-1.27 m)
	Resultant of reactions about Y	-38.25	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.9	mm	Member No. 176, x: 0.800 m
	Max displacement in Y	0.0	mm	Member No. 265, x: 0.500 m
	Max displacement in Z	5.7	mm	Member No. 300, x: 0.000 m
	Max vectorial displacement	5.7	mm	Member No. 300, x: 0.000 m
	Max rotation about X	-1.3	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	-2.7	mrad	Member No. 341, x: 1.010 m
	Max rotation about Z	-0.0	mrad	Member No. 337, x: 1.464 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	CO1 - LC1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	114.60	kN	
	Sum of support reactions in Z	114.60	kN	Deviation 0.00%
	Max displacement in X	1.8	mm	Member No. 176, x: 0.750 m
	Max displacement in Y	2.3	mm	Member No. 280, x: 0.500 m
	Max displacement in Z	12.9	mm	Member No. 275, x: 2.020 m
	Max vectorial displacement	12.9	mm	Member No. 275, x: 2.020 m
	Max rotation about X	-5.9	mrad	Member No. 281, x: 0.909 m
	Max rotation about Y	-6.1	mrad	Member No. 269, x: 1.010 m
	Max rotation about Z	-0.1	mrad	Member No. 261, x: 1.010 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO2 - LC2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	88.80	kN	
	Sum of support reactions in Z	88.80	kN	Deviation 0.00%
	Max displacement in X	0.9	mm	Member No. 176, x: 0.800 m
	Max displacement in Y	0.0	mm	Member No. 265, x: 0.500 m
	Max displacement in Z	5.7	mm	Member No. 281, x: 1.683 m
	Max vectorial displacement	5.7	mm	Member No. 281, x: 1.683 m
	Max rotation about X	-1.3	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	-2.7	mrad	Member No. 341, x: 1.010 m
	Max rotation about Z	-0.0	mrad	Member No. 337, x: 1.464 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	1.8	mm	CO1, Member No. 176, x: 0.750 m

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Max displacement in Y	2.3	mm	CO1, Member No. 280, x: 0.500 m
Max displacement in Z	12.9	mm	CO1, Member No. 275, x: 2.020 m
Max vectorial displacement	12.9	mm	CO1, Member No. 275, x: 2.020 m
Max rotation about X	-5.9	mrad	LC1, Member No. 281, x: 1.010 m
Max rotation about Y	-6.1	mrad	CO1, Member No. 269, x: 1.010 m
Max rotation about Z	-0.1	mrad	CO1, Member No. 261, x: 1.010 m
Number of 1D finite elements (member elements)	90		
Number of FE mesh nodes	48		
Number of equations	288		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		
Activate Release Nonlinearities	☒		
Activate failed members	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☒ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
	Maximum number of reactivations	:	3

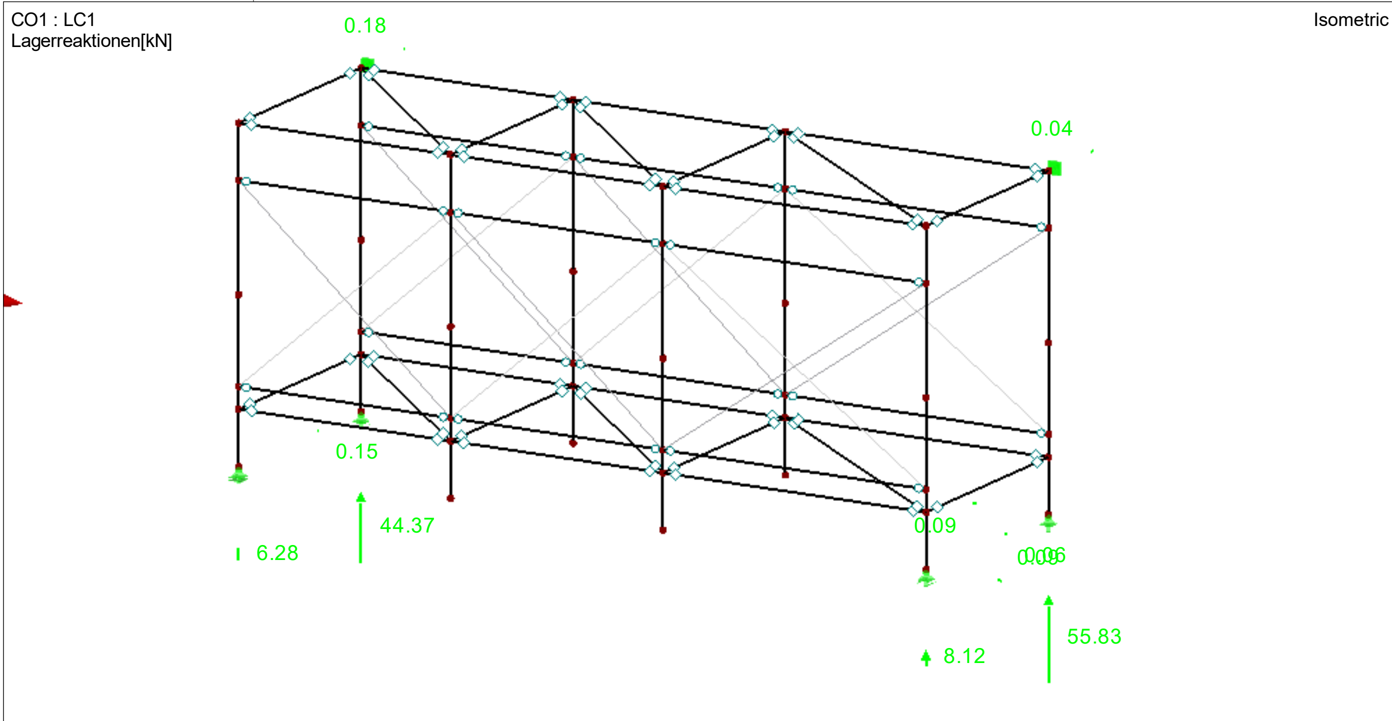
■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/3.2 (Stiel)								
266	CO1	MAX N	0.000	0.00	0.00	0.00	0.00	0.00	0.00
301	CO1	MIN N	0.000	-55.83	-0.17	-0.03	0.00	0.02	-0.11
277	LC1	MAX V_y	0.000	-5.46	0.06	0.13	0.00	-0.03	-0.06
243	CO1	MIN V_y	0.500	-44.37	-0.31	-0.03	0.00	0.00	0.00
296	LC1	MAX V_z	0.000	-19.23	0.00	0.75	0.00	-0.17	0.00
228	LC1	MIN V_z	0.000	-0.18	-0.01	-0.80	0.00	0.18	-0.01
260	CO1	MAX M_T	0.500	-42.78	-0.07	-0.52	0.00	-0.18	-0.05
274	CO1	MIN M_T	0.500	-38.18	-0.05	0.39	0.00	0.13	-0.05
296	LC1	MAX M_y	0.500	-19.23	0.00	0.75	0.00	0.20	0.00
228	LC1	MIN M_y	0.500	-0.18	-0.01	-0.80	0.00	-0.22	0.00
296	CO1	MAX M_z	0.500	-19.24	-0.04	0.68	0.00	0.20	0.02
243	CO1	MIN M_z	0.000	-44.37	-0.23	-0.02	0.00	0.01	-0.14
	Section No. 2: Rohr 48.3/3.2 (Riegel)								
283	LC1	MAX N	0.000	2.82	0.00	0.01	0.00	-0.02	0.00
268	CO1	MIN N	0.000	-0.11	0.00	-0.08	-0.01	0.09	0.00
267	LC1	MAX V_y	0.000	0.12	0.00	-0.07	0.00	0.07	0.00
250	LC1	MIN V_y	0.000	0.01	0.00	0.00	-0.01	0.01	0.00
269	LC1	MAX V_z	0.000	1.38	0.00	0.13	-0.01	-0.13	0.00
305	CO1	MIN V_z	0.000	1.47	0.00	-0.10	0.02	0.12	0.00
305	CO1	MAX M_T	0.252	1.47	0.00	-0.10	0.02	0.10	0.00
269	CO1	MIN M_T	2.020	1.25	0.00	0.13	-0.02	0.13	0.00
269	LC1	MAX M_y	2.020	1.38	0.00	0.13	-0.01	0.14	0.00
269	LC1	MIN M_y	0.000	1.38	0.00	0.13	-0.01	-0.13	0.00
267	LC1	MAX M_z	0.000	0.12	0.00	-0.07	0.00	0.07	0.00
267	LC1	MIN M_z	2.020	0.12	0.00	-0.07	0.00	-0.08	0.00
	Section No. 4: Rohr 48.3/4 (Rohr)								
336	LC1	MAX N	0.000	0.21	0.00	0.00	-0.01	0.00	0.00
272	CO1	MIN N	0.000	-0.26	0.00	0.00	-0.01	0.00	0.00
308	LC1	MAX V_y	0.000	0.05	0.00	0.00	0.01	0.00	0.00
337	LC1	MIN V_y	0.000	0.08	0.00	0.00	-0.01	0.00	0.00
308	CO1	MAX V_z	0.000	0.05	0.00	0.00	0.01	0.00	0.00
338	CO1	MIN V_z	0.000	-0.07	0.00	0.00	0.00	0.00	0.00
308	CO1	MAX M_T	3.300	0.05	0.00	0.00	0.01	0.00	0.00
336	CO1	MIN M_T	0.000	0.21	0.00	0.00	-0.02	0.00	0.00
338	CO1	MAX M_y	0.000	-0.07	0.00	0.00	0.00	0.00	0.00
308	CO1	MIN M_y	0.000	0.05	0.00	0.00	0.01	0.00	0.00
286	CO1	MAX M_z	0.000	-0.12	0.00	0.00	0.00	0.00	0.00
337	LC1	MIN M_z	0.000	0.08	0.00	0.00	-0.01	0.00	0.00
	Section No. 12: U-Doppel U-Doppel								
264	CO1	MAX N	1.010	-0.04	0.00	0.02	0.00	0.00	0.00
275	LC1	MIN N	0.000	-1.13	0.00	0.02	0.00	-0.01	0.00

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
297	CO1	MAX V_y	0.000	-0.66	0.00	-0.14	0.00	0.15	0.00
261	CO1	MIN V_y	2.020	-0.57	-0.01	0.18	0.00	0.17	0.01
261	LC1	MAX V_z	0.000	-0.62	0.00	0.18	0.00	-0.20	0.00
297	LC1	MIN V_z	0.000	-0.74	0.00	-0.14	0.00	0.15	0.00
300	LC1	MAX M_T	0.000	-0.18	0.00	-0.03	0.00	0.03	0.00
261	CO1	MIN M_T	0.000	-0.57	0.00	0.18	0.00	-0.20	0.00
261	LC1	MAX M_y	2.020	-0.62	0.00	0.18	0.00	0.17	0.00
261	LC1	MIN M_y	0.000	-0.62	0.00	0.18	0.00	-0.20	0.00
261	CO1	MAX M_z	2.020	-0.57	-0.01	0.18	0.00	0.17	0.01
261	CO1	MIN M_z	0.000	-0.57	0.00	0.18	0.00	-0.20	0.00
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)								
213	LC1	MAX N	0.000	0.07	0.06	0.28	0.00	-0.03	0.08
220	CO1	MIN N	1.000	-55.75	-0.10	-0.05	0.00	-0.15	0.00
219	CO1	MAX V_y	0.000	-55.74	0.10	1.44	0.00	-0.15	-0.06
220	CO1	MIN V_y	1.000	-55.75	-0.10	-0.05	0.00	-0.15	0.00
219	LC1	MAX V_z	0.000	-55.72	0.00	1.57	0.00	-0.17	-0.02
175	LC1	MIN V_z	0.000	-44.22	-0.01	-1.53	0.00	0.15	-0.04
175	CO1	MAX M_T	0.000	-44.25	0.07	-1.42	0.00	0.14	-0.08
289	LC1	MIN M_T	0.000	-8.11	0.01	0.06	0.00	0.02	0.01
176	LC1	MAX M_y	1.000	-44.22	-0.01	0.18	0.00	0.18	-0.01
220	LC1	MIN M_y	1.000	-55.72	0.00	-0.18	0.00	-0.17	-0.01
207	CO1	MAX M_z	0.000	-0.20	0.06	1.17	0.00	-0.14	0.08
175	CO1	MIN M_z	0.200	-44.25	0.05	-1.42	0.00	-0.15	-0.09
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)								
209	CO1	MAX N	0.000	47.63	0.00	0.00	0.00	0.00	0.00
222	CO1	MIN N	0.000	-51.32	0.00	0.00	0.00	0.00	0.00
221	CO1	MAX V_y	2.570	-1.53	0.00	0.00	0.03	0.00	0.00
198	CO1	MIN V_y	0.000	-49.77	0.00	0.00	0.00	0.00	0.00
198	CO1	MAX V_z	0.000	-49.77	0.00	0.00	0.00	0.00	0.00
222	CO1	MIN V_z	0.000	-51.32	0.00	0.00	0.00	0.00	0.00
221	CO1	MAX M_T	0.000	-1.53	0.00	0.00	0.03	0.00	0.00
197	CO1	MIN M_T	0.000	-1.53	0.00	0.00	-0.03	0.00	0.00
204	CO1	MAX M_y	1.863	-7.13	0.00	0.00	-0.01	0.00	0.00
197	CO1	MIN M_y	0.000	-1.53	0.00	0.00	-0.03	0.00	0.00
222	CO1	MAX M_z	0.000	-51.32	0.00	0.00	0.00	0.00	0.00
197	CO1	MIN M_z	1.725	-1.53	0.00	0.00	-0.03	0.00	0.00
	Section No. 19: Rundstahl 15 (Diagonale_FWT)								
199	CO1	MAX N	0.000	67.30	0.00	0.00	0.00	0.00	0.00
217	CO1	MIN N	0.000	0.23	0.00	0.00	0.00	0.00	0.00
199	LC1	MAX V_y	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MIN V_y	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MAX V_z	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MIN V_z	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MAX M_T	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MIN M_T	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MAX M_y	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MIN M_y	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MAX M_z	0.000	67.11	0.00	0.00	0.00	0.00	0.00
199	LC1	MIN M_z	0.000	67.11	0.00	0.00	0.00	0.00	0.00

LAGERREAKTIONEN



Max P-X': 0.09, Min P-X': -0.09 kN
Max P-Y': 0.15, Min P-Y': -0.18 kN
Max P-Z': 55.83, Min P-Z': 0.00 kN

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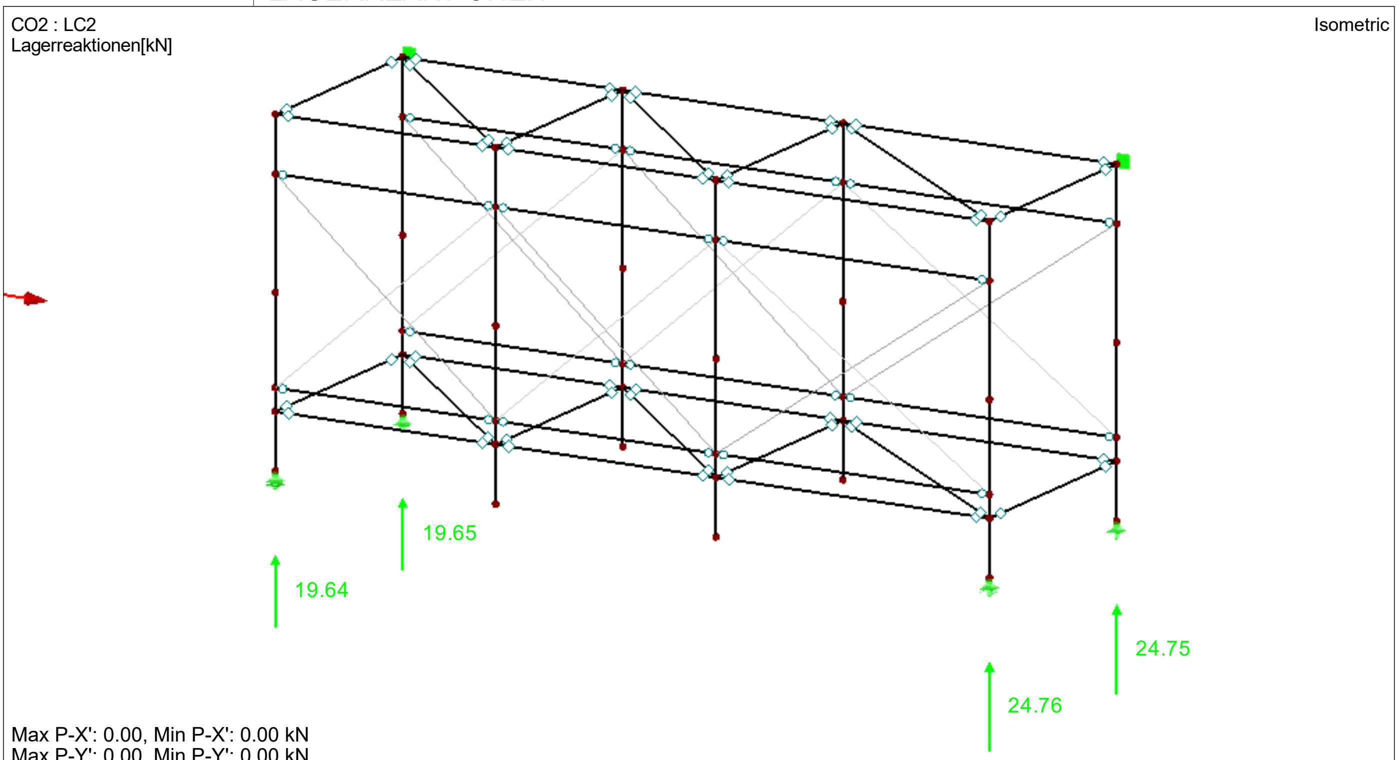


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 24.76, Min P-Z': 0.00 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz	Correspondin Load Cases
	Section No. 1: Rohr 48.3/3.2 (Stiel)										
228	RC1		0.000	MAX N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
301	RC1		0.000	MIN N	▷ -55.83	-0.17	-0.03	0.00	0.02	-0.11	CO 1
277	RC1		0.000	MAX V_y	-5.44	▷ 0.05	0.14	0.00	-0.03	-0.05	CO 1
243	RC1		0.500	MIN V_y	-44.37	▷ -0.31	-0.03	0.00	0.00	0.00	CO 1
296	RC1		0.225	MAX V_z	-19.24	-0.04	▷ 0.70	0.00	0.01	0.01	CO 1
228	RC1		0.200	MIN V_z	-0.19	-0.02	▷ -0.76	0.00	0.01	0.01	CO 1
260	RC1		0.500	MAX M_T	-42.78	-0.07	-0.52	▷ 0.00	-0.18	-0.05	CO 1
274	RC1		0.500	MIN M_T	-38.18	-0.05	0.39	▷ 0.00	0.13	-0.05	CO 1
296	RC1		0.500	MAX M_y	-19.24	-0.04	0.68	0.00	▷ 0.20	0.02	CO 1
228	RC1		0.500	MIN M_y	-0.19	-0.02	-0.76	0.00	▷ -0.22	0.01	CO 1
296	RC1		0.500	MAX M_z	-19.24	-0.04	0.68	0.00	0.20	▷ 0.02	CO 1
243	RC1		0.000	MIN M_z	-44.37	-0.23	-0.02	0.00	0.01	▷ -0.14	CO 1
	Section No. 2: Rohr 48.3/3.2 (Riegel)										
283	RC1		1.919	MAX N	▷ 2.59	0.00	0.01	0.00	0.00	0.00	CO 1
268	RC1		0.000	MIN N	▷ -0.11	0.00	-0.08	-0.01	0.09	0.00	CO 1
267	RC1		0.000	MAX V_y	0.14	▷ 0.00	-0.05	0.00	0.05	0.00	CO 1
250	RC1		0.000	MIN V_y	0.01	▷ 0.00	-0.01	0.00	0.03	0.00	CO 1
269	RC1		2.020	MAX V_z	1.25	0.00	▷ 0.13	-0.02	0.13	0.00	CO 1
305	RC1		0.000	MIN V_z	1.47	0.00	▷ -0.10	0.02	0.12	0.00	CO 1
305	RC1		0.252	MAX M_T	1.47	0.00	-0.10	▷ 0.02	0.10	0.00	CO 1
269	RC1		2.020	MIN M_T	1.25	0.00	0.13	▷ -0.02	0.13	0.00	CO 1
269	RC1		2.020	MAX M_y	1.25	0.00	0.13	-0.02	▷ 0.13	0.00	CO 1
269	RC1		0.000	MIN M_y	1.25	0.00	0.13	-0.02	▷ -0.13	0.00	CO 1
267	RC1		0.000	MAX M_z	0.14	0.00	-0.05	0.00	0.05	▷ 0.00	CO 1
267	RC1		2.020	MIN M_z	0.14	0.00	-0.05	0.00	-0.06	▷ 0.00	CO 1
	Section No. 4: Rohr 48.3/4 (Rohr)										
336	RC1		0.000	MAX N	▷ 0.21	0.00	0.00	-0.02	0.00	0.00	CO 1
272	RC1		0.000	MIN N	▷ -0.26	0.00	0.00	-0.01	0.00	0.00	CO 1
308	RC1		0.000	MAX V_y	0.05	▷ 0.00	0.00	0.01	0.00	0.00	CO 1
337	RC1		0.000	MIN V_y	0.09	▷ 0.00	0.00	-0.01	0.00	0.00	CO 1
272	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
272	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
308	RC1		3.300	MAX M_T	0.05	0.00	0.00	▷ 0.01	0.00	0.00	CO 1
336	RC1		0.000	MIN M_T	0.21	0.00	0.00	▷ -0.02	0.00	0.00	CO 1
272	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
272	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
286	RC1		0.000	MAX M_z	-0.12	0.00	0.00	0.00	0.00	▷ 0.00	CO 1
337	RC1		0.000	MIN M_z	0.09	0.00	0.00	-0.01	0.00	▷ 0.00	CO 1
	Section No. 12: U-Doppel U-Doppel										
261	RC1		0.000	MAX N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
275	RC1		2.020	MIN N	▷ -1.01	0.00	0.02	0.00	0.03	0.00	CO 1
297	RC1		0.000	MAX V_y	-0.66	▷ 0.00	-0.14	0.00	0.15	0.00	CO 1
261	RC1		2.020	MIN V_y	-0.57	▷ -0.01	0.18	0.00	0.17	0.01	CO 1
261	RC1		1.111	MAX V_z	-0.56	0.00	▷ 0.18	0.00	0.00	0.00	CO 1
297	RC1		1.134	MIN V_z	-0.66	0.00	▷ -0.14	0.00	0.00	0.00	CO 1
300	RC1		0.378	MAX M_T	-0.18	0.00	-0.03	▷ 0.00	0.02	0.00	CO 1
261	RC1		0.000	MIN M_T	-0.57	0.00	0.18	▷ 0.00	-0.20	0.00	CO 1
261	RC1		2.020	MAX M_y	-0.57	-0.01	0.18	0.00	▷ 0.17	0.01	CO 1
261	RC1		0.000	MIN M_y	-0.57	0.00	0.18	0.00	▷ -0.20	0.00	CO 1
261	RC1		2.020	MAX M_z	-0.57	-0.01	0.18	0.00	0.17	▷ 0.01	CO 1
261	RC1		0.000	MIN M_z	-0.57	0.00	0.18	0.00	-0.20	▷ 0.00	CO 1
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)										
213	RC1		0.130	MAX N	▷ 0.07	0.05	0.29	0.00	0.01	0.07	CO 1
220	RC1		1.000	MIN N	▷ -55.75	-0.10	-0.05	0.00	-0.15	0.00	CO 1
219	RC1		0.000	MAX V_y	-55.74	▷ 0.10	1.44	0.00	-0.15	-0.06	CO 1
220	RC1		1.000	MIN V_y	-55.75	▷ -0.10	-0.05	0.00	-0.15	0.00	CO 1
219	RC1		0.100	MAX V_z	-55.74	0.09	▷ 1.46	0.00	0.00	-0.07	CO 1
175	RC1		0.100	MIN V_z	-44.25	0.06	▷ -1.43	0.00	0.00	-0.08	CO 1
175	RC1		0.000	MAX M_T	-44.25	0.07	-1.42	▷ 0.00	0.14	-0.08	CO 1
219	RC1		0.000	MIN M_T	-55.74	0.10	1.44	▷ 0.00	-0.15	-0.06	CO 1
195	RC1		0.000	MAX M_y	-0.20	0.05	-1.41	0.00	▷ 0.17	0.08	CO 1
220	RC1		1.000	MIN M_y	-55.75	-0.10	-0.05	0.00	▷ -0.15	0.00	CO 1
207	RC1		0.000	MAX M_z	-0.20	0.06	1.17	0.00	-0.14	▷ 0.08	CO 1
175	RC1		0.200	MIN M_z	-44.25	0.05	-1.42	0.00	-0.15	▷ -0.09	CO 1
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)										
209	RC1		0.000	MAX N	▷ 47.63	0.00	0.00	0.00	0.00	0.00	CO 1
222	RC1		0.000	MIN N	▷ -51.32	0.00	0.00	0.00	0.00	0.00	CO 1
197	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
197	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
197	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
197	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
221	RC1		0.000	MAX M_T	-1.53	0.00	0.00	▷ 0.03	0.00	0.00	CO 1
197	RC1		0.000	MIN M_T	-1.53	0.00	0.00	▷ -0.03	0.00	0.00	CO 1
197	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
197	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
197	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
197	RC1		2.070	MIN M_z	-1.53	0.00	0.00	-0.03	0.00	▷ 0.00	CO 1
	Section No. 19: Rundstahl 15 (Diagonale_FWT)										
199	RC1		0.000	MAX N	▷ 67.30	0.00	0.00	0.00	0.00	0.00	CO 1
199	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	

4.3 CROSS-SECTIONS - INTERNAL FORCES

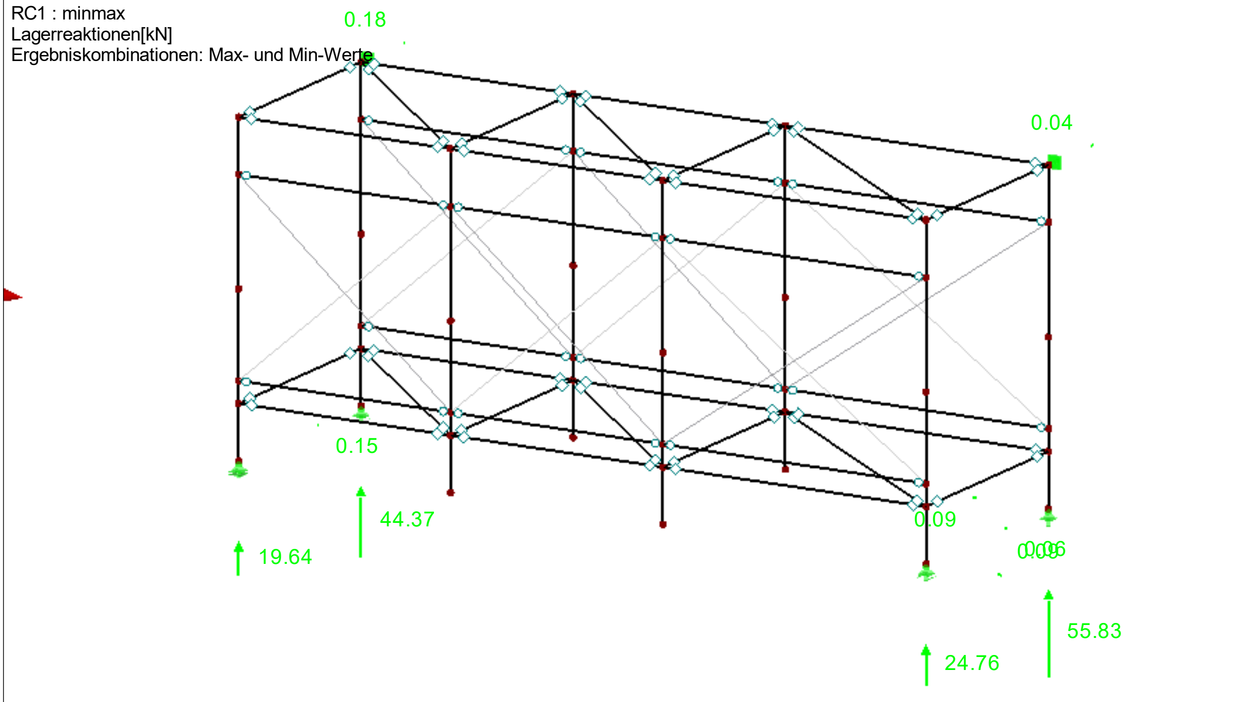
Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
199	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	

LAGERREAKTIONEN

RC1 : minmax
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max P-X': 0.09, Min P-X': -0.09 kN
Max P-Y': 0.15, Min P-Y': -0.18 kN
Max P-Z': 55.83, Min P-Z': 0.00 kN

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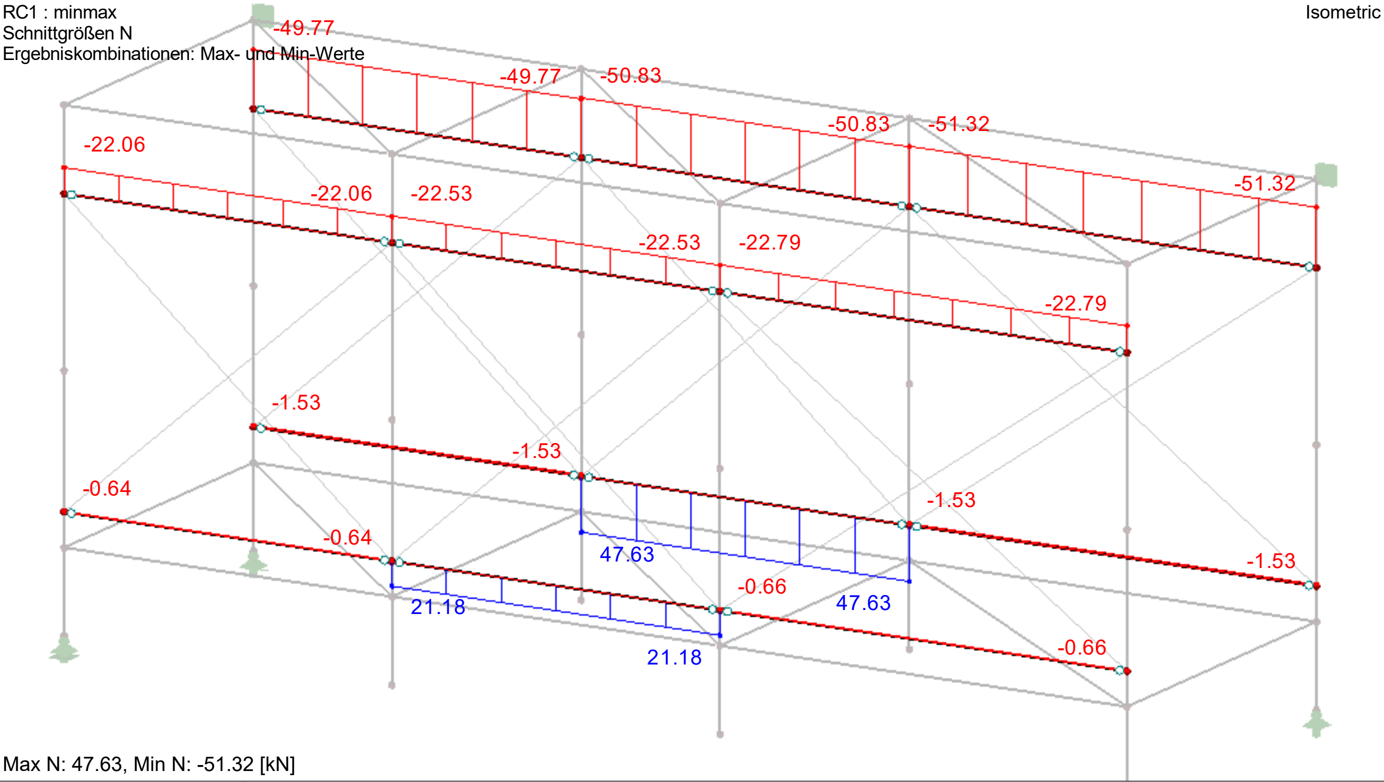
Project: 2023 Model: K-1-FW-dome-1 Date: 21.09.2023

INTERNAL FORCES N

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric

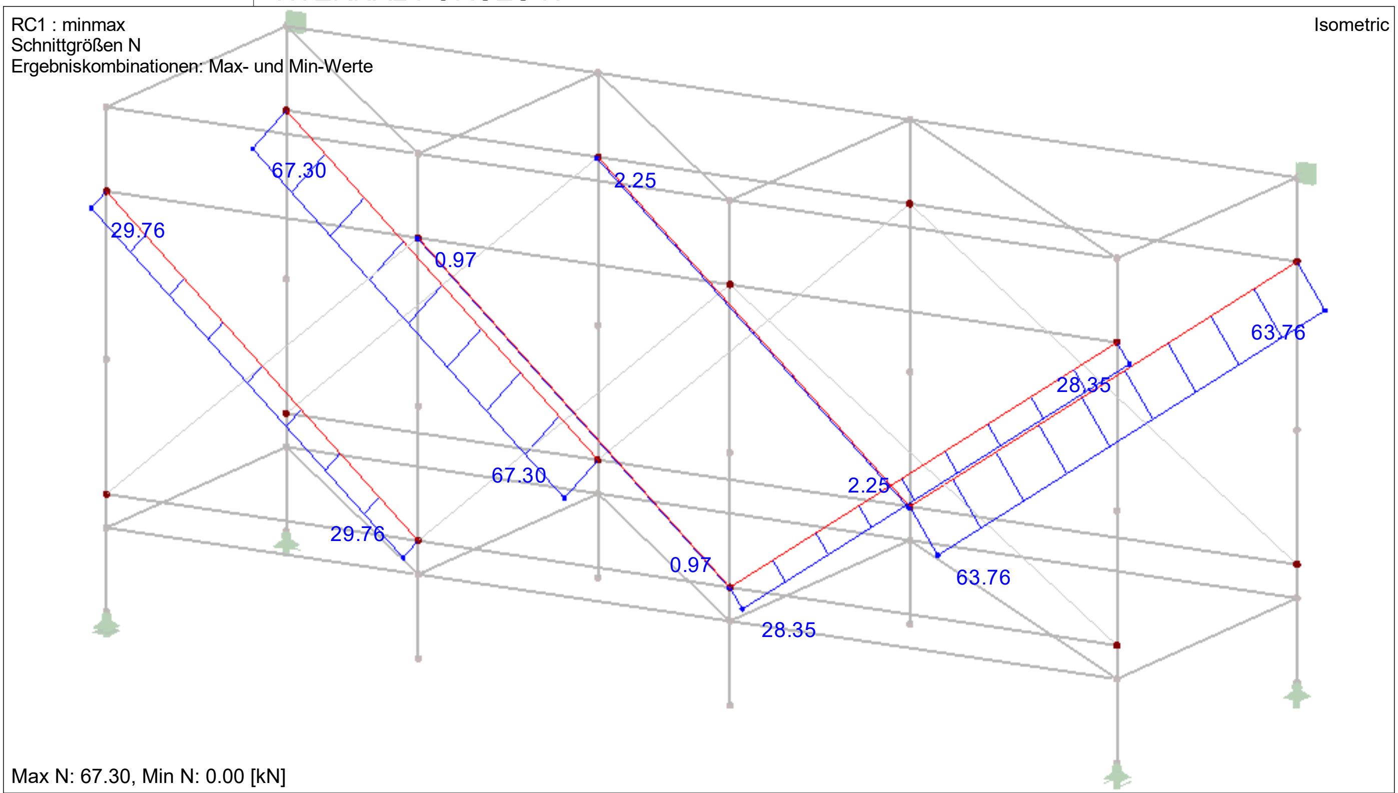


Max N: 47.63, Min N: -51.32 [kN]

INTERNAL FORCES N

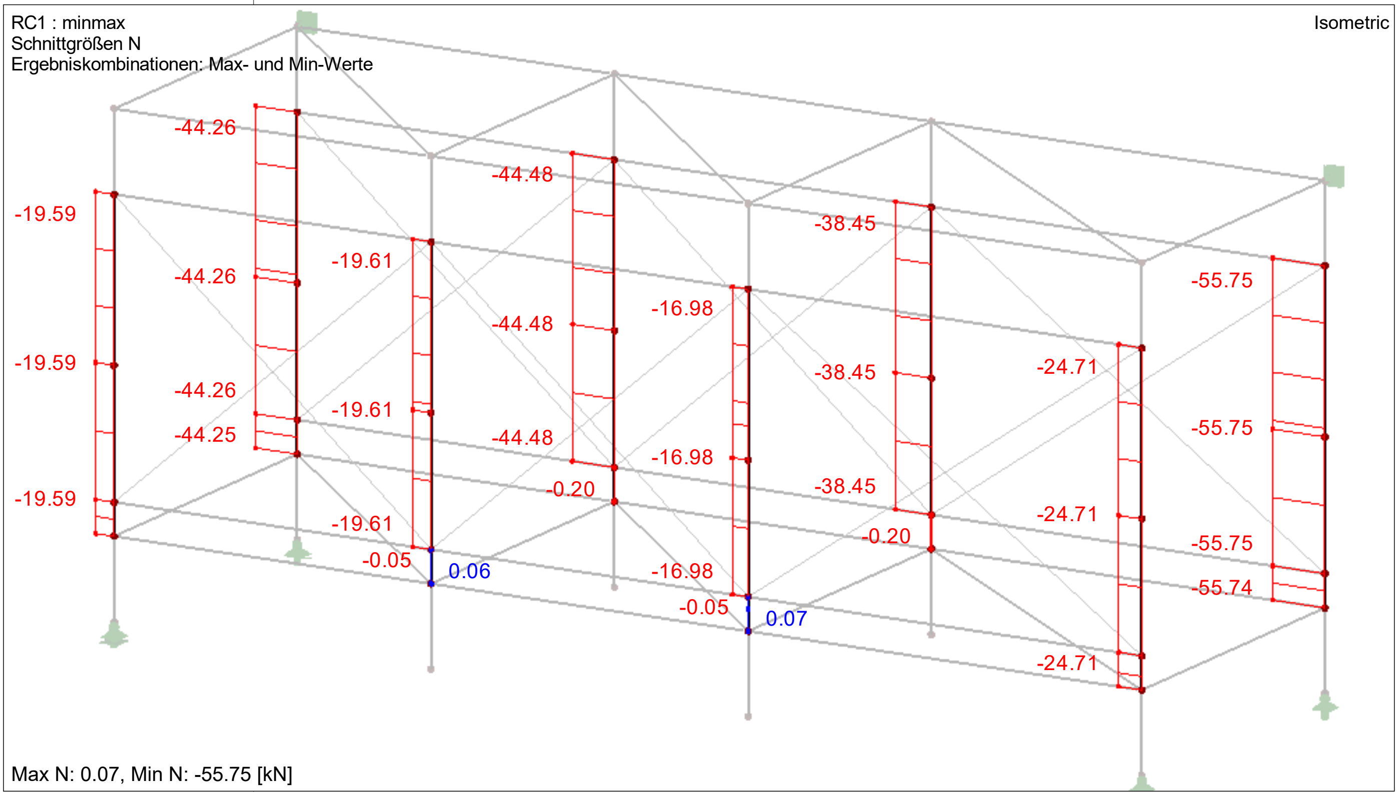
RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric

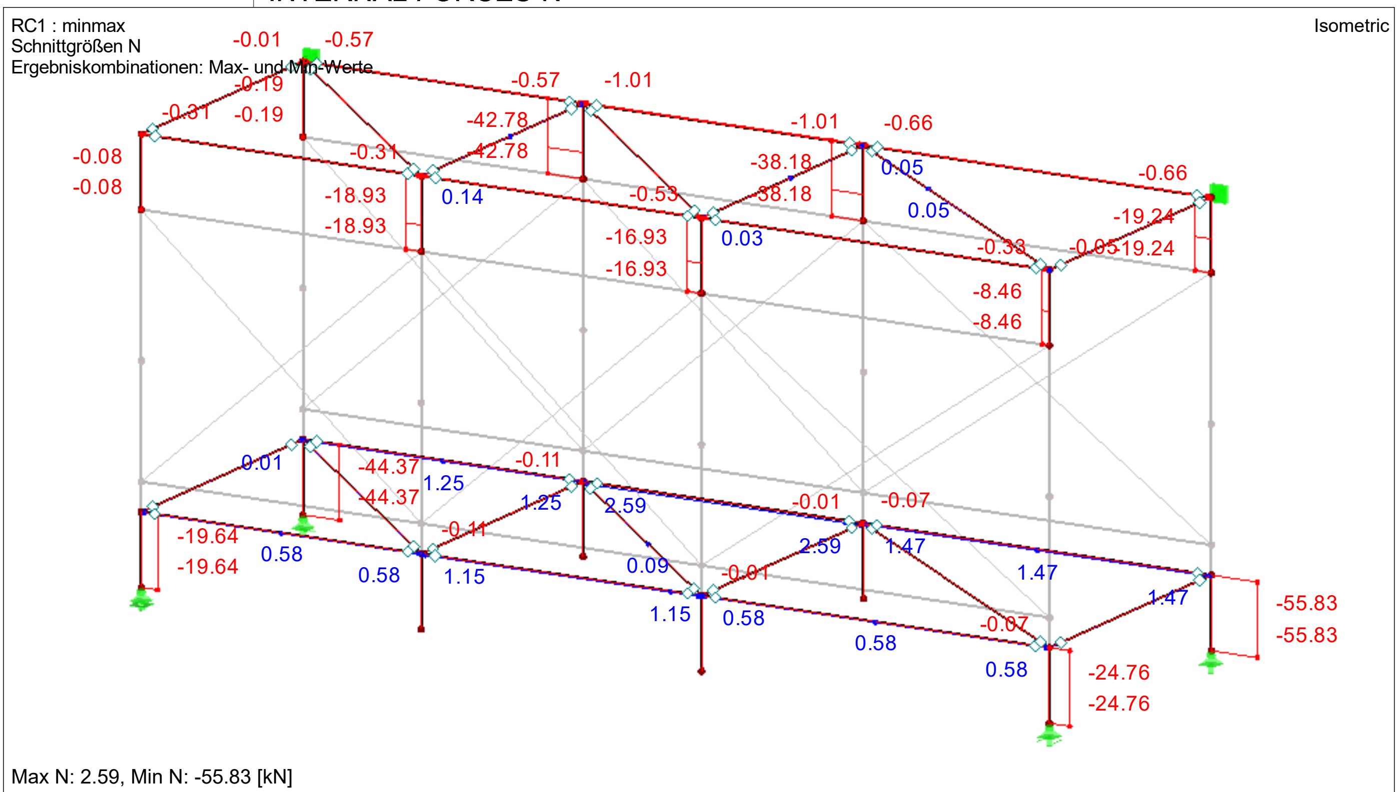


Max N: 67.30, Min N: 0.00 [kN]

INTERNAL FORCES N



INTERNAL FORCES N



Parts of the Allround FW System

Upper FW chord	QRO	60/4,0mm	S355
Lower FW chord	QRO	60/4,0mm	S355
FW post	RuRo	48,3x4,0mm	S355
FW Diagonal	d=15mm		St 900/100

Load -carrying capacity of parts: See structural analysis Layher

Upper FW chord

Nd= -52 kN

H=150cm, 2,57m-Feld

N,Rd= -95,5 kN eta= 0,54 < 1,0

Lower FW chord

Nd= 48 kN

H=150cm, 2,57m-Feld

N,Rd= 123,4 kN eta= 0,39 < 1,0

FW Diagonal

Nd= 68 kN

H=150cm, 2,57m-Feld

N,Rd= 103 kN eta= 0,66 < 1,0

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Alternatively:

AR - Diagonal

NRd= 28 kN

n= 3 pieces

NRd= 84 kN

FW post

Nd= -56 kN

Stütze unter zentrischer Druckbeanspruchung:

Nachweis: **Nd < NK,Rd** SIA 263, Abs. 4.5.1

mit: Nd=Bemessungslast=gammaFxN
NK,Rd=Knicklast des Stabes=kappa * fy *A / gamma,m1

	gammaF=	1,00			N=	56,00	kN
					sk=	1,80	m
Stütze	Rohr	D=	48,3	mm			
		t=	4	mm			
	A=	5,57	cm²	fy=		355	N/mm²
				Siehe Auszug aus Zulassung			
	I=	13,77	cm^4		gammaM=		1,05
	i=	1,57	cm	epsilon²=	0,66		
Verhältnis d/t		12	<	50 * epsilc	33	Klasse 1	
		Klasse 1		70 * epsilc	46	Klasse 2	
			→	90 * epsilc	60	Klasse 3	

Bemessungskraft

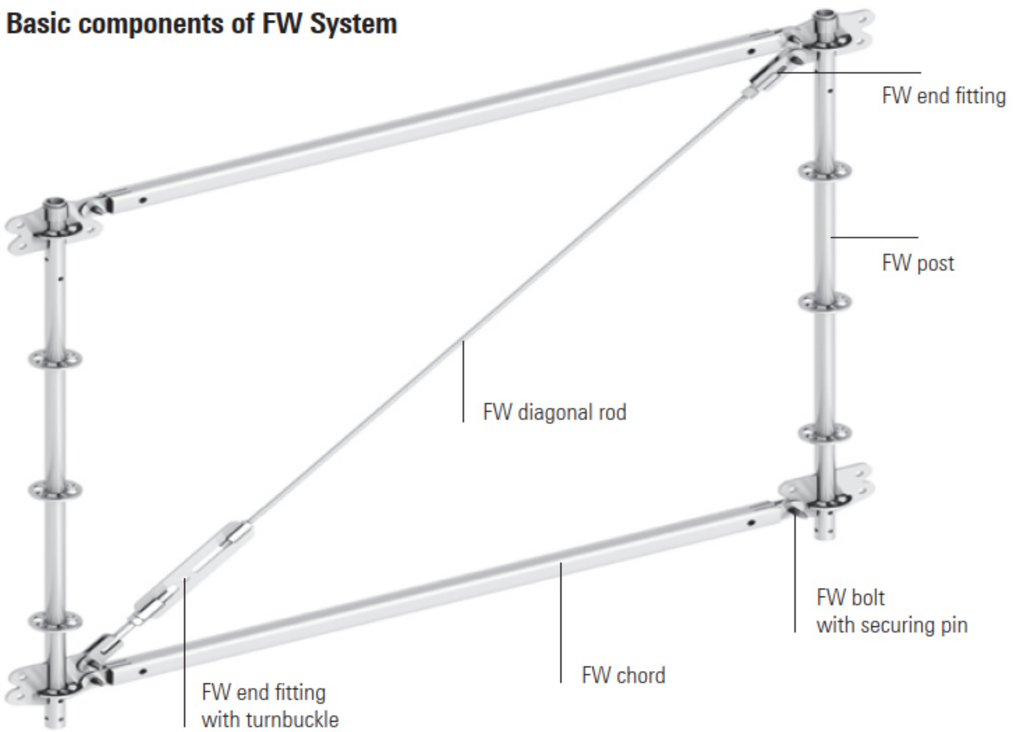
Nd=gamma,F x N= 56,00 kN

lamda,K=	114,5		
lamda,E=	76,4	fy=	355 N/mm²
lamda,bezogen=	1,50		
Knickspannungslinie:	c		kalt gefertigt
alpha=		0,34	
phi=	1,84		
kappa=	0,34		

Npl=A*fy/gammaM= 188,21 kN

NK,Rd=kappa * A * fy / gamma,m1= 65 kN

Nachweis:	NEd/NK,RD	<	1,00
	0,87	<	1,00
		OK	



Design resistances of top and bottom chords N_{Rd} [kN]				
	Bay length L			
	1.09 m	1.57 m	2.07 m	2.57 m
Compression	-123.4			-95.5
Tension	123.4 (bolt connection)			

Design resistances to tension of diagonal brace Z_{Rd} [kN]				
System height H	Bay length L [m]			
	1.09 m	1.57 m	2.07 m	2.57 m
	123.4 (bolt connection)			
	Derived design shear resistance $V_{Z,Rd}$ [kN]			
2.0 m	105.6	93.0	81.0	70.8
1.5 m	94.6	78.7	65.6	55.7
1.0 m	73.0	56.0	44.5	36.7

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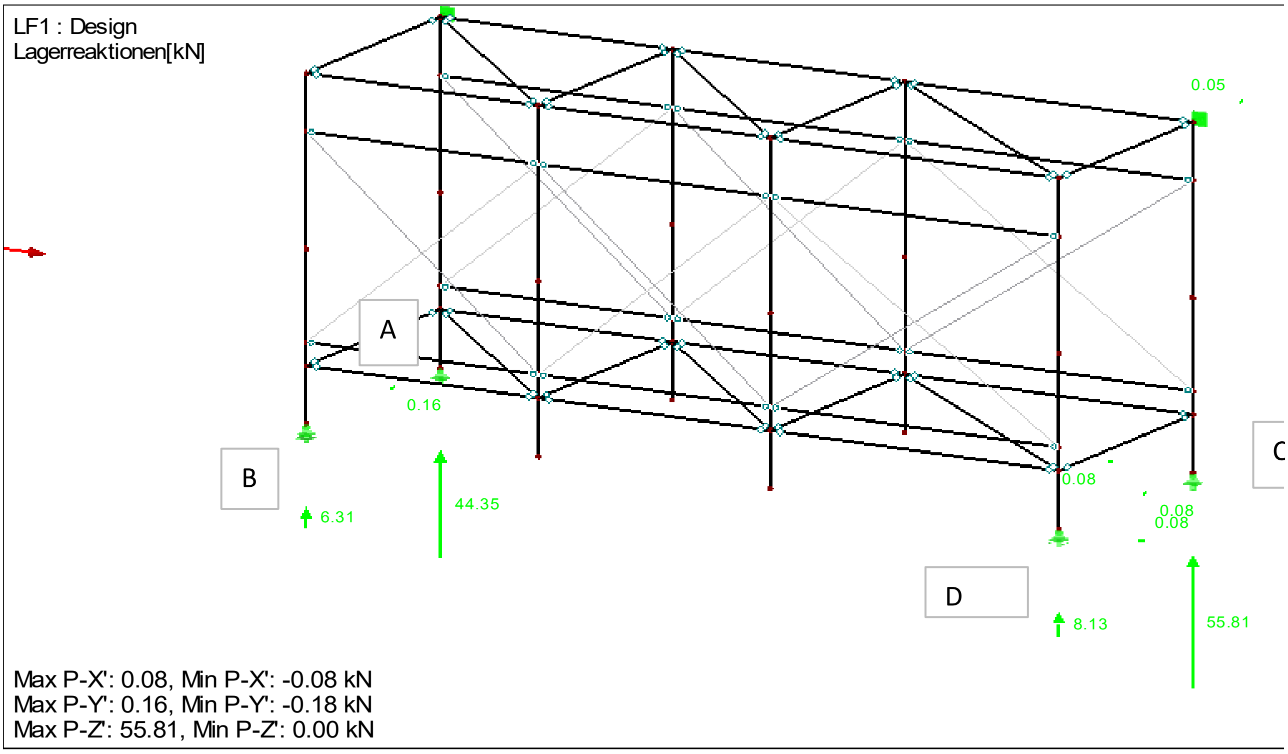
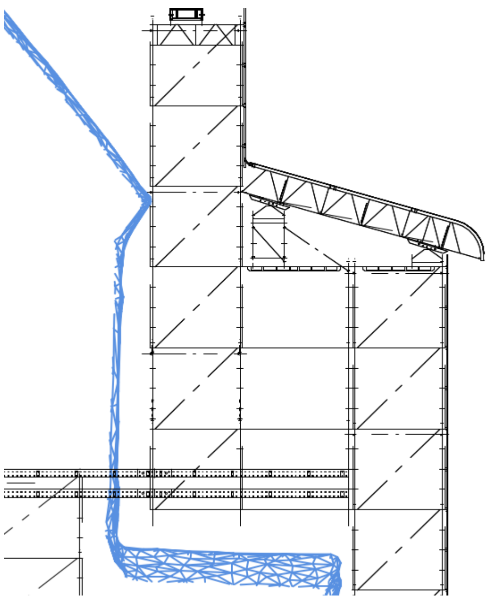
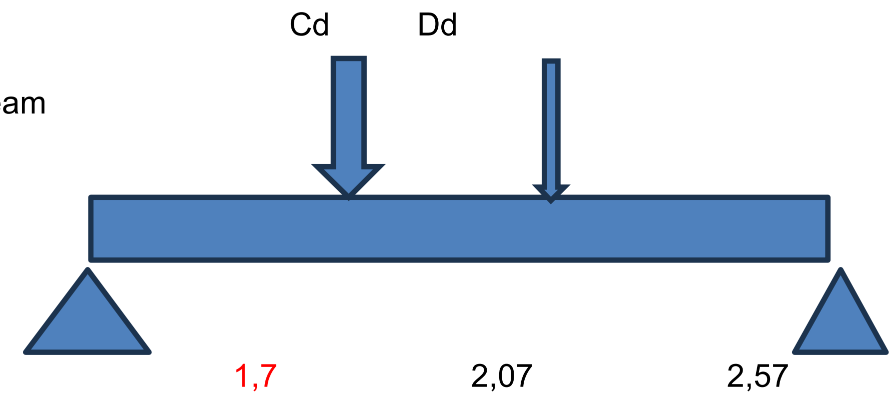
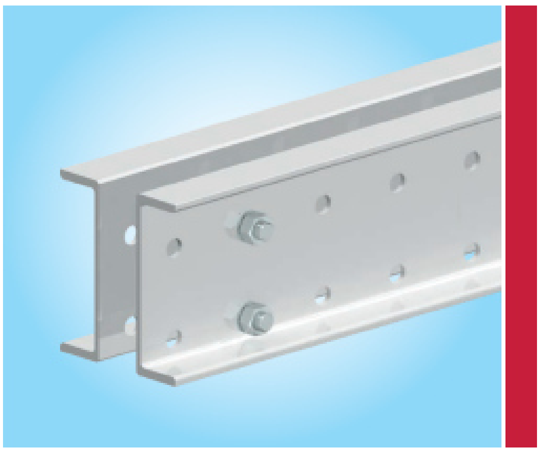
Reaction forces

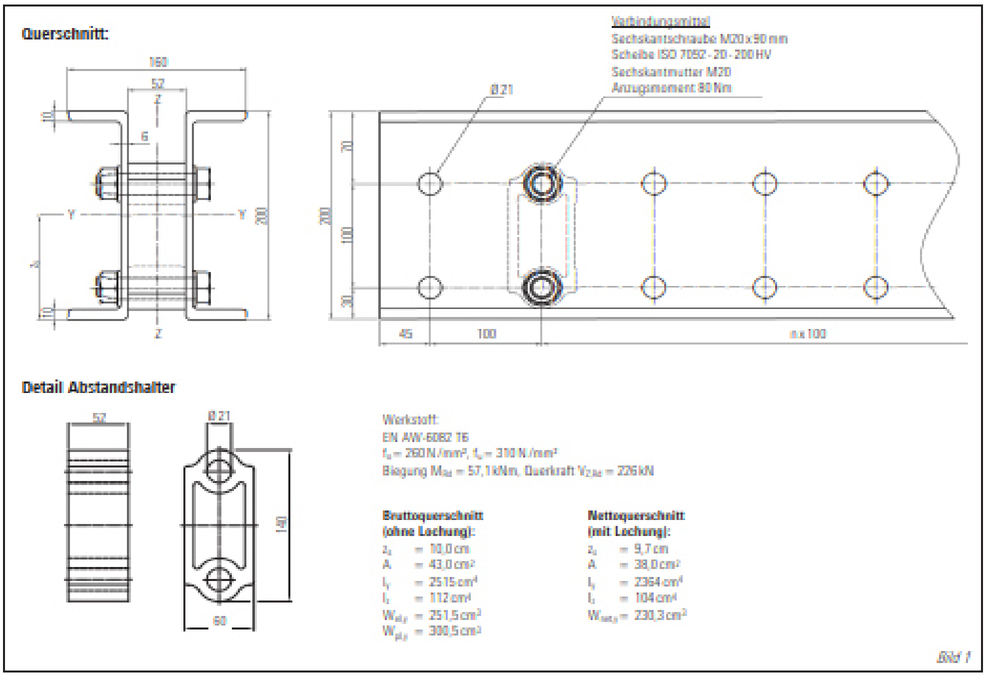


LC1		LC2	
Ad	45 kN	Ad	20 kN
Bd=	7 kN	Bd=	20 kN
Cd=	56 kN	Cd=	25 kN
Dd=	8 kN	Dd=	25 kN



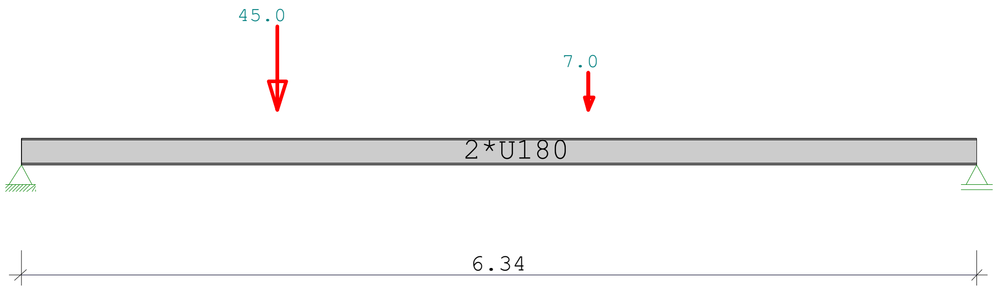

Cd
Dd
Flexbeam
1,7
2,07
2,57




Querschnitt:
160
52
6
Y
Z
200
Verbindungsmittel
Sechskantschraube M20 x 90 mm
Scheibe ISO 7092 - 20 - 200 HV
Sechskantmutter M20
Anzugsmoment 80 Nm
Ø 21
70
100
30
45
100
n x 100
Detail Abstandshalter
52
Ø 21
140
60
Werkstoff:
EN AW-6082 T6
f_y = 260 N/mm², f_u = 310 N/mm²
Biegung M_{Rd} = 57,1 kNm, Querkraft $V_{z,Rd}$ = 226 kN
Bruttoquerschnitt
(ohne Lochung):
z_s = 10,0 cm
A = 43,0 cm²
I_y = 2515 cm⁴
I_z = 112 cm⁴
$W_{el,y}$ = 251,5 cm³
$W_{pl,y}$ = 300,5 cm³
Nettoquerschnitt
(mit Lochung):
z_s = 9,7 cm
A = 38,0 cm²
I_y = 2364 cm⁴
I_z = 104 cm⁴
$W_{net,y}$ = 230,3 cm³
Bild 1

Position: Monestary-Gelati-Flexbeam-1

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 50



Durchlaufträger
E-Modul E =210000 N/mm2

System	Länge		Querschnittswerte				
Feld	L (m)		QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	6.34	konstant	1	2728.0	304.0	304.0	2 U180

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a
3=Einzelmoment bei a 4=Trapezlast von a - a+b
5=Dreieckslast über L 6=Trapezlast über L

Feld	Typ	EG	Gr	g_l/r	p_l/r	Faktor	Abstand	Länge	ausPOS	Phi
1	2			0.00	45.00	1.00	1.70			
	2			0.00	7.00	1.00	3.77			

In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf
die Nummer der zug. Überlagerung (siehe unten).

Feldmomente Maximum							(kNm , kN)	
Feld			Mf	M li	M re	Q li	Q re	komb
1	x0 =	1.70	60.81	0.00	0.00	35.77	-16.23	2

Stützmomente Maximum						(kNm , kN)	
Stütze	M li	M re	Q li +	Q re	= max V	min V	komb
1	0.00	0.00	0.00	35.77	35.77	0.00	2
2	0.00	0.00	-16.23	0.00	16.23	0.00	2

Auflagerkräfte						(kN)
Stütze	aus g	max p	min p	Vollast	max	min
1	0.00	35.77	0.00	35.77	35.77	0.00
2	0.00	16.23	0.00	16.23	16.23	0.00
Summe:	0.00	52.00	0.00	52.00	52.00	0.00

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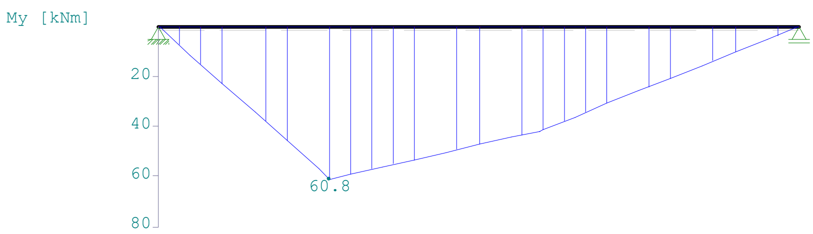
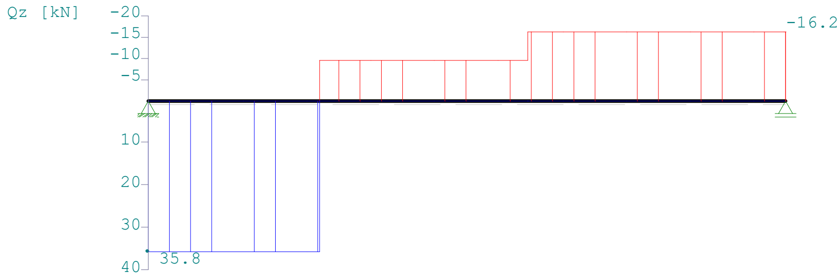
Maßstab 1 : 75





In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

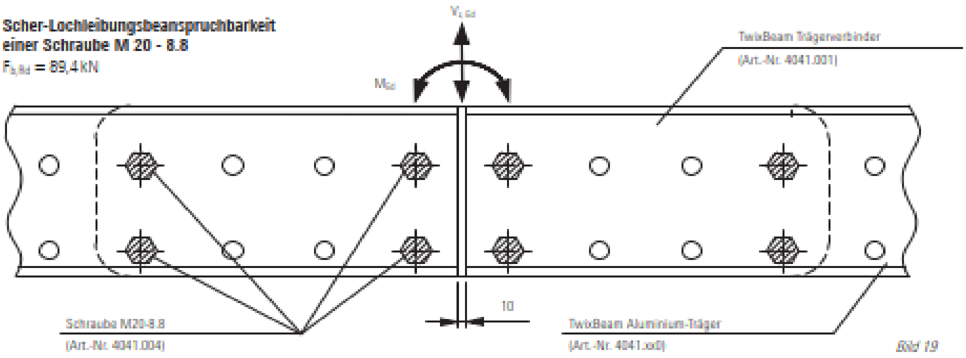
Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a 3=Einzelmoment bei a 4=Trapezlast von a - a+b 5=Dreieckslast über L 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	p1	g2	p2	Faktor	Abstand	Länge
1	1	2	1	0.00	45.00			1.00	1.70	
2		2	1	0.00	7.00			1.00	3.77	

Gerechnete Kombinationen aus 2 Lasten

Last	K1	K2
	g	g
1	.	x
2	.	x

Verbindung mit 4 Schrauben je Seite gemäß folgender Darstellung:

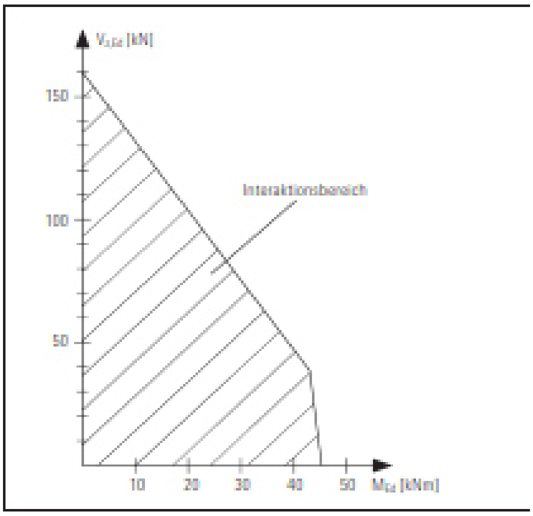


Übertragung der Schnittgrößen im Stoß mit TwixBeam Trägerverbinder

M_{Ed} [kNm]	$V_{z,Ed}$ [kN]
45,3	0
43,0	38,6
40,0	47,1
30,0	75,4
20,0	103,7
10,0	131,9
0	159,9

Maximal Normalkraft
N_{Rd} = ± 358 kN*

* bei alleiniger Wirkung von N



	1 Twix beam		MRd=	57 kNm
			VRd=	226 kNm
2 Twixbeams				

Loadcase 1

Md=	62 kN	< MRd=	114 kN
Vd=	37 kN	< VRd=	452 kN

Joint

Md=	62	kNm
Vd=	37	kN
VRd=	76	kN
MRd=	46	kNm

Ad=	40 kN
Bd=	20 kN

Loadcase 2

	Md=	56 kN	< MRd=	114 kN
	Vd=	29 kN	< VRd=	452 kN
Joint	Md=	56 kNm		
	Vd=	29 kN		
	VRd=	76 kN		
	MRd=	46 kNm		

Ad=	30 kN
Bd=	22 kN

Heavy duty tower for Ad	Nd =	80 kN
	NRd=	140 kN

4x AR-Standard, effective length 2m

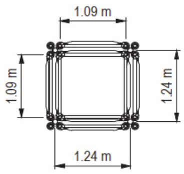
AR - Standard für Bd	Nd =	22 kN
	NRd=	45 kN

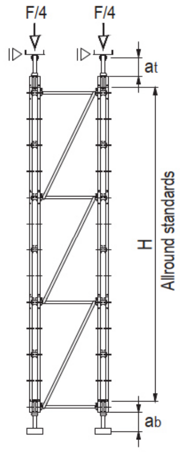
4x AR-Standard, effective length 2m

Buckling load NRd= 45 kN

HEAVY-DUTY TOWER

Permissible vertical load F [kN] per Allround heavy-duty tower 1.09 x 1.09 m, laterally held at the top				
Tower height [m]	Characteristic velocity pressure q (q_p) [kN/m²]			
	0 (no wind)	0.5 (0,71)	0.8 (1,14)	1.2 (1,71)
2	602.0	593.6	588.8	582.4
4	564.4	548.8	544.0	536.0
6	564.4	555.6	540.4	481.2
8	554.8	518.4	452.0	363.6
10	535.2	436.8	352.8	240.8
12	518.0	398.8	290.0	145.6
16	504.0	298.0	144.8	–
20	492.4	201.6	–	–

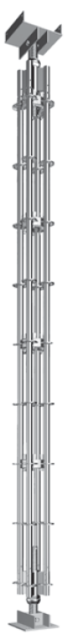


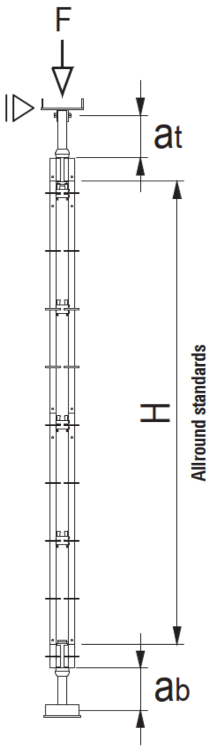


Double wedge head coupler spacing: 50 cm or 100 cm
Spindle extension of head jack and base plate: $a_t \leq 25$ cm, $a_b \leq 25$ cm

The permissible loads apply for any combined execution of the heavy-duty tower with Allround scaffolding components LW / Variant K2000+ / Variant II.

The calculations were made with the velocity pressures q, covering any time from the erection to the dismantling.
For a time from the erection to the dismantling of up to two years, the velocity pressure may be reduced by the factor 0.7, such that the specified permissible vertical loads apply for the higher velocity pressures q_p in brackets.





Vertical heavy-duty support				
Characteristic velocity pressure q (q_p) [kN/m²]	Spindle extension bottom / top a_b / a_t [cm]	Spacing between the double wedge head couplers [cm]	Permiss	
			Support height H = 2.0 m	
0 (no wind)	5 / 5	50	178.5	
		100	170.0	
	20 / 20	50	165.6	
		100	158.8	
	35 / 35	50	152.2	
		100	146.9	
0.5 (0.71)	5 / 5	50	177.3	
		100	168.7	
	20 / 20	50	164.1	
		100	157.2	
	35 / 35	50	150.3	
		100	145.0	
0.8 (1.14)	5 / 5	50	176.6	
		100	167.9	
	20 / 20	50	163.2	
		100	156.2	
	35 / 35	50	149.2	
		100	143.8	
1.2 (1.71)	5 / 5	50	175.7	
		100	166.8	
	20 / 20	50	162.0	
		100	154.9	
	35 / 35	50	147.7	
		100	142.3	

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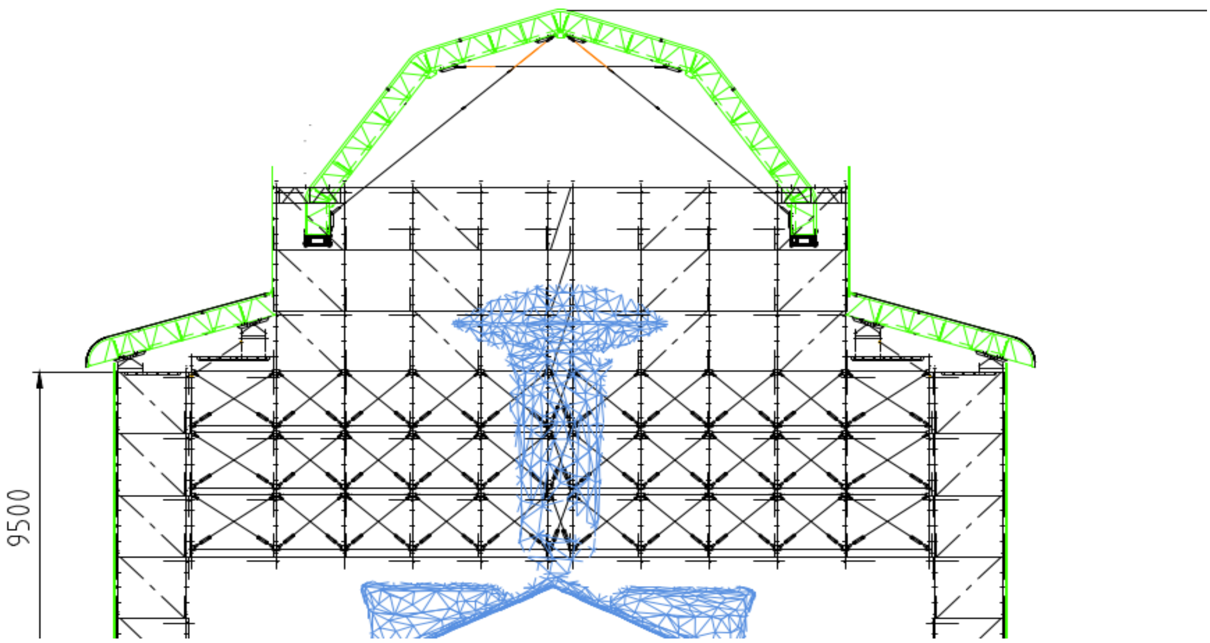
Pos.8: Gable wall



1. Dead load	G=	80 kN		
	L=	22 m		
	n=	2 sides		
	g=	1,8182 kN/m		
2. Live Load	q=	1 kN/m²		
	b=	1 m		
	q=	1		

3. Load shoring schaffold LC 1

Ad=	45 kN	Ak=	30,0 kN
Bd=	8 kN	Bk=	5,3 kN

4. Load shoring schaffold LC 2

Ad=	20 kN	Ak=	13,3 kN
Bd=	20 kN	Bk=	13,3 kN

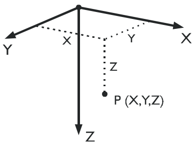
5. Wind chapter 5

Wd=	20 kN	Wk	13,3 kN

MODEL - GENERAL DATA

General	Model name	:	K-1-FW-dome-Gable-wall
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

Cartesian



1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
41	-	Cartesian	3.640	0.000	0.000	
42	-	Cartesian	3.640	0.000	-1.000	
43	-	Cartesian	3.640	0.000	-2.000	Supported
44	-	Cartesian	3.640	0.000	-6.500	Supported
45	-	Cartesian	3.640	2.070	0.000	
46	-	Cartesian	3.640	2.070	-1.000	
47	-	Cartesian	3.640	2.070	-2.000	
48	-	Cartesian	3.640	2.070	-6.500	
49	-	Cartesian	3.640	0.000	0.500	Supported
50	-	Cartesian	3.640	2.070	0.500	Supported
51	-	Cartesian	3.640	0.000	-1.500	
52	-	Cartesian	3.640	2.070	-1.500	
53	-	Cartesian	3.640	0.000	-2.500	
54	-	Cartesian	3.640	0.000	-3.000	
55	-	Cartesian	3.640	0.000	-4.000	Supported
56	-	Cartesian	3.640	2.070	-2.500	
57	-	Cartesian	3.640	2.070	-3.000	
58	-	Cartesian	6.210	0.000	0.000	
59	-	Cartesian	6.210	0.000	-1.000	
60	-	Cartesian	6.210	0.000	-2.000	Supported
61	-	Cartesian	6.210	0.000	-6.500	Supported
62	-	Cartesian	6.210	2.070	0.000	
63	-	Cartesian	6.210	2.070	-1.000	
64	-	Cartesian	6.210	2.070	-2.000	
65	-	Cartesian	6.210	2.070	-6.500	
66	-	Cartesian	6.210	0.000	0.500	
67	-	Cartesian	6.210	2.070	0.500	
68	-	Cartesian	6.210	0.000	-1.500	
69	-	Cartesian	6.210	2.070	-1.500	
70	-	Cartesian	3.640	2.070	-4.000	
71	-	Cartesian	6.210	0.000	-2.500	
72	-	Cartesian	6.210	0.000	-3.000	
73	-	Cartesian	6.210	0.000	-4.000	Supported
74	-	Cartesian	6.210	2.070	-2.500	
75	-	Cartesian	8.280	0.000	0.000	
76	-	Cartesian	8.280	0.000	-1.000	
77	-	Cartesian	8.280	0.000	-2.000	Supported
78	-	Cartesian	8.280	0.000	-6.500	Supported
79	-	Cartesian	8.280	2.070	0.000	
80	-	Cartesian	8.280	2.070	-1.000	
81	-	Cartesian	8.280	2.070	-2.000	
82	-	Cartesian	8.280	2.070	-6.500	
83	-	Cartesian	8.280	0.000	0.500	
84	-	Cartesian	8.280	2.070	0.500	
87	-	Cartesian	6.210	2.070	-3.000	
88	-	Cartesian	6.210	2.070	-4.000	
90	-	Cartesian	8.280	0.000	-3.000	
91	-	Cartesian	8.280	0.000	-4.000	Supported
92	-	Cartesian	10.350	0.000	0.000	
93	-	Cartesian	10.350	0.000	-1.000	
94	-	Cartesian	10.350	0.000	-2.000	Supported
95	-	Cartesian	10.350	0.000	-6.500	Supported
96	-	Cartesian	10.350	2.070	0.000	
97	-	Cartesian	10.350	2.070	-1.000	
98	-	Cartesian	10.350	2.070	-2.000	
99	-	Cartesian	10.350	2.070	-6.500	
100	-	Cartesian	10.350	0.000	0.500	
101	-	Cartesian	10.350	2.070	0.500	
105	-	Cartesian	8.280	2.070	-3.000	
106	-	Cartesian	8.280	2.070	-4.000	
108	-	Cartesian	10.350	0.000	-3.000	
109	-	Cartesian	10.350	0.000	-4.000	Supported
110	-	Cartesian	12.420	0.000	0.000	
111	-	Cartesian	10.350	2.070	-3.000	
112	-	Cartesian	10.350	2.070	-4.000	
113	-	Cartesian	12.420	0.000	-1.000	
114	-	Cartesian	3.640	0.000	-5.000	
115	-	Cartesian	3.640	0.000	-6.000	
116	-	Cartesian	12.420	0.000	-2.000	Supported
117	-	Cartesian	3.640	2.070	-5.000	
118	-	Cartesian	3.640	2.070	-6.000	

1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
119	-	Cartesian	12.420	0.000	-6.500	Supported
120	-	Cartesian	6.210	0.000	-5.000	
121	-	Cartesian	6.210	0.000	-6.000	
122	-	Cartesian	12.420	2.070	0.000	
123	-	Cartesian	6.210	2.070	-5.000	
124	-	Cartesian	6.210	2.070	-6.000	
125	-	Cartesian	12.420	2.070	-1.000	
126	-	Cartesian	8.280	0.000	-5.000	
127	-	Cartesian	8.280	0.000	-6.000	
128	-	Cartesian	12.420	2.070	-2.000	
129	-	Cartesian	8.280	2.070	-5.000	
130	-	Cartesian	8.280	2.070	-6.000	
131	-	Cartesian	12.420	2.070	-6.500	
132	-	Cartesian	10.350	0.000	-5.000	
133	-	Cartesian	10.350	0.000	-6.000	
134	-	Cartesian	12.420	0.000	0.500	
135	-	Cartesian	10.350	2.070	-5.000	
136	-	Cartesian	10.350	2.070	-6.000	
137	-	Cartesian	12.420	2.070	0.500	
139	-	Cartesian	12.420	0.000	-3.000	
140	-	Cartesian	12.420	0.000	-4.000	Supported
141	-	Cartesian	12.420	2.070	-3.000	
142	-	Cartesian	12.420	2.070	-4.000	
145	-	Cartesian	12.420	0.000	-5.000	
146	-	Cartesian	12.420	0.000	-6.000	
147	-	Cartesian	12.420	2.070	-5.000	
148	-	Cartesian	12.420	2.070	-6.000	
156	-	Cartesian	14.490	0.000	0.000	
157	-	Cartesian	14.490	0.000	-1.000	
158	-	Cartesian	14.490	0.000	-2.000	Supported
159	-	Cartesian	3.640	0.000	-0.200	
160	-	Cartesian	3.640	0.000	-2.200	
161	-	Cartesian	3.640	0.000	-4.200	
162	-	Cartesian	3.640	2.070	-0.200	
163	-	Cartesian	3.640	2.070	-2.200	
164	-	Cartesian	6.210	0.000	-0.200	
165	-	Cartesian	6.210	0.000	-2.200	
166	-	Cartesian	6.210	2.070	-0.200	
167	-	Cartesian	6.210	2.070	-2.200	
168	-	Cartesian	8.280	0.000	-0.200	
169	-	Cartesian	8.280	0.000	-2.200	
170	-	Cartesian	8.280	2.070	-0.200	
171	-	Cartesian	8.280	2.070	-2.200	
172	-	Cartesian	10.350	0.000	-0.200	
173	-	Cartesian	10.350	0.000	-2.200	
174	-	Cartesian	10.350	2.070	-0.200	
175	-	Cartesian	10.350	2.070	-2.200	
176	-	Cartesian	3.640	2.070	-4.200	
177	-	Cartesian	6.210	0.000	-4.200	
178	-	Cartesian	6.210	2.070	-4.200	
179	-	Cartesian	8.280	0.000	-4.200	
180	-	Cartesian	8.280	2.070	-4.200	
181	-	Cartesian	10.350	0.000	-4.200	
182	-	Cartesian	10.350	2.070	-4.200	
187	-	Cartesian	12.420	0.000	-0.200	
188	-	Cartesian	12.420	0.000	-2.200	
189	-	Cartesian	12.420	2.070	-0.200	
190	-	Cartesian	12.420	2.070	-2.200	
193	-	Cartesian	12.420	0.000	-4.200	
194	-	Cartesian	12.420	2.070	-4.200	
195	-	Cartesian	14.490	0.000	-6.500	Supported
196	-	Cartesian	14.490	2.070	0.000	
197	-	Cartesian	14.490	2.070	-1.000	
198	-	Cartesian	14.490	2.070	-2.000	
199	-	Cartesian	14.490	2.070	-6.500	
200	-	Cartesian	14.490	0.000	0.500	
201	-	Cartesian	14.490	2.070	0.500	
203	-	Cartesian	14.490	0.000	-3.000	
204	-	Cartesian	14.490	0.000	-4.000	Supported
205	-	Cartesian	14.490	2.070	-3.000	
206	-	Cartesian	14.490	2.070	-4.000	
209	-	Cartesian	14.490	0.000	-5.000	
210	-	Cartesian	14.490	0.000	-6.000	
211	-	Cartesian	14.490	2.070	-5.000	
212	-	Cartesian	14.490	2.070	-6.000	
217	-	Cartesian	14.490	0.000	-0.200	
218	-	Cartesian	14.490	0.000	-2.200	
219	-	Cartesian	14.490	2.070	-0.200	
220	-	Cartesian	14.490	2.070	-2.200	
223	-	Cartesian	14.490	0.000	-4.200	
224	-	Cartesian	14.490	2.070	-4.200	
232	-	Cartesian	16.560	0.000	0.000	
233	-	Cartesian	16.560	0.000	-1.000	
234	-	Cartesian	16.560	0.000	-2.000	Supported
235	-	Cartesian	16.560	0.000	-6.500	Supported
236	-	Cartesian	16.560	2.070	0.000	
237	-	Cartesian	16.560	2.070	-1.000	
238	-	Cartesian	16.560	2.070	-2.000	

1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
239	-	Cartesian	16.560	2.070	-6.500	
240	-	Cartesian	16.560	0.000	0.500	
241	-	Cartesian	16.560	2.070	0.500	
243	-	Cartesian	16.560	0.000	-3.000	
244	-	Cartesian	16.560	0.000	-4.000	Supported
245	-	Cartesian	16.560	2.070	-3.000	
246	-	Cartesian	16.560	2.070	-4.000	
249	-	Cartesian	16.560	0.000	-5.000	
250	-	Cartesian	16.560	0.000	-6.000	
251	-	Cartesian	16.560	2.070	-5.000	
252	-	Cartesian	16.560	2.070	-6.000	
257	-	Cartesian	16.560	0.000	-0.200	
258	-	Cartesian	16.560	0.000	-2.200	
259	-	Cartesian	16.560	2.070	-0.200	
260	-	Cartesian	16.560	2.070	-2.200	
263	-	Cartesian	16.560	0.000	-4.200	
264	-	Cartesian	16.560	2.070	-4.200	
272	-	Cartesian	17.130	0.000	0.000	
273	-	Cartesian	17.130	0.000	-1.000	
274	-	Cartesian	17.130	0.000	-2.000	Supported
275	-	Cartesian	17.130	0.000	-6.500	Supported
276	-	Cartesian	17.130	2.070	0.000	
277	-	Cartesian	17.130	2.070	-1.000	
278	-	Cartesian	17.130	2.070	-2.000	
279	-	Cartesian	17.130	2.070	-6.500	
280	-	Cartesian	17.130	0.000	0.500	
281	-	Cartesian	17.130	2.070	0.500	
283	-	Cartesian	17.130	0.000	-3.000	
284	-	Cartesian	17.130	0.000	-4.000	Supported
285	-	Cartesian	17.130	2.070	-3.000	
286	-	Cartesian	17.130	2.070	-4.000	
289	-	Cartesian	17.130	0.000	-5.000	
290	-	Cartesian	17.130	0.000	-6.000	
291	-	Cartesian	17.130	2.070	-5.000	
292	-	Cartesian	17.130	2.070	-6.000	
297	-	Cartesian	17.130	0.000	-0.200	
298	-	Cartesian	17.130	0.000	-2.200	
299	-	Cartesian	17.130	2.070	-0.200	
300	-	Cartesian	17.130	2.070	-2.200	
303	-	Cartesian	17.130	0.000	-4.200	
304	-	Cartesian	17.130	2.070	-4.200	
312	-	Cartesian	19.200	0.000	0.000	
313	-	Cartesian	19.200	0.000	-1.000	
314	-	Cartesian	19.200	0.000	-2.000	Supported
315	-	Cartesian	19.200	0.000	-6.500	Supported
316	-	Cartesian	19.200	2.070	0.000	
317	-	Cartesian	19.200	2.070	-1.000	
318	-	Cartesian	19.200	2.070	-2.000	
319	-	Cartesian	19.200	2.070	-6.500	
320	-	Cartesian	19.200	0.000	0.500	
321	-	Cartesian	19.200	2.070	0.500	
323	-	Cartesian	19.200	0.000	-3.000	
324	-	Cartesian	19.200	0.000	-4.000	Supported
325	-	Cartesian	19.200	2.070	-3.000	
326	-	Cartesian	19.200	2.070	-4.000	
329	-	Cartesian	19.200	0.000	-5.000	
330	-	Cartesian	19.200	0.000	-6.000	
331	-	Cartesian	19.200	2.070	-5.000	
332	-	Cartesian	19.200	2.070	-6.000	
337	-	Cartesian	19.200	0.000	-0.200	
338	-	Cartesian	19.200	0.000	-2.200	
339	-	Cartesian	19.200	2.070	-0.200	
340	-	Cartesian	19.200	2.070	-2.200	
343	-	Cartesian	19.200	0.000	-4.200	
344	-	Cartesian	19.200	2.070	-4.200	
352	-	Cartesian	21.270	0.000	0.000	
353	-	Cartesian	21.270	0.000	-1.000	
354	-	Cartesian	21.270	0.000	-2.000	Supported
355	-	Cartesian	21.270	0.000	-6.500	Supported
356	-	Cartesian	21.270	2.070	0.000	
357	-	Cartesian	21.270	2.070	-1.000	
358	-	Cartesian	21.270	2.070	-2.000	
359	-	Cartesian	21.270	2.070	-6.500	
360	-	Cartesian	21.270	0.000	0.500	
361	-	Cartesian	21.270	2.070	0.500	
363	-	Cartesian	21.270	0.000	-3.000	
364	-	Cartesian	21.270	0.000	-4.000	Supported
365	-	Cartesian	21.270	2.070	-3.000	
366	-	Cartesian	21.270	2.070	-4.000	
369	-	Cartesian	21.270	0.000	-5.000	
370	-	Cartesian	21.270	0.000	-6.000	
371	-	Cartesian	21.270	2.070	-5.000	
372	-	Cartesian	21.270	2.070	-6.000	
377	-	Cartesian	21.270	0.000	-0.200	
378	-	Cartesian	21.270	0.000	-2.200	
379	-	Cartesian	21.270	2.070	-0.200	
380	-	Cartesian	21.270	2.070	-2.200	
383	-	Cartesian	21.270	0.000	-4.200	

1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
384	-	Cartesian	21.270	2.070	-4.200	
392	-	Cartesian	23.340	0.000	0.000	
393	-	Cartesian	23.340	0.000	-1.000	
394	-	Cartesian	23.340	0.000	-2.000	Supported
395	-	Cartesian	23.340	0.000	-6.500	Supported
396	-	Cartesian	23.340	2.070	0.000	
397	-	Cartesian	23.340	2.070	-1.000	
398	-	Cartesian	23.340	2.070	-2.000	
399	-	Cartesian	23.340	2.070	-6.500	
400	-	Cartesian	23.340	0.000	0.500	
401	-	Cartesian	23.340	2.070	0.500	
403	-	Cartesian	23.340	0.000	-3.000	
404	-	Cartesian	23.340	0.000	-4.000	Supported
405	-	Cartesian	23.340	2.070	-3.000	
406	-	Cartesian	23.340	2.070	-4.000	
409	-	Cartesian	23.340	0.000	-5.000	
410	-	Cartesian	23.340	0.000	-6.000	
411	-	Cartesian	23.340	2.070	-5.000	
412	-	Cartesian	23.340	2.070	-6.000	
417	-	Cartesian	23.340	0.000	-0.200	
418	-	Cartesian	23.340	0.000	-2.200	
419	-	Cartesian	23.340	2.070	-0.200	
420	-	Cartesian	23.340	2.070	-2.200	
423	-	Cartesian	23.340	0.000	-4.200	
424	-	Cartesian	23.340	2.070	-4.200	
432	-	Cartesian	25.410	0.000	0.000	
433	-	Cartesian	25.410	0.000	-1.000	
434	-	Cartesian	25.410	0.000	-2.000	Supported
435	-	Cartesian	25.410	0.000	-6.500	Supported
436	-	Cartesian	25.410	2.070	0.000	
437	-	Cartesian	25.410	2.070	-1.000	
438	-	Cartesian	25.410	2.070	-2.000	
439	-	Cartesian	25.410	2.070	-6.500	
440	-	Cartesian	25.410	0.000	0.500	
441	-	Cartesian	25.410	2.070	0.500	
443	-	Cartesian	25.410	0.000	-3.000	
444	-	Cartesian	25.410	0.000	-4.000	Supported
445	-	Cartesian	25.410	2.070	-3.000	
446	-	Cartesian	25.410	2.070	-4.000	
449	-	Cartesian	25.410	0.000	-5.000	
450	-	Cartesian	25.410	0.000	-6.000	
451	-	Cartesian	25.410	2.070	-5.000	
452	-	Cartesian	25.410	2.070	-6.000	
457	-	Cartesian	25.410	0.000	-0.200	
458	-	Cartesian	25.410	0.000	-2.200	
459	-	Cartesian	25.410	2.070	-0.200	
460	-	Cartesian	25.410	2.070	-2.200	
463	-	Cartesian	25.410	0.000	-4.200	
464	-	Cartesian	25.410	2.070	-4.200	
472	-	Cartesian	27.480	0.000	0.000	
473	-	Cartesian	27.480	0.000	-1.000	
474	-	Cartesian	27.480	0.000	-2.000	Supported
475	-	Cartesian	27.480	0.000	-6.500	Supported
476	-	Cartesian	27.480	2.070	0.000	
477	-	Cartesian	27.480	2.070	-1.000	
478	-	Cartesian	27.480	2.070	-2.000	
479	-	Cartesian	27.480	2.070	-6.500	
480	-	Cartesian	27.480	0.000	0.500	
481	-	Cartesian	27.480	2.070	0.500	
482	-	Cartesian	27.480	0.000	-1.500	
483	-	Cartesian	27.480	0.000	-3.000	
484	-	Cartesian	27.480	0.000	-4.000	Supported
485	-	Cartesian	27.480	2.070	-3.000	
486	-	Cartesian	27.480	2.070	-4.000	
487	-	Cartesian	27.480	2.070	-1.500	
488	-	Cartesian	27.480	0.000	-2.500	
489	-	Cartesian	27.480	0.000	-5.000	
490	-	Cartesian	27.480	0.000	-6.000	
491	-	Cartesian	27.480	2.070	-5.000	
492	-	Cartesian	27.480	2.070	-6.000	
493	-	Cartesian	27.480	2.070	-2.500	
497	-	Cartesian	27.480	0.000	-0.200	
498	-	Cartesian	27.480	0.000	-2.200	
499	-	Cartesian	27.480	2.070	-0.200	
500	-	Cartesian	27.480	2.070	-2.200	
503	-	Cartesian	27.480	0.000	-4.200	
504	-	Cartesian	27.480	2.070	-4.200	
512	-	Cartesian	30.050	0.000	0.000	
513	-	Cartesian	30.050	0.000	-1.000	
514	-	Cartesian	30.050	0.000	-2.000	Supported
515	-	Cartesian	30.050	0.000	-6.500	Supported
516	-	Cartesian	30.050	2.070	0.000	
517	-	Cartesian	30.050	2.070	-1.000	
518	-	Cartesian	30.050	2.070	-2.000	
519	-	Cartesian	30.050	2.070	-6.500	
520	-	Cartesian	30.050	0.000	0.500	Supported
521	-	Cartesian	30.050	2.070	0.500	Supported
522	-	Cartesian	30.050	0.000	-1.500	

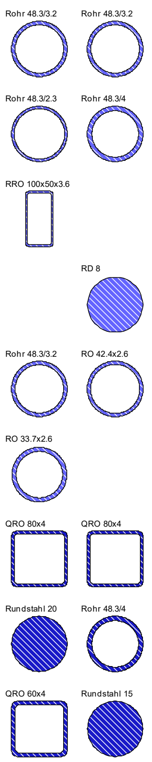
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
523	-	Cartesian	30.050	0.000	-3.000	
524	-	Cartesian	30.050	0.000	-4.000	Supported
525	-	Cartesian	30.050	2.070	-3.000	
526	-	Cartesian	30.050	2.070	-4.000	
527	-	Cartesian	30.050	2.070	-1.500	
528	-	Cartesian	30.050	0.000	-2.500	
529	-	Cartesian	30.050	0.000	-5.000	
530	-	Cartesian	30.050	0.000	-6.000	
531	-	Cartesian	30.050	2.070	-5.000	
532	-	Cartesian	30.050	2.070	-6.000	
533	-	Cartesian	30.050	2.070	-2.500	
537	-	Cartesian	30.050	0.000	-0.200	
538	-	Cartesian	30.050	0.000	-2.200	
539	-	Cartesian	30.050	2.070	-0.200	
540	-	Cartesian	30.050	2.070	-2.200	
543	-	Cartesian	30.050	0.000	-4.200	
544	-	Cartesian	30.050	2.070	-4.200	

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN EN 1993-1-1:2010-12					
	21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
2	Baustahl S 235 mit erh. Streckgrenze_					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					
3	Steel S 355 | DIN EN 1993-1-1:2010-12					
	21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
4	Prestressing Steel Bar St 900/1030 | DIN EN 1992-1-1/NA/A1:2015-12					
	20500.00	7884.62	78.50	1.00E-05	1.00	Isotropic Linear Elastic

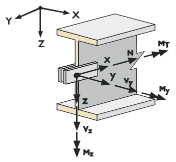
1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Stiel							
2	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63	8.81	8.81	0.00	0.00	48.3	48.3
		3.32	1.65	1.65				
	Diagonale							
4	Rohr 48.3/4							
	1	27.54	13.77	13.77	0.00	0.00	48.3	48.3
		5.57	2.77	2.77				
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00	129.00	42.90	0.00	0.00	50.0	100.0
		10.20	2.22	6.38				
6	spindel spindel							
	1	1.00	3.74	3.74	0.00	0.00	0.0	0.0
		3.84	2.00	2.00				
7	G1 Gitterträger H=45cm S							
	1	1.00	4500.00	5.00	0.00	0.00	50.0	100.0
		10.00	5.00	5.00				
8	RD 8 | DIN 1013-1							
	1	0.04	0.02	0.02	0.00	0.00	8.0	8.0
		0.50	0.42	0.42				
9	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93	6.46	6.46	0.00	0.00	42.4	42.4
		3.25	1.62	1.62				
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19	3.09	3.09	0.00	0.00	33.7	33.7
		2.54	1.27	1.27				
	Diagonale_TG60							
12	U-Doppel U-Doppel							
	2	1.00	400.00	10.00	0.00	0.00	40.0	80.0
		10.00	5.00	5.00				

1.3 CROSS-SECTIONS

Section No.	Matl. No.	J [cm^4] / A [cm^2]	I_y [cm^4] / A_y [cm^2]	I_z [cm^4] / A_z [cm^2]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
13	QRO 80x4 | DIN 59410:1974							
	3	177.00	115.00	115.00	0.00	0.00	80.0	80.0
		12.00	5.12	5.12				
	Brückenträger_Pfosten							
15	QRO 80x4 | DIN 59410:1974							
	3	177.00	115.00	115.00	0.00	0.00	80.0	80.0
		12.00	5.12	5.12				
	Brückenträger_Riegel							
16	Rundstahl 20							
	4	1.57	0.79	0.79	0.00	0.00	20.0	20.0
		3.14	2.64	2.64				
	Brückenträger-Diagonale							
17	Rohr 48.3/4							
	3	27.54	13.77	13.77	0.00	0.00	48.3	48.3
		5.57	2.77	2.77				
	Pfosten_Fachwerkträger							
18	QRO 60x4 | DIN 59410:1974							
	3	71.20	45.90	45.90	0.00	0.00	60.0	60.0
		8.82	3.79	3.79				
	Gurt_Fachwerkträger							
19	Rundstahl 15							
	4	0.50	0.25	0.25	0.00	0.00	15.0	15.0
		1.77	1.48	1.48				
	Diagonale_FWT							



1.4 MEMBER HINGES

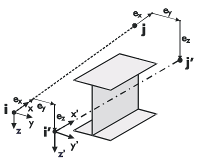
Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	1000000.000	☐	☐	☒	☐
	Nonlinearity	-	Partial activity...	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1200.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	5000.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
5	Local x,y,z	2500.000	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
1	u_y+	Yielding from release force	12.000	-	
	u_y-	Yielding from release force	12.000	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.700	
		0.0400	0.900	
		0.0600	> 1.000	Tearing
5	$\varphi_{y'}$	0.0000	0.000	
		0.0000	> 0.000	Tearing



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

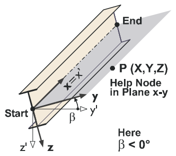
Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc.	Cross-Section Alignment		Transverse offset from cross-section of another obj.				Axial offset from adjacent	
No.	y-Axis	z-Axis	Object Type	Object No.	y-Axis	z-Axis	Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
1	Beam	482	474	Angle	0.00	17	17	-	-	-	-	0.500	Z
2	Beam	487	478	Angle	0.00	17	17	-	-	-	-	0.500	Z
3	Beam	522	514	Angle	0.00	17	17	-	-	-	-	0.500	Z
4	Beam	527	518	Angle	0.00	17	17	-	-	-	-	0.500	Z
5	Beam	488	483	Angle	0.00	17	17	-	-	-	-	0.500	Z
6	Beam	493	485	Angle	0.00	17	17	-	-	-	-	0.500	Z
7	Beam	528	523	Angle	0.00	17	17	-	-	-	-	0.500	Z
8	Beam	533	525	Angle	0.00	17	17	-	-	-	-	0.500	Z
9	Beam	51	43	Angle	0.00	17	17	-	-	-	-	0.500	Z
10	Beam	52	47	Angle	0.00	17	17	-	-	-	-	0.500	Z
11	Beam	68	60	Angle	0.00	17	17	-	-	-	-	0.500	Z
12	Beam	69	64	Angle	0.00	17	17	-	-	-	-	0.500	Z
13	Beam	53	54	Angle	0.00	17	17	-	-	-	-	0.500	Z
14	Beam	56	57	Angle	0.00	17	17	-	-	-	-	0.500	Z
15	Beam	71	72	Angle	0.00	17	17	-	-	-	-	0.500	Z
16	Beam	74	87	Angle	0.00	17	17	-	-	-	-	0.500	Z
175	Beam	41	159	Angle	0.00	17	17	-	-	-	-	0.200	Z
176	Beam	42	51	Angle	0.00	17	17	-	-	-	-	0.500	Z
177	Beam	43	160	Angle	0.00	17	17	-	-	-	-	0.200	Z
178	Beam	54	55	Angle	0.00	17	17	-	-	-	-	1.000	Z
179	Beam	55	161	Angle	0.00	17	17	-	-	-	-	0.200	Z
180	Beam	114	115	Angle	0.00	17	17	-	-	-	-	1.000	Z
189	Beam	45	162	Angle	0.00	17	17	-	-	-	-	0.200	Z
190	Beam	46	52	Angle	0.00	17	17	-	-	-	-	0.500	Z
191	Beam	47	163	Angle	0.00	17	17	-	-	-	-	0.200	Z
192	Beam	57	70	Angle	0.00	17	17	-	-	-	-	1.000	Z
193	Beam	70	176	Angle	0.00	17	17	-	-	-	-	0.200	Z
194	Beam	117	118	Angle	0.00	17	17	-	-	-	-	1.000	Z
195	Beam	58	164	Angle	0.00	17	17	-	-	-	-	0.200	Z
196	Beam	59	68	Angle	0.00	17	17	-	-	-	-	0.500	Z
197	Beam	164	159	Angle	0.00	18	18	4	4	-	-	2.570	X
198	Beam	60	43	Angle	0.00	18	18	4	4	-	-	2.570	X
199	Tension	164	43	Angle	0.00	19	19	-	-	-	-	3.138	XZ
200	Tension	60	159	Angle	0.00	19	19	-	-	-	-	3.138	XZ
201	Beam	62	166	Angle	0.00	17	17	-	-	-	-	0.200	Z
202	Beam	63	69	Angle	0.00	17	17	-	-	-	-	0.500	Z
203	Beam	166	162	Angle	0.00	18	18	4	4	-	-	2.570	X
204	Beam	64	47	Angle	0.00	18	18	4	4	-	-	2.570	X
205	Tension	166	47	Angle	0.00	19	19	-	-	-	-	3.138	XZ
206	Tension	64	162	Angle	0.00	19	19	-	-	-	-	3.138	XZ
207	Beam	75	168	Angle	0.00	17	17	-	-	-	-	0.200	Z
208	Beam	76	77	Angle	0.00	17	17	-	-	-	-	1.000	Z
209	Beam	168	164	Angle	0.00	18	18	4	4	-	-	2.070	X
210	Beam	77	60	Angle	0.00	18	18	4	4	-	-	2.070	X
211	Tension	168	60	Angle	0.00	19	19	-	-	-	-	2.743	XZ
212	Tension	77	164	Angle	0.00	19	19	-	-	-	-	2.743	XZ
213	Beam	79	170	Angle	0.00	17	17	-	-	-	-	0.200	Z
214	Beam	80	81	Angle	0.00	17	17	-	-	-	-	1.000	Z
215	Beam	170	166	Angle	0.00	18	18	4	4	-	-	2.070	X
216	Beam	81	64	Angle	0.00	18	18	4	4	-	-	2.070	X
217	Tension	170	64	Angle	0.00	19	19	-	-	-	-	2.743	XZ
218	Tension	81	166	Angle	0.00	19	19	-	-	-	-	2.743	XZ
219	Beam	92	172	Angle	0.00	17	17	-	-	-	-	0.200	Z
220	Beam	93	94	Angle	0.00	17	17	-	-	-	-	1.000	Z
221	Beam	172	168	Angle	0.00	18	18	4	4	-	-	2.070	X
222	Beam	94	77	Angle	0.00	18	18	4	4	-	-	2.070	X
223	Beam	60	165	Angle	0.00	17	17	-	-	-	-	0.200	Z
224	Beam	72	73	Angle	0.00	17	17	-	-	-	-	1.000	Z
225	Beam	159	42	Angle	0.00	17	17	-	-	-	-	0.800	Z
226	Beam	165	160	Angle	0.00	18	18	4	4	-	-	2.570	X
227	Beam	73	55	Angle	0.00	18	18	4	4	-	-	2.570	X
228	Beam	115	44	Angle	0.00	1	1	-	-	-	-	0.500	Z
229	Tension	165	55	Angle	0.00	19	19	-	-	-	-	3.138	XZ
230	Tension	73	160	Angle	0.00	19	19	-	-	-	-	3.138	XZ
231	Beam	64	167	Angle	0.00	17	17	-	-	-	-	0.200	Z
232	Beam	87	88	Angle	0.00	17	17	-	-	-	-	1.000	Z
233	Beam	162	46	Angle	0.00	17	17	-	-	-	-	0.800	Z
234	Beam	167	163	Angle	0.00	18	18	4	4	-	-	2.570	X
235	Beam	88	70	Angle	0.00	18	18	4	4	-	-	2.570	X
236	Beam	118	48	Angle	0.00	1	1	-	-	-	-	0.500	Z
237	Tension	167	70	Angle	0.00	19	19	-	-	-	-	3.138	XZ
238	Tension	88	163	Angle	0.00	19	19	-	-	-	-	3.138	XZ
239	Beam	77	169	Angle	0.00	17	17	-	-	-	-	0.200	Z
240	Beam	90	91	Angle	0.00	17	17	-	-	-	-	1.000	Z
241	Beam	169	165	Angle	0.00	18	18	4	4	-	-	2.070	X
242	Beam	91	73	Angle	0.00	18	18	4	4	-	-	2.070	X
243	Beam	41	49	Angle	0.00	1	1	-	-	-	-	0.500	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	Rotation β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
244	Beam	45	50	Angle	0.00	1	1	-	-	-	-	0.500	Z
245	Tension	169	73	Angle	0.00	19	19	-	-	-	-	2.743	XZ
246	Tension	91	165	Angle	0.00	19	19	-	-	-	-	2.743	XZ
247	Beam	44	48	Angle	0.00	2	2	1	1	1	-	2.020	Y
248	Beam	81	171	Angle	0.00	17	17	-	-	-	-	0.200	Z
249	Beam	105	106	Angle	0.00	17	17	-	-	-	-	1.000	Z
250	Beam	41	45	Angle	0.00	2	2	1	1	1	-	2.020	Y
251	Beam	43	47	Angle	0.00	2	2	1	1	1	-	2.020	Y
252	Beam	171	167	Angle	0.00	18	18	4	4	-	-	2.070	X
253	Beam	106	88	Angle	0.00	18	18	4	4	-	-	2.070	X
254	Tension	171	88	Angle	0.00	19	19	-	-	-	-	2.743	XZ
255	Tension	106	167	Angle	0.00	19	19	-	-	-	-	2.743	XZ
256	Beam	94	173	Angle	0.00	17	17	-	-	-	-	0.200	Z
257	Beam	108	109	Angle	0.00	17	17	-	-	-	-	1.000	Z
258	Beam	173	169	Angle	0.00	18	18	4	4	-	-	2.070	X
259	Beam	164	59	Angle	0.00	17	17	-	-	-	-	0.800	Z
260	Beam	121	61	Angle	0.00	1	1	-	-	-	-	0.500	Z
261	Beam	44	61	Angle	0.00	12	12	1	1	1	-	2.520	X
262	Beam	166	63	Angle	0.00	17	17	-	-	-	-	0.800	Z
263	Beam	124	65	Angle	0.00	1	1	-	-	-	-	0.500	Z
264	Beam	48	65	Angle	0.00	12	12	1	1	1	-	2.520	X
265	Beam	58	66	Angle	0.00	1	1	-	-	-	-	0.500	Z
266	Beam	62	67	Angle	0.00	1	1	-	-	-	-	0.500	Z
267	Beam	61	65	Angle	0.00	2	2	1	1	1	-	2.020	Y
268	Beam	58	62	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	41	58	Angle	0.00	2	2	1	1	1	-	2.520	X
270	Beam	60	64	Angle	0.00	2	2	1	1	1	-	2.020	Y
271	Beam	109	91	Angle	0.00	18	18	4	4	-	-	2.070	X
272	Beam	44	65	Angle	0.00	4	4	5	5	-	-	3.300	XY
273	Beam	168	76	Angle	0.00	17	17	-	-	-	-	0.800	Z
274	Beam	127	78	Angle	0.00	1	1	-	-	-	-	0.500	Z
275	Beam	61	78	Angle	0.00	12	12	1	1	1	-	2.020	X
276	Beam	170	80	Angle	0.00	17	17	-	-	-	-	0.800	Z
277	Beam	130	82	Angle	0.00	1	1	-	-	-	-	0.500	Z
278	Beam	65	82	Angle	0.00	12	12	1	1	1	-	2.020	X
279	Beam	75	83	Angle	0.00	1	1	-	-	-	-	0.500	Z
280	Beam	79	84	Angle	0.00	1	1	-	-	-	-	0.500	Z
281	Beam	78	82	Angle	0.00	2	2	1	1	1	-	2.020	Y
282	Beam	75	79	Angle	0.00	2	2	1	1	1	-	2.020	Y
283	Beam	58	75	Angle	0.00	2	2	1	1	1	-	2.020	X
284	Beam	77	81	Angle	0.00	2	2	1	1	1	-	2.020	Y
285	Beam	160	53	Angle	0.00	17	17	-	-	-	-	0.300	Z
286	Beam	61	82	Angle	0.00	4	4	5	5	-	-	2.927	XY
287	Tension	172	77	Angle	0.00	19	19	-	-	-	-	2.743	XZ
288	Tension	94	168	Angle	0.00	19	19	-	-	-	-	2.743	XZ
289	Beam	96	174	Angle	0.00	17	17	-	-	-	-	0.200	Z
290	Beam	97	98	Angle	0.00	17	17	-	-	-	-	1.000	Z
291	Beam	174	170	Angle	0.00	18	18	4	4	-	-	2.070	X
292	Beam	98	81	Angle	0.00	18	18	4	4	-	-	2.070	X
293	Tension	174	81	Angle	0.00	19	19	-	-	-	-	2.743	XZ
294	Tension	98	170	Angle	0.00	19	19	-	-	-	-	2.743	XZ
295	Beam	172	93	Angle	0.00	17	17	-	-	-	-	0.800	Z
296	Beam	133	95	Angle	0.00	1	1	-	-	-	-	0.500	Z
297	Beam	78	95	Angle	0.00	12	12	1	1	1	-	2.020	X
298	Beam	174	97	Angle	0.00	17	17	-	-	-	-	0.800	Z
299	Beam	136	99	Angle	0.00	1	1	-	-	-	-	0.500	Z
300	Beam	82	99	Angle	0.00	12	12	1	1	1	-	2.020	X
301	Beam	92	100	Angle	0.00	1	1	-	-	-	-	0.500	Z
302	Beam	96	101	Angle	0.00	1	1	-	-	-	-	0.500	Z
303	Beam	95	99	Angle	0.00	2	2	1	1	1	-	2.020	Y
304	Beam	92	96	Angle	0.00	2	2	1	1	1	-	2.020	Y
305	Beam	75	92	Angle	0.00	2	2	1	1	1	-	2.020	X
306	Beam	94	98	Angle	0.00	2	2	1	1	1	-	2.020	Y
307	Beam	163	56	Angle	0.00	17	17	-	-	-	-	0.300	Z
308	Beam	78	99	Angle	0.00	4	4	5	5	-	-	2.927	XY
309	Beam	55	70	Angle	0.00	2	2	1	1	1	-	2.020	Y
310	Beam	165	71	Angle	0.00	17	17	-	-	-	-	0.300	Z
311	Beam	167	74	Angle	0.00	17	17	-	-	-	-	0.300	Z
312	Beam	73	88	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	169	90	Angle	0.00	17	17	-	-	-	-	0.800	Z
314	Beam	171	105	Angle	0.00	17	17	-	-	-	-	0.800	Z
315	Beam	91	106	Angle	0.00	2	2	1	1	1	-	2.020	Y
316	Tension	173	91	Angle	0.00	19	19	-	-	-	-	2.743	XZ
317	Tension	109	169	Angle	0.00	19	19	-	-	-	-	2.743	XZ
318	Beam	98	175	Angle	0.00	17	17	-	-	-	-	0.200	Z
319	Beam	111	112	Angle	0.00	17	17	-	-	-	-	1.000	Z
320	Beam	175	171	Angle	0.00	18	18	4	4	-	-	2.070	X
321	Beam	112	106	Angle	0.00	18	18	4	4	-	-	2.070	X
322	Tension	175	106	Angle	0.00	19	19	-	-	-	-	2.743	XZ
323	Tension	112	171	Angle	0.00	19	19	-	-	-	-	2.743	XZ
324	Beam	173	108	Angle	0.00	17	17	-	-	-	-	0.800	Z
325	Beam	175	111	Angle	0.00	17	17	-	-	-	-	0.800	Z
326	Beam	109	112	Angle	0.00	2	2	1	1	1	-	2.020	Y
327	Beam	73	177	Angle	0.00	17	17	-	-	-	-	0.200	Z
328	Beam	120	121	Angle	0.00	17	17	-	-	-	-	1.000	Z
329	Beam	177	161	Angle	0.00	18	18	4	4	-	-	2.570	X
330	Beam	121	115	Angle	0.00	18	18	4	4	-	-	2.570	X
331	Tension	177	115	Angle	0.00	19	19	-	-	-	-	3.138	XZ

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
332	Tension	121	161	Angle	0.00	19	19	-	-	-	-	3.138	XZ
333	Beam	88	178	Angle	0.00	17	17	-	-	-	-	0.200	Z
334	Beam	123	124	Angle	0.00	17	17	-	-	-	-	1.000	Z
335	Beam	178	176	Angle	0.00	18	18	4	4	-	-	2.570	X
336	Beam	41	62	Angle	0.00	4	4	5	5	-	-	3.300	XY
337	Beam	58	79	Angle	0.00	4	4	5	5	-	-	2.927	XY
338	Beam	75	96	Angle	0.00	4	4	5	5	-	-	2.927	XY
339	Beam	43	64	Angle	0.00	4	4	5	5	-	-	3.300	XY
340	Beam	60	81	Angle	0.00	4	4	5	5	-	-	2.927	XY
341	Beam	45	62	Angle	0.00	2	2	1	1	1	-	2.520	X
342	Beam	62	79	Angle	0.00	2	2	1	1	1	-	2.020	X
343	Beam	79	96	Angle	0.00	2	2	1	1	1	-	2.020	X
344	Beam	77	98	Angle	0.00	4	4	5	5	-	-	2.927	XY
345	Beam	55	88	Angle	0.00	4	4	5	5	-	-	3.300	XY
346	Beam	73	106	Angle	0.00	4	4	5	5	-	-	2.927	XY
347	Beam	91	112	Angle	0.00	4	4	5	5	-	-	2.927	XY
348	Beam	124	118	Angle	0.00	18	18	4	4	-	-	2.570	X
349	Tension	178	118	Angle	0.00	19	19	-	-	-	-	3.138	XZ
350	Tension	124	176	Angle	0.00	19	19	-	-	-	-	3.138	XZ
351	Beam	91	179	Angle	0.00	17	17	-	-	-	-	0.200	Z
352	Beam	126	127	Angle	0.00	17	17	-	-	-	-	1.000	Z
353	Beam	179	177	Angle	0.00	18	18	4	4	-	-	2.070	X
354	Beam	127	121	Angle	0.00	18	18	4	4	-	-	2.070	X
355	Tension	179	121	Angle	0.00	19	19	-	-	-	-	2.743	XZ
356	Tension	127	177	Angle	0.00	19	19	-	-	-	-	2.743	XZ
357	Beam	106	180	Angle	0.00	17	17	-	-	-	-	0.200	Z
358	Beam	129	130	Angle	0.00	17	17	-	-	-	-	1.000	Z
359	Beam	180	178	Angle	0.00	18	18	4	4	-	-	2.070	X
360	Beam	130	124	Angle	0.00	18	18	4	4	-	-	2.070	X
361	Tension	180	124	Angle	0.00	19	19	-	-	-	-	2.743	XZ
362	Tension	130	178	Angle	0.00	19	19	-	-	-	-	2.743	XZ
363	Beam	109	181	Angle	0.00	17	17	-	-	-	-	0.200	Z
364	Beam	132	133	Angle	0.00	17	17	-	-	-	-	1.000	Z
365	Beam	181	179	Angle	0.00	18	18	4	4	-	-	2.070	X
366	Beam	133	127	Angle	0.00	18	18	4	4	-	-	2.070	X
367	Beam	161	114	Angle	0.00	17	17	-	-	-	-	0.800	Z
368	Beam	176	117	Angle	0.00	17	17	-	-	-	-	0.800	Z
369	Beam	115	118	Angle	0.00	2	2	1	1	1	-	2.020	Y
370	Beam	177	120	Angle	0.00	17	17	-	-	-	-	0.800	Z
371	Beam	178	123	Angle	0.00	17	17	-	-	-	-	0.800	Z
372	Beam	121	124	Angle	0.00	2	2	1	1	1	-	2.020	Y
373	Beam	179	126	Angle	0.00	17	17	-	-	-	-	0.800	Z
374	Beam	180	129	Angle	0.00	17	17	-	-	-	-	0.800	Z
375	Beam	127	130	Angle	0.00	2	2	1	1	1	-	2.020	Y
376	Tension	181	127	Angle	0.00	19	19	-	-	-	-	2.743	XZ
377	Tension	133	179	Angle	0.00	19	19	-	-	-	-	2.743	XZ
378	Beam	112	182	Angle	0.00	17	17	-	-	-	-	0.200	Z
379	Beam	135	136	Angle	0.00	17	17	-	-	-	-	1.000	Z
380	Beam	182	180	Angle	0.00	18	18	4	4	-	-	2.070	X
381	Beam	136	130	Angle	0.00	18	18	4	4	-	-	2.070	X
382	Tension	182	130	Angle	0.00	19	19	-	-	-	-	2.743	XZ
383	Tension	136	180	Angle	0.00	19	19	-	-	-	-	2.743	XZ
384	Beam	181	132	Angle	0.00	17	17	-	-	-	-	0.800	Z
385	Beam	182	135	Angle	0.00	17	17	-	-	-	-	0.800	Z
386	Beam	133	136	Angle	0.00	2	2	1	1	1	-	2.020	Y
387	Beam	115	124	Angle	0.00	4	4	5	5	-	-	3.300	XY
388	Beam	121	130	Angle	0.00	4	4	5	5	-	-	2.927	XY
389	Beam	127	136	Angle	0.00	4	4	5	5	-	-	2.927	XY
390	Beam	110	187	Angle	0.00	17	17	-	-	-	-	0.200	Z
391	Beam	113	116	Angle	0.00	17	17	-	-	-	-	1.000	Z
392	Beam	187	172	Angle	0.00	18	18	4	4	-	-	2.070	X
393	Beam	116	94	Angle	0.00	18	18	4	4	-	-	2.070	X
394	Beam	116	188	Angle	0.00	17	17	-	-	-	-	0.200	Z
395	Beam	139	140	Angle	0.00	17	17	-	-	-	-	1.000	Z
396	Beam	188	173	Angle	0.00	18	18	4	4	-	-	2.070	X
397	Beam	140	109	Angle	0.00	18	18	4	4	-	-	2.070	X
398	Tension	187	94	Angle	0.00	19	19	-	-	-	-	2.743	XZ
399	Tension	116	172	Angle	0.00	19	19	-	-	-	-	2.743	XZ
400	Beam	122	189	Angle	0.00	17	17	-	-	-	-	0.200	Z
401	Beam	125	128	Angle	0.00	17	17	-	-	-	-	1.000	Z
402	Beam	189	174	Angle	0.00	18	18	4	4	-	-	2.070	X
403	Beam	128	98	Angle	0.00	18	18	4	4	-	-	2.070	X
404	Tension	189	98	Angle	0.00	19	19	-	-	-	-	2.743	XZ
405	Tension	128	174	Angle	0.00	19	19	-	-	-	-	2.743	XZ
406	Beam	187	113	Angle	0.00	17	17	-	-	-	-	0.800	Z
407	Beam	146	119	Angle	0.00	1	1	-	-	-	-	0.500	Z
408	Beam	95	119	Angle	0.00	12	12	1	1	1	-	2.020	X
409	Beam	189	125	Angle	0.00	17	17	-	-	-	-	0.800	Z
410	Beam	148	131	Angle	0.00	1	1	-	-	-	-	0.500	Z
411	Beam	99	131	Angle	0.00	12	12	1	1	1	-	2.020	X
412	Beam	110	134	Angle	0.00	1	1	-	-	-	-	0.500	Z
413	Beam	122	137	Angle	0.00	1	1	-	-	-	-	0.500	Z
414	Beam	119	131	Angle	0.00	2	2	1	1	1	-	2.020	Y
415	Beam	110	122	Angle	0.00	2	2	1	1	1	-	2.020	Y
416	Beam	92	110	Angle	0.00	2	2	1	1	1	-	2.020	X
417	Beam	116	128	Angle	0.00	2	2	1	1	1	-	2.020	Y
418	Beam	95	131	Angle	0.00	4	4	5	5	-	-	2.927	XY
419	Tension	188	109	Angle	0.00	19	19	-	-	-	-	2.743	XZ

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Project: 2023 Model: K-1-FW-dome-Gable-wall Date: 23.09.2023

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
420	Tension	140	173	Angle	0.00	19	19	-	-	-	-	2.743	XZ
421	Beam	128	190	Angle	0.00	17	17	-	-	-	-	0.200	Z
422	Beam	141	142	Angle	0.00	17	17	-	-	-	-	1.000	Z
423	Beam	190	175	Angle	0.00	18	18	4	4	-	-	2.070	X
424	Beam	142	112	Angle	0.00	18	18	4	4	-	-	2.070	X
425	Tension	190	112	Angle	0.00	19	19	-	-	-	-	2.743	XZ
426	Tension	142	175	Angle	0.00	19	19	-	-	-	-	2.743	XZ
427	Beam	188	139	Angle	0.00	17	17	-	-	-	-	0.800	Z
428	Beam	190	141	Angle	0.00	17	17	-	-	-	-	0.800	Z
429	Beam	140	142	Angle	0.00	2	2	1	1	1	-	2.020	Y
430	Beam	92	122	Angle	0.00	4	4	5	5	-	-	2.927	XY
431	Beam	96	122	Angle	0.00	2	2	1	1	1	-	2.020	X
432	Beam	94	128	Angle	0.00	4	4	5	5	-	-	2.927	XY
433	Beam	109	142	Angle	0.00	4	4	5	5	-	-	2.927	XY
434	Beam	140	193	Angle	0.00	17	17	-	-	-	-	0.200	Z
435	Beam	145	146	Angle	0.00	17	17	-	-	-	-	1.000	Z
436	Beam	193	181	Angle	0.00	18	18	4	4	-	-	2.070	X
437	Beam	146	133	Angle	0.00	18	18	4	4	-	-	2.070	X
438	Tension	193	133	Angle	0.00	19	19	-	-	-	-	2.743	XZ
439	Tension	146	181	Angle	0.00	19	19	-	-	-	-	2.743	XZ
440	Beam	142	194	Angle	0.00	17	17	-	-	-	-	0.200	Z
441	Beam	147	148	Angle	0.00	17	17	-	-	-	-	1.000	Z
442	Beam	194	182	Angle	0.00	18	18	4	4	-	-	2.070	X
443	Beam	148	136	Angle	0.00	18	18	4	4	-	-	2.070	X
444	Tension	194	136	Angle	0.00	19	19	-	-	-	-	2.743	XZ
445	Tension	148	182	Angle	0.00	19	19	-	-	-	-	2.743	XZ
446	Beam	193	145	Angle	0.00	17	17	-	-	-	-	0.800	Z
447	Beam	194	147	Angle	0.00	17	17	-	-	-	-	0.800	Z
448	Beam	146	148	Angle	0.00	2	2	1	1	1	-	2.020	Y
449	Beam	133	148	Angle	0.00	4	4	5	5	-	-	2.927	XY
450	Beam	156	217	Angle	0.00	17	17	-	-	-	-	0.200	Z
451	Beam	157	158	Angle	0.00	17	17	-	-	-	-	1.000	Z
452	Beam	217	187	Angle	0.00	18	18	4	4	-	-	2.070	X
453	Beam	158	116	Angle	0.00	18	18	4	4	-	-	2.070	X
454	Beam	158	218	Angle	0.00	17	17	-	-	-	-	0.200	Z
455	Beam	203	204	Angle	0.00	17	17	-	-	-	-	1.000	Z
456	Beam	218	188	Angle	0.00	18	18	4	4	-	-	2.070	X
457	Beam	204	140	Angle	0.00	18	18	4	4	-	-	2.070	X
458	Tension	217	116	Angle	0.00	19	19	-	-	-	-	2.743	XZ
459	Tension	158	187	Angle	0.00	19	19	-	-	-	-	2.743	XZ
460	Beam	196	219	Angle	0.00	17	17	-	-	-	-	0.200	Z
461	Beam	197	198	Angle	0.00	17	17	-	-	-	-	1.000	Z
462	Beam	219	189	Angle	0.00	18	18	4	4	-	-	2.070	X
463	Beam	198	128	Angle	0.00	18	18	4	4	-	-	2.070	X
464	Tension	219	128	Angle	0.00	19	19	-	-	-	-	2.743	XZ
465	Tension	198	189	Angle	0.00	19	19	-	-	-	-	2.743	XZ
466	Beam	217	157	Angle	0.00	17	17	-	-	-	-	0.800	Z
467	Beam	210	195	Angle	0.00	1	1	-	-	-	-	0.500	Z
468	Beam	119	195	Angle	0.00	12	12	1	1	1	-	2.020	X
469	Beam	219	197	Angle	0.00	17	17	-	-	-	-	0.800	Z
470	Beam	212	199	Angle	0.00	1	1	-	-	-	-	0.500	Z
471	Beam	131	199	Angle	0.00	12	12	1	1	1	-	2.020	X
472	Beam	156	200	Angle	0.00	1	1	-	-	-	-	0.500	Z
473	Beam	196	201	Angle	0.00	1	1	-	-	-	-	0.500	Z
474	Beam	195	199	Angle	0.00	2	2	1	1	1	-	2.020	Y
475	Beam	156	196	Angle	0.00	2	2	1	1	1	-	2.020	Y
476	Beam	110	156	Angle	0.00	2	2	1	1	1	-	2.020	X
477	Beam	158	198	Angle	0.00	2	2	1	1	1	-	2.020	Y
478	Beam	119	199	Angle	0.00	4	4	5	5	-	-	2.927	XY
479	Tension	218	140	Angle	0.00	19	19	-	-	-	-	2.743	XZ
480	Tension	204	188	Angle	0.00	19	19	-	-	-	-	2.743	XZ
481	Beam	198	220	Angle	0.00	17	17	-	-	-	-	0.200	Z
482	Beam	205	206	Angle	0.00	17	17	-	-	-	-	1.000	Z
483	Beam	220	190	Angle	0.00	18	18	4	4	-	-	2.070	X
484	Beam	206	142	Angle	0.00	18	18	4	4	-	-	2.070	X
485	Tension	220	142	Angle	0.00	19	19	-	-	-	-	2.743	XZ
486	Tension	206	190	Angle	0.00	19	19	-	-	-	-	2.743	XZ
487	Beam	218	203	Angle	0.00	17	17	-	-	-	-	0.800	Z
488	Beam	220	205	Angle	0.00	17	17	-	-	-	-	0.800	Z
489	Beam	204	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
490	Beam	110	196	Angle	0.00	4	4	5	5	-	-	2.927	XY
491	Beam	122	196	Angle	0.00	2	2	1	1	1	-	2.020	X
492	Beam	116	198	Angle	0.00	4	4	5	5	-	-	2.927	XY
493	Beam	140	206	Angle	0.00	4	4	5	5	-	-	2.927	XY
494	Beam	204	223	Angle	0.00	17	17	-	-	-	-	0.200	Z
495	Beam	209	210	Angle	0.00	17	17	-	-	-	-	1.000	Z
496	Beam	223	193	Angle	0.00	18	18	4	4	-	-	2.070	X
497	Beam	210	146	Angle	0.00	18	18	4	4	-	-	2.070	X
498	Tension	223	146	Angle	0.00	19	19	-	-	-	-	2.743	XZ
499	Tension	210	193	Angle	0.00	19	19	-	-	-	-	2.743	XZ
500	Beam	206	224	Angle	0.00	17	17	-	-	-	-	0.200	Z
501	Beam	211	212	Angle	0.00	17	17	-	-	-	-	1.000	Z
502	Beam	224	194	Angle	0.00	18	18	4	4	-	-	2.070	X
503	Beam	212	148	Angle	0.00	18	18	4	4	-	-	2.070	X
504	Tension	224	148	Angle	0.00	19	19	-	-	-	-	2.743	XZ
505	Tension	212	194	Angle	0.00	19	19	-	-	-	-	2.743	XZ
506	Beam	223	209	Angle	0.00	17	17	-	-	-	-	0.800	Z
507	Beam	224	211	Angle	0.00	17	17	-	-	-	-	0.800	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
508	Beam	210	212	Angle	0.00	2	2	1	1	1	-	2.020	Y
509	Beam	146	212	Angle	0.00	4	4	5	5	-	-	2.927	XY
510	Beam	232	257	Angle	0.00	17	17	-	-	-	-	0.200	Z
511	Beam	233	234	Angle	0.00	17	17	-	-	-	-	1.000	Z
512	Beam	257	217	Angle	0.00	18	18	4	4	-	-	2.070	X
513	Beam	234	158	Angle	0.00	18	18	4	4	-	-	2.070	X
514	Beam	234	258	Angle	0.00	17	17	-	-	-	-	0.200	Z
515	Beam	243	244	Angle	0.00	17	17	-	-	-	-	1.000	Z
516	Beam	258	218	Angle	0.00	18	18	4	4	-	-	2.070	X
517	Beam	244	204	Angle	0.00	18	18	4	4	-	-	2.070	X
518	Tension	257	158	Angle	0.00	19	19	-	-	-	-	2.743	XZ
519	Tension	234	217	Angle	0.00	19	19	-	-	-	-	2.743	XZ
520	Beam	236	259	Angle	0.00	17	17	-	-	-	-	0.200	Z
521	Beam	237	238	Angle	0.00	17	17	-	-	-	-	1.000	Z
522	Beam	259	219	Angle	0.00	18	18	4	4	-	-	2.070	X
523	Beam	238	198	Angle	0.00	18	18	4	4	-	-	2.070	X
524	Tension	259	198	Angle	0.00	19	19	-	-	-	-	2.743	XZ
525	Tension	238	219	Angle	0.00	19	19	-	-	-	-	2.743	XZ
526	Beam	257	233	Angle	0.00	17	17	-	-	-	-	0.800	Z
527	Beam	250	235	Angle	0.00	1	1	-	-	-	-	0.500	Z
528	Beam	195	235	Angle	0.00	12	12	1	1	1	-	2.020	X
529	Beam	259	237	Angle	0.00	17	17	-	-	-	-	0.800	Z
530	Beam	252	239	Angle	0.00	1	1	-	-	-	-	0.500	Z
531	Beam	199	239	Angle	0.00	12	12	1	1	1	-	2.020	X
532	Beam	232	240	Angle	0.00	1	1	-	-	-	-	0.500	Z
533	Beam	236	241	Angle	0.00	1	1	-	-	-	-	0.500	Z
534	Beam	235	239	Angle	0.00	2	2	1	1	1	-	2.020	Y
535	Beam	232	236	Angle	0.00	2	2	1	1	1	-	2.020	Y
536	Beam	156	232	Angle	0.00	2	2	1	1	1	-	2.020	X
537	Beam	234	238	Angle	0.00	2	2	1	1	1	-	2.020	Y
538	Beam	195	239	Angle	0.00	4	4	5	5	-	-	2.927	XY
539	Tension	258	204	Angle	0.00	19	19	-	-	-	-	2.743	XZ
540	Tension	244	218	Angle	0.00	19	19	-	-	-	-	2.743	XZ
541	Beam	238	260	Angle	0.00	17	17	-	-	-	-	0.200	Z
542	Beam	245	246	Angle	0.00	17	17	-	-	-	-	1.000	Z
543	Beam	260	220	Angle	0.00	18	18	4	4	-	-	2.070	X
544	Beam	246	206	Angle	0.00	18	18	4	4	-	-	2.070	X
545	Tension	260	206	Angle	0.00	19	19	-	-	-	-	2.743	XZ
546	Tension	246	220	Angle	0.00	19	19	-	-	-	-	2.743	XZ
547	Beam	258	243	Angle	0.00	17	17	-	-	-	-	0.800	Z
548	Beam	260	245	Angle	0.00	17	17	-	-	-	-	0.800	Z
549	Beam	244	246	Angle	0.00	2	2	1	1	1	-	2.020	Y
550	Beam	156	236	Angle	0.00	4	4	5	5	-	-	2.927	XY
551	Beam	196	236	Angle	0.00	2	2	1	1	1	-	2.020	X
552	Beam	158	238	Angle	0.00	4	4	5	5	-	-	2.927	XY
553	Beam	204	246	Angle	0.00	4	4	5	5	-	-	2.927	XY
554	Beam	244	263	Angle	0.00	17	17	-	-	-	-	0.200	Z
555	Beam	249	250	Angle	0.00	17	17	-	-	-	-	1.000	Z
556	Beam	263	223	Angle	0.00	18	18	4	4	-	-	2.070	X
557	Beam	250	210	Angle	0.00	18	18	4	4	-	-	2.070	X
558	Tension	263	210	Angle	0.00	19	19	-	-	-	-	2.743	XZ
559	Tension	250	223	Angle	0.00	19	19	-	-	-	-	2.743	XZ
560	Beam	246	264	Angle	0.00	17	17	-	-	-	-	0.200	Z
561	Beam	251	252	Angle	0.00	17	17	-	-	-	-	1.000	Z
562	Beam	264	224	Angle	0.00	18	18	4	4	-	-	2.070	X
563	Beam	252	212	Angle	0.00	18	18	4	4	-	-	2.070	X
564	Tension	264	212	Angle	0.00	19	19	-	-	-	-	2.743	XZ
565	Tension	252	224	Angle	0.00	19	19	-	-	-	-	2.743	XZ
566	Beam	263	249	Angle	0.00	17	17	-	-	-	-	0.800	Z
567	Beam	264	251	Angle	0.00	17	17	-	-	-	-	0.800	Z
568	Beam	250	252	Angle	0.00	2	2	1	1	1	-	2.020	Y
569	Beam	210	252	Angle	0.00	4	4	5	5	-	-	2.927	XY
570	Beam	272	297	Angle	0.00	17	17	-	-	-	-	0.200	Z
571	Beam	273	274	Angle	0.00	17	17	-	-	-	-	1.000	Z
572	Beam	297	257	Angle	0.00	18	18	4	4	-	-	0.570	X
573	Beam	274	234	Angle	0.00	18	18	4	4	-	-	0.570	X
574	Beam	274	298	Angle	0.00	17	17	-	-	-	-	0.200	Z
575	Beam	283	284	Angle	0.00	17	17	-	-	-	-	1.000	Z
576	Beam	298	258	Angle	0.00	18	18	4	4	-	-	0.570	X
577	Beam	284	244	Angle	0.00	18	18	4	4	-	-	0.570	X
578	Tension	297	234	Angle	0.00	19	19	-	-	-	-	1.888	XZ
579	Tension	274	257	Angle	0.00	19	19	-	-	-	-	1.888	XZ
580	Beam	276	299	Angle	0.00	17	17	-	-	-	-	0.200	Z
581	Beam	277	278	Angle	0.00	17	17	-	-	-	-	1.000	Z
582	Beam	299	259	Angle	0.00	18	18	4	4	-	-	0.570	X
583	Beam	278	238	Angle	0.00	18	18	4	4	-	-	0.570	X
584	Tension	299	238	Angle	0.00	19	19	-	-	-	-	1.888	XZ
585	Tension	278	259	Angle	0.00	19	19	-	-	-	-	1.888	XZ
586	Beam	297	273	Angle	0.00	17	17	-	-	-	-	0.800	Z
587	Beam	290	275	Angle	0.00	1	1	-	-	-	-	0.500	Z
588	Beam	235	275	Angle	0.00	12	12	1	1	1	-	0.520	X
589	Beam	299	277	Angle	0.00	17	17	-	-	-	-	0.800	Z
590	Beam	292	279	Angle	0.00	1	1	-	-	-	-	0.500	Z
591	Beam	239	279	Angle	0.00	12	12	1	1	1	-	0.520	X
592	Beam	272	280	Angle	0.00	1	1	-	-	-	-	0.500	Z
593	Beam	276	281	Angle	0.00	1	1	-	-	-	-	0.500	Z
594	Beam	275	279	Angle	0.00	2	2	1	1	1	-	2.020	Y
595	Beam	272	276	Angle	0.00	2	2	1	1	1	-	2.020	Y

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
596	Beam	232	272	Angle	0.00	2	2	1	1	1	-	0.520	X
597	Beam	274	278	Angle	0.00	2	2	1	1	1	-	2.020	Y
598	Beam	235	279	Angle	0.00	4	4	5	5	-	-	2.147	XY
599	Tension	298	244	Angle	0.00	19	19	-	-	-	-	1.888	XZ
600	Tension	284	258	Angle	0.00	19	19	-	-	-	-	1.888	XZ
601	Beam	278	300	Angle	0.00	17	17	-	-	-	-	0.200	Z
602	Beam	285	286	Angle	0.00	17	17	-	-	-	-	1.000	Z
603	Beam	300	260	Angle	0.00	18	18	4	4	-	-	0.570	X
604	Beam	286	246	Angle	0.00	18	18	4	4	-	-	0.570	X
605	Tension	300	246	Angle	0.00	19	19	-	-	-	-	1.888	XZ
606	Tension	286	260	Angle	0.00	19	19	-	-	-	-	1.888	XZ
607	Beam	298	283	Angle	0.00	17	17	-	-	-	-	0.800	Z
608	Beam	300	285	Angle	0.00	17	17	-	-	-	-	0.800	Z
609	Beam	284	286	Angle	0.00	2	2	1	1	1	-	2.020	Y
610	Beam	232	276	Angle	0.00	4	4	5	5	-	-	2.147	XY
611	Beam	236	276	Angle	0.00	2	2	1	1	1	-	0.520	X
612	Beam	234	278	Angle	0.00	4	4	5	5	-	-	2.147	XY
613	Beam	244	286	Angle	0.00	4	4	5	5	-	-	2.147	XY
614	Beam	284	303	Angle	0.00	17	17	-	-	-	-	0.200	Z
615	Beam	289	290	Angle	0.00	17	17	-	-	-	-	1.000	Z
616	Beam	303	263	Angle	0.00	18	18	4	4	-	-	0.570	X
617	Beam	290	250	Angle	0.00	18	18	4	4	-	-	0.570	X
618	Tension	303	250	Angle	0.00	19	19	-	-	-	-	1.888	XZ
619	Tension	290	263	Angle	0.00	19	19	-	-	-	-	1.888	XZ
620	Beam	286	304	Angle	0.00	17	17	-	-	-	-	0.200	Z
621	Beam	291	292	Angle	0.00	17	17	-	-	-	-	1.000	Z
622	Beam	304	264	Angle	0.00	18	18	4	4	-	-	0.570	X
623	Beam	292	252	Angle	0.00	18	18	4	4	-	-	0.570	X
624	Tension	304	252	Angle	0.00	19	19	-	-	-	-	1.888	XZ
625	Tension	292	264	Angle	0.00	19	19	-	-	-	-	1.888	XZ
626	Beam	303	289	Angle	0.00	17	17	-	-	-	-	0.800	Z
627	Beam	304	291	Angle	0.00	17	17	-	-	-	-	0.800	Z
628	Beam	290	292	Angle	0.00	2	2	1	1	1	-	2.020	Y
629	Beam	250	292	Angle	0.00	4	4	5	5	-	-	2.147	XY
630	Beam	312	337	Angle	0.00	17	17	-	-	-	-	0.200	Z
631	Beam	313	314	Angle	0.00	17	17	-	-	-	-	1.000	Z
632	Beam	337	297	Angle	0.00	18	18	4	4	-	-	2.070	X
633	Beam	314	274	Angle	0.00	18	18	4	4	-	-	2.070	X
634	Beam	314	338	Angle	0.00	17	17	-	-	-	-	0.200	Z
635	Beam	323	324	Angle	0.00	17	17	-	-	-	-	1.000	Z
636	Beam	338	298	Angle	0.00	18	18	4	4	-	-	2.070	X
637	Beam	324	284	Angle	0.00	18	18	4	4	-	-	2.070	X
638	Tension	337	274	Angle	0.00	19	19	-	-	-	-	2.743	XZ
639	Tension	314	297	Angle	0.00	19	19	-	-	-	-	2.743	XZ
640	Beam	316	339	Angle	0.00	17	17	-	-	-	-	0.200	Z
641	Beam	317	318	Angle	0.00	17	17	-	-	-	-	1.000	Z
642	Beam	339	299	Angle	0.00	18	18	4	4	-	-	2.070	X
643	Beam	318	278	Angle	0.00	18	18	4	4	-	-	2.070	X
644	Tension	339	278	Angle	0.00	19	19	-	-	-	-	2.743	XZ
645	Tension	318	299	Angle	0.00	19	19	-	-	-	-	2.743	XZ
646	Beam	337	313	Angle	0.00	17	17	-	-	-	-	0.800	Z
647	Beam	330	315	Angle	0.00	1	1	-	-	-	-	0.500	Z
648	Beam	275	315	Angle	0.00	12	12	1	1	1	-	2.020	X
649	Beam	339	317	Angle	0.00	17	17	-	-	-	-	0.800	Z
650	Beam	332	319	Angle	0.00	1	1	-	-	-	-	0.500	Z
651	Beam	279	319	Angle	0.00	12	12	1	1	1	-	2.020	X
652	Beam	312	320	Angle	0.00	1	1	-	-	-	-	0.500	Z
653	Beam	316	321	Angle	0.00	1	1	-	-	-	-	0.500	Z
654	Beam	315	319	Angle	0.00	2	2	1	1	1	-	2.020	Y
655	Beam	312	316	Angle	0.00	2	2	1	1	1	-	2.020	Y
656	Beam	272	312	Angle	0.00	2	2	1	1	1	-	2.020	X
657	Beam	314	318	Angle	0.00	2	2	1	1	1	-	2.020	Y
658	Beam	275	319	Angle	0.00	4	4	5	5	-	-	2.927	XY
659	Tension	338	284	Angle	0.00	19	19	-	-	-	-	2.743	XZ
660	Tension	324	298	Angle	0.00	19	19	-	-	-	-	2.743	XZ
661	Beam	318	340	Angle	0.00	17	17	-	-	-	-	0.200	Z
662	Beam	325	326	Angle	0.00	17	17	-	-	-	-	1.000	Z
663	Beam	340	300	Angle	0.00	18	18	4	4	-	-	2.070	X
664	Beam	326	286	Angle	0.00	18	18	4	4	-	-	2.070	X
665	Tension	340	286	Angle	0.00	19	19	-	-	-	-	2.743	XZ
666	Tension	326	300	Angle	0.00	19	19	-	-	-	-	2.743	XZ
667	Beam	338	323	Angle	0.00	17	17	-	-	-	-	0.800	Z
668	Beam	340	325	Angle	0.00	17	17	-	-	-	-	0.800	Z
669	Beam	324	326	Angle	0.00	2	2	1	1	1	-	2.020	Y
670	Beam	272	316	Angle	0.00	4	4	5	5	-	-	2.927	XY
671	Beam	276	316	Angle	0.00	2	2	1	1	1	-	2.020	X
672	Beam	274	318	Angle	0.00	4	4	5	5	-	-	2.927	XY
673	Beam	284	326	Angle	0.00	4	4	5	5	-	-	2.927	XY
674	Beam	324	343	Angle	0.00	17	17	-	-	-	-	0.200	Z
675	Beam	329	330	Angle	0.00	17	17	-	-	-	-	1.000	Z
676	Beam	343	303	Angle	0.00	18	18	4	4	-	-	2.070	X
677	Beam	330	290	Angle	0.00	18	18	4	4	-	-	2.070	X
678	Tension	343	290	Angle	0.00	19	19	-	-	-	-	2.743	XZ
679	Tension	330	303	Angle	0.00	19	19	-	-	-	-	2.743	XZ
680	Beam	326	344	Angle	0.00	17	17	-	-	-	-	0.200	Z
681	Beam	331	332	Angle	0.00	17	17	-	-	-	-	1.000	Z
682	Beam	344	304	Angle	0.00	18	18	4	4	-	-	2.070	X
683	Beam	332	292	Angle	0.00	18	18	4	4	-	-	2.070	X

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
684	Tension	344	292	Angle	0.00	19	19	-	-	-	-	2.743	XZ
685	Tension	332	304	Angle	0.00	19	19	-	-	-	-	2.743	XZ
686	Beam	343	329	Angle	0.00	17	17	-	-	-	-	0.800	Z
687	Beam	344	331	Angle	0.00	17	17	-	-	-	-	0.800	Z
688	Beam	330	332	Angle	0.00	2	2	1	1	1	-	2.020	Y
689	Beam	290	332	Angle	0.00	4	4	5	5	-	-	2.927	XY
690	Beam	352	377	Angle	0.00	17	17	-	-	-	-	0.200	Z
691	Beam	353	354	Angle	0.00	17	17	-	-	-	-	1.000	Z
692	Beam	377	337	Angle	0.00	18	18	4	4	-	-	2.070	X
693	Beam	354	314	Angle	0.00	18	18	4	4	-	-	2.070	X
694	Beam	354	378	Angle	0.00	17	17	-	-	-	-	0.200	Z
695	Beam	363	364	Angle	0.00	17	17	-	-	-	-	1.000	Z
696	Beam	378	338	Angle	0.00	18	18	4	4	-	-	2.070	X
697	Beam	364	324	Angle	0.00	18	18	4	4	-	-	2.070	X
698	Tension	377	314	Angle	0.00	19	19	-	-	-	-	2.743	XZ
699	Tension	354	337	Angle	0.00	19	19	-	-	-	-	2.743	XZ
700	Beam	356	379	Angle	0.00	17	17	-	-	-	-	0.200	Z
701	Beam	357	358	Angle	0.00	17	17	-	-	-	-	1.000	Z
702	Beam	379	339	Angle	0.00	18	18	4	4	-	-	2.070	X
703	Beam	358	318	Angle	0.00	18	18	4	4	-	-	2.070	X
704	Tension	379	318	Angle	0.00	19	19	-	-	-	-	2.743	XZ
705	Tension	358	339	Angle	0.00	19	19	-	-	-	-	2.743	XZ
706	Beam	377	353	Angle	0.00	17	17	-	-	-	-	0.800	Z
707	Beam	370	355	Angle	0.00	1	1	-	-	-	-	0.500	Z
708	Beam	315	355	Angle	0.00	12	12	1	1	1	-	2.020	X
709	Beam	379	357	Angle	0.00	17	17	-	-	-	-	0.800	Z
710	Beam	372	359	Angle	0.00	1	1	-	-	-	-	0.500	Z
711	Beam	319	359	Angle	0.00	12	12	1	1	1	-	2.020	X
712	Beam	352	360	Angle	0.00	1	1	-	-	-	-	0.500	Z
713	Beam	356	361	Angle	0.00	1	1	-	-	-	-	0.500	Z
714	Beam	355	359	Angle	0.00	2	2	1	1	1	-	2.020	Y
715	Beam	352	356	Angle	0.00	2	2	1	1	1	-	2.020	Y
716	Beam	312	352	Angle	0.00	2	2	1	1	1	-	2.020	X
717	Beam	354	358	Angle	0.00	2	2	1	1	1	-	2.020	Y
718	Beam	315	359	Angle	0.00	4	4	5	5	-	-	2.927	XY
719	Tension	378	324	Angle	0.00	19	19	-	-	-	-	2.743	XZ
720	Tension	364	338	Angle	0.00	19	19	-	-	-	-	2.743	XZ
721	Beam	358	380	Angle	0.00	17	17	-	-	-	-	0.200	Z
722	Beam	365	366	Angle	0.00	17	17	-	-	-	-	1.000	Z
723	Beam	380	340	Angle	0.00	18	18	4	4	-	-	2.070	X
724	Beam	366	326	Angle	0.00	18	18	4	4	-	-	2.070	X
725	Tension	380	326	Angle	0.00	19	19	-	-	-	-	2.743	XZ
726	Tension	366	340	Angle	0.00	19	19	-	-	-	-	2.743	XZ
727	Beam	378	363	Angle	0.00	17	17	-	-	-	-	0.800	Z
728	Beam	380	365	Angle	0.00	17	17	-	-	-	-	0.800	Z
729	Beam	364	366	Angle	0.00	2	2	1	1	1	-	2.020	Y
730	Beam	312	356	Angle	0.00	4	4	5	5	-	-	2.927	XY
731	Beam	316	356	Angle	0.00	2	2	1	1	1	-	2.020	X
732	Beam	314	358	Angle	0.00	4	4	5	5	-	-	2.927	XY
733	Beam	324	366	Angle	0.00	4	4	5	5	-	-	2.927	XY
734	Beam	364	383	Angle	0.00	17	17	-	-	-	-	0.200	Z
735	Beam	369	370	Angle	0.00	17	17	-	-	-	-	1.000	Z
736	Beam	383	343	Angle	0.00	18	18	4	4	-	-	2.070	X
737	Beam	370	330	Angle	0.00	18	18	4	4	-	-	2.070	X
738	Tension	383	330	Angle	0.00	19	19	-	-	-	-	2.743	XZ
739	Tension	370	343	Angle	0.00	19	19	-	-	-	-	2.743	XZ
740	Beam	366	384	Angle	0.00	17	17	-	-	-	-	0.200	Z
741	Beam	371	372	Angle	0.00	17	17	-	-	-	-	1.000	Z
742	Beam	384	344	Angle	0.00	18	18	4	4	-	-	2.070	X
743	Beam	372	332	Angle	0.00	18	18	4	4	-	-	2.070	X
744	Tension	384	332	Angle	0.00	19	19	-	-	-	-	2.743	XZ
745	Tension	372	344	Angle	0.00	19	19	-	-	-	-	2.743	XZ
746	Beam	383	369	Angle	0.00	17	17	-	-	-	-	0.800	Z
747	Beam	384	371	Angle	0.00	17	17	-	-	-	-	0.800	Z
748	Beam	370	372	Angle	0.00	2	2	1	1	1	-	2.020	Y
749	Beam	330	372	Angle	0.00	4	4	5	5	-	-	2.927	XY
750	Beam	392	417	Angle	0.00	17	17	-	-	-	-	0.200	Z
751	Beam	393	394	Angle	0.00	17	17	-	-	-	-	1.000	Z
752	Beam	417	377	Angle	0.00	18	18	4	4	-	-	2.070	X
753	Beam	394	354	Angle	0.00	18	18	4	4	-	-	2.070	X
754	Beam	394	418	Angle	0.00	17	17	-	-	-	-	0.200	Z
755	Beam	403	404	Angle	0.00	17	17	-	-	-	-	1.000	Z
756	Beam	418	378	Angle	0.00	18	18	4	4	-	-	2.070	X
757	Beam	404	364	Angle	0.00	18	18	4	4	-	-	2.070	X
758	Tension	417	354	Angle	0.00	19	19	-	-	-	-	2.743	XZ
759	Tension	394	377	Angle	0.00	19	19	-	-	-	-	2.743	XZ
760	Beam	396	419	Angle	0.00	17	17	-	-	-	-	0.200	Z
761	Beam	397	398	Angle	0.00	17	17	-	-	-	-	1.000	Z
762	Beam	419	379	Angle	0.00	18	18	4	4	-	-	2.070	X
763	Beam	398	358	Angle	0.00	18	18	4	4	-	-	2.070	X
764	Tension	419	358	Angle	0.00	19	19	-	-	-	-	2.743	XZ
765	Tension	398	379	Angle	0.00	19	19	-	-	-	-	2.743	XZ
766	Beam	417	393	Angle	0.00	17	17	-	-	-	-	0.800	Z
767	Beam	410	395	Angle	0.00	1	1	-	-	-	-	0.500	Z
768	Beam	355	395	Angle	0.00	12	12	1	1	1	-	2.020	X
769	Beam	419	397	Angle	0.00	17	17	-	-	-	-	0.800	Z
770	Beam	412	399	Angle	0.00	1	1	-	-	-	-	0.500	Z
771	Beam	359	399	Angle	0.00	12	12	1	1	1	-	2.020	X

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	Rotation β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
772	Beam	392	400	Angle	0.00	1	1	-	-	-	-	0.500	Z
773	Beam	396	401	Angle	0.00	1	1	-	-	-	-	0.500	Z
774	Beam	395	399	Angle	0.00	2	2	1	1	1	-	2.020	Y
775	Beam	392	396	Angle	0.00	2	2	1	1	1	-	2.020	Y
776	Beam	352	392	Angle	0.00	2	2	1	1	1	-	2.020	X
777	Beam	394	398	Angle	0.00	2	2	1	1	1	-	2.020	Y
778	Beam	355	399	Angle	0.00	4	4	5	5	-	-	2.927	XY
779	Tension	418	364	Angle	0.00	19	19	-	-	-	-	2.743	XZ
780	Tension	404	378	Angle	0.00	19	19	-	-	-	-	2.743	XZ
781	Beam	398	420	Angle	0.00	17	17	-	-	-	-	0.200	Z
782	Beam	405	406	Angle	0.00	17	17	-	-	-	-	1.000	Z
783	Beam	420	380	Angle	0.00	18	18	4	4	-	-	2.070	X
784	Beam	406	366	Angle	0.00	18	18	4	4	-	-	2.070	X
785	Tension	420	366	Angle	0.00	19	19	-	-	-	-	2.743	XZ
786	Tension	406	380	Angle	0.00	19	19	-	-	-	-	2.743	XZ
787	Beam	418	403	Angle	0.00	17	17	-	-	-	-	0.800	Z
788	Beam	420	405	Angle	0.00	17	17	-	-	-	-	0.800	Z
789	Beam	404	406	Angle	0.00	2	2	1	1	1	-	2.020	Y
790	Beam	352	396	Angle	0.00	4	4	5	5	-	-	2.927	XY
791	Beam	356	396	Angle	0.00	2	2	1	1	1	-	2.020	X
792	Beam	354	398	Angle	0.00	4	4	5	5	-	-	2.927	XY
793	Beam	364	406	Angle	0.00	4	4	5	5	-	-	2.927	XY
794	Beam	404	423	Angle	0.00	17	17	-	-	-	-	0.200	Z
795	Beam	409	410	Angle	0.00	17	17	-	-	-	-	1.000	Z
796	Beam	423	383	Angle	0.00	18	18	4	4	-	-	2.070	X
797	Beam	410	370	Angle	0.00	18	18	4	4	-	-	2.070	X
798	Tension	423	370	Angle	0.00	19	19	-	-	-	-	2.743	XZ
799	Tension	410	383	Angle	0.00	19	19	-	-	-	-	2.743	XZ
800	Beam	406	424	Angle	0.00	17	17	-	-	-	-	0.200	Z
801	Beam	411	412	Angle	0.00	17	17	-	-	-	-	1.000	Z
802	Beam	424	384	Angle	0.00	18	18	4	4	-	-	2.070	X
803	Beam	412	372	Angle	0.00	18	18	4	4	-	-	2.070	X
804	Tension	424	372	Angle	0.00	19	19	-	-	-	-	2.743	XZ
805	Tension	412	384	Angle	0.00	19	19	-	-	-	-	2.743	XZ
806	Beam	423	409	Angle	0.00	17	17	-	-	-	-	0.800	Z
807	Beam	424	411	Angle	0.00	17	17	-	-	-	-	0.800	Z
808	Beam	410	412	Angle	0.00	2	2	1	1	1	-	2.020	Y
809	Beam	370	412	Angle	0.00	4	4	5	5	-	-	2.927	XY
810	Beam	432	457	Angle	0.00	17	17	-	-	-	-	0.200	Z
811	Beam	433	434	Angle	0.00	17	17	-	-	-	-	1.000	Z
812	Beam	457	417	Angle	0.00	18	18	4	4	-	-	2.070	X
813	Beam	434	394	Angle	0.00	18	18	4	4	-	-	2.070	X
814	Beam	434	458	Angle	0.00	17	17	-	-	-	-	0.200	Z
815	Beam	443	444	Angle	0.00	17	17	-	-	-	-	1.000	Z
816	Beam	458	418	Angle	0.00	18	18	4	4	-	-	2.070	X
817	Beam	444	404	Angle	0.00	18	18	4	4	-	-	2.070	X
818	Tension	457	394	Angle	0.00	19	19	-	-	-	-	2.743	XZ
819	Tension	434	417	Angle	0.00	19	19	-	-	-	-	2.743	XZ
820	Beam	436	459	Angle	0.00	17	17	-	-	-	-	0.200	Z
821	Beam	437	438	Angle	0.00	17	17	-	-	-	-	1.000	Z
822	Beam	459	419	Angle	0.00	18	18	4	4	-	-	2.070	X
823	Beam	438	398	Angle	0.00	18	18	4	4	-	-	2.070	X
824	Tension	459	398	Angle	0.00	19	19	-	-	-	-	2.743	XZ
825	Tension	438	419	Angle	0.00	19	19	-	-	-	-	2.743	XZ
826	Beam	457	433	Angle	0.00	17	17	-	-	-	-	0.800	Z
827	Beam	450	435	Angle	0.00	1	1	-	-	-	-	0.500	Z
828	Beam	395	435	Angle	0.00	12	12	1	1	1	-	2.020	X
829	Beam	459	437	Angle	0.00	17	17	-	-	-	-	0.800	Z
830	Beam	452	439	Angle	0.00	1	1	-	-	-	-	0.500	Z
831	Beam	399	439	Angle	0.00	12	12	1	1	1	-	2.020	X
832	Beam	432	440	Angle	0.00	1	1	-	-	-	-	0.500	Z
833	Beam	436	441	Angle	0.00	1	1	-	-	-	-	0.500	Z
834	Beam	435	439	Angle	0.00	2	2	1	1	1	-	2.020	Y
835	Beam	432	436	Angle	0.00	2	2	1	1	1	-	2.020	Y
836	Beam	392	432	Angle	0.00	2	2	1	1	1	-	2.020	X
837	Beam	434	438	Angle	0.00	2	2	1	1	1	-	2.020	Y
838	Beam	395	439	Angle	0.00	4	4	5	5	-	-	2.927	XY
839	Tension	458	404	Angle	0.00	19	19	-	-	-	-	2.743	XZ
840	Tension	444	418	Angle	0.00	19	19	-	-	-	-	2.743	XZ
841	Beam	438	460	Angle	0.00	17	17	-	-	-	-	0.200	Z
842	Beam	445	446	Angle	0.00	17	17	-	-	-	-	1.000	Z
843	Beam	460	420	Angle	0.00	18	18	4	4	-	-	2.070	X
844	Beam	446	406	Angle	0.00	18	18	4	4	-	-	2.070	X
845	Tension	460	406	Angle	0.00	19	19	-	-	-	-	2.743	XZ
846	Tension	446	420	Angle	0.00	19	19	-	-	-	-	2.743	XZ
847	Beam	458	443	Angle	0.00	17	17	-	-	-	-	0.800	Z
848	Beam	460	445	Angle	0.00	17	17	-	-	-	-	0.800	Z
849	Beam	444	446	Angle	0.00	2	2	1	1	1	-	2.020	Y
850	Beam	392	436	Angle	0.00	4	4	5	5	-	-	2.927	XY
851	Beam	396	436	Angle	0.00	2	2	1	1	1	-	2.020	X
852	Beam	394	438	Angle	0.00	4	4	5	5	-	-	2.927	XY
853	Beam	404	446	Angle	0.00	4	4	5	5	-	-	2.927	XY
854	Beam	444	463	Angle	0.00	17	17	-	-	-	-	0.200	Z
855	Beam	449	450	Angle	0.00	17	17	-	-	-	-	1.000	Z
856	Beam	463	423	Angle	0.00	18	18	4	4	-	-	2.070	X
857	Beam	450	410	Angle	0.00	18	18	4	4	-	-	2.070	X
858	Tension	463	410	Angle	0.00	19	19	-	-	-	-	2.743	XZ
859	Tension	450	423	Angle	0.00	19	19	-	-	-	-	2.743	XZ

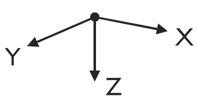
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
860	Beam	446	464	Angle	0.00	17	17	-	-	-	-	0.200	Z
861	Beam	451	452	Angle	0.00	17	17	-	-	-	-	1.000	Z
862	Beam	464	424	Angle	0.00	18	18	4	4	-	-	2.070	X
863	Beam	452	412	Angle	0.00	18	18	4	4	-	-	2.070	X
864	Tension	464	412	Angle	0.00	19	19	-	-	-	-	2.743	XZ
865	Tension	452	424	Angle	0.00	19	19	-	-	-	-	2.743	XZ
866	Beam	463	449	Angle	0.00	17	17	-	-	-	-	0.800	Z
867	Beam	464	451	Angle	0.00	17	17	-	-	-	-	0.800	Z
868	Beam	450	452	Angle	0.00	2	2	1	1	1	-	2.020	Y
869	Beam	410	452	Angle	0.00	4	4	5	5	-	-	2.927	XY
870	Beam	472	497	Angle	0.00	17	17	-	-	-	-	0.200	Z
871	Beam	473	482	Angle	0.00	17	17	-	-	-	-	0.500	Z
872	Beam	497	457	Angle	0.00	18	18	4	4	-	-	2.070	X
873	Beam	474	434	Angle	0.00	18	18	4	4	-	-	2.070	X
874	Beam	474	498	Angle	0.00	17	17	-	-	-	-	0.200	Z
875	Beam	483	484	Angle	0.00	17	17	-	-	-	-	1.000	Z
876	Beam	498	458	Angle	0.00	18	18	4	4	-	-	2.070	X
877	Beam	484	444	Angle	0.00	18	18	4	4	-	-	2.070	X
878	Tension	497	434	Angle	0.00	19	19	-	-	-	-	2.743	XZ
879	Tension	474	457	Angle	0.00	19	19	-	-	-	-	2.743	XZ
880	Beam	476	499	Angle	0.00	17	17	-	-	-	-	0.200	Z
881	Beam	477	487	Angle	0.00	17	17	-	-	-	-	0.500	Z
882	Beam	499	459	Angle	0.00	18	18	4	4	-	-	2.070	X
883	Beam	478	438	Angle	0.00	18	18	4	4	-	-	2.070	X
884	Tension	499	438	Angle	0.00	19	19	-	-	-	-	2.743	XZ
885	Tension	478	459	Angle	0.00	19	19	-	-	-	-	2.743	XZ
886	Beam	497	473	Angle	0.00	17	17	-	-	-	-	0.800	Z
887	Beam	490	475	Angle	0.00	1	1	-	-	-	-	0.500	Z
888	Beam	435	475	Angle	0.00	12	12	1	1	1	-	2.020	X
889	Beam	499	477	Angle	0.00	17	17	-	-	-	-	0.800	Z
890	Beam	492	479	Angle	0.00	1	1	-	-	-	-	0.500	Z
891	Beam	439	479	Angle	0.00	12	12	1	1	1	-	2.020	X
892	Beam	472	480	Angle	0.00	1	1	-	-	-	-	0.500	Z
893	Beam	476	481	Angle	0.00	1	1	-	-	-	-	0.500	Z
894	Beam	475	479	Angle	0.00	2	2	1	1	1	-	2.020	Y
895	Beam	472	476	Angle	0.00	2	2	1	1	1	-	2.020	Y
896	Beam	432	472	Angle	0.00	2	2	1	1	1	-	2.020	X
897	Beam	474	478	Angle	0.00	2	2	1	1	1	-	2.020	Y
898	Beam	435	479	Angle	0.00	4	4	5	5	-	-	2.927	XY
899	Tension	498	444	Angle	0.00	19	19	-	-	-	-	2.743	XZ
900	Tension	484	458	Angle	0.00	19	19	-	-	-	-	2.743	XZ
901	Beam	478	500	Angle	0.00	17	17	-	-	-	-	0.200	Z
902	Beam	485	486	Angle	0.00	17	17	-	-	-	-	1.000	Z
903	Beam	500	460	Angle	0.00	18	18	4	4	-	-	2.070	X
904	Beam	486	446	Angle	0.00	18	18	4	4	-	-	2.070	X
905	Tension	500	446	Angle	0.00	19	19	-	-	-	-	2.743	XZ
906	Tension	486	460	Angle	0.00	19	19	-	-	-	-	2.743	XZ
907	Beam	498	488	Angle	0.00	17	17	-	-	-	-	0.300	Z
908	Beam	500	493	Angle	0.00	17	17	-	-	-	-	0.300	Z
909	Beam	484	486	Angle	0.00	2	2	1	1	1	-	2.020	Y
910	Beam	432	476	Angle	0.00	4	4	5	5	-	-	2.927	XY
911	Beam	436	476	Angle	0.00	2	2	1	1	1	-	2.020	X
912	Beam	434	478	Angle	0.00	4	4	5	5	-	-	2.927	XY
913	Beam	444	486	Angle	0.00	4	4	5	5	-	-	2.927	XY
914	Beam	484	503	Angle	0.00	17	17	-	-	-	-	0.200	Z
915	Beam	489	490	Angle	0.00	17	17	-	-	-	-	1.000	Z
916	Beam	503	463	Angle	0.00	18	18	4	4	-	-	2.070	X
917	Beam	490	450	Angle	0.00	18	18	4	4	-	-	2.070	X
918	Tension	503	450	Angle	0.00	19	19	-	-	-	-	2.743	XZ
919	Tension	490	463	Angle	0.00	19	19	-	-	-	-	2.743	XZ
920	Beam	486	504	Angle	0.00	17	17	-	-	-	-	0.200	Z
921	Beam	491	492	Angle	0.00	17	17	-	-	-	-	1.000	Z
922	Beam	504	464	Angle	0.00	18	18	4	4	-	-	2.070	X
923	Beam	492	452	Angle	0.00	18	18	4	4	-	-	2.070	X
924	Tension	504	452	Angle	0.00	19	19	-	-	-	-	2.743	XZ
925	Tension	492	464	Angle	0.00	19	19	-	-	-	-	2.743	XZ
926	Beam	503	489	Angle	0.00	17	17	-	-	-	-	0.800	Z
927	Beam	504	491	Angle	0.00	17	17	-	-	-	-	0.800	Z
928	Beam	490	492	Angle	0.00	2	2	1	1	1	-	2.020	Y
929	Beam	450	492	Angle	0.00	4	4	5	5	-	-	2.927	XY
930	Beam	512	537	Angle	0.00	17	17	-	-	-	-	0.200	Z
931	Beam	513	522	Angle	0.00	17	17	-	-	-	-	0.500	Z
932	Beam	537	497	Angle	0.00	18	18	4	4	-	-	2.570	X
933	Beam	514	474	Angle	0.00	18	18	4	4	-	-	2.570	X
934	Beam	514	538	Angle	0.00	17	17	-	-	-	-	0.200	Z
935	Beam	523	524	Angle	0.00	17	17	-	-	-	-	1.000	Z
936	Beam	538	498	Angle	0.00	18	18	4	4	-	-	2.570	X
937	Beam	524	484	Angle	0.00	18	18	4	4	-	-	2.570	X
938	Tension	537	474	Angle	0.00	19	19	-	-	-	-	3.138	XZ
939	Tension	514	497	Angle	0.00	19	19	-	-	-	-	3.138	XZ
940	Beam	516	539	Angle	0.00	17	17	-	-	-	-	0.200	Z
941	Beam	517	527	Angle	0.00	17	17	-	-	-	-	0.500	Z
942	Beam	539	499	Angle	0.00	18	18	4	4	-	-	2.570	X
943	Beam	518	478	Angle	0.00	18	18	4	4	-	-	2.570	X
944	Tension	539	478	Angle	0.00	19	19	-	-	-	-	3.138	XZ
945	Tension	518	499	Angle	0.00	19	19	-	-	-	-	3.138	XZ
946	Beam	537	513	Angle	0.00	17	17	-	-	-	-	0.800	Z
947	Beam	530	515	Angle	0.00	1	1	-	-	-	-	0.500	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
948	Beam	475	515	Angle	0.00	12	12	1	1	1	-	2.520	X
949	Beam	539	517	Angle	0.00	17	17	-	-	-	-	0.800	Z
950	Beam	532	519	Angle	0.00	1	1	-	-	-	-	0.500	Z
951	Beam	479	519	Angle	0.00	12	12	1	1	1	-	2.520	X
952	Beam	512	520	Angle	0.00	1	1	-	-	-	-	0.500	Z
953	Beam	516	521	Angle	0.00	1	1	-	-	-	-	0.500	Z
954	Beam	515	519	Angle	0.00	2	2	1	1	1	-	2.020	Y
955	Beam	512	516	Angle	0.00	2	2	1	1	1	-	2.020	Y
956	Beam	472	512	Angle	0.00	2	2	1	1	1	-	2.520	X
957	Beam	514	518	Angle	0.00	2	2	1	1	1	-	2.020	Y
958	Beam	475	519	Angle	0.00	4	4	5	5	-	-	3.300	XY
959	Tension	538	484	Angle	0.00	19	19	-	-	-	-	3.138	XZ
960	Tension	524	498	Angle	0.00	19	19	-	-	-	-	3.138	XZ
961	Beam	518	540	Angle	0.00	17	17	-	-	-	-	0.200	Z
962	Beam	525	526	Angle	0.00	17	17	-	-	-	-	1.000	Z
963	Beam	540	500	Angle	0.00	18	18	4	4	-	-	2.570	X
964	Beam	526	486	Angle	0.00	18	18	4	4	-	-	2.570	X
965	Tension	540	486	Angle	0.00	19	19	-	-	-	-	3.138	XZ
966	Tension	526	500	Angle	0.00	19	19	-	-	-	-	3.138	XZ
967	Beam	538	528	Angle	0.00	17	17	-	-	-	-	0.300	Z
968	Beam	540	533	Angle	0.00	17	17	-	-	-	-	0.300	Z
969	Beam	524	526	Angle	0.00	2	2	1	1	1	-	2.020	Y
970	Beam	472	516	Angle	0.00	4	4	5	5	-	-	3.300	XY
971	Beam	476	516	Angle	0.00	2	2	1	1	1	-	2.520	X
972	Beam	474	518	Angle	0.00	4	4	5	5	-	-	3.300	XY
973	Beam	484	526	Angle	0.00	4	4	5	5	-	-	3.300	XY
974	Beam	524	543	Angle	0.00	17	17	-	-	-	-	0.200	Z
975	Beam	529	530	Angle	0.00	17	17	-	-	-	-	1.000	Z
976	Beam	543	503	Angle	0.00	18	18	4	4	-	-	2.570	X
977	Beam	530	490	Angle	0.00	18	18	4	4	-	-	2.570	X
978	Tension	543	490	Angle	0.00	19	19	-	-	-	-	3.138	XZ
979	Tension	530	503	Angle	0.00	19	19	-	-	-	-	3.138	XZ
980	Beam	526	544	Angle	0.00	17	17	-	-	-	-	0.200	Z
981	Beam	531	532	Angle	0.00	17	17	-	-	-	-	1.000	Z
982	Beam	544	504	Angle	0.00	18	18	4	4	-	-	2.570	X
983	Beam	532	492	Angle	0.00	18	18	4	4	-	-	2.570	X
984	Tension	544	492	Angle	0.00	19	19	-	-	-	-	3.138	XZ
985	Tension	532	504	Angle	0.00	19	19	-	-	-	-	3.138	XZ
986	Beam	543	529	Angle	0.00	17	17	-	-	-	-	0.800	Z
987	Beam	544	531	Angle	0.00	17	17	-	-	-	-	0.800	Z
988	Beam	530	532	Angle	0.00	2	2	1	1	1	-	2.020	Y
989	Beam	490	532	Angle	0.00	4	4	5	5	-	-	3.300	XY
990	Beam	477	517	Angle	0.00	1	1	1	1	1	-	2.520	X
991	Beam	517	513	Angle	0.00	1	1	1	1	1	-	2.020	Y
992	Beam	513	473	Angle	0.00	1	1	1	1	1	-	2.520	X
993	Beam	485	525	Angle	0.00	1	1	1	1	1	-	2.520	X
994	Beam	525	523	Angle	0.00	1	1	1	1	1	-	2.020	Y
995	Beam	523	483	Angle	0.00	1	1	1	1	1	-	2.520	X
996	Beam	491	531	Angle	0.00	1	1	1	1	1	-	2.520	X
997	Beam	531	529	Angle	0.00	1	1	1	1	1	-	2.020	Y
998	Beam	529	489	Angle	0.00	1	1	1	1	1	-	2.520	X
999	Beam	487	527	Angle	0.00	1	1	1	1	1	-	2.520	X
1000	Beam	527	522	Angle	0.00	1	1	1	1	1	-	2.020	Y
1001	Beam	522	482	Angle	0.00	1	1	1	1	1	-	2.520	X
1002	Beam	493	533	Angle	0.00	1	1	1	1	1	-	2.520	X
1003	Beam	533	528	Angle	0.00	1	1	1	1	1	-	2.020	Y
1004	Beam	528	488	Angle	0.00	1	1	1	1	1	-	2.520	X
1005	Beam	63	46	Angle	0.00	2	2	1	1	1	-	2.520	X
1006	Beam	46	42	Angle	0.00	2	2	1	1	1	-	2.020	Y
1007	Beam	42	59	Angle	0.00	2	2	1	1	1	-	2.520	X
1008	Beam	87	57	Angle	0.00	2	2	1	1	1	-	2.520	X
1009	Beam	57	54	Angle	0.00	2	2	1	1	1	-	2.020	Y
1010	Beam	54	72	Angle	0.00	2	2	1	1	1	-	2.520	X
1011	Beam	123	117	Angle	0.00	2	2	1	1	1	-	2.520	X
1012	Beam	117	114	Angle	0.00	2	2	1	1	1	-	2.020	Y
1013	Beam	114	120	Angle	0.00	2	2	1	1	1	-	2.520	X
1014	Beam	69	52	Angle	0.00	2	2	1	1	1	-	2.520	X
1015	Beam	52	51	Angle	0.00	2	2	1	1	1	-	2.020	Y
1016	Beam	51	68	Angle	0.00	2	2	1	1	1	-	2.520	X
1017	Beam	74	56	Angle	0.00	2	2	1	1	1	-	2.520	X
1018	Beam	56	53	Angle	0.00	2	2	1	1	1	-	2.020	Y
1019	Beam	53	71	Angle	0.00	2	2	1	1	1	-	2.520	X

1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	520	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☐	☐
4	50	XYZ	0.00	0.00	0.00	☐	☐	☐	☒	☐	☐	☐
5	on next row:	XYZ	0.00	0.00	0.00	☐	☐	☒	☐	☐	☐	☐
	43,44,55,60,61,73,77,78,91,94,95,109,116,119,140,158,195,204,234,235,244,274,275,284,314,315,324,354,355,364, 394,395,404,434,435,444,474,475,484,514,515,524											
6	49	XYZ	0.00	0.00	0.00	☐	☐	☒	☒	☐	☐	☐
7	521	XYZ	0.00	0.00	0.00	☐	☒	☐	☒	☐	☐	☐

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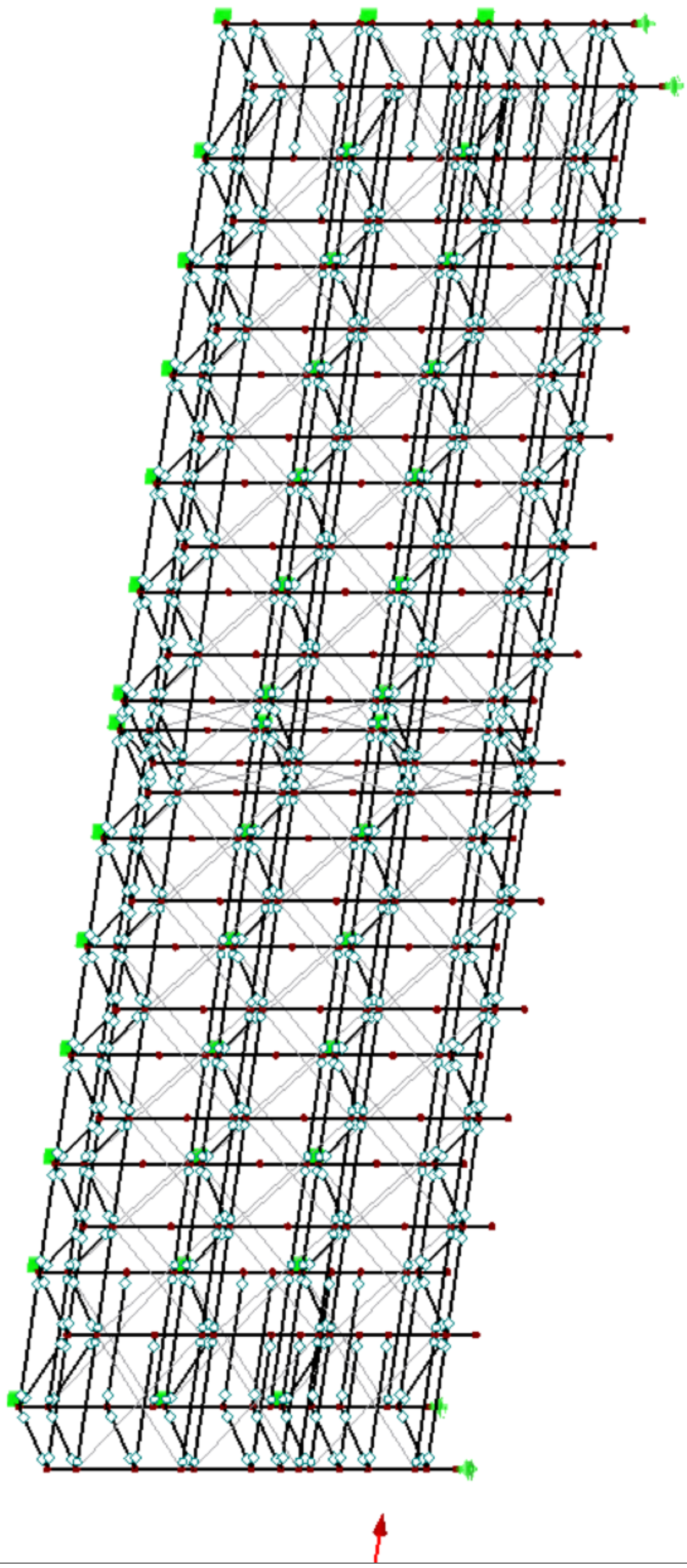
Project: 2023 Model: K-1-FW-dome-Gable-wall Date: 23.09.2023

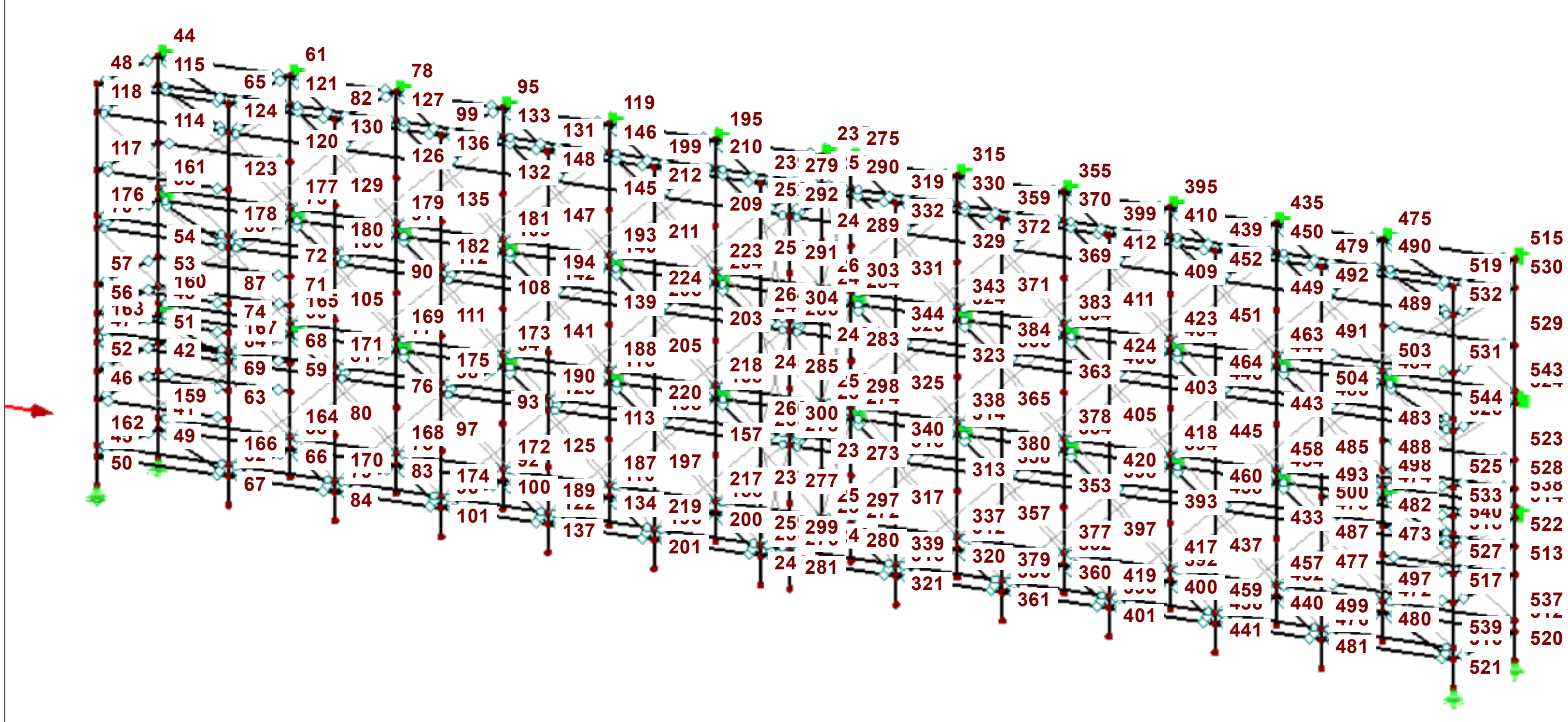
MODEL

Isometric



Node Numbering

Isometric



■ MODEL

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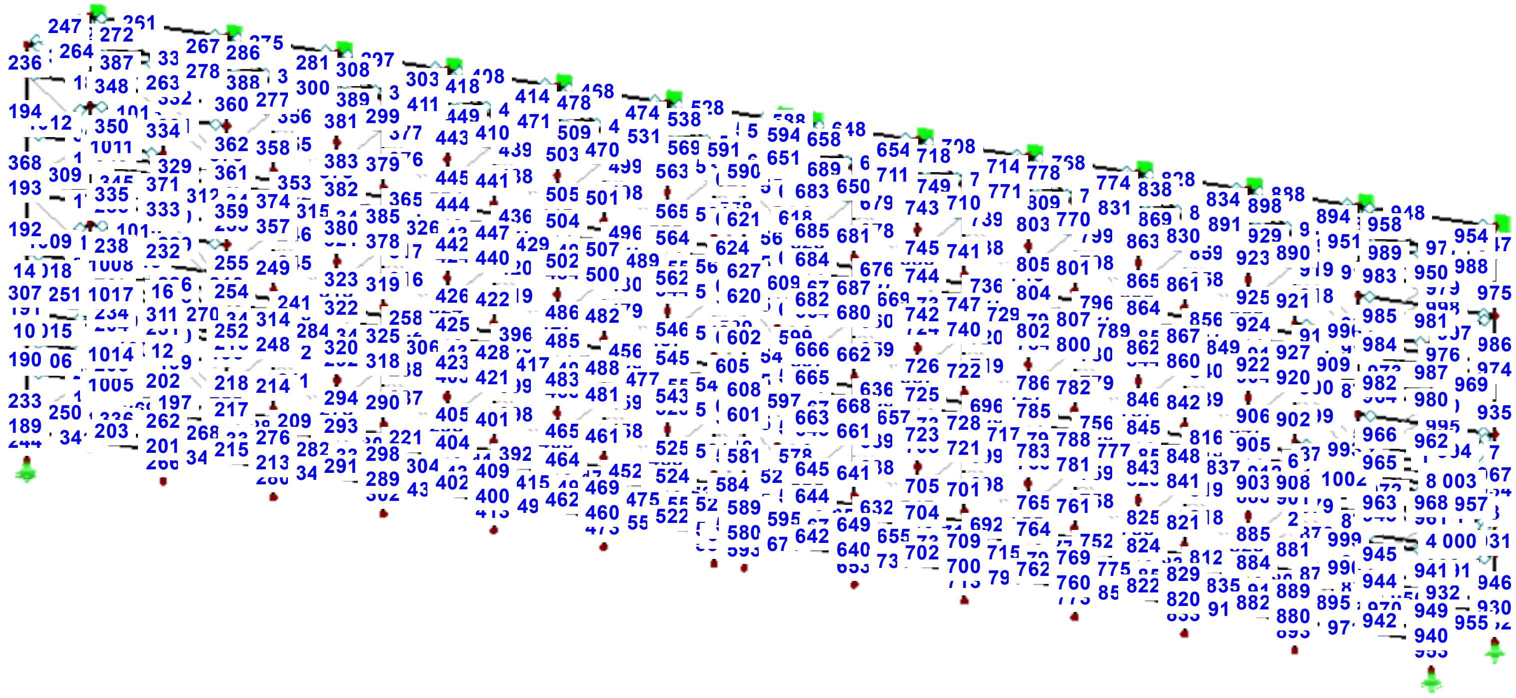
Project: 2023

Model: K-1-FW-dome-Gable-wall

Date: 23.09.2023

Member Numbering

Isometric



MODEL

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Project: 2023

Model: K-1-FW-dome-Gable-wall

Date: 23.09.2023

MODEL

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed - Category A: domestic, residential areas	☐			
LC3	Load scaffold-shoring LC 1	Imposed - Category A: domestic, residential areas	☐			
LC4	Load scaffold-shoring LC 2	Imposed - Category A: domestic, residential areas	☐			
LC5	Wind	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters			
LC1	EG	Method of analysis	:	■	Geometrically linear analysis
LC2	Live Load	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Load scaffold-shoring LC 1	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Load scaffold-shoring LC 2	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		LC1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
CO2		LC2	1	1.35	LC1	EG
			2	1.35	LC2	Live Load
			3	1.35	LC3	Load scaffold-shoring LC 1
CO3		LC3	1	1.35	LC1	EG
			2	1.35	LC2	Live Load
			3	1.35	LC4	Load scaffold-shoring LC 2
CO4		LC4	1	0.90	LC1	EG
			2	1.50	LC5	Wind

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters			
CO1	LC1	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	LC2	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	LC3	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	LC4	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters
		: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z) : ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2 or CO3 or CO4

LC1
EG

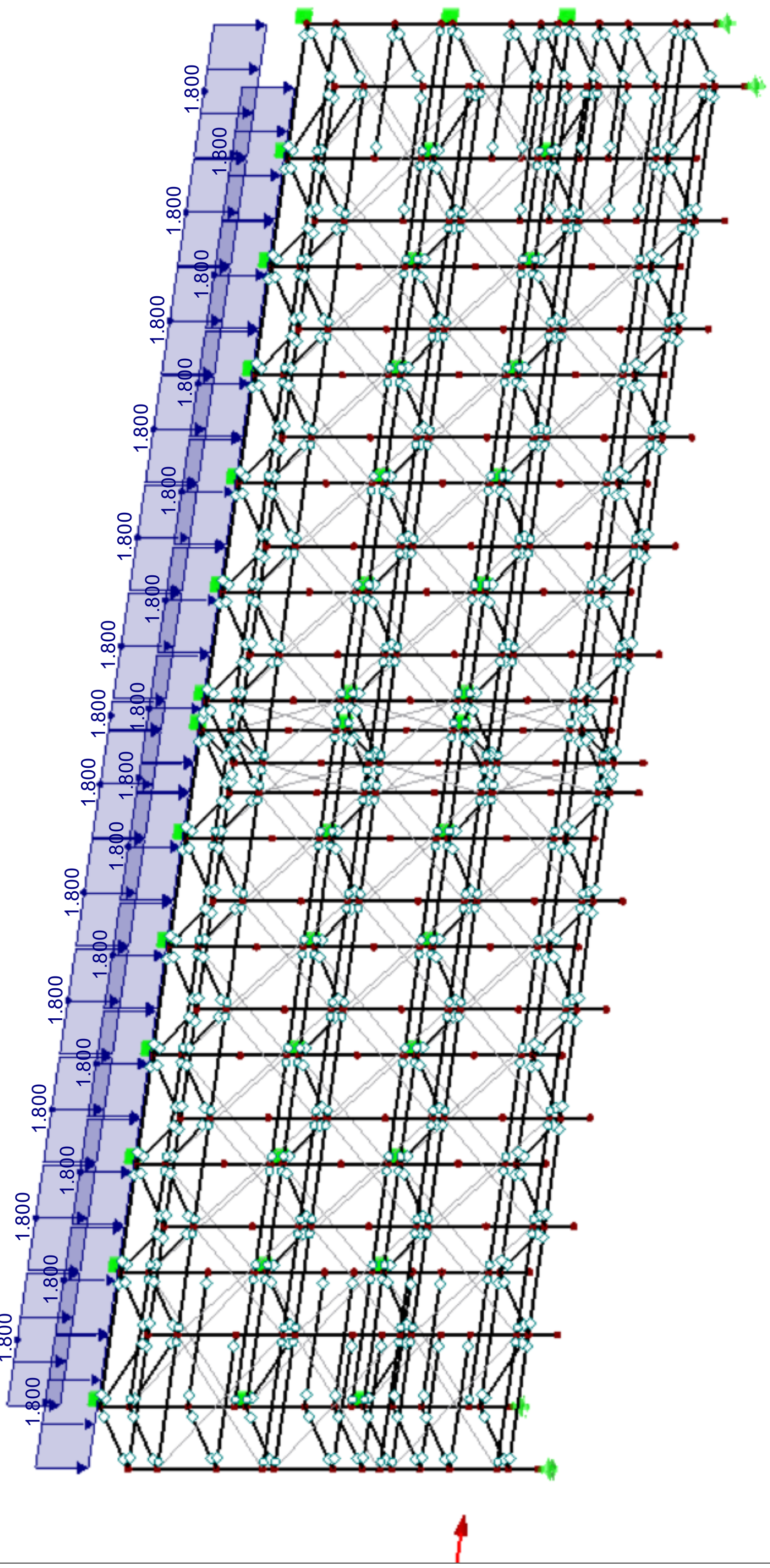
3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members		Force	Uniform	Z	True Length	p	1.800	kN/m
	261,264,275,278,297,300,408,411,468,471,528,531,588,591,648,651,708,711,768,771,828,831,888,891,948,951								

LC1: EG

Isometric



LC1 : EG
Belastung [kN/m]

LC2
Live Load

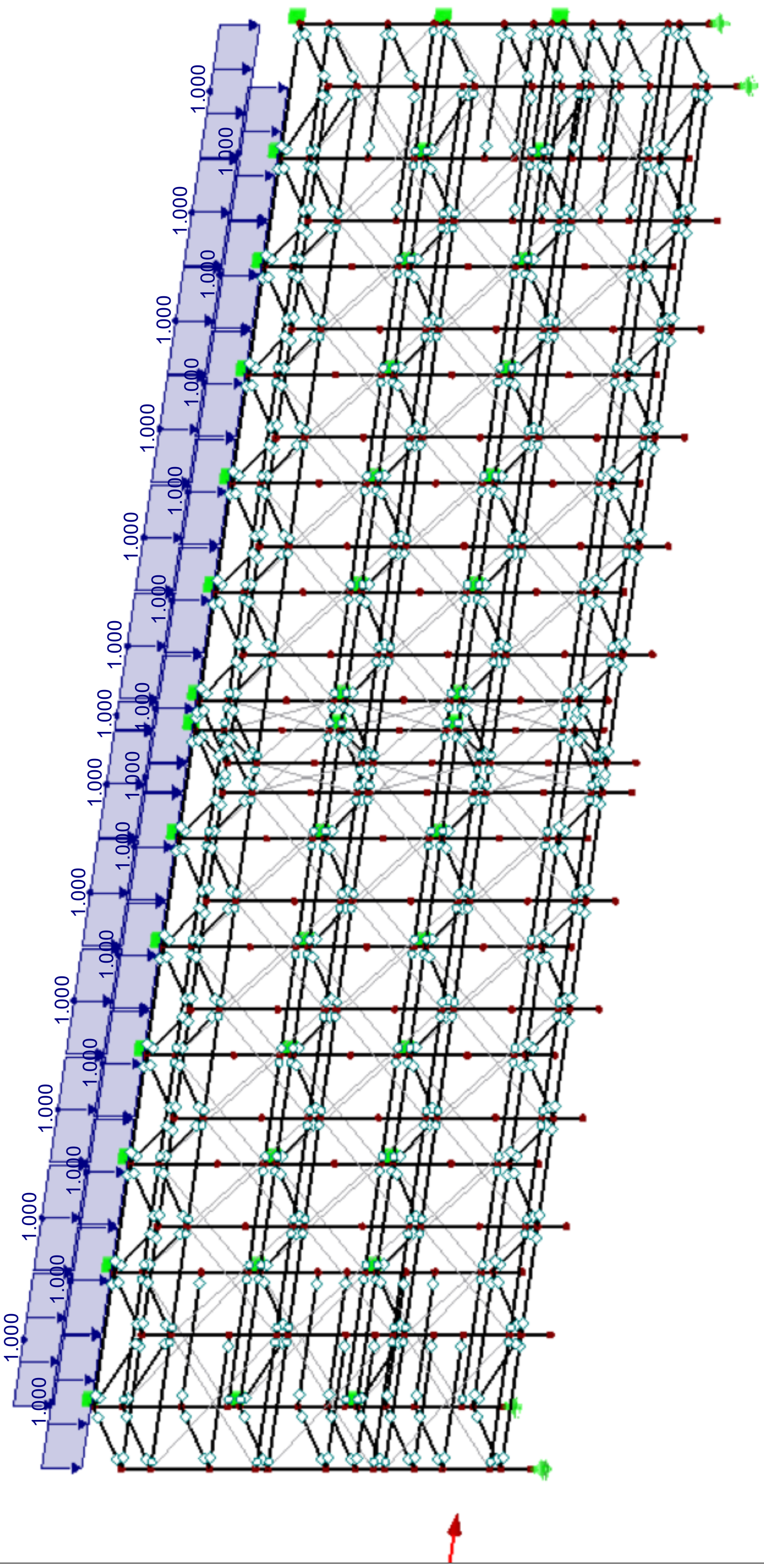
3.2 MEMBER LOADS

LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members		Force	Uniform	Z	True Length	p	1.000	kN/m
	261,264,275,278,297,300,408,411,468,471,528,531,588,591,648,651,708,711,768,771,828,831,888,891,948,951								

LC2: LIVE LOAD

Isometric



LC2 : Live Load
Belastung [kN/m]

LC3
Load scaffold-shoring LC 1

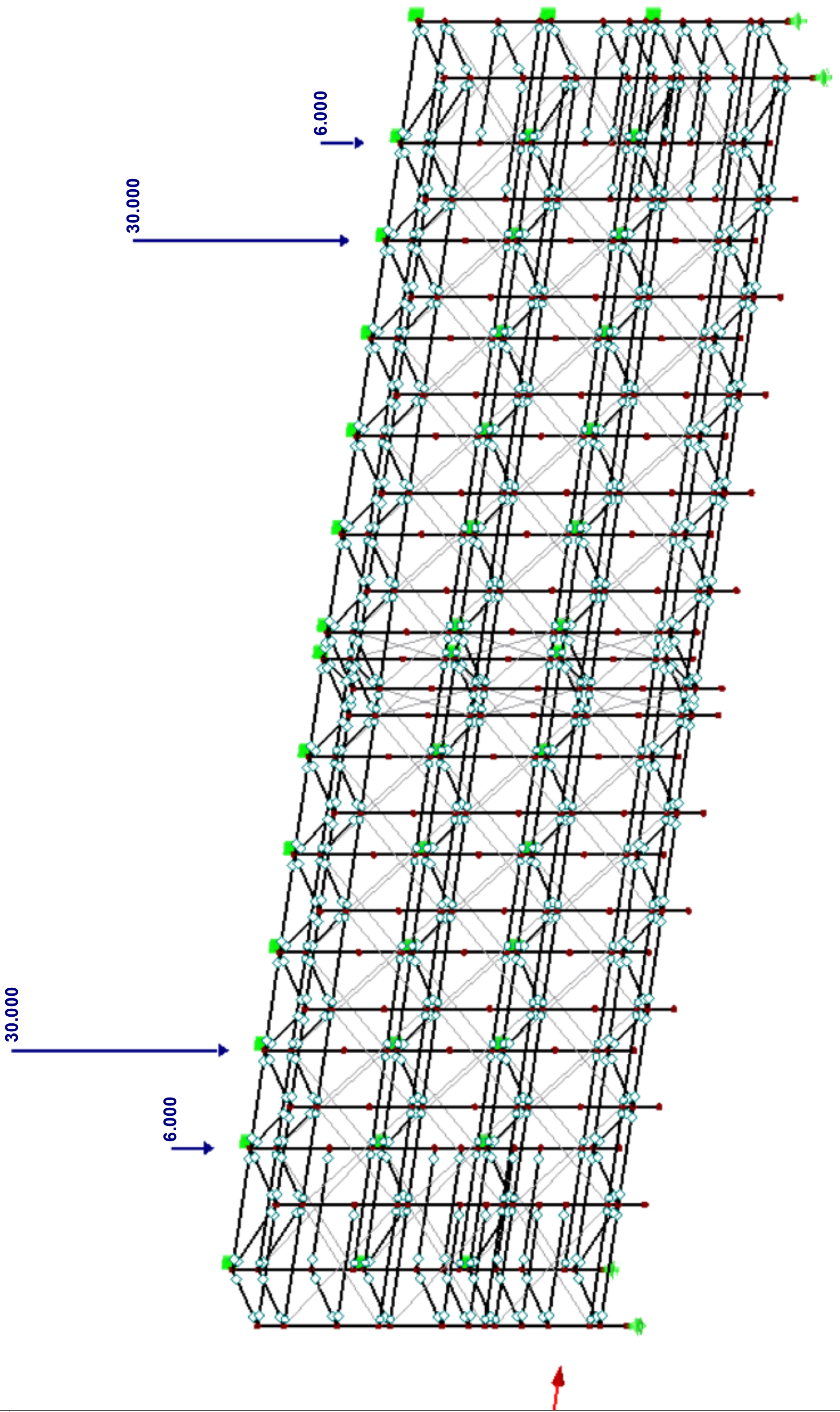
■ 3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Load scaffold-shoring LC 1

	On Nodes	Coordinate	Force [kN]			Moment [kNm]		
No.	No.	System	P_X / P_U	P_Y / P_V	P_Z / P_W	M_X / M_U	M_Y / M_V	M_Z / M_W
1	78,435	0 | Global XYZ	0.000	0.000	30.000	0.000	0.000	0.000
2	61,475	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

LC3: LOAD SCAFFOLD-SHORING LC 1

Isometric



LC3 : Load scaffold-shoring LC 1
Belastung [kN]

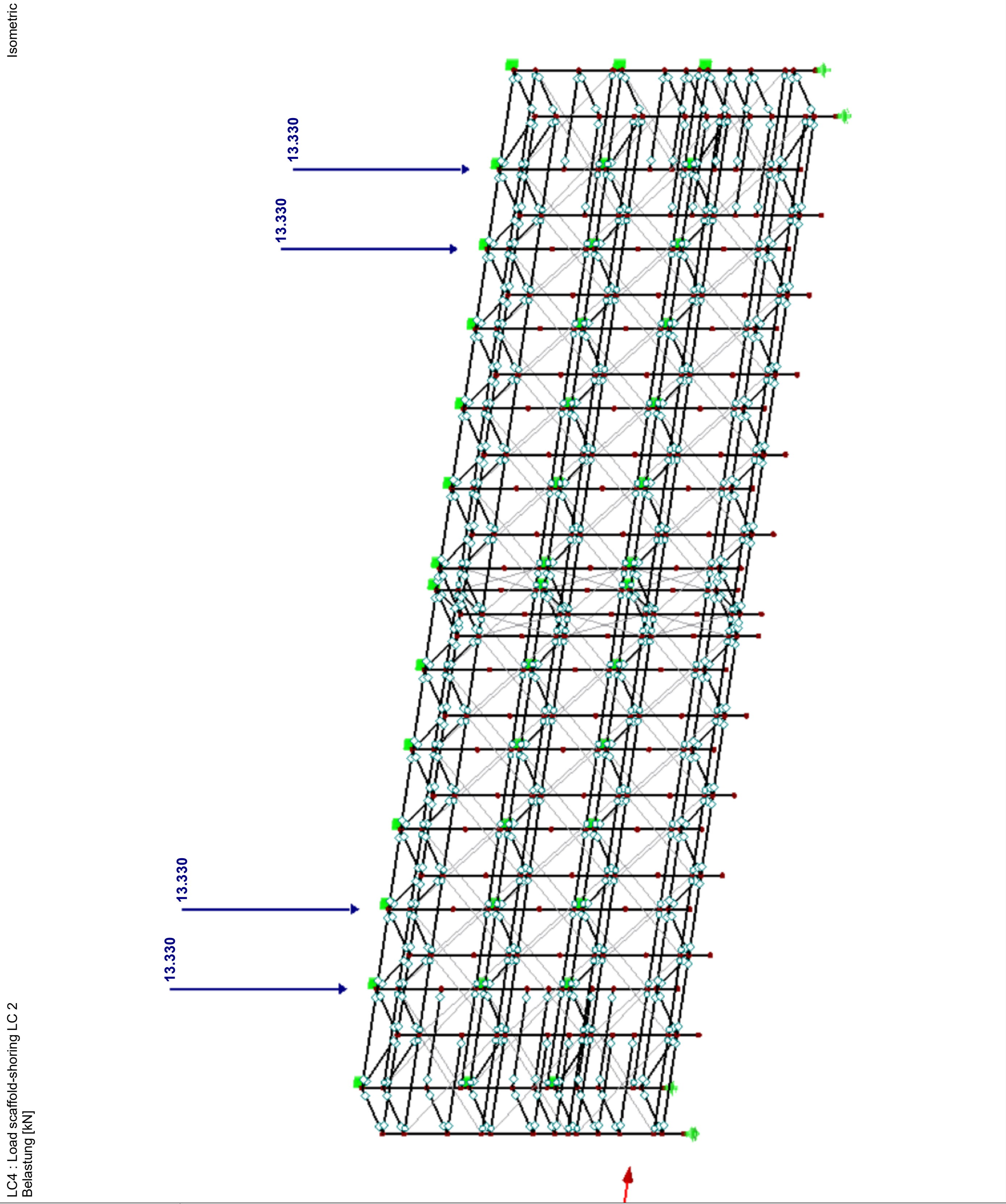
LC4
Load scaffold-shoring LC 2

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Load scaffold-shoring LC 2

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	78,435	0 | Global XYZ	0.000	0.000	13.330	0.000	0.000	0.000
2	61,475	0 | Global XYZ	0.000	0.000	13.330	0.000	0.000	0.000

LC4: LOAD SCAFFOLD-SHORING LC 2



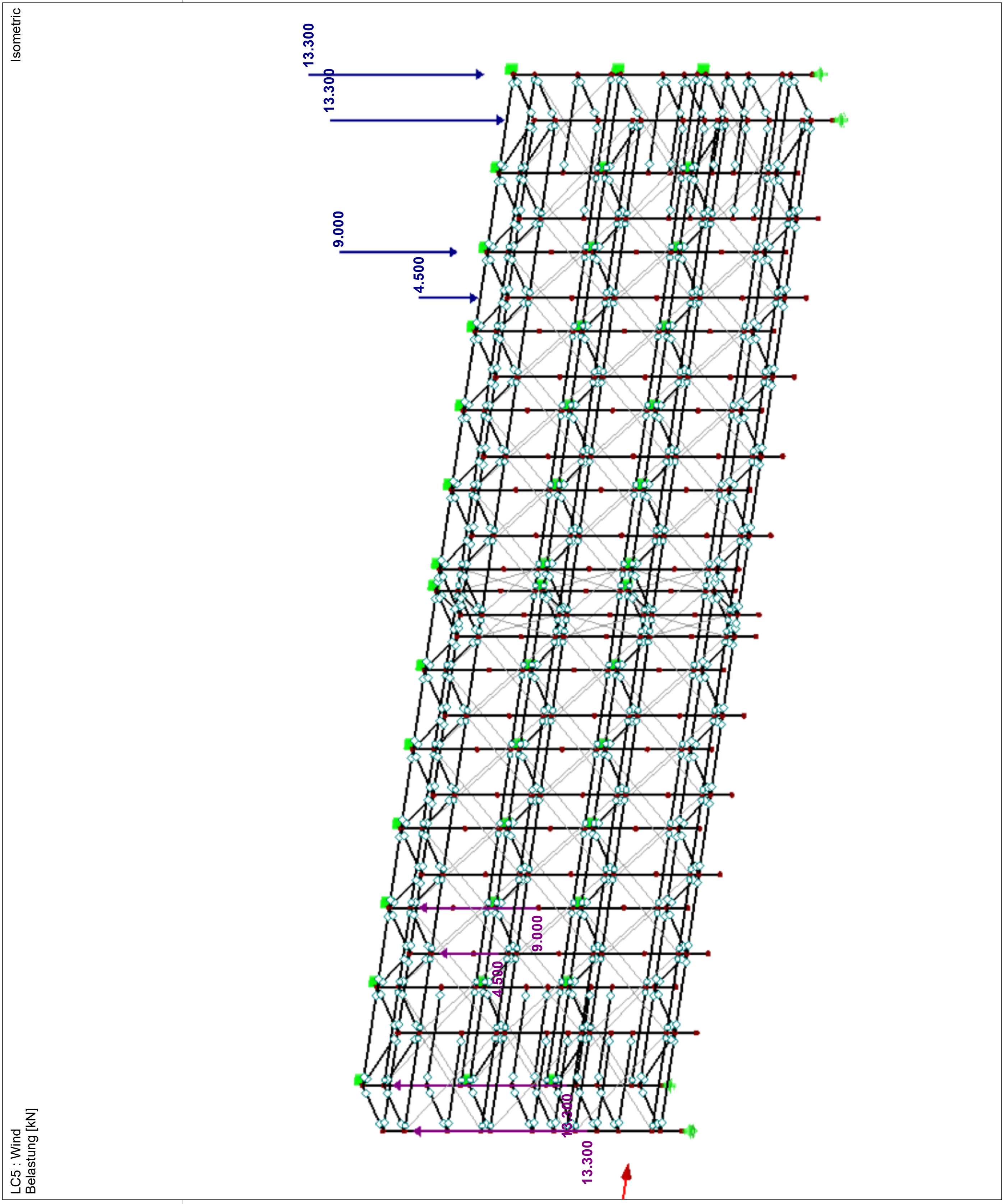
LC5
Wind

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC5: Wind

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	515,519	0 | Global XYZ	0.000	0.000	13.300	0.000	0.000	0.000
2	435	0 | Global XYZ	0.000	0.000	9.000	0.000	0.000	0.000
3	439	0 | Global XYZ	0.000	0.000	4.500	0.000	0.000	0.000
4	44,48	0 | Global XYZ	0.000	0.000	-13.300	0.000	0.000	0.000
5	78	0 | Global XYZ	0.000	0.000	-9.000	0.000	0.000	0.000
6	82	0 | Global XYZ	0.000	0.000	-4.500	0.000	0.000	0.000

LC5: WIND


Isometric
13.300
13.300
9.000
4.500
9.000
4.500
13.300
13.300
LC5 : Wind
Belastung [kN]

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	92.74	kN	
	Sum of support reactions in Z	92.74	kN	Deviation -0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:16.84, Y:1.03, Z:-3.34 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-1.7	mm	Member No. 3, x: 0.100 m
	Max displacement in Y	0.2	mm	Member No. 279, x: 0.500 m
	Max displacement in Z	12.0	mm	Member No. 531, x: 1.212 m
	Max vectorial displacement	12.0	mm	Member No. 648, x: 0.808 m
	Max rotation about X	-2.8	mrad	Member No. 972, x: 3.300 m
	Max rotation about Y	-4.8	mrad	Member No. 961, x: 0.090 m
	Max rotation about Z	-0.1	mrad	Member No. 1012, x: 0.909 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	4		
	LC2 - Live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	51.52	kN	
	Sum of support reactions in Z	51.52	kN	Deviation -0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:16.84, Y:1.03, Z:-3.34 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-0.9	mm	Member No. 3, x: 0.100 m
	Max displacement in Y	0.1	mm	Member No. 279, x: 0.500 m
	Max displacement in Z	6.7	mm	Member No. 531, x: 1.212 m
	Max vectorial displacement	6.7	mm	Member No. 648, x: 0.808 m
	Max rotation about X	-1.5	mrad	Member No. 972, x: 3.300 m
	Max rotation about Y	-2.7	mrad	Member No. 961, x: 0.090 m
	Max rotation about Z	-0.0	mrad	Member No. 1012, x: 0.909 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	4		
	LC3 - Load scaffold-shoring LC 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	72.00	kN	
	Sum of support reactions in Z	72.00	kN	Deviation 0.00%
	Resultant of reactions about X	-74.52	kNm	At center of gravity of model (X:16.84, Y:1.03, Z:-3.34 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-1.7	mm	Member No. 3, x: 0.125 m
	Max displacement in Y	3.4	mm	Member No. 592, x: 0.500 m
	Max displacement in Z	11.4	mm	Member No. 513, x: 0.000 m
	Max vectorial displacement	11.9	mm	Member No. 592, x: 0.500 m
	Max rotation about X	-5.6	mrad	Member No. 549, x: 1.010 m
	Max rotation about Y	-5.8	mrad	Member No. 934, x: 0.100 m
	Max rotation about Z	-0.7	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	4		
	LC4 - Load scaffold-shoring LC 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	53.32	kN	
	Sum of support reactions in Z	53.32	kN	Deviation -0.00%
	Resultant of reactions about X	-55.19	kNm	At center of gravity of model (X:16.84, Y:1.03, Z:-3.34 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	-1.1	mm	Member No. 3, x: 0.125 m
	Max displacement in Y	2.2	mm	Member No. 592, x: 0.500 m
	Max displacement in Z	7.3	mm	Member No. 513, x: 0.000 m
	Max vectorial displacement	7.7	mm	Member No. 592, x: 0.500 m
	Max rotation about X	-3.6	mrad	Member No. 609, x: 1.010 m
	Max rotation about Y	-3.8	mrad	Member No. 934, x: 0.100 m
	Max rotation about Z	-0.5	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	6		
	LC5 - Wind			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	-0.00	kN	
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:16.84, Y:1.03, Z:-3.34 m)
	Resultant of reactions about Y	-933.76	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.4	mm	Member No. 367, x: 0.560 m
	Max displacement in Y	0.1	mm	Member No. 772, x: 0.500 m
	Max displacement in Z	2.0	mm	Member No. 888, x: 0.000 m
	Max vectorial displacement	2.0	mm	Member No. 888, x: 0.000 m
	Max rotation about X	-0.5	mrad	Member No. 972, x: 0.000 m
	Max rotation about Y	-0.7	mrad	Member No. 934, x: 0.100 m
	Max rotation about Z	-0.1	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	CO1 - LC1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	202.47	kN	
	Sum of support reactions in Z	202.47	kN	Deviation -0.00%
	Max displacement in X	-4.0	mm	Member No. 3, x: 0.075 m
	Max displacement in Y	-0.5	mm	Member No. 893, x: 0.500 m
	Max displacement in Z	26.7	mm	Member No. 531, x: 1.212 m
	Max vectorial displacement	26.7	mm	Member No. 648, x: 0.808 m
	Max rotation about X	-6.4	mrad	Member No. 972, x: 3.300 m
	Max rotation about Y	-11.2	mrad	Member No. 961, x: 0.090 m
	Max rotation about Z	-0.2	mrad	Member No. 1012, x: 0.909 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	6		
	Calculate critical load factor	☐		
	CO2 - LC2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	291.95	kN	
	Sum of support reactions in Z	291.95	kN	Deviation -0.00%
	Max displacement in X	-6.5	mm	Member No. 3, x: 0.050 m
	Max displacement in Y	6.6	mm	Member No. 301, x: 0.500 m
	Max displacement in Z	42.1	mm	Member No. 648, x: 0.808 m
	Max vectorial displacement	42.1	mm	Member No. 648, x: 0.808 m
	Max rotation about X	-12.5	mrad	Member No. 972, x: 0.000 m
	Max rotation about Y	-19.7	mrad	Member No. 934, x: 0.090 m
	Max rotation about Z	-1.5	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	6		
	Calculate critical load factor	☐		
	CO3 - LC3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	266.73	kN	
	Sum of support reactions in Z	266.73	kN	Deviation -0.00%
	Max displacement in X	-5.5	mm	Member No. 3, x: 0.075 m
	Max displacement in Y	4.1	mm	Member No. 301, x: 0.500 m
	Max displacement in Z	36.1	mm	Member No. 648, x: 0.808 m
	Max vectorial displacement	36.1	mm	Member No. 648, x: 0.808 m
	Max rotation about X	-10.2	mrad	Member No. 972, x: 0.000 m
	Max rotation about Y	16.5	mrad	Member No. 177, x: 0.090 m
	Max rotation about Z	-1.0	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	6		
	Calculate critical load factor	☐		
	CO4 - LC4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of loads in Z	83.46	kN	
	Sum of support reactions in Z	83.46	kN	Deviation -0.00%
	Max displacement in X	-1.7	mm	Member No. 3, x: 0.075 m
	Max displacement in Y	-0.2	mm	Member No. 910, x: 2.927 m
	Max displacement in Z	11.5	mm	Member No. 708, x: 0.909 m
	Max vectorial displacement	11.5	mm	Member No. 708, x: 0.909 m
	Max rotation about X	-3.3	mrad	Member No. 972, x: 0.000 m
	Max rotation about Y	-5.7	mrad	Member No. 934, x: 0.090 m
	Max rotation about Z	-0.1	mrad	Member No. 1000, x: 1.010 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	-6.5	mm	CO2, Member No. 3, x: 0.050 m
	Max displacement in Y	6.6	mm	CO2, Member No. 301, x: 0.500 m
	Max displacement in Z	42.1	mm	CO2, Member No. 648, x: 0.808 m
	Max vectorial displacement	42.1	mm	CO2, Member No. 648, x: 0.808 m
	Max rotation about X	-12.5	mrad	CO2, Member No. 972, x: 0.000 m
	Max rotation about Y	-19.7	mrad	CO2, Member No. 934, x: 0.090 m
	Max rotation about Z	-1.5	mrad	CO2, Member No. 1000, x: 1.010 m
	Number of 1D finite elements (member elements)	853		
	Number of FE mesh nodes	352		
	Number of equations	2112		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate Release Nonlinearities	☒		
	Activate failed members	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☒ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
	Maximum number of reactivations	:	3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/3.2 (Stiel)								
243	LC5	MAX N	0.000	▹ 19.07	0.01	0.00	0.00	0.00	0.00
243	CO2	MIN N	0.000	▹ -94.73	-0.80	-0.41	0.00	0.33	-0.65
228	CO2	MAX V_y	0.275	-4.99	▹ 0.20	-3.26	0.01	0.08	0.01
243	CO2	MIN V_y	0.500	-94.71	▹ -1.56	-0.80	0.00	0.00	0.00
947	CO2	MAX V_z	0.300	-5.00	0.14	▹ 3.31	-0.01	0.00	0.00
228	CO2	MIN V_z	0.300	-4.99	0.20	▹ -3.26	0.01	-0.01	0.00
260	CO2	MAX M_T	0.500	-16.61	0.10	-2.98	▹ 0.01	-0.63	-0.06
994	CO2	MIN M_T	0.000	0.02	0.00	0.02	▹ -0.04	-0.02	0.00
228	CO2	MAX M_y	0.000	-5.01	0.20	-3.23	0.01	▹ 0.97	0.06
947	CO2	MIN M_y	0.000	-5.02	0.14	3.27	-0.01	▹ -0.98	0.05
228	CO2	MAX M_z	0.000	-5.01	0.20	-3.23	0.01	0.97	▹ 0.06
243	CO2	MIN M_z	0.000	-94.73	-0.80	-0.41	0.00	0.33	▹ -0.65
	Section No. 2: Rohr 48.3/3.2 (Riegel)								
596	CO2	MAX N	0.182	▹ 24.01	0.04	0.04	0.00	-0.01	0.00
1016	CO2	MIN N	2.520	▹ -0.86	-0.01	0.08	0.00	0.10	0.01
611	CO2	MAX V_y	0.520	17.05	▹ 0.05	-0.04	0.00	-0.01	-0.01
1012	CO2	MIN V_y	0.000	0.01	▹ -0.04	0.01	0.02	-0.01	-0.04
283	CO2	MAX V_z	0.000	10.10	0.01	▹ 0.23	-0.01	-0.21	0.01
896	CO2	MIN V_z	2.020	10.97	-0.01	▹ -0.21	0.01	-0.19	0.01
957	CO2	MAX M_T	0.000	-0.32	-0.01	0.02	▹ 0.06	-0.03	-0.01
251	CO2	MIN M_T	0.000	0.11	0.01	0.04	▹ -0.06	-0.04	0.01
269	CO2	MAX M_y	2.520	3.09	0.01	0.20	-0.04	▹ 0.23	-0.01
269	CO2	MIN M_y	0.000	3.09	0.01	0.20	-0.04	▹ -0.23	0.01

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	
1012	CO2	MAX M_z	2.020	0.01	-0.04	0.01	0.02	0.01	0.04	
1012	CO2	MIN M_z	0.000	0.01	-0.04	0.01	0.02	-0.01	-0.04	
	Section No. 4: Rohr 48.3/4 (Rohr)									
973	CO2	MAX N	1.815	0.79	0.00	0.00	0.02	0.00	0.00	
345	CO2	MIN N	0.330	-0.85	0.00	0.00	-0.03	0.00	0.00	
913	CO2	MAX V_y	2.927	0.48	0.01	0.00	0.01	0.00	-0.01	
610	CO2	MIN V_y	0.000	0.08	-0.01	0.00	-0.01	0.00	-0.01	
913	CO2	MAX V_z	0.000	0.48	0.01	0.00	0.01	0.00	0.01	
340	CO2	MIN V_z	0.000	-0.54	0.00	0.00	-0.04	0.00	0.00	
972	CO2	MAX M_T	3.300	0.64	0.00	0.00	0.03	0.00	-0.01	
336	CO2	MIN M_T	0.000	0.78	0.00	0.00	-0.05	0.00	0.00	
913	CO2	MAX M_y	2.927	0.48	0.01	0.00	0.01	0.00	-0.01	
913	CO2	MIN M_y	0.000	0.48	0.01	0.00	0.01	0.00	0.01	
913	CO2	MAX M_z	0.000	0.48	0.01	0.00	0.01	0.00	0.01	
913	CO2	MIN M_z	2.927	0.48	0.01	0.00	0.01	0.00	-0.01	
	Section No. 12: U-Doppel U-Doppel									
297	LC5	MAX N	0.000	0.15	0.00	0.00	0.00	0.00	0.00	
528	CO2	MIN N	1.111	-11.76	0.00	-0.35	0.00	1.86	0.01	
588	CO2	MAX V_y	0.520	-11.63	0.02	-1.00	0.00	-0.03	0.00	
297	CO2	MIN V_y	0.000	-8.28	-0.01	4.02	0.00	-0.26	0.00	
264	CO1	MAX V_z	0.000	-2.03	0.00	5.13	0.00	-0.33	0.00	
948	CO1	MIN V_z	2.520	-2.03	0.00	-5.13	0.00	-0.33	0.00	
948	CO2	MAX M_T	1.134	-3.27	0.01	0.17	0.00	2.89	0.00	
261	CO2	MIN M_T	1.260	-3.18	0.00	0.30	0.00	2.88	0.00	
951	CO1	MAX M_y	1.260	-2.07	0.00	-0.17	0.00	3.01	0.00	
948	CO2	MIN M_y	2.520	-3.22	0.00	-5.08	0.00	-0.52	-0.01	
948	CO2	MAX M_z	0.252	-3.28	0.00	3.51	0.00	1.26	0.01	
948	CO2	MIN M_z	2.520	-3.22	0.00	-5.08	0.00	-0.52	-0.01	
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)									
175	LC5	MAX N	0.000	19.05	0.00	0.40	0.00	-0.02	0.00	
225	CO2	MIN N	0.000	-94.58	-0.30	0.54	-0.01	-0.84	-0.40	
233	CO2	MAX V_y	0.160	-51.13	0.21	0.62	-0.01	-0.36	0.00	
225	CO2	MIN V_y	0.640	-94.57	-0.78	1.61	-0.01	-0.06	-0.01	
934	CO2	MAX V_z	0.090	-64.07	-0.01	14.96	-0.02	0.03	0.06	
177	CO2	MIN V_z	0.090	-64.39	0.03	-15.12	0.02	-0.01	0.10	
285	CO2	MAX M_T	0.000	-64.79	0.05	0.67	0.02	-1.66	0.10	
967	CO2	MIN M_T	0.000	-64.47	0.00	-0.69	-0.02	1.66	0.06	
934	CO2	MAX M_y	0.200	-64.12	0.00	14.75	-0.02	1.66	0.06	
177	CO2	MIN M_y	0.200	-64.43	0.05	-14.92	0.02	-1.66	0.10	
10	CO2	MAX M_z	0.500	-51.26	-0.16	0.26	0.01	0.79	0.12	
175	CO2	MIN M_z	0.010	-94.54	0.00	-4.12	0.00	-0.08	-0.49	
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)									
572	CO2	MAX N	0.000	64.58	0.00	0.00	0.00	0.00	0.00	
497	CO2	MIN N	0.000	-62.30	0.00	0.00	0.00	0.00	0.00	
677	CO4	MAX V_y	0.000	-18.39	0.00	0.00	0.00	0.00	0.00	
617	CO4	MIN V_y	0.000	-18.17	0.00	0.00	0.00	0.00	0.00	
916	CO4	MAX V_z	0.000	2.41	0.00	0.00	0.00	0.00	0.00	
917	CO4	MIN V_z	0.000	-17.85	0.00	0.00	0.00	0.00	0.00	
932	CO2	MAX M_T	0.000	-4.84	0.00	0.00	0.05	0.00	0.00	
197	CO2	MIN M_T	0.000	-4.37	0.00	0.00	-0.07	0.00	0.00	
977	CO2	MAX M_y	0.000	-35.67	0.00	0.00	0.03	0.00	0.00	
197	CO2	MIN M_y	0.000	-4.37	0.00	0.00	-0.07	0.00	0.00	
976	CO2	MAX M_z	0.000	-14.98	0.00	0.00	-0.01	0.00	0.00	
197	CO2	MIN M_z	2.570	-4.37	0.00	0.00	-0.07	0.00	0.00	
	Section No. 19: Rundstahl 15 (Diagonale_FWT)									
229	CO2	MAX N	0.000	54.99	0.00	0.00	0.00	0.00	0.00	
779	LC4	MIN N	0.000	0.00	0.00	0.00	0.00	0.00	0.00	
199	LC1	MAX V_y	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MIN V_y	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MAX V_z	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MIN V_z	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MAX M_T	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MIN M_T	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MAX M_y	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MIN M_y	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MAX M_z	0.000	12.11	0.00	0.00	0.00	0.00	0.00	
199	LC1	MIN M_z	0.000	12.11	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
43	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.12	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.09	0.00	0.00	0.00	0.00	LC3

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
43	CO4	0.00	0.06	0.00	0.00	0.00	0.00	LC4
44	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.36	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.22	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.40	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.23	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.02	0.00	0.00	0.00	0.00	LC4
49	LC1	0.00	0.03	23.29	0.00	0.00	0.00	EG
	LC2	0.00	0.02	12.94	0.00	0.00	0.00	Live Load
	LC3	0.00	0.38	33.82	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.25	25.23	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	-19.07	0.00	0.00	0.00	Wind
	CO1	0.00	0.07	50.86	0.00	0.00	0.00	LC1
	CO2	0.00	0.39	94.73	0.00	0.00	0.00	LC2
	CO3	0.00	0.31	83.05	0.00	0.00	0.00	LC3
	CO4	0.00	0.02	-7.59	0.00	0.00	0.00	LC4
50	LC1	0.00	0.00	23.08	0.00	0.00	0.00	EG
	LC2	0.00	0.00	12.82	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	2.18	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.00	1.43	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	-16.29	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	50.38	0.00	0.00	0.00	LC1
	CO2	0.00	0.00	51.25	0.00	0.00	0.00	LC2
	CO3	0.00	0.00	50.32	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	-3.71	0.00	0.00	0.00	LC4
55	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.44	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.28	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.71	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.45	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.04	0.00	0.00	0.00	0.00	LC4
60	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.12	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.26	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.17	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
61	LC1	0.00	-0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.12	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.17	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.16	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
73	LC1	0.00	-0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.11	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.04	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.04	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.03	0.00	0.00	0.00	0.00	LC4
77	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.11	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.19	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.12	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.02	0.00	0.00	0.00	0.00	LC4
78	LC1	0.00	-0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.15	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.27	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.16	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
91	LC1	0.00	-0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.18	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.11	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.04	0.00	0.00	0.00	0.00	LC1

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
91	CO2	0.00	0.17	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.10	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.05	0.00	0.00	0.00	0.00	LC4
94	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.05	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.16	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.10	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
95	LC1	0.00	-0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.06	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.15	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.11	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
109	LC1	0.00	-0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.17	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.20	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.11	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.04	0.00	0.00	0.00	0.00	LC4
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.05	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.03	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.12	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.07	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
119	LC1	0.00	-0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.06	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.15	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.10	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
140	LC1	0.00	-0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.15	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.19	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.12	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.02	0.00	0.00	0.00	0.00	LC4
158	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.04	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.02	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.09	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.05	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
195	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.14	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.09	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
204	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.19	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.12	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
234	LC1	0.00	0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.03	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.02	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
234	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.08	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.15	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.12	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.04	0.00	0.00	0.00	0.00	LC4
235	LC1	0.00	0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.08	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.07	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.02	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.04	0.00	0.00	0.00	0.00	LC4
244	LC1	0.00	0.05	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.03	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.13	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.08	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.10	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.27	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.21	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.05	0.00	0.00	0.00	0.00	LC4
274	LC1	0.00	-0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.02	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.01	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.08	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.02	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.04	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.04	0.00	0.00	0.00	0.00	LC4
275	LC1	0.00	-0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.08	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.28	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.21	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.04	0.00	0.00	0.00	0.00	LC4
284	LC1	0.00	-0.05	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.03	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.06	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.10	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.03	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.01	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.05	0.00	0.00	0.00	0.00	LC4
314	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.03	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.02	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.07	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.04	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
315	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.16	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.11	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
324	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.13	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.08	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.18	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.11	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
354	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.03	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.02	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.08	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.04	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
355	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load

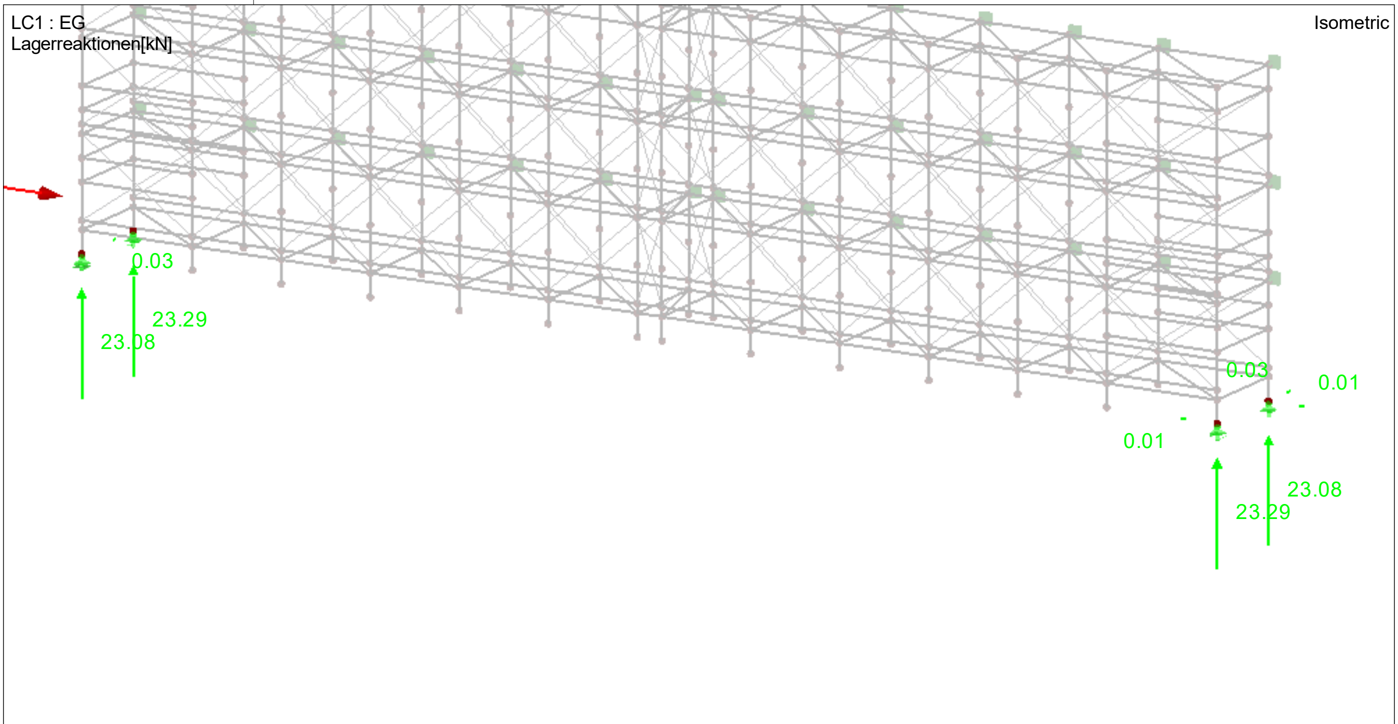
■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
355	LC3	0.00	-0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.12	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.08	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
364	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.20	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.13	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.01	0.00	0.00	0.00	0.00	LC4
394	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.05	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.03	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.10	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.05	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
395	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.06	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.09	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.06	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
404	LC1	0.00	0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.15	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.23	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.15	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.02	0.00	0.00	0.00	0.00	LC4
434	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.05	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.14	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.08	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
435	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.20	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.09	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
444	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.16	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.24	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.17	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.03	0.00	0.00	0.00	0.00	LC4
474	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.13	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.08	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.25	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.14	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.01	0.00	0.00	0.00	0.00	LC4
475	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.10	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.07	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.08	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.02	0.00	0.00	0.00	0.00	LC4

■ 4.4 NODES - SUPPORT FORCES

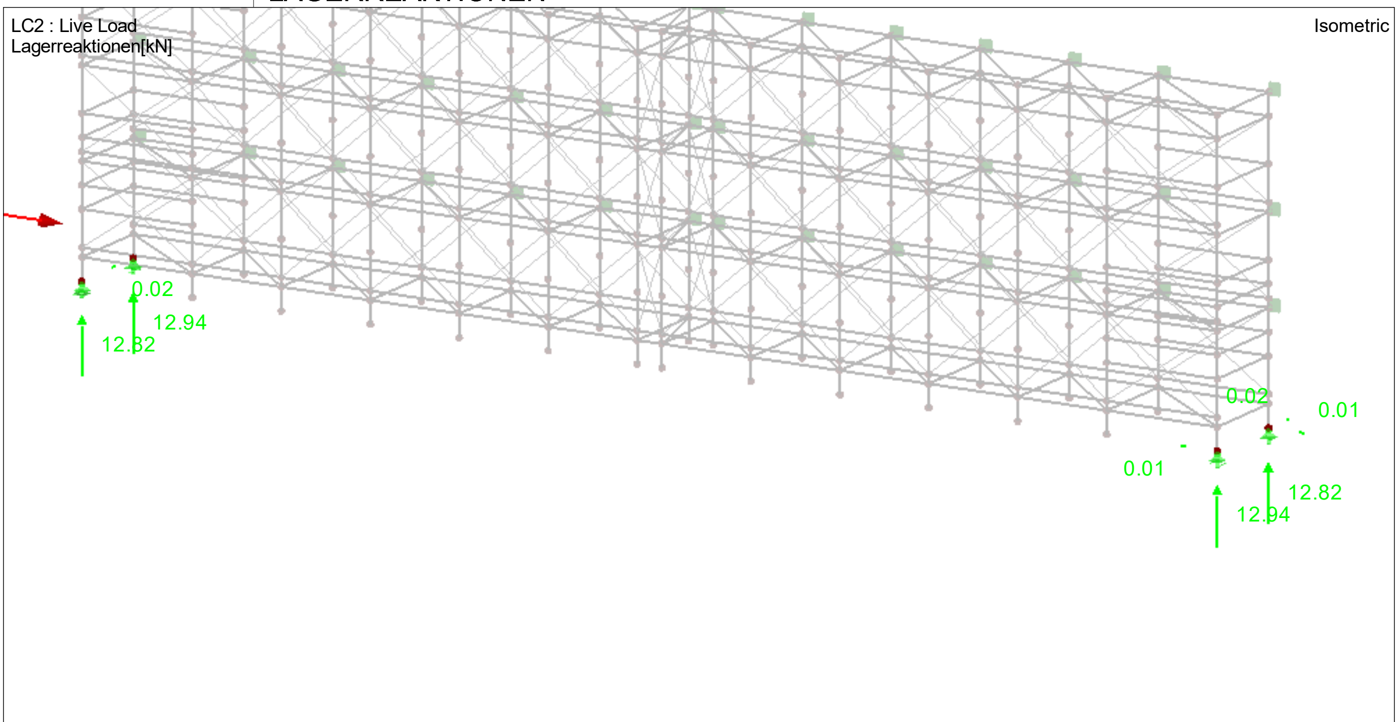
Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
484	LC1	0.00	0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.14	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	0.09	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	0.17	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	0.13	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.05	0.00	0.00	0.00	0.00	LC4
514	LC1	0.00	-0.01	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.12	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.07	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.03	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.18	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.13	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.03	0.00	0.00	0.00	0.00	LC4
515	LC1	0.00	-0.02	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.01	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.36	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.21	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.01	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	-0.04	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.48	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.30	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	-0.01	0.00	0.00	0.00	0.00	LC4
520	LC1	0.01	-0.03	23.08	0.00	0.00	0.00	EG
	LC2	0.01	-0.02	12.82	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.33	33.68	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	-0.03	0.22	25.14	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	19.05	0.00	0.00	0.00	Wind
	CO1	0.02	-0.07	50.38	0.00	0.00	0.00	LC1
	CO2	-0.11	0.26	94.09	0.00	0.00	0.00	LC2
	CO3	-0.06	0.18	82.47	0.00	0.00	0.00	LC3
	CO4	0.00	-0.02	49.32	0.00	0.00	0.00	LC4
521	LC1	-0.01	0.00	23.29	0.00	0.00	0.00	EG
	LC2	-0.01	0.00	12.94	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	2.32	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.03	0.00	1.52	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	0.00	16.31	0.00	0.00	0.00	Wind
	CO1	-0.02	0.00	50.86	0.00	0.00	0.00	LC1
	CO2	0.11	0.00	51.88	0.00	0.00	0.00	LC2
	CO3	0.06	0.00	50.89	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	45.45	0.00	0.00	0.00	LC4
524	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-0.41	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 1
	LC4	0.00	-0.25	0.00	0.00	0.00	0.00	Load scaffold-shoring LC 2
	LC5	0.00	-0.02	0.00	0.00	0.00	0.00	Wind
	CO1	0.00	0.01	0.00	0.00	0.00	0.00	LC1
	CO2	0.00	-0.63	0.00	0.00	0.00	0.00	LC2
	CO3	0.00	-0.37	0.00	0.00	0.00	0.00	LC3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	LC4
Σ Supp.	LC1	0.00	0.00	92.74				
Σ Loads	LC1	0.00	0.00	92.74				
Σ Supp.	LC2	0.00	0.00	51.52				
Σ Loads	LC2	0.00	0.00	51.52				
Σ Supp.	LC3	0.00	0.00	72.00				
Σ Loads	LC3	0.00	0.00	72.00				
Σ Supp.	LC4	0.00	0.00	53.32				
Σ Loads	LC4	0.00	0.00	53.32				
Σ Supp.	LC5	0.00	0.00	0.00				
Σ Loads	LC5	0.00	0.00	0.00				
Σ Supp.	CO1	0.00	0.00	202.47				
Σ Loads	CO1	0.00	0.00	202.47				
Σ Supp.	CO2	0.00	0.00	291.95				
Σ Loads	CO2	0.00	0.00	291.95				
Σ Supp.	CO3	0.00	0.00	266.73				
Σ Loads	CO3	0.00	0.00	266.73				
Σ Supp.	CO4	0.00	0.00	83.46				
Σ Loads	CO4	0.00	0.00	83.46				

■ LAGERREAKTIONEN



Max P-X': 0.01, Min P-X': -0.01 kN
Max P-Y': 0.03, Min P-Y': -0.03 kN
Max P-Z': 23.29, Min P-Z': 23.08 kN

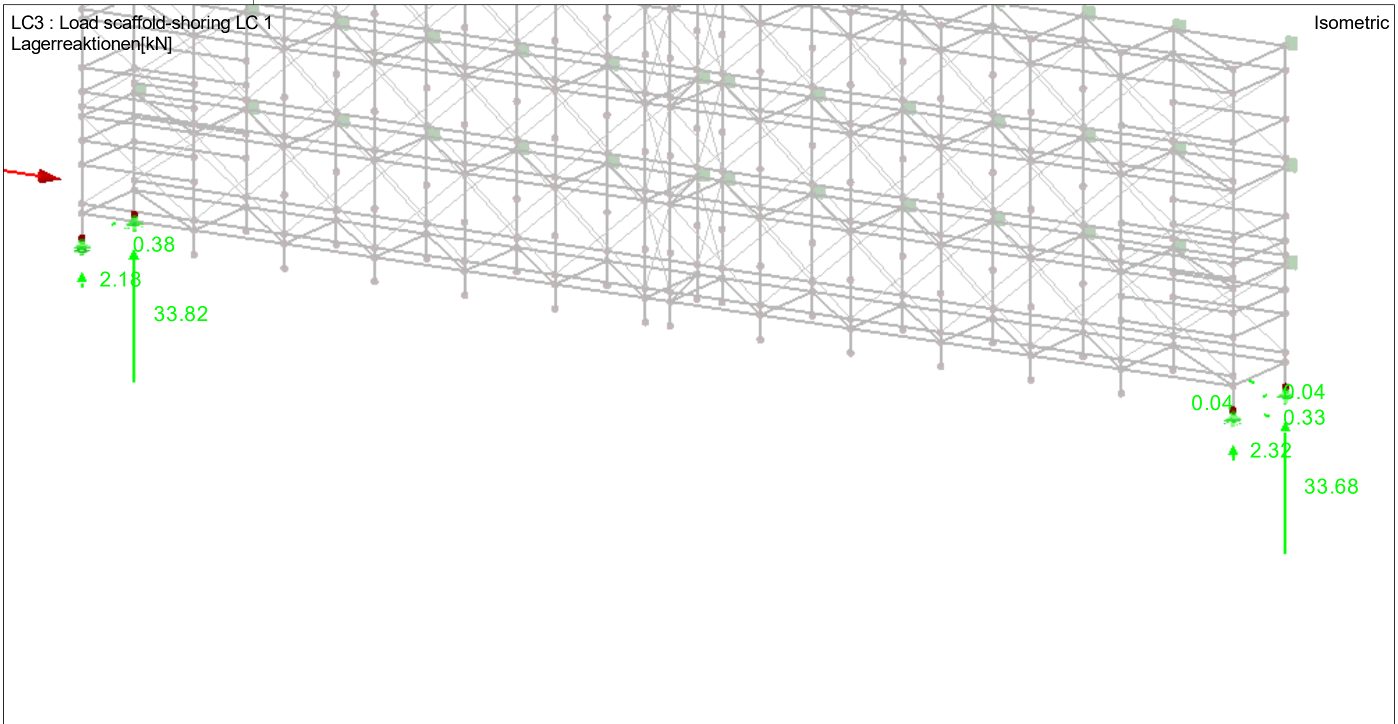
■ LAGERREAKTIONEN



Max P-X': 0.01, Min P-X': -0.01 kN
Max P-Y': 0.02, Min P-Y': -0.02 kN
Max P-Z': 12.94, Min P-Z': 12.82 kN

LAGERREAKTIONEN

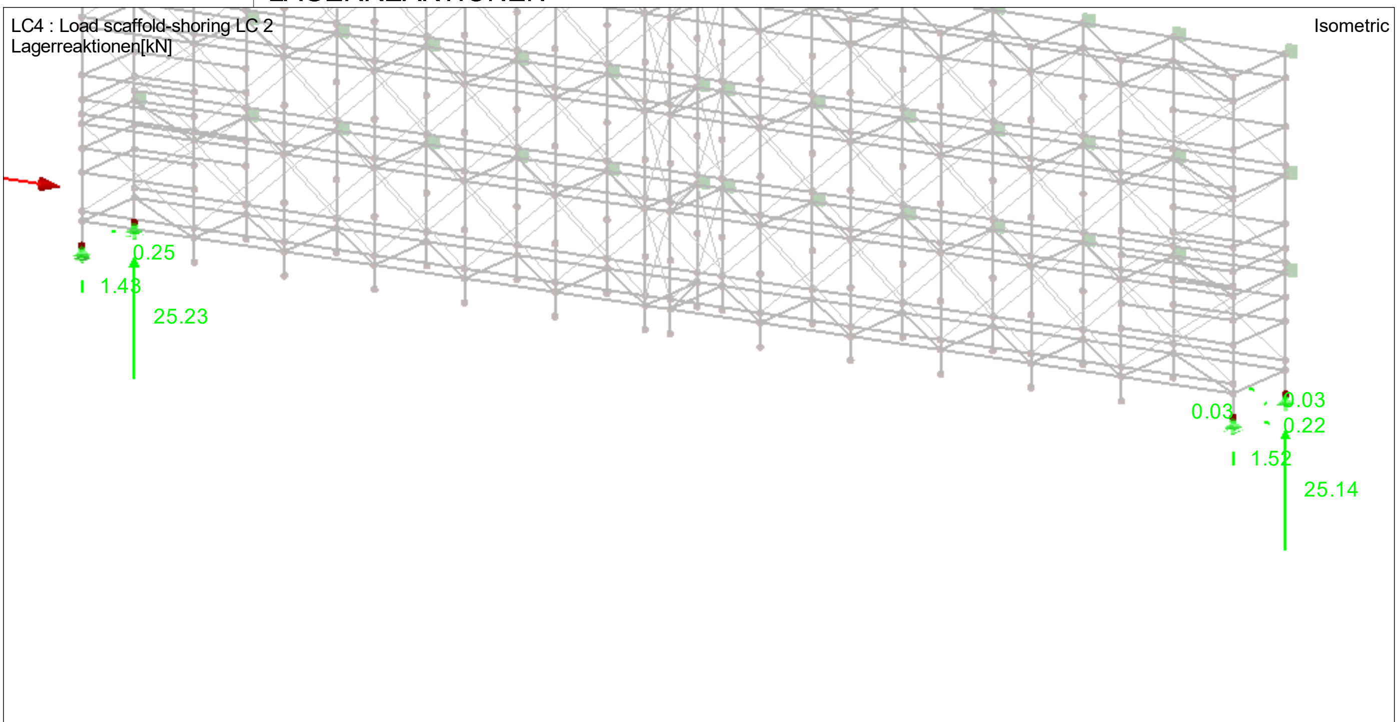
LC3 : Load scaffold-shoring LC 1
Lagerreaktionen[kN]



Max P-X': 0.04, Min P-X': -0.04 kN
Max P-Y': 0.38, Min P-Y': 0.00 kN
Max P-Z': 33.82, Min P-Z': 2.18 kN

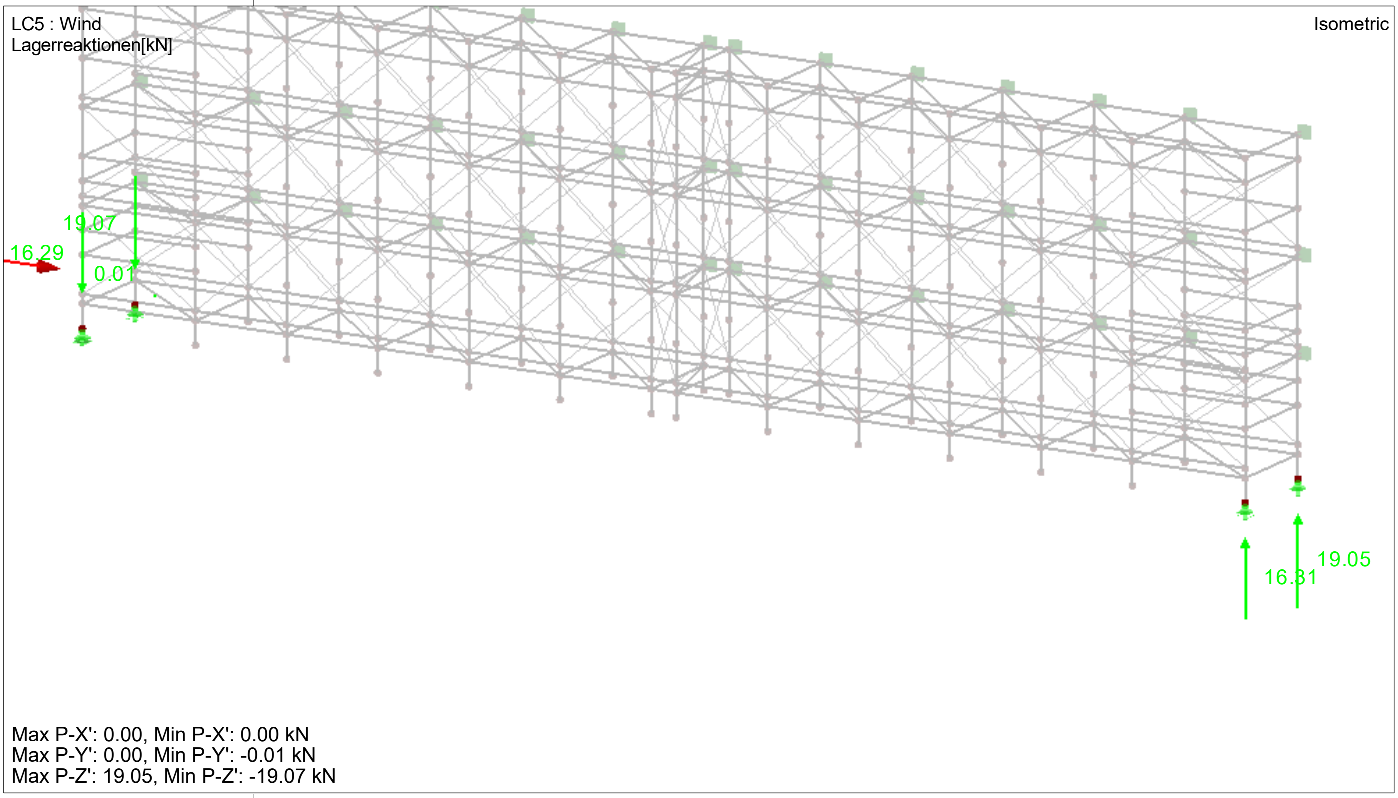
LAGERREAKTIONEN

LC4 : Load scaffold-shoring LC 2
Lagerreaktionen[kN]



Max P-X': 0.03, Min P-X': -0.03 kN
Max P-Y': 0.25, Min P-Y': 0.00 kN
Max P-Z': 25.23, Min P-Z': 1.43 kN

LAGERREAKTIONEN



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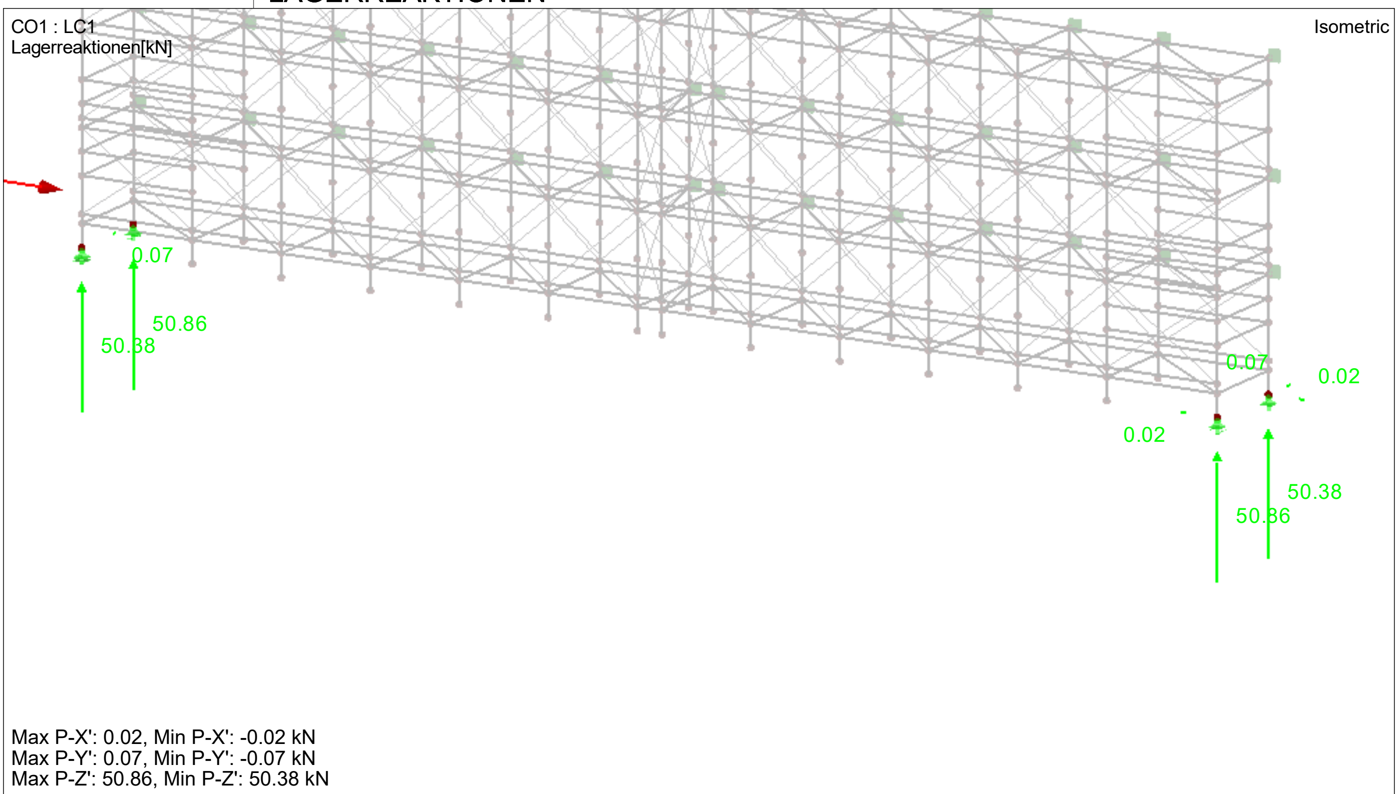

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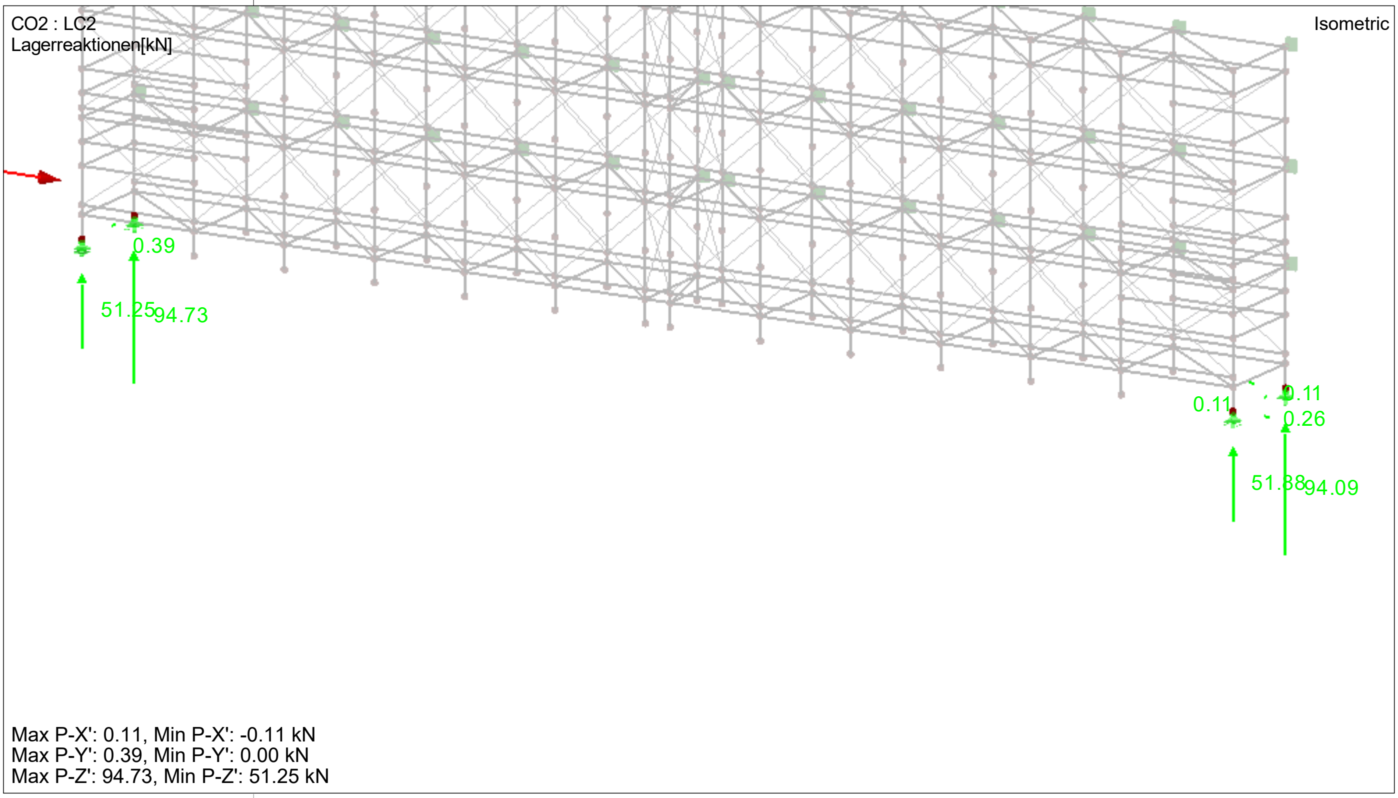

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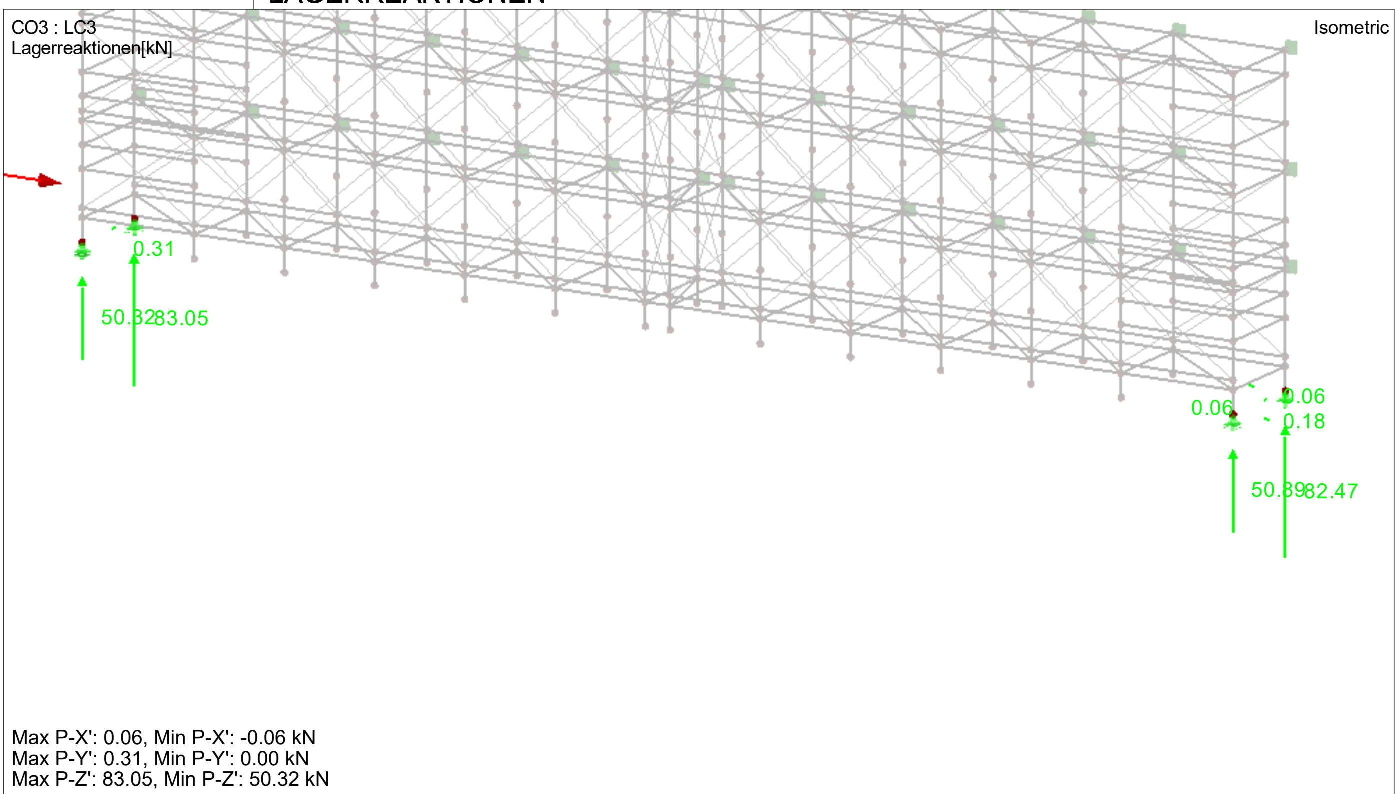

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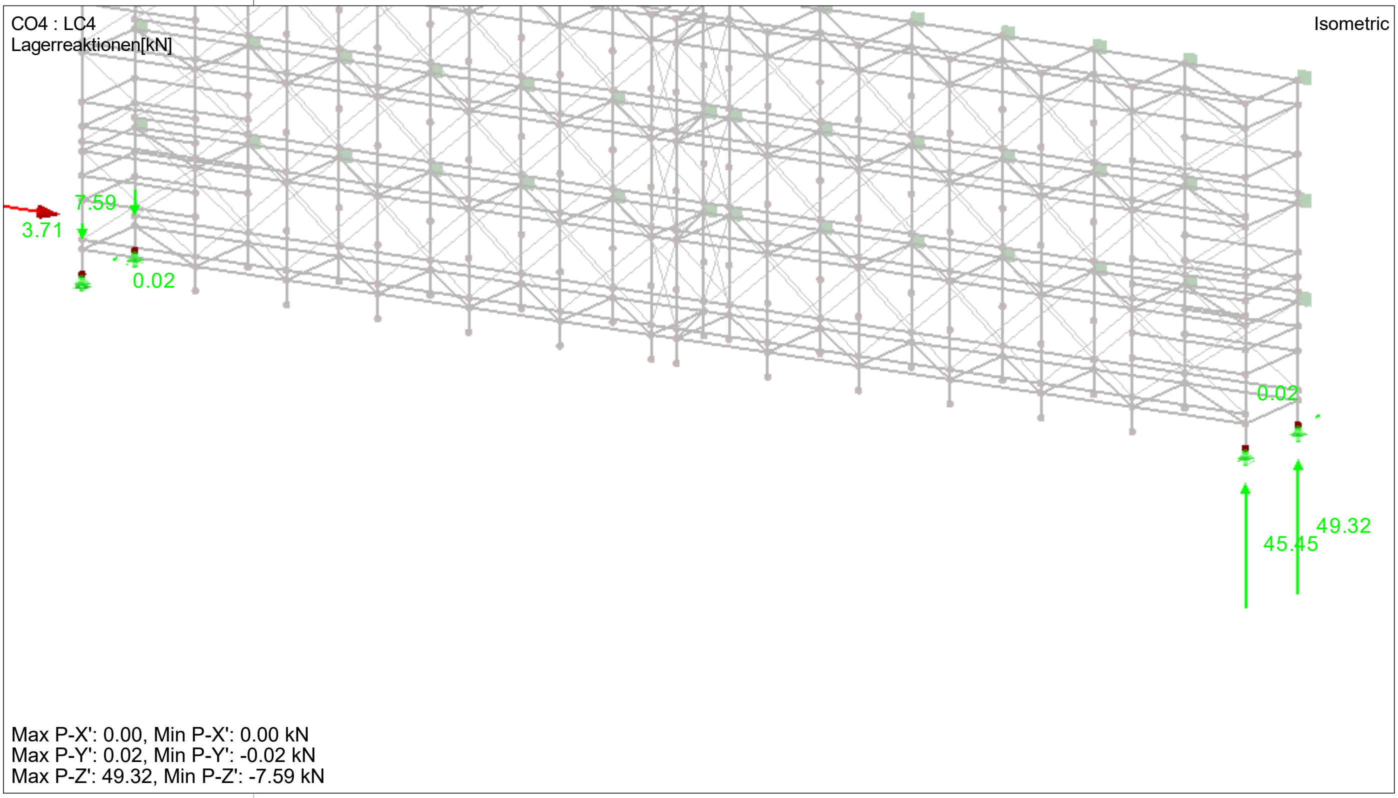


■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	Forces [kN] V_y	Forces [kN] V_z	Moments [kNm] M_T	Moments [kNm] M_y	Moments [kNm] M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/3.2 (Stiel)										
228	RC1		0.275	MAX N	▷ 17.85	-0.01	-0.71	0.00	0.00	0.00	CO 4
243	RC1		0.000	MIN N	▷ -94.73	-0.80	-0.41	0.00	0.33	-0.65	CO 2
228	RC1		0.275	MAX V_y	-4.99	▷ 0.20	-3.26	0.01	0.08	0.01	CO 2
243	RC1		0.500	MIN V_y	-94.71	▷ -1.56	-0.80	0.00	0.00	0.00	CO 2
947	RC1		0.300	MAX V_z	-5.00	0.14	▷ 3.31	-0.01	0.00	0.00	CO 2
228	RC1		0.300	MIN V_z	-4.99	0.20	▷ -3.26	0.01	-0.01	0.00	CO 2
260	RC1		0.500	MAX M_T	-16.61	0.10	-2.98	▷ 0.01	-0.63	-0.06	CO 2
994	RC1		0.000	MIN M_T	0.02	0.00	0.02	▷ -0.04	-0.02	0.00	CO 2
228	RC1		0.000	MAX M_y	-5.01	0.20	-3.23	0.01	▷ 0.97	0.06	CO 2
947	RC1		0.000	MIN M_y	-5.02	0.14	3.27	-0.01	▷ -0.98	0.05	CO 2
228	RC1		0.000	MAX M_z	-5.01	0.20	-3.23	0.01	0.97	▷ 0.06	CO 2
243	RC1		0.000	MIN M_z	-94.73	-0.80	-0.41	0.00	0.33	▷ -0.65	CO 2
	Section No. 2: Rohr 48.3/3.2 (Riegel)										
596	RC1		0.182	MAX N	▷ 24.01	0.04	0.04	0.00	-0.01	0.00	CO 2
1016	RC1		2.520	MIN N	▷ -0.86	-0.01	0.08	0.00	0.10	0.01	CO 2
611	RC1		0.520	MAX V_y	17.05	▷ 0.05	-0.04	0.00	-0.01	-0.01	CO 2
1012	RC1		0.000	MIN V_y	0.01	▷ -0.04	0.01	0.02	-0.01	-0.04	CO 2
283	RC1		0.000	MAX V_z	10.10	0.01	▷ 0.23	-0.01	-0.21	0.01	CO 2
896	RC1		2.020	MIN V_z	10.97	-0.01	▷ -0.21	0.01	-0.19	0.01	CO 2
957	RC1		0.000	MAX M_T	-0.32	-0.01	0.02	▷ 0.06	-0.03	-0.01	CO 2
251	RC1		0.000	MIN M_T	0.11	0.01	0.04	▷ -0.06	-0.04	0.01	CO 2
269	RC1		2.520	MAX M_y	3.09	0.01	0.20	-0.04	▷ 0.23	-0.01	CO 2
269	RC1		0.000	MIN M_y	3.09	0.01	0.20	-0.04	▷ -0.23	0.01	CO 2
1012	RC1		2.020	MAX M_z	0.01	-0.04	0.01	0.02	0.01	▷ 0.04	CO 2
1012	RC1		0.000	MIN M_z	0.01	-0.04	0.01	0.02	-0.01	▷ -0.04	CO 2
	Section No. 4: Rohr 48.3/4 (Rohr)										
973	RC1		1.815	MAX N	▷ 0.79	0.00	0.00	0.02	0.00	0.00	CO 2
345	RC1		0.330	MIN N	▷ -0.85	0.00	0.00	-0.03	0.00	0.00	CO 2
913	RC1		2.927	MAX V_y	0.48	▷ 0.01	0.00	0.01	0.00	-0.01	CO 2
610	RC1		0.000	MIN V_y	0.08	▷ -0.01	0.00	-0.01	0.00	-0.01	CO 2
272	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
272	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
972	RC1		3.300	MAX M_T	0.64	0.00	0.00	▷ 0.03	0.00	-0.01	CO 2
336	RC1		0.000	MIN M_T	0.78	0.00	0.00	▷ -0.05	0.00	0.00	CO 2
272	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
272	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
913	RC1		0.000	MAX M_z	0.48	0.01	0.00	0.01	0.00	▷ 0.01	CO 2
913	RC1		2.927	MIN M_z	0.48	0.01	0.00	0.01	0.00	▷ -0.01	CO 2
	Section No. 12: U-Doppel U-Doppel										
261	RC1		0.000	MAX N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
528	RC1		1.111	MIN N	▷ -11.76	0.00	-0.35	0.00	1.86	0.01	CO 2
588	RC1		0.520	MAX V_y	-11.63	▷ 0.02	-1.00	0.00	-0.03	0.00	CO 2
297	RC1		0.000	MIN V_y	-8.28	▷ -0.01	4.02	0.00	-0.26	0.00	CO 2
264	RC1		0.000	MAX V_z	-2.03	0.00	▷ 5.13	0.00	-0.33	0.00	CO 1
948	RC1		2.520	MIN V_z	-2.03	0.00	▷ -5.13	0.00	-0.33	0.00	CO 1
948	RC1		1.134	MAX M_T	-3.27	0.01	0.17	▷ 0.00	2.89	0.00	CO 2
261	RC1		1.260	MIN M_T	-3.18	0.00	0.30	▷ 0.00	2.88	0.00	CO 2
951	RC1		1.260	MAX M_y	-2.07	0.00	-0.17	0.00	▷ 3.01	0.00	CO 1
948	RC1		2.520	MIN M_y	-3.22	0.00	-5.08	0.00	▷ -0.52	-0.01	CO 2
948	RC1		0.252	MAX M_z	-3.28	0.00	3.51	0.00	1.26	▷ 0.01	CO 2
948	RC1		2.520	MIN M_z	-3.22	0.00	-5.08	0.00	-0.52	▷ -0.01	CO 2
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)										
179	RC1		0.110	MAX N	▷ 14.08	0.00	-2.85	0.00	0.00	0.00	CO 4
225	RC1		0.000	MIN N	▷ -94.58	-0.30	0.54	-0.01	-0.84	-0.40	CO 2
233	RC1		0.160	MAX V_y	-51.13	▷ 0.21	0.62	-0.01	-0.36	0.00	CO 2
225	RC1		0.640	MIN V_y	-94.57	▷ -0.78	1.61	-0.01	-0.06	-0.01	CO 2
934	RC1		0.090	MAX V_z	-64.07	-0.01	▷ 14.96	-0.02	0.03	0.06	CO 2
177	RC1		0.090	MIN V_z	-64.39	0.03	▷ -15.12	0.02	-0.01	0.10	CO 2
285	RC1		0.000	MAX M_T	-64.79	0.05	0.67	▷ 0.02	-1.66	0.10	CO 2
967	RC1		0.000	MIN M_T	-64.47	0.00	-0.69	▷ -0.02	1.66	0.06	CO 2
934	RC1		0.200	MAX M_y	-64.12	0.00	14.75	-0.02	▷ 1.66	0.06	CO 2
177	RC1		0.200	MIN M_y	-64.43	0.05	-14.92	0.02	▷ -1.66	0.10	CO 2
10	RC1		0.500	MAX M_z	-51.26	-0.16	0.26	0.01	0.79	▷ 0.12	CO 2
175	RC1		0.010	MIN M_z	-94.54	0.00	-4.12	0.00	-0.08	▷ -0.49	CO 2
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)										
572	RC1		0.000	MAX N	▷ 64.58	0.00	0.00	0.00	0.00	0.00	CO 2
497	RC1		0.000	MIN N	▷ -62.30	0.00	0.00	0.00	0.00	0.00	CO 2
197	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
197	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
197	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
197	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
932	RC1		0.000	MAX M_T	-4.84	0.00	0.00	▷ 0.05	0.00	0.00	CO 2
197	RC1		0.000	MIN M_T	-4.37	0.00	0.00	▷ -0.07	0.00	0.00	CO 2
197	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
197	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
197	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
197	RC1		2.570	MIN M_z	-4.37	0.00	0.00	-0.07	0.00	▷ 0.00	CO 2
	Section No. 19: Rundstahl 15 (Diagonale_FWT)										
229	RC1		0.000	MAX N	▷ 54.99	0.00	0.00	0.00	0.00	0.00	CO 2
199	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
199	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
199	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
199	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
199	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
199	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
199	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
199	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
43	RC1	Max $P_{Y'}$	0.00	0.06	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-0.12	0.00	0.00	0.00	0.00	CO 2
44	RC1	Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.40	0.00	0.00	0.00	0.00	CO 2
49	RC1	Max $P_{Y'}$	0.00	0.39	94.73	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.39	94.73	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.02	-7.59	0.00	0.00	0.00	CO 4
50	RC1	Max $P_{Z'}$	0.00	0.00	51.25	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.00	-3.71	0.00	0.00	0.00	CO 4
55	RC1	Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 4
		Min $P_{Y'}$	0.00	-0.71	0.00	0.00	0.00	0.00	CO 2
60	RC1	Max $P_{Y'}$	0.00	0.26	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
61	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.17	0.00	0.00	0.00	0.00	CO 2
73	RC1	Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.04	0.00	0.00	0.00	0.00	CO 1
77	RC1	Max $P_{Y'}$	0.00	0.19	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.02	0.00	0.00	0.00	0.00	CO 4

■ 4.4 NODES - SUPPORT FORCES

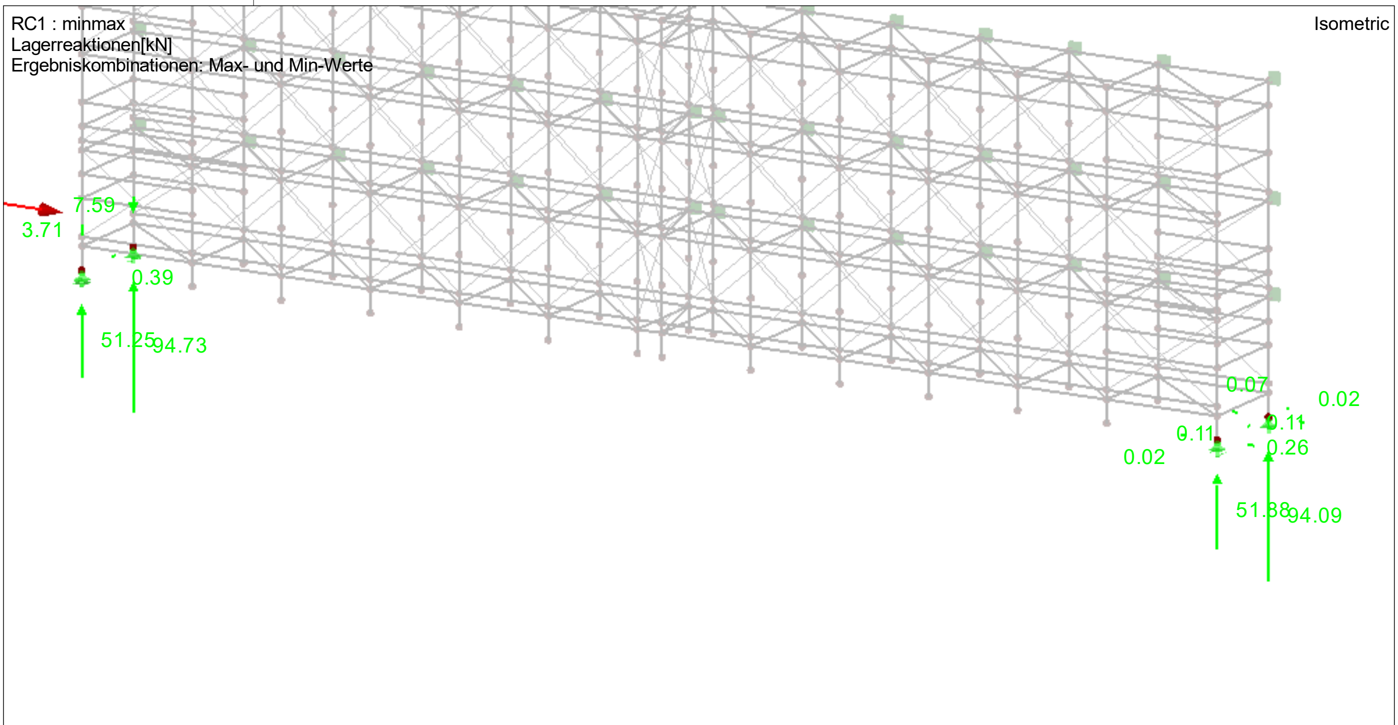
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
78	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.27	0.00	0.00	0.00	0.00	CO 2
91	RC1	Max $P_{Y'}$	0.00	0.17	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.05	0.00	0.00	0.00	0.00	CO 4
94	RC1	Max $P_{Y'}$	0.00	0.16	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.01	0.00	0.00	0.00	0.00	CO 4
95	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.15	0.00	0.00	0.00	0.00	CO 2
109	RC1	Max $P_{Y'}$	0.00	0.20	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.04	0.00	0.00	0.00	0.00	CO 4
116	RC1	Max $P_{Y'}$	0.00	0.12	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
119	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.15	0.00	0.00	0.00	0.00	CO 2
140	RC1	Max $P_{Y'}$	0.00	0.19	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.02	0.00	0.00	0.00	0.00	CO 4
158	RC1	Max $P_{Y'}$	0.00	0.09	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
195	RC1	Max $P_{Y'}$	0.00	0.01	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.14	0.00	0.00	0.00	0.00	CO 2
204	RC1	Max $P_{Y'}$	0.00	0.19	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.01	0.00	0.00	0.00	0.00	CO 4
234	RC1	Max $P_{Y'}$	0.00	0.15	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
235	RC1	Max $P_{Y'}$	0.00	0.08	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.07	0.00	0.00	0.00	0.00	CO 2
244	RC1	Max $P_{Y'}$	0.00	0.27	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
274	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.08	0.00	0.00	0.00	0.00	CO 1
275	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.28	0.00	0.00	0.00	0.00	CO 2
284	RC1	Max $P_{Y'}$	0.00	0.03	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.10	0.00	0.00	0.00	0.00	CO 1
314	RC1	Max $P_{Y'}$	0.00	0.07	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
315	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.16	0.00	0.00	0.00	0.00	CO 2
324	RC1	Max $P_{Y'}$	0.00	0.18	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
354	RC1	Max $P_{Y'}$	0.00	0.08	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.01	0.00	0.00	0.00	0.00	CO 1
355	RC1	Max $P_{Y'}$	0.00	0.01	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.12	0.00	0.00	0.00	0.00	CO 2
364	RC1	Max $P_{Y'}$	0.00	0.20	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
394	RC1	Max $P_{Y'}$	0.00	0.10	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.01	0.00	0.00	0.00	0.00	CO 1
395	RC1	Max $P_{Y'}$	0.00	0.03	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.09	0.00	0.00	0.00	0.00	CO 2
404	RC1	Max $P_{Y'}$	0.00	0.23	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
434	RC1	Max $P_{Y'}$	0.00	0.14	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
435	RC1	Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.20	0.00	0.00	0.00	0.00	CO 2
444	RC1	Max $P_{Y'}$	0.00	0.24	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
474	RC1	Max $P_{Y'}$	0.00	0.25	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	-0.01	0.00	0.00	0.00	0.00	CO 1
475	RC1	Max $P_{Y'}$	0.00	0.04	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.08	0.00	0.00	0.00	0.00	CO 3
484	RC1	Max $P_{Y'}$	0.00	0.17	0.00	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
514	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.18	0.00	0.00	0.00	0.00	CO 2
515	RC1	Max $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{Y'}$	0.00	-0.48	0.00	0.00	0.00	0.00	CO 2
520	RC1	Max $P_{X'}$	0.02	-0.07	50.38	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.11	0.26	94.09	0.00	0.00	0.00	CO 2
		Max $P_{Y'}$	-0.11	0.26	94.09	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	0.02	-0.07	50.38	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	-0.11	0.26	94.09	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
521	RC1	Max $P_{X'}$	0.11	0.00	51.88	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.02	0.00	50.86	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	0.11	0.00	51.88	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
524	RC1	Max $P_{Y'}$	0.00	0.01	0.00	0.00	0.00	0.00	CO 1
		Min $P_{Y'}$	0.00	-0.63	0.00	0.00	0.00	0.00	CO 2

LAGERREAKTIONEN

RC1 : minmax
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

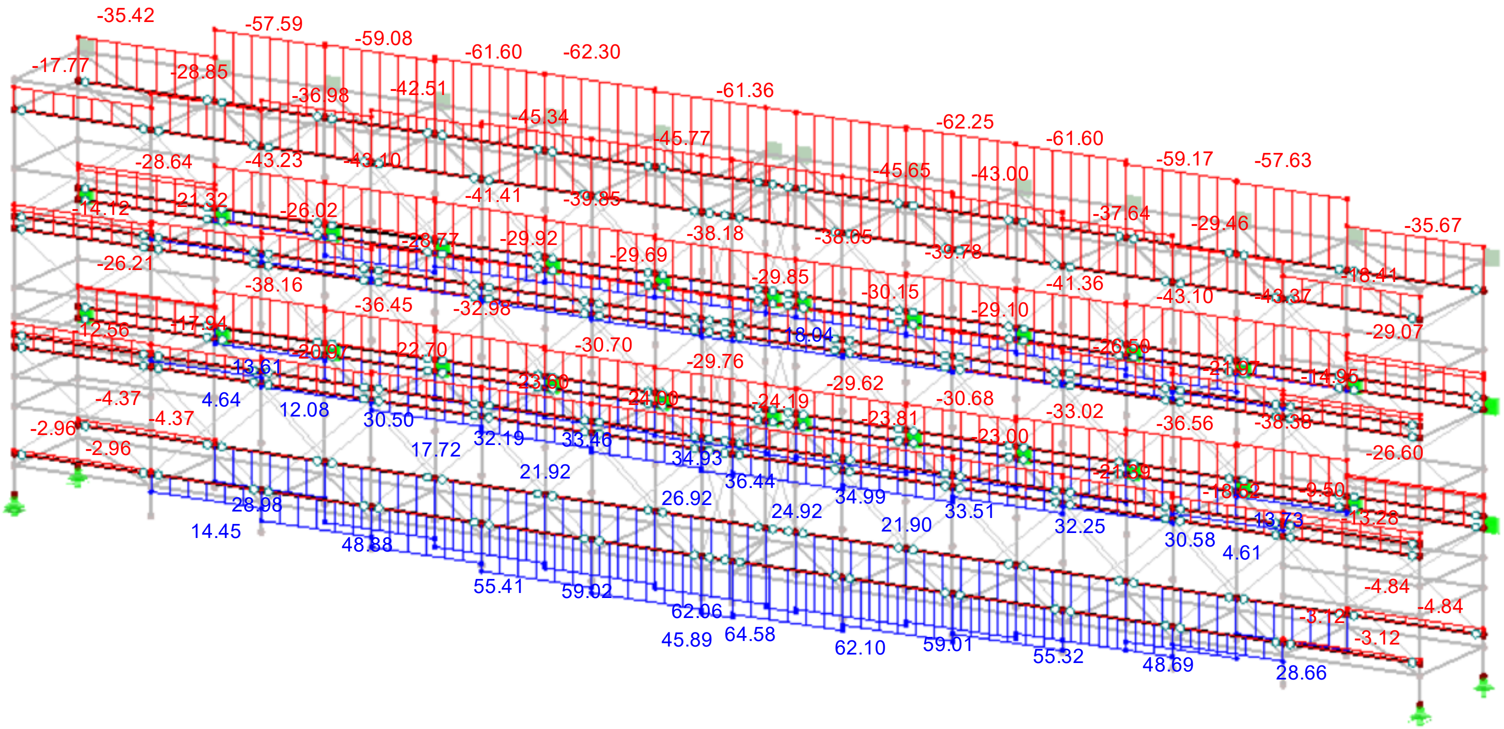
Isometric



Max P-X': 0.11, Min P-X': -0.11 kN
Max P-Y': 0.39, Min P-Y': -0.07 kN
Max P-Z': 94.73, Min P-Z': -7.59 kN

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 64.58, Min N: -62.30 [kN]

■ INTERNAL FORCES N

Project: 2023

Model: K-1-FW-dome-Gable-wall

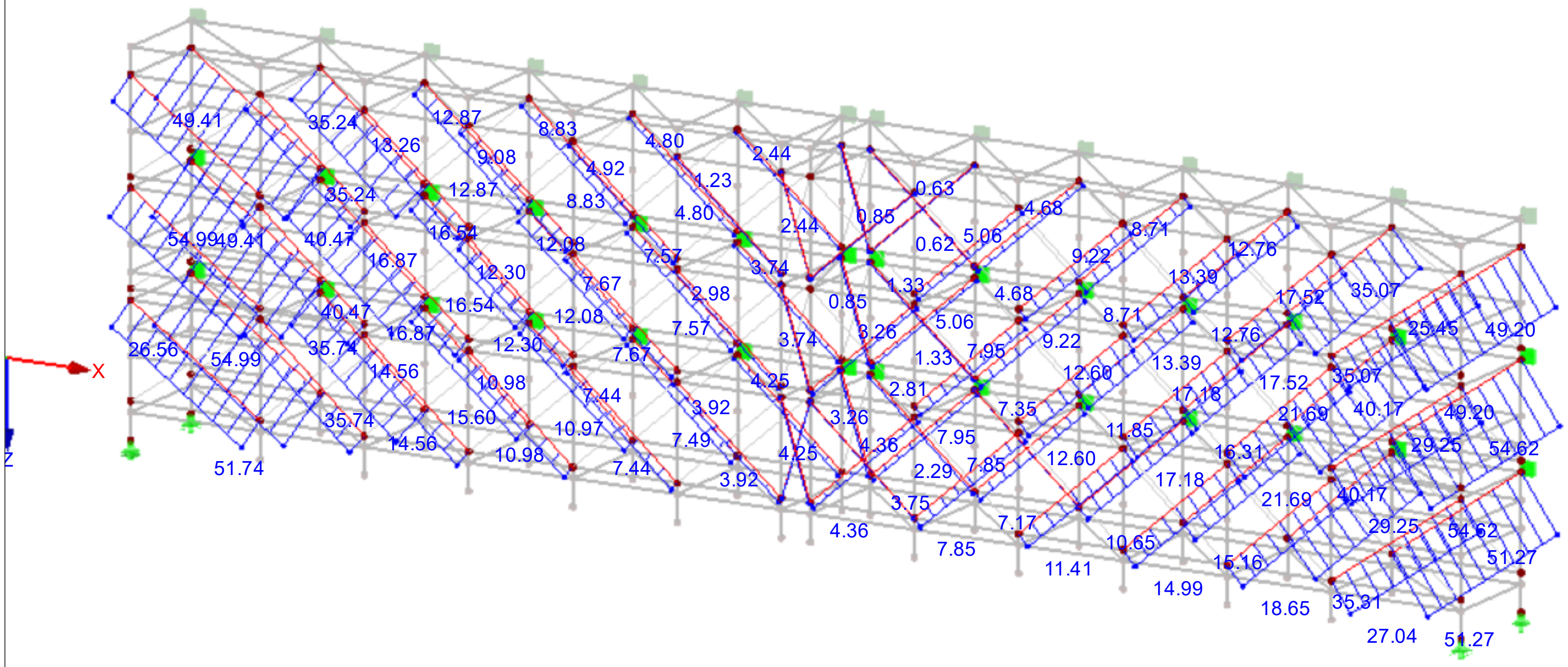
Date: 23.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 54.99, Min N: 0.00 [kN]

INTERNAL FORCES N

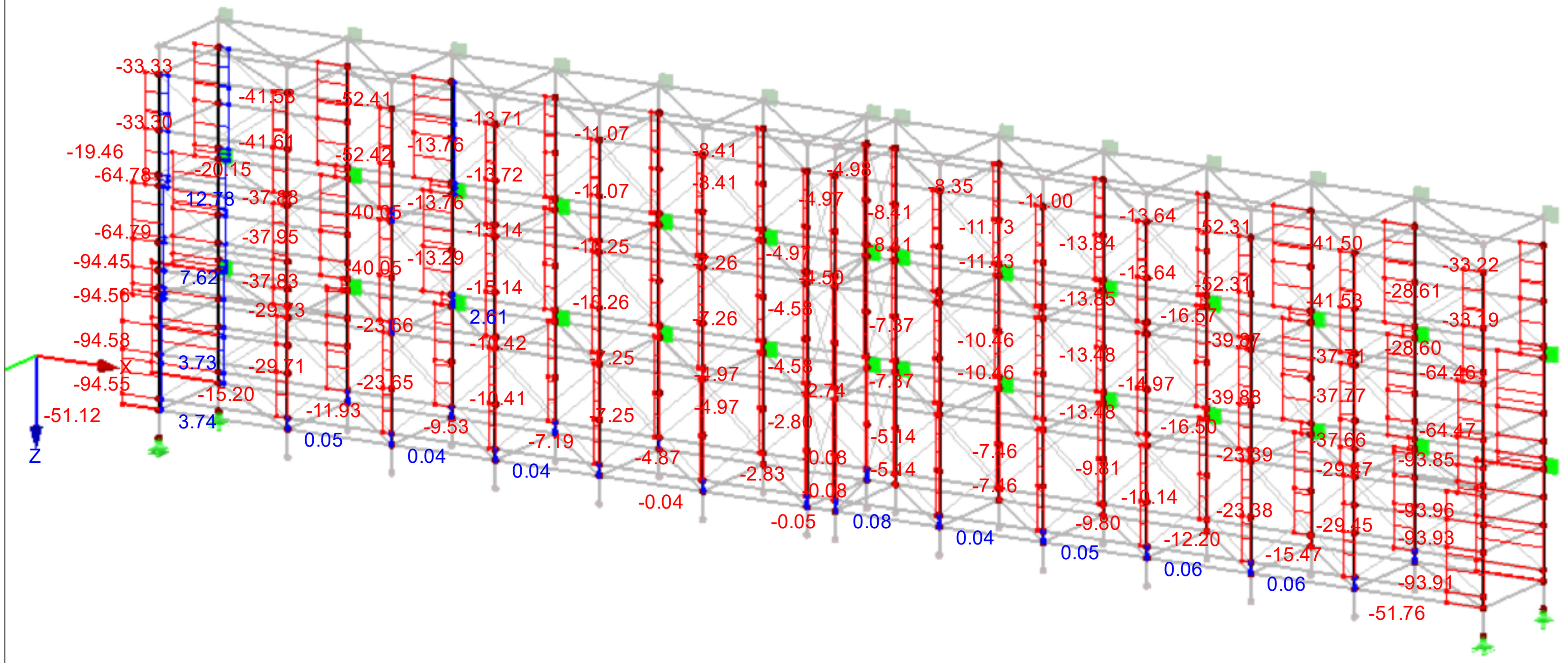
Project: 2023
Model: K-1-FW-dome-Gable-wall
Date: 23.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 14.08, Min N: -94.58 [kN]

INTERNAL FORCES N

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

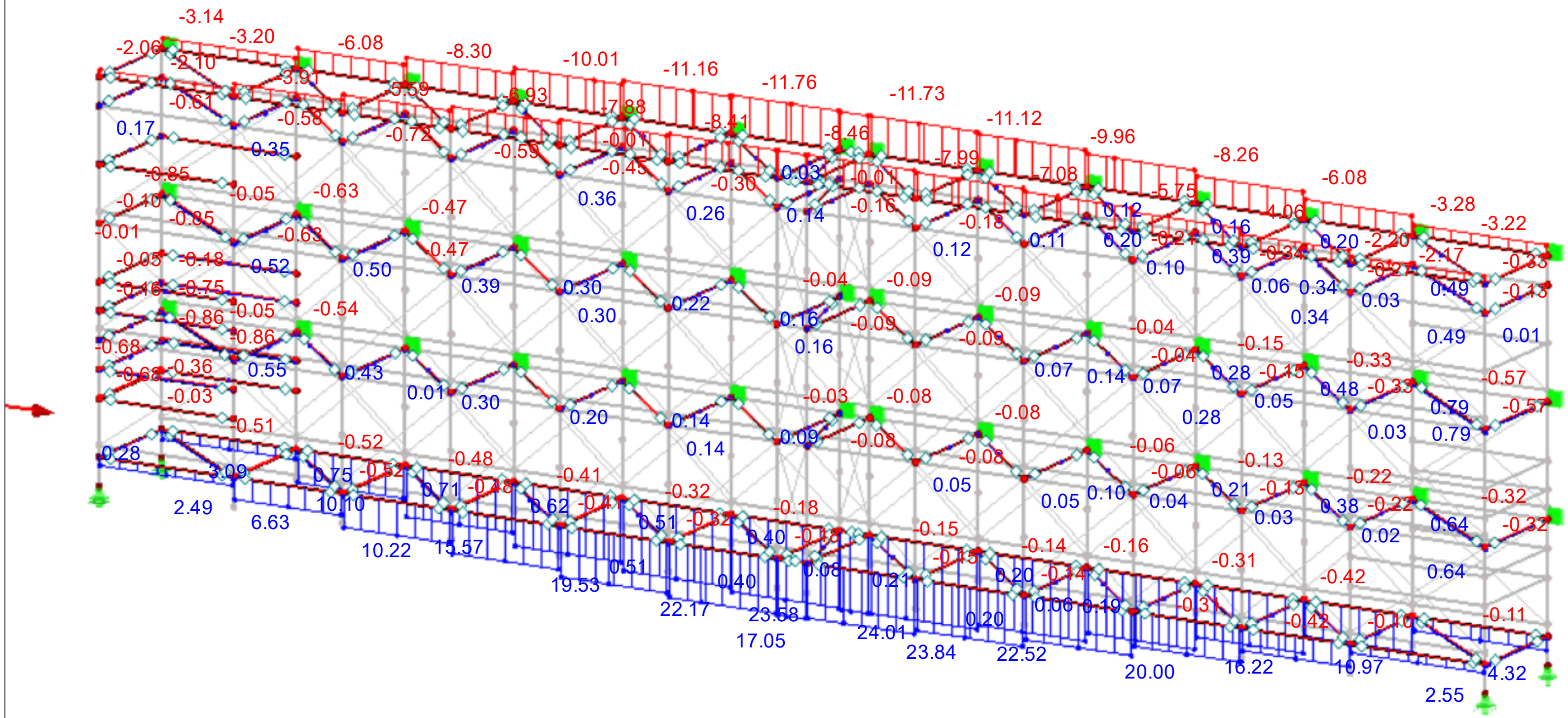
Project: 2023
Model: K-1-FW-dome-Gable-wall
Date: 23.09.2023

RESULTS

INTERNAL FORCES N

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 24.01, Min N: -11.76 [kN]

Volker Knobloch
Anderssenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023
Model: K-1-FW-dome-Gable-wall
Date: 23.09.2023

RESULTS

STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

Members to design:	1-16,175-180,189-196,201,202,207,208,213,214,219,220,223-225,231-233, 239,240,248,249,256,257,259,262,273,276,285,289,290,295,298,307, 310,311,313,314,318,319,324,325,327,328,333,334,351,352,357,358, 363,364,367,368,370,371,373,374,378,379,384,385,390,391,394,395, 400,401,406,409,421,422,427,428,434,435,440,441,446,447,450,451, 454,455,460,461,466,469,481,482,487,488,494,495,500,501,506,507, 510,511,514,515,520,521,526,529,541,542,547,548,554,555,560,561, 566,567,570,571,574,575,580,581,586,589,601,602,607,608,614,615, 620,621,626,627,630,631,634,635,640,641,646,649,661,662,667,668, 674,675,680,681,686,687,690,691,694,695,700,701,706,709,721,722, 727,728,734,735,740,741,746,747,750,751,754,755,760,761,766,769, 781,782,787,788,794,795,800,801,806,807,810,811,814,815,820,821, 826,829,841,842,847,848,854,855,860,861,866,867,870,871,874,875, 880,881,886,889,901,902,907,908,914,915,920,921,926,927,930,931, 934,935,940,941,946,949,961,962,967,968,974,975,980,981,986,987
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design	
Load combinations to design:	CO1 LC1 CO2 LC2 CO3 LC3 CO4 LC4

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm^2]	Shear Modulus G [kN/cm^2]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm^2]	Max. Thickness t [mm]
3	Baustahl S 355 | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	35.50	40.0
					33.50	80.0
					31.50	100.0
					29.50	150.0
					28.50	200.0
					27.50	250.0

Rohr 48.3/4

1.3 CROSS-SECTIONS

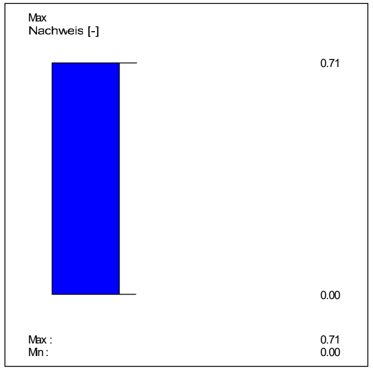
Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
17	3	Rohr 48.3/4	Pipe	0.71	Pfosten_Fachwerkträger

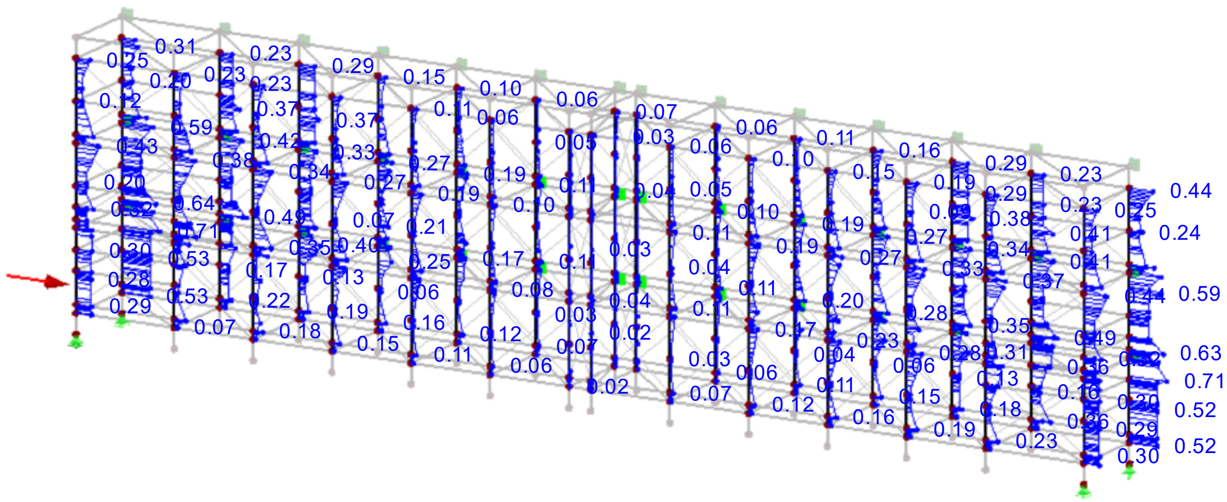
2.2 DESIGN BY CROSS-SECTION

Sect. No.	Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
17	**Rohr 48.3/4 - Pfosten_Fachwerkträger**						
	520	0.000	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	179	0.110	LK4	0.08	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	225	0.000	LK2	0.53	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	195	0.200	LK1	0.22	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	570	0.000	LK2	0.03	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	177	0.090	LK2	0.23	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	225	0.640	LK2	0.01	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	363	0.180	LK2	0.14	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	195	0.200	LK1	0.22	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	570	0.000	LK2	0.03	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	195	0.200	LK2	0.16	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	9	0.075	LK2	0.71	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	930	0.020	LK2	0.47	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	285	0.000	LK2	0.64	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis

Isometric





Max Nachweis: 0.71

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Project: 2023
Model: K-1-FW-dome-Gable-wall
Date: 23.09.2023

RS-STAHLEC3

Parts of the Allround FW System

Upper FW chord	QRO	60/4,0mm	S355
Lower FW chord	QRO	60/4,0mm	S355
FW post	RuRo	48,3x4,0mm	S355
FW Diagonal	d=15mm		St 900/100

Load -carrying capacity of parts: See structural analysis Layher

Upper FW chord

Nd= -64 kN

H=150cm, 2,07m-Feld

N,Rd= -123 kN eta= 0,52 < 1,0

Lower FW chord

Nd= 67 kN

H=150cm, 2,07m-Feld

N,Rd= 123,4 kN eta= 0,54 < 1,0

FW Diagonal

Nd= 56 kN

H=150cm, 2,07m-Feld

N,Rd= 103 kN eta= 0,54 < 1,0

FW post

Nd= -56 kN

Stütze unter zentrischer Druckbeanspruchung:

Nachweis: **Nd < NK,Rd** SIA 263, Abs. 4.5.1

mit: Nd=Bemessungslast=gammaFxN

NK,Rd=Knicklast des Stabes=kappa * fy *A / gamma,m1

	gammaF=	1,00		N=	56,00	kN
				sk=	1,80	m
Stütze	Rohr	D=	48,3 mm			
		t=	4 mm			
	A=	5,57 cm²		fy=	355	N/mm²
				Siehe Auszug aus Zulassung		
	I=	13,77 cm^4		gammaM=	1,05	
	i=	1,57 cm		epsilon²=	0,66	
Verhältnis d/t		12 <		50 * epsilc	33	Klasse 1
		Klasse 1		70 * epsilc	46	Klasse 2
			→	90 * epsilc	60	Klasse 3

Bemessungskraft

Nd=gamma,F x N= 56,00 kN

lamda,K= 114,5

lamda,E= 76,4 → fy= 355 N/mm²

lamda,bezogen= 1,50 →

Knickspannungslinie: c kalt gefertigt

alpha= 0,34

phi= 1,84

kappa= 0,34

Npl=A*fy/gammaM= 188,21 kN

NK,Rd=kappa * A * fy / gamma,m1= 65 kN

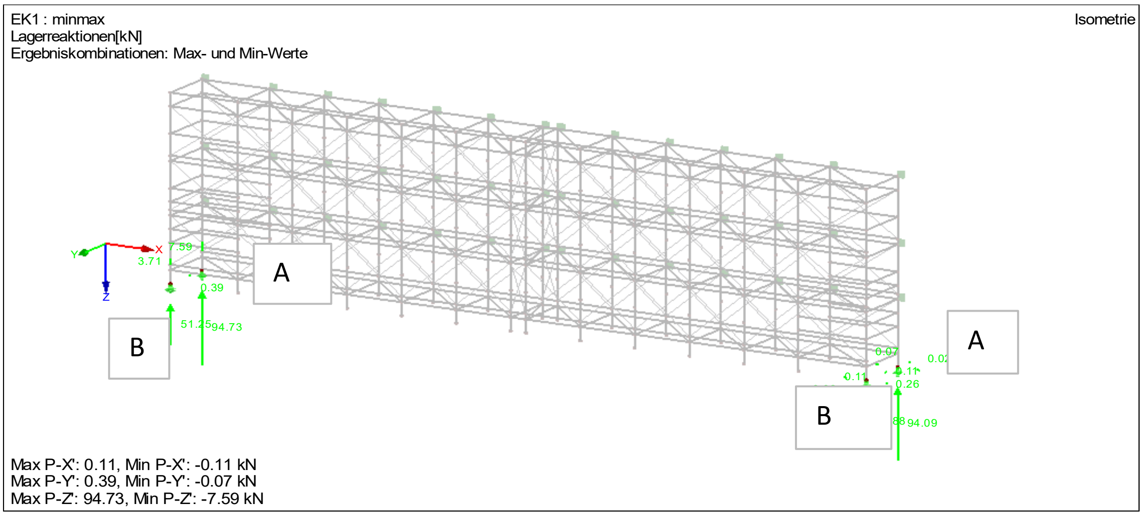
Nachweis: NEd/NK,RD < 1,00

0,87 < 1,00

OK

stress analysis: eta= 0,71 < 1,0

Reaction forces



	A [kN]	B [kN]
EG	24	24
LL	13	13
LC1	34	3
LC2	26	2
Wind	19	16
design	94	52

The lifting rachtion force doesn't occur, because the dead load of the scaffold chapter 6 is only considered as live load.

Support scaffold: Heavy duty tower

2 AR standards.
effective length 1m

NRd= 2 * 80kN= 160 kN

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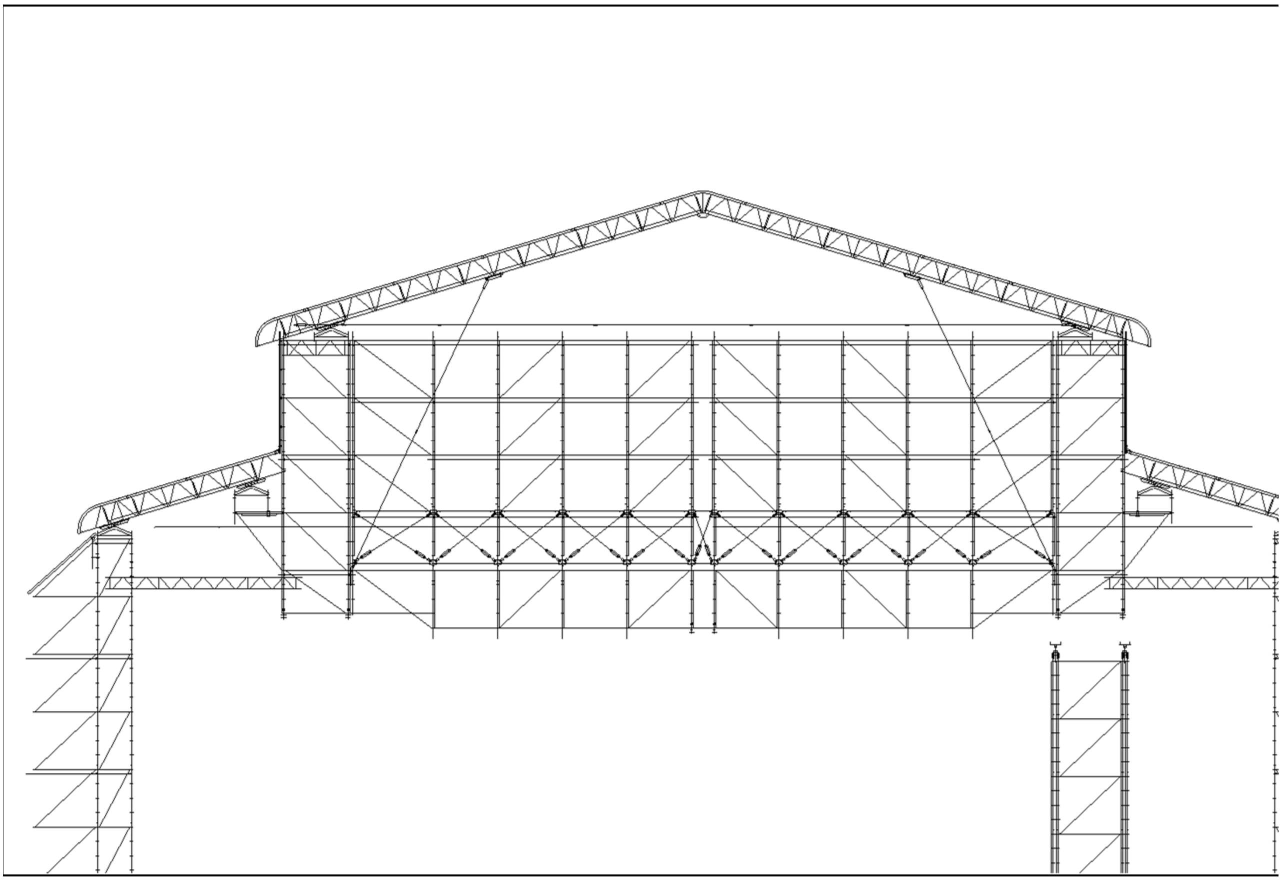
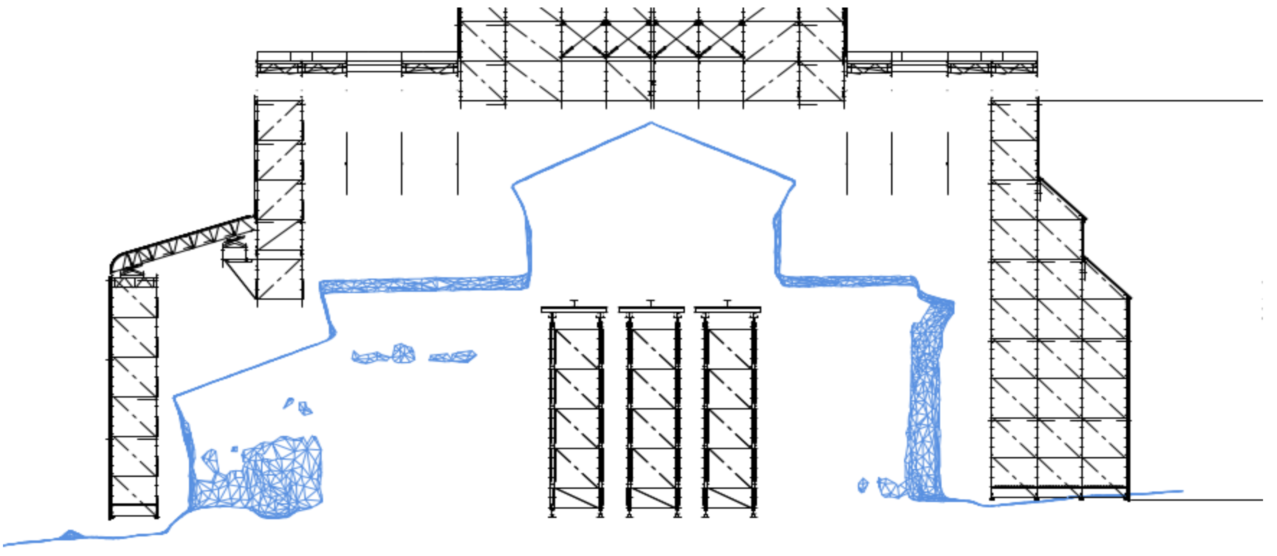
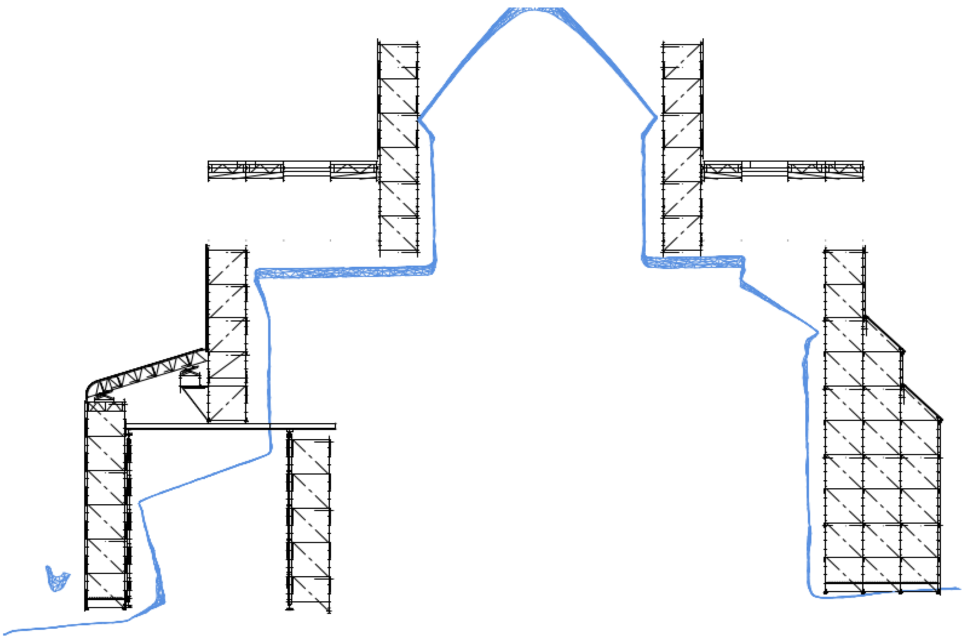
Pos.9: Roof

Gable wall







Gable wall		G=	60 kN
		L=	23 m
	g=	1,30 kN/m	

Live Load

	q=	1,0 * 2,07/2=	1,04 kN/m
Snow	roof		
	q=	0,25 * 2,07=	0,52 kN/m

roof 1
q= 0,25 * (2,07+5,2)/2= 0,91 kN/m

Parts of the Allround FW System

Upper FW chord	QRO	60/4,0mm	S355
Lower FW chord	QRO	60/4,0mm	S355
FW post	RuRo	48,3x4,0mm	S355
FW Diagonal	d=15mm		St 900/100

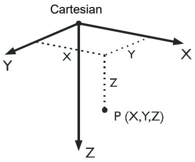
Load -carrying capacity of parts: See structural analysis Layher

MODEL - GENERAL DATA

General	Model name	:	K-1-FW-1
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

Cartesian



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
21	-	Cartesian	0.000	0.000	0.000	
22	-	Cartesian	0.000	0.000	-1.000	
23	-	Cartesian	0.000	0.000	-2.000	
24	-	Cartesian	0.000	0.000	-2.500	Supported
25	-	Cartesian	2.070	0.000	0.000	
26	-	Cartesian	2.070	0.000	-1.000	
27	-	Cartesian	2.070	0.000	-2.000	
28	-	Cartesian	2.070	0.000	-2.500	
29	-	Cartesian	0.000	2.070	0.000	
30	-	Cartesian	0.000	2.070	-1.000	
31	-	Cartesian	0.000	2.070	-2.000	
32	-	Cartesian	0.000	2.070	-2.500	
33	-	Cartesian	2.070	2.070	0.000	
34	-	Cartesian	2.070	2.070	-1.000	
35	-	Cartesian	2.070	2.070	-2.000	
36	-	Cartesian	2.070	2.070	-2.500	
37	-	Cartesian	0.000	0.000	0.500	Supported
38	-	Cartesian	2.070	0.000	0.500	
39	-	Cartesian	0.000	2.070	0.500	Supported
40	-	Cartesian	2.070	2.070	0.500	
41	-	Cartesian	4.140	0.000	0.000	
42	-	Cartesian	4.140	0.000	-1.000	
43	-	Cartesian	4.140	0.000	-2.000	
44	-	Cartesian	4.140	0.000	-2.500	
45	-	Cartesian	4.140	2.070	0.000	
46	-	Cartesian	4.140	2.070	-1.000	
47	-	Cartesian	4.140	2.070	-2.000	
48	-	Cartesian	4.140	2.070	-2.500	
49	-	Cartesian	4.140	0.000	0.500	
50	-	Cartesian	4.140	2.070	0.500	
58	-	Cartesian	6.210	0.000	0.000	
59	-	Cartesian	6.210	0.000	-1.000	
60	-	Cartesian	6.210	0.000	-2.000	
61	-	Cartesian	6.210	0.000	-2.500	
62	-	Cartesian	6.210	2.070	0.000	
63	-	Cartesian	6.210	2.070	-1.000	
64	-	Cartesian	6.210	2.070	-2.000	
65	-	Cartesian	6.210	2.070	-2.500	
66	-	Cartesian	6.210	0.000	0.500	
67	-	Cartesian	6.210	2.070	0.500	
75	-	Cartesian	8.280	0.000	0.000	
76	-	Cartesian	8.280	0.000	-1.000	
77	-	Cartesian	8.280	0.000	-2.000	
78	-	Cartesian	8.280	0.000	-2.500	
79	-	Cartesian	8.280	2.070	0.000	
80	-	Cartesian	8.280	2.070	-1.000	
81	-	Cartesian	8.280	2.070	-2.000	
82	-	Cartesian	8.280	2.070	-2.500	
83	-	Cartesian	8.280	0.000	0.500	
84	-	Cartesian	8.280	2.070	0.500	
92	-	Cartesian	10.850	0.000	0.000	
93	-	Cartesian	10.850	0.000	-1.000	
94	-	Cartesian	10.850	0.000	-2.000	
95	-	Cartesian	10.850	0.000	-2.500	Supported
96	-	Cartesian	10.850	2.070	0.000	
97	-	Cartesian	10.850	2.070	-1.000	
98	-	Cartesian	10.850	2.070	-2.000	
99	-	Cartesian	10.850	2.070	-2.500	
100	-	Cartesian	10.850	0.000	0.500	Supported
101	-	Cartesian	10.850	2.070	0.500	Supported
157	-	Cartesian	0.000	0.000	-0.200	
158	-	Cartesian	2.070	0.000	-0.200	
159	-	Cartesian	4.140	0.000	-0.200	
160	-	Cartesian	0.000	2.070	-0.200	
161	-	Cartesian	2.070	2.070	-0.200	
162	-	Cartesian	4.140	2.070	-0.200	
164	-	Cartesian	6.210	0.000	-0.200	
166	-	Cartesian	6.210	2.070	-0.200	
168	-	Cartesian	8.280	0.000	-0.200	
170	-	Cartesian	8.280	2.070	-0.200	
172	-	Cartesian	10.850	0.000	-0.200	

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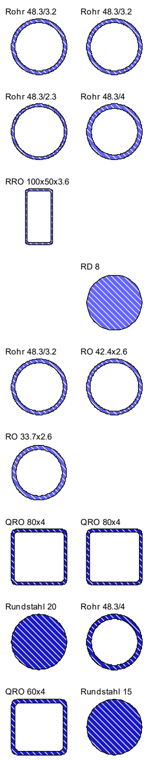
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
174	-	Cartesian	10.850	2.070	-0.200	

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm^2]	Modulus G [kN/cm^2]	Spec. Weight γ [kN/m^3]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN EN 1993-1-1:2010-12 21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
2	Baustahl S 235 mit erh. Streckgrenze_ 21000.00 Benutzerdefiniertes Material	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
3	Steel S 355 | DIN EN 1993-1-1:2010-12 21000.00	8076.92	78.50	1.20E-05	1.00	Isotropic Linear Elastic
4	Prestressing Steel Bar St 900/1030 | DIN EN 1992-1-1/NA/A1:2015-12 20500.00	7884.62	78.50	1.00E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm^4] A [cm^2]	I_y [cm^4] A_y [cm^2]	I_z [cm^4] A_z [cm^2]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/3.2 2 Stiel	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
2	Rohr 48.3/3.2 2 Riegel	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
3	Rohr 48.3/2.3 1 Diagonale	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
4	Rohr 48.3/4 1 Rohr	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
5	RRO 100x50x3.6 | DIN 59410:1974 1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel 1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	G1 Gitterträger H=45cm S 1	1.00 10.00	4500.00 5.00	5.00 5.00	0.00	0.00	50.0	100.0
8	RD 8 | DIN 1013-1 1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2 2 Riegel_TG60_1	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
10	RO 42.4x2.6 | DIN 2448 2 Riegel_TG60_2	12.93 3.25	6.46 1.62	6.46 1.62	0.00	0.00	42.4	42.4
11	RO 33.7x2.6 | DIN 2448 1 Diagonale_TG60	6.19 2.54	3.09 1.27	3.09 1.27	0.00	0.00	33.7	33.7
12	U-Doppel U-Doppel 2	1.00 10.00	400.00 5.00	10.00 5.00	0.00	0.00	40.0	80.0
13	QRO 80x4 | DIN 59410:1974 3 Brückenträger_Pfosten	177.00 12.00	115.00 5.12	115.00 5.12	0.00	0.00	80.0	80.0
15	QRO 80x4 | DIN 59410:1974 3 Brückenträger_Riegel	177.00 12.00	115.00 5.12	115.00 5.12	0.00	0.00	80.0	80.0
16	Rundstahl 20 4 Brückenträger-Diagonale	1.57 3.14	0.79 2.64	0.79 2.64	0.00	0.00	20.0	20.0
17	Rohr 48.3/4 3 Pfosten_Fachwerkträger	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3

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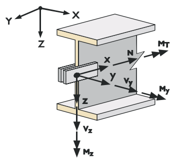
1.3 CROSS-SECTIONS

Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
18	QRO 60x4 | DIN 59410:1974							
	3	71.20	45.90	45.90	0.00	0.00	60.0	60.0
		8.82	3.79	3.79				
	Gurt_Fachwerkträger							
19	Rundstahl 15							
	4	0.50	0.25	0.25	0.00	0.00	15.0	15.0
		1.77	1.48	1.48				
	Diagonale_FWT							



1.4 MEMBER HINGES

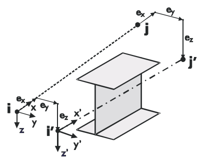
Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	1000000.000	☐	☐	☒	☐
	Nonlinearity	-	Partial activity...	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1200.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	5000.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
5	Local x,y,z	2500.000	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
1	u_y+	Yielding from release force	12.000	-	
	u_y-	Yielding from release force	12.000	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.700	
		0.0400	0.900	
		0.0600	> 1.000	Tearing
5	$\varphi_{y'}$	0.0000	0.000	
		0.0000	> 0.000	Tearing

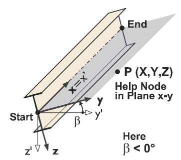


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
167	Beam	21	157	Angle	0.00	17	17	-	-	-	-	0.200	Z
168	Beam	22	23	Angle	0.00	17	17	-	-	-	-	1.000	Z
169	Beam	25	158	Angle	0.00	17	17	-	-	-	-	0.200	Z
170	Beam	26	27	Angle	0.00	17	17	-	-	-	-	1.000	Z
171	Beam	158	157	Angle	0.00	18	18	4	4	-	-	2.070	X
172	Beam	27	23	Angle	0.00	18	18	4	4	-	-	2.070	X
173	Tension	158	23	Angle	0.00	19	19	-	-	-	-	2.743	XZ

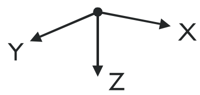
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
174	Tension	27	157	Angle	0.00	19	19	-	-	-	-	2.743	XZ
175	Beam	41	159	Angle	0.00	17	17	-	-	-	-	0.200	Z
176	Beam	42	43	Angle	0.00	17	17	-	-	-	-	1.000	Z
177	Beam	159	158	Angle	0.00	18	18	4	4	-	-	2.070	X
178	Beam	43	27	Angle	0.00	18	18	4	4	-	-	2.070	X
179	Tension	159	27	Angle	0.00	19	19	-	-	-	-	2.743	XZ
180	Tension	43	158	Angle	0.00	19	19	-	-	-	-	2.743	XZ
181	Beam	29	160	Angle	0.00	17	17	-	-	-	-	0.200	Z
182	Beam	30	31	Angle	0.00	17	17	-	-	-	-	1.000	Z
183	Beam	33	161	Angle	0.00	17	17	-	-	-	-	0.200	Z
184	Beam	34	35	Angle	0.00	17	17	-	-	-	-	1.000	Z
185	Beam	161	160	Angle	0.00	18	18	4	4	-	-	2.070	X
186	Beam	35	31	Angle	0.00	18	18	4	4	-	-	2.070	X
187	Tension	161	31	Angle	0.00	19	19	-	-	-	-	2.743	XZ
188	Tension	35	160	Angle	0.00	19	19	-	-	-	-	2.743	XZ
189	Beam	45	162	Angle	0.00	17	17	-	-	-	-	0.200	Z
190	Beam	46	47	Angle	0.00	17	17	-	-	-	-	1.000	Z
191	Beam	162	161	Angle	0.00	18	18	4	4	-	-	2.070	X
192	Beam	47	35	Angle	0.00	18	18	4	4	-	-	2.070	X
193	Tension	162	35	Angle	0.00	19	19	-	-	-	-	2.743	XZ
194	Tension	47	161	Angle	0.00	19	19	-	-	-	-	2.743	XZ
195	Beam	58	164	Angle	0.00	17	17	-	-	-	-	0.200	Z
196	Beam	59	60	Angle	0.00	17	17	-	-	-	-	1.000	Z
197	Beam	164	159	Angle	0.00	18	18	4	4	-	-	2.070	X
198	Beam	60	43	Angle	0.00	18	18	4	4	-	-	2.070	X
199	Tension	164	43	Angle	0.00	19	19	-	-	-	-	2.743	XZ
200	Tension	60	159	Angle	0.00	19	19	-	-	-	-	2.743	XZ
201	Beam	62	166	Angle	0.00	17	17	-	-	-	-	0.200	Z
202	Beam	63	64	Angle	0.00	17	17	-	-	-	-	1.000	Z
203	Beam	166	162	Angle	0.00	18	18	4	4	-	-	2.070	X
204	Beam	64	47	Angle	0.00	18	18	4	4	-	-	2.070	X
205	Tension	166	47	Angle	0.00	19	19	-	-	-	-	2.743	XZ
206	Tension	64	162	Angle	0.00	19	19	-	-	-	-	2.743	XZ
207	Beam	75	168	Angle	0.00	17	17	-	-	-	-	0.200	Z
208	Beam	76	77	Angle	0.00	17	17	-	-	-	-	1.000	Z
209	Beam	168	164	Angle	0.00	18	18	4	4	-	-	2.070	X
210	Beam	77	60	Angle	0.00	18	18	4	4	-	-	2.070	X
211	Tension	168	60	Angle	0.00	19	19	-	-	-	-	2.743	XZ
212	Tension	77	164	Angle	0.00	19	19	-	-	-	-	2.743	XZ
213	Beam	79	170	Angle	0.00	17	17	-	-	-	-	0.200	Z
214	Beam	80	81	Angle	0.00	17	17	-	-	-	-	1.000	Z
215	Beam	170	166	Angle	0.00	18	18	4	4	-	-	2.070	X
216	Beam	81	64	Angle	0.00	18	18	4	4	-	-	2.070	X
217	Tension	170	64	Angle	0.00	19	19	-	-	-	-	2.743	XZ
218	Tension	81	166	Angle	0.00	19	19	-	-	-	-	2.743	XZ
219	Beam	92	172	Angle	0.00	17	17	-	-	-	-	0.200	Z
220	Beam	93	94	Angle	0.00	17	17	-	-	-	-	1.000	Z
221	Beam	172	168	Angle	0.00	18	18	4	4	-	-	2.570	X
222	Beam	94	77	Angle	0.00	18	18	4	4	-	-	2.570	X
223	Beam	157	22	Angle	0.00	17	17	-	-	-	-	0.800	Z
224	Beam	158	26	Angle	0.00	17	17	-	-	-	-	0.800	Z
225	Beam	159	42	Angle	0.00	17	17	-	-	-	-	0.800	Z
226	Beam	23	24	Angle	0.00	1	1	-	-	-	-	0.500	Z
227	Beam	27	28	Angle	0.00	1	1	-	-	-	-	0.500	Z
228	Beam	43	44	Angle	0.00	1	1	-	-	-	-	0.500	Z
229	Beam	24	28	Angle	0.00	12	12	1	1	1	-	2.020	X
230	Beam	28	44	Angle	0.00	12	12	1	1	1	-	2.020	X
231	Beam	160	30	Angle	0.00	17	17	-	-	-	-	0.800	Z
232	Beam	161	34	Angle	0.00	17	17	-	-	-	-	0.800	Z
233	Beam	162	46	Angle	0.00	17	17	-	-	-	-	0.800	Z
234	Beam	31	32	Angle	0.00	1	1	-	-	-	-	0.500	Z
235	Beam	35	36	Angle	0.00	1	1	-	-	-	-	0.500	Z
236	Beam	47	48	Angle	0.00	1	1	-	-	-	-	0.500	Z
237	Beam	32	36	Angle	0.00	12	12	1	1	1	-	2.020	X
238	Beam	36	48	Angle	0.00	12	12	1	1	1	-	2.020	X
239	Beam	21	37	Angle	0.00	17	17	-	-	-	-	0.500	Z
240	Beam	29	39	Angle	0.00	17	17	-	-	-	-	0.500	Z
241	Beam	25	38	Angle	0.00	1	1	-	-	-	-	0.500	Z
242	Beam	33	40	Angle	0.00	1	1	-	-	-	-	0.500	Z
243	Beam	41	49	Angle	0.00	1	1	-	-	-	-	0.500	Z
244	Beam	45	50	Angle	0.00	1	1	-	-	-	-	0.500	Z
245	Beam	24	32	Angle	0.00	2	2	1	1	1	-	2.020	Y
246	Beam	28	36	Angle	0.00	2	2	1	1	1	-	2.020	Y
247	Beam	44	48	Angle	0.00	2	2	1	1	1	-	2.020	Y
248	Beam	21	29	Angle	0.00	2	2	1	1	1	-	2.020	Y
249	Beam	25	33	Angle	0.00	2	2	1	1	1	-	2.020	Y
250	Beam	41	45	Angle	0.00	2	2	1	1	1	-	2.020	Y
251	Beam	21	25	Angle	0.00	2	2	1	1	1	-	2.020	X
252	Beam	25	41	Angle	0.00	2	2	1	1	1	-	2.020	X
254	Beam	29	33	Angle	0.00	2	2	1	1	1	-	2.020	X
255	Beam	21	33	Angle	0.00	4	4	5	5	-	-	2.927	XY
257	Beam	24	36	Angle	0.00	4	4	5	5	-	-	2.927	XY
258	Beam	28	48	Angle	0.00	4	4	5	5	-	-	2.927	XY
259	Beam	164	59	Angle	0.00	17	17	-	-	-	-	0.800	Z
260	Beam	60	61	Angle	0.00	1	1	-	-	-	-	0.500	Z
261	Beam	44	61	Angle	0.00	12	12	1	1	1	-	2.020	X
262	Beam	166	63	Angle	0.00	17	17	-	-	-	-	0.800	Z
263	Beam	64	65	Angle	0.00	1	1	-	-	-	-	0.500	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
264	Beam	48	65	Angle	0.00	12	12	1	1	1	-	2.020	X
265	Beam	58	66	Angle	0.00	1	1	-	-	-	-	0.500	Z
266	Beam	62	67	Angle	0.00	1	1	-	-	-	-	0.500	Z
267	Beam	61	65	Angle	0.00	2	2	1	1	1	-	2.020	Y
268	Beam	58	62	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	41	58	Angle	0.00	2	2	1	1	1	-	2.020	X
272	Beam	44	65	Angle	0.00	4	4	5	5	-	-	2.927	XY
273	Beam	168	76	Angle	0.00	17	17	-	-	-	-	0.800	Z
274	Beam	77	78	Angle	0.00	1	1	-	-	-	-	0.500	Z
275	Beam	61	78	Angle	0.00	12	12	1	1	1	-	2.020	X
276	Beam	170	80	Angle	0.00	17	17	-	-	-	-	0.800	Z
277	Beam	81	82	Angle	0.00	1	1	-	-	-	-	0.500	Z
278	Beam	65	82	Angle	0.00	12	12	1	1	1	-	2.020	X
279	Beam	75	83	Angle	0.00	1	1	-	-	-	-	0.500	Z
280	Beam	79	84	Angle	0.00	1	1	-	-	-	-	0.500	Z
281	Beam	78	82	Angle	0.00	2	2	1	1	1	-	2.020	Y
282	Beam	75	79	Angle	0.00	2	2	1	1	1	-	2.020	Y
283	Beam	58	75	Angle	0.00	2	2	1	1	1	-	2.020	X
286	Beam	61	82	Angle	0.00	4	4	5	5	-	-	2.927	XY
287	Tension	172	77	Angle	0.00	19	19	-	-	-	-	3.138	XZ
288	Tension	94	168	Angle	0.00	19	19	-	-	-	-	3.138	XZ
289	Beam	96	174	Angle	0.00	17	17	-	-	-	-	0.200	Z
290	Beam	97	98	Angle	0.00	17	17	-	-	-	-	1.000	Z
291	Beam	174	170	Angle	0.00	18	18	4	4	-	-	2.570	X
292	Beam	98	81	Angle	0.00	18	18	4	4	-	-	2.570	X
293	Tension	174	81	Angle	0.00	19	19	-	-	-	-	3.138	XZ
294	Tension	98	170	Angle	0.00	19	19	-	-	-	-	3.138	XZ
295	Beam	172	93	Angle	0.00	17	17	-	-	-	-	0.800	Z
296	Beam	94	95	Angle	0.00	1	1	-	-	-	-	0.500	Z
297	Beam	78	95	Angle	0.00	12	12	1	1	1	-	2.520	X
298	Beam	174	97	Angle	0.00	17	17	-	-	-	-	0.800	Z
299	Beam	98	99	Angle	0.00	1	1	-	-	-	-	0.500	Z
300	Beam	82	99	Angle	0.00	12	12	1	1	1	-	2.520	X
301	Beam	92	100	Angle	0.00	1	1	-	-	-	-	0.500	Z
302	Beam	96	101	Angle	0.00	1	1	-	-	-	-	0.500	Z
303	Beam	95	99	Angle	0.00	2	2	1	1	1	-	2.020	Y
304	Beam	92	96	Angle	0.00	2	2	1	1	1	-	2.020	Y
305	Beam	75	92	Angle	0.00	2	2	1	1	1	-	2.520	X
308	Beam	78	99	Angle	0.00	4	4	5	5	-	-	3.300	XY
335	Beam	25	45	Angle	0.00	4	4	5	5	-	-	2.927	XY
336	Beam	41	62	Angle	0.00	4	4	5	5	-	-	2.927	XY
337	Beam	58	79	Angle	0.00	4	4	5	5	-	-	2.927	XY
338	Beam	75	96	Angle	0.00	4	4	5	5	-	-	3.300	XY
340	Beam	33	45	Angle	0.00	2	2	1	1	1	-	2.020	X
341	Beam	45	62	Angle	0.00	2	2	1	1	1	-	2.020	X
342	Beam	62	79	Angle	0.00	2	2	1	1	1	-	2.020	X
343	Beam	79	96	Angle	0.00	2	2	1	1	1	-	2.520	X

1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	100	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☐	☐
4	39	XYZ	0.00	0.00	0.00	☐	☐	☐	☒	☐	☐	☐
5	24,95	XYZ	0.00	0.00	0.00	☐	☐	☒	☐	☐	☐	☐
6	37	XYZ	0.00	0.00	0.00	☐	☐	☒	☒	☐	☐	☐
7	101	XYZ	0.00	0.00	0.00	☐	☒	☐	☒	☐	☐	☐

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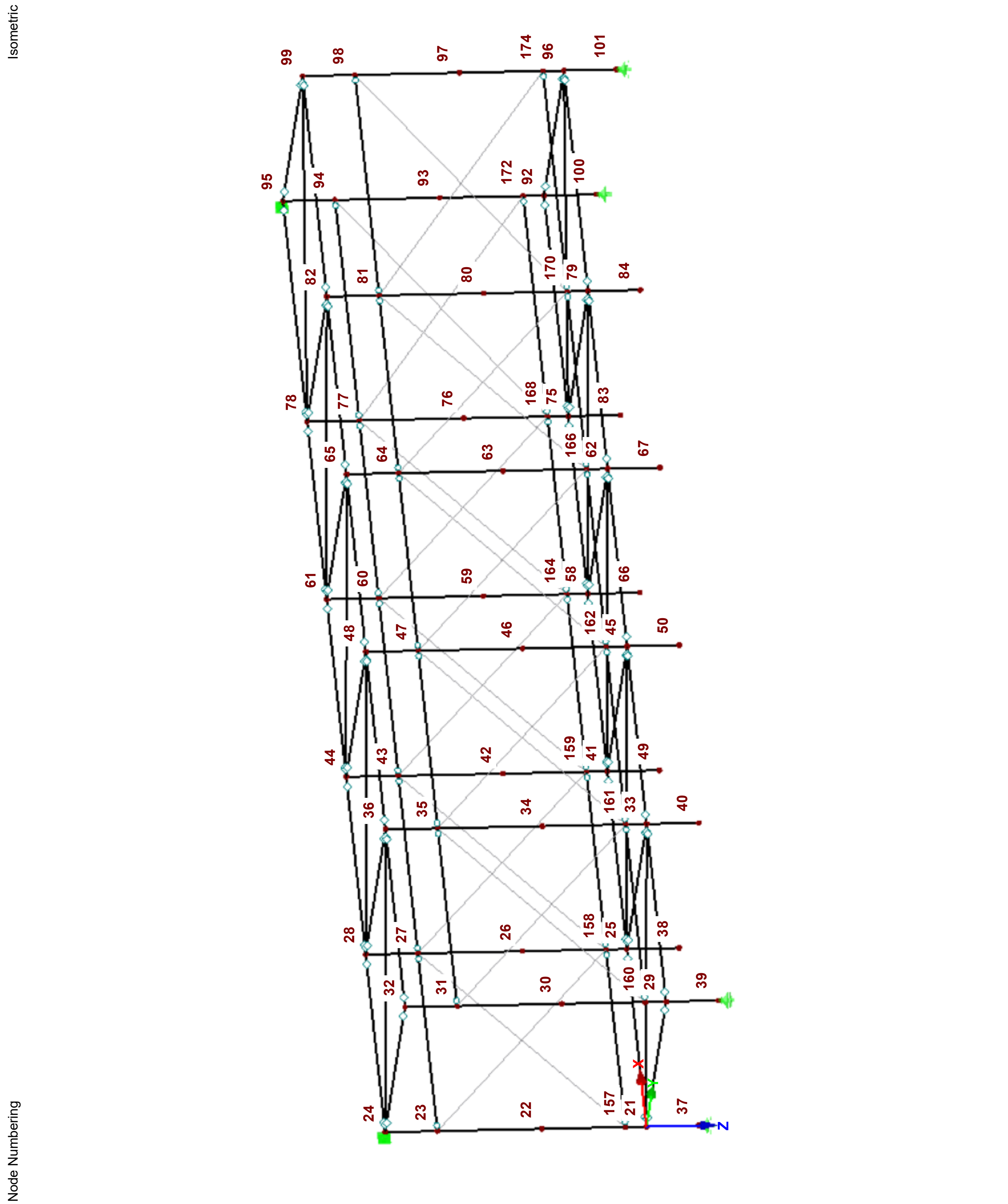
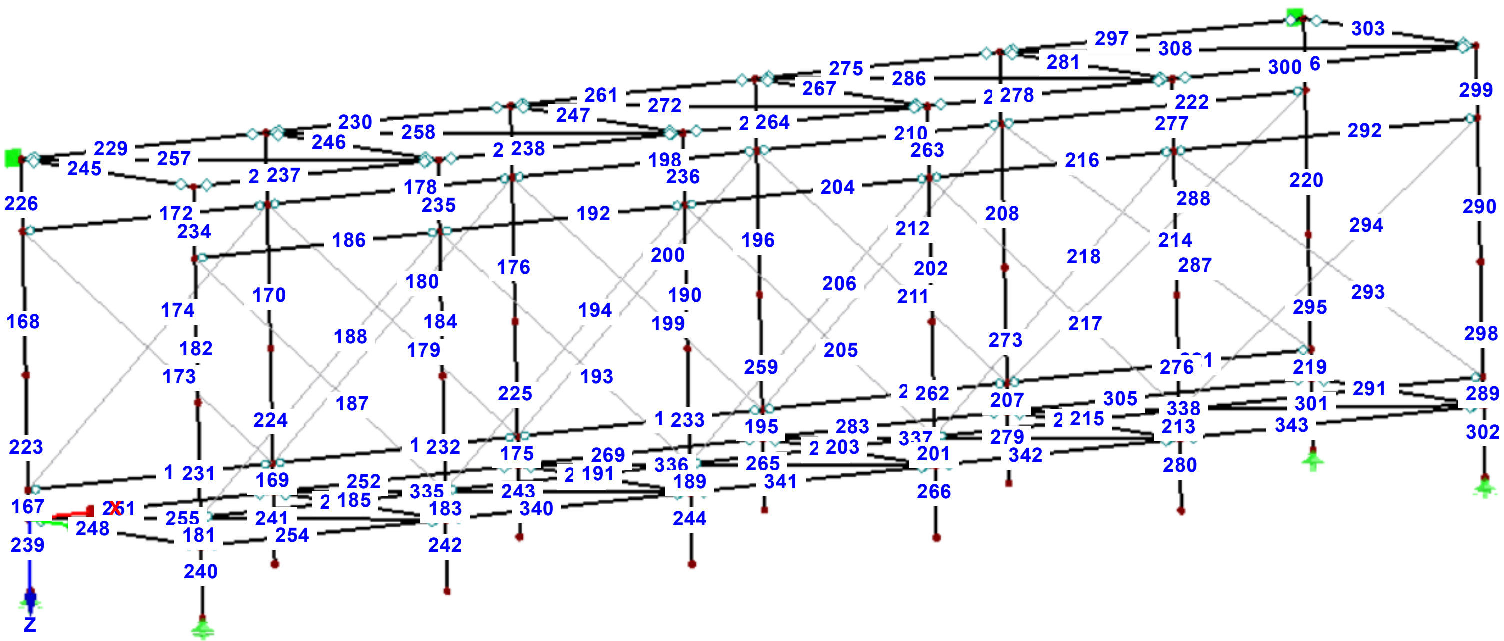
Project:	2023	Model:	K-1-FW-1	Date:	22.09.2023

MODEL



Member Numbering

Isometric



■ MODEL

Volker Knobloch
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Project: 2023

Model: K-1-FW-1

Date: 22.09.2023

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live load	Imposed - Category A: domestic, residential areas	☐			
LC3	Snow	Imposed - Category A: domestic, residential areas	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Live load	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Snow	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem_1	1	1.35	LC1	EG
			2	1.50	LC2	Live load
CO2		Bem_2	1	1.35	LC1	EG
			2	1.35	LC3	Snow
			3	1.35	LC3	Snow

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem_1	Method of analysis	: ■	Geometrically linear analysis
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem_2	Method of analysis	: ■	Geometrically linear analysis
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2

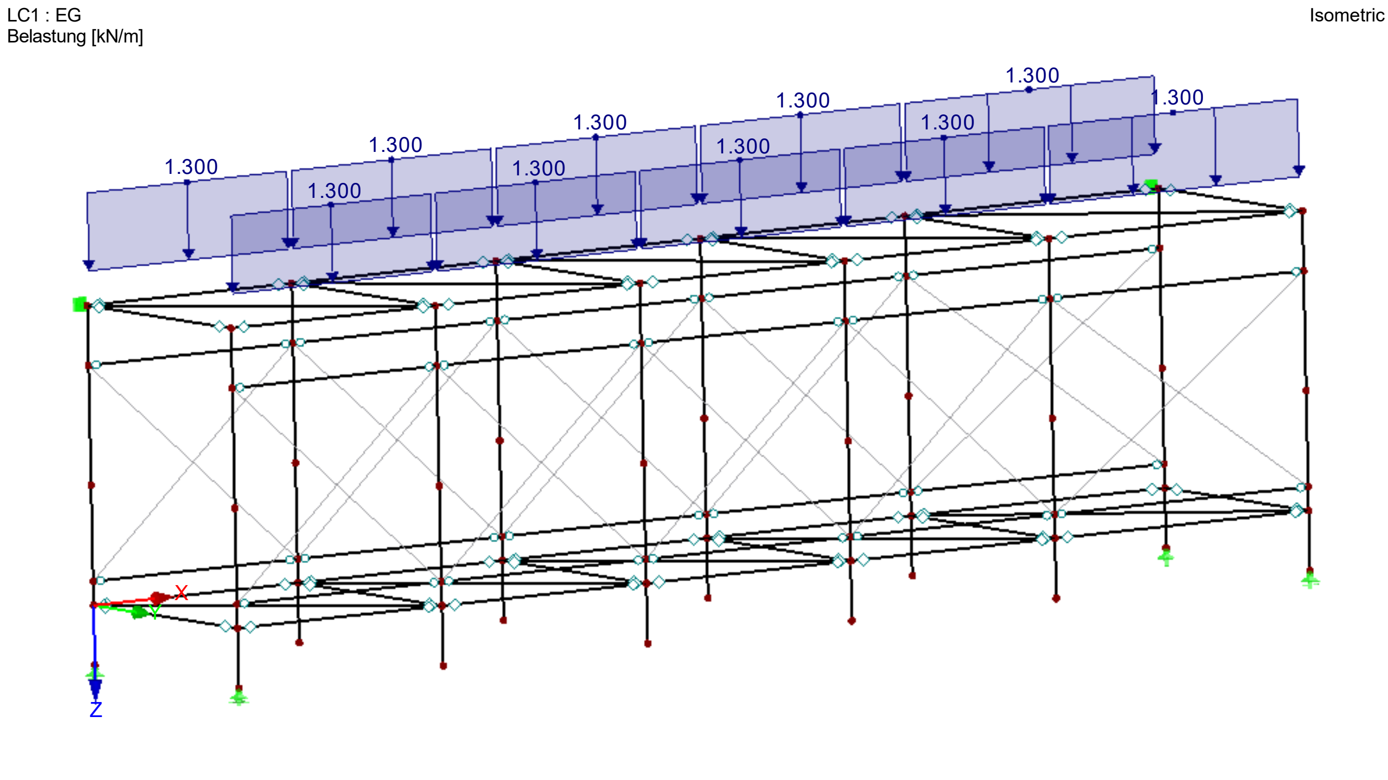
LC1
EG

3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	229,230, 261,275,297	Force	Uniform	Z	True Length	p	1.300	kN/m
2	Members	237,238, 264,278,300	Force	Uniform	Z	True Length	p	1.300	kN/m

LC1: EG



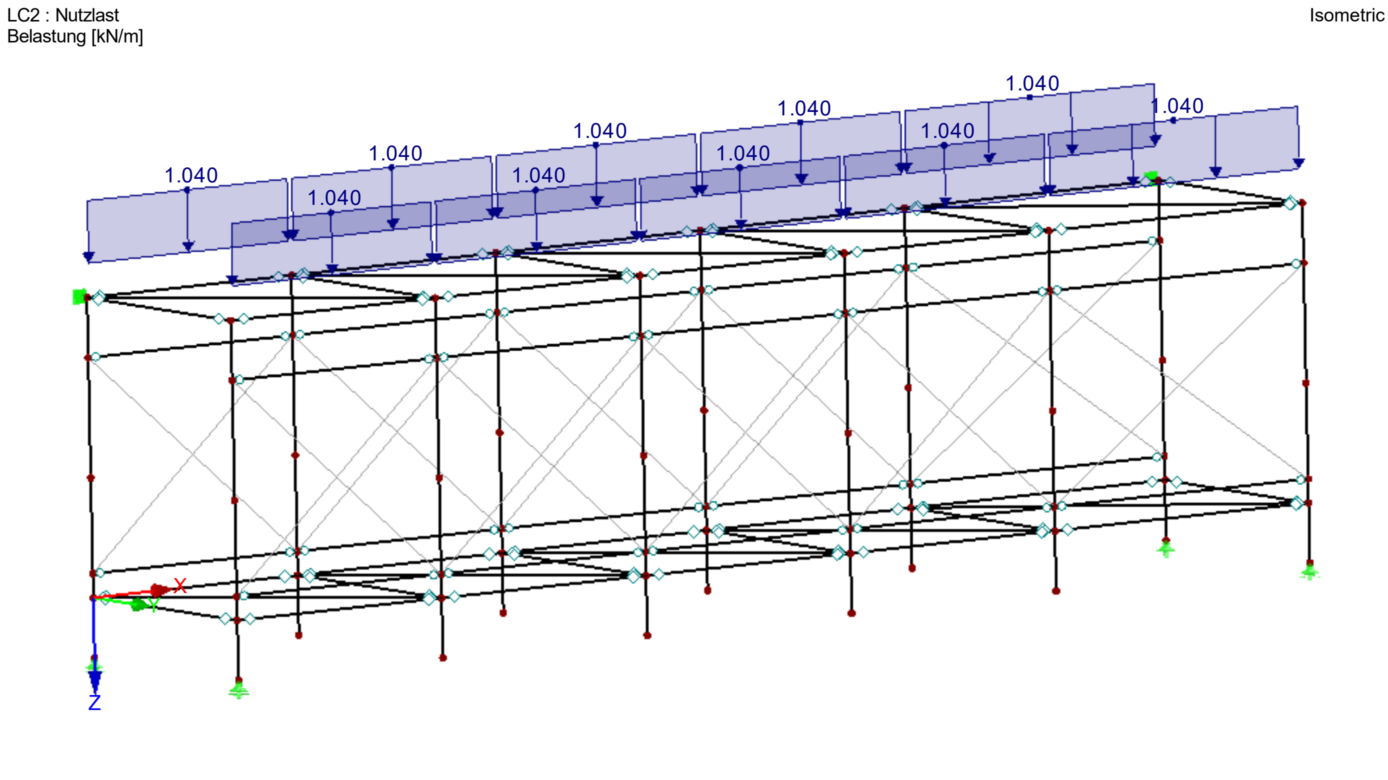
LC2
Live load

3.2 MEMBER LOADS

LC2: Live load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	229,230,237,238,261,264,275,278,297,300	Force	Uniform	Z	True Length	p	1.040	kN/m

LC2: NUTZLAST



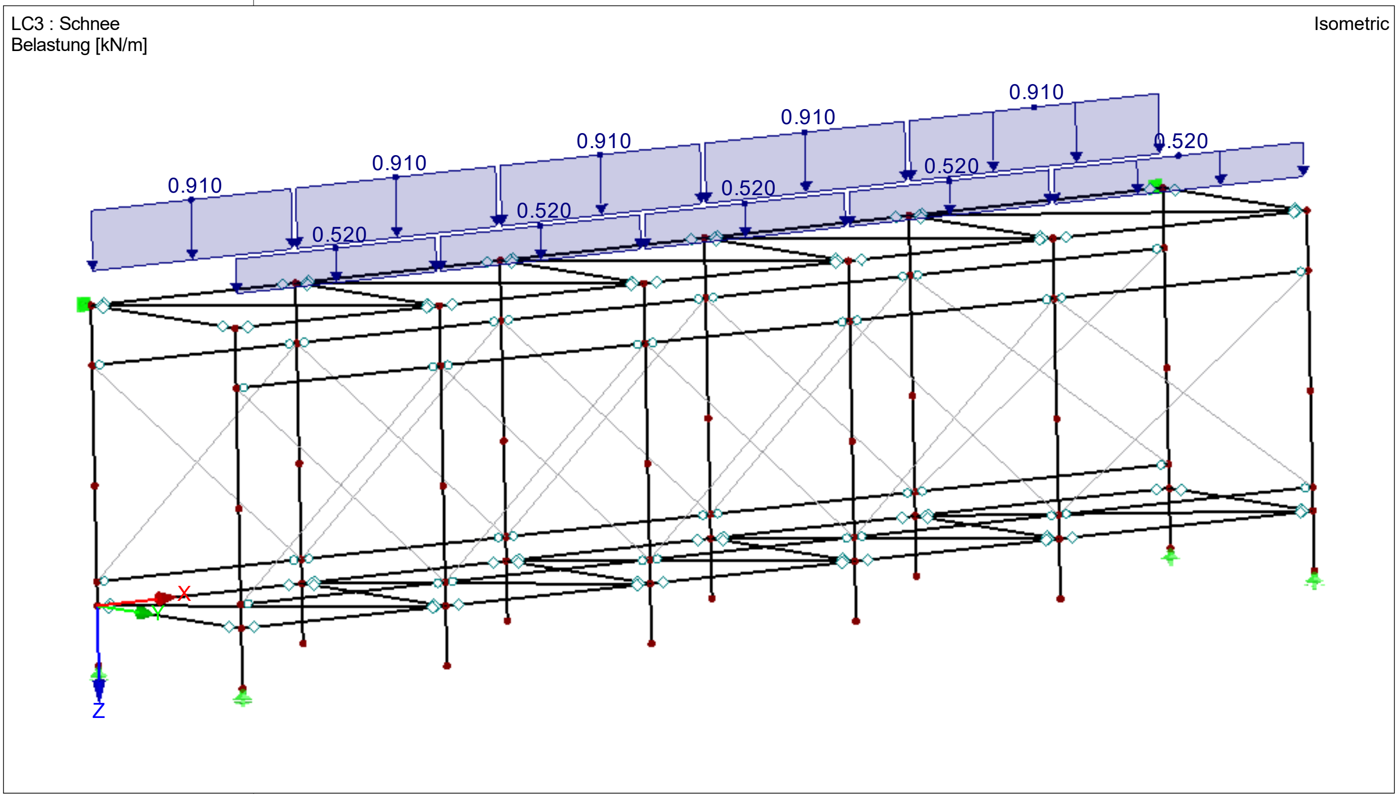
LC3
Snow

3.2 MEMBER LOADS

LC3: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	237,238, 264,278,300	Force	Uniform	Z	True Length	p	0.520	kN/m
2	Members	229,230, 261,275,297	Force	Uniform	Z	True Length	p	0.910	kN/m

LC3: SCHNEE


LC3 : Schnee
Belastung [kN/m]
Isometric
0.910
0.910
0.910
0.910
0.910
0.520
0.520
0.520
0.520
0.520
X
Y
Z

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■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	27.56	kN	
	Sum of support reactions in Z	27.56	kN	Deviation -0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:5.36, Y:1.04, Z:-1.27 m)
	Resultant of reactions about Y	-1.82	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.5	mm	Member No. 168, x: 0.750 m
	Max displacement in Y	-0.0	mm	Member No. 280, x: 0.500 m
	Max displacement in Z	2.9	mm	Member No. 264, x: 1.111 m
	Max vectorial displacement	2.9	mm	Member No. 264, x: 1.111 m
	Max rotation about X	-0.6	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	1.7	mrad	Member No. 300, x: 2.520 m
	Max rotation about Z	-0.0	mrad	Member No. 336, x: 1.464 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC2 - Live load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	22.05	kN	
	Sum of support reactions in Z	22.05	kN	Deviation 0.00%
	Resultant of reactions about X	0.00	kNm	At center of gravity of model (X:5.36, Y:1.04, Z:-1.27 m)
	Resultant of reactions about Y	-1.46	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.4	mm	Member No. 168, x: 0.750 m
	Max displacement in Y	-0.0	mm	Member No. 280, x: 0.500 m
	Max displacement in Z	2.3	mm	Member No. 264, x: 1.111 m
	Max vectorial displacement	2.4	mm	Member No. 264, x: 1.111 m
	Max rotation about X	-0.5	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	1.4	mrad	Member No. 300, x: 2.520 m
	Max rotation about Z	-0.0	mrad	Member No. 336, x: 1.464 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	LC3 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	15.16	kN	
	Sum of support reactions in Z	15.16	kN	Deviation -0.00%
	Resultant of reactions about X	-4.28	kNm	At center of gravity of model (X:5.36, Y:1.04, Z:-1.27 m)
	Resultant of reactions about Y	-1.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.3	mm	Member No. 168, x: 0.750 m
	Max displacement in Y	0.1	mm	Member No. 243, x: 0.500 m
	Max displacement in Z	2.0	mm	Member No. 261, x: 1.111 m
	Max vectorial displacement	2.0	mm	Member No. 261, x: 1.111 m
	Max rotation about X	-0.4	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	1.2	mrad	Member No. 297, x: 2.520 m
	Max rotation about Z	-0.0	mrad	Member No. 229, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	CO1 - Bem_1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	70.28	kN	
	Sum of support reactions in Z	70.28	kN	Deviation -0.00%
	Max displacement in X	1.2	mm	Member No. 168, x: 0.750 m
	Max displacement in Y	-0.0	mm	Member No. 280, x: 0.500 m
	Max displacement in Z	7.6	mm	Member No. 264, x: 1.111 m
	Max vectorial displacement	7.6	mm	Member No. 264, x: 1.111 m
	Max rotation about X	-1.5	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	4.7	mrad	Member No. 297, x: 2.520 m
	Max rotation about Z	-0.0	mrad	Member No. 336, x: 1.464 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☒		
	Number of load increments	1		
	Number of iterations	2		
	CO2 - Bem_2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	78.13	kN	
	Sum of support reactions in Z	78.13	kN	Deviation -0.00%

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max displacement in X	1.5	mm	Member No. 168, x: 0.750 m
	Max displacement in Y	0.4	mm	Member No. 243, x: 0.500 m
	Max displacement in Z	9.6	mm	Member No. 261, x: 1.111 m
	Max vectorial displacement	9.6	mm	Member No. 261, x: 1.111 m
	Max rotation about X	-2.0	mrad	Member No. 338, x: 0.000 m
	Max rotation about Y	5.9	mrad	Member No. 297, x: 2.520 m
	Max rotation about Z	-0.0	mrad	Member No. 229, x: 1.010 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☒		
	Number of load increments	1		
	Number of iterations	2		
	Summary			
	Max displacement in X	1.5	mm	CO2, Member No. 168, x: 0.750 m
	Max displacement in Y	0.4	mm	CO2, Member No. 243, x: 0.500 m
	Max displacement in Z	9.6	mm	CO2, Member No. 261, x: 1.111 m
	Max vectorial displacement	9.6	mm	CO2, Member No. 261, x: 1.111 m
	Max rotation about X	-2.0	mrad	CO2, Member No. 338, x: 0.000 m
	Max rotation about Y	5.9	mrad	CO2, Member No. 297, x: 2.520 m
	Max rotation about Z	-0.0	mrad	CO2, Member No. 229, x: 1.010 m
	Number of 1D finite elements (member elements)	142		
	Number of FE mesh nodes	72		
	Number of equations	432		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate Release Nonlinearities	☒		
	Activate failed members	☒		

Setting	Option		Value
Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☒ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
	Maximum number of reactivations	:	3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

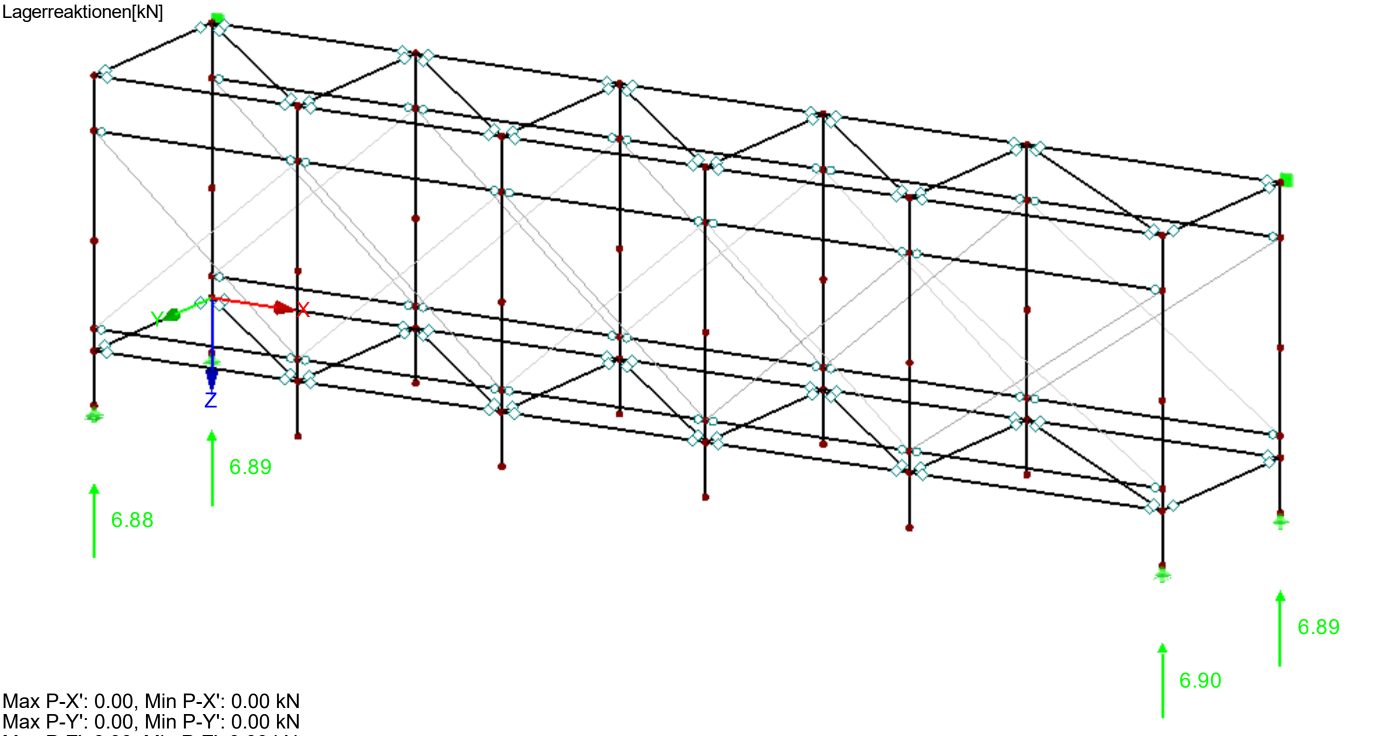
Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/3.2 (Stiel)								
242	LC1	MAX N	0.000	0.00	0.00	0.00	0.00	0.00	0.00
301	CO2	MIN N	0.000	-22.28	-0.03	-0.02	0.00	0.01	-0.01
260	CO2	MAX V_y	0.000	-8.44	0.01	0.15	0.00	-0.04	-0.01
301	CO2	MIN V_y	0.000	-22.28	-0.03	-0.02	0.00	0.01	-0.01
296	CO2	MAX V_z	0.000	-5.38	0.00	1.02	0.00	-0.18	0.00
226	CO2	MIN V_z	0.000	-4.34	0.00	-0.84	0.00	0.16	0.00
235	CO2	MAX M_T	0.000	-6.36	0.01	-0.40	0.00	0.09	-0.01
274	CO2	MIN M_T	0.000	-9.52	0.01	0.40	0.00	-0.11	-0.01
296	CO2	MAX M_y	0.500	-5.38	0.00	1.02	0.00	0.33	0.00
226	CO2	MIN M_y	0.500	-4.34	0.00	-0.84	0.00	-0.26	0.00
301	CO1	MAX M_z	0.000	-17.58	0.01	0.00	0.00	0.00	0.00
260	CO2	MIN M_z	0.500	-8.44	0.01	0.15	0.00	0.04	-0.02
	Section No. 2: Rohr 48.3/3.2 (Riegel)								
269	CO2	MAX N	0.000	3.14	0.00	0.00	0.00	-0.01	0.00
249	CO2	MIN N	0.000	-0.04	0.00	-0.01	0.00	0.01	0.00
282	CO2	MAX V_y	0.000	0.02	0.00	-0.01	0.00	0.01	0.00
248	CO2	MIN V_y	0.000	0.00	0.00	0.00	0.00	0.00	0.00
251	CO2	MAX V_z	0.000	1.14	0.00	0.08	0.00	-0.08	0.00
305	CO2	MIN V_z	0.000	1.28	0.00	-0.06	0.00	0.08	0.00
282	CO2	MAX M_T	0.000	0.02	0.00	-0.01	0.00	0.01	0.00
251	CO2	MIN M_T	0.000	1.14	0.00	0.08	0.00	-0.08	0.00
305	CO2	MAX M_y	0.000	1.28	0.00	-0.06	0.00	0.08	0.00
305	CO2	MIN M_y	2.520	1.28	0.00	-0.06	0.00	-0.08	0.00
282	CO2	MAX M_z	0.000	0.02	0.00	-0.01	0.00	0.01	0.00
282	CO2	MIN M_z	2.020	0.02	0.00	-0.01	0.00	-0.01	0.00
	Section No. 4: Rohr 48.3/4 (Rohr)								
255	CO2	MAX N	0.000	0.06	0.00	0.00	0.00	0.00	0.00
257	CO2	MIN N	0.000	-0.07	0.00	0.00	0.00	0.00	0.00
258	CO2	MAX V_y	0.000	-0.05	0.00	0.00	0.00	0.00	0.00

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
336	CO2	MIN V_y	0.000	0.02	▹ 0.00	0.00	0.00	0.00	0.00
286	CO1	MAX V_z	0.000	-0.01	0.00	▹ 0.00	0.00	0.00	0.00
286	CO2	MIN V_z	0.000	0.01	0.00	▹ 0.00	0.00	0.00	0.00
308	CO2	MAX M_T	0.000	0.03	0.00	0.00	▹ 0.00	0.00	0.00
336	CO2	MIN M_T	0.000	0.02	0.00	0.00	▹ 0.00	0.00	0.00
308	CO2	MAX M_y	0.000	0.03	0.00	0.00	0.00	▹ 0.00	0.00
255	CO2	MIN M_y	0.000	0.06	0.00	0.00	0.00	▹ 0.00	0.00
336	CO2	MAX M_z	2.927	0.02	0.00	0.00	0.00	0.00	▹ 0.00
335	CO2	MIN M_z	0.000	0.05	0.00	0.00	0.00	0.00	▹ 0.00
	Section No. 12: U-Doppel U-Doppel								
237	LC3	MAX N	0.000	▹ -0.10	0.00	0.54	0.00	-0.02	0.00
261	CO2	MIN N	0.000	▹ -1.54	0.00	4.26	0.00	-0.07	0.00
297	CO2	MAX V_y	0.000	-1.02	▹ 0.00	5.23	0.00	-0.01	0.00
229	CO2	MIN V_y	0.000	-0.79	▹ 0.00	4.34	0.00	-0.15	0.00
297	CO2	MAX V_z	0.000	-1.02	0.00	▹ 5.23	0.00	-0.01	0.00
297	CO2	MIN V_z	2.520	-1.02	0.00	▹ -5.38	0.00	-0.20	0.00
300	CO2	MAX M_T	0.000	-0.81	0.00	3.92	▹ 0.00	-0.01	0.00
237	CO2	MIN M_T	0.000	-0.62	0.00	3.26	▹ 0.00	-0.11	0.00
297	CO2	MAX M_y	1.260	-1.02	0.00	-0.07	0.00	▹ 3.24	0.00
297	CO2	MIN M_y	2.520	-1.02	0.00	-5.38	0.00	▹ -0.20	0.00
229	CO2	MAX M_z	2.020	-0.79	0.00	-4.17	0.00	0.03	▹ 0.00
229	CO2	MIN M_z	0.000	-0.79	0.00	4.34	0.00	-0.15	▹ 0.00
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)								
213	LC3	MAX N	0.000	▹ 0.00	0.00	0.18	0.00	-0.02	0.00
239	CO2	MIN N	0.000	▹ -22.27	-0.04	0.00	0.00	0.00	-0.02
195	CO2	MAX V_y	0.000	-0.07	▹ 0.01	0.49	0.00	-0.05	0.02
239	CO2	MIN V_y	0.000	-22.27	▹ -0.04	0.00	0.00	0.00	-0.02
207	CO2	MAX V_z	0.000	-0.03	0.01	▹ 1.40	0.00	-0.14	0.01
169	CO2	MIN V_z	0.000	-0.04	0.01	▹ -1.42	0.00	0.14	0.01
183	CO2	MAX M_T	0.000	-0.01	0.01	-1.02	▹ 0.00	0.10	0.01
207	CO2	MIN M_T	0.000	-0.03	0.01	1.40	▹ 0.00	-0.14	0.01
219	CO2	MAX M_y	0.200	-22.21	0.00	1.27	0.00	▹ 0.16	-0.01
220	CO2	MIN M_y	1.000	-22.21	0.00	-0.19	0.00	▹ -0.18	0.00
175	CO2	MAX M_z	0.000	-0.06	0.01	-0.63	0.00	0.06	▹ 0.02
239	CO2	MIN M_z	0.000	-22.27	-0.04	0.00	0.00	0.00	▹ -0.02
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)								
197	CO2	MAX N	0.000	▹ 27.74	0.00	0.00	0.00	0.00	0.00
210	CO2	MIN N	0.000	▹ -30.71	0.00	0.00	0.00	0.00	0.00
171	CO2	MAX V_y	0.000	-1.36	▹ 0.00	0.00	-0.01	0.00	0.00
197	CO2	MIN V_y	0.000	27.74	▹ 0.00	0.00	0.00	0.00	0.00
209	CO1	MAX V_z	0.000	16.63	0.00	▹ 0.00	0.00	0.00	0.00
171	CO2	MIN V_z	0.000	-1.36	0.00	▹ 0.00	-0.01	0.00	0.00
221	CO2	MAX M_T	0.000	-1.46	0.00	0.00	▹ 0.00	0.00	0.00
171	CO2	MIN M_T	0.000	-1.36	0.00	0.00	▹ -0.01	0.00	0.00
222	CO2	MAX M_y	0.000	-22.82	0.00	0.00	0.00	▹ 0.00	0.00
172	CO1	MIN M_y	0.000	-15.40	0.00	0.00	0.00	▹ 0.00	0.00
203	CO2	MAX M_z	0.000	21.06	0.00	0.00	0.00	0.00	▹ 0.00
197	CO2	MIN M_z	0.000	27.74	0.00	0.00	0.00	0.00	▹ 0.00
	Section No. 19: Rundstahl 15 (Diagonale_FWT)								
288	CO2	MAX N	0.000	▹ 29.34	0.00	0.00	0.00	0.00	0.00
205	LC3	MIN N	0.000	▹ 0.19	0.00	0.00	0.00	0.00	0.00
173	LC1	MAX V_y	0.000	8.41	▹ 0.00	0.00	0.00	0.00	0.00
173	LC1	MIN V_y	0.000	8.41	▹ 0.00	0.00	0.00	0.00	0.00
173	LC1	MAX V_z	0.000	8.41	0.00	▹ 0.00	0.00	0.00	0.00
173	LC1	MIN V_z	0.000	8.41	0.00	▹ 0.00	0.00	0.00	0.00
173	LC1	MAX M_T	0.000	8.41	0.00	0.00	▹ 0.00	0.00	0.00
173	LC1	MIN M_T	0.000	8.41	0.00	0.00	▹ 0.00	0.00	0.00
173	LC1	MAX M_y	0.000	8.41	0.00	0.00	0.00	▹ 0.00	0.00
173	LC1	MIN M_y	0.000	8.41	0.00	0.00	0.00	▹ 0.00	0.00
173	LC1	MAX M_z	0.000	8.41	0.00	0.00	0.00	0.00	▹ 0.00
173	LC1	MIN M_z	0.000	8.41	0.00	0.00	0.00	0.00	▹ 0.00

LAGERREAKTIONEN

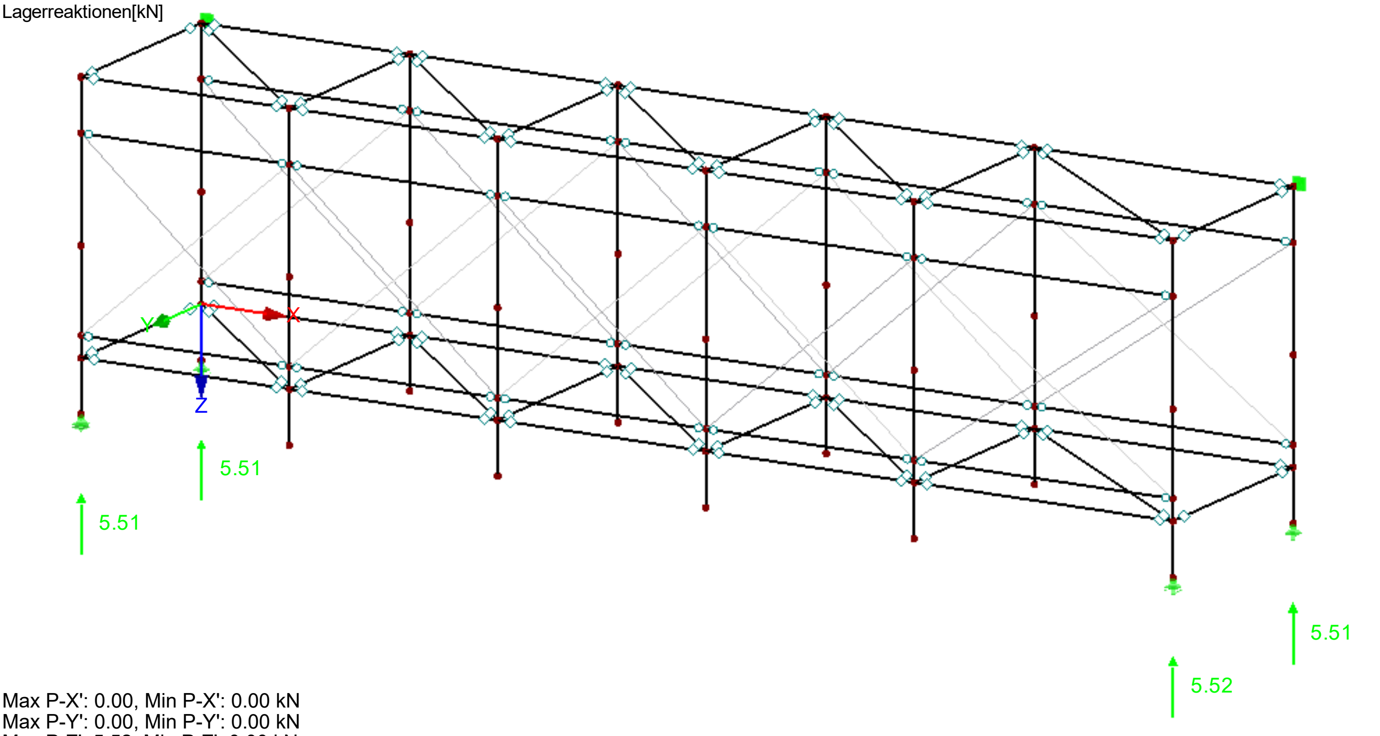
LC1 : EG
Lagerreaktionen[kN]
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 6.90, Min P-Z': 0.00 kN

LAGERREAKTIONEN

LC2 : Nutzlast
Lagerreaktionen[kN]
Isometric

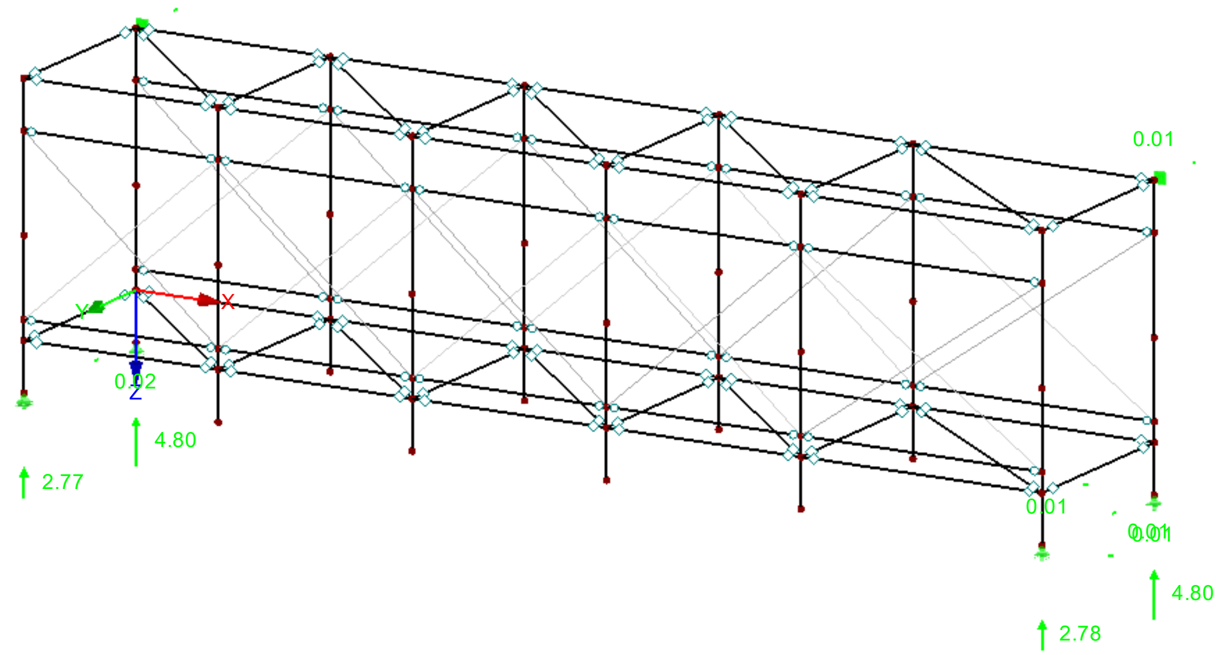


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 5.52, Min P-Z': 0.00 kN

■ LAGERREAKTIONEN

LC3 : Schnee
Lagerreaktionen[kN]

Isometric



Max P-X': 0.01, Min P-X': -0.01 kN
Max P-Y': 0.02, Min P-Y': -0.02 kN
Max P-Z': 4.80, Min P-Z': 0.00 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/3.2 (Stiel)										
226	RC1		0.000	MAX N	0.00	0.00	0.00	0.00	0.00	0.00	
301	RC1		0.000	MIN N	-22.28	-0.03	-0.02	0.00	0.01	-0.01	CO 2
260	RC1		0.000	MAX V_y	-8.44	0.01	0.15	0.00	-0.04	-0.01	CO 2
301	RC1		0.000	MIN V_y	-22.28	-0.03	-0.02	0.00	0.01	-0.01	CO 2
296	RC1		0.000	MAX V_z	-5.38	0.00	1.02	0.00	-0.18	0.00	CO 2
226	RC1		0.000	MIN V_z	-4.34	0.00	-0.84	0.00	0.16	0.00	CO 2
235	RC1		0.000	MAX M_T	-6.36	0.01	-0.40	0.00	0.09	-0.01	CO 2
274	RC1		0.000	MIN M_T	-9.52	0.01	0.40	0.00	-0.11	-0.01	CO 2
296	RC1		0.500	MAX M_y	-5.38	0.00	1.02	0.00	0.33	0.00	CO 2
226	RC1		0.500	MIN M_y	-4.34	0.00	-0.84	0.00	-0.26	0.00	CO 2
301	RC1		0.000	MAX M_z	-17.58	0.01	0.00	0.00	0.00	0.00	CO 1
260	RC1		0.500	MIN M_z	-8.44	0.01	0.15	0.00	0.04	-0.02	CO 2
	Section No. 2: Rohr 48.3/3.2 (Riegel)										
269	RC1		0.000	MAX N	3.14	0.00	0.00	0.00	-0.01	0.00	CO 2
249	RC1		0.000	MIN N	-0.04	0.00	-0.01	0.00	0.01	0.00	CO 2
282	RC1		0.000	MAX V_y	0.02	0.00	-0.01	0.00	0.01	0.00	CO 2
248	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
251	RC1		0.000	MAX V_z	1.14	0.00	0.08	0.00	-0.08	0.00	CO 2
305	RC1		0.000	MIN V_z	1.28	0.00	-0.06	0.00	0.08	0.00	CO 2
282	RC1		0.000	MAX M_T	0.02	0.00	-0.01	0.00	0.01	0.00	CO 2
251	RC1		0.000	MIN M_T	1.14	0.00	0.08	0.00	-0.08	0.00	CO 2
305	RC1		0.000	MAX M_y	1.28	0.00	-0.06	0.00	0.08	0.00	CO 2
305	RC1		2.520	MIN M_y	1.28	0.00	-0.06	0.00	-0.08	0.00	CO 2
282	RC1		0.000	MAX M_z	0.02	0.00	-0.01	0.00	0.01	0.00	CO 2
282	RC1		2.020	MIN M_z	0.02	0.00	-0.01	0.00	-0.01	0.00	CO 2
	Section No. 4: Rohr 48.3/4 (Rohr)										
255	RC1		0.000	MAX N	0.06	0.00	0.00	0.00	0.00	0.00	CO 2
257	RC1		0.000	MIN N	-0.07	0.00	0.00	0.00	0.00	0.00	CO 2
258	RC1		0.000	MAX V_y	-0.05	0.00	0.00	0.00	0.00	0.00	CO 2
336	RC1		0.000	MIN V_y	0.02	0.00	0.00	0.00	0.00	0.00	CO 2
255	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
255	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
308	RC1		0.000	MAX M_T	0.03	0.00	0.00	0.00	0.00	0.00	CO 2
336	RC1		0.000	MIN M_T	0.02	0.00	0.00	0.00	0.00	0.00	CO 2
255	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
255	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

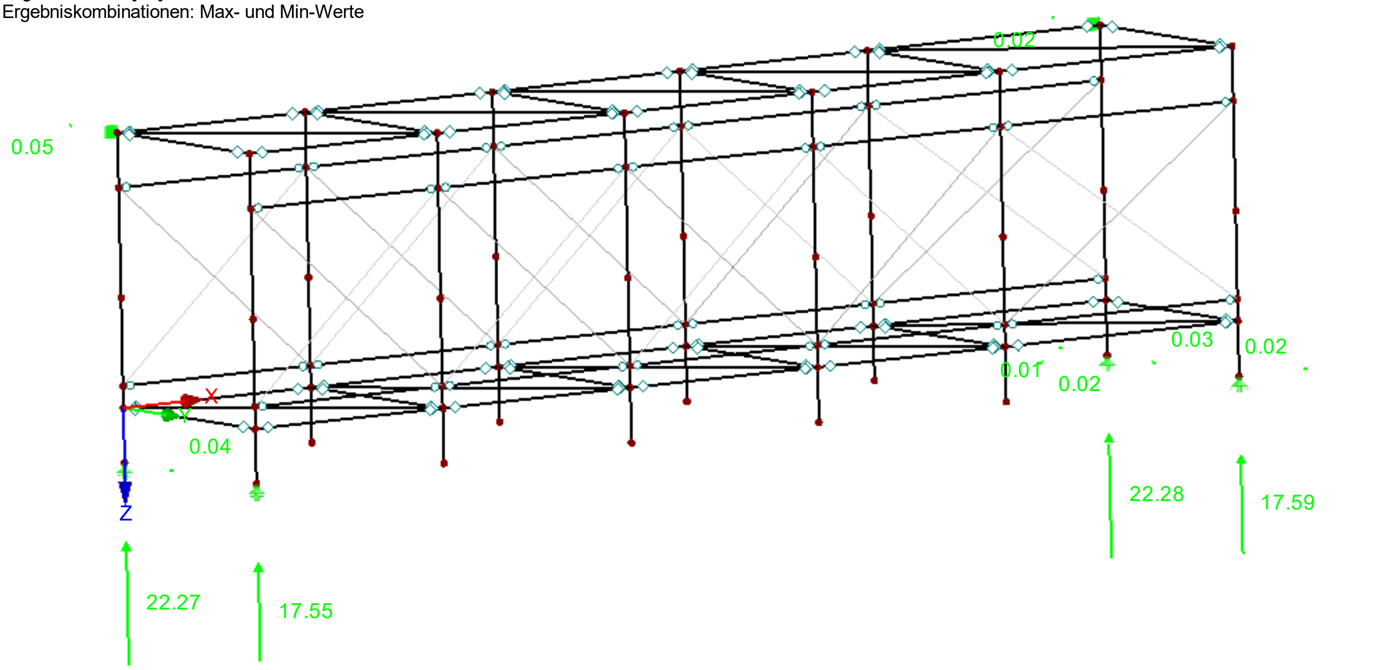
Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
336	RC1		2.927	MAX M_z	0.02	0.00	0.00	0.00	0.00	▷ 0.00	CO 2
335	RC1		0.000	MIN M_z	0.05	0.00	0.00	0.00	0.00	▷ 0.00	CO 2
	Section No. 12: U-Doppel U-Doppel										
229	RC1		0.000	MAX N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
261	RC1		0.000	MIN N	▷ -1.54	0.00	4.26	0.00	-0.07	0.00	CO 2
297	RC1		0.000	MAX V_y	-1.02	▷ 0.00	5.23	0.00	-0.01	0.00	CO 2
229	RC1		0.000	MIN V_y	-0.79	▷ 0.00	4.34	0.00	-0.15	0.00	CO 2
297	RC1		0.000	MAX V_z	-1.02	0.00	▷ 5.23	0.00	-0.01	0.00	CO 2
297	RC1		2.520	MIN V_z	-1.02	0.00	▷ -5.38	0.00	-0.20	0.00	CO 2
229	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
229	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
297	RC1		1.260	MAX M_y	-1.02	0.00	-0.07	0.00	▷ 3.24	0.00	CO 2
297	RC1		2.520	MIN M_y	-1.02	0.00	-5.38	0.00	▷ -0.20	0.00	CO 2
229	RC1		2.020	MAX M_z	-0.79	0.00	-4.17	0.00	0.03	▷ 0.00	CO 2
229	RC1		0.000	MIN M_z	-0.79	0.00	4.34	0.00	-0.15	▷ 0.00	CO 2
	Section No. 17: Rohr 48.3/4 (Pfosten_Fachwerkträger)										
167	RC1		0.000	MAX N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
239	RC1		0.000	MIN N	▷ -22.27	-0.04	0.00	0.00	0.00	-0.02	CO 2
195	RC1		0.000	MAX V_y	-0.07	▷ 0.01	0.49	0.00	-0.05	0.02	CO 2
239	RC1		0.000	MIN V_y	-22.27	▷ -0.04	0.00	0.00	0.00	-0.02	CO 2
207	RC1		0.000	MAX V_z	-0.03	0.01	▷ 1.40	0.00	-0.14	0.01	CO 2
169	RC1		0.000	MIN V_z	-0.04	0.01	▷ -1.42	0.00	0.14	0.01	CO 2
183	RC1		0.000	MAX M_T	-0.01	0.01	-1.02	▷ 0.00	0.10	0.01	CO 2
207	RC1		0.000	MIN M_T	-0.03	0.01	1.40	▷ 0.00	-0.14	0.01	CO 2
219	RC1		0.200	MAX M_y	-22.21	0.00	1.27	0.00	▷ 0.16	-0.01	CO 2
220	RC1		1.000	MIN M_y	-22.21	0.00	-0.19	0.00	▷ -0.18	0.00	CO 2
175	RC1		0.000	MAX M_z	-0.06	0.01	-0.63	0.00	0.06	▷ 0.02	CO 2
239	RC1		0.000	MIN M_z	-22.27	-0.04	0.00	0.00	0.00	▷ -0.02	CO 2
	Section No. 18: QRO 60x4 | DIN 59410:1974 (Gurt_Fachwerkträger)										
197	RC1		0.000	MAX N	▷ 27.74	0.00	0.00	0.00	0.00	0.00	CO 2
210	RC1		0.000	MIN N	▷ -30.71	0.00	0.00	0.00	0.00	0.00	CO 2
171	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
171	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
171	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
221	RC1		0.000	MAX M_T	-1.46	0.00	0.00	▷ 0.00	0.00	0.00	CO 2
171	RC1		0.000	MIN M_T	-1.36	0.00	0.00	▷ -0.01	0.00	0.00	CO 2
171	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
171	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
171	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
171	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 19: Rundstahl 15 (Diagonale_FWT)										
288	RC1		0.000	MAX N	▷ 29.34	0.00	0.00	0.00	0.00	0.00	CO 2
173	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
173	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
173	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
173	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
173	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
173	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
173	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
173	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
173	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
173	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
173	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

LAGERREAKTIONEN

RC1 : minmax
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric

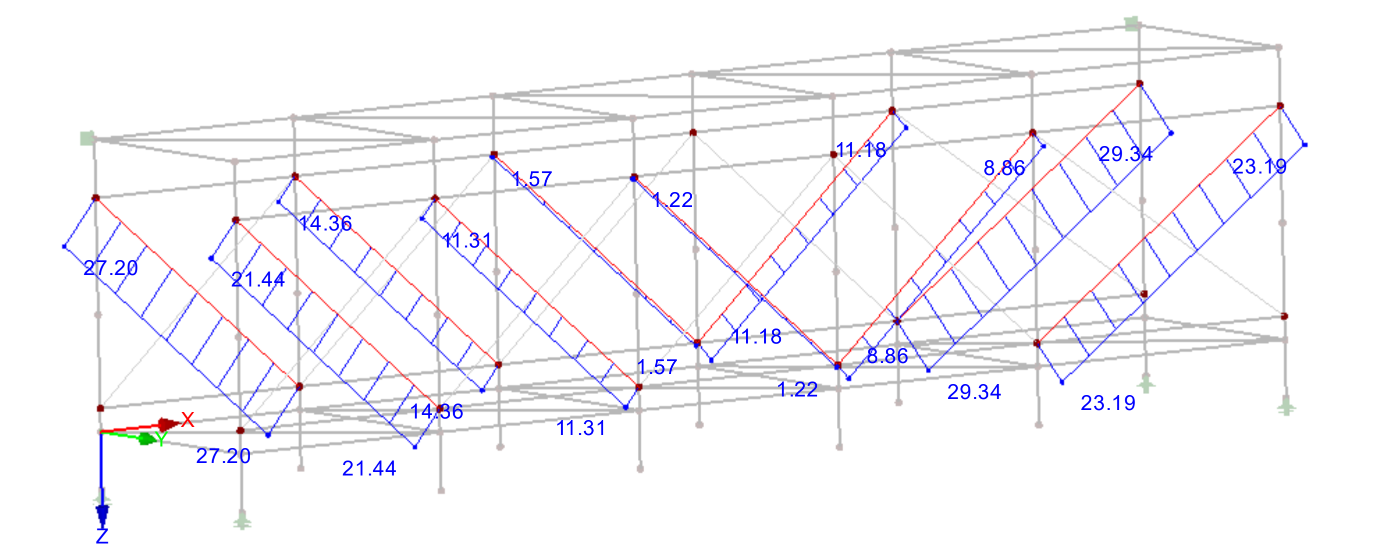


Max P-X': 0.02, Min P-X': -0.02 kN
Max P-Y': 0.04, Min P-Y': -0.05 kN
Max P-Z': 22.28, Min P-Z': 0.00 kN

DIAGONALEN FACHWERKTRÄGER

RC1 : minmax
Schnittgrößen N
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric

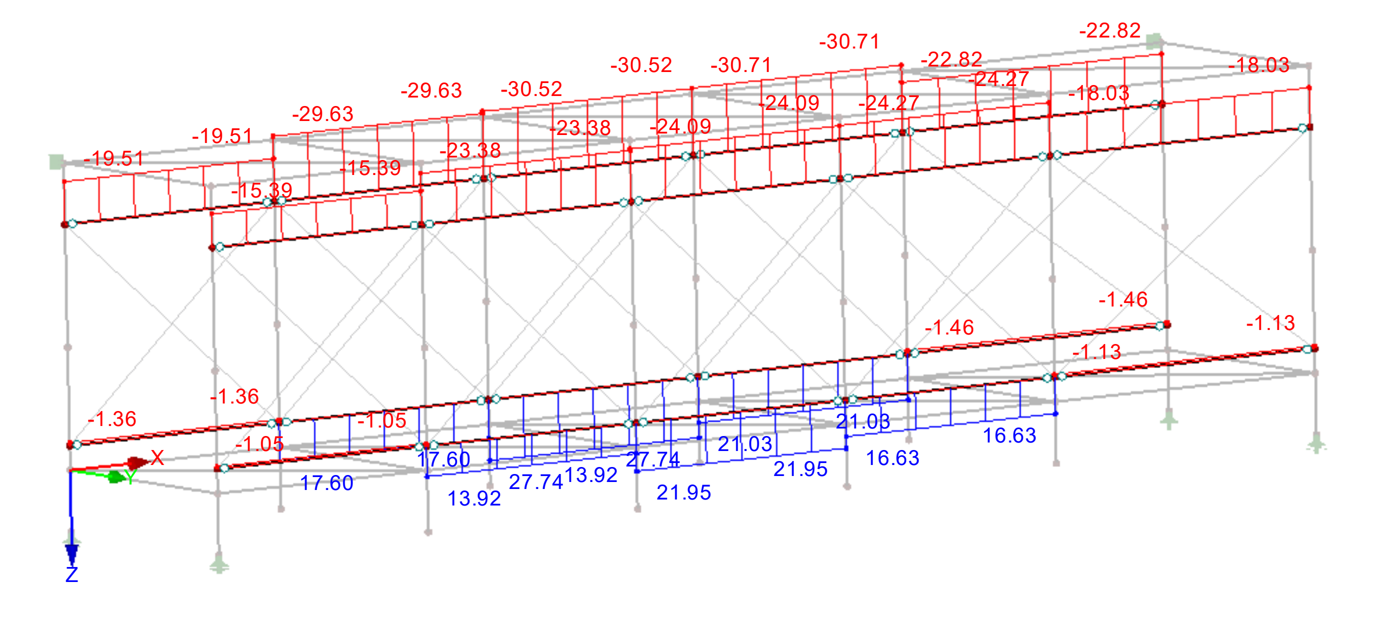


Max N: 29.34, Min N: 0.00 [kN]

GURTE FACHWERKTRÄGER

RC1 : minmax
Schnittgrößen N
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric

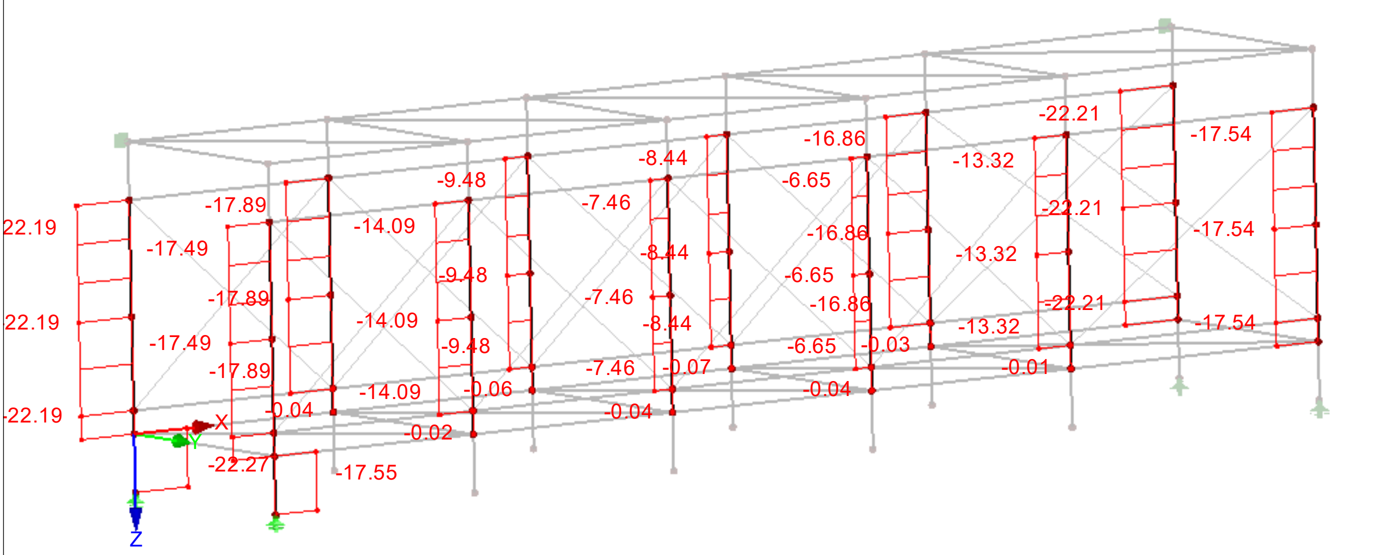


Max N: 27.74, Min N: -30.71 [kN]

STIELE FACHWERKTRÄGER

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric

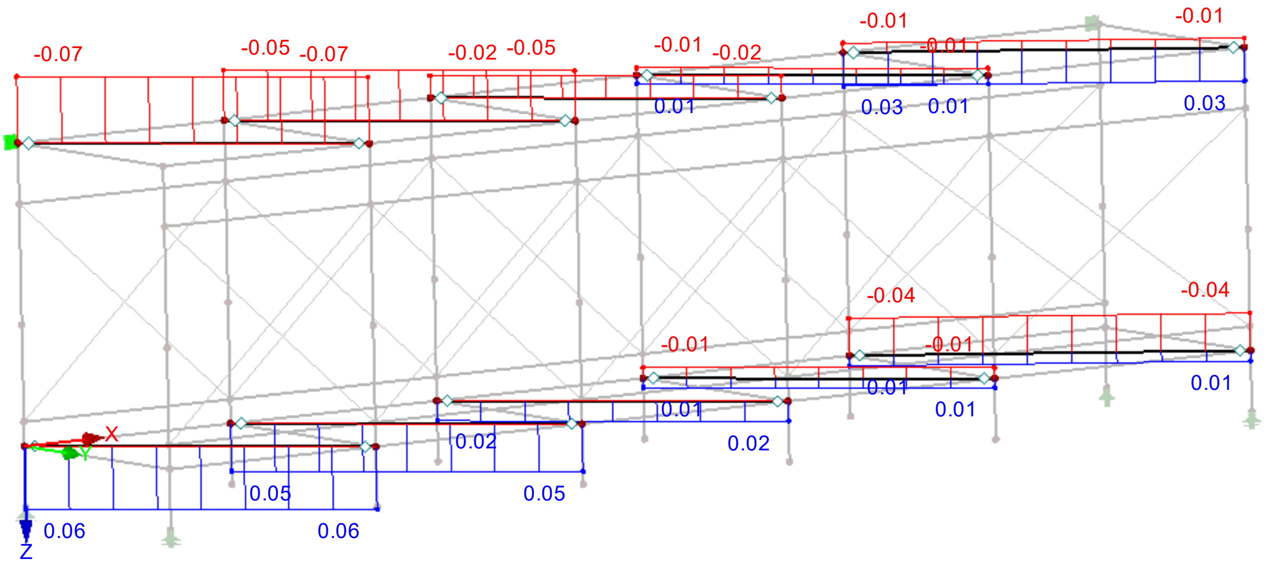


Max N: 0.00, Min N: -22.27 [kN]

DIAGOANLEN AR-GERÜST

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric

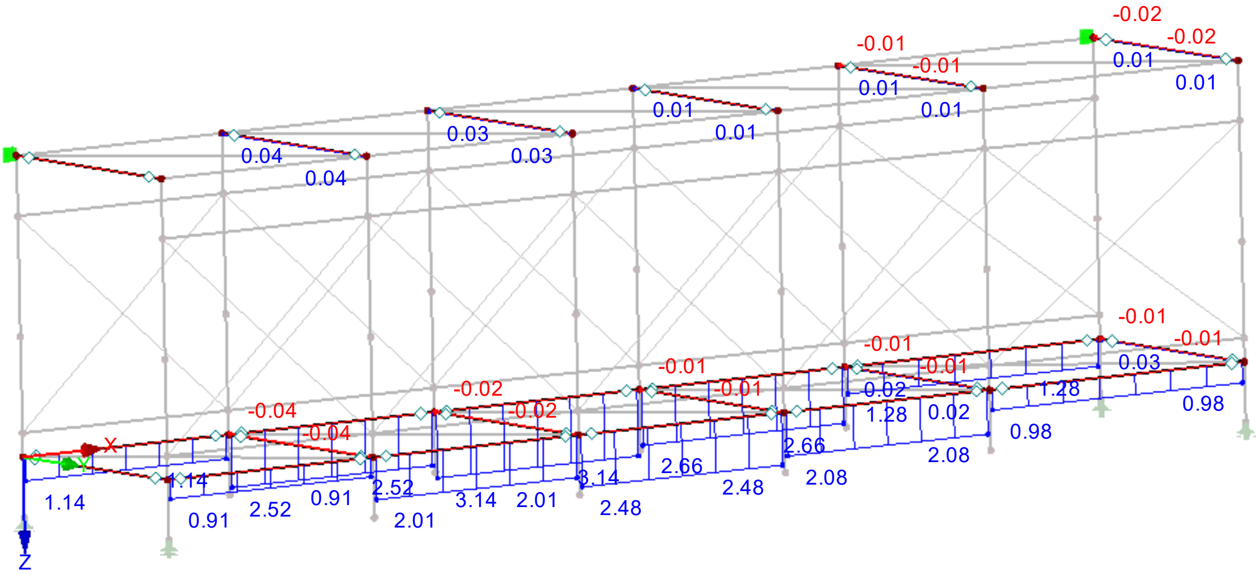


Max N: 0.06, Min N: -0.07 [kN]

RIEGEL AR - GERÜST

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 3.14, Min N: -0.04 [kN]

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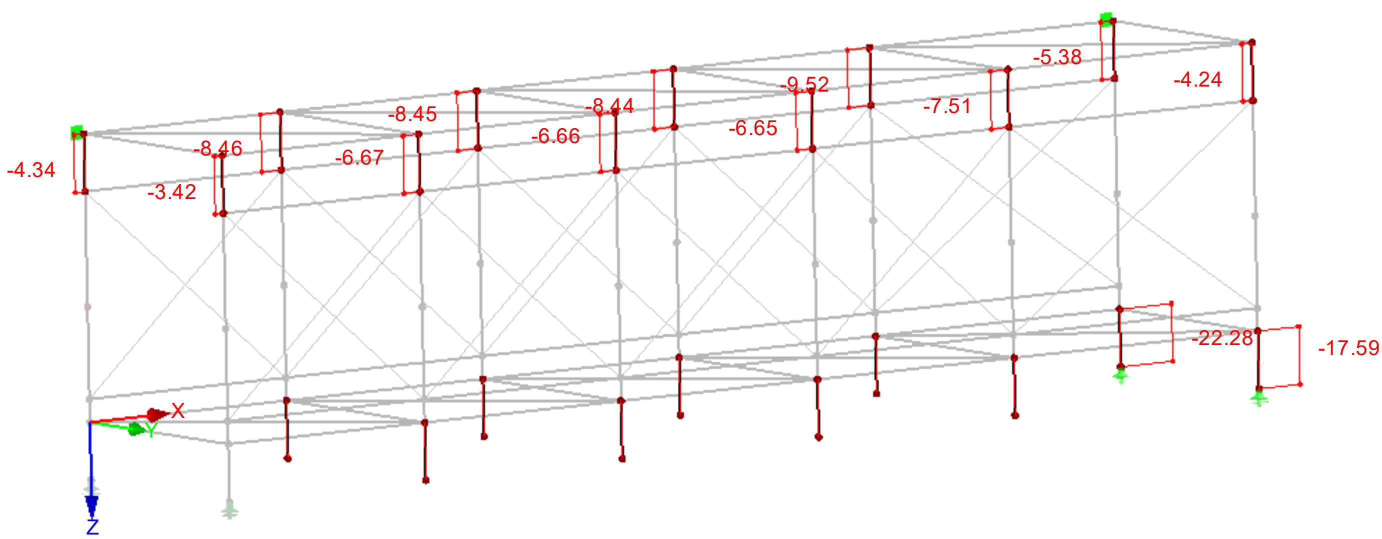
STIELE AR - GERÜST

RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max N: 0.00, Min N: -22.28 [kN]

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Upper FW chord

Nd= -31 kN

H=150cm, 2,07m-Feld

N,Rd= -123 kN eta= 0,25 < 1,0

Lower FW chord

Nd= 22 kN

H=150cm, 2,07m-Feld

N,Rd= 123,4 kN eta= 0,18 < 1,0

FW Diagonal

Nd= 24 kN

H=150cm, 2,07m-Feld

N,Rd= 103 kN eta= 0,23 < 1,0

FW post

Nd= -20 kN

Stütze unter zentrischer Druckbeanspruchung:

Nachweis: **Nd < NK,Rd** SIA 263, Abs. 4.5.1

mit: Nd=Bemessungslast=gammaFxN
NK,Rd=Knicklast des Stabes=kappa * fy *A / gamma,m1

gammaF= 1,00 N= 20,00 kN
sk= 1,80 m

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Stütze	Rohr	D=	48,3 mm			
		t=	4 mm			
	A=	5,57 cm²		fy=	355 N/mm²	
				Siehe Auszug aus Zulassung		
	I=	13,77 cm^4		gammaM=	1,05	
	i=	1,57 cm		epsilon²=	0,66	
Verhältnis d/t		12 <		50 * epsilc	33	Klasse 1
		Klasse 1		70 * epsilc	46	Klasse 2
			→	90 * epsilc	60	Klasse 3

Bemessungskraft

Nd=gamma,F x N= 20,00 kN

lamda,K=	114,5		
lamda,E=	76,4	→ fy=	355 N/mm²
lamda,bezogen=	1,50	→	
Knickspannungslinie:	c		kalt gefertigt
alpha=		0,34	
phi=	1,84		
kappa=	0,34		

Npl=A*fy/gammaM= 188,21 kN

NK,Rd=kappa * A * fy / gamma,m1= 65 kN

Nachweis: NEd/NK,RD < 1,00

0,31 < 1,00

OK

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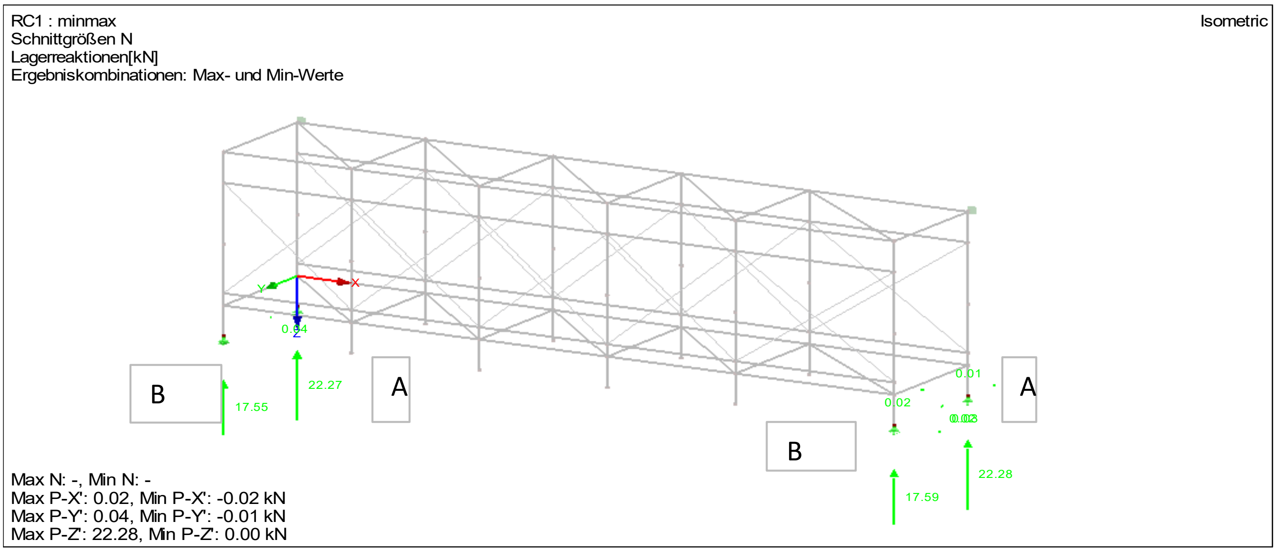
Reaction force



	A,k [kN]	B,k [kN]
EG	7	7
LL	6	6
Snow	5	3
design	23	18

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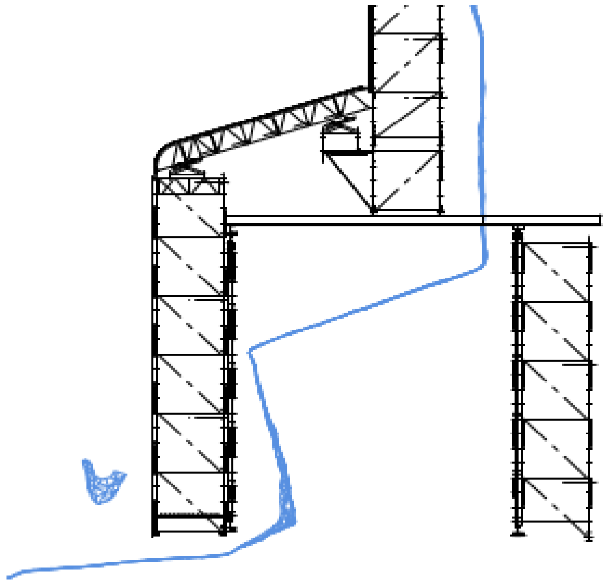
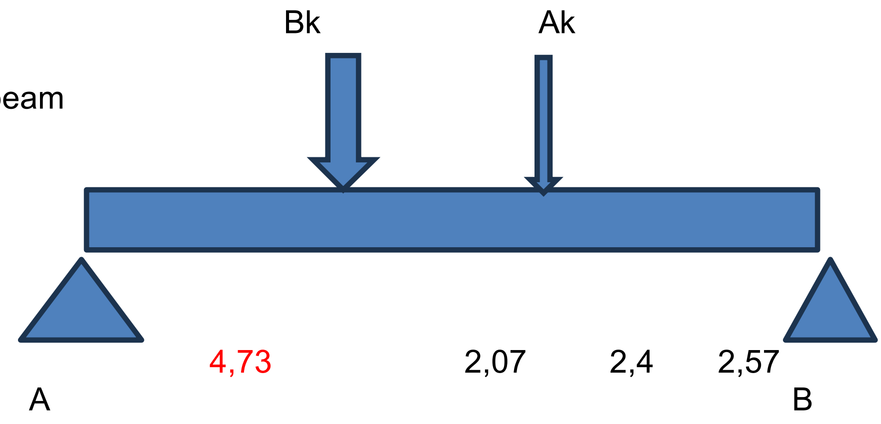
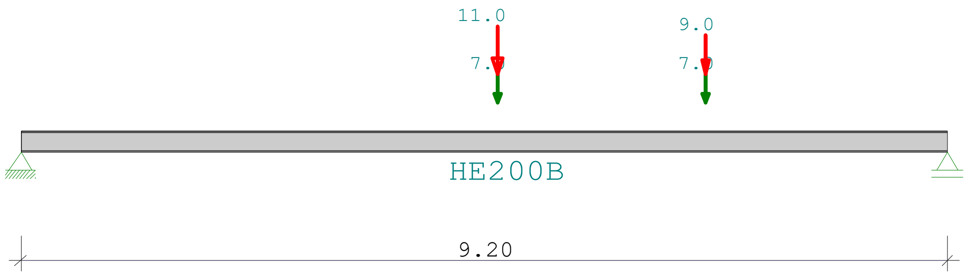


Steel beam



Position: Monestary-Gelati--Steel-beam-stabel wall

Durchlaufträger DLT10 02/2022/B (FRILO R-2023-2/P04)
Maßstab 1 : 75



Stahlträger S235 DIN EN 1993-1-1/NA:2015-08
E-Modul E =210000 N/mm2

System	Länge		Querschnittswerte				
Feld	L (m)		QNr.	I (cm4)	Wo (cm3)	Wu (cm3)	
1	9.200	konstant	1	5700.0	570.0	570.0	HE200B

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a
3=Einzelmoment bei a 4=Trapezlast von a - a+b
5=Dreieckslast über L 6=Trapezlast über L

Feld	Typ	EG Gr	g_l/r	q_l/r	Faktor	Abstand	Länge	ausPOS	Phi
1	2	A	7.000	11.000	1.000	4.730			
	2	A	7.000	9.000	1.000	6.800			

Eigengewicht des Trägers ist mit Gamma = 78.5 kN/m3 berücksichtigt.

Einwirkungen:

Nr	Kl	Bezeichnung	ψ0	ψ1	ψ2	γ
A	1	Wohnräume	0.70	0.50	0.30	1.50

Schadensfolgeklasse CC 2 nach EN 1990 Tab. B1 -> K_{Fi} = 1.0 Tab. B3
In den folgenden Tabellen steht am Ende der Zeilen ein Verweis auf die Nummer der zug. Überlagerung (siehe unten).
In Tabellen mit Gammafachen Schnittgrößen steht zusätzlich ein Verweis auf die Leiteinwirkung.

Ergebnisse für 1-fache Lasten

Feldmomente Maximum (kNm , kN)

Feld		Mf	M li	M re	V li	V re	komb
1	x0 = 4.731	67.59	0.00	0.00	15.74	-23.90	2

Stützmomente Maximum (kNm , kN)

Stütze	M li	M re	V li	V re	max F	min F	komb
1	0.00	0.00	0.00	15.74	15.74	8.05	2
2	0.00	0.00	-23.90	0.00	23.90	11.59	2

Auflagerkräfte						(kN)
Stütze	aus g	max q	min q	Vollast	max	min
1	8.05	7.69	0.00	15.74	15.74	8.05
2	11.59	12.31	0.00	23.90	23.90	11.59
Summe:	19.64	20.00	0.00	39.64	39.64	19.64

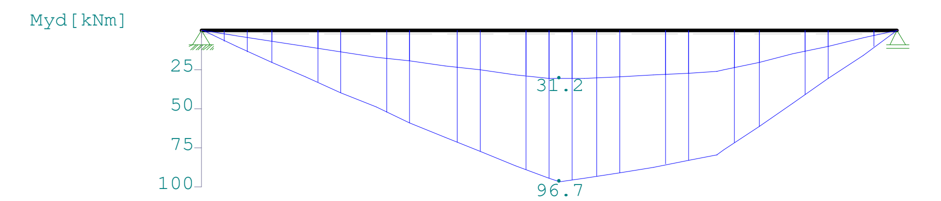
Auflagerkräfte				(kN)
	Stütze 1		Stütze 2	
EG	max	min	max	min
g	8.0	8.0	11.6	11.6
A	7.7	0.0	12.3	0.0
Sum	15.7	8.0	23.9	11.6

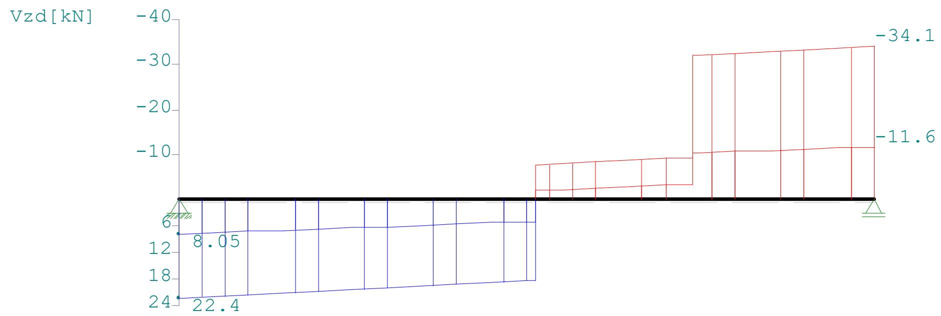
Ergebnisse für γ-fache Lasten
Teilsicherheitsbeiwert γG * K_{Fi} = 1.35 über Trägerlänge konstant

Feldmomente Maximum							(kNm , kN)
Feld		Mfd	Mdli	Mdre	V li	V re	komb
1	x0 = 4.731	96.70	0.00	0.00	22.40	-34.11	A 2

Stützmomente Maximum							(kNm , kN)
Stütze	Mdli	Mdre	Vdli	Vdre	max F	min F	komb
1	0.00	0.00	0.00	22.40	22.40	8.05	A 2
2	0.00	0.00	-34.11	0.00	34.11	11.59	A 2

Maßstab 1 : 100





Querschnitte S235		fyk =	235 N/mm2			
Art	Name	Npl	Mplyd	Vplzd	Mplzd	Vplyd
4	HE200B	1835	151	337	72	814

Nachweis nach DIN EN 1993-1-1/NA:2015-08 6.2.1 (6.1) γM0 = 1.00

Feld Nr.	x (m)	QNr.	My,ed (kNm)	Vz,ed (kN)	σv (N/mm2)	τ	QKL	η	komb
1	0.000	1	0.0	22.4	24	14	1	0.10	A 2
	4.729	1	96.7	18.5	170	3	1	0.72	A 2
	4.731	1	96.7	-7.5	170	1	1	0.72	A 2
	6.799	1	79.5	-9.2	139	1	1	0.59	A 2
	6.801	1	79.5	-32.1	140	5	1	0.59	A 2
	9.200	1	0.0	-34.1	36	21	1	0.15	A 2

Nachweis nach DIN EN 1993-1-1/NA:2015-08 6.2.1 (6.2) γM0 = 1.00

Feld Nr.	x (m)	My,ed (kNm)	Vz,ed (kN)	QKL (-)	ρ (-)	M,Rd (kNm)	η	komb
1	0.000	0.0	22.4	1	0.00	151.3	0.07	A 2
	4.729	96.7	18.5	1	0.00	151.3	0.64	A 2
	4.731	96.7	-7.5	1	0.00	151.3	0.64	A 2
	6.799	79.5	-9.2	1	0.00	151.3	0.53	A 2
	6.801	79.5	-32.1	1	0.00	151.3	0.53	A 2
	9.200	0.0	-34.1	1	0.00	151.3	0.10	A 2

Biegedrillknicken nach DIN EN 1993-1-1/NA:2015-08 Gl.6.54, Anhang B
Der Druckgurt ist mindestens in Feldmitte gehalten.
Biegedrillknicken nach DIN EN 1993-1-1/NA:2015-08 Gl.6.54, Anhang B
Die Lasten sind OK Balken angesetzt.

Feld Nr.	MEd,y (	MRk,y kNm)	λlt	κlt	γM	Eta	komb
1	96.71	151.31	0.56	0.94	1.10	0.75	A 2

Zulässige Durchbiegungen : im Feld zul f = L / 300
charakteristische Kombination

Feld Nr.	x (m)	fg (cm)	ftot (cm)	f (cm)	zulf (cm)	η	komb
1	4.731	2.10	4.47	4.466	3.067	**1.46!!**	2

In der folgenden Tabelle sind die Lasten mit der internen Numerierung angegeben. Die anschließende Tabelle der gerechneten Kombinationen referenziert auf diese Nummern.

Belastung (kN,m) Lasttyp: 1=Gleichlast über L 2=Einzellast bei a
3=Einzelmoment bei a 4=Trapezlast von a - a+b
5=Dreieckslast über L 6=Trapezlast über L

Nr.	Feld	Typ	Grp	g1	q1	g2	q2	Faktor	Abstand	Länge
1	1	2	A 1	7.00	11.00			1.00	4.73	
2		2	A 1	7.00	9.00			1.00	6.80	

Gerechnete Kombinationen aus 2 Lasten

Last	K1	K2
	g	g
1	.	x
2	.	x

Die vorstehenden Kombinationen werden wie folgt bearbeitet:
Beim Nachweis der Tragsicherheit werden die ständigen Lasten
alle gleichzeitig alternierend mit GammaG = 1,00 / 1,35 beaufschlagt.
Wenn in einer Kombination p-Lasten aus unterschiedlichen Einwirkungen
vorhanden sind, dann wird jeweils untersucht, welche Einwirkung die
Leiteinwirkung ist.
Die Auswirkung der Lasteinwirkungsdauer wird ebenfalls geprüft.

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Steel Beam HEB 200 S235

eta= 0,72 < 1,0

Reaction forces

A,g,k= 8,00 kN
A,q,k= 8,00 kN

AR - Standard

B,g,k= 12,00 kN
B,q,k= 13,00 kN

Heavy duty - tower

2 Column heavy duty support

Nd = 40 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

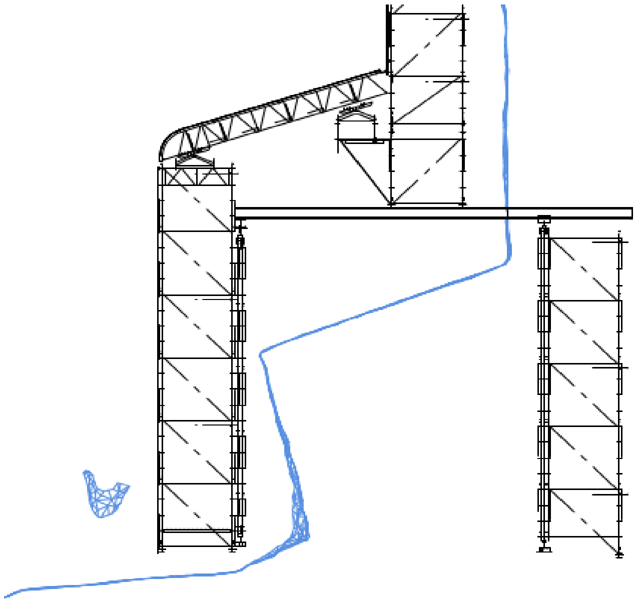
Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 21,815 kN

a= 0,7 m
b= 0,7 m

sigma= 45 kN/m²

Pos.10: Gable Wall - 1



Kutaisi, Georgie

25,9 m/s

q= 0,4193 kN/m²

Windzone 3

qb,o= 0,47 kN/m²
z= 14 m
qp= 0,90 kN/m²

force coefficent cf= 0,8
time coefficient ct= 0,7
b= 2,07 m

q,k= 1,05 kN/m

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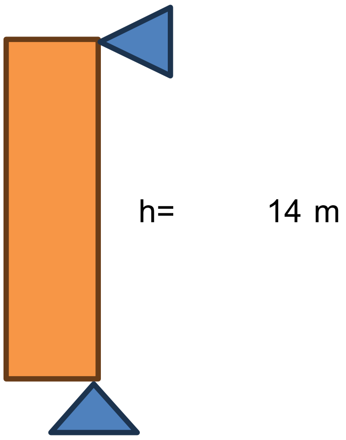


Md= 1,5*q,k * h^2/8= 38,6 kNm

Z=-D= Md / 2,07= 18,6 kN < NRd

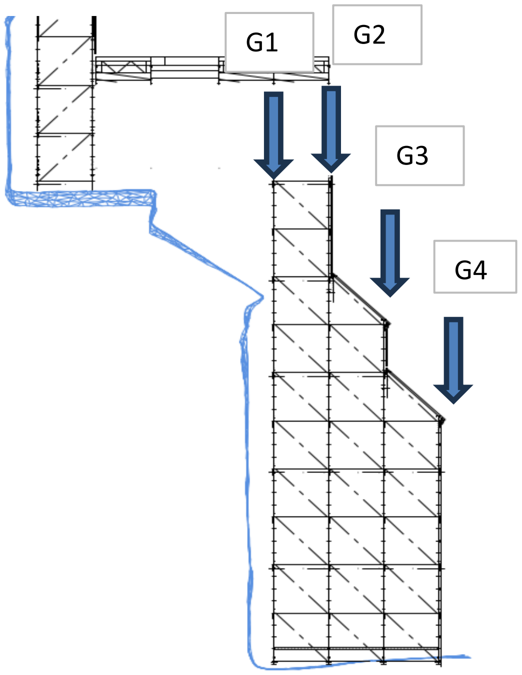
Vd= 1,5 * q,k * h/2= 11,01 kN

Diagonal: Dd=Vd * 1,42= 15,64 kN < DRd

Pressure bearing

Ad= 11 kN

Pos.11: Gable Wall - 2



Dead load:

G1=	3 kN
G2=	6 kN
G3=	6 kN
G4=	3 kN

Ballast

B1=	10 kN
B2=	20 kN

Kutaisi, Georgie

25,9 m/s

q= 0,4193 kN/m²

Windzone 3

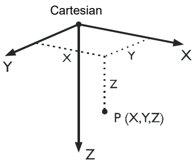
	qb,o=	0,47 kN/m²		
	z=	22 m		
	qp=	1,07 kN/m²		
force coefficent			cf=	0,8
time coefficient			ct=	0,7
			b=	2,07 m
			q,k=	1,24 kN/m
	qb,o=	0,47 kN/m²		
	z=	22 m		
	qp=	1,07 kN/m²		
force coefficent			cf=	-0,5
time coefficient			ct=	0,7
			b=	2,07 m
			q,k=	-0,77 kN/m

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-1-SW1
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES



Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
173	-	Cartesian	0.000	18.890	24.000	Supported
174	-	Cartesian	0.000	18.890	22.000	Supported
175	-	Cartesian	0.000	18.890	20.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
177	-	Cartesian	0.000	16.820	22.000	Supported
178	-	Cartesian	0.000	16.820	20.000	Supported
179	-	Cartesian	0.000	18.890	18.000	Supported
180	-	Cartesian	0.000	16.820	18.000	Supported
182	-	Cartesian	0.000	16.820	16.000	Supported
184	-	Cartesian	0.000	16.820	14.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
210	-	Cartesian	0.000	14.750	22.000	Supported
211	-	Cartesian	0.000	14.750	20.000	Supported
212	-	Cartesian	0.000	14.750	18.000	Supported
213	-	Cartesian	0.000	14.750	16.000	Supported
214	-	Cartesian	0.000	14.750	14.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
217	-	Cartesian	0.000	14.750	12.000	Supported
219	-	Cartesian	0.000	14.750	10.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
222	-	Cartesian	0.000	14.750	8.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
258	-	Cartesian	0.000	12.680	22.000	Supported
259	-	Cartesian	0.000	12.680	20.000	Supported
260	-	Cartesian	0.000	12.680	18.000	Supported
261	-	Cartesian	0.000	12.680	16.000	Supported
262	-	Cartesian	0.000	12.680	14.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
265	-	Cartesian	0.000	12.680	12.000	Supported
267	-	Cartesian	0.000	12.680	10.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
270	-	Cartesian	0.000	12.680	8.000	Supported

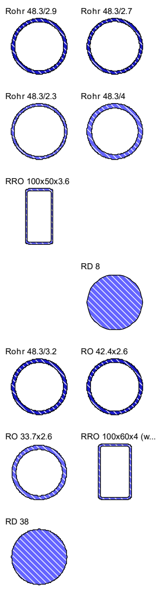
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Node Coordinates Y [m]	Node Coordinates Z [m]	Comment
275	-	Cartesian	0.000	12.680	30.000	Supported

1.2 MATERIALS

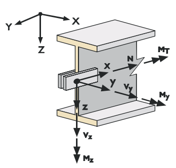
Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40 4.14	10.70 2.07	10.70 2.07	0.00	0.00	48.3	48.3
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18 3.87	10.09 1.92	10.09 1.92	0.00	0.00	48.3	48.3
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63 3.32	8.81 1.65	8.81 1.65	0.00	0.00	48.3	48.3
	Diagonale							
4	Rohr 48.3/4							
	1	27.54 5.57	13.77 2.77	13.77 2.77	0.00	0.00	48.3	48.3
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00 10.20	129.00 2.22	42.90 6.38	0.00	0.00	50.0	100.0
6	spindel spindel							
	1	1.00 3.84	3.74 2.00	3.74 2.00	0.00	0.00	0.0	0.0
7	GI-KDXL Kederdach XL							
	1	1.00 17.00	20900.00 9.00	20900.00 9.00	0.00	0.00	50.0	1000.0
8	RD 8 | DIN 1013-1							
	1	0.04 0.50	0.02 0.42	0.02 0.42	0.00	0.00	8.0	8.0
9	Rohr 48.3/3.2							
	2	23.17 4.53	11.59 2.26	11.59 2.26	0.00	0.00	48.3	48.3
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93 3.25	6.46 1.62	6.46 1.62	0.00	0.00	42.4	42.4
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19 2.54	3.09 1.27	3.09 1.27	0.00	0.00	33.7	33.7
	Diagonale_TG60							
12	RRO 100x60x4 (warmgefertigt)							
	1	156.00 12.00	158.00 3.23	70.50 6.98	0.00	0.00	60.0	100.0
13	RD 38							
	1	20.47 11.30	10.24 9.49	10.24 9.49	0.00	0.00	38.0	38.0

1.4 MEMBER HINGES



Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

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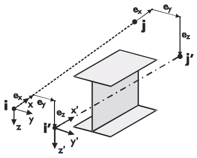
1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

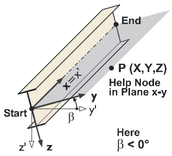


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
471	Beam	177	174	Angle	0.00	2	2	1	1	1	-	2.020	Y
472	Beam	178	175	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	180	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
481	Beam	174	173	Angle	90.00	1	1	-	-	-	-	2.000	Z
482	Beam	175	174	Angle	90.00	1	1	-	-	-	-	2.000	Z
483	Beam	179	175	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
486	Beam	177	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
487	Beam	178	177	Angle	90.00	1	1	-	-	-	-	2.000	Z
488	Beam	180	178	Angle	90.00	1	1	-	-	-	-	2.000	Z
489	Beam	182	180	Angle	90.00	1	1	-	-	-	-	2.000	Z
491	Beam	184	182	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
496	Beam	177	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
497	Beam	178	174	Angle	0.00	3	3	2	2	2	-	2.723	YZ
498	Beam	180	175	Angle	0.00	3	3	2	2	2	-	2.723	YZ
499	Beam	182	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
601	Beam	210	177	Angle	0.00	2	2	1	1	1	-	2.020	Y
602	Beam	211	178	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	212	180	Angle	0.00	2	2	1	1	1	-	2.020	Y
604	Beam	213	182	Angle	0.00	2	2	1	1	1	-	2.020	Y
605	Beam	214	184	Angle	0.00	2	2	1	1	1	-	2.020	Y
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
609	Beam	210	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
610	Beam	211	210	Angle	90.00	1	1	-	-	-	-	2.000	Z
611	Beam	212	211	Angle	90.00	1	1	-	-	-	-	2.000	Z
612	Beam	213	212	Angle	90.00	1	1	-	-	-	-	2.000	Z
613	Beam	214	213	Angle	90.00	1	1	-	-	-	-	2.000	Z
614	Beam	217	214	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
616	Beam	219	217	Angle	90.00	1	1	-	-	-	-	2.000	Z
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
619	Beam	210	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
620	Beam	211	177	Angle	0.00	3	3	2	2	2	-	2.723	YZ
621	Beam	212	178	Angle	0.00	3	3	2	2	2	-	2.723	YZ
622	Beam	213	180	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
624	Beam	214	182	Angle	0.00	3	3	2	2	2	-	2.723	YZ
625	Beam	217	184	Angle	0.00	3	3	2	2	2	-	2.723	YZ
627	Beam	222	219	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ

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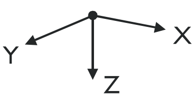
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	Rotation β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
711	Beam	258	210	Angle	0.00	2	2	1	1	1	-	2.020	Y
712	Beam	259	211	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	260	212	Angle	0.00	2	2	1	1	1	-	2.020	Y
714	Beam	261	213	Angle	0.00	2	2	1	1	1	-	2.020	Y
715	Beam	262	214	Angle	0.00	2	2	1	1	1	-	2.020	Y
716	Beam	265	217	Angle	0.00	2	2	1	1	1	-	2.020	Y
717	Beam	267	219	Angle	0.00	2	2	1	1	1	-	2.020	Y
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
719	Beam	258	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
720	Beam	259	258	Angle	90.00	1	1	-	-	-	-	2.000	Z
721	Beam	260	259	Angle	90.00	1	1	-	-	-	-	2.000	Z
722	Beam	261	260	Angle	90.00	1	1	-	-	-	-	2.000	Z
723	Beam	262	261	Angle	90.00	1	1	-	-	-	-	2.000	Z
724	Beam	265	262	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
726	Beam	267	265	Angle	90.00	1	1	-	-	-	-	2.000	Z
727	Beam	270	222	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
729	Beam	258	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
730	Beam	259	210	Angle	0.00	3	3	2	2	2	-	2.723	YZ
731	Beam	260	211	Angle	0.00	3	3	2	2	2	-	2.723	YZ
732	Beam	261	212	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
734	Beam	262	213	Angle	0.00	3	3	2	2	2	-	2.723	YZ
735	Beam	265	214	Angle	0.00	3	3	2	2	2	-	2.723	YZ
736	Beam	267	217	Angle	0.00	3	3	2	2	2	-	2.723	YZ
737	Beam	270	267	Angle	90.00	1	1	-	-	-	-	2.000	Z
738	Beam	270	219	Angle	0.00	3	3	2	2	2	-	2.723	YZ
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ

1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	Rotation [°] about Y	Rotation [°] about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	275	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☒	☒
	173-180,182,184,185,188,191,194,209-215,217,219,221,222,258,259,261-263,267,269											
4	203,206,227	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Ineffective	☐	☐	☒
5	257,260, 265,270	XYZ	0.00	0.00	0.00	☐	☒	Spring	☐	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

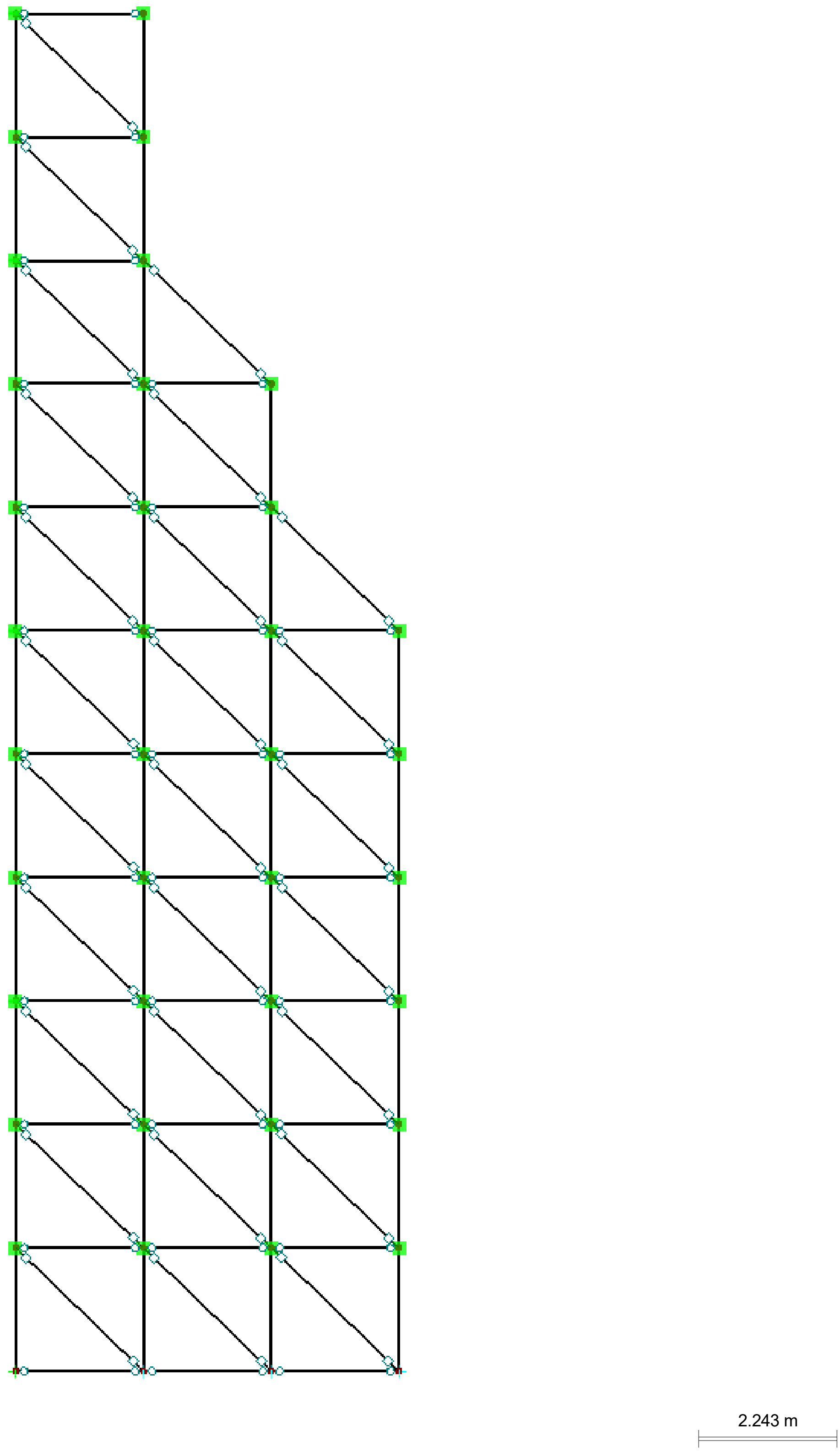
Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	275	5000.000	5000.000	4000.000	-	-	-
4	203,206,227	5000.000	5000.000	4000.000	-	-	-
5	257,260,265,270	-	100.000	-	-	-	-

1.8.3 NODAL SUPPORTS - INEFFECTIVE

Support No.	Nodes No.	Ineffective Support Under $P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$
4	203,206,227	-	-	Failure if -P	-	-	-

MODEL

In X-direction



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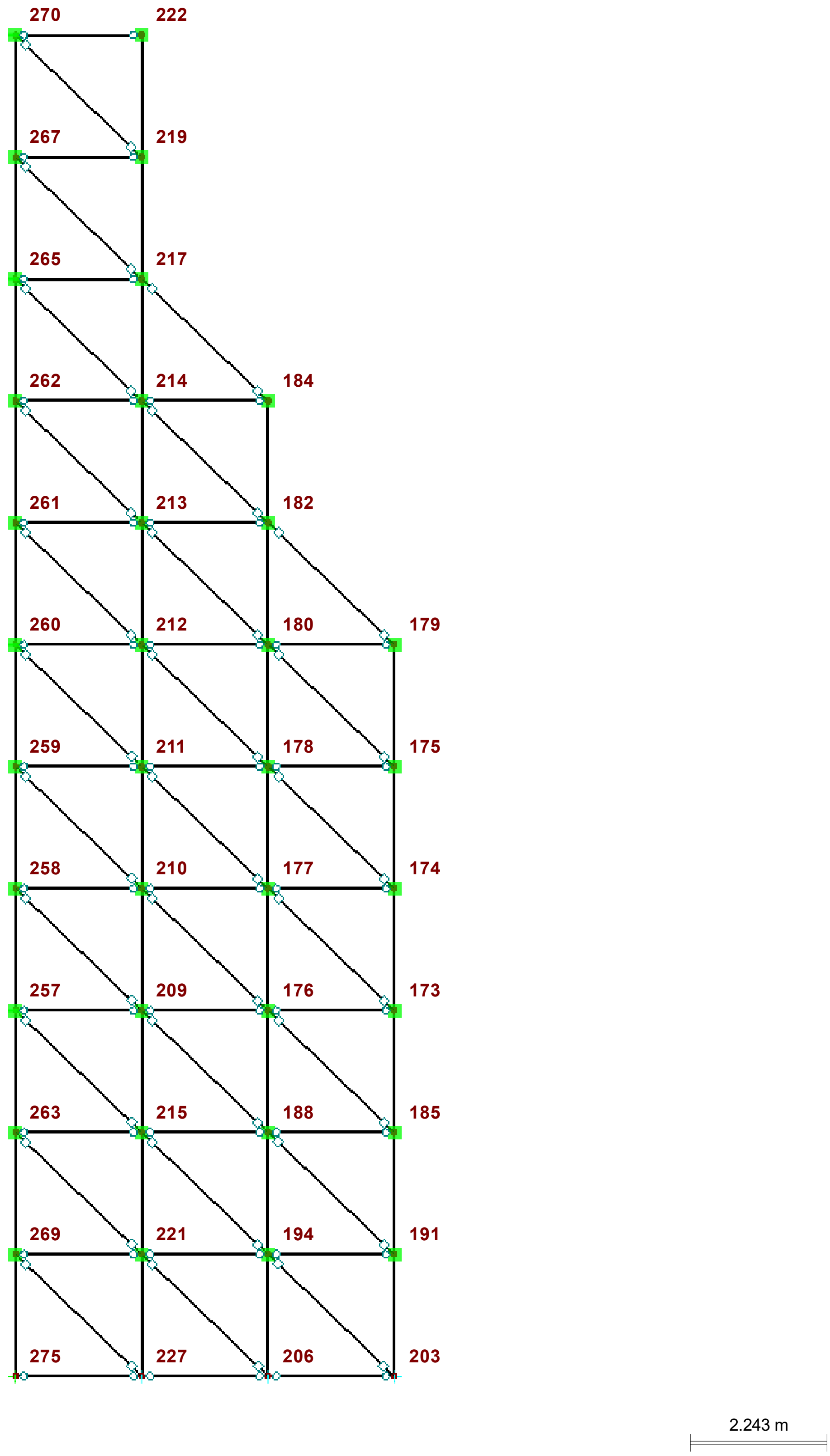
MODEL

Node Numbering

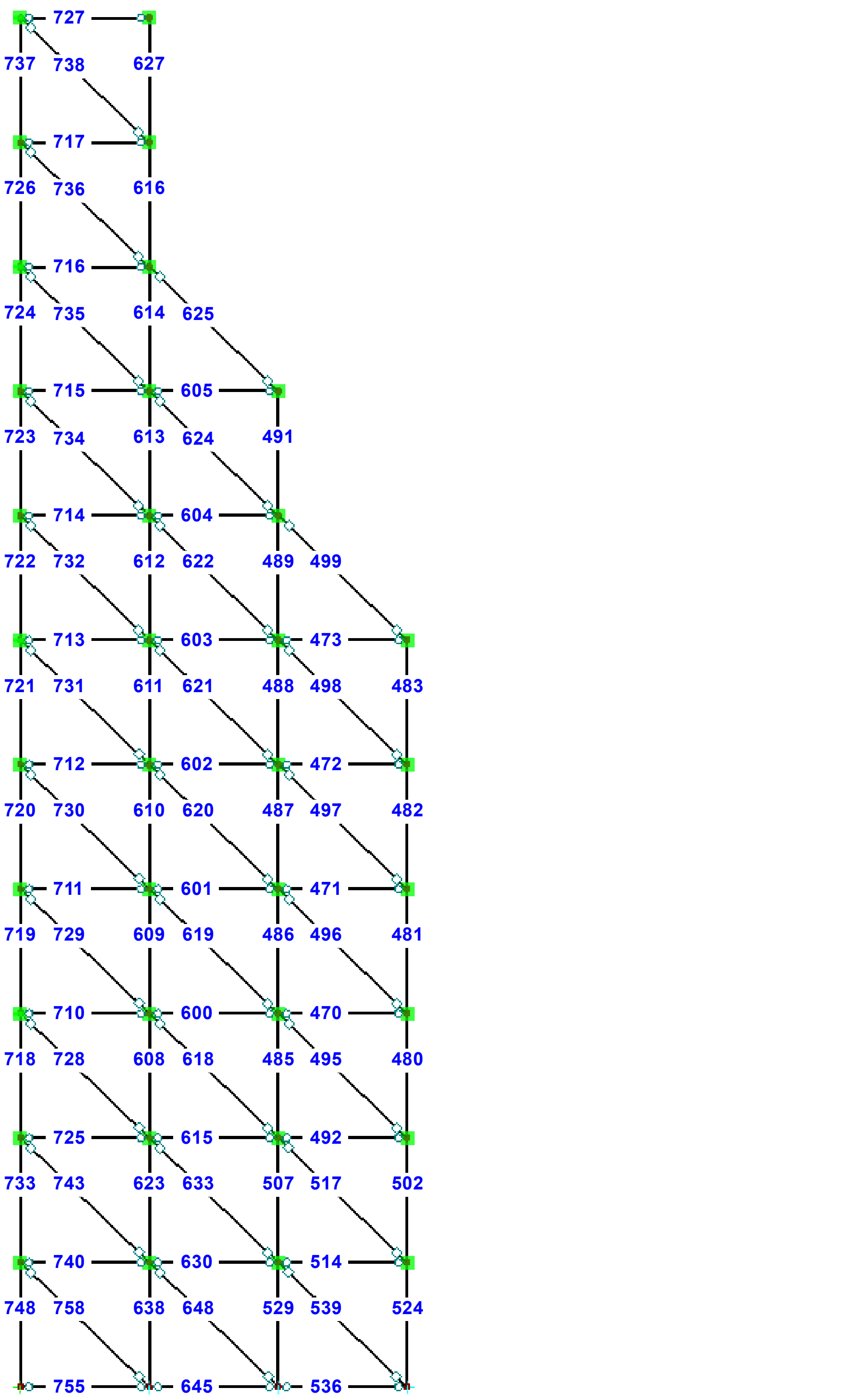
In X-direction



MODEL

Member Numbering

In X-direction



2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Wind 1	Wind	☐			
LC3	Wind 2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Wind 1	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Wind 2	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	0.90	LC1	EG
			2	1.50	LC2	Wind 1
CO2		Bem-2	1	0.90	LC1	EG
			2	1.50	LC3	Wind 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2

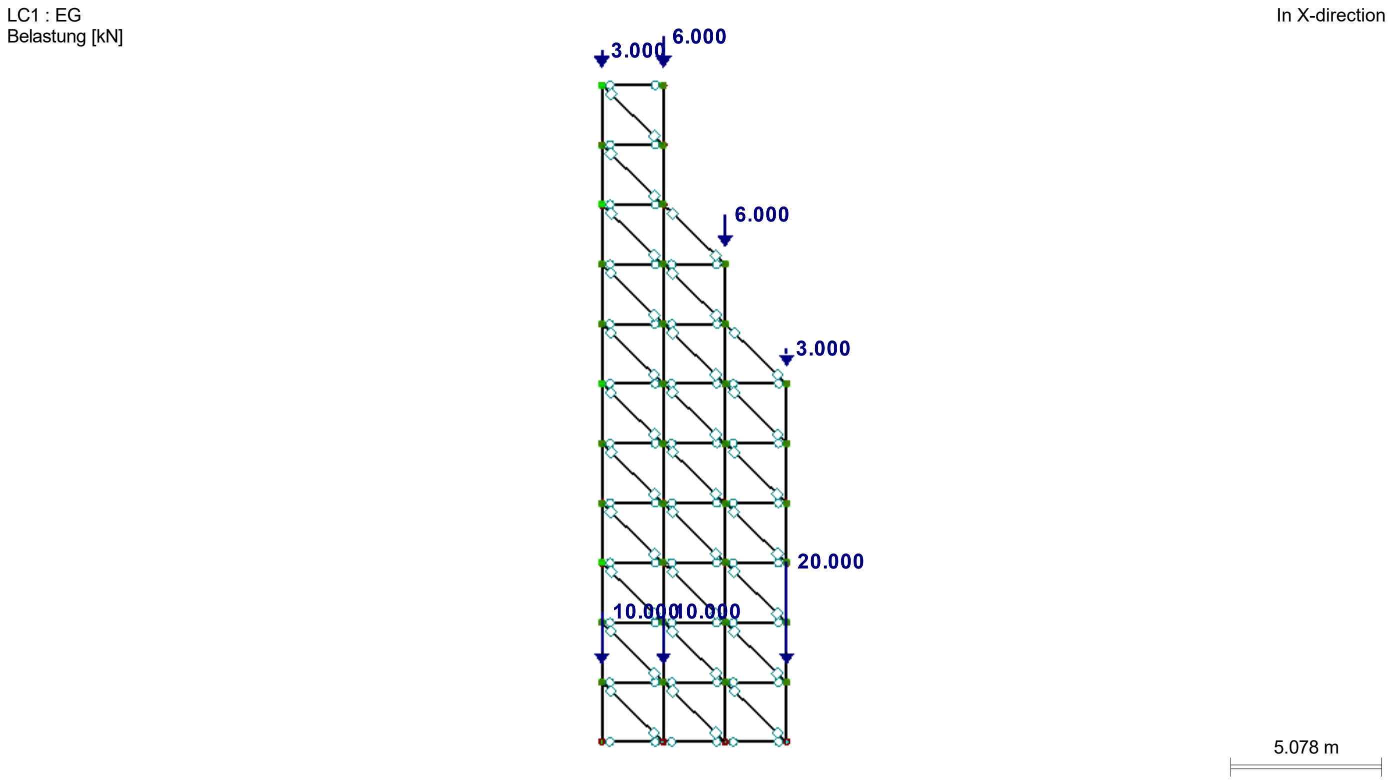
3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

LC1
EG

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	179,270	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
2	184,222	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000
3	221,269	0 | Global XYZ	0.000	0.000	10.000	0.000	0.000	0.000
4	191	0 | Global XYZ	0.000	0.000	20.000	0.000	0.000	0.000

LC1: EG



LC2
Wind 1

3.2 MEMBER LOADS

LC2: Wind 1

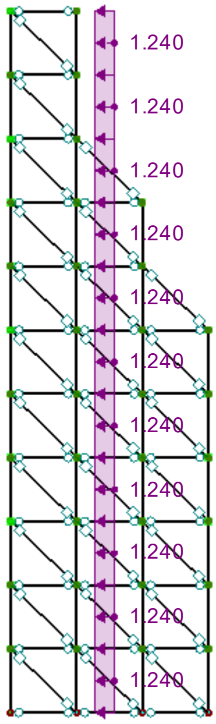
No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	608-614,616, 623,627,638	Force	Uniform	Y	True Length	p	-1.240	kN/m

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

LC2: WIND 1

LC2 : Wind 1
Belastung [kN/m]

In X-direction



LC3
Wind 2

3.2 MEMBER LOADS

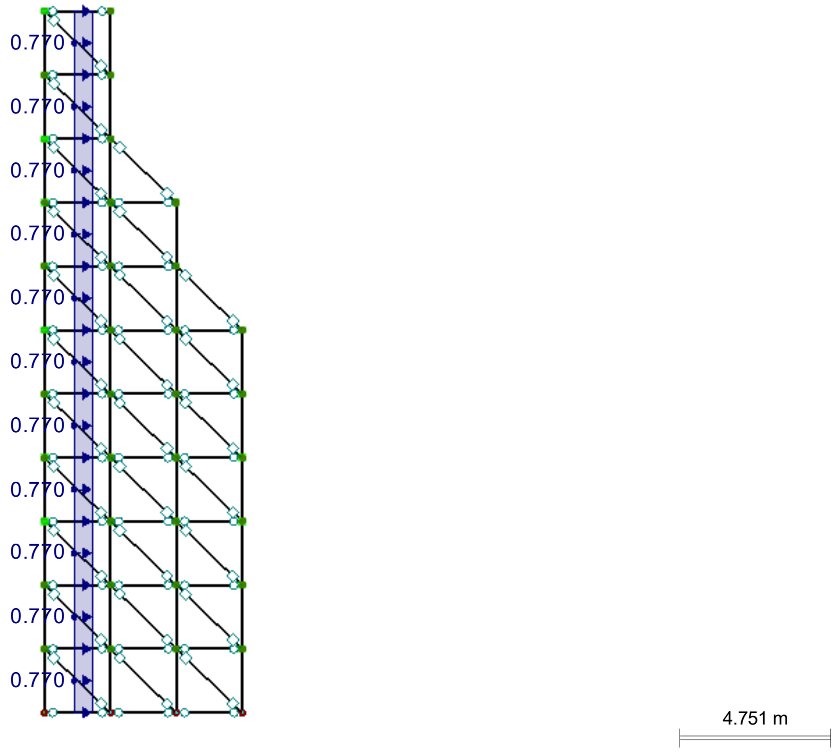
LC3: Wind 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	608-614,616, 623,627,638	Force	Uniform	Y	True Length	p	0.770	kN/m

LC3: WIND 2

LC3 : Wind 2
Belastung [kN/m]

In X-direction



■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - EG			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	58.00	kN	
	Sum of support reactions in Z	58.00	kN	Deviation 0.00%
	Resultant of reactions about X	44.32	kNm	At center of gravity of model (X:-0.02, Y:15.38, Z:20.77 m)
	Resultant of reactions about Y	-0.93	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.1	mm	Member No. 524, x: 1.300 m
	Max displacement in Y	1.4	mm	Member No. 499, x: 0.000 m
	Max displacement in Z	5.6	mm	Member No. 483, x: 0.000 m
	Max vectorial displacement	5.6	mm	Member No. 483, x: 0.000 m
	Max rotation about X	1.3	mrad	Member No. 514, x: 1.010 m
	Max rotation about Y	-0.5	mrad	Member No. 536, x: 2.020 m
	Max rotation about Z	-0.2	mrad	Member No. 539, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC2 - Wind 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	-27.28	kN	
	Sum of support reactions in Y	-27.28	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	0.00	kN	
	Resultant of reactions about X	-48.31	kNm	At center of gravity of model (X:-0.02, Y:15.38, Z:20.77 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	-0.44	kNm	At center of gravity of model
	Max displacement in X	-1.0	mm	Member No. 737, x: 0.700 m
	Max displacement in Y	-62.7	mm	Member No. 614, x: 1.143 m
	Max displacement in Z	-21.9	mm	Member No. 539, x: 2.723 m
	Max vectorial displacement	62.9	mm	Member No. 614, x: 1.143 m
	Max rotation about X	-12.0	mrad	Member No. 638, x: 1.700 m
	Max rotation about Y	-3.2	mrad	Member No. 727, x: 0.000 m
	Max rotation about Z	-1.7	mrad	Member No. 738, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC3 - Wind 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	16.94	kN	
	Sum of support reactions in Y	16.94	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	0.00	kN	
	Resultant of reactions about X	30.00	kNm	At center of gravity of model (X:-0.02, Y:15.38, Z:20.77 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.27	kNm	At center of gravity of model
	Max displacement in X	-0.6	mm	Member No. 529, x: 1.300 m
	Max displacement in Y	32.0	mm	Member No. 613, x: 0.900 m
	Max displacement in Z	-3.1	mm	Member No. 758, x: 0.000 m
	Max vectorial displacement	32.0	mm	Member No. 613, x: 0.900 m
	Max rotation about X	6.8	mrad	Member No. 638, x: 1.600 m
	Max rotation about Y	2.0	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	1.0	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-40.92	kN	
	Sum of support reactions in Y	-40.92	kN	Deviation 0.00%
	Sum of loads in Z	52.20	kN	
	Sum of support reactions in Z	52.20	kN	Deviation 0.00%
	Max displacement in X	1.7	mm	Member No. 524, x: 1.300 m
	Max displacement in Y	-76.5	mm	Member No. 613, x: 0.900 m
	Max displacement in Z	10.0	mm	Member No. 758, x: 0.000 m
	Max vectorial displacement	76.8	mm	Member No. 613, x: 0.900 m
	Max rotation about X	-18.3	mrad	Member No. 638, x: 1.700 m
	Max rotation about Y	-5.7	mrad	Member No. 536, x: 2.020 m
	Max rotation about Z	-2.9	mrad	Member No. 539, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	3		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Sum of loads in Y	25.41	kN	
Sum of support reactions in Y	25.41	kN	Deviation 0.00%
Sum of loads in Z	52.20	kN	
Sum of support reactions in Z	52.20	kN	Deviation 0.00%
Max displacement in X	-1.1	mm	Member No. 529, x: 1.300 m
Max displacement in Y	48.8	mm	Member No. 613, x: 0.900 m
Max displacement in Z	8.4	mm	Member No. 539, x: 2.723 m
Max vectorial displacement	48.9	mm	Member No. 613, x: 0.900 m
Max rotation about X	10.6	mrad	Member No. 638, x: 1.600 m
Max rotation about Y	3.6	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	1.9	mrad	Member No. 648, x: 2.723 m
Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
Stiffness reduction multiplied by coefficient	☒		
Consider favorable effects of tensile forces	☒		
Divide results by CO factor	☐		
Number of load increments	1		
Number of iterations	3		
Calculate critical load factor	☐		
Summary			
Max displacement in X	1.7	mm	CO1, Member No. 524, x: 1.300 m
Max displacement in Y	-76.5	mm	CO1, Member No. 613, x: 0.900 m
Max displacement in Z	-21.9	mm	LC2, Member No. 539, x: 2.723 m
Max vectorial displacement	76.8	mm	CO1, Member No. 613, x: 0.900 m
Max rotation about X	-18.3	mrad	CO1, Member No. 638, x: 1.700 m
Max rotation about Y	-5.7	mrad	CO1, Member No. 536, x: 2.020 m
Max rotation about Z	-2.9	mrad	CO1, Member No. 539, x: 2.723 m
Number of 1D finite elements (member elements)	91		
Number of FE mesh nodes	40		
Number of equations	240		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		
Activate Release Nonlinearities	☒		
Activate Support Nonlinearities	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☐ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
723	LC2	MAX N	0.000	▷ 7.78	0.00	0.01	0.00	0.01	0.00
748	CO1	MIN N	2.000	▷ -24.39	-0.01	-0.07	0.00	-0.18	0.03
529	CO2	MAX V_y	0.700	-7.84	▷ 0.13	0.14	0.00	-0.03	0.00
524	CO1	MIN V_y	0.700	-8.21	▷ -0.20	-0.15	0.00	0.04	0.01
638	CO1	MAX V_z	0.000	-21.48	-0.16	▷ 1.97	0.00	-0.59	-0.12
627	CO1	MIN V_z	2.000	-5.65	0.00	▷ -2.02	0.00	-0.60	0.00
524	CO1	MAX M_T	0.000	-8.21	-0.19	-0.13	▷ 0.00	0.14	-0.13
638	CO1	MIN M_T	2.000	-21.44	-0.05	-1.96	▷ -0.01	-0.59	0.20
627	CO1	MAX M_y	0.900	-5.65	0.00	0.07	0.00	▷ 0.50	0.00
623	CO1	MIN M_y	2.000	-11.30	0.00	-1.99	0.00	▷ -0.81	0.00
524	CO1	MAX M_z	2.000	-8.21	-0.14	-0.13	0.00	-0.15	▷ 0.24
529	CO2	MIN M_z	2.000	-7.84	0.09	0.12	0.00	0.15	▷ -0.15
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
713	CO2	MAX N	1.010	▷ 4.47	0.00	-0.02	0.00	0.00	0.00
713	CO1	MIN N	0.000	▷ -6.99	0.00	0.03	0.00	-0.04	0.00
727	CO1	MAX V_y	0.000	-1.70	▷ 0.00	-0.25	0.03	0.17	0.00
645	CO1	MIN V_y	1.919	-1.52	▷ 0.00	0.22	0.00	0.13	0.00
755	CO1	MAX V_z	0.707	-3.91	0.00	▷ 0.24	-0.03	-0.01	0.00
727	CO1	MIN V_z	0.707	-1.70	0.00	▷ -0.26	0.03	-0.01	0.00
727	CO1	MAX M_T	1.414	-1.70	0.00	-0.25	▷ 0.03	-0.19	0.00
755	CO1	MIN M_T	0.000	-3.91	0.00	0.23	▷ -0.03	-0.17	0.00
755	CO1	MAX M_y	2.020	-3.91	0.00	0.20	-0.03	▷ 0.29	0.00
727	CO1	MIN M_y	2.020	-1.70	0.00	-0.24	0.03	▷ -0.34	0.00
755	CO2	MAX M_z	2.020	2.29	0.00	-0.14	0.02	-0.17	▷ 0.00

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
645	CO1	MIN M_z	0.000	-1.52	0.00	0.20	0.00	-0.29	▷ 0.00
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
539	CO1	MAX N	0.000	▷ 7.48	0.00	0.00	-0.02	0.00	0.00
738	CO1	MIN N	0.000	▷ -5.42	0.00	0.00	0.01	0.00	0.00
539	CO1	MAX V_y	0.000	7.48	▷ 0.00	0.00	-0.02	0.00	0.00
648	CO2	MIN V_y	1.498	-4.94	▷ 0.00	0.00	0.01	0.00	0.00
539	CO1	MAX V_z	0.000	7.48	0.00	▷ 0.00	-0.02	0.00	0.00
539	CO2	MIN V_z	0.000	-3.45	0.00	▷ 0.00	0.01	0.00	0.00
648	CO2	MAX M_T	0.000	-4.94	0.00	0.00	▷ 0.01	0.00	0.00
539	CO1	MIN M_T	0.000	7.48	0.00	0.00	▷ -0.02	0.00	0.00
738	CO1	MAX M_y	0.000	-5.42	0.00	0.00	0.01	▷ 0.00	0.00
539	CO1	MIN M_y	0.000	7.48	0.00	0.00	-0.02	▷ 0.00	0.00
648	LC3	MAX M_z	0.000	-2.80	0.00	0.00	0.01	0.00	▷ 0.00
648	CO1	MIN M_z	2.451	7.01	0.00	0.00	-0.02	0.00	▷ 0.00

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
173	LC1	0.00	0.00	0.00	0.00	-0.02	0.02	EG
	LC2	0.00	0.00	0.00	0.00	-0.01	0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.05	-0.05	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.13	0.14	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
174	LC1	0.00	0.00	0.00	0.00	-0.02	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.02	-0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.07	0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.02	Bem-2
175	LC1	0.00	0.00	0.00	0.00	-0.02	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.07	-0.07	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-2
176	LC1	0.00	0.00	0.00	0.00	0.04	-0.04	EG
	LC2	0.00	0.00	0.00	0.00	-0.04	0.04	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.06	Bem-2
177	LC1	0.00	0.00	0.00	0.00	0.03	-0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.01	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
178	LC1	0.00	0.00	0.00	0.00	0.03	-0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
179	LC1	0.00	0.00	0.00	0.00	-0.02	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
180	LC1	0.00	0.00	0.00	0.00	0.03	-0.03	EG
	LC2	0.00	0.00	0.00	0.00	-0.07	0.07	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-2
182	LC1	0.00	0.00	0.00	0.00	0.02	-0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.04	-0.04	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-2
184	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.13	-0.14	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.04	0.04	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.09	-0.10	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-2
185	LC1	0.00	0.00	0.00	0.00	-0.03	0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.04	-0.05	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.13	0.14	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.04	-0.05	Bem-2
188	LC1	0.00	0.00	0.00	0.00	0.04	-0.04	EG
	LC2	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	-0.02	Bem-2
191	LC1	0.02	0.00	0.00	0.00	-0.02	0.03	EG
	LC2	0.06	0.00	0.00	0.00	0.00	0.04	Wind 1
	LC3	-0.07	0.00	0.00	0.00	0.02	-0.07	Wind 2
	CO1	0.19	0.00	0.00	0.00	-0.06	0.20	Bem-1
	CO2	-0.10	0.00	0.00	0.00	0.00	-0.08	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
194	LC1	-0.01	0.00	0.00	0.00	0.04	-0.05	EG
	LC2	0.07	0.00	0.00	0.00	0.06	-0.02	Wind 1
	LC3	-0.07	0.00	0.00	0.00	-0.06	0.02	Wind 2
	CO1	0.18	0.00	0.00	0.00	0.19	-0.10	Bem-1
	CO2	-0.12	0.00	0.00	0.00	-0.06	-0.01	Bem-2
203	LC1	-0.02	-0.12	19.59	0.00	0.00	0.03	EG
	LC2	-0.06	-1.97	0.00	0.00	0.00	0.09	Wind 1
	LC3	0.07	1.86	5.87	0.00	0.00	-0.10	Wind 2
	CO1	-0.19	-4.63	2.91	0.00	0.00	0.28	Bem-1
	CO2	0.10	2.68	26.80	0.00	0.00	-0.13	Bem-2
206	LC1	0.01	-0.06	11.23	0.00	0.00	-0.02	EG
	LC2	-0.07	-2.01	0.00	0.00	0.00	0.12	Wind 1
	LC3	0.07	1.84	0.20	0.00	0.00	-0.11	Wind 2
	CO1	-0.18	-4.52	8.07	0.00	0.00	0.27	Bem-1
	CO2	0.12	2.72	11.37	0.00	0.00	-0.19	Bem-2
209	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	-0.03	0.04	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-2
210	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.05	Bem-2
211	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.01	-0.01	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-2
212	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	-0.07	0.08	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	-0.02	Bem-2
213	LC1	0.00	0.00	0.00	0.00	-0.02	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-2
214	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.02	-0.02	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.07	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.06	Bem-2
215	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.02	-0.02	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.06	0.05	Bem-2
217	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	-0.07	0.07	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.08	0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-2
219	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.17	-0.19	Wind 1
	LC3	0.00	0.00	0.00	0.00	-0.07	0.08	Wind 2
	CO1	0.00	0.00	0.00	0.00	0.18	-0.20	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.12	0.13	Bem-2
221	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.08	0.00	0.00	0.00	0.06	-0.03	Wind 1
	LC3	-0.07	0.00	0.00	0.00	-0.05	0.02	Wind 2
	CO1	0.16	0.00	0.00	0.00	0.17	-0.08	Bem-1
	CO2	-0.10	0.00	0.00	0.00	-0.12	0.07	Bem-2
222	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	-0.03	0.00	Wind 1
	LC3	0.00	0.00	0.00	0.00	0.01	0.00	Wind 2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.02	0.00	Bem-2
227	LC1	0.00	-0.04	13.86	0.00	0.00	0.00	EG
	LC2	-0.08	-2.02	0.00	0.00	0.00	0.13	Wind 1
	LC3	0.06	1.80	0.00	0.00	0.00	-0.11	Wind 2
	CO1	-0.16	-4.33	16.61	0.00	0.00	0.27	Bem-1
	CO2	0.10	2.64	9.89	0.00	0.00	-0.17	Bem-2
257	LC1	0.00	0.03	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-3.28	0.00	0.00	0.00	-0.05	Wind 1
	LC3	0.00	1.79	0.00	0.00	0.00	0.06	Wind 2
	CO1	0.00	-4.33	0.00	0.00	0.00	-0.13	Bem-1
	CO2	0.00	2.73	0.00	0.00	0.00	0.09	Bem-2
258	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	-0.02	0.00	0.00	0.00	0.05	-0.07	Wind 1
	LC3	0.02	0.00	0.00	0.00	-0.05	0.06	Wind 2
	CO1	-0.04	0.00	0.00	0.00	0.11	-0.14	Bem-1
	CO2	0.03	0.00	0.00	0.00	-0.07	0.09	Bem-2
259	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.03	-0.03	Wind 1
	LC3	-0.01	0.00	0.00	0.00	-0.04	0.04	Wind 2

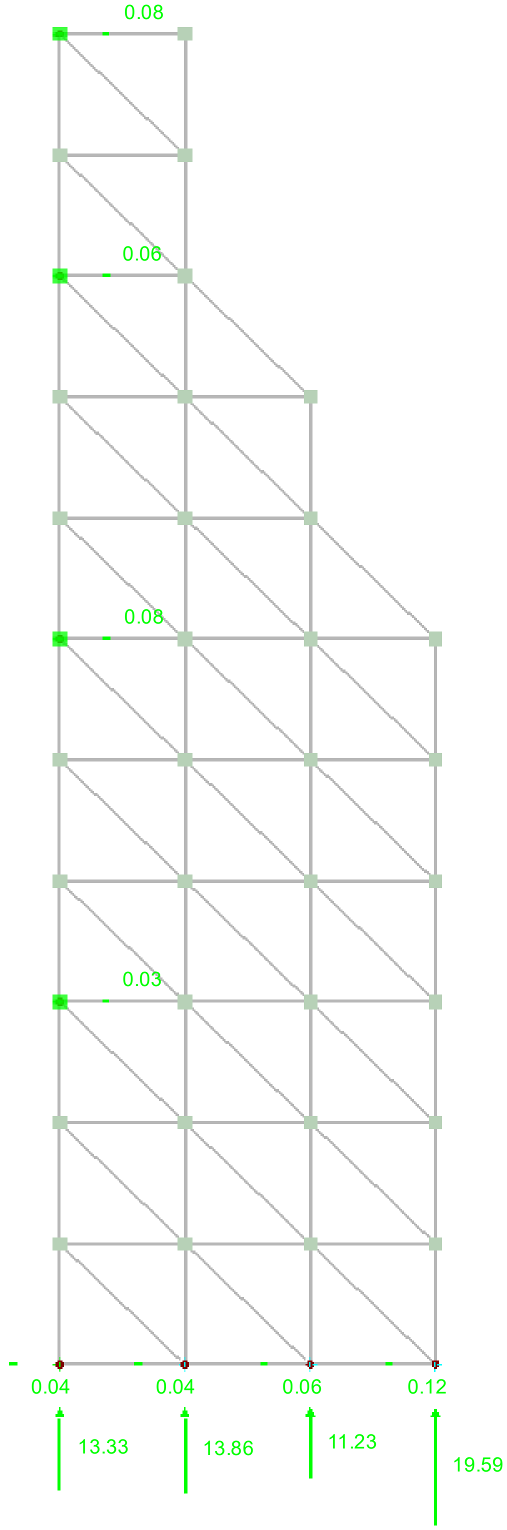
■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
259	CO1	0.01	0.00	0.00	0.00	0.08	-0.09	Bem-1
	CO2	-0.01	0.00	0.00	0.00	-0.05	0.06	Bem-2
260	LC1	0.00	0.08	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-5.23	0.00	0.00	0.00	0.01	Wind 1
	LC3	0.00	2.71	0.00	0.00	0.00	0.02	Wind 2
	CO1	0.00	-6.49	0.00	0.00	0.00	-0.03	Bem-1
	CO2	0.00	4.15	0.00	0.00	0.00	0.02	Bem-2
261	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.04	-0.04	Wind 1
	LC3	0.01	0.00	0.00	0.00	-0.03	0.04	Wind 2
	CO1	-0.01	0.00	0.00	0.00	0.07	-0.08	Bem-1
	CO2	0.01	0.00	0.00	0.00	-0.04	0.05	Bem-2
262	LC1	0.00	0.00	0.00	0.00	0.01	-0.01	EG
	LC2	-0.03	0.00	0.00	0.00	-0.01	0.03	Wind 1
	LC3	0.01	0.00	0.00	0.00	-0.01	0.01	Wind 2
	CO1	-0.02	0.00	0.00	0.00	0.03	-0.02	Bem-1
	CO2	0.02	0.00	0.00	0.00	-0.01	0.00	Bem-2
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.02	0.00	0.00	0.00	0.08	-0.09	Wind 1
	LC3	-0.02	0.00	0.00	0.00	-0.07	0.09	Wind 2
	CO1	0.04	0.00	0.00	0.00	0.15	-0.19	Bem-1
	CO2	-0.03	0.00	0.00	0.00	-0.10	0.12	Bem-2
265	LC1	0.00	0.06	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	-5.90	0.00	0.00	0.00	0.10	Wind 1
	LC3	0.00	2.92	0.00	0.00	0.00	-0.03	Wind 2
	CO1	0.00	-6.99	0.00	0.00	0.00	0.07	Bem-1
	CO2	0.00	4.42	0.00	0.00	0.00	-0.06	Bem-2
267	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	-0.08	0.00	0.00	0.00	0.03	0.07	Wind 1
	LC3	0.04	0.00	0.00	0.00	-0.03	-0.01	Wind 2
	CO1	-0.09	0.00	0.00	0.00	0.07	0.02	Bem-1
	CO2	0.06	0.00	0.00	0.00	-0.05	-0.02	Bem-2
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.01	0.00	0.00	0.00	0.12	-0.13	Wind 1
	LC3	-0.01	0.00	0.00	0.00	-0.11	0.11	Wind 2
	CO1	0.03	0.00	0.00	0.00	0.25	-0.27	Bem-1
	CO2	-0.02	0.00	0.00	0.00	-0.16	0.17	Bem-2
270	LC1	0.00	0.08	0.00	0.00	0.00	0.00	EG
	LC2	0.11	-5.06	0.00	0.00	0.00	0.19	Wind 1
	LC3	-0.05	2.41	0.00	0.00	0.00	-0.08	Wind 2
	CO1	0.11	-5.78	0.00	0.00	0.00	0.20	Bem-1
	CO2	-0.08	3.71	0.00	0.00	0.00	-0.13	Bem-2
275	LC1	0.00	-0.04	13.33	0.00	0.00	0.00	EG
	LC2	-0.01	-1.80	0.00	0.00	0.00	0.00	Wind 1
	LC3	0.01	1.60	-6.07	0.00	0.00	0.00	Wind 2
	CO1	-0.03	-3.85	24.62	0.00	0.00	0.00	Bem-1
	CO2	0.02	2.36	4.14	0.00	0.00	0.00	Bem-2
Σ Supp.	LC1	0.00	0.00	58.00				
Σ Loads	LC1	0.00	0.00	58.00				
Σ Supp.	LC2	0.00	-27.28	0.00				
Σ Loads	LC2	0.00	-27.28	0.00				
Σ Supp.	LC3	0.00	16.94	0.00				
Σ Loads	LC3	0.00	16.94	0.00				
Σ Supp.	CO1	0.00	-40.92	52.20				
Σ Loads	CO1	0.00	-40.92	52.20				
Σ Supp.	CO2	0.00	25.41	52.20				
Σ Loads	CO2	0.00	25.41	52.20				

LAGERREAKTIONEN

LC1 : EG
Lagerreaktionen[kN]

In X-direction



Max P-Y': 0.08, Min P-Y': -0.12 kN
Max P-Z': 19.59, Min P-Z': 0.00 kN

2.5 m

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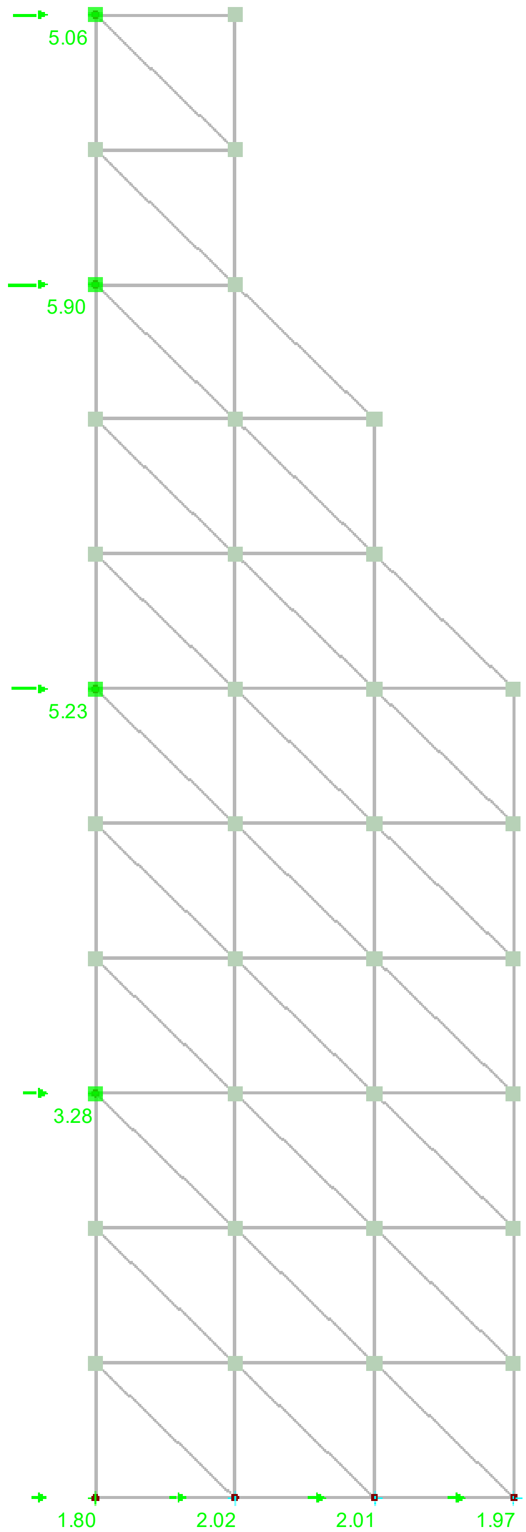
LAGERREAKTIONEN

LC2 : Wind 1
Lagerreaktionen[kN]

In X-direction



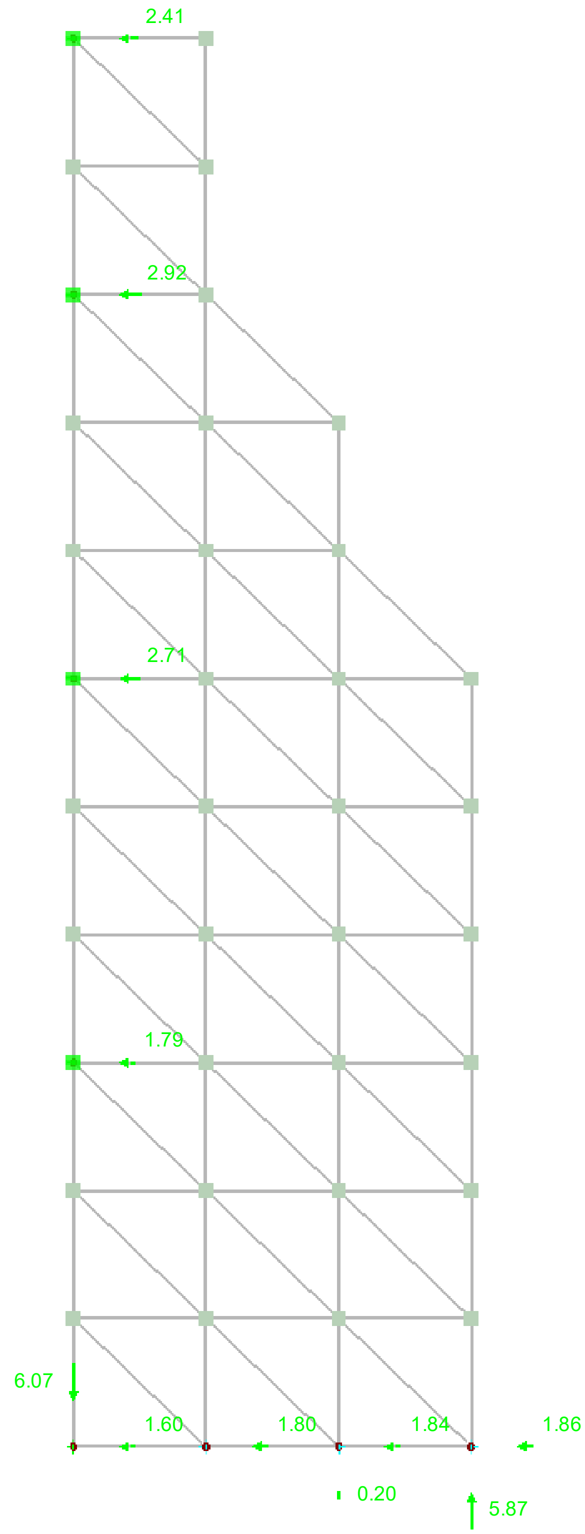
Max P-Y': -1.80, Min P-Y': -5.90 kN
Max P-Z': 0.00, Min P-Z': 0.00 kN

2.243 m

LAGERREAKTIONEN

LC3 : Wind 2
Lagerreaktionen[kN]

In X-direction



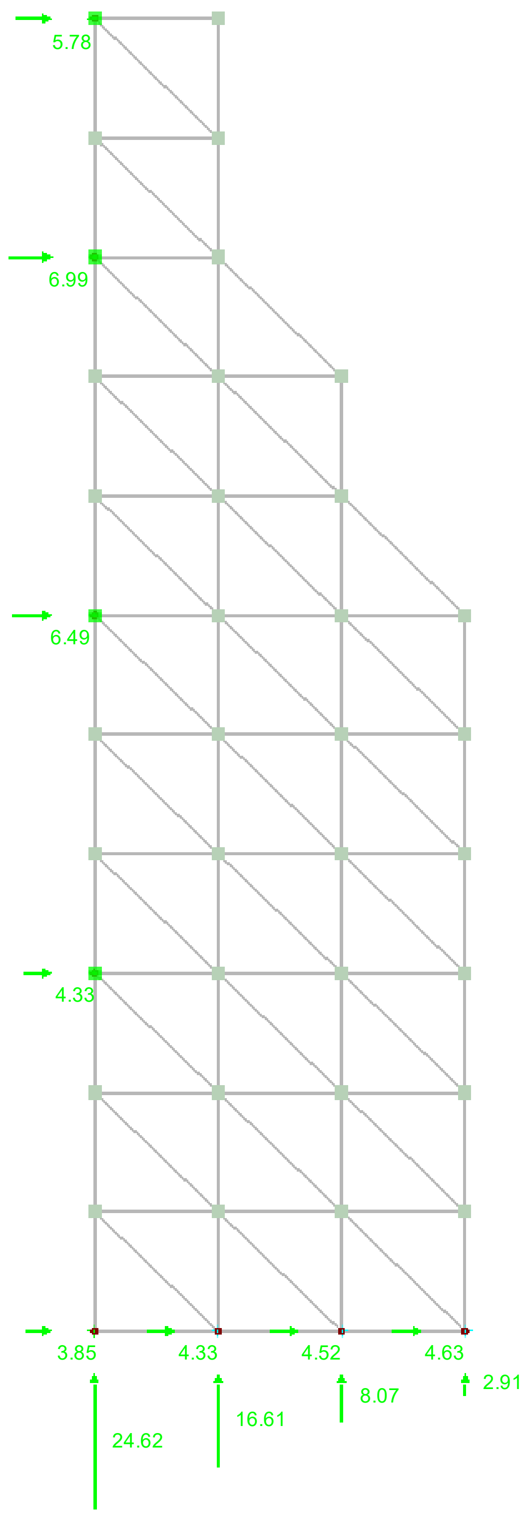
Max P-Y': 2.92, Min P-Y': 1.60 kN
Max P-Z': 5.87, Min P-Z': -6.07 kN

2.362 m

LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

In X-direction



Max P-Y': -3.85, Min P-Y': -6.99 kN
Max P-Z': 24.62, Min P-Z': 0.00 kN

2.533 m

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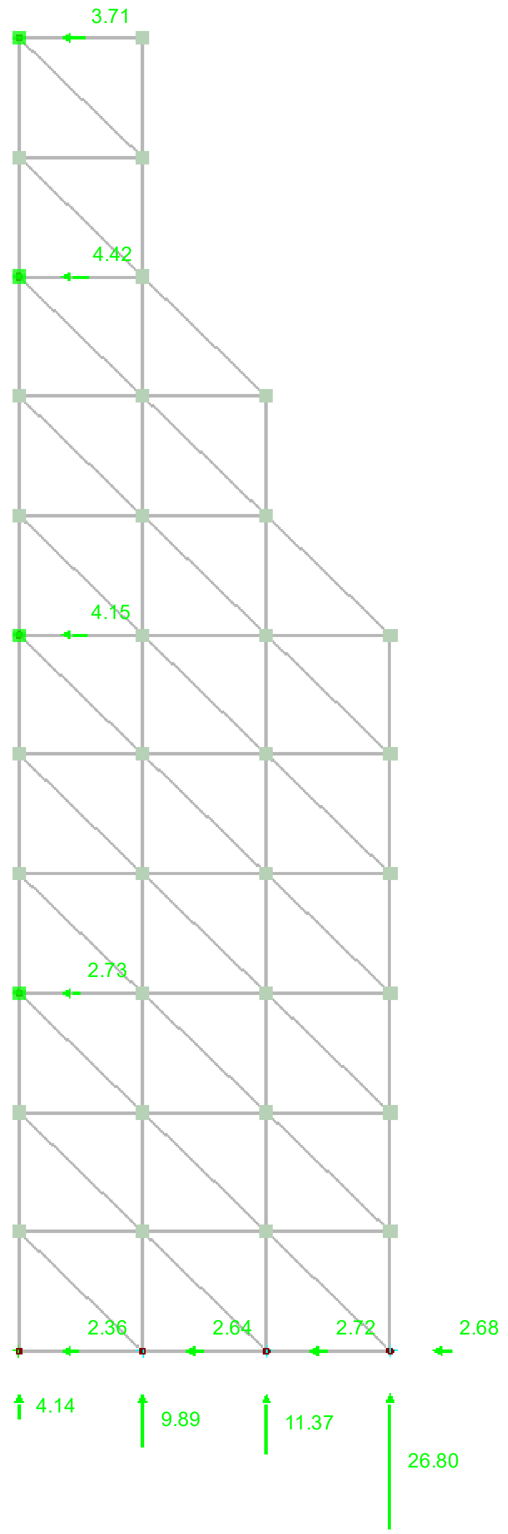
LAGERREAKTIONEN

CO2 : Bem-2
Lagerreaktionen[kN]

In X-direction



Max P-Y': 4.42, Min P-Y': 2.36 kN
Max P-Z': 26.80, Min P-Z': 0.00 kN

2.533 m

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
502	RC1		1.400	MAX N	▷ 5.78	0.00	-0.05	0.00	0.00	0.00	CO 1
748	RC1		2.000	MIN N	▷ -24.39	-0.01	-0.07	0.00	-0.18	0.03	CO 1
529	RC1		0.700	MAX V_y	-7.84	▷ 0.13	0.14	0.00	-0.03	0.00	CO 2
524	RC1		0.700	MIN V_y	-8.21	▷ -0.20	-0.15	0.00	0.04	0.01	CO 1
638	RC1		0.000	MAX V_z	-21.48	-0.16	▷ 1.97	0.00	-0.59	-0.12	CO 1
627	RC1		2.000	MIN V_z	-5.65	0.00	▷ -2.02	0.00	-0.60	0.00	CO 1
524	RC1		0.000	MAX M_T	-8.21	-0.19	-0.13	▷ 0.00	0.14	-0.13	CO 1
638	RC1		2.000	MIN M_T	-21.44	-0.05	-1.96	▷ -0.01	-0.59	0.20	CO 1
627	RC1		0.900	MAX M_y	-5.65	0.00	0.07	0.00	▷ 0.50	0.00	CO 1
623	RC1		2.000	MIN M_y	-11.30	0.00	-1.99	0.00	▷ -0.81	0.00	CO 1
524	RC1		2.000	MAX M_z	-8.21	-0.14	-0.13	0.00	-0.15	▷ 0.24	CO 1
529	RC1		2.000	MIN M_z	-7.84	0.09	0.12	0.00	0.15	▷ -0.15	CO 2
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
713	RC1		1.010	MAX N	▷ 4.47	0.00	-0.02	0.00	0.00	0.00	CO 2
713	RC1		0.000	MIN N	▷ -6.99	0.00	0.03	0.00	-0.04	0.00	CO 1
727	RC1		0.000	MAX V_y	-1.70	▷ 0.00	-0.25	0.03	0.17	0.00	CO 1
645	RC1		1.919	MIN V_y	-1.52	▷ 0.00	0.22	0.00	0.13	0.00	CO 1
755	RC1		0.707	MAX V_z	-3.91	0.00	▷ 0.24	-0.03	-0.01	0.00	CO 1
727	RC1		0.707	MIN V_z	-1.70	0.00	▷ -0.26	0.03	-0.01	0.00	CO 1
727	RC1		1.414	MAX M_T	-1.70	0.00	-0.25	▷ 0.03	-0.19	0.00	CO 1
755	RC1		0.000	MIN M_T	-3.91	0.00	0.23	▷ -0.03	-0.17	0.00	CO 1
755	RC1		2.020	MAX M_y	-3.91	0.00	0.20	-0.03	▷ 0.29	0.00	CO 1
727	RC1		2.020	MIN M_y	-1.70	0.00	-0.24	0.03	▷ -0.34	0.00	CO 1
755	RC1		2.020	MAX M_z	2.29	0.00	-0.14	0.02	-0.17	▷ 0.00	CO 2
645	RC1		0.000	MIN M_z	-1.52	0.00	0.20	0.00	-0.29	▷ 0.00	CO 1
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
539	RC1		0.000	MAX N	▷ 7.48	0.00	0.00	-0.02	0.00	0.00	CO 1
738	RC1		0.000	MIN N	▷ -5.42	0.00	0.00	0.01	0.00	0.00	CO 1
495	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
495	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
495	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
495	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
648	RC1		0.000	MAX M_T	-4.94	0.00	0.00	▷ 0.01	0.00	0.00	CO 2
539	RC1		0.000	MIN M_T	7.48	0.00	0.00	▷ -0.02	0.00	0.00	CO 1
495	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
495	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
495	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
495	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.13	0.14	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.13	0.14	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
174	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.02	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.07	0.08	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.07	0.08	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.02	CO 2
175	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
176	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.06	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.06	CO 2
177	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
178	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
178		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 2
180	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
182	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 1
184	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.09	-0.10	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.09	-0.10	CO 1
185	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.13	0.14	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.13	0.14	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.05	CO 2
188	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 1
191	RC1	Max $P_{X'}$	0.19	0.00	0.00	0.00	-0.06	0.20	CO 1
		Min $P_{X'}$	-0.10	0.00	0.00	0.00	0.00	-0.08	CO 2
		Max $M_{Y'}$	-0.10	0.00	0.00	0.00	0.00	-0.08	CO 2
		Min $M_{Y'}$	0.19	0.00	0.00	0.00	-0.06	0.20	CO 1
		Max $M_{Z'}$	0.19	0.00	0.00	0.00	-0.06	0.20	CO 1
		Min $M_{Z'}$	-0.10	0.00	0.00	0.00	0.00	-0.08	CO 2
194	RC1	Max $P_{X'}$	0.18	0.00	0.00	0.00	0.19	-0.10	CO 1
		Min $P_{X'}$	-0.12	0.00	0.00	0.00	-0.06	-0.01	CO 2
		Max $M_{Y'}$	0.18	0.00	0.00	0.00	0.19	-0.10	CO 1
		Min $M_{Y'}$	-0.12	0.00	0.00	0.00	-0.06	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.18	0.00	0.00	0.00	0.19	-0.10	CO 1
203	RC1	Max $P_{X'}$	0.10	2.68	26.80	0.00	0.00	-0.13	CO 2
		Min $P_{X'}$	-0.19	-4.63	2.91	0.00	0.00	0.28	CO 1
		Max $P_{Y'}$	0.10	2.68	26.80	0.00	0.00	-0.13	CO 2
		Min $P_{Y'}$	-0.19	-4.63	2.91	0.00	0.00	0.28	CO 1
		Max $P_{Z'}$	0.10	2.68	26.80	0.00	0.00	-0.13	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.19	-4.63	2.91	0.00	0.00	0.28	CO 1
		Min $M_{Z'}$	0.10	2.68	26.80	0.00	0.00	-0.13	CO 2
206	RC1	Max $P_{X'}$	0.12	2.72	11.37	0.00	0.00	-0.19	CO 2
		Min $P_{X'}$	-0.18	-4.52	8.07	0.00	0.00	0.27	CO 1
		Max $P_{Y'}$	0.12	2.72	11.37	0.00	0.00	-0.19	CO 2
		Min $P_{Y'}$	-0.18	-4.52	8.07	0.00	0.00	0.27	CO 1
		Max $P_{Z'}$	0.12	2.72	11.37	0.00	0.00	-0.19	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.18	-4.52	8.07	0.00	0.00	0.27	CO 1
		Min $M_{Z'}$	0.12	2.72	11.37	0.00	0.00	-0.19	CO 2
209	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.02	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
210	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 1
211	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 1

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
211		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 1
212	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.02	-0.02	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.02	-0.02	CO 2
213	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 1
214	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.07	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.06	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.06	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.07	CO 1
215	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.05	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.05	CO 1
217	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.08	0.08	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.08	0.08	CO 1
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
219	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.18	-0.20	CO 1
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.18	-0.20	CO 1
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.12	0.13	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.12	0.13	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.18	-0.20	CO 1
221	RC1	Max $P_{X'}$	0.16	0.00	0.00	0.00	0.17	-0.08	CO 1
		Min $P_{X'}$	-0.10	0.00	0.00	0.00	-0.12	0.07	CO 2
		Max $M_{Y'}$	0.16	0.00	0.00	0.00	0.17	-0.08	CO 1
		Min $M_{Y'}$	-0.10	0.00	0.00	0.00	-0.12	0.07	CO 2
		Max $M_{Z'}$	-0.10	0.00	0.00	0.00	-0.12	0.07	CO 2
		Min $M_{Z'}$	0.16	0.00	0.00	0.00	0.17	-0.08	CO 1
222	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.02	0.00	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.00	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
227	RC1	Max $P_{X'}$	0.10	2.64	9.89	0.00	0.00	-0.17	CO 2
		Min $P_{X'}$	-0.16	-4.33	16.61	0.00	0.00	0.27	CO 1
		Max $P_{Y'}$	0.10	2.64	9.89	0.00	0.00	-0.17	CO 2
		Min $P_{Y'}$	-0.16	-4.33	16.61	0.00	0.00	0.27	CO 1
		Max $P_{Z'}$	-0.16	-4.33	16.61	0.00	0.00	0.27	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.16	-4.33	16.61	0.00	0.00	0.27	CO 1
		Min $M_{Z'}$	0.10	2.64	9.89	0.00	0.00	-0.17	CO 2
257	RC1	Max $P_{X'}$	0.00	-4.33	0.00	0.00	0.00	-0.13	CO 1
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	2.73	0.00	0.00	0.00	0.09	CO 2
		Min $P_{Y'}$	0.00	-4.33	0.00	0.00	0.00	-0.13	CO 1
		Max $M_{Z'}$	0.00	2.73	0.00	0.00	0.00	0.09	CO 2
		Min $M_{Z'}$	0.00	-4.33	0.00	0.00	0.00	-0.13	CO 1
258	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	-0.07	0.09	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.11	-0.14	CO 1
		Max $M_{Y'}$	-0.04	0.00	0.00	0.00	0.11	-0.14	CO 1
		Min $M_{Y'}$	0.03	0.00	0.00	0.00	-0.07	0.09	CO 2
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	-0.07	0.09	CO 2
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.11	-0.14	CO 1
259	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.08	-0.09	CO 1
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	-0.05	0.06	CO 2
		Max $M_{Y'}$	0.01	0.00	0.00	0.00	0.08	-0.09	CO 1
		Min $M_{Y'}$	-0.01	0.00	0.00	0.00	-0.05	0.06	CO 2
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	-0.05	0.06	CO 2
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.08	-0.09	CO 1
260	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	4.15	0.00	0.00	0.00	0.02	CO 2

■ 4.4 NODES - SUPPORT FORCES

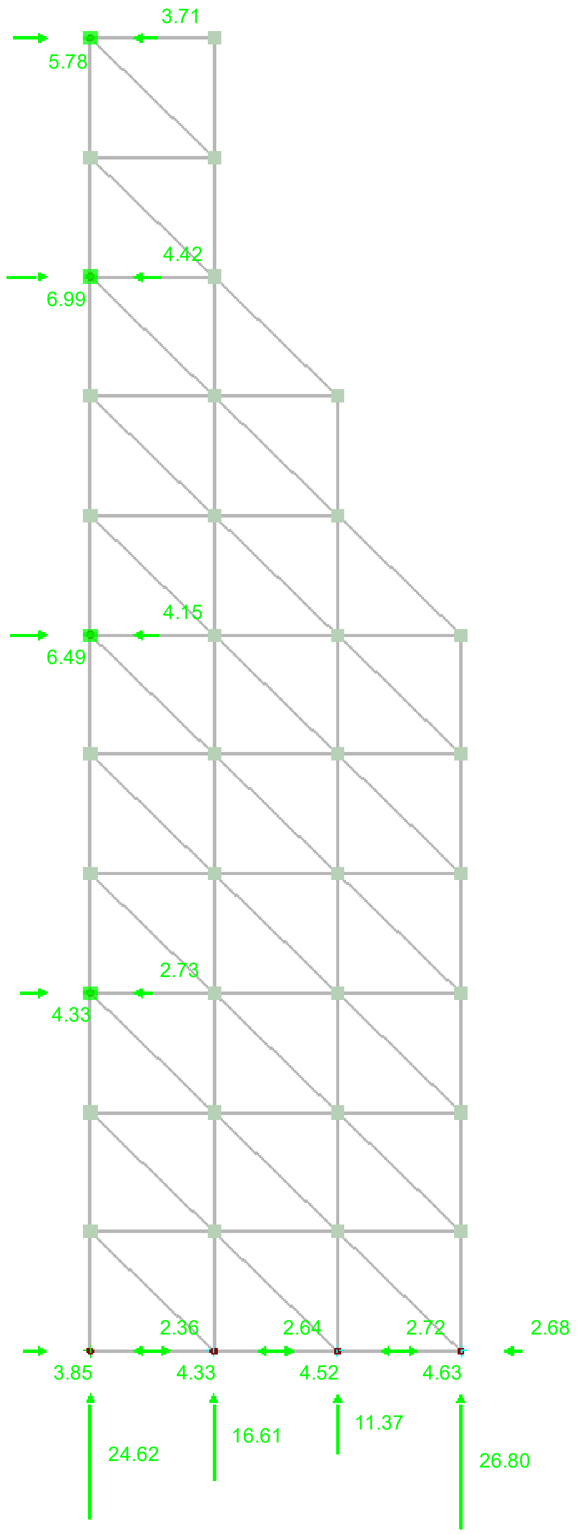
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
260		Min $P_{Y'}$	0.00	-6.49	0.00	0.00	0.00	-0.03	CO 1
		Max $M_{Z'}$	0.00	4.15	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	0.00	-6.49	0.00	0.00	0.00	-0.03	CO 1
261	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	-0.04	0.05	CO 2
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.07	-0.08	CO 1
		Max $M_{Y'}$	-0.01	0.00	0.00	0.00	0.07	-0.08	CO 1
		Min $M_{Y'}$	0.01	0.00	0.00	0.00	-0.04	0.05	CO 2
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	-0.04	0.05	CO 2
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.07	-0.08	CO 1
262	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	-0.01	0.00	CO 2
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.03	-0.02	CO 1
		Max $M_{Y'}$	-0.02	0.00	0.00	0.00	0.03	-0.02	CO 1
		Min $M_{Y'}$	0.02	0.00	0.00	0.00	-0.01	0.00	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.03	-0.02	CO 1
263	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.15	-0.19	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	-0.10	0.12	CO 2
		Max $M_{Y'}$	0.04	0.00	0.00	0.00	0.15	-0.19	CO 1
		Min $M_{Y'}$	-0.03	0.00	0.00	0.00	-0.10	0.12	CO 2
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	-0.10	0.12	CO 2
		Min $M_{Z'}$	0.04	0.00	0.00	0.00	0.15	-0.19	CO 1
265	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	4.42	0.00	0.00	0.00	-0.06	CO 2
		Min $P_{Y'}$	0.00	-6.99	0.00	0.00	0.00	0.07	CO 1
		Max $M_{Z'}$	0.00	-6.99	0.00	0.00	0.00	0.07	CO 1
		Min $M_{Z'}$	0.00	4.42	0.00	0.00	0.00	-0.06	CO 2
267	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	-0.05	-0.02	CO 2
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.07	0.02	CO 1
		Max $M_{Y'}$	-0.09	0.00	0.00	0.00	0.07	0.02	CO 1
		Min $M_{Y'}$	0.06	0.00	0.00	0.00	-0.05	-0.02	CO 2
		Max $M_{Z'}$	-0.09	0.00	0.00	0.00	0.07	0.02	CO 1
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	-0.05	-0.02	CO 2
269	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.25	-0.27	CO 1
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	-0.16	0.17	CO 2
		Max $M_{Y'}$	0.03	0.00	0.00	0.00	0.25	-0.27	CO 1
		Min $M_{Y'}$	-0.02	0.00	0.00	0.00	-0.16	0.17	CO 2
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	-0.16	0.17	CO 2
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.25	-0.27	CO 1
270	RC1	Max $P_{X'}$	0.11	-5.78	0.00	0.00	0.00	0.20	CO 1
		Min $P_{X'}$	-0.08	3.71	0.00	0.00	0.00	-0.13	CO 2
		Max $P_{Y'}$	-0.08	3.71	0.00	0.00	0.00	-0.13	CO 2
		Min $P_{Y'}$	0.11	-5.78	0.00	0.00	0.00	0.20	CO 1
		Max $M_{Z'}$	0.11	-5.78	0.00	0.00	0.00	0.20	CO 1
		Min $M_{Z'}$	-0.08	3.71	0.00	0.00	0.00	-0.13	CO 2
275	RC1	Max $P_{X'}$	0.02	2.36	4.14	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.03	-3.85	24.62	0.00	0.00	0.00	CO 1
		Max $P_{Y'}$	0.02	2.36	4.14	0.00	0.00	0.00	CO 2
		Min $P_{Y'}$	-0.03	-3.85	24.62	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	-0.03	-3.85	24.62	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.03	-3.85	24.62	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	0.02	2.36	4.14	0.00	0.00	0.00	CO 2

LAGERREAKTIONEN

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction

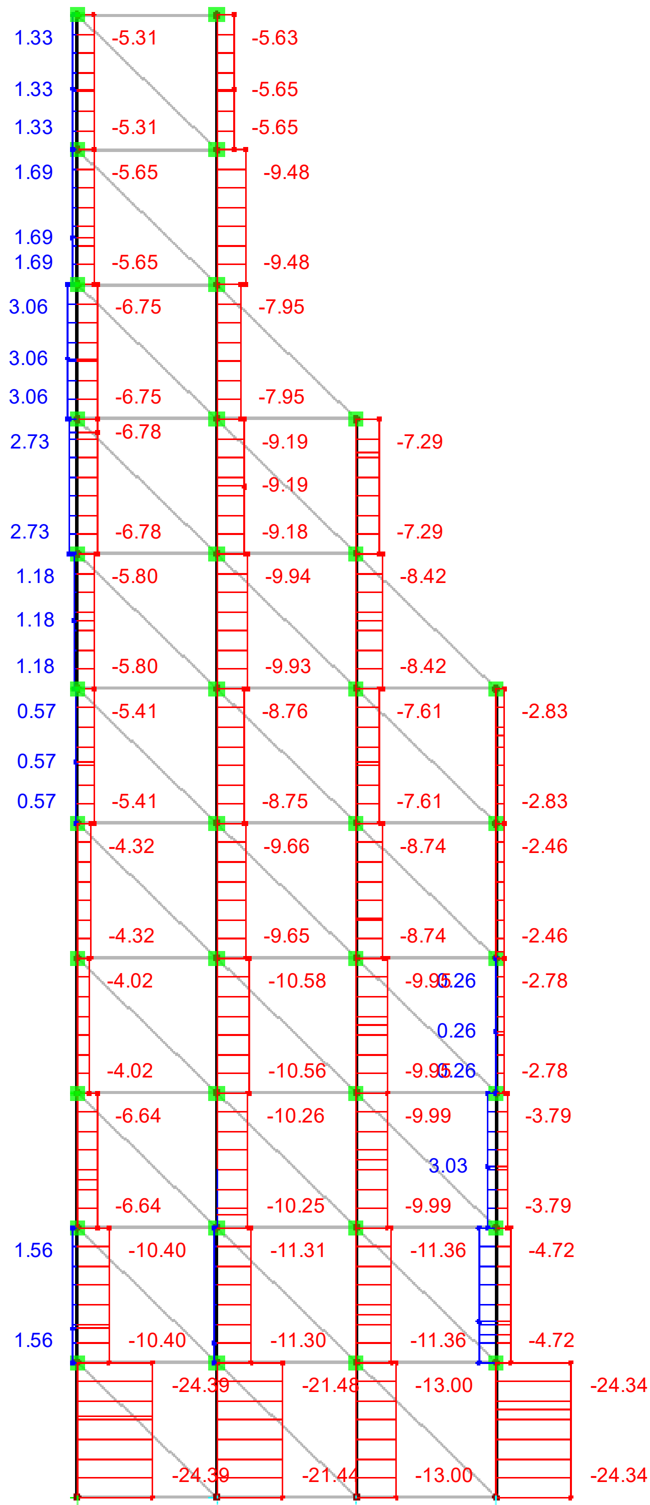


Max P-Y': 4.42, Min P-Y': -6.99 kN
Max P-Z': 26.80, Min P-Z': 0.00 kN

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

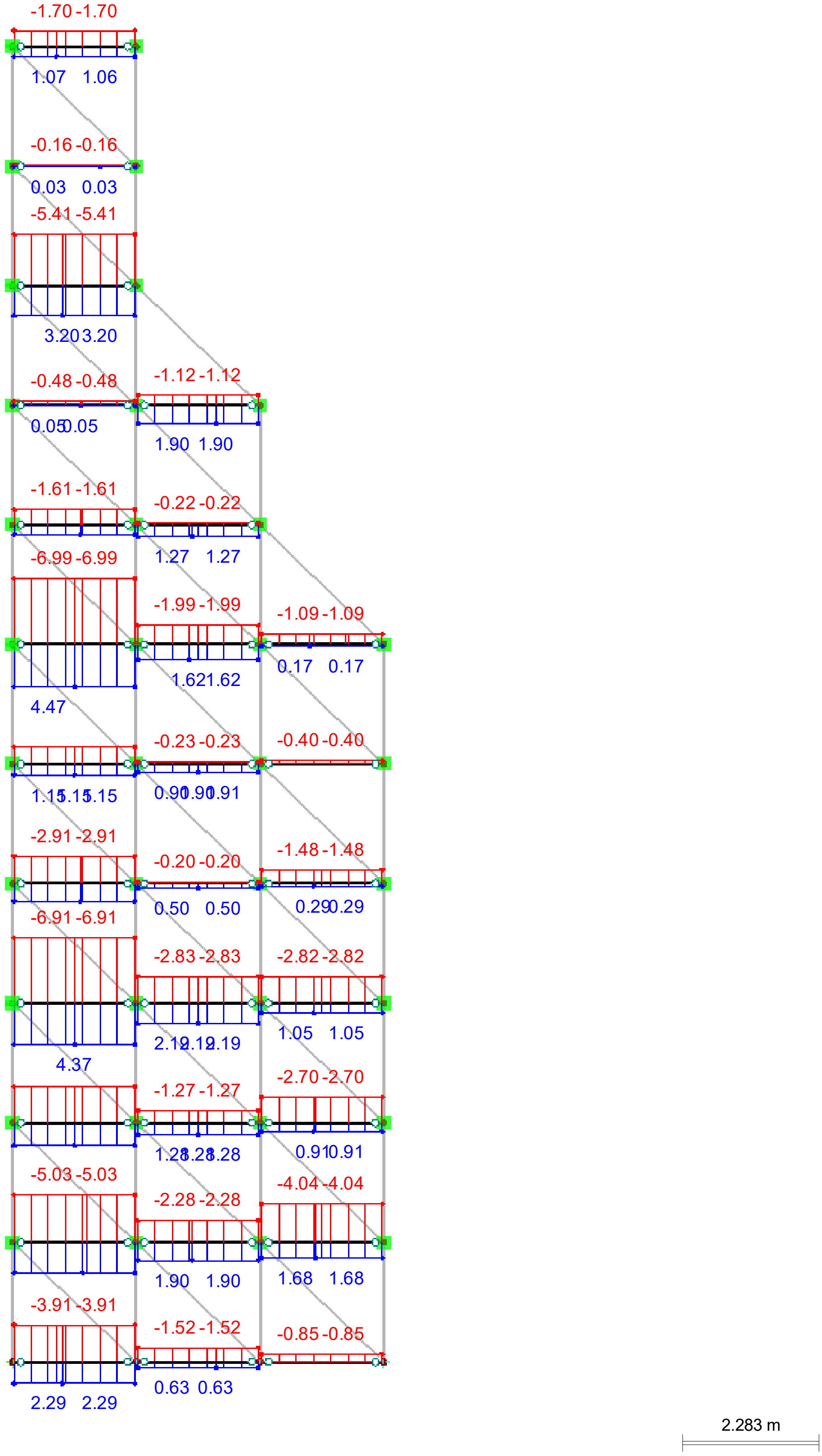


Max N: 5.78, Min N: -24.39 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

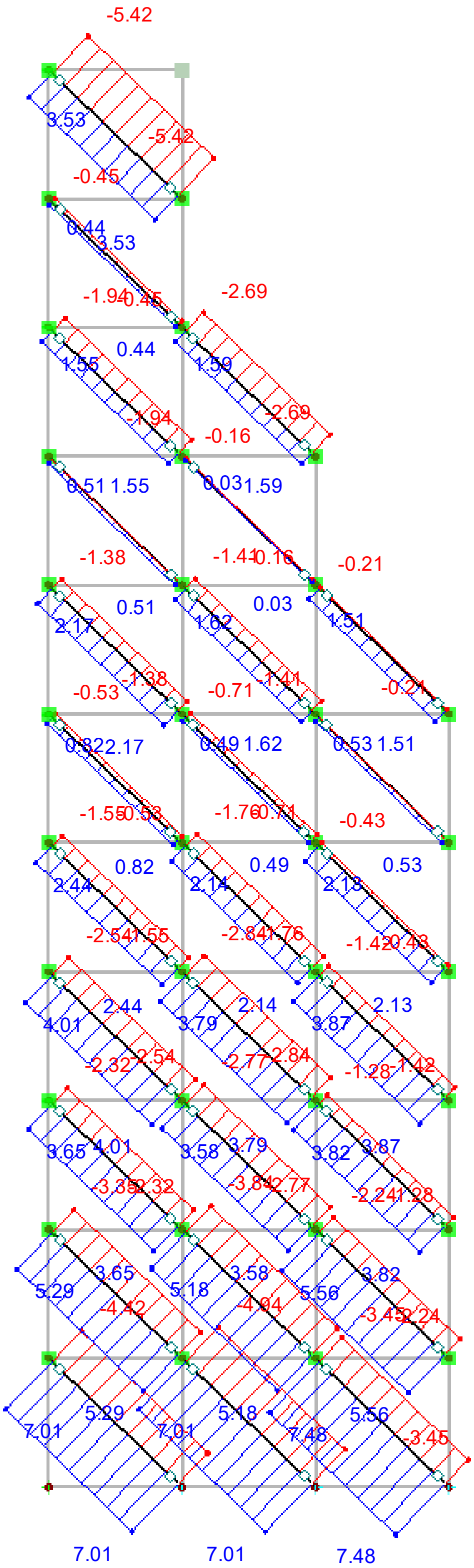


Max N: 4.47, Min N: -6.99 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

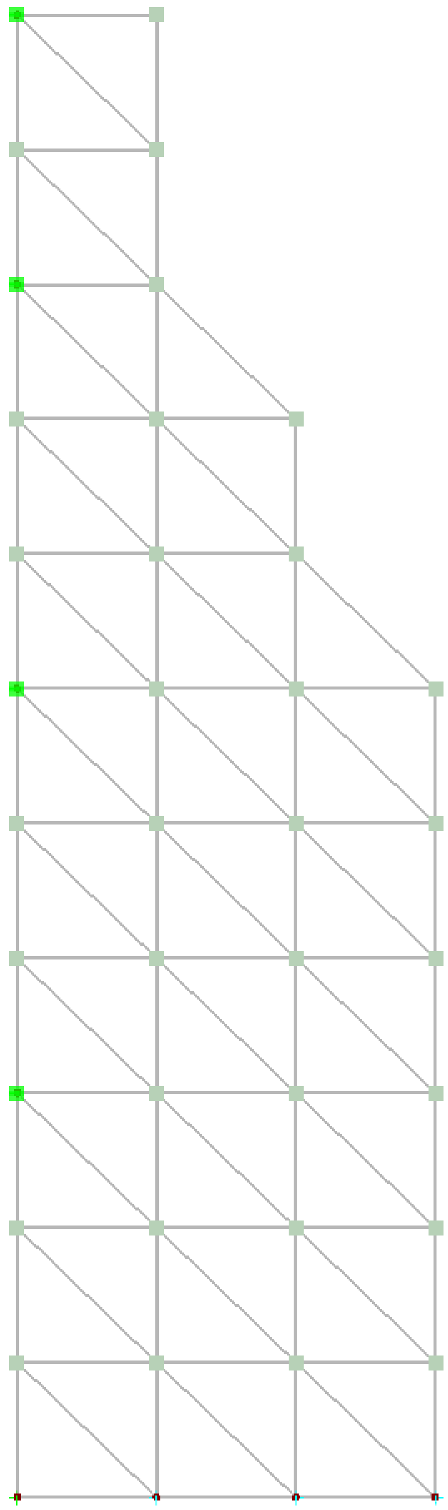


Max N: 7.48, Min N: -5.42 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



2.243 m

Max N: -, Min N: -

Allround Standard

Nd=	8 kN	< NRd		
Nd=	-25 kN	< NRd		

Allround ledger

Nd=	7 kN	< NRd=	42,3 kN	
Nd=	-7 kN	< NRd=	-42,3 kN	

Allround diagonal (2,07/2,0m)

Nd=	8 kN	< NRd=	28,5 kN
Nd=	-8 kN	< NRd=	-14,4 kN

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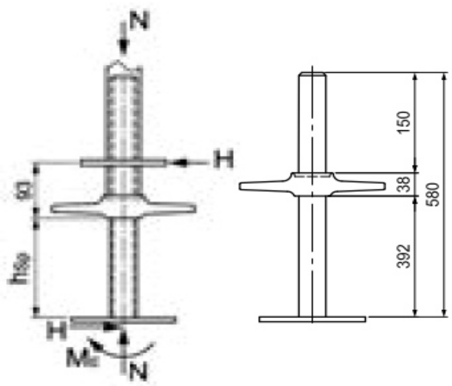
Base plate solid

BASE PLATE 60 SOLID



Substitute cross-sectional values of the spindle

$A = 8.80\ cm^2$

$W_{el} = 3.84\ cm^3$

$W_{pl} = 4.79\ cm^3$

$I = 6.51\ cm^4$

Material: EN 10025-2-S355J2

→ Rolled thread: $f_{u,b} = 360{,}0\ N/mm^2$

Tab. 14 Base plate loading

Spindle extension length h_{Sp} [cm]	Permissible vertical spindle load N [kN]* with simultaneous effect of a horizontal load H [kN]																									
	H = 0		H = 0.5		H = 1.0		H = 1.5		H = 2.0		H = 2.5		H = 3.0		H = 3.5		H = 4.0		H = 4.5		H = 5.0		H = 5.5		H = 6.0	
	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2	N_1	N_2
0	54	69	54	69	54	68	54	67	53	–	53	–	53	–	52	–	52	–	51	–	51	–	50	–	50	–
5	54	68	53	–	53	–	52	–	52	–	51	–	50	–	49	–	48	–	48	–	47	–	46	–	45	–
10	53	–	53	–	52	–	49	–	49	–	48	–	47	–	46	–	45	–	44	–	42	–	41	–	40	–
15	53	–	51	–	50	–	48	–	47	–	47	–	44	–	43	–	41	–	39	–	38	–	36	–	34	–
20	51	–	50	–	48	–	46	–	44	–	42	–	40	–	38	–	36	–	35	–	–	–	–	–	–	–
25	50	–	48	–	45	–	43	–	41	–	39	–	37	–	34	–	–	–	–	–	–	–	–	–	–	–

Nd=	30	kN
Nk=	21,4	kN
Hd=	5	kN
Hk=	3,6	kN
Hk=	4	kN
hsp=	15	kN
Nzul=	41	kN

Proof stability against gliding

Nd=	24+16+8+3=	51	kN
Ballast			kN
		51	kN

Hd= 3,9+4,4+4,6+4,7= 17,6 kN

friction coefficient mü= 0,6 Wood - Soil

Hd= 17,6 kN < mü * Nd= 30,6 kN

Load distribution under base plate shoring scaffold

Nk=	30	kN
a=	0,6	m
b=	0,5	m
sigma=	100	kN/m²

Horizontal bearing:

Hd= 6,7 kN

q,k= 6,7/1,5/2,07= 2,2 kN/m

Span L= 22 m

Md= 1,5 * q,k * L^2/8=		130,55	kNm
	z=	4,14	m
Z=-D=		31,533	kN
Vd=	1,5 * q,k * L/2=	35,604	kN
Dd=	1,42 * Vd=	50,557	kN

Double diagonal

lattice girder with ledgers and horizontal diagonals

All stabel walls are braced horizontally and vertically with lattice girders.

All scaffolds are connected. The scaffolds are braced against the outer walls of the monestary.

see drawing.

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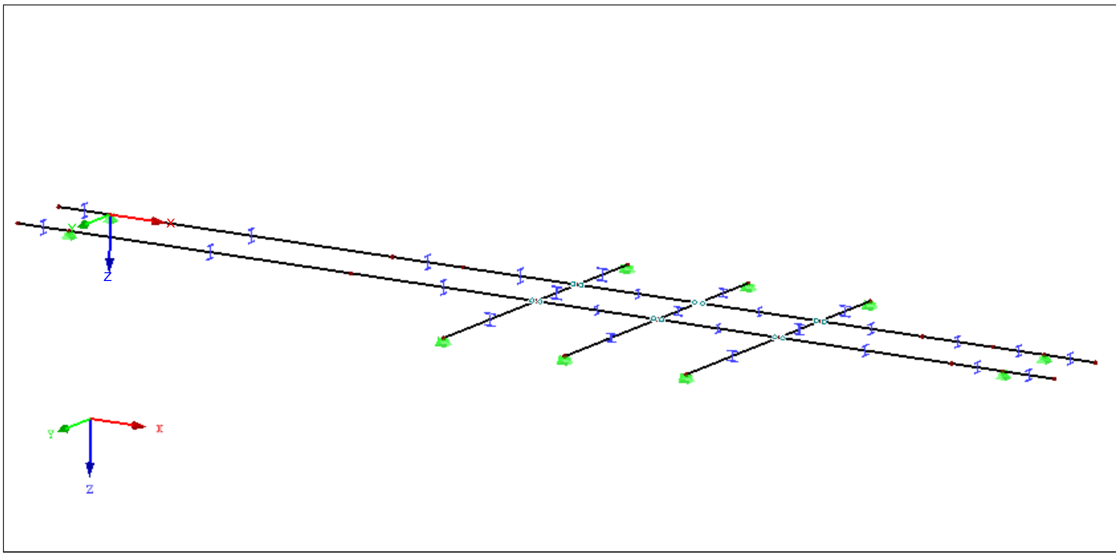
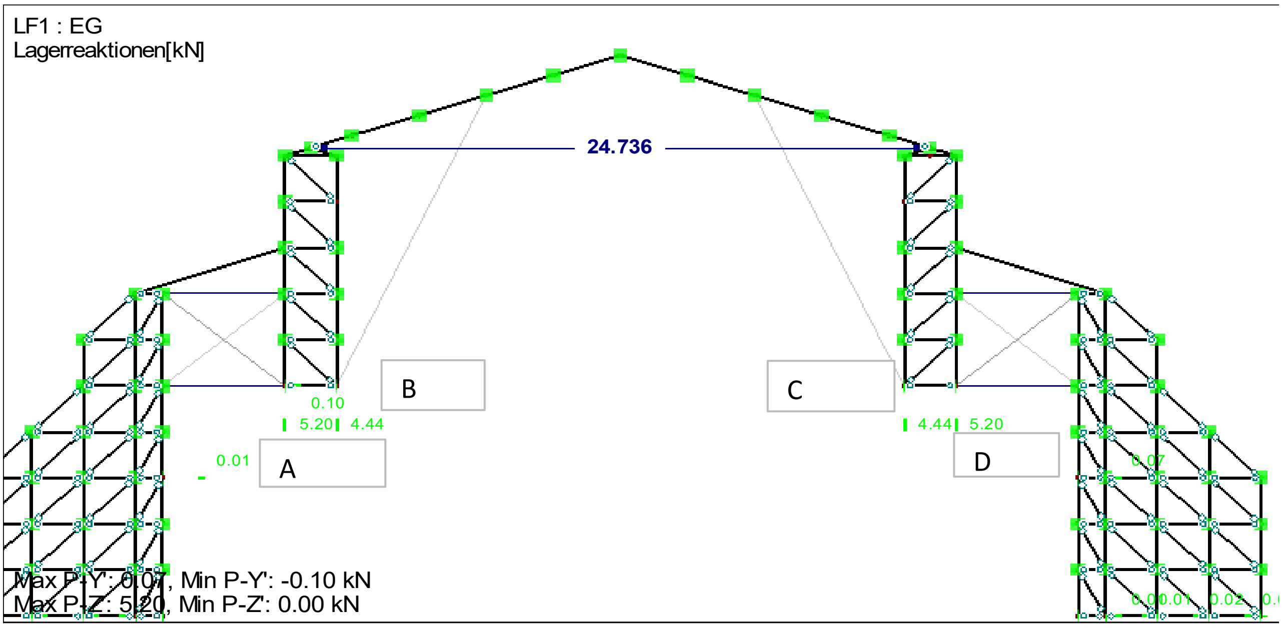
Pos.12: Steel beams



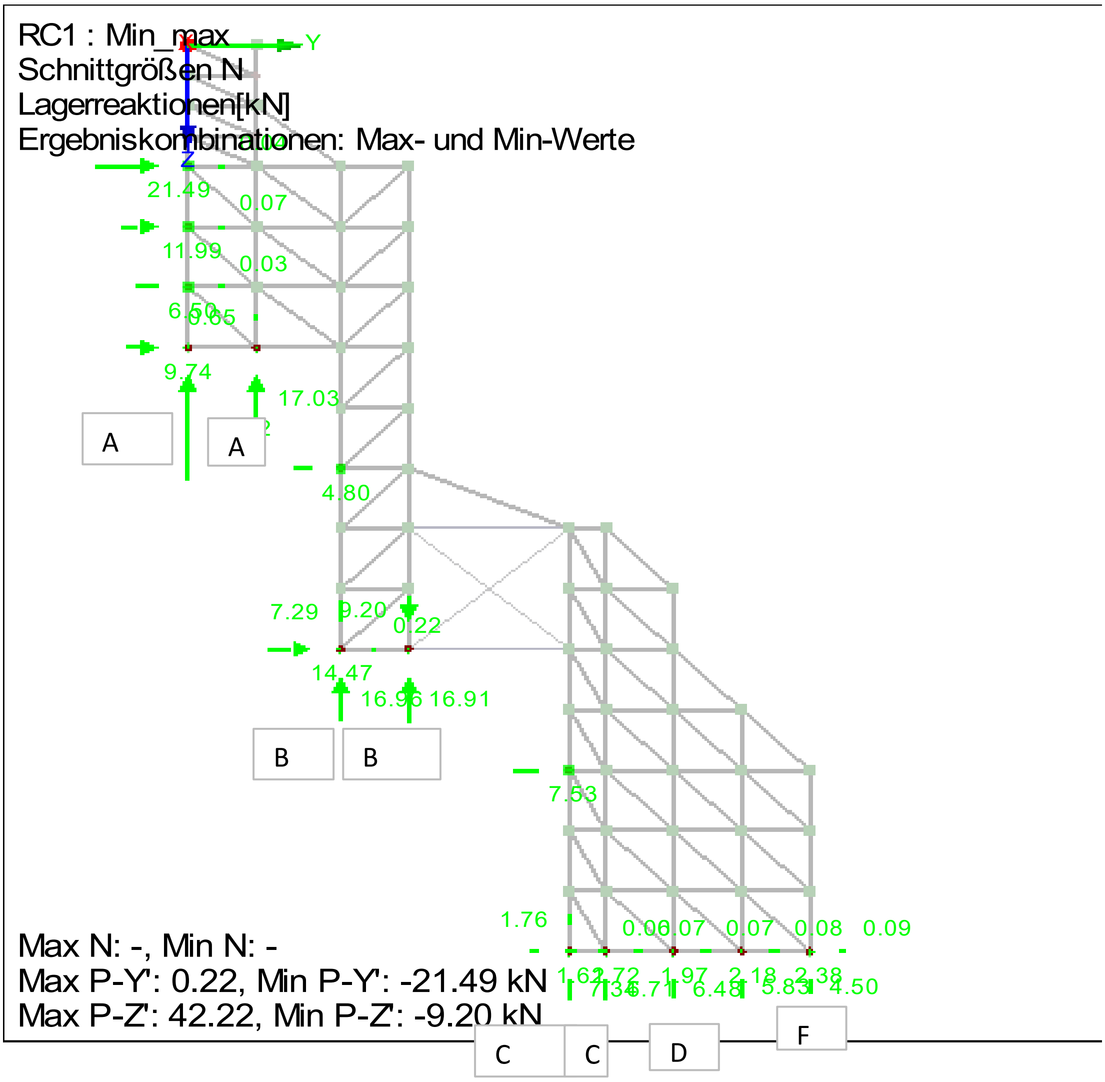
Loads:

Chapter 2



		A	B	C	D	a [kN/m]	b [kN/m]	c [kN/m]	d [kN/m]
Dead Load		5,2	4,5	4,5	5,2	2,0	1,8	1,8	2,0
Snow		5,9	3,8	3,8	5	2,3	1,5	1,5	1,9
Live Load		5,3	5,3	5,3	5,3	2,1	2,1	2,1	2,1
Wind 1		-3,6	-5	-7,3	-11,2	-1,4	-1,9	-2,8	-4,4
Wind 2		0,6	8,4	-6	-9	0,2	3,3	-2,3	-3,5

Chapter 5



b= 2,32 m

a b c d

		A	B	C	D	[kN/m]	[kN/m]	[kN/m]	[kN/m]
Dead Load			6			0,0	2,3	0,0	0,0
Snow			2			0,0	0,8	0,0	0,0
Live Load			5			0,0	1,9	0,0	0,0
Wind 1			-9			0,0	-3,5	0,0	0,0
Wind 2			0			0,0	0,0	0,0	0,0

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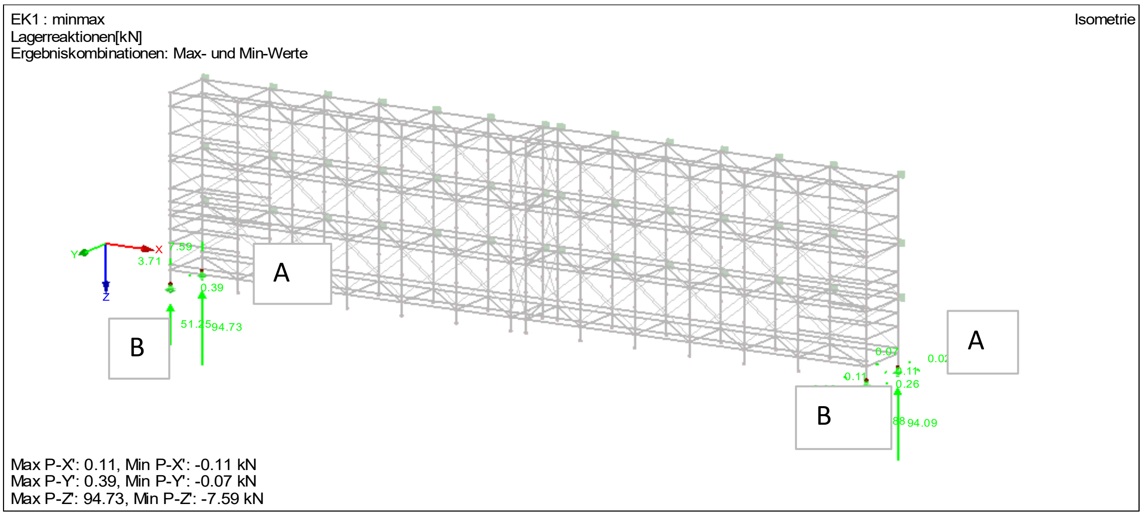
Chapter 9

Reaction forces



	A [kN]	B [kN]	
EG	24	24	
LL	13	13	
LC1	34	3	divided by 2 and added to EG
LC2	26	2	and LL
Wind	19	16 (+/-)	

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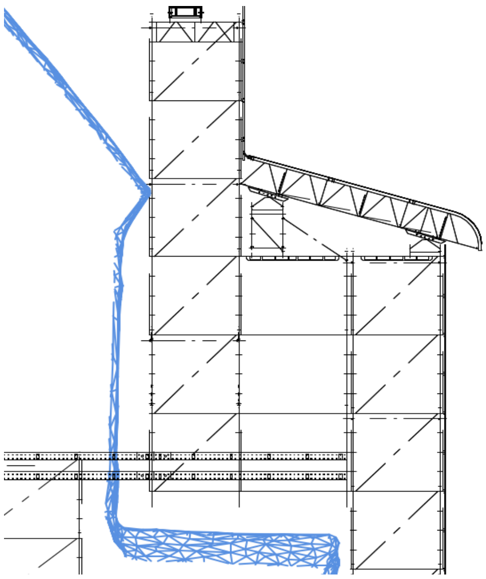
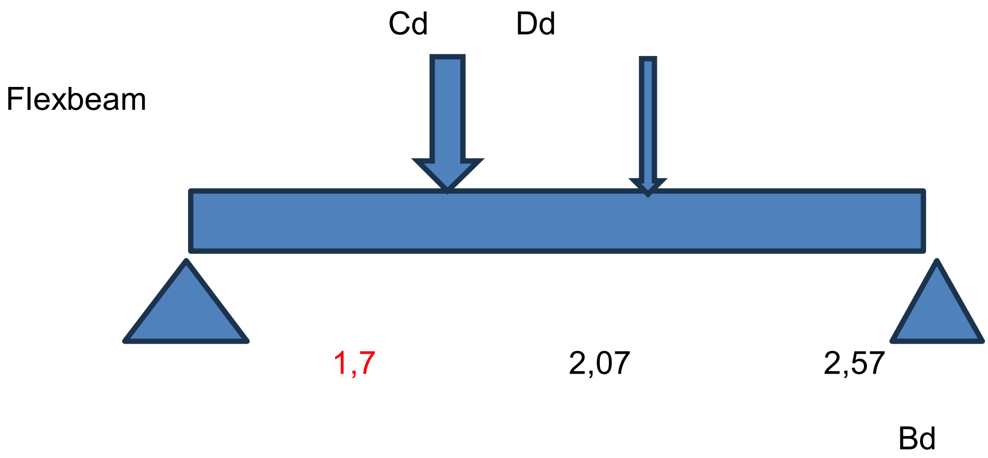
Chapter 7

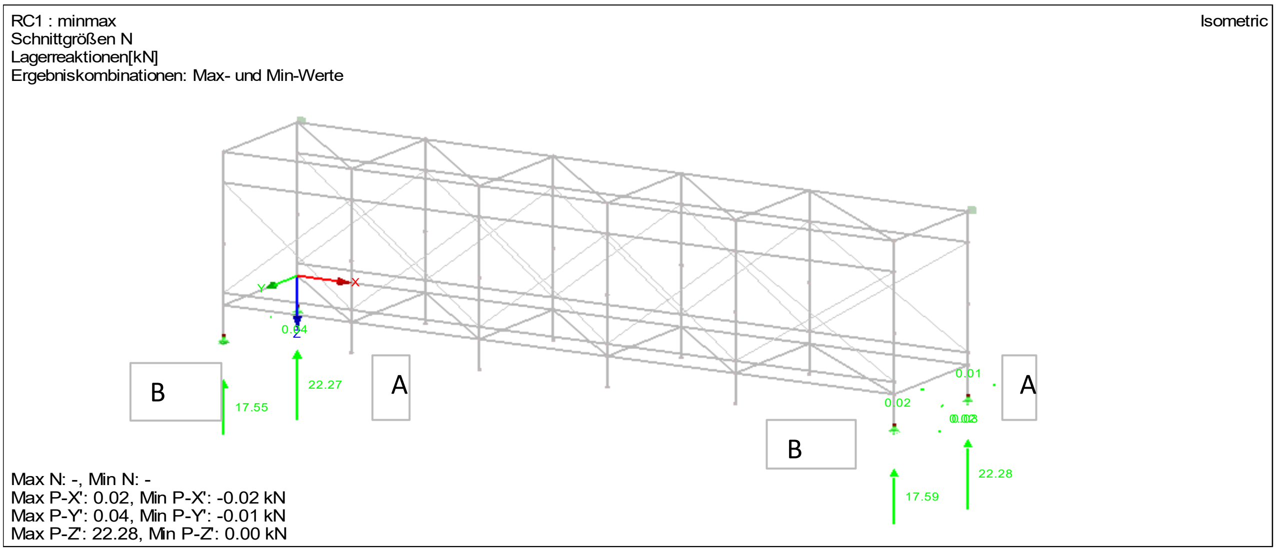




Bd= 2 * 20= 40 kN

B,g,k= 15 kN
B,q,k= 14 kN

Reaction force



	A,k [kN]	B,k [kN]
EG	7	7
LL	6	6
Snow	5	3
design	23	18

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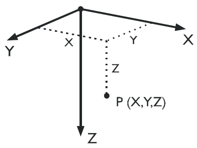
Project: 2023 | Model: K-Steel-beams Kloster-Gelati | Date: 22.09.2023

MODEL - GENERAL DATA

General	Model name	:	K-Steel-beams
	Model description	:	Kloster-Gelati
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: EN 1990 National Annex: DIN - Deutschland
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

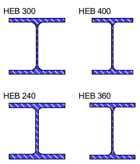


Node No.	Reference Node	Coordinate System	X [m]	Y [m]	Z [m]	Comment
1	-	Cartesian	0.000	0.000	0.000	Supported
2	-	Cartesian	13.660	0.000	0.000	
3	-	Cartesian	17.210	0.000	0.000	
4	-	Cartesian	20.760	0.000	0.000	
5	-	Cartesian	27.320	0.000	0.000	Supported
6	-	Cartesian	0.000	2.070	0.000	Supported
7	-	Cartesian	13.660	2.070	0.000	
8	-	Cartesian	17.210	2.070	0.000	
9	-	Cartesian	20.760	2.070	0.000	
10	-	Cartesian	27.320	2.070	0.000	Supported
11	-	Cartesian	13.660	6.720	0.000	Supported
12	-	Cartesian	17.210	6.720	0.000	Supported
13	-	Cartesian	20.760	6.720	0.000	Supported
14	-	Cartesian	13.660	-2.510	0.000	Supported
15	-	Cartesian	17.210	-2.510	0.000	Supported
16	-	Cartesian	20.760	-2.510	0.000	Supported
17	-	Cartesian	-1.500	2.070	0.000	
18	-	Cartesian	-1.500	0.000	0.000	
19	-	Cartesian	28.820	0.000	0.000	
20	-	Cartesian	28.820	2.070	0.000	
21	-	Cartesian	8.250	0.000	0.000	
22	-	Cartesian	8.250	2.070	0.000	
23	-	Cartesian	25.820	0.000	0.000	
24	-	Cartesian	25.820	2.070	0.000	
25	-	Cartesian	10.320	0.000	0.000	
26	-	Cartesian	23.750	0.000	0.000	
27	-	Cartesian	0.570	0.000	0.000	
28	-	Cartesian	0.570	2.070	0.000	

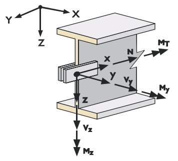
1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235 | Layher					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	HEB 300							
	1	185.00	25170.00	8563.00	0.00	0.00	300.0	300.0
		149.10	94.97	28.65				
2	HEB 400							
	1	355.70	57680.00	10820.00	0.00	0.00	300.0	400.0
		197.80	120.15	48.08				
3	HEB 240							
	1	102.70	11260.00	3923.00	0.00	0.00	240.0	240.0
		106.00	68.04	20.61				
4	HEB 360							
	1	292.50	43190.00	10140.00	0.00	0.00	300.0	360.0
		180.60	112.58	39.74				



1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	4850.000	☐	☐	☒	☒
	Nonlinearity	-	Diagram...	-	-	Diagram...	Diagram...
	Riegel LW						
2	Local x,y,z	☐	4850.000	☐	☐	☒	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante K2000+						
3	Local x,y,z	☐	☐	☐	☐	35.000	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante II						
4	Local x,y,z	☐	4850.000	☒	☐	☒	5.100
	Nonlinearity	-	-	Diagram...	-	Diagram...	-
	AR Doppelkeilkopfkupplung K2000+						
5	Local x,y,z	☐	☐	☐	☐	0.100	5.100
	Nonlinearity	-	-	-	-	-	-
	Kurzer Riegel <W06						
6	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Gelenk My und Mz						
7	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	-	-
	Gelenk My						
8	Local x,y,z	☐	20000.000	20000.000	☐	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Normalkupplung						
9	Local x,y,z	☐	5000.000	5000.000	0.010	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Drehkupplung						
10	Local x,y,z	☐	☐	☐	☐	0.010	0.010
	Nonlinearity	-	-	-	-	-	-
	Gelenke My und Mz mit geringer Steifigkeit						
11	Local x,y,z	☐	☐	☐	☐	100.000	100.000
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß (Übergreifungsstoß c=10.000kNcm/rad)						
12	Local x,y,z	☐	0.100	0.100	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Anschluss KD Fahrwagen						
13	Local x,y,z	10000.000	☐	☐	☐	☒	☒
	Nonlinearity	Partial activity...	-	-	-	-	-
	EV-Traverse mit Normalkraftbegrenzung						
14	Local x,y,z	☐	☒	☒	☐	0.010	0.010
	Nonlinearity	-	Diagram...	Diagram...	-	-	-
	TX Bolzenanschluss						
15	Local x,y,z	☐	☐	☐	☐	58.800	58.800
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß K2000 (gestauchter RV c=5.880kNcm/rad)						
16	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß LW (angeformter Stoßbolzen, ni-li Drehfeder)						
17	Local x,y,z	☐	☐	☐	☐	45.700	45.700
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß TG 60 (gestauchter RV c=4.570kNcm/rad)						
18	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
13	u_x+	Tearing from release force	11.400	-	
	u_x-	Tearing from release force	11.400	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$u_{y'}$	0.000	0.000	
		0.000	3.000	
		0.000	6.000	
		0.000	9.000	
		0.000	12.000	
		0.000	15.000	
		0.001	> 16.600	Yielding
	$\varphi_{y'}$	0.0000	0.000	
		0.0017	0.200	
		0.0042	0.400	
		0.0081	0.600	
		0.0149	0.800	
		0.0303	1.000	
		0.0485	1.100	
		0.0702	1.160	
		0.0968	> 1.200	Yielding
	$\varphi_{z'}$	0.0000	0.000	

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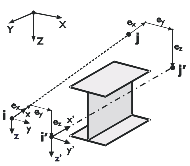
1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
		0.0100	0.100	
		0.0250	0.200	
		0.0468	0.290	
		0.0750	0.360	
		0.1007	> 0.401	Yielding
2	$\varphi_{y'}$	0.0000	0.000	
		0.0026	0.200	
		0.0065	0.400	
		0.0127	0.600	
		0.0207	0.750	
		0.0318	0.870	
		0.0442	0.950	
		0.0592	> 1.010	Yielding
3	$\varphi_{y'}$	0.0000	0.000	
		0.0014	0.100	
		0.0030	0.200	
		0.0050	0.300	
		0.0075	0.400	
		0.0107	0.500	
		0.0148	0.600	
		0.0192	> 0.680	Yielding
4	$u_{z'}$	0.000	0.000	
		0.000	5.100	
		0.002	> 5.110	Stopping
	$\varphi_{y'}$	0.0000	0.000	
		0.0068	0.150	
		0.0155	0.300	
		0.0274	0.450	
		0.0415	0.580	
		0.0566	> 0.682	Yielding
11	$\varphi_{y'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
	$\varphi_{z'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
14	$u_{y'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
	$u_{z'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
16	$\varphi_{y'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}, e_{i,X}$	$e_{i,y}, e_{i,Y}$	$e_{i,z}, e_{i,Z}$	Member End - Eccentricity $e_{j,x}, e_{j,X}$	$e_{j,y}, e_{j,Y}$	$e_{j,z}, e_{j,Z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel
2	Global	78.0	0.0	0.0	-78.0	0.0	0.0	AR_Diagonale (für 2D Berechnung)
3	Local	43.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK
4	Local	0.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK_dreifach
5	Local	60.0	0.0	0.0	0.0	0.0	0.0	AR_SLT_XL_Riegel
6	Local	25.0	0.0	0.0	0.0	0.0	0.0	AR_Riegel_Anfang (einseitig)
7	Local	0.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel_Ende (einseitig)

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

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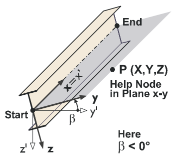
Project: 2023 | Model: K-Steel-beams Kloster-Gelati | Date: 22.09.2023

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

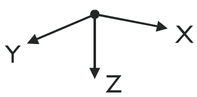
Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
5	Middle	Middle	None	0	Middle	Middle	☐	☐
6	Middle	Middle	None	0	Middle	Middle	☐	☐
7	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	11	7	Angle	0.00	4	4	-	-	-	-	4.650	Y
2	Beam	7	2	Angle	0.00	4	4	-	-	-	-	2.070	Y
3	Beam	2	14	Angle	0.00	4	4	-	-	-	-	2.510	Y
4	Beam	12	8	Angle	0.00	3	3	-	-	-	-	4.650	Y
5	Beam	8	3	Angle	0.00	3	3	-	-	-	-	2.070	Y
6	Beam	3	15	Angle	0.00	3	3	-	-	-	-	2.510	Y
8	Beam	13	9	Angle	0.00	1	1	-	-	-	-	4.650	Y
9	Beam	9	4	Angle	0.00	1	1	-	-	-	-	2.070	Y
10	Beam	4	16	Angle	0.00	1	1	-	-	-	-	2.510	Y
11	Beam	1	27	Angle	0.00	2	2	-	-	-	-	0.570	X
12	Beam	6	28	Angle	0.00	2	2	-	-	-	-	0.570	X
13	Beam	2	3	Angle	0.00	3	3	18	18	-	-	3.550	X
14	Beam	7	8	Angle	0.00	3	3	18	18	-	-	3.550	X
15	Beam	3	4	Angle	0.00	3	3	18	18	-	-	3.550	X
16	Beam	8	9	Angle	0.00	3	3	18	18	-	-	3.550	X
17	Beam	4	26	Angle	0.00	1	1	18	-	-	-	2.990	X
18	Beam	9	24	Angle	0.00	1	1	18	-	-	-	5.060	X
19	Beam	5	19	Angle	0.00	1	1	-	-	-	-	1.500	X
20	Beam	10	20	Angle	0.00	1	1	-	-	-	-	1.500	X
21	Beam	1	18	Angle	0.00	2	2	-	-	-	-	1.500	X
22	Beam	6	17	Angle	0.00	2	2	-	-	-	-	1.500	X
23	Beam	21	25	Angle	0.00	2	2	-	-	-	-	2.070	X
24	Beam	22	7	Angle	0.00	2	2	-	18	-	-	5.410	X
25	Beam	23	5	Angle	0.00	1	1	-	-	-	-	1.500	X
26	Beam	24	10	Angle	0.00	1	1	-	-	-	-	1.500	X
27	Beam	25	2	Angle	0.00	2	2	-	18	-	-	3.340	X
28	Beam	26	23	Angle	0.00	1	1	-	-	-	-	2.070	X
29	Beam	27	21	Angle	0.00	2	2	-	-	-	-	7.680	X
30	Beam	28	22	Angle	0.00	2	2	-	-	-	-	7.680	X

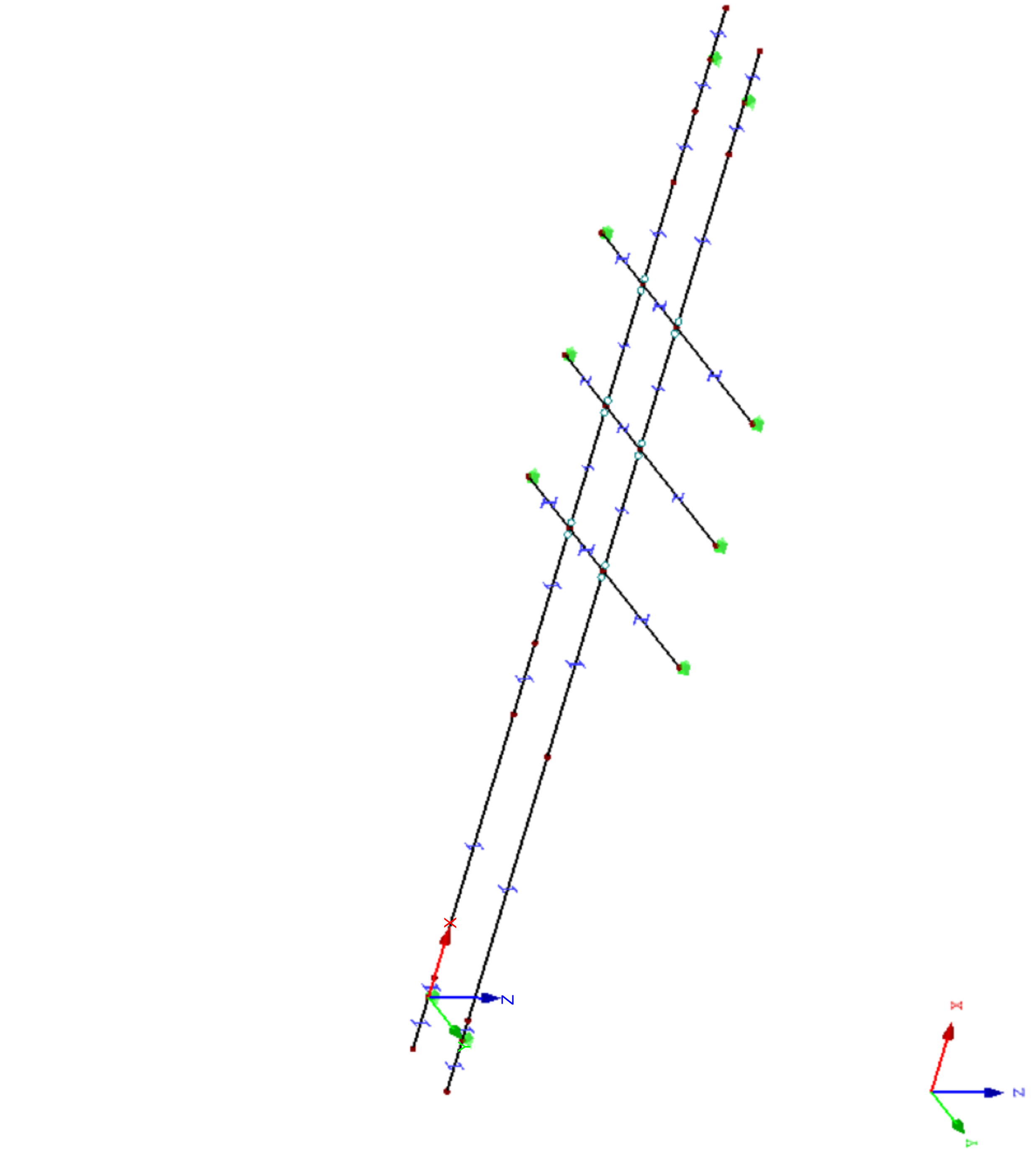
1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	1,5,6,10	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☒	☐	☒
2	11-16	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☒	☒

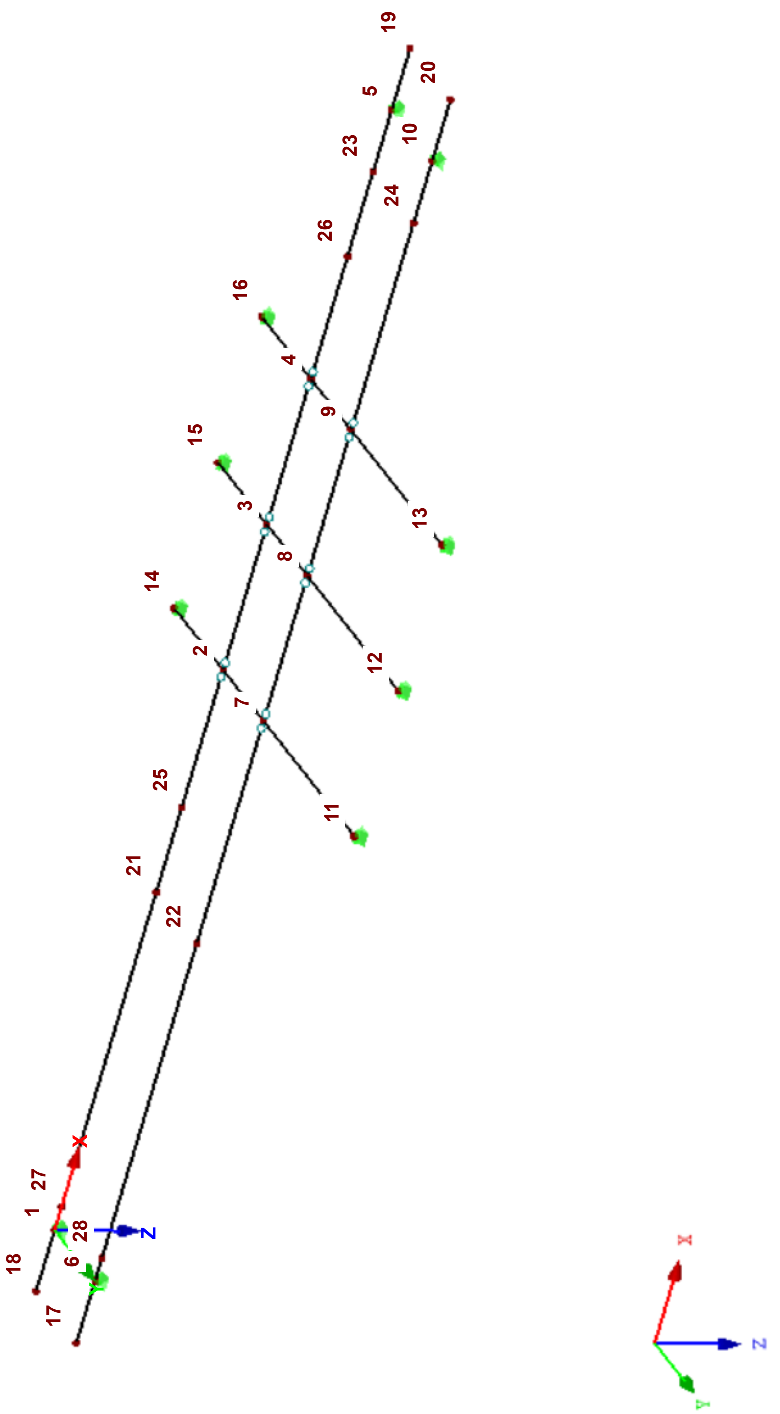
MODEL

Isometric



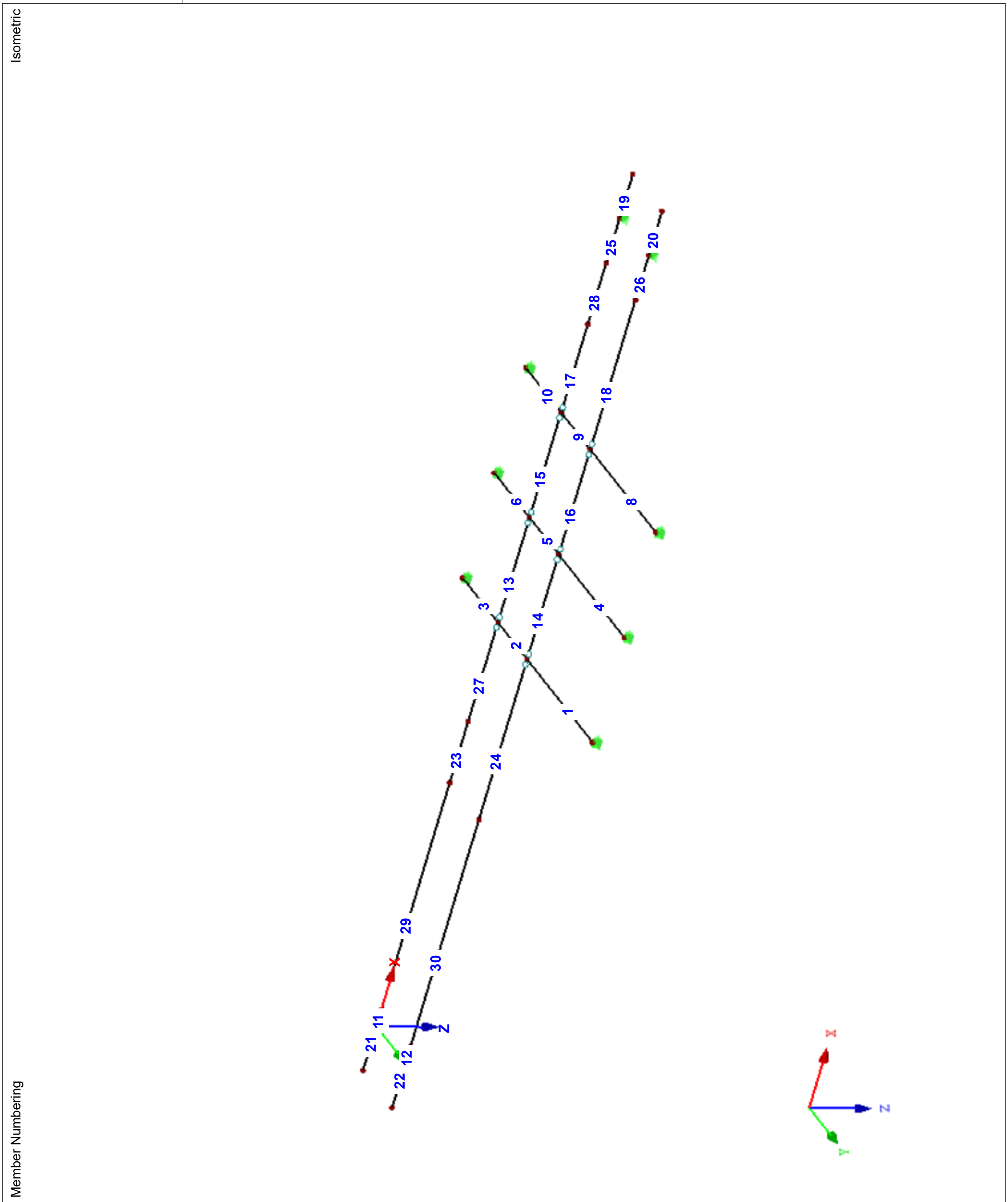
■ MODEL

Isometric



Node Numbering

MODEL



Isometric
19
20
25
26
28
10
17
18
9
15
6
16
8
5
13
3
14
4
2
27
1
23
24
29
30
X
11
21
12
22
Z
X
Z
Y
Member Numbering

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 | DIN Action Category	Active	Self-Weight - Factor in Direction X	Y	Z
LC1	Dead Load	Permanent	☒	0.000	0.000	1.000
LC2	live Load	Imposed - Category A: domestic, residential areas	☐			
LC3	Snow	Snow (H ≤ 1000 m a.s.l.)	☐			
LC4	Wind 1	Wind	☐			
LC5	Wind 2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	Dead Load	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC2	live Load	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Snow	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Wind 1	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind 2	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	Dead Load
			2	1.35	LC2	live Load
			3	1.35	LC3	Snow
CO2		Bem-2	1	0.90	LC1	Dead Load
			2	1.50	LC4	Wind 1
CO3		Bem-3	1	0.90	LC1	Dead Load
			2	1.50	LC5	Wind 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2 or CO3

LC1
Dead Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: Dead Load

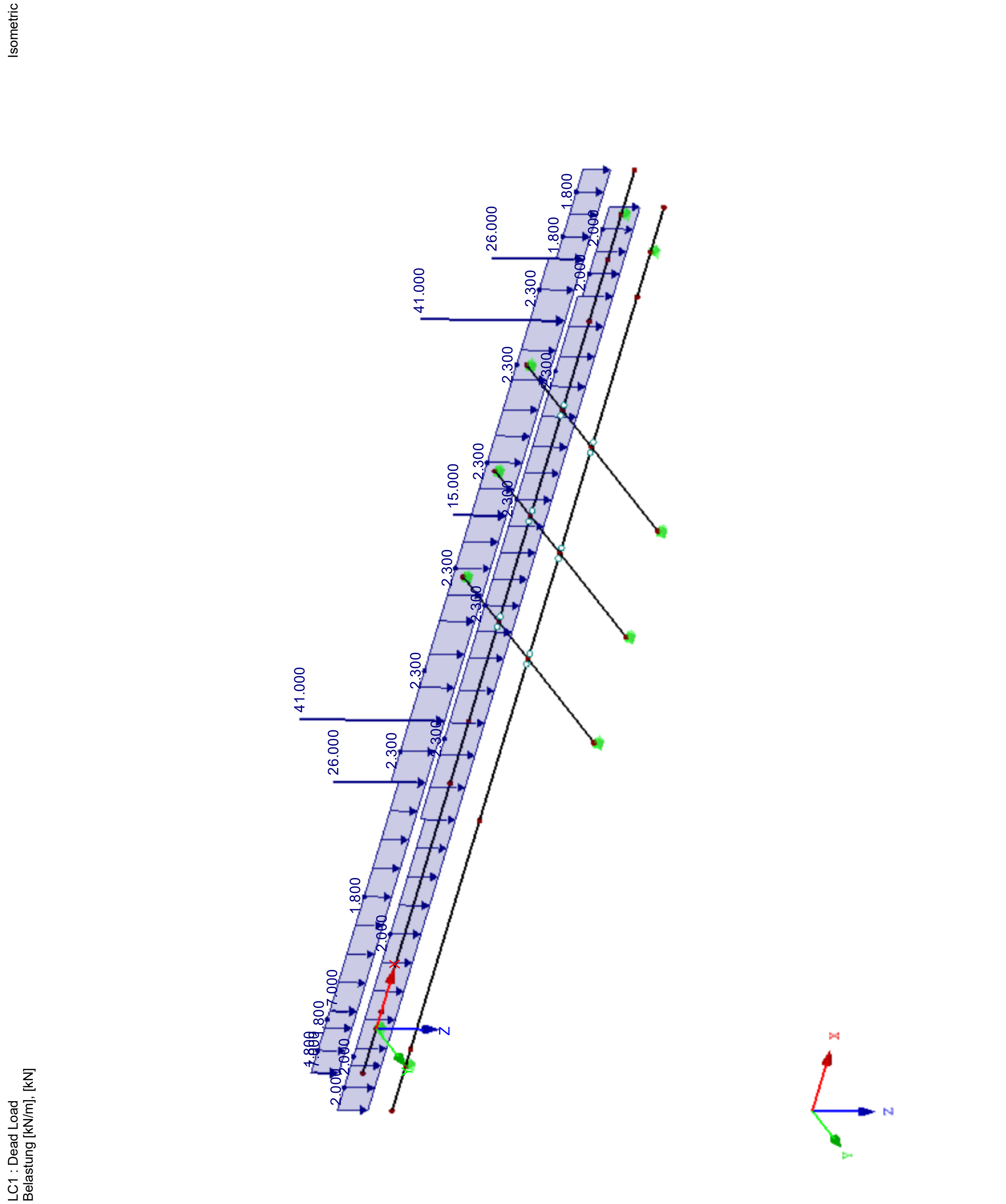
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	23	0 | Global XYZ	0.000	0.000	26.000	0.000	0.000	0.000
2	25,26	0 | Global XYZ	0.000	0.000	41.000	0.000	0.000	0.000
3	21	0 | Global XYZ	0.000	0.000	26.000	0.000	0.000	0.000
4	3	0 | Global XYZ	0.000	0.000	15.000	0.000	0.000	0.000
5	18,27	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: Dead Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.000	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.800	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	2.300	kN/m

■ LC1: DEAD LOAD



LC2
live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: live Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	21,23	0 | Global XYZ	0.000	0.000	15.000	0.000	0.000	0.000
2	25,26	0 | Global XYZ	0.000	0.000	40.000	0.000	0.000	0.000
3	3	0 | Global XYZ	0.000	0.000	14.000	0.000	0.000	0.000
4	18,27	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

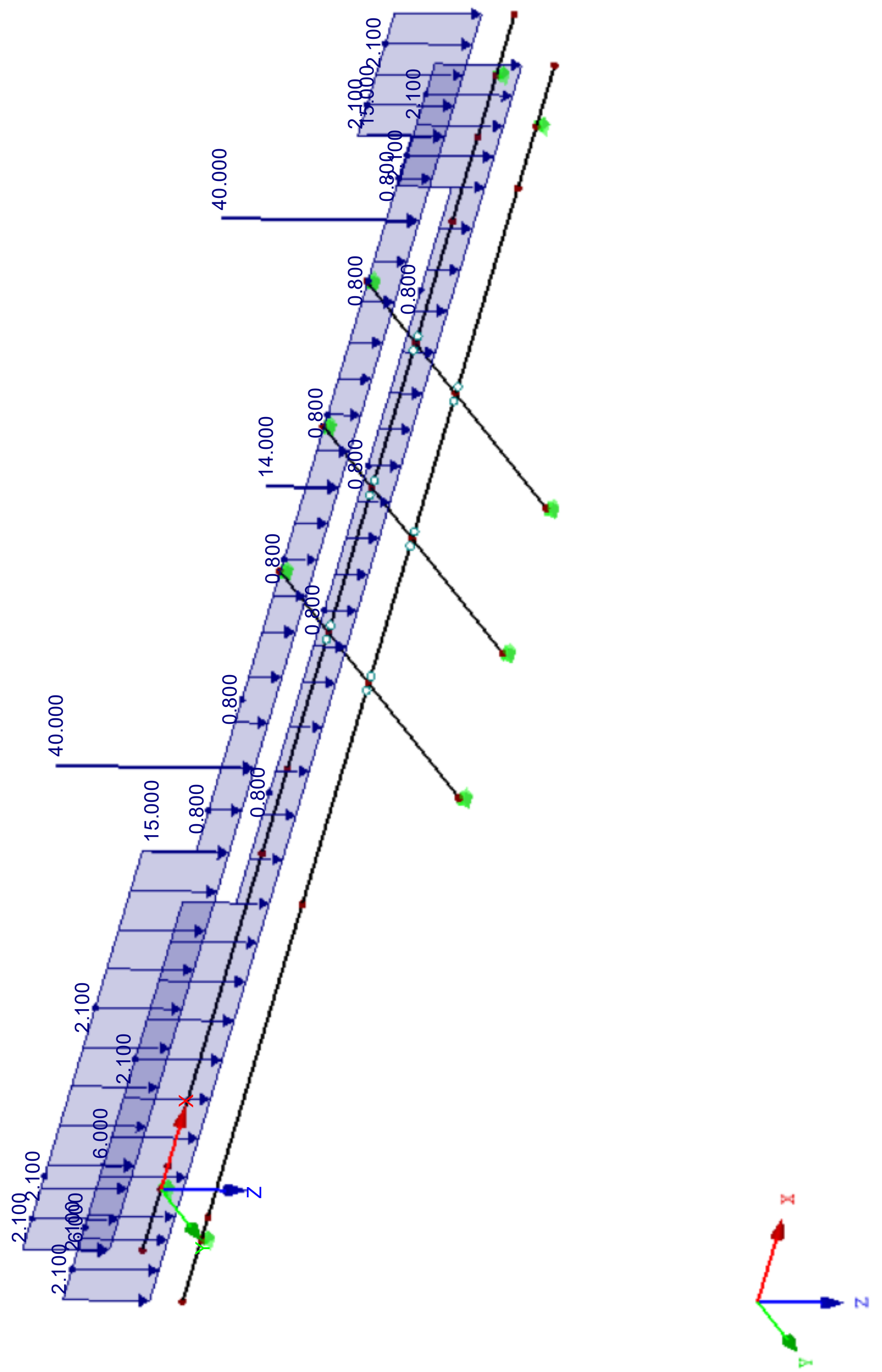
3.2 MEMBER LOADS

LC2: live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,12,19-22, 25,26,29,30	Force	Uniform	Z	True Length	p	2.100	kN/m
2	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	0.800	kN/m

LC2: LIVE LOAD

Isometric



LC2 : live Load
Belastung [kN/m], [kN]

LC3
Snow

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Snow

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	27	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
2	18	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC3: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.300	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.500	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	1.900	kN/m

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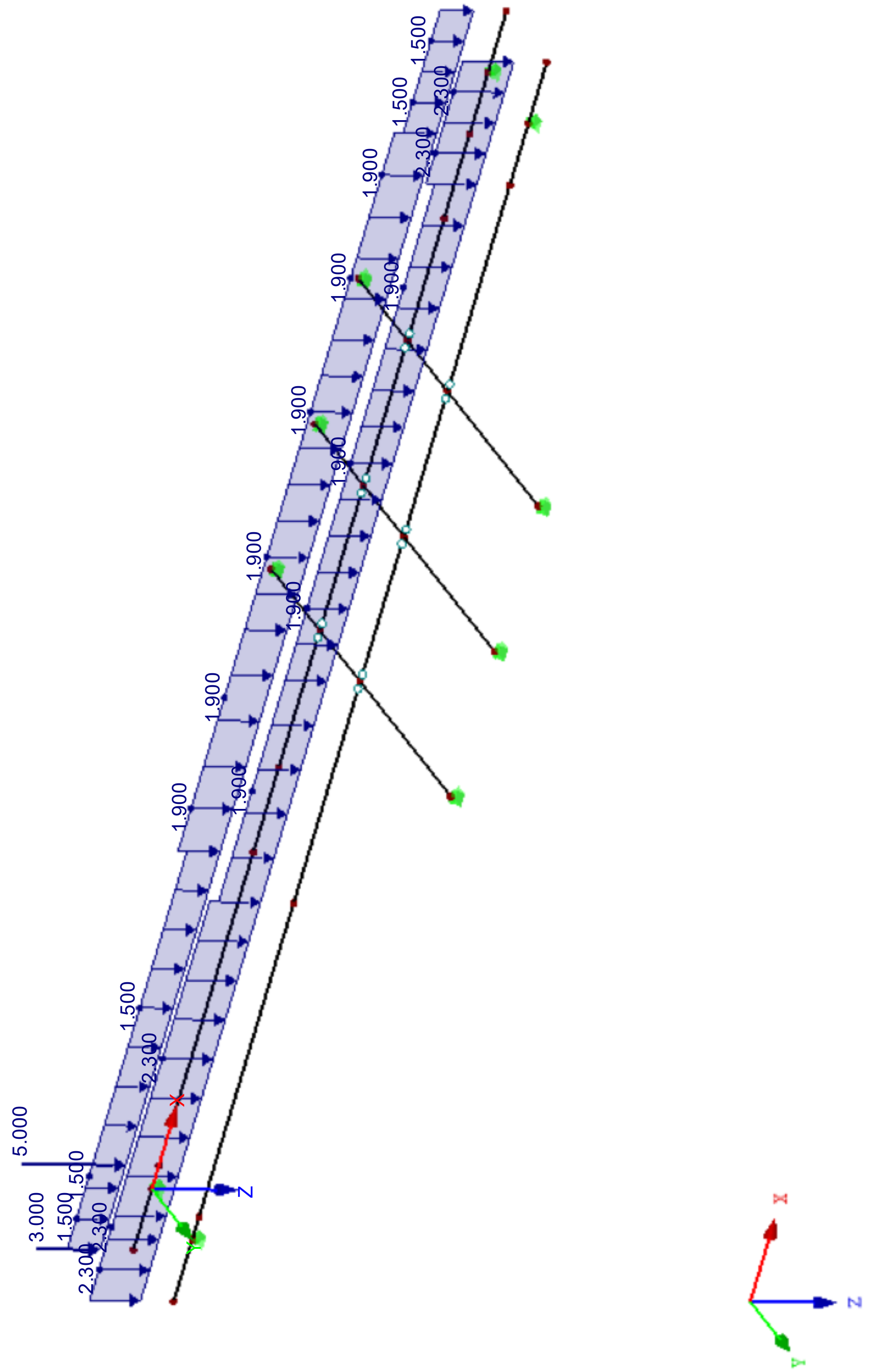
LC3: SNOW

Isometric



LC3 : Snow
Belastung [kN/m], [kN]

LC4
Wind 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Wind 1

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	25,26	0 | Global XYZ	0.000	0.000	-19.000	0.000	0.000	0.000
2	21,23	0 | Global XYZ	0.000	0.000	-16.000	0.000	0.000	0.000

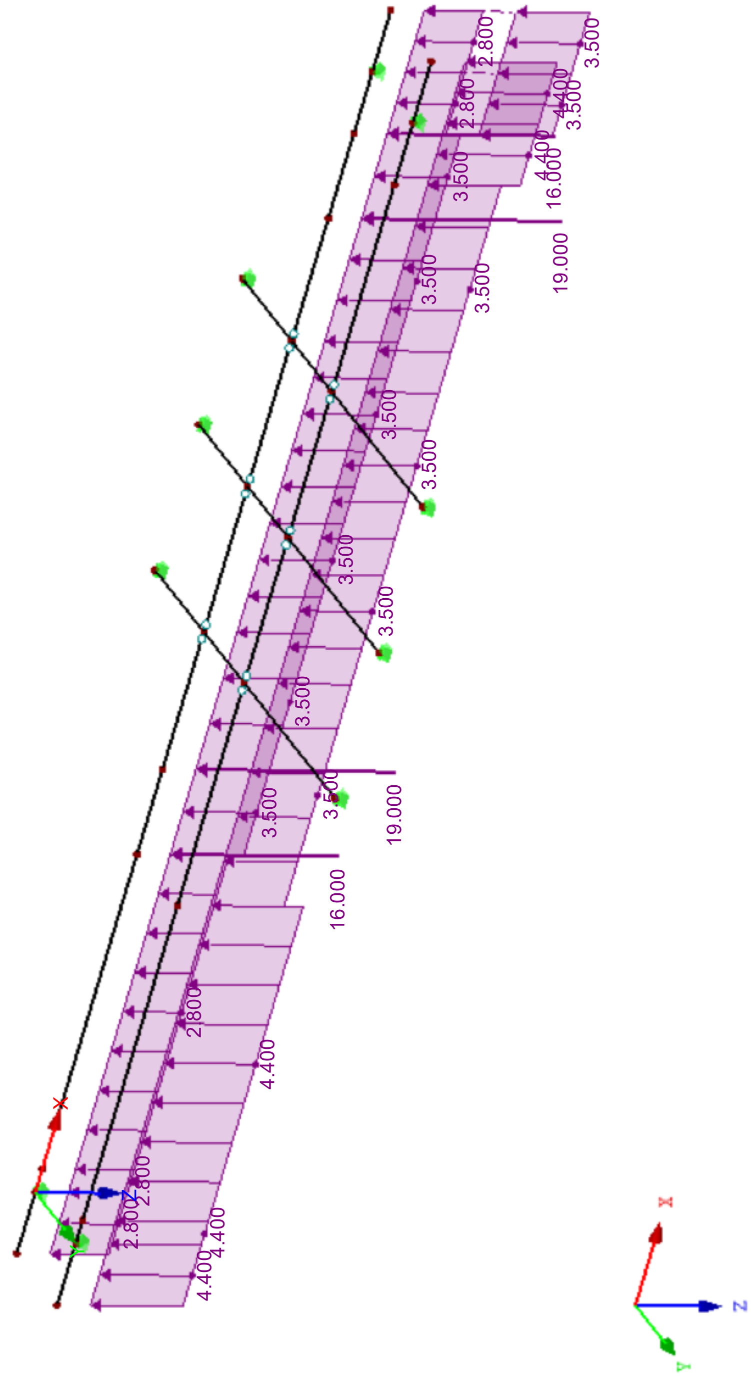
3.2 MEMBER LOADS

LC4: Wind 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	-4.400	kN/m
2	Members	11,21,29	Force	Uniform	Z	True Length	p	-2.800	kN/m
3	Members	19,25	Force	Uniform	Z	True Length	p	-2.800	kN/m
4	Members	13-19,23-25, 27,28	Force	Uniform	Z	True Length	p	-3.500	kN/m

LC4: WIND 1

Isometric



LC4 : Wind 1
Belastung [kN/m], [kN]

LC5
Wind 2

■ 3.2 MEMBER LOADS

LC5: Wind 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	-2.300	kN/m
2	Members	12-18,20, 22-24,26-28, 30	Force	Uniform	Z	True Length	p	-3.500	kN/m

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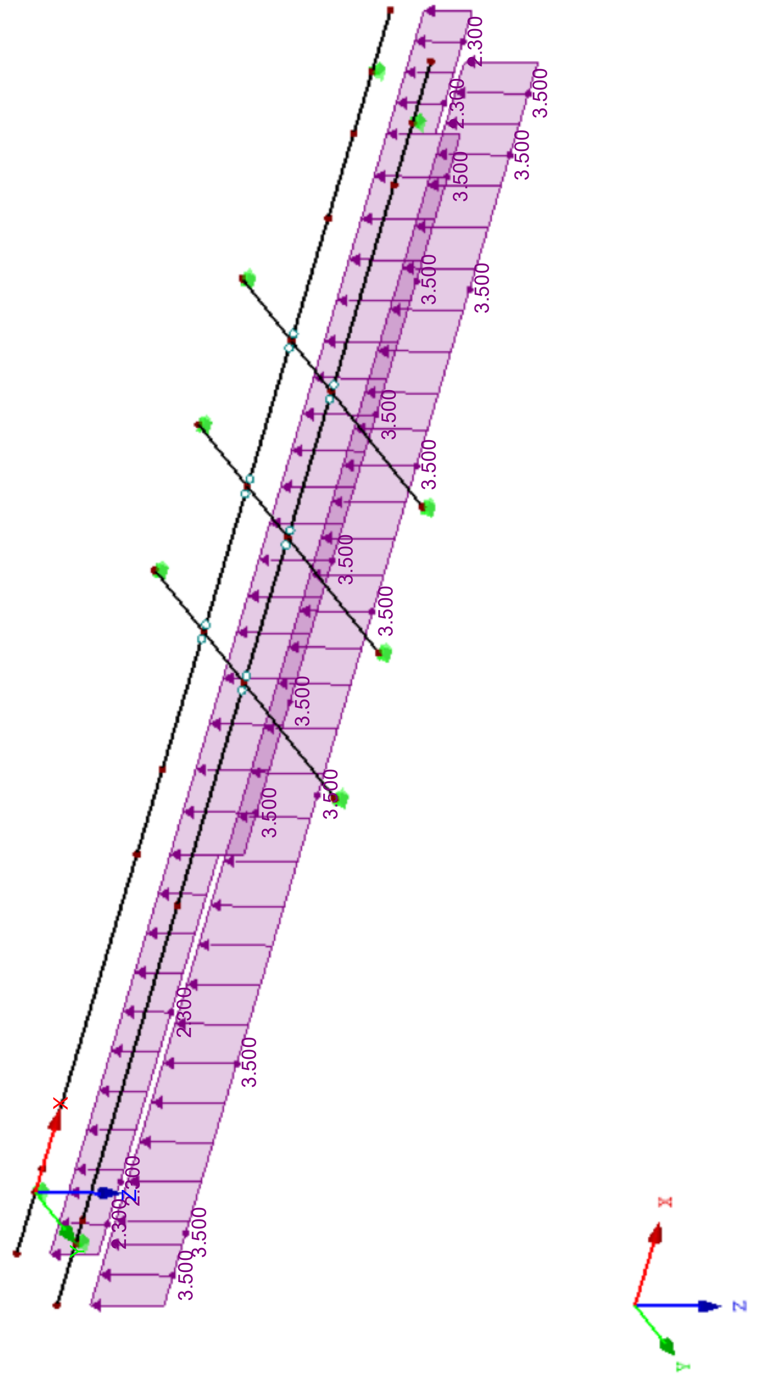
LC5: WIND 2

Isometric



LC5 : Wind 2
Belastung [kN/m]

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
LC1 - Dead Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	401.60	kN	
Sum of support reactions in Z	401.60	kN	Deviation 0.00%
Resultant of reactions about X	-256.37	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	-357.73	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	42.9	mm	Member No. 29, x: 7.296 m
Max vectorial displacement	42.9	mm	Member No. 29, x: 7.296 m
Max rotation about X	9.0	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	-8.4	mrad	Member No. 11, x: 0.285 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC2 - live Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	217.66	kN	
Sum of support reactions in Z	217.66	kN	Deviation 0.00%
Resultant of reactions about X	-208.01	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	-99.16	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	27.4	mm	Member No. 29, x: 7.296 m
Max vectorial displacement	27.4	mm	Member No. 29, x: 7.296 m
Max rotation about X	4.1	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	5.5	mrad	Member No. 27, x: 3.340 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC3 - Snow			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	123.22	kN	
Sum of support reactions in Z	123.22	kN	Deviation -0.00%
Resultant of reactions about X	-35.79	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	109.86	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	10.6	mm	Member No. 30, x: 7.296 m
Max vectorial displacement	10.6	mm	Member No. 30, x: 7.296 m
Max rotation about X	2.9	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	-2.2	mrad	Member No. 12, x: 0.171 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC4 - Wind 1			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	-295.29	kN	
Sum of support reactions in Z	-295.29	kN	Deviation 0.00%
Resultant of reactions about X	153.44	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	370.39	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	-28.9	mm	Member No. 29, x: 7.296 m
Max vectorial displacement	28.9	mm	Member No. 29, x: 7.296 m
Max rotation about X	-5.4	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	5.8	mrad	Member No. 11, x: 0.114 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC5 - Wind 2			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-196.94	kN	
	Sum of support reactions in Z	-196.94	kN	Deviation 0.00%
	Resultant of reactions about X	45.01	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
	Resultant of reactions about Y	72.87	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-17.6	mm	Member No. 30, x: 7.296 m
	Max vectorial displacement	17.6	mm	Member No. 30, x: 7.296 m
	Max rotation about X	-5.4	mrad	Member No. 6, x: 2.510 m
	Max rotation about Y	3.6	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	1002.35	kN	
	Sum of support reactions in Z	1002.35	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	116.2	mm	Member No. 29, x: 7.296 m
	Max vectorial displacement	116.2	mm	Member No. 29, x: 7.296 m
	Max rotation about X	23.8	mrad	Member No. 6, x: 2.510 m
	Max rotation about Y	-22.7	mrad	Member No. 11, x: 0.314 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-81.49	kN	
	Sum of support reactions in Z	-81.49	kN	Deviation -0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-13.4	mm	Member No. 30, x: 6.528 m
	Max vectorial displacement	13.4	mm	Member No. 30, x: 6.528 m
	Max rotation about X	-1.4	mrad	Member No. 3, x: 2.510 m
	Max rotation about Y	3.0	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	66.03	kN	
	Sum of support reactions in Z	66.03	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	19.8	mm	Member No. 29, x: 7.296 m
	Max vectorial displacement	19.8	mm	Member No. 29, x: 7.296 m
	Max rotation about X	1.1	mrad	Member No. 3, x: 2.510 m
	Max rotation about Y	4.7	mrad	Member No. 27, x: 3.340 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	116.2	mm	CO1, Member No. 29, x: 7.296 m
	Max vectorial displacement	116.2	mm	CO1, Member No. 29, x: 7.296 m

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Max rotation about X	23.8	mrad	CO1, Member No. 6, x: 2.510 m
Max rotation about Y	-22.7	mrad	CO1, Member No. 11, x: 0.314 m
Max rotation about Z	0.0	mrad	
Number of 1D finite elements (member elements)	29		
Number of FE mesh nodes	28		
Number of equations	168		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		

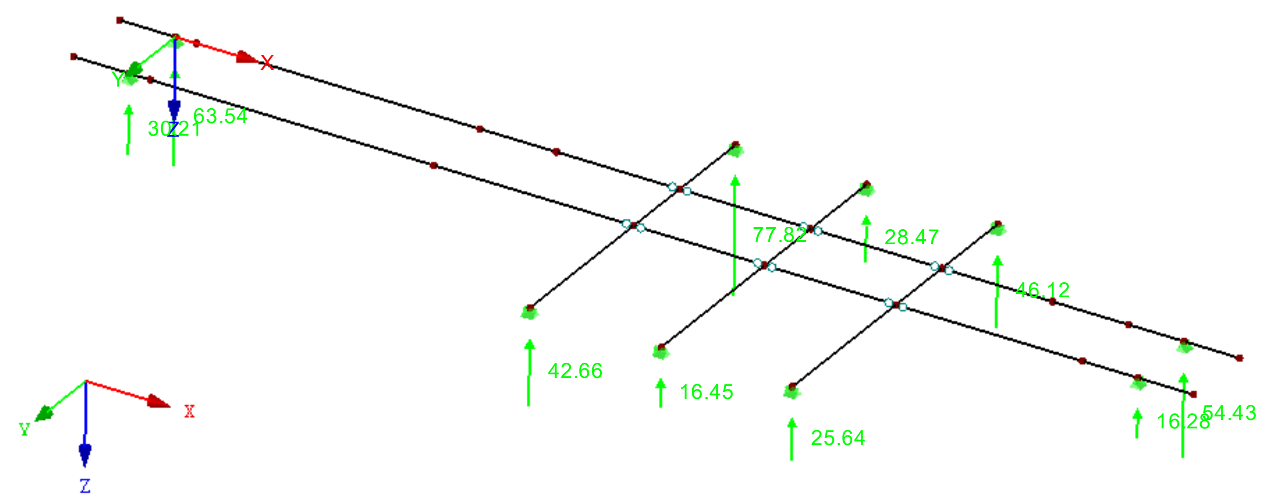
■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: HEB 300								
25	CO1	MAX N	1.500	▷ 1.91	0.00	-122.08	-0.20	-9.98	0.00
17	CO1	MIN N	2.990	▷ -0.29	0.39	73.15	-0.20	255.96	-1.36
17	CO1	MAX V_y	0.000	0.42	▷ 0.96	98.05	-0.20	0.00	0.00
25	CO1	MIN V_y	0.000	1.43	▷ -0.24	-108.78	-0.20	163.19	-0.37
17	CO1	MAX V_z	0.000	0.42	0.96	▷ 98.05	-0.20	0.00	0.00
25	CO1	MIN V_z	1.500	1.91	0.00	▷ -122.08	-0.20	-9.98	0.00
17	LC4	MAX M_T	0.000	0.00	0.00	-24.88	▷ 0.06	0.00	0.00
17	CO1	MIN M_T	2.093	0.01	0.54	80.62	▷ -0.20	186.99	-1.24
10	CO1	MAX M_y	0.000	1.03	0.00	-104.99	0.00	▷ 268.50	0.00
8	LC4	MIN M_y	4.650	0.00	0.00	-16.93	0.00	▷ -78.73	0.00
18	CO1	MAX M_z	2.024	-0.05	-0.01	9.03	0.03	35.35	▷ 0.03
28	CO1	MIN M_z	0.000	0.15	-0.19	-36.20	-0.20	255.96	▷ -1.36
	Section No. 2: HEB 400								
27	CO1	MAX N	3.340	▷ 3.79	-1.75	-175.63	0.19	0.00	0.00
21	CO1	MIN N	0.000	▷ -0.81	0.00	35.67	0.00	-42.96	0.00
29	CO1	MAX V_y	5.376	0.52	▷ 0.25	58.51	0.19	484.70	-2.10
27	CO1	MIN V_y	3.340	3.79	▷ -1.75	-175.63	0.19	0.00	0.00
11	CO1	MAX V_z	0.000	3.14	0.00	▷ 138.58	0.19	-42.96	0.00
27	CO1	MIN V_z	3.340	3.79	-1.75	▷ -175.63	0.19	0.00	0.00
29	CO1	MAX M_T	7.296	-0.02	0.23	40.49	▷ 0.19	579.73	-3.32
29	LC4	MIN M_T	0.000	0.00	0.00	-29.49	▷ -0.06	-14.11	0.00
23	CO1	MAX M_y	0.000	0.05	-0.11	-18.47	0.19	▷ 594.58	-3.57
23	LC4	MIN M_y	0.000	0.00	0.00	8.01	-0.06	▷ -158.03	0.00
24	CO1	MAX M_z	0.773	0.03	0.02	-23.22	-0.03	202.80	▷ 0.19
23	CO1	MIN M_z	2.070	0.48	-0.28	-36.78	0.19	537.40	▷ -4.03
	Section No. 3: HEB 240								
6	CO1	MAX N	2.510	▷ 1.62	0.00	-68.12	0.00	0.00	0.00
16	CO1	MIN N	0.000	▷ -0.07	-0.03	13.97	0.01	0.00	0.00
15	CO1	MAX V_y	0.000	-0.05	▷ 0.20	13.97	-0.09	0.00	0.00
13	CO1	MIN V_y	3.550	-0.05	▷ -0.20	-13.97	0.09	0.00	0.00
4	CO1	MAX V_z	0.000	0.74	0.00	▷ 37.28	0.00	0.00	0.00
6	CO1	MIN V_z	2.510	1.62	0.00	▷ -68.12	0.00	0.00	0.00
13	CO1	MAX M_T	3.372	-0.04	-0.17	-12.58	▷ 0.09	2.36	-0.03
15	CO1	MIN M_T	0.000	-0.05	0.20	13.97	▷ -0.09	0.00	0.00
6	CO1	MAX M_y	0.000	0.91	0.00	-65.31	0.00	▷ 167.48	0.00
5	LC4	MIN M_y	0.000	0.00	0.00	2.88	0.00	▷ -44.37	0.00
16	CO1	MAX M_z	1.597	-0.01	0.00	1.40	0.01	12.28	▷ 0.02
13	CO1	MIN M_z	1.952	-0.01	-0.02	-1.40	0.09	12.28	▷ -0.15
	Section No. 4: HEB 360								
3	CO1	MAX N	2.510	▷ 3.17	0.00	-186.30	0.00	0.00	0.00
2	CO1	MIN N	2.070	▷ -0.08	0.00	8.13	0.00	461.54	0.00
1	LC1	MAX V_y	0.000	0.00	▷ 0.00	42.66	0.00	0.00	0.00
1	LC1	MIN V_y	0.000	0.00	▷ 0.00	42.66	0.00	0.00	0.00
1	CO1	MAX V_z	0.000	1.39	0.00	▷ 99.20	0.00	0.00	0.00
3	CO1	MIN V_z	2.510	3.17	0.00	▷ -186.30	0.00	0.00	0.00
1	LC1	MAX M_T	0.000	0.00	0.00	42.66	▷ 0.00	0.00	0.00
1	LC1	MIN M_T	0.000	0.00	0.00	42.66	▷ 0.00	0.00	0.00
3	CO1	MAX M_y	0.000	1.80	0.00	-181.51	0.00	▷ 461.65	0.00
1	LC4	MIN M_y	4.650	0.00	0.00	-30.06	0.00	▷ -139.77	0.00
1	LC1	MAX M_z	0.000	0.00	0.00	42.66	0.00	0.00	▷ 0.00
1	LC1	MIN M_z	0.000	0.00	0.00	42.66	0.00	0.00	▷ 0.00

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]

Isometric

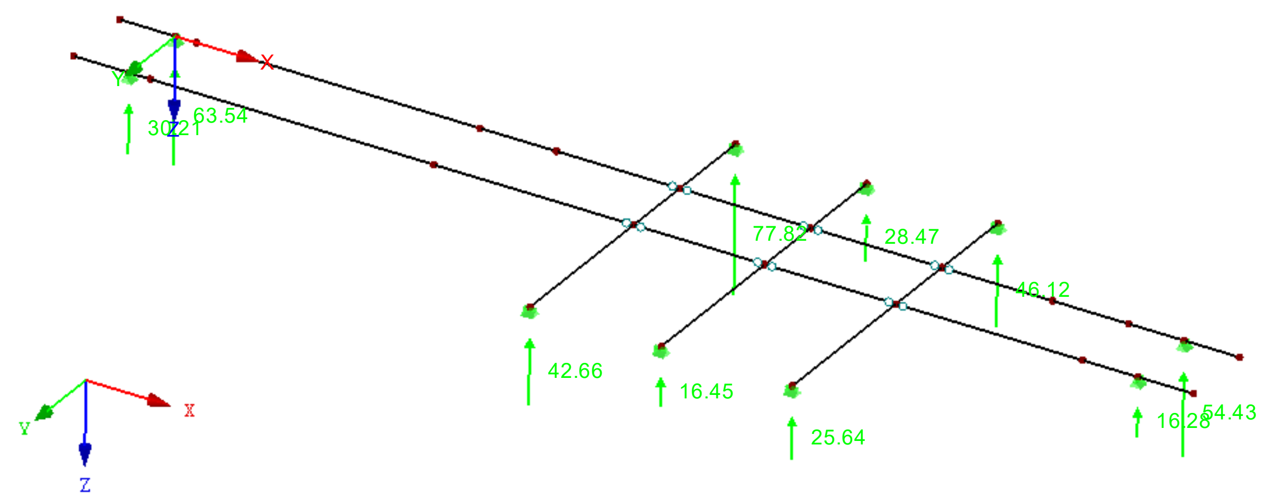


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 77.82, Min P-Z': 16.28 kN

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]

Isometric

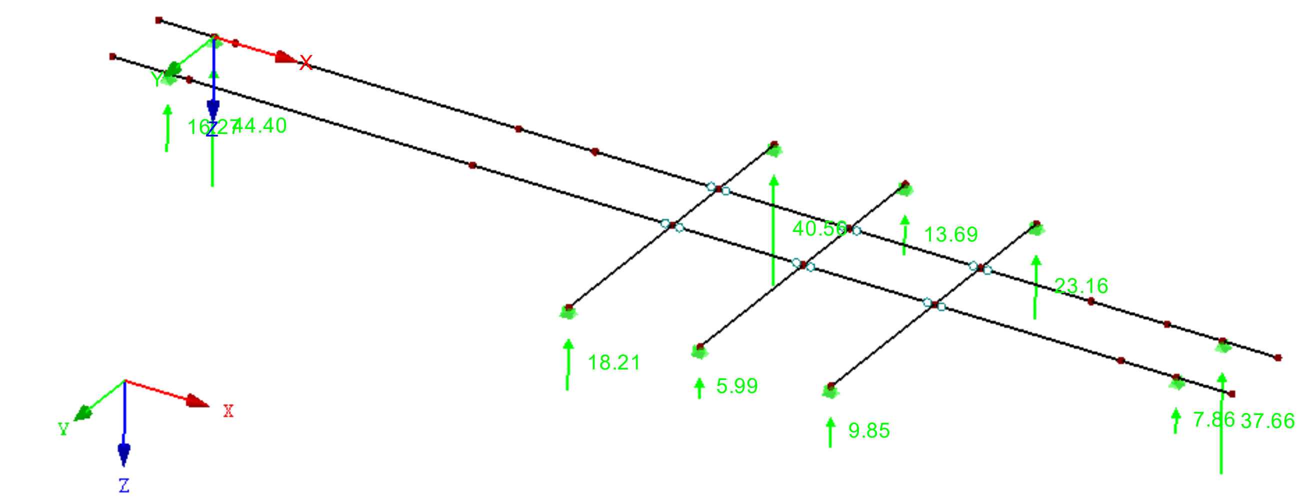


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 77.82, Min P-Z': 16.28 kN

LAGERREAKTIONEN

LC2 : live Load
Lagerreaktionen[kN]

Isometric

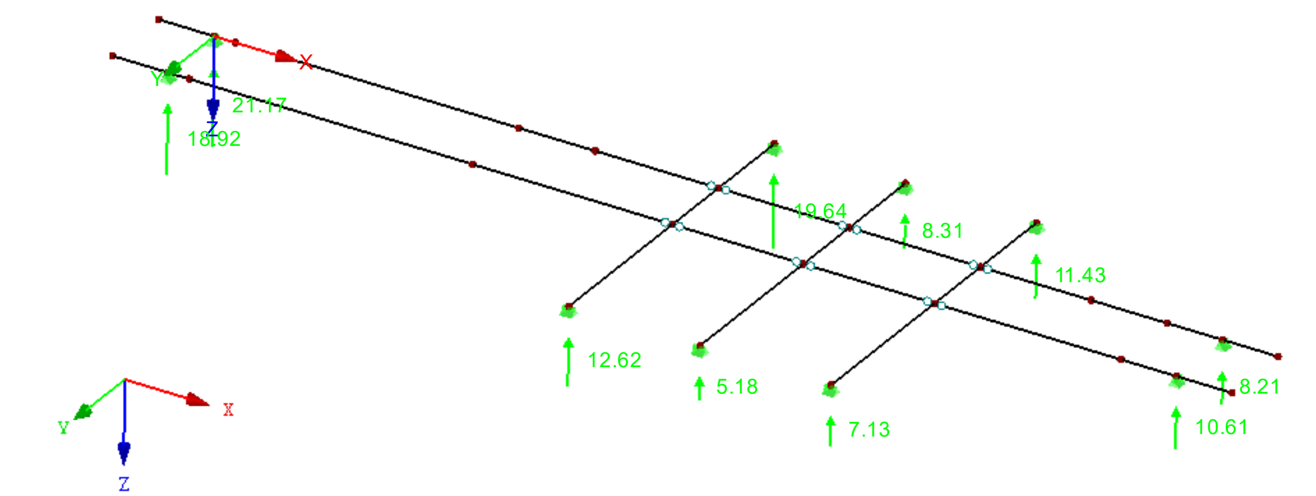


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 44.40, Min P-Z': 5.99 kN

LAGERREAKTIONEN

LC3 : Snow
Lagerreaktionen[kN]

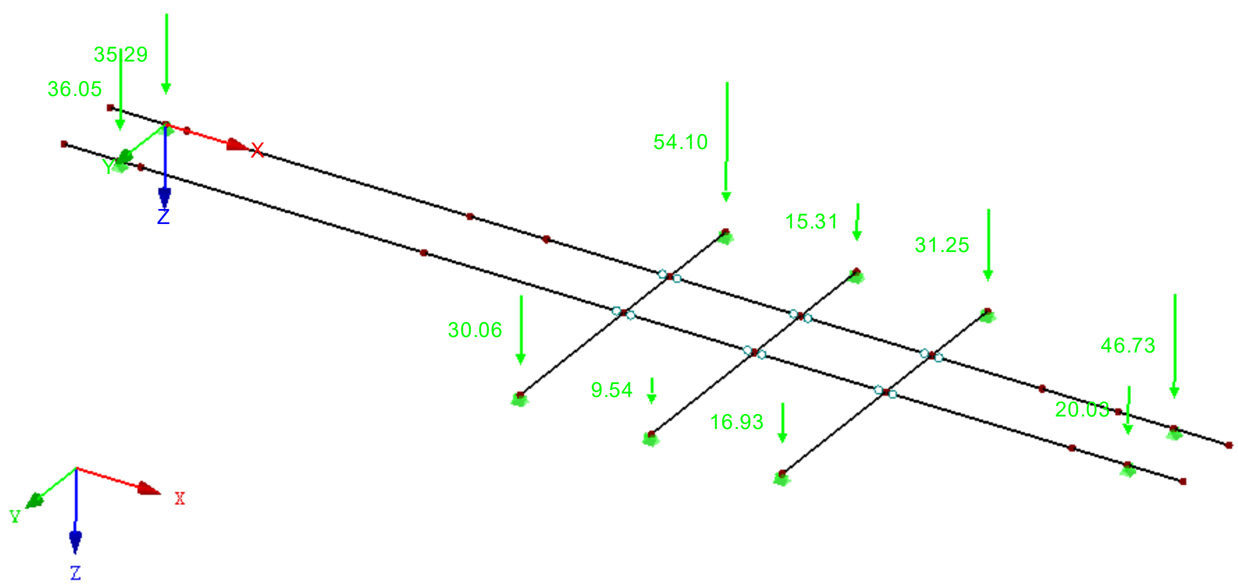
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 21.17, Min P-Z': 5.18 kN

LAGERREAKTIONEN

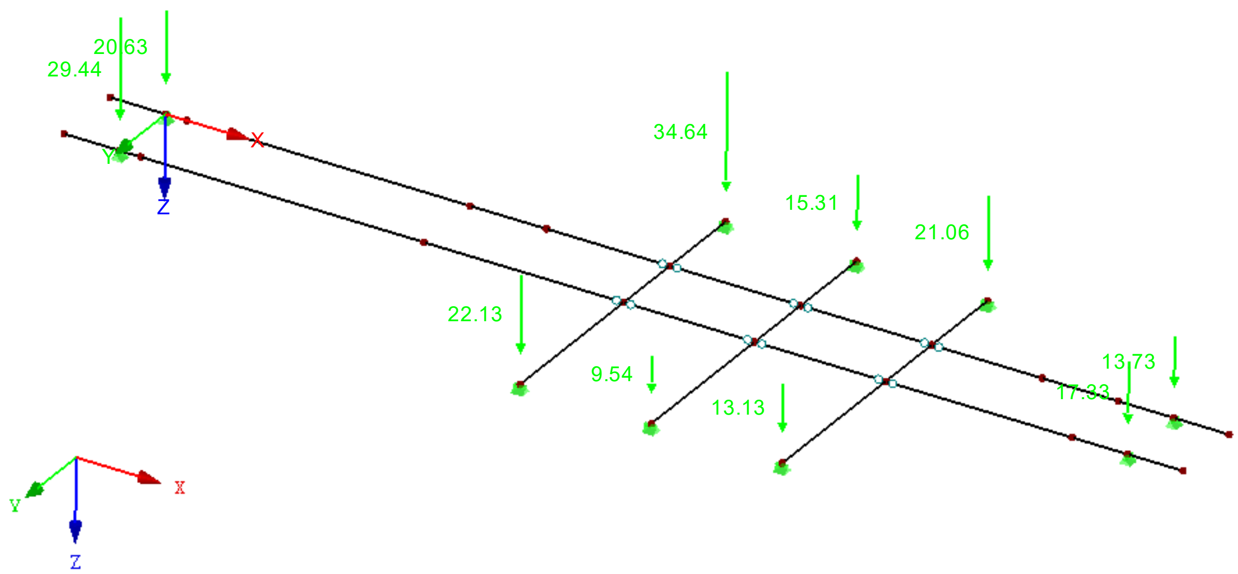
LC4 : Wind 1
Lagerreaktionen[kN]



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -54.10 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]

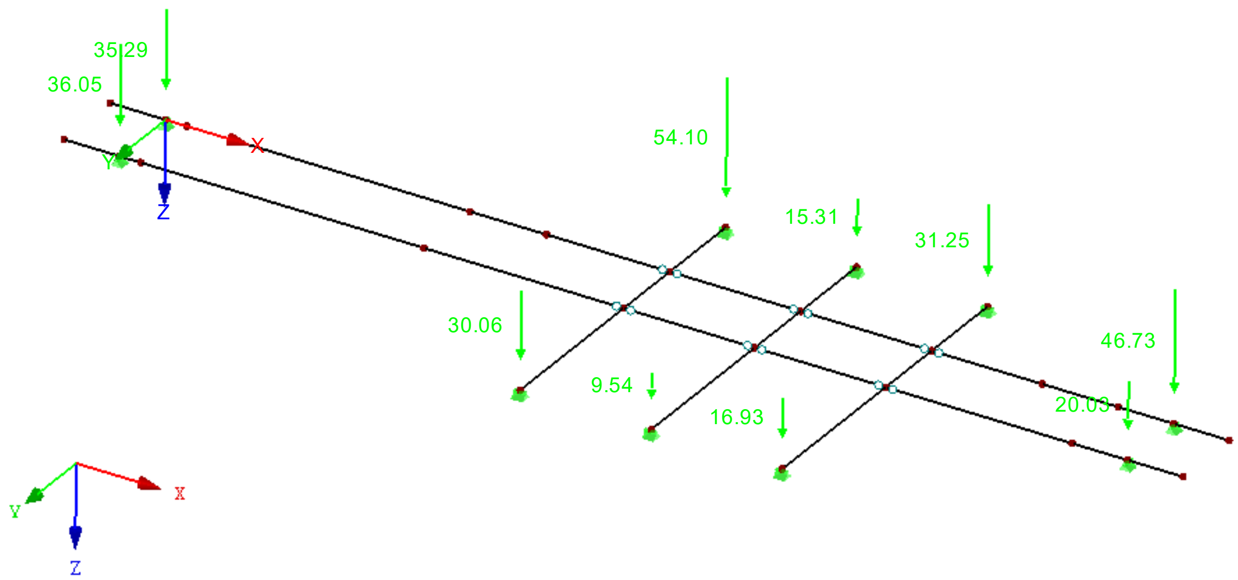


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -34.64 kN

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

LAGERREAKTIONEN

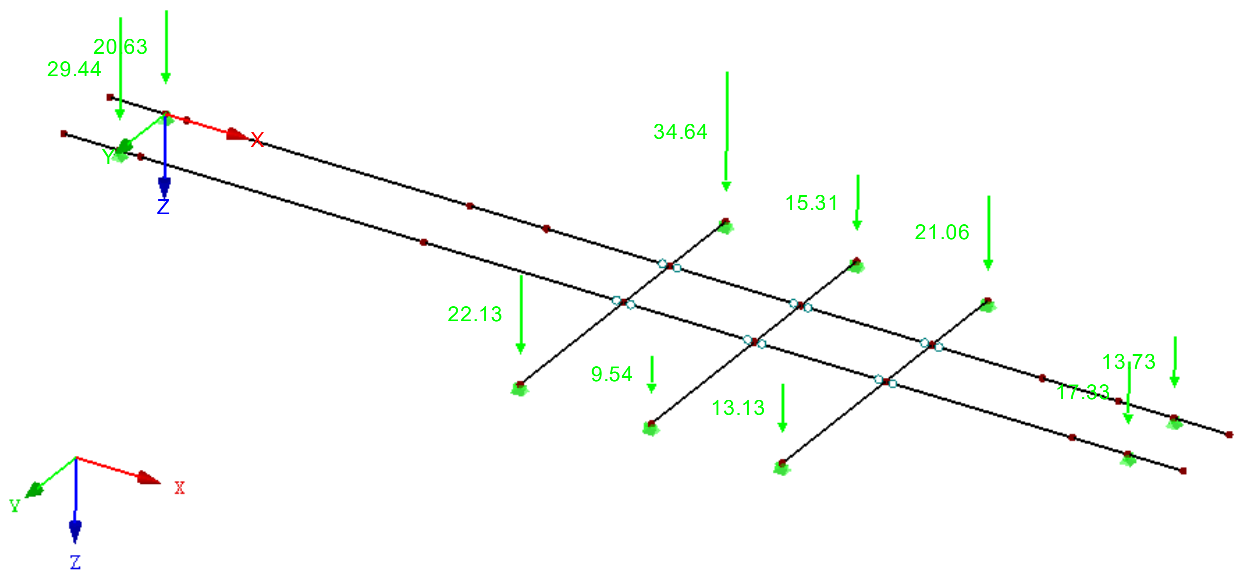
LC4 : Wind 1
Lagerreaktionen[kN]
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -54.10 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]
Isometric

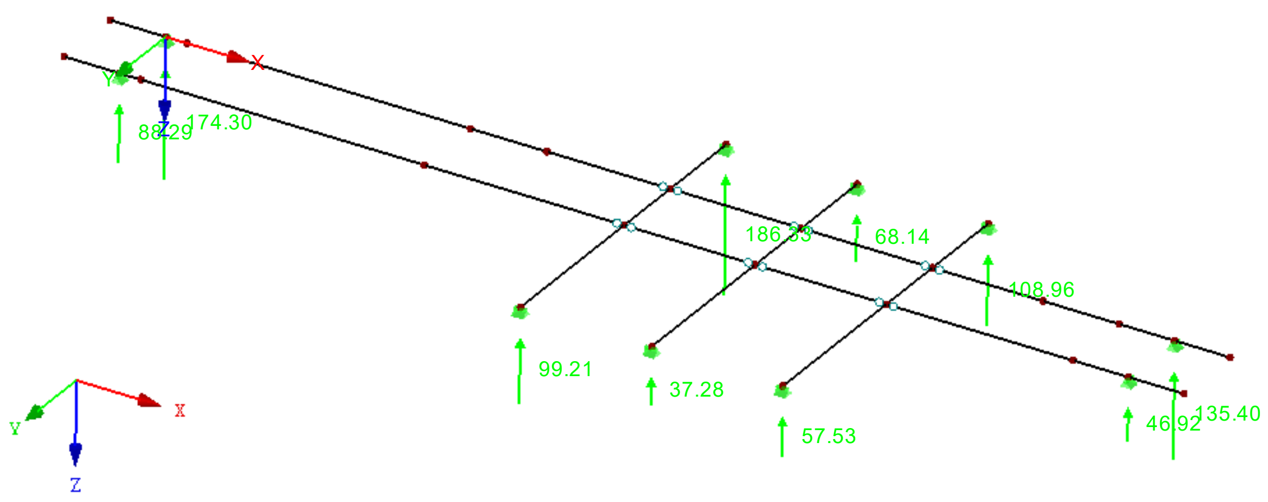


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -34.64 kN

LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

Isometric

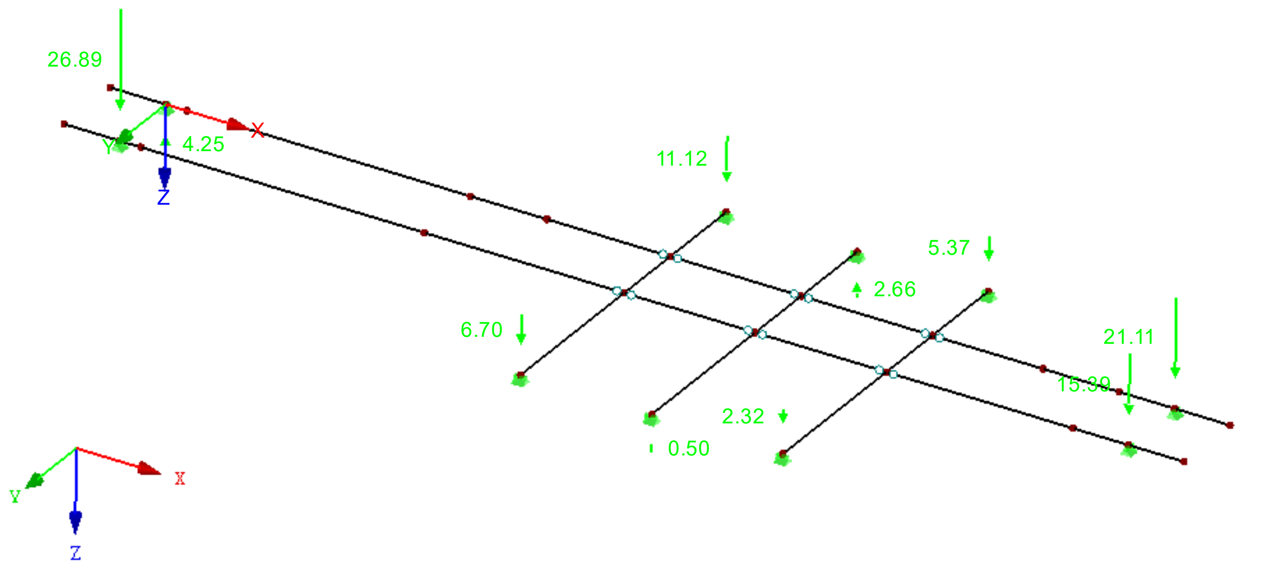


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 186.33, Min P-Z': 37.28 kN

LAGERREAKTIONEN

CO2 : Bem-2
Lagerreaktionen[kN]

Isometric

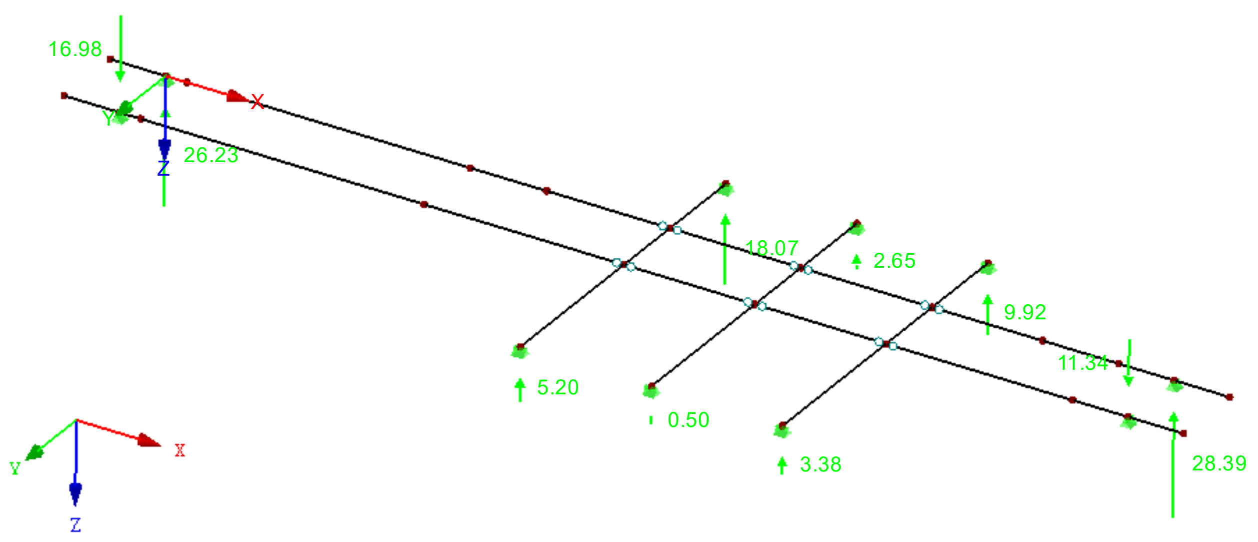


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 4.25, Min P-Z': -26.89 kN

■ LAGERREAKTIONEN

CO3 : Bem-3
Lagerreaktionen[kN]

Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 28.39, Min P-Z': -16.98 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: HEB 300										
25	RC1		1.500	MAX N	▷ 1.91	0.00	-122.08	-0.20	-9.98	0.00	CO 1
17	RC1		2.990	MIN N	▷ -0.29	0.39	73.15	-0.20	255.96	-1.36	CO 1
17	RC1		0.000	MAX V_y	0.42	▷ 0.96	98.05	-0.20	0.00	0.00	CO 1
25	RC1		0.000	MIN V_y	1.43	▷ -0.24	-108.78	-0.20	163.19	-0.37	CO 1
17	RC1		0.000	MAX V_z	0.42	0.96	▷ 98.05	-0.20	0.00	0.00	CO 1
25	RC1		1.500	MIN V_z	1.91	0.00	▷ -122.08	-0.20	-9.98	0.00	CO 1
18	RC1		0.000	MAX M_T	-0.13	-0.04	25.89	▷ 0.03	0.00	0.00	CO 1
17	RC1		2.093	MIN M_T	0.01	0.54	80.62	▷ -0.20	186.99	-1.24	CO 1
10	RC1		0.000	MAX M_y	1.03	0.00	-104.99	0.00	▷ 268.50	0.00	CO 1
8	RC1		4.650	MIN M_y	0.00	0.00	-7.22	0.00	▷ -22.19	0.00	CO 2
18	RC1		2.024	MAX M_z	-0.05	-0.01	9.03	0.03	35.35	▷ 0.03	CO 1
28	RC1		0.000	MIN M_z	0.15	-0.19	-36.20	-0.20	255.96	▷ -1.36	CO 1
	Section No. 2: HEB 400										
27	RC1		3.340	MAX N	▷ 3.79	-1.75	-175.63	0.19	0.00	0.00	CO 1
21	RC1		0.000	MIN N	▷ -0.81	0.00	35.67	0.00	-42.96	0.00	CO 1
29	RC1		5.376	MAX V_y	0.52	▷ 0.25	58.51	0.19	484.70	-2.10	CO 1
27	RC1		3.340	MIN V_y	3.79	▷ -1.75	-175.63	0.19	0.00	0.00	CO 1
11	RC1		0.000	MAX V_z	3.14	0.00	▷ 138.58	0.19	-42.96	0.00	CO 1
27	RC1		3.340	MIN V_z	3.79	-1.75	▷ -175.63	0.19	0.00	0.00	CO 1
29	RC1		7.296	MAX M_T	-0.02	0.23	40.49	▷ 0.19	579.73	-3.32	CO 1
24	RC1		0.271	MIN M_T	0.00	0.02	-18.78	▷ -0.03	213.35	0.19	CO 1
23	RC1		0.000	MAX M_y	0.05	-0.11	-18.47	0.19	▷ 594.58	-3.57	CO 1
30	RC1		5.760	MIN M_y	0.00	0.00	-0.25	0.00	▷ -65.90	0.00	CO 2
24	RC1		0.773	MAX M_z	0.03	0.02	-23.22	-0.03	202.80	▷ 0.19	CO 1
23	RC1		2.070	MIN M_z	0.48	-0.28	-36.78	0.19	537.40	▷ -4.03	CO 1
	Section No. 3: HEB 240										
6	RC1		2.510	MAX N	▷ 1.62	0.00	-68.12	0.00	0.00	0.00	CO 1
16	RC1		0.000	MIN N	▷ -0.07	-0.03	13.97	0.01	0.00	0.00	CO 1
15	RC1		0.000	MAX V_y	-0.05	▷ 0.20	13.97	-0.09	0.00	0.00	CO 1
13	RC1		3.550	MIN V_y	-0.05	▷ -0.20	-13.97	0.09	0.00	0.00	CO 1
4	RC1		0.000	MAX V_z	0.74	0.00	▷ 37.28	0.00	0.00	0.00	CO 1
6	RC1		2.510	MIN V_z	1.62	0.00	▷ -68.12	0.00	0.00	0.00	CO 1
13	RC1		3.372	MAX M_T	-0.04	-0.17	-12.58	▷ 0.09	2.36	-0.03	CO 1
15	RC1		0.000	MIN M_T	-0.05	0.20	13.97	▷ -0.09	0.00	0.00	CO 1
6	RC1		0.000	MAX M_y	0.91	0.00	-65.31	0.00	▷ 167.48	0.00	CO 1
5	RC1		0.000	MIN M_y	0.00	0.00	5.64	0.00	▷ -5.80	0.00	CO 2

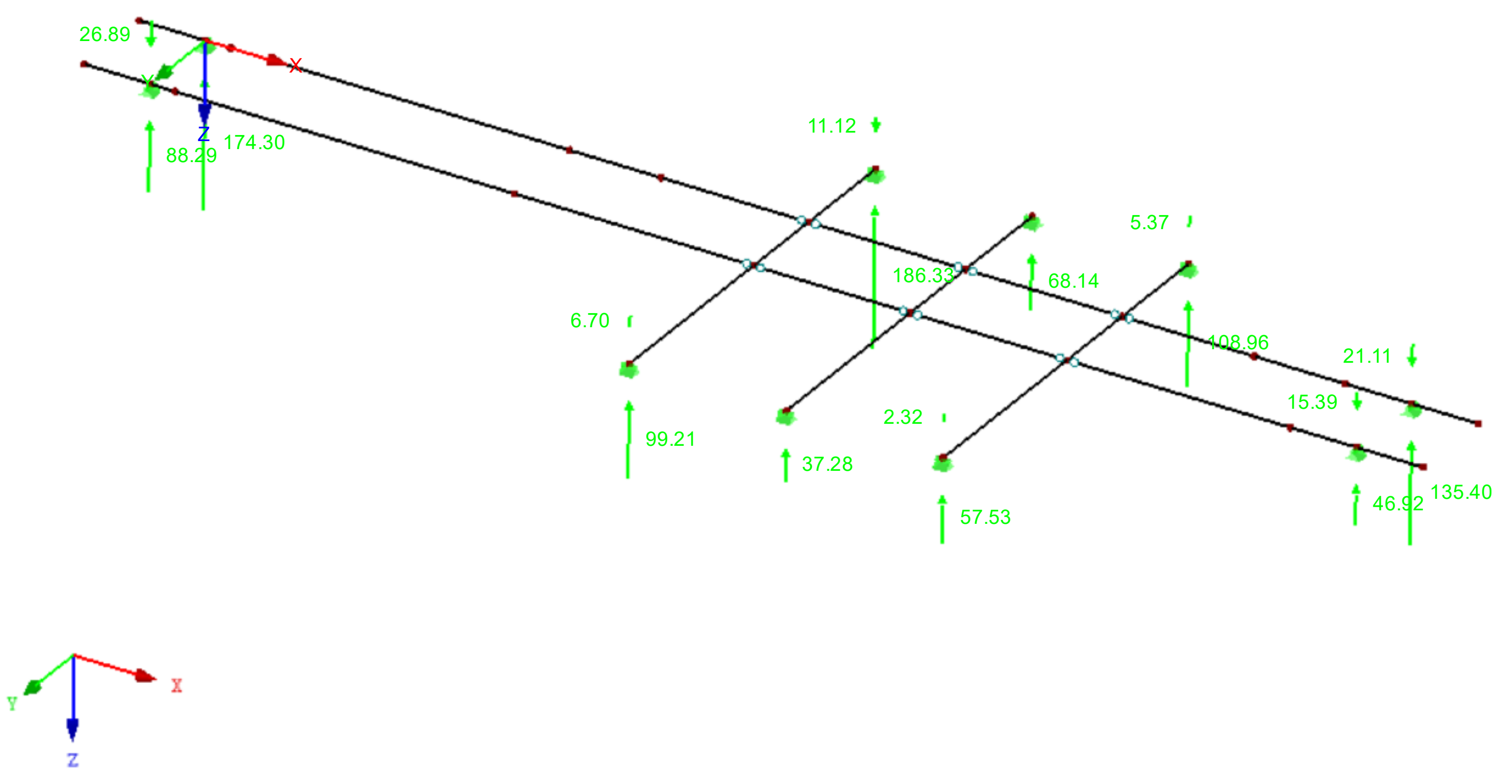
■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
16	RC1		1.597	MAX M_z	-0.01	0.00	1.40	0.01	12.28	▷ 0.02	CO 1
13	RC1		1.952	MIN M_z	-0.01	-0.02	-1.40	0.09	12.28	▷ -0.15	CO 1
	Section No. 4: HEB 360										
3	RC1		2.510	MAX N	▷ 3.17	0.00	-186.30	0.00	0.00	0.00	CO 1
2	RC1		2.070	MIN N	▷ -0.08	0.00	8.13	0.00	461.54	0.00	CO 1
1	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MAX V_z	1.39	0.00	▷ 99.20	0.00	0.00	0.00	CO 1
3	RC1		2.510	MIN V_z	3.17	0.00	▷ -186.30	0.00	0.00	0.00	CO 1
1	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
3	RC1		0.000	MAX M_y	1.80	0.00	-181.51	0.00	▷ 461.65	0.00	CO 1
1	RC1		4.650	MIN M_y	0.00	0.00	-12.63	0.00	▷ -44.93	0.00	CO 2
1	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
1	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

RC1 : minmax
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 186.33, Min P-Z': -26.89 kN

LAGERREAKTIONEN

Project: 2023
Model: K-Steel-beams
Kloster-Gelati
Date: 22.09.2023

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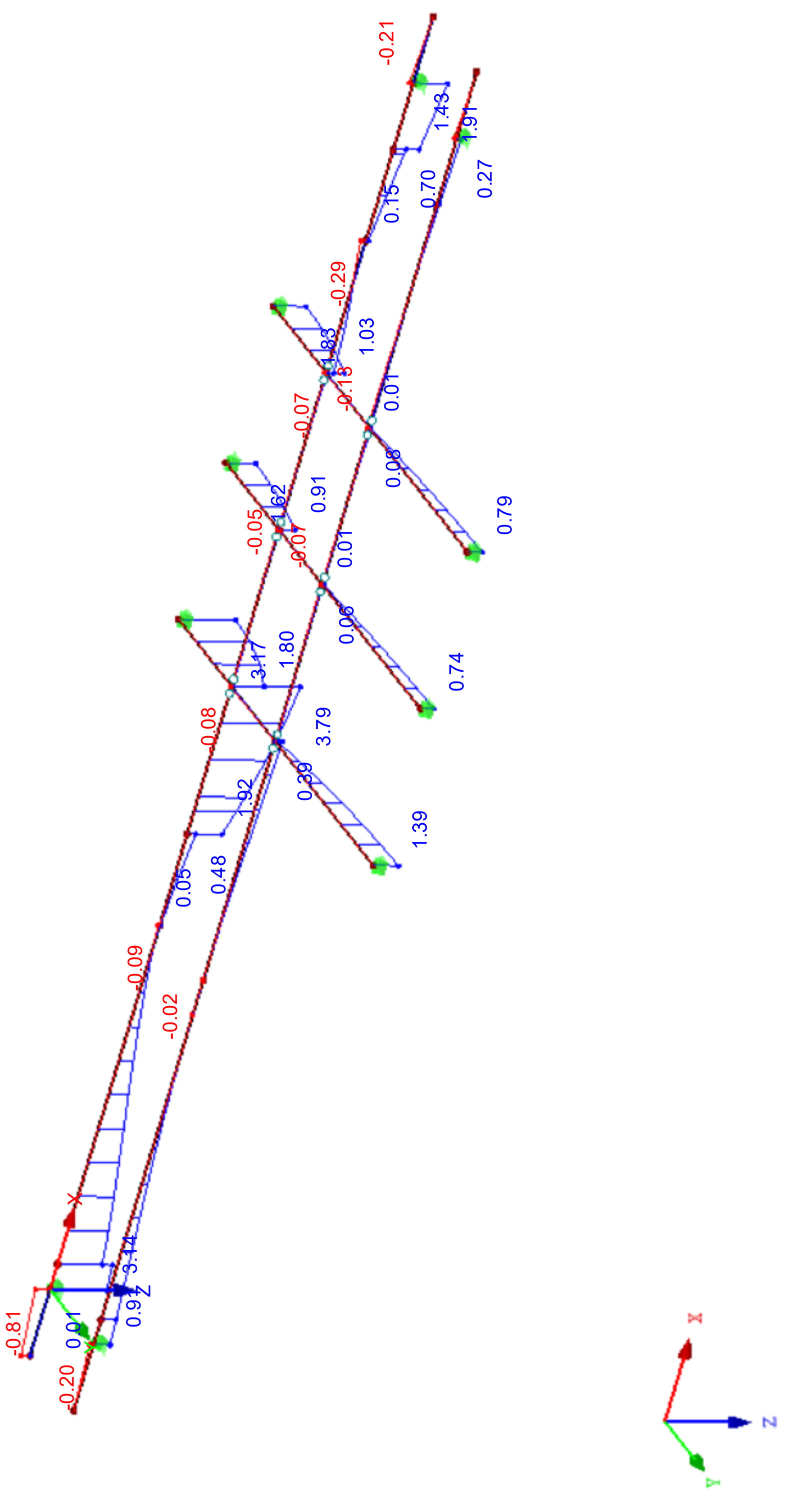
RESULTS

INTERNAL FORCES N

Isometric

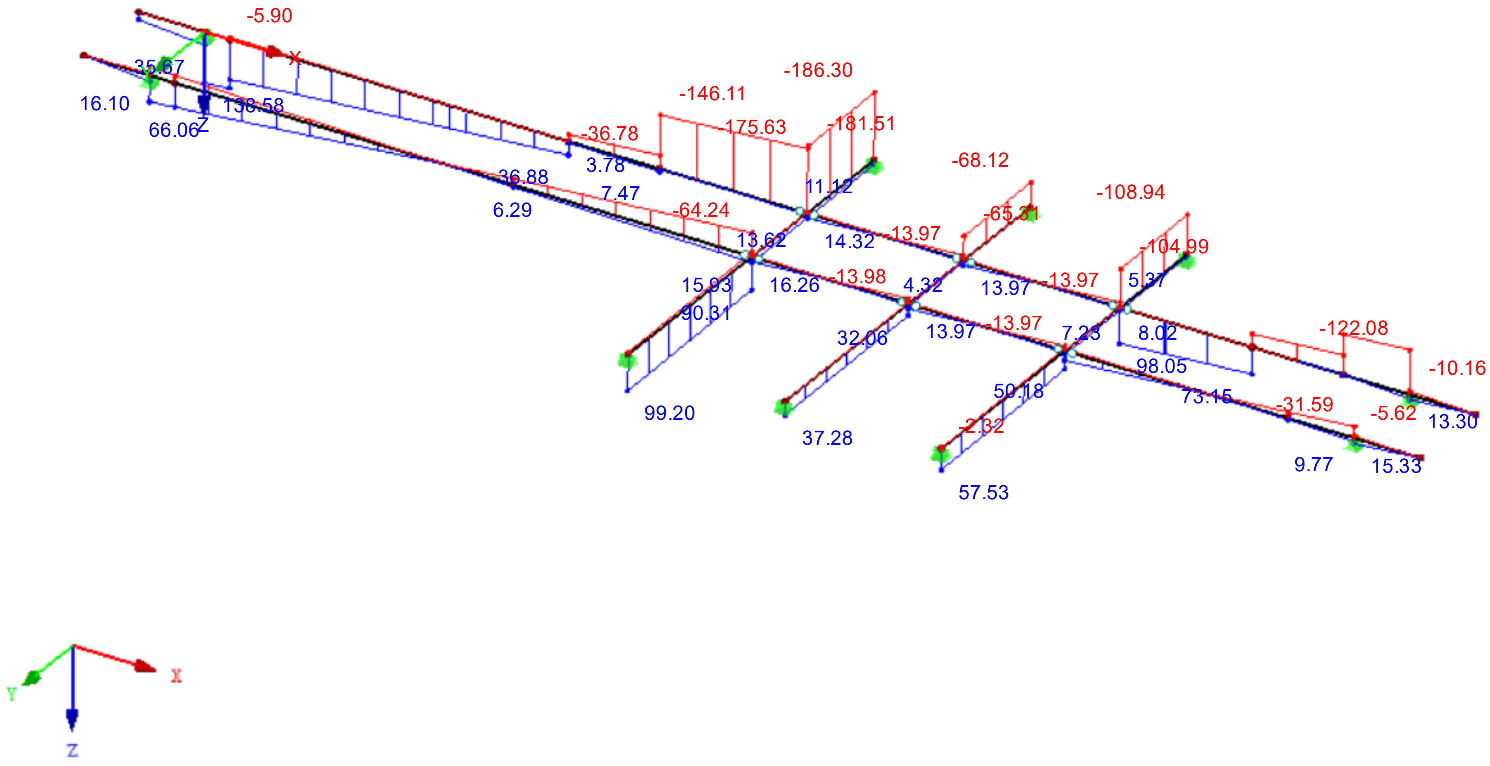


RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Max N: 3.79, Min N: -0.81 [kN]

RC1 : minmax
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max V-z: 138.58, Min V-z: -186.30 [kN]

■ INTERNAL FORCES V_z

Project: 2023
Model: K-Steel-beams
Kloster-Gelati
Date: 22.09.2023

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RESULTS

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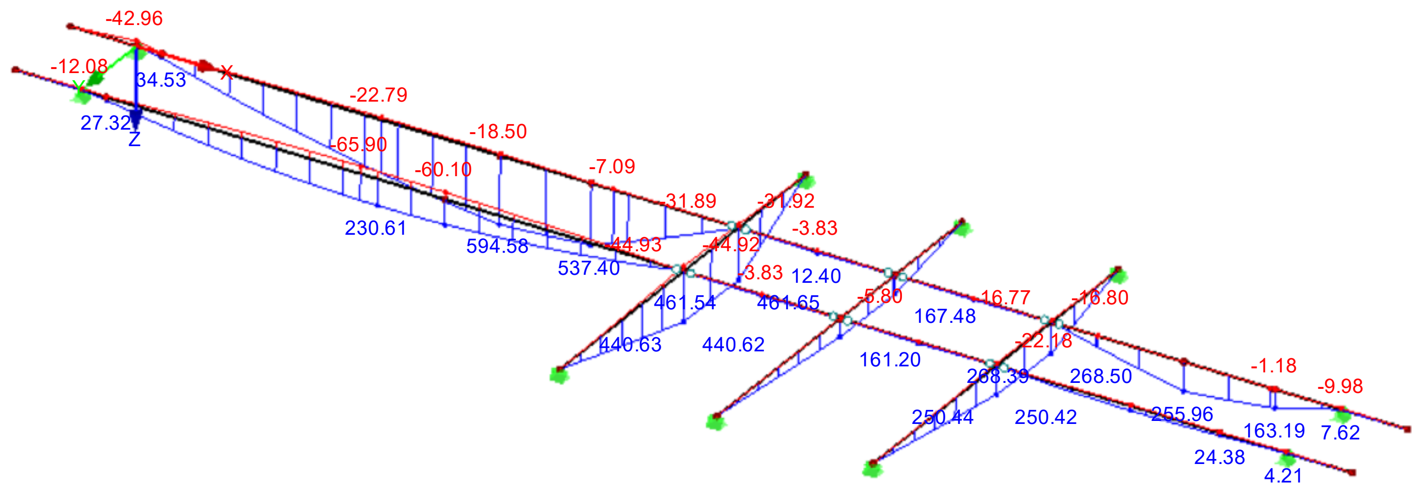
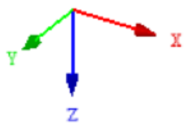
RC1 : minmax
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

Isometric





Max M-y: 594.58, Min M-y: -65.90 [kNm]

■ INTERNAL FORCES M_y

Project: 2023

Model: K-Steel-beams
Kloster-Gelati

Date: 22.09.2023

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RESULTS

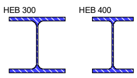
1.1 GENERAL DATA

Members to design:	All	
Sets of members to design:		
National Annex:	DIN	
Ultimate Limit State Design		
Load combinations to design:	CO1	Bem-1
	CO2	Bem-2
	CO3	Bem-3

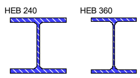
1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
1	S 235 | Layher Benutzerdefiniertes Material	21000.00	8100.00	0.300	23.50	100.0

1.3 CROSS-SECTIONS



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	1	HEB 300	I-section rolled	0.67	
2	1	HEB 400	I-section rolled	0.87	
3	1	HEB 240	I-section rolled	0.74	
4	1	HEB 360	I-section rolled	0.81	



1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
1	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
2	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
3	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
4	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
5	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
6	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
8	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
9	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
10	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
11	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
12	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
13	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
14	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
15	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
16	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
17	☒	☒	1.00	2.990	☒	1.00	2.990	☒	1.0	1.0	2.990	2.990
18	☒	☒	1.00	5.060	☒	1.00	5.060	☒	1.0	1.0	5.060	5.060
19	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
20	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
21	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
22	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
23	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
24	☒	☒	1.00	5.410	☒	1.00	5.410	☒	1.0	1.0	5.410	5.410
25	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
26	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
27	☒	☒	1.00	3.340	☒	1.00	3.340	☒	1.0	1.0	3.340	3.340
28	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
29	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
30	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
1	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
2	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
3	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Cross-sectional area for tension design	☐
4	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
5	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
6	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
8	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
9	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
10	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
11	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
12	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
13	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
14	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
15	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
16	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
17	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
18	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
19	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
20	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
21	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
22	Cross-Section	2 - HEB 400

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1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
23	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
24	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
25	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
26	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
27	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
28	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
29	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
30	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
1	Cross-section No. 4 - HEB 360					
	4.650	LK1	0.70	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.12	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.70	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	4.650	LK1	0.77	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
2	Cross-section No. 4 - HEB 360					
	2.070	LK1	0.73	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.73	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.81	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
3	Cross-section No. 4 - HEB 360					
	0.000	LK1	0.73	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.23	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.73	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.81	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
4	Cross-section No. 3 - HEB 240					
	0.698	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	4.650	LK1	0.65	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.65	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	4.650	LK1	0.72	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
5	Cross-section No. 3 - HEB 240					
	2.070	LK1	0.68	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK3	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.68	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.74	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
6	Cross-section No. 3 - HEB 240					
	0.000	LK1	0.68	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.68	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.74	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
8	Cross-section No. 1 - HEB 300					
	4.650	LK1	0.57	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.09	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.57	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	4.650	LK1	0.63	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
9	Cross-section No. 1 - HEB 300					
	2.070	LK1	0.61	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.61	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.67	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
10	Cross-section No. 1 - HEB 300					
	0.000	LK1	0.61	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.17	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.61	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.67	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
11	Cross-section No. 2 - HEB 400					
	0.000	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
12	Cross-section No. 2 - HEB 400					
	0.570	LK1	0.04	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.570	LK1	0.04	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.570	LK1	0.04	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
13	Cross-section No. 3 - HEB 240					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
14	Cross-section No. 3 - HEB 240					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
15	Cross-section No. 3 - HEB 240					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
16	Cross-section No. 3 - HEB 240					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
17	Cross-section No. 1 - HEB 300					
	0.448	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	2.990	LK3	0.15	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.990	LK3	0.15	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.990	LK1	0.35	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.990	LK1	0.64	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
18	Cross-section No. 1 - HEB 300					
	3.036	LK1	0.09	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.036	LK1	0.09	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.036	LK1	0.11	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
19	Cross-section No. 1 - HEB 300					
	0.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.02	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
20	Cross-section No. 1 - HEB 300					
	1.200	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.03	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
21	Cross-section No. 2 - HEB 400					
	0.000	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
22	Cross-section No. 2 - HEB 400					
	1.500	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK1	0.02	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
23	Cross-section No. 2 - HEB 400					
	0.000	LK3	0.17	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.17	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.63	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK3	0.18	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.000	LK1	0.84	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
24	Cross-section No. 2 - HEB 400					
	0.000	LK1	0.29	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	5.410	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.29	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.32	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
25	Cross-section No. 1 - HEB 300					
	0.000	LK1	0.37	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.19	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.37	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.41	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
26	Cross-section No. 1 - HEB 300					
	0.000	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
27	Cross-section No. 2 - HEB 400					
	0.000	LK3	0.16	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.340	LK1	0.18	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.16	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.52	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK3	0.17	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.000	LK1	0.79	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
28	Cross-section No. 1 - HEB 300					
	1.967	LK1	0.38	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.967	LK1	0.38	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.35	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.64	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
29	Cross-section No. 2 - HEB 400					
	1.536	LK1	0.25	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.11	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.536	LK1	0.25	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	7.680	LK1	0.63	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	7.680	LK3	0.18	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.000	LK1	0.87	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
30	Cross-section No. 2 - HEB 400					
	6.144	LK1	0.30	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6

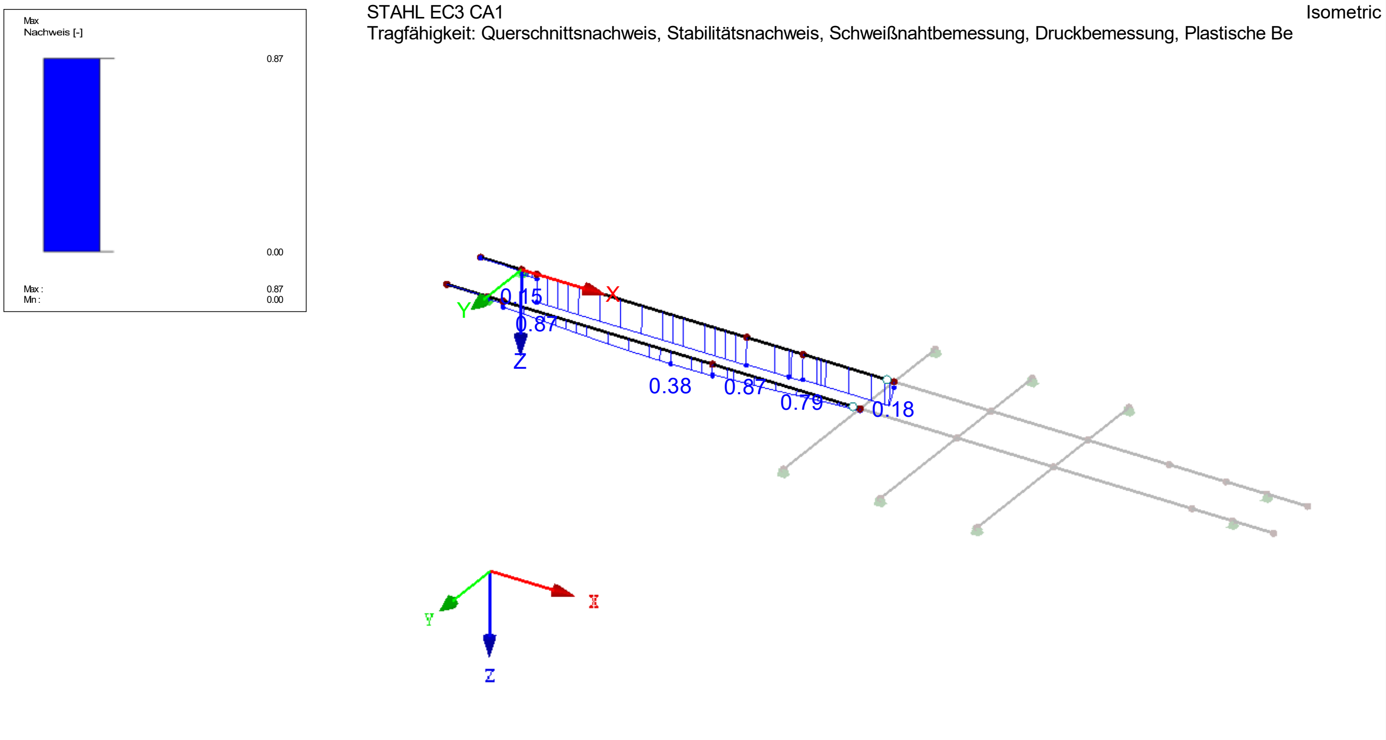
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	6.144	LK1	0.30	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	6.144	LK1	0.38	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section

NACHWEIS

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be

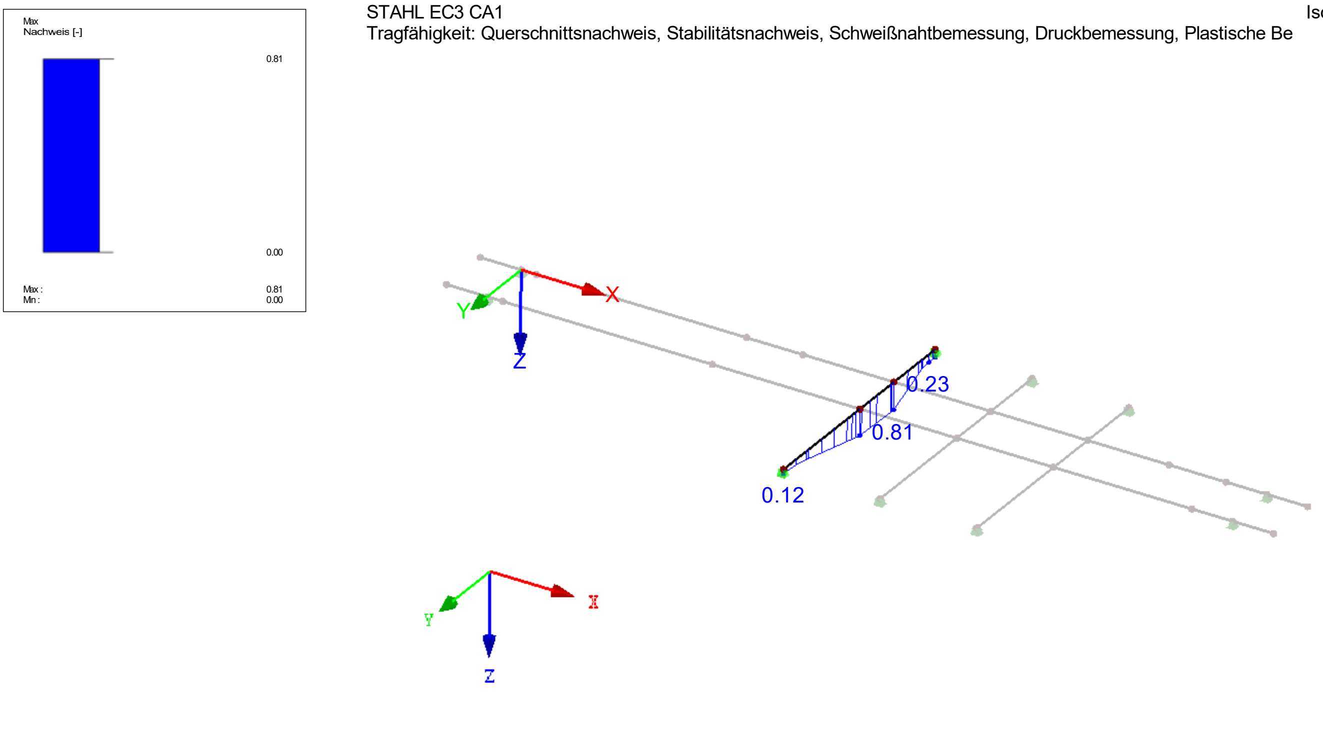
Isometric



Max Nachweis: 0.87

NACHWEIS

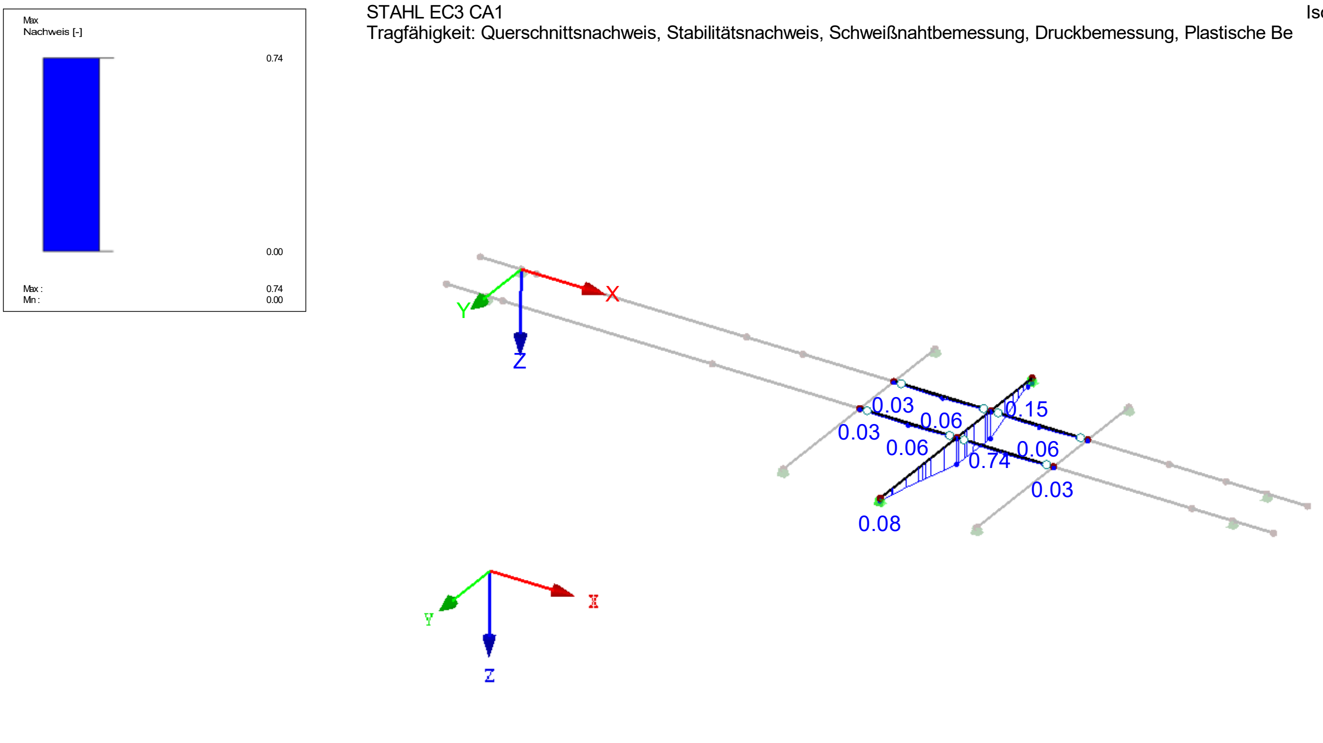
STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be
Isometric



Max Nachweis: 0.81

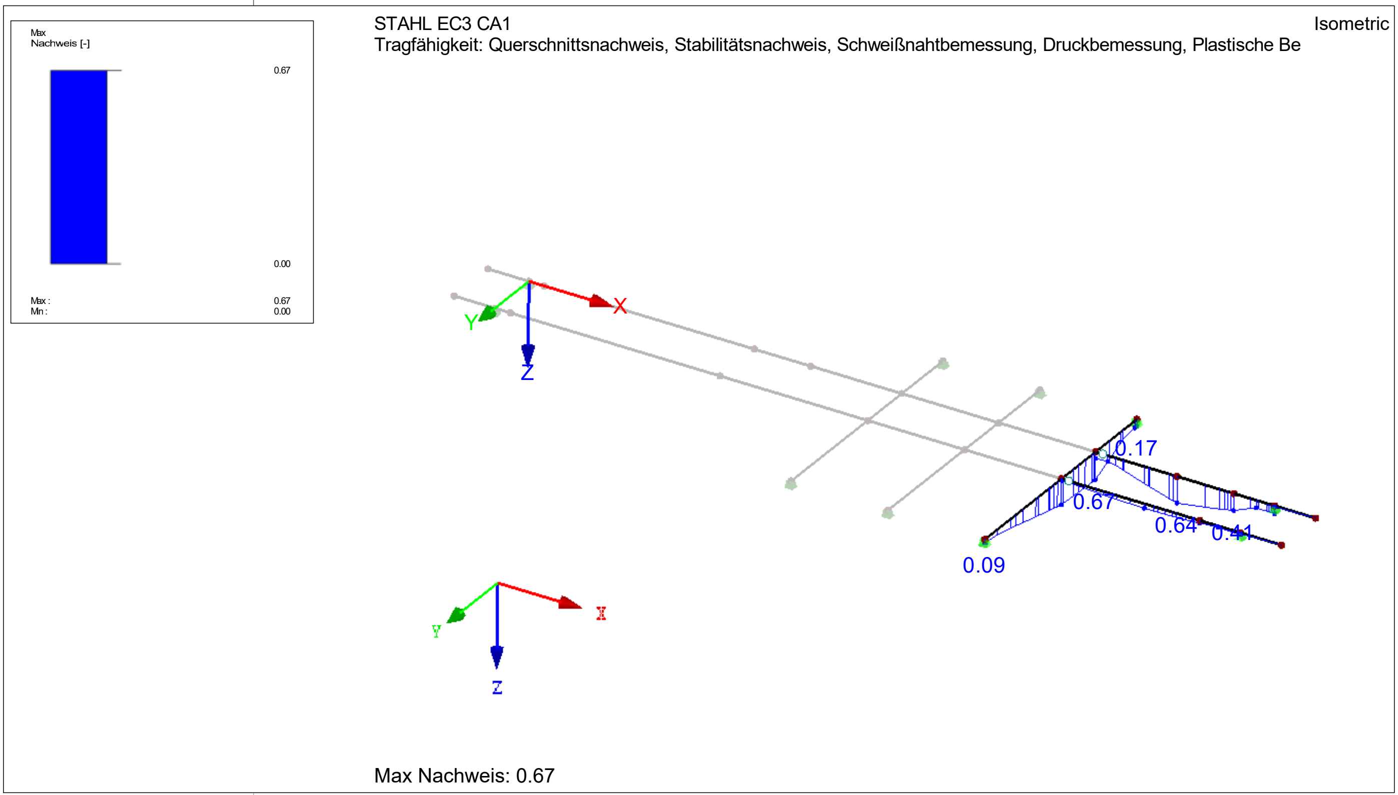
NACHWEIS

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be
Isometric



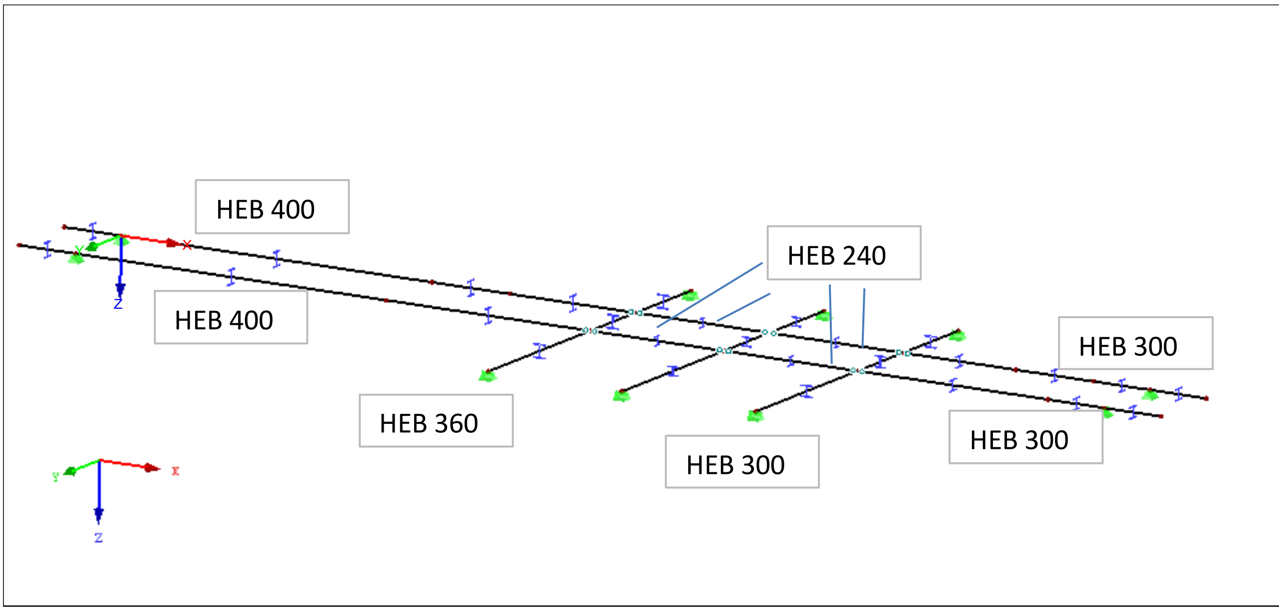
Max Nachweis: 0.74

■ NACHWEIS



Max
Nachweis [-]
0.67
0.00
Max : 0.67
Min : 0.00
STAHL EC3 CA1
Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be
X
Y
Z
0.17
0.67
0.64
0.41
0.09
Max Nachweis: 0.67

Dimensioning



HEB 400	Nd=	20 kN
S235	Vd=	180 kN
	Md=	595 kNm
	eta=	0,87 < 1,0

HEB 360	Nd=	20 kN
S235	Vd=	188 kN
	Md=	465 kNm
	eta=	0,81 < 1,0

HEB 240	Nd=	10 kN
S235	Vd=	70 kN
	Md=	168 kNm
	eta=	0,74 < 1,0

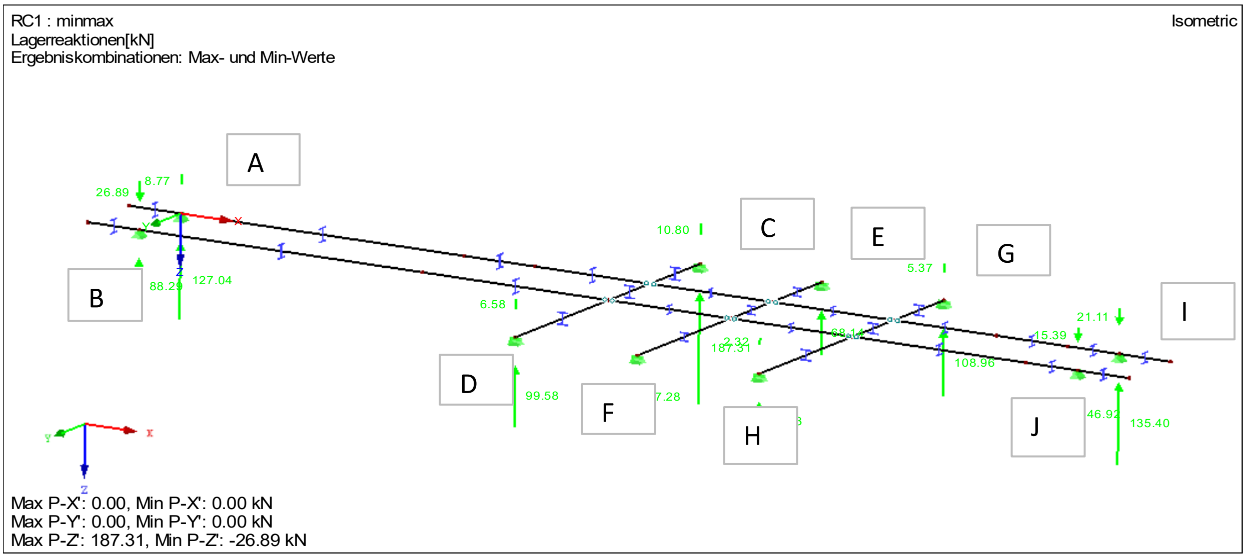
Ingenieurbüro Volker Knobloch
Andersenstr. 16
74078 Heilbronn

Tel. 07066/9179841
Fax. 07066/9179849

HEB 300 Nd= 20 kN
S235 Vd= 125 kN
Md= 268 kNm

eta= 0,67 < 1,0

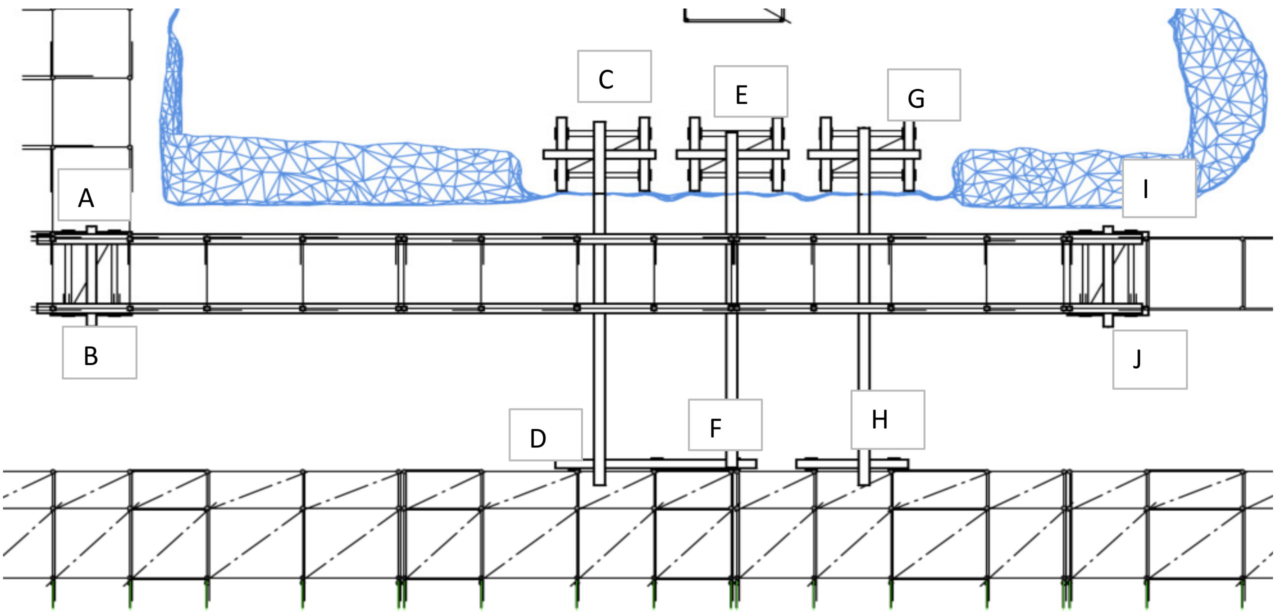
Reaction forces:



		A	B	C	D	E	F
Dead Load		64	31	78	43	29	17
Live Load		45	17	41	19	14	6
Snow		22	19	20	13	9	6
Wind 1		-36	-36	-54	-30	-16	-10
Wind 2		-21	-30	-35	-22	-16	-10
max	design	180	90	188	100	70	40
max	design		0	0	0	0	0
min	design	0	-27	-11	-8	0	0

		G	H	I	J		
Dead Load		47	26	55	17		
Live Load		24	10	38	8		
Snow		12	8	9	11		
Wind 1		-31	-17	-47	-21		
Wind 2		-21	-13	-14	-18		
max	design	110	58	135	47		
max	design		0	0	0		
min	design	-6	-3	-22	-16		

Heavy duty towers:



Point A

2 Column heavy duty support

Nd =	180	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / 2 / 1,35 + 5 + 2= 73,667 kN

a=	0,75	m
b=	0,75	m
sigma=	131	kN/m²

Point B

2 Column heavy duty support

Nd =	90	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / 2 / 1,35 + 5 + 2= 40,333 kN

a=	0,6	m
b=	0,6	m
sigma=	112	kN/m²

Point C

4 Column heavy duty support

Nd =	188 kN
NRd=	560 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 41,815 kN

a=	0,6 m
b=	0,6 m
sigma=	116 kN/m²

Point D

1 Column heavy duty support

Nd =	100 kN
NRd=	140 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 81,074 kN

a=	0,75 m
b=	0,75 m
sigma=	144 kN/m²

Point E

4 Column heavy duty support

Nd =	70	kN
NRd=	560	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 19,963 kN

a=	0,5	m
b=	0,5	m
sigma=	80	kN/m²

Point F

1 Column heavy duty support

Nd =	40	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 36,63 kN

a=	0,6	m
b=	0,6	m
sigma=	102	kN/m²

Point G

4 Column heavy duty support

Nd =	70	kN
NRd=	560	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 19,963 kN

a=	0,5	m
b=	0,5	m
sigma=	80	kN/m²

Point H

1 Column heavy duty support

Nd =	58	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 49,963 kN

a=	0,6	m
b=	0,6	m
sigma=	139	kN/m²

Point I

2 Column heavy duty support

Nd = 135 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 57 kN

a= 0,7 m
b= 0,7 m

sigma= 116 kN/m²

Point J

2 Column heavy duty support

Nd = 50 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

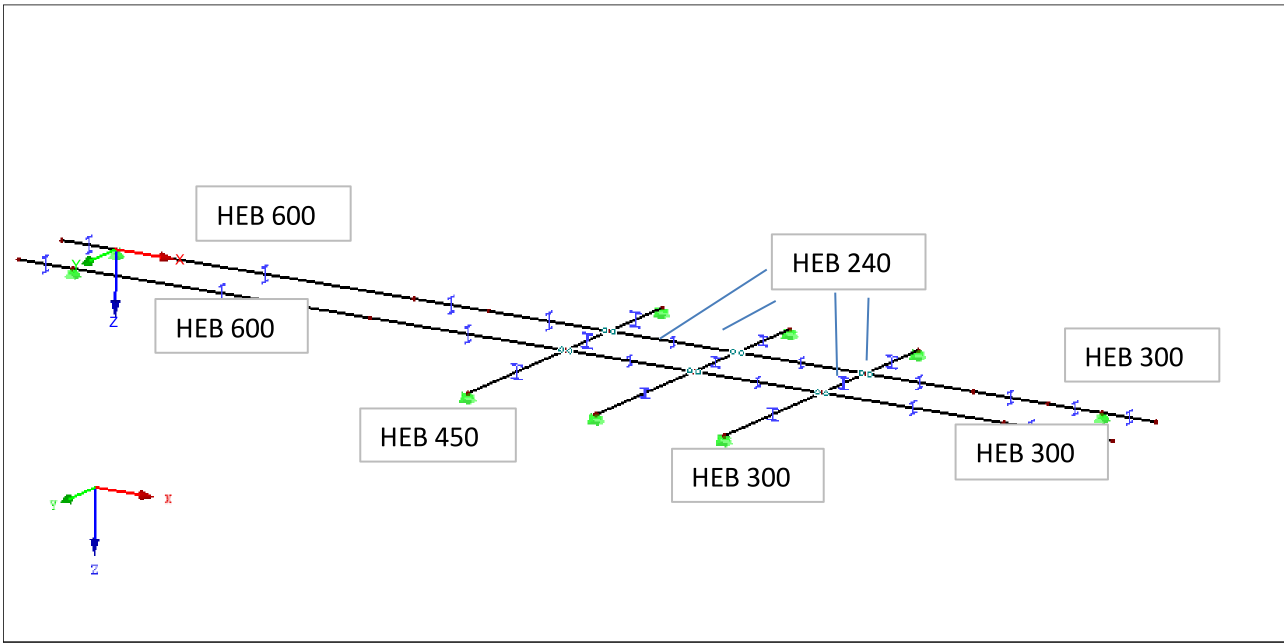
Ncolum,k= Nd / n / 1,35 + 5 + 2= 25,519 kN

a= 0,7 m
b= 0,7 m

sigma= 52 kN/m²

Dimensioning

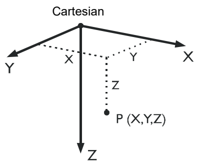
opposite side
longer span für HEB 600



MODEL - GENERAL DATA

General	Model name	:	K-Steel-beams-b
	Model description	:	Kloster-Gelati
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: EN 1990 National Annex: DIN - Deutschland
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

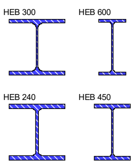


Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
1	-	Cartesian	0.000	-5.020	0.000	
2	-	Cartesian	13.660	-5.020	0.000	
3	-	Cartesian	17.210	-5.020	0.000	
4	-	Cartesian	20.760	-5.020	0.000	
5	-	Cartesian	27.320	-5.020	0.000	Supported
6	-	Cartesian	0.000	-7.090	0.000	
7	-	Cartesian	13.660	-7.090	0.000	
8	-	Cartesian	17.210	-7.090	0.000	
9	-	Cartesian	20.760	-7.090	0.000	
10	-	Cartesian	27.320	-7.090	0.000	Supported
11	-	Cartesian	13.660	-11.740	0.000	Supported
12	-	Cartesian	17.210	-11.740	0.000	Supported
13	-	Cartesian	20.760	-11.740	0.000	Supported
14	-	Cartesian	13.660	-2.510	0.000	Supported
15	-	Cartesian	17.210	-2.510	0.000	Supported
16	-	Cartesian	20.760	-2.510	0.000	Supported
17	-	Cartesian	-1.500	-7.090	0.000	
18	-	Cartesian	-1.500	-5.020	0.000	
19	-	Cartesian	28.820	-5.020	0.000	
20	-	Cartesian	28.820	-7.090	0.000	
21	-	Cartesian	8.250	-5.020	0.000	
22	-	Cartesian	8.250	-7.090	0.000	
23	-	Cartesian	25.820	-5.020	0.000	
24	-	Cartesian	25.820	-7.090	0.000	
25	-	Cartesian	10.320	-5.020	0.000	
26	-	Cartesian	23.750	-5.020	0.000	
27	-	Cartesian	0.570	-5.020	0.000	
28	-	Cartesian	0.570	-7.090	0.000	
29	-	Cartesian	-5.500	-7.090	0.000	Supported
30	-	Cartesian	-5.500	-5.020	0.000	Supported

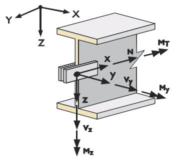
1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235 | Layher 21000.00 Benutzerdefiniertes Material	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	HEB 300 1	185.00 149.10	25170.00 94.97	8563.00 28.65	0.00	0.00	300.0	300.0
2	HEB 600 1	667.20 270.00	171000.00 150.42	13530.00 85.47	0.00	0.00	300.0	600.0
3	HEB 240 1	102.70 106.00	11260.00 68.04	3923.00 20.61	0.00	0.00	240.0	240.0
4	HEB 450 1	440.50 218.00	79890.00 130.21	11720.00 56.71	0.00	0.00	300.0	450.0



1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	4850.000	☐	☐	☒	☒
	Nonlinearity	-	Diagram...	-	-	Diagram...	Diagram...
	Riegel LW						
2	Local x,y,z	☐	4850.000	☐	☐	☒	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante K2000+						
3	Local x,y,z	☐	☐	☐	☐	35.000	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante II						
4	Local x,y,z	☐	4850.000	☒	☐	☒	5.100
	Nonlinearity	-	-	Diagram...	-	Diagram...	-
	AR Doppelkeilkopfkupplung K2000+						
5	Local x,y,z	☐	☐	☐	☐	0.100	5.100
	Nonlinearity	-	-	-	-	-	-
	Kurzer Riegel <W06						
6	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Gelenk My und Mz						
7	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	-	-
	Gelenk My						
8	Local x,y,z	☐	20000.000	20000.000	☐	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Normalkupplung						
9	Local x,y,z	☐	5000.000	5000.000	0.010	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Drehkupplung						
10	Local x,y,z	☐	☐	☐	☐	0.010	0.010
	Nonlinearity	-	-	-	-	-	-
	Gelenke My und Mz mit geringer Steifigkeit						
11	Local x,y,z	☐	☐	☐	☐	100.000	100.000
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß (Übergreifungsstoß c=10.000kNcm/rad)						
12	Local x,y,z	☐	0.100	0.100	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Anschluss KD Fahrwagen						
13	Local x,y,z	10000.000	☐	☐	☐	☒	☒
	Nonlinearity	Partial activity...	-	-	-	-	-
	EV-Traverse mit Normalkraftbegrenzung						
14	Local x,y,z	☐	☒	☒	☐	0.010	0.010
	Nonlinearity	-	Diagram...	Diagram...	-	-	-
	TX Bolzenanschluss						
15	Local x,y,z	☐	☐	☐	☐	58.800	58.800
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß K2000 (gestauchter RV c=5.880kNcm/rad)						
16	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß LW (angeformter Stoßbolzen, ni-li Drehfeder)						
17	Local x,y,z	☐	☐	☐	☐	45.700	45.700
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß TG 60 (gestauchter RV c=4.570kNcm/rad)						
18	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
13	u_x+	Tearing from release force	11.400	-	
	u_x-	Tearing from release force	11.400	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$u_{y'}$	0.000	0.000	
		0.000	3.000	
		0.000	6.000	
		0.000	9.000	
		0.000	12.000	
		0.000	15.000	
		0.001	> 16.600	Yielding
	$\varphi_{y'}$	0.0000	0.000	
		0.0017	0.200	
		0.0042	0.400	
		0.0081	0.600	
		0.0149	0.800	
		0.0303	1.000	
		0.0485	1.100	
		0.0702	1.160	
		0.0968	> 1.200	Yielding
	$\varphi_{z'}$	0.0000	0.000	

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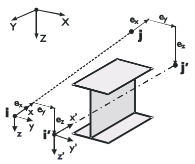
1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
		0.0100	0.100	
		0.0250	0.200	
		0.0468	0.290	
		0.0750	0.360	
		0.1007	> 0.401	Yielding
2	$\varphi_{y'}$	0.0000	0.000	
		0.0026	0.200	
		0.0065	0.400	
		0.0127	0.600	
		0.0207	0.750	
		0.0318	0.870	
		0.0442	0.950	
		0.0592	> 1.010	Yielding
3	$\varphi_{y'}$	0.0000	0.000	
		0.0014	0.100	
		0.0030	0.200	
		0.0050	0.300	
		0.0075	0.400	
		0.0107	0.500	
		0.0148	0.600	
		0.0192	> 0.680	Yielding
4	$u_{z'}$	0.000	0.000	
		0.000	5.100	
		0.002	> 5.110	Stopping
	$\varphi_{y'}$	0.0000	0.000	
		0.0068	0.150	
		0.0155	0.300	
		0.0274	0.450	
		0.0415	0.580	
		0.0566	> 0.682	Yielding
11	$\varphi_{y'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
	$\varphi_{z'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
14	$u_{y'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
	$u_{z'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
16	$\varphi_{y'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$, $e_{i,X}$	$e_{i,y}$, $e_{i,Y}$	$e_{i,z}$, $e_{i,Z}$	Member End - Eccentricity $e_{j,x}$, $e_{j,X}$	$e_{j,y}$, $e_{j,Y}$	$e_{j,z}$, $e_{j,Z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel
2	Global	78.0	0.0	0.0	-78.0	0.0	0.0	AR_Diagonale (für 2D Berechnung)
3	Local	43.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK
4	Local	0.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK_dreifach
5	Local	60.0	0.0	0.0	0.0	0.0	0.0	AR_SLT_XL_Riegel
6	Local	25.0	0.0	0.0	0.0	0.0	0.0	AR_Riegel_Anfang (einseitig)
7	Local	0.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel_Ende (einseitig)

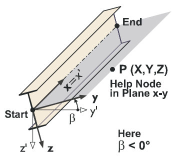
1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

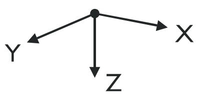
Ecc.	Cross-Section Alignment		Transverse offset from cross-section of another obj.				Axial offset from adjacent	
No.	y-Axis	z-Axis	Object Type	Object No.	y-Axis	z-Axis	Member Sta	Member End
5	Middle	Middle	None	0	Middle	Middle	☐	☐
6	Middle	Middle	None	0	Middle	Middle	☐	☐
7	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
1	Beam	7	11	Angle	0.00	4	4	-	-	-	-	4.650	Y
2	Beam	2	7	Angle	0.00	4	4	-	-	-	-	2.070	Y
3	Beam	14	2	Angle	0.00	4	4	-	-	-	-	2.510	Y
4	Beam	8	12	Angle	0.00	3	3	-	-	-	-	4.650	Y
5	Beam	3	8	Angle	0.00	3	3	-	-	-	-	2.070	Y
6	Beam	15	3	Angle	0.00	3	3	-	-	-	-	2.510	Y
8	Beam	9	13	Angle	0.00	1	1	-	-	-	-	4.650	Y
9	Beam	4	9	Angle	0.00	1	1	-	-	-	-	2.070	Y
10	Beam	16	4	Angle	0.00	1	1	-	-	-	-	2.510	Y
11	Beam	27	1	Angle	0.00	2	2	-	-	-	-	0.570	X
12	Beam	28	6	Angle	0.00	2	2	-	-	-	-	0.570	X
13	Beam	3	2	Angle	0.00	3	3	18	18	-	-	3.550	X
14	Beam	8	7	Angle	0.00	3	3	18	18	-	-	3.550	X
15	Beam	4	3	Angle	0.00	3	3	18	18	-	-	3.550	X
16	Beam	9	8	Angle	0.00	3	3	18	18	-	-	3.550	X
17	Beam	26	4	Angle	0.00	1	1	-	18	-	-	2.990	X
18	Beam	24	9	Angle	0.00	1	1	-	18	-	-	5.060	X
19	Beam	19	5	Angle	0.00	1	1	-	-	-	-	1.500	X
20	Beam	20	10	Angle	0.00	1	1	-	-	-	-	1.500	X
21	Beam	18	1	Angle	0.00	2	2	-	-	-	-	1.500	X
22	Beam	17	6	Angle	0.00	2	2	-	-	-	-	1.500	X
23	Beam	25	21	Angle	0.00	2	2	-	-	-	-	2.070	X
24	Beam	7	22	Angle	0.00	2	2	18	-	-	-	5.410	X
25	Beam	5	23	Angle	0.00	1	1	-	-	-	-	1.500	X
26	Beam	10	24	Angle	0.00	1	1	-	-	-	-	1.500	X
27	Beam	2	25	Angle	0.00	2	2	18	-	-	-	3.340	X
28	Beam	23	26	Angle	0.00	1	1	-	-	-	-	2.070	X
29	Beam	21	27	Angle	0.00	2	2	-	-	-	-	7.680	X
30	Beam	22	28	Angle	0.00	2	2	-	-	-	-	7.680	X
31	Beam	18	30	Angle	0.00	2	2	-	-	-	-	4.000	X
32	Beam	17	29	Angle	0.00	2	2	-	-	-	-	4.000	X

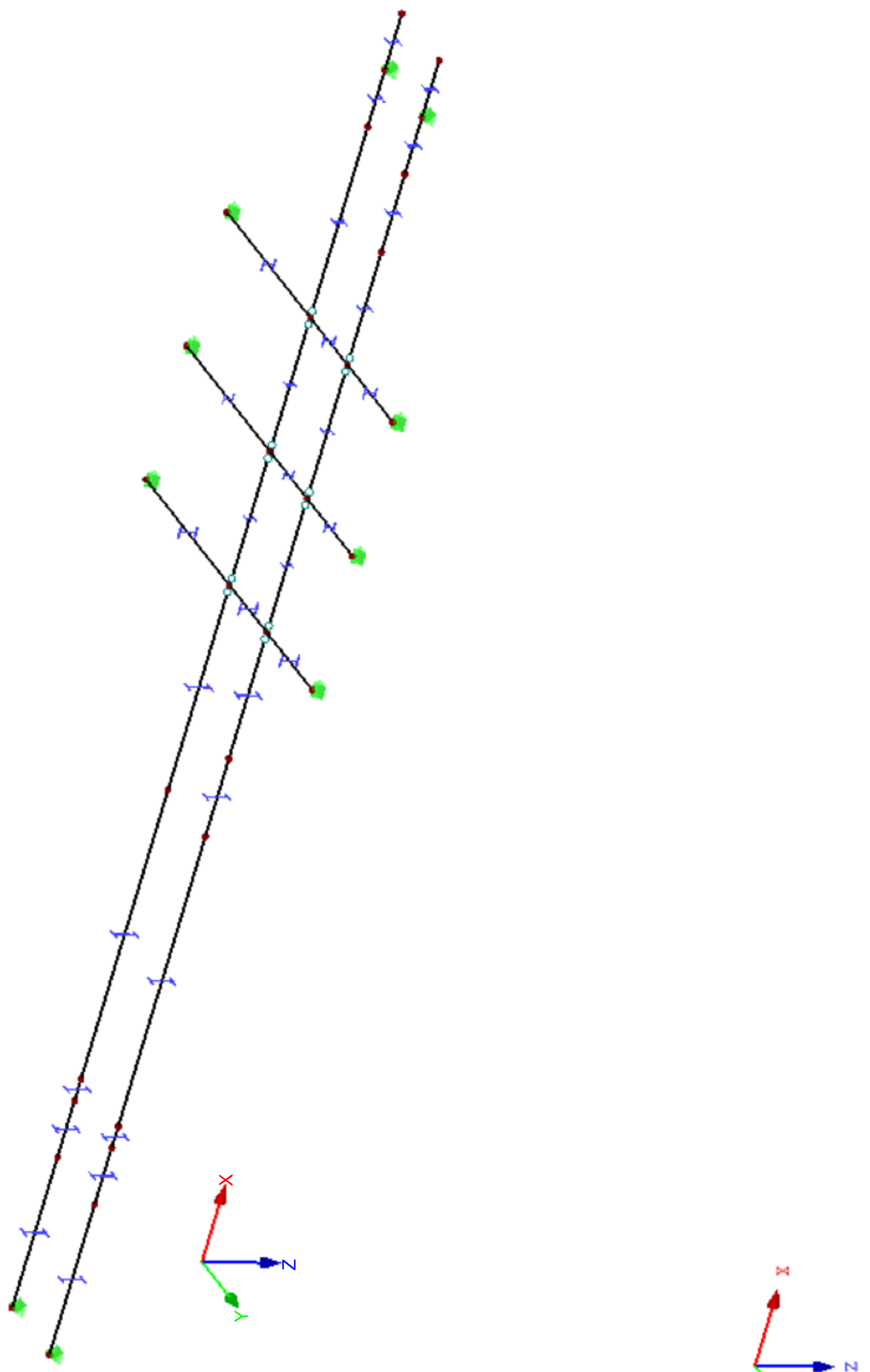
1.8 NODAL SUPPORTS



Support			Rotation [°]			Column	Support Conditions					
No.	Nodes No.	Sequen.	about X	about Y	about Z	in Z	$u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	5,10,29,30	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☒	☐	☒
2	11-16	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☒	☒

MODEL

Isometric



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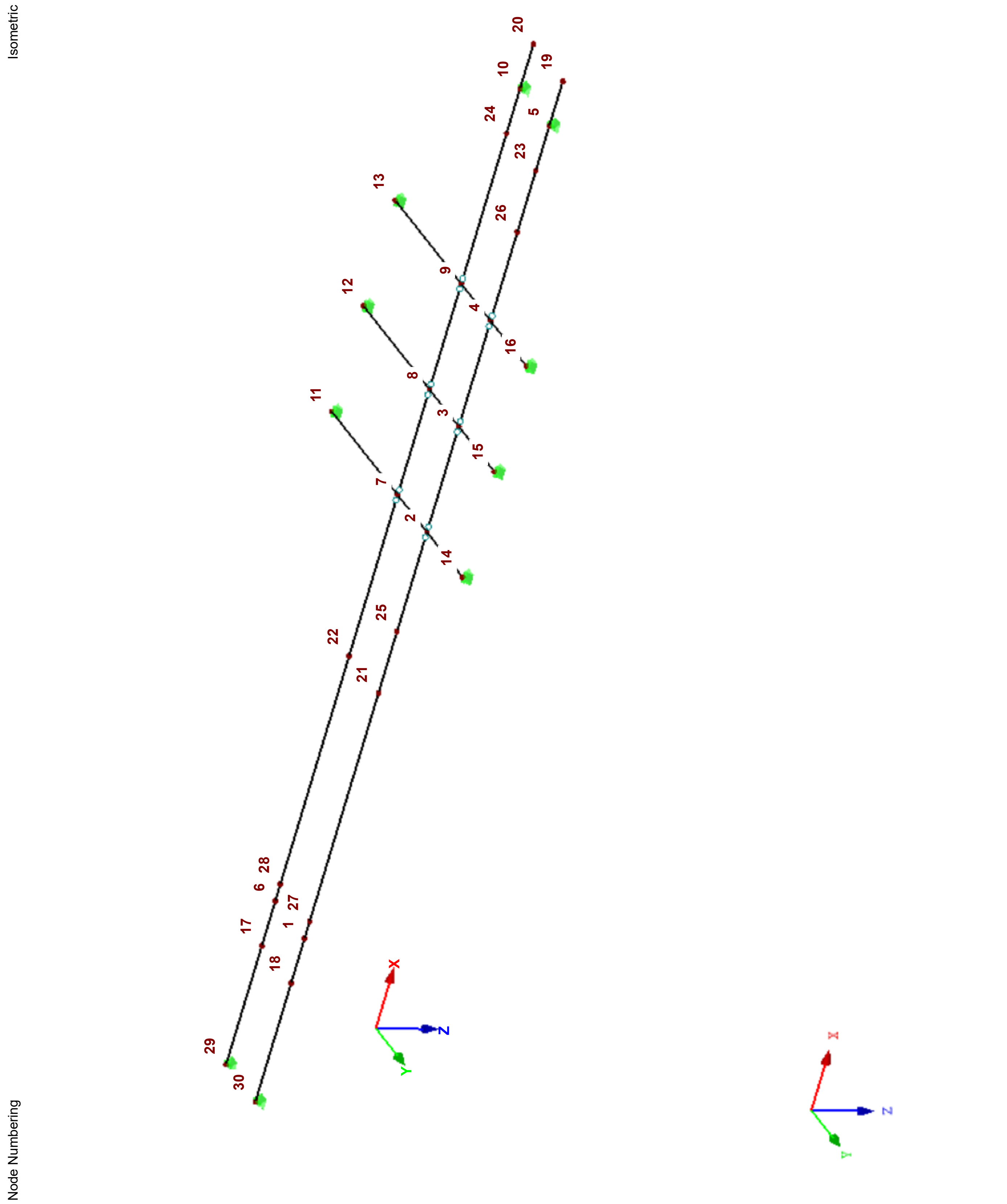
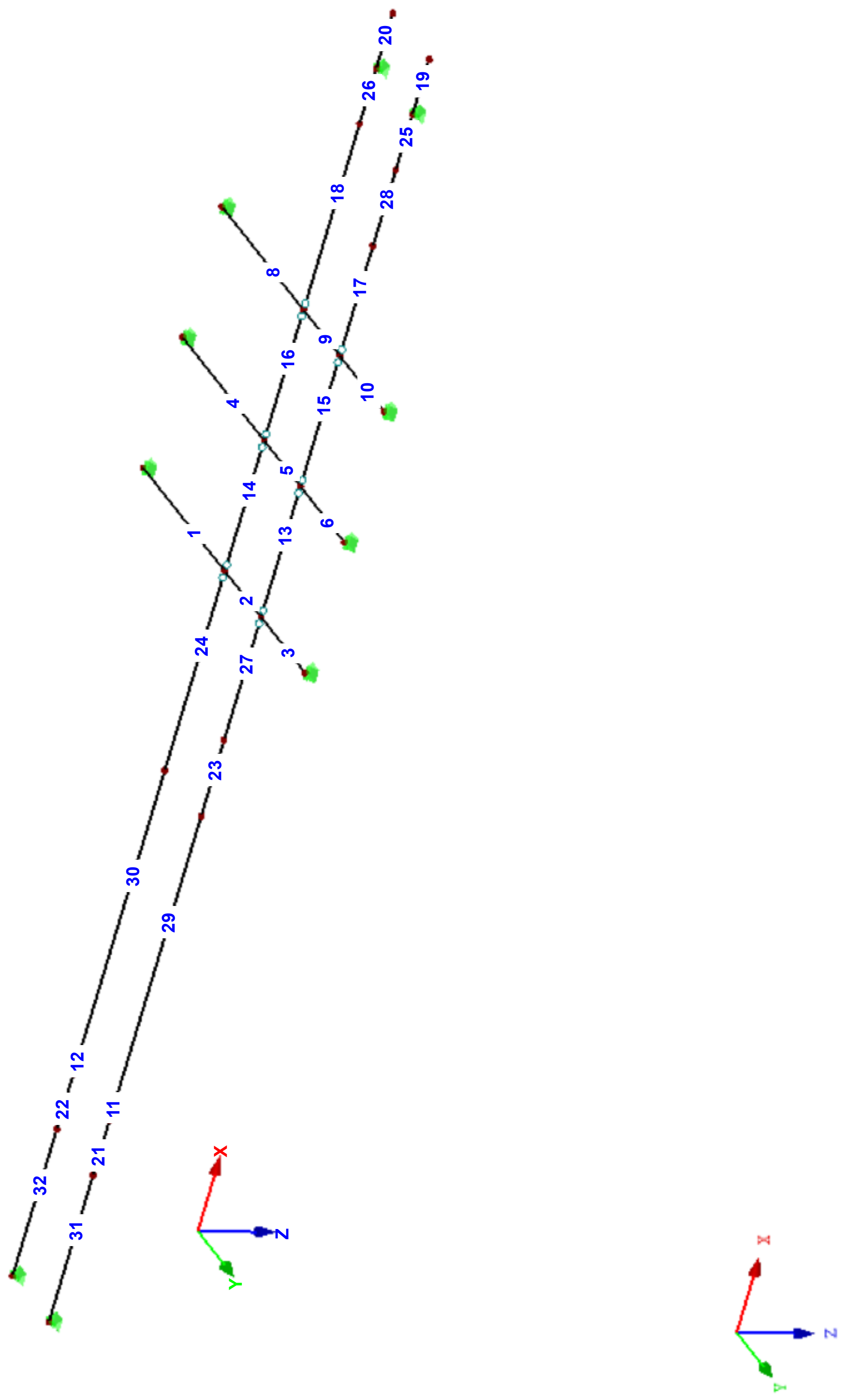
■ MODEL



MODEL

Isometric



Member Numbering

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 | DIN Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	Dead Load	Permanent	☒	0.000	0.000	1.000
LC2	live Load	Imposed - Category A: domestic, residential areas	☐			
LC3	Snow	Snow ($H \leq 1000$ m a.s.l.)	☐			
LC4	Wind 1	Wind	☐			
LC5	Wind 2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	Dead Load	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC2	live Load	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Snow	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Wind 1	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind 2	Method of analysis	:	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	Dead Load
			2	1.35	LC2	live Load
			3	1.35	LC3	Snow
CO2		Bem-2	1	0.90	LC1	Dead Load
			2	1.50	LC4	Wind 1
CO3		Bem-3	1	0.90	LC1	Dead Load
			2	1.50	LC5	Wind 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	:	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2 or CO3

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: Dead Load

LC1
Dead Load

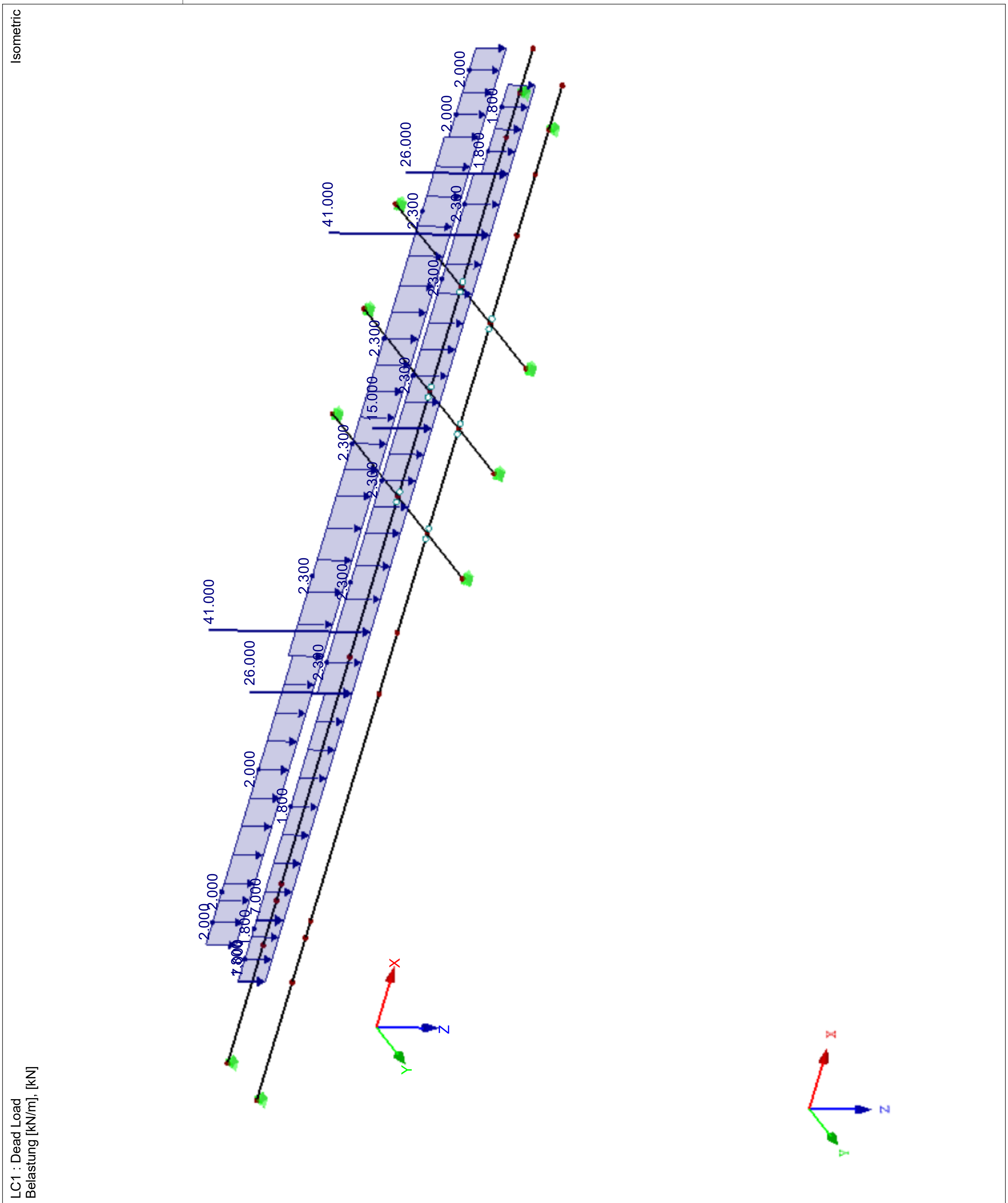
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	21,23	0 | Global XYZ	0.000	0.000	26.000	0.000	0.000	0.000
2	25,26	0 | Global XYZ	0.000	0.000	41.000	0.000	0.000	0.000
4	3	0 | Global XYZ	0.000	0.000	15.000	0.000	0.000	0.000
5	18,27	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: Dead Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.000	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.800	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	2.300	kN/m

LC1: DEAD LOAD



LC2
live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: live Load

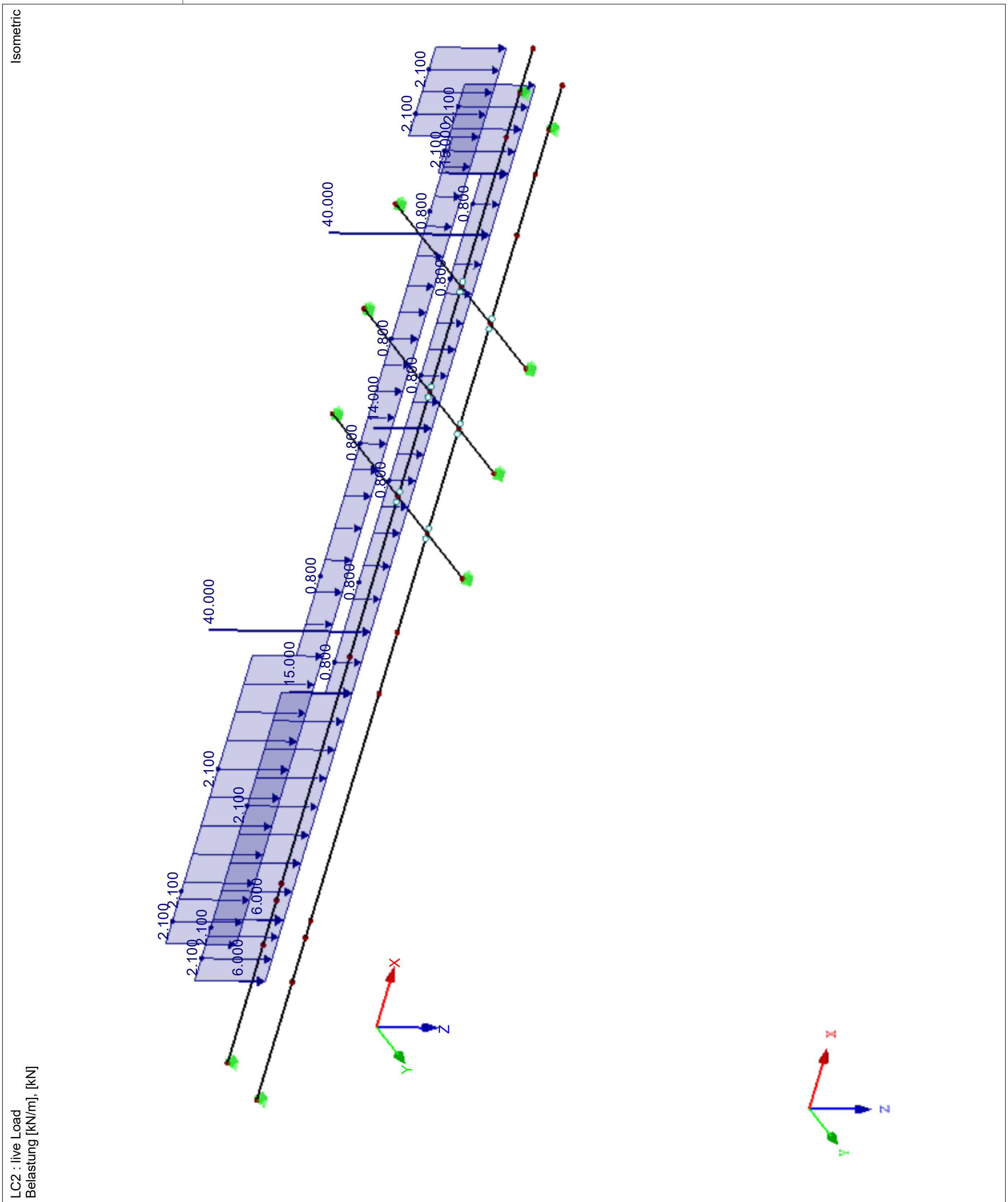
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	21,23	0 | Global XYZ	0.000	0.000	15.000	0.000	0.000	0.000
2	25,26	0 | Global XYZ	0.000	0.000	40.000	0.000	0.000	0.000
3	3	0 | Global XYZ	0.000	0.000	14.000	0.000	0.000	0.000
4	18,27	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC2: live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,12,19-22, 25,26,29,30	Force	Uniform	Z	True Length	p	2.100	kN/m
2	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	0.800	kN/m

LC2: LIVE LOAD



LC3
Snow

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Snow

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	27	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
2	18	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000

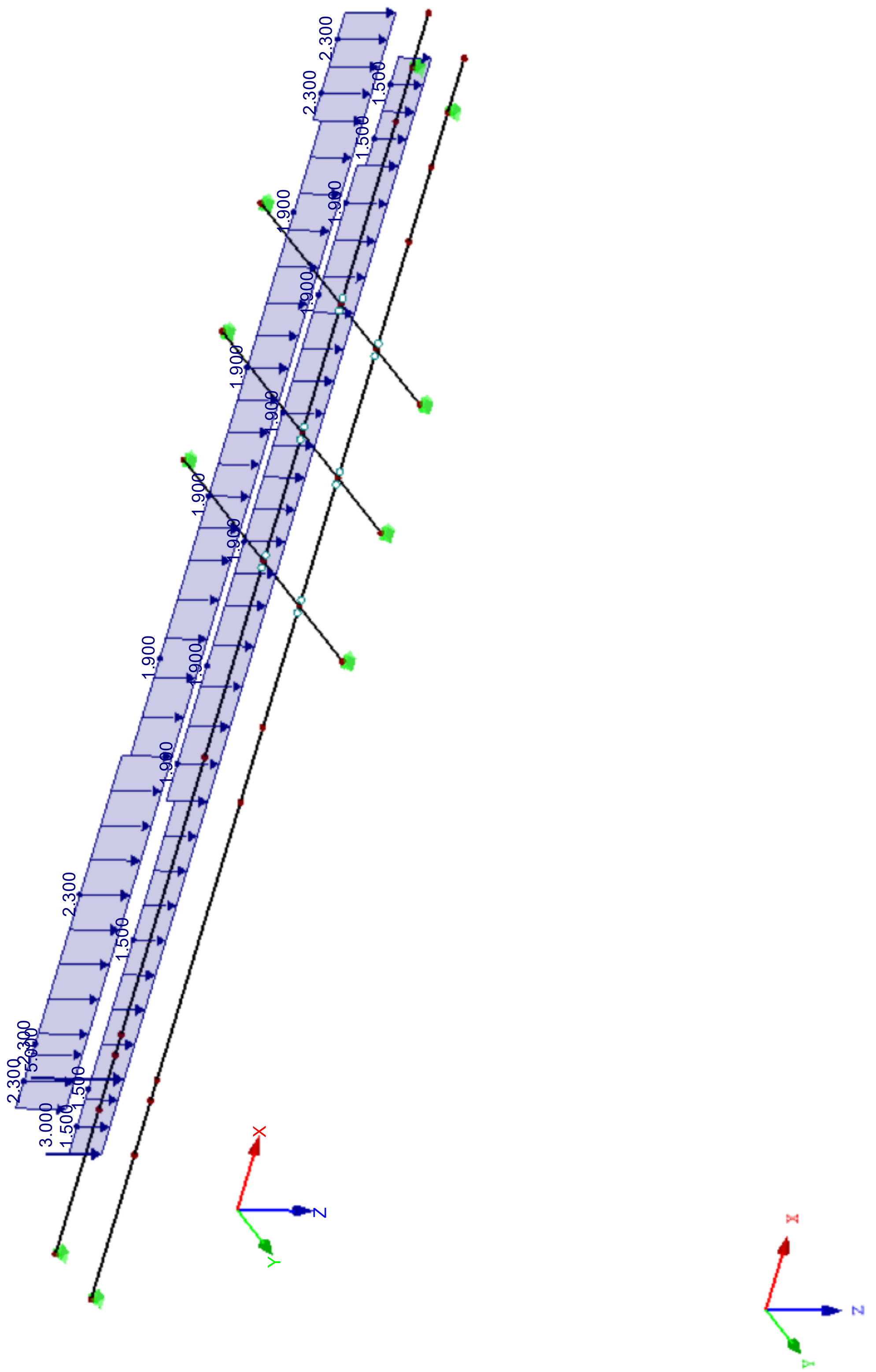
3.2 MEMBER LOADS

LC3: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.300	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.500	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	1.900	kN/m

■ LC3: SNOW

Isometric



LC3 : Snow
Belastung [kN/m], [kN]

LC4
Wind 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Wind 1

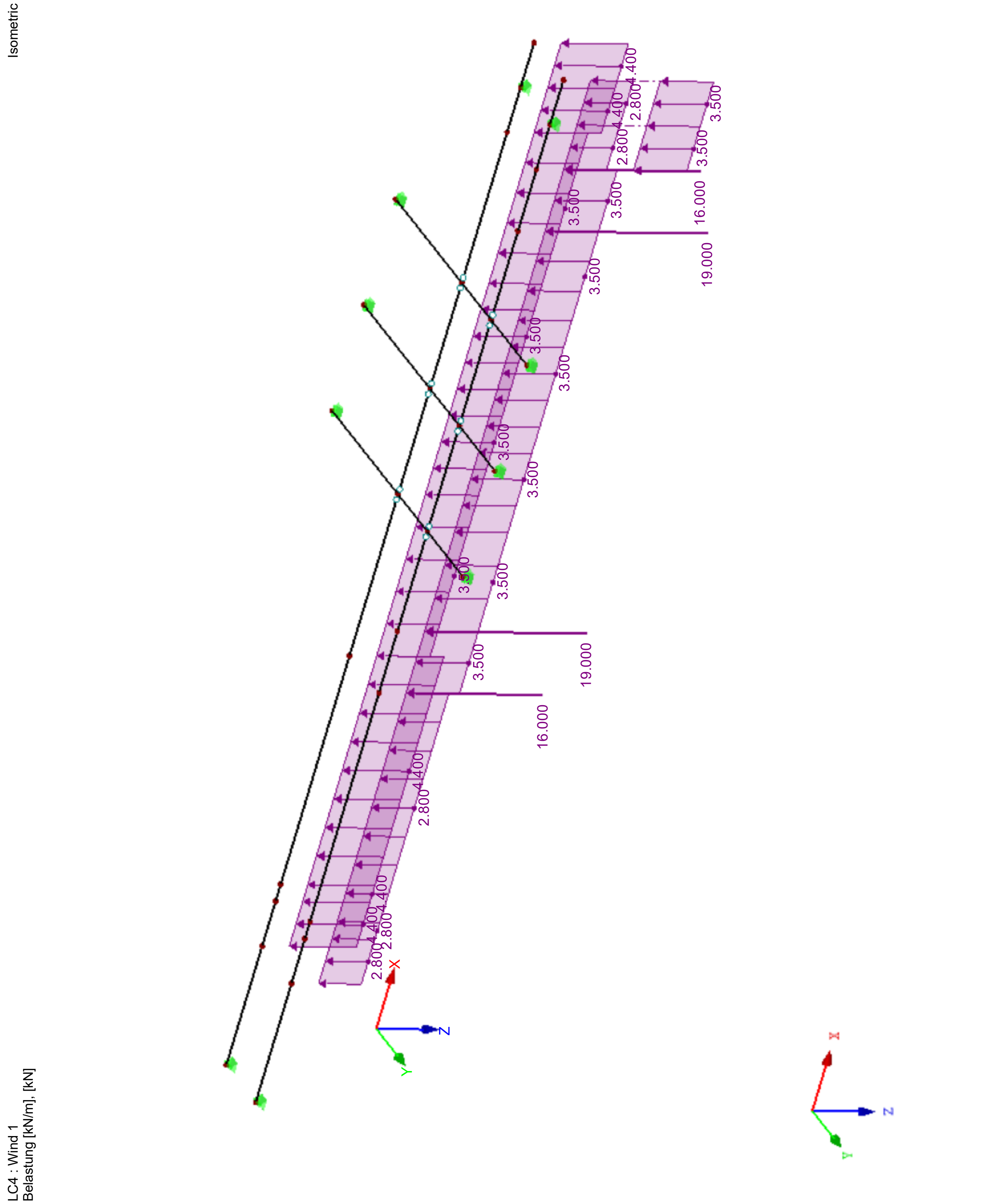
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	25,26	0 | Global XYZ	0.000	0.000	-19.000	0.000	0.000	0.000
2	21,23	0 | Global XYZ	0.000	0.000	-16.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC4: Wind 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	-4.400	kN/m
2	Members	11,21,29	Force	Uniform	Z	True Length	p	-2.800	kN/m
3	Members	19,25	Force	Uniform	Z	True Length	p	-2.800	kN/m
4	Members	13-19,23-25, 27,28	Force	Uniform	Z	True Length	p	-3.500	kN/m

LC4: WIND 1


Isometric
4.400
2.800
4.400
2.800
3.500
3.500
16.000
19.000
3.500
3.500
3.500
3.500
3.500
3.500
3.500
3.500
3.500
19.000
3.500
16.000
4.400
2.800
4.400
2.800
4.400
2.800
X
Z
Y
LC4 : Wind 1
Belastung [kN/m], [kN]

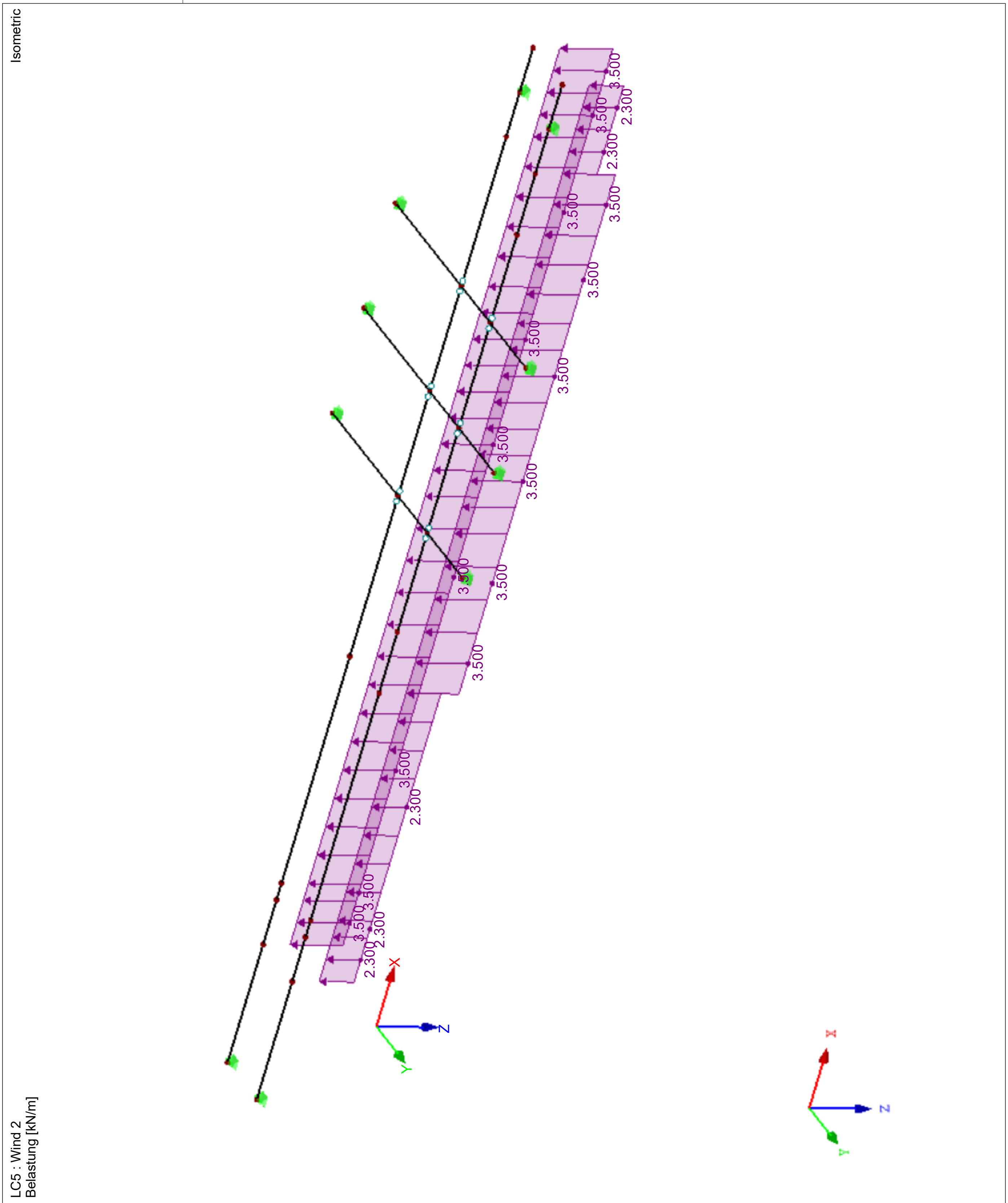
LC5
Wind 2

3.2 MEMBER LOADS

LC5: Wind 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	-2.300	kN/m
2	Members	12-18,20, 22-24,26-28, 30	Force	Uniform	Z	True Length	p	-3.500	kN/m

LC5: WIND 2



■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - Dead Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	438.45	kN	
	Sum of support reactions in Z	438.45	kN	Deviation 0.00%
	Resultant of reactions about X	239.40	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-1199.27	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	44.7	mm	Member No. 29, x: 3.072 m
	Max vectorial displacement	44.7	mm	Member No. 29, x: 3.072 m
	Max rotation about X	-9.0	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-6.7	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC2 - live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	217.66	kN	
	Sum of support reactions in Z	217.66	kN	Deviation -0.00%
	Resultant of reactions about X	195.37	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-725.88	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	27.0	mm	Member No. 29, x: 3.456 m
	Max vectorial displacement	27.0	mm	Member No. 29, x: 3.456 m
	Max rotation about X	-4.1	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	4.2	mrad	Member No. 27, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC3 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	123.22	kN	
	Sum of support reactions in Z	123.22	kN	Deviation 0.00%
	Resultant of reactions about X	28.64	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-244.92	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	11.7	mm	Member No. 30, x: 3.456 m
	Max vectorial displacement	11.7	mm	Member No. 30, x: 3.456 m
	Max rotation about X	-2.9	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-1.8	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC4 - Wind 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-295.29	kN	
	Sum of support reactions in Z	-295.29	kN	Deviation 0.00%
	Resultant of reactions about X	-136.29	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	1220.62	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-25.6	mm	Member No. 29, x: 3.072 m
	Max vectorial displacement	25.6	mm	Member No. 29, x: 3.072 m
	Max rotation about X	5.4	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-3.7	mrad	Member No. 25, x: 0.225 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC5 - Wind 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-196.94	kN	
	Sum of support reactions in Z	-196.94	kN	Deviation 0.00%
	Resultant of reactions about X	-33.58	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	639.92	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-18.6	mm	Member No. 30, x: 3.072 m
	Max vectorial displacement	18.6	mm	Member No. 30, x: 3.072 m
	Max rotation about X	5.4	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	2.8	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	1052.10	kN	
	Sum of support reactions in Z	1052.10	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	122.5	mm	Member No. 29, x: 3.456 m
	Max vectorial displacement	122.5	mm	Member No. 29, x: 3.456 m
	Max rotation about X	-23.8	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-18.5	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-48.33	kN	
	Sum of support reactions in Z	-48.33	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-12.2	mm	Member No. 30, x: 3.840 m
	Max vectorial displacement	12.2	mm	Member No. 30, x: 3.840 m
	Max rotation about X	1.2	mrad	Member No. 10, x: 0.000 m
	Max rotation about Y	1.9	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	99.20	kN	
	Sum of support reactions in Z	99.20	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	21.6	mm	Member No. 29, x: 3.456 m
	Max vectorial displacement	21.6	mm	Member No. 29, x: 3.456 m
	Max rotation about X	-1.1	mrad	Member No. 3, x: 0.000 m
	Max rotation about Y	3.7	mrad	Member No. 27, x: 0.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	122.5	mm	CO1, Member No. 29, x: 3.456 m
	Max vectorial displacement	122.5	mm	CO1, Member No. 29, x: 3.456 m

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■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max rotation about X	-23.8	mrad	CO1, Member No. 6, x: 0.000 m
	Max rotation about Y	-18.5	mrad	CO1, Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Number of 1D finite elements (member elements)	31		
	Number of FE mesh nodes	30		
	Number of equations	180		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		

	Setting	Item		Value
	Other Settings	Max number of iterations	:	100
		Number of divisions for member results	:	10
		Member divisions, cables, foundation or tapered members	:	10
		Number of member divisions for searching maximum values	:	20
	Options	☐ Activate shear stiffness of members (Ay, Az)		
		☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
		☒ Apply temperature/deformation load actions without stiffness modifications		
	Precision and Tolerance	☐ Change default setting		

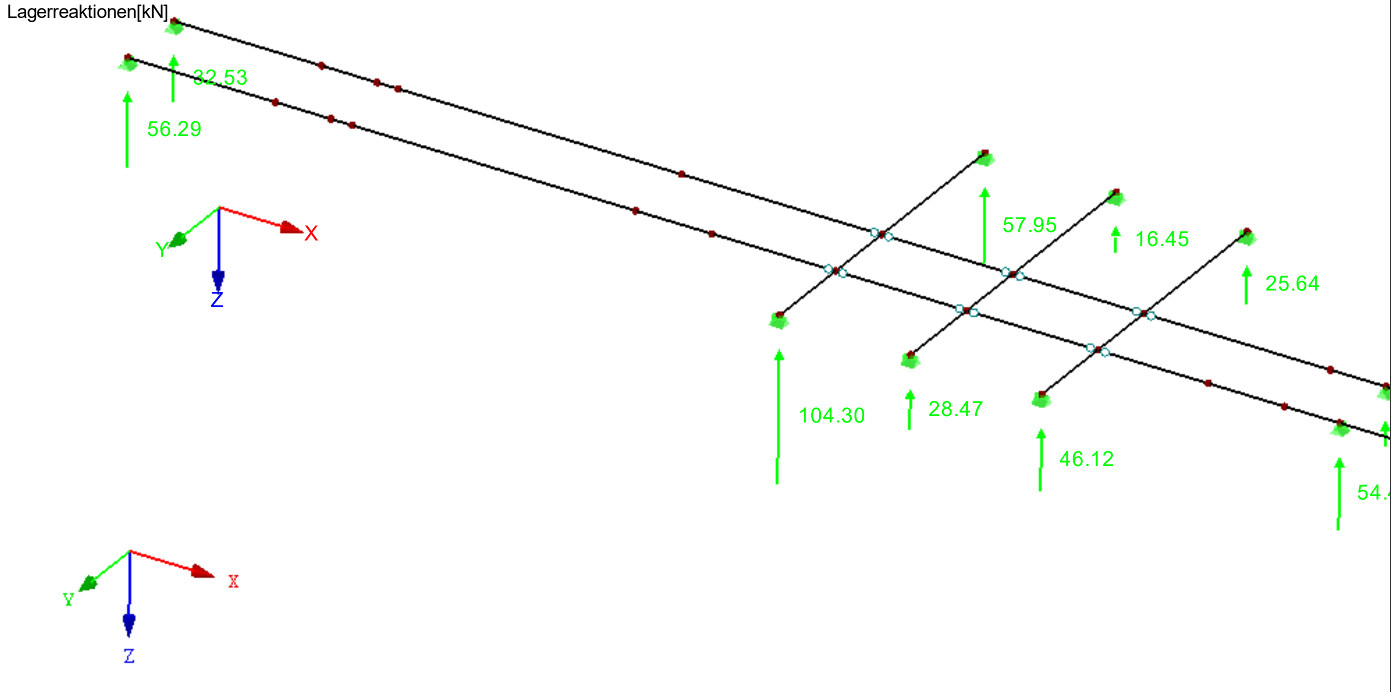
■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: HEB 300								
25	CO1	MAX N	0.000	▷ 1.91	0.00	122.08	0.20	-9.98	0.00
17	CO1	MIN N	0.000	▷ -0.29	-0.39	-73.15	0.20	255.96	-1.36
25	CO1	MAX V_y	1.500	1.43	▷ 0.24	108.78	0.20	163.19	-0.37
17	CO1	MIN V_y	2.990	0.42	▷ -0.96	-98.05	0.20	0.00	0.00
25	CO1	MAX V_z	0.000	1.91	0.00	▷ 122.08	0.20	-9.98	0.00
17	CO1	MIN V_z	2.990	0.42	-0.96	▷ -98.05	0.20	0.00	0.00
17	CO1	MAX M_T	0.897	0.01	-0.54	-80.62	▷ 0.20	186.99	-1.24
17	LC4	MIN M_T	0.000	0.00	0.00	14.41	▷ -0.06	-58.74	0.00
10	CO1	MAX M_y	2.510	1.03	0.00	104.99	0.00	▷ 268.50	0.00
8	LC4	MIN M_y	0.000	0.00	0.00	16.93	0.00	▷ -78.73	0.00
18	CO1	MAX M_z	3.036	-0.05	0.01	-9.03	-0.03	35.35	▷ 0.03
17	CO1	MIN M_z	0.000	-0.29	-0.39	-73.15	0.20	255.96	▷ -1.36
	Section No. 2: HEB 600								
27	CO1	MAX N	0.000	▷ 4.25	1.69	233.87	-0.19	0.00	0.00
29	CO1	MIN N	2.304	▷ -0.02	-0.03	-6.17	-0.19	911.18	-3.94
27	CO1	MAX V_y	0.000	4.25	▷ 1.69	233.87	-0.19	0.00	0.00
11	CO1	MIN V_y	0.000	0.95	▷ -0.19	-85.04	-0.19	731.32	-1.68
27	CO1	MAX V_z	0.000	4.25	1.69	▷ 233.87	-0.19	0.00	0.00
31	CO1	MIN V_z	4.000	2.58	0.00	▷ -139.08	-0.19	0.00	0.00
11	LC4	MAX M_T	0.000	0.00	0.00	19.36	▷ 0.05	-146.71	0.00
29	CO1	MIN M_T	3.456	0.01	-0.07	-17.87	▷ -0.19	897.34	-3.49
29	CO1	MAX M_y	1.536	0.01	0.01	1.62	-0.19	▷ 912.93	-4.21
29	LC4	MIN M_y	0.768	0.00	0.00	0.01	0.05	▷ -213.65	0.00
21	CO1	MAX M_z	1.500	1.13	-0.19	90.82	-0.19	681.19	▷ 1.42
23	CO1	MIN M_z	2.070	0.66	0.38	72.56	-0.19	898.46	▷ -4.66
	Section No. 3: HEB 240								
6	CO1	MAX N	0.000	▷ 1.62	0.00	68.12	0.00	0.00	0.00
14	CO1	MIN N	0.000	▷ -0.11	-0.03	13.97	0.02	0.00	0.00
13	CO1	MAX V_y	0.000	-0.09	▷ 0.20	13.97	-0.14	0.00	0.00
15	CO1	MIN V_y	3.550	-0.05	▷ -0.20	-13.97	0.09	0.00	0.00
6	CO1	MAX V_z	0.000	1.62	0.00	▷ 68.12	0.00	0.00	0.00
4	CO1	MIN V_z	4.650	0.74	0.00	▷ -37.27	0.00	0.00	0.00
15	CO1	MAX M_T	3.550	-0.05	-0.20	-13.97	▷ 0.09	0.00	0.00
13	CO1	MIN M_T	0.000	-0.09	0.20	13.97	▷ -0.14	0.00	0.00
6	CO1	MAX M_y	2.510	0.91	0.00	65.31	0.00	▷ 167.49	0.00
4	LC4	MIN M_y	0.000	0.00	0.00	9.54	0.00	▷ -44.36	0.00
16	CO1	MAX M_z	1.952	-0.01	0.00	-1.40	-0.01	12.28	▷ 0.02
15	CO1	MIN M_z	1.952	-0.01	-0.02	-1.40	0.09	12.28	▷ -0.15
	Section No. 4: HEB 450								
3	CO1	MAX N	0.000	▷ 3.04	0.00	247.43	0.00	0.00	0.00
2	CO1	MIN N	0.000	▷ -0.05	0.00	-6.24	0.00	613.79	0.00
2	CO2	MAX V_y	0.000	0.00	▷ 0.00	-7.37	0.00	-20.29	0.00
1	CO1	MIN V_y	0.000	0.12	▷ 0.00	-122.79	0.00	595.93	0.00
3	CO1	MAX V_z	0.000	3.04	0.00	▷ 247.43	0.00	0.00	0.00
1	CO1	MIN V_z	4.650	1.36	0.00	▷ -133.52	0.00	0.00	0.00
2	CO1	MAX M_T	0.000	-0.05	0.00	-6.24	▷ 0.00	613.79	0.00
1	CO1	MIN M_T	0.000	0.12	0.00	-122.79	▷ 0.00	595.93	0.00
3	CO1	MAX M_y	2.510	1.75	0.00	241.65	0.00	▷ 613.83	0.00
1	LC4	MIN M_y	0.000	0.00	0.00	37.95	0.00	▷ -176.47	0.00
2	CO3	MAX M_z	0.000	-0.01	0.00	-16.30	0.00	68.06	▷ 0.00
1	CO1	MIN M_z	0.000	0.12	0.00	-122.79	0.00	595.93	▷ 0.00

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]

Isometric

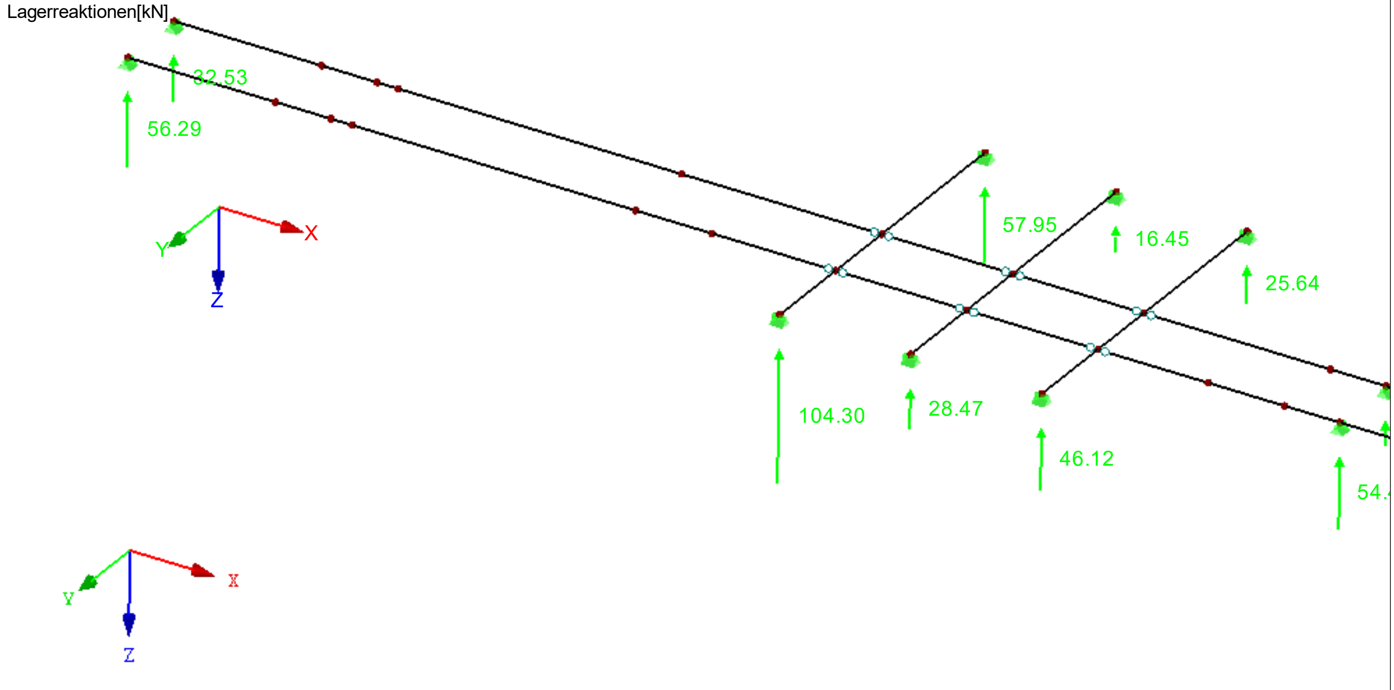


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 104.30, Min P-Z': 16.28 kN

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]

Isometric

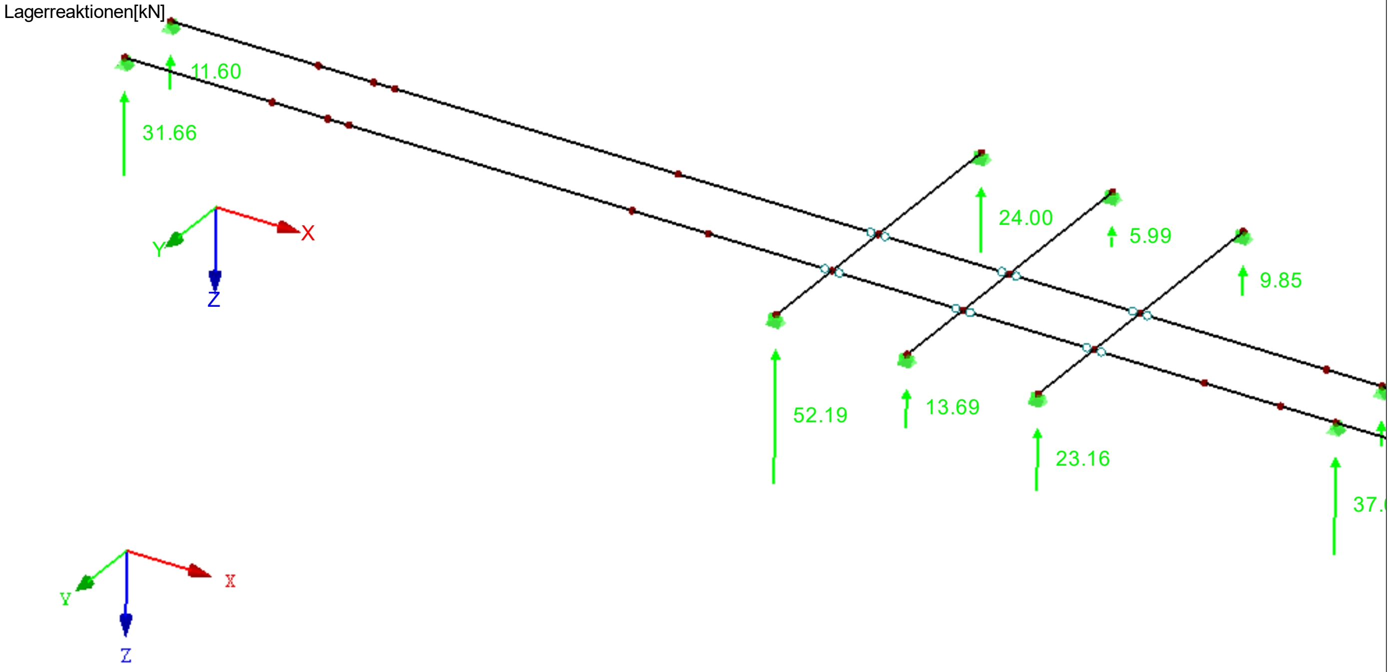


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 104.30, Min P-Z': 16.28 kN

LAGERREAKTIONEN

LC2 : live Load
Lagerreaktionen[kN]

Isometric

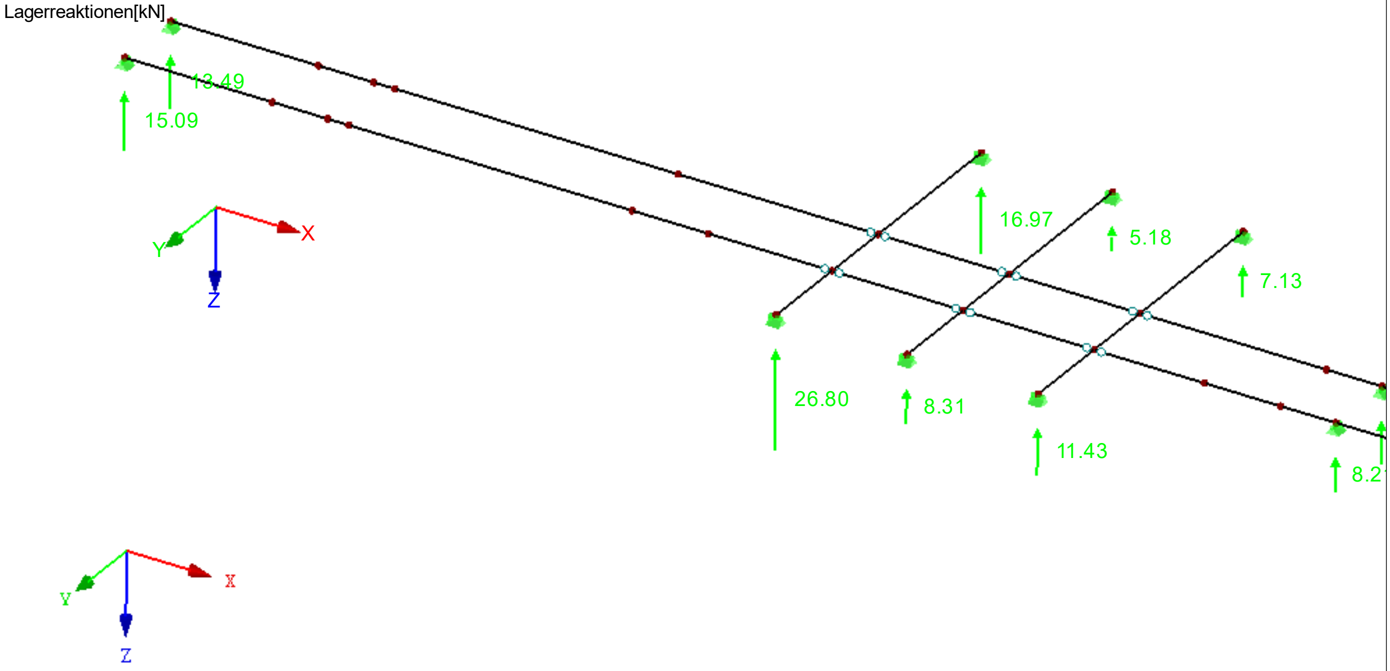


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 52.19, Min P-Z': 5.99 kN

LAGERREAKTIONEN

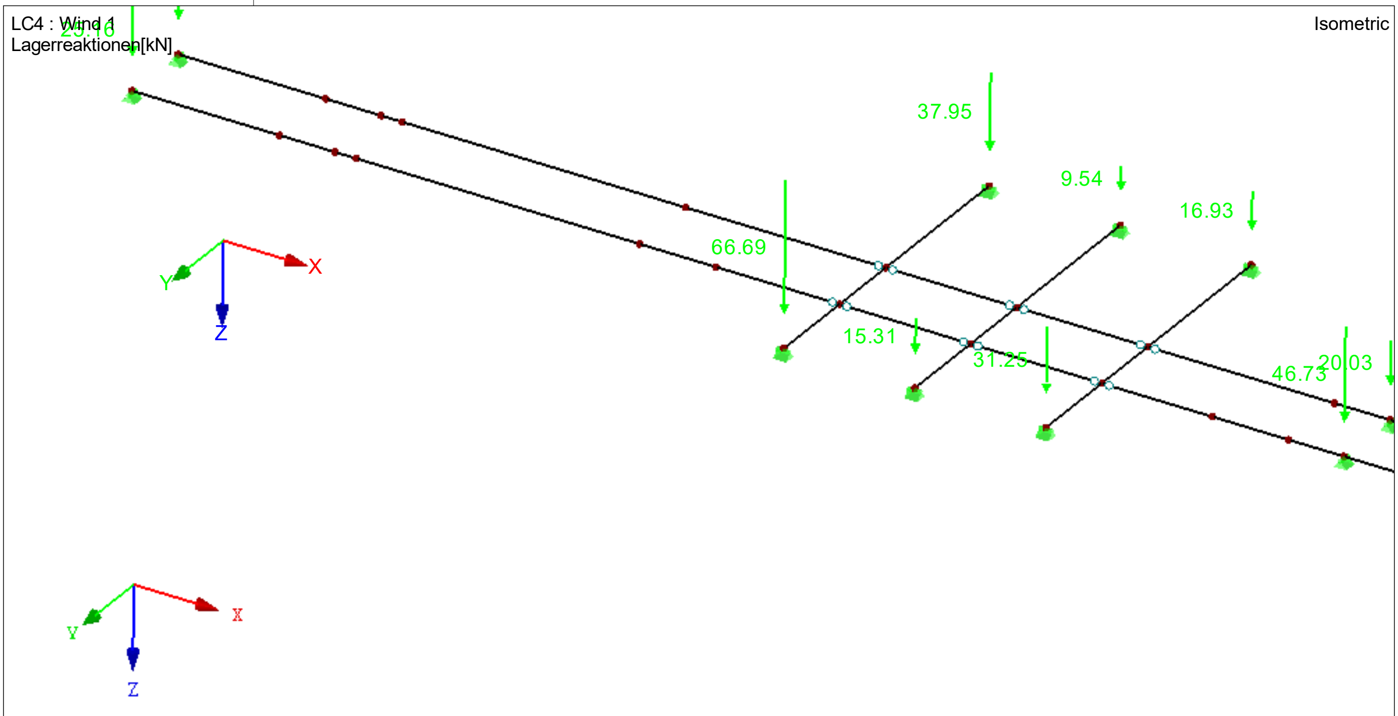
LC3 : Snow
Lagerreaktionen[kN]

Isometric



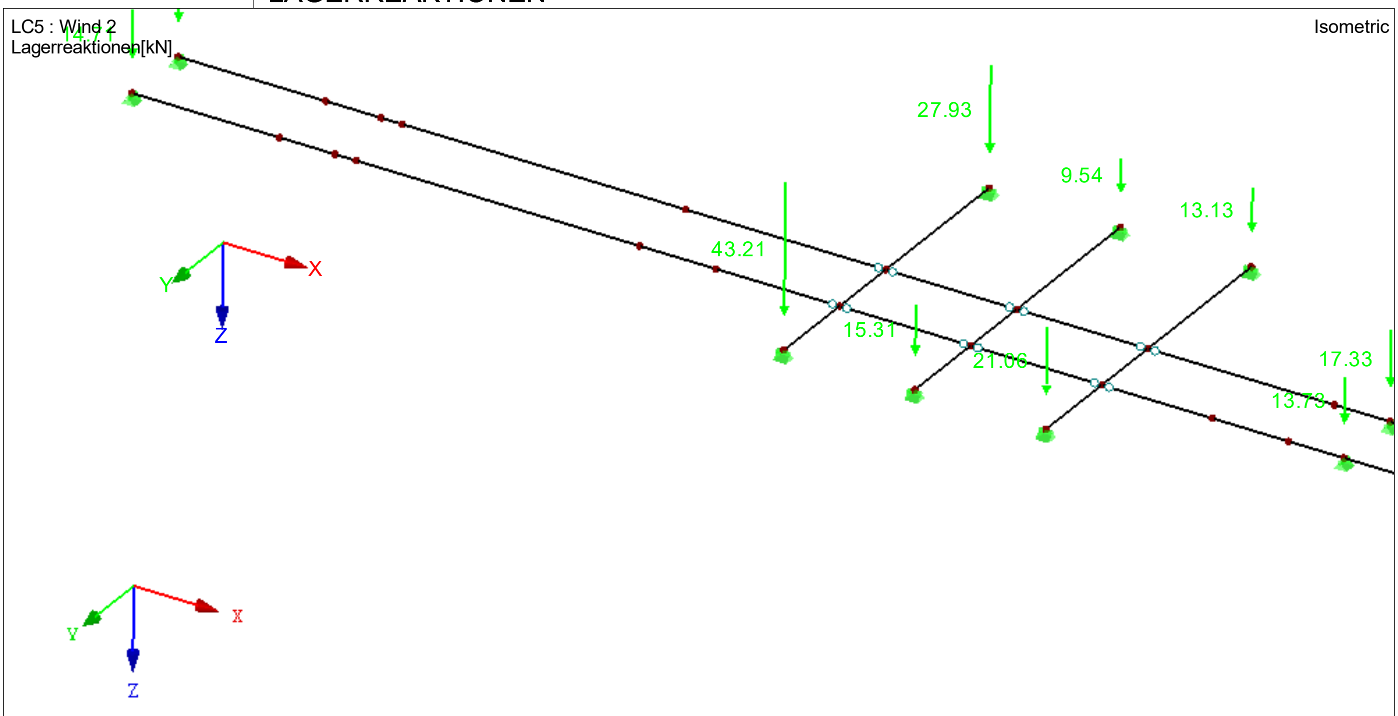
Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 26.80, Min P-Z': 5.18 kN

LAGERREAKTIONEN



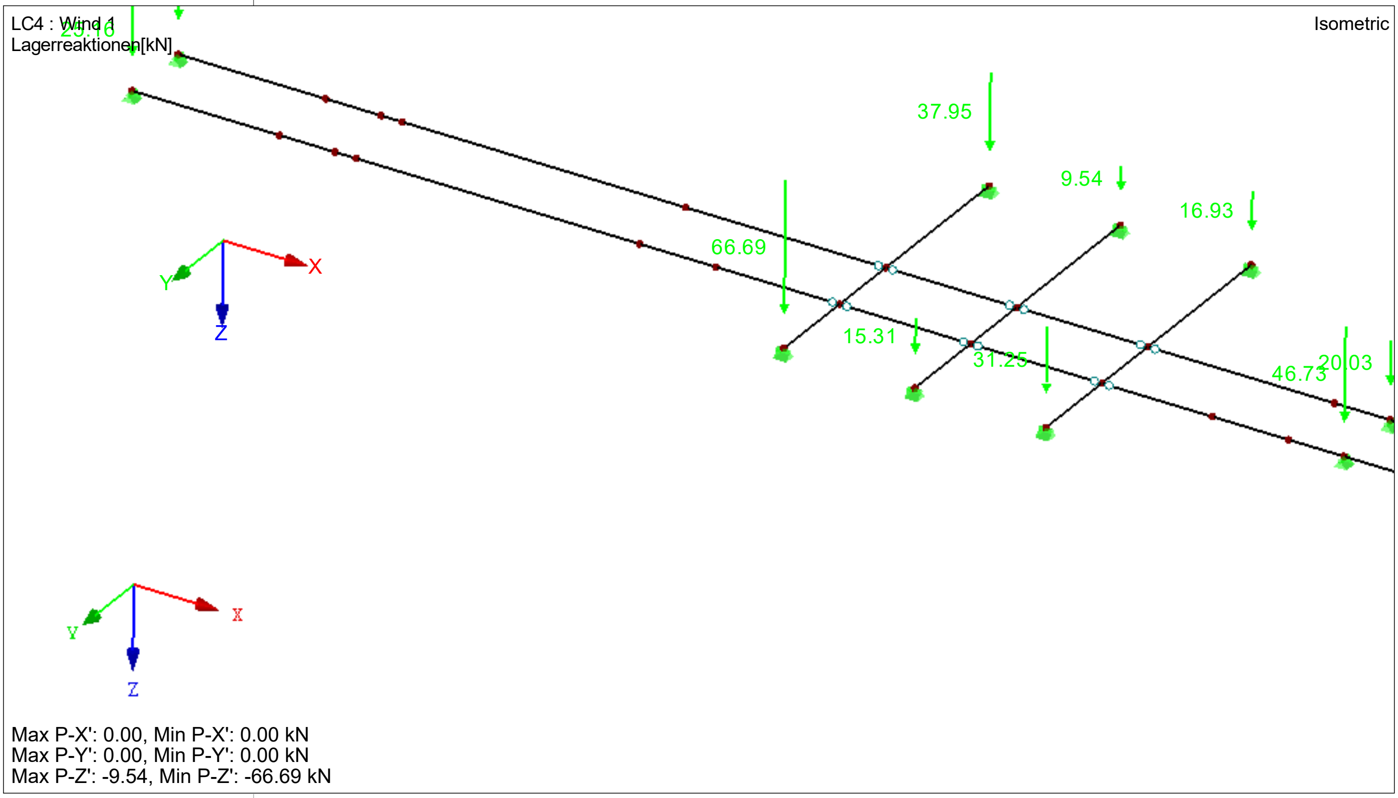
Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -66.69 kN

LAGERREAKTIONEN

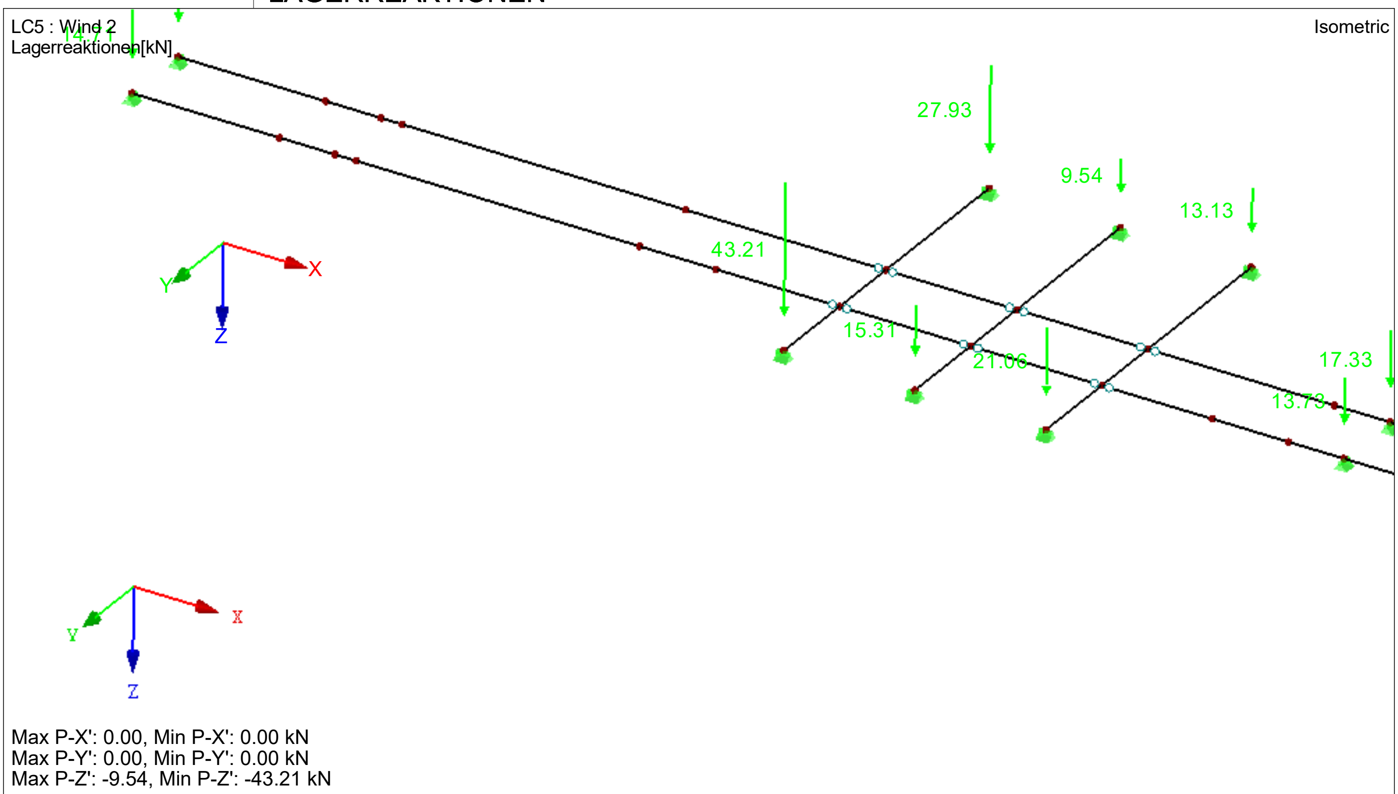


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -43.21 kN

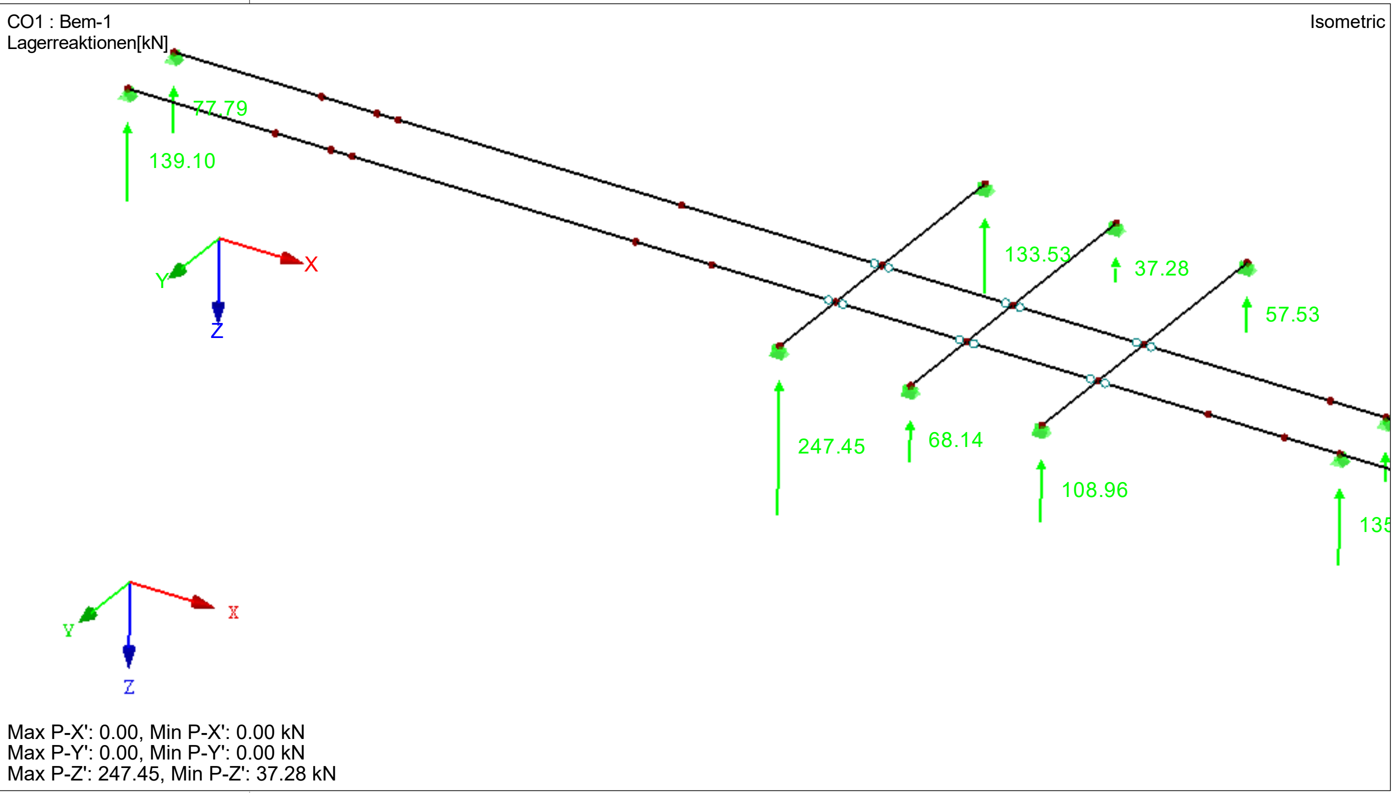
■ LAGERREAKTIONEN



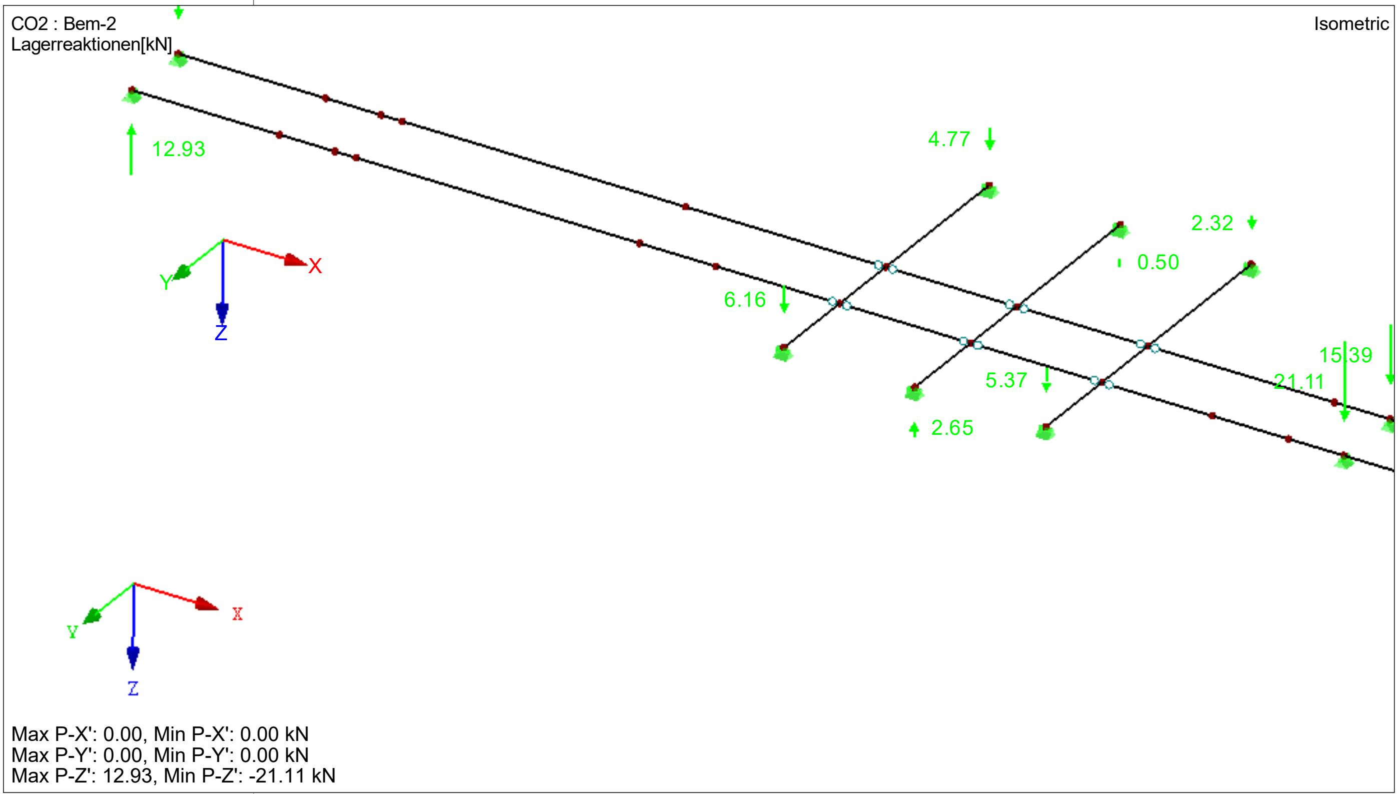
■ LAGERREAKTIONEN



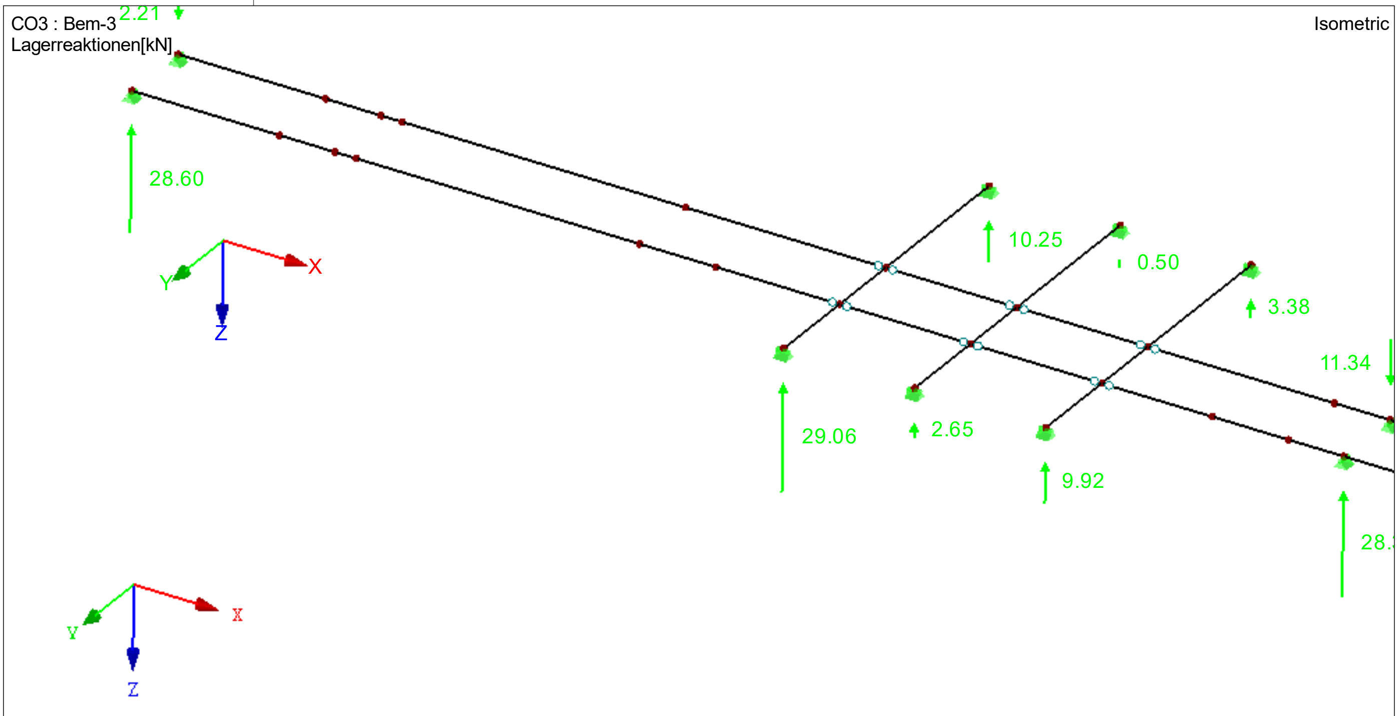
LAGERREAKTIONEN



LAGERREAKTIONEN



■ LAGERREAKTIONEN



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 29.06, Min P-Z': -11.34 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

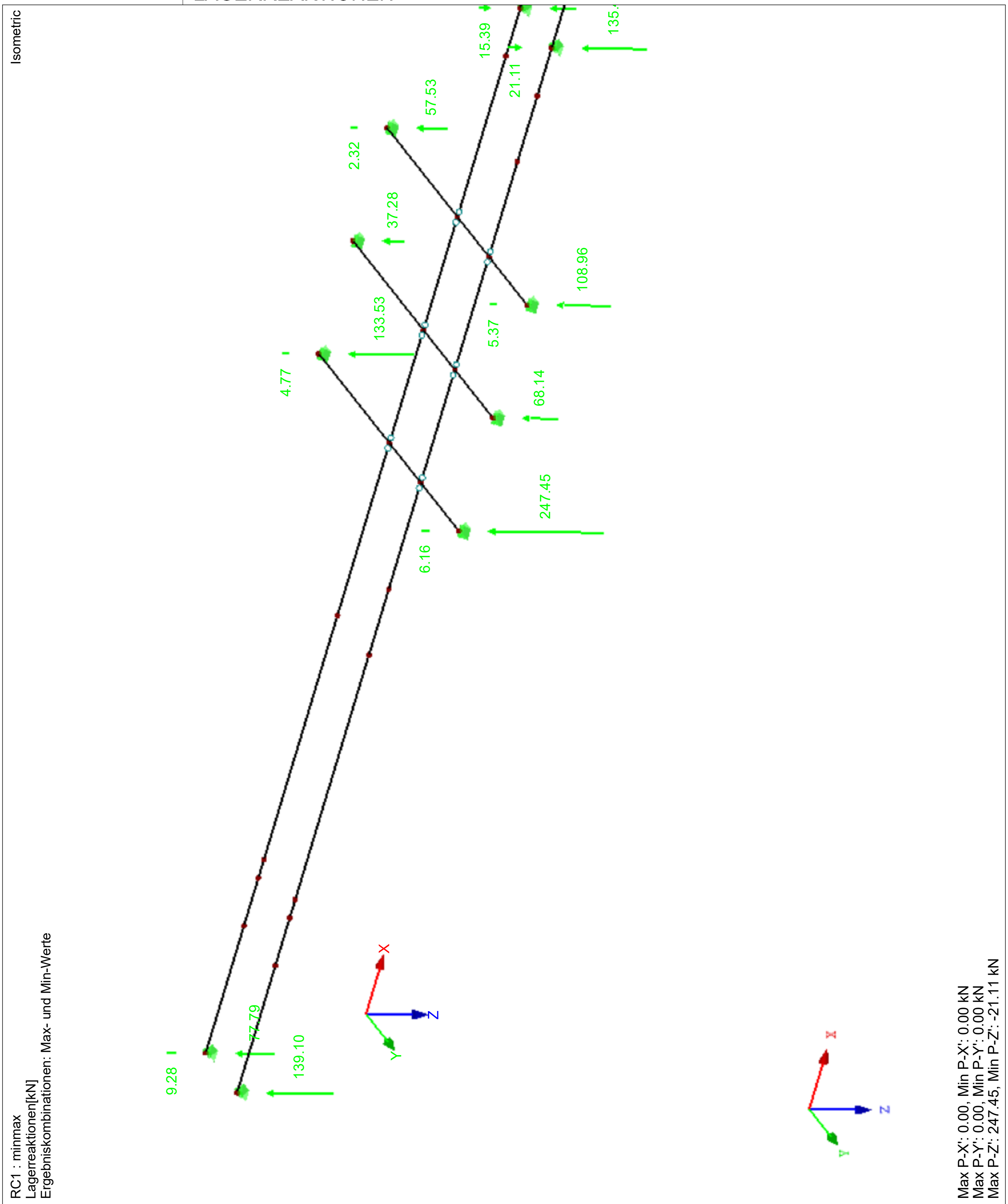
Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: HEB 300										
25	RC1		0.000	MAX N	▷ 1.91	0.00	122.08	0.20	-9.98	0.00	CO 1
17	RC1		0.000	MIN N	▷ -0.29	-0.39	-73.15	0.20	255.96	-1.36	CO 1
25	RC1		1.500	MAX V_y	1.43	▷ 0.24	108.78	0.20	163.19	-0.37	CO 1
17	RC1		2.990	MIN V_y	0.42	▷ -0.96	-98.05	0.20	0.00	0.00	CO 1
25	RC1		0.000	MAX V_z	1.91	0.00	▷ 122.08	0.20	-9.98	0.00	CO 1
17	RC1		2.990	MIN V_z	0.42	-0.96	▷ -98.05	0.20	0.00	0.00	CO 1
17	RC1		0.897	MAX M_T	0.01	-0.54	-80.62	▷ 0.20	186.99	-1.24	CO 1
18	RC1		5.060	MIN M_T	-0.13	0.04	-25.89	▷ -0.03	0.00	0.00	CO 1
10	RC1		2.510	MAX M_y	1.03	0.00	104.99	0.00	▷ 268.50	0.00	CO 1
8	RC1		0.000	MIN M_y	0.00	0.00	7.22	0.00	▷ -22.19	0.00	CO 2
18	RC1		3.036	MAX M_z	-0.05	0.01	-9.03	-0.03	35.35	▷ 0.03	CO 1
17	RC1		0.000	MIN M_z	-0.29	-0.39	-73.15	0.20	255.96	▷ -1.36	CO 1
	Section No. 2: HEB 600										
27	RC1		0.000	MAX N	▷ 4.25	1.69	233.87	-0.19	0.00	0.00	CO 1
29	RC1		2.304	MIN N	▷ -0.02	-0.03	-6.17	-0.19	911.18	-3.94	CO 1
27	RC1		0.000	MAX V_y	4.25	▷ 1.69	233.87	-0.19	0.00	0.00	CO 1
11	RC1		0.000	MIN V_y	0.95	▷ -0.19	-85.04	-0.19	731.32	-1.68	CO 1
27	RC1		0.000	MAX V_z	4.25	1.69	▷ 233.87	-0.19	0.00	0.00	CO 1
31	RC1		4.000	MIN V_z	2.58	0.00	▷ -139.08	-0.19	0.00	0.00	CO 1
30	RC1		3.072	MAX M_T	0.00	-0.01	10.46	▷ 0.03	474.83	0.26	CO 1
29	RC1		3.456	MIN M_T	0.01	-0.07	-17.87	▷ -0.19	897.34	-3.49	CO 1
29	RC1		1.536	MAX M_y	0.01	0.01	1.62	-0.19	▷ 912.93	-4.21	CO 1
30	RC1		3.840	MIN M_y	0.00	0.00	-0.19	0.00	▷ -101.77	0.00	CO 2
21	RC1		1.500	MAX M_z	1.13	-0.19	90.82	-0.19	681.19	▷ 1.42	CO 1
23	RC1		2.070	MIN M_z	0.66	0.38	72.56	-0.19	898.46	▷ -4.66	CO 1
	Section No. 3: HEB 240										
6	RC1		0.000	MAX N	▷ 1.62	0.00	68.12	0.00	0.00	0.00	CO 1
14	RC1		0.000	MIN N	▷ -0.11	-0.03	13.97	0.02	0.00	0.00	CO 1
13	RC1		0.000	MAX V_y	-0.09	▷ 0.20	13.97	-0.14	0.00	0.00	CO 1
15	RC1		3.550	MIN V_y	-0.05	▷ -0.20	-13.97	0.09	0.00	0.00	CO 1
6	RC1		0.000	MAX V_z	1.62	0.00	▷ 68.12	0.00	0.00	0.00	CO 1
4	RC1		4.650	MIN V_z	0.74	0.00	▷ -37.27	0.00	0.00	0.00	CO 1
15	RC1		3.550	MAX M_T	-0.05	-0.20	-13.97	▷ 0.09	0.00	0.00	CO 1
13	RC1		0.000	MIN M_T	-0.09	0.20	13.97	▷ -0.14	0.00	0.00	CO 1
6	RC1		2.510	MAX M_y	0.91	0.00	65.31	0.00	▷ 167.49	0.00	CO 1
5	RC1		2.070	MIN M_y	0.00	0.00	-5.65	0.00	▷ -5.79	0.00	CO 2

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

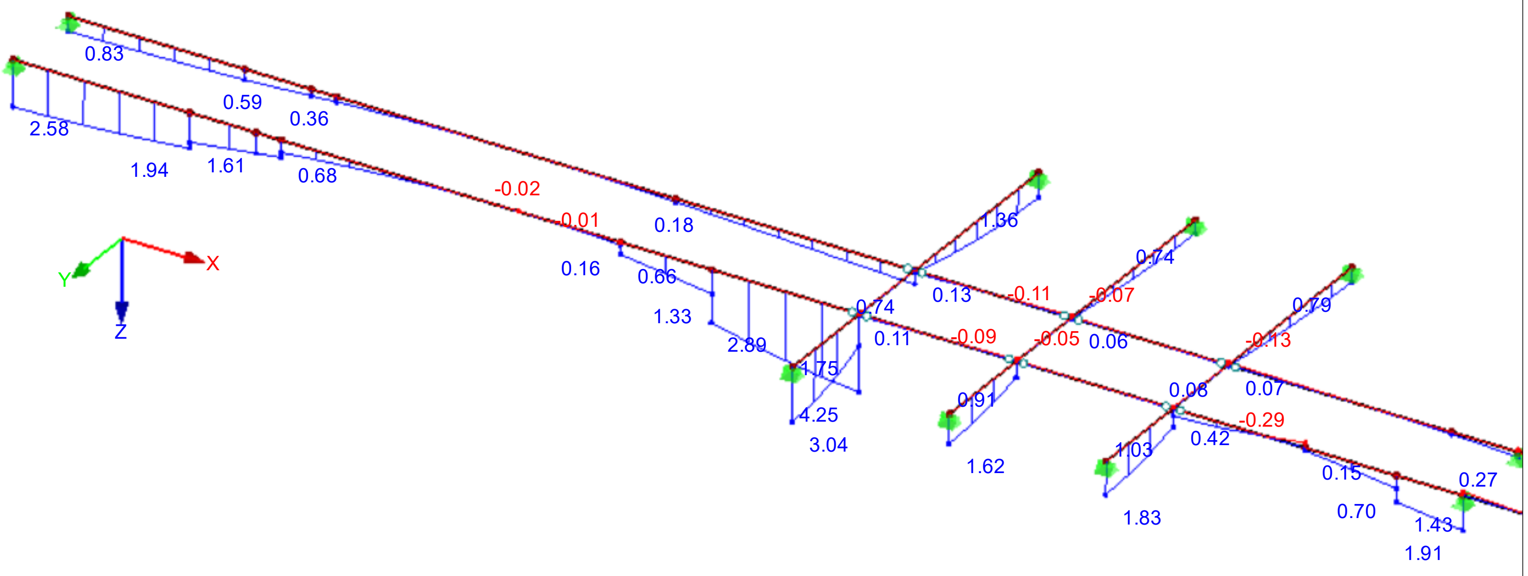
Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
16	RC1		1.952	MAX M_z	-0.01	0.00	-1.40	-0.01	12.28	▷ 0.02	CO 1
15	RC1		1.952	MIN M_z	-0.01	-0.02	-1.40	0.09	12.28	▷ -0.15	CO 1
	Section No. 4: HEB 450										
3	RC1		0.000	MAX N	▷ 3.04	0.00	247.43	0.00	0.00	0.00	CO 1
2	RC1		0.000	MIN N	▷ -0.05	0.00	-6.24	0.00	613.79	0.00	CO 1
1	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
3	RC1		0.000	MAX V_z	3.04	0.00	▷ 247.43	0.00	0.00	0.00	CO 1
1	RC1		4.650	MIN V_z	1.36	0.00	▷ -133.52	0.00	0.00	0.00	CO 1
1	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
3	RC1		2.510	MAX M_y	1.75	0.00	241.65	0.00	▷ 613.83	0.00	CO 1
1	RC1		0.000	MIN M_y	0.00	0.00	11.94	0.00	▷ -38.85	0.00	CO 2
1	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
1	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

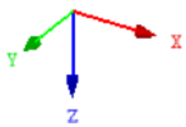
LAGERREAKTIONEN



RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Isometric





Max N: 4.25, Min N: -0.29 [kN]

INTERNAL FORCES N

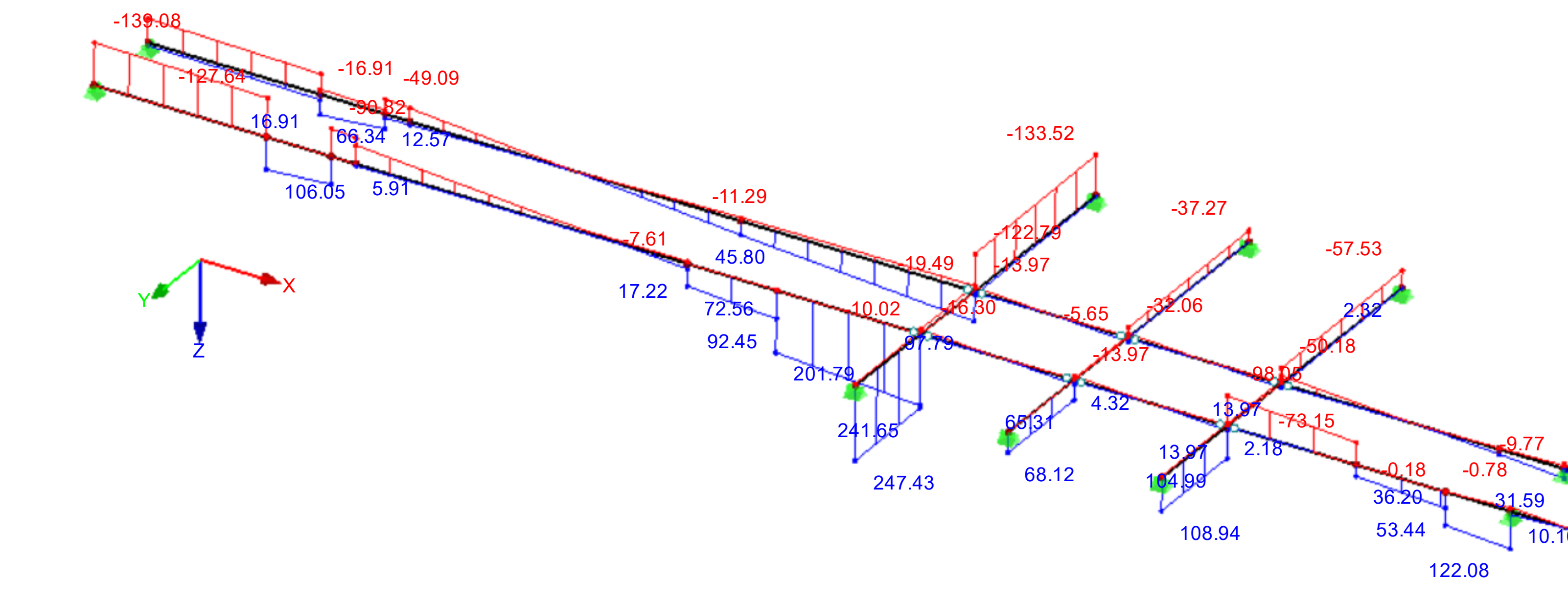
Project: 2023
Model: K-Steel-beams-b
Kloster-Gelati
Date: 24.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

RC1 : minmax
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max V-z: 247.43, Min V-z: -139.08 [kN]

■ INTERNAL FORCES V_z

Project: 2023

Model: K-Steel-beams-b

Kloster-Gelati

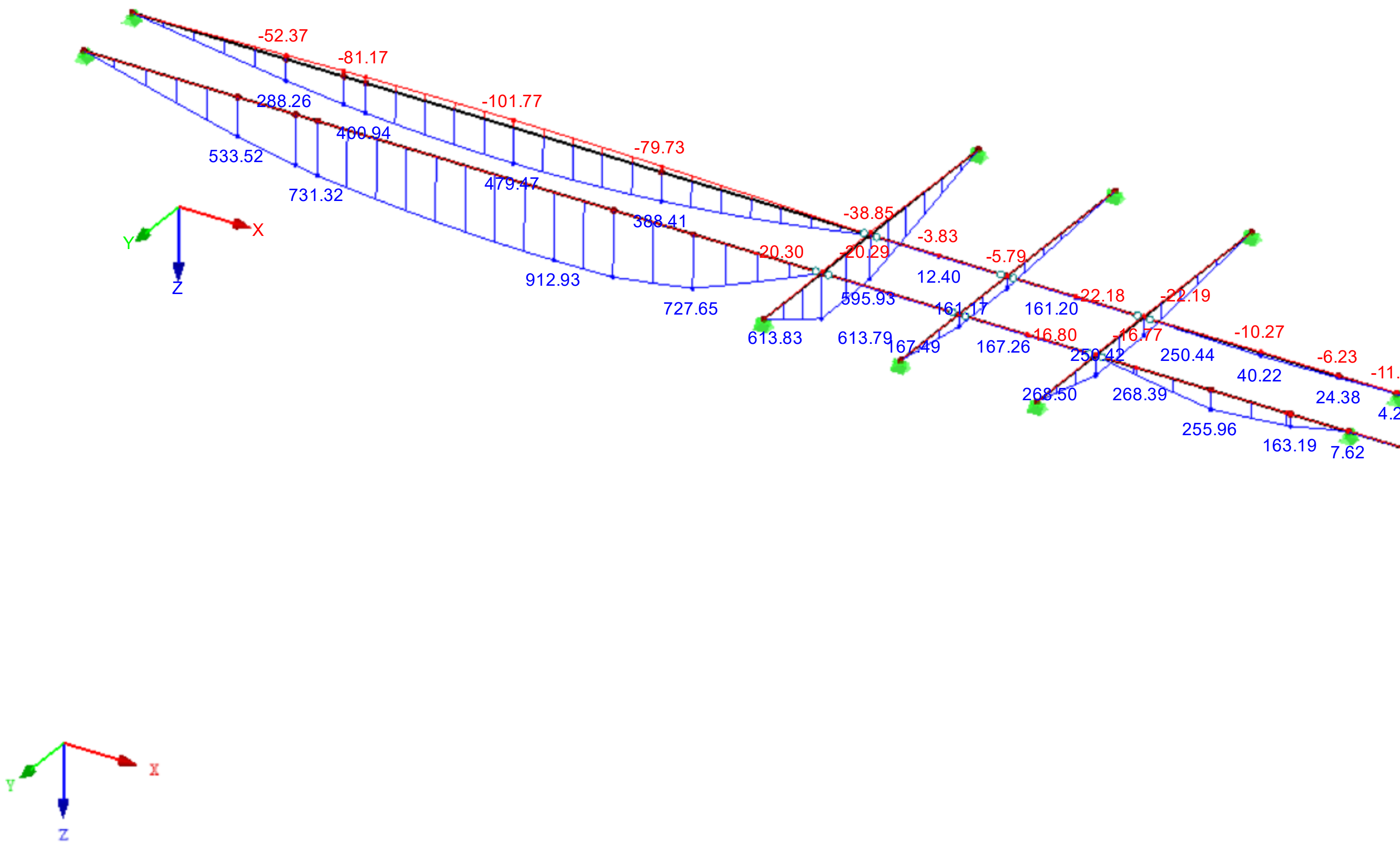
Date: 24.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

RC1 : minmax
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max M-y: 912.93, Min M-y: -101.77 [kNm]

RSTAB 8.31.01 - Space Frame Structures
www.dlubal.com

INTERNAL FORCES M_y

Project: 2023
Model: K-Steel-beams-b
Kloster-Gelati
Date: 24.09.2023

Volker Knobloch
Andersenstraße 16, 74078 HEILBRONN
Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

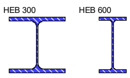
1.1 GENERAL DATA

Members to design:	All	
Sets of members to design:		
National Annex:	DIN	
Ultimate Limit State Design		
Load combinations to design:	CO1	Bem-1
	CO2	Bem-2
	CO3	Bem-3

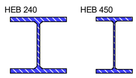
1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
1	S 235 | Layher Benutzerdefiniertes Material	21000.00	8100.00	0.300	23.50	100.0

1.3 CROSS-SECTIONS



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	1	HEB 300	I-section rolled	0.67	
2	1	HEB 600	I-section rolled	0.83	
3	1	HEB 240	I-section rolled	0.74	
4	1	HEB 450	I-section rolled	0.72	



1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
1	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
2	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
3	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
4	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
5	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
6	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
8	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
9	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
10	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
11	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
12	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
13	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
14	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
15	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
16	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
17	☒	☒	1.00	2.990	☒	1.00	2.990	☒	1.0	1.0	2.990	2.990
18	☒	☒	1.00	5.060	☒	1.00	5.060	☒	1.0	1.0	5.060	5.060
19	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
20	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
21	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
22	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
23	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
24	☒	☒	1.00	5.410	☒	1.00	5.410	☒	1.0	1.0	5.410	5.410
25	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
26	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
27	☒	☒	1.00	3.340	☒	1.00	3.340	☒	1.0	1.0	3.340	3.340
28	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
29	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
30	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
31	☒	☒	1.00	4.000	☒	1.00	4.000	☒	1.0	1.0	4.000	4.000
32	☒	☒	1.00	4.000	☒	1.00	4.000	☒	1.0	1.0	4.000	4.000

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
1	Cross-Section	4 - HEB 450
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
2	Cross-Section	4 - HEB 450
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
3	Cross-Section	4 - HEB 450

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
4	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
5	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
6	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
8	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
9	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
10	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
11	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
12	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
13	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
14	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
15	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
16	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
17	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
18	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
19	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
20	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
21	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
22	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
23	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
24	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
25	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
26	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
27	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
28	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
29	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
30	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
31	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
32	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
1	**Cross-section No. 4 - HEB 450**					
	0.000	LK1	0.64	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.12	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.64	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.70	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
2	**Cross-section No. 4 - HEB 450**					
	0.000	LK1	0.66	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK3	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.66	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.72	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
3	**Cross-section No. 4 - HEB 450**					
	2.510	LK1	0.66	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.23	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.66	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						6.2.8
	2.510	LK1	0.72	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
4	**Cross-section No. 3 - HEB 240**					
	3.953	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.65	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.65	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.72	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
5	**Cross-section No. 3 - HEB 240**					
	0.000	LK1	0.68	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK3	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.68	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.74	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
6	**Cross-section No. 3 - HEB 240**					
	2.510	LK1	0.68	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.68	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.510	LK1	0.74	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
8	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.57	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.09	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.57	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.63	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
9	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.61	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.61	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.67	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
10	**Cross-section No. 1 - HEB 300**					
	2.510	LK1	0.61	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.17	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.61	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.510	LK1	0.67	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
11	**Cross-section No. 2 - HEB 600**					
	0.000	LK3	0.09	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.570	LK1	0.06	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.09	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.24	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.53	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
12	**Cross-section No. 2 - HEB 600**					
	0.000	LK1	0.27	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.570	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.27	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.29	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
13	**Cross-section No. 3 - HEB 240**					

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
14	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
15	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
16	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
17	**Cross-section No. 1 - HEB 300**					
	2.541	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK3	0.15	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.990	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.15	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.35	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.64	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
18	**Cross-section No. 1 - HEB 300**					
	2.024	LK1	0.09	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	5.060	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.024	LK1	0.09	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.024	LK1	0.11	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
19	**Cross-section No. 1 - HEB 300**					
	1.500	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	1.500	LK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.275	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.02	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
20	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	1.500	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.275	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.03	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
21	**Cross-section No. 2 - HEB 600**					
	1.500	LK3	0.08	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6

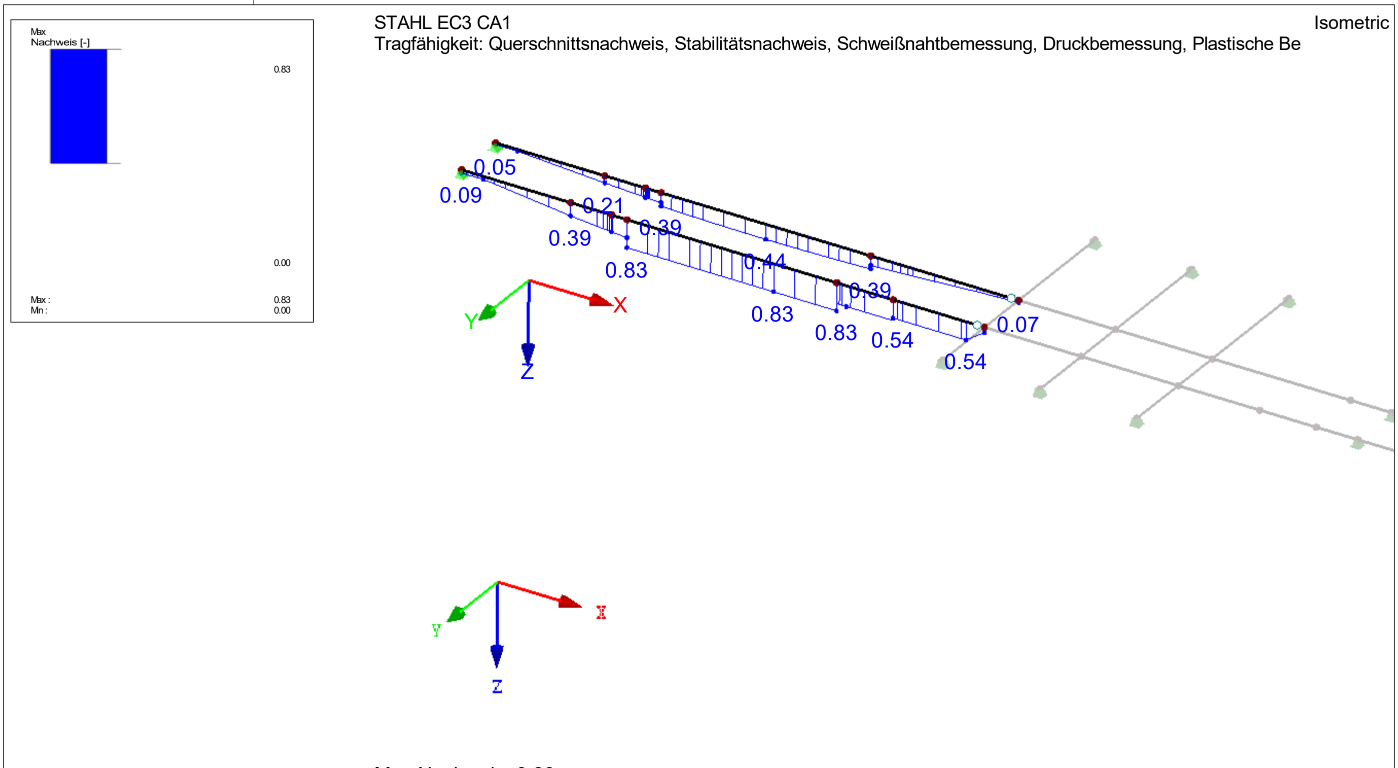
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK3	0.08	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.21	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.500	LK1	0.50	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
22	**Cross-section No. 2 - HEB 600**					
	1.500	LK1	0.25	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.25	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.27	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
23	**Cross-section No. 2 - HEB 600**					
	2.070	LK3	0.13	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.06	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK3	0.13	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.37	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.070	LK3	0.14	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.000	LK1	0.61	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
24	**Cross-section No. 2 - HEB 600**					
	5.410	LK1	0.26	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	5.410	LK1	0.26	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	5.410	LK1	0.28	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
25	**Cross-section No. 1 - HEB 300**					
	1.500	LK1	0.37	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.19	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.37	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.41	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
26	**Cross-section No. 1 - HEB 300**					
	1.500	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
27	**Cross-section No. 2 - HEB 600**					
	0.835	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	3.340	LK3	0.11	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.16	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.340	LK3	0.11	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.340	LK1	0.25	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	3.340	LK3	0.12	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.668	LK1	0.54	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
28	**Cross-section No. 1 - HEB 300**					
	0.104	LK1	0.38	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.104	LK1	0.38	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.35	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.070	LK1	0.64	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
29	**Cross-section No. 2 - HEB 600**					

2.4 DESIGN BY MEMBER

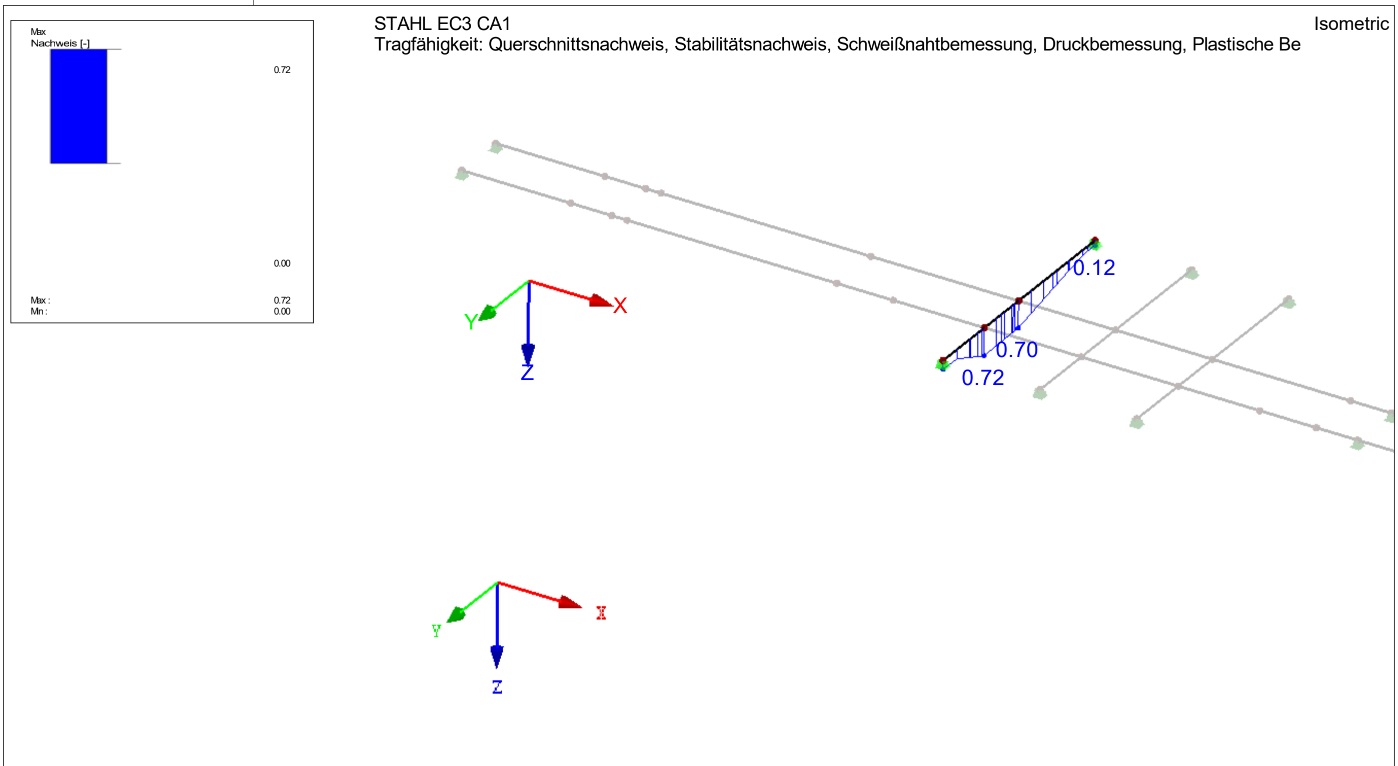
Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK3	0.13	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	7.680	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.13	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.536	LK1	0.38	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK3	0.16	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
	0.000	LK1	0.83	≤ 1	ST363)	Stability analysis - Biaxial bending acc. to 6.3.3, Method 2
30	**Cross-section No. 2 - HEB 600**					
	3.840	LK1	0.32	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.840	LK1	0.32	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.840	LK1	0.44	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
31	**Cross-section No. 2 - HEB 600**					
	0.800	LK1	0.29	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.000	LK1	0.09	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.800	LK1	0.29	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.13	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.39	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
32	**Cross-section No. 2 - HEB 600**					
	3.800	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.19	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.19	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.21	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section

NACHWEIS



Max Nachweis: 0.83

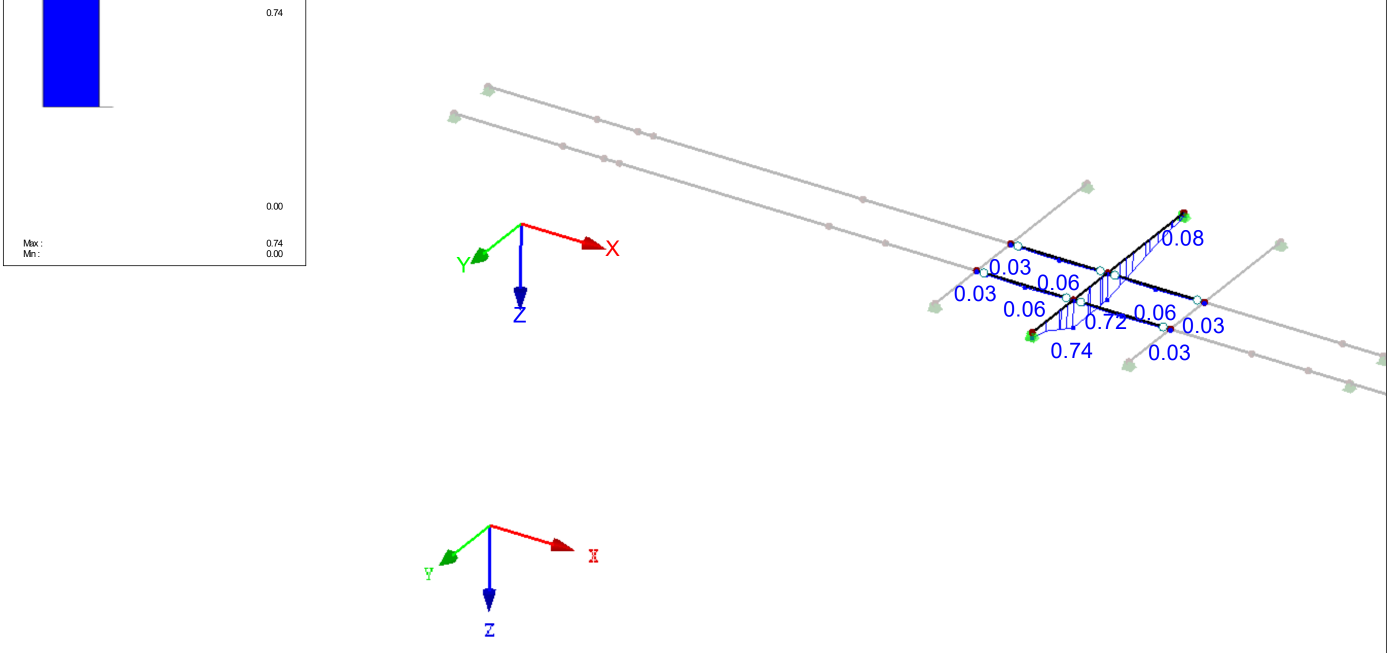
NACHWEIS



Max Nachweis: 0.72

NACHWEIS

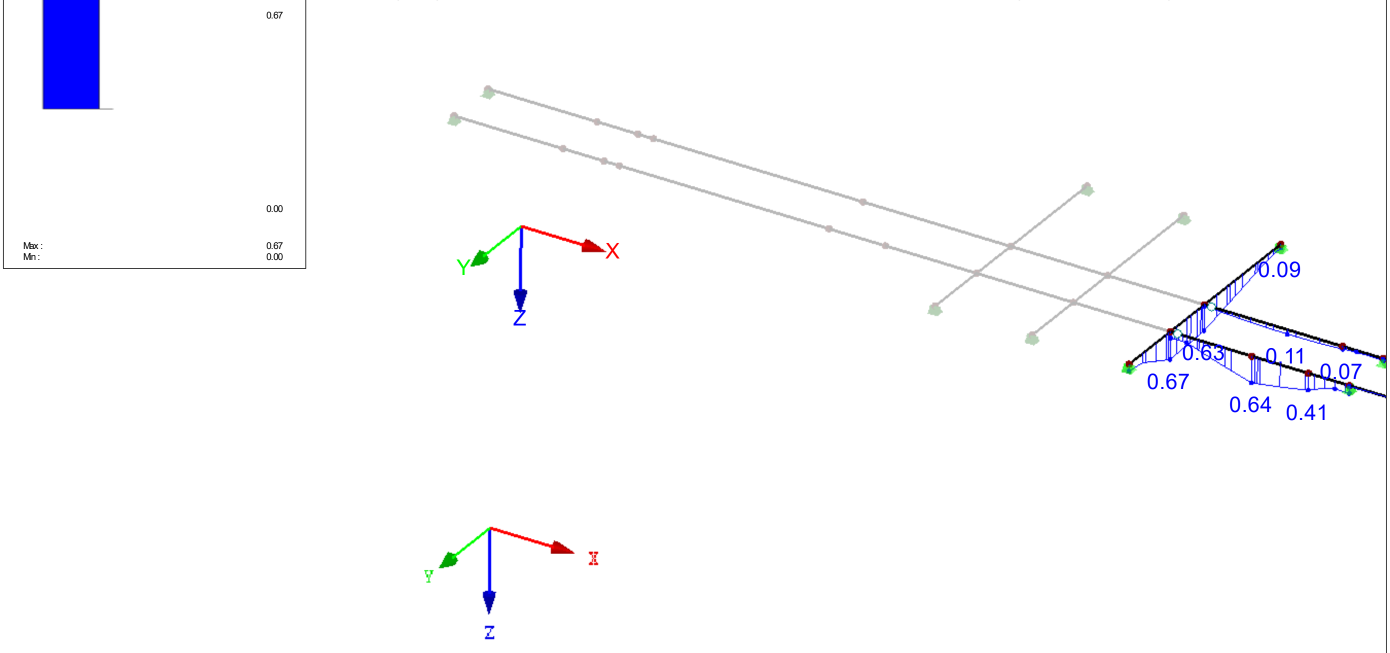
STAHL EC3 CA1 Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be



Max Nachweis: 0.74

NACHWEIS

STAHL EC3 CA1 Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be



Max Nachweis: 0.67

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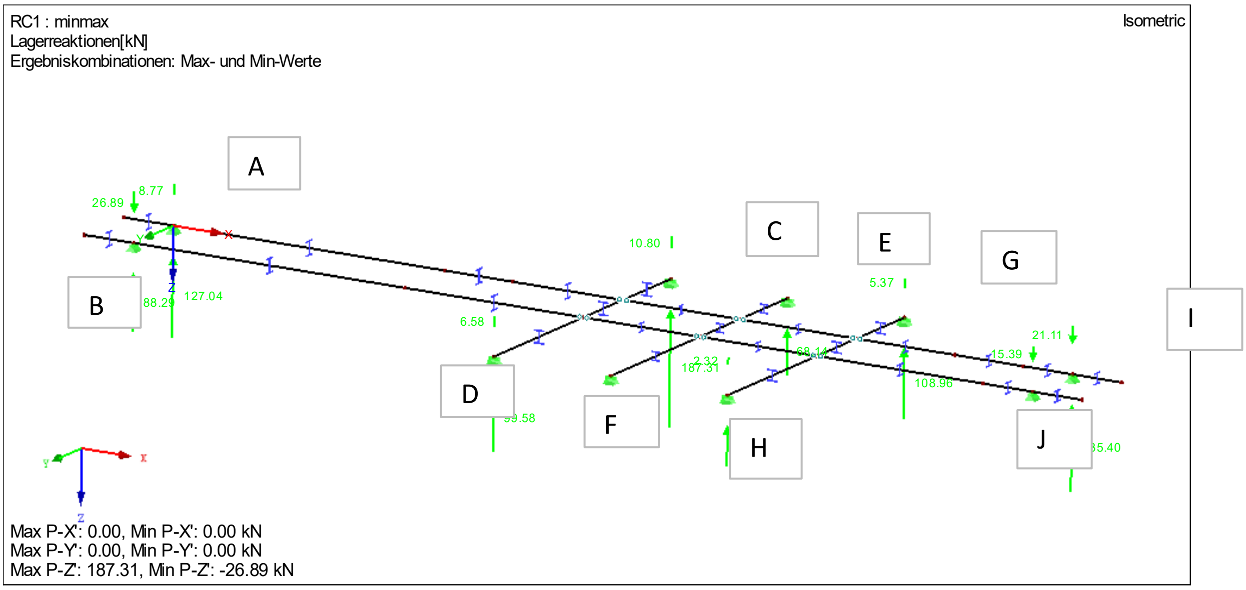
HEB 600	Nd=	20	kN
S235	Vd=	250	kN
	Md=	913	kNm
	eta=	0,81	< 1,0

HEB 450	Nd=	20	kN
S235	Vd=	220	kN
	Md=	740	kNm
	eta=	0,87	< 1,0

HEB 240	Nd=	10	kN
S235	Vd=	70	kN
	Md=	202	kNm
	eta=	0,9	< 1,0

HEB 300	Nd=	20	kN
S235	Vd=	100	kN
	Md=	268	kNm
	eta=	0,82	< 1,0

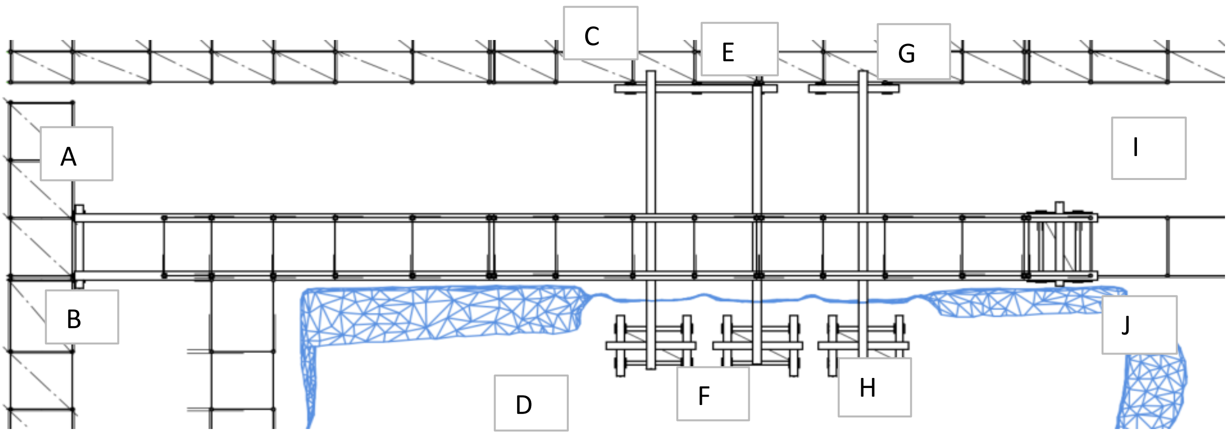
Reaction forces:



		A	B	C	D	E	F
Dead Load		33	56	58	105	20	29
Live Load		12	32	24	53	6	14
Snow		14	115	17	27	6	9
Wind 1		-26	-26	-38	-67	-10	-16
Wind 2		-21	-15	-28	-44	-10	-16
max	design	80	140	135	248	40	70
max	design		0	0	0	0	0
min	design	-10	0	-5	-6	0	0

		G	H	I	J		
Dead Load		26	46	20	55		
Live Load		10	24	8	38		
Snow		8	12	11	9		
Wind 1		-17	-32	-20	-47		
Wind 2		-14	-22	-18	-14		
max	design	58	109	47	135		
max	design		0	0	0		
min	design	-3	0	-16	-22		

Heavy duty towers:



Point A

2 Column heavy duty support

Nd =	80	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 36,63 kN

a=	0,6	m
b=	0,6	m
sigma=	102	kN/m²

Point B

2 Column heavy duty support

Nd =	140	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 58,852 kN

a=	0,7	m
b=	0,7	m
sigma=	120	kN/m²

Point C

2 Column heavy duty support

Nd =	135	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	57	kN
a=	0,7	m
b=	0,7	m
sigma=	116	kN/m²

Point D

4 Column heavy duty support

Nd =	248	kN
NRd=	560	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	52,926	kN
a=	0,7	m
b=	0,7	m
sigma=	108	kN/m²

Point E

1 Column heavy duty support

Nd =	40	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	36,63	kN
a=	0,6	m
b=	0,6	m
sigma=	102	kN/m²

Point F

4 Column heavy duty support

Nd =	70	kN
NRd=	560	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	19,963	kN
a=	0,6	m
b=	0,6	m
sigma=	55	kN/m²

Point G

1 Column heavy duty support

Nd =	60	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	51,444	kN
a=	0,7	m
b=	0,7	m
sigma=	105	kN/m²

Point H

4 Column heavy duty support

Nd =	109	kN
NRd=	560	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	27,185	kN
a=	0,5	m
b=	0,5	m
sigma=	109	kN/m²

Point I

2 Column heavy duty support

Nd =	50	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 25,519 kN

a=	0,5	m
b=	0,5	m
sigma=	102	kN/m²

Point J

2 Column heavy duty support

Nd =	135	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 57 kN

a=	0,7	m
b=	0,7	m
sigma=	116	kN/m²

Pos.13: General

All scaffolds must be connect with tubes and couplers.

If the scaffold is connected to the building, the load bearing capacity of the buliding has to be checked on site.

All horizontal supports of the scaffold is build witthe tubes, rigid couplers, base plate and a wooden board (min 30/30cm) to distribute the force locally.

There is a load distribution under each base plate according to the calculation.

The scaffolder has to check if the ground has a sufficient load bearing capacity!

The whole structure has to be checked once a year by a qualified scaffolder!

Heilbronn, the 22nd of September 2023

Dipl.-Ing. Volker Knobloch
Beratender Ingenieur
Ingenieurkammer Baden-Württemberg
Nachweisberechtigter für Standsicherheit
nach § 18 (3) LBOVVO
St-Nr. 1215

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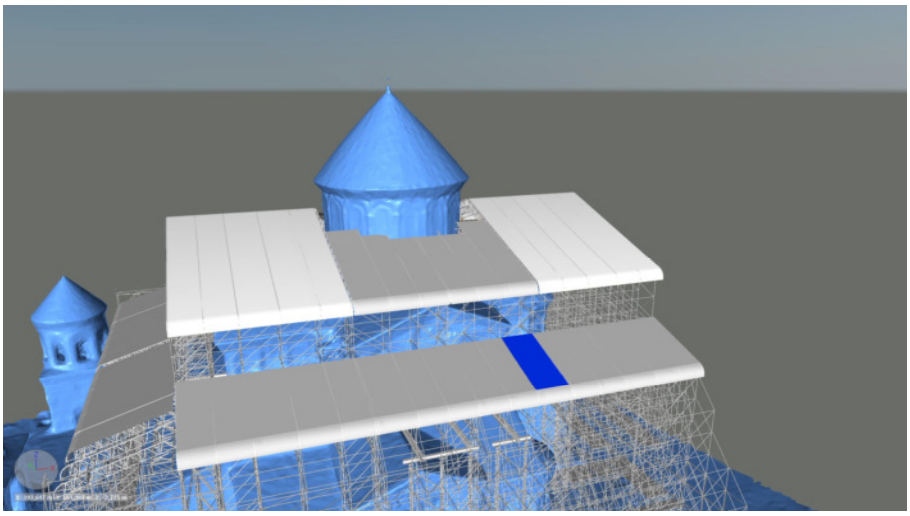
Pos.14: Roof structure without dome



The dome itself needs no roof in the first step of the restoration.

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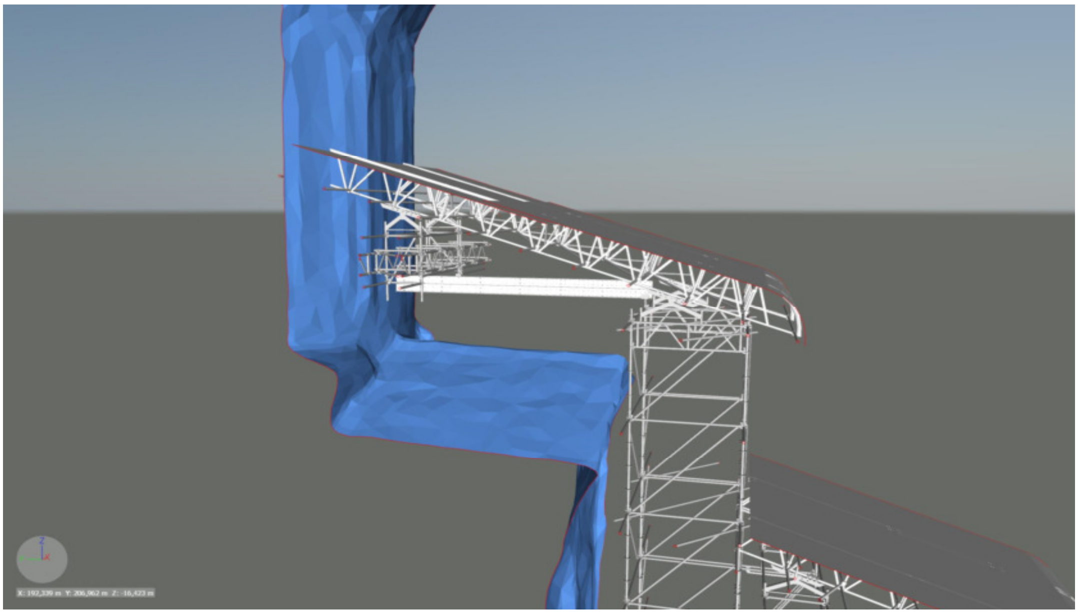
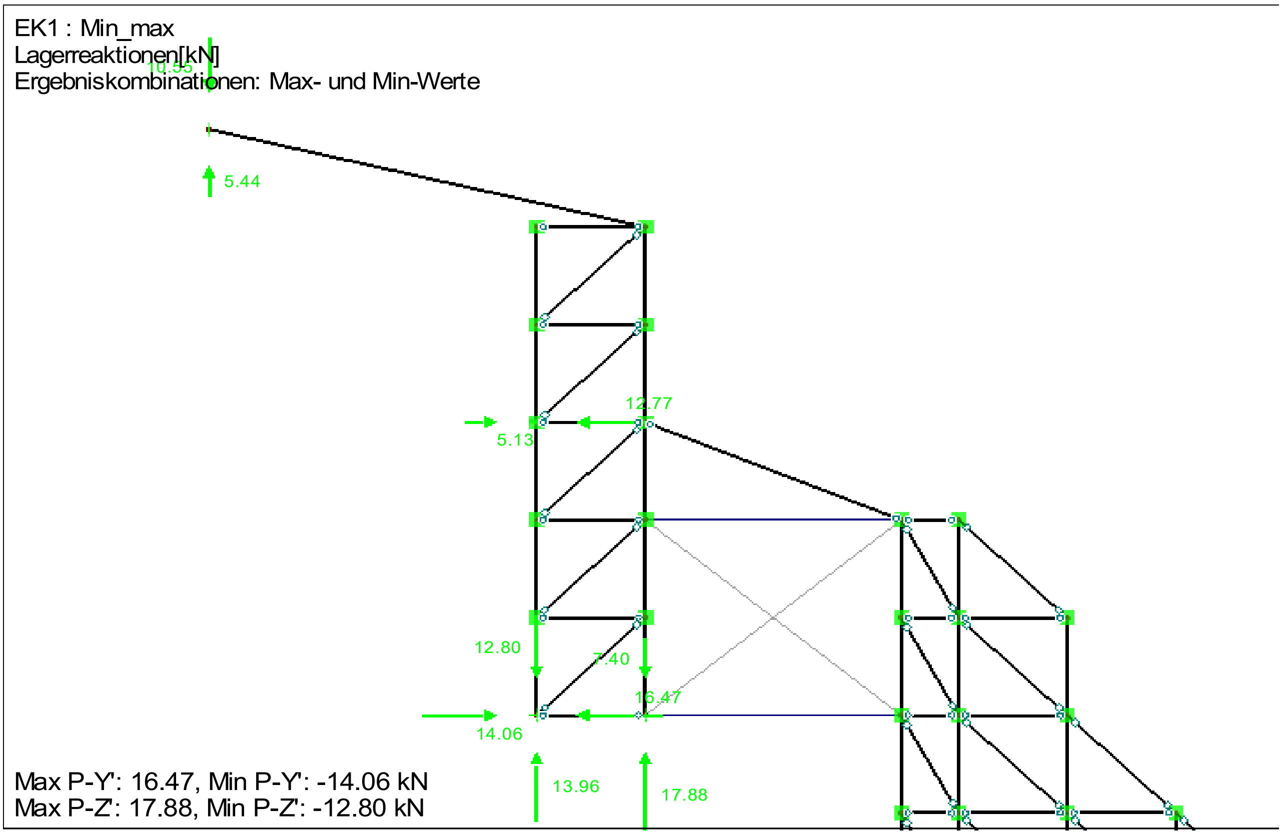
Pos.14.1: Short roof



Reaction force at the top

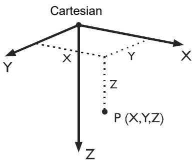


CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-1-TS-10
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES



Node No.	Reference Node	Coordinate System	X [m]	Y [m]	Z [m]	Comment
50	-	Cartesian	0.000	-1.600	8.000	Supported
63	-	Cartesian	0.000	4.640	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
86	-	Cartesian	0.000	4.640	12.000	Supported
94	-	Cartesian	0.000	6.710	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported
122	-	Cartesian	0.000	4.640	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported
134	-	Cartesian	0.000	6.710	20.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported

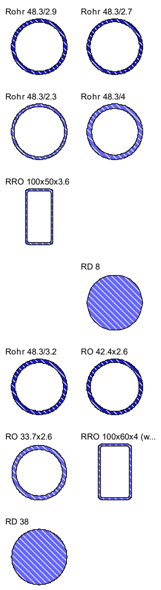
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
239	-	Cartesian	0.000	12.680	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported

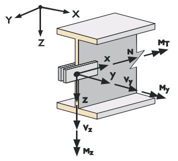
1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40	10.70	10.70	0.00	0.00	48.3	48.3
		4.14	2.07	2.07				
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18	10.09	10.09	0.00	0.00	48.3	48.3
		3.87	1.92	1.92				
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63	8.81	8.81	0.00	0.00	48.3	48.3
		3.32	1.65	1.65				
	Diagonale							
4	Rohr 48.3/4							
	1	27.54	13.77	13.77	0.00	0.00	48.3	48.3
		5.57	2.77	2.77				
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00	129.00	42.90	0.00	0.00	50.0	100.0
		10.20	2.22	6.38				
6	spindel spindel							
	1	1.00	3.74	3.74	0.00	0.00	0.0	0.0
		3.84	2.00	2.00				
7	GI-KDXL Kederdach XL							
	1	1.00	20900.00	20900.00	0.00	0.00	50.0	1000.0
		17.00	9.00	9.00				
8	RD 8 | DIN 1013-1							
	1	0.04	0.02	0.02	0.00	0.00	8.0	8.0
		0.50	0.42	0.42				
9	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93	6.46	6.46	0.00	0.00	42.4	42.4
		3.25	1.62	1.62				
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19	3.09	3.09	0.00	0.00	33.7	33.7
		2.54	1.27	1.27				
	Diagonale_TG60							
12	RRO 100x60x4 (Hot Formed)							
	1	156.00	158.00	70.50	0.00	0.00	60.0	100.0
		12.00	3.23	6.98				
13	RD 38							
	1	20.47	10.24	10.24	0.00	0.00	38.0	38.0
		11.30	9.49	9.49				

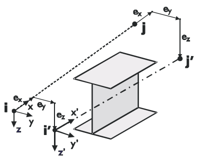


1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

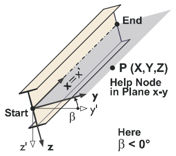


1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐



1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
168	Beam	63	69	Angle	0.00	2	2	1	1	1	-	2.020	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z

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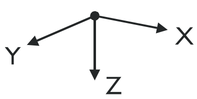
1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
882	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
883	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ
891	Beam	281	111	Angle	0.00	7	7	3	3	-	-	5.274	YZ
894	Beam	69	50	Angle	0.00	7	7	-	-	-	-	8.547	YZ

1.8 NODAL SUPPORTS



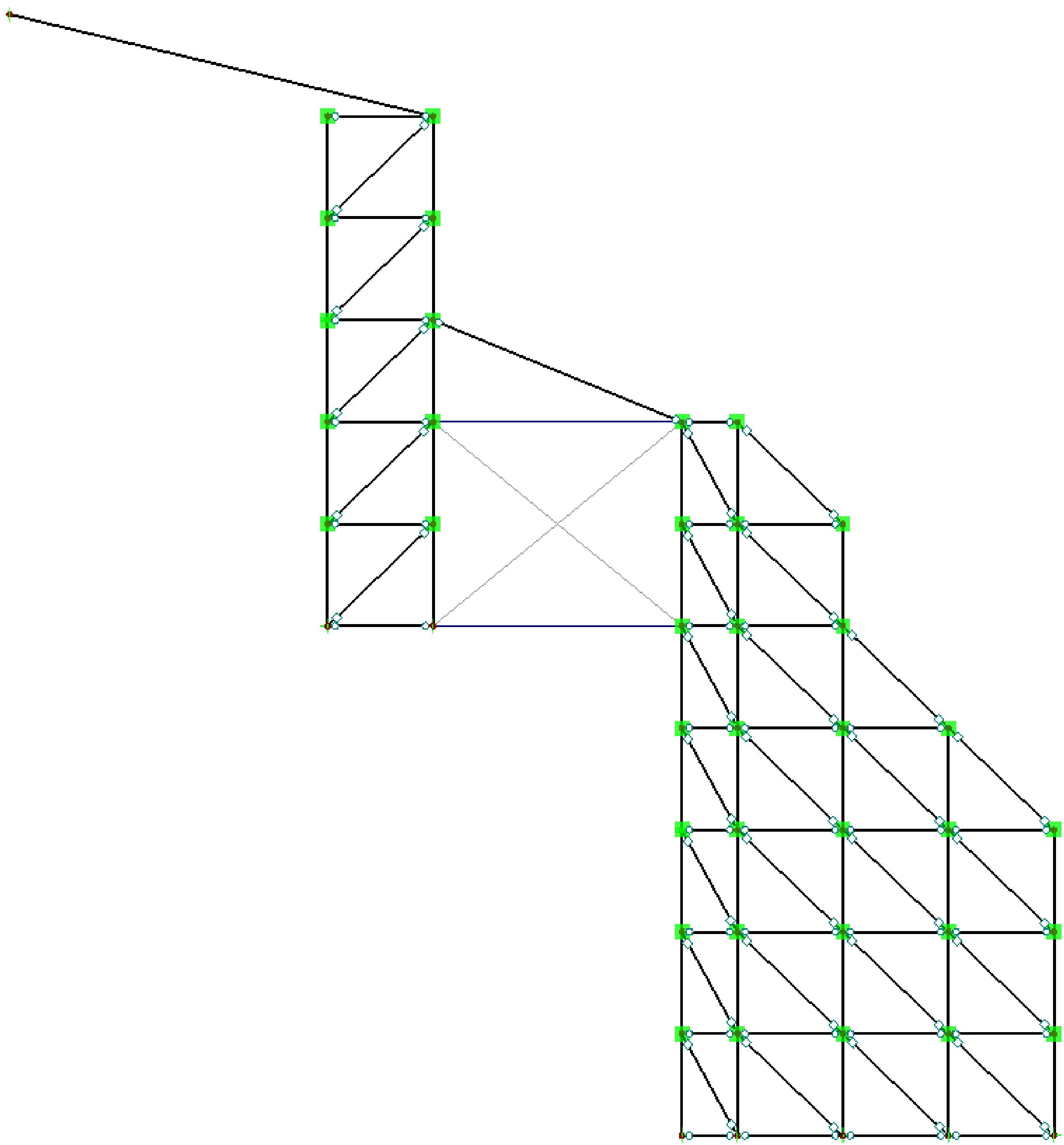
Support No.	Nodes No.	Sequen.	Rotation [°] about X	Rotation [°] about Y	Rotation [°] about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	203,206, 227,275,323	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
2	107,305	XYZ	0.00	0.00	0.00	☐	☒	Spring	☐	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☒	☒
	63,69,86,94,110,111,116,122,125,164,167,173,176,179,185,188,191,194,197,209,215,221,233,239,245,251,257,263, 269,281,287,293,299,311,317											
4	50,134	XYZ	0.00	0.00	0.00	☐	Spring	☐	Spring	☐	☐	☒
5	131	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

Support		Translation Spring [kN/m]			Rotation Spring [kNm/rad]		
No.	Nodes No.	$C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	$C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	203,206,227,275,323	5000.000	5000.000	5000.000	-	-	-
2	107,305	-	1000.000	-	-	-	-
4	50,134	5000.000	-	5000.000	-	-	-
5	131	5000.000	5000.000	5000.000	-	-	-

MODEL

In X-direction

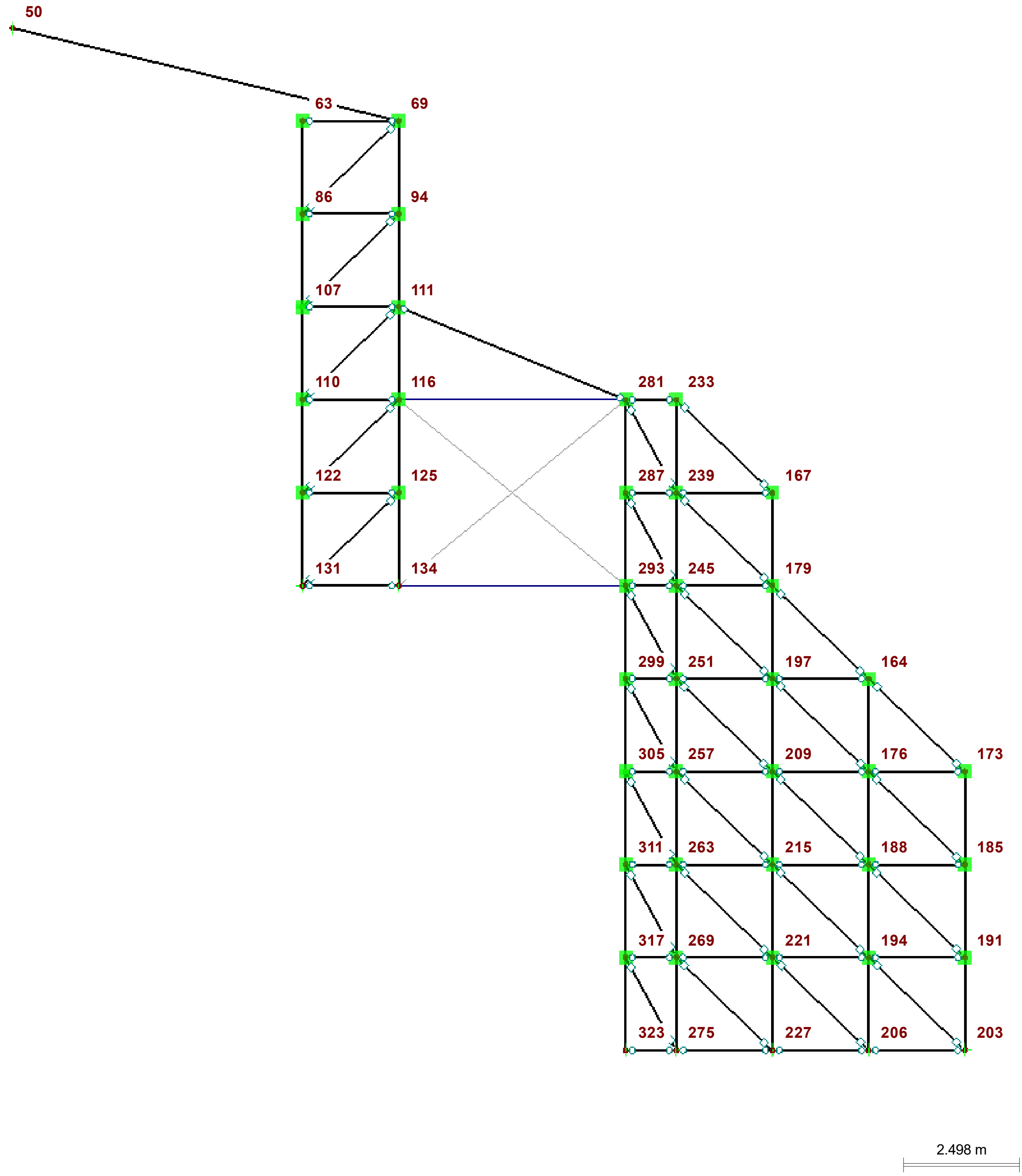


2.498 m

MODEL

Node Numbering

In X-direction



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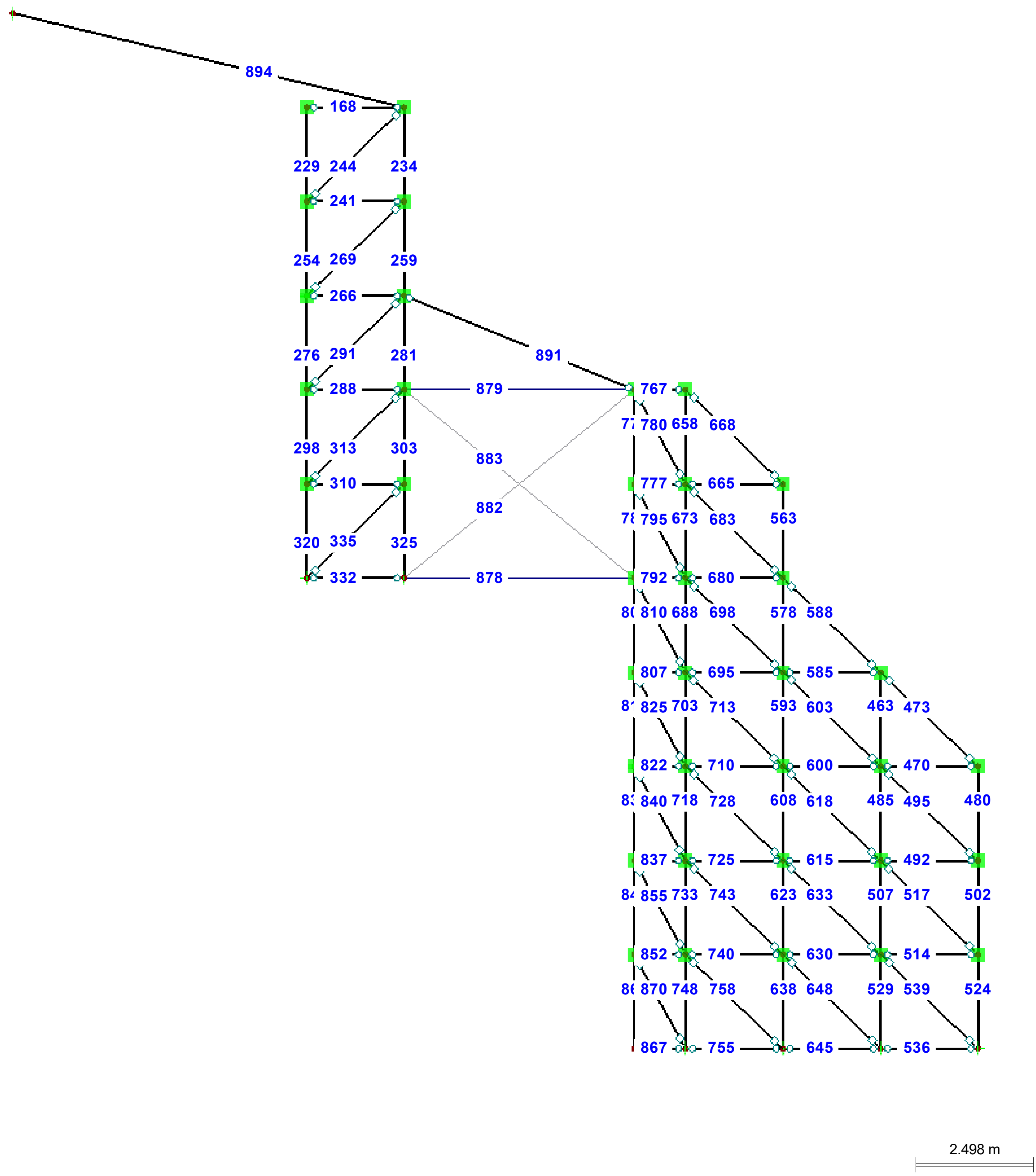
MODEL

Member Numbering

In X-direction



2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind	Wind	☐			
LC4	Snow	Snow / ice	☐			
LC5	Wind-2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Live Load	Method of analysis	: ■	Geometrically linear analysis
LC3	Wind	Method of analysis	: ■	Geometrically linear analysis
LC4	Snow	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind-2	Method of analysis	: ■	Geometrically linear analysis

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	0.90	LC3	Wind
CO2		Bem-2	1	1.35	LC1	EG
			2	0.90	LC2	Live Load
			3	1.50	LC3	Wind
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
			3	1.50	LC4	Snow
CO5		Bem-5	1	0.90	LC1	EG
			2	1.50	LC5	Wind-2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	Bem-5	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters	
			☒ Shear forces V_y and V_z
			☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒ Materials (partial factor γM)
			: ☒ Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒ Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4 or CO5

LC1
EG

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

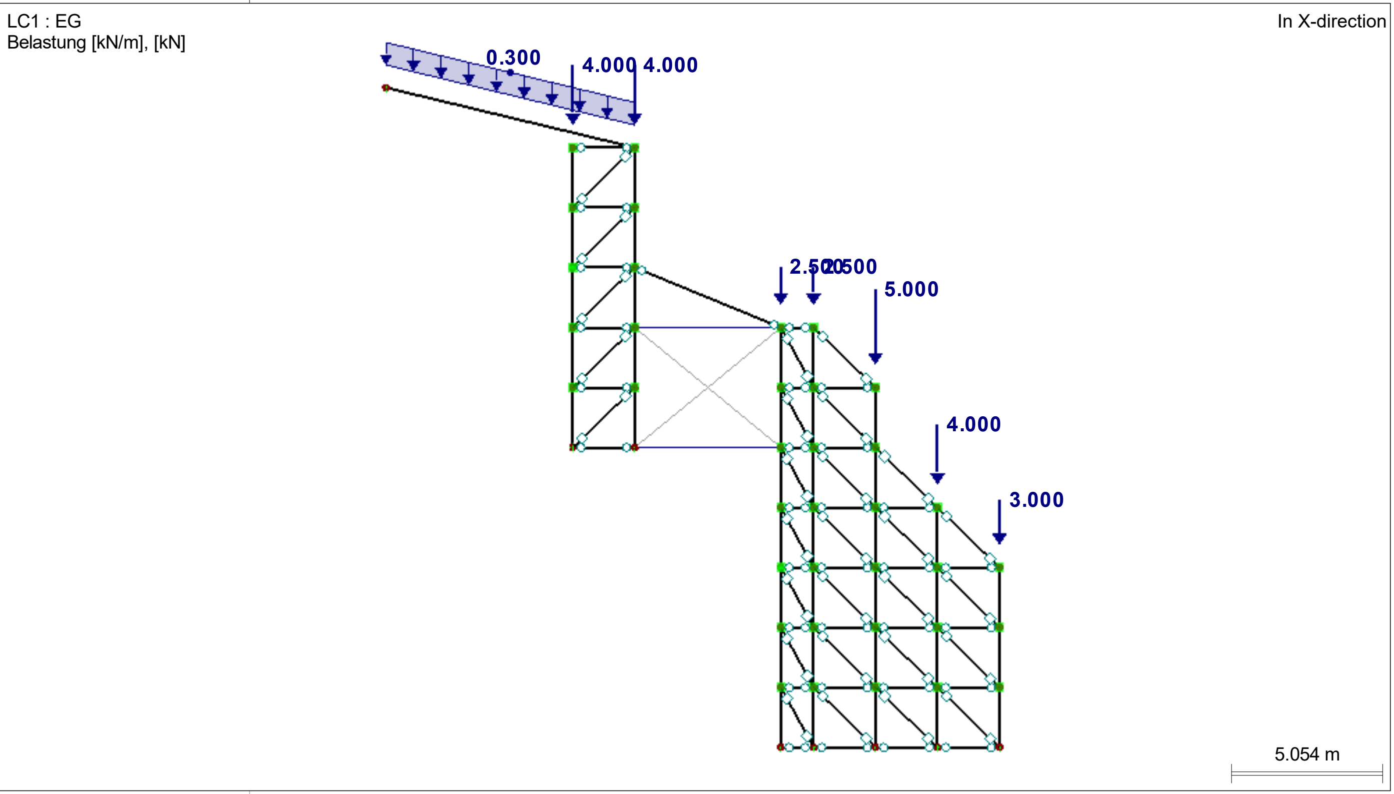
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	63,69,164	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	894	Force	Uniform	Z	True Length	p	0.300	kN/m

LC1: EG



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	122,125	0 | Global XYZ	0.000	0.000	4.800	0.000	0.000	0.000

3.2 MEMBER LOADS

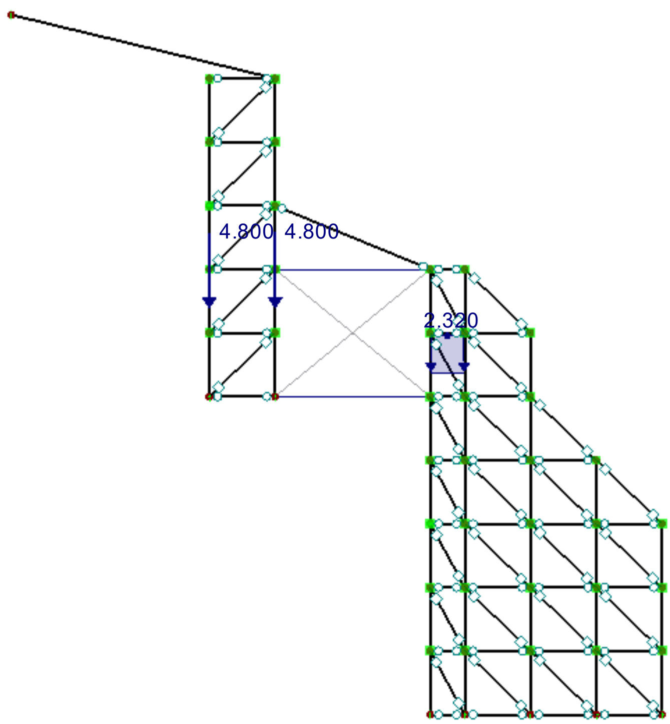
LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	2.320	kN/m

LC2: LIVE LOAD

LC2 : Live Load
Belastung [kN/m], [kN]

In X-direction



4.765 m

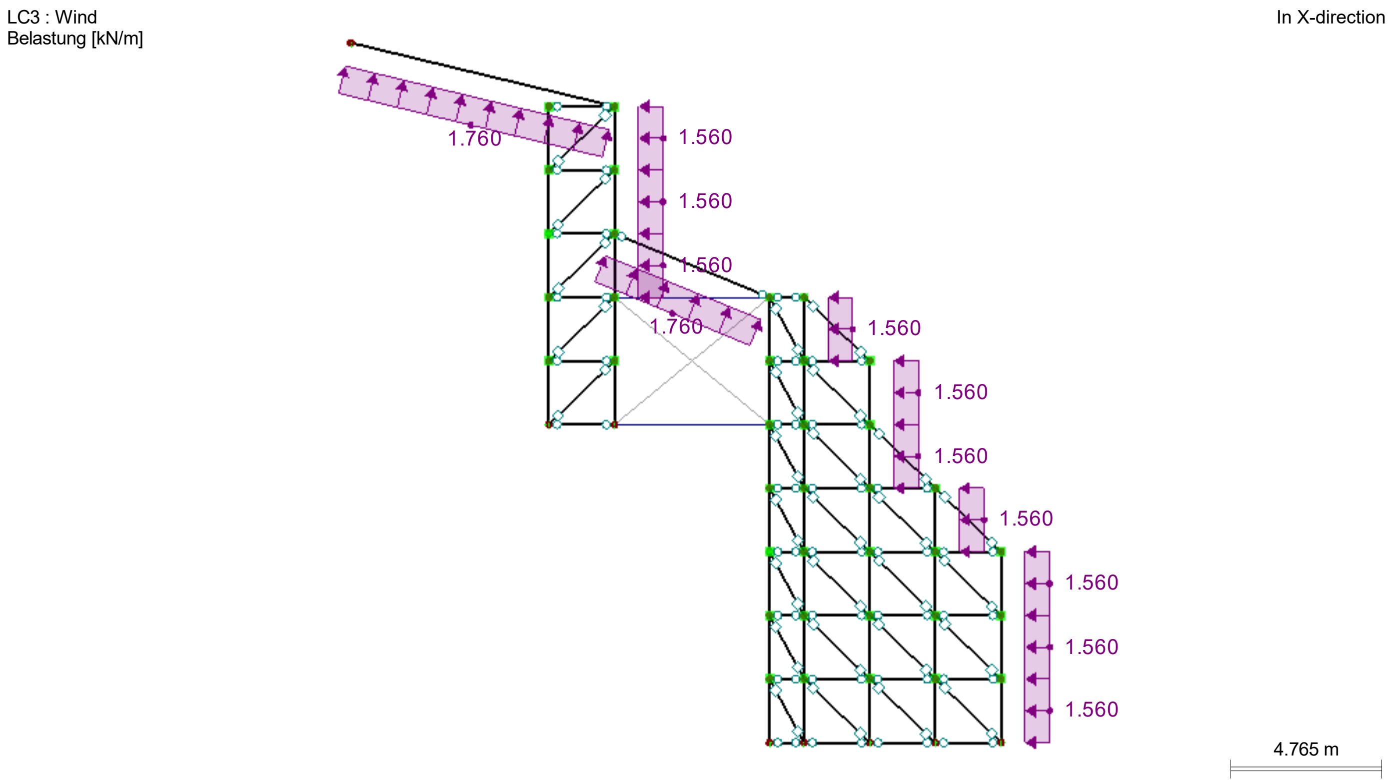
LC3
Wind

3.2 MEMBER LOADS

LC3: Wind

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,658	Force	Uniform	Y	True Length	p	-1.560	kN/m
2	Members	578	Force	Uniform	Y	True Length	p	-1.560	kN/m
3	Members	891,894	Force	Uniform	z	True Length	p	-1.760	kN/m

LC3: WIND



LC4
Snow

3.2 MEMBER LOADS

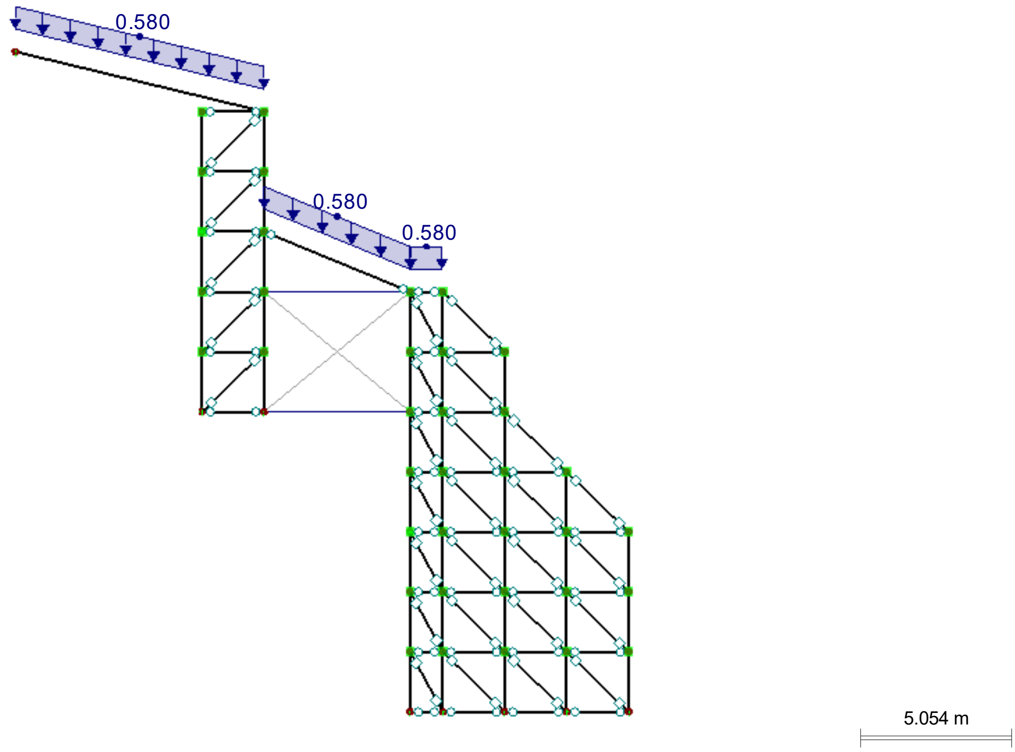
LC4: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	767,891,894	Force	Uniform	Z	True Length	p	0.580	kN/m

LC4: SNOW

LC4 : Snow
Belastung [kN/m]

In X-direction



LC5
Wind-2

3.2 MEMBER LOADS

LC5: Wind-2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	463,480, 502,524, 563,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	578	Force	Uniform	Y	True Length	p	1.000	kN/m
3	Members	891,894	Force	Uniform	z	True Length	p	-1.760	kN/m
4	Members	234,259,281	Force	Uniform	Y	True Length	p	1.000	kN/m

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■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
LC1 - EG			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	-0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	27.56	kN	
Sum of support reactions in Z	27.56	kN	Deviation 0.00%
Resultant of reactions about X	21.24	kNm	At center of gravity of model (X:-0.01, Y:10.49, Z:19.37 m)
Resultant of reactions about Y	-0.30	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	-0.0	mm	Member No. 524, x: 1.300 m
Max displacement in Y	0.9	mm	Member No. 894, x: 8.547 m
Max displacement in Z	1.6	mm	Member No. 894, x: 1.282 m
Max vectorial displacement	1.7	mm	Member No. 894, x: 1.282 m
Max rotation about X	0.3	mrad	Member No. 894, x: 8.547 m
Max rotation about Y	0.1	mrad	Member No. 524, x: 2.000 m
Max rotation about Z	0.0	mrad	Member No. 539, x: 2.723 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	3		
LC2 - Live Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	-0.00	kN	
Sum of loads in Z	12.01	kN	
Sum of support reactions in Z	12.01	kN	Deviation -0.00%
Resultant of reactions about X	-42.23	kNm	At center of gravity of model (X:-0.01, Y:10.49, Z:19.37 m)
Resultant of reactions about Y	-0.13	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	-0.0	mm	Member No. 638, x: 1.300 m
Max displacement in Y	-0.5	mm	Member No. 234, x: 1.500 m
Max displacement in Z	1.5	mm	Member No. 792, x: 0.520 m
Max vectorial displacement	1.5	mm	Member No. 792, x: 0.520 m
Max rotation about X	-3.3	mrad	Member No. 792, x: 0.936 m
Max rotation about Y	0.1	mrad	Member No. 645, x: 0.000 m
Max rotation about Z	0.0	mrad	Member No. 758, x: 2.723 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC3 - Wind			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	-24.16	kN	
Sum of support reactions in Y	-24.16	kN	Deviation 0.00%
Sum of loads in Z	-23.21	kN	
Sum of support reactions in Z	-23.21	kN	Deviation 0.00%
Resultant of reactions about X	199.08	kNm	At center of gravity of model (X:-0.01, Y:10.49, Z:19.37 m)
Resultant of reactions about Y	0.25	kNm	At center of gravity of model
Resultant of reactions about Z	-0.26	kNm	At center of gravity of model
Max displacement in X	0.4	mm	Member No. 529, x: 1.300 m
Max displacement in Y	-12.4	mm	Member No. 463, x: 0.900 m
Max displacement in Z	-4.7	mm	Member No. 894, x: 3.846 m
Max vectorial displacement	12.4	mm	Member No. 463, x: 0.900 m
Max rotation about X	11.5	mrad	Member No. 658, x: 0.200 m
Max rotation about Y	-1.5	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	-0.7	mrad	Member No. 648, x: 2.723 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC4 - Snow			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	8.62	kN	
Sum of support reactions in Z	8.62	kN	Deviation 0.00%
Resultant of reactions about X	-42.43	kNm	At center of gravity of model (X:-0.01, Y:10.49, Z:19.37 m)
Resultant of reactions about Y	-0.09	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	-0.0	mm	Member No. 320, x: 0.700 m
Max displacement in Y	1.5	mm	Member No. 894, x: 8.547 m
Max displacement in Z	1.6	mm	Member No. 894, x: 3.846 m
Max vectorial displacement	2.0	mm	Member No. 894, x: 3.846 m
Max rotation about X	-1.2	mrad	Member No. 767, x: 0.988 m
Max rotation about Y	0.2	mrad	Member No. 332, x: 0.000 m
Max rotation about Z	-0.1	mrad	Member No. 335, x: 0.000 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC5 - Wind-2			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	27.04	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	27.04	kN	Deviation -0.00%
	Sum of loads in Z	-23.21	kN	
	Sum of support reactions in Z	-23.21	kN	Deviation 0.00%
	Resultant of reactions about X	166.77	kNm	At center of gravity of model (X:-0.01, Y:10.49, Z:19.37 m)
	Resultant of reactions about Y	0.25	kNm	At center of gravity of model
	Resultant of reactions about Z	0.29	kNm	At center of gravity of model
	Max displacement in X	0.9	mm	Member No. 254, x: 0.700 m
	Max displacement in Y	44.6	mm	Member No. 894, x: 4.274 m
	Max displacement in Z	-7.3	mm	Member No. 269, x: 0.000 m
	Max vectorial displacement	44.8	mm	Member No. 894, x: 4.274 m
	Max rotation about X	12.9	mrad	Member No. 234, x: 0.400 m
	Max rotation about Y	-2.9	mrad	Member No. 266, x: 0.000 m
	Max rotation about Z	1.5	mrad	Member No. 269, x: 0.000 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	2		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	-21.74	kN	
	Sum of support reactions in Y	-21.74	kN	Deviation 0.00%
	Sum of loads in Z	34.34	kN	
	Sum of support reactions in Z	34.34	kN	Deviation 0.00%
	Max displacement in X	0.4	mm	Member No. 638, x: 1.300 m
	Max displacement in Y	-11.7	mm	Member No. 463, x: 0.900 m
	Max displacement in Z	3.3	mm	Member No. 269, x: 0.000 m
	Max vectorial displacement	11.8	mm	Member No. 463, x: 0.900 m
	Max rotation about X	-10.6	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	-1.3	mrad	Member No. 638, x: 2.000 m
	Max rotation about Z	-0.7	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	-36.24	kN	
	Sum of support reactions in Y	-36.24	kN	Deviation 0.00%
	Sum of loads in Z	13.20	kN	
	Sum of support reactions in Z	13.20	kN	Deviation 0.00%
	Max displacement in X	0.7	mm	Member No. 638, x: 1.300 m
	Max displacement in Y	-19.5	mm	Member No. 463, x: 0.900 m
	Max displacement in Z	-5.2	mm	Member No. 894, x: 4.701 m
	Max vectorial displacement	19.6	mm	Member No. 463, x: 0.900 m
	Max rotation about X	-17.7	mrad	Member No. 524, x: 1.800 m
	Max rotation about Y	-2.3	mrad	Member No. 638, x: 2.000 m
	Max rotation about Z	-1.2	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	-36.24	kN	
	Sum of support reactions in Y	-36.24	kN	Deviation 0.00%
	Sum of loads in Z	-10.01	kN	
	Sum of support reactions in Z	-10.01	kN	Deviation 0.00%
	Max displacement in X	0.7	mm	Member No. 638, x: 1.300 m
	Max displacement in Y	-19.3	mm	Member No. 463, x: 0.900 m
	Max displacement in Z	-6.3	mm	Member No. 894, x: 4.274 m
	Max vectorial displacement	19.3	mm	Member No. 463, x: 0.900 m
	Max rotation about X	17.5	mrad	Member No. 658, x: 0.200 m
	Max rotation about Y	-2.3	mrad	Member No. 638, x: 2.000 m
	Max rotation about Z	-1.2	mrad	Member No. 758, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	-0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of loads in Z	68.16	kN	
	Sum of support reactions in Z	68.16	kN	Deviation 0.00%
	Max displacement in X	-0.1	mm	Member No. 320, x: 0.700 m
	Max displacement in Y	3.2	mm	Member No. 894, x: 8.547 m
	Max displacement in Z	5.6	mm	Member No. 894, x: 2.564 m
	Max vectorial displacement	6.0	mm	Member No. 894, x: 2.564 m
	Max rotation about X	-5.1	mrad	Member No. 792, x: 0.936 m
	Max rotation about Y	0.3	mrad	Member No. 332, x: 0.000 m
	Max rotation about Z	-0.2	mrad	Member No. 335, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO5 - Bem-5			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	40.56	kN	
	Sum of support reactions in Y	40.56	kN	Deviation -0.00%
	Sum of loads in Z	-10.01	kN	
	Sum of support reactions in Z	-10.01	kN	Deviation 0.00%
	Max displacement in X	1.2	mm	Member No. 254, x: 0.700 m
	Max displacement in Y	68.1	mm	Member No. 894, x: 4.701 m
	Max displacement in Z	-9.9	mm	Member No. 269, x: 0.000 m
	Max vectorial displacement	68.3	mm	Member No. 894, x: 4.701 m
	Max rotation about X	19.6	mrad	Member No. 234, x: 0.400 m
	Max rotation about Y	-4.2	mrad	Member No. 266, x: 0.000 m
	Max rotation about Z	2.1	mrad	Member No. 269, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	1.2	mm	CO5, Member No. 254, x: 0.700 m
	Max displacement in Y	68.1	mm	CO5, Member No. 894, x: 4.701 m
	Max displacement in Z	-9.9	mm	CO5, Member No. 269, x: 0.000 m
	Max vectorial displacement	68.3	mm	CO5, Member No. 894, x: 4.701 m
	Max rotation about X	19.6	mrad	CO5, Member No. 234, x: 0.400 m
	Max rotation about Y	-4.2	mrad	CO5, Member No. 266, x: 0.000 m
	Max rotation about Z	2.1	mrad	CO5, Member No. 269, x: 0.000 m
	Number of 1D finite elements (member elements)	101		
	Number of FE mesh nodes	45		
	Number of equations	270		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Activate Release Nonlinearities	☒		
	Activate failed members	☒		

Other Settings	Max number of iterations	: 100
	Number of divisions for member results	: 10
	Member divisions, cables, foundation or tapered members	: 10
	Number of member divisions for searching maximum values	: 20
Options	☐ Activate shear stiffness of members (Ay, Az)	
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)	
	☒ Apply temperature/deformation load actions without stiffness modifications	
Precision and Tolerance	☐ Change default setting	
Nonlinear effects - Activate	☐ Support and elastic foundations	
	☒ Failing members due to member type	
	☒ Member hinges	
	☐ Member elastic foundation	
	☐ Member nonlinearities	
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate	
	Maximum number of reactivations	: 3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
320	CO5	MAX N	1.200	▷ 12.04	-0.02	0.00	0.00	0.01	0.00
325	CO4	MIN N	0.000	▷ -18.48	0.00	0.00	0.00	-0.01	0.00
529	CO5	MAX V_y	0.700	-2.38	▷ 0.05	0.08	0.00	-0.01	0.00
276	CO5	MIN V_y	2.000	11.86	▷ -0.19	0.30	0.00	0.31	0.20
578	CO3	MAX V_z	0.000	-2.28	0.00	▷ 2.73	0.00	-1.13	0.00
563	CO2	MIN V_z	2.000	-7.68	0.00	▷ -2.83	0.00	-1.17	0.00
254	CO5	MAX M_T	0.000	3.05	-0.15	-0.40	▷ 0.00	0.45	-0.19
524	CO3	MIN M_T	2.000	-3.14	-0.06	-2.12	▷ 0.00	-0.33	0.09
259	CO5	MAX M_y	0.000	-9.73	0.00	-1.76	0.00	▷ 0.96	0.00
563	CO2	MIN M_y	2.000	-7.68	0.00	-2.83	0.00	▷ -1.17	0.00
276	CO5	MAX M_z	2.000	11.86	-0.19	0.30	0.00	0.31	▷ 0.20
254	CO5	MIN M_z	0.000	3.05	-0.15	-0.40	0.00	0.45	▷ -0.19
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
332	CO5	MAX N	0.707	▷ 15.65	0.00	-0.02	0.00	0.00	0.00
332	CO3	MIN N	0.000	▷ -14.36	0.00	0.00	0.00	0.01	0.00
867	CO3	MAX V_y	0.000	-1.52	▷ 0.00	0.14	-0.02	-0.08	0.00
867	CO5	MIN V_y	1.040	0.95	▷ 0.00	-0.07	0.01	-0.03	0.00
792	CO1	MAX V_z	0.000	-6.88	0.00	▷ 1.84	0.00	-0.14	0.00
792	CO4	MIN V_z	1.040	-0.06	0.00	▷ -1.84	0.00	-0.14	0.00
266	CO5	MAX M_T	0.909	2.98	0.00	-0.12	▷ 0.03	0.02	0.00
867	CO3	MIN M_T	0.000	-1.52	0.00	0.14	▷ -0.02	-0.08	0.00
792	CO4	MAX M_y	0.520	-0.07	0.00	-0.03	0.00	▷ 0.35	0.00
767	CO2	MIN M_y	1.040	-3.18	0.00	-0.44	0.00	▷ -0.40	0.00
867	CO3	MAX M_z	0.000	-1.52	0.00	0.14	-0.02	-0.08	▷ 0.00
867	CO3	MIN M_z	1.040	-1.52	0.00	0.14	-0.02	0.07	▷ 0.00
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
269	CO5	MAX N	0.000	▷ 12.62	0.00	0.00	0.01	0.00	0.00
683	CO5	MIN N	0.000	▷ -2.72	0.00	0.00	0.00	0.00	0.00
269	CO5	MAX V_y	2.723	12.62	▷ 0.00	0.00	0.01	0.00	0.00
648	CO5	MIN V_y	2.043	-2.07	▷ 0.00	0.00	0.01	0.00	0.00
795	CO5	MAX V_z	0.000	-1.95	0.00	▷ 0.00	0.00	0.00	0.00
313	CO5	MIN V_z	0.000	1.10	0.00	▷ 0.00	0.00	0.00	0.00
269	CO5	MAX M_T	0.000	12.62	0.00	0.00	▷ 0.01	0.00	0.00
758	CO2	MIN M_T	0.000	3.10	0.00	0.00	▷ -0.01	0.00	0.00
840	CO5	MAX M_y	0.000	0.46	0.00	0.00	0.00	▷ 0.00	0.00
269	CO5	MIN M_y	2.723	12.62	0.00	0.00	0.01	▷ 0.00	0.00
335	CO3	MAX M_z	0.000	0.39	0.00	0.00	0.00	0.00	▷ 0.00
269	CO5	MIN M_z	0.000	12.62	0.00	0.00	0.01	0.00	▷ 0.00
	Section No. 7: GI-KDXL Kederdach XL								
894	CO4	MAX N	8.547	▷ 1.28	0.00	-5.29	0.00	0.00	0.00
891	CO5	MIN N	3.164	▷ -4.18	0.00	1.39	0.00	-8.81	0.00
891	LC1	MAX V_y	0.000	-0.15	▷ 0.00	0.00	0.00	0.00	0.00
891	LC1	MIN V_y	0.000	-0.15	▷ 0.00	0.00	0.00	0.00	0.00
894	CO3	MAX V_z	8.547	-2.45	0.00	▷ 10.26	0.00	0.00	0.00
894	CO5	MIN V_z	0.000	-2.96	0.00	▷ -10.19	0.00	0.17	0.00
891	LC1	MAX M_T	0.000	-0.15	0.00	0.00	▷ 0.00	0.00	0.00
891	LC1	MIN M_T	0.000	-0.15	0.00	0.00	▷ 0.00	0.00	0.00
894	CO4	MAX M_y	4.274	0.00	0.00	0.01	0.00	▷ 11.29	0.00
894	CO3	MIN M_y	4.274	-2.74	0.00	0.10	0.00	▷ -22.14	0.00
891	LC1	MAX M_z	0.000	-0.15	0.00	0.00	0.00	0.00	▷ 0.00
891	LC1	MIN M_z	0.000	-0.15	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 8: RD 8 | DIN 1013-1								
882	CO5	MAX N	0.000	▷ 9.19	0.00	0.00	0.00	0.00	0.00
882	LC4	MIN N	0.000	▷ 0.17	0.00	0.00	0.00	0.00	0.00
882	LC1	MAX V_y	0.000	0.19	▷ 0.00	0.00	0.00	0.00	0.00
882	LC1	MIN V_y	0.000	0.19	▷ 0.00	0.00	0.00	0.00	0.00
882	LC1	MAX V_z	0.000	0.19	0.00	▷ 0.00	0.00	0.00	0.00
882	LC1	MIN V_z	0.000	0.19	0.00	▷ 0.00	0.00	0.00	0.00
882	LC1	MAX M_T	0.000	0.19	0.00	0.00	▷ 0.00	0.00	0.00
882	LC1	MIN M_T	0.000	0.19	0.00	0.00	▷ 0.00	0.00	0.00
882	LC1	MAX M_y	0.000	0.19	0.00	0.00	0.00	▷ 0.00	0.00
882	LC1	MIN M_y	0.000	0.19	0.00	0.00	0.00	▷ 0.00	0.00
882	LC1	MAX M_z	0.000	0.19	0.00	0.00	0.00	0.00	▷ 0.00
882	LC1	MIN M_z	0.000	0.19	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 12: RRO 100x60x4 (warmgefertigt)								
878	CO5	MAX N	0.000	▷ 8.52	0.00	0.00	0.00	0.00	0.00
878	CO3	MIN N	0.000	▷ -14.34	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_y	0.000	-0.10	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_y	0.000	-0.10	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_z	0.000	-0.10	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MIN V_z	0.000	-0.10	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MAX M_T	0.000	-0.10	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MIN M_T	0.000	-0.10	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MAX M_y	0.000	-0.10	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MIN M_y	0.000	-0.10	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MAX M_z	0.000	-0.10	0.00	0.00	0.00	0.00	▷ 0.00
878	LC1	MIN M_z	0.000	-0.10	0.00	0.00	0.00	0.00	▷ 0.00

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
50	LC1	0.00	0.00	1.28	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-7.80	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	2.47	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	-7.72	0.00	0.00	0.00	Wind-2
	CO1	0.00	0.00	-5.29	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	-9.97	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	-10.55	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	5.44	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	-10.43	0.00	0.00	0.00	Bem-5
63	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
69	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.09	0.09	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.21	0.22	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.08	0.08	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.13	0.13	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.13	0.13	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.31	0.33	Bem-5
86	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	-0.10	-0.09	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.10	0.00	0.00	0.00	-0.14	-0.22	Wind-2
	CO1	-0.01	0.00	0.00	0.00	-0.09	-0.08	Bem-1
	CO2	-0.02	0.00	0.00	0.00	-0.14	-0.13	Bem-2
	CO3	-0.02	0.00	0.00	0.00	-0.14	-0.13	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.14	0.00	0.00	0.00	-0.22	-0.33	Bem-5
94	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.04	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.28	0.31	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.07	-0.07	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.07	-0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.42	0.47	Bem-5
107	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	-0.31	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-3.11	0.00	0.00	0.00	0.05	Wind
	LC4	0.00	-0.09	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	8.38	0.00	0.00	0.00	-0.31	Wind-2
	CO1	0.00	-3.43	0.00	0.00	0.00	0.04	Bem-1
	CO2	0.00	-5.13	0.00	0.00	0.00	0.07	Bem-2
	CO3	0.00	-4.81	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.00	-0.56	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	12.77	0.00	0.00	0.00	-0.47	Bem-5
110	LC1	0.00	0.00	0.00	0.00	0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	-0.04	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.01	0.01	Snow
	LC5	-0.10	0.00	0.00	0.00	0.08	0.02	Wind-2
	CO1	0.01	0.00	0.00	0.00	-0.03	-0.02	Bem-1
	CO2	0.02	0.00	0.00	0.00	-0.05	-0.04	Bem-2
	CO3	0.02	0.00	0.00	0.00	-0.06	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.03	0.03	Bem-4
	CO5	-0.15	0.00	0.00	0.00	0.12	0.03	Bem-5
111	LC1	0.00	0.00	0.00	0.00	-0.01	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	-0.01	Snow
	LC5	0.00	0.00	0.00	0.00	-0.04	-0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.02	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.04	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.03	-0.03	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.07	-0.03	Bem-5
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	-0.01	Snow
	LC5	0.00	0.00	0.00	0.00	0.03	0.03	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	0.01	Bem-3

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
116	CO4	0.00	0.00	0.00	0.00	-0.02	-0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.04	0.04	Bem-5
122	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.01	Wind
	LC4	-0.01	0.00	0.00	0.00	0.01	0.01	Snow
	LC5	0.02	0.00	0.00	0.00	-0.02	-0.03	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.01	0.02	Bem-4
	CO5	0.02	0.00	0.00	0.00	-0.02	-0.04	Bem-5
125	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	-0.01	Snow
	LC5	0.00	0.00	0.00	0.00	0.03	0.03	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.02	-0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.04	0.04	Bem-5
131	LC1	0.00	-0.01	4.25	0.00	0.00	0.00	EG
	LC2	0.00	0.17	4.85	0.00	0.00	0.00	Live Load
	LC3	-0.01	-9.45	-1.81	0.00	0.00	-0.01	Wind
	LC4	0.01	-0.03	0.65	0.00	0.00	0.01	Snow
	LC5	-0.02	11.11	-11.11	0.00	0.00	-0.03	Wind-2
	CO1	0.00	-8.12	11.38	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	-13.87	7.40	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	-14.06	1.13	0.00	0.00	-0.01	Bem-3
	CO4	0.01	0.18	13.96	0.00	0.00	0.02	Bem-4
	CO5	-0.02	16.47	-12.80	0.00	0.00	-0.04	Bem-5
134	LC1	0.00	0.00	4.86	0.00	0.00	0.00	EG
	LC2	0.00	0.00	4.40	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-7.69	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	3.10	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	-5.13	0.00	0.00	0.00	Wind-2
	CO1	0.00	0.00	6.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	-1.31	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	-7.40	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	17.88	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	-3.04	0.00	0.00	0.00	Bem-5
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-5
167	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.01	-0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-5
173	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-5
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.02	-0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.03	-0.04	Bem-5
179	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.10	0.10	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.08	-0.08	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.10	0.10	Bem-1

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■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
179	CO2	0.00	0.00	0.00	0.00	-0.16	0.17	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.16	0.16	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.12	-0.12	Bem-5
185	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.02	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.02	0.02	Bem-5
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.02	0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-5
191	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.01	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.03	0.00	0.00	0.00	-0.01	-0.01	Wind-2
	CO1	0.04	0.00	0.00	0.00	0.02	0.01	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.02	0.02	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.02	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.05	0.00	0.00	0.00	-0.01	-0.02	Bem-5
194	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.07	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.03	0.00	0.00	0.00	-0.04	0.03	Wind-2
	CO1	0.04	0.00	0.00	0.00	0.06	-0.04	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.10	-0.06	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.10	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.05	0.00	0.00	0.00	-0.07	0.04	Bem-5
197	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.05	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.04	0.04	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.04	-0.04	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.07	-0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.06	0.07	Bem-5
203	LC1	0.00	0.02	3.29	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.02	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.60	-1.24	0.00	0.00	0.07	Wind
	LC4	0.00	0.02	0.02	0.00	0.00	0.00	Snow
	LC5	0.03	1.02	1.00	0.00	0.00	-0.05	Wind-2
	CO1	-0.04	-1.38	3.36	0.00	0.00	0.06	Bem-1
	CO2	-0.07	-2.35	2.60	0.00	0.00	0.10	Bem-2
	CO3	-0.07	-2.38	1.10	0.00	0.00	0.10	Bem-3
	CO4	0.00	0.09	4.50	0.00	0.00	-0.01	Bem-4
	CO5	0.05	1.53	4.46	0.00	0.00	-0.07	Bem-5
206	LC1	0.00	0.01	3.96	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.08	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.47	0.26	0.00	0.00	0.08	Wind
	LC4	0.00	0.02	0.06	0.00	0.00	0.00	Snow
	LC5	0.03	0.92	0.09	0.00	0.00	-0.05	Wind-2
	CO1	-0.04	-1.26	5.72	0.00	0.00	0.06	Bem-1
	CO2	-0.07	-2.15	5.83	0.00	0.00	0.11	Bem-2
	CO3	-0.07	-2.18	3.97	0.00	0.00	0.11	Bem-3
	CO4	0.00	0.08	5.56	0.00	0.00	-0.01	Bem-4
	CO5	0.05	1.39	3.71	0.00	0.00	-0.08	Bem-5
209	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.01	-0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.01	-0.01	Bem-5
215	LC1	0.00	0.00	0.00	0.00	-0.01	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.04	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
215	LC5	0.00	0.00	0.00	0.00	-0.03	0.03	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.06	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.06	0.06	Bem-5
221	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.07	-0.05	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.03	0.00	0.00	0.00	-0.05	0.04	Wind-2
	CO1	0.04	0.00	0.00	0.00	0.06	-0.04	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.11	-0.07	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.11	-0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.04	0.00	0.00	0.00	-0.08	0.06	Bem-5
227	LC1	0.00	0.00	4.19	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.33	0.00	0.00	0.00	Live Load
	LC3	-0.05	-1.32	-0.55	0.00	0.00	0.08	Wind
	LC4	0.00	0.02	0.25	0.00	0.00	0.00	Snow
	LC5	0.03	0.82	0.77	0.00	0.00	-0.05	Wind-2
	CO1	-0.04	-1.14	5.63	0.00	0.00	0.07	Bem-1
	CO2	-0.07	-1.94	5.11	0.00	0.00	0.12	Bem-2
	CO3	-0.08	-1.97	2.93	0.00	0.00	0.12	Bem-3
	CO4	0.00	0.08	6.52	0.00	0.00	0.00	Bem-4
	CO5	0.04	1.22	4.94	0.00	0.00	-0.06	Bem-5
233	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.03	0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-5
239	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.07	-0.07	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.06	0.06	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.07	-0.06	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.11	-0.10	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.11	-0.10	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.08	0.09	Bem-5
245	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.11	0.08	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.08	-0.06	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.10	0.07	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.16	0.12	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.16	0.12	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.13	-0.09	Bem-5
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.03	0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.04	-0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.06	-0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-5
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.04	0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.02	-0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.05	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.05	0.04	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-5
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.03	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.03	0.02	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.01	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.04	0.03	Bem-5
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
269	LC3	0.04	0.00	0.00	0.00	0.06	-0.06	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.02	0.00	0.00	0.00	-0.04	0.04	Wind-2
	CO1	0.03	0.00	0.00	0.00	0.06	-0.05	Bem-1
	CO2	0.06	0.00	0.00	0.00	0.10	-0.09	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.10	-0.09	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.03	0.00	0.00	0.00	-0.06	0.06	Bem-5
275	LC1	0.00	0.00	3.02	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.06	0.00	0.00	0.00	Live Load
	LC3	-0.04	-1.15	-1.52	0.00	0.00	0.04	Wind
	LC4	0.00	0.02	0.76	0.00	0.00	0.00	Snow
	LC5	0.02	0.70	-0.21	0.00	0.00	-0.02	Wind-2
	CO1	-0.03	-0.99	4.37	0.00	0.00	0.03	Bem-1
	CO2	-0.06	-1.69	2.84	0.00	0.00	0.06	Bem-2
	CO3	-0.06	-1.71	0.51	0.00	0.00	0.06	Bem-3
	CO4	0.00	0.07	6.79	0.00	0.00	0.00	Bem-4
	CO5	0.03	1.05	2.30	0.00	0.00	-0.03	Bem-5
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.01	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.00	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.02	0.01	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-5
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.07	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.06	0.03	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.06	-0.03	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.10	-0.05	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.10	-0.05	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	-0.09	0.05	Bem-5
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	-0.02	0.01	Wind
	LC4	0.00	0.00	0.00	0.00	-0.01	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	0.02	-0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	-0.03	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	-0.04	0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.04	-0.02	Bem-5
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.02	-0.01	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.00	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.02	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.03	-0.02	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.03	-0.02	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.01	Bem-4
	CO5	-0.01	0.00	0.00	0.00	-0.01	0.00	Bem-5
305	LC1	0.00	-0.03	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	-4.98	0.00	0.00	0.00	0.00	Wind
	LC4	0.00	0.01	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	3.44	0.00	0.00	0.00	-0.01	Wind-2
	CO1	0.00	-4.50	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-7.51	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	-7.51	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	5.13	0.00	0.00	0.00	-0.01	Bem-5
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.03	-0.02	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	0.00	0.00	0.00	0.00	-0.01	0.01	Wind-2
	CO1	0.00	0.00	0.00	0.00	0.03	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.05	-0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.05	-0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	0.01	0.00	0.00	0.00	-0.02	0.01	Bem-5
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.07	-0.04	Wind
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC5	-0.01	0.00	0.00	0.00	-0.04	0.02	Wind-2
	CO1	0.01	0.00	0.00	0.00	0.06	-0.03	Bem-1
	CO2	0.02	0.00	0.00	0.00	0.10	-0.06	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.11	-0.06	Bem-3
	CO4	0.00	0.00	0.00	0.00	-0.01	0.00	Bem-4
	CO5	-0.01	0.00	0.00	0.00	-0.05	0.03	Bem-5

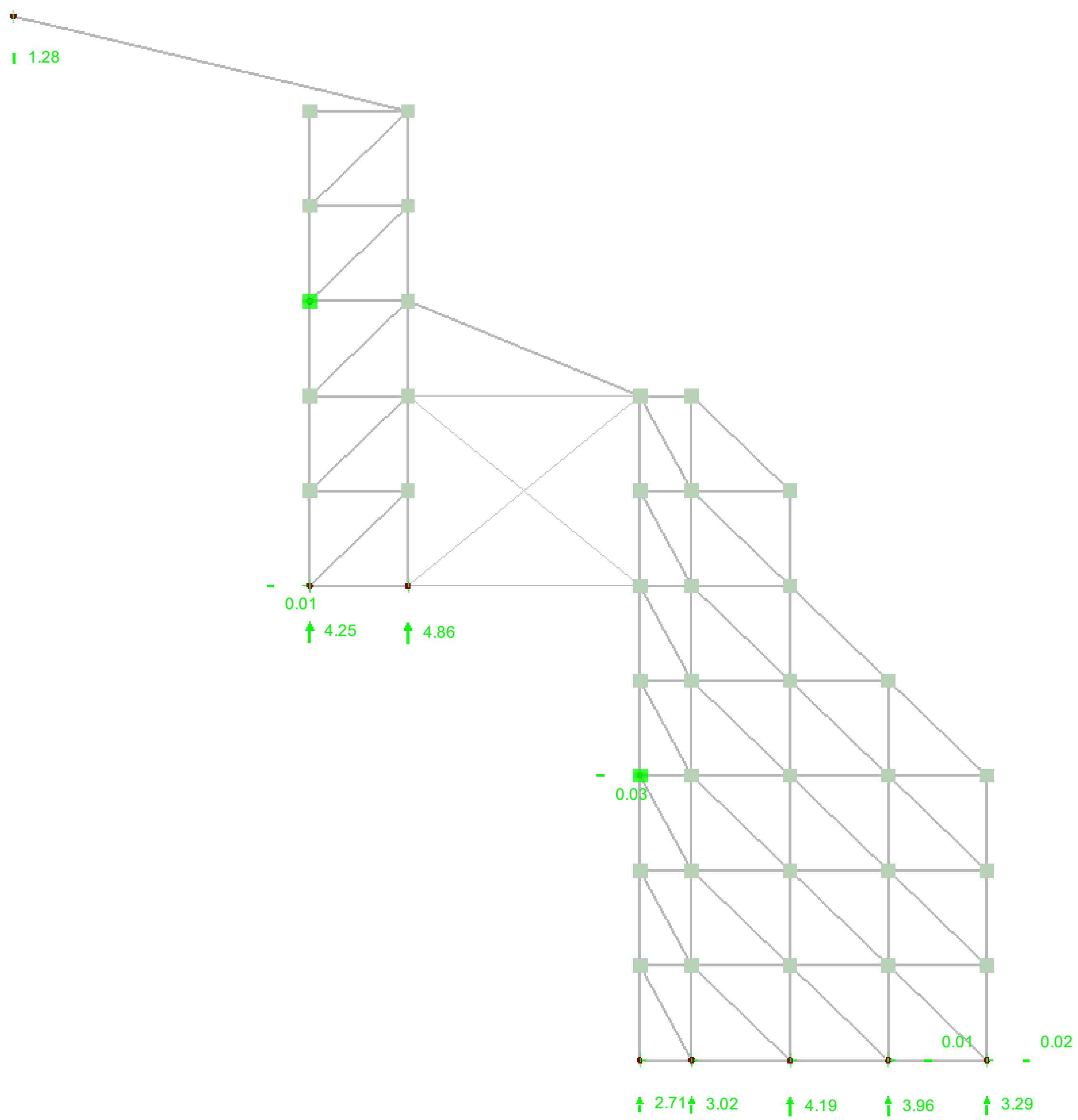
■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
323	LC1	0.00	0.00	2.71	0.00	0.00	0.00	EG
	LC2	0.00	0.02	1.26	0.00	0.00	0.00	Live Load
	LC3	-0.01	-1.08	-2.86	0.00	0.00	0.00	Wind
	LC4	0.00	0.02	1.31	0.00	0.00	0.00	Snow
	LC5	0.01	0.66	-0.91	0.00	0.00	0.00	Wind-2
	CO1	-0.01	-0.93	3.16	0.00	0.00	0.00	Bem-1
	CO2	-0.02	-1.59	0.71	0.00	0.00	0.00	Bem-2
	CO3	-0.02	-1.62	-1.70	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.07	7.50	0.00	0.00	0.00	Bem-4
	CO5	0.01	0.99	0.85	0.00	0.00	0.00	Bem-5
Σ Supp.	LC1	0.00	0.00	27.56				
Σ Loads	LC1	0.00	0.00	27.56				
Σ Supp.	LC2	0.00	0.00	12.01				
Σ Loads	LC2	0.00	0.00	12.01				
Σ Supp.	LC3	0.00	-24.16	-23.21				
Σ Loads	LC3	0.00	-24.16	-23.21				
Σ Supp.	LC4	0.00	0.00	8.62				
Σ Loads	LC4	0.00	0.00	8.62				
Σ Supp.	LC5	0.00	27.04	-23.21				
Σ Loads	LC5	0.00	27.04	-23.21				
Σ Supp.	CO1	0.00	-21.74	34.34				
Σ Loads	CO1	0.00	-21.74	34.34				
Σ Supp.	CO2	0.00	-36.24	13.20				
Σ Loads	CO2	0.00	-36.24	13.20				
Σ Supp.	CO3	0.00	-36.24	-10.01				
Σ Loads	CO3	0.00	-36.24	-10.01				
Σ Supp.	CO4	0.00	0.00	68.16				
Σ Loads	CO4	0.00	0.00	68.16				
Σ Supp.	CO5	0.00	40.56	-10.01				
Σ Loads	CO5	0.00	40.56	-10.01				

LAGERREAKTIONEN

LC1 : EG
Lagerreaktionen[kN]

In X-direction



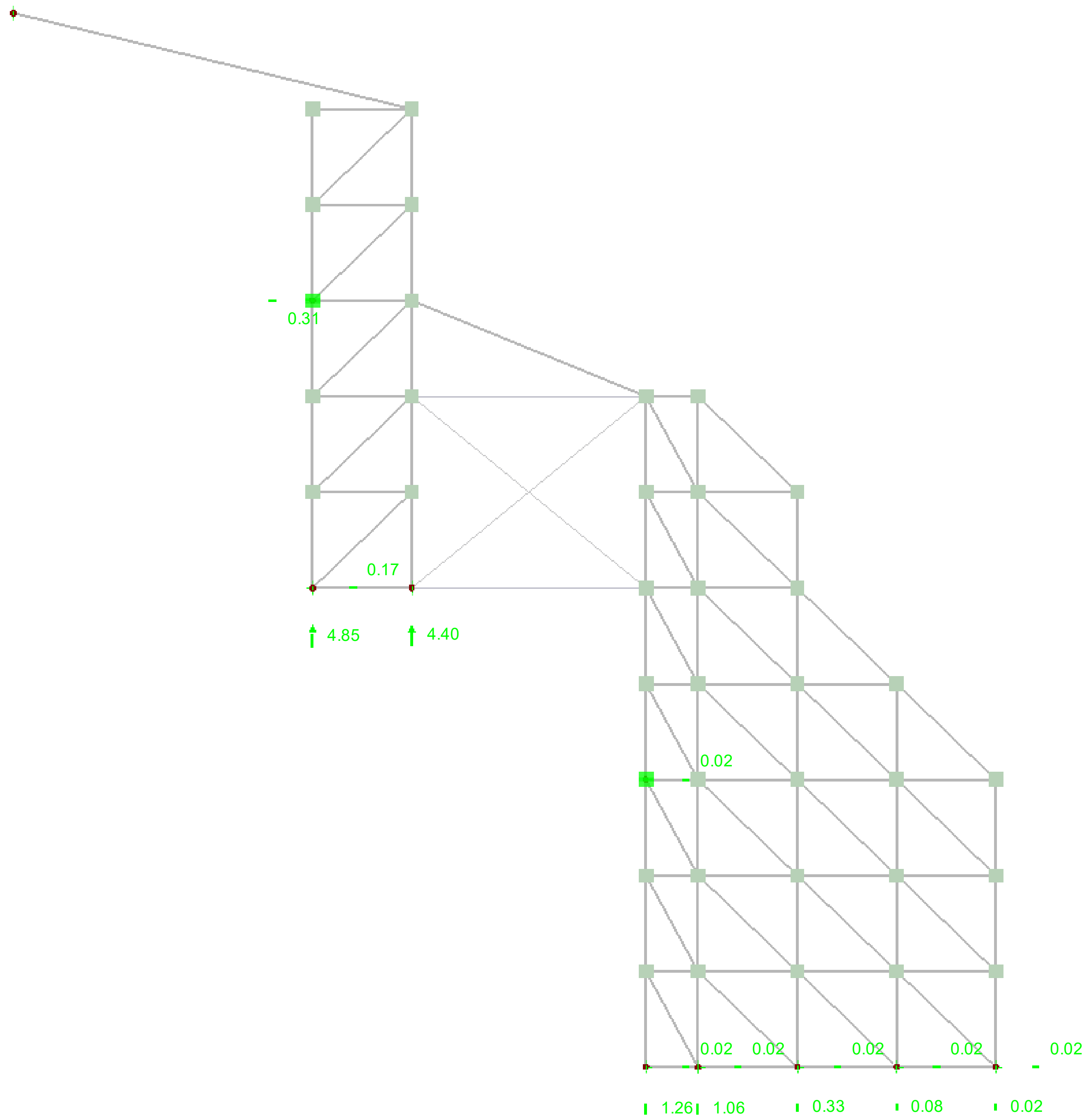
Max P-Y': 0.02, Min P-Y': -0.03 kN
Max P-Z': 4.86, Min P-Z': 0.00 kN

2.589 m

LAGERREAKTIONEN

LC2 : Live Load
Lagerreaktionen[kN]

In X-direction



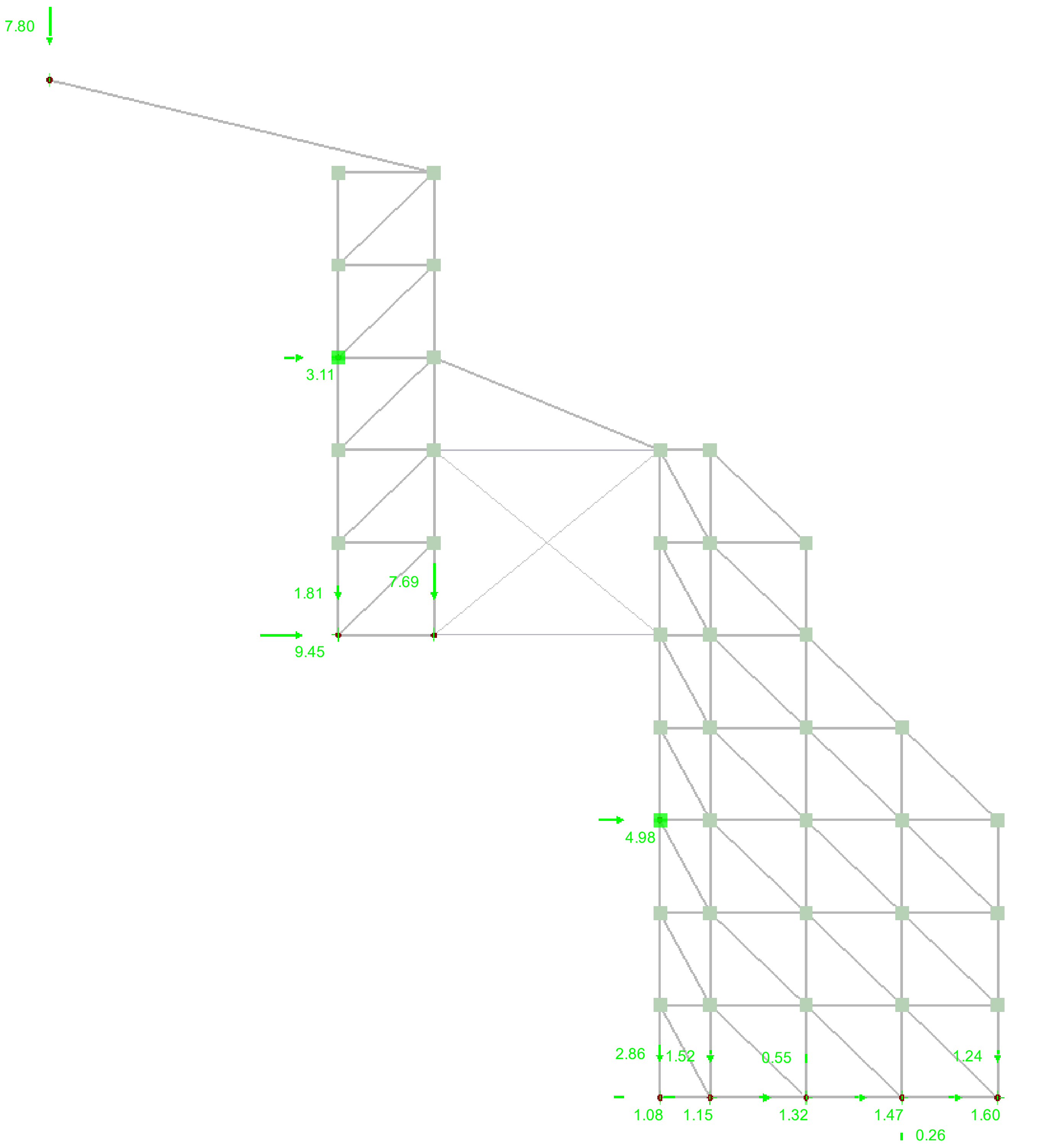
Max P-Y': 0.17, Min P-Y': -0.31 kN
Max P-Z': 4.85, Min P-Z': 0.00 kN

2.589 m

LAGERREAKTIONEN

LC3 : Wind
Lagerreaktionen[kN]

In X-direction



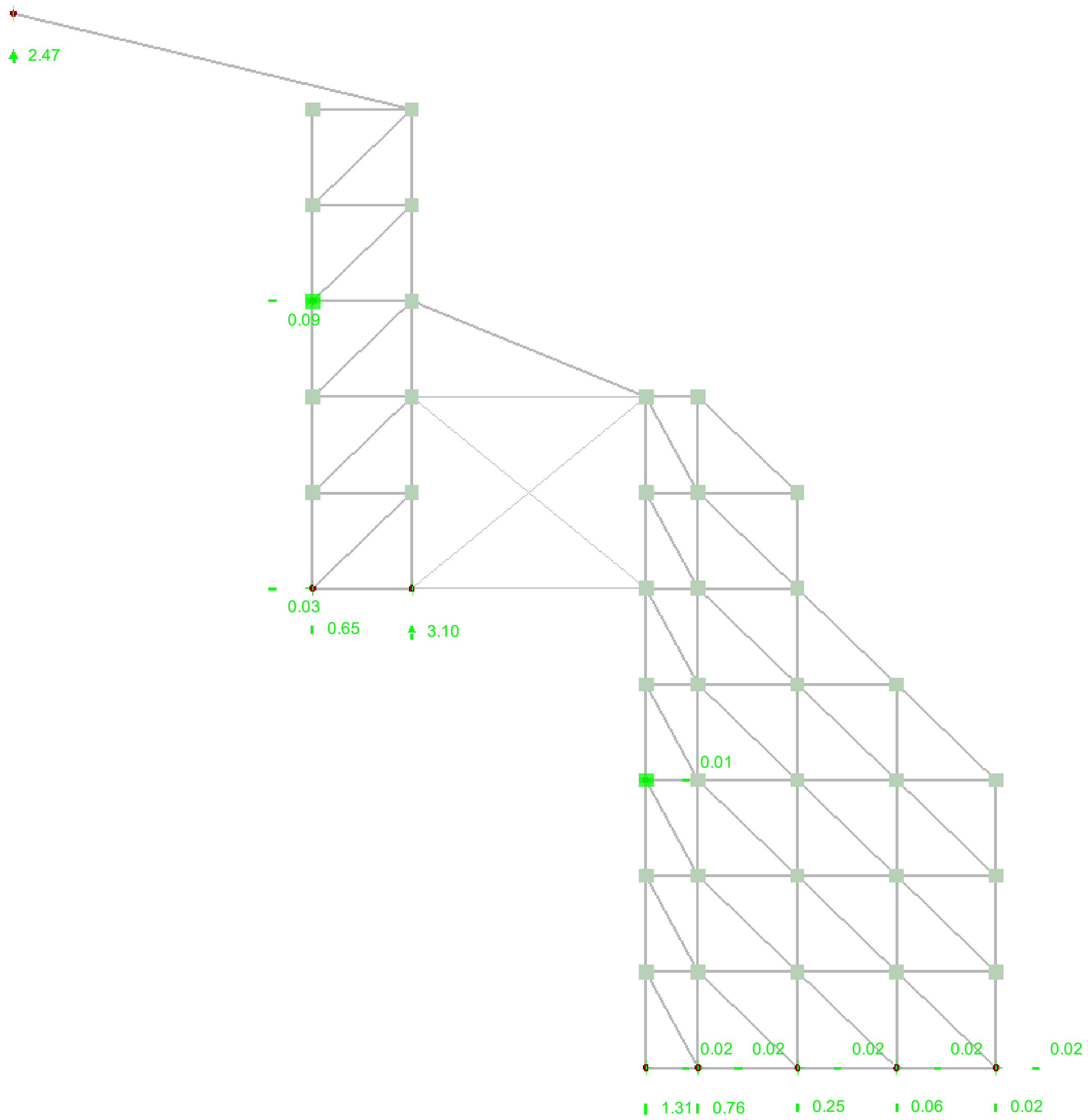
Max P-Y': 0.00, Min P-Y': -9.45 kN
Max P-Z': 0.26, Min P-Z': -7.80 kN

2.498 m

LAGERREAKTIONEN

LC4 : Snow
Lagerreaktionen[kN]

In X-direction



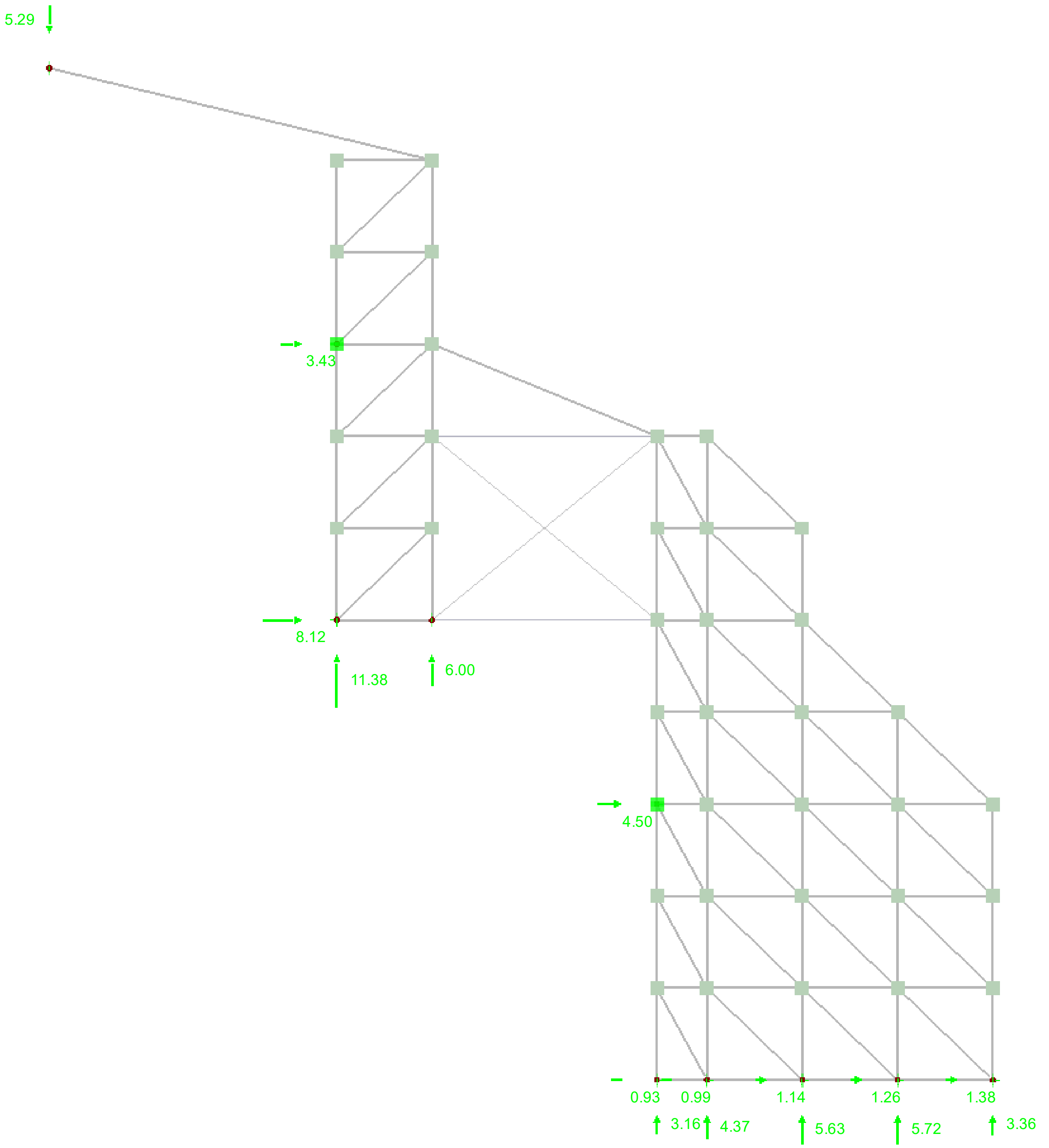
Max P-Y': 0.02, Min P-Y': -0.09 kN
Max P-Z': 3.10, Min P-Z': 0.00 kN

2.589 m

LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

In X-direction



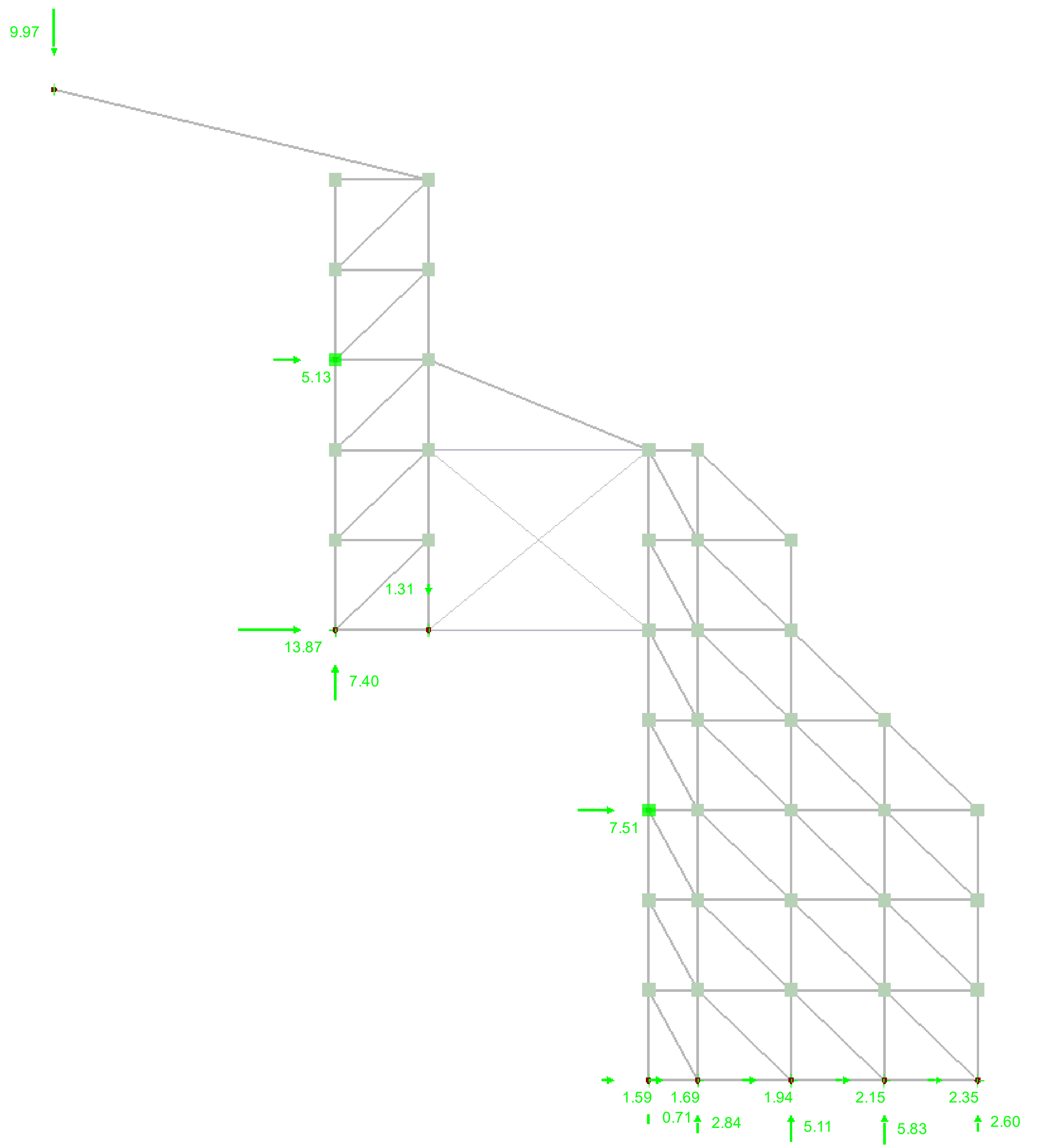
Max P-Y': 0.00, Min P-Y': -8.12 kN
Max P-Z': 11.38, Min P-Z': -5.29 kN

2.498 m

LAGERREAKTIONEN

CO2 : Bem-2
Lagerreaktionen[kN]

In X-direction

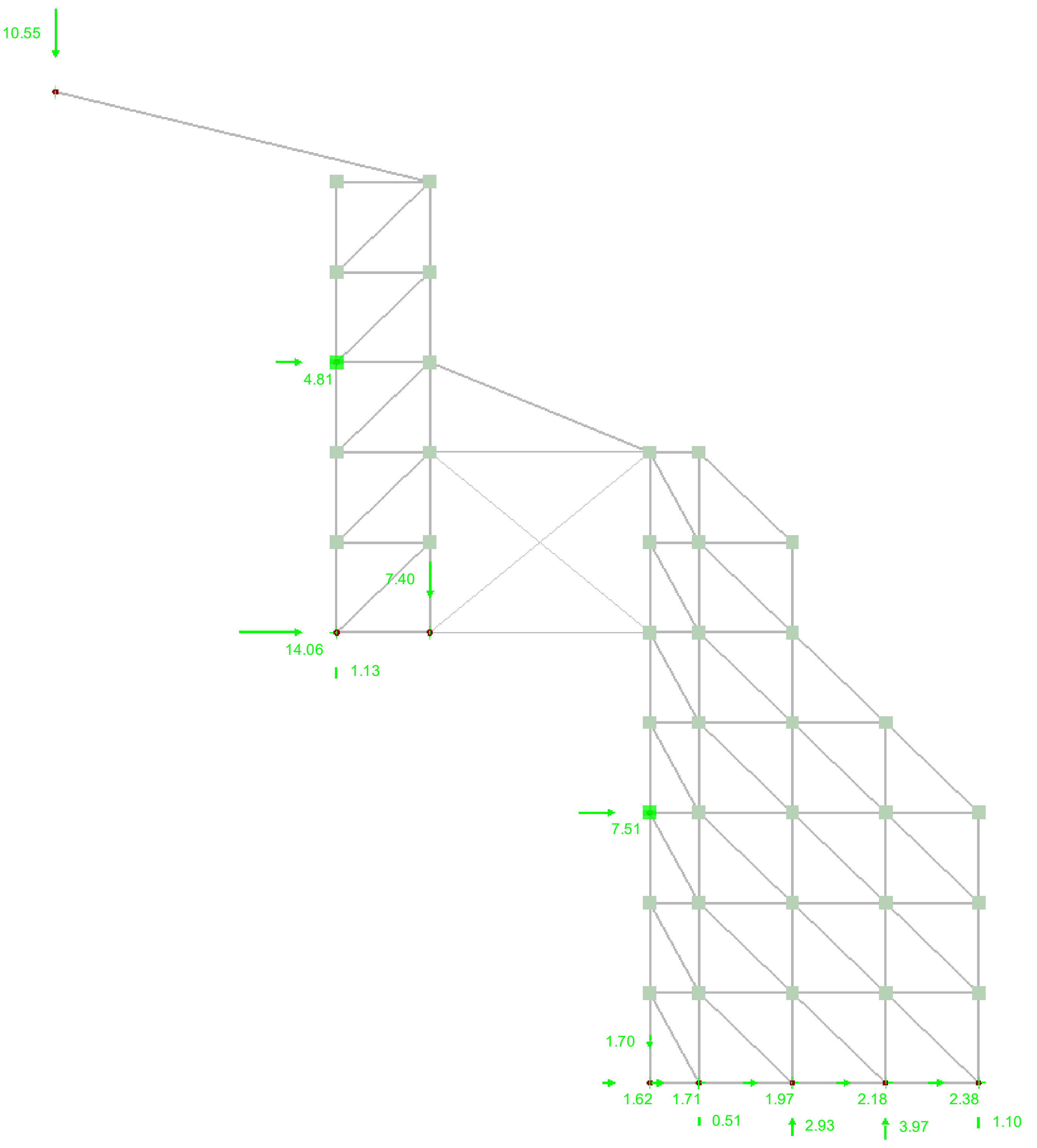


Max P-Y': 0.00, Min P-Y': -13.87 kN
Max P-Z': 7.40, Min P-Z': -9.97 kN

LAGERREAKTIONEN

CO3 : Bem-3
Lagerreaktionen[kN]

In X-direction



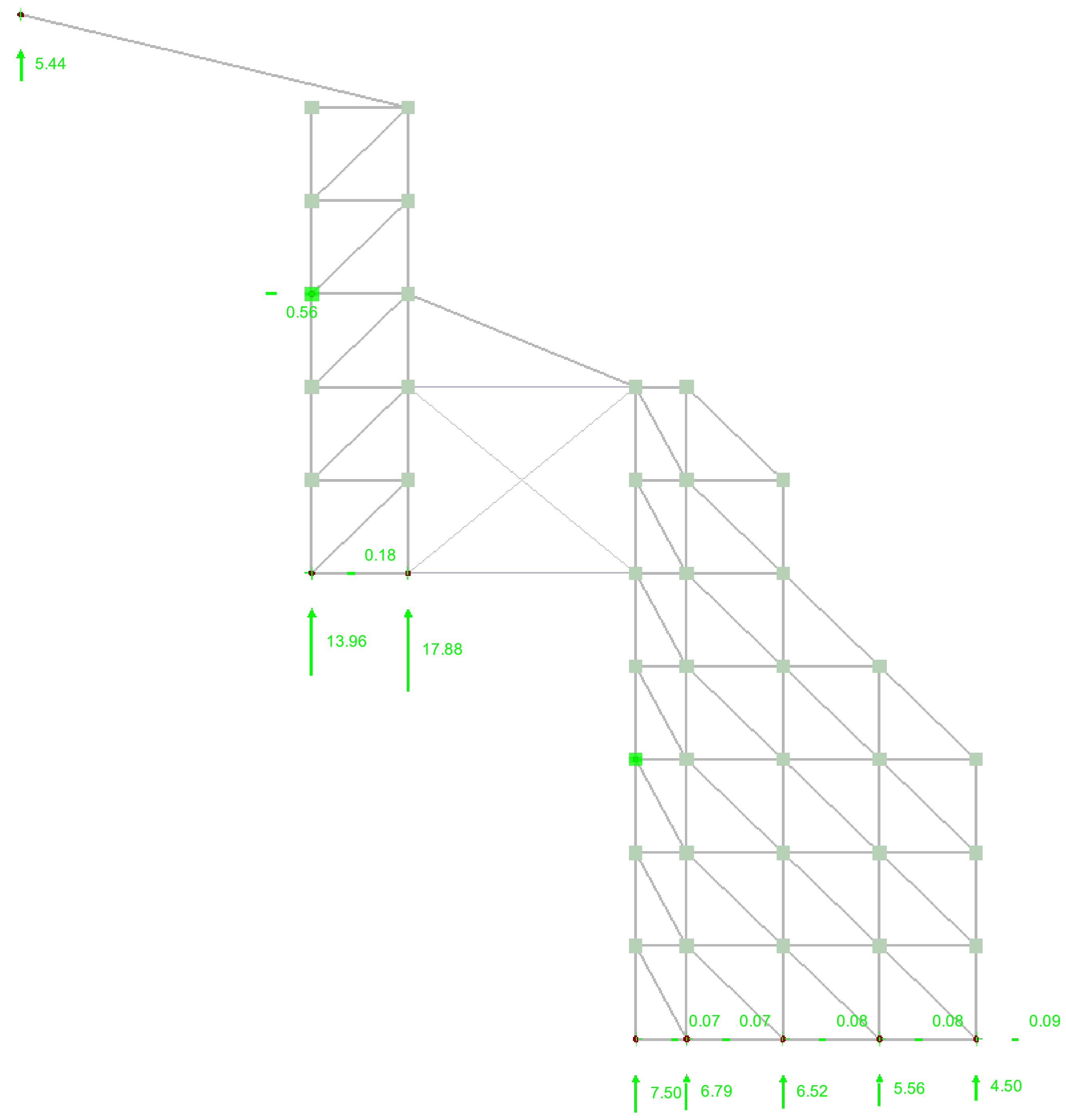
Max P-Y': 0.00, Min P-Y': -14.06 kN
Max P-Z': 3.97, Min P-Z': -10.55 kN

2.533 m

LAGERREAKTIONEN

CO4 : Bem-4
Lagerreaktionen[kN]

In X-direction



Max P-Y': 0.18, Min P-Y': -0.56 kN
Max P-Z': 17.88, Min P-Z': 0.00 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
320	RC1		1.200	MAX N	12.04	-0.02	0.00	0.00	0.01	0.00	CO 5
325	RC1		0.000	MIN N	-18.48	0.00	0.00	0.00	-0.01	0.00	CO 4
529	RC1		0.700	MAX V_y	-2.38	0.05	0.08	0.00	-0.01	0.00	CO 5
276	RC1		2.000	MIN V_y	11.86	-0.19	0.30	0.00	0.31	0.20	CO 5
578	RC1		0.000	MAX V_z	-2.28	0.00	2.73	0.00	-1.13	0.00	CO 3
563	RC1		2.000	MIN V_z	-7.68	0.00	-2.83	0.00	-1.17	0.00	CO 2
254	RC1		0.000	MAX M_T	3.05	-0.15	-0.40	0.00	0.45	-0.19	CO 5
524	RC1		2.000	MIN M_T	-3.14	-0.06	-2.12	0.00	-0.33	0.09	CO 3
259	RC1		0.000	MAX M_y	-9.73	0.00	-1.76	0.00	0.96	0.00	CO 5
563	RC1		2.000	MIN M_y	-7.68	0.00	-2.83	0.00	-1.17	0.00	CO 2
276	RC1		2.000	MAX M_z	11.86	-0.19	0.30	0.00	0.31	0.20	CO 5
254	RC1		0.000	MIN M_z	3.05	-0.15	-0.40	0.00	0.45	-0.19	CO 5
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
332	RC1		0.707	MAX N	15.65	0.00	-0.02	0.00	0.00	0.00	CO 5
332	RC1		0.000	MIN N	-14.36	0.00	0.00	0.00	0.01	0.00	CO 3
867	RC1		0.000	MAX V_y	-1.52	0.00	0.14	-0.02	-0.08	0.00	CO 3
867	RC1		1.040	MIN V_y	0.95	0.00	-0.07	0.01	-0.03	0.00	CO 5
792	RC1		0.000	MAX V_z	-6.88	0.00	1.84	0.00	-0.14	0.00	CO 1
792	RC1		1.040	MIN V_z	-0.06	0.00	-1.84	0.00	-0.14	0.00	CO 4
266	RC1		0.909	MAX M_T	2.98	0.00	-0.12	0.03	0.02	0.00	CO 5
867	RC1		0.000	MIN M_T	-1.52	0.00	0.14	-0.02	-0.08	0.00	CO 3
792	RC1		0.520	MAX M_y	-0.07	0.00	-0.03	0.00	0.35	0.00	CO 4
767	RC1		1.040	MIN M_y	-3.18	0.00	-0.44	0.00	-0.40	0.00	CO 2
867	RC1		0.000	MAX M_z	-1.52	0.00	0.14	-0.02	-0.08	0.00	CO 3
867	RC1		1.040	MIN M_z	-1.52	0.00	0.14	-0.02	0.07	0.00	CO 3
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
269	RC1		0.000	MAX N	12.62	0.00	0.00	0.01	0.00	0.00	CO 5
683	RC1		0.000	MIN N	-2.72	0.00	0.00	0.00	0.00	0.00	CO 5
244	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
269	RC1		0.000	MAX M_T	12.62	0.00	0.00	0.01	0.00	0.00	CO 5
758	RC1		0.000	MIN M_T	3.10	0.00	0.00	-0.01	0.00	0.00	CO 2
244	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
269	RC1		0.000	MIN M_z	12.62	0.00	0.00	0.01	0.00	0.00	CO 5
	Section No. 7: GI-KDXL Kederdach XL										
894	RC1		8.547	MAX N	1.28	0.00	-5.29	0.00	0.00	0.00	CO 4
891	RC1		3.164	MIN N	-4.18	0.00	1.39	0.00	-8.81	0.00	CO 5
891	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
894	RC1		8.547	MAX V_z	-2.45	0.00	10.26	0.00	0.00	0.00	CO 3
894	RC1		0.000	MIN V_z	-2.96	0.00	-10.19	0.00	0.17	0.00	CO 5
891	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
894	RC1		4.274	MAX M_y	0.00	0.00	0.01	0.00	11.29	0.00	CO 4
894	RC1		4.274	MIN M_y	-2.74	0.00	0.10	0.00	-22.14	0.00	CO 3
891	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
891	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 8: RD 8 | DIN 1013-1										
882	RC1		0.000	MAX N	9.19	0.00	0.00	0.00	0.00	0.00	CO 5
882	RC1		0.000	MIN N	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
882	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
878	RC1		0.000	MAX N	8.52	0.00	0.00	0.00	0.00	0.00	CO 5
878	RC1		0.000	MIN N	-14.34	0.00	0.00	0.00	0.00	0.00	CO 3
878	RC1		0.000	MAX V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
50	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.00	5.44	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	-10.55	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
63	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.31	0.33	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.31	0.33	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
86	RC1	Max $P_{X'}$	0.14	0.00	0.00	0.00	-0.22	-0.33	CO 5
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	-0.14	-0.13	CO 2
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Y'}$	0.14	0.00	0.00	0.00	-0.22	-0.33	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.14	0.00	0.00	0.00	-0.22	-0.33	CO 5
94	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.42	0.47	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.42	0.47	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.07	-0.07	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.42	0.47	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.07	-0.07	CO 2
107	RC1	Max $P_{X'}$	0.00	12.77	0.00	0.00	0.00	-0.47	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	12.77	0.00	0.00	0.00	-0.47	CO 5
		Min $P_{Y'}$	0.00	-5.13	0.00	0.00	0.00	0.07	CO 2
		Max $M_{Z'}$	0.00	-5.13	0.00	0.00	0.00	0.07	CO 2
		Min $M_{Z'}$	0.00	12.77	0.00	0.00	0.00	-0.47	CO 5
110	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	-0.05	-0.04	CO 2
		Min $P_{X'}$	-0.15	0.00	0.00	0.00	0.12	0.03	CO 5
		Max $M_{Y'}$	-0.15	0.00	0.00	0.00	0.12	0.03	CO 5
		Min $M_{Y'}$	0.02	0.00	0.00	0.00	-0.06	-0.04	CO 3
		Max $M_{Z'}$	-0.15	0.00	0.00	0.00	0.12	0.03	CO 5
		Min $M_{Z'}$	0.02	0.00	0.00	0.00	-0.06	-0.04	CO 3
111	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	0.04	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.07	-0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.07	-0.03	CO 5
116	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
122	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	-0.02	-0.04	CO 5
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.01	0.02	CO 4
		Max $M_{Y'}$	-0.01	0.00	0.00	0.00	0.01	0.02	CO 4
		Min $M_{Y'}$	0.02	0.00	0.00	0.00	-0.02	-0.04	CO 5
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.01	0.02	CO 4
		Min $M_{Z'}$	0.02	0.00	0.00	0.00	-0.02	-0.04	CO 5
125	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	0.04	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	-0.02	CO 4
131	RC1	Max $P_{X'}$	0.01	0.18	13.96	0.00	0.00	0.02	CO 4
		Min $P_{X'}$	-0.02	16.47	-12.80	0.00	0.00	-0.04	CO 5
		Max $P_{Y'}$	-0.02	16.47	-12.80	0.00	0.00	-0.04	CO 5
		Min $P_{Y'}$	-0.01	-14.06	1.13	0.00	0.00	-0.01	CO 3
		Max $P_{Z'}$	0.01	0.18	13.96	0.00	0.00	0.02	CO 4
		Min $P_{Z'}$	-0.02	16.47	-12.80	0.00	0.00	-0.04	CO 5
		Max $M_{Z'}$	0.01	0.18	13.96	0.00	0.00	0.02	CO 4
		Min $M_{Z'}$	-0.02	16.47	-12.80	0.00	0.00	-0.04	CO 5
134	RC1	Max $P_{X'}$	0.00	0.00	17.88	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	0.00	0.00	-3.04	0.00	0.00	0.00	CO 5
		Max $P_{Z'}$	0.00	0.00	17.88	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	-7.40	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	-3.04	0.00	0.00	0.00	CO 5

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 2
167	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 5
176	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.03	-0.04	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.03	-0.04	CO 5
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.12	-0.12	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.16	0.17	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.16	0.17	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.12	-0.12	CO 5
185	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.02	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.04	CO 2
188	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.03	0.03	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
191	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 3
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	-0.01	-0.02	CO 5
		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 2
		Min $M_{Y'}$	-0.05	0.00	0.00	0.00	-0.01	-0.02	CO 5
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.02	0.02	CO 3
		Min $M_{Z'}$	-0.05	0.00	0.00	0.00	-0.01	-0.02	CO 5
194	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 3
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	-0.07	0.04	CO 5
		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 2
		Min $M_{Y'}$	-0.05	0.00	0.00	0.00	-0.07	0.04	CO 5
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	-0.07	0.04	CO 5
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.10	-0.06	CO 2
197	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.07	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.07	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.07	-0.07	CO 2
203	RC1	Max $P_{X'}$	0.05	1.53	4.46	0.00	0.00	-0.07	CO 5
		Min $P_{X'}$	-0.07	-2.38	1.10	0.00	0.00	0.10	CO 3
		Max $P_{Y'}$	0.05	1.53	4.46	0.00	0.00	-0.07	CO 5
		Min $P_{Y'}$	-0.07	-2.38	1.10	0.00	0.00	0.10	CO 3
		Max $P_{Z'}$	0.00	0.09	4.50	0.00	0.00	-0.01	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.07	-2.38	1.10	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	0.05	1.53	4.46	0.00	0.00	-0.07	CO 5
206	RC1	Max $P_{X'}$	0.05	1.39	3.71	0.00	0.00	-0.08	CO 5
		Min $P_{X'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Max $P_{Y'}$	0.05	1.39	3.71	0.00	0.00	-0.08	CO 5
		Min $P_{Y'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Max $P_{Z'}$	-0.07	-2.15	5.83	0.00	0.00	0.11	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.07	-2.18	3.97	0.00	0.00	0.11	CO 3
		Min $M_{Z'}$	0.05	1.39	3.71	0.00	0.00	-0.08	CO 5
209	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2

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■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
209		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.04	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.01	-0.01	CO 5
215	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.06	0.06	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.06	CO 3
221	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.11	-0.07	CO 3
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	-0.08	0.06	CO 5
		Max $M_{Y'}$	0.07	0.00	0.00	0.00	0.11	-0.07	CO 2
		Min $M_{Y'}$	-0.04	0.00	0.00	0.00	-0.08	0.06	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	-0.08	0.06	CO 5
		Min $M_{Z'}$	0.08	0.00	0.00	0.00	0.11	-0.07	CO 3
227	RC1	Max $P_{X'}$	0.04	1.22	4.94	0.00	0.00	-0.06	CO 5
		Min $P_{X'}$	-0.08	-1.97	2.93	0.00	0.00	0.12	CO 3
		Max $P_{Y'}$	0.04	1.22	4.94	0.00	0.00	-0.06	CO 5
		Min $P_{Y'}$	-0.08	-1.97	2.93	0.00	0.00	0.12	CO 3
		Max $P_{Z'}$	0.00	0.08	6.52	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.08	-1.97	2.93	0.00	0.00	0.12	CO 3
		Min $M_{Z'}$	0.04	1.22	4.94	0.00	0.00	-0.06	CO 5
233	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.05	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
239	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.11	-0.10	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.08	0.09	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.08	0.09	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.11	-0.10	CO 2
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.13	-0.09	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.16	0.12	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.16	0.12	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.13	-0.09	CO 5
251	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.06	-0.04	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.06	-0.04	CO 2
257	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.03	-0.03	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.05	0.04	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.05	0.04	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.03	-0.03	CO 5
263	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 2
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.03	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.03	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.05	CO 3
269	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 3
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	-0.06	0.06	CO 5
		Max $M_{Y'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 2
		Min $M_{Y'}$	-0.03	0.00	0.00	0.00	-0.06	0.06	CO 5
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	-0.06	0.06	CO 5
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.10	-0.09	CO 3
275	RC1	Max $P_{X'}$	0.03	1.05	2.30	0.00	0.00	-0.03	CO 5
		Min $P_{X'}$	-0.06	-1.71	0.51	0.00	0.00	0.06	CO 3
		Max $P_{Y'}$	0.03	1.05	2.30	0.00	0.00	-0.03	CO 5
		Min $P_{Y'}$	-0.06	-1.71	0.51	0.00	0.00	0.06	CO 3
		Max $P_{Z'}$	0.00	0.07	6.79	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	-0.06	-1.71	0.51	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.03	1.05	2.30	0.00	0.00	-0.03	CO 5
281	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.02	0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.02	0.01	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
287	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

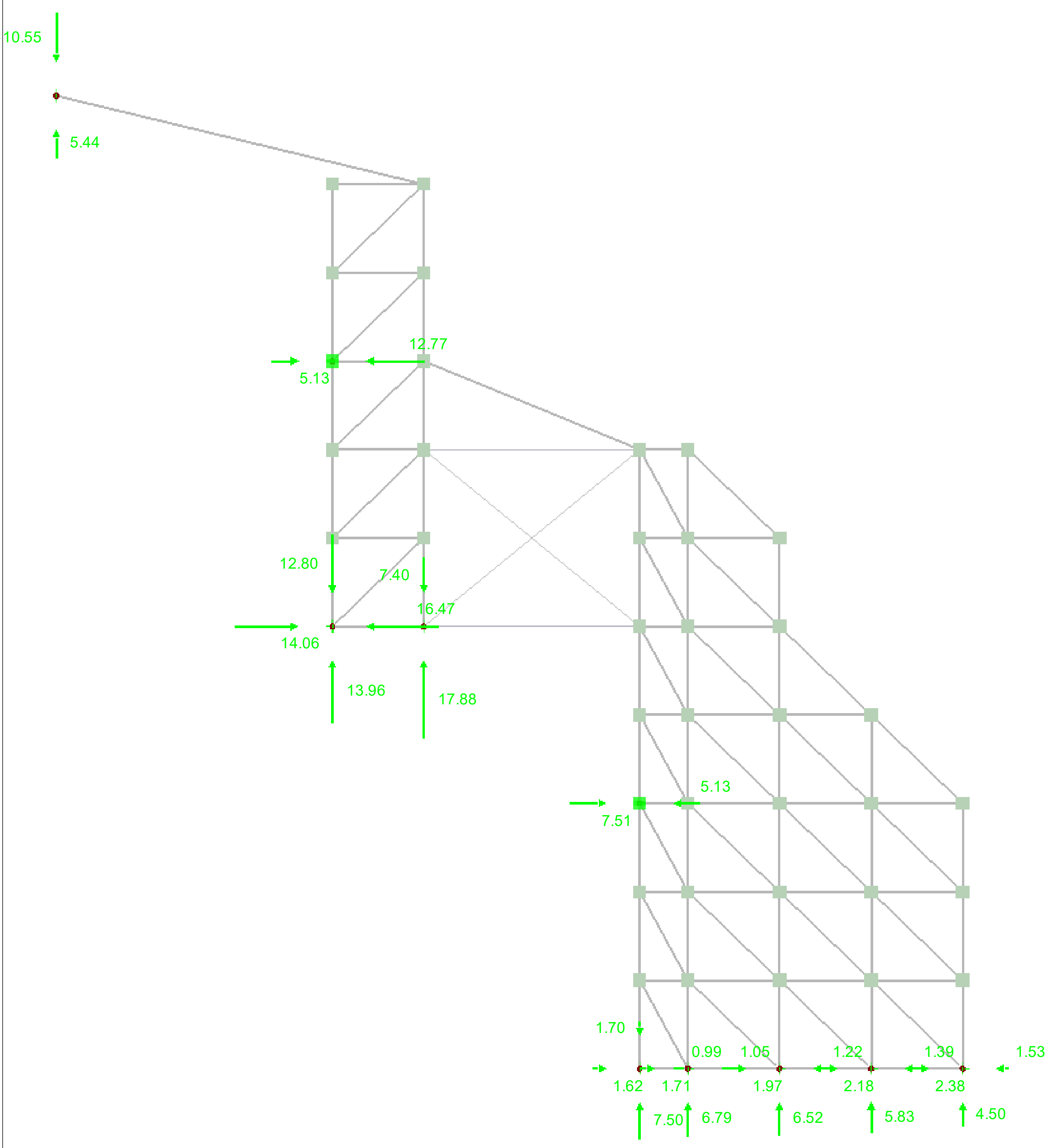
Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
287		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.10	-0.05	CO 3
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.09	0.05	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.09	0.05	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.10	-0.05	CO 3
293	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.04	-0.02	CO 5
		Min $M_{Y'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.04	0.02	CO 2
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.04	-0.02	CO 5
299	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	-0.01	0.00	CO 5
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.03	-0.02	CO 3
		Min $M_{Y'}$	-0.01	0.00	0.00	0.00	-0.01	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	-0.01	0.01	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.03	-0.02	CO 3
305	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.00	5.13	0.00	0.00	0.00	-0.01	CO 5
		Min $P_{Y'}$	0.00	-7.51	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 4
		Min $M_{Z'}$	0.00	5.13	0.00	0.00	0.00	-0.01	CO 5
311	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	-0.02	0.01	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	-0.01	0.00	CO 4
		Max $M_{Y'}$	0.00	0.00	0.00	0.00	0.05	-0.03	CO 3
		Min $M_{Y'}$	0.01	0.00	0.00	0.00	-0.02	0.01	CO 5
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	-0.02	0.01	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.05	-0.03	CO 3
317	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.10	-0.06	CO 2
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	-0.05	0.03	CO 5
		Max $M_{Y'}$	0.02	0.00	0.00	0.00	0.11	-0.06	CO 3
		Min $M_{Y'}$	-0.01	0.00	0.00	0.00	-0.05	0.03	CO 5
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	-0.05	0.03	CO 5
		Min $M_{Z'}$	0.02	0.00	0.00	0.00	0.11	-0.06	CO 3
323	RC1	Max $P_{X'}$	0.01	0.99	0.85	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	-0.02	-1.62	-1.70	0.00	0.00	0.00	CO 3
		Max $P_{Y'}$	0.01	0.99	0.85	0.00	0.00	0.00	CO 5
		Min $P_{Y'}$	-0.02	-1.62	-1.70	0.00	0.00	0.00	CO 3
		Max $P_{Z'}$	0.00	0.07	7.50	0.00	0.00	0.00	CO 4
		Min $P_{Z'}$	-0.02	-1.62	-1.70	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	-0.02	-1.62	-1.70	0.00	0.00	0.00	CO 3
		Min $M_{Z'}$	0.01	0.99	0.85	0.00	0.00	0.00	CO 5

LAGERREAKTIONEN

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction

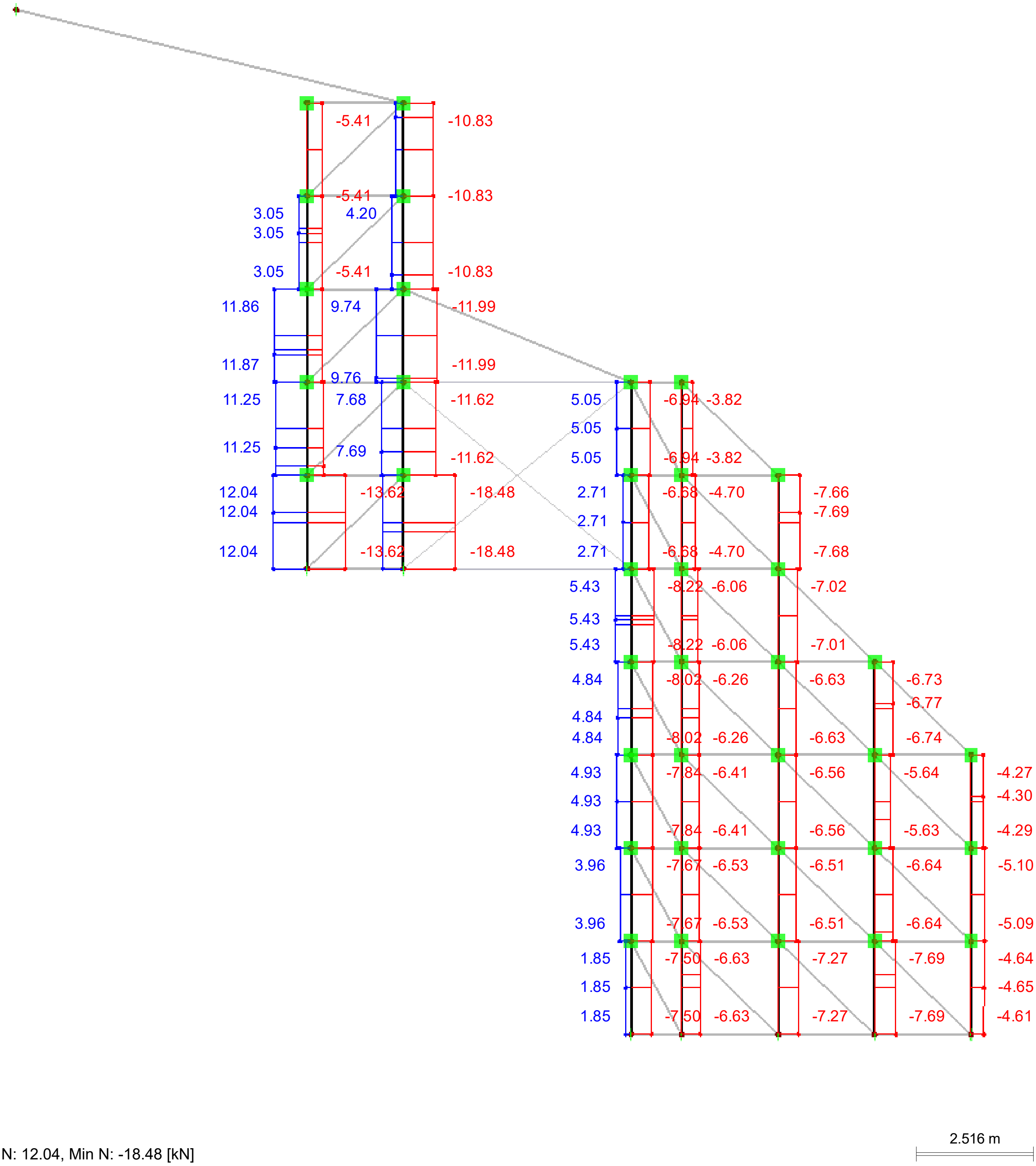


Max P-Y': 16.47, Min P-Y': -14.06 kN
Max P-Z': 17.88, Min P-Z': -12.80 kN

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

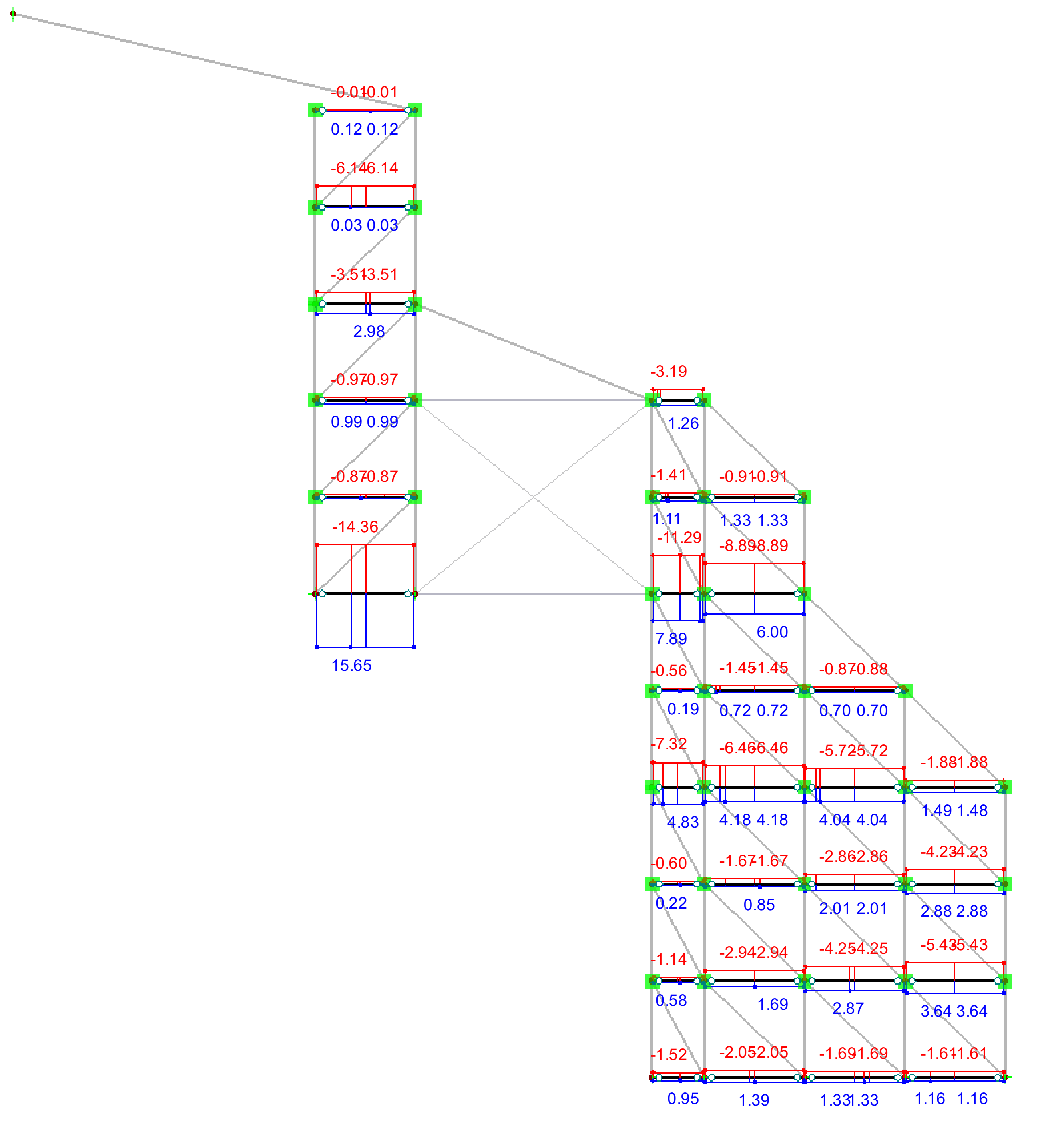


Max N: 12.04, Min N: -18.48 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

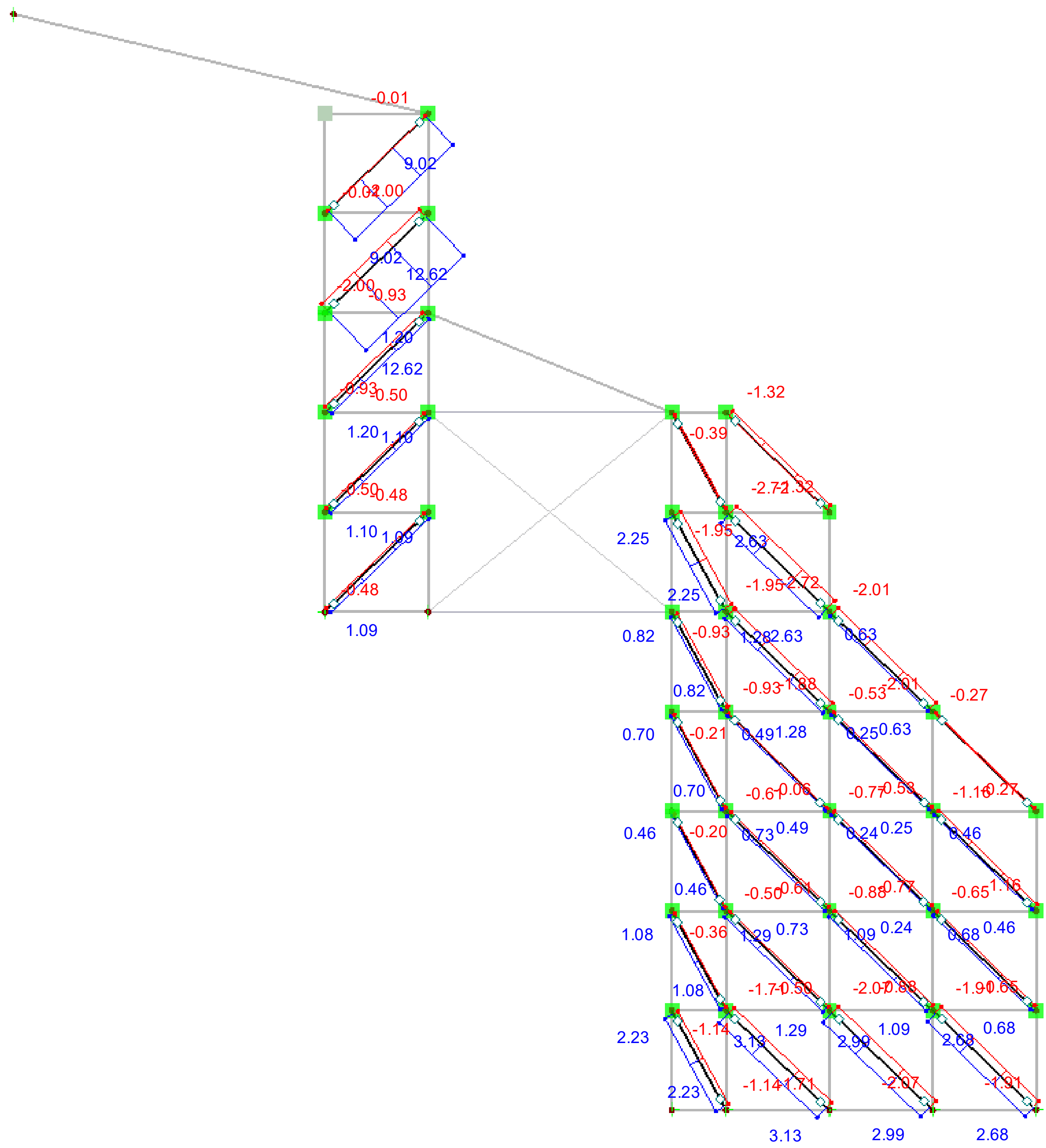


Max N: 15.65, Min N: -14.36 [kN]

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



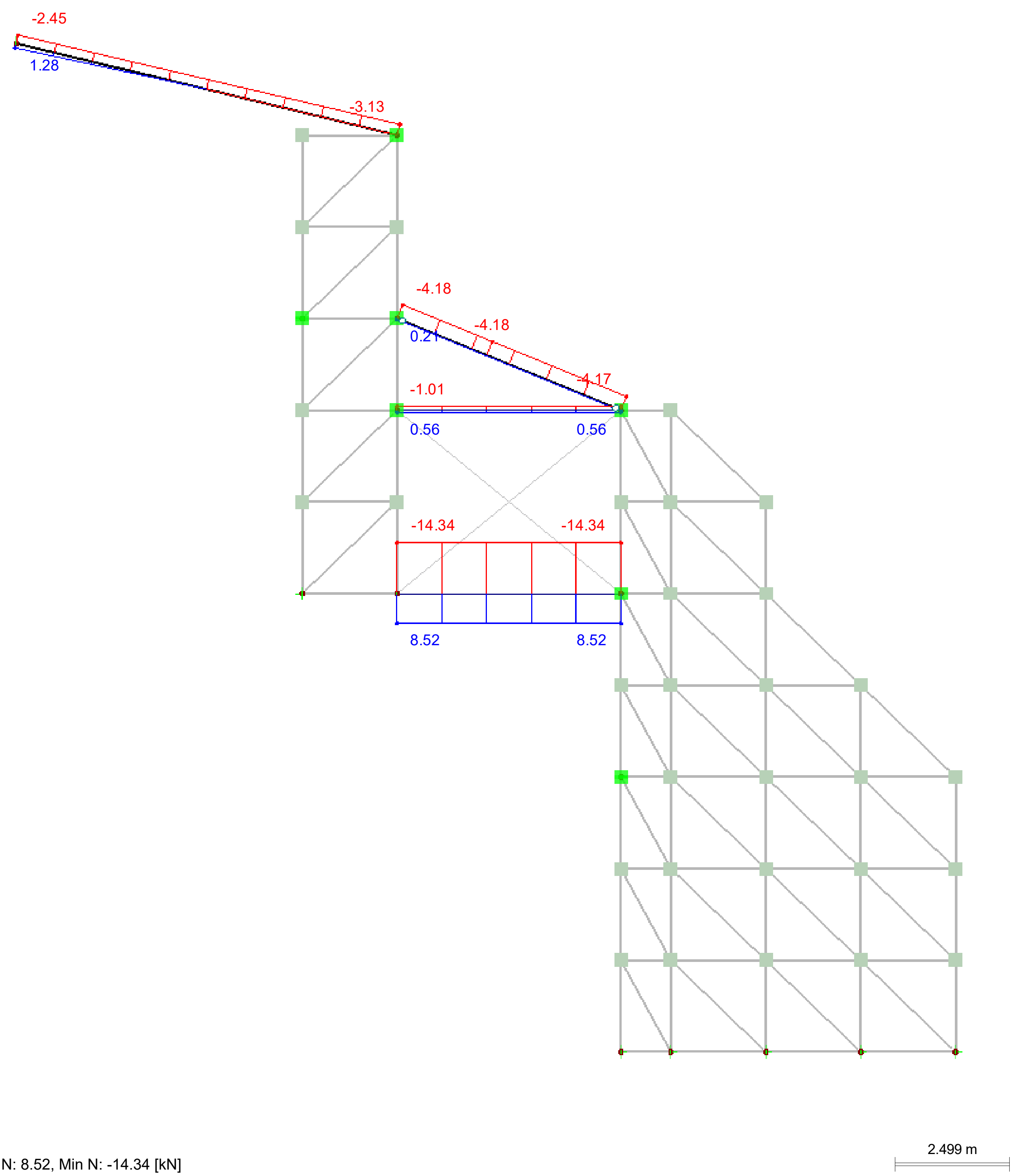
Max N: 12.62, Min N: -2.72 [kN]

2.498 m

INTERNAL FORCES N

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction

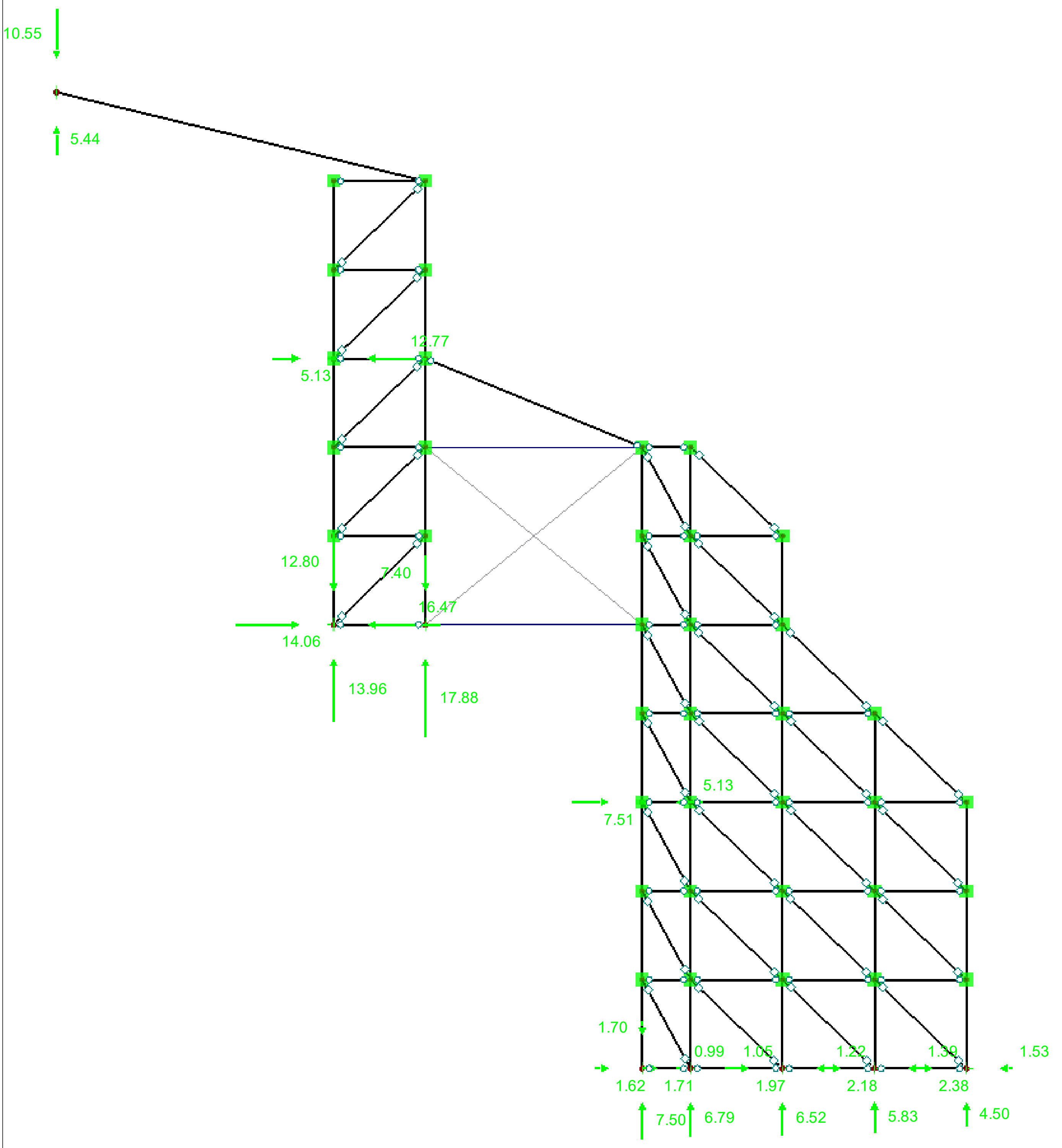


Max N: 8.52, Min N: -14.34 [kN]

LAGERREAKTIONEN

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max P-Y': 16.47, Min P-Y': -14.06 kN
Max P-Z': 17.88, Min P-Z': -12.80 kN

2.606 m

STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

Members to design:	229,234,254,259,276,281,298,303,320,325,463,480,485,502,507,524,529,563,578,593,608,623,638,658,673,688,703,718,733,748,770,785,800,815,830,845,860
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design Load combinations to design:	CO1 Bem-1 CO2 Bem-2 CO3 Bem-3 CO4 Bem-4

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

1.3 CROSS-SECTIONS

Rohr 48.3/2.9

Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	0.44	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.33	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.24	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.700	LK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	LK2	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.300	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.35	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.23	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.23	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK4	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	LK4	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	LK3	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.35	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.26	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.26	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.200	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	LK4	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.200	LK4	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.06	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK3	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.25	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.25	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	LK4	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.29	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK4	0.29	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK3	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK4	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.40	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.40	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.27	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.44	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.33	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	LK2	0.35	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.400	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.31	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.26	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	LK2	0.15	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	LK4	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK4	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.000	LK2	0.36	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.700	LK4	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.700	LK4	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	LK2	0.43	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.800	LK2	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK2	0.42	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.30	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK2	0.17	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.500	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.200	LK2	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK3	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK2	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK2	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					

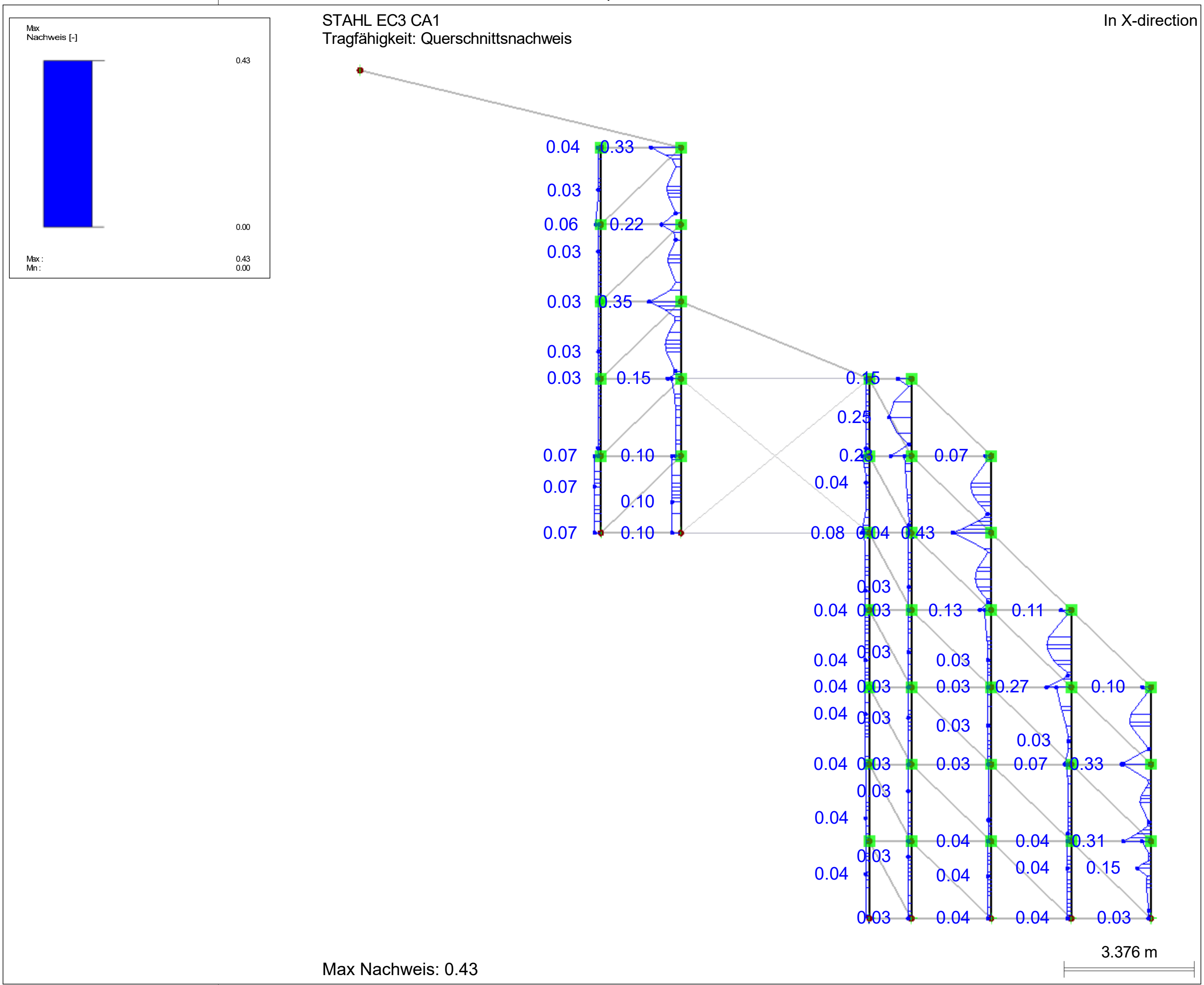
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	LK4	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	LK2	0.25	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.32	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK2	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK2	0.16	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK3	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	LK3	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.13	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.13	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	LK4	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	LK2	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	LK2	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	LK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	LK2	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	2.000	LK2	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	LK4	0.16	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK3	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	LK3	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK4	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	LK3	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	LK4	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	LK3	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	LK3	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	LK4	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK4	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	LK1	0.07	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS



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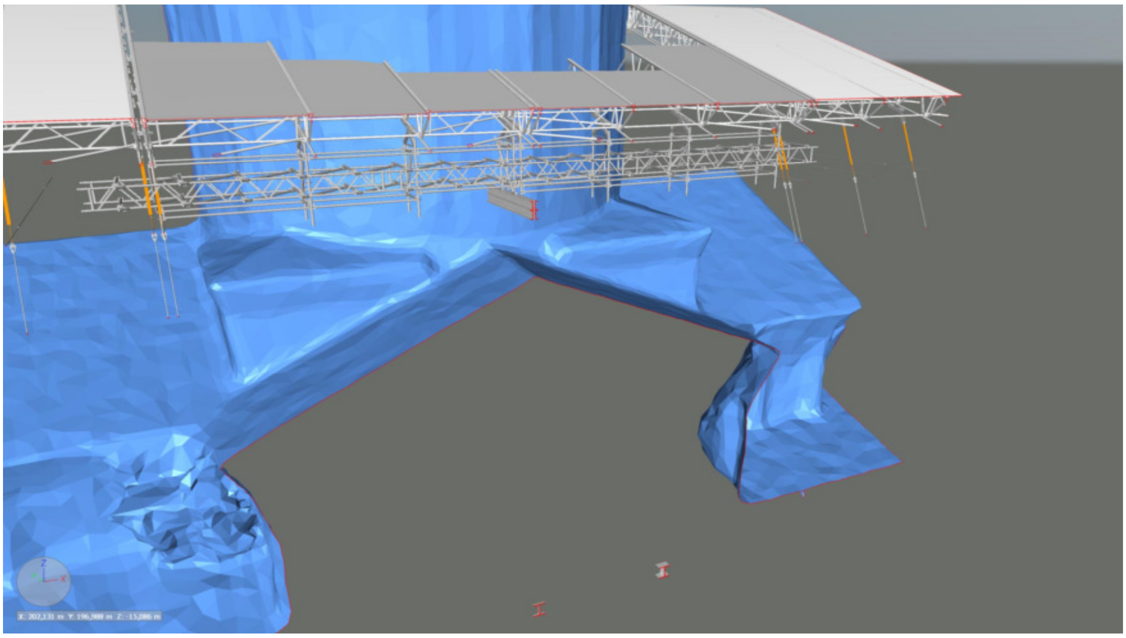
DL	A,g,k=	1,3	kN
SN	A,q,k=	2,5	kN
W	A,q,k=	-7,8	kN
	Ad=	5,6	kN
	Ad=	-10,6	kN

Lattice Beam 2x 450mm Steel



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DL +SN	Md=	(5,6/2,32) * 7^2/8=	14,784	kNm
	Vd=	(5,6/2,32) * 7/2=	8,4483	kN
	MRD=	25 kNm		
	VRd=	27 kN		
DL + W	Md=	(-10,6/2,32) * 7^2/8=	-27,98	kNm
	Vd=	(-10,6/2,32) * 7/2=	-15,99	kN
Lattice Beam	MRd=	25 kNm		
	VRd=	27 kN		

Reaction Force

DL	A,g,k=	(0,5 + 1,3/2,32) * 7 / 2=	3,7	kN
SN	A,q,k=	(2,5/2,32) * 7 / 2=	3,8	kN
W	A,q,k=	(-7,8/2,32) * 7 / 2=	-11,8	kN
Design	Ad=	(5,6/2,32+0,8) * 7 / 2=	11,2	kN
Design	Ad=	(-10,6/2,32) * 7 / 2=	-16,0	kN

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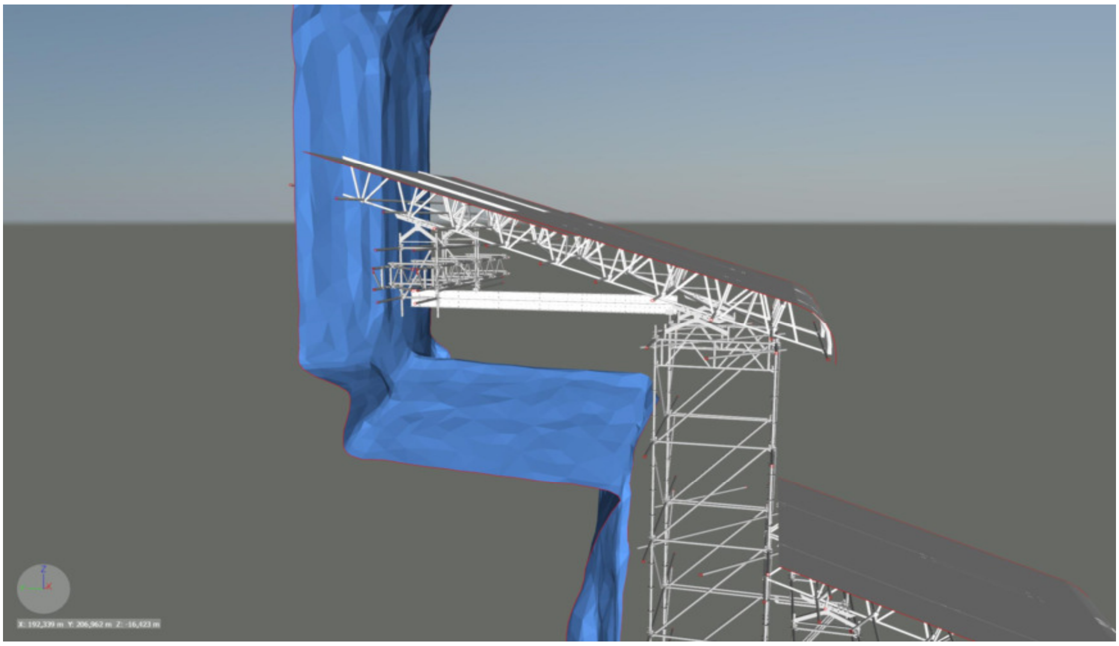
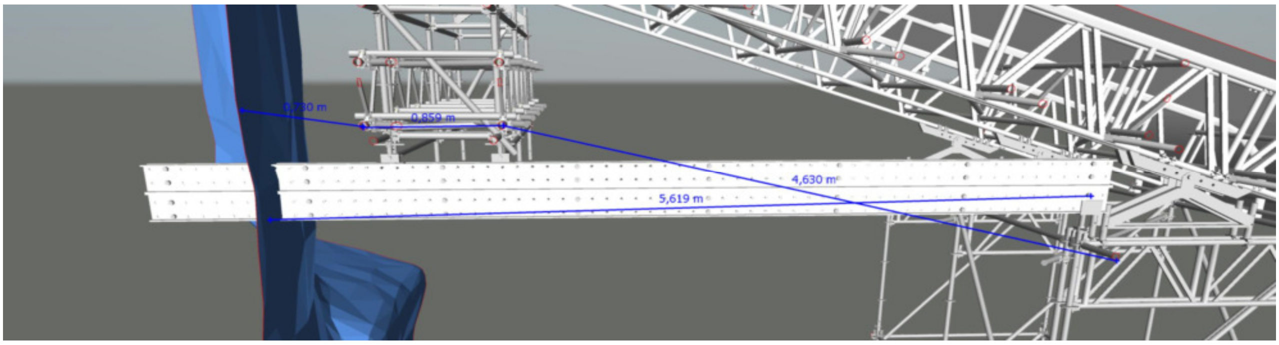
Pos.14.2: Twixbeam



Qd=	2 * 11,2=	24 kN
Qd=	2 * (-16)=	-32 kN



A B

Ad=	18	Bd=	6 kN
Ad=	-23	Bd=	-9 kN

Md= 37,547 kNm < MRd (2x Twixbeam)

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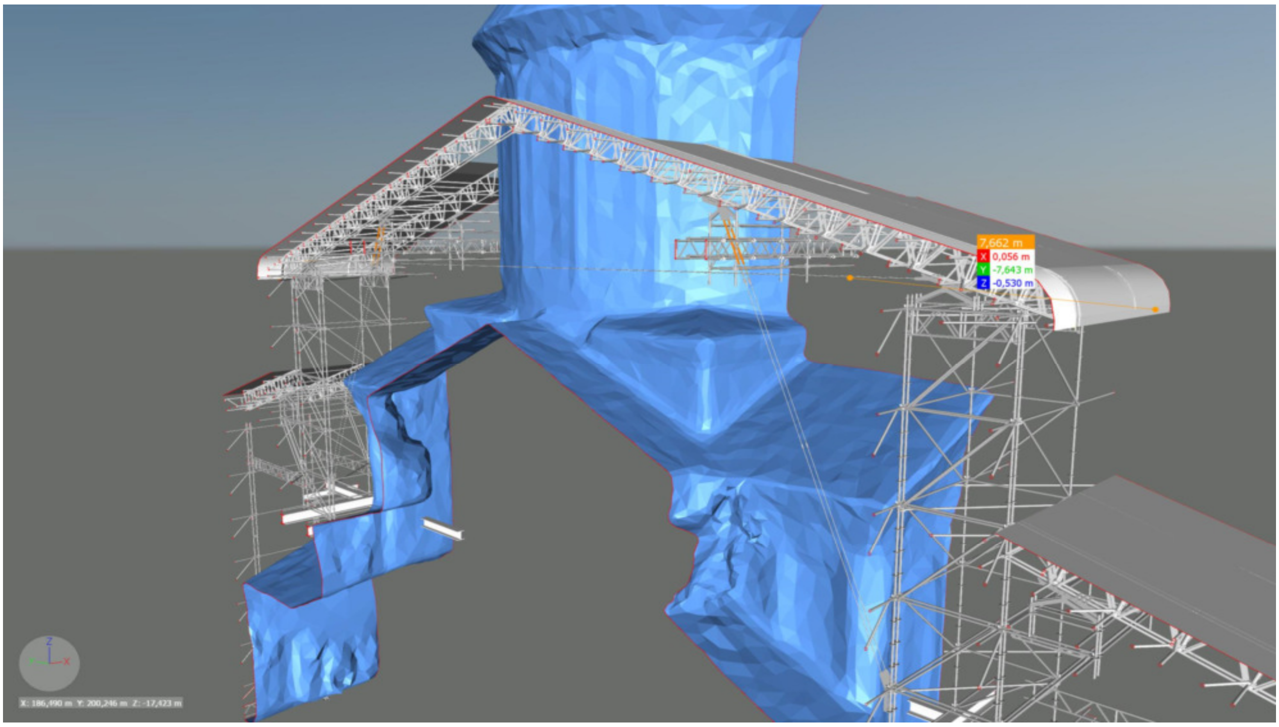
Pos.14.3: Double Keder Roof Beam



DL	A,g,k=	(0,5 + 1,3/2,32) * 7 / 2=	3,7 kN
SN	A,q,k=	(2,5/2,32) * 7 / 2=	3,8 kN
W	A,q,k=	(-7,8/2,32) * 7 / 2=	-11,8 kN
Design	Ad=	(5,6/2,32+0,8) * 7 / 2=	11,2 kN
Design	Ad=	(-10,6/2,32) * 7 / 2=	-16,0 kN

The Kederroof Beam has to be built twice.

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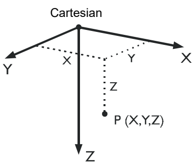
Project: 2023 Model: K-Dach-1-ok Date: 15.12.2023

CONTENTS

MODEL - GENERAL DATA

General	Model name	:	K-Dach-1-ok
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: Ohne National Annex: None
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²



1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
63	-	Cartesian	0.000	4.640	10.000	Supported
64	-	Cartesian	0.000	-18.060	10.000	Supported
69	-	Cartesian	0.000	6.710	10.000	Supported
70	-	Cartesian	0.000	-20.130	10.000	Supported
86	-	Cartesian	0.000	4.640	12.000	
87	-	Cartesian	0.000	-18.060	12.000	
94	-	Cartesian	0.000	6.710	12.000	Supported
95	-	Cartesian	0.000	-20.130	12.000	Supported
107	-	Cartesian	0.000	4.640	14.000	Supported
108	-	Cartesian	0.000	-18.060	14.000	Supported
110	-	Cartesian	0.000	4.640	16.000	Supported
111	-	Cartesian	0.000	6.710	14.000	Supported
112	-	Cartesian	0.000	-18.060	16.000	Supported
113	-	Cartesian	0.000	-20.130	14.000	Supported
116	-	Cartesian	0.000	6.710	16.000	Supported
117	-	Cartesian	0.000	-20.130	16.000	Supported
122	-	Cartesian	0.000	4.640	18.000	Supported
123	-	Cartesian	0.000	-18.060	18.000	Supported
125	-	Cartesian	0.000	6.710	18.000	Supported

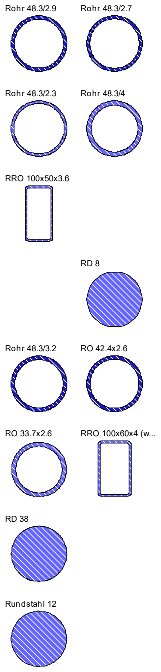
1.1 NODES

Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
126	-	Cartesian	0.000	-20.130	18.000	Supported
131	-	Cartesian	0.000	4.640	20.000	Supported
132	-	Cartesian	0.000	-18.060	20.000	Supported
134	-	Cartesian	0.000	6.710	20.000	Supported
135	-	Cartesian	0.000	-20.130	20.000	Supported
164	-	Cartesian	0.000	16.820	22.000	Supported
165	-	Cartesian	0.000	-30.240	22.000	Supported
167	-	Cartesian	0.000	14.750	18.000	Supported
168	-	Cartesian	0.000	-28.170	18.000	Supported
173	-	Cartesian	0.000	18.890	24.000	Supported
174	-	Cartesian	0.000	-32.310	24.000	Supported
176	-	Cartesian	0.000	16.820	24.000	Supported
177	-	Cartesian	0.000	-30.240	24.000	Supported
179	-	Cartesian	0.000	14.750	20.000	Supported
180	-	Cartesian	0.000	-28.170	20.000	Supported
185	-	Cartesian	0.000	18.890	26.000	Supported
186	-	Cartesian	0.000	-32.310	26.000	Supported
188	-	Cartesian	0.000	16.820	26.000	Supported
189	-	Cartesian	0.000	-30.240	26.000	Supported
191	-	Cartesian	0.000	18.890	28.000	Supported
192	-	Cartesian	0.000	-32.310	28.000	Supported
194	-	Cartesian	0.000	16.820	28.000	Supported
195	-	Cartesian	0.000	-30.240	28.000	Supported
197	-	Cartesian	0.000	14.750	22.000	Supported
198	-	Cartesian	0.000	-28.170	22.000	Supported
203	-	Cartesian	0.000	18.890	30.000	Supported
204	-	Cartesian	0.000	-32.310	30.000	Supported
206	-	Cartesian	0.000	16.820	30.000	Supported
207	-	Cartesian	0.000	-30.240	30.000	Supported
209	-	Cartesian	0.000	14.750	24.000	Supported
210	-	Cartesian	0.000	-28.170	24.000	Supported
215	-	Cartesian	0.000	14.750	26.000	Supported
216	-	Cartesian	0.000	-28.170	26.000	Supported
221	-	Cartesian	0.000	14.750	28.000	Supported
222	-	Cartesian	0.000	-28.170	28.000	Supported
227	-	Cartesian	0.000	14.750	30.000	Supported
228	-	Cartesian	0.000	-28.170	30.000	Supported
233	-	Cartesian	0.000	12.680	16.000	Supported
234	-	Cartesian	0.000	-26.100	16.000	Supported
239	-	Cartesian	0.000	12.680	18.000	Supported
240	-	Cartesian	0.000	-26.100	18.000	Supported
245	-	Cartesian	0.000	12.680	20.000	Supported
246	-	Cartesian	0.000	-26.100	20.000	Supported
251	-	Cartesian	0.000	12.680	22.000	Supported
252	-	Cartesian	0.000	-26.100	22.000	Supported
257	-	Cartesian	0.000	12.680	24.000	Supported
258	-	Cartesian	0.000	-26.100	24.000	Supported
263	-	Cartesian	0.000	12.680	26.000	Supported
264	-	Cartesian	0.000	-26.100	26.000	Supported
269	-	Cartesian	0.000	12.680	28.000	Supported
270	-	Cartesian	0.000	-26.100	28.000	Supported
275	-	Cartesian	0.000	12.680	30.000	Supported
276	-	Cartesian	0.000	-26.100	30.000	Supported
281	-	Cartesian	0.000	11.590	16.000	Supported
282	-	Cartesian	0.000	-25.010	16.000	Supported
287	-	Cartesian	0.000	11.590	18.000	Supported
288	-	Cartesian	0.000	-25.010	18.000	Supported
293	-	Cartesian	0.000	11.590	20.000	Supported
294	-	Cartesian	0.000	-25.010	20.000	Supported
299	-	Cartesian	0.000	11.590	22.000	Supported
300	-	Cartesian	0.000	-25.010	22.000	Supported
305	-	Cartesian	0.000	11.590	24.000	Supported
306	-	Cartesian	0.000	-25.010	24.000	Supported
311	-	Cartesian	0.000	11.590	26.000	Supported
312	-	Cartesian	0.000	-25.010	26.000	Supported
317	-	Cartesian	0.000	11.590	28.000	Supported
318	-	Cartesian	0.000	-25.010	28.000	Supported
323	-	Cartesian	0.000	11.590	30.000	Supported
325	-	Cartesian	0.000	-25.010	30.000	Supported
327	-	Cartesian	0.000	-6.710	5.640	Supported
328	-	Cartesian	0.000	-17.446	9.128	Supported
329	-	Cartesian	0.000	-14.762	8.256	Supported
330	-	Cartesian	0.000	-12.078	7.384	Supported
331	-	Cartesian	0.000	-9.394	6.512	Supported
332	-	Cartesian	0.000	-4.026	6.512	Supported
333	-	Cartesian	0.000	-1.342	7.384	Supported
334	-	Cartesian	0.000	1.342	8.256	Supported
335	-	Cartesian	0.000	4.026	9.128	Supported
336	-	Cartesian	0.000	5.675	10.000	
337	-	Cartesian	0.000	5.658	9.658	Supported
338	-	Cartesian	0.000	-19.078	9.658	Supported
339	-	Cartesian	0.000	0.391	7.947	
340	-	Cartesian	0.000	-11.127	7.075	
341	-	Cartesian	0.000	-13.811	7.947	

1.2 MATERIALS

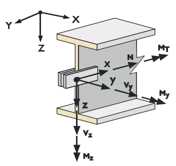
Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/K]	Partial Factor γ_M [-]	Material Model
1	Steel S 235 | DIN 18800:1990-11					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
2	Steel S 460 Q | DIN EN 1993-1-1:2010-12					
	21000.00	8100.00	78.50	1.20E-05	1.00	Isotropic Linear Elastic

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	Rohr 48.3/2.9							
	2	21.40	10.70	10.70	0.00	0.00	48.3	48.3
		4.14	2.07	2.07				
	Stiel							
2	Rohr 48.3/2.7							
	2	20.18	10.09	10.09	0.00	0.00	48.3	48.3
		3.87	1.92	1.92				
	Riegel							
3	Rohr 48.3/2.3							
	1	17.63	8.81	8.81	0.00	0.00	48.3	48.3
		3.32	1.65	1.65				
	Diagonale							
4	Rohr 48.3/4							
	1	27.54	13.77	13.77	0.00	0.00	48.3	48.3
		5.57	2.77	2.77				
	Rohr							
5	RRO 100x50x3.6 | DIN 59410:1974							
	1	102.00	129.00	42.90	0.00	0.00	50.0	100.0
		10.20	2.22	6.38				
6	spindel spindel							
	1	1.00	3.74	3.74	0.00	0.00	0.0	0.0
		3.84	2.00	2.00				
7	2 Gitterträger Stahl h=75cm							
	1	1.00	12000.00	1.00	0.00	0.00	0.0	0.0
		9.00	4.50	4.50				
8	RD 8 | DIN 1013-1							
	1	0.04	0.02	0.02	0.00	0.00	8.0	8.0
		0.50	0.42	0.42				
9	Rohr 48.3/3.2							
	2	23.17	11.59	11.59	0.00	0.00	48.3	48.3
		4.53	2.26	2.26				
	Riegel_TG60_1							
10	RO 42.4x2.6 | DIN 2448							
	2	12.93	6.46	6.46	0.00	0.00	42.4	42.4
		3.25	1.62	1.62				
	Riegel_TG60_2							
11	RO 33.7x2.6 | DIN 2448							
	1	6.19	3.09	3.09	0.00	0.00	33.7	33.7
		2.54	1.27	1.27				
	Diagonale_TG60							
12	RRO 100x60x4 (Hot Formed)							
	1	156.00	158.00	70.50	0.00	0.00	60.0	100.0
		12.00	3.23	6.98				
13	RD 38							
	1	20.47	10.24	10.24	0.00	0.00	38.0	38.0
		11.30	9.49	9.49				
14	GI-KDXL Kederdach XL							
	2	1.00	20900.00	20900.00	0.00	0.00	50.0	1000.0
		17.00	9.00	9.00				
15	Rundstahl 12							
	1	0.20	0.10	0.10	0.00	0.00	12.0	12.0
		1.13	0.95	0.95				

1.4 MEMBER HINGES

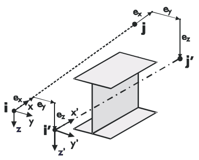


Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	Diagram...	-
	Riegel						
2	Local x,y,z	1300.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Diagonale						
3	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
4	Local x,y,z	2500.000	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$\varphi_{y'}$	0.0000	0.000	
		0.0200	0.900	
		0.0400	1.100	
		0.0600	> 1.200	Yielding

1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

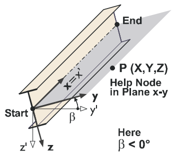


Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$	$e_{i,y}$	$e_{i,z}$	Member End - Eccentricity $e_{j,x}$	$e_{j,y}$	$e_{j,z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	Riegel
2	Local	77.5	50.0	0.0	-77.5	50.0	0.0	Diagonale
3	Local	25.0	0.0	0.0	0.0	0.0	0.0	Riegel
4	Local	0.0	0.0	0.0	-25.0	0.0	0.0	Riegel

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



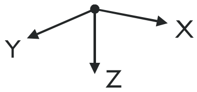
Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	337	69	Angle	0.00	4	4	-	-	-	-	1.106	YZ
168	Beam	63	69	Angle	0.00	5	5	-	-	3	-	2.045	Y
169	Beam	70	64	Angle	0.00	5	5	-	-	1	-	2.020	Y
229	Beam	86	63	Angle	90.00	1	1	-	-	-	-	2.000	Z
230	Beam	64	87	Angle	90.00	1	1	-	-	-	-	2.000	Z
234	Beam	94	69	Angle	90.00	1	1	-	-	-	-	2.000	Z
235	Beam	70	95	Angle	90.00	1	1	-	-	-	-	2.000	Z
241	Beam	86	94	Angle	0.00	2	2	1	1	1	-	2.020	Y
242	Beam	95	87	Angle	0.00	2	2	1	1	1	-	2.020	Y
244	Beam	86	69	Angle	0.00	3	3	2	2	2	-	2.723	YZ
245	Beam	70	87	Angle	0.00	3	3	2	2	2	-	2.723	YZ
254	Beam	107	86	Angle	90.00	1	1	-	-	-	-	2.000	Z
255	Beam	87	108	Angle	90.00	1	1	-	-	-	-	2.000	Z
259	Beam	111	94	Angle	90.00	1	1	-	-	-	-	2.000	Z
260	Beam	95	113	Angle	90.00	1	1	-	-	-	-	2.000	Z
266	Beam	107	111	Angle	0.00	2	2	1	1	1	-	2.020	Y
267	Beam	113	108	Angle	0.00	2	2	1	1	1	-	2.020	Y
269	Beam	107	94	Angle	0.00	3	3	2	2	2	-	2.723	YZ
270	Beam	95	108	Angle	0.00	3	3	2	2	2	-	2.723	YZ
276	Beam	110	107	Angle	90.00	1	1	-	-	-	-	2.000	Z
277	Beam	108	112	Angle	90.00	1	1	-	-	-	-	2.000	Z
281	Beam	116	111	Angle	90.00	1	1	-	-	-	-	2.000	Z
282	Beam	113	117	Angle	90.00	1	1	-	-	-	-	2.000	Z
288	Beam	110	116	Angle	0.00	2	2	1	1	1	-	2.020	Y
289	Beam	117	112	Angle	0.00	2	2	1	1	1	-	2.020	Y
291	Beam	110	111	Angle	0.00	3	3	2	2	2	-	2.723	YZ
292	Beam	113	112	Angle	0.00	3	3	2	2	2	-	2.723	YZ
298	Beam	122	110	Angle	90.00	1	1	-	-	-	-	2.000	Z
299	Beam	112	123	Angle	90.00	1	1	-	-	-	-	2.000	Z
303	Beam	125	116	Angle	90.00	1	1	-	-	-	-	2.000	Z
304	Beam	117	126	Angle	90.00	1	1	-	-	-	-	2.000	Z
310	Beam	122	125	Angle	0.00	2	2	1	1	1	-	2.020	Y
311	Beam	126	123	Angle	0.00	2	2	1	1	1	-	2.020	Y
313	Beam	122	116	Angle	0.00	3	3	2	2	2	-	2.723	YZ
314	Beam	117	123	Angle	0.00	3	3	2	2	2	-	2.723	YZ
320	Beam	131	122	Angle	90.00	1	1	-	-	-	-	2.000	Z
321	Beam	123	132	Angle	90.00	1	1	-	-	-	-	2.000	Z
325	Beam	134	125	Angle	90.00	1	1	-	-	-	-	2.000	Z
326	Beam	126	135	Angle	90.00	1	1	-	-	-	-	2.000	Z
332	Beam	131	134	Angle	0.00	2	2	1	1	1	-	2.020	Y
333	Beam	135	132	Angle	0.00	2	2	1	1	1	-	2.020	Y
335	Beam	131	125	Angle	0.00	3	3	2	2	2	-	2.723	YZ
336	Beam	126	132	Angle	0.00	3	3	2	2	2	-	2.723	YZ
463	Beam	164	176	Angle	90.00	1	1	-	-	-	-	2.000	Z
464	Beam	177	165	Angle	90.00	1	1	-	-	-	-	2.000	Z
470	Beam	176	173	Angle	0.00	2	2	1	1	1	-	2.020	Y
471	Beam	174	177	Angle	0.00	2	2	1	1	1	-	2.020	Y
473	Beam	164	173	Angle	0.00	3	3	2	2	2	-	2.723	YZ
474	Beam	174	165	Angle	0.00	3	3	2	2	2	-	2.723	YZ
480	Beam	173	185	Angle	90.00	1	1	-	-	-	-	2.000	Z
481	Beam	186	174	Angle	90.00	1	1	-	-	-	-	2.000	Z
485	Beam	176	188	Angle	90.00	1	1	-	-	-	-	2.000	Z
486	Beam	189	177	Angle	90.00	1	1	-	-	-	-	2.000	Z
492	Beam	188	185	Angle	0.00	2	2	1	1	1	-	2.020	Y

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
493	Beam	186	189	Angle	0.00	2	2	1	1	1	-	2.020	Y
495	Beam	176	185	Angle	0.00	3	3	2	2	2	-	2.723	YZ
496	Beam	186	177	Angle	0.00	3	3	2	2	2	-	2.723	YZ
502	Beam	185	191	Angle	90.00	1	1	-	-	-	-	2.000	Z
503	Beam	192	186	Angle	90.00	1	1	-	-	-	-	2.000	Z
507	Beam	188	194	Angle	90.00	1	1	-	-	-	-	2.000	Z
508	Beam	195	189	Angle	90.00	1	1	-	-	-	-	2.000	Z
514	Beam	194	191	Angle	0.00	2	2	1	1	1	-	2.020	Y
515	Beam	192	195	Angle	0.00	2	2	1	1	1	-	2.020	Y
517	Beam	188	191	Angle	0.00	3	3	2	2	2	-	2.723	YZ
518	Beam	192	189	Angle	0.00	3	3	2	2	2	-	2.723	YZ
524	Beam	191	203	Angle	90.00	1	1	-	-	-	-	2.000	Z
525	Beam	204	192	Angle	90.00	1	1	-	-	-	-	2.000	Z
529	Beam	194	206	Angle	90.00	1	1	-	-	-	-	2.000	Z
530	Beam	207	195	Angle	90.00	1	1	-	-	-	-	2.000	Z
536	Beam	206	203	Angle	0.00	2	2	1	1	1	-	2.020	Y
537	Beam	204	207	Angle	0.00	2	2	1	1	1	-	2.020	Y
539	Beam	194	203	Angle	0.00	3	3	2	2	2	-	2.723	YZ
540	Beam	204	195	Angle	0.00	3	3	2	2	2	-	2.723	YZ
563	Beam	167	179	Angle	90.00	1	1	-	-	-	-	2.000	Z
564	Beam	180	168	Angle	90.00	1	1	-	-	-	-	2.000	Z
578	Beam	179	197	Angle	90.00	1	1	-	-	-	-	2.000	Z
579	Beam	198	180	Angle	90.00	1	1	-	-	-	-	2.000	Z
585	Beam	197	164	Angle	0.00	2	2	1	1	1	-	2.020	Y
586	Beam	165	198	Angle	0.00	2	2	1	1	1	-	2.020	Y
588	Beam	179	164	Angle	0.00	3	3	2	2	2	-	2.723	YZ
589	Beam	165	180	Angle	0.00	3	3	2	2	2	-	2.723	YZ
593	Beam	197	209	Angle	90.00	1	1	-	-	-	-	2.000	Z
594	Beam	210	198	Angle	90.00	1	1	-	-	-	-	2.000	Z
600	Beam	209	176	Angle	0.00	2	2	1	1	1	-	2.020	Y
601	Beam	177	210	Angle	0.00	2	2	1	1	1	-	2.020	Y
603	Beam	197	176	Angle	0.00	3	3	2	2	2	-	2.723	YZ
604	Beam	177	198	Angle	0.00	3	3	2	2	2	-	2.723	YZ
608	Beam	209	215	Angle	90.00	1	1	-	-	-	-	2.000	Z
609	Beam	216	210	Angle	90.00	1	1	-	-	-	-	2.000	Z
615	Beam	215	188	Angle	0.00	2	2	1	1	1	-	2.020	Y
616	Beam	189	216	Angle	0.00	2	2	1	1	1	-	2.020	Y
618	Beam	209	188	Angle	0.00	3	3	2	2	2	-	2.723	YZ
619	Beam	189	210	Angle	0.00	3	3	2	2	2	-	2.723	YZ
623	Beam	215	221	Angle	90.00	1	1	-	-	-	-	2.000	Z
624	Beam	222	216	Angle	90.00	1	1	-	-	-	-	2.000	Z
630	Beam	221	194	Angle	0.00	2	2	1	1	1	-	2.020	Y
631	Beam	195	222	Angle	0.00	2	2	1	1	1	-	2.020	Y
633	Beam	215	194	Angle	0.00	3	3	2	2	2	-	2.723	YZ
634	Beam	195	216	Angle	0.00	3	3	2	2	2	-	2.723	YZ
638	Beam	221	227	Angle	90.00	1	1	-	-	-	-	2.000	Z
639	Beam	228	222	Angle	90.00	1	1	-	-	-	-	2.000	Z
645	Beam	227	206	Angle	0.00	2	2	1	1	1	-	2.020	Y
646	Beam	207	228	Angle	0.00	2	2	1	1	1	-	2.020	Y
648	Beam	221	206	Angle	0.00	3	3	2	2	2	-	2.723	YZ
649	Beam	207	222	Angle	0.00	3	3	2	2	2	-	2.723	YZ
658	Beam	233	239	Angle	90.00	1	1	-	-	-	-	2.000	Z
659	Beam	240	234	Angle	90.00	1	1	-	-	-	-	2.000	Z
665	Beam	239	167	Angle	0.00	2	2	1	1	1	-	2.020	Y
666	Beam	168	240	Angle	0.00	2	2	1	1	1	-	2.020	Y
668	Beam	233	167	Angle	0.00	3	3	2	2	2	-	2.723	YZ
669	Beam	168	234	Angle	0.00	3	3	2	2	2	-	2.723	YZ
673	Beam	239	245	Angle	90.00	1	1	-	-	-	-	2.000	Z
674	Beam	246	240	Angle	90.00	1	1	-	-	-	-	2.000	Z
680	Beam	245	179	Angle	0.00	2	2	1	1	1	-	2.020	Y
681	Beam	180	246	Angle	0.00	2	2	1	1	1	-	2.020	Y
683	Beam	239	179	Angle	0.00	3	3	2	2	2	-	2.723	YZ
684	Beam	180	240	Angle	0.00	3	3	2	2	2	-	2.723	YZ
688	Beam	245	251	Angle	90.00	1	1	-	-	-	-	2.000	Z
689	Beam	252	246	Angle	90.00	1	1	-	-	-	-	2.000	Z
695	Beam	251	197	Angle	0.00	2	2	1	1	1	-	2.020	Y
696	Beam	198	252	Angle	0.00	2	2	1	1	1	-	2.020	Y
698	Beam	245	197	Angle	0.00	3	3	2	2	2	-	2.723	YZ
699	Beam	198	246	Angle	0.00	3	3	2	2	2	-	2.723	YZ
703	Beam	251	257	Angle	90.00	1	1	-	-	-	-	2.000	Z
704	Beam	258	252	Angle	90.00	1	1	-	-	-	-	2.000	Z
710	Beam	257	209	Angle	0.00	2	2	1	1	1	-	2.020	Y
711	Beam	210	258	Angle	0.00	2	2	1	1	1	-	2.020	Y
713	Beam	251	209	Angle	0.00	3	3	2	2	2	-	2.723	YZ
714	Beam	210	252	Angle	0.00	3	3	2	2	2	-	2.723	YZ
718	Beam	257	263	Angle	90.00	1	1	-	-	-	-	2.000	Z
719	Beam	264	258	Angle	90.00	1	1	-	-	-	-	2.000	Z
725	Beam	263	215	Angle	0.00	2	2	1	1	1	-	2.020	Y
726	Beam	216	264	Angle	0.00	2	2	1	1	1	-	2.020	Y
728	Beam	257	215	Angle	0.00	3	3	2	2	2	-	2.723	YZ
729	Beam	216	258	Angle	0.00	3	3	2	2	2	-	2.723	YZ
733	Beam	263	269	Angle	90.00	1	1	-	-	-	-	2.000	Z
734	Beam	270	264	Angle	90.00	1	1	-	-	-	-	2.000	Z
740	Beam	269	221	Angle	0.00	2	2	1	1	1	-	2.020	Y
741	Beam	222	270	Angle	0.00	2	2	1	1	1	-	2.020	Y
743	Beam	263	221	Angle	0.00	3	3	2	2	2	-	2.723	YZ
744	Beam	222	264	Angle	0.00	3	3	2	2	2	-	2.723	YZ
748	Beam	269	275	Angle	90.00	1	1	-	-	-	-	2.000	Z

1.7 MEMBERS

Mbr. No.	Member	Node Start	Node End	Rotation Type	β [°]	Cross-Section Start	Cross-Section End	Hinge No. Start	Hinge No. End	Ecc. No.	Div. No.	Length L [m]	
749	Beam	276	270	Angle	90.00	1	1	-	-	-	-	2.000	Z
755	Beam	275	227	Angle	0.00	2	2	1	1	1	-	2.020	Y
756	Beam	228	276	Angle	0.00	2	2	1	1	1	-	2.020	Y
758	Beam	269	227	Angle	0.00	3	3	2	2	2	-	2.723	YZ
759	Beam	228	270	Angle	0.00	3	3	2	2	2	-	2.723	YZ
767	Beam	281	233	Angle	0.00	2	2	1	1	1	-	1.040	Y
768	Beam	234	282	Angle	0.00	2	2	1	1	1	-	1.040	Y
770	Beam	281	287	Angle	90.00	1	1	-	-	-	-	2.000	Z
771	Beam	288	282	Angle	90.00	1	1	-	-	-	-	2.000	Z
777	Beam	287	239	Angle	0.00	2	2	1	1	1	-	1.040	Y
778	Beam	240	288	Angle	0.00	2	2	1	1	1	-	1.040	Y
780	Beam	281	239	Angle	0.00	3	3	2	2	2	-	2.123	YZ
781	Beam	240	282	Angle	0.00	3	3	2	2	2	-	2.123	YZ
785	Beam	287	293	Angle	90.00	1	1	-	-	-	-	2.000	Z
786	Beam	294	288	Angle	90.00	1	1	-	-	-	-	2.000	Z
792	Beam	293	245	Angle	0.00	2	2	1	1	1	-	1.040	Y
793	Beam	246	294	Angle	0.00	2	2	1	1	1	-	1.040	Y
795	Beam	287	245	Angle	0.00	3	3	2	2	2	-	2.123	YZ
796	Beam	246	288	Angle	0.00	3	3	2	2	2	-	2.123	YZ
800	Beam	293	299	Angle	90.00	1	1	-	-	-	-	2.000	Z
801	Beam	300	294	Angle	90.00	1	1	-	-	-	-	2.000	Z
807	Beam	299	251	Angle	0.00	2	2	1	1	1	-	1.040	Y
808	Beam	252	300	Angle	0.00	2	2	1	1	1	-	1.040	Y
810	Beam	293	251	Angle	0.00	3	3	2	2	2	-	2.123	YZ
811	Beam	252	294	Angle	0.00	3	3	2	2	2	-	2.123	YZ
815	Beam	299	305	Angle	90.00	1	1	-	-	-	-	2.000	Z
816	Beam	306	300	Angle	90.00	1	1	-	-	-	-	2.000	Z
822	Beam	305	257	Angle	0.00	2	2	1	1	1	-	1.040	Y
823	Beam	258	306	Angle	0.00	2	2	1	1	1	-	1.040	Y
825	Beam	299	257	Angle	0.00	3	3	2	2	2	-	2.123	YZ
826	Beam	258	300	Angle	0.00	3	3	2	2	2	-	2.123	YZ
830	Beam	305	311	Angle	90.00	1	1	-	-	-	-	2.000	Z
831	Beam	312	306	Angle	90.00	1	1	-	-	-	-	2.000	Z
837	Beam	311	263	Angle	0.00	2	2	1	1	1	-	1.040	Y
838	Beam	264	312	Angle	0.00	2	2	1	1	1	-	1.040	Y
840	Beam	305	263	Angle	0.00	3	3	2	2	2	-	2.123	YZ
841	Beam	264	306	Angle	0.00	3	3	2	2	2	-	2.123	YZ
845	Beam	311	317	Angle	90.00	1	1	-	-	-	-	2.000	Z
846	Beam	318	312	Angle	90.00	1	1	-	-	-	-	2.000	Z
852	Beam	317	269	Angle	0.00	2	2	1	1	1	-	1.040	Y
853	Beam	270	318	Angle	0.00	2	2	1	1	1	-	1.040	Y
855	Beam	311	269	Angle	0.00	3	3	2	2	2	-	2.123	YZ
856	Beam	270	312	Angle	0.00	3	3	2	2	2	-	2.123	YZ
860	Beam	317	323	Angle	90.00	1	1	-	-	-	-	2.000	Z
861	Beam	325	318	Angle	90.00	1	1	-	-	-	-	2.000	Z
867	Beam	323	275	Angle	0.00	2	2	1	1	1	-	1.040	Y
868	Beam	276	325	Angle	0.00	2	2	1	1	1	-	1.040	Y
870	Beam	317	275	Angle	0.00	3	3	2	2	2	-	2.123	YZ
871	Beam	276	318	Angle	0.00	3	3	2	2	2	-	2.123	YZ
878	Truss (N only)	134	293	Angle	0.00	12	12	-	-	-	-	4.880	Y
879	Truss (N only)	116	281	Angle	0.00	12	12	-	-	-	-	4.880	Y
880	Truss (N only)	294	135	Angle	0.00	12	12	-	-	-	-	4.880	Y
881	Truss (N only)	282	117	Angle	0.00	12	12	-	-	-	-	4.880	Y
884	Beam	70	338	Angle	0.00	4	4	-	-	-	-	1.106	YZ
885	Beam	327	332	Angle	0.00	14	14	-	-	-	-	2.822	YZ
886	Beam	328	329	Angle	0.00	14	14	-	-	-	-	2.822	YZ
887	Beam	329	341	Angle	0.00	14	14	-	-	-	-	1.000	YZ
888	Beam	330	340	Angle	0.00	14	14	-	-	-	-	1.000	YZ
889	Beam	331	327	Angle	0.00	14	14	-	-	-	-	2.822	YZ
890	Beam	332	333	Angle	0.00	14	14	-	-	-	-	2.822	YZ
891	Beam	333	339	Angle	0.00	14	14	-	-	-	-	1.822	YZ
892	Beam	334	335	Angle	0.00	14	14	-	-	-	-	2.822	YZ
893	Beam	335	337	Angle	0.00	14	14	-	3	-	-	1.716	YZ
894	Tension	338	337	Angle	0.00	15	15	-	-	-	-	24.736	Y
895	Beam	234	113	Angle	0.00	14	14	-	-	-	-	6.296	YZ
896	Beam	233	111	Angle	0.00	14	14	-	-	-	-	6.296	YZ
897	Tension	132	330	Angle	0.00	15	15	-	-	-	-	13.962	YZ
898	Tension	131	333	Angle	0.00	15	15	-	-	-	-	13.962	YZ
899	Beam	63	337	Angle	0.00	4	4	-	-	-	-	1.074	YZ
900	Beam	338	328	Angle	0.00	14	14	3	-	-	-	1.716	YZ
901	Beam	64	338	Angle	0.00	4	4	-	-	-	-	1.074	YZ
902	Tension	294	117	Angle	0.00	8	8	-	-	-	-	6.310	YZ
903	Tension	282	135	Angle	0.00	8	8	-	-	-	-	6.310	YZ
904	Tension	134	281	Angle	0.00	8	8	-	-	-	-	6.310	YZ
905	Tension	116	293	Angle	0.00	8	8	-	-	-	-	6.310	YZ
906	Beam	339	334	Angle	0.00	14	14	-	-	-	-	1.000	YZ
907	Beam	340	331	Angle	0.00	14	14	-	-	-	-	1.822	YZ
908	Beam	341	330	Angle	0.00	14	14	-	-	-	-	1.822	YZ



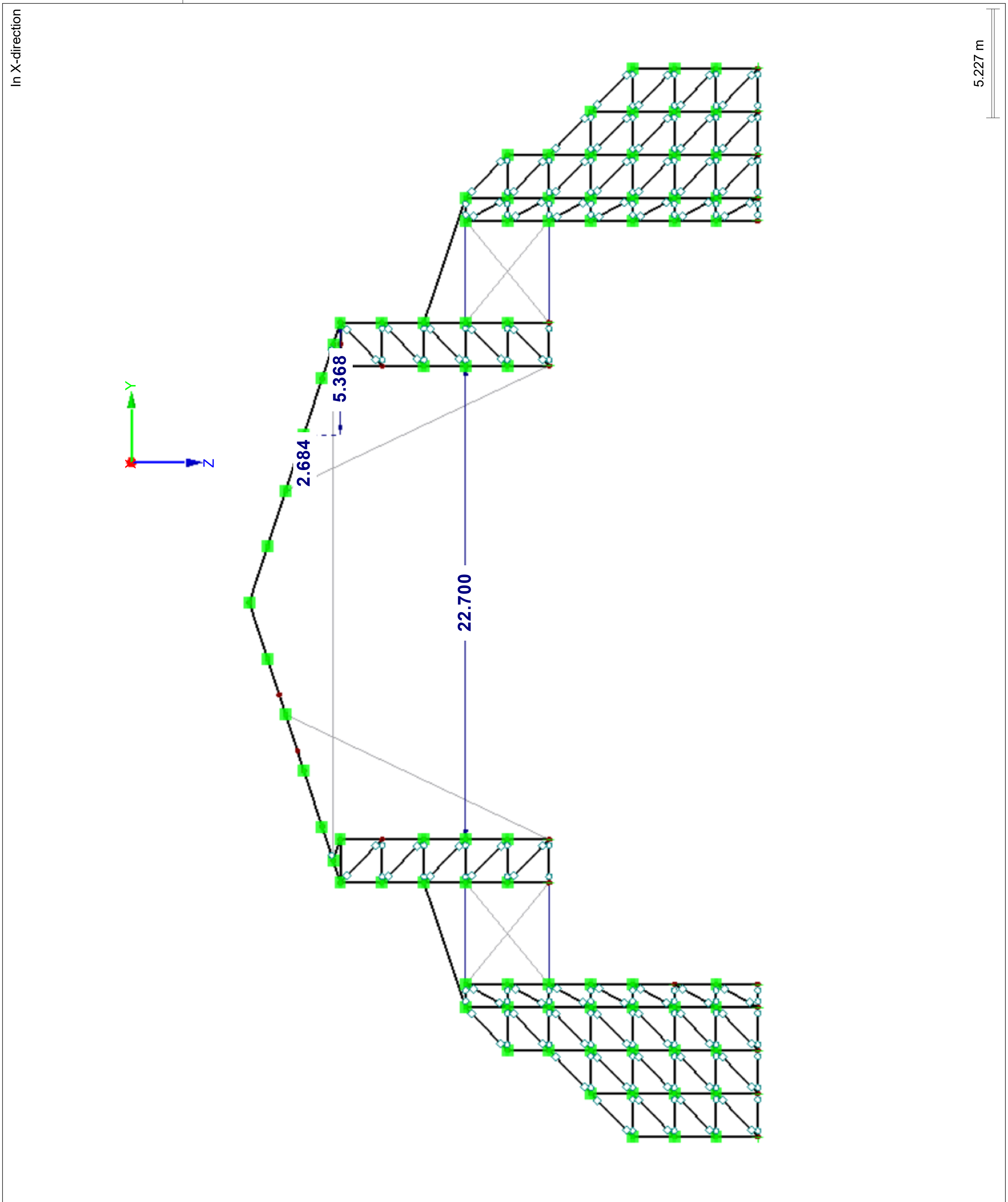
1.8 NODAL SUPPORTS

Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	203,204, 206,207, 227,228, 275,276, 323,325	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
2	312	XYZ	0.00	0.00	0.00	☐	☐	Spring	☐	☐	☐	☒
3	on next row:	XYZ	0.00	0.00	0.00	☐	☒	☐	☐	☐	☐	☒
	63,64,69,70,94,95,107,108,110-113,116,117,122,123,125,126,164,165,167,168,173,174,176,177,179,180,185,186,188, 189,191,192,194,195,197,198,209,210,215,216,221,222,233,234,239,240,245,246,251,252,257,258,263,264,269,270, 281,282,287,288,293,294,299,300,305,306,311,317,318,327-335,337,338											
4	132	XYZ	0.00	0.00	0.00	☐	Spring	Spring	Spring	☐	☐	☒
5	131,134,135	XYZ	0.00	0.00	0.00	☐	Spring	☐	Spring	☐	☐	☒

1.8.2 NODAL SUPPORTS - SPRINGS

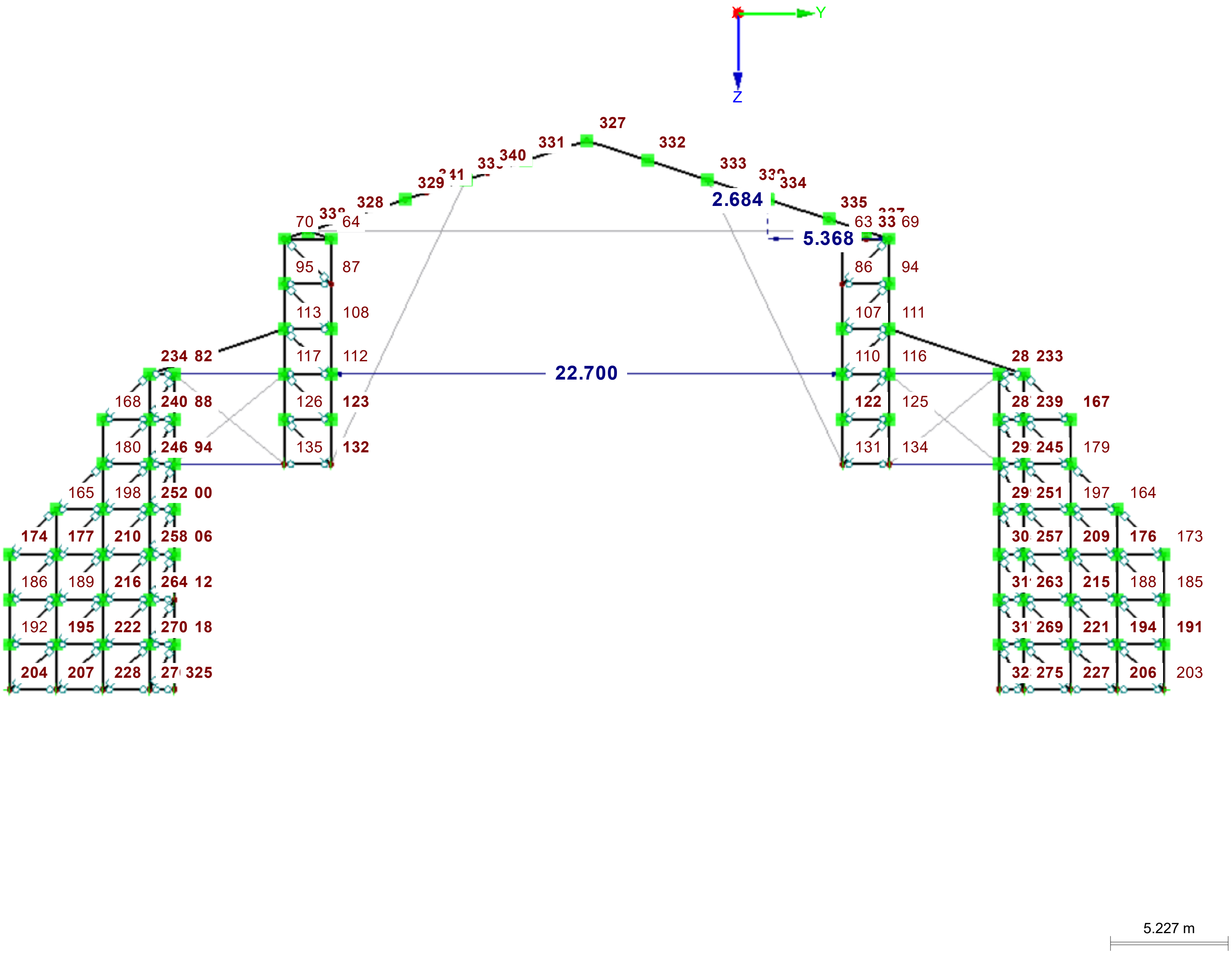
Support No.	Nodes No.	Translation Spring [kN/m] $C_{u,X'}$	$C_{u,Y'}$	$C_{u,Z'}$	Rotation Spring [kNm/rad] $C_{\varphi,X'}$	$C_{\varphi,Y'}$	$C_{\varphi,Z'}$
1	203,204,206,207,227,228, 275,276,323,325	5000.000	5000.000	5000.000	-	-	-
2	312	-	1000.000	-	-	-	-
4	132	5000.000	1000.000	5000.000	-	-	-
5	131,134,135	5000.000	-	5000.000	-	-	-

MODEL



Node Numbering

In X-direction



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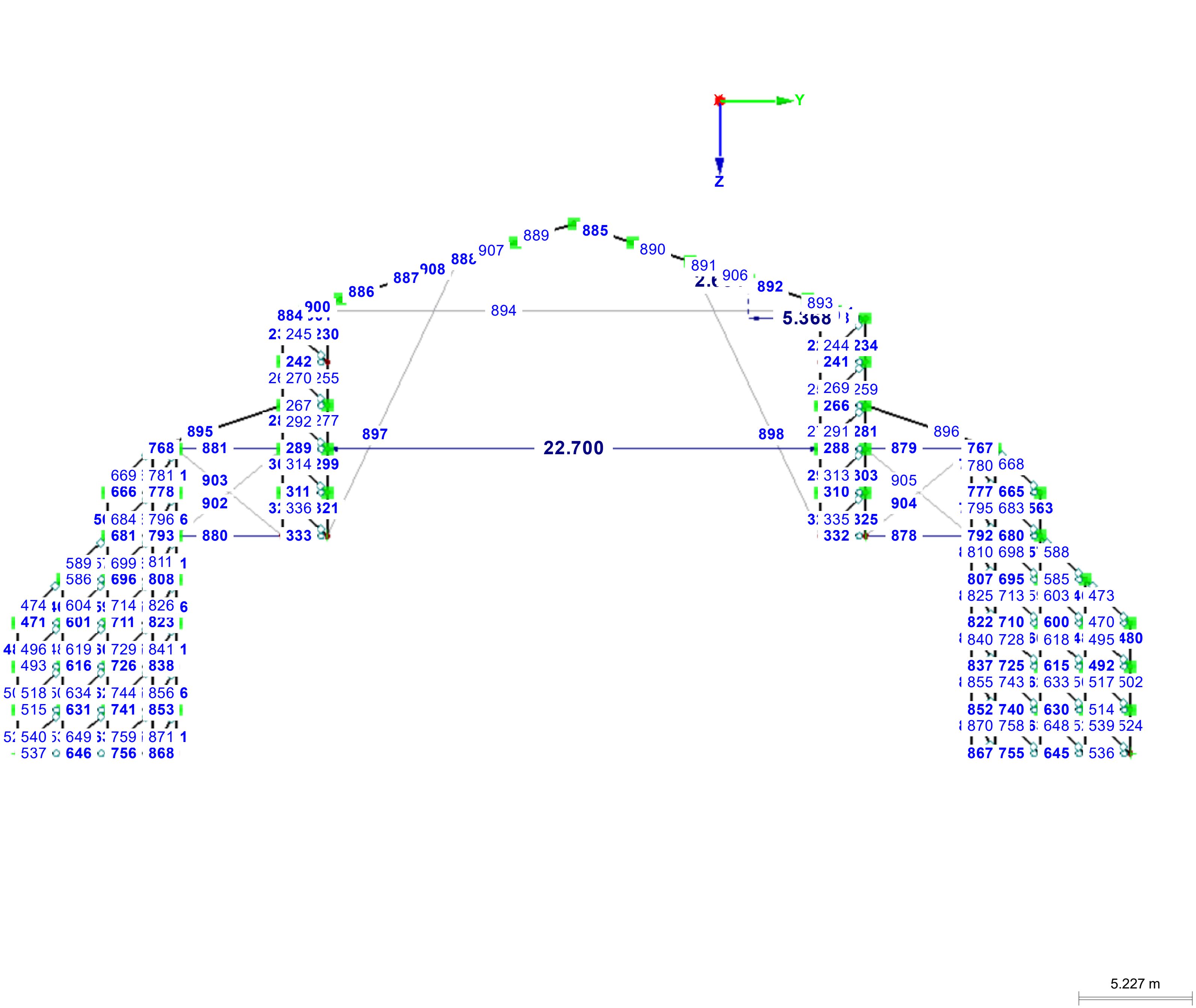
Project: 2023
Model: K-Dach-1-ok
Date: 15.12.2023

Member Numbering

In X-direction



■ MODEL

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Project: 2023

Model: K-Dach-1-ok

Date: 15.12.2023

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MODEL

2.1 LOAD CASES

Load Case	Load Case Description	No Standard Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	EG	Permanent	☐			
LC2	Live Load	Imposed	☐			
LC3	Wind - 1	Wind	☐			
LC4	Wind - 2	Wind	☐			
LC5	Snow	Imposed	☐			
LC6	Earthquake	Accidental	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	EG	Method of analysis	: ■	Geometrically linear analysis
LC2	Live Load	Method of analysis	: ■	Geometrically linear analysis
LC3	Wind - 1	Method of analysis	: ■	Geometrically linear analysis
LC4	Wind - 2	Method of analysis	: ■	Geometrically linear analysis
LC5	Snow	Method of analysis	: ■	Geometrically linear analysis
LC6	Earthquake	Method of analysis	: ■	Geometrically linear analysis

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	EG
			2	1.50	LC2	Live Load
CO2		Bem-2	1	1.35	LC1	EG
			2	1.50	LC5	Snow
CO3		Bem-3	1	0.90	LC1	EG
			2	1.50	LC3	Wind - 1
CO4		Bem-4	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
CO5		Bem-5	1	1.35	LC1	EG
			2	1.50	LC4	Wind - 2
			3	1.50	LC5	Snow
CO6		Eathquake	1	1.00	LC1	EG
			2	1.00	LC6	Earthquake

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO4	Bem-4	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO5	Bem-5	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO6	Eathquake	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	Min_max	CO1 or CO2 or CO3 or CO4 or CO5 or CO6

LC1
EG

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: EG

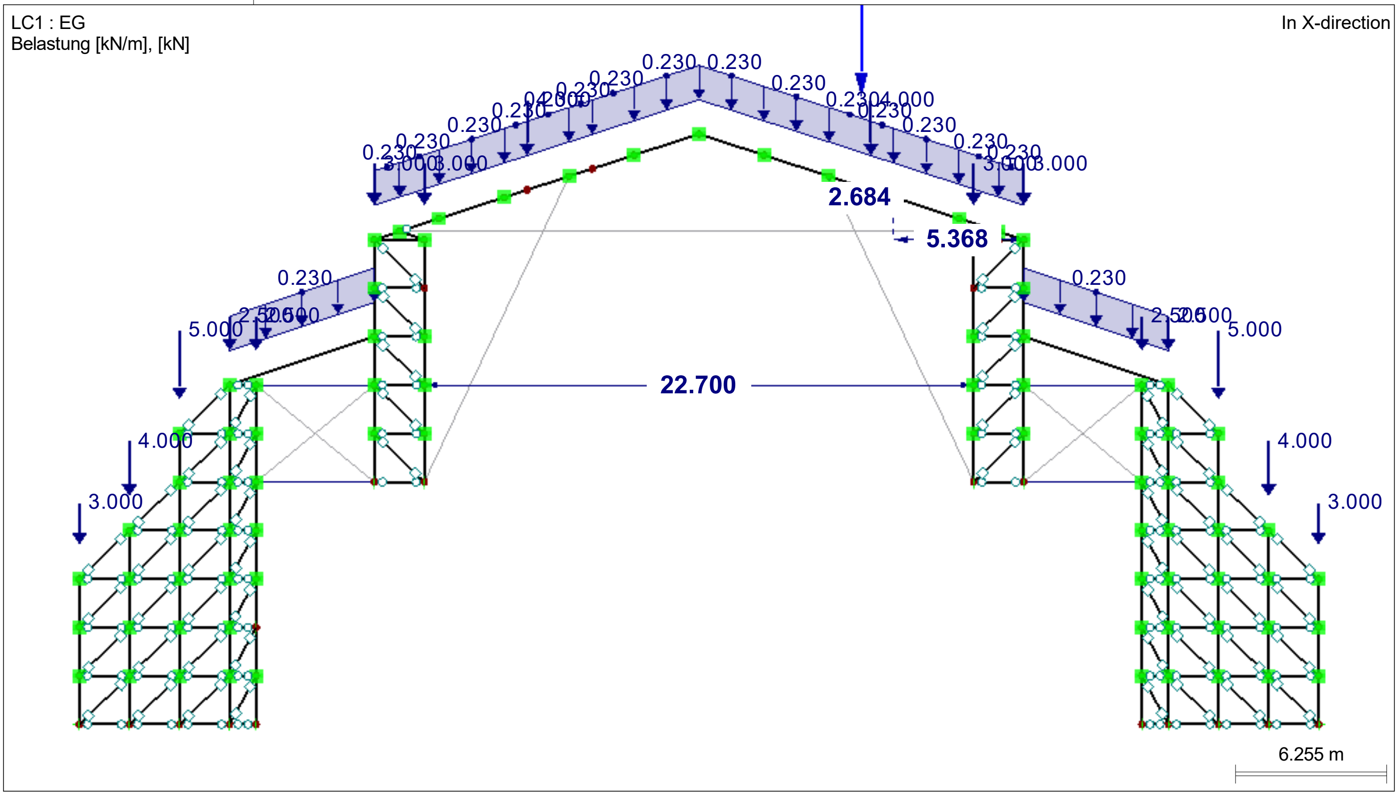
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	164,339,341	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
2	165	0 | Global XYZ	0.000	0.000	4.000	0.000	0.000	0.000
3	233,281	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
4	63,64,69,70,173	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
5	167	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
6	234,282	0 | Global XYZ	0.000	0.000	2.500	0.000	0.000	0.000
7	174	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000
8	168	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: EG

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884-893, 895,896, 900,906-908	Force	Uniform	Z	True Length	p	0.230	kN/m

LC1: EG



LC2
Live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: Live Load

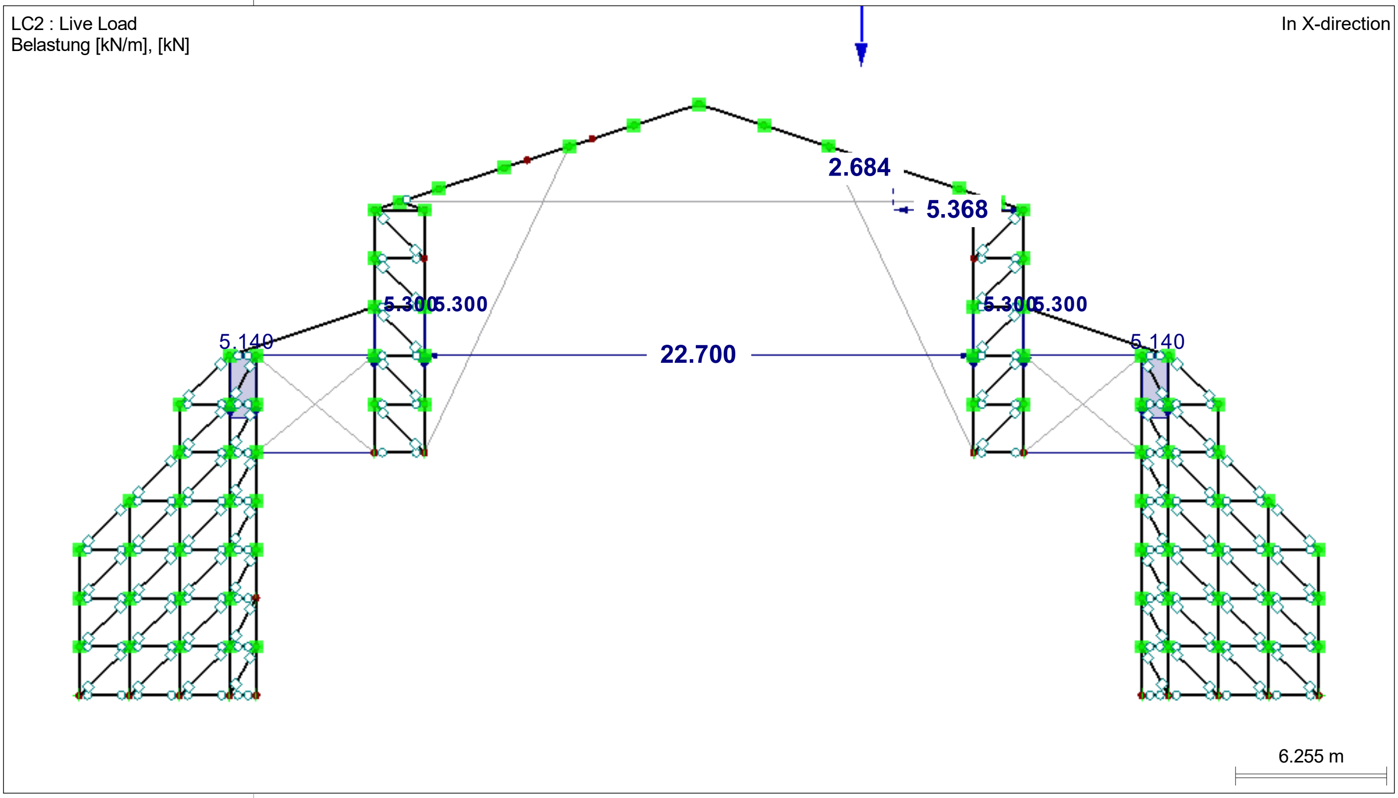
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	122,125	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000
2	123,126	0 | Global XYZ	0.000	0.000	5.300	0.000	0.000	0.000

3.2 MEMBER LOADS

LC2: Live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	792	Force	Uniform	Z	True Length	p	5.140	kN/m
2	Members	793	Force	Uniform	Z	True Length	p	5.140	kN/m

LC2: LIVE LOAD



LC3
Wind - 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Wind - 1

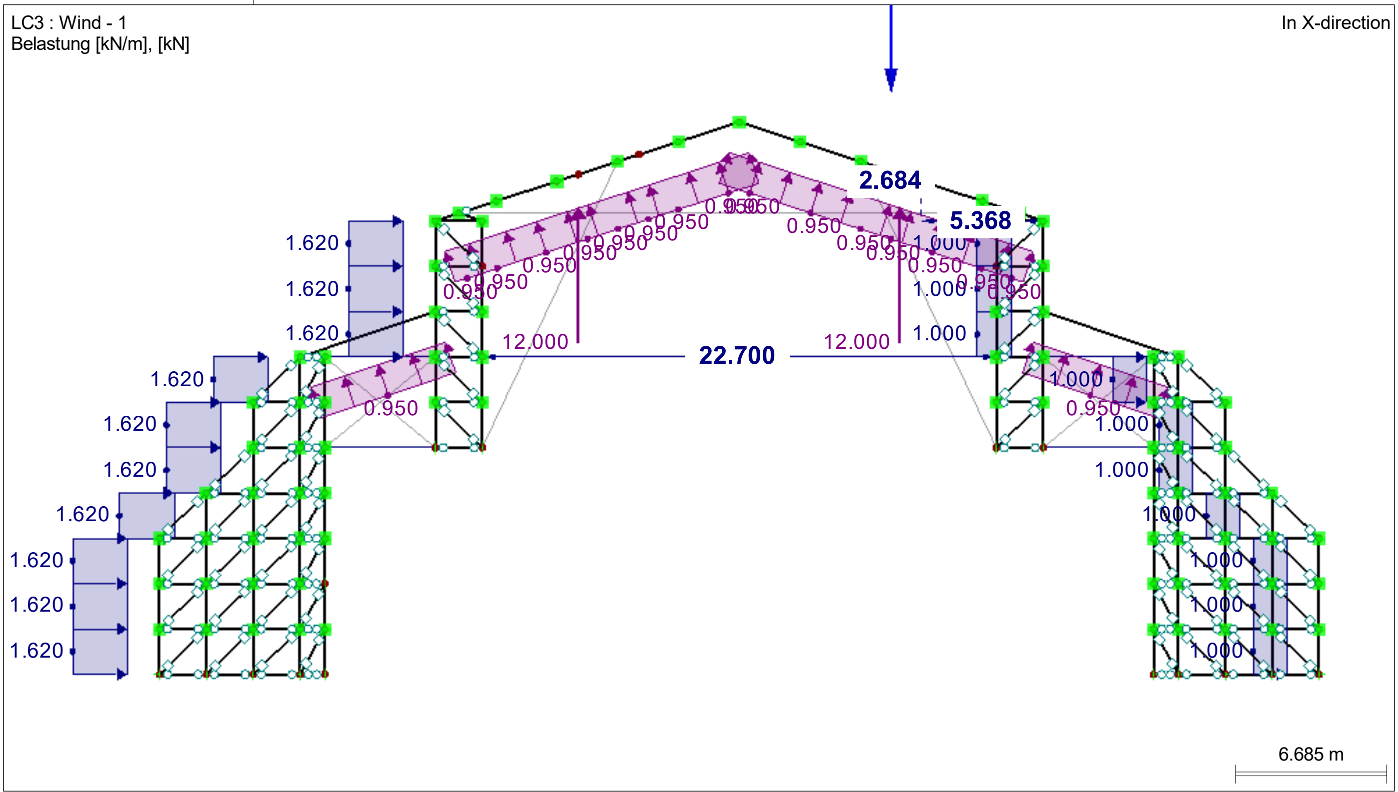
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	339,341	0 | Global XYZ	0.000	0.000	-12.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC3: Wind - 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	234,259,281,463,480,502,524,563,578,658	Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members	235,260,282,464,481,503,525,564,659	Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,884,886, 892,893, 895,896,900	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,887-891, 906-908	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	579	Force	Uniform	Y	True Length	p	1.620	kN/m

LC3: WIND - 1



LC4
Wind - 2

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Wind - 2

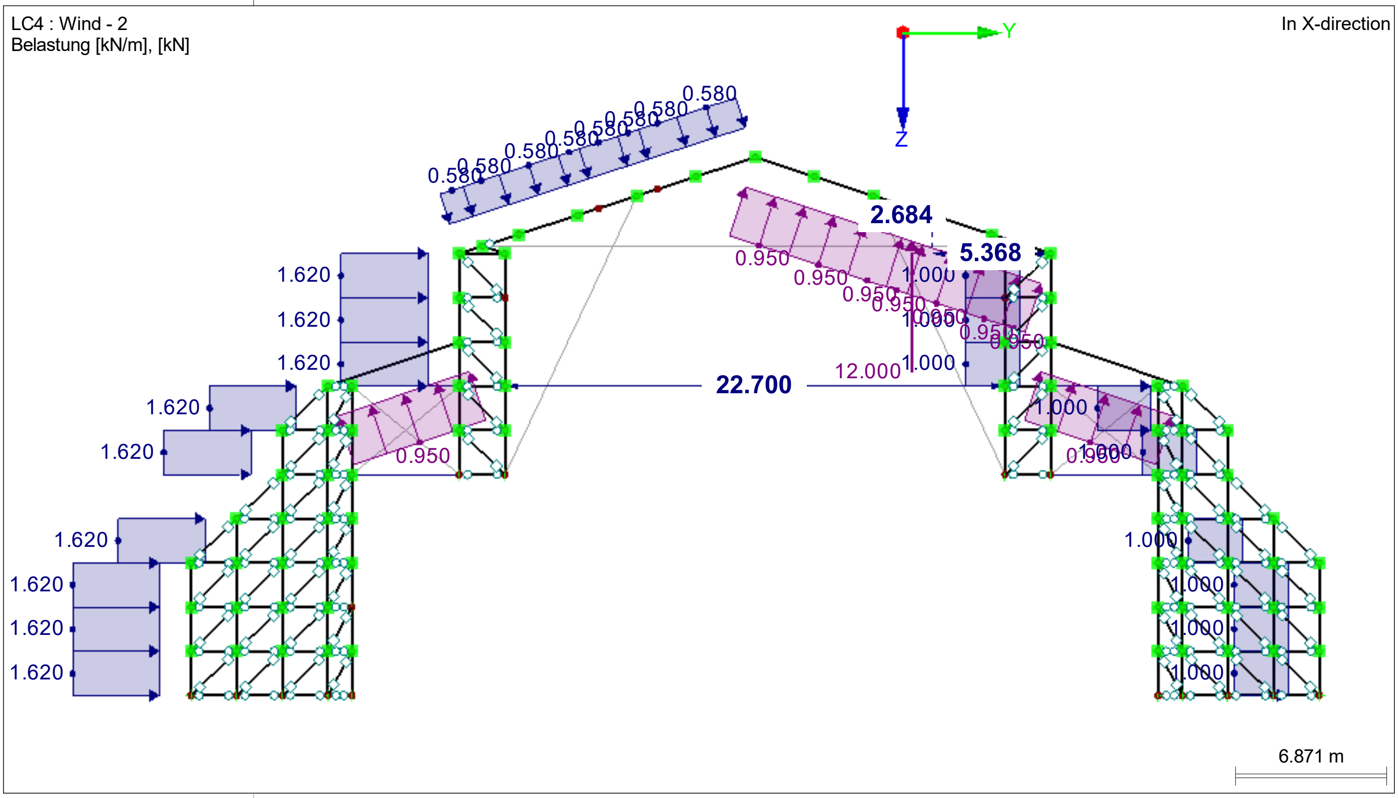
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	339	0 | Global XYZ	0.000	0.000	-12.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC4: Wind - 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Symbol	Value	Unit
1	Members 234,259,281,463,480,502,524,563,658		Force	Uniform	Y	True Length	p	1.000	kN/m
2	Members 235,260,282,464,481,503,525,564,659		Force	Uniform	Y	True Length	p	1.620	kN/m
3	Members	1,892,893, 895,896	Force	Uniform	z	True Length	p	-0.950	kN/m
4	Members	885,890, 891,906	Force	Uniform	z	True Length	p	-0.950	kN/m
5	Members	884,886,900	Force	Uniform	z	True Length	p	0.580	kN/m
6	Members	887-889,907, 908	Force	Uniform	z	True Length	p	0.580	kN/m

LC4: WIND - 2



LC5
Snow

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC5: Snow

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	339,341	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC5: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	1,884,895, 896	Force	Uniform	Z	Projection Z	p	0.640	kN/m
2	Members	885-893,900, 906-908	Force	Uniform	Z	Projection Z	p	0.320	kN/m

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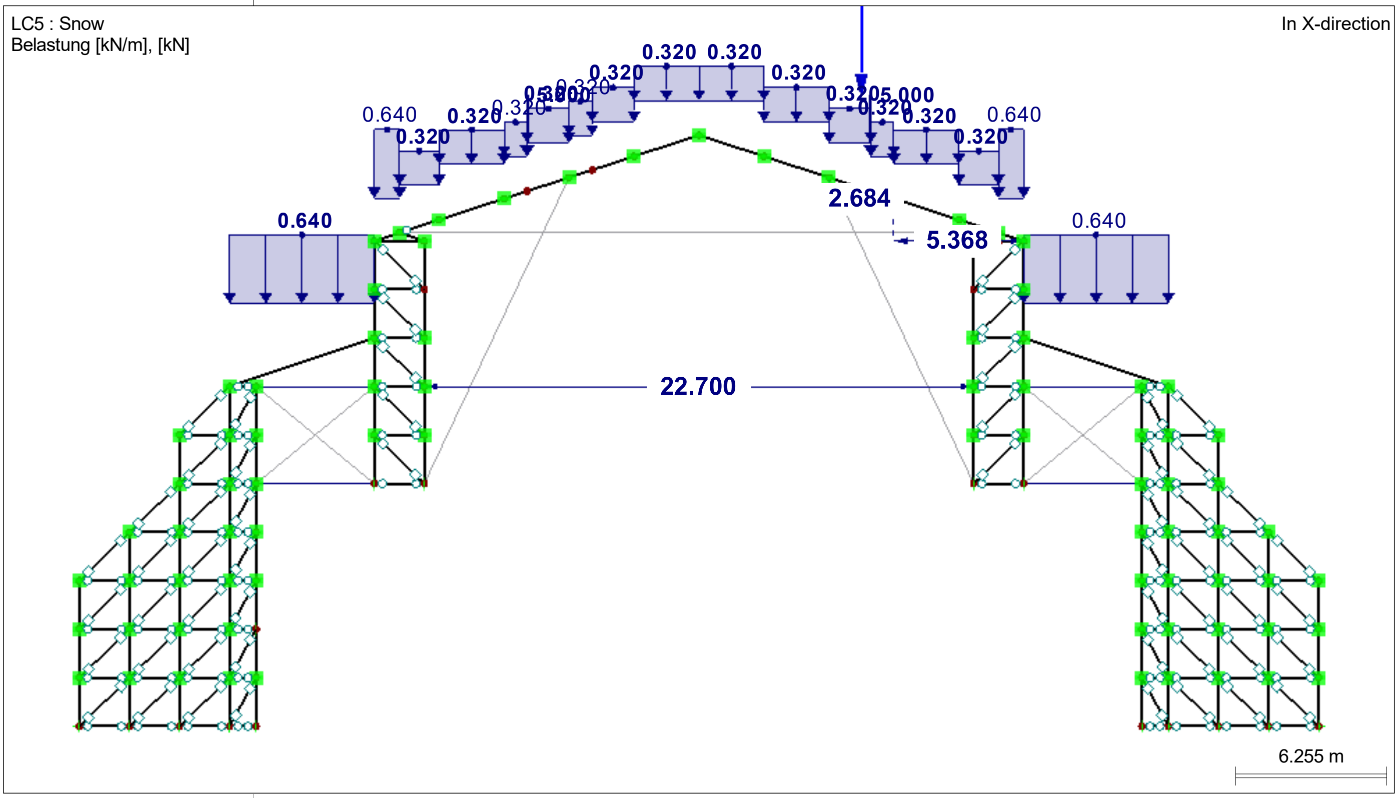
Project: 2023 Model: K-Dach-1-ok Date: 15.12.2023

LC5: SNOW



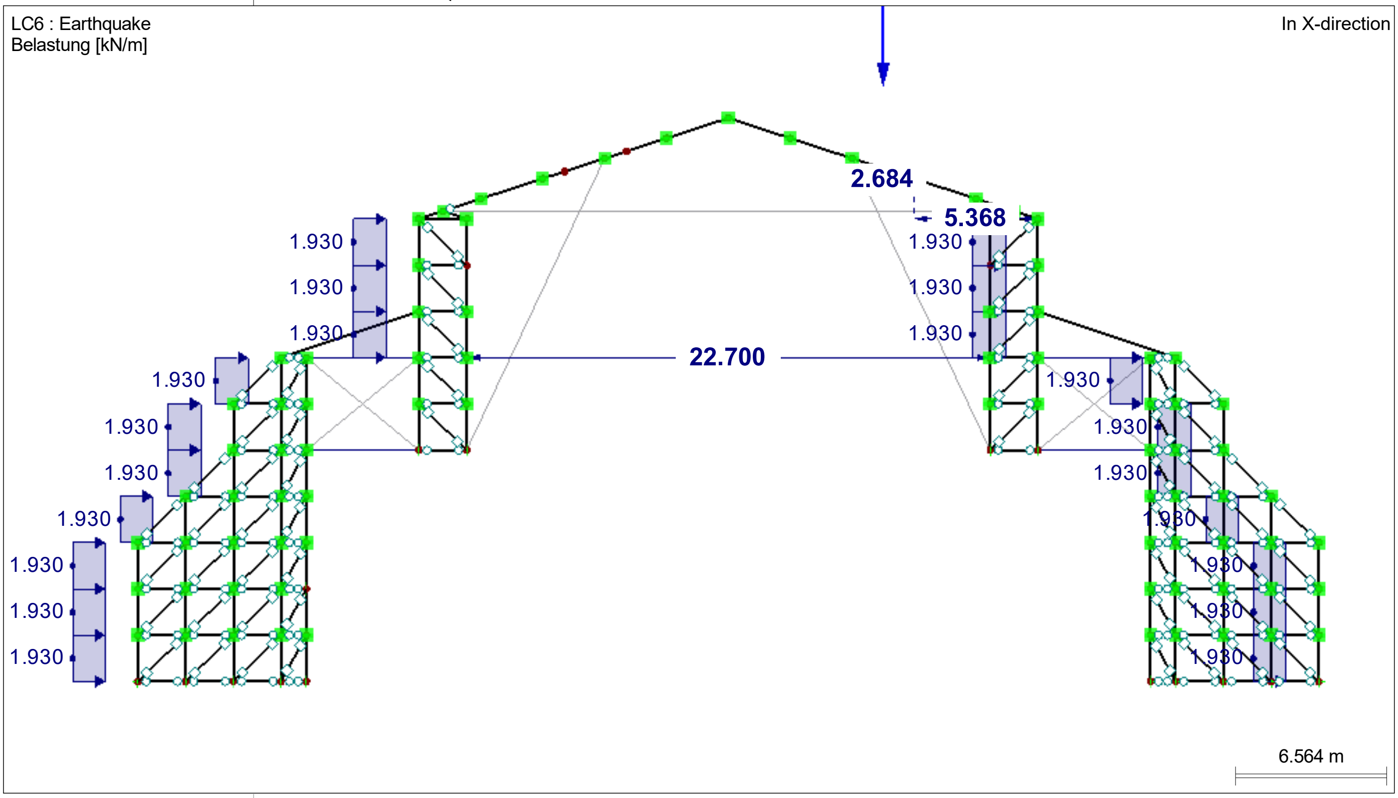
LC6
Earthquake

3.2 MEMBER LOADS

LC6: Earthquake

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members		Force	Uniform	Y	True Length	p	1.930	kN/m
	234,259,281,463,480,502,524,563,578,658								
2	Members		Force	Uniform	Y	True Length	p	1.930	kN/m
	235,260,282,464,481,503,525,564,659								
5	Members	579	Force	Uniform	Y	True Length	p	1.930	kN/m

LC6: EARTHQUAKE



■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
LC1 - EG			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	-0.00	kN	
Sum of loads in Z	63.39	kN	
Sum of support reactions in Z	63.39	kN	Deviation -0.00%
Resultant of reactions about X	-0.09	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	-0.60	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.1	mm	Member No. 242, x: 1.313 m
Max displacement in Y	5.7	mm	Member No. 1, x: 0.000 m
Max displacement in Z	18.9	mm	Member No. 885, x: 0.000 m
Max vectorial displacement	18.9	mm	Member No. 885, x: 0.000 m
Max rotation about X	-2.7	mrad	Member No. 893, x: 1.716 m
Max rotation about Y	0.2	mrad	Member No. 1, x: 1.106 m
Max rotation about Z	-0.3	mrad	Member No. 241, x: 0.000 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	3		
LC2 - Live Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	-0.00	kN	
Sum of loads in Z	31.89	kN	
Sum of support reactions in Z	31.89	kN	Deviation 0.00%
Resultant of reactions about X	-0.04	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	-0.30	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	Member No. 564, x: 1.400 m
Max displacement in Y	-1.6	mm	Member No. 800, x: 0.700 m
Max displacement in Z	3.3	mm	Member No. 792, x: 0.520 m
Max vectorial displacement	3.4	mm	Member No. 792, x: 0.520 m
Max rotation about X	-7.2	mrad	Member No. 792, x: 0.988 m
Max rotation about Y	0.1	mrad	Member No. 666, x: 0.000 m
Max rotation about Z	0.1	mrad	Member No. 242, x: 2.020 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	3		
LC3 - Wind - 1			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	-0.00	kN	
Sum of loads in Y	52.40	kN	
Sum of support reactions in Y	52.40	kN	Deviation 0.00%
Sum of loads in Z	-60.84	kN	
Sum of support reactions in Z	-60.84	kN	Deviation 0.00%
Resultant of reactions about X	-100.68	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	0.58	kNm	At center of gravity of model
Resultant of reactions about Z	0.50	kNm	At center of gravity of model
Max displacement in X	-1.2	mm	Member No. 638, x: 1.200 m
Max displacement in Y	49.8	mm	Member No. 281, x: 1.000 m
Max displacement in Z	-14.4	mm	Member No. 891, x: 0.820 m
Max vectorial displacement	49.9	mm	Member No. 281, x: 1.000 m
Max rotation about X	12.5	mrad	Member No. 464, x: 0.300 m
Max rotation about Y	3.7	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	1.9	mrad	Member No. 648, x: 2.723 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC4 - Wind - 2			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	53.83	kN	
Sum of support reactions in Y	53.83	kN	Deviation 0.00%
Sum of loads in Z	-28.31	kN	
Sum of support reactions in Z	-28.31	kN	Deviation 0.00%
Resultant of reactions about X	-239.97	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
Resultant of reactions about Y	0.27	kNm	At center of gravity of model
Resultant of reactions about Z	0.51	kNm	At center of gravity of model
Max displacement in X	-1.7	mm	Member No. 638, x: 1.200 m
Max displacement in Y	83.5	mm	Member No. 906, x: 0.200 m
Max displacement in Z	20.8	mm	Member No. 908, x: 1.549 m
Max vectorial displacement	84.7	mm	Member No. 906, x: 0.200 m
Max rotation about X	16.4	mrad	Member No. 260, x: 1.200 m
Max rotation about Y	5.2	mrad	Member No. 536, x: 0.000 m
Max rotation about Z	-3.3	mrad	Member No. 242, x: 2.020 m
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	2		
LC5 - Snow			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	-0.00	kN	
	Sum of loads in Z	26.90	kN	
	Sum of support reactions in Z	26.90	kN	Deviation 0.00%
	Resultant of reactions about X	-0.04	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
	Resultant of reactions about Y	-0.26	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.1	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	7.4	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	23.1	mm	
	Max vectorial displacement	23.2	mm	
	Max rotation about X	-3.5	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.3	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	0.5	mrad	Member No. 242, x: 2.020 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	LC6 - Earthquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	77.20	kN	
	Sum of support reactions in Y	77.20	kN	Deviation 0.00%
	Sum of loads in Z	0.00	kN	
	Sum of support reactions in Z	-0.00	kN	
	Resultant of reactions about X	-148.45	kNm	At center of gravity of model (X:-0.01, Y:-6.71, Z:18.08 m)
	Resultant of reactions about Y	0.00	kNm	At center of gravity of model
	Resultant of reactions about Z	0.74	kNm	At center of gravity of model
	Max displacement in X	-3.1	mm	Member No. 638, x: 1.200 m
	Max displacement in Y	126.7	mm	Member No. 563, x: 0.800 m
	Max displacement in Z	24.7	mm	Member No. 907, x: 1.184 m
	Max vectorial displacement	126.7	mm	Member No. 563, x: 0.800 m
	Max rotation about X	24.0	mrad	Member No. 524, x: 1.700 m
	Max rotation about Y	9.3	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	4.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	3		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	133.41	kN	
	Sum of support reactions in Z	133.41	kN	Deviation -0.00%
	Max displacement in X	0.2	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	7.9	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	28.7	mm	
	Max vectorial displacement	28.7	mm	
	Max rotation about X	11.0	mrad	Member No. 792, x: 0.052 m
	Max rotation about Y	0.4	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	-0.6	mrad	Member No. 229, x: 0.000 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	125.93	kN	
	Sum of support reactions in Z	125.93	kN	Deviation -0.00%
	Max displacement in X	0.4	mm	Member No. 242, x: 1.313 m
	Max displacement in Y	20.4	mm	Member No. 1, x: 0.000 m
	Max displacement in Z	64.8	mm	Member No. 885, x: 0.000 m
	Max vectorial displacement	64.9	mm	Member No. 885, x: 0.000 m
	Max rotation about X	-9.4	mrad	Member No. 893, x: 1.716 m
	Max rotation about Y	0.8	mrad	Member No. 1, x: 1.106 m
	Max rotation about Z	1.3	mrad	Member No. 242, x: 2.020 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	78.60	kN	
	Sum of support reactions in Y	78.60	kN	Deviation 0.00%
	Sum of loads in Z	-34.21	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Z	-34.21	kN	Deviation -0.00%
	Max displacement in X	-2.2	mm	Member No. 529, x: 1.200 m
	Max displacement in Y	84.3	mm	Member No. 281, x: 1.000 m
	Max displacement in Z	-15.7	mm	Member No. 891, x: 1.367 m
	Max vectorial displacement	84.4	mm	Member No. 281, x: 1.000 m
	Max rotation about X	19.4	mrad	Member No. 464, x: 0.300 m
	Max rotation about Y	6.5	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	3.3	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO4 - Bem-4			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	-0.00	kN	
	Sum of loads in Y	80.75	kN	
	Sum of support reactions in Y	80.75	kN	Deviation 0.00%
	Sum of loads in Z	43.11	kN	
	Sum of support reactions in Z	43.11	kN	Deviation 0.00%
	Max displacement in X	3.4	mm	Member No. 277, x: 0.900 m
	Max displacement in Y	136.4	mm	Member No. 234, x: 1.000 m
	Max displacement in Z	42.0	mm	Member No. 908, x: 1.822 m
	Max vectorial displacement	138.3	mm	Member No. 908, x: 1.822 m
	Max rotation about X	26.6	mrad	Member No. 235, x: 1.600 m
	Max rotation about Y	9.2	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	4.7	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	4		
	Calculate critical load factor	☐		
	CO5 - Bem-5			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	80.75	kN	
	Sum of support reactions in Y	80.75	kN	Deviation 0.00%
	Sum of loads in Z	83.47	kN	
	Sum of support reactions in Z	83.47	kN	Deviation -0.00%
	Max displacement in X	4.7	mm	Member No. 277, x: 0.900 m
	Max displacement in Y	162.9	mm	Member No. 234, x: 1.300 m
	Max displacement in Z	62.2	mm	Member No. 888, x: 0.700 m
	Max vectorial displacement	165.1	mm	Member No. 888, x: 0.650 m
	Max rotation about X	31.0	mrad	Member No. 235, x: 1.600 m
	Max rotation about Y	10.2	mrad	Member No. 267, x: 2.020 m
	Max rotation about Z	5.2	mrad	Member No. 270, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	CO6 - Eathquake			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	77.20	kN	
	Sum of support reactions in Y	77.20	kN	Deviation 0.00%
	Sum of loads in Z	63.39	kN	
	Sum of support reactions in Z	63.39	kN	Deviation -0.00%
	Max displacement in X	-3.5	mm	Member No. 529, x: 1.200 m
	Max displacement in Y	134.8	mm	Member No. 658, x: 1.100 m
	Max displacement in Z	37.9	mm	Member No. 889, x: 0.564 m
	Max vectorial displacement	134.9	mm	Member No. 658, x: 1.100 m
	Max rotation about X	26.9	mrad	Member No. 524, x: 1.700 m
	Max rotation about Y	10.3	mrad	Member No. 536, x: 0.000 m
	Max rotation about Z	5.3	mrad	Member No. 648, x: 2.723 m
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	5		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	4.7	mm	CO5, Member No. 277, x: 0.900 m
	Max displacement in Y	162.9	mm	CO5, Member No. 234, x: 1.300 m
	Max displacement in Z	64.8	mm	CO2, Member No. 885, x: 0.000 m
	Max vectorial displacement	165.1	mm	CO5, Member No. 888, x: 0.650 m
	Max rotation about X	31.0	mrad	CO5, Member No. 235, x: 1.600 m

■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
Max rotation about Y	10.3	mrad	CO6, Member No. 536, x: 0.000 m
Max rotation about Z	5.3	mrad	CO6, Member No. 648, x: 2.723 m
Number of 1D finite elements (member elements)	220		
Number of FE mesh nodes	103		
Number of equations	618		
Max number of iterations	100		
Divisions of members for member results	10		
Divisions of cable, foundation, or tapered members	10		
Activate shear rigidity (A-y, A-z) of members	☐		
Activate Release Nonlinearities	☒		
Activate failed members	☒		

Other Settings	Max number of iterations	:	100
	Number of divisions for member results	:	10
	Member divisions, cables, foundation or tapered members	:	10
	Number of member divisions for searching maximum values	:	20
Options	☐ Activate shear stiffness of members (Ay, Az)		
	☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
	☒ Apply temperature/deformation load actions without stiffness modifications		
Precision and Tolerance	☐ Change default setting		
Nonlinear effects - Activate	☐ Support and elastic foundations		
	☒ Failing members due to member type		
	☒ Member hinges		
	☐ Member elastic foundation		
	☐ Member nonlinearities		
Reactivation of failed members	☒ Check deformation of failing members and reactivate where appropriate		
	Maximum number of reactivations	:	3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: Rohr 48.3/2.9 (Stiel)								
860	LC6	MAX N	0.000	▷ 19.43	-0.01	0.24	0.00	-0.22	-0.08
321	CO5	MIN N	0.300	▷ -41.95	0.03	0.09	0.00	0.04	0.10
524	CO6	MAX V_y	0.700	-21.64	▷ 0.40	-0.80	0.00	-0.43	0.00
235	CO5	MIN V_y	1.000	-9.20	▷ -0.33	0.24	0.00	-0.67	0.01
260	CO5	MAX V_z	2.000	4.15	-0.17	▷ 3.32	0.00	1.88	0.11
564	CO3	MIN V_z	0.000	-3.94	-0.03	▷ -2.95	0.00	1.19	-0.05
255	CO5	MAX M_T	0.000	-28.28	0.26	0.37	▷ 0.05	-0.37	0.23
230	CO5	MIN M_T	2.000	-19.19	0.00	0.37	▷ -0.05	0.16	-0.13
260	CO5	MAX M_y	2.000	4.15	-0.17	3.32	0.00	▷ 1.88	0.11
564	CO4	MIN M_y	1.100	-5.11	-0.07	-0.10	0.00	▷ -0.77	0.00
235	CO5	MAX M_z	2.000	-9.14	-0.26	2.72	0.01	0.86	▷ 0.31
529	CO6	MIN M_z	2.000	-4.18	0.22	0.36	-0.01	0.44	▷ -0.40
	Section No. 2: Rohr 48.3/2.7 (Riegel)								
767	CO5	MAX N	0.208	▷ 13.38	0.00	0.07	0.00	0.00	0.00
333	CO5	MIN N	0.000	▷ -23.40	0.00	0.00	0.00	0.04	0.00
242	CO5	MAX V_y	2.020	8.92	▷ 0.34	-0.59	0.06	-0.51	-0.35
241	LC6	MIN V_y	0.000	4.83	▷ -0.10	0.14	-0.02	-0.14	-0.15
793	CO1	MAX V_z	0.000	-0.23	0.00	▷ 4.03	0.00	-0.28	0.00
792	CO1	MIN V_z	1.040	-0.49	0.00	▷ -4.04	0.00	-0.29	0.00
267	CO5	MAX M_T	0.000	13.01	0.00	-0.05	▷ 0.08	-0.01	0.00
289	CO5	MIN M_T	1.616	-1.43	0.00	-0.06	▷ -0.03	0.06	0.00
792	CO1	MAX M_y	0.520	-0.54	0.00	-0.03	0.00	▷ 0.77	0.00
242	CO5	MIN M_y	2.020	8.92	0.34	-0.59	0.06	▷ -0.51	-0.35
242	CO5	MAX M_z	0.000	8.92	0.30	-0.60	0.06	0.54	▷ 0.23
242	CO5	MIN M_z	2.020	8.92	0.34	-0.59	0.06	-0.51	▷ -0.35
	Section No. 3: Rohr 48.3/2.3 (Diagonale)								
684	CO5	MAX N	0.000	▷ 6.67	0.00	0.00	0.01	0.00	0.00
270	CO5	MIN N	0.000	▷ -18.26	0.00	0.00	0.05	0.00	0.00
270	CO4	MAX V_y	2.723	-15.95	▷ 0.00	0.00	0.04	0.00	0.00
245	CO3	MIN V_y	0.000	-2.94	▷ 0.00	0.00	0.00	0.00	0.00
270	CO4	MAX V_z	0.000	-15.95	0.00	▷ 0.00	0.04	0.00	0.00
796	CO4	MIN V_z	0.000	3.60	0.00	▷ 0.00	0.01	0.00	0.00
270	CO5	MAX M_T	0.000	-18.26	0.00	0.00	▷ 0.05	0.00	0.00
292	CO5	MIN M_T	0.000	1.68	0.00	0.00	▷ -0.02	0.00	0.00
244	CO6	MAX M_y	2.451	-4.80	0.00	0.00	0.00	▷ 0.00	0.00
270	CO5	MIN M_y	2.723	-18.26	0.00	0.00	0.05	▷ 0.00	0.00
633	CO6	MAX M_z	0.000	-11.16	0.00	0.00	-0.01	0.00	▷ 0.00
270	CO5	MIN M_z	0.000	-18.26	0.00	0.00	0.05	0.00	▷ 0.00
	Section No. 4: Rohr 48.3/4 (Rohr)								
1	CO3	MAX N	0.000	▷ 22.27	-0.09	-0.30	-0.02	-0.07	-0.04
901	CO5	MIN N	0.000	▷ -46.24	-0.17	0.27	-0.03	-0.23	-0.13
884	CO5	MAX V_y	0.664	-39.54	▷ 0.26	0.43	0.05	0.21	-0.01
901	CO5	MIN V_y	0.591	-46.24	▷ -0.24	0.41	-0.03	-0.02	0.00
884	CO5	MAX V_z	0.000	-39.78	0.18	▷ 1.69	0.05	-0.54	0.15

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
1	CO2	MIN V_z	1.106	-37.82	0.03	▷ -1.00	0.01	-0.30	-0.03
884	CO5	MAX M_T	0.000	-39.78	0.18	1.69	▷ 0.05	-0.54	0.15
1	LC6	MIN M_T	0.000	-0.38	-0.14	0.12	▷ -0.03	-0.01	-0.06
1	CO3	MAX M_y	1.106	22.20	-0.10	1.06	-0.02	▷ 0.32	0.06
884	CO5	MIN M_y	0.000	-39.78	0.18	1.69	0.05	▷ -0.54	0.15
884	CO5	MAX M_z	0.000	-39.78	0.18	1.69	0.05	-0.54	▷ 0.15
901	CO5	MIN M_z	0.000	-46.24	-0.17	0.27	-0.03	-0.23	▷ -0.13
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974								
169	CO5	MAX N	0.606	▷ 43.73	0.00	-0.15	0.03	0.02	0.00
168	CO4	MIN N	2.045	▷ -16.27	0.00	0.16	-0.01	0.23	0.00
169	CO5	MAX V_y	0.000	43.73	▷ 0.00	-0.16	0.03	0.12	0.00
168	CO6	MIN V_y	2.045	15.52	▷ 0.00	0.55	-0.04	0.82	0.00
168	LC6	MAX V_z	0.000	7.06	0.00	▷ 0.57	-0.05	-0.35	0.00
169	CO5	MIN V_z	2.020	43.73	0.00	▷ -0.17	0.03	-0.20	0.00
169	CO5	MAX M_T	0.606	43.73	0.00	-0.15	▷ 0.03	0.02	0.00
168	LC6	MIN M_T	0.000	7.06	0.00	0.57	▷ -0.05	-0.35	0.00
168	CO6	MAX M_y	2.045	15.52	0.00	0.55	-0.04	▷ 0.82	0.00
169	CO3	MIN M_y	0.000	-10.76	0.00	0.34	0.00	▷ -0.71	0.00
168	CO6	MAX M_z	2.045	15.52	0.00	0.55	-0.04	0.82	▷ 0.00
169	CO5	MIN M_z	2.020	43.73	0.00	-0.17	0.03	-0.20	▷ 0.00
	Section No. 8: RD 8 | DIN 1013-1								
902	CO5	MAX N	0.000	▷ 21.17	0.00	0.00	0.00	0.00	0.00
904	LC2	MIN N	0.000	▷ 0.02	0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_y	0.000	9.75	▷ 0.00	0.00	0.00	0.00	0.00
902	LC3	MIN V_y	0.000	9.75	▷ 0.00	0.00	0.00	0.00	0.00
902	LC3	MAX V_z	0.000	9.75	0.00	▷ 0.00	0.00	0.00	0.00
902	LC3	MIN V_z	0.000	9.75	0.00	▷ 0.00	0.00	0.00	0.00
902	LC3	MAX M_T	0.000	9.75	0.00	0.00	▷ 0.00	0.00	0.00
902	LC3	MIN M_T	0.000	9.75	0.00	0.00	▷ 0.00	0.00	0.00
902	LC3	MAX M_y	0.000	9.75	0.00	0.00	0.00	▷ 0.00	0.00
902	LC3	MIN M_y	0.000	9.75	0.00	0.00	0.00	▷ 0.00	0.00
902	LC3	MAX M_z	0.000	9.75	0.00	0.00	0.00	0.00	▷ 0.00
902	LC3	MIN M_z	0.000	9.75	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 12: RRO 100x60x4 (warmgefertigt)								
879	CO5	MAX N	0.000	▷ 0.83	0.00	0.00	0.00	0.00	0.00
880	CO5	MIN N	0.000	▷ -23.40	0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_y	0.000	-0.51	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MIN V_y	0.000	-0.51	▷ 0.00	0.00	0.00	0.00	0.00
878	LC1	MAX V_z	0.000	-0.51	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MIN V_z	0.000	-0.51	0.00	▷ 0.00	0.00	0.00	0.00
878	LC1	MAX M_T	0.000	-0.51	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MIN M_T	0.000	-0.51	0.00	0.00	▷ 0.00	0.00	0.00
878	LC1	MAX M_y	0.000	-0.51	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MIN M_y	0.000	-0.51	0.00	0.00	0.00	▷ 0.00	0.00
878	LC1	MAX M_z	0.000	-0.51	0.00	0.00	0.00	0.00	▷ 0.00
878	LC1	MIN M_z	0.000	-0.51	0.00	0.00	0.00	0.00	▷ 0.00
	Section No. 14: GI-KDXL Kederdach XL								
895	CO5	MAX N	6.296	▷ 21.15	-0.16	0.84	0.00	-0.84	0.81
900	CO2	MIN N	0.000	▷ -37.43	0.00	12.21	0.00	0.00	0.00
896	LC6	MAX V_y	0.000	-1.97	▷ 0.05	-0.16	0.00	0.75	0.25
895	CO5	MIN V_y	6.296	21.15	▷ -0.16	0.84	0.00	-0.84	0.81
900	CO5	MAX V_z	0.000	-23.66	-0.03	▷ 20.52	0.00	0.00	0.00
889	CO5	MIN V_z	2.822	-11.97	0.00	▷ -17.81	0.00	9.78	0.00
900	CO5	MAX M_T	0.000	-23.66	-0.03	20.52	▷ 0.00	0.00	0.00
893	LC6	MIN M_T	0.000	-6.28	0.00	-0.55	▷ 0.00	0.94	0.00
887	CO5	MAX M_y	1.000	-22.51	0.00	11.51	0.00	▷ 88.79	0.00
891	CO4	MIN M_y	1.822	-8.53	0.00	-4.78	0.00	▷ -57.33	0.00
895	CO5	MAX M_z	6.296	21.15	-0.16	0.84	0.00	-0.84	▷ 0.81
895	CO5	MIN M_z	0.000	18.71	-0.16	-0.83	0.00	-0.87	▷ -0.18
	Section No. 15: Rundstahl 12								
894	CO2	MAX N	0.000	▷ 30.49	0.00	0.00	0.00	0.00	0.00
898	LC2	MIN N	0.000	▷ 0.01	0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_y	0.000	9.40	▷ 0.00	0.00	0.00	0.00	0.00
894	LC1	MIN V_y	0.000	9.40	▷ 0.00	0.00	0.00	0.00	0.00
894	LC1	MAX V_z	0.000	9.40	0.00	▷ 0.00	0.00	0.00	0.00
894	LC1	MIN V_z	0.000	9.40	0.00	▷ 0.00	0.00	0.00	0.00
894	LC1	MAX M_T	0.000	9.40	0.00	0.00	▷ 0.00	0.00	0.00
894	LC1	MIN M_T	0.000	9.40	0.00	0.00	▷ 0.00	0.00	0.00
894	LC1	MAX M_y	0.000	9.40	0.00	0.00	0.00	▷ 0.00	0.00
894	LC1	MIN M_y	0.000	9.40	0.00	0.00	0.00	▷ 0.00	0.00
894	LC1	MAX M_z	0.000	9.40	0.00	0.00	0.00	0.00	▷ 0.00
894	LC1	MIN M_z	0.000	9.40	0.00	0.00	0.00	0.00	▷ 0.00

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
63	LC1	0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.10	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.04	0.00	0.00	0.00	0.00	-0.03	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	-0.03	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	0.06	Eathquake
64	LC1	0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	-0.11	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.10	0.00	0.00	0.00	0.00	-0.06	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.04	0.00	0.00	0.00	0.00	0.03	Bem-2
	CO3	-0.06	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.21	0.00	0.00	0.00	0.00	-0.12	Bem-4
	CO5	-0.27	0.00	0.00	0.00	0.00	-0.16	Bem-5
	CO6	-0.13	0.00	0.00	0.00	0.00	-0.08	Eathquake
69	LC1	0.00	0.00	0.00	0.00	0.00	0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.12	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.04	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	-0.30	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.10	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.20	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.13	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	-0.23	Eathquake
70	LC1	0.00	0.00	0.00	0.00	0.00	-0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.28	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.04	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.24	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.05	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.10	Bem-2
	CO3	0.08	0.00	0.00	0.00	0.00	0.12	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.46	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	0.57	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.30	Eathquake
94	LC1	0.02	0.00	0.00	0.00	0.00	0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.07	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.10	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.04	Snow
	LC6	-0.18	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	0.05	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.00	0.11	Bem-2
	CO3	-0.12	0.00	0.00	0.00	0.00	-0.06	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.16	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	0.30	Bem-5
	CO6	-0.14	0.00	0.00	0.00	0.00	-0.04	Eathquake
95	LC1	0.02	0.00	0.00	0.00	0.00	-0.03	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	0.25	Wind - 1
	LC4	-0.18	0.00	0.00	0.00	0.00	0.47	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.04	Snow
	LC6	-0.16	0.00	0.00	0.00	0.00	0.46	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	-0.05	Bem-1
	CO2	0.07	0.00	0.00	0.00	0.00	-0.11	Bem-2
	CO3	-0.09	0.00	0.00	0.00	0.00	0.39	Bem-3
	CO4	-0.34	0.00	0.00	0.00	0.00	0.77	Bem-4
	CO5	-0.44	0.00	0.00	0.00	0.00	0.92	Bem-5
	CO6	-0.21	0.00	0.00	0.00	0.00	0.53	Eathquake
107	LC1	-0.01	0.00	0.00	0.00	0.00	-0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.09	Wind - 2
	LC5	-0.02	0.00	0.00	0.00	0.00	-0.03	Snow
	LC6	0.13	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-1
	CO2	-0.04	0.00	0.00	0.00	0.00	-0.09	Bem-2
	CO3	0.09	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	-0.14	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.26	Bem-5
	CO6	0.11	0.00	0.00	0.00	0.00	0.03	Eathquake
108	LC1	-0.01	0.00	0.00	0.00	0.00	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.22	Wind - 1
	LC4	0.07	0.00	0.00	0.00	0.00	-0.40	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
108	LC5	-0.02	0.00	0.00	0.00	0.00	0.03	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.40	Earthquake
	CO1	-0.02	0.00	0.00	0.00	0.00	0.04	Bem-1
	CO2	-0.04	0.00	0.00	0.00	0.00	0.09	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	-0.34	Bem-3
	CO4	0.13	0.00	0.00	0.00	0.00	-0.64	Bem-4
	CO5	0.19	0.00	0.00	0.00	0.00	-0.73	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	-0.45	Eathquake
110	LC1	-0.01	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.02	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.04	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	-0.04	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.03	Eathquake
111	LC1	0.01	0.00	0.00	0.00	0.00	-0.05	EG
	LC2	0.01	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	-0.08	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.02	0.00	0.00	0.00	0.00	-0.09	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	-0.21	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	-0.11	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	-0.33	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	0.01	Eathquake
112	LC1	-0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.06	0.00	0.00	0.00	0.00	-0.02	Wind - 1
	LC4	0.10	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	-0.02	Snow
	LC6	0.09	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	-0.04	Bem-2
	CO3	0.09	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.18	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	0.22	0.00	0.00	0.00	0.00	0.07	Bem-5
	CO6	0.12	0.00	0.00	0.00	0.00	0.03	Eathquake
113	LC1	0.01	0.00	0.00	0.00	0.00	0.05	EG
	LC2	0.01	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	-0.14	Wind - 1
	LC4	-0.14	0.00	0.00	0.00	0.00	-0.37	Wind - 2
	LC5	0.02	0.00	0.00	0.00	0.00	0.08	Snow
	LC6	-0.14	0.00	0.00	0.00	0.00	-0.35	Earthquake
	CO1	0.03	0.00	0.00	0.00	0.00	0.09	Bem-1
	CO2	0.05	0.00	0.00	0.00	0.00	0.21	Bem-2
	CO3	-0.10	0.00	0.00	0.00	0.00	-0.25	Bem-3
	CO4	-0.24	0.00	0.00	0.00	0.00	-0.68	Bem-4
	CO5	-0.29	0.00	0.00	0.00	0.00	-0.84	Bem-5
	CO6	-0.17	0.00	0.00	0.00	0.00	-0.46	Eathquake
116	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.08	Eathquake
117	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.08	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.12	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.10	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.10	Eathquake
122	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.05	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.09	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.02	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
122	CO3	0.04	0.00	0.00	0.00	0.00	-0.08	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	-0.08	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	-0.08	Eathquake
123	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.05	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.07	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.08	0.00	0.00	0.00	0.00	-0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.09	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.14	0.00	0.00	0.00	0.00	-0.11	Bem-4
	CO5	-0.17	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	-0.10	0.00	0.00	0.00	0.00	-0.10	Eathquake
125	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.08	Eathquake
126	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.08	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.05	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.05	0.00	0.00	0.00	0.00	0.12	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.10	Eathquake
131	LC1	0.00	0.00	6.08	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.26	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	-16.99	0.00	0.00	-0.04	Wind - 1
	LC4	-0.04	0.00	-12.55	0.00	0.00	-0.06	Wind - 2
	LC5	0.01	0.00	4.24	0.00	0.00	0.01	Snow
	LC6	-0.05	0.00	4.50	0.00	0.00	-0.08	Earthquake
	CO1	0.01	0.00	16.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	14.34	0.00	0.00	0.02	Bem-2
	CO3	-0.05	0.00	-17.16	0.00	0.00	-0.08	Bem-3
	CO4	-0.06	0.00	-8.26	0.00	0.00	-0.09	Bem-4
	CO5	-0.06	0.00	-5.15	0.00	0.00	-0.08	Bem-5
	CO6	-0.05	0.00	8.67	0.00	0.00	-0.08	Eathquake
132	LC1	0.00	-0.31	6.07	0.00	0.00	0.00	EG
	LC2	0.00	0.10	5.26	0.00	0.00	0.00	Live Load
	LC3	0.06	23.20	-14.65	0.00	0.00	-0.08	Wind - 1
	LC4	0.05	20.91	6.65	0.00	0.00	-0.07	Wind - 2
	LC5	0.01	-0.41	4.23	0.00	0.00	-0.01	Snow
	LC6	0.07	26.27	8.64	0.00	0.00	-0.10	Earthquake
	CO1	0.01	-0.30	15.99	0.00	0.00	-0.01	Bem-1
	CO2	0.01	-1.06	14.32	0.00	0.00	-0.02	Bem-2
	CO3	0.08	33.40	-13.42	0.00	0.00	-0.12	Bem-3
	CO4	0.09	29.68	22.79	0.00	0.00	-0.10	Bem-4
	CO5	0.09	27.98	37.63	0.00	0.00	-0.09	Bem-5
	CO6	0.08	25.32	19.64	0.00	0.00	-0.10	Eathquake
134	LC1	0.00	0.00	7.16	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.28	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	-13.74	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	-12.10	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	6.31	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	-8.22	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	17.65	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	19.34	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	-15.98	0.00	0.00	0.00	Bem-3
	CO4	0.01	0.00	-10.22	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	-0.75	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	-0.98	0.00	0.00	0.00	Eathquake
135	LC1	0.00	0.00	7.19	0.00	0.00	0.00	EG
	LC2	0.00	0.00	5.27	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	-6.37	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.10	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	6.35	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	3.14	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	17.68	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	19.45	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	-5.36	0.00	0.00	0.00	Bem-3
	CO4	-0.01	0.00	6.60	0.00	0.00	0.00	Bem-4
	CO5	-0.01	0.00	12.52	0.00	0.00	0.00	Bem-5
	CO6	-0.01	0.00	7.90	0.00	0.00	0.00	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
164	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	-0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	-0.06	Eathquake
165	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	0.03	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	-0.02	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.02	Eathquake
167	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.01	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.07	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	0.08	0.00	0.00	0.00	0.00	0.05	Eathquake
168	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	-0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.03	Bem-3
	CO4	0.07	0.00	0.00	0.00	0.00	-0.09	Bem-4
	CO5	0.08	0.00	0.00	0.00	0.00	-0.10	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.07	Eathquake
173	LC1	-0.01	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	-0.07	Wind - 1
	LC4	-0.10	0.00	0.00	0.00	0.00	-0.14	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.17	0.00	0.00	0.00	0.00	-0.24	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	-0.11	0.00	0.00	0.00	0.00	-0.14	Bem-3
	CO4	-0.18	0.00	0.00	0.00	0.00	-0.25	Bem-4
	CO5	-0.21	0.00	0.00	0.00	0.00	-0.27	Bem-5
	CO6	-0.20	0.00	0.00	0.00	0.00	-0.26	Eathquake
174	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	-0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	-0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	-0.09	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	-0.05	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	-0.06	Eathquake
176	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.02	Eathquake
177	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.03	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
177	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.04	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.03	Eathquake
179	LC1	0.00	0.00	0.00	0.00	0.00	0.02	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.14	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.23	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.03	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.01	0.00	0.00	0.00	0.00	0.26	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.29	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.25	Eathquake
180	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	-0.06	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.16	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	-0.18	Bem-5
	CO6	-0.04	0.00	0.00	0.00	0.00	-0.14	Eathquake
185	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	-0.10	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	-0.17	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	-0.29	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	-0.18	Bem-3
	CO4	0.10	0.00	0.00	0.00	0.00	-0.29	Bem-4
	CO5	0.12	0.00	0.00	0.00	0.00	-0.32	Bem-5
	CO6	0.11	0.00	0.00	0.00	0.00	-0.31	Eathquake
186	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	-0.11	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.04	0.00	0.00	0.00	0.00	-0.15	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.12	Eathquake
188	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.07	0.00	0.00	0.00	0.00	0.02	Eathquake
189	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.09	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.11	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.13	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.12	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.12	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.11	Eathquake
191	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.08	0.00	0.00	0.00	0.00	-0.13	Wind - 1
	LC4	-0.11	0.00	0.00	0.00	0.00	-0.20	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.20	0.00	0.00	0.00	0.00	-0.35	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.02	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
191	CO3	-0.15	0.00	0.00	0.00	0.00	-0.22	Bem-3
	CO4	-0.21	0.00	0.00	0.00	0.00	-0.33	Bem-4
	CO5	-0.22	0.00	0.00	0.00	0.00	-0.36	Bem-5
	CO6	-0.24	0.00	0.00	0.00	0.00	-0.36	Eathquake
192	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	-0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	-0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	-0.05	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	-0.04	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.03	Eathquake
194	LC1	-0.01	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.12	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.17	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.30	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.21	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.28	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	-0.31	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	-0.32	0.00	0.00	0.00	0.00	0.06	Eathquake
195	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.05	Eathquake
197	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.02	Wind - 1
	LC4	-0.04	0.00	0.00	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-3
	CO4	-0.07	0.00	0.00	0.00	0.00	-0.06	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	-0.08	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	-0.03	Eathquake
198	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.06	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	-0.08	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	-0.08	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	0.05	Eathquake
203	LC1	0.01	0.11	3.72	0.00	0.00	-0.01	EG
	LC2	0.00	0.01	-0.09	0.00	0.00	0.00	Live Load
	LC3	0.12	2.98	9.27	0.00	0.00	-0.17	Wind - 1
	LC4	0.17	4.06	14.48	0.00	0.00	-0.24	Wind - 2
	LC5	0.01	0.14	0.59	0.00	0.00	-0.01	Snow
	LC6	0.30	7.34	25.46	0.00	0.00	-0.43	Earthquake
	CO1	0.01	0.18	4.92	0.00	0.00	-0.01	Bem-1
	CO2	0.02	0.37	5.97	0.00	0.00	-0.03	Bem-2
	CO3	0.20	4.86	18.94	0.00	0.00	-0.29	Bem-3
	CO4	0.29	6.54	28.82	0.00	0.00	-0.40	Bem-4
	CO5	0.31	7.03	31.15	0.00	0.00	-0.43	Bem-5
	CO6	0.32	7.56	30.31	0.00	0.00	-0.45	Eathquake
204	LC1	0.00	-0.03	3.36	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.02	0.00	0.00	0.00	Live Load
	LC3	-0.05	1.87	-5.68	0.00	0.00	-0.09	Wind - 1
	LC4	-0.05	1.82	-5.03	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	-0.03	0.11	0.00	0.00	0.00	Snow
	LC6	-0.06	2.22	-6.60	0.00	0.00	-0.10	Earthquake
	CO1	0.00	-0.10	4.57	0.00	0.00	0.01	Bem-1
	CO2	0.01	-0.08	4.70	0.00	0.00	0.01	Bem-2
	CO3	-0.07	2.76	-5.30	0.00	0.00	-0.13	Bem-3
	CO4	-0.07	2.66	-2.80	0.00	0.00	-0.12	Bem-4
	CO5	-0.07	2.62	-2.51	0.00	0.00	-0.12	Bem-5
	CO6	-0.06	2.18	-3.16	0.00	0.00	-0.10	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
206	LC1	0.00	0.10	4.19	0.00	0.00	-0.01	EG
	LC2	0.00	0.02	0.11	0.00	0.00	0.00	Live Load
	LC3	0.10	2.83	2.73	0.00	0.00	-0.18	Wind - 1
	LC4	0.14	3.88	5.05	0.00	0.00	-0.26	Wind - 2
	LC5	0.01	0.14	0.33	0.00	0.00	-0.01	Snow
	LC6	0.24	7.01	8.08	0.00	0.00	-0.46	Earthquake
	CO1	0.01	0.18	5.84	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.35	6.18	0.00	0.00	-0.03	Bem-2
	CO3	0.16	4.64	8.48	0.00	0.00	-0.30	Bem-3
	CO4	0.23	6.28	14.03	0.00	0.00	-0.42	Bem-4
	CO5	0.25	6.75	15.18	0.00	0.00	-0.45	Bem-5
	CO6	0.26	7.25	12.78	0.00	0.00	-0.48	Eathquake
207	LC1	0.00	-0.03	4.05	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.15	0.00	0.00	0.00	Live Load
	LC3	-0.04	1.72	-1.95	0.00	0.00	-0.10	Wind - 1
	LC4	-0.04	1.67	-2.22	0.00	0.00	-0.10	Wind - 2
	LC5	0.00	-0.03	0.15	0.00	0.00	0.00	Snow
	LC6	-0.05	2.04	-2.45	0.00	0.00	-0.12	Earthquake
	CO1	0.00	-0.10	5.71	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.08	5.71	0.00	0.00	0.01	Bem-2
	CO3	-0.06	2.54	0.75	0.00	0.00	-0.15	Bem-3
	CO4	-0.06	2.45	2.15	0.00	0.00	-0.14	Bem-4
	CO5	-0.06	2.41	2.27	0.00	0.00	-0.14	Bem-5
	CO6	-0.05	2.00	1.53	0.00	0.00	-0.12	Eathquake
209	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.06	Eathquake
210	LC1	0.00	0.00	0.00	0.00	0.00	-0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.05	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.06	Eathquake
215	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.05	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.05	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.05	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.06	Eathquake
216	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.08	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	-0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.12	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	-0.10	Bem-4
	CO5	-0.02	0.00	0.00	0.00	0.00	-0.09	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.09	Eathquake
221	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.13	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.17	0.00	0.00	0.00	0.00	0.05	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.31	0.00	0.00	0.00	0.00	0.09	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.02	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.21	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.28	0.00	0.00	0.00	0.00	0.08	Bem-4
	CO5	-0.30	0.00	0.00	0.00	0.00	0.08	Bem-5
	CO6	-0.32	0.00	0.00	0.00	0.00	0.09	Eathquake
222	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.04	0.00	0.00	0.00	0.00	0.06	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
222	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.08	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.06	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.06	0.00	0.00	0.00	0.00	0.09	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.07	Eathquake
227	LC1	0.00	0.09	4.41	0.00	0.00	0.00	EG
	LC2	0.00	0.02	0.68	0.00	0.00	0.00	Live Load
	LC3	0.09	2.59	0.51	0.00	0.00	-0.18	Wind - 1
	LC4	0.12	3.56	0.84	0.00	0.00	-0.25	Wind - 2
	LC5	0.01	0.13	0.45	0.00	0.00	-0.01	Snow
	LC6	0.23	6.44	0.37	0.00	0.00	-0.46	Earthquake
	CO1	0.01	0.16	6.99	0.00	0.00	-0.01	Bem-1
	CO2	0.01	0.32	6.65	0.00	0.00	-0.02	Bem-2
	CO3	0.14	4.25	4.50	0.00	0.00	-0.29	Bem-3
	CO4	0.20	5.78	7.07	0.00	0.00	-0.40	Bem-4
	CO5	0.22	6.23	8.06	0.00	0.00	-0.44	Bem-5
	CO6	0.24	6.70	5.03	0.00	0.00	-0.47	Eathquake
228	LC1	0.00	-0.02	4.42	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	0.68	0.00	0.00	0.01	Live Load
	LC3	-0.04	1.55	-2.15	0.00	0.00	-0.10	Wind - 1
	LC4	-0.03	1.49	-3.35	0.00	0.00	-0.09	Wind - 2
	LC5	0.00	-0.03	0.47	0.00	0.00	0.00	Snow
	LC6	-0.04	1.83	-3.32	0.00	0.00	-0.11	Earthquake
	CO1	0.00	-0.09	7.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	-0.06	6.69	0.00	0.00	0.00	Bem-2
	CO3	-0.06	2.28	0.41	0.00	0.00	-0.15	Bem-3
	CO4	-0.05	2.19	0.46	0.00	0.00	-0.14	Bem-4
	CO5	-0.05	2.16	0.41	0.00	0.00	-0.14	Bem-5
	CO6	-0.04	1.80	0.57	0.00	0.00	-0.11	Eathquake
233	LC1	-0.01	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.03	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.19	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	0.04	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.18	Eathquake
234	LC1	-0.01	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	-0.01	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.03	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.02	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.06	0.00	0.00	0.00	0.00	-0.03	Bem-4
	CO5	0.09	0.00	0.00	0.00	0.00	-0.07	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	-0.05	Eathquake
239	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.01	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.08	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.09	Bem-4
	CO5	0.11	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	0.09	0.00	0.00	0.00	0.00	0.11	Eathquake
240	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.11	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.14	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.04	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.18	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.22	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.22	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.16	Eathquake
245	LC1	0.00	0.00	0.00	0.00	0.00	0.01	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.17	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.02	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	0.29	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.02	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.04	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
245	CO3	-0.02	0.00	0.00	0.00	0.00	0.11	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	0.30	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	0.35	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	0.31	Eathquake
246	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	-0.02	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	-0.05	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	-0.05	Eathquake
251	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	-0.02	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.15	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.11	Bem-4
	CO5	-0.06	0.00	0.00	0.00	0.00	0.13	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.16	Eathquake
252	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	-0.04	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	-0.05	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	-0.07	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	-0.07	0.00	0.00	0.00	0.00	0.10	Bem-3
	CO4	-0.08	0.00	0.00	0.00	0.00	0.07	Bem-4
	CO5	-0.09	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	-0.07	0.00	0.00	0.00	0.00	0.07	Eathquake
257	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.07	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.12	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.22	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.13	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.20	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.22	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.23	Eathquake
258	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	-0.01	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.10	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	-0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.14	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.06	0.00	0.00	0.00	0.00	0.10	Eathquake
263	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.13	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	0.05	0.00	0.00	0.00	0.00	0.25	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.15	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.22	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.24	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.26	Eathquake
264	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	-0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.02	0.00	0.00	0.00	0.00	-0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.02	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	-0.03	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	-0.01	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
269	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.10	0.00	0.00	0.00	0.00	0.12	Wind - 1
	LC4	-0.14	0.00	0.00	0.00	0.00	0.17	Wind - 2
	LC5	-0.01	0.00	0.00	0.00	0.00	0.01	Snow
	LC6	-0.25	0.00	0.00	0.00	0.00	0.31	Earthquake
	CO1	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.02	Bem-2
	CO3	-0.16	0.00	0.00	0.00	0.00	0.20	Bem-3
	CO4	-0.22	0.00	0.00	0.00	0.00	0.27	Bem-4
	CO5	-0.24	0.00	0.00	0.00	0.00	0.30	Bem-5
	CO6	-0.25	0.00	0.00	0.00	0.00	0.32	Eathquake
270	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.09	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.05	0.00	0.00	0.00	0.00	0.13	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.12	Bem-5
	CO6	0.04	0.00	0.00	0.00	0.00	0.10	Eathquake
275	LC1	0.00	0.08	3.41	0.00	0.00	0.00	EG
	LC2	0.00	0.02	2.21	0.00	0.00	0.00	Live Load
	LC3	0.05	2.25	-3.40	0.00	0.00	-0.08	Wind - 1
	LC4	0.07	3.08	-4.84	0.00	0.00	-0.11	Wind - 2
	LC5	0.00	0.11	1.07	0.00	0.00	0.00	Snow
	LC6	0.13	5.58	-7.87	0.00	0.00	-0.20	Earthquake
	CO1	0.00	0.14	7.90	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.27	6.18	0.00	0.00	-0.01	Bem-2
	CO3	0.09	3.70	-3.11	0.00	0.00	-0.13	Bem-3
	CO4	0.12	5.04	-3.84	0.00	0.00	-0.17	Bem-4
	CO5	0.13	5.42	-2.36	0.00	0.00	-0.18	Bem-5
	CO6	0.13	5.83	-4.70	0.00	0.00	-0.20	Eathquake
276	LC1	0.00	-0.01	3.54	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	2.17	0.00	0.00	0.00	Live Load
	LC3	-0.02	1.33	-1.98	0.00	0.00	-0.04	Wind - 1
	LC4	-0.01	1.28	-3.32	0.00	0.00	-0.04	Wind - 2
	LC5	0.00	-0.02	1.26	0.00	0.00	0.00	Snow
	LC6	-0.02	1.57	-2.07	0.00	0.00	-0.05	Earthquake
	CO1	0.00	-0.08	8.04	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.05	6.67	0.00	0.00	0.00	Bem-2
	CO3	-0.02	1.96	-0.14	0.00	0.00	-0.06	Bem-3
	CO4	-0.02	1.88	-0.67	0.00	0.00	-0.06	Bem-4
	CO5	-0.02	1.85	0.13	0.00	0.00	-0.06	Bem-5
	CO6	-0.02	1.55	0.97	0.00	0.00	-0.05	Eathquake
281	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.03	0.00	0.00	0.00	0.00	-0.04	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.02	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	-0.01	Bem-5
	CO6	-0.03	0.00	0.00	0.00	0.00	-0.04	Eathquake
282	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.02	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.05	0.00	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.03	0.00	0.00	0.00	0.00	-0.01	Bem-3
	CO4	-0.06	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	-0.08	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.06	0.00	0.00	0.00	0.00	0.02	Eathquake
287	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.05	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.01	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.10	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.01	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.04	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	0.09	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	0.11	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	0.11	0.00	0.00	0.00	0.00	0.01	Eathquake
288	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.01	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.06	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
288	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.01	0.00	0.00	0.00	0.00	0.07	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.01	0.00	0.00	0.00	0.00	0.07	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.08	Eathquake
293	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.12	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.01	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.14	Bem-4
	CO5	0.02	0.00	0.00	0.00	0.00	0.16	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.13	Eathquake
294	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.01	Bem-3
	CO4	0.05	0.00	0.00	0.00	0.00	0.02	Bem-4
	CO5	0.05	0.00	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.01	Eathquake
299	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	-0.01	0.00	0.00	0.00	0.00	0.06	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.01	0.00	0.00	0.00	0.00	0.10	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	-0.03	0.00	0.00	0.00	0.00	0.10	Bem-4
	CO5	-0.04	0.00	0.00	0.00	0.00	0.11	Bem-5
	CO6	-0.02	0.00	0.00	0.00	0.00	0.11	Eathquake
300	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.03	0.00	0.00	0.00	0.00	0.03	Wind - 1
	LC4	-0.03	0.00	0.00	0.00	0.00	0.02	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.04	0.00	0.00	0.00	0.00	0.03	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	-0.05	0.00	0.00	0.00	0.00	0.04	Bem-3
	CO4	-0.05	0.00	0.00	0.00	0.00	0.03	Bem-4
	CO5	-0.05	0.00	0.00	0.00	0.00	0.03	Bem-5
	CO6	-0.05	0.00	0.00	0.00	0.00	0.03	Eathquake
305	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.01	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.07	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.13	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.01	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.02	0.00	0.00	0.00	0.00	0.12	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.13	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.13	Eathquake
306	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.05	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.03	0.00	0.00	0.00	0.00	0.06	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.08	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.03	0.00	0.00	0.00	0.00	0.06	Eathquake
311	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.03	0.00	0.00	0.00	0.00	0.06	Wind - 1
	LC4	0.03	0.00	0.00	0.00	0.00	0.08	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.06	0.00	0.00	0.00	0.00	0.14	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.01	Bem-2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
311	CO3	0.04	0.00	0.00	0.00	0.00	0.09	Bem-3
	CO4	0.04	0.00	0.00	0.00	0.00	0.13	Bem-4
	CO5	0.04	0.00	0.00	0.00	0.00	0.14	Bem-5
	CO6	0.05	0.00	0.00	0.00	0.00	0.15	Eathquake
312	LC1	0.00	-0.04	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	8.71	0.00	0.00	0.00	0.01	Wind - 1
	LC4	0.00	7.97	0.00	0.00	0.00	0.01	Wind - 2
	LC5	0.00	-0.08	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	10.18	0.00	0.00	0.00	0.02	Earthquake
	CO1	0.00	-0.06	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.17	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	12.86	0.00	0.00	0.00	0.02	Bem-3
	CO4	0.00	11.71	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.00	11.43	0.00	0.00	0.00	0.02	Bem-5
	CO6	0.00	10.05	0.00	0.00	0.00	0.02	Eathquake
317	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	-0.06	0.00	0.00	0.00	0.00	0.08	Wind - 1
	LC4	-0.09	0.00	0.00	0.00	0.00	0.11	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	-0.15	0.00	0.00	0.00	0.00	0.19	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.01	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	-0.10	0.00	0.00	0.00	0.00	0.12	Bem-3
	CO4	-0.13	0.00	0.00	0.00	0.00	0.17	Bem-4
	CO5	-0.14	0.00	0.00	0.00	0.00	0.18	Bem-5
	CO6	-0.15	0.00	0.00	0.00	0.00	0.19	Eathquake
318	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 1
	LC4	0.02	0.00	0.00	0.00	0.00	0.04	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.02	0.00	0.00	0.00	0.00	0.05	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.03	0.00	0.00	0.00	0.00	0.06	Bem-3
	CO4	0.03	0.00	0.00	0.00	0.00	0.06	Bem-4
	CO5	0.03	0.00	0.00	0.00	0.00	0.06	Bem-5
	CO6	0.02	0.00	0.00	0.00	0.00	0.05	Eathquake
323	LC1	0.00	0.07	2.74	0.00	0.00	0.00	EG
	LC2	0.00	0.02	2.50	0.00	0.00	0.00	Live Load
	LC3	0.00	2.12	-7.04	0.00	0.00	0.00	Wind - 1
	LC4	0.00	2.91	-11.16	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.10	0.45	0.00	0.00	0.00	Snow
	LC6	-0.01	5.25	-19.85	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.13	7.40	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.25	4.31	0.00	0.00	0.00	Bem-2
	CO3	-0.01	3.49	-10.17	0.00	0.00	0.00	Bem-3
	CO4	-0.01	4.76	-15.47	0.00	0.00	0.00	Bem-4
	CO5	-0.01	5.12	-15.65	0.00	0.00	0.00	Bem-5
	CO6	-0.01	5.51	-18.02	0.00	0.00	0.00	Eathquake
325	LC1	0.00	-0.01	3.06	0.00	0.00	0.00	EG
	LC2	0.00	-0.04	2.40	0.00	0.00	0.00	Live Load
	LC3	0.00	1.25	0.60	0.00	0.00	0.00	Wind - 1
	LC4	0.00	1.21	-0.86	0.00	0.00	0.00	Wind - 2
	LC5	0.00	-0.02	0.89	0.00	0.00	0.00	Snow
	LC6	0.01	1.48	0.19	0.00	0.00	0.00	Earthquake
	CO1	0.00	-0.07	7.72	0.00	0.00	0.00	Bem-1
	CO2	0.00	-0.05	5.43	0.00	0.00	0.00	Bem-2
	CO3	0.01	1.85	3.34	0.00	0.00	0.00	Bem-3
	CO4	0.01	1.77	2.45	0.00	0.00	0.00	Bem-4
	CO5	0.01	1.75	2.53	0.00	0.00	0.00	Bem-5
	CO6	0.00	1.46	2.84	0.00	0.00	0.00	Eathquake
327	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
328	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake

■ 4.4 NODES - SUPPORT FORCES

Node No.	LC/CO	Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	
329	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
330	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
331	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
332	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
333	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
334	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
335	LC1	0.00	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.00	0.00	0.00	0.00	0.00	0.00	Wind - 2
	LC5	0.00	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.00	0.00	0.00	0.00	0.00	0.00	Earthquake
	CO1	0.00	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	0.00	0.00	0.00	0.00	0.00	0.00	Bem-2
	CO3	0.00	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.00	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	0.00	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.00	0.00	0.00	0.00	0.00	0.00	Eathquake
337	LC1	-0.02	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.10	0.00	0.00	0.00	0.00	-0.01	Wind - 1
	LC4	0.01	0.00	0.00	0.00	0.00	0.00	Wind - 2

■ 4.4 NODES - SUPPORT FORCES

Node		Support Forces [kN]			Support Moments [kNm]			
No.	LC/CO	$P_{X'}$	$P_{Y'}$	$P_{Z'}$	$M_{X'}$	$M_{Y'}$	$M_{Z'}$	
337	LC5	-0.03	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.23	0.00	0.00	0.00	0.00	-0.03	Earthquake
	CO1	-0.04	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.07	0.00	0.00	0.00	0.00	0.01	Bem-2
	CO3	0.14	0.00	0.00	0.00	0.00	-0.02	Bem-3
	CO4	0.01	0.00	0.00	0.00	0.00	0.00	Bem-4
	CO5	-0.08	0.00	0.00	0.00	0.00	0.00	Bem-5
	CO6	0.17	0.00	0.00	0.00	0.00	-0.02	Eathquake
338	LC1	-0.02	0.00	0.00	0.00	0.00	0.00	EG
	LC2	0.00	0.00	0.00	0.00	0.00	0.00	Live Load
	LC3	0.04	0.00	0.00	0.00	0.00	0.00	Wind - 1
	LC4	0.19	0.00	0.00	0.00	0.00	0.01	Wind - 2
	LC5	-0.03	0.00	0.00	0.00	0.00	0.00	Snow
	LC6	0.16	0.00	0.00	0.00	0.00	0.01	Earthquake
	CO1	-0.04	0.00	0.00	0.00	0.00	0.00	Bem-1
	CO2	-0.07	0.00	0.00	0.00	0.00	-0.01	Bem-2
	CO3	0.07	0.00	0.00	0.00	0.00	0.00	Bem-3
	CO4	0.35	0.00	0.00	0.00	0.00	0.01	Bem-4
	CO5	0.46	0.00	0.00	0.00	0.00	0.01	Bem-5
	CO6	0.21	0.00	0.00	0.00	0.00	0.01	Eathquake
Σ Supp.	LC1	0.00	0.00	63.39				
Σ Loads	LC1	0.00	0.00	63.39				
Σ Supp.	LC2	0.00	0.00	31.89				
Σ Loads	LC2	0.00	0.00	31.89				
Σ Supp.	LC3	0.00	52.40	-60.84				
Σ Loads	LC3	0.00	52.40	-60.84				
Σ Supp.	LC4	0.00	53.83	-28.31				
Σ Loads	LC4	0.00	53.83	-28.31				
Σ Supp.	LC5	0.00	0.00	26.90				
Σ Loads	LC5	0.00	0.00	26.90				
Σ Supp.	LC6	0.00	77.20	0.00				
Σ Loads	LC6	0.00	77.20	0.00				
Σ Supp.	CO1	0.00	0.00	133.41				
Σ Loads	CO1	0.00	0.00	133.41				
Σ Supp.	CO2	0.00	0.00	125.93				
Σ Loads	CO2	0.00	0.00	125.93				
Σ Supp.	CO3	0.00	78.60	-34.21				
Σ Loads	CO3	0.00	78.60	-34.21				
Σ Supp.	CO4	0.00	80.75	43.11				
Σ Loads	CO4	0.00	80.75	43.11				
Σ Supp.	CO5	0.00	80.75	83.47				
Σ Loads	CO5	0.00	80.75	83.47				
Σ Supp.	CO6	0.00	77.20	63.39				
Σ Loads	CO6	0.00	77.20	63.39				

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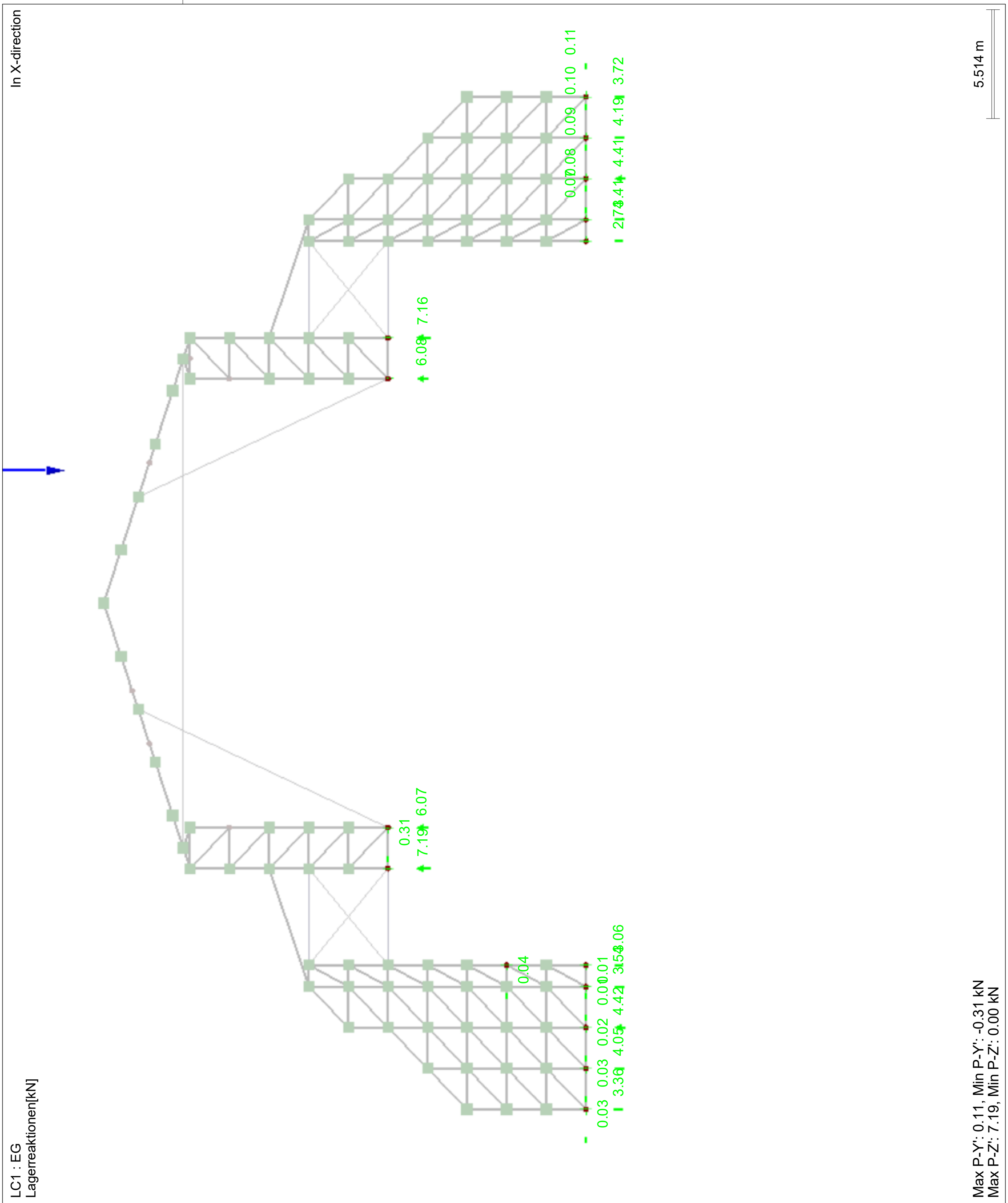

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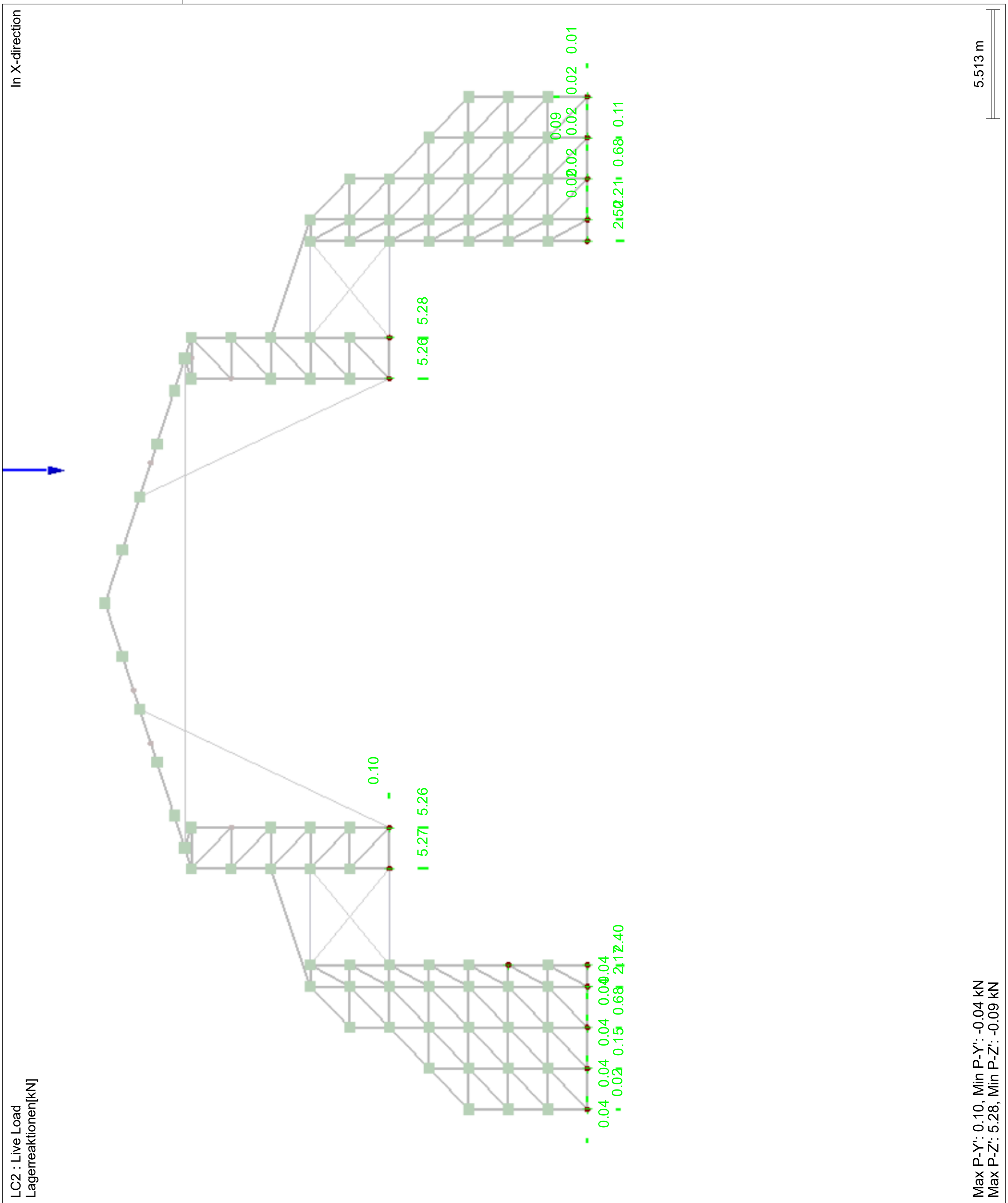

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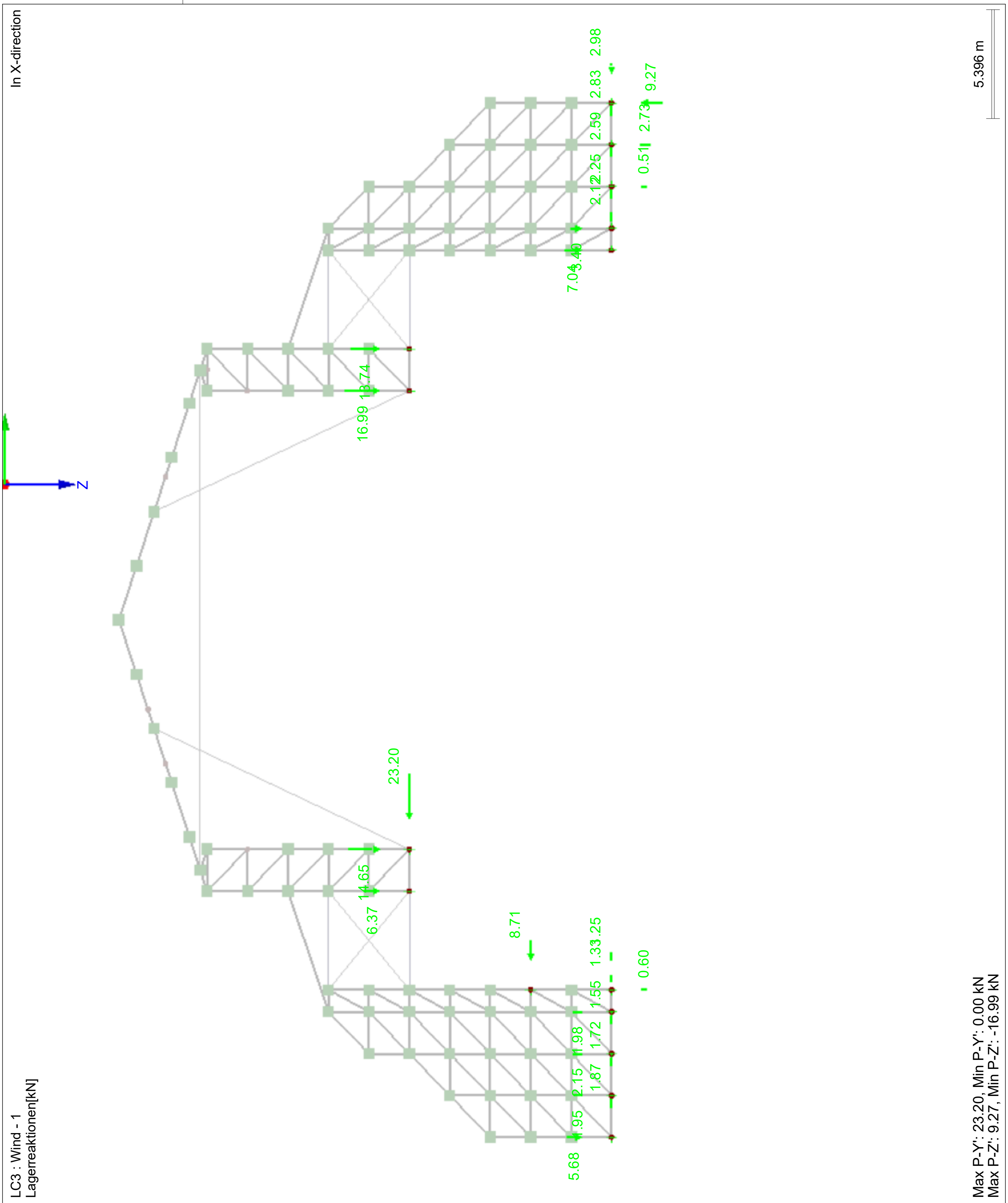

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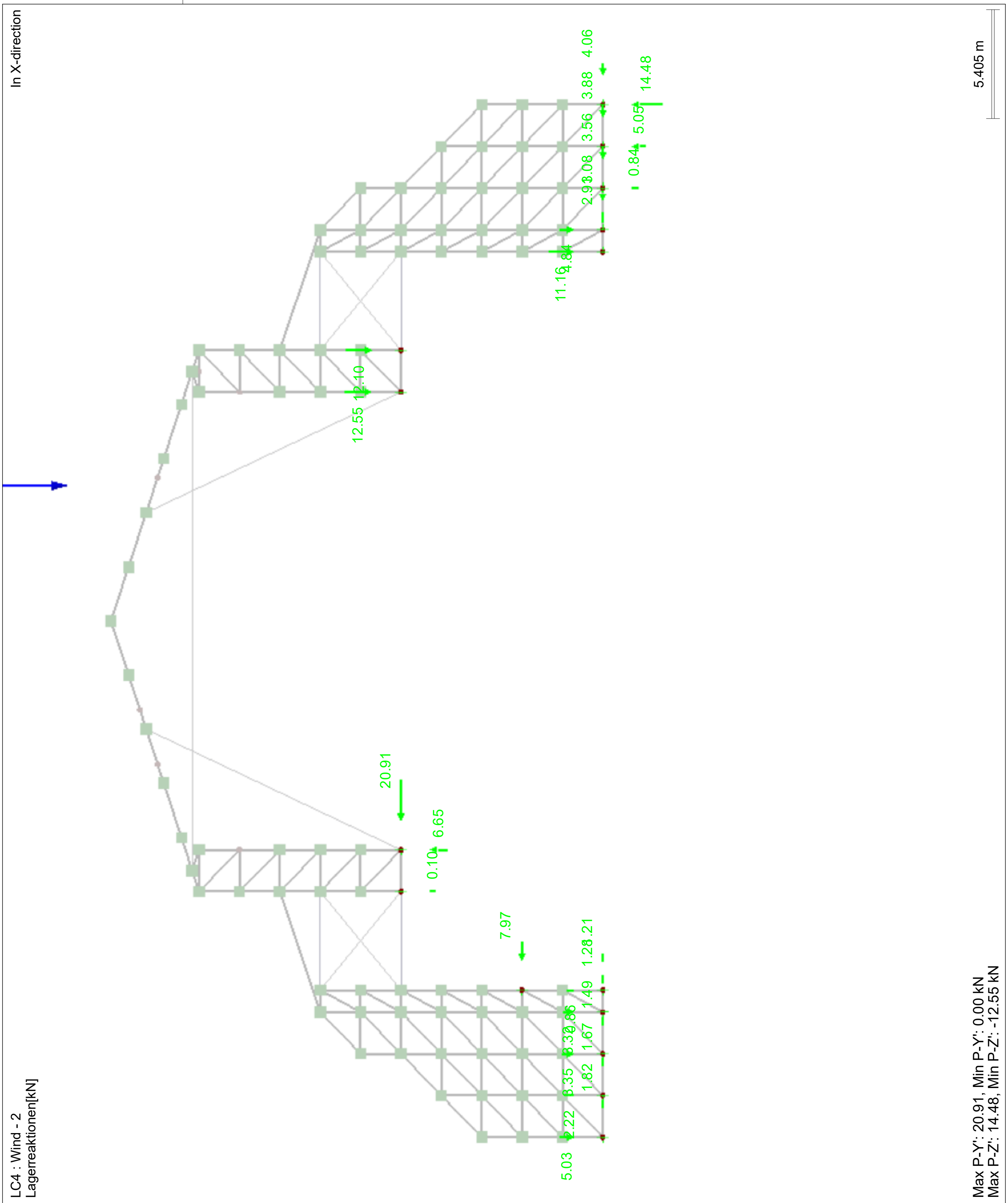

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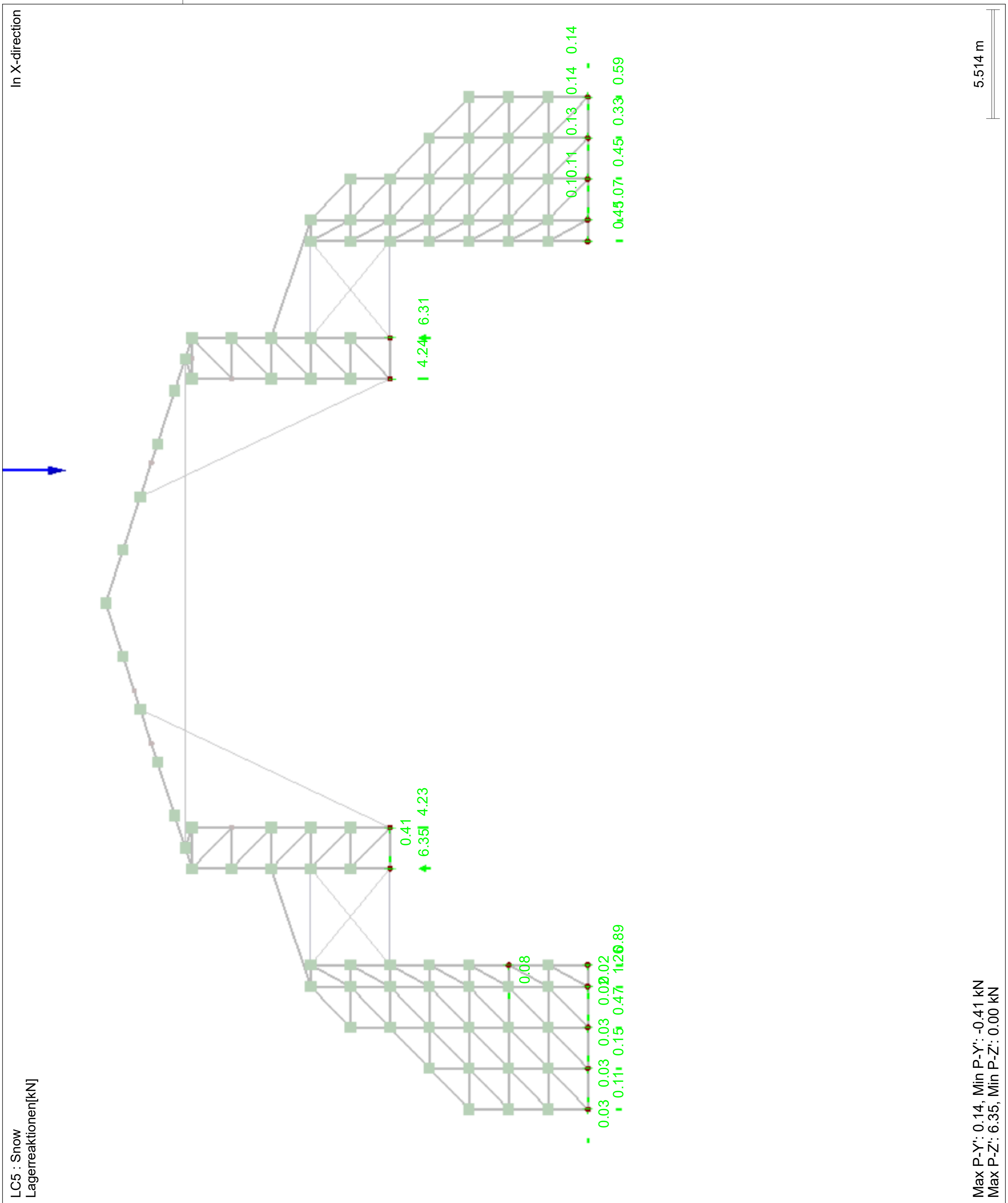

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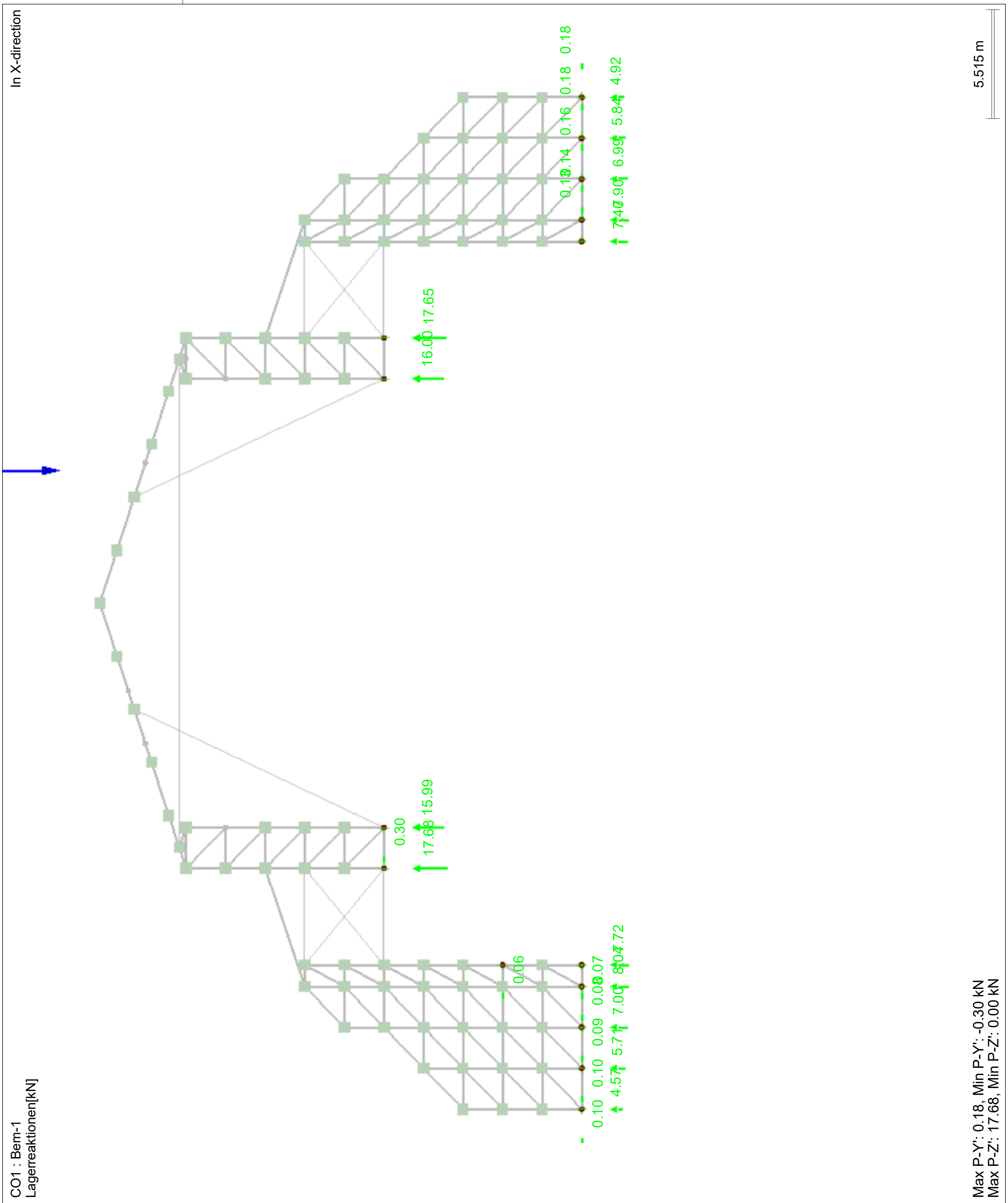

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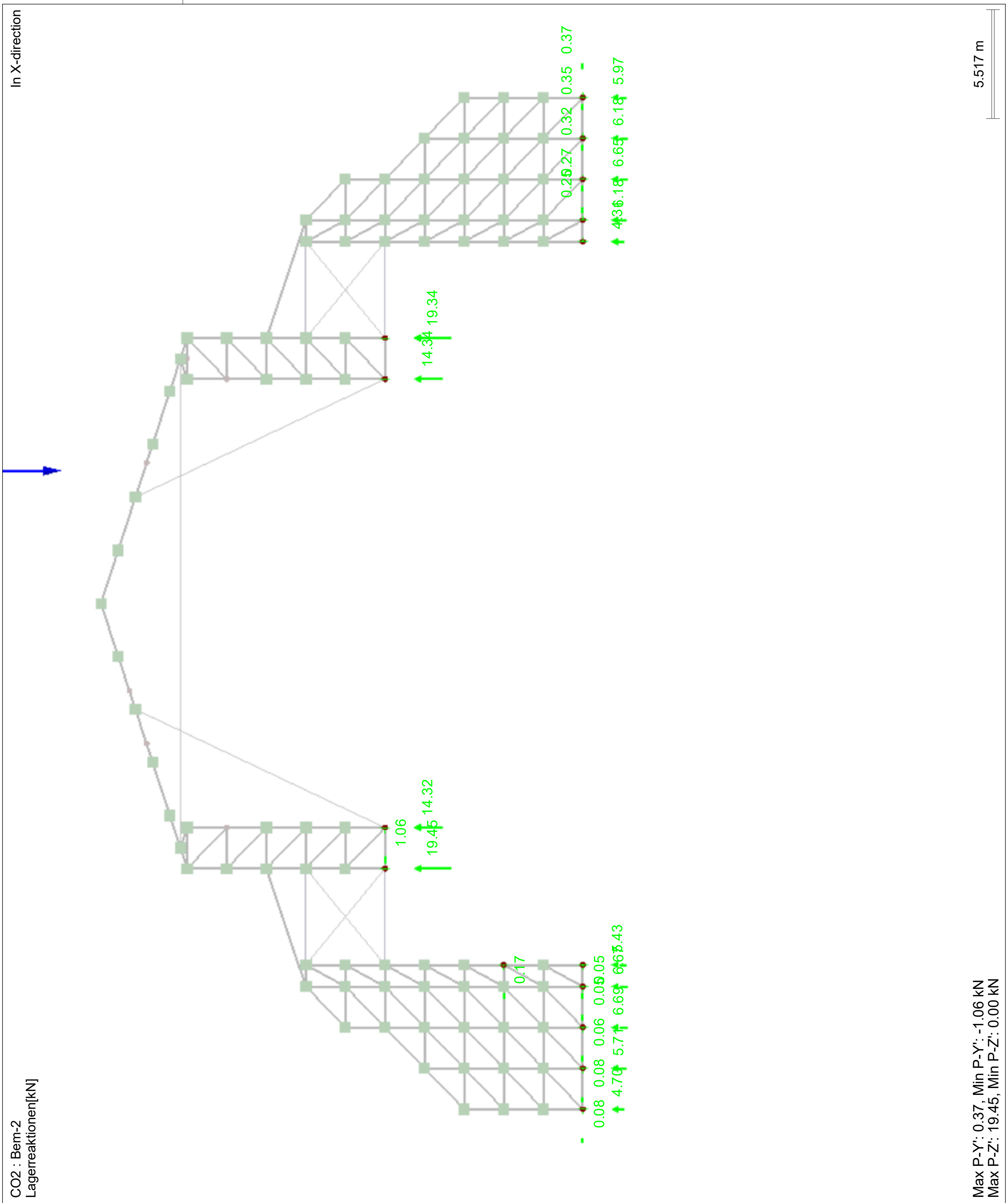

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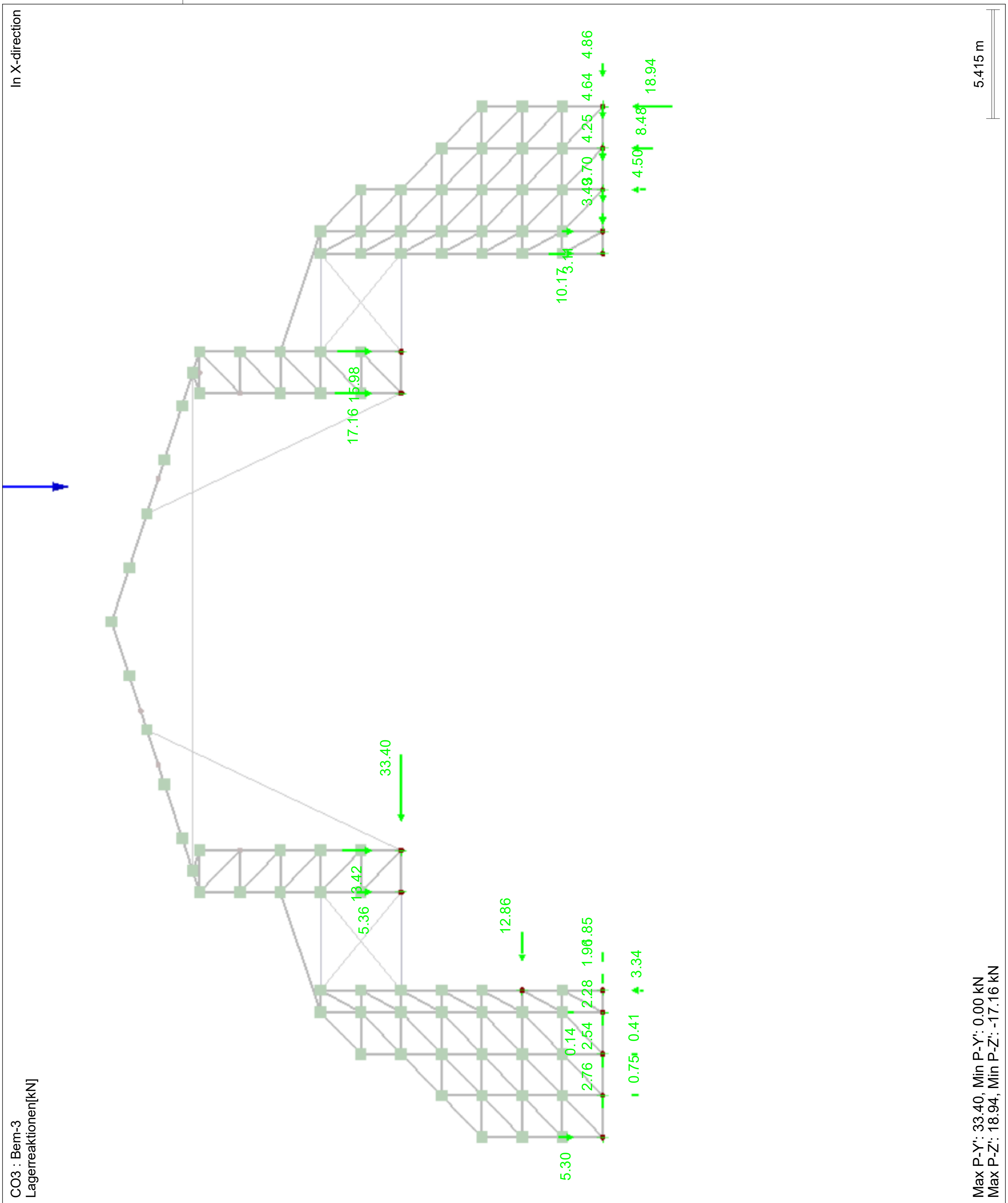

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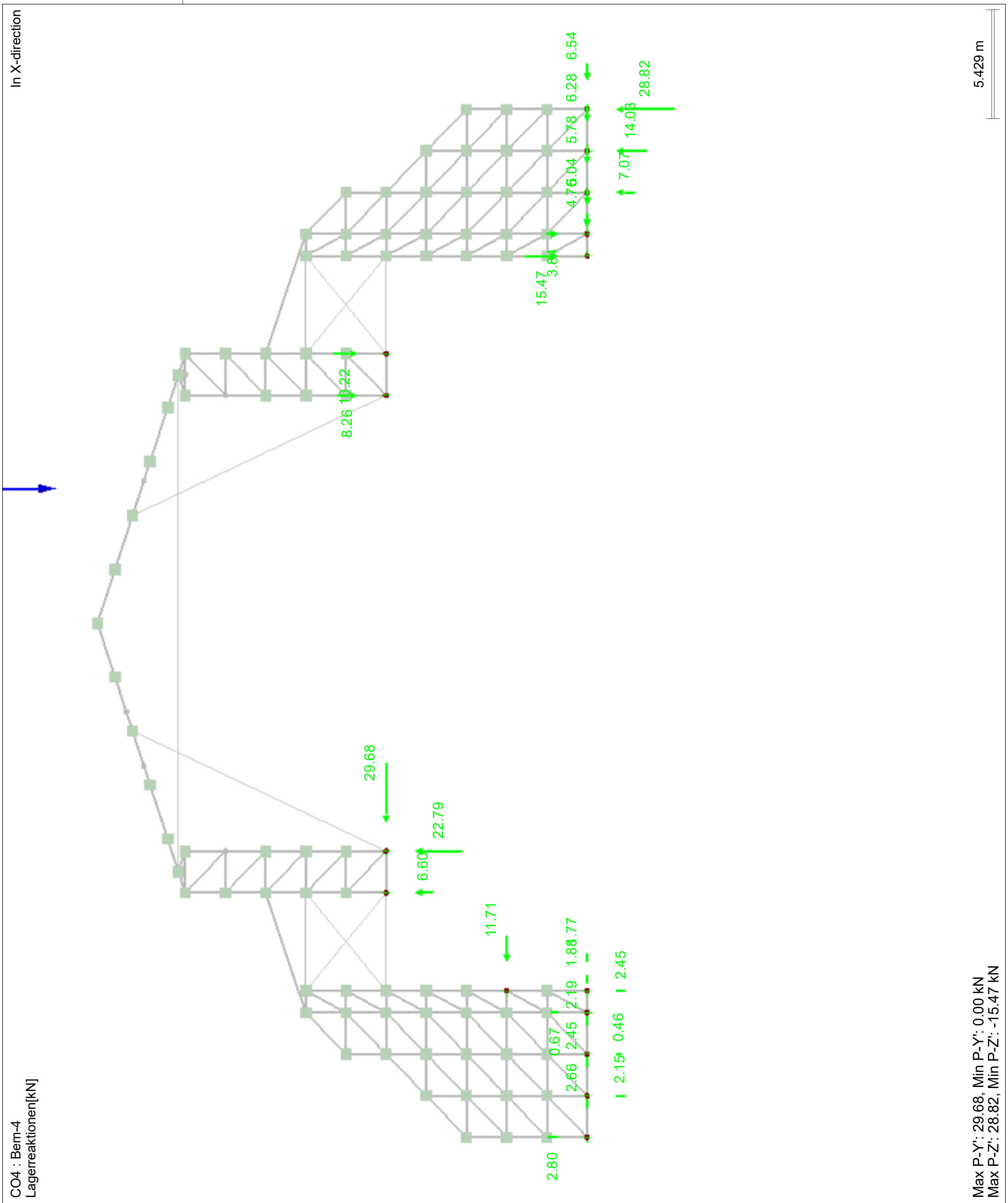

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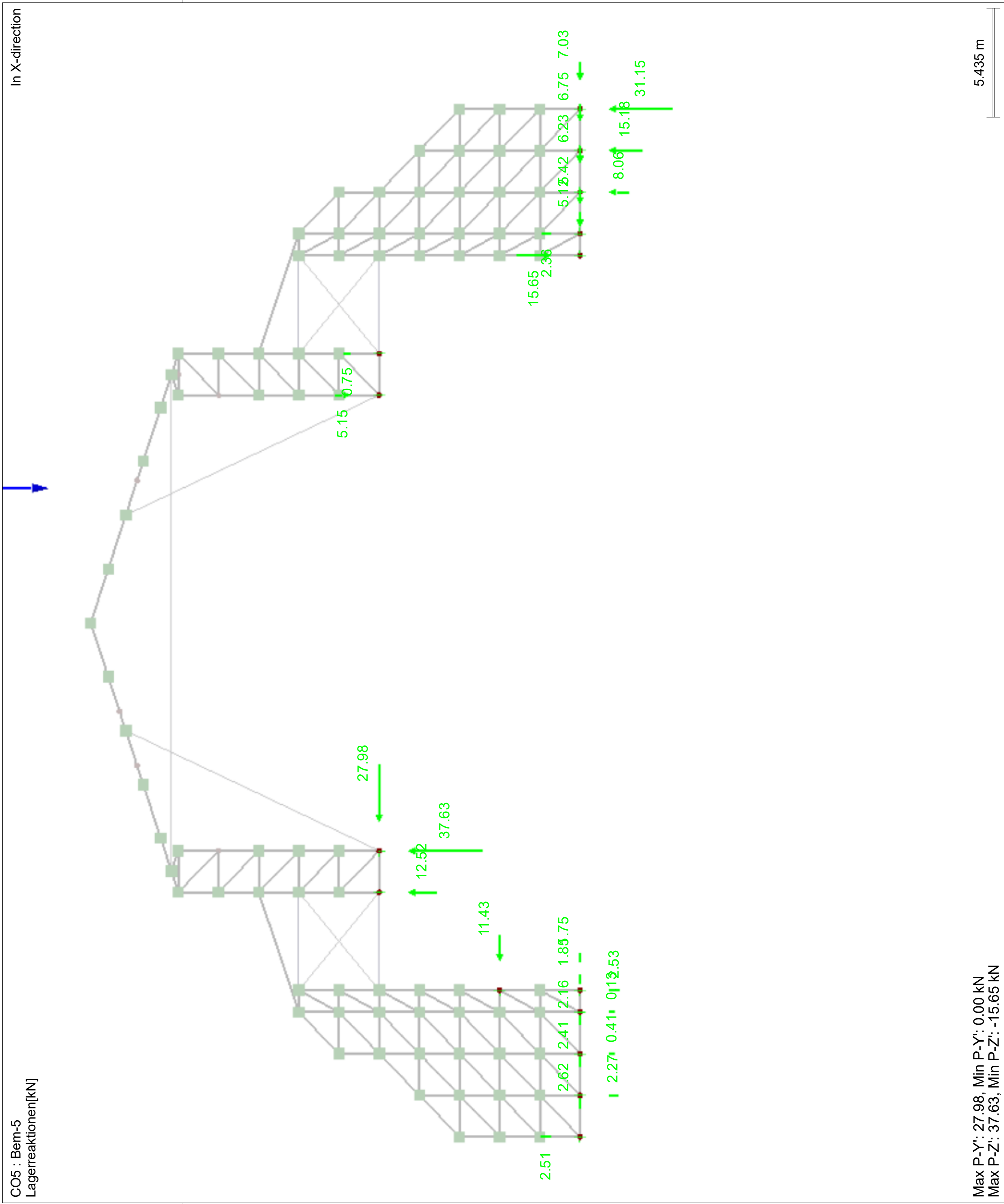

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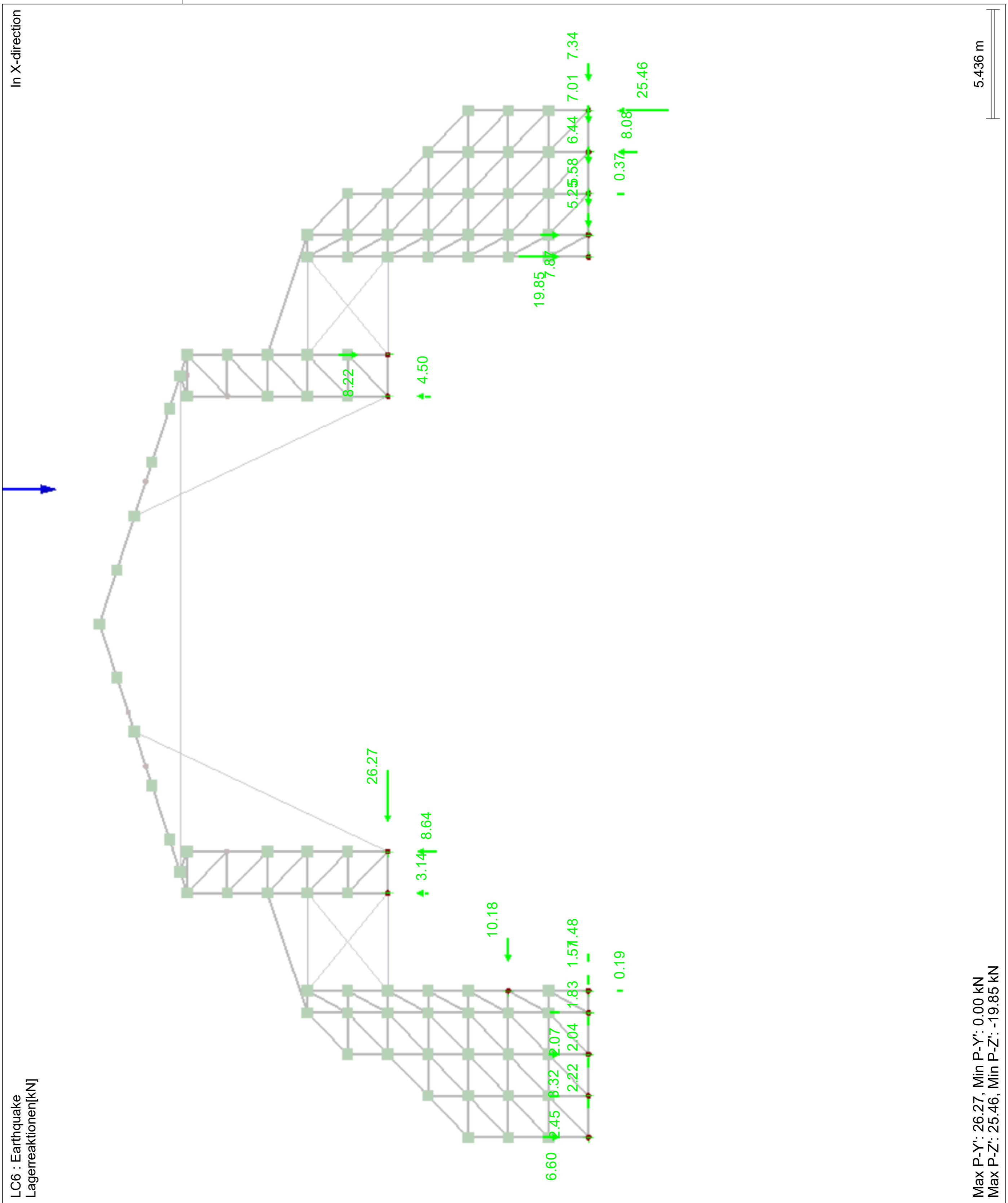

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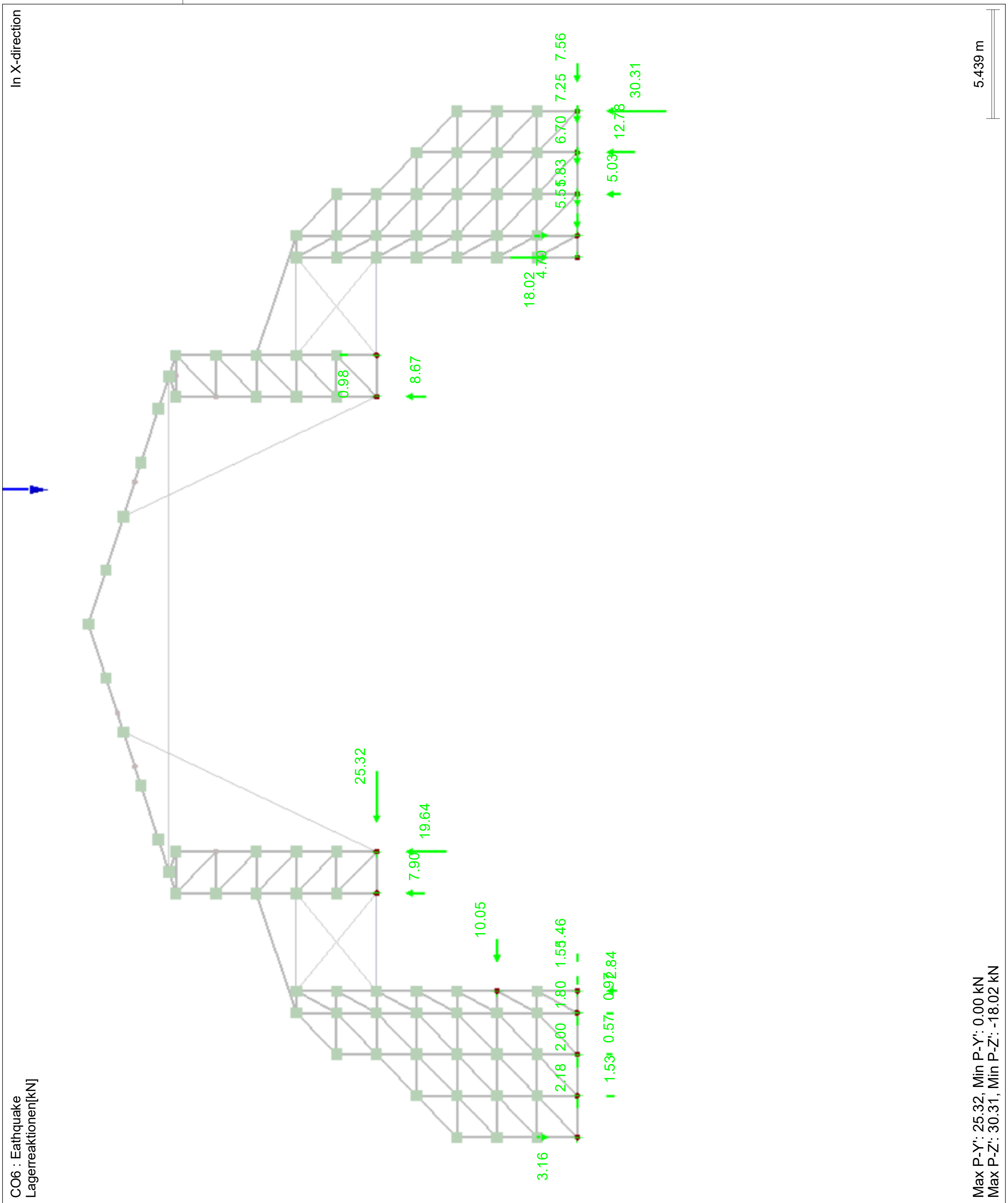


■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	Forces [kN] V_y	Forces [kN] V_z	Moments [kNm] M_T	Moments [kNm] M_y	Moments [kNm] M_z	Correspondin Load Cases
	Section No. 1: Rohr 48.3/2.9 (Stiel)										
860	RC1		0.900	MAX N	▷ 17.59	-0.02	0.22	0.00	-0.01	-0.06	CO 6
321	RC1		0.300	MIN N	▷ -41.95	0.03	0.09	0.00	0.04	0.10	CO 5
524	RC1		0.700	MAX V_y	-21.64	▷ 0.40	-0.80	0.00	-0.43	0.00	CO 6
235	RC1		1.000	MIN V_y	-9.20	▷ -0.33	0.24	0.00	-0.67	0.01	CO 5
260	RC1		2.000	MAX V_z	4.15	-0.17	▷ 3.32	0.00	1.88	0.11	CO 5
564	RC1		0.000	MIN V_z	-3.94	-0.03	▷ -2.95	0.00	1.19	-0.05	CO 3
255	RC1		0.000	MAX M_T	-28.28	0.26	0.37	▷ 0.05	-0.37	0.23	CO 5
230	RC1		2.000	MIN M_T	-19.19	0.00	0.37	▷ -0.05	0.16	-0.13	CO 5
260	RC1		2.000	MAX M_y	4.15	-0.17	3.32	0.00	▷ 1.88	0.11	CO 5
564	RC1		1.100	MIN M_y	-5.11	-0.07	-0.10	0.00	▷ -0.77	0.00	CO 4
235	RC1		2.000	MAX M_z	-9.14	-0.26	2.72	0.01	0.86	▷ 0.31	CO 5
529	RC1		2.000	MIN M_z	-4.18	0.22	0.36	-0.01	0.44	▷ -0.40	CO 6
	Section No. 2: Rohr 48.3/2.7 (Riegel)										
767	RC1		0.208	MAX N	▷ 13.38	0.00	0.07	0.00	0.00	0.00	CO 5
333	RC1		0.000	MIN N	▷ -23.40	0.00	0.00	0.00	0.04	0.00	CO 5
242	RC1		2.020	MAX V_y	8.92	▷ 0.34	-0.59	0.06	-0.51	-0.35	CO 5
241	RC1		0.000	MIN V_y	3.73	▷ -0.08	0.09	-0.01	-0.09	-0.11	CO 6
793	RC1		0.000	MAX V_z	-0.23	0.00	▷ 4.03	0.00	-0.28	0.00	CO 1
792	RC1		1.040	MIN V_z	-0.49	0.00	▷ -4.04	0.00	-0.29	0.00	CO 1
267	RC1		0.000	MAX M_T	13.01	0.00	-0.05	▷ 0.08	-0.01	0.00	CO 5
289	RC1		1.616	MIN M_T	-1.43	0.00	-0.06	▷ -0.03	0.06	0.00	CO 5
792	RC1		0.520	MAX M_y	-0.54	0.00	-0.03	0.00	▷ 0.77	0.00	CO 1
242	RC1		2.020	MIN M_y	8.92	0.34	-0.59	0.06	▷ -0.51	-0.35	CO 5
242	RC1		0.000	MAX M_z	8.92	0.30	-0.60	0.06	0.54	▷ 0.23	CO 5
242	RC1		2.020	MIN M_z	8.92	0.34	-0.59	0.06	-0.51	▷ -0.35	CO 5
	Section No. 3: Rohr 48.3/2.3 (Diagonale)										
684	RC1		0.000	MAX N	▷ 6.67	0.00	0.00	0.01	0.00	0.00	CO 5
270	RC1		0.000	MIN N	▷ -18.26	0.00	0.00	0.05	0.00	0.00	CO 5
244	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
244	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
244	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
270	RC1		0.000	MAX M_T	-18.26	0.00	0.00	▷ 0.05	0.00	0.00	CO 5
292	RC1		0.000	MIN M_T	1.68	0.00	0.00	▷ -0.02	0.00	0.00	CO 5
244	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
244	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
244	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
270	RC1		0.000	MIN M_z	-18.26	0.00	0.00	0.05	0.00	▷ 0.00	CO 5
	Section No. 4: Rohr 48.3/4 (Rohr)										
1	RC1		0.000	MAX N	▷ 22.27	-0.09	-0.30	-0.02	-0.07	-0.04	CO 3
901	RC1		0.000	MIN N	▷ -46.24	-0.17	0.27	-0.03	-0.23	-0.13	CO 5
884	RC1		0.664	MAX V_y	-39.54	▷ 0.26	0.43	0.05	0.21	-0.01	CO 5
901	RC1		0.591	MIN V_y	-46.24	▷ -0.24	0.41	-0.03	-0.02	0.00	CO 5
884	RC1		0.000	MAX V_z	-39.78	0.18	▷ 1.69	0.05	-0.54	0.15	CO 5
1	RC1		1.106	MIN V_z	-37.82	0.03	▷ -1.00	0.01	-0.30	-0.03	CO 2
884	RC1		0.000	MAX M_T	-39.78	0.18	1.69	▷ 0.05	-0.54	0.15	CO 5
901	RC1		1.074	MIN M_T	-46.24	-0.20	0.35	▷ -0.03	0.16	0.11	CO 5
1	RC1		1.106	MAX M_y	22.20	-0.10	1.06	-0.02	▷ 0.32	0.06	CO 3
884	RC1		0.000	MIN M_y	-39.78	0.18	1.69	0.05	▷ -0.54	0.15	CO 5
884	RC1		0.000	MAX M_z	-39.78	0.18	1.69	0.05	-0.54	▷ 0.15	CO 5
901	RC1		0.000	MIN M_z	-46.24	-0.17	0.27	-0.03	-0.23	▷ -0.13	CO 5
	Section No. 5: RRO 100x50x3.6 | DIN 59410:1974										
169	RC1		0.606	MAX N	▷ 43.73	0.00	-0.15	0.03	0.02	0.00	CO 5
168	RC1		2.045	MIN N	▷ -16.27	0.00	0.16	-0.01	0.23	0.00	CO 4
169	RC1		0.000	MAX V_y	43.73	▷ 0.00	-0.16	0.03	0.12	0.00	CO 5
168	RC1		2.045	MIN V_y	15.52	▷ 0.00	0.55	-0.04	0.82	0.00	CO 6
168	RC1		2.045	MAX V_z	15.52	0.00	▷ 0.55	-0.04	0.82	0.00	CO 6
169	RC1		2.020	MIN V_z	43.73	0.00	▷ -0.17	0.03	-0.20	0.00	CO 5
169	RC1		0.606	MAX M_T	43.73	0.00	-0.15	▷ 0.03	0.02	0.00	CO 5
168	RC1		0.307	MIN M_T	15.52	0.00	0.51	▷ -0.04	-0.10	0.00	CO 6
168	RC1		2.045	MAX M_y	15.52	0.00	0.55	-0.04	▷ 0.82	0.00	CO 6
169	RC1		0.000	MIN M_y	-10.76	0.00	0.34	0.00	▷ -0.71	0.00	CO 3
168	RC1		2.045	MAX M_z	15.52	0.00	0.55	-0.04	0.82	▷ 0.00	CO 6
169	RC1		2.020	MIN M_z	43.73	0.00	-0.17	0.03	-0.20	▷ 0.00	CO 5
	Section No. 8: RD 8 | DIN 1013-1										
902	RC1		0.000	MAX N	▷ 21.17	0.00	0.00	0.00	0.00	0.00	CO 5
902	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
902	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
902	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
902	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
902	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
902	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
902	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
902	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 12: RRO 100x60x4 (warmgefertigt)										
879	RC1		0.000	MAX N	▷ 0.83	0.00	0.00	0.00	0.00	0.00	CO 5
880	RC1		0.000	MIN N	▷ -23.40	0.00	0.00	0.00	0.00	0.00	CO 5
878	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
878	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
878	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
878	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
878	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
878	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
	Section No. 14: GI-KDXL Kederdach XL										
895	RC1		6.296	MAX N	▷ 21.15	-0.16	0.84	0.00	-0.84	0.81	CO 5
900	RC1		0.000	MIN N	▷ -37.43	0.00	12.21	0.00	0.00	0.00	CO 2
896	RC1		4.722	MAX V_y	-3.61	▷ 0.04	-0.49	0.00	0.87	0.08	CO 6
895	RC1		6.296	MIN V_y	21.15	▷ -0.16	0.84	0.00	-0.84	0.81	CO 5
900	RC1		0.000	MAX V_z	-23.66	-0.03	▷ 20.52	0.00	0.00	0.00	CO 5
889	RC1		2.822	MIN V_z	-11.97	0.00	▷ -17.81	0.00	9.78	0.00	CO 5
900	RC1		0.000	MAX M_T	-23.66	-0.03	20.52	▷ 0.00	0.00	0.00	CO 5
893	RC1		1.716	MIN M_T	-14.28	0.00	-4.25	▷ 0.00	0.00	0.00	CO 6
887	RC1		1.000	MAX M_y	-22.51	0.00	11.51	0.00	▷ 88.79	0.00	CO 5
891	RC1		1.822	MIN M_y	-8.53	0.00	-4.78	0.00	▷ -57.33	0.00	CO 4
895	RC1		6.296	MAX M_z	21.15	-0.16	0.84	0.00	-0.84	▷ 0.81	CO 5
895	RC1		0.000	MIN M_z	18.71	-0.16	-0.83	0.00	-0.87	▷ -0.18	CO 5
	Section No. 15: Rundstahl 12										
894	RC1		0.000	MAX N	▷ 30.49	0.00	0.00	0.00	0.00	0.00	CO 2
894	RC1		0.000	MIN N	▷ 0.00	0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MIN V_z	0.00	0.00	▷ 0.00	0.00	0.00	0.00	
894	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
894	RC1		0.000	MAX M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MIN M_y	0.00	0.00	0.00	0.00	▷ 0.00	0.00	
894	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
894	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
63	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.03	CO 5
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	0.06	CO 6
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	-0.03	CO 5
64	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.03	CO 2
		Min $P_{X'}$	-0.27	0.00	0.00	0.00	0.00	-0.16	CO 5
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.03	CO 2
		Min $M_{Z'}$	-0.27	0.00	0.00	0.00	0.00	-0.16	CO 5
69	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.23	CO 6
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.13	CO 5
		Min $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	-0.23	CO 6
70	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	0.57	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.05	CO 1
		Max $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	0.57	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.10	CO 2
94	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	0.30	CO 5
		Min $P_{X'}$	-0.14	0.00	0.00	0.00	0.00	-0.04	CO 6
		Max $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	0.30	CO 5
		Min $M_{Z'}$	-0.12	0.00	0.00	0.00	0.00	-0.06	CO 3
95	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.11	CO 2
		Min $P_{X'}$	-0.44	0.00	0.00	0.00	0.00	0.92	CO 5
		Max $M_{Z'}$	-0.44	0.00	0.00	0.00	0.00	0.92	CO 5
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.11	CO 2
107	RC1	Max $P_{X'}$	0.11	0.00	0.00	0.00	0.00	0.03	CO 6
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.09	CO 2
		Max $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	0.05	CO 3
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.26	CO 5
108	RC1	Max $P_{X'}$	0.19	0.00	0.00	0.00	0.00	-0.73	CO 5
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.09	CO 2
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.09	CO 2
		Min $M_{Z'}$	0.19	0.00	0.00	0.00	0.00	-0.73	CO 5
110	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.03	CO 3
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	0.03	CO 5
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.04	CO 2
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.03	CO 6
111	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	-0.33	CO 5
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.01	CO 6
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.04	CO 3

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
111		Min $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	-0.33	CO 5
112	RC1	Max $P_{X'}$	0.22	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	-0.04	CO 2
		Max $M_{Z'}$	0.22	0.00	0.00	0.00	0.00	0.07	CO 5
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.04	CO 2
113	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.21	CO 2
		Min $P_{X'}$	-0.29	0.00	0.00	0.00	0.00	-0.84	CO 5
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.21	CO 2
		Min $M_{Z'}$	-0.29	0.00	0.00	0.00	0.00	-0.84	CO 5
116	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.10	CO 4
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.10	CO 4
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
117	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.12	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.12	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
122	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.08	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	-0.10	CO 4
123	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Min $P_{X'}$	-0.17	0.00	0.00	0.00	0.00	-0.10	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	-0.12	CO 3
125	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.02	CO 2
126	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	0.12	CO 3
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.12	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
131	RC1	Max $P_{X'}$	0.01	0.00	14.34	0.00	0.00	0.02	CO 2
		Min $P_{X'}$	-0.06	0.00	-8.26	0.00	0.00	-0.09	CO 4
		Max $P_{Z'}$	0.01	0.00	16.00	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	-0.05	0.00	-17.16	0.00	0.00	-0.08	CO 3
		Max $M_{Z'}$	0.01	0.00	14.34	0.00	0.00	0.02	CO 2
		Min $M_{Z'}$	-0.06	0.00	-8.26	0.00	0.00	-0.09	CO 4
132	RC1	Max $P_{X'}$	0.09	27.98	37.63	0.00	0.00	-0.09	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.08	33.40	-13.42	0.00	0.00	-0.12	CO 3
		Min $P_{Y'}$	0.01	-1.06	14.32	0.00	0.00	-0.02	CO 2
		Max $P_{Z'}$	0.09	27.98	37.63	0.00	0.00	-0.09	CO 5
		Min $P_{Z'}$	0.08	33.40	-13.42	0.00	0.00	-0.12	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.08	33.40	-13.42	0.00	0.00	-0.12	CO 3
134	RC1	Max $P_{X'}$	0.01	0.00	-10.22	0.00	0.00	0.00	CO 4
		Min $P_{X'}$	0.00	0.00	19.34	0.00	0.00	0.00	CO 2
		Max $P_{Z'}$	0.00	0.00	19.34	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	0.01	0.00	-15.98	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	0.00	-10.22	0.00	0.00	0.00	CO 4
135	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	0.00	-5.36	0.00	0.00	0.00	CO 3
		Max $P_{Z'}$	0.00	0.00	19.45	0.00	0.00	0.00	CO 2
		Min $P_{Z'}$	-0.01	0.00	-5.36	0.00	0.00	0.00	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	0.00	12.52	0.00	0.00	0.00	CO 5
164	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	-0.12	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.06	0.00	0.00	0.00	0.00	-0.12	CO 5
165	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Max $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	0.03	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.02	CO 4
167	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Max $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.01	CO 5
168	RC1	Max $P_{X'}$	0.08	0.00	0.00	0.00	0.00	-0.10	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	0.08	0.00	0.00	0.00	0.00	-0.10	CO 5
173	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.21	0.00	0.00	0.00	0.00	-0.27	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.21	0.00	0.00	0.00	0.00	-0.27	CO 5
174	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	-0.09	CO 3

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
174		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 2
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	-0.09	CO 3
176	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
177	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.04	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
179	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.02	0.00	0.00	0.00	0.00	0.25	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.29	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
180	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.14	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	-0.18	CO 5
185	RC1	Max $P_{X'}$	0.12	0.00	0.00	0.00	0.00	-0.32	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.12	0.00	0.00	0.00	0.00	-0.32	CO 5
186	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	-0.15	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	-0.15	CO 3
188	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.02	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
189	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.13	CO 3
191	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.24	0.00	0.00	0.00	0.00	-0.36	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.24	0.00	0.00	0.00	0.00	-0.36	CO 6
192	RC1	Max $P_{X'}$	0.04	0.00	0.00	0.00	0.00	-0.04	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 1
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	-0.05	CO 3
194	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.32	0.00	0.00	0.00	0.00	0.06	CO 6
		Max $M_{Z'}$	-0.32	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.00	CO 1
195	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
197	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	-0.08	CO 5
		Max $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	0.02	CO 3
		Min $M_{Z'}$	-0.09	0.00	0.00	0.00	0.00	-0.08	CO 5
198	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	0.02	CO 5
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.05	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
203	RC1	Max $P_{X'}$	0.32	7.56	30.31	0.00	0.00	-0.45	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.32	7.56	30.31	0.00	0.00	-0.45	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.31	7.03	31.15	0.00	0.00	-0.43	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.32	7.56	30.31	0.00	0.00	-0.45	CO 6
204	RC1	Max $P_{X'}$	0.01	-0.08	4.70	0.00	0.00	0.01	CO 2
		Min $P_{X'}$	-0.07	2.76	-5.30	0.00	0.00	-0.13	CO 3
		Max $P_{Y'}$	-0.07	2.76	-5.30	0.00	0.00	-0.13	CO 3
		Min $P_{Y'}$	0.00	-0.10	4.57	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.01	-0.08	4.70	0.00	0.00	0.01	CO 2
		Min $P_{Z'}$	-0.07	2.76	-5.30	0.00	0.00	-0.13	CO 3
		Max $M_{Z'}$	0.01	-0.08	4.70	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	-0.07	2.76	-5.30	0.00	0.00	-0.13	CO 3
206	RC1	Max $P_{X'}$	0.26	7.25	12.78	0.00	0.00	-0.48	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.26	7.25	12.78	0.00	0.00	-0.48	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.25	6.75	15.18	0.00	0.00	-0.45	CO 5

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
206		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.26	7.25	12.78	0.00	0.00	-0.48	CO 6
207	RC1	Max $P_{X'}$	0.00	-0.10	5.71	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.06	2.54	0.75	0.00	0.00	-0.15	CO 3
		Max $P_{Y'}$	-0.06	2.54	0.75	0.00	0.00	-0.15	CO 3
		Min $P_{Y'}$	0.00	-0.10	5.71	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.00	-0.08	5.71	0.00	0.00	0.01	CO 2
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	-0.10	5.71	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	-0.06	2.54	0.75	0.00	0.00	-0.15	CO 3
209	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.06	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
210	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.08	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
215	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.06	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
216	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.12	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.12	CO 3
221	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.32	0.00	0.00	0.00	0.00	0.09	CO 6
		Max $M_{Z'}$	-0.32	0.00	0.00	0.00	0.00	0.09	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
222	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.09	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.09	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
227	RC1	Max $P_{X'}$	0.24	6.70	5.03	0.00	0.00	-0.47	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.24	6.70	5.03	0.00	0.00	-0.47	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.22	6.23	8.06	0.00	0.00	-0.44	CO 5
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.24	6.70	5.03	0.00	0.00	-0.47	CO 6
228	RC1	Max $P_{X'}$	0.00	-0.09	7.00	0.00	0.00	0.01	CO 1
		Min $P_{X'}$	-0.06	2.28	0.41	0.00	0.00	-0.15	CO 3
		Max $P_{Y'}$	-0.06	2.28	0.41	0.00	0.00	-0.15	CO 3
		Min $P_{Y'}$	0.00	-0.09	7.00	0.00	0.00	0.01	CO 1
		Max $P_{Z'}$	0.00	-0.09	7.00	0.00	0.00	0.01	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	-0.09	7.00	0.00	0.00	0.01	CO 1
		Min $M_{Z'}$	-0.06	2.28	0.41	0.00	0.00	-0.15	CO 3
233	RC1	Max $P_{X'}$	0.06	0.00	0.00	0.00	0.00	0.18	CO 6
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.04	CO 5
		Max $M_{Z'}$	0.06	0.00	0.00	0.00	0.00	0.18	CO 6
		Min $M_{Z'}$	-0.01	0.00	0.00	0.00	0.00	-0.01	CO 1
234	RC1	Max $P_{X'}$	0.09	0.00	0.00	0.00	0.00	-0.07	CO 5
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	0.08	CO 3
		Min $M_{Z'}$	0.09	0.00	0.00	0.00	0.00	-0.07	CO 5
239	RC1	Max $P_{X'}$	0.11	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.11	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
240	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.22	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.22	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
245	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.35	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.35	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
246	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	-0.02	CO 4
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	-0.05	CO 6
251	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.08	CO 3
		Min $P_{X'}$	-0.06	0.00	0.00	0.00	0.00	0.13	CO 5
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.16	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
252	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	

■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
252		Min $P_{X'}$	-0.09	0.00	0.00	0.00	0.00	0.06	CO 5
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.10	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
257	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.22	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.23	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
258	RC1	Max $P_{X'}$	0.07	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.07	0.00	0.00	0.00	0.00	0.14	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
263	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.26	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.26	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
264	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.01	CO 3
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.02	0.00	0.00	0.00	0.00	-0.01	CO 6
269	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.25	0.00	0.00	0.00	0.00	0.32	CO 6
		Max $M_{Z'}$	-0.25	0.00	0.00	0.00	0.00	0.32	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
270	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.13	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 1
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.13	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	-0.01	CO 2
275	RC1	Max $P_{X'}$	0.13	5.83	-4.70	0.00	0.00	-0.20	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.13	5.83	-4.70	0.00	0.00	-0.20	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.14	7.90	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.13	5.83	-4.70	0.00	0.00	-0.20	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.13	5.83	-4.70	0.00	0.00	-0.20	CO 6
276	RC1	Max $P_{X'}$	0.00	-0.08	8.04	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.02	1.96	-0.14	0.00	0.00	-0.06	CO 3
		Max $P_{Y'}$	-0.02	1.96	-0.14	0.00	0.00	-0.06	CO 3
		Min $P_{Y'}$	0.00	-0.08	8.04	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	0.00	-0.08	8.04	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	-0.02	1.88	-0.67	0.00	0.00	-0.06	CO 4
		Max $M_{Z'}$	0.00	-0.08	8.04	0.00	0.00	0.00	CO 1
		Min $M_{Z'}$	-0.02	1.96	-0.14	0.00	0.00	-0.06	CO 3
281	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	-0.03	0.00	0.00	0.00	0.00	-0.04	CO 6
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.00	CO 3
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.04	CO 6
282	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	0.03	CO 5
		Max $M_{Z'}$	-0.08	0.00	0.00	0.00	0.00	0.03	CO 5
		Min $M_{Z'}$	-0.03	0.00	0.00	0.00	0.00	-0.01	CO 3
287	RC1	Max $P_{X'}$	0.11	0.00	0.00	0.00	0.00	0.01	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.04	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $M_{Z'}$	0.01	0.00	0.00	0.00	0.00	-0.01	CO 2
288	RC1	Max $P_{X'}$	0.02	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $P_{X'}$	-0.01	0.00	0.00	0.00	0.00	0.07	CO 3
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
293	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.13	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.16	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
294	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.02	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.02	CO 4
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
299	RC1	Max $P_{X'}$	0.01	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	-0.04	0.00	0.00	0.00	0.00	0.11	CO 5
		Max $M_{Z'}$	-0.04	0.00	0.00	0.00	0.00	0.11	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
300	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.05	0.00	0.00	0.00	0.00	0.04	CO 3
		Max $M_{Z'}$	-0.05	0.00	0.00	0.00	0.00	0.04	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
305	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.13	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.02	0.00	0.00	0.00	0.00	0.13	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
306	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.08	CO 3

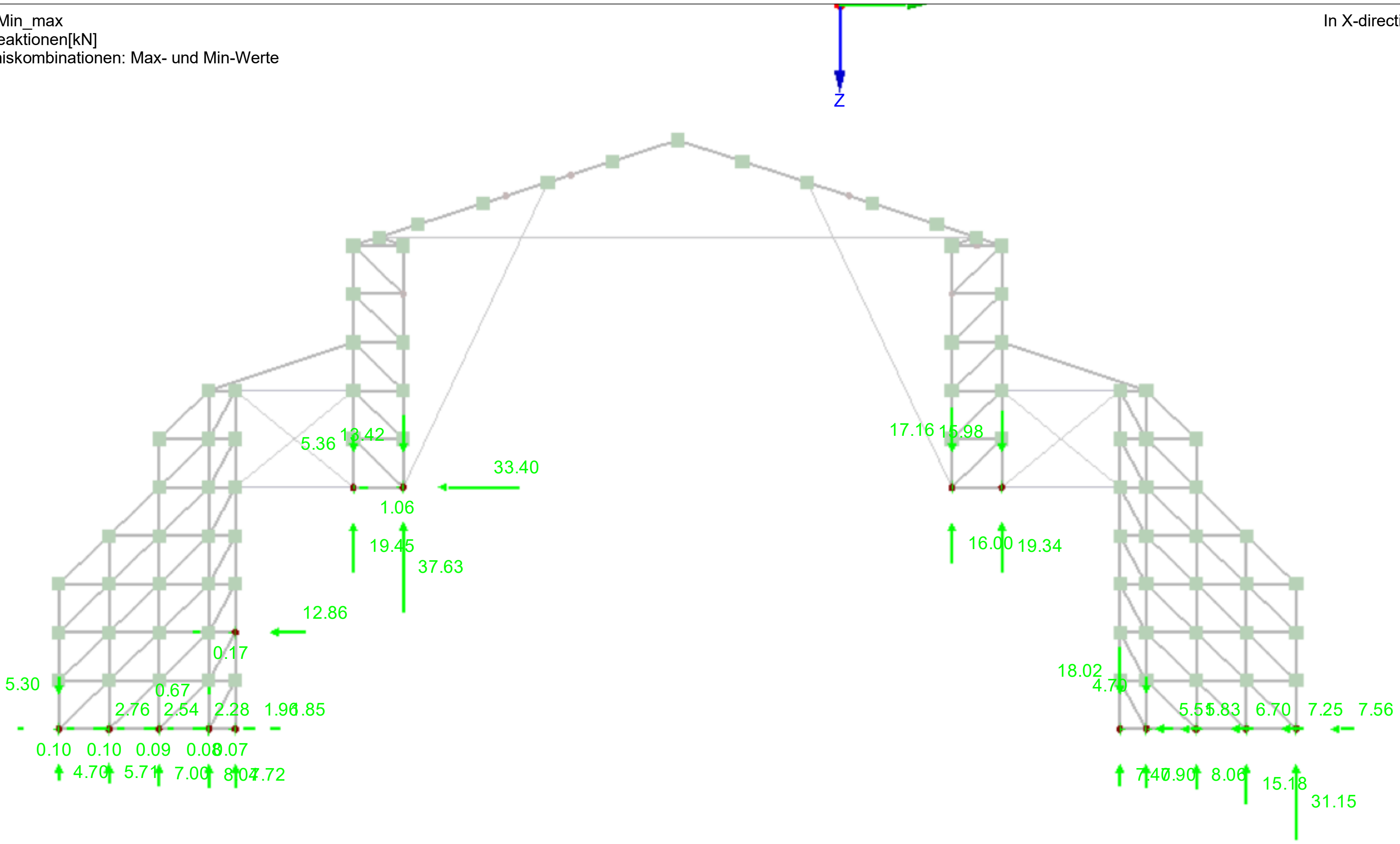
■ 4.4 NODES - SUPPORT FORCES

Result Combinations

Node No.	RC		Support Forces [kN] $P_{X'}$	$P_{Y'}$	$P_{Z'}$	Support Moments [kNm] $M_{X'}$	$M_{Y'}$	$M_{Z'}$	Corresponding Load Cases
306		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.08	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
311	RC1	Max $P_{X'}$	0.05	0.00	0.00	0.00	0.00	0.15	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.05	0.00	0.00	0.00	0.00	0.15	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
312	RC1	Max $P_{Y'}$	0.00	12.86	0.00	0.00	0.00	0.02	CO 3
		Min $P_{Y'}$	0.00	-0.17	0.00	0.00	0.00	0.00	CO 2
		Max $M_{Z'}$	0.00	12.86	0.00	0.00	0.00	0.02	CO 3
		Min $M_{Z'}$	0.00	-0.06	0.00	0.00	0.00	0.00	CO 1
317	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.15	0.00	0.00	0.00	0.00	0.19	CO 6
		Max $M_{Z'}$	-0.15	0.00	0.00	0.00	0.00	0.19	CO 6
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
318	RC1	Max $P_{X'}$	0.03	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
		Max $M_{Z'}$	0.03	0.00	0.00	0.00	0.00	0.06	CO 3
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 1
323	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	-0.01	5.51	-18.02	0.00	0.00	0.00	CO 6
		Max $P_{Y'}$	-0.01	5.51	-18.02	0.00	0.00	0.00	CO 6
		Min $P_{Y'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Z'}$	0.00	0.13	7.40	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	-0.01	5.51	-18.02	0.00	0.00	0.00	CO 6
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	-0.01	5.51	-18.02	0.00	0.00	0.00	CO 6
325	RC1	Max $P_{X'}$	0.01	1.85	3.34	0.00	0.00	0.00	CO 3
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $P_{Y'}$	0.01	1.85	3.34	0.00	0.00	0.00	CO 3
		Min $P_{Y'}$	0.00	-0.07	7.72	0.00	0.00	0.00	CO 1
		Max $P_{Z'}$	0.00	-0.07	7.72	0.00	0.00	0.00	CO 1
		Min $P_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.01	1.85	3.34	0.00	0.00	0.00	CO 3
327	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
328	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 2
329	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
330	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
331	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
332	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
333	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
334	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	
335	RC1	Max $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
		Min $P_{X'}$	0.00	0.00	0.00	0.00	0.00	0.00	
		Max $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 5
		Min $M_{Z'}$	0.00	0.00	0.00	0.00	0.00	0.00	CO 6
337	RC1	Max $P_{X'}$	0.17	0.00	0.00	0.00	0.00	-0.02	CO 6
		Min $P_{X'}$	-0.08	0.00	0.00	0.00	0.00	0.00	CO 5
		Max $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	0.01	CO 2
		Min $M_{Z'}$	0.17	0.00	0.00	0.00	0.00	-0.02	CO 6
338	RC1	Max $P_{X'}$	0.46	0.00	0.00	0.00	0.00	0.01	CO 5
		Min $P_{X'}$	-0.07	0.00	0.00	0.00	0.00	-0.01	CO 2
		Max $M_{Z'}$	0.35	0.00	0.00	0.00	0.00	0.01	CO 4
		Min $M_{Z'}$	-0.07	0.00	0.00	0.00	0.00	-0.01	CO 2

RC1 : Min_max
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max P-Y': 33.40, Min P-Y': -1.06 kN
Max P-Z': 37.63, Min P-Z': -18.02 kN

LAGERREAKTIONEN

Volker Knobloch
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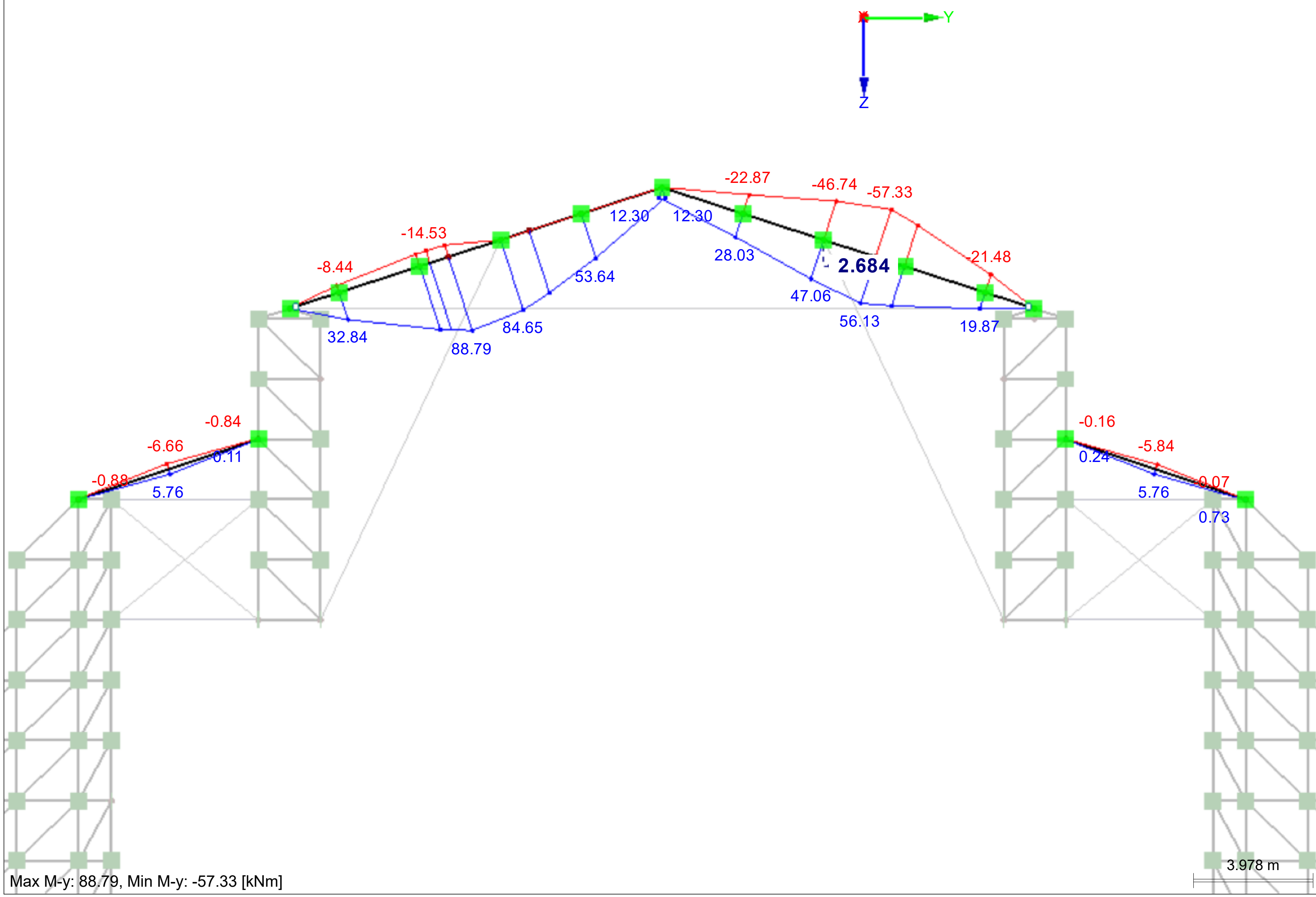
Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023
Model: K-Dach-1-ok
Date: 15.12.2023

RESULTS

RC1 : Min_max
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max M-y: 88.79, Min M-y: -57.33 [kNm]

INTERNAL FORCES M_y

Project: 2023
Model: K-Dach-1-ok
Date: 15.12.2023

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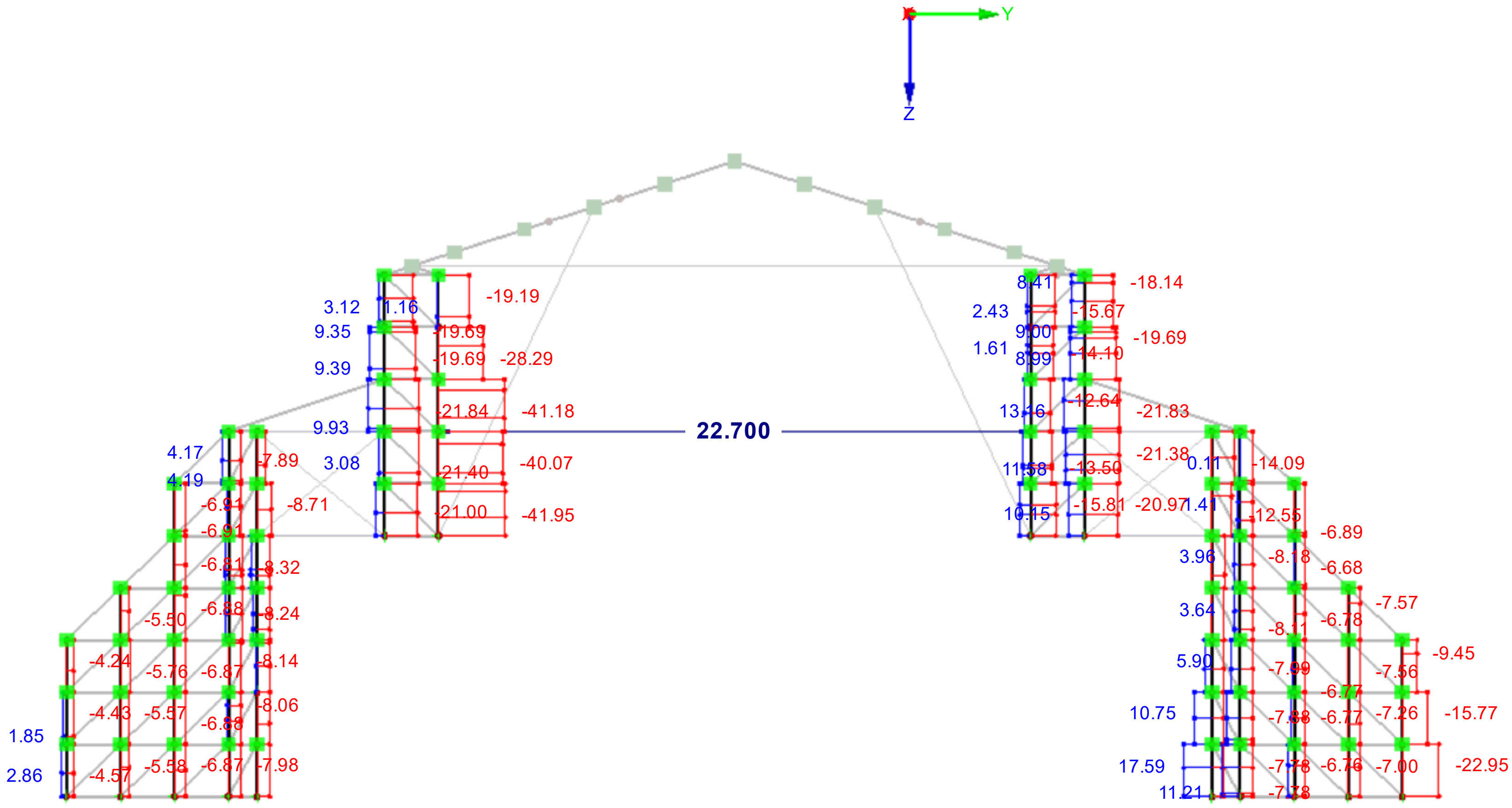
RESULTS

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 17.59, Min N: -41.95 [kN]

5.34 m

INTERNAL FORCES N

Project: 2023

Model: K-Dach-1-ok

Date: 15.12.20

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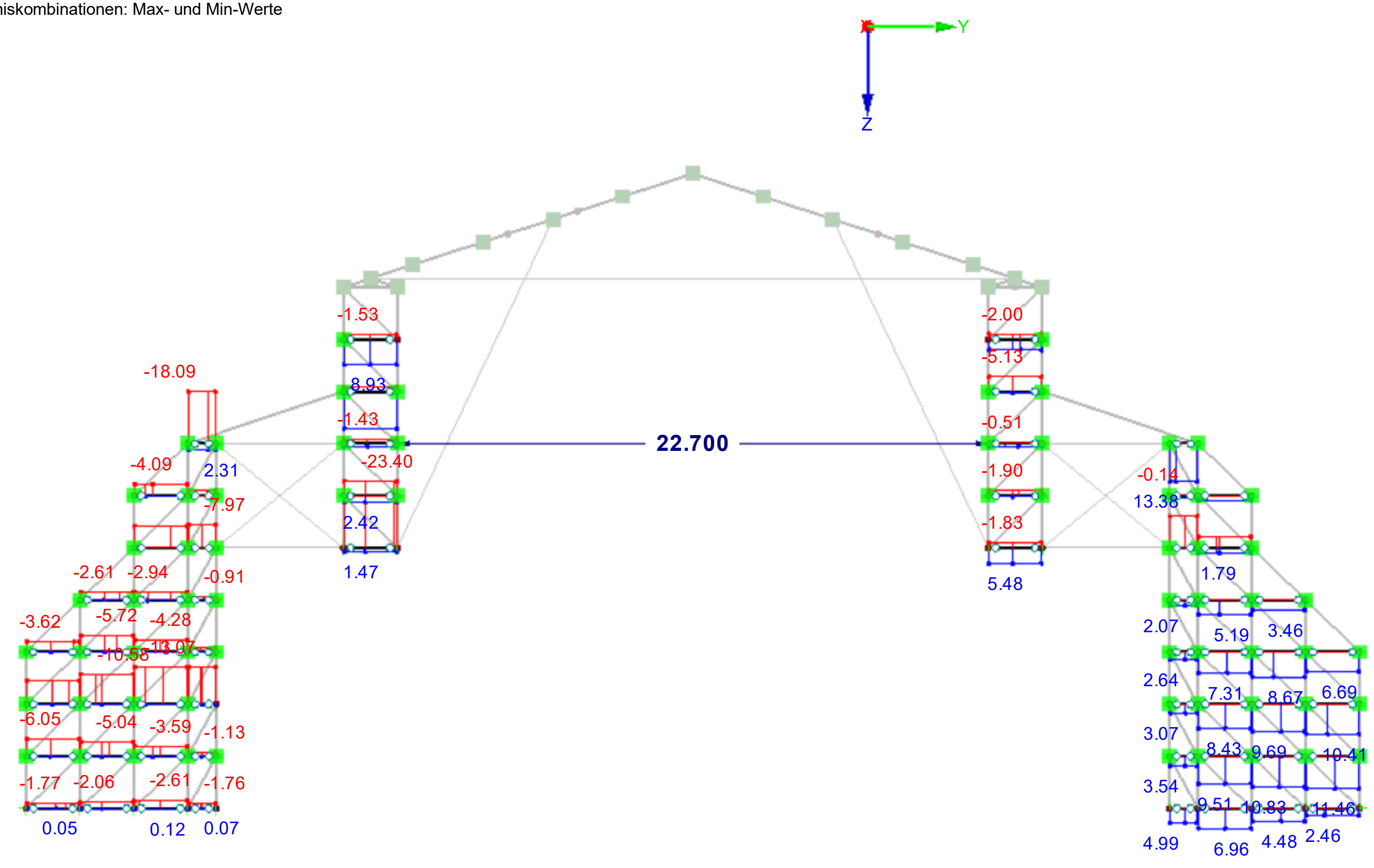
RESULTS

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 13.38, Min N: -23.40 [kN]

INTERNAL FORCES N

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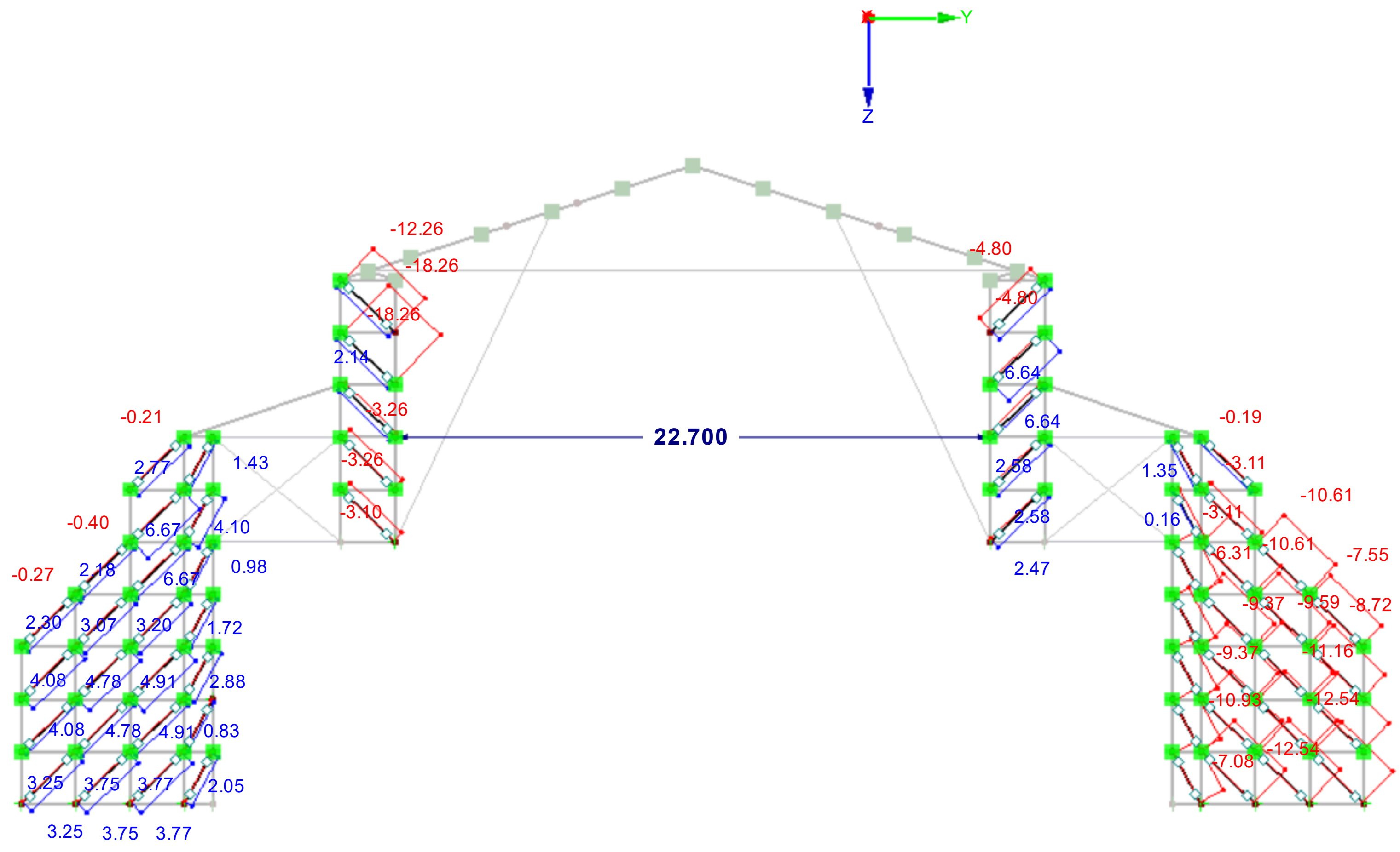
Project: 2023
Model: K-Dach-1-ok
Date: 15.12.2023
RESULTS
Sheet: 1
Page: 60/82

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 6.67, Min N: -18.26 [kN]

5.309 m

■ INTERNAL FORCES N

Project: 2023
Model: K-Dach-1-ok
Date: 15.12.20

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RESULTS

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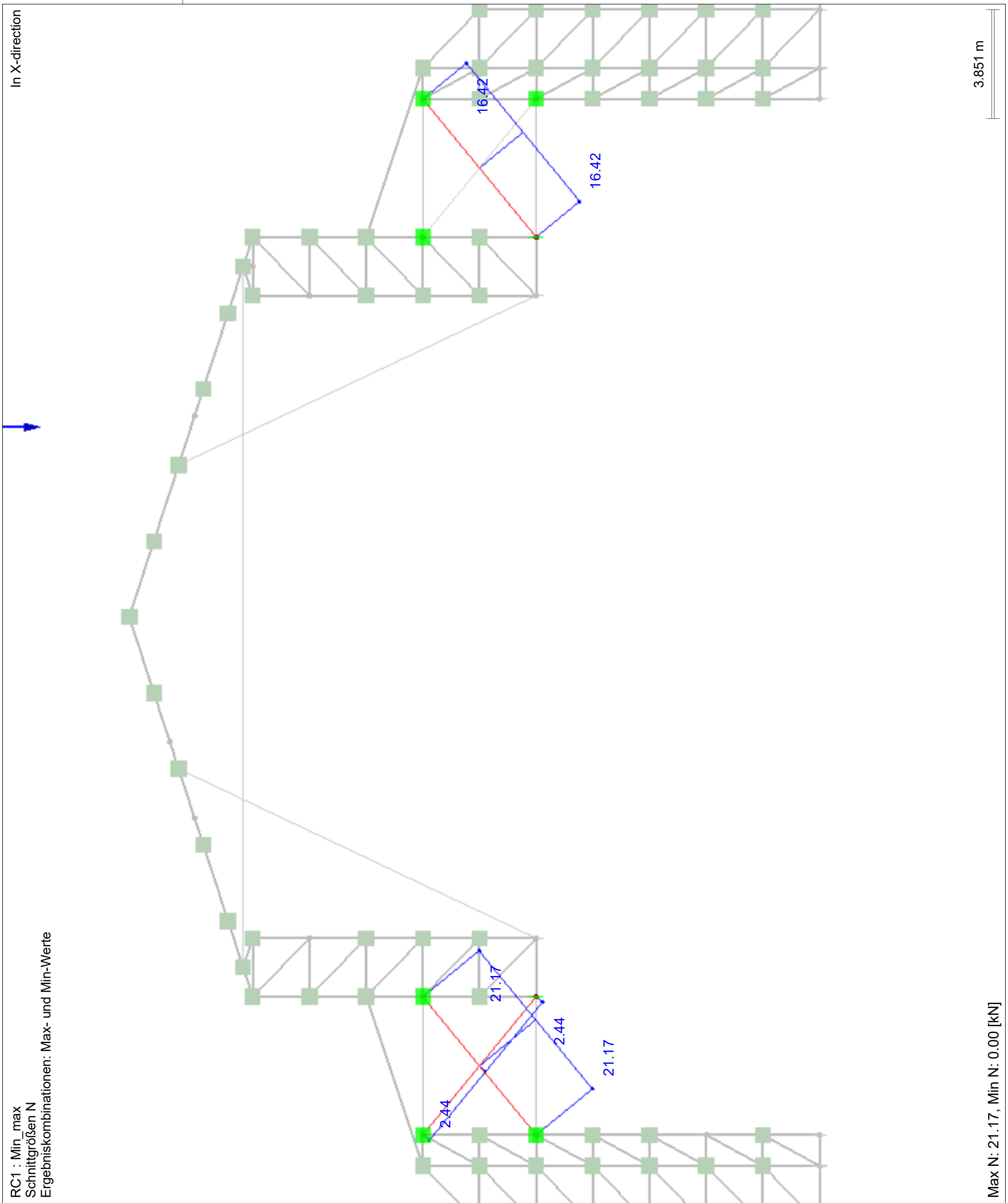
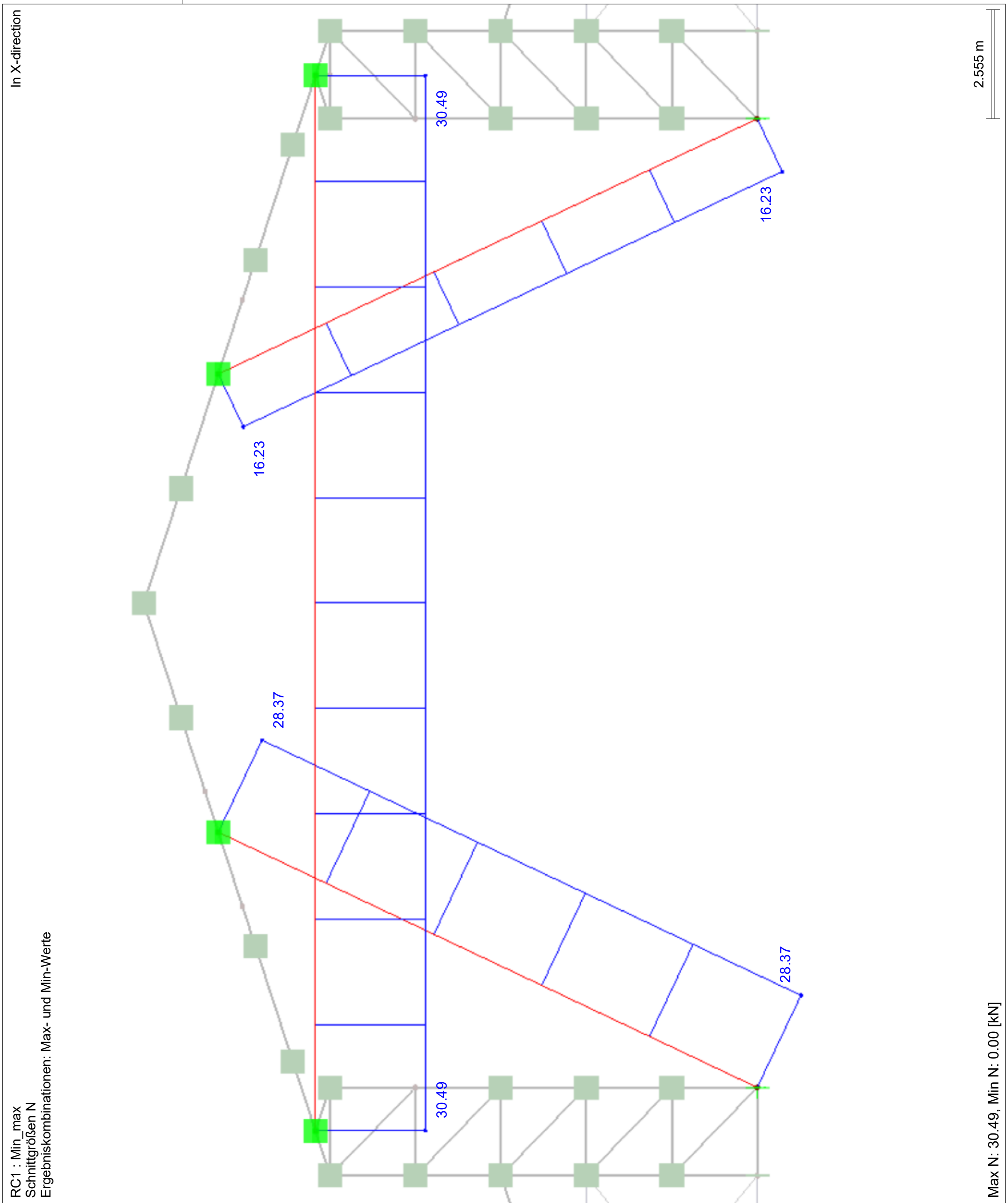
RESULTS

Project: 2023 Model: K-Dach-1-ok Date: 15.12.2023

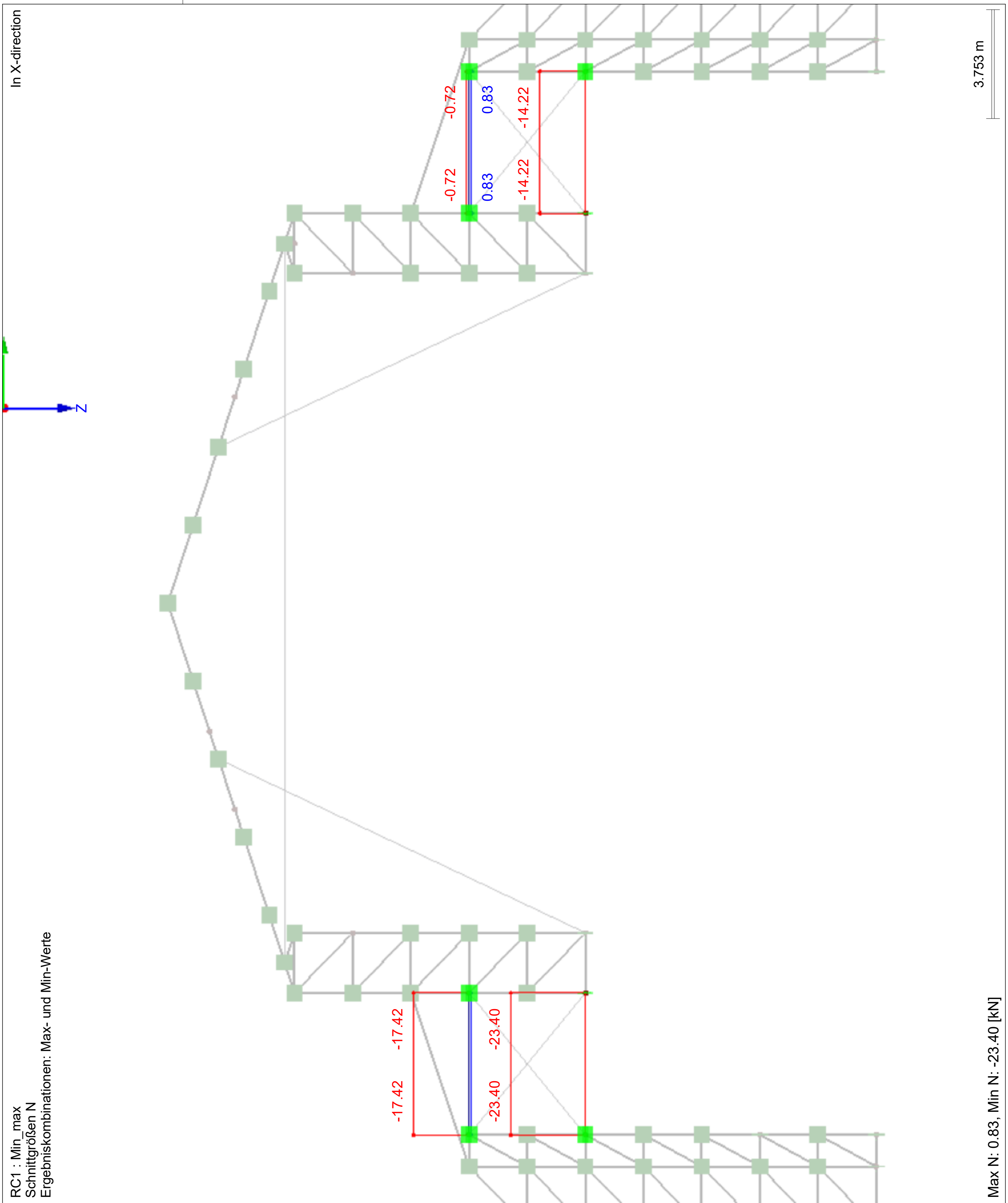
INTERNAL FORCES N



■ INTERNAL FORCES N

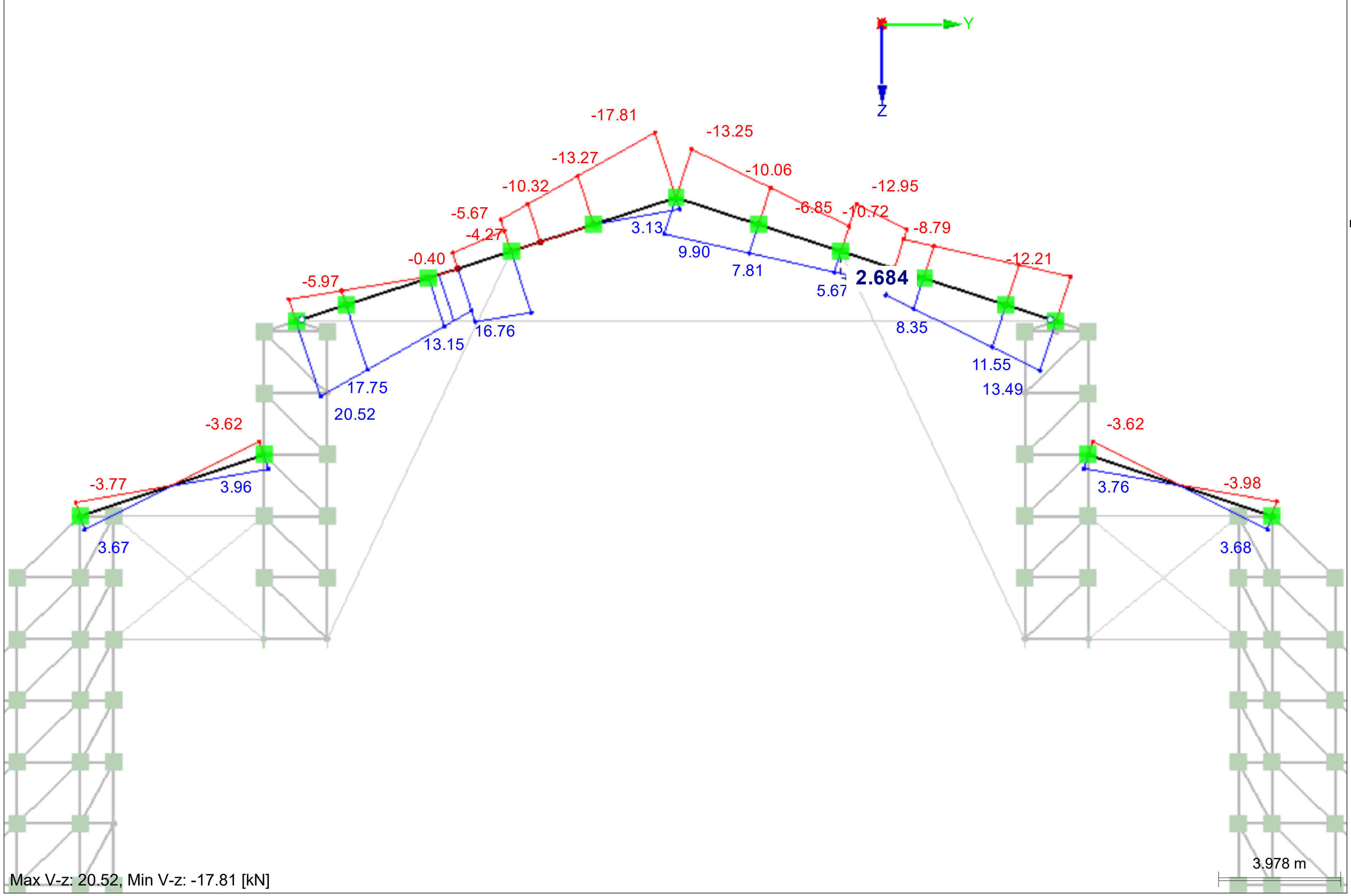


INTERNAL FORCES N



RC1 : Min_max
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max V-z: 20.52, Min V-z: -17.81 [kN]

INTERNAL FORCES V_z

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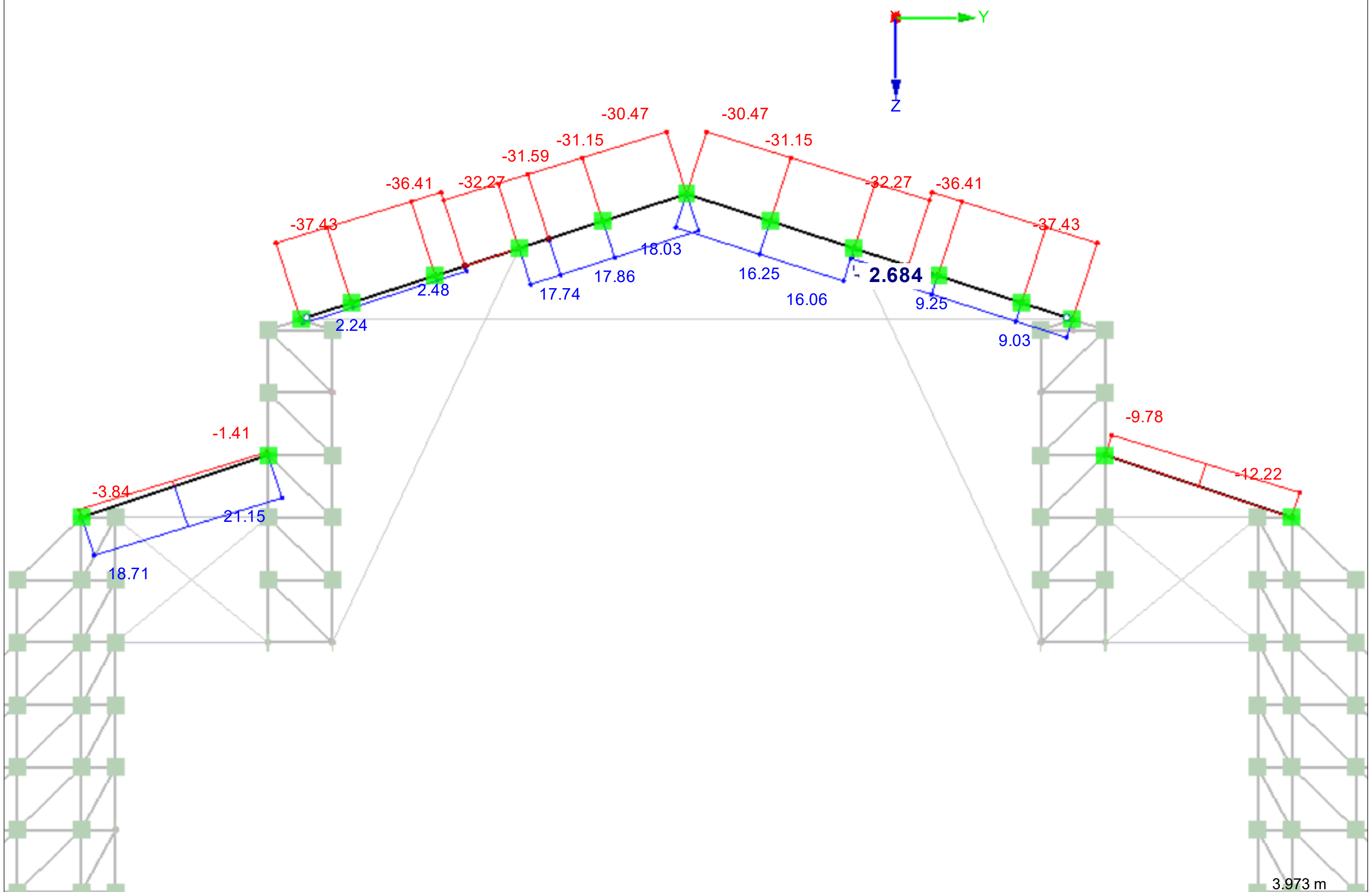
Project: 2023
Model: K-Dach-1-ok
Date: 15.12.20

RESULTS

RC1 : Min_max
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

In X-direction



Max N: 21.15, Min N: -37.43 [kN]

RSTAB 8.31.01 - Space Frame Structures

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INTERNAL FORCES N

Project: 2023

Model: K-Dach-1-ok

Date: 15.12.2023

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RESULTS

STEEL EC3
CA1
Bemessung nach Eurocode 3

1.1 GENERAL DATA

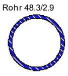
Members to design:	229,230,234,235,254,255,259,260,276,277,281,282,298,299,303,304, 320,321,325,326,463,464,480,481,485,486,502,503,507,508,524,525, 529,530,563,564,578,579,593,594,608,609,623,624,638,639,658,659, 673,674,688,689,703,704,718,719,733,734,748,749,770,771,785,786, 800,801,815,816,830,831,845,846,860,861
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design Result combinations to design:	RC1 Min_max

1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
2	Baustahl S 460 Q | DIN EN 1993-1-1:2010-12	21000.00	8076.92	0.300	46.00	40.0
					44.00	80.0

1.3 CROSS-SECTIONS

Rohr 48.3/2.9



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	2	Rohr 48.3/2.9	Pipe	1.18	Stiel

1.5 EFFECTIVE LENGTHS - MEMBERS

Member No.	Buckling Possible	Buckling About Axis y Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Buckling About Axis z Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Lateral-Torsional Buckling Possible	k_z	k_w	L_w [m]	L_T [m]
229	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
230	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
234	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
235	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
254	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
255	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
259	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
260	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
276	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
277	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
281	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
282	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
298	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
299	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
303	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
304	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
320	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
321	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
325	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
326	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
463	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
464	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
480	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
481	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
485	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
486	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
502	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
503	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
507	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
508	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
524	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
525	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
529	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
530	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
563	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
564	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
578	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
579	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
593	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
594	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
608	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
609	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
623	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
624	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
638	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
639	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
658	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
659	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
673	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
674	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
688	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
689	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
703	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
704	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
718	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

1.5 EFFECTIVE LENGTHS - MEMBERS

Member No.	Buckling Possible	Buckling About Axis y Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Buckling About Axis z Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Lateral-Torsional Buckling Possible	k_z	k_w	L_w [m]	L_T [m]
719	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
733	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
734	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
748	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
749	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
770	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
771	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
785	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
786	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
800	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
801	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
815	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
816	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
830	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
831	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
845	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
846	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
860	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000
861	☒	☒	1.00	2.000	☒	1.00	2.000	☐	1.0	1.0	2.000	2.000

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
229	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.35	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
230	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.300	EK1	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.58	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
234	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.04	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.12	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.43	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
235	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.04	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.900	EK1	0.17	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.52	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
254	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
255	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.15	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.800	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.700	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.05	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.79	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
259	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.800	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	EK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.07	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	EK1	0.18	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.46	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
260	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.600	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.10	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.05	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.600	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.04	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.47	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.46	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
276	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.200	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
277	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	EK1	0.22	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.500	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.01	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.600	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.700	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.11	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.400	EK1	1.18	> 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
281	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.07	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.12	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	2.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.47	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.47	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	EK1	0.30	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
282	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.800	EK1	0.14	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.14	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.47	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.47	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
298	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.29	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.29	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.27	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
299	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.21	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	1.600	EK1	0.00	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.800	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.06	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.29	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.29	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.500	EK1	1.03	> 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
303	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.46	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.46	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
304	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.600	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.700	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.46	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.46	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2

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Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	EK1	0.38	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
320	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.800	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.900	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.34	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.34	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.23	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
321	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.400	EK1	0.22	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.300	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.400	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.34	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.34	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.400	EK1	0.98	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
325	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.300	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.45	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.45	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
326	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.11	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.700	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.45	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.45	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
463	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.600	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.20	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.600	EK1	0.37	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
464	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.28	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.08	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	EK1	0.41	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
480	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.500	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.03	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	1.100	EK1	0.19	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.600	EK1	0.44	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
481	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.24	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.09	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.09	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.200	EK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
485	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.20	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
486	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.10	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
502	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.08	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.200	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.200	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.49	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
503	**Cross-section No. 1 - Rohr 48.3/2.9**					

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Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.300	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.200	EK1	0.15	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.12	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
507	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.400	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.22	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
508	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
524	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.12	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.000	EK1	0.03	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.700	EK1	0.18	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.700	EK1	0.15	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.81	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
525	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.02	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.600	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.10	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
529	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.500	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	0.700	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.200	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.05	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. t

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Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.28	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
530	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.800	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.14	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
563	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.600	EK1	0.18	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.600	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.07	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.300	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.300	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	EK1	0.39	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
564	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.100	EK1	0.28	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.19	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.200	EK1	0.42	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
578	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.400	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.09	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.05	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.19	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
579	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.16	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.16	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.900	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.900	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.15	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
593	**Cross-section No. 1 - Rohr 48.3/2.9**					

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
594	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.700	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.700	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.700	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
608	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.400	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
609	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.08	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
623	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.700	EK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.700	EK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.100	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.600	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
624	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
638	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.800	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.400	EK1	0.07	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.400	EK1	0.07	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.04	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.400	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.04	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
639	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
658	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.10	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.900	EK1	0.10	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.05	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.000	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.09	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	1.100	EK1	0.29	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
659	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.300	EK1	0.10	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.300	EK1	0.10	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.06	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.300	EK1	0.13	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.11	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.10	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.10	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						2
673	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.400	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.200	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.400	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
674	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.13	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
688	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.500	EK1	0.05	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
689	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.000	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.000	EK1	0.00	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.000	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	1.800	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.06	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
703	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.14	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.14	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
704	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.01	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.300	EK1	0.02	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.01	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.300	EK1	0.02	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.300	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.15	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.15	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
718	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.03	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
719	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.000	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.18	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.18	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.07	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
733	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.05	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	1.800	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.800	EK1	0.03	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.800	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.800	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
734	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.300	EK1	0.00	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.600	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.600	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.700	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
748	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.01	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.200	EK1	0.11	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.03	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
749	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.08	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
770	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.600	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.30	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.30	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.24	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
771	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.03	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.400	EK1	0.00	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.12	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
785	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.07	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.500	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.12	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.12	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.33	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
786	**Cross-section No. 1 - Rohr 48.3/2.9**					
	2.000	EK1	0.05	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						6.2.9.1
	1.000	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.24	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
800	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.100	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
801	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.700	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.07	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.600	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.21	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
815	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.200	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
816	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.01	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	2.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	2.000	EK1	0.11	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.11	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.18	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2
830	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.100	EK1	0.02	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.000	EK1	0.01	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 a

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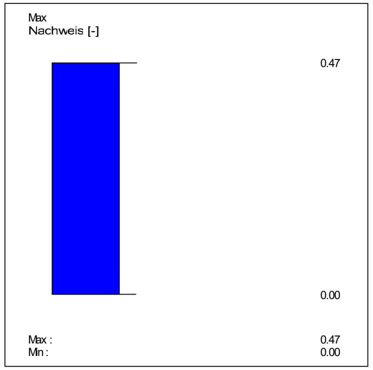
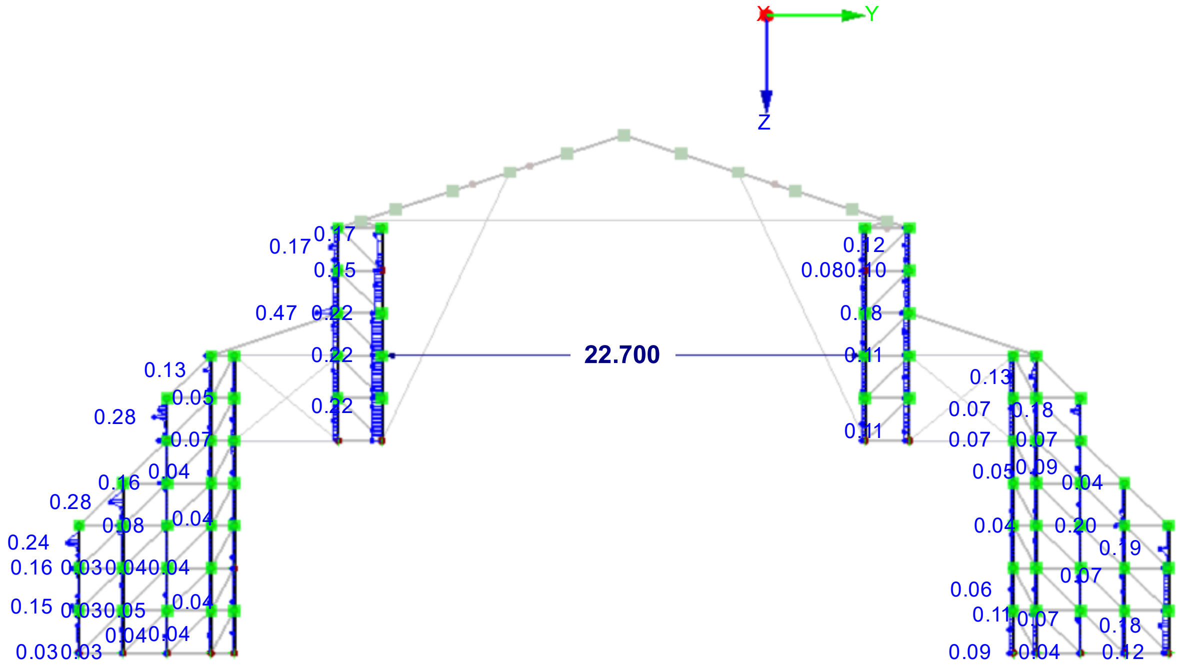
Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						and 6.3.1.2
831	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.900	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.300	EK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.100	EK1	0.01	≤ 1	CS116)	Cross-section check - Bending about z-axis acc. to 6.2.5 - Class 1 or 2
	0.300	EK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.100	EK1	0.01	≤ 1	CS151)	Cross-section check - Bending about z-axis and shear force acc. to 6.2.5 and 6.2.8
	0.000	EK1	0.00	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.300	EK1	0.04	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	1.900	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	1.900	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
845	**Cross-section No. 1 - Rohr 48.3/2.9**					
	1.000	EK1	0.06	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS123)	Cross-section check - Shear force in y-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS128)	Cross-section check - Resulting shear force acc. to 6.2.6
	0.900	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	1.100	EK1	0.02	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
846	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	1.700	EK1	0.02	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.800	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	0.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
860	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.900	EK1	0.09	≤ 1	CS101)	Cross-section check - Tension acc. to 6.2.3
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	2.000	EK1	0.00	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	2.000	EK1	0.00	≤ 1	CS181)	Cross-section check - Bending, shear and axial force acc. to 6.2.9.1
	0.900	EK1	0.03	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.01	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.16	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.16	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
861	**Cross-section No. 1 - Rohr 48.3/2.9**					
	0.000	EK1	0.04	≤ 1	CS102)	Cross-section check - Compression acc. to 6.2.4
	0.900	EK1	0.01	≤ 1	CS201)	Cross-section check - Bending about z-axis, shear and axial force acc. to 6.2.9.1
	2.000	EK1	0.00	≤ 1	CS221)	Cross-section check - Biaxial bending, shear and axial force acc. to 6.2.10 and 6.2.9
	0.000	EK1	0.17	≤ 1	ST302)	Stability analysis - Flexural buckling about y-axis acc. to 6.3.1.1 and 6.3.1.2
	0.000	EK1	0.17	≤ 1	ST312)	Stability analysis - Flexural buckling about z-axis acc. to 6.3.1.1 and 6.3.1.2
	2.000	EK1	0.09	≤ 1	ST364)	Stability analysis - Bending and compression acc. to 6.3.3, Method 2

STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis

In X-direction





Max Nachweis: 0.47

7.109 m

NACHWEIS: TRAGFÄHIGKEIT - QUERSCHNITTSNACHWEIS

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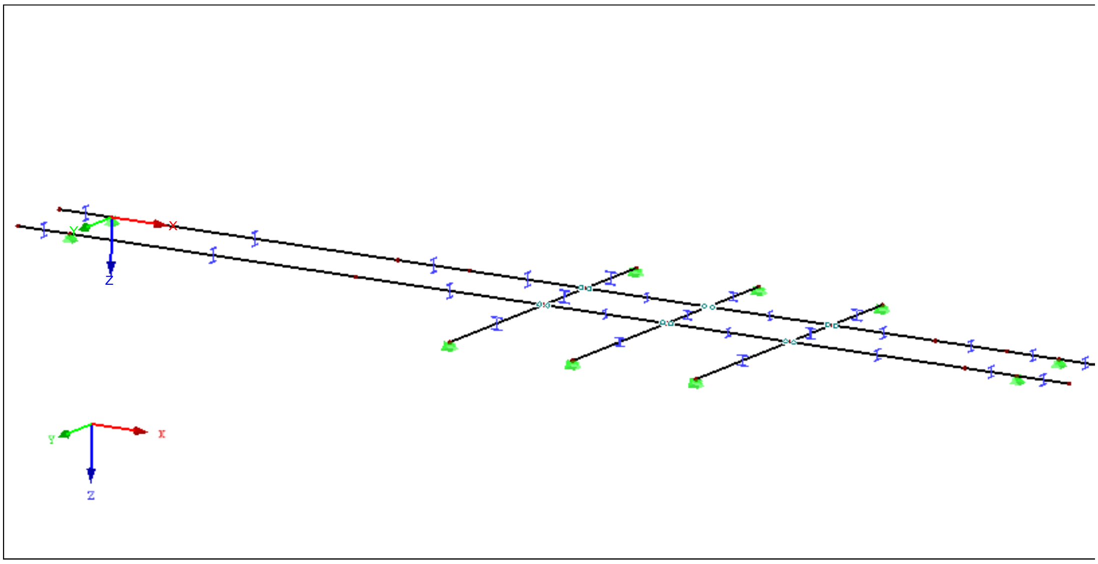
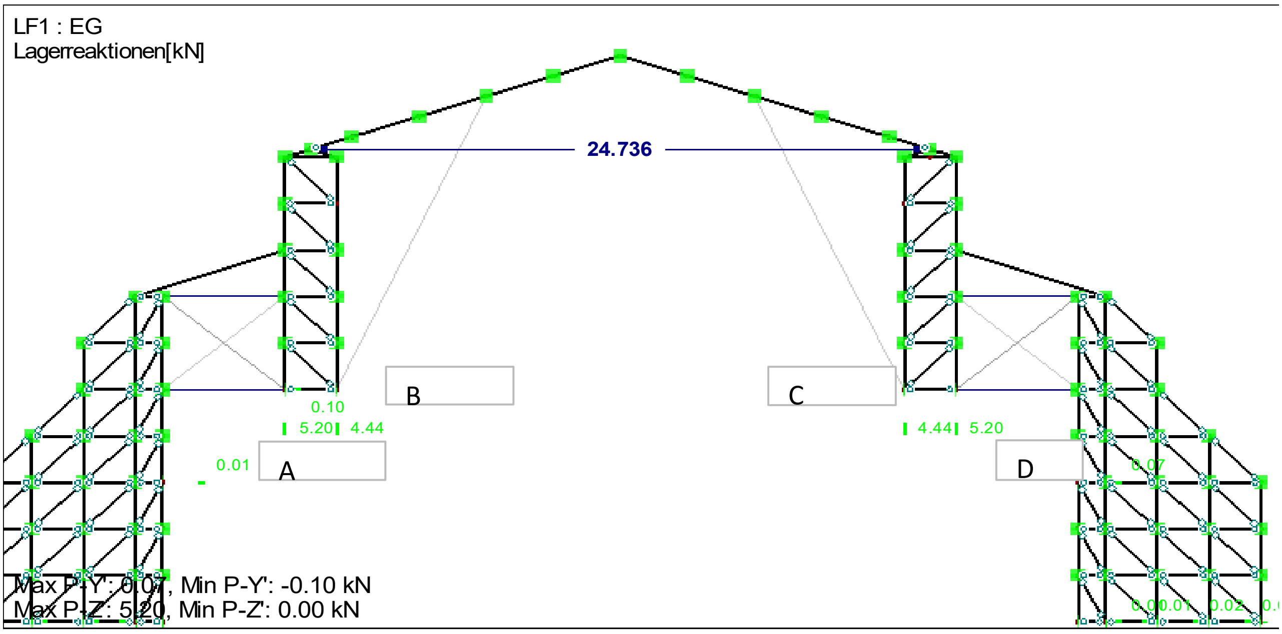
Pos.14.4: Steel beams



Loads:

Chapter 2



						a	b	c	d
		A	B	C	D	[kN/m]	[kN/m]	[kN/m]	[kN/m]
Dead Load		5,2	4,5	4,5	5,2	2,0	1,8	1,8	2,0
Snow		5,9	3,8	3,8	5	2,3	1,5	1,5	1,9
Live Load		5,3	5,3	5,3	5,3	2,1	2,1	2,1	2,1
Wind 1		-3,6	-5	-7,3	-11,2	-1,4	-1,9	-2,8	-4,4
Wind 2		0,6	8,4	-6	-9	0,2	3,3	-2,3	-3,5

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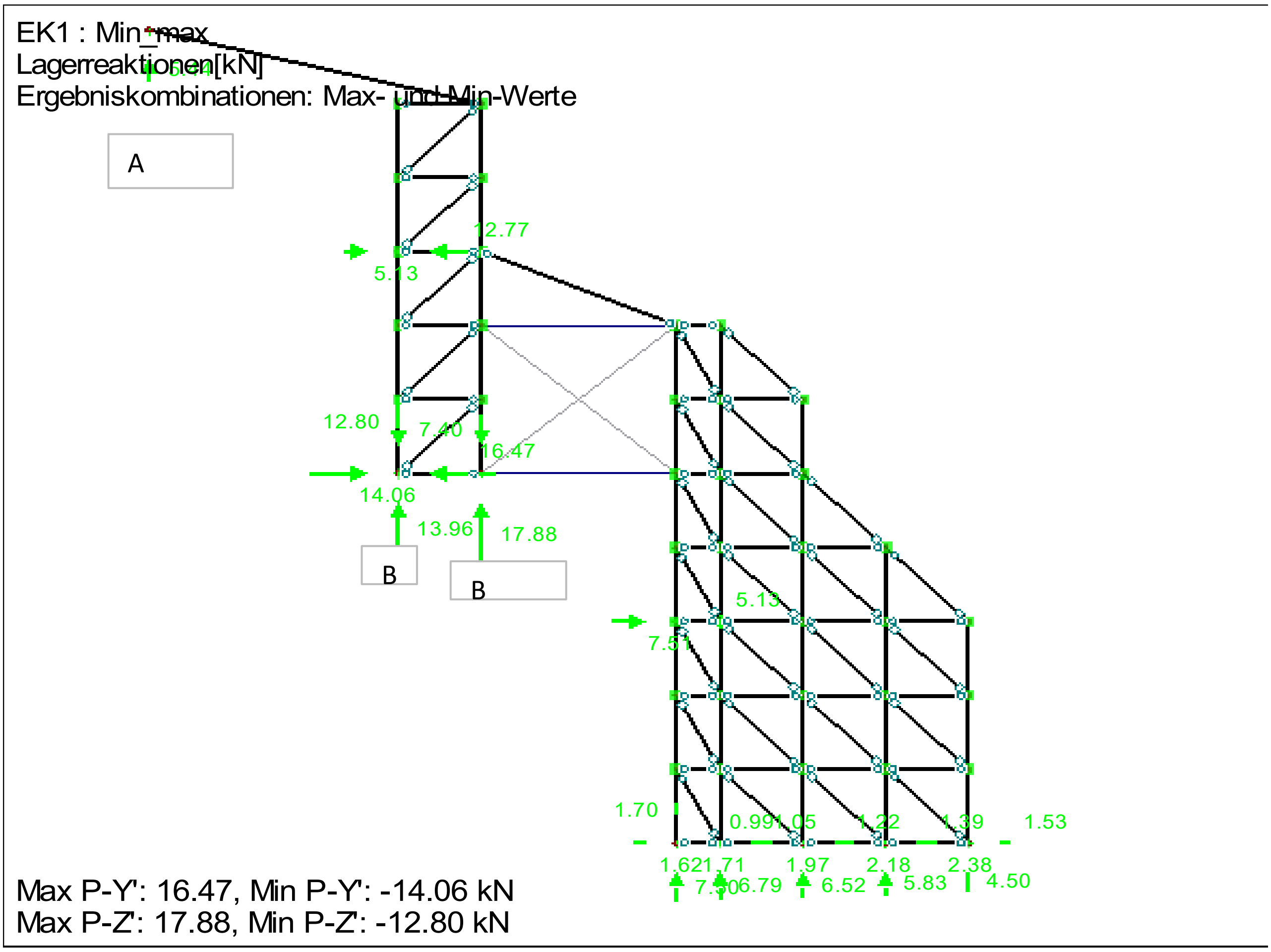
Chapter 4



						b=		2,32 m	
						a	b	c	d
		A	B	C	D	[kN/m]	[kN/m]	[kN/m]	[kN/m]
Dead Load			5			0,0	1,9	0,0	0,0
Snow			2			0,0	0,8	0,0	0,0
Live Load			5			0,0	1,9	0,0	0,0
Wind 1			-5			0,0	-1,9	0,0	0,0
Wind 2			0			0,0	0,0	0,0	0,0

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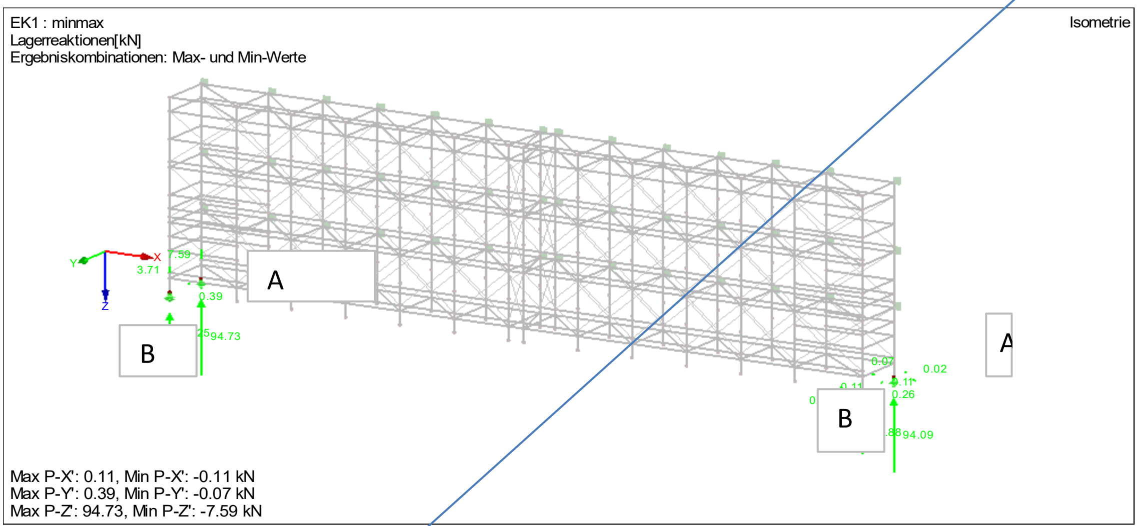
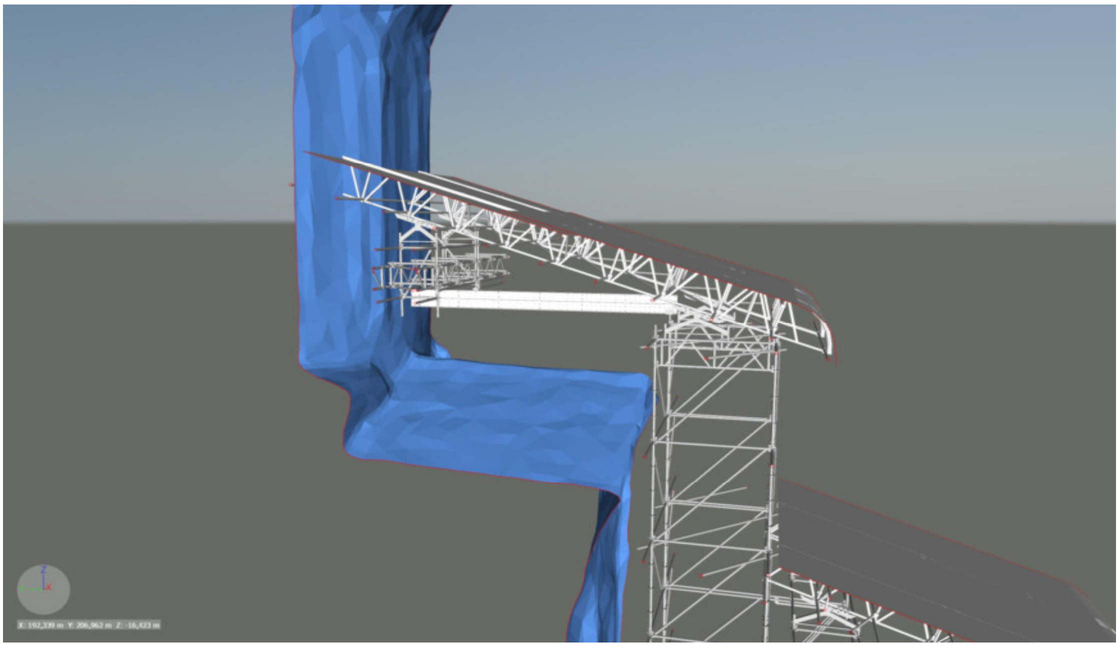
Chapter 9

Reaction forces

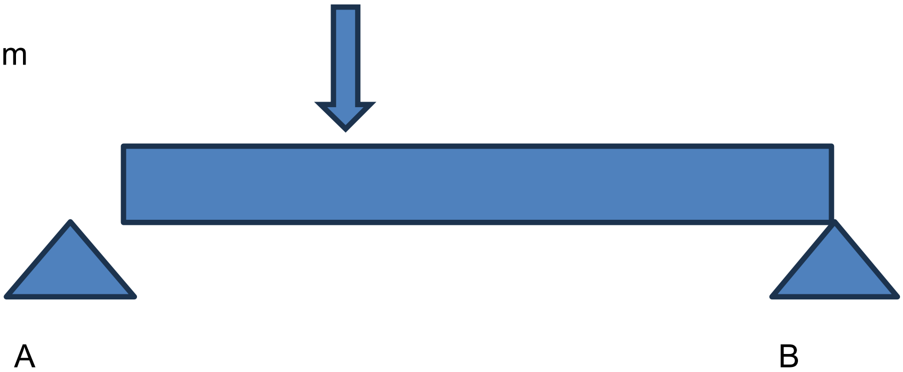


	A [kN]	B [kN]	
EG	24	24	
LL	13	13	
LC1	34	3	divided by 2 and added to EG
LC2	26	2	and LL
Wind	19	16 (+/-)	

Chapter 14



Flexbeam



Ad=	17,6	Bd=	6,4 kN
Ad=	-23,47	Bd=	-8,533 kN

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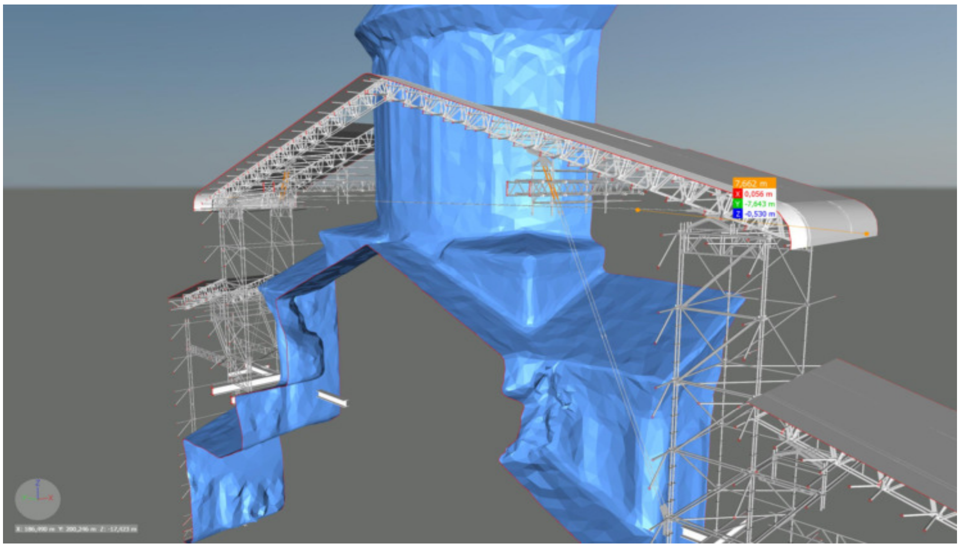
Reaction force

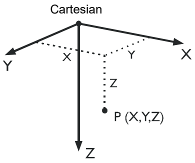


	A,k [kN]	B,k [kN]
EG	7	7
Snow	5	5
Wind	-10	-10

MODEL - GENERAL DATA

General	Model name	:	K-Steel-beams-wo-Dome
	Model description	:	Kloster-Gelati
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: EN 1990 National Annex: DIN - Deutschland
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

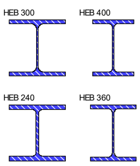


Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
1	-	Cartesian	0.000	0.000	0.000	Supported
2	-	Cartesian	13.660	0.000	0.000	
3	-	Cartesian	17.210	0.000	0.000	
4	-	Cartesian	20.760	0.000	0.000	
5	-	Cartesian	27.320	0.000	0.000	Supported
6	-	Cartesian	0.000	2.070	0.000	Supported
7	-	Cartesian	13.660	2.070	0.000	
8	-	Cartesian	17.210	2.070	0.000	
9	-	Cartesian	20.760	2.070	0.000	
10	-	Cartesian	27.320	2.070	0.000	Supported
11	-	Cartesian	13.660	6.720	0.000	Supported
12	-	Cartesian	17.210	6.720	0.000	Supported
13	-	Cartesian	20.760	6.720	0.000	Supported
14	-	Cartesian	13.660	-2.510	0.000	Supported
15	-	Cartesian	17.210	-2.510	0.000	Supported
16	-	Cartesian	20.760	-2.510	0.000	Supported
17	-	Cartesian	-1.500	2.070	0.000	
18	-	Cartesian	-1.500	0.000	0.000	
19	-	Cartesian	28.820	0.000	0.000	
20	-	Cartesian	28.820	2.070	0.000	
21	-	Cartesian	8.250	0.000	0.000	
22	-	Cartesian	8.250	2.070	0.000	
23	-	Cartesian	25.820	0.000	0.000	
24	-	Cartesian	25.820	2.070	0.000	
25	-	Cartesian	10.320	0.000	0.000	
26	-	Cartesian	23.750	0.000	0.000	
27	-	Cartesian	0.570	0.000	0.000	
28	-	Cartesian	0.570	2.070	0.000	

1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235 | Layher					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] / A [cm²]	I_y [cm⁴] / A_y [cm²]	I_z [cm⁴] / A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	HEB 300							
	1	185.00	25170.00	8563.00	0.00	0.00	300.0	300.0
		149.10	94.97	28.65				
2	HEB 400							
	1	355.70	57680.00	10820.00	0.00	0.00	300.0	400.0
		197.80	120.15	48.08				
3	HEB 240							
	1	102.70	11260.00	3923.00	0.00	0.00	240.0	240.0
		106.00	68.04	20.61				
4	HEB 360							
	1	292.50	43190.00	10140.00	0.00	0.00	300.0	360.0
		180.60	112.58	39.74				

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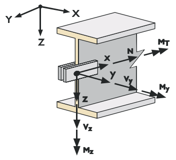

1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	4850.000	☐	☐	☒	☒
	Nonlinearity	-	Diagram...	-	-	Diagram...	Diagram...
	Riegel LW						
2	Local x,y,z	☐	4850.000	☐	☐	☒	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante K2000+						
3	Local x,y,z	☐	☐	☐	☐	35.000	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante II						
4	Local x,y,z	☐	4850.000	☒	☐	☒	5.100
	Nonlinearity	-	-	Diagram...	-	Diagram...	-
	AR Doppelkeilkopfkupplung K2000+						
5	Local x,y,z	☐	☐	☐	☐	0.100	5.100
	Nonlinearity	-	-	-	-	-	-
	Kurzer Riegel <W06						
6	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Gelenk My und Mz						
7	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	-	-
	Gelenk My						
8	Local x,y,z	☐	20000.000	20000.000	☐	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Normalkupplung						
9	Local x,y,z	☐	5000.000	5000.000	0.010	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Drehkupplung						
10	Local x,y,z	☐	☐	☐	☐	0.010	0.010
	Nonlinearity	-	-	-	-	-	-
	Gelenke My und Mz mit geringer Steifigkeit						
11	Local x,y,z	☐	☐	☐	☐	100.000	100.000
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß (Übergreifungsstoß c=10.000kNcm/rad)						
12	Local x,y,z	☐	0.100	0.100	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Anschluss KD Fahrwagen						
13	Local x,y,z	10000.000	☐	☐	☐	☒	☒
	Nonlinearity	Partial activity...	-	-	-	-	-
	EV-Traverse mit Normalkraftbegrenzung						
14	Local x,y,z	☐	☒	☒	☐	0.010	0.010
	Nonlinearity	-	Diagram...	Diagram...	-	-	-
	TX Bolzenanschluss						
15	Local x,y,z	☐	☐	☐	☐	58.800	58.800
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß K2000 (gestauchter RV c=5.880kNcm/rad)						
16	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß LW (angeformter Stoßbolzen, ni-li Drehfeder)						
17	Local x,y,z	☐	☐	☐	☐	45.700	45.700
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß TG 60 (gestauchter RV c=4.570kNcm/rad)						
18	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
13	u_x+	Tearing from release force	11.400	-	
	u_x-	Tearing from release force	11.400	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$u_{y'}$	0.000	0.000	
		0.000	3.000	
		0.000	6.000	
		0.000	9.000	
		0.000	12.000	
		0.000	15.000	
		0.001	> 16.600	Yielding
	$\varphi_{y'}$	0.0000	0.000	
		0.0017	0.200	
		0.0042	0.400	
		0.0081	0.600	
		0.0149	0.800	
		0.0303	1.000	
		0.0485	1.100	
		0.0702	1.160	
		0.0968	> 1.200	Yielding
	$\varphi_{z'}$	0.0000	0.000	

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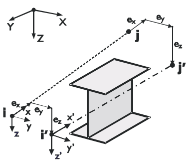
1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
		0.0100	0.100	
		0.0250	0.200	
		0.0468	0.290	
		0.0750	0.360	
		0.1007	> 0.401	Yielding
2	$\varphi_{y'}$	0.0000	0.000	
		0.0026	0.200	
		0.0065	0.400	
		0.0127	0.600	
		0.0207	0.750	
		0.0318	0.870	
		0.0442	0.950	
		0.0592	> 1.010	Yielding
3	$\varphi_{y'}$	0.0000	0.000	
		0.0014	0.100	
		0.0030	0.200	
		0.0050	0.300	
		0.0075	0.400	
		0.0107	0.500	
		0.0148	0.600	
		0.0192	> 0.680	Yielding
4	$u_{z'}$	0.000	0.000	
		0.000	5.100	
		0.002	> 5.110	Stopping
	$\varphi_{y'}$	0.0000	0.000	
		0.0068	0.150	
		0.0155	0.300	
		0.0274	0.450	
		0.0415	0.580	
		0.0566	> 0.682	Yielding
11	$\varphi_{y'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
	$\varphi_{z'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
14	$u_{y'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
	$u_{z'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
16	$\varphi_{y'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$, $e_{i,X}$	$e_{i,y}$, $e_{i,Y}$	$e_{i,z}$, $e_{i,Z}$	Member End - Eccentricity $e_{j,x}$, $e_{j,X}$	$e_{j,y}$, $e_{j,Y}$	$e_{j,z}$, $e_{j,Z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel
2	Global	78.0	0.0	0.0	-78.0	0.0	0.0	AR_Diagonale (für 2D Berechnung)
3	Local	43.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK
4	Local	0.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK_dreifach
5	Local	60.0	0.0	0.0	0.0	0.0	0.0	AR_SLT_XL_Riegel
6	Local	25.0	0.0	0.0	0.0	0.0	0.0	AR_Riegel_Anfang (einseitig)
7	Local	0.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel_Ende (einseitig)

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

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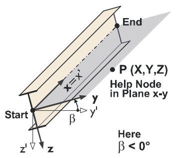
1.5/2 MEMBER ECCENTRICITIES - RELATIVE

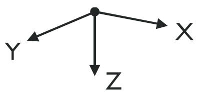
Ecc.	Cross-Section Alignment		Transverse offset from cross-section of another obj.				Axial offset from adjacent	
No.	y-Axis	z-Axis	Object Type	Object No.	y-Axis	z-Axis	Member Sta	Member End
5	Middle	Middle	None	0	Middle	Middle	☐	☐
6	Middle	Middle	None	0	Middle	Middle	☐	☐
7	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr.		Node		Rotation		Cross-Section		Hinge No.		Ecc.	Div.	Length	
No.	Member	Start	End	Type	β [°]	Start	End	Start	End	No.	No.	L [m]	
1	Beam	11	7	Angle	0.00	4	4	-	-	-	-	4.650	Y
2	Beam	7	2	Angle	0.00	4	4	-	-	-	-	2.070	Y
3	Beam	2	14	Angle	0.00	4	4	-	-	-	-	2.510	Y
4	Beam	12	8	Angle	0.00	3	3	-	-	-	-	4.650	Y
5	Beam	8	3	Angle	0.00	3	3	-	-	-	-	2.070	Y
6	Beam	3	15	Angle	0.00	3	3	-	-	-	-	2.510	Y
8	Beam	13	9	Angle	0.00	1	1	-	-	-	-	4.650	Y
9	Beam	9	4	Angle	0.00	1	1	-	-	-	-	2.070	Y
10	Beam	4	16	Angle	0.00	1	1	-	-	-	-	2.510	Y
11	Beam	1	27	Angle	0.00	2	2	-	-	-	-	0.570	X
12	Beam	6	28	Angle	0.00	2	2	-	-	-	-	0.570	X
13	Beam	2	3	Angle	0.00	3	3	18	18	-	-	3.550	X
14	Beam	7	8	Angle	0.00	3	3	18	18	-	-	3.550	X
15	Beam	3	4	Angle	0.00	3	3	18	18	-	-	3.550	X
16	Beam	8	9	Angle	0.00	3	3	18	18	-	-	3.550	X
17	Beam	4	26	Angle	0.00	1	1	18	-	-	-	2.990	X
18	Beam	9	24	Angle	0.00	1	1	18	-	-	-	5.060	X
19	Beam	5	19	Angle	0.00	1	1	-	-	-	-	1.500	X
20	Beam	10	20	Angle	0.00	1	1	-	-	-	-	1.500	X
21	Beam	1	18	Angle	0.00	2	2	-	-	-	-	1.500	X
22	Beam	6	17	Angle	0.00	2	2	-	-	-	-	1.500	X
23	Beam	21	25	Angle	0.00	2	2	-	-	-	-	2.070	X
24	Beam	22	7	Angle	0.00	2	2	-	18	-	-	5.410	X
25	Beam	23	5	Angle	0.00	1	1	-	-	-	-	1.500	X
26	Beam	24	10	Angle	0.00	1	1	-	-	-	-	1.500	X
27	Beam	25	2	Angle	0.00	2	2	-	18	-	-	3.340	X
28	Beam	26	23	Angle	0.00	1	1	-	-	-	-	2.070	X
29	Beam	27	21	Angle	0.00	2	2	-	-	-	-	7.680	X
30	Beam	28	22	Angle	0.00	2	2	-	-	-	-	7.680	X

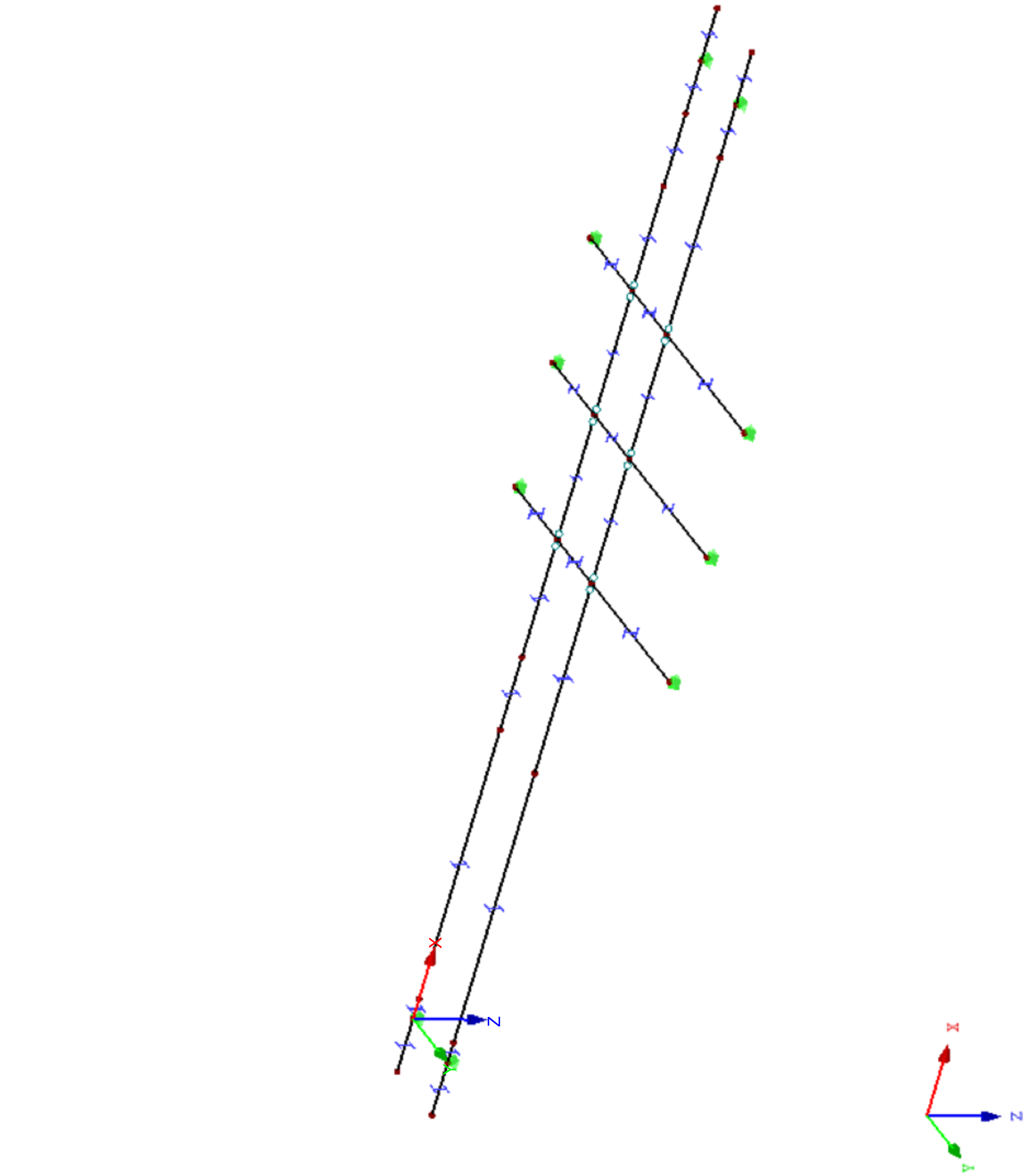
1.8 NODAL SUPPORTS



Support			Rotation [°]			Column	Support Conditions					
No.	Nodes No.	Sequen.	about X	about Y	about Z	in Z	$u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	1,5,6,10	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☒	☐	☒
2	11-16	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☒	☒

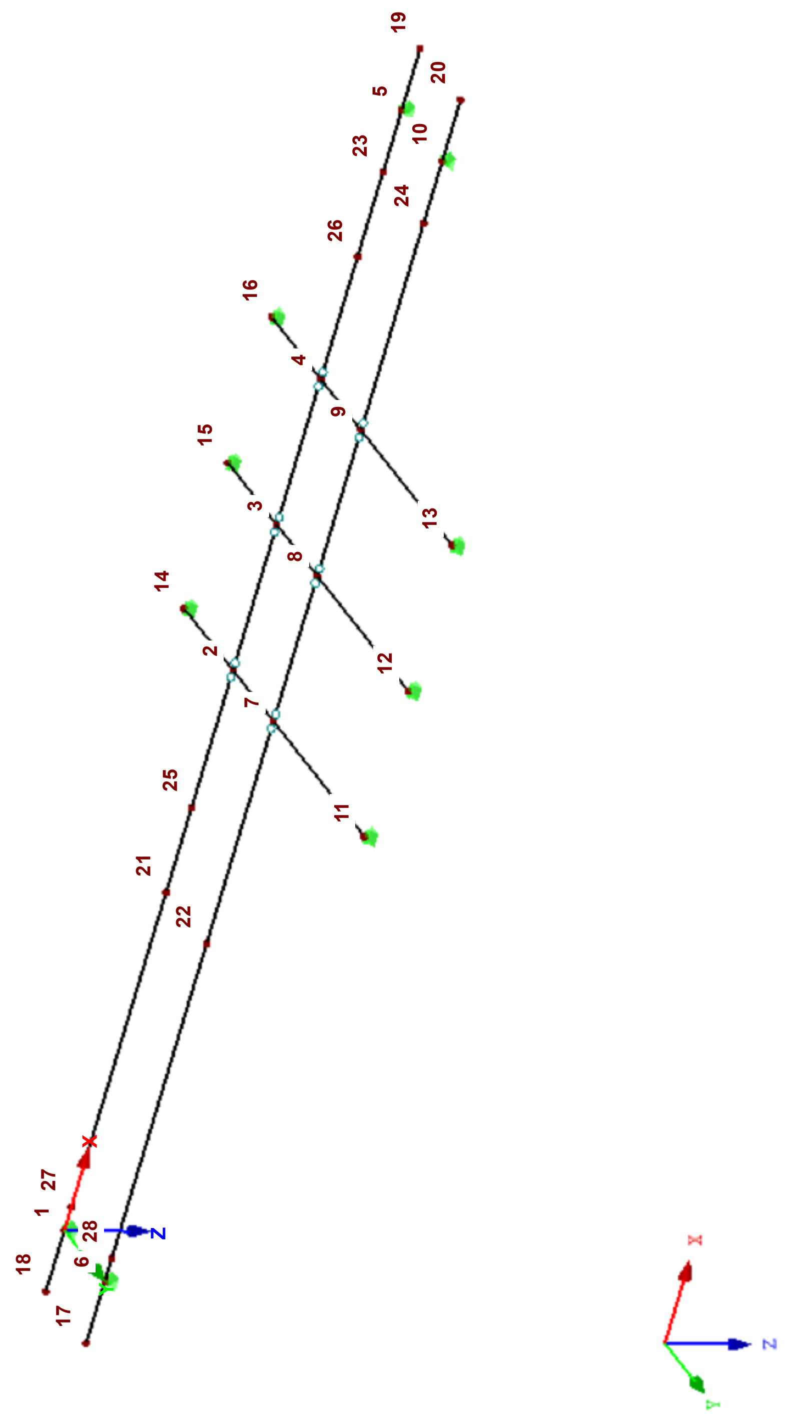
MODEL

Isometric



■ MODEL

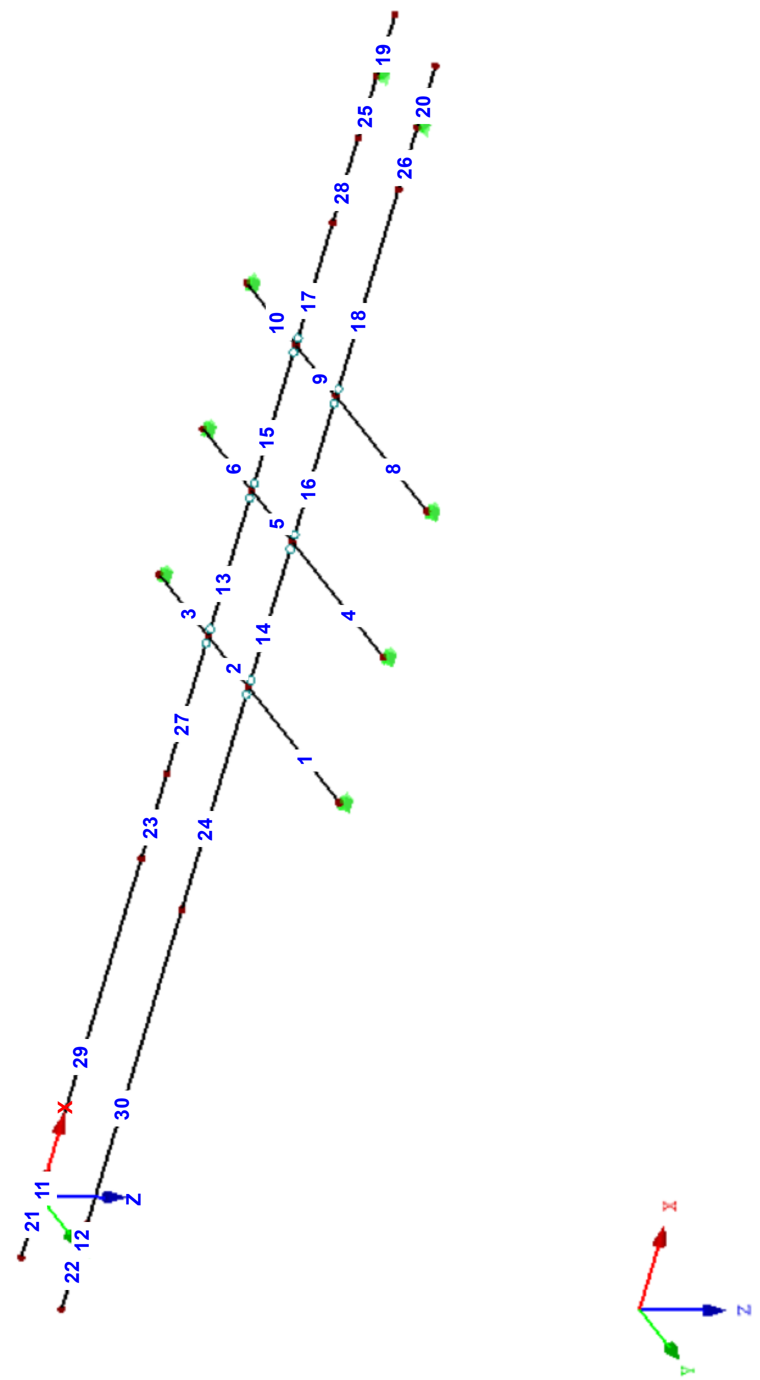
Isometric



Node Numbering

MODEL

Isometric



Member Numbering

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 | DIN Action Category	Active	Self-Weight - Factor in Direction X	Y	Z
LC1	Dead Load	Permanent	☒	0.000	0.000	1.000
LC2	live Load	Imposed - Category A: domestic, residential areas	☐			
LC3	Snow	Snow (H ≤ 1000 m a.s.l.)	☐			
LC4	Wind 1	Wind	☐			
LC5	Wind 2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters			
LC1	Dead Load	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC2	live Load	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Snow	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Wind 1	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind 2	Method of analysis	:	■	Geometrically linear analysis
		Activate stiffness factors of:	:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	Dead Load
			2	1.35	LC2	live Load
			3	1.35	LC3	Snow
CO2		Bem-2	1	0.90	LC1	Dead Load
			2	1.50	LC4	Wind 1
CO3		Bem-3	1	0.90	LC1	Dead Load
			2	1.50	LC5	Wind 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters			
CO1	Bem-1	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	:	■	Second order analysis (P-Delta)
		Options	:	☒	Consider favorable effects due to tension
			:	☒	Refer internal forces to deformed system for:
					☒ Normal forces N
					☒ Shear forces V_y and V_z
					☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	:	☒	Materials (partial factor γM)
			:	☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			:	☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2 or CO3

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1
Dead Load

LC1: Dead Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
2	25,26	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000
4	3	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
5	18,27	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: Dead Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.000	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.800	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	2.000	kN/m

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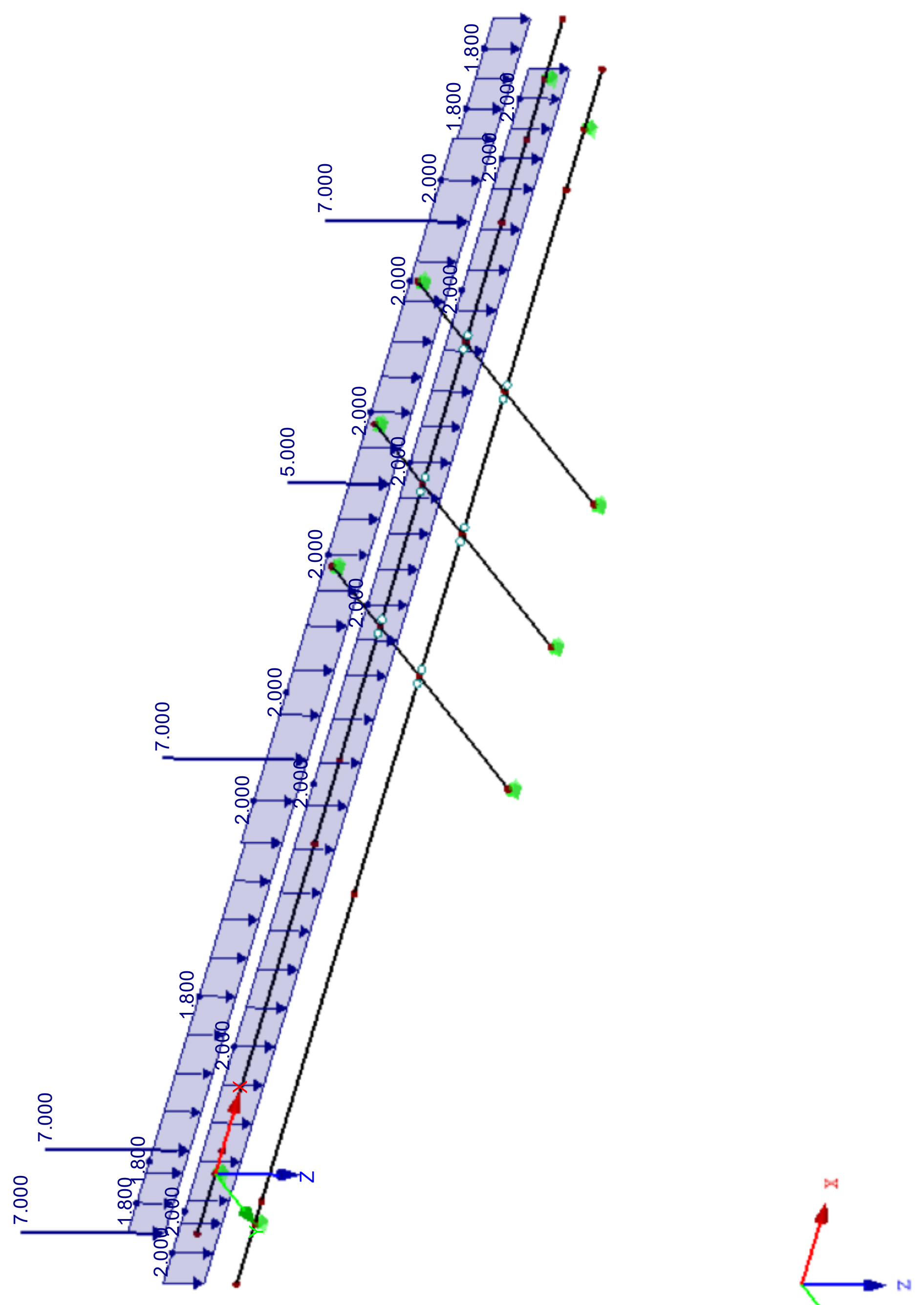
Project: 2023 | Model: K-Steel-beams-wo-Dome | Date: 15.12.2023
Kloster-Gelati

LC1: DEAD LOAD

Isometric



LC1 : Dead Load
Belastung [kN/m], [kN]

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Project: 2023 | Model: K-Steel-beams-wo-Dome
Kloster-Gelati | Date: 15.12.2023

LC2
live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: live Load

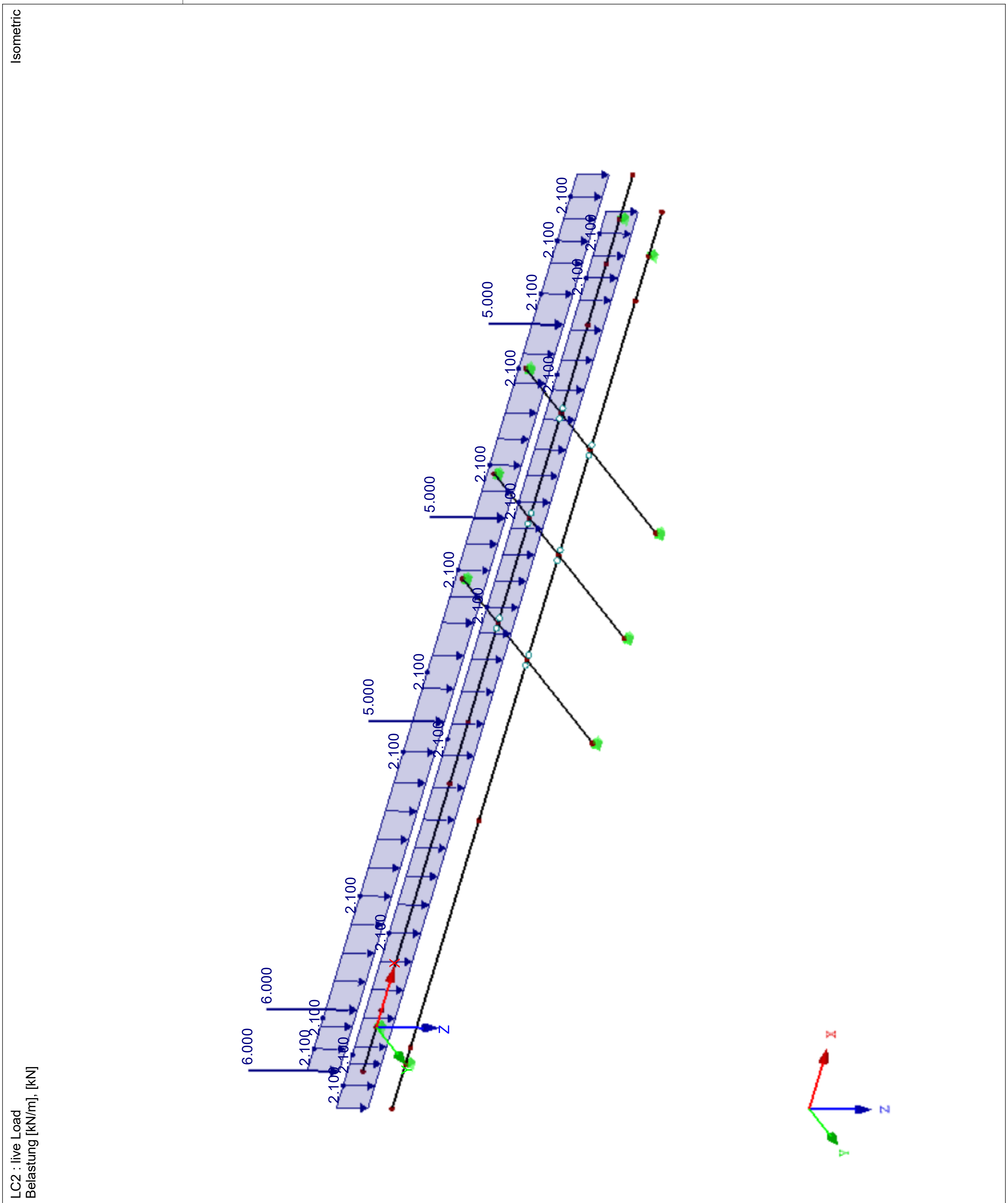
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
2	25,26	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
3	3	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
4	18,27	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC2: live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,12,19-22, 25,26,29,30	Force	Uniform	Z	True Length	p	2.100	kN/m
2	Members	13-16	Force	Uniform	Z	True Length	p	2.100	kN/m
3	Members	23,24,27	Force	Uniform	Z	True Length	p	2.100	kN/m
4	Members	17,18,28	Force	Uniform	Z	True Length	p	2.100	kN/m

LC2: LIVE LOAD



LC3
Snow

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Snow

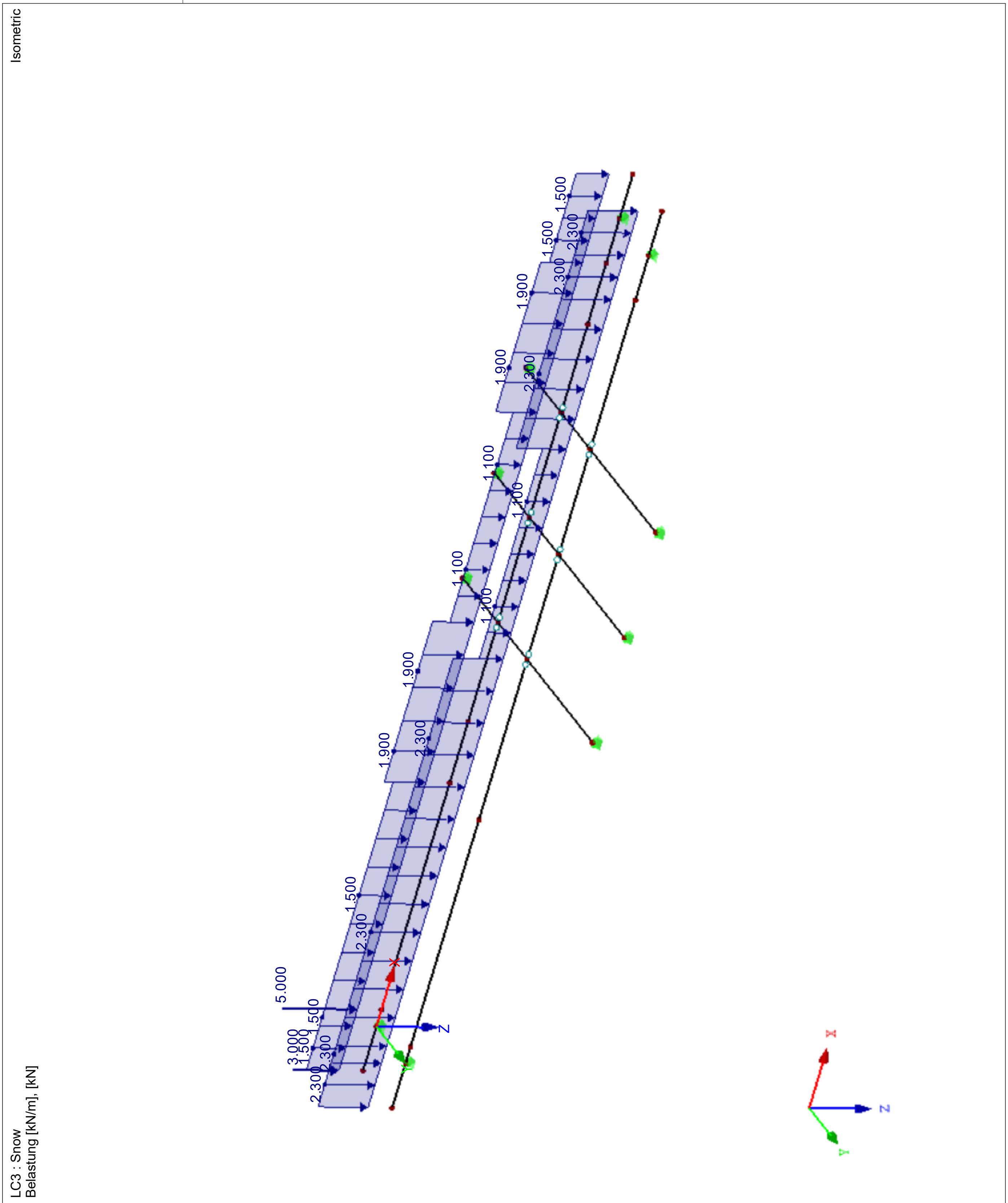
	On Nodes	Coordinate	Force [kN]			Moment [kNm]		
No.	No.	System	P_X / P_U	P_Y / P_V	P_Z / P_W	M_X / M_U	M_Y / M_V	M_Z / M_W
1	27	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
2	18	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC3: Snow

	Reference	On Members	Load	Load	Load	Reference	Load Parameters		
No.	to	No.	Type	Distribution	Direction	Length	Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.300	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.500	kN/m
3	Members	17,23,27,28	Force	Uniform	Z	True Length	p	1.900	kN/m
4	Members	24	Force	Uniform	Z	True Length	p	2.300	kN/m
5	Members	18	Force	Uniform	Z	True Length	p	2.300	kN/m
6	Members	13-16	Force	Uniform	Z	True Length	p	1.100	kN/m

LC3: SNOW



Isometric
1.500
2.300
1.900
1.100
5.000
3.000
Z
LC3 : Snow
Belastung [kN/m], [kN]

LC4
Wind 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Wind 1

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	25,26	0 | Global XYZ	0.000	0.000	-10.000	0.000	0.000	0.000

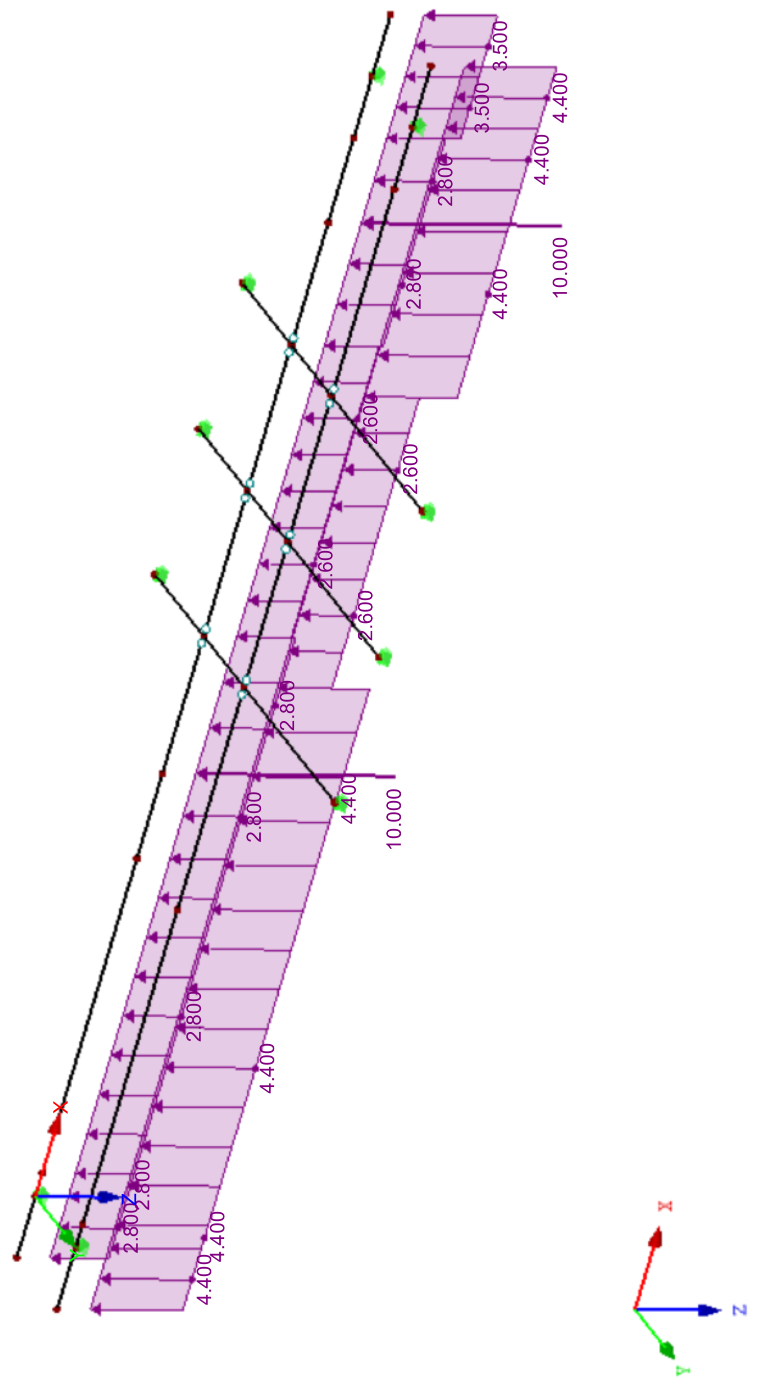
3.2 MEMBER LOADS

LC4: Wind 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	-4.400	kN/m
2	Members	11,21,29	Force	Uniform	Z	True Length	p	-2.800	kN/m
4	Members	19,25	Force	Uniform	Z	True Length	p	-3.500	kN/m
5	Members	23,27	Force	Uniform	Z	True Length	p	-2.800	kN/m
6	Members	24	Force	Uniform	Z	True Length	p	-4.400	kN/m
7	Members	18	Force	Uniform	Z	True Length	p	-4.400	kN/m
8	Members	17,28	Force	Uniform	Z	True Length	p	-2.800	kN/m
9	Members	13-16	Force	Uniform	Z	True Length	p	-2.600	kN/m

LC4: WIND 1

Isometric



LC4 : Wind 1
Belastung [kN/m], [kN]

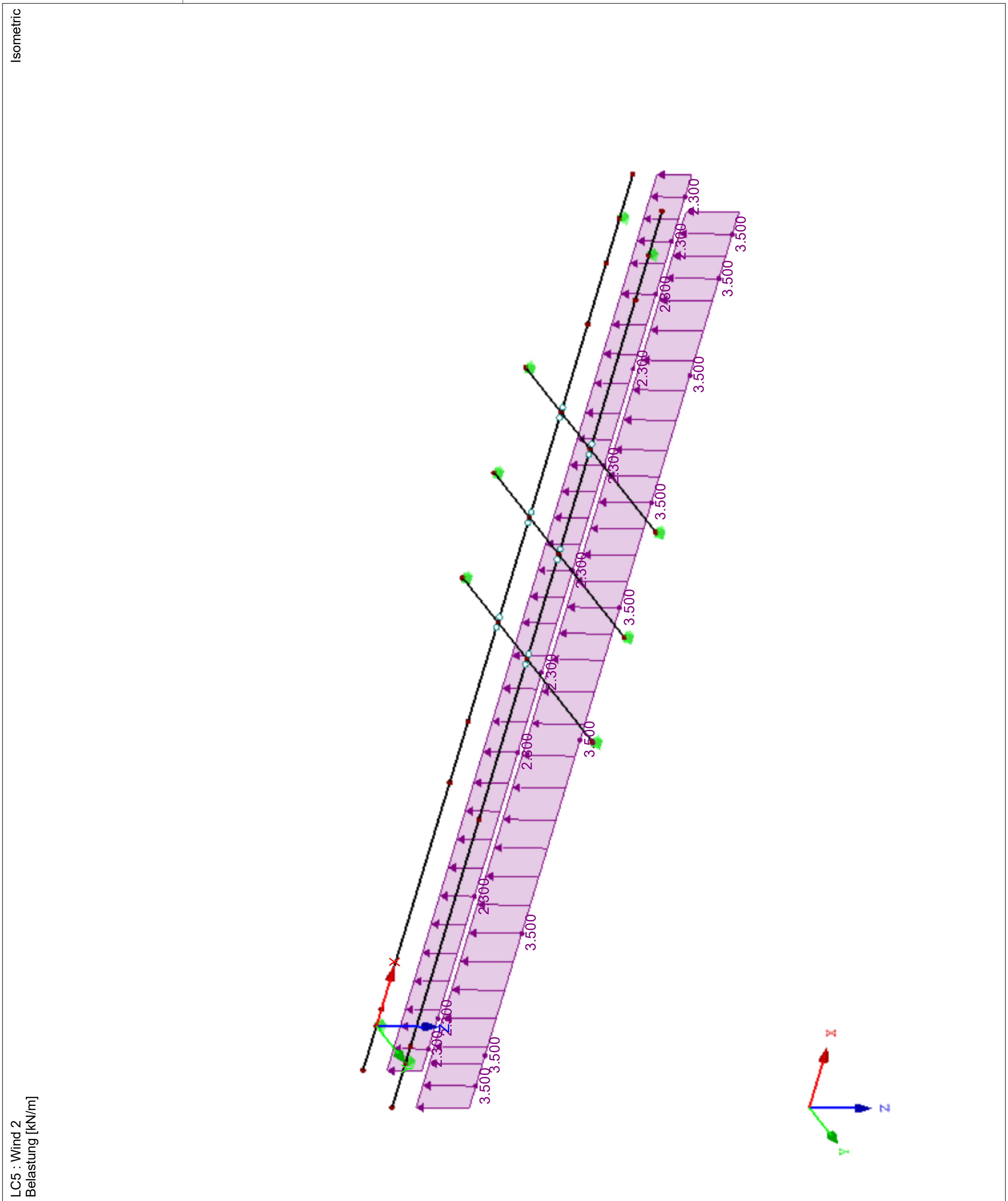
LC5
Wind 2

3.2 MEMBER LOADS

LC5: Wind 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	-2.300	kN/m
2	Members	12,14,16, 18,20,22, 24,26,30	Force	Uniform	Z	True Length	p	-3.500	kN/m
3	Members	13,15,27	Force	Uniform	Z	True Length	p	-2.300	kN/m
4	Members	17,23,28	Force	Uniform	Z	True Length	p	-2.300	kN/m

LC5: WIND 2



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■ 4.0 RESULTS - SUMMARY

Description	Value	Unit	Comment
LC1 - Dead Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	261.06	kN	
Sum of support reactions in Z	261.06	kN	Deviation 0.00%
Resultant of reactions about X	-78.39	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	119.57	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	19.0	mm	Member No. 24, x: 0.000 m
Max vectorial displacement	19.0	mm	Member No. 24, x: 0.000 m
Max rotation about X	6.5	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	-3.8	mrad	Member No. 12, x: 0.171 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC2 - live Load			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	154.34	kN	
Sum of support reactions in Z	154.34	kN	Deviation 0.00%
Resultant of reactions about X	-75.63	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	116.66	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	11.5	mm	Member No. 5, x: 0.207 m
Max vectorial displacement	11.5	mm	Member No. 5, x: 0.207 m
Max rotation about X	4.2	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	-2.2	mrad	Member No. 11, x: 0.513 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC3 - Snow			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	116.04	kN	
Sum of support reactions in Z	116.04	kN	Deviation -0.00%
Resultant of reactions about X	-29.24	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	136.61	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	11.0	mm	Member No. 30, x: 7.296 m
Max vectorial displacement	11.0	mm	Member No. 30, x: 7.296 m
Max rotation about X	1.8	mrad	Member No. 3, x: 2.510 m
Max rotation about Y	-2.3	mrad	Member No. 12, x: 0.171 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC4 - Wind 1			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	
Sum of support reactions in Y	0.00	kN	
Sum of loads in Z	-226.20	kN	
Sum of support reactions in Z	-226.20	kN	Deviation 0.00%
Resultant of reactions about X	54.31	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
Resultant of reactions about Y	47.74	kNm	At center of gravity of model
Resultant of reactions about Z	0.00	kNm	At center of gravity of model
Max displacement in X	0.0	mm	
Max displacement in Y	0.0	mm	
Max displacement in Z	-21.5	mm	Member No. 30, x: 7.296 m
Max vectorial displacement	21.5	mm	Member No. 30, x: 7.296 m
Max rotation about X	-4.0	mrad	Member No. 6, x: 2.510 m
Max rotation about Y	4.4	mrad	Member No. 12, x: 0.171 m
Max rotation about Z	0.0	mrad	
Method of analysis	Linear		Geometrically linear analysis
Stiffness reduction multiplied by coefficient	☐		
Number of load increments	1		
Number of iterations	1		
LC5 - Wind 2			
Sum of loads in X	0.00	kN	
Sum of support reactions in X	0.00	kN	
Sum of loads in Y	0.00	kN	

4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-175.86	kN	
	Sum of support reactions in Z	-175.86	kN	Deviation 0.00%
	Resultant of reactions about X	16.67	kNm	At center of gravity of model (X:13.65, Y:1.34, Z:0.00 m)
	Resultant of reactions about Y	1.53	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-17.0	mm	Member No. 30, x: 7.296 m
	Max vectorial displacement	17.0	mm	Member No. 30, x: 7.296 m
	Max rotation about X	-4.5	mrad	Member No. 6, x: 2.510 m
	Max rotation about Y	3.5	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	717.46	kN	
	Sum of support reactions in Z	717.46	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	60.8	mm	Member No. 30, x: 7.296 m
	Max vectorial displacement	60.8	mm	Member No. 30, x: 7.296 m
	Max rotation about X	18.5	mrad	Member No. 6, x: 2.510 m
	Max rotation about Y	-12.3	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-104.35	kN	
	Sum of support reactions in Z	-104.35	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-16.8	mm	Member No. 30, x: 6.912 m
	Max vectorial displacement	16.8	mm	Member No. 30, x: 6.912 m
	Max rotation about X	-2.1	mrad	Member No. 3, x: 2.510 m
	Max rotation about Y	3.6	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-28.83	kN	
	Sum of support reactions in Z	-28.83	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-9.3	mm	Member No. 30, x: 6.528 m
	Max vectorial displacement	9.3	mm	Member No. 30, x: 6.528 m
	Max rotation about X	1.0	mrad	Member No. 4, x: 0.000 m
	Max rotation about Y	2.0	mrad	Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	60.8	mm	CO1, Member No. 30, x: 7.296 m
	Max vectorial displacement	60.8	mm	CO1, Member No. 30, x: 7.296 m

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Max rotation about X	18.5	mrad	CO1, Member No. 6, x: 2.510 m
	Max rotation about Y	-12.3	mrad	CO1, Member No. 12, x: 0.171 m
	Max rotation about Z	0.0	mrad	
	Number of 1D finite elements (member elements)	29		
	Number of FE mesh nodes	28		
	Number of equations	168		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		

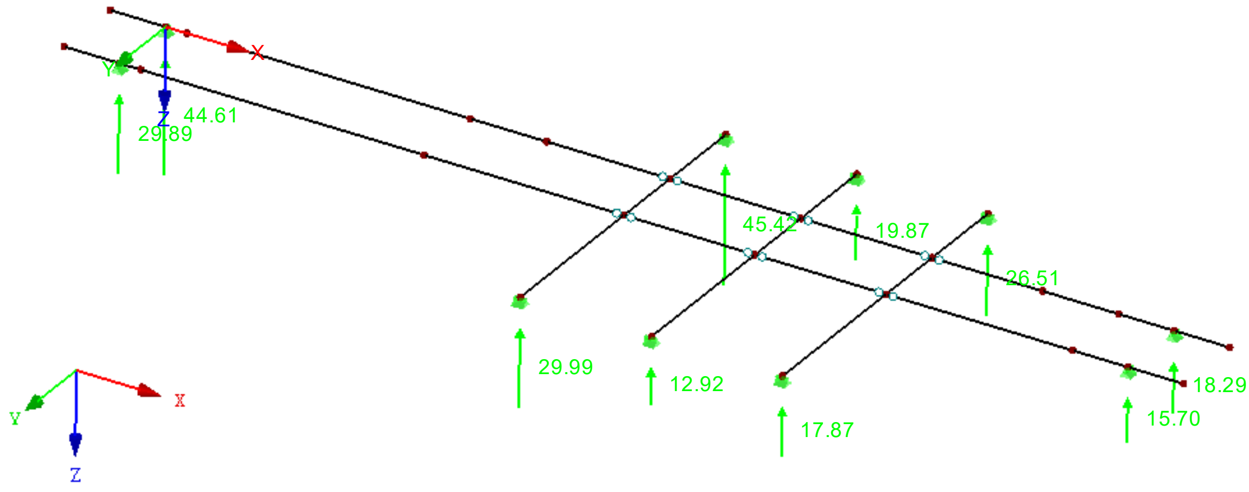
	Other Settings	Max number of iterations	:	100
		Number of divisions for member results	:	10
		Member divisions, cables, foundation or tapered members	:	10
		Number of member divisions for searching maximum values	:	20
	Options	☐Activate shear stiffness of members (Ay, Az)		
		☒Modify stiffness (material, cross-sections, members, load cases and combinations)		
		☒Apply temperature/deformation load actions without stiffness modifications		
	Precision and Tolerance	☐Change default setting		

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: HEB 300								
10	CO1	MAX N	2.510	▷ 0.81	0.00	-69.43	0.00	0.00	0.00
20	CO1	MIN N	0.000	▷ -0.11	0.00	15.33	0.00	-11.50	0.00
17	CO1	MAX V_y	0.000	-0.03	▷ 0.28	38.91	-0.15	0.00	0.00
28	CO1	MIN V_y	1.449	0.11	▷ -0.05	-20.26	-0.15	53.86	-0.13
8	CO1	MAX V_z	0.000	0.45	0.00	▷ 44.73	0.00	0.00	0.00
10	CO1	MIN V_z	2.510	0.81	0.00	▷ -69.43	0.00	0.00	0.00
17	LC4	MAX M_T	0.000	0.00	0.00	-14.15	▷ 0.05	0.00	0.00
17	CO1	MIN M_T	0.000	-0.03	0.28	38.91	▷ -0.15	0.00	0.00
8	CO1	MAX M_y	4.650	0.02	0.00	37.39	0.00	▷ 190.93	0.00
8	LC4	MIN M_y	4.650	0.00	0.00	-14.17	0.00	▷ -65.91	0.00
18	CO1	MAX M_z	2.024	-0.04	0.00	11.08	0.01	43.37	▷ 0.02
17	CO1	MIN M_z	2.392	-0.04	0.07	15.75	-0.15	65.37	▷ -0.30
	Section No. 2: HEB 400								
11	CO1	MAX N	0.000	▷ 1.05	0.00	95.36	0.14	-42.96	0.00
21	CO1	MIN N	0.000	▷ -0.39	0.00	35.68	0.00	-42.96	0.00
29	CO1	MAX V_y	3.072	0.31	▷ 0.07	36.88	0.14	167.47	-0.33
27	CO1	MIN V_y	3.340	0.65	▷ -0.57	-77.73	0.14	0.00	0.00
11	CO1	MAX V_z	0.000	1.05	0.00	▷ 95.36	0.14	-42.96	0.00
27	CO1	MIN V_z	3.340	0.65	-0.57	▷ -77.73	0.14	0.00	0.00
29	CO1	MAX M_T	7.296	0.00	-0.01	-2.76	▷ 0.14	239.53	-1.01
27	LC4	MIN M_T	0.000	0.00	0.00	17.10	▷ -0.05	-72.72	0.00
30	CO1	MAX M_y	6.528	0.00	0.00	-1.99	-0.01	▷ 244.23	0.08
30	LC4	MIN M_y	6.528	0.00	0.00	0.82	0.00	▷ -100.09	0.00
24	CO1	MAX M_z	0.811	0.05	0.01	-23.07	-0.01	219.62	▷ 0.09
23	CO1	MIN M_z	1.553	0.09	-0.12	-22.20	0.14	215.60	▷ -1.13
	Section No. 3: HEB 240								
6	CO1	MAX N	2.510	▷ 0.94	0.00	-50.63	0.00	0.00	0.00
16	CO1	MIN N	0.000	▷ -0.07	-0.02	14.45	0.01	0.00	0.00
15	CO1	MAX V_y	0.000	-0.05	▷ 0.16	14.45	-0.09	0.00	0.00
13	CO1	MIN V_y	3.550	-0.05	▷ -0.16	-14.45	0.08	0.00	0.00
4	CO1	MAX V_z	0.000	0.49	0.00	▷ 31.04	0.00	0.00	0.00
6	CO1	MIN V_z	2.510	0.94	0.00	▷ -50.63	0.00	0.00	0.00
13	CO1	MAX M_T	3.550	-0.05	-0.16	-14.45	▷ 0.08	0.00	0.00
15	CO1	MIN M_T	0.000	-0.05	0.16	14.45	▷ -0.09	0.00	0.00
4	CO1	MAX M_y	4.650	0.03	0.00	25.82	0.00	▷ 132.22	0.00
4	LC5	MIN M_y	4.650	0.00	0.00	-8.38	0.00	▷ -38.97	0.00
14	CO1	MAX M_z	1.952	-0.01	0.00	-1.45	-0.01	12.70	▷ 0.01
13	CO1	MIN M_z	1.952	-0.01	-0.01	-1.45	0.08	12.70	▷ -0.12
	Section No. 4: HEB 360								
3	CO1	MAX N	2.510	▷ 1.41	0.00	-119.72	0.00	0.00	0.00
2	CO1	MIN N	0.000	▷ -0.01	0.00	-18.78	0.00	337.43	0.00
1	LC1	MAX V_y	0.000	0.00	▷ 0.00	29.99	0.00	0.00	0.00
1	LC1	MIN V_y	0.000	0.00	▷ 0.00	29.99	0.00	0.00	0.00
1	CO1	MAX V_z	0.000	0.80	0.00	▷ 77.01	0.00	0.00	0.00
3	CO1	MIN V_z	2.510	1.41	0.00	▷ -119.72	0.00	0.00	0.00
1	LC1	MAX M_T	0.000	0.00	0.00	29.99	▷ 0.00	0.00	0.00
1	LC1	MIN M_T	0.000	0.00	0.00	29.99	▷ 0.00	0.00	0.00
1	CO1	MAX M_y	4.650	0.04	0.00	68.12	0.00	▷ 337.43	0.00
1	LC4	MIN M_y	4.650	0.00	0.00	-25.47	0.00	▷ -118.41	0.00
1	LC1	MAX M_z	0.000	0.00	0.00	29.99	0.00	0.00	▷ 0.00
1	LC1	MIN M_z	0.000	0.00	0.00	29.99	0.00	0.00	▷ 0.00

LAGERREAKTIONEN

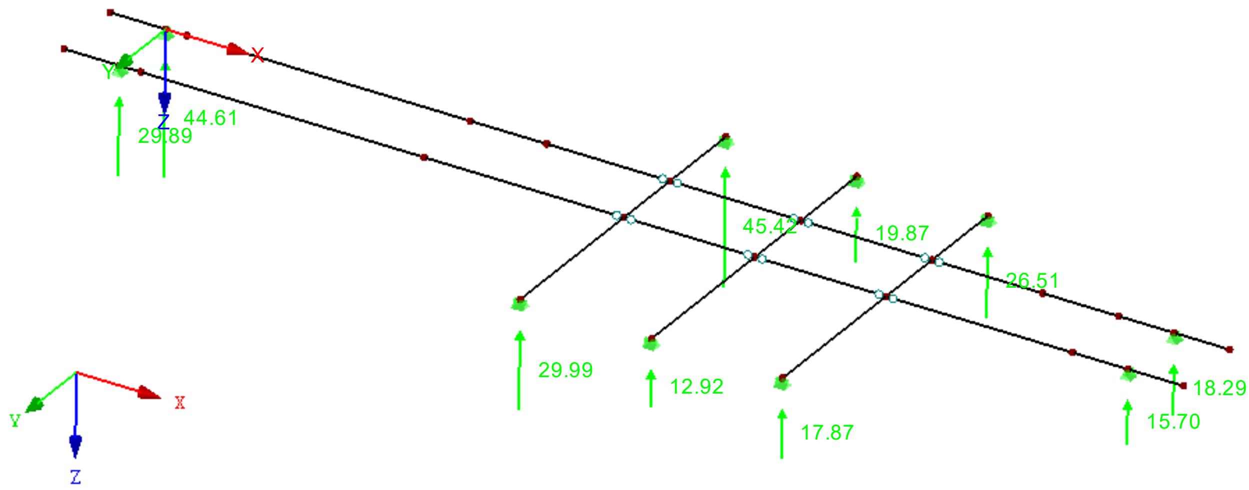
LC1 : Dead Load
Lagerreaktionen[kN]
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 45.42, Min P-Z': 12.92 kN

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]
Isometric

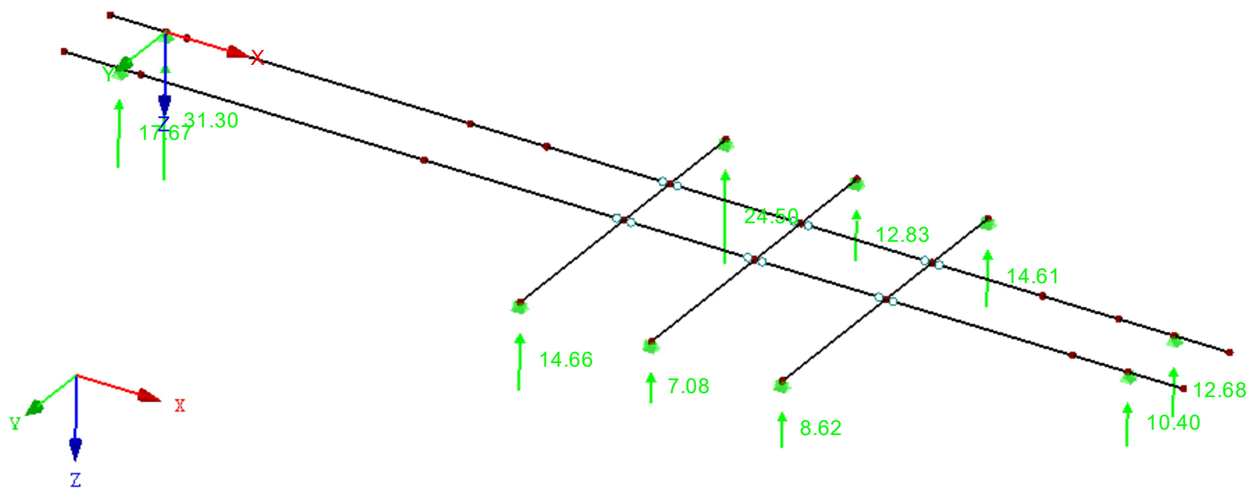


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 45.42, Min P-Z': 12.92 kN

LAGERREAKTIONEN

LC2 : live Load
Lagerreaktionen[kN]

Isometric

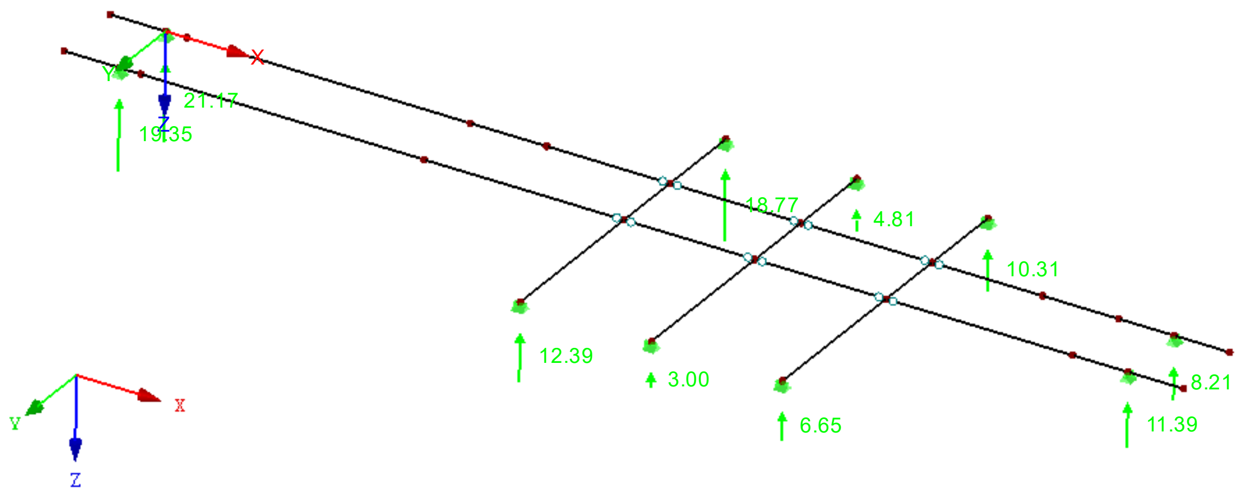


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 31.30, Min P-Z': 7.08 kN

LAGERREAKTIONEN

LC3 : Snow
Lagerreaktionen[kN]

Isometric

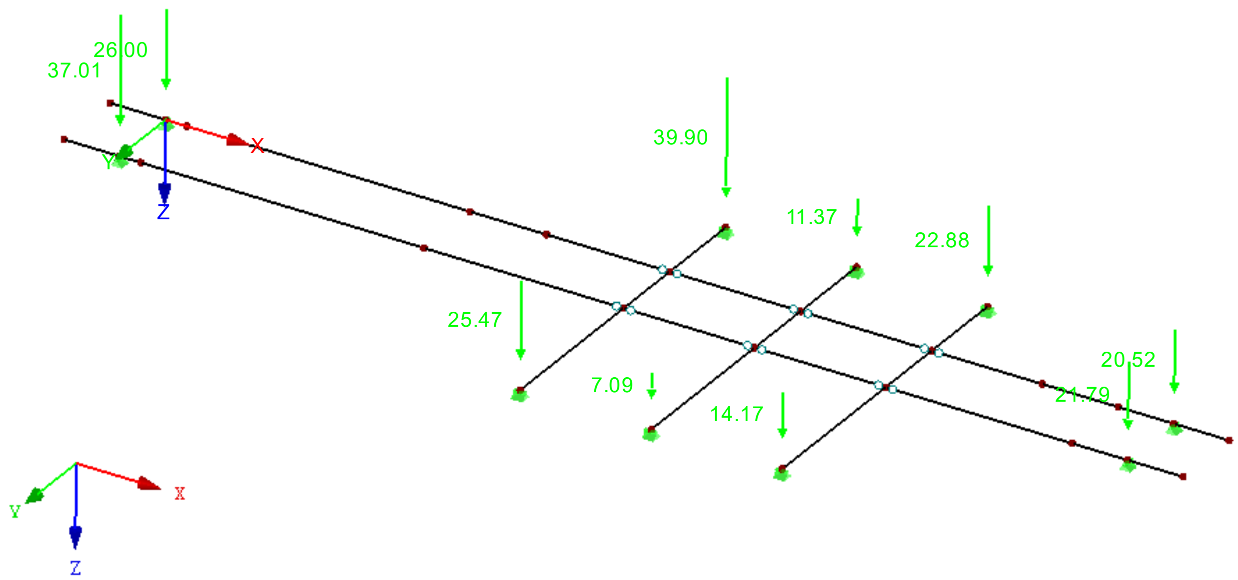


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 21.17, Min P-Z': 3.00 kN

LAGERREAKTIONEN

LC4 : Wind 1
Lagerreaktionen[kN]

Isometric

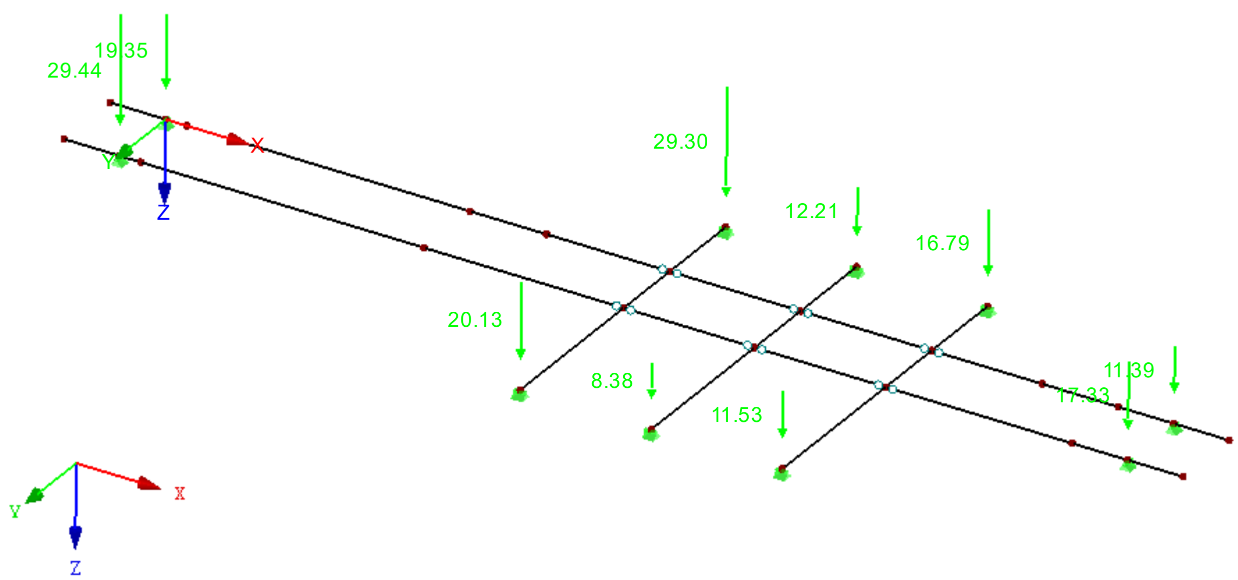


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -7.09, Min P-Z': -39.90 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]

Isometric

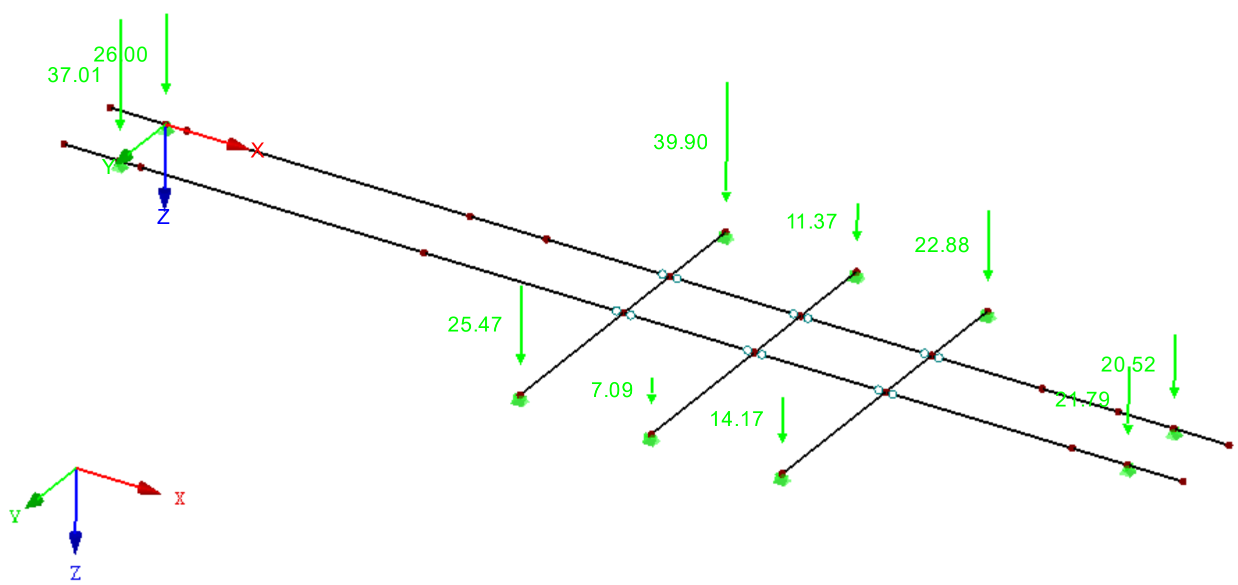


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -8.38, Min P-Z': -29.44 kN

LAGERREAKTIONEN

LC4 : Wind 1
Lagerreaktionen[kN]

Isometric

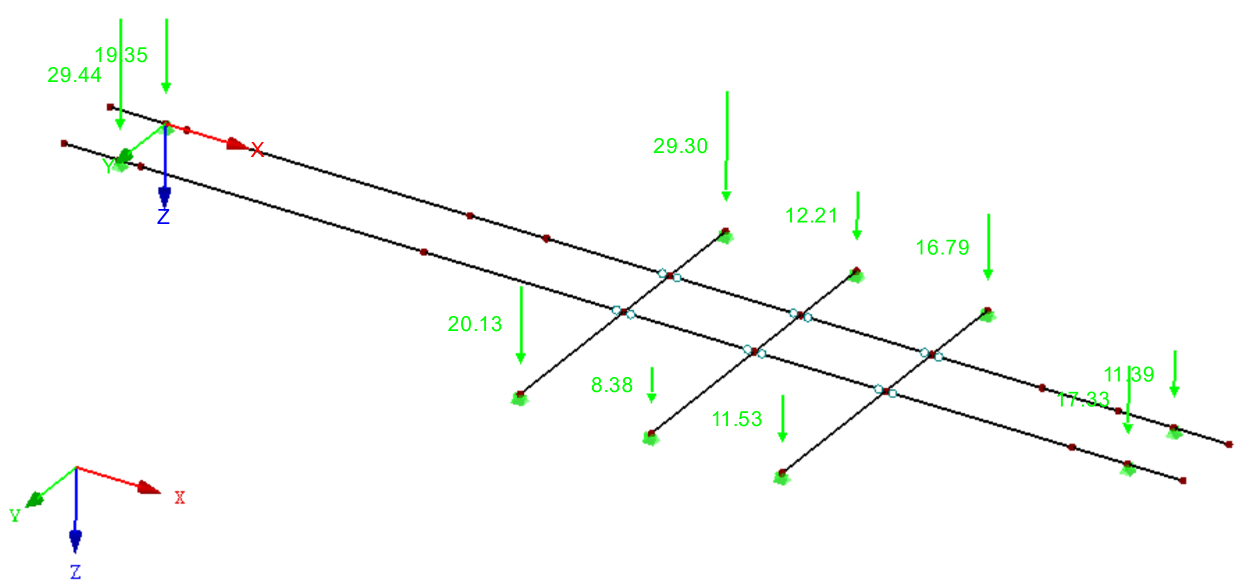


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -7.09, Min P-Z': -39.90 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]

Isometric

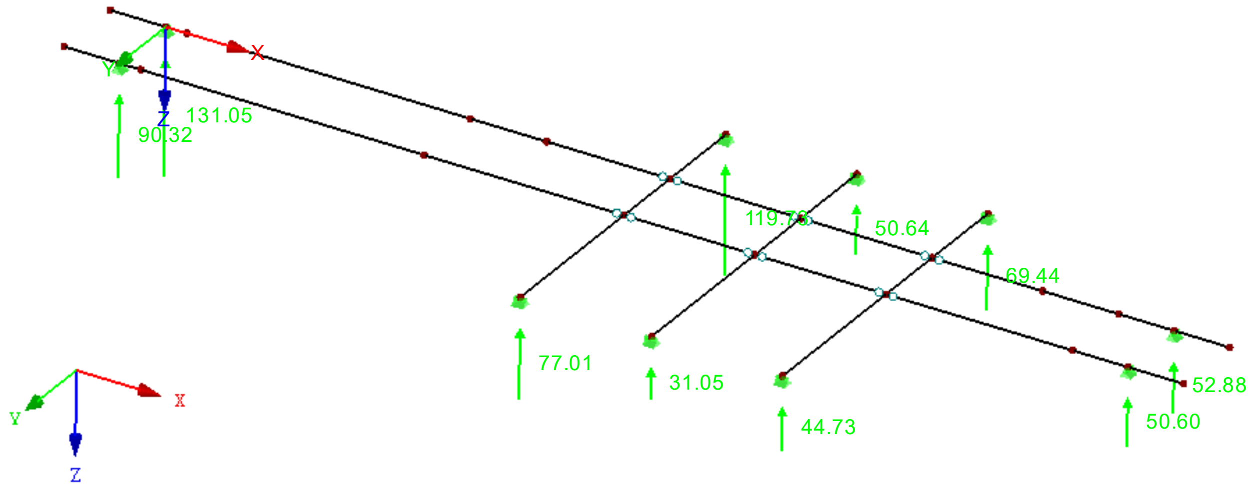


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -8.38, Min P-Z': -29.44 kN

■ LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

Isometric

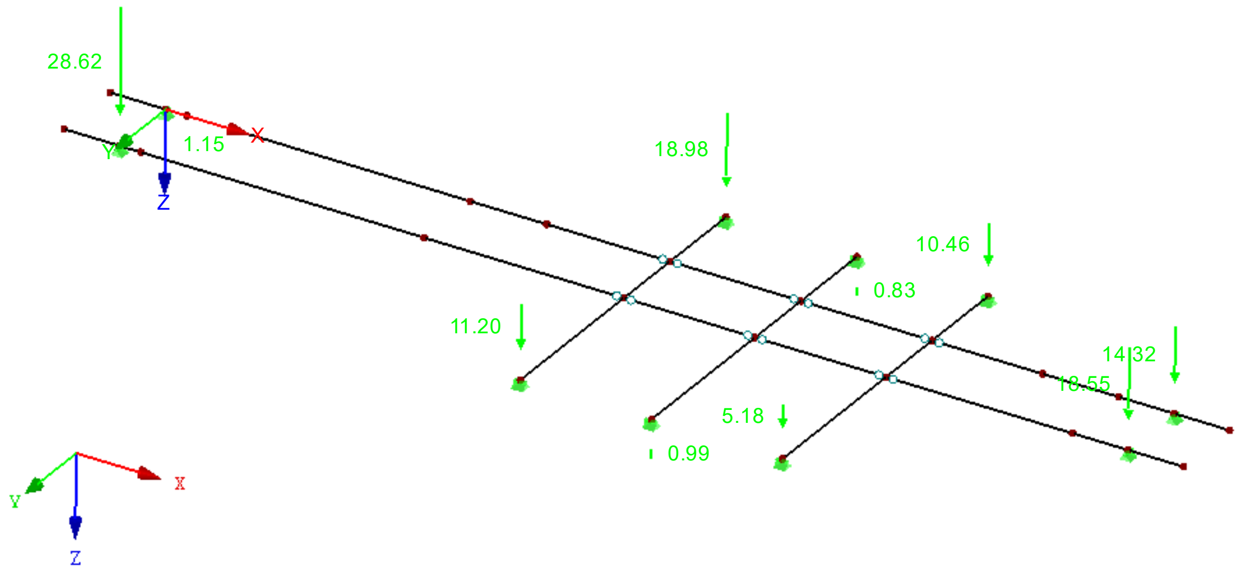


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 131.05, Min P-Z': 31.05 kN

■ LAGERREAKTIONEN

CO2 : Bem-2
Lagerreaktionen[kN]

Isometric

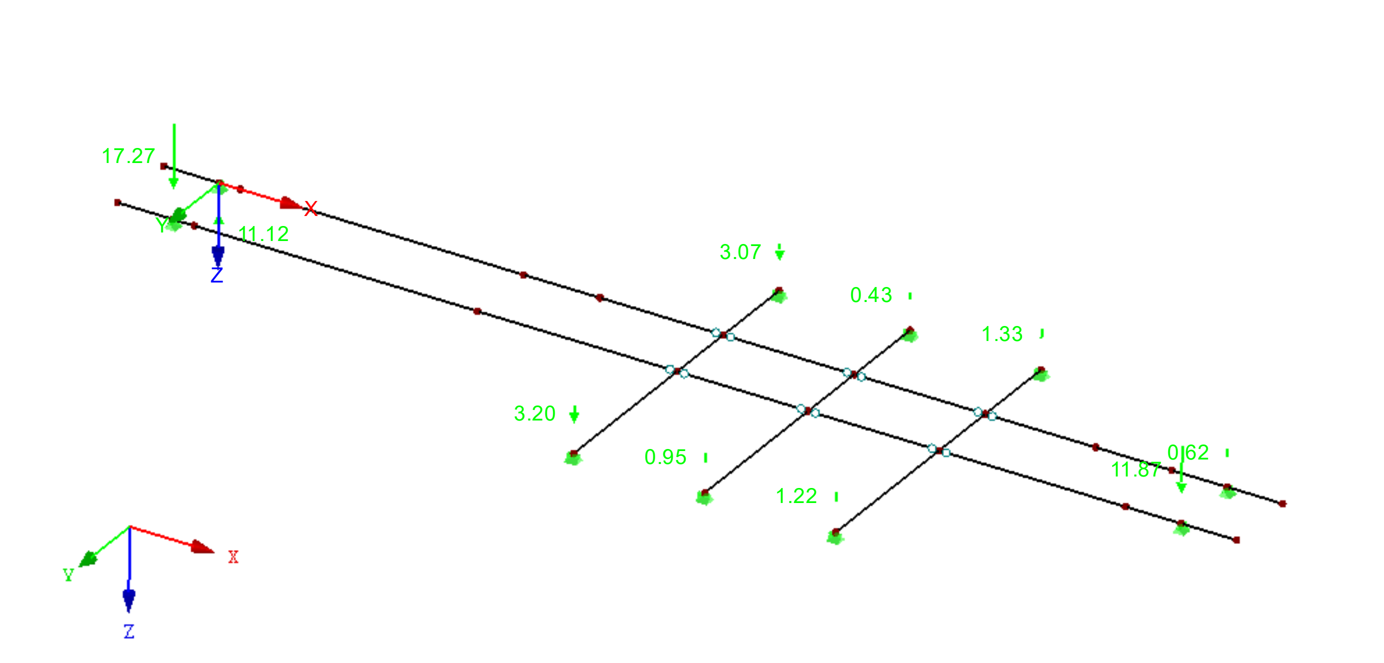


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 1.15, Min P-Z': -28.62 kN

■ LAGERREAKTIONEN

CO3 : Bem-3
Lagerreaktionen[kN]

Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 11.12, Min P-Z': -17.27 kN

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
	Section No. 1: HEB 300										
10	RC1		2.510	MAX N	▷ 0.81	0.00	-69.43	0.00	0.00	0.00	CO 1
20	RC1		0.000	MIN N	▷ -0.11	0.00	15.33	0.00	-11.50	0.00	CO 1
17	RC1		0.000	MAX V_y	-0.03	▷ 0.28	38.91	-0.15	0.00	0.00	CO 1
28	RC1		1.449	MIN V_y	0.11	▷ -0.05	-20.26	-0.15	53.86	-0.13	CO 1
8	RC1		0.000	MAX V_z	0.45	0.00	▷ 44.73	0.00	0.00	0.00	CO 1
10	RC1		2.510	MIN V_z	0.81	0.00	▷ -69.43	0.00	0.00	0.00	CO 1
17	RC1		0.747	MAX M_T	0.00	0.01	-7.91	▷ 0.03	-6.29	-0.01	CO 2
17	RC1		0.000	MIN M_T	-0.03	0.28	38.91	▷ -0.15	0.00	0.00	CO 1
8	RC1		4.650	MAX M_y	0.02	0.00	37.39	0.00	▷ 190.93	0.00	CO 1
8	RC1		4.650	MIN M_y	0.00	0.00	-10.08	0.00	▷ -35.48	0.00	CO 2
18	RC1		2.024	MAX M_z	-0.04	0.00	11.08	0.01	43.37	▷ 0.02	CO 1
17	RC1		2.392	MIN M_z	-0.04	0.07	15.75	-0.15	65.37	▷ -0.30	CO 1
	Section No. 2: HEB 400										
11	RC1		0.000	MAX N	▷ 1.05	0.00	95.36	0.14	-42.96	0.00	CO 1
21	RC1		0.000	MIN N	▷ -0.39	0.00	35.68	0.00	-42.96	0.00	CO 1
29	RC1		3.072	MAX V_y	0.31	▷ 0.07	36.88	0.14	167.47	-0.33	CO 1
27	RC1		3.340	MIN V_y	0.65	▷ -0.57	-77.73	0.14	0.00	0.00	CO 1
11	RC1		0.000	MAX V_z	1.05	0.00	▷ 95.36	0.14	-42.96	0.00	CO 1
27	RC1		3.340	MIN V_z	0.65	-0.57	▷ -77.73	0.14	0.00	0.00	CO 1
29	RC1		7.296	MAX M_T	0.00	-0.01	-2.76	▷ 0.14	239.53	-1.01	CO 1
29	RC1		6.912	MIN M_T	0.00	0.00	-0.83	▷ -0.03	-43.85	-0.03	CO 2
30	RC1		6.528	MAX M_y	0.00	0.00	-1.99	-0.01	▷ 244.23	0.08	CO 1
30	RC1		6.528	MIN M_y	0.00	0.00	0.63	0.00	▷ -77.40	0.00	CO 2
24	RC1		0.811	MAX M_z	0.05	0.01	-23.07	-0.01	219.62	▷ 0.09	CO 1
23	RC1		1.553	MIN M_z	0.09	-0.12	-22.20	0.14	215.60	▷ -1.13	CO 1
	Section No. 3: HEB 240										
6	RC1		2.510	MAX N	▷ 0.94	0.00	-50.63	0.00	0.00	0.00	CO 1
16	RC1		0.000	MIN N	▷ -0.07	-0.02	14.45	0.01	0.00	0.00	CO 1
15	RC1		0.000	MAX V_y	-0.05	▷ 0.16	14.45	-0.09	0.00	0.00	CO 1
13	RC1		3.550	MIN V_y	-0.05	▷ -0.16	-14.45	0.08	0.00	0.00	CO 1
4	RC1		0.000	MAX V_z	0.49	0.00	▷ 31.04	0.00	0.00	0.00	CO 1
6	RC1		2.510	MIN V_z	0.94	0.00	▷ -50.63	0.00	0.00	0.00	CO 1
13	RC1		3.550	MAX M_T	-0.05	-0.16	-14.45	▷ 0.08	0.00	0.00	CO 1
15	RC1		0.000	MIN M_T	-0.05	0.16	14.45	▷ -0.09	0.00	0.00	CO 1
4	RC1		4.650	MAX M_y	0.03	0.00	25.82	0.00	▷ 132.22	0.00	CO 1
5	RC1		0.000	MIN M_y	0.00	0.00	5.16	0.00	▷ -12.50	0.00	CO 3

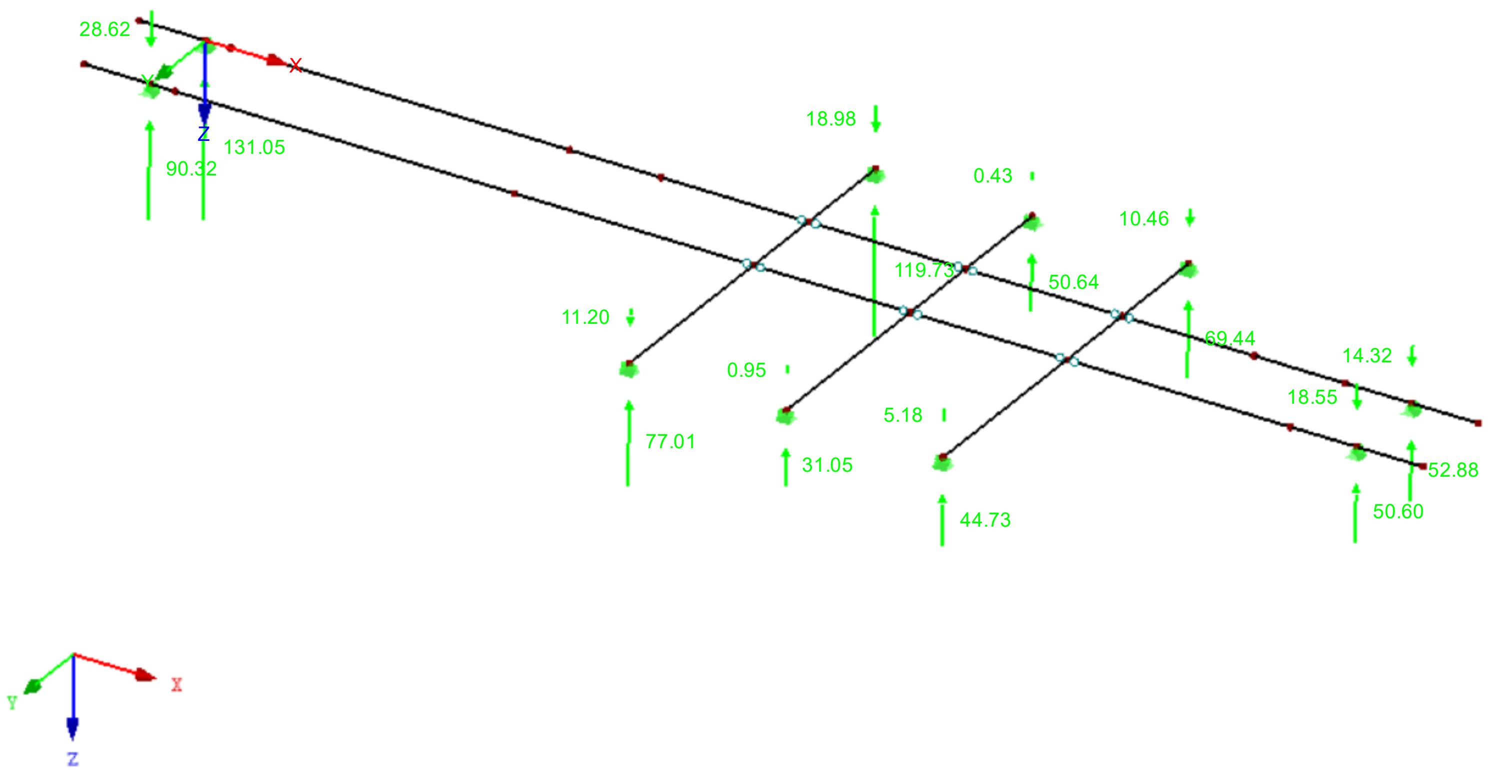
■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
14	RC1		1.952	MAX M_z	-0.01	0.00	-1.45	-0.01	12.70	▷ 0.01	CO 1
13	RC1		1.952	MIN M_z	-0.01	-0.01	-1.45	0.08	12.70	▷ -0.12	CO 1
	Section No. 4: HEB 360										
3	RC1		2.510	MAX N	▷ 1.41	0.00	-119.72	0.00	0.00	0.00	CO 1
2	RC1		0.000	MIN N	▷ -0.01	0.00	-18.78	0.00	337.43	0.00	CO 1
1	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MAX V_z	0.80	0.00	▷ 77.01	0.00	0.00	0.00	CO 1
3	RC1		2.510	MIN V_z	1.41	0.00	▷ -119.72	0.00	0.00	0.00	CO 1
1	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		4.650	MAX M_y	0.04	0.00	68.12	0.00	▷ 337.43	0.00	CO 1
1	RC1		4.650	MIN M_y	0.00	0.00	-17.14	0.00	▷ -65.89	0.00	CO 2
1	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
1	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

RC1 : minmax
Lagerreaktionen[kN]
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 131.05, Min P-Z': -28.62 kN

LAGERREAKTIONEN

Project: 2023
Model: K-Steel-beams-wo-Dome
Kloster-Gelati
Date: 15.12.20

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Tel: 07066/9179841 - Fax: 07066/9179849

RESULTS

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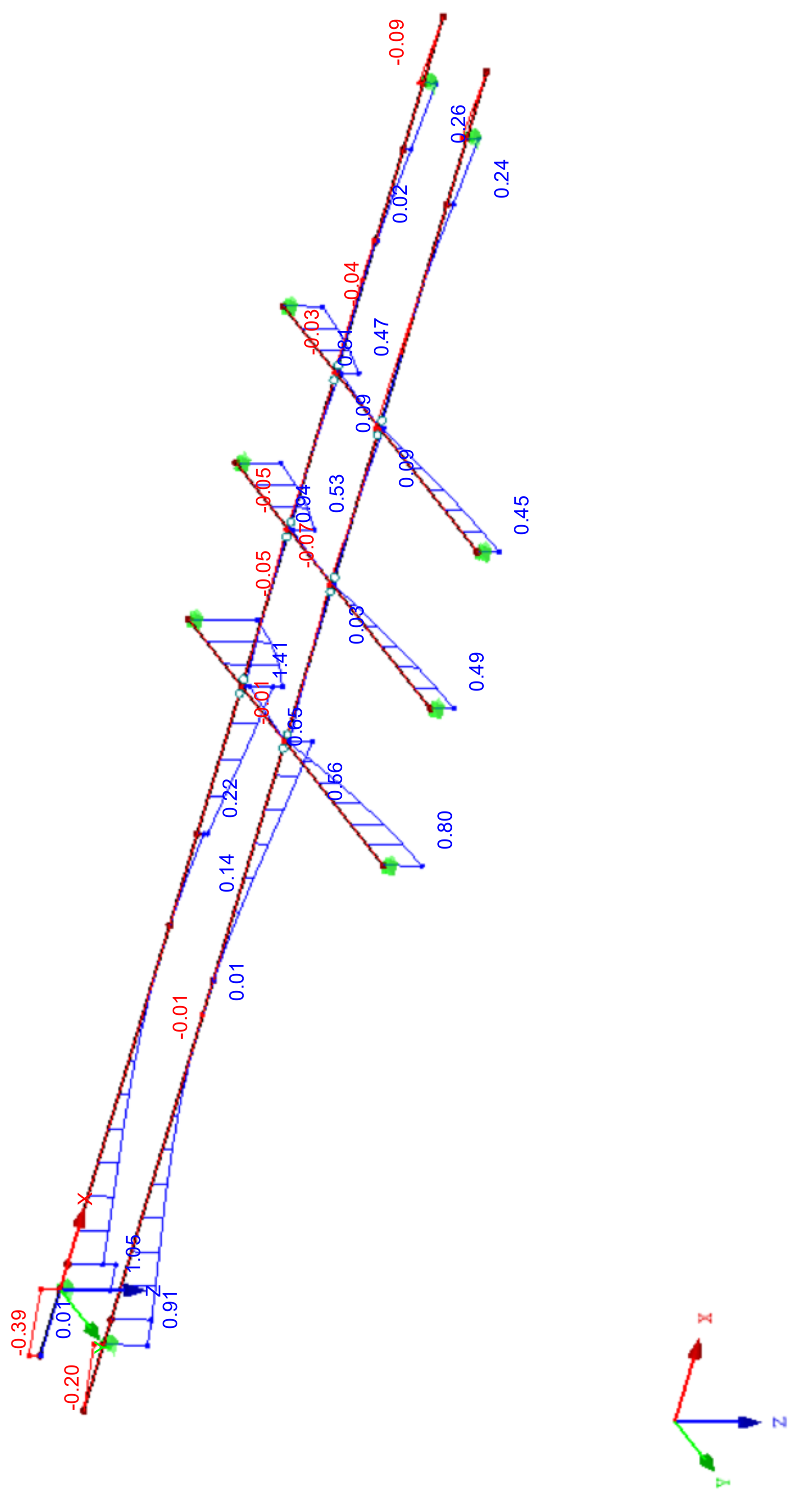
RESULTS

Project: 2023 Model: K-Steel-beams-wo-Dome Kloster-Gelati Date: 15.12.2023

INTERNAL FORCES N

Isometric

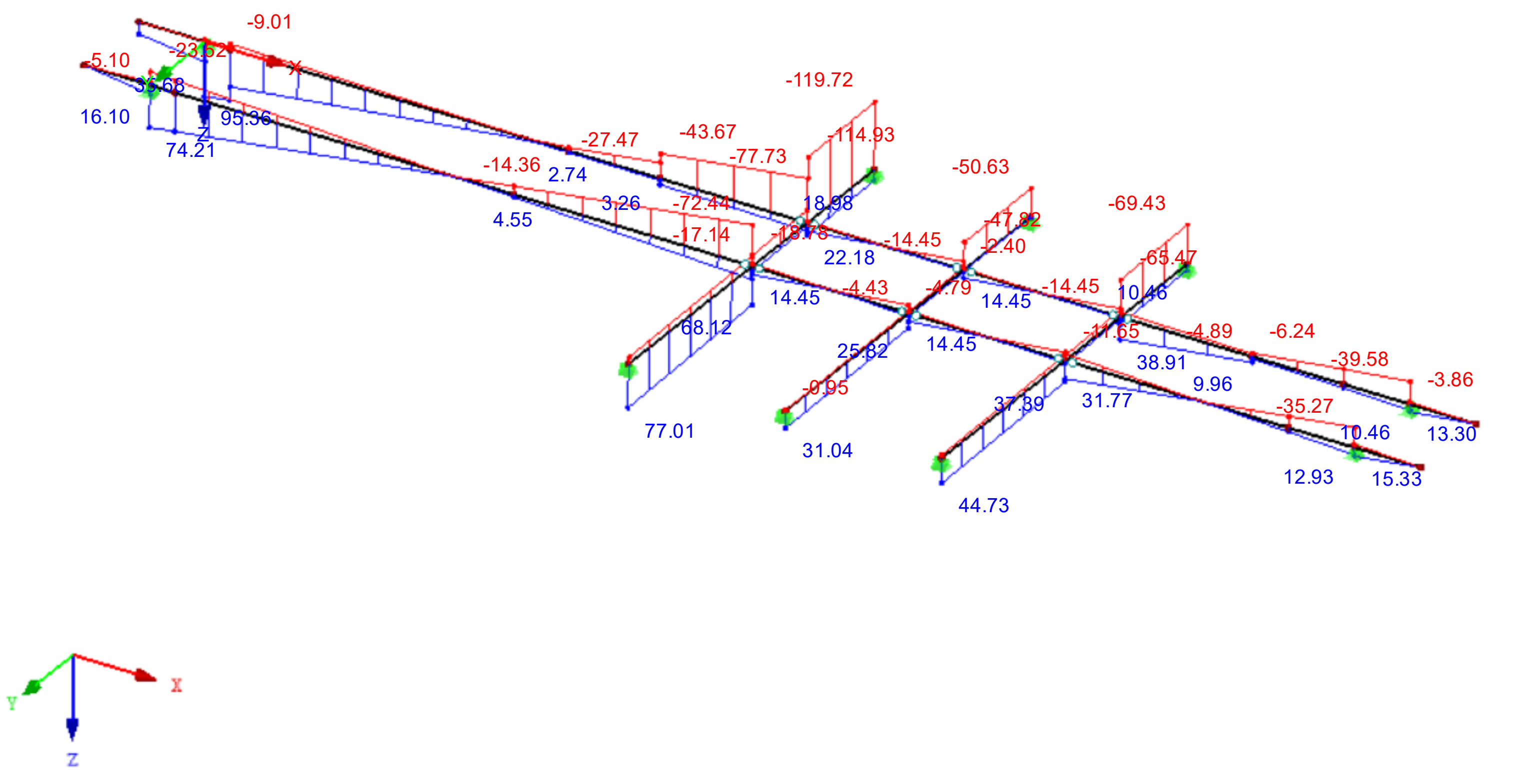


RC1 : minmax
Schnittgrößen N
Ergebniskombinationen: Max- und Min-Werte

Max N: 1.41, Min N: -0.39 [kN]

RC1 : minmax
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

Isometric



Max V-z: 95.36, Min V-z: -119.72 [kN]

■ INTERNAL FORCES V_z

RSTAB 8.31.01 - Space Frame Structures

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Project: 2023

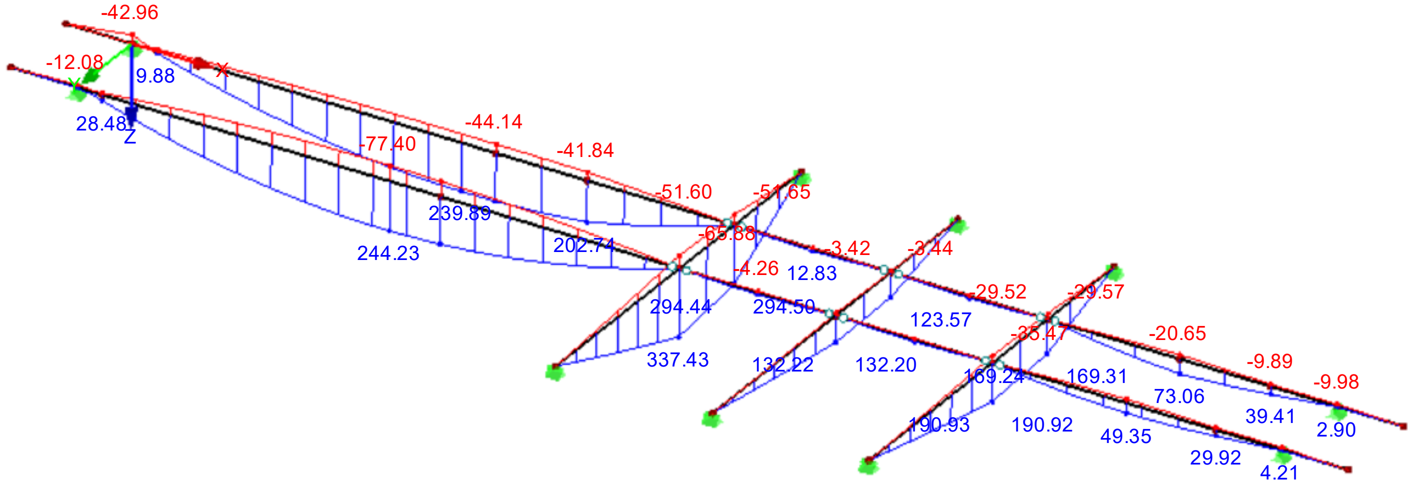
Model: K-Steel-beams-wo-Dome
Kloster-Gelati

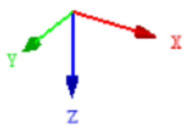
Date: 15.12.20[illegible]

RESULTS

RC1 : minmax
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

Isometric





Max M-y: 337.43, Min M-y: -77.40 [kNm]

INTERNAL FORCES M_y

Project: 2023

Model: K-Steel-beams-wo-Dome
Kloster-Gelati

Date: 15.12.2023

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RESULTS

STEEL EC3
CA1
Bemessung nach Eurocode 3

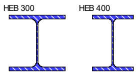
1.1 GENERAL DATA

Members to design:	All
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design	
Load combinations to design:	CO1 Bem-1
	CO2 Bem-2
	CO3 Bem-3

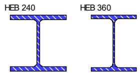
1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm^2]	Shear Modulus G [kN/cm^2]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm^2]	Max. Thickness t [mm]
1	S 235 | Layher Benutzerdefiniertes Material	21000.00	8100.00	0.300	23.50	100.0

1.3 CROSS-SECTIONS



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	1	HEB 300	I-section rolled	0.48	
2	1	HEB 400	I-section rolled	0.40	
3	1	HEB 240	I-section rolled	0.59	
4	1	HEB 360	I-section rolled	0.59	



1.5 EFFECTIVE LENGTHS - MEMBERS

Member	Buckling	Buckling About Axis y			Buckling About Axis z			Lateral-Torsional Buckling				
No.	Possible	Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Possible	k_z	k_w	L_w [m]	L_T [m]
1	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
2	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
3	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
4	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
5	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
6	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
8	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
9	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
10	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
11	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
12	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
13	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
14	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
15	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
16	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
17	☒	☒	1.00	2.990	☒	1.00	2.990	☒	1.0	1.0	2.990	2.990
18	☒	☒	1.00	5.060	☒	1.00	5.060	☒	1.0	1.0	5.060	5.060
19	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
20	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
21	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
22	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
23	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
24	☒	☒	1.00	5.410	☒	1.00	5.410	☒	1.0	1.0	5.410	5.410
25	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
26	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
27	☒	☒	1.00	3.340	☒	1.00	3.340	☒	1.0	1.0	3.340	3.340
28	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
29	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
30	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
1	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
2	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
3	Cross-Section	4 - HEB 360
	Shear panel	☐
	Rotational restraint	☐

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Cross-sectional area for tension design	☐
4	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
5	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
6	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
8	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
9	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
10	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
11	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
12	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
13	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
14	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
15	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
16	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
17	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
18	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
19	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
20	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
21	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
22	Cross-Section	2 - HEB 400

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
23	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
24	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
25	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
26	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
27	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
28	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
29	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
30	Cross-Section	2 - HEB 400
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
1	**Cross-section No. 4 - HEB 360**					
	4.650	LK1	0.54	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.09	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.54	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	4.650	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
2	**Cross-section No. 4 - HEB 360**					
	0.000	LK1	0.54	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.54	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
3	**Cross-section No. 4 - HEB 360**					
	0.000	LK1	0.47	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.15	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.47	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.51	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
4	**Cross-section No. 3 - HEB 240**					
	2.093	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	4.650	LK1	0.53	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.53	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	4.650	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
5	**Cross-section No. 3 - HEB 240**					
	1.966	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.53	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.53	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
6	**Cross-section No. 3 - HEB 240**					
	1.381	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.50	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.11	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.50	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.55	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
8	**Cross-section No. 1 - HEB 300**					
	0.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	4.650	LK1	0.43	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	4.650	LK1	0.43	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	4.650	LK1	0.48	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
9	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.43	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.43	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.48	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
10	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.39	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.510	LK1	0.11	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.39	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.42	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
11	**Cross-section No. 2 - HEB 400**					
	0.000	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.10	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
12	**Cross-section No. 2 - HEB 400**					
	0.570	LK1	0.04	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.570	LK1	0.04	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.570	LK1	0.04	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
13	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
14	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 o

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
15	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
16	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
17	**Cross-section No. 1 - HEB 300**					
	2.990	LK1	0.17	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.06	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.990	LK1	0.17	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.990	LK1	0.18	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
18	**Cross-section No. 1 - HEB 300**					
	3.036	LK1	0.11	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.036	LK1	0.11	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.036	LK1	0.13	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
19	**Cross-section No. 1 - HEB 300**					
	0.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.02	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
20	**Cross-section No. 1 - HEB 300**					
	1.500	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.03	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
21	**Cross-section No. 2 - HEB 400**					
	0.000	LK1	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
22	**Cross-section No. 2 - HEB 400**					
	1.500	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8

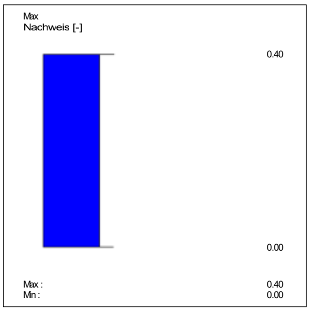
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
	0.000	LK1	0.02	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
23	**Cross-section No. 2 - HEB 400**					
	0.000	LK2	0.06	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK2	0.06	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.34	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
24	**Cross-section No. 2 - HEB 400**					
	0.000	LK1	0.31	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	5.410	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.31	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.34	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
25	**Cross-section No. 1 - HEB 300**					
	1.500	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.09	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.06	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.09	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.10	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
26	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.07	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.07	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.07	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
27	**Cross-section No. 2 - HEB 400**					
	2.338	LK1	0.10	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.340	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.338	LK1	0.10	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.08	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.29	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
28	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.17	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.070	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.17	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.18	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
29	**Cross-section No. 2 - HEB 400**					
	3.840	LK1	0.25	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.840	LK1	0.25	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	6.912	LK1	0.10	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	6.912	LK1	0.38	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
30	**Cross-section No. 2 - HEB 400**					
	6.528	LK1	0.32	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	6.528	LK1	0.32	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	6.528	LK1	0.40	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6

2.4 DESIGN BY MEMBER

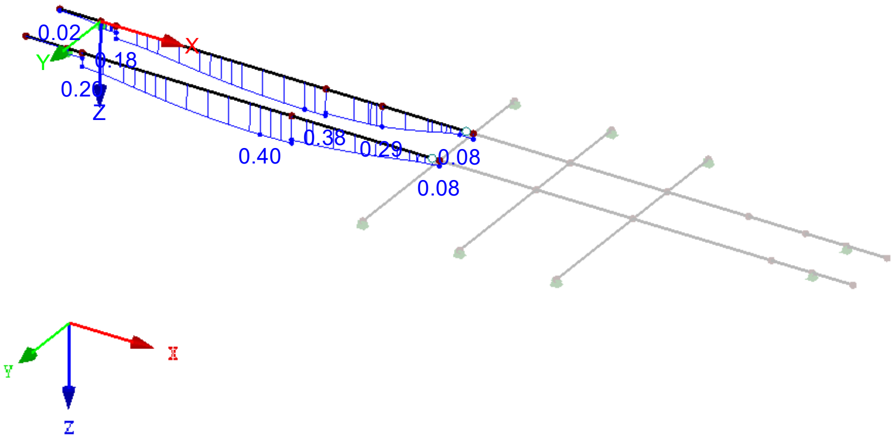
Member No.	Location x [m]	LC/CO/ RC	Design	Equation No.	Description
					6.3.2.3 - I-Section

NACHWEIS



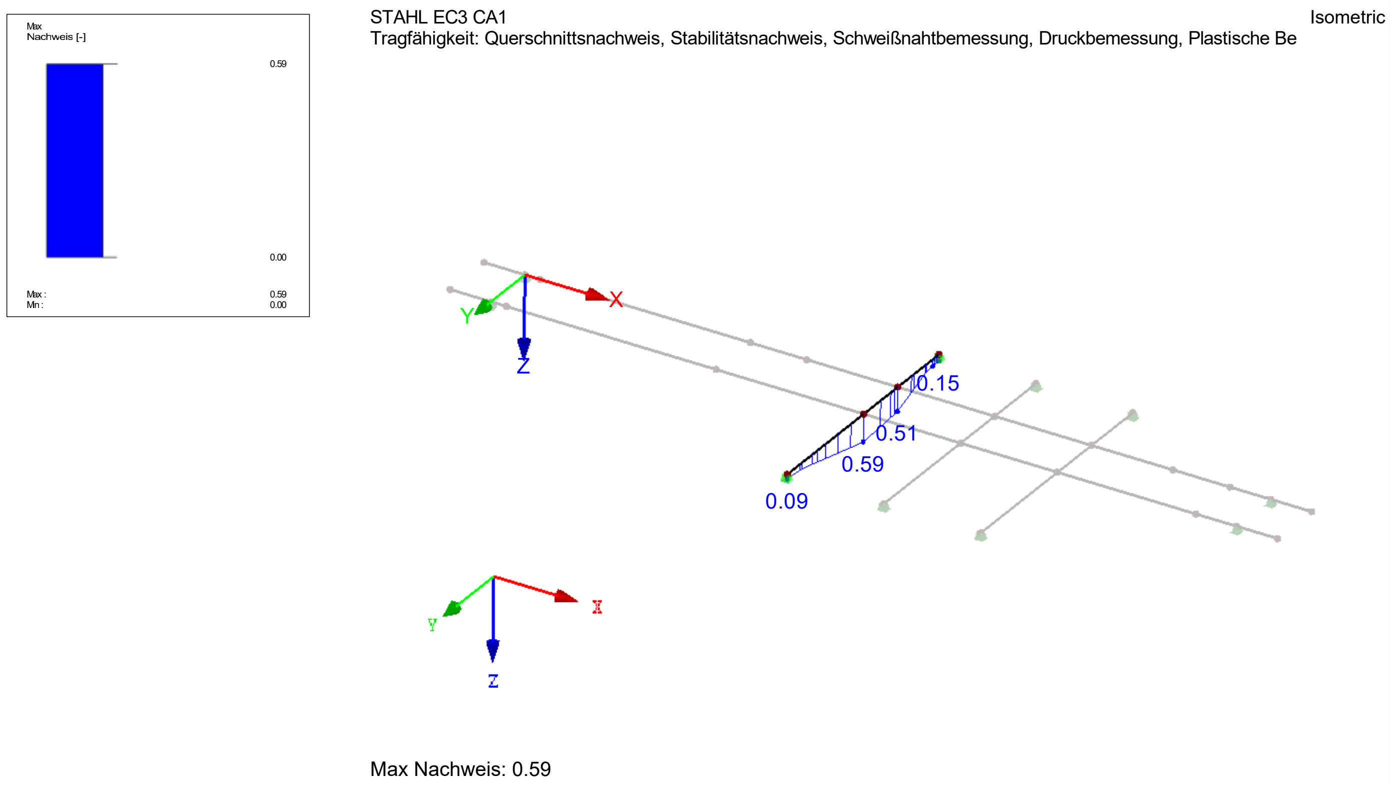
STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be

Isometric

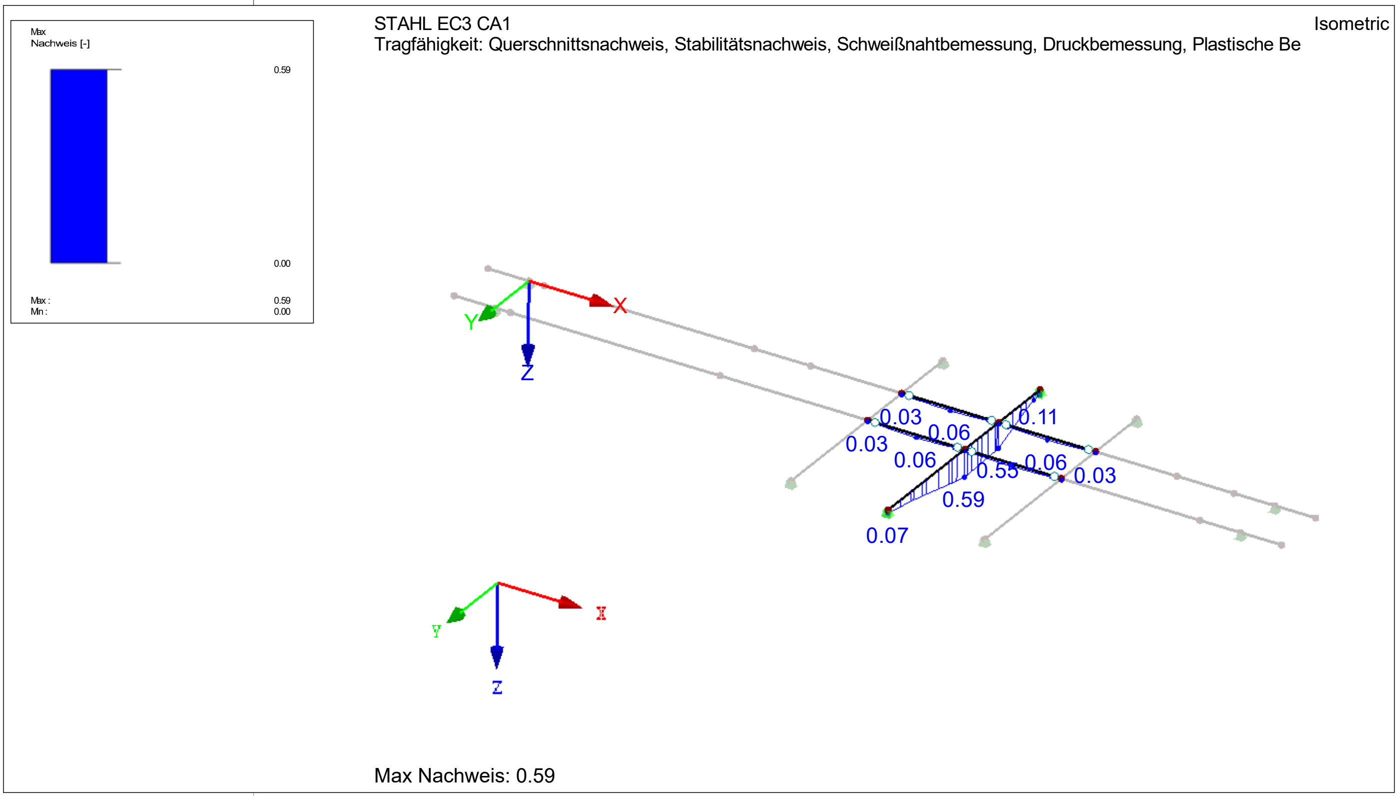


Max Nachweis: 0.40

NACHWEIS

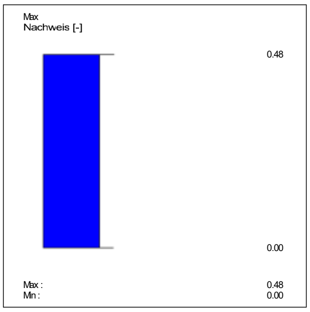


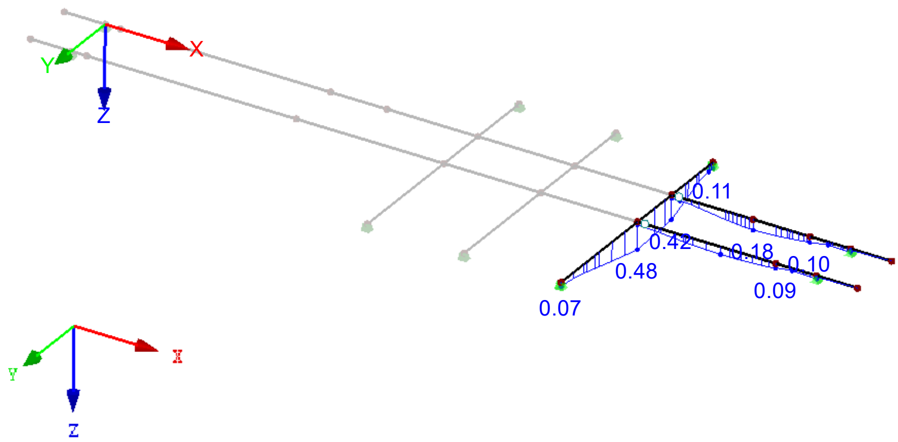
NACHWEIS



■ NACHWEIS

STAHL EC3 CA1 Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be





Max Nachweis: 0.48

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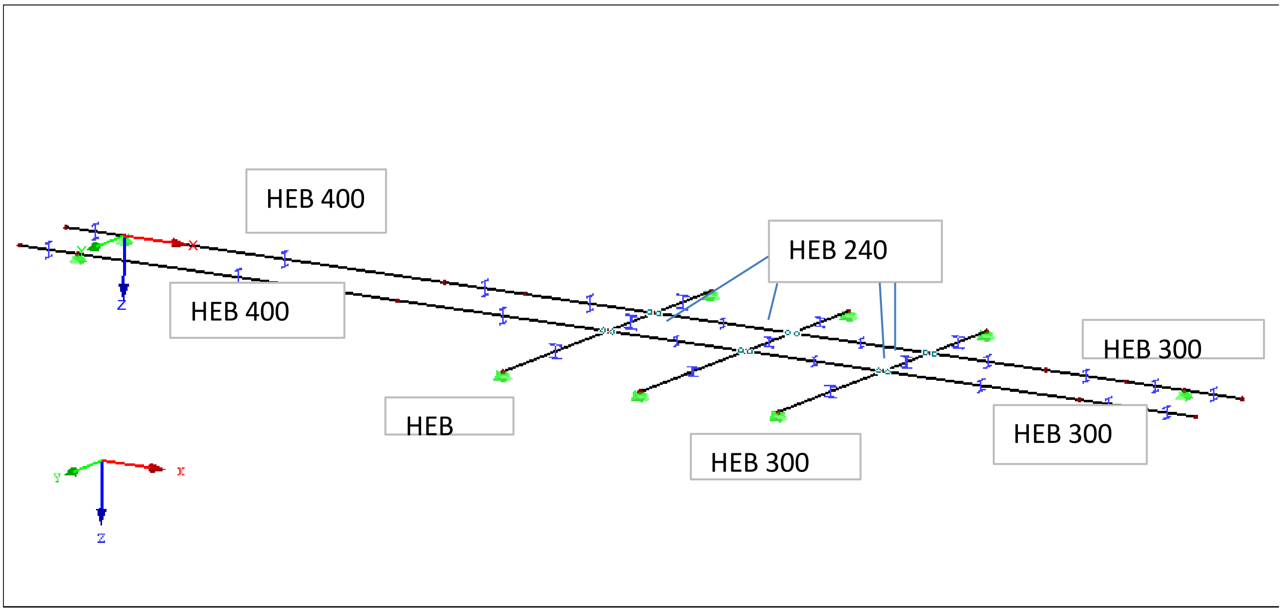
Dimensioning



HEB 400	Nd=	20 kN
S235	Vd=	100 kN
	Md=	280 kNm
	eta=	0,4 < 1,0
HEB 360	Nd=	20 kN
S235	Vd=	130 kN
	Md=	350 kNm
	eta=	0,6 < 1,0
HEB 240	Nd=	10 kN
S235	Vd=	55 kN
	Md=	140 kNm
	eta=	0,6 < 1,0

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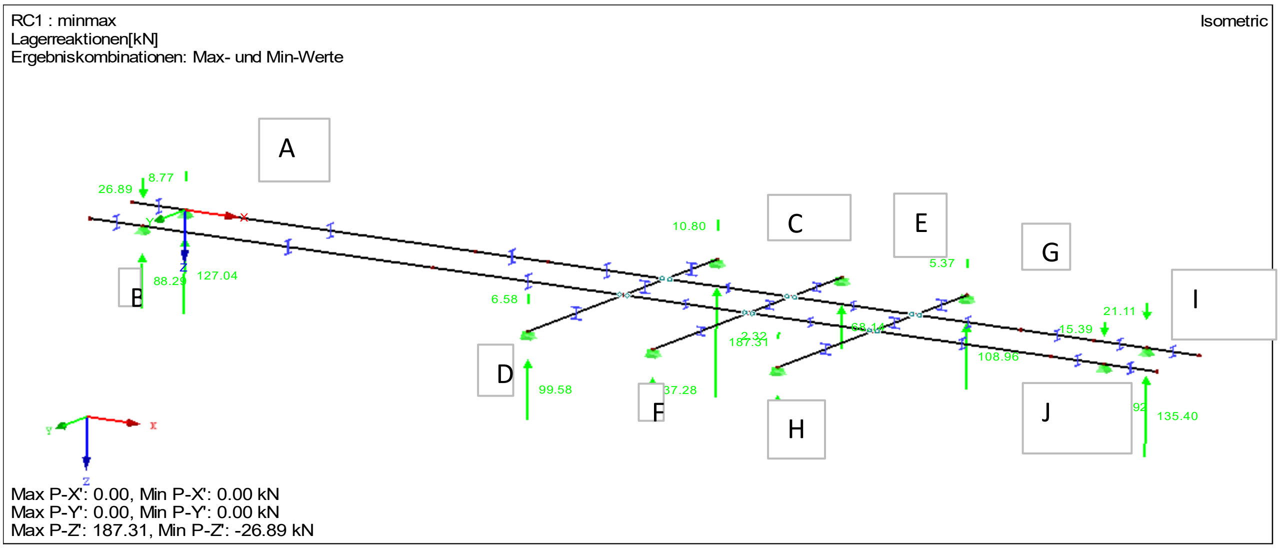
HEB 300	Nd=	20	kN
S235	Vd=	80	kN
	Md=	200	kNm
	eta=	0,5 < 1,0	

Reaction forces:



		A	B	C	D	E	F
Dead Load		45	30	46	30	20	13
Live Load		35	20	25	15	13	8
Snow		22	20	20	13	5	4
Wind 1		-26	-37	-40	-26	-12	-8
Wind 2		-20	-30	-30	-21	-13	-10
max	design	135	91	120	80	61	31
max	design		0	0	0	0	0
min	design	0	-29	-20	-12	0	0

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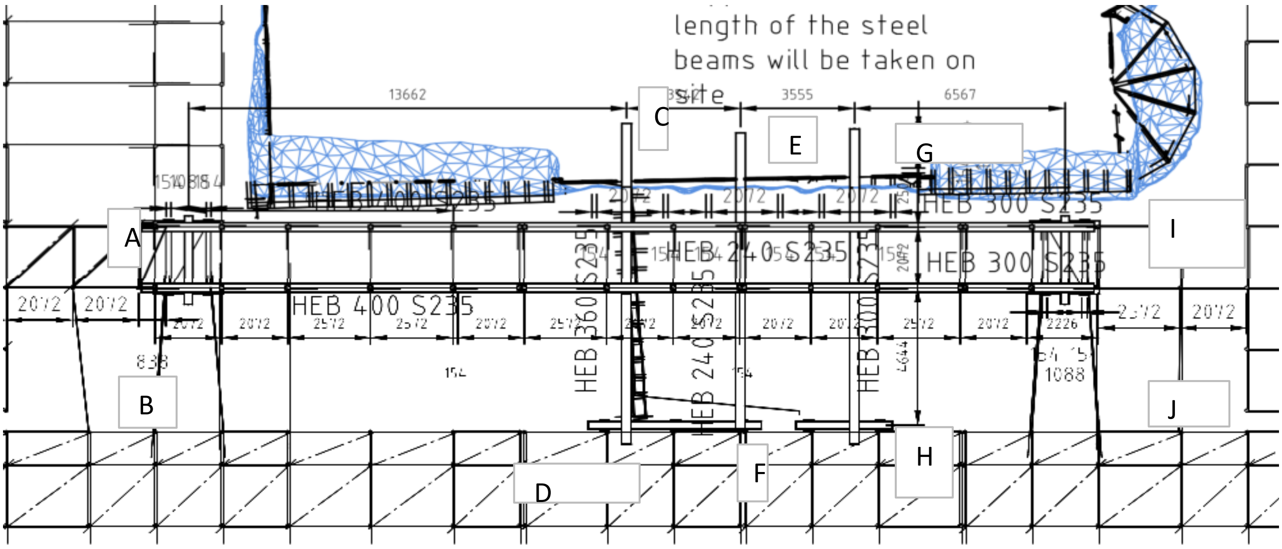
		G	H	I	J		
Dead Load		27	18	20	20		
Live Load		15	10	13	11		
Snow		11	7	10	11		
Wind 1		-23	-15	-21	-22		
Wind 2		-17	-12	-12	-18		
max	design	70	45	60	51		
max	design		0	0	0		
min	design	-11	-6	-15	-19		

Heavy duty towers:



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Point A

2 Column heavy duty support

Nd =	140	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / 2 / 1,35 + 5 + 2=	58,9	kN
a=	0,75	m
b=	0,75	m
sigma=	105	kN/m²

Point B

2 Column heavy duty support

Nd =	100	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / 2 / 1,35 + 5 + 2=	44,037	kN
a=	0,6	m
b=	0,6	m
sigma=	122	kN/m²

Point C

On the wall

Nd = 120 kN

Point D

1 Column heavy duty support

Nd = 100 kN
NRd= 140 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 81,07 kN

a= 0,75 m
b= 0,75 m

sigma= 144 kN/m²

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Point E

On the wall

Nd = 61 kN

Point F

1 Column heavy duty support

Nd = 31 kN
NRd= 140 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 29,963 kN

a= 0,6 m
b= 0,6 m

sigma= 83 kN/m²

Point G

On the wall

Nd = 70 kN

Point H

1 Column heavy duty support

Nd = 45 kN
NRd= 140 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 40,333 kN

a= 0,6 m
b= 0,6 m

sigma= 112 kN/m²

Point I

1 Column heavy duty support

Nd = 60 kN
NRd= 140 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 51,444 kN

a= 0,7 m
b= 0,7 m

sigma= 105 kN/m²

Point J

2 Column heavy duty support

Nd = 60 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

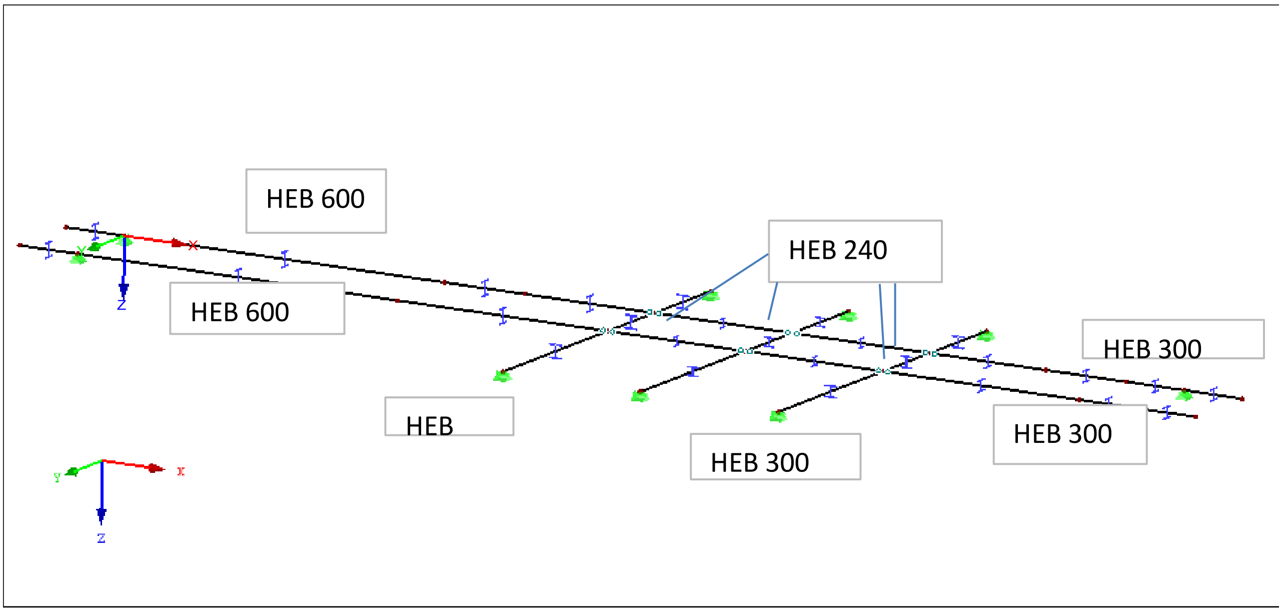
Ncolum,k= Nd / n / 1,35 + 5 + 2= 29,222 kN

a= 0,7 m
b= 0,7 m

sigma= 60 kN/m²

Dimensioning

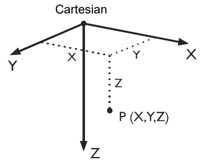
opposite side
longer span für HEB 600



MODEL - GENERAL DATA

General	Model name	:	K-Steel-beams-b-wo-dome
	Model description	:	Kloster-Gelati
	Project name	:	2023
	Type of model	:	3D
	Positive direction of global axis Z	:	Downward
	Classification of load cases and combinations	:	According to Standard: EN 1990 National Annex: DIN - Deutschland
Options	☐ Use CQC Rule		
	☐ Enable CAD/BIM model		
	Standard Gravity		
	g	:	10.00 m/s²

1.1 NODES

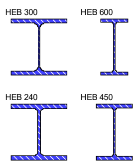


Node No.	Reference Node	Coordinate System	Node Coordinates X [m]	Y [m]	Z [m]	Comment
1	-	Cartesian	0.000	-5.020	0.000	
2	-	Cartesian	13.660	-5.020	0.000	
3	-	Cartesian	17.210	-5.020	0.000	
4	-	Cartesian	20.760	-5.020	0.000	
5	-	Cartesian	27.320	-5.020	0.000	Supported
6	-	Cartesian	0.000	-7.090	0.000	
7	-	Cartesian	13.660	-7.090	0.000	
8	-	Cartesian	17.210	-7.090	0.000	
9	-	Cartesian	20.760	-7.090	0.000	
10	-	Cartesian	27.320	-7.090	0.000	Supported
11	-	Cartesian	13.660	-11.740	0.000	Supported
12	-	Cartesian	17.210	-11.740	0.000	Supported
13	-	Cartesian	20.760	-11.740	0.000	Supported
14	-	Cartesian	13.660	-2.510	0.000	Supported
15	-	Cartesian	17.210	-2.510	0.000	Supported
16	-	Cartesian	20.760	-2.510	0.000	Supported
17	-	Cartesian	-1.500	-7.090	0.000	
18	-	Cartesian	-1.500	-5.020	0.000	
19	-	Cartesian	28.820	-5.020	0.000	
20	-	Cartesian	28.820	-7.090	0.000	
21	-	Cartesian	8.250	-5.020	0.000	
22	-	Cartesian	8.250	-7.090	0.000	
23	-	Cartesian	25.820	-5.020	0.000	
24	-	Cartesian	25.820	-7.090	0.000	
25	-	Cartesian	10.320	-5.020	0.000	
26	-	Cartesian	23.750	-5.020	0.000	
27	-	Cartesian	0.570	-5.020	0.000	
28	-	Cartesian	0.570	-7.090	0.000	
29	-	Cartesian	-5.500	-7.090	0.000	Supported
30	-	Cartesian	-5.500	-5.020	0.000	Supported

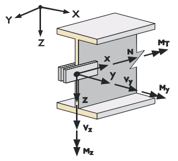
1.2 MATERIALS

Matl. No.	Modulus E [kN/cm²]	Modulus G [kN/cm²]	Spec. Weight γ [kN/m³]	Coeff. of Th. Exp. α [1/°C]	Partial Factor γ_M [-]	Material Model
1	S 235 | Layher					
	21000.00	8100.00	78.50	1.20E-05	1.10	Isotropic Linear Elastic
	Benutzerdefiniertes Material					

1.3 CROSS-SECTIONS



Section No.	Matl. No.	J [cm⁴] A [cm²]	I_y [cm⁴] A_y [cm²]	I_z [cm⁴] A_z [cm²]	Principal Axes α [°]	Rotation α' [°]	Overall Dimensions [mm] Width b	Height h
1	HEB 300							
	1	185.00 149.10	25170.00 94.97	8563.00 28.65	0.00	0.00	300.0	300.0
2	HEB 600							
	1	667.20 270.00	171000.00 150.42	13530.00 85.47	0.00	0.00	300.0	600.0
3	HEB 240							
	1	102.70 106.00	11260.00 68.04	3923.00 20.61	0.00	0.00	240.0	240.0
4	HEB 450							
	1	440.50 218.00	79890.00 130.21	11720.00 56.71	0.00	0.00	300.0	450.0



1.4 MEMBER HINGES

Release No.	Reference System	Force Release or Spring [kN/m] u_x	u_y	u_z	Moment Release or Spring [kNm/rad] φ_x	φ_y	φ_z
1	Local x,y,z	☐	4850.000	☐	☐	☒	☒
	Nonlinearity	-	Diagram...	-	-	Diagram...	Diagram...
	Riegel LW						
2	Local x,y,z	☐	4850.000	☐	☐	☒	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante K2000+						
3	Local x,y,z	☐	☐	☐	☐	35.000	5.100
	Nonlinearity	-	-	-	-	Diagram...	-
	Variante II						
4	Local x,y,z	☐	4850.000	☒	☐	☒	5.100
	Nonlinearity	-	-	Diagram...	-	Diagram...	-
	AR Doppelkeilkopfkupplung K2000+						
5	Local x,y,z	☐	☐	☐	☐	0.100	5.100
	Nonlinearity	-	-	-	-	-	-
	Kurzer Riegel <W06						
6	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Gelenk My und Mz						
7	Local x,y,z	☐	☐	☐	☐	☒	☐
	Nonlinearity	-	-	-	-	-	-
	Gelenk My						
8	Local x,y,z	☐	20000.000	20000.000	☐	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Normalkupplung						
9	Local x,y,z	☐	5000.000	5000.000	0.010	☐	☐
	Nonlinearity	-	-	-	-	-	-
	Drehkupplung						
10	Local x,y,z	☐	☐	☐	☐	0.010	0.010
	Nonlinearity	-	-	-	-	-	-
	Gelenke My und Mz mit geringer Steifigkeit						
11	Local x,y,z	☐	☐	☐	☐	100.000	100.000
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß (Übergreifungsstoß c=10.000kNcm/rad)						
12	Local x,y,z	☐	0.100	0.100	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-
	Anschluss KD Fahrwagen						
13	Local x,y,z	10000.000	☐	☐	☐	☒	☒
	Nonlinearity	Partial activity...	-	-	-	-	-
	EV-Traverse mit Normalkraftbegrenzung						
14	Local x,y,z	☐	☒	☒	☐	0.010	0.010
	Nonlinearity	-	Diagram...	Diagram...	-	-	-
	TX Bolzenanschluss						
15	Local x,y,z	☐	☐	☐	☐	58.800	58.800
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß K2000 (gestauchter RV c=5.880kNcm/rad)						
16	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	Diagram...	Diagram...
	Ständerstoß LW (angeformter Stoßbolzen, ni-li Drehfeder)						
17	Local x,y,z	☐	☐	☐	☐	45.700	45.700
	Nonlinearity	-	-	-	-	-	-
	Ständerstoß TG 60 (gestauchter RV c=4.570kNcm/rad)						
18	Local x,y,z	☐	☐	☐	☐	☒	☒
	Nonlinearity	-	-	-	-	-	-

1.4.1 MEMBER HINGES - NONLINEARITIES - PARTIAL ACTIVITY

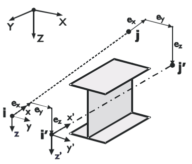
Release No.	Degree of Freedom	Type	Value [kN, kNm, m, rad]	Slippage [m, rad]	Comment
13	u_x+	Tearing from release force	11.400	-	
	u_x-	Tearing from release force	11.400	-	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
1	$u_{y'}$	0.000	0.000	
		0.000	3.000	
		0.000	6.000	
		0.000	9.000	
		0.000	12.000	
		0.000	15.000	
		0.001	> 16.600	Yielding
	$\varphi_{y'}$	0.0000	0.000	
		0.0017	0.200	
		0.0042	0.400	
		0.0081	0.600	
		0.0149	0.800	
		0.0303	1.000	
		0.0485	1.100	
		0.0702	1.160	
		0.0968	> 1.200	Yielding
	$\varphi_{z'}$	0.0000	0.000	

1.4.2 MEMBER HINGES - NONLINEARITIES - STRESS-STRAIN DIAGRAM

Release No.	Degree of Freedom	u, φ [m, rad]	P, M [kN, kNm]	Comment
		0.0100	0.100	
		0.0250	0.200	
		0.0468	0.290	
		0.0750	0.360	
		0.1007	> 0.401	Yielding
2	$\varphi_{y'}$	0.0000	0.000	
		0.0026	0.200	
		0.0065	0.400	
		0.0127	0.600	
		0.0207	0.750	
		0.0318	0.870	
		0.0442	0.950	
		0.0592	> 1.010	Yielding
3	$\varphi_{y'}$	0.0000	0.000	
		0.0014	0.100	
		0.0030	0.200	
		0.0050	0.300	
		0.0075	0.400	
		0.0107	0.500	
		0.0148	0.600	
		0.0192	> 0.680	Yielding
4	$u_{z'}$	0.000	0.000	
		0.000	5.100	
		0.002	> 5.110	Stopping
	$\varphi_{y'}$	0.0000	0.000	
		0.0068	0.150	
		0.0155	0.300	
		0.0274	0.450	
		0.0415	0.580	
		0.0566	> 0.682	Yielding
11	$\varphi_{y'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
	$\varphi_{z'}$	0.0000	0.000	
		0.0260	0.001	
		0.1260	> 10.000	Continuous
14	$u_{y'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
	$u_{z'}$	0.000	0.000	
		0.001	0.100	
		0.002	> 100.000	Continuous
16	$\varphi_{y'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding
	$\varphi_{z'}$	0.0000	0.000	
		0.0009	0.200	
		0.0020	0.400	
		0.0037	0.600	
		0.0064	0.800	
		0.0098	0.950	
		0.0133	1.050	
		0.0189	1.150	
		0.0254	> 1.220	Yielding



1.5/1 MEMBER ECCENTRICITIES - ABSOLUTE

Ecc. No.	Reference System	Member Start - Eccentricity [mm] $e_{i,x}$, $e_{i,X}$	$e_{i,y}$, $e_{i,Y}$	$e_{i,z}$, $e_{i,Z}$	Member End - Eccentricity $e_{j,x}$, $e_{j,X}$	$e_{j,y}$, $e_{j,Y}$	$e_{j,z}$, $e_{j,Z}$	Comment
1	Local	25.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel
2	Global	78.0	0.0	0.0	-78.0	0.0	0.0	AR_Diagonale (für 2D Berechnung)
3	Local	43.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK
4	Local	0.0	0.0	0.0	-43.0	0.0	0.0	AR_DKK_dreifach
5	Local	60.0	0.0	0.0	0.0	0.0	0.0	AR_SLT_XL_Riegel
6	Local	25.0	0.0	0.0	0.0	0.0	0.0	AR_Riegel_Anfang (einseitig)
7	Local	0.0	0.0	0.0	-25.0	0.0	0.0	AR_Riegel_Ende (einseitig)

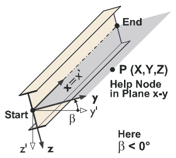
1.5/2 MEMBER ECCENTRICITIES - RELATIVE

Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
1	Middle	Middle	None	0	Middle	Middle	☐	☐
2	Middle	Middle	None	0	Middle	Middle	☐	☐
3	Middle	Middle	None	0	Middle	Middle	☐	☐
4	Middle	Middle	None	0	Middle	Middle	☐	☐

1.5/2 MEMBER ECCENTRICITIES - RELATIVE

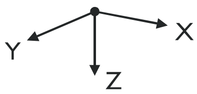
Ecc. No.	Cross-Section Alignment y-Axis	z-Axis	Transverse offset from cross-section of another obj. Object Type	Object No.	y-Axis	z-Axis	Axial offset from adjacent Member Sta	Member End
5	Middle	Middle	None	0	Middle	Middle	☐	☐
6	Middle	Middle	None	0	Middle	Middle	☐	☐
7	Middle	Middle	None	0	Middle	Middle	☐	☐

1.7 MEMBERS



Mbr. No.	Member	Node Start	End	Rotation Type	β [°]	Cross-Section Start	End	Hinge No. Start	End	Ecc. No.	Div. No.	Length L [m]	
1	Beam	7	11	Angle	0.00	4	4	-	-	-	-	4.650	Y
2	Beam	2	7	Angle	0.00	4	4	-	-	-	-	2.070	Y
3	Beam	14	2	Angle	0.00	4	4	-	-	-	-	2.510	Y
4	Beam	8	12	Angle	0.00	3	3	-	-	-	-	4.650	Y
5	Beam	3	8	Angle	0.00	3	3	-	-	-	-	2.070	Y
6	Beam	15	3	Angle	0.00	3	3	-	-	-	-	2.510	Y
8	Beam	9	13	Angle	0.00	1	1	-	-	-	-	4.650	Y
9	Beam	4	9	Angle	0.00	1	1	-	-	-	-	2.070	Y
10	Beam	16	4	Angle	0.00	1	1	-	-	-	-	2.510	Y
11	Beam	27	1	Angle	0.00	2	2	-	-	-	-	0.570	X
12	Beam	28	6	Angle	0.00	2	2	-	-	-	-	0.570	X
13	Beam	3	2	Angle	0.00	3	3	18	18	-	-	3.550	X
14	Beam	8	7	Angle	0.00	3	3	18	18	-	-	3.550	X
15	Beam	4	3	Angle	0.00	3	3	18	18	-	-	3.550	X
16	Beam	9	8	Angle	0.00	3	3	18	18	-	-	3.550	X
17	Beam	26	4	Angle	0.00	1	1	-	18	-	-	2.990	X
18	Beam	24	9	Angle	0.00	1	1	-	18	-	-	5.060	X
19	Beam	19	5	Angle	0.00	1	1	-	-	-	-	1.500	X
20	Beam	20	10	Angle	0.00	1	1	-	-	-	-	1.500	X
21	Beam	18	1	Angle	0.00	2	2	-	-	-	-	1.500	X
22	Beam	17	6	Angle	0.00	2	2	-	-	-	-	1.500	X
23	Beam	25	21	Angle	0.00	2	2	-	-	-	-	2.070	X
24	Beam	7	22	Angle	0.00	2	2	18	-	-	-	5.410	X
25	Beam	5	23	Angle	0.00	1	1	-	-	-	-	1.500	X
26	Beam	10	24	Angle	0.00	1	1	-	-	-	-	1.500	X
27	Beam	2	25	Angle	0.00	2	2	18	-	-	-	3.340	X
28	Beam	23	26	Angle	0.00	1	1	-	-	-	-	2.070	X
29	Beam	21	27	Angle	0.00	2	2	-	-	-	-	7.680	X
30	Beam	22	28	Angle	0.00	2	2	-	-	-	-	7.680	X
31	Beam	18	30	Angle	0.00	2	2	-	-	-	-	4.000	X
32	Beam	17	29	Angle	0.00	2	2	-	-	-	-	4.000	X

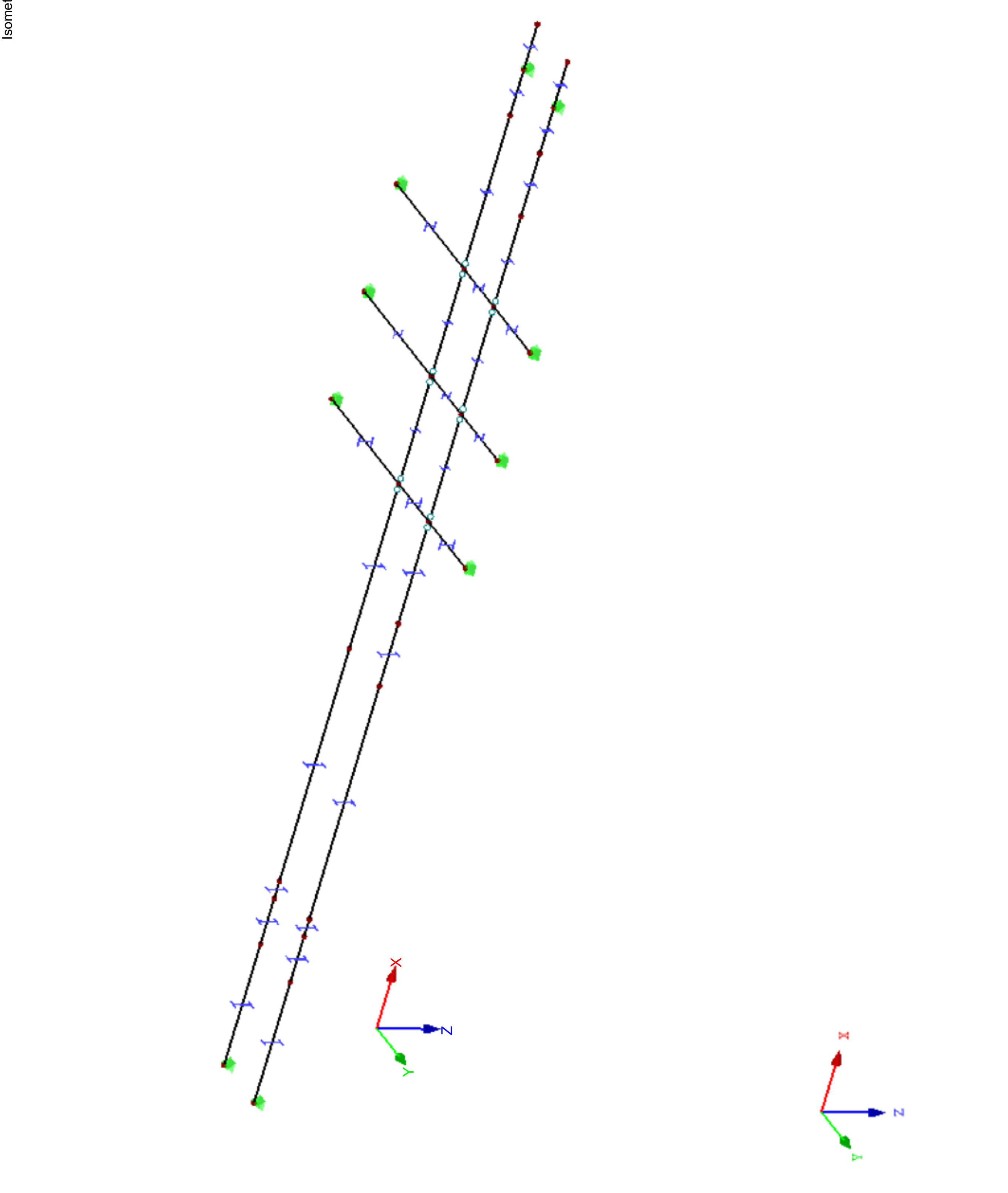
1.8 NODAL SUPPORTS



Support No.	Nodes No.	Sequen.	Rotation [°] about X	about Y	about Z	Column in Z	Support Conditions $u_{X'}$	$u_{Y'}$	$u_{Z'}$	$\varphi_{X'}$	$\varphi_{Y'}$	$\varphi_{Z'}$
1	5,10,29,30	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☒	☐	☒
2	11-16	XYZ	0.00	0.00	0.00	☐	☒	☒	☒	☐	☒	☒

MODEL

Isometric



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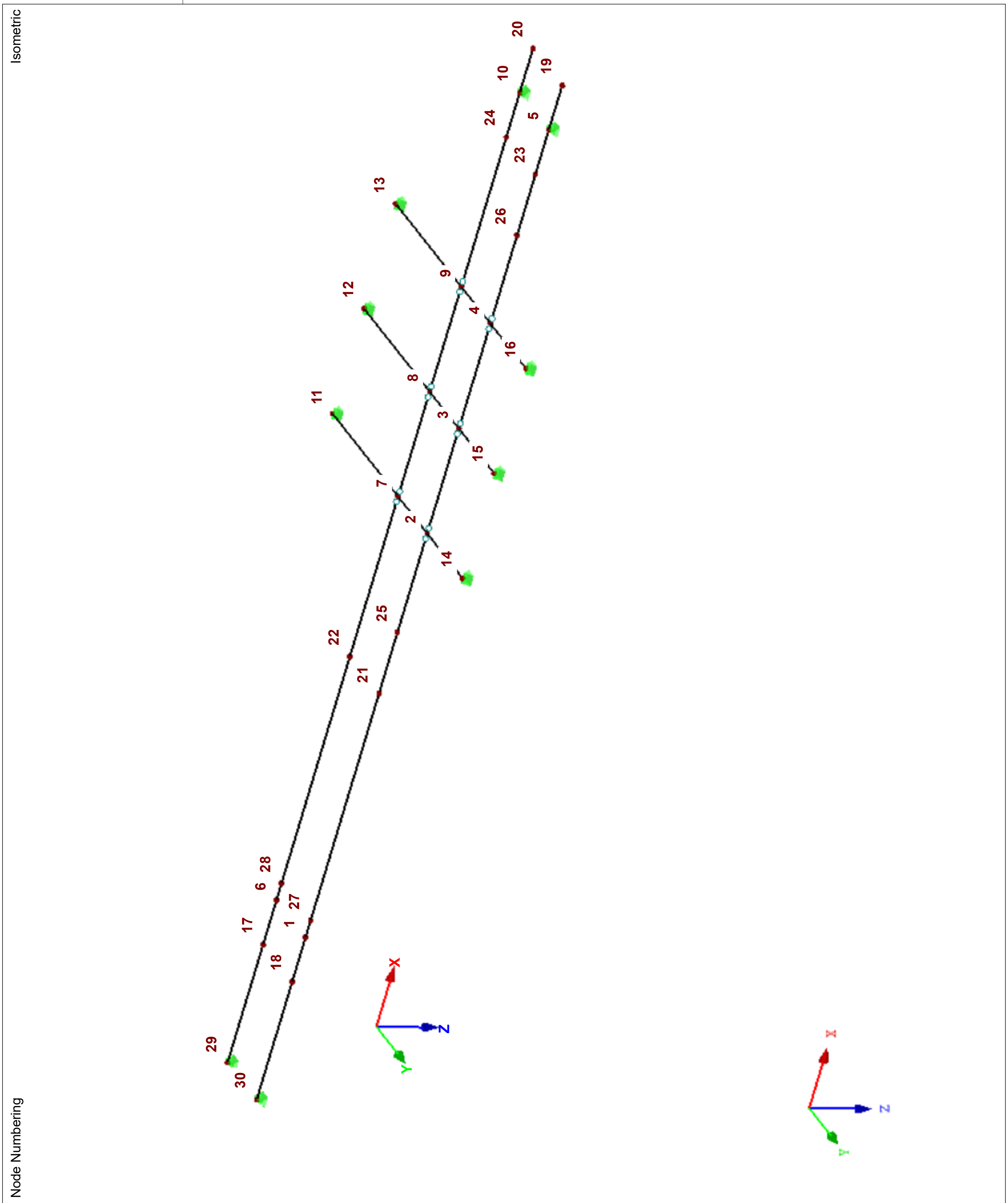
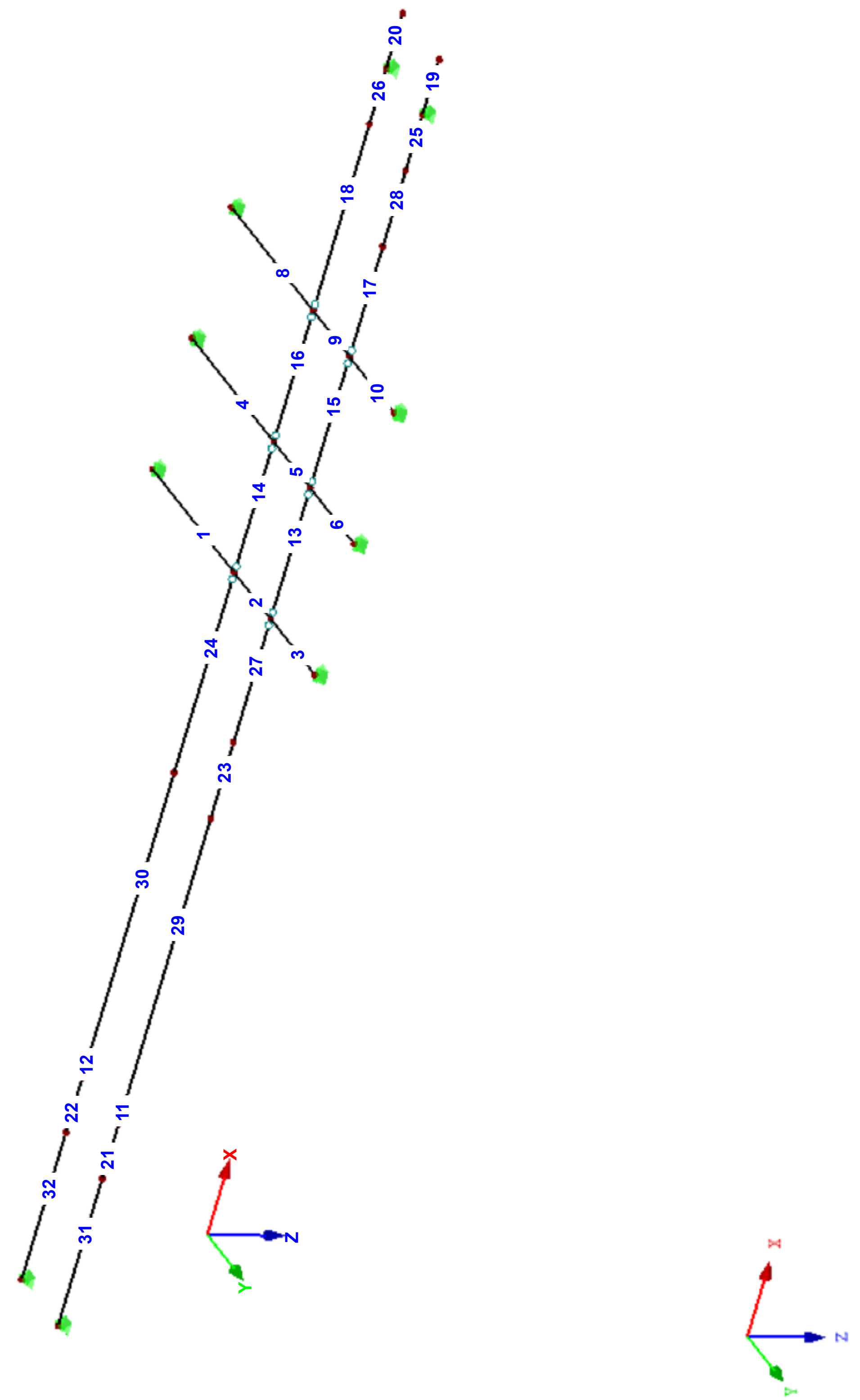
Project: 2023 | Model: K-Steel-beams-b-wo-dome Kloster-Gelati | Date: 15.12.2023

MODEL



■ MODEL

Isometric



Member Numbering

2.1 LOAD CASES

Load Case	Load Case Description	EN 1990 | DIN Action Category	Self-Weight - Factor in Direction Active	X	Y	Z
LC1	Dead Load	Permanent	☒	0.000	0.000	1.000
LC2	live Load	Imposed - Category A: domestic, residential areas	☐			
LC3	Snow	Snow (H ≤ 1000 m a.s.l.)	☐			
LC4	Wind 1	Wind	☐			
LC5	Wind 2	Wind	☐			

2.1.1 LOAD CASES - CALCULATION PARAMETERS

Load Case	Load Case Description	Calculation Parameters		
LC1	Dead Load	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC2	live Load	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC3	Snow	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC4	Wind 1	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
LC5	Wind 2	Method of analysis	: ■	Geometrically linear analysis
		Activate stiffness factors of:	: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

2.5 LOAD COMBINATIONS

Load Combin.	DS	Load Combination Description	No.	Factor	Load Case	
CO1		Bem-1	1	1.35	LC1	Dead Load
			2	1.35	LC2	live Load
			3	1.35	LC3	Snow
CO2		Bem-2	1	0.90	LC1	Dead Load
			2	1.50	LC4	Wind 1
CO3		Bem-3	1	0.90	LC1	Dead Load
			2	1.50	LC5	Wind 2

2.5.2 LOAD COMBINATIONS - CALCULATION PARAMETERS

Load Combin.	Description	Calculation Parameters		
CO1	Bem-1	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO2	Bem-2	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)
CO3	Bem-3	Method of analysis	: ■	Second order analysis (P-Delta)
		Options	: ☒	Consider favorable effects due to tension
			: ☒	Refer internal forces to deformed system for:
				☒ Normal forces N
				☒ Shear forces V_y and V_z
				☒ Moments M_y, M_z and M_T
		Activate stiffness factors of:	: ☒	Materials (partial factor γM)
			: ☒	Cross-sections (factor for J, I_y, I_z, A, A_y, A_z)
			: ☒	Members (factor for GJ, EI_y, EI_z, EA, GA_y, GA_z)

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2.6 RESULT COMBINATIONS

Result Combin	Description	Loading
RC1	minmax	CO1 or CO2 or CO3

LC1
Dead Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC1: Dead Load

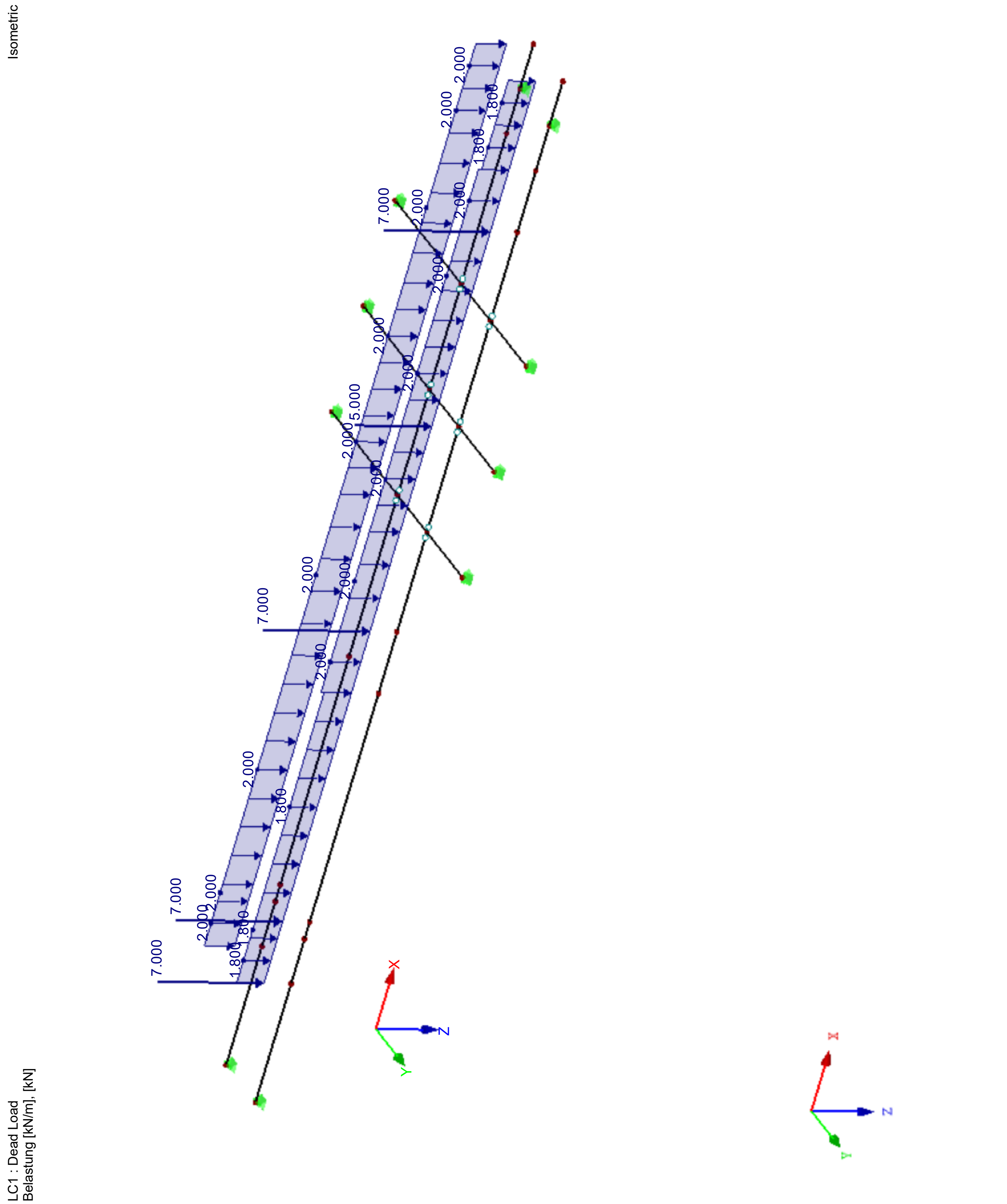
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
2	25,26	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000
4	3	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
5	18,27	0 | Global XYZ	0.000	0.000	7.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC1: Dead Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.000	kN/m
2	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	1.800	kN/m
3	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	2.000	kN/m

LC1: DEAD LOAD



LC2
live Load

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC2: live Load

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	23	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
2	25,26	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
3	3	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
4	18,27	0 | Global XYZ	0.000	0.000	6.000	0.000	0.000	0.000

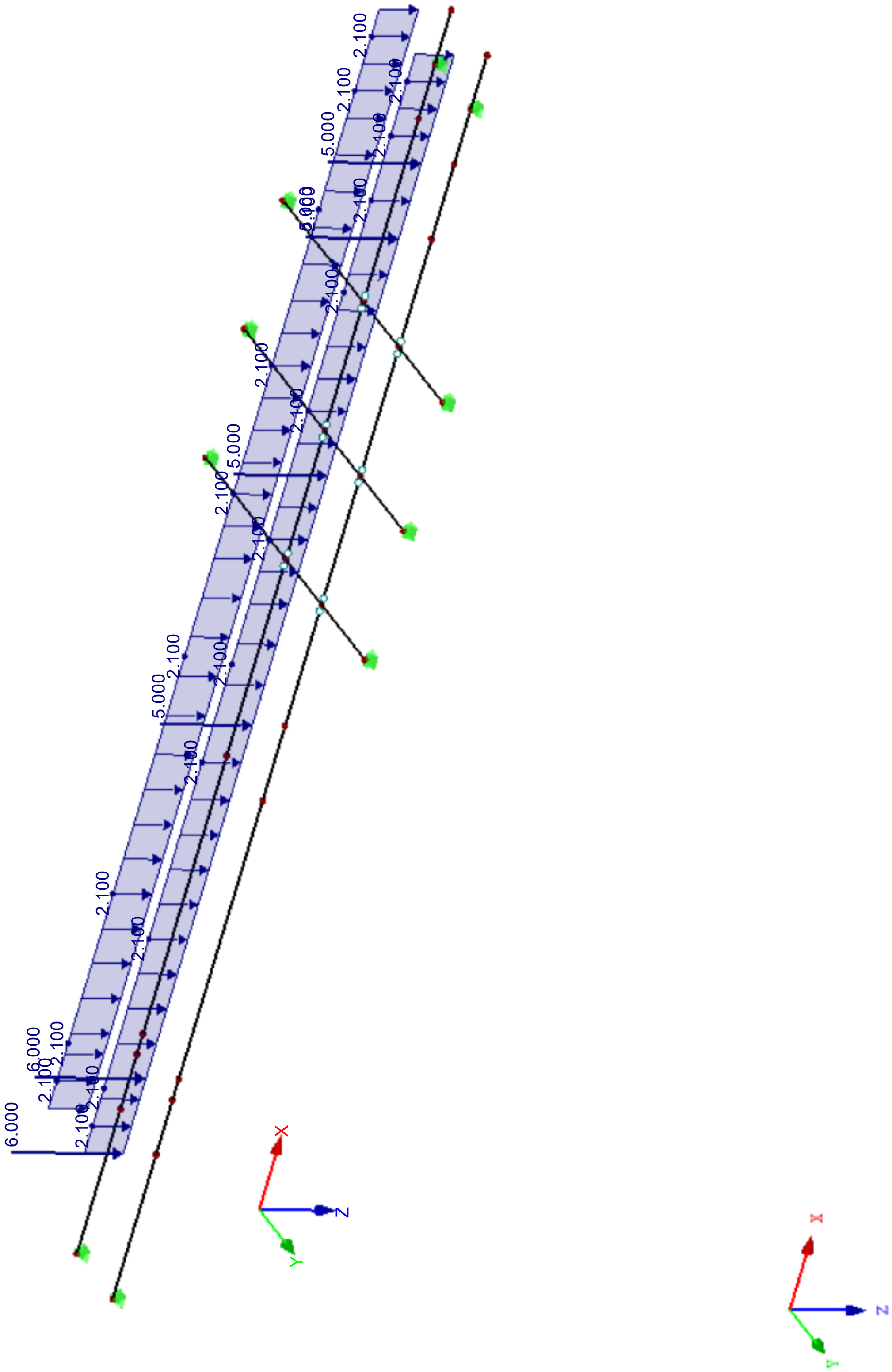
3.2 MEMBER LOADS

LC2: live Load

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,12,19-22, 25,26,29,30	Force	Uniform	Z	True Length	p	2.100	kN/m
2	Members	13-18,23,24, 27,28	Force	Uniform	Z	True Length	p	2.100	kN/m

LC2: LIVE LOAD

Isometric



LC2 : live Load
Belastung [kN/m], [kN]

LC3
Snow

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC3: Snow

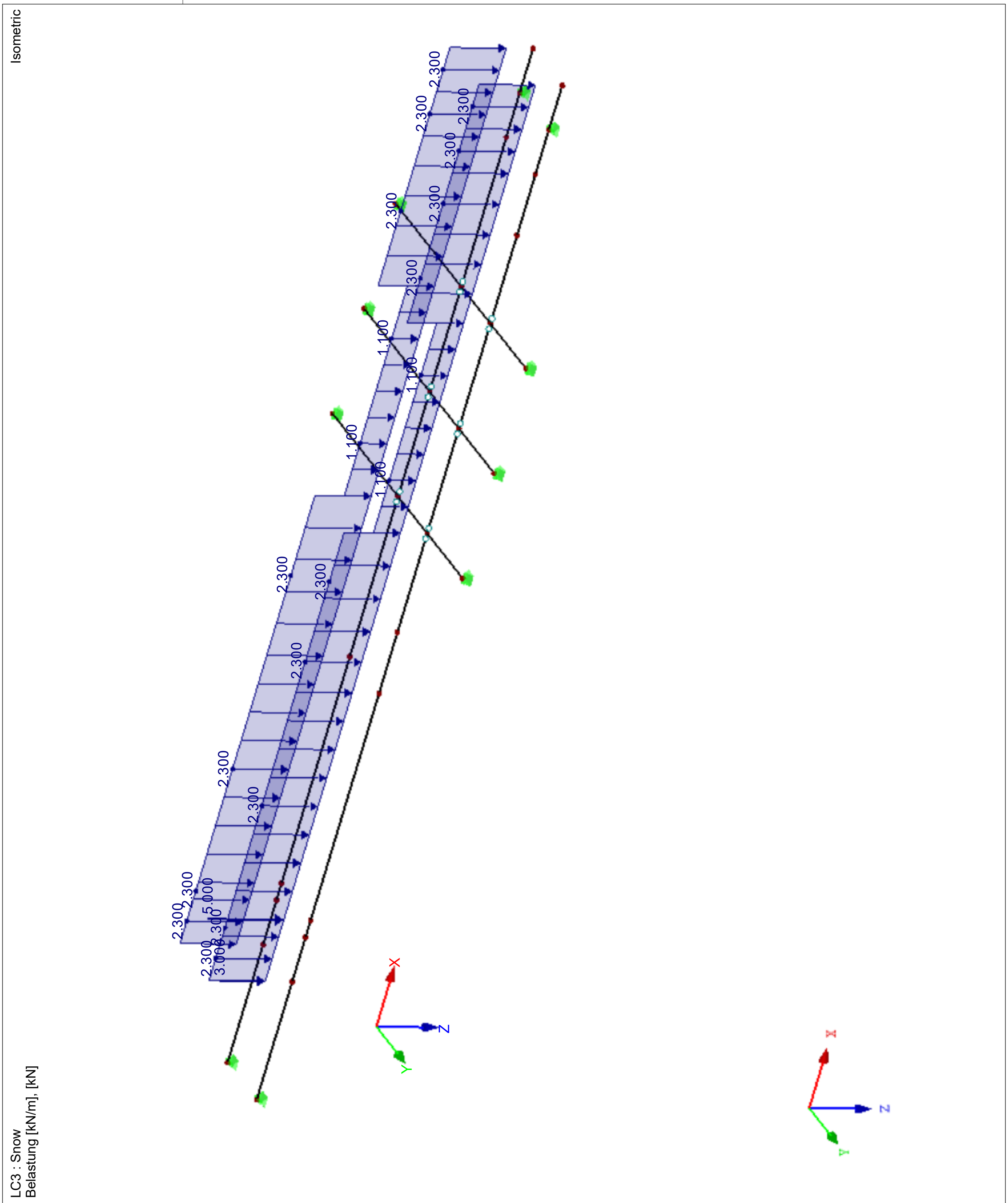
No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	27	0 | Global XYZ	0.000	0.000	5.000	0.000	0.000	0.000
2	18	0 | Global XYZ	0.000	0.000	3.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC3: Snow

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	2.300	kN/m
2	Members	19,25	Force	Uniform	Z	True Length	p	2.300	kN/m
3	Members	14,16	Force	Uniform	Z	True Length	p	1.100	kN/m
4	Members	11,21,29	Force	Uniform	Z	True Length	p	2.300	kN/m
5	Members	23,24,27	Force	Uniform	Z	True Length	p	2.300	kN/m
6	Members	17,18,28	Force	Uniform	Z	True Length	p	2.300	kN/m
7	Members	13,15	Force	Uniform	Z	True Length	p	1.100	kN/m

LC3: SNOW



LC4
Wind 1

3.1 NODAL LOADS - BY COMPONENTS - COORDINATE SYSTEM

LC4: Wind 1

No.	On Nodes No.	Coordinate System	Force [kN] P_X / P_U	P_Y / P_V	P_Z / P_W	Moment [kNm] M_X / M_U	M_Y / M_V	M_Z / M_W
1	25,26	0 | Global XYZ	0.000	0.000	-10.000	0.000	0.000	0.000

3.2 MEMBER LOADS

LC4: Wind 1

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	12,20,22, 26,30	Force	Uniform	Z	True Length	p	-4.400	kN/m
2	Members	11,21,29	Force	Uniform	Z	True Length	p	-2.800	kN/m
3	Members	19,25	Force	Uniform	Z	True Length	p	-2.800	kN/m
4	Members	17-19,23-25, 27,28	Force	Uniform	Z	True Length	p	-3.500	kN/m
5	Members	13-16	Force	Uniform	Z	True Length	p	-2.600	kN/m

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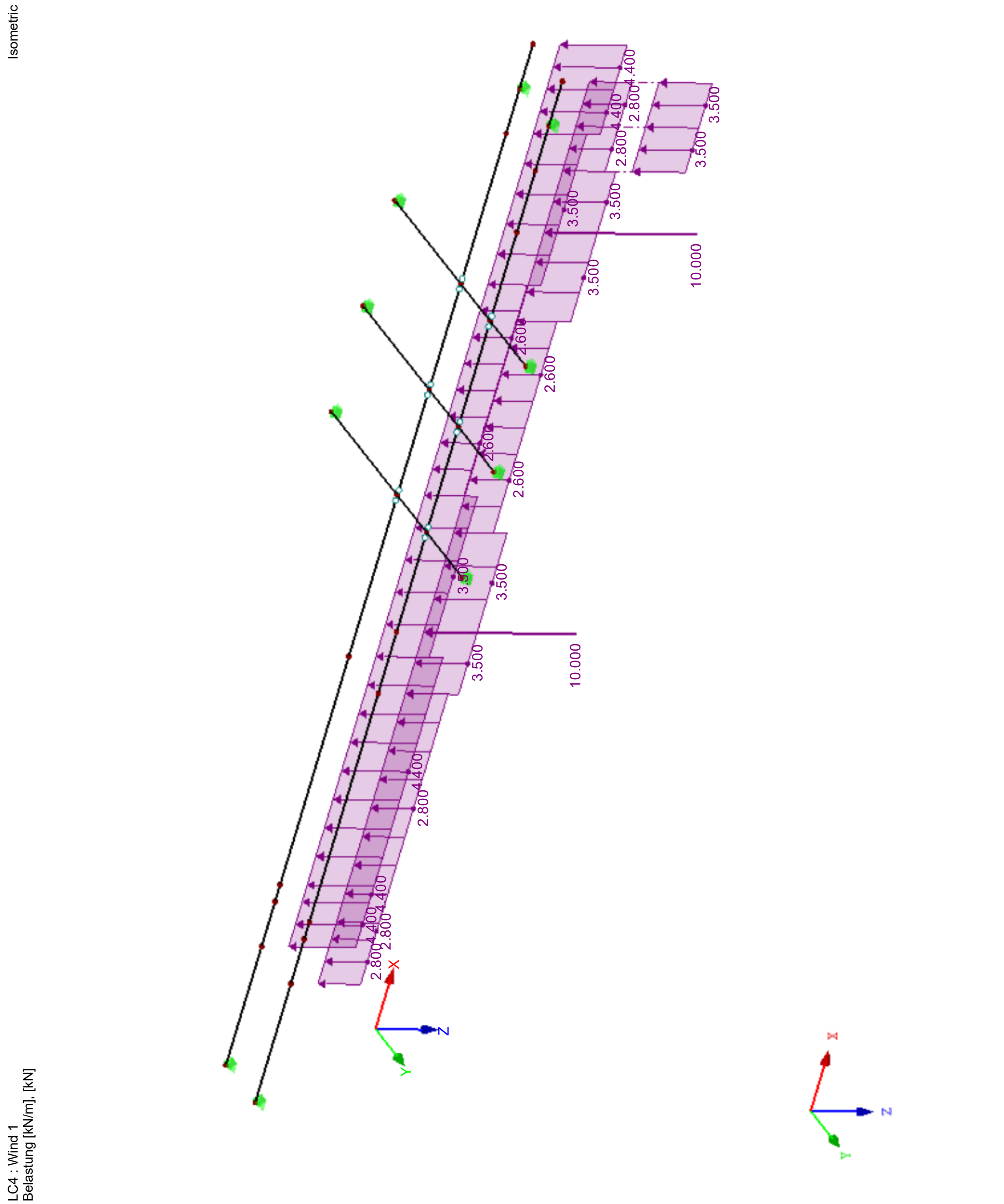
LC4: WIND 1



LC5
Wind 2

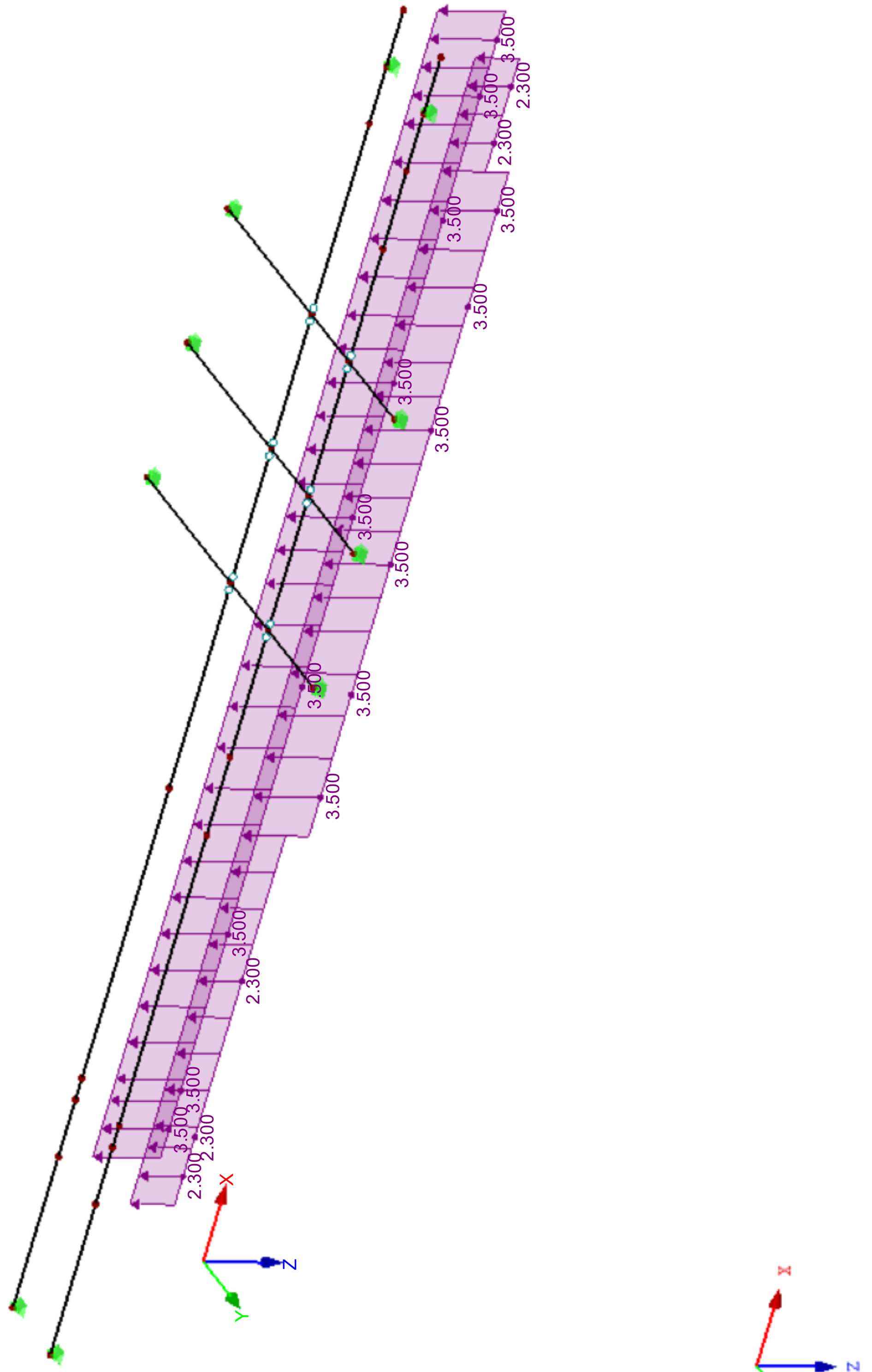
3.2 MEMBER LOADS

LC5: Wind 2

No.	Reference to	On Members No.	Load Type	Load Distribution	Load Direction	Reference Length	Load Parameters Symbol	Value	Unit
1	Members	11,19,21, 25,29	Force	Uniform	Z	True Length	p	-2.300	kN/m
2	Members	12-18,20, 22-24,26-28, 30	Force	Uniform	Z	True Length	p	-3.500	kN/m

LC5: WIND 2

Isometric



LC5 : Wind 2
Belastung [kN/m]

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	LC1 - Dead Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	297.91	kN	
	Sum of support reactions in Z	297.91	kN	Deviation 0.00%
	Resultant of reactions about X	69.59	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-317.31	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	27.5	mm	Member No. 29, x: 3.456 m
	Max vectorial displacement	27.5	mm	Member No. 29, x: 3.456 m
	Max rotation about X	-6.5	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-4.4	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC2 - live Load			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	159.34	kN	
	Sum of support reactions in Z	159.34	kN	Deviation 0.00%
	Resultant of reactions about X	73.10	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-402.99	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	15.5	mm	Member No. 29, x: 3.840 m
	Max vectorial displacement	15.5	mm	Member No. 29, x: 3.840 m
	Max rotation about X	-4.2	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-2.5	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC3 - Snow			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	130.43	kN	
	Sum of support reactions in Z	130.43	kN	Deviation 0.00%
	Resultant of reactions about X	41.01	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	-205.27	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	14.1	mm	Member No. 29, x: 3.840 m
	Max vectorial displacement	14.1	mm	Member No. 29, x: 3.840 m
	Max rotation about X	-1.8	mrad	Member No. 10, x: 0.000 m
	Max rotation about Y	-2.2	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC4 - Wind 1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-232.51	kN	
	Sum of support reactions in Z	-232.51	kN	Deviation 0.00%
	Resultant of reactions about X	-68.79	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	825.19	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-22.2	mm	Member No. 30, x: 3.456 m
	Max vectorial displacement	22.2	mm	Member No. 30, x: 3.456 m
	Max rotation about X	4.0	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	3.3	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	LC5 - Wind 2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	

■ 4.0 RESULTS - SUMMARY

	Description	Value	Unit	Comment
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-196.94	kN	
	Sum of support reactions in Z	-196.94	kN	Deviation 0.00%
	Resultant of reactions about X	-33.58	kNm	At center of gravity of model (X:10.77, Y:-6.31, Z:0.00 m)
	Resultant of reactions about Y	639.92	kNm	At center of gravity of model
	Resultant of reactions about Z	0.00	kNm	At center of gravity of model
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-18.6	mm	Member No. 30, x: 3.072 m
	Max vectorial displacement	18.6	mm	Member No. 30, x: 3.072 m
	Max rotation about X	5.4	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	2.8	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	Linear		Geometrically linear analysis
	Stiffness reduction multiplied by coefficient	☐		
	Number of load increments	1		
	Number of iterations	1		
	CO1 - Bem-1			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	793.38	kN	
	Sum of support reactions in Z	793.38	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	84.9	mm	Member No. 29, x: 3.840 m
	Max vectorial displacement	84.9	mm	Member No. 29, x: 3.840 m
	Max rotation about X	-18.5	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	-13.5	mrad	Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO2 - Bem-2			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-80.64	kN	
	Sum of support reactions in Z	-80.64	kN	Deviation 0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-13.0	mm	Member No. 30, x: 3.456 m
	Max vectorial displacement	13.0	mm	Member No. 30, x: 3.456 m
	Max rotation about X	1.8	mrad	Member No. 10, x: 0.000 m
	Max rotation about Y	1.9	mrad	Member No. 32, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	CO3 - Bem-3			
	Sum of loads in X	0.00	kN	
	Sum of support reactions in X	0.00	kN	
	Sum of loads in Y	0.00	kN	
	Sum of support reactions in Y	0.00	kN	
	Sum of loads in Z	-27.29	kN	
	Sum of support reactions in Z	-27.29	kN	Deviation -0.00%
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	-7.0	mm	Member No. 30, x: 3.456 m
	Max vectorial displacement	7.0	mm	Member No. 30, x: 3.456 m
	Max rotation about X	2.4	mrad	Member No. 6, x: 0.000 m
	Max rotation about Y	1.8	mrad	Member No. 14, x: 3.550 m
	Max rotation about Z	0.0	mrad	
	Method of analysis	2nd Order		Second order analysis (Nonlinear, Timoshenko)
	Internal forces referred to deformed system for...	☒		N, V_y, V_z, M_y, M_z, M_T
	Stiffness reduction multiplied by coefficient	☒		
	Consider favorable effects of tensile forces	☒		
	Divide results by CO factor	☐		
	Number of load increments	1		
	Number of iterations	1		
	Calculate critical load factor	☐		
	Summary			
	Max displacement in X	0.0	mm	
	Max displacement in Y	0.0	mm	
	Max displacement in Z	84.9	mm	CO1, Member No. 29, x: 3.840 m
	Max vectorial displacement	84.9	mm	CO1, Member No. 29, x: 3.840 m

■ 4.0 RESULTS - SUMMARY

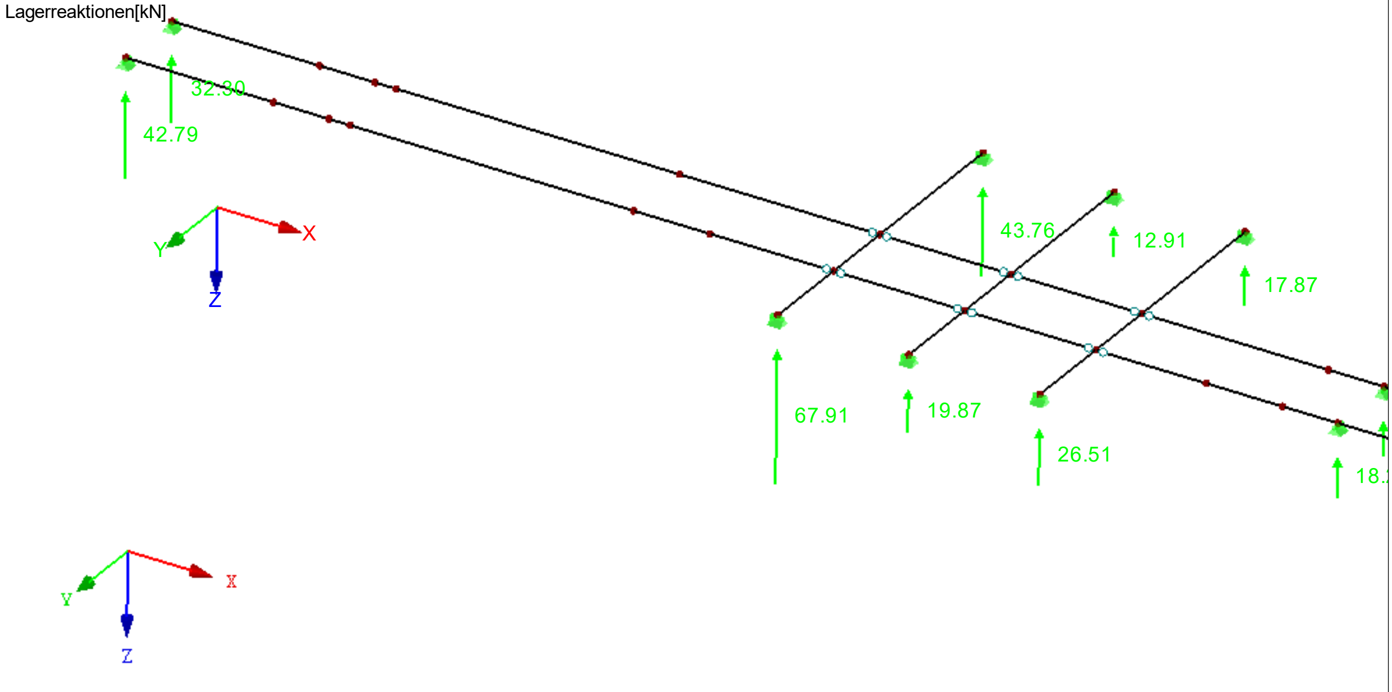
	Description	Value	Unit	Comment
	Max rotation about X	-18.5	mrad	CO1, Member No. 6, x: 0.000 m
	Max rotation about Y	-13.5	mrad	CO1, Member No. 31, x: 4.000 m
	Max rotation about Z	0.0	mrad	
	Number of 1D finite elements (member elements)	31		
	Number of FE mesh nodes	30		
	Number of equations	180		
	Max number of iterations	100		
	Divisions of members for member results	10		
	Divisions of cable, foundation, or tapered members	10		
	Activate shear rigidity (A-y, A-z) of members	☐		
	Other Settings	Max number of iterations		: 100
		Number of divisions for member results		: 10
		Member divisions, cables, foundation or tapered members		: 10
		Number of member divisions for searching maximum values		: 20
	Options	☐ Activate shear stiffness of members (Ay, Az)		
		☒ Modify stiffness (material, cross-sections, members, load cases and combinations)		
		☒ Apply temperature/deformation load actions without stiffness modifications		
	Precision and Tolerance	☐ Change default setting		

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Member No.	LC/CO	Node No.	Location x [m]	Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z
	Section No. 1: HEB 300								
10	CO1	MAX N	0.000	▷ 0.86	0.00	71.78	0.00	0.00	0.00
20	CO1	MIN N	1.500	▷ -0.11	0.00	-15.33	0.00	-11.50	0.00
25	CO1	MAX V_y	1.500	0.21	▷ 0.05	32.53	0.15	48.80	-0.08
17	CO1	MIN V_y	2.990	-0.02	▷ -0.31	-42.13	0.15	0.00	0.00
10	CO1	MAX V_z	0.000	0.86	0.00	▷ 71.78	0.00	0.00	0.00
8	CO1	MIN V_z	4.650	0.47	0.00	▷ -45.61	0.00	0.00	0.00
17	CO1	MAX M_T	2.691	-0.02	-0.27	-39.07	▷ 0.15	12.14	-0.08
17	LC4	MIN M_T	0.000	0.00	0.00	5.86	▷ -0.05	-33.16	0.00
8	CO1	MAX M_y	0.000	0.03	0.00	-38.26	0.00	▷ 195.00	0.00
8	LC4	MIN M_y	0.000	0.00	0.00	13.38	0.00	▷ -62.21	0.00
18	CO1	MAX M_z	3.036	-0.04	0.01	-11.08	-0.01	43.37	▷ 0.02
17	CO1	MIN M_z	0.598	-0.05	-0.08	-17.68	0.15	71.53	▷ -0.33
	Section No. 2: HEB 600								
31	CO1	MAX N	4.000	▷ 1.54	0.00	-114.32	-0.15	0.00	0.00
29	CO1	MIN N	4.224	▷ -0.01	0.01	5.08	-0.15	628.17	-1.79
27	CO1	MAX V_y	0.000	1.48	▷ 0.75	130.93	-0.15	0.00	0.00
31	CO1	MIN V_y	0.000	1.11	▷ -0.12	-102.88	-0.15	434.44	-0.52
27	CO1	MAX V_z	0.000	1.48	0.75	▷ 130.93	-0.15	0.00	0.00
31	CO1	MIN V_z	4.000	1.54	0.00	▷ -114.32	-0.15	0.00	0.00
21	LC4	MAX M_T	0.000	0.00	0.00	-19.07	▷ 0.04	-76.28	0.00
29	CO1	MIN M_T	3.456	0.01	0.04	13.70	▷ -0.15	620.96	-1.91
29	CO1	MAX M_y	4.608	0.00	0.00	0.76	-0.15	▷ 629.29	-1.72
30	LC4	MIN M_y	3.840	0.00	0.00	-0.30	0.00	▷ -177.86	0.00
21	CO1	MAX M_z	1.500	0.55	-0.11	64.44	-0.15	543.74	▷ 0.90
29	CO1	MIN M_z	0.768	0.23	0.17	43.89	-0.15	543.56	▷ -2.11
	Section No. 3: HEB 240								
6	CO1	MAX N	0.000	▷ 0.93	0.00	50.63	0.00	0.00	0.00
14	CO1	MIN N	0.000	▷ -0.09	-0.02	14.45	0.01	0.00	0.00
13	CO1	MAX V_y	0.000	-0.07	▷ 0.16	14.45	-0.12	0.00	0.00
15	CO1	MIN V_y	3.550	-0.05	▷ -0.16	-14.45	0.08	0.00	0.00
6	CO1	MAX V_z	0.000	0.93	0.00	▷ 50.63	0.00	0.00	0.00
4	CO1	MIN V_z	4.650	0.49	0.00	▷ -31.04	0.00	0.00	0.00
15	CO1	MAX M_T	3.372	-0.04	-0.14	-13.01	▷ 0.08	2.44	-0.03
13	CO1	MIN M_T	0.000	-0.07	0.16	14.45	▷ -0.12	0.00	0.00
4	CO1	MAX M_y	0.000	0.03	0.00	-25.82	0.00	▷ 132.20	0.00
4	LC5	MIN M_y	0.000	0.00	0.00	9.54	0.00	▷ -44.35	0.00
16	CO1	MAX M_z	1.952	-0.01	0.00	-1.45	-0.01	12.70	▷ 0.01
15	CO1	MIN M_z	1.952	-0.01	-0.01	-1.45	0.08	12.70	▷ -0.12
	Section No. 4: HEB 450								
3	CO1	MAX N	0.000	▷ 1.66	0.00	177.49	0.00	0.00	0.00
2	CO1	MIN N	2.070	▷ -0.01	0.00	21.52	0.00	487.70	0.00
2	CO1	MAX V_y	0.000	0.15	▷ 0.00	26.30	0.00	438.20	0.00
1	CO1	MIN V_y	0.000	0.06	▷ 0.00	-99.51	0.00	487.70	0.00
3	CO1	MAX V_z	0.000	1.66	0.00	▷ 177.49	0.00	0.00	0.00
1	CO1	MIN V_z	4.650	0.90	0.00	▷ -110.25	0.00	0.00	0.00
2	CO1	MAX M_T	0.000	0.15	0.00	26.30	▷ 0.00	438.20	0.00
1	CO1	MIN M_T	0.000	0.06	0.00	-99.51	▷ 0.00	487.70	0.00
1	CO1	MAX M_y	0.000	0.06	0.00	-99.51	0.00	▷ 487.70	0.00
1	LC4	MIN M_y	0.000	0.00	0.00	31.58	0.00	▷ -146.84	0.00
1	LC1	MAX M_z	0.000	0.00	0.00	-35.80	0.00	184.97	▷ 0.00
1	CO1	MIN M_z	0.000	0.06	0.00	-99.51	0.00	487.70	▷ 0.00

LAGERREAKTIONEN

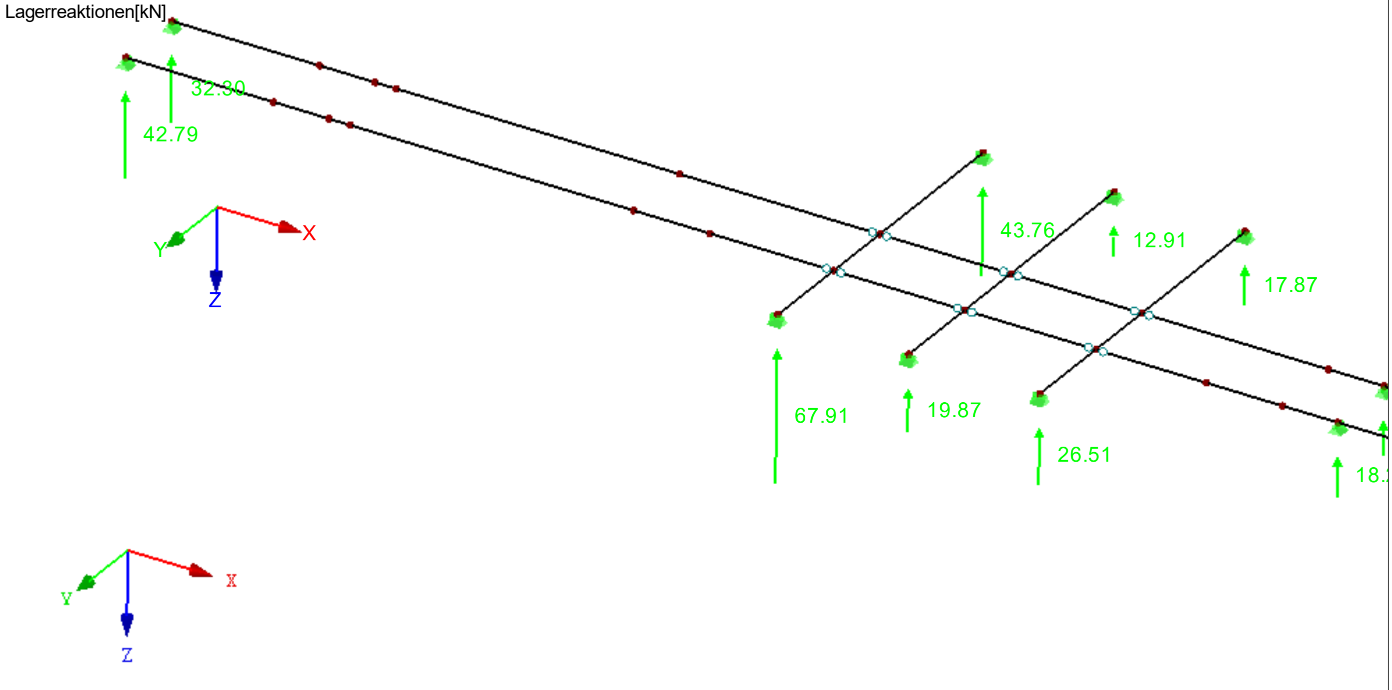
LC1 : Dead Load
Lagerreaktionen[kN]
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 67.91, Min P-Z': 12.91 kN

LAGERREAKTIONEN

LC1 : Dead Load
Lagerreaktionen[kN]
Isometric

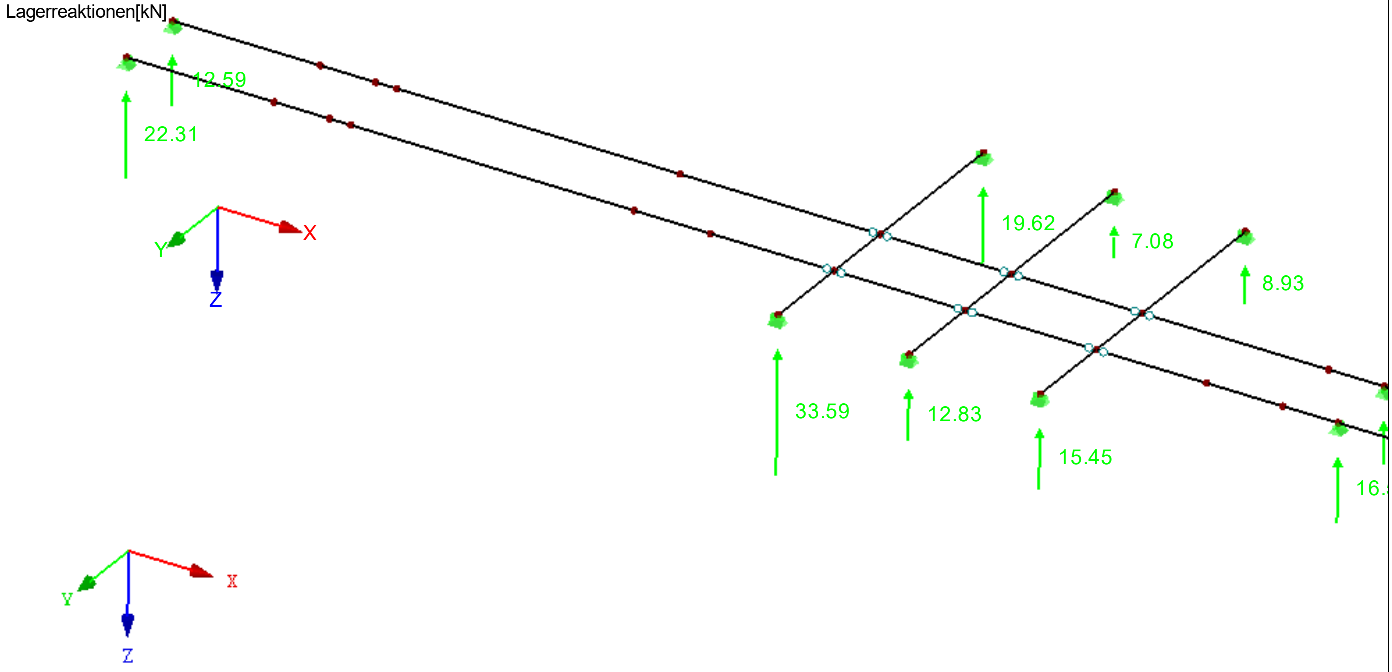


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 67.91, Min P-Z': 12.91 kN

LAGERREAKTIONEN

LC2 : live Load
Lagerreaktionen[kN]

Isometric

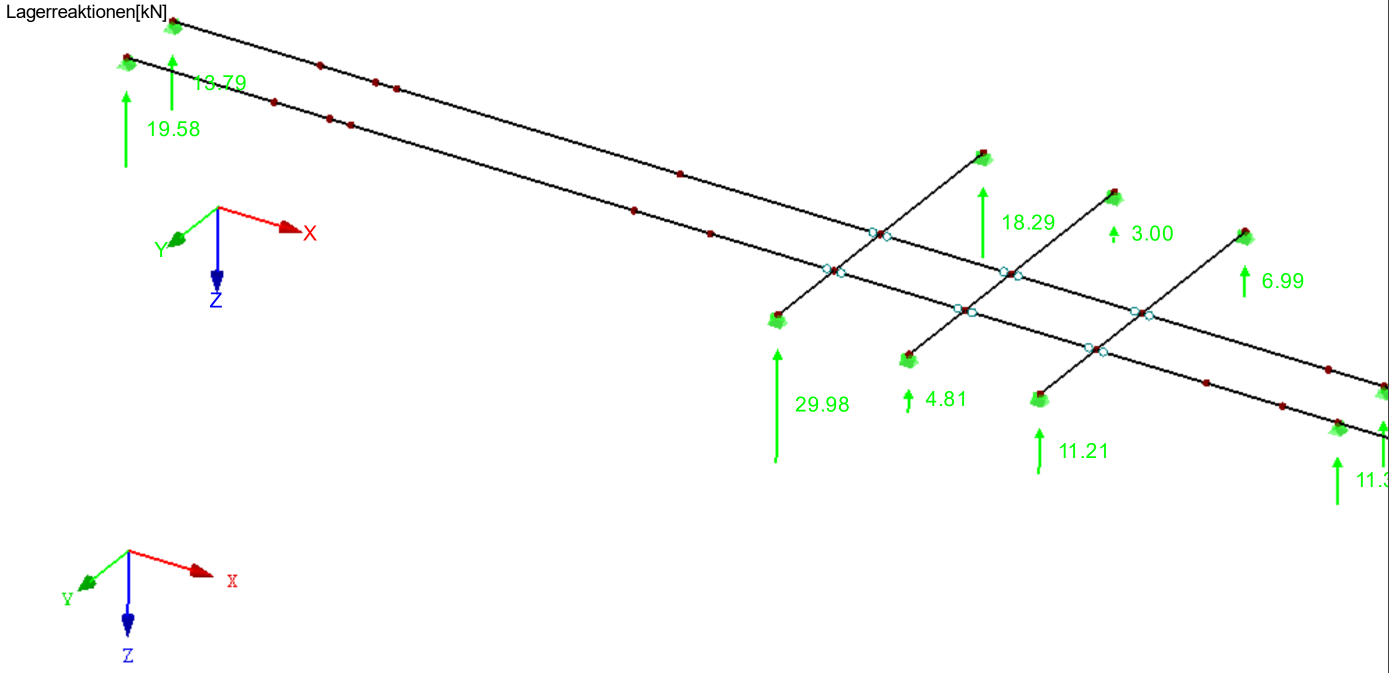


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 33.59, Min P-Z': 7.08 kN

LAGERREAKTIONEN

LC3 : Snow
Lagerreaktionen[kN]

Isometric

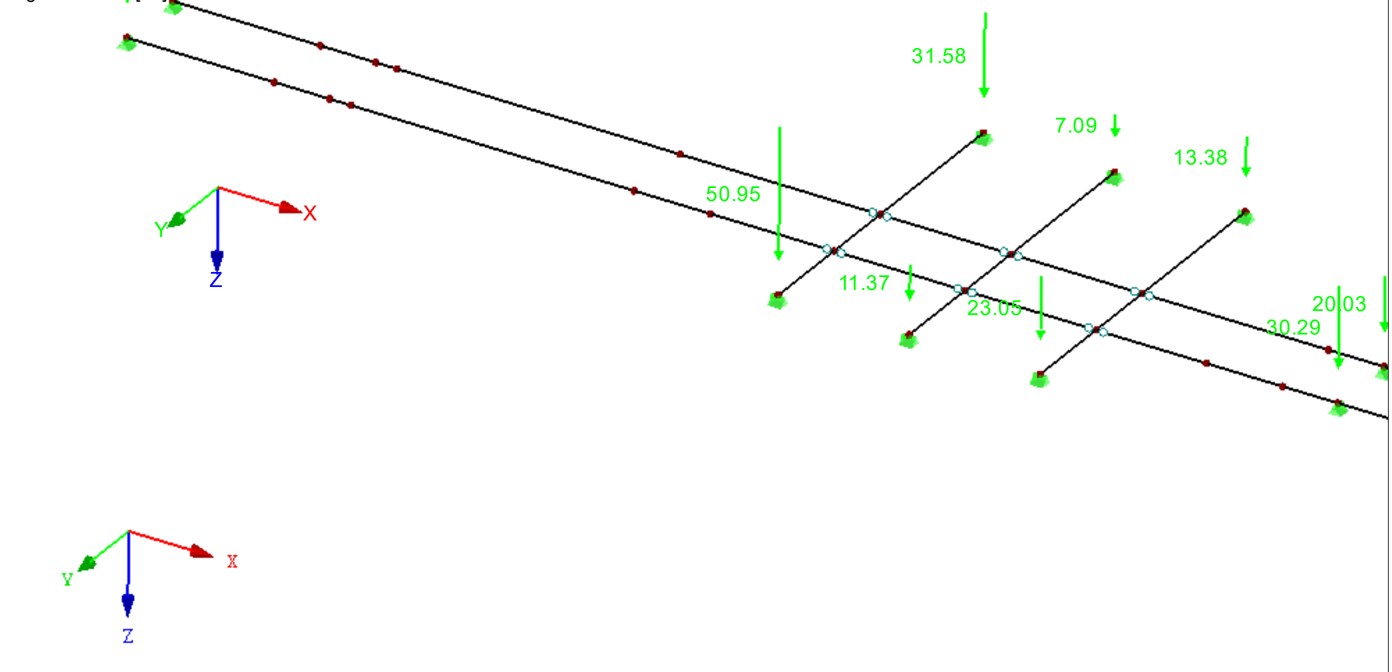


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 29.98, Min P-Z': 3.00 kN

LAGERREAKTIONEN

LC4 : Wind 1
Lagerreaktionen[kN]

Isometric

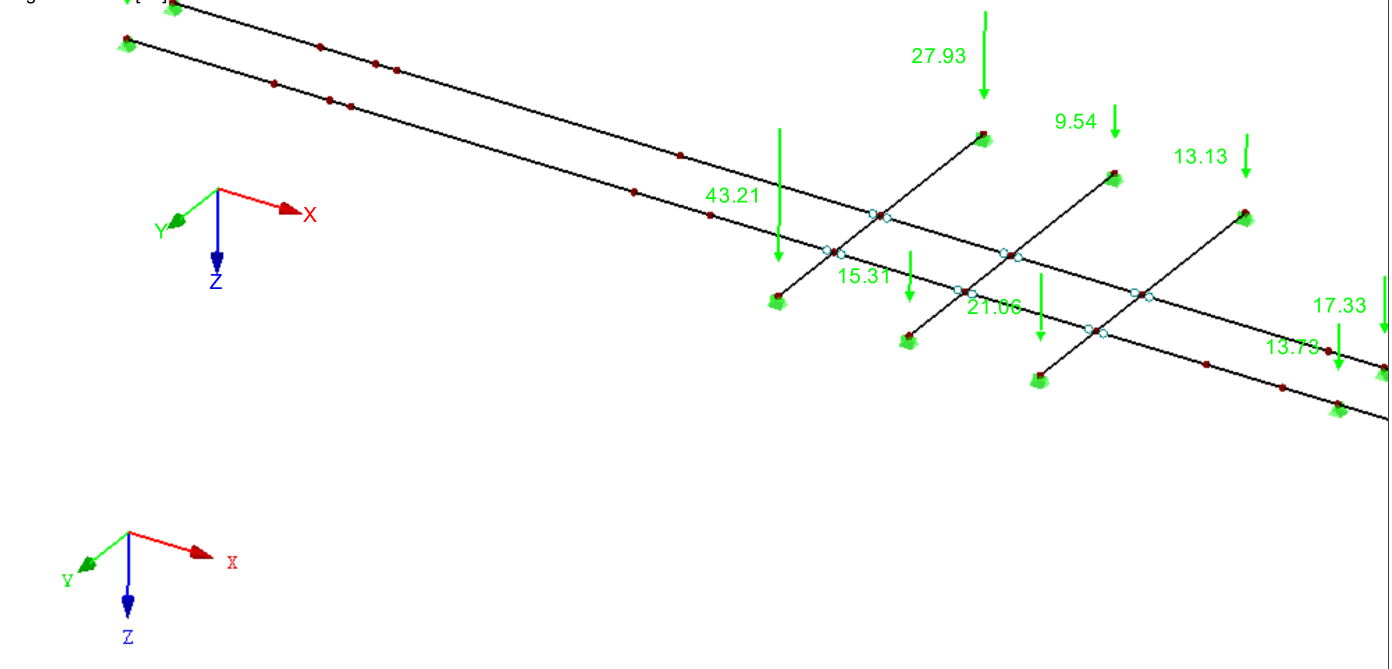


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -7.09, Min P-Z': -50.95 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]

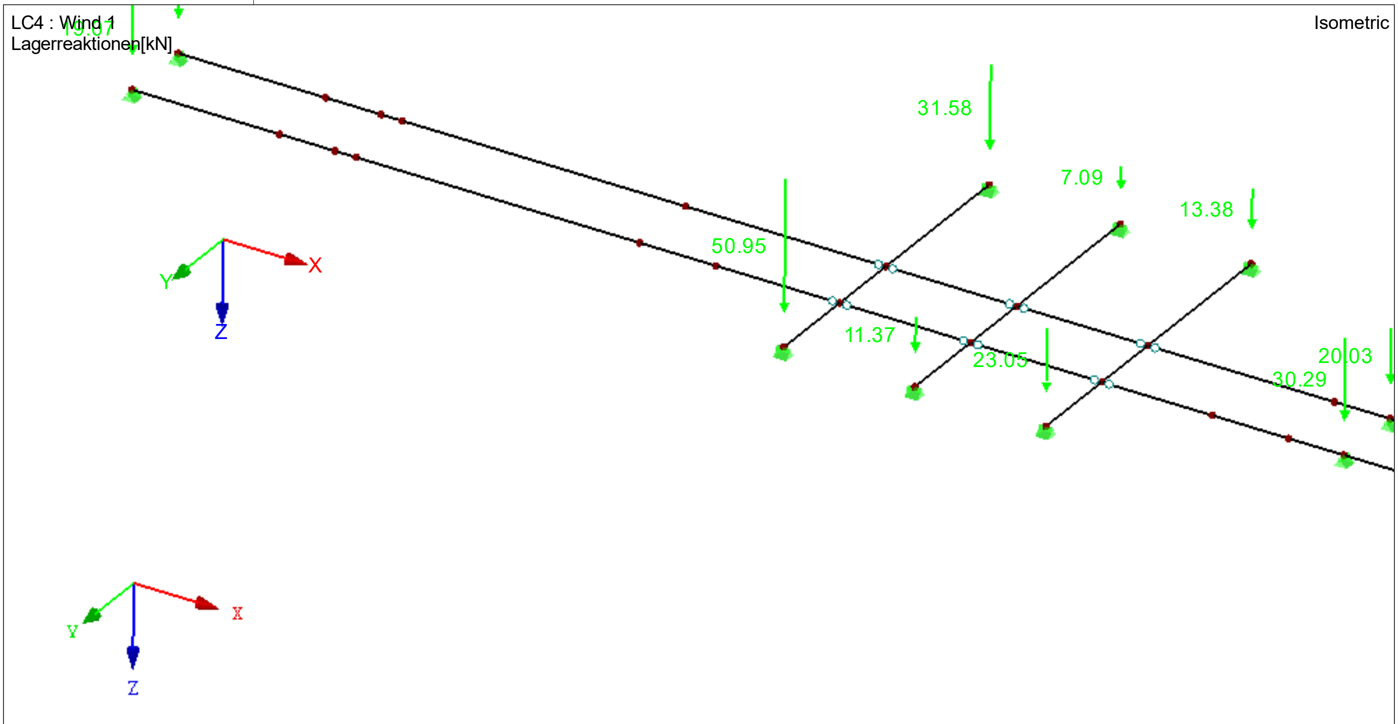
Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -43.21 kN

LAGERREAKTIONEN

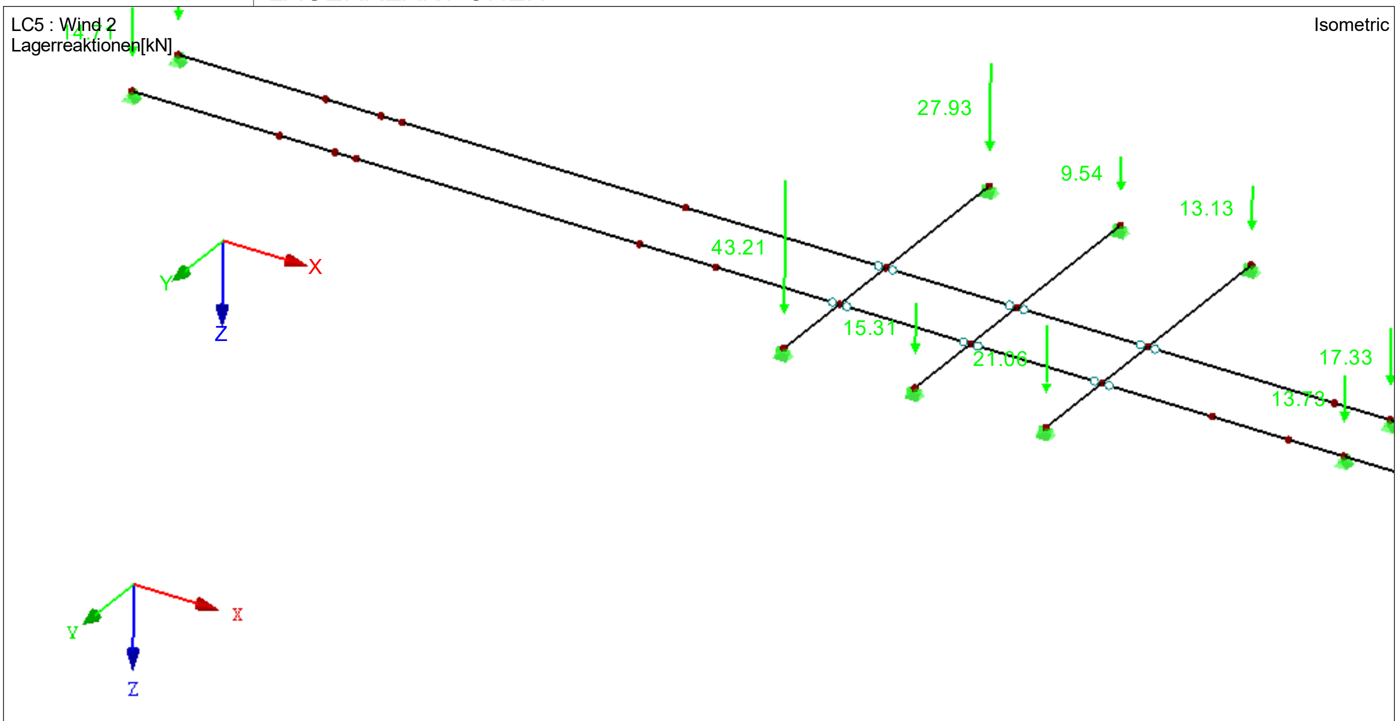
LC4 : Wind 1
Lagerreaktionen[kN]



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -7.09, Min P-Z': -50.95 kN

LAGERREAKTIONEN

LC5 : Wind 2
Lagerreaktionen[kN]

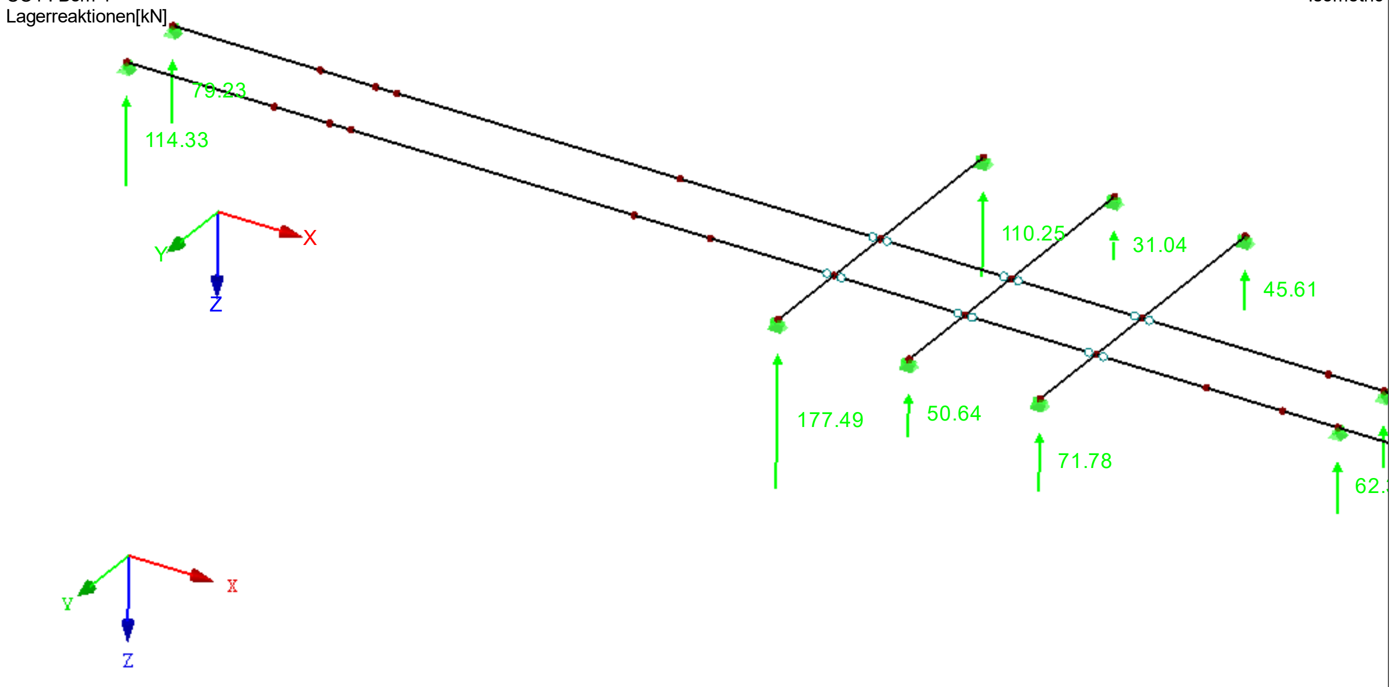


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': -9.54, Min P-Z': -43.21 kN

LAGERREAKTIONEN

CO1 : Bem-1
Lagerreaktionen[kN]

Isometric

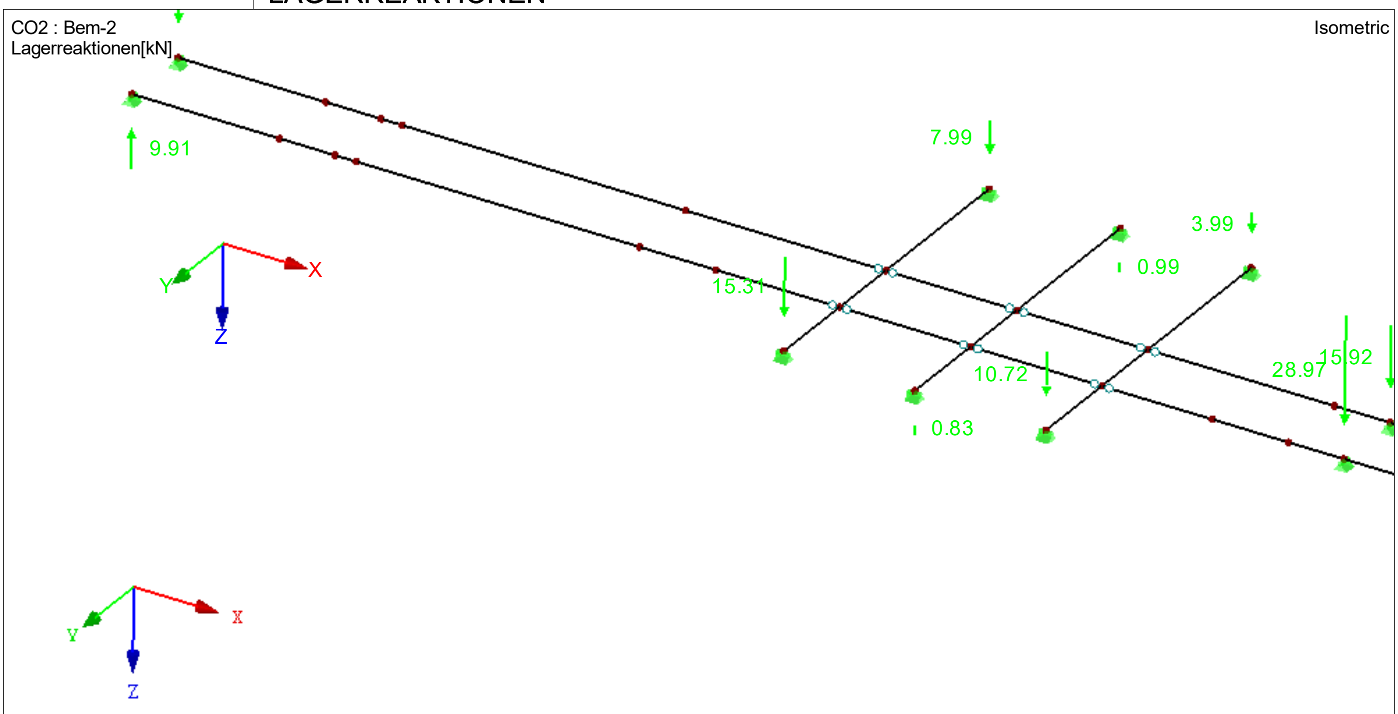


Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 177.49, Min P-Z': 31.04 kN

LAGERREAKTIONEN

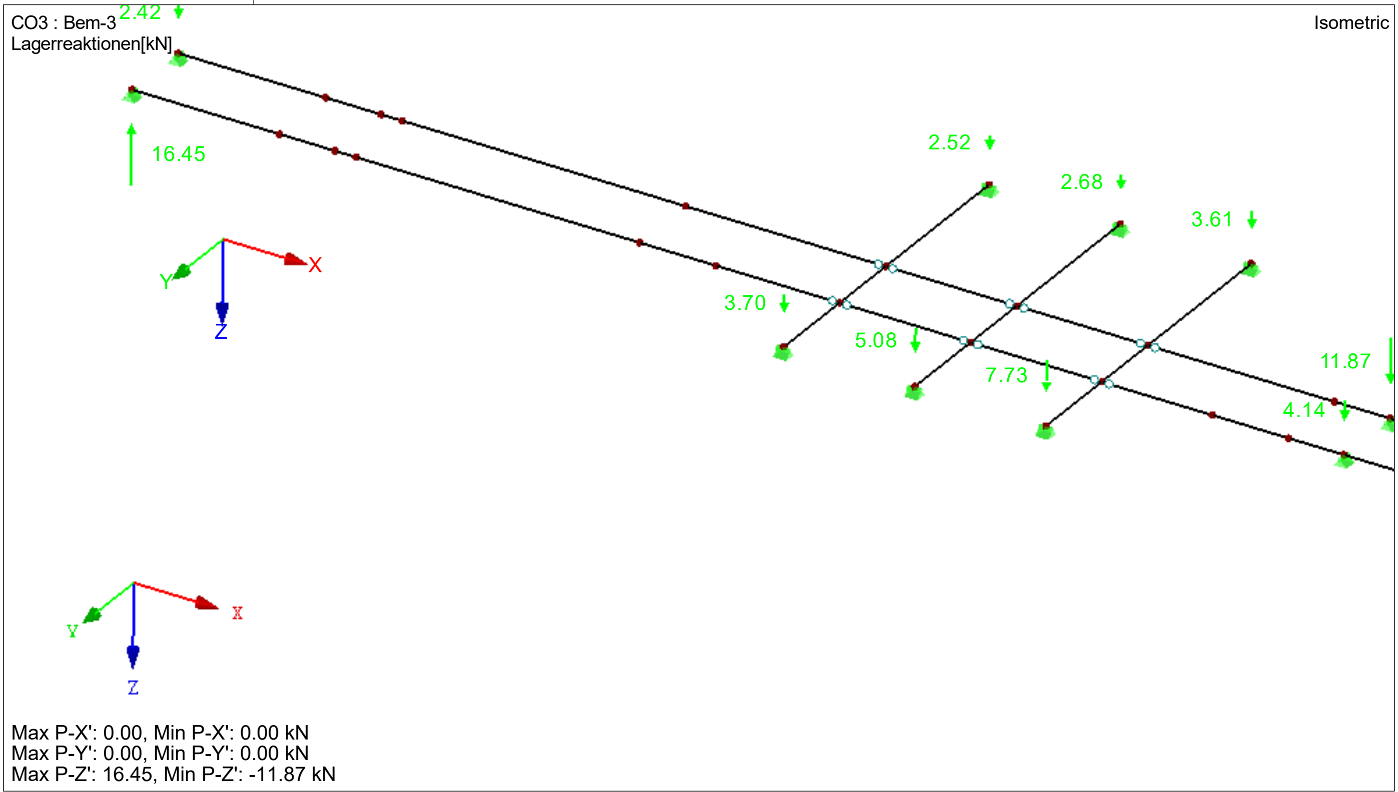
CO2 : Bem-2
Lagerreaktionen[kN]

Isometric



Max P-X': 0.00, Min P-X': 0.00 kN
Max P-Y': 0.00, Min P-Y': 0.00 kN
Max P-Z': 9.91, Min P-Z': -28.97 kN

■ LAGERREAKTIONEN



■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

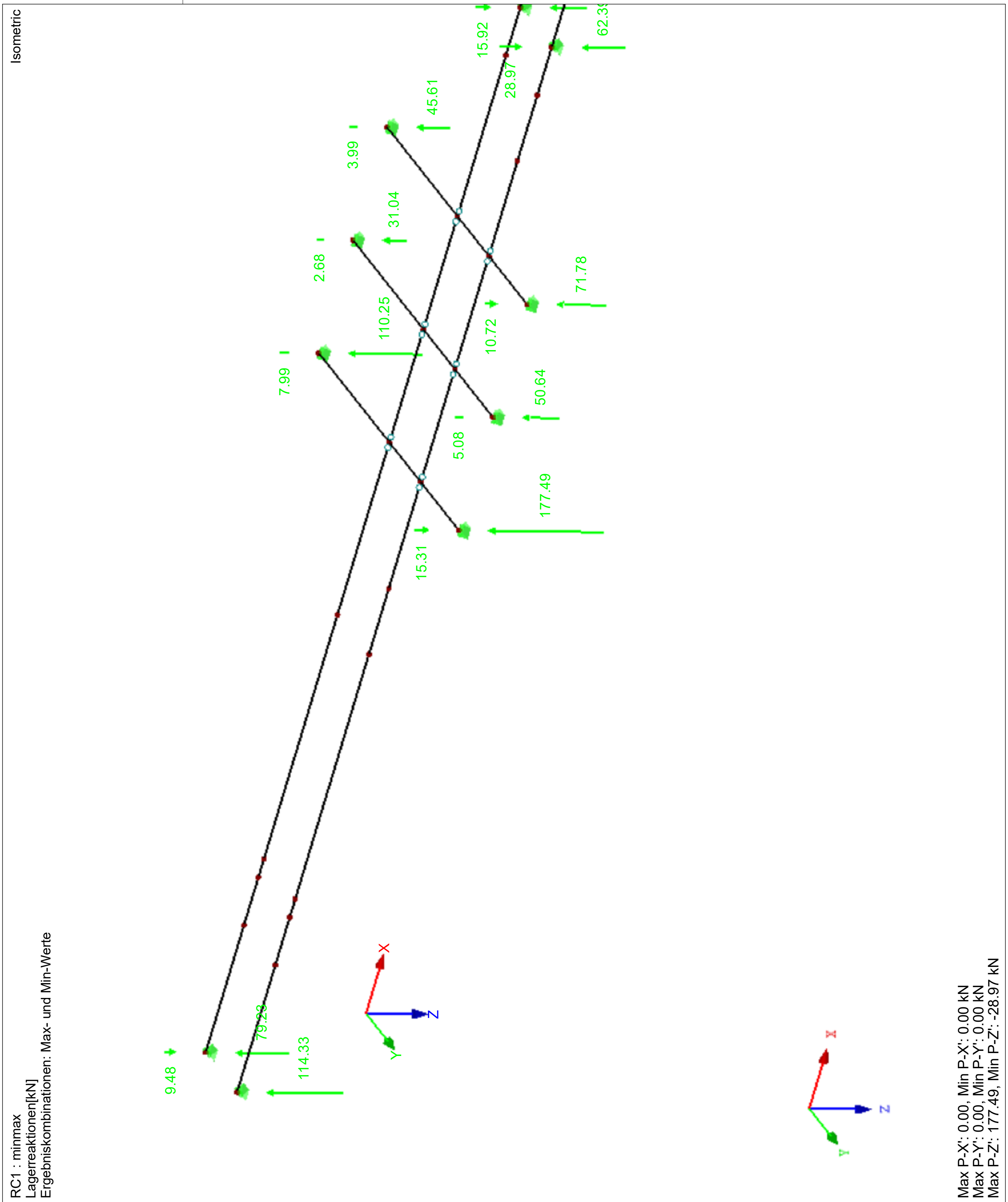
Member No.	RC	Node No.	Location x [m]		Forces [kN] N	Vy	Vz	Moments [kNm] MT	My	Mz	Correspondin Load Cases
	Section No. 1: HEB 300										
10	RC1		0.000	MAX N	0.86	0.00	71.78	0.00	0.00	0.00	CO 1
20	RC1		1.500	MIN N	-0.11	0.00	-15.33	0.00	-11.50	0.00	CO 1
25	RC1		1.500	MAX V_y	0.21	0.05	32.53	0.15	48.80	-0.08	CO 1
17	RC1		2.990	MIN V_y	-0.02	-0.31	-42.13	0.15	0.00	0.00	CO 1
10	RC1		0.000	MAX V_z	0.86	0.00	71.78	0.00	0.00	0.00	CO 1
8	RC1		4.650	MIN V_z	0.47	0.00	-45.61	0.00	0.00	0.00	CO 1
17	RC1		2.691	MAX M_T	-0.02	-0.27	-39.07	0.15	12.14	-0.08	CO 1
17	RC1		0.598	MIN M_T	0.00	0.00	6.45	-0.02	-22.29	-0.02	CO 2
8	RC1		0.000	MAX M_y	0.03	0.00	-38.26	0.00	195.00	0.00	CO 1
10	RC1		2.510	MIN M_y	0.01	0.00	-13.36	0.00	-30.23	0.00	CO 2
18	RC1		3.036	MAX M_z	-0.04	0.01	-11.08	-0.01	43.37	0.02	CO 1
17	RC1		0.598	MIN M_z	-0.05	-0.08	-17.68	0.15	71.53	-0.33	CO 1
	Section No. 2: HEB 600										
31	RC1		4.000	MAX N	1.54	0.00	-114.32	-0.15	0.00	0.00	CO 1
29	RC1		4.224	MIN N	-0.01	0.01	5.08	-0.15	628.17	-1.79	CO 1
27	RC1		0.000	MAX V_y	1.48	0.75	130.93	-0.15	0.00	0.00	CO 1
31	RC1		0.000	MIN V_y	1.11	-0.12	-102.88	-0.15	434.44	-0.52	CO 1
27	RC1		0.000	MAX V_z	1.48	0.75	130.93	-0.15	0.00	0.00	CO 1
31	RC1		4.000	MIN V_z	1.54	0.00	-114.32	-0.15	0.00	0.00	CO 1
27	RC1		2.672	MAX M_T	0.00	0.00	-9.16	0.02	-29.98	-0.02	CO 2
29	RC1		3.456	MIN M_T	0.01	0.04	13.70	-0.15	620.96	-1.91	CO 1
29	RC1		4.608	MAX M_y	0.00	0.00	0.76	-0.15	629.29	-1.72	CO 1
30	RC1		3.840	MIN M_y	0.00	0.00	0.02	0.00	-103.81	0.00	CO 2
21	RC1		1.500	MAX M_z	0.55	-0.11	64.44	-0.15	543.74	0.90	CO 1
29	RC1		0.768	MIN M_z	0.23	0.17	43.89	-0.15	543.56	-2.11	CO 1
	Section No. 3: HEB 240										
6	RC1		0.000	MAX N	0.93	0.00	50.63	0.00	0.00	0.00	CO 1
14	RC1		0.000	MIN N	-0.09	-0.02	14.45	0.01	0.00	0.00	CO 1
13	RC1		0.000	MAX V_y	-0.07	0.16	14.45	-0.12	0.00	0.00	CO 1
15	RC1		3.550	MIN V_y	-0.05	-0.16	-14.45	0.08	0.00	0.00	CO 1
6	RC1		0.000	MAX V_z	0.93	0.00	50.63	0.00	0.00	0.00	CO 1
4	RC1		4.650	MIN V_z	0.49	0.00	-31.04	0.00	0.00	0.00	CO 1
15	RC1		3.372	MAX M_T	-0.04	-0.14	-13.01	0.08	2.44	-0.03	CO 1
13	RC1		0.000	MIN M_T	-0.07	0.16	14.45	-0.12	0.00	0.00	CO 1
4	RC1		0.000	MAX M_y	0.03	0.00	-25.82	0.00	132.20	0.00	CO 1
4	RC1		0.000	MIN M_y	0.00	0.00	6.16	0.00	-20.57	0.00	CO 3

■ 4.3 CROSS-SECTIONS - INTERNAL FORCES

Result Combinations

Member No.	RC	Node No.	Location x [m]		Forces [kN] N	V_y	V_z	Moments [kNm] M_T	M_y	M_z	Correspondin Load Cases
16	RC1		1.952	MAX M_z	-0.01	0.00	-1.45	-0.01	12.70	▷ 0.01	CO 1
15	RC1		1.952	MIN M_z	-0.01	-0.01	-1.45	0.08	12.70	▷ -0.12	CO 1
	Section No. 4: HEB 450										
3	RC1		0.000	MAX N	▷ 1.66	0.00	177.49	0.00	0.00	0.00	CO 1
2	RC1		2.070	MIN N	▷ -0.01	0.00	21.52	0.00	487.70	0.00	CO 1
1	RC1		0.000	MAX V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
1	RC1		0.000	MIN V_y	0.00	▷ 0.00	0.00	0.00	0.00	0.00	
3	RC1		0.000	MAX V_z	1.66	0.00	▷ 177.49	0.00	0.00	0.00	CO 1
1	RC1		4.650	MIN V_z	0.90	0.00	▷ -110.25	0.00	0.00	0.00	CO 1
1	RC1		0.000	MAX M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		0.000	MIN M_T	0.00	0.00	0.00	▷ 0.00	0.00	0.00	
1	RC1		0.000	MAX M_y	0.06	0.00	-99.51	0.00	▷ 487.70	0.00	CO 1
1	RC1		0.000	MIN M_y	0.00	0.00	15.15	0.00	▷ -53.79	0.00	CO 2
1	RC1		0.000	MAX M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	
1	RC1		0.000	MIN M_z	0.00	0.00	0.00	0.00	0.00	▷ 0.00	

LAGERREAKTIONEN



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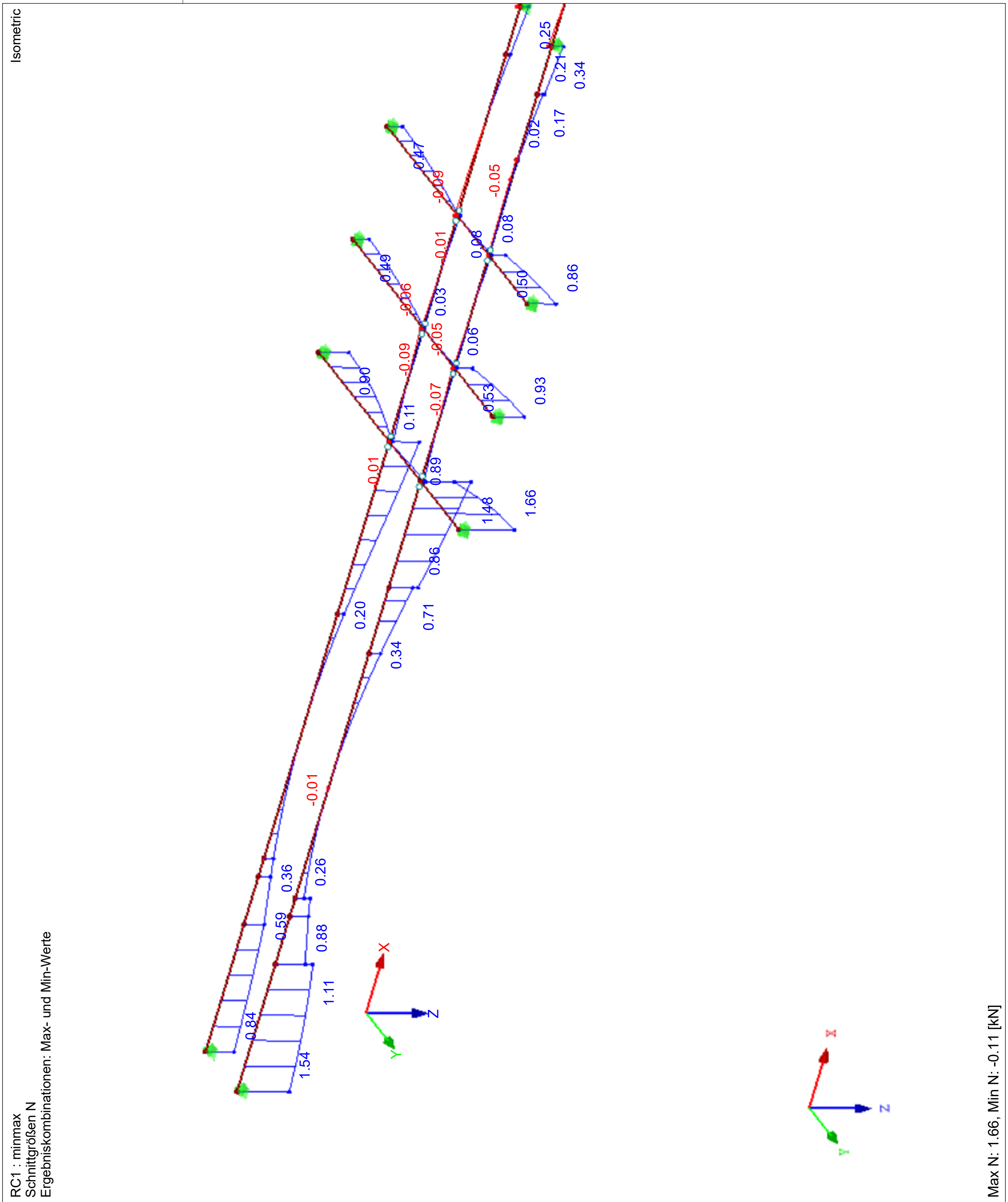
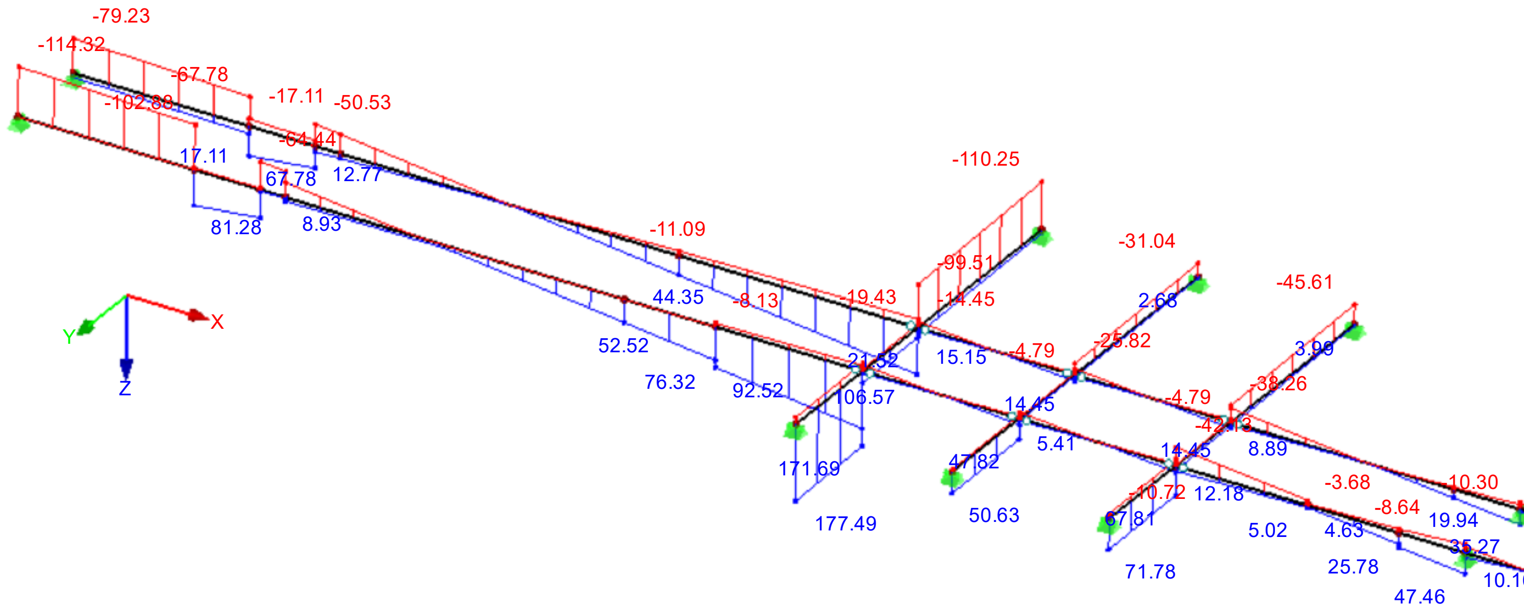
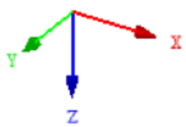
INTERNAL FORCES N



RC1 : minmax
Schnittgrößen V-z
Ergebniskombinationen: Max- und Min-Werte

Isometric





Max V-z: 177.49, Min V-z: -114.32 [kN]

INTERNAL FORCES V_z

Project: 2023
Model: K-Steel-beams-b-wo-dome
Kloster-Gelati
Date: 15.12.20

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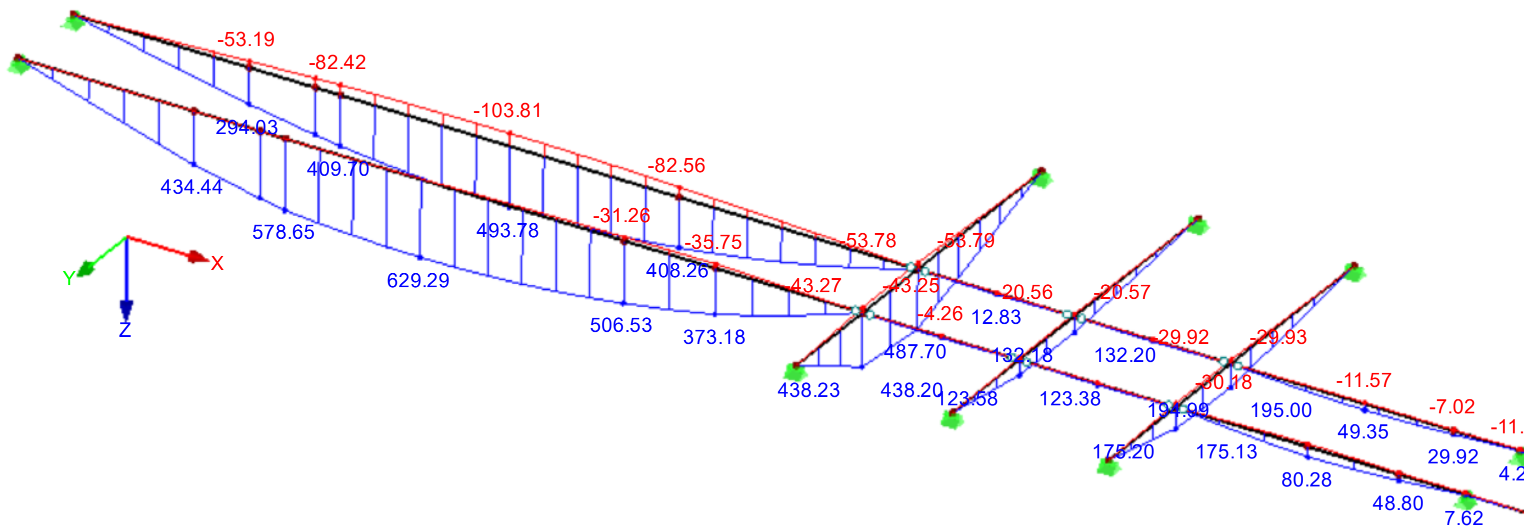
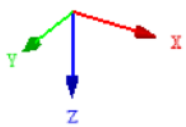
RESULTS

RC1 : minmax
Schnittgrößen M-y
Ergebniskombinationen: Max- und Min-Werte

Isometric





Max M-y: 629.29, Min M-y: -103.81 [kNm]

INTERNAL FORCES M_y

Project: 2023
Model: K-Steel-beams-b-wo-dome
Kloster-Gelati
Date: 15.12.20

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RESULTS

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Sheet: 1

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Tel: 07066/9179841 - Fax: 07066/9179849

Project: 2023 | Model: K-Steel-beams-b-wo-dome Kloster-Gelati | Date: 15.12.2023

STEEL EC3
CA1
Bemessung nach Eurocode 3

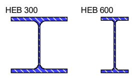
1.1 GENERAL DATA

Members to design:	All
Sets of members to design:	
National Annex:	DIN
Ultimate Limit State Design	
Load combinations to design:	CO1 Bem-1
	CO2 Bem-2
	CO3 Bem-3

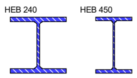
1.2 MATERIALS

Matl. No.	Material Description	E- Modulus E [kN/cm²]	Shear Modulus G [kN/cm²]	Poisson's Ratio ν [-]	Yield Stress f_{yk} [kN/cm²]	Max. Thickness t [mm]
1	S 235 | Layher Benutzerdefiniertes Material	21000.00	8100.00	0.300	23.50	100.0

1.3 CROSS-SECTIONS



Sect. No.	Matl. No.	Cross-Section Description	Cross-Section Type	Max Design Ratio	Comment
1	1	HEB 300	I-section rolled	0.49	
2	1	HEB 600	I-section rolled	0.57	
3	1	HEB 240	I-section rolled	0.59	
4	1	HEB 450	I-section rolled	0.57	



1.5 EFFECTIVE LENGTHS - MEMBERS

Member No.	Buckling Possible	Buckling About Axis y Possible	$k_{cr,y}$	$L_{cr,y}$ [m]	Buckling About Axis z Possible	$k_{cr,z}$	$L_{cr,z}$ [m]	Lateral-Torsional Buckling Possible	k_z	k_w	L_w [m]	L_T [m]
1	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
2	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
3	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
4	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
5	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
6	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
8	☒	☒	1.00	4.650	☒	1.00	4.650	☒	1.0	1.0	4.650	4.650
9	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
10	☒	☒	1.00	2.510	☒	1.00	2.510	☒	1.0	1.0	2.510	2.510
11	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
12	☒	☒	1.00	0.570	☒	1.00	0.570	☒	1.0	1.0	0.570	0.570
13	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
14	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
15	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
16	☒	☒	1.00	3.550	☒	1.00	3.550	☒	1.0	1.0	3.550	3.550
17	☒	☒	1.00	2.990	☒	1.00	2.990	☒	1.0	1.0	2.990	2.990
18	☒	☒	1.00	5.060	☒	1.00	5.060	☒	1.0	1.0	5.060	5.060
19	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
20	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
21	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
22	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
23	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
24	☒	☒	1.00	5.410	☒	1.00	5.410	☒	1.0	1.0	5.410	5.410
25	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
26	☒	☒	1.00	1.500	☒	1.00	1.500	☒	1.0	1.0	1.500	1.500
27	☒	☒	1.00	3.340	☒	1.00	3.340	☒	1.0	1.0	3.340	3.340
28	☒	☒	1.00	2.070	☒	1.00	2.070	☒	1.0	1.0	2.070	2.070
29	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
30	☒	☒	1.00	7.680	☒	1.00	7.680	☒	1.0	1.0	7.680	7.680
31	☒	☒	1.00	4.000	☒	1.00	4.000	☒	1.0	1.0	4.000	4.000
32	☒	☒	1.00	4.000	☒	1.00	4.000	☒	1.0	1.0	4.000	4.000

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
1	Cross-Section	4 - HEB 450
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
2	Cross-Section	4 - HEB 450
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
3	Cross-Section	4 - HEB 450

1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
4	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
5	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
6	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
8	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
9	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
10	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
11	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
12	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
13	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
14	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
15	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
16	Cross-Section	3 - HEB 240
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
17	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
18	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
19	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
20	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
21	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

■ 1.12 PARAMETERS - MEMBERS

Member No.	Description	Parameter
22	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
23	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
24	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
25	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
26	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
27	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
28	Cross-Section	1 - HEB 300
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
29	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
30	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
31	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐
32	Cross-Section	2 - HEB 600
	Shear panel	☐
	Rotational restraint	☐
	Cross-sectional area for tension design	☐

■ 2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
1	**Cross-section No. 4 - HEB 450**					
	0.000	LK1	0.52	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.10	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.52	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.57	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
2	**Cross-section No. 4 - HEB 450**					
	2.070	LK1	0.52	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.52	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.57	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
3	**Cross-section No. 4 - HEB 450**					
	2.510	LK1	0.47	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.16	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.47	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
						6.2.8
	2.510	LK1	0.52	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
4	**Cross-section No. 3 - HEB 240**					
	2.325	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.53	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.53	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
5	**Cross-section No. 3 - HEB 240**					
	0.000	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	2.070	LK1	0.53	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.01	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.53	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.59	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
6	**Cross-section No. 3 - HEB 240**					
	1.130	LK2	0.00	≤ 1	CS100)	Negligible internal forces
	2.510	LK1	0.50	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.11	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.50	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.510	LK1	0.55	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
8	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.44	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.650	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.44	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.49	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
9	**Cross-section No. 1 - HEB 300**					
	2.070	LK1	0.44	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.44	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.49	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
10	**Cross-section No. 1 - HEB 300**					
	2.510	LK1	0.40	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.11	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.510	LK1	0.40	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.510	LK1	0.44	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
11	**Cross-section No. 2 - HEB 600**					
	0.000	LK3	0.04	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.570	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK3	0.04	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.15	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	0.000	LK1	0.42	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
12	**Cross-section No. 2 - HEB 600**					
	0.000	LK1	0.27	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.570	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.27	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.30	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section

2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/RC	Design		Equation No.	Description
13	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
14	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
15	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
16	**Cross-section No. 3 - HEB 240**					
	1.775	LK1	0.05	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	3.550	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.775	LK1	0.05	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.775	LK1	0.06	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
17	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.18	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	2.990	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.18	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.20	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
18	**Cross-section No. 1 - HEB 300**					
	2.024	LK1	0.11	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	5.060	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.024	LK1	0.11	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.024	LK1	0.13	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
19	**Cross-section No. 1 - HEB 300**					
	1.500	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	1.500	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.350	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.03	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
20	**Cross-section No. 1 - HEB 300**					
	0.000	LK1	0.00	≤ 1	CS100)	Negligible internal forces
	1.500	LK1	0.03	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	1.500	LK1	0.02	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	1.425	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.03	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.03	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
21	**Cross-section No. 2 - HEB 600**					
	0.000	LK1	0.29	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)

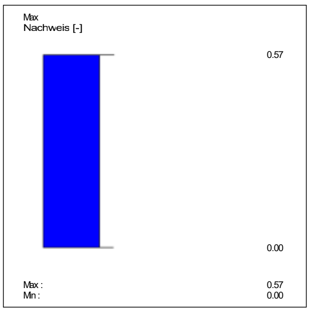
2.4 DESIGN BY MEMBER

Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
	0.000	LK1	0.29	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.13	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	1.500	LK1	0.40	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
22	**Cross-section No. 2 - HEB 600**					
	1.500	LK1	0.25	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.25	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.28	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
23	**Cross-section No. 2 - HEB 600**					
	0.000	LK2	0.02	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK2	0.02	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.12	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	2.070	LK1	0.37	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
24	**Cross-section No. 2 - HEB 600**					
	5.410	LK1	0.27	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	5.410	LK1	0.27	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	5.410	LK1	0.30	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
25	**Cross-section No. 1 - HEB 300**					
	1.500	LK1	0.11	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.07	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.11	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.12	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
26	**Cross-section No. 1 - HEB 300**					
	1.500	LK1	0.07	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	1.500	LK1	0.07	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	1.500	LK1	0.07	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
27	**Cross-section No. 2 - HEB 600**					
	0.000	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.835	LK1	0.07	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.09	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.835	LK1	0.07	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.340	LK1	0.07	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	3.340	LK1	0.27	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
28	**Cross-section No. 1 - HEB 300**					
	2.070	LK1	0.18	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.04	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	2.070	LK1	0.18	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	2.070	LK1	0.20	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
29	**Cross-section No. 2 - HEB 600**					
	7.680	LK3	0.04	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	7.680	LK3	0.04	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6

2.4 DESIGN BY MEMBER

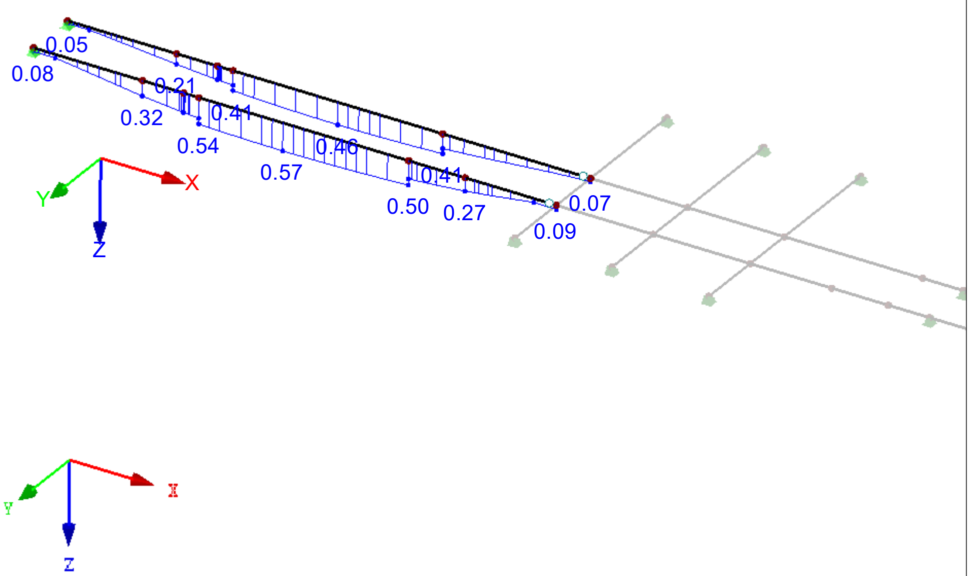
Member No.	Location x [m]	LC/CO/ RC	Design		Equation No.	Description
						6.2.8
	4.608	LK1	0.18	≤ 1	CS161)	Cross-section check - Biaxial bending and shear force acc. to 6.2.6, 6.2.7 and 6.2.9
	4.608	LK1	0.57	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
30	**Cross-section No. 2 - HEB 600**					
	3.840	LK1	0.33	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	0.000	LK1	0.03	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	3.840	LK1	0.33	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	3.840	LK1	0.46	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
31	**Cross-section No. 2 - HEB 600**					
	0.000	LK1	0.29	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.000	LK1	0.08	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.29	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.32	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section
32	**Cross-section No. 2 - HEB 600**					
	3.800	LK3	0.00	≤ 1	CS100)	Negligible internal forces
	0.000	LK1	0.19	≤ 1	CS111)	Cross-section check - Bending about y-axis acc. to 6.2.5 - Class 1 or 2
	4.000	LK1	0.05	≤ 1	CS121)	Cross-section check - Shear force in z-axis acc. to 6.2.6
	0.000	LK1	0.00	≤ 1	CS126)	Cross-section check - Shear buckling acc. to 6.2.6(6)
	0.000	LK1	0.19	≤ 1	CS141)	Cross-section check - Bending and shear force acc. to 6.2.5 and 6.2.8
	0.000	LK1	0.21	≤ 1	ST331)	Stability analysis - Lateral torsional buckling acc. to 6.3.2.1 and 6.3.2.3 - I-Section

NACHWEIS



STAHL EC3 CA1
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be

Isometric



Max Nachweis: 0.57

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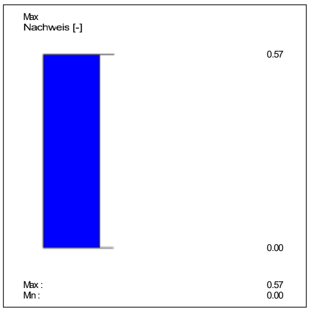
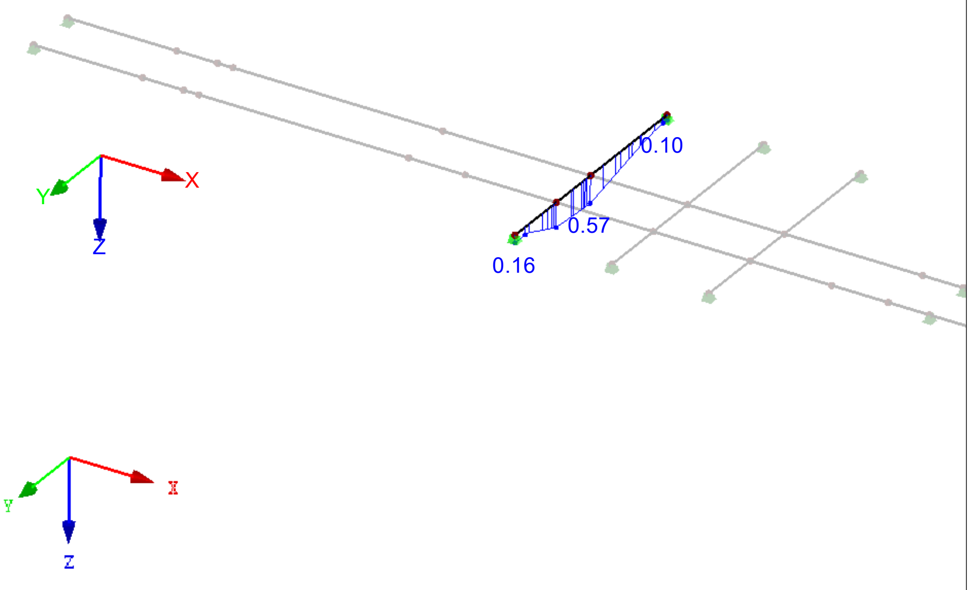
Project: 2023 | Model: K-Steel-beams-b-wo-dome Kloster-Gelati | Date: 15.12.2023

NACHWEIS

STAHL EC3 CA1 — Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be

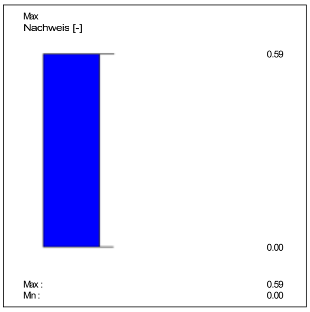


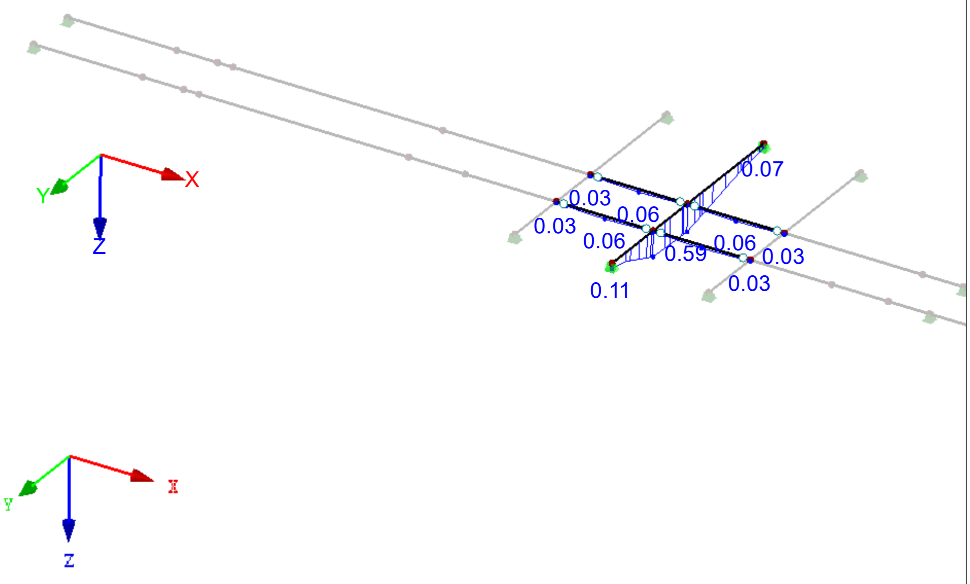


Max Nachweis: 0.57

NACHWEIS

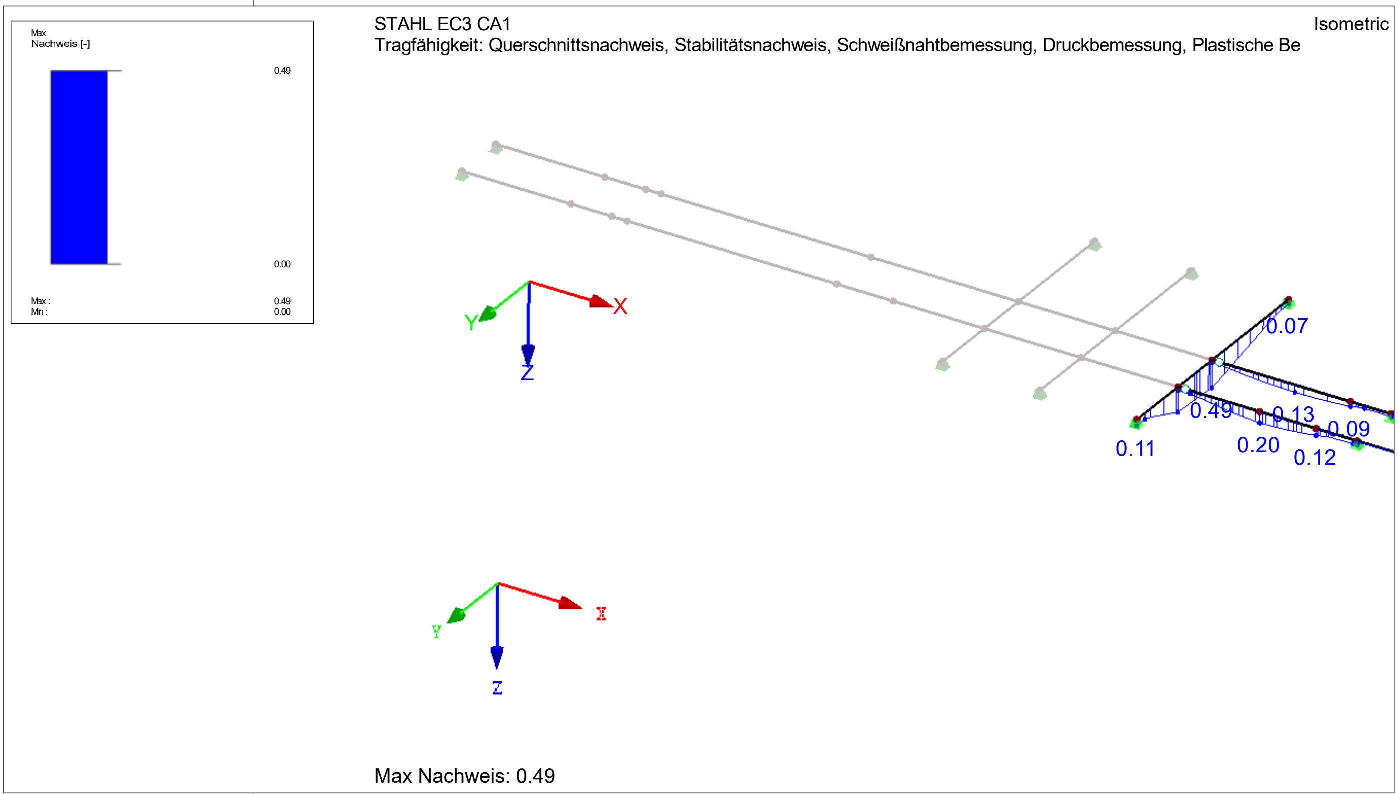
STAHL EC3 CA1 — Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be





Max Nachweis: 0.59

NACHWEIS


Max
Nachweis [-]
0.49
0.00
Max : 0.49
Min : 0.00
STAHL EC3 CA1
Isometric
Tragfähigkeit: Querschnittsnachweis, Stabilitätsnachweis, Schweißnahtbemessung, Druckbemessung, Plastische Be
X
Y
Z
0.07
0.49
0.13
0.09
0.11
0.20
0.12
Max Nachweis: 0.49

HEB 600	Nd=	20	kN
S235	Vd=	140	kN
	Md=	650	kNm
	eta=	0,57	< 1,0

HEB 450	Nd=	20	kN
S235	Vd=	190	kN
	Md=	500	kNm
	eta=	0,57	< 1,0

HEB 240	Nd=	10	kN
S235	Vd=	60	kN
	Md=	140	kNm
	eta=	0,59	< 1,0

HEB 300	Nd=	20	kN
S235	Vd=	75	kN
	Md=	210	kNm
	eta=	0,5	< 1,0

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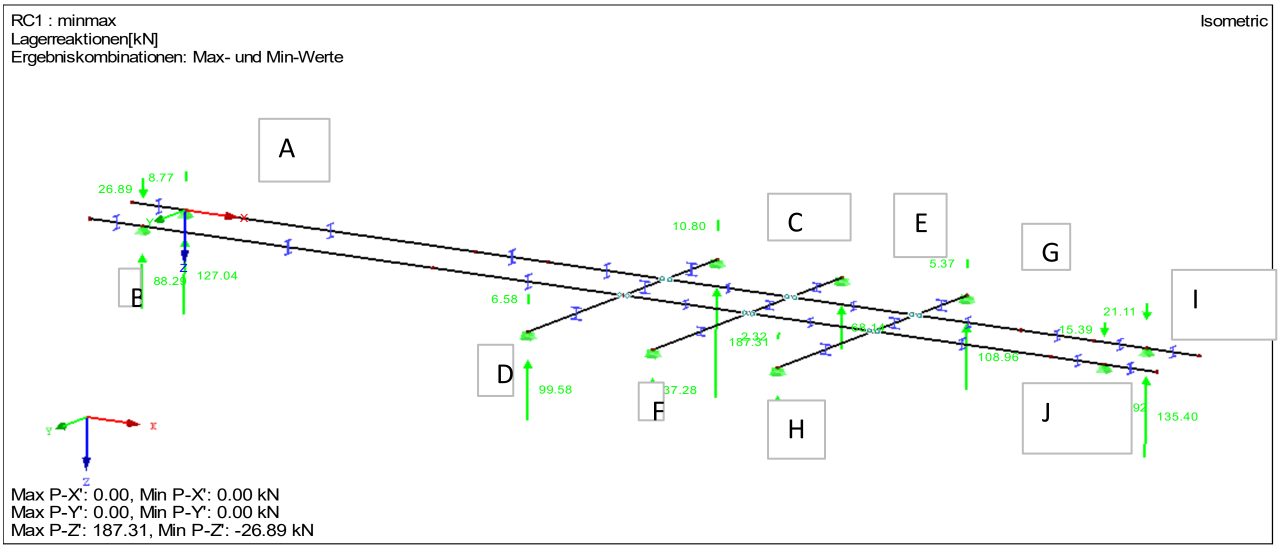
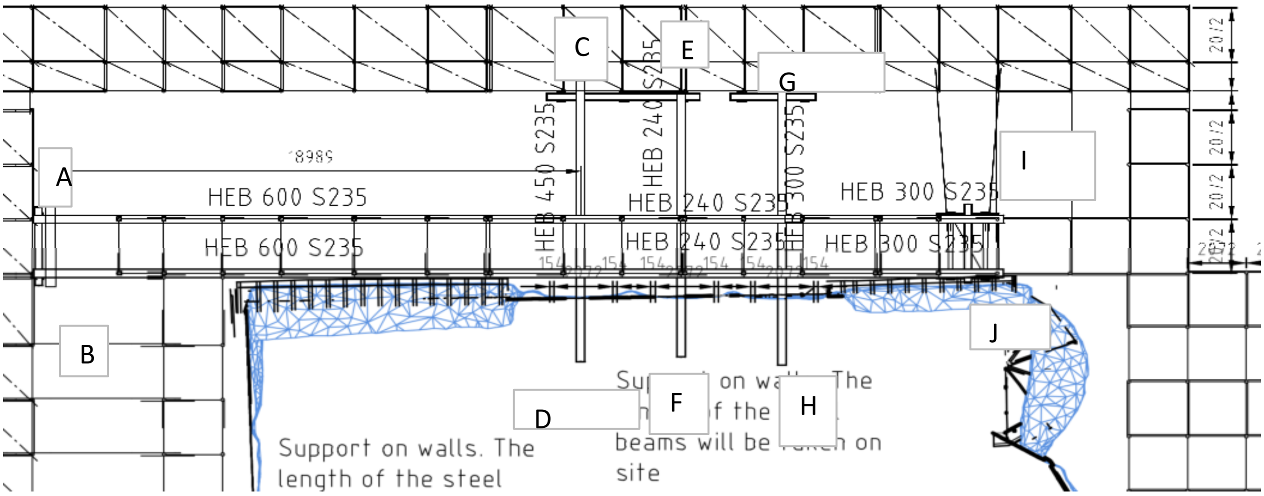
Reaction forces:



		A	B	C	D	E	F
Dead Load		35	45	44	68	15	20
Live Load		13	23	20	34	8	15
Snow		14	20	19	30	4	5
Wind 1		-26	-20	-32	-51	-8	-12
Wind 2		-21	-15	-28	-44	-10	-16
max	design	80	120	115	180	32	51
max	design		0	0	0	0	0
min	design	-10	0	-8	-16	-3	-6

		G	H	I	J		
Dead Load		18	27	16	19		
Live Load		10	16	11	17		
Snow		8	12	12	12		
Wind 1		-14	-23	-21	-31		
Wind 2		-14	-22	-18	-20		
max	design	45	72	51	63		
max	design		0	0	0		
min	design	-4	-11	-16	-30		

Heavy duty towers:



Point A

2 Column heavy duty support

Nd = 80 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 36,63 kN

a= 0,55 m
b= 0,55 m

sigma= 121 kN/m²

Point B

2 Column heavy duty support

Nd = 120 kN
NRd= 280 kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 51,444 kN

a= 0,7 m
b= 0,7 m

sigma= 105 kN/m²

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Point C

2 Column heavy duty support

Nd =	115	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 49,593 kN

a=	0,7	m
b=	0,7	m
sigma=	101	kN/m²

Point D

On the wall

Nd = 180 kN

Point E

1 Column heavy duty support

Nd =	40	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 36,63 kN

a=	0,6	m
b=	0,6	m
sigma=	102	kN/m²

Point F

on the wall

Nd = 51 kN

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Point G

1 Column heavy duty support

Nd =	50	kN
NRd=	140	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2=	44,037	kN
a=	0,7	m
b=	0,7	m
sigma=	90	kN/m²

Point H

On the wall

Nd =	109	kN

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Point I

2 Column heavy duty support

Nd =	52	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 26,259 kN

a=	0,5	m
b=	0,5	m
sigma=	105	kN/m²

Point J

2 Column heavy duty support

Nd =	65	kN
NRd=	280	kN

4x AR-Standard, effective length 2m

Load distribution under each colum

Ncolum,k= Nd / n / 1,35 + 5 + 2= 31,074 kN

a=	0,7	m
b=	0,7	m
sigma=	63	kN/m²

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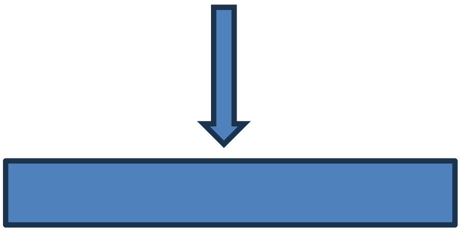
Pos.15.1: Foundation: a= 0,55 m
b= 0,55 m

d= 0,15 m

Concrete C25/30 XC3 XF1

Concrete cover cnom= 35 mm

d



a=b

sigma= 150 kN/m²

Nd= 68 kN

reinforcement d= 10 mm
e= 150 mm

crosswise

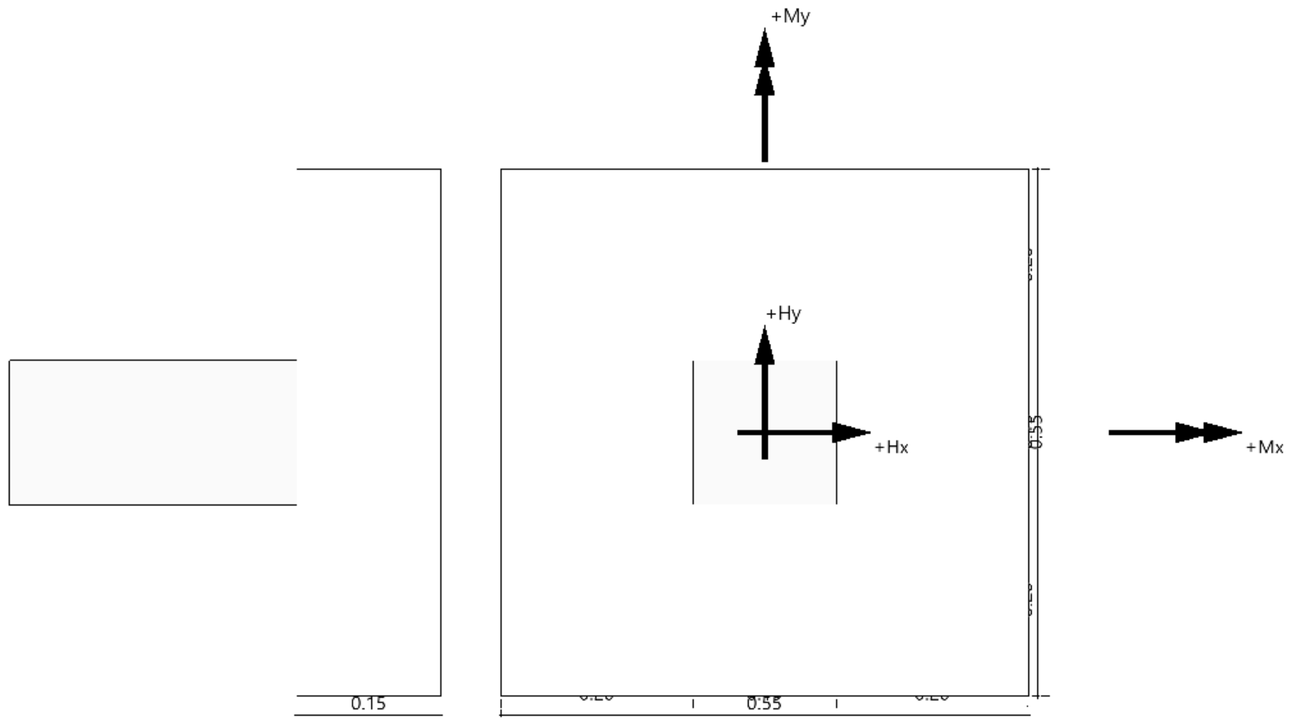
Position: gelati15-1

Fundament (x64) FD+ 01/2024 (FRILO R-2024-1/P01)

System

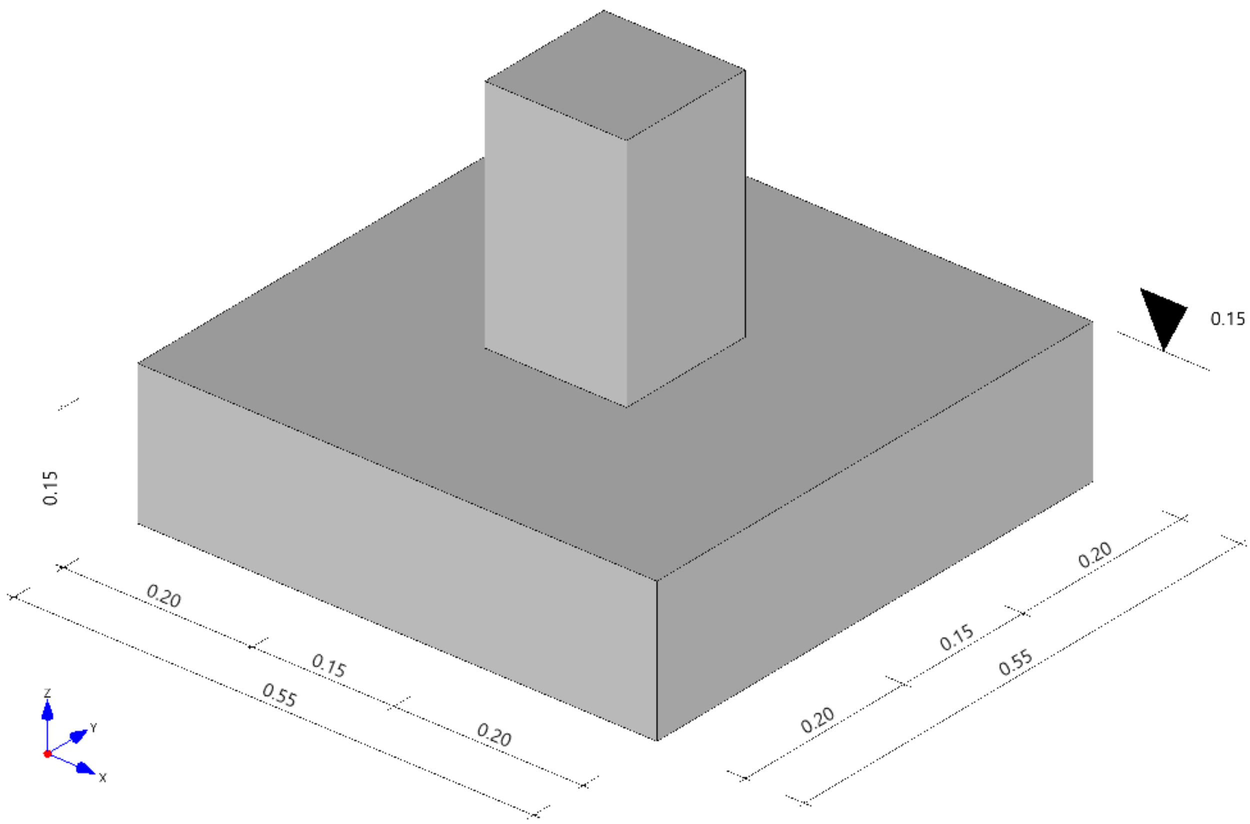
Draufsicht

Maßstab 1 : 8.0



Isometrie

Maßstab 1 : 6.1



Fundament nach DIN EN 1992-1-1/NA/A1:2015-12 und DIN EN 1997-1/NA:2010-12

Bauteil

Bauteil	Beton	Betonstahl	Breite (x) m	Breite (y) m	Höhe (z) m
Fundament Stütze	C 25/30 C 25/30	B500A B500A	0.55 0.15	0.55 0.15	0.15 0.00

Einbindetiefe des Fundamentes in den Baugrund 0.15 m. Ohne Grundwasser. Bemessungswert des Sohldruckwiderstands $\sigma_{R,}$ = 230.00 kN/m².

Lasten

Stützenlasten - Bemessungswerte

Nr	Bezeichnung	N kN	M_{xI} kNm	M_{xII} kNm	M_{yI} kNm	M_{yII} kNm	H_{xI} kN	H_{xII} kN	H_{yI} kN	H_{yII} kN	Red $_N$ [1]	Red $_{MH}$ [1]	BS [2]	GZ
1	Lastfall 1	68.0	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	1.40	1.40	BSP	STR

1 : Reduktionsfaktoren N für vertikale Lasten und MH für Momente und horizontale Lasten, verwendet für das Erzeugen fehlender Grenzzustände.
2 : BS: Bemessungssituation P: ständig A: außergewöhnlich E: Erdbeben T: vorübergehend

Sollte für einen Nachweis ein Lastfall nicht im erforderlichen Grenzzustand vorliegen, so wird ein Lastfall mit gleicher Bezeichnung und gefordertem Grenzzustand verwendet. Liegt kein korrespondierender Lastfall vor, so wird unter Verwendung der Reduktionsfaktoren ein Lastfall erzeugt. Eigengewicht ist bei den Nachweisen berücksichtigt. Wichte Beton : γ = 25.00 kN/m³. Gesamtfundament ohne Sockel bzw. Stütze 0.045 m³ / 1.13 kN. Torsion aus Horizontallasten wird nicht berücksichtigt.

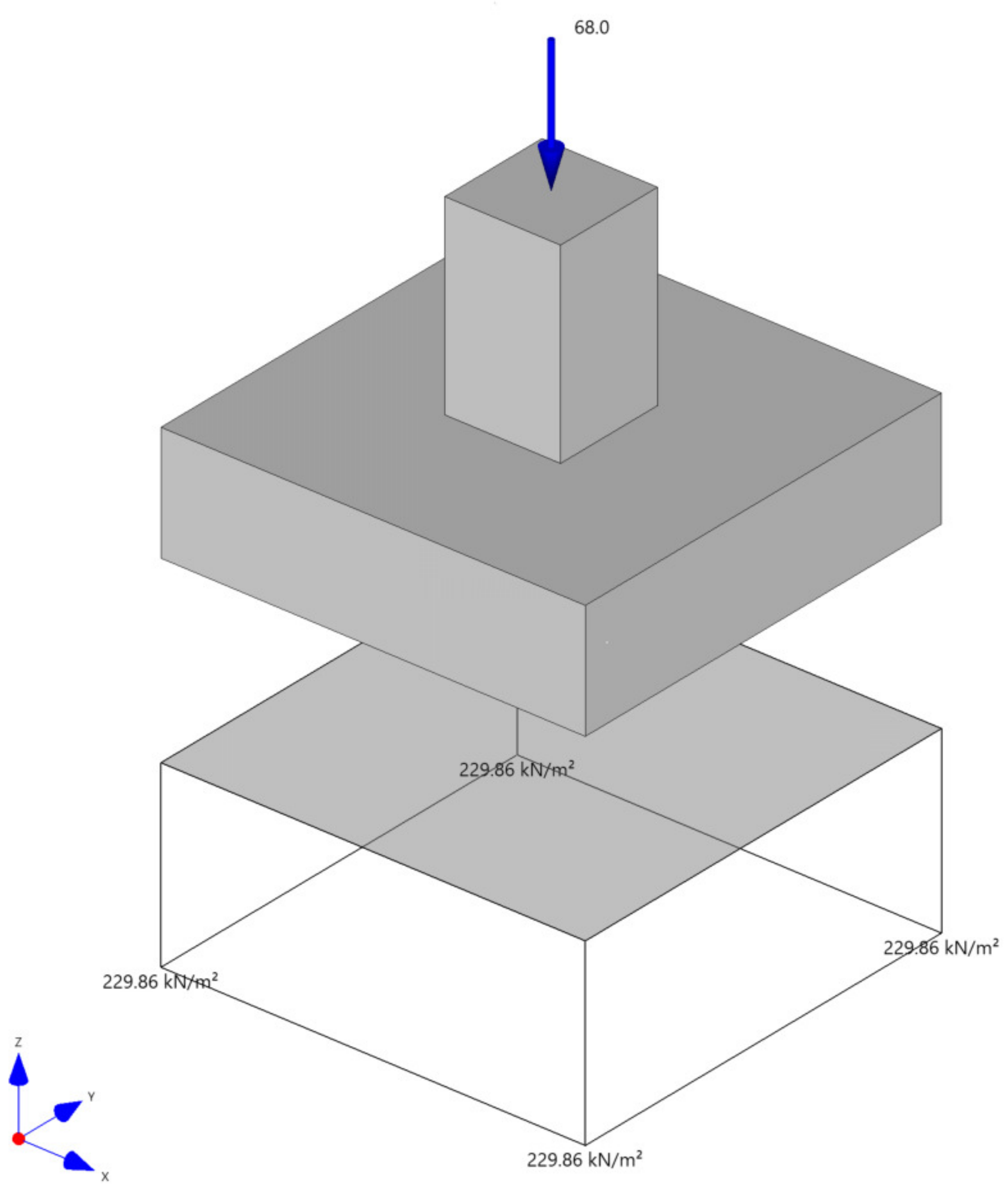
charakteristische Schnittgrößen in der Sohlfuge

LF Nr	Bezeichnung	V kN	ex m	My kNm	ey m	Mx kNm	Hx kN	Hy kN
1	Th.1.O.	49.7	0.00	0.00	0.00	0.00	0.0	0.0
1	Th.2.O.	49.7	0.00	0.00	0.00	0.00	0.0	0.0

Lastfallgrafiken

Lastfall 1 -

Maßstab 1 : 7.5



Ergebnisse

Übersicht Nachweise

Nachweis	Lastfall I	η I	Lastfall II	η II
klaffende Fuge nur ständige Lasten SLS charakteristisch	0 [1]	0.00	0 [1]	0.00
klaffende Fuge ständige und veränderliche Lasten SLS charakteristisch	1 [2]	0.00	1 [2]	0.00
Lagesicherheit	1 [2]	0.00	1 [2]	0.00
Vereinfachter Nachweis ULS	1 [2]	1.00		

1 : Es sind keine maßgebenden Ergebnisse vorhanden.
2 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.

Übersicht Bewehrung

Art	Lastfall	cm²
Biegung $As_{x,u}$ Biegung $As_{y,u}$	1[1] 1[1]	1.1 1.3
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.		

Bemessungswert des Sohldruckwiderstands $\sigma_{R,d}$ = 230.00 kN/m²

σ_{Rd} = 230.00 kN/m². Der Bemessungswert des Sohldruckwiderstands ist direkt vorgegeben worden.

Vereinfachter Nachweis Ergebnislastfall

Nr	GZ	BS	N_d kN	R_0 kN	a' m	b' m	σ_d kN/m²	σ_{Rd} kN/m²	η
1_I	GEO	P	69.5	0.0	0.55	0.55	229.86	230.00	1.00

Der Sohldruck ist mit Sicherheitsbeiwerten behaftet.

Biegung

Bemessung Ergebnislastfälle

LF	$M_{yu,Ed}$ kNm	$M_{xu,Ed}$ kNm	$M_{yo,Ed}$ kNm	$M_{xo,Ed}$ kNm	$A_{s,xu}$ cm²	$A_{s,yu}$ cm²	$A_{s,xo}$ cm²	$A_{s,yo}$ cm²
1 [1]	**3.40**	3.40	0.00	0.00	**1.1***	1.3*	0.0	0.0
*: Mindestbewehrung nach DIN EN 1992-1-1/NA/A1:2015-12 9.2.1.1 (1)								
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.								

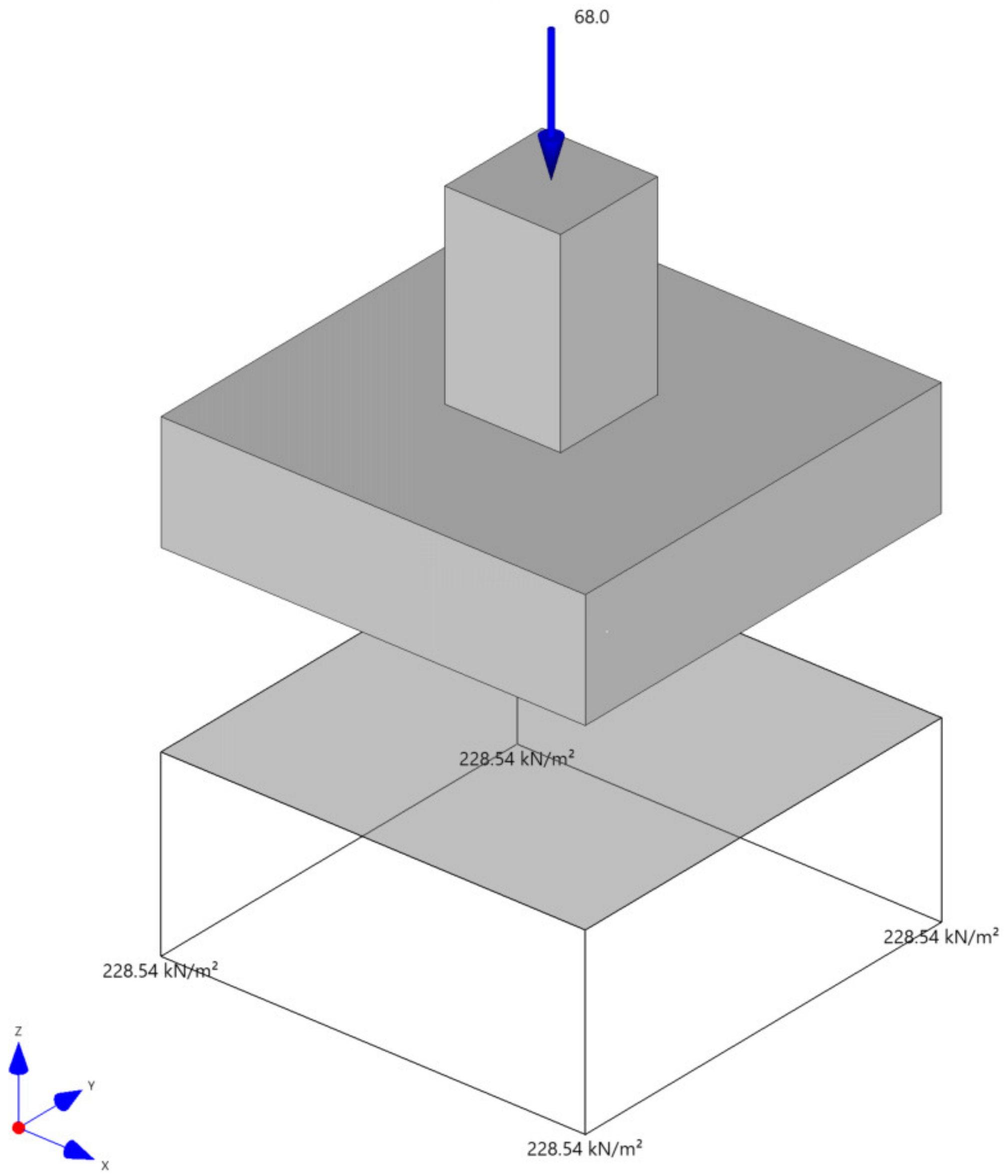
Bewehrungslage Bewehrung in x-Richtung d1,x = 4.0 cm. Bewehrungslage Bewehrung in y-Richtung d1,y = 6.0 cm. Ausgerundetes Biegemoment aus der Achse der Stütze. 20% Querbewehrung wurden berücksichtigt.

Mindestbewehrung zur Sicherstellung der Querkrafttragfähigkeit nach DIN EN 1992-1-1/NA, NCI zu 6.4.5

Mindestmomente	$M_{y,min}$ =	$\eta_x * v_{Ed} * b_{eff,y}$	= 0.125 * 62.9 * 0.33	= 2.60	kNm
Mindestbewehrung	$A_{s,x,min}$ =		=	= 0.5	cm²
Mindestmomente	$M_{x,min}$ =	$\eta_y * v_{Ed} * b_{eff,x}$	= 0.125 * 62.9 * 0.33	= 2.60	kNm
Mindestbewehrung	$A_{s,y,min}$ =		=	= 0.7	cm²

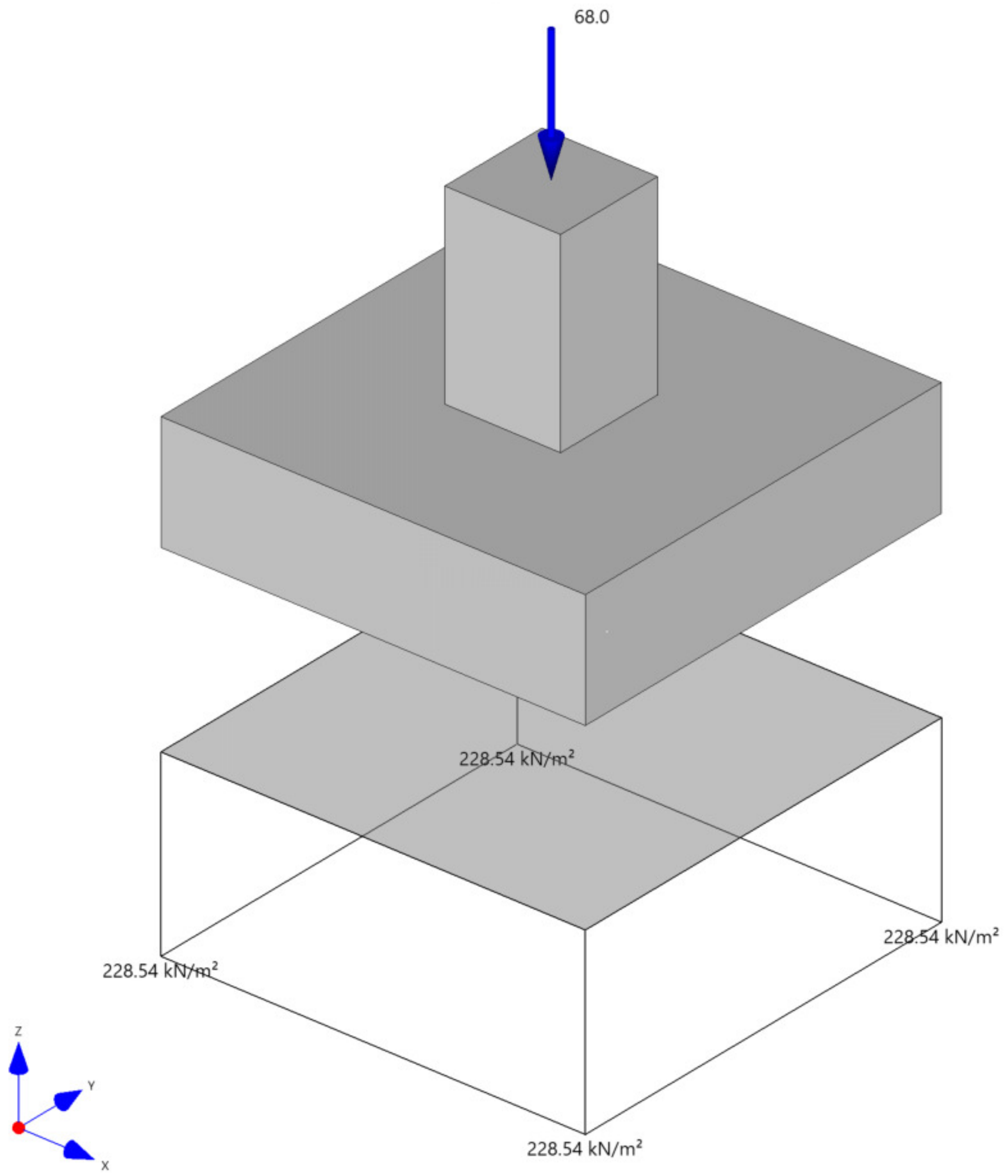
Ergebnislastfall Biegebemessung in x-Richtung

Maßstab 1 : 7.5



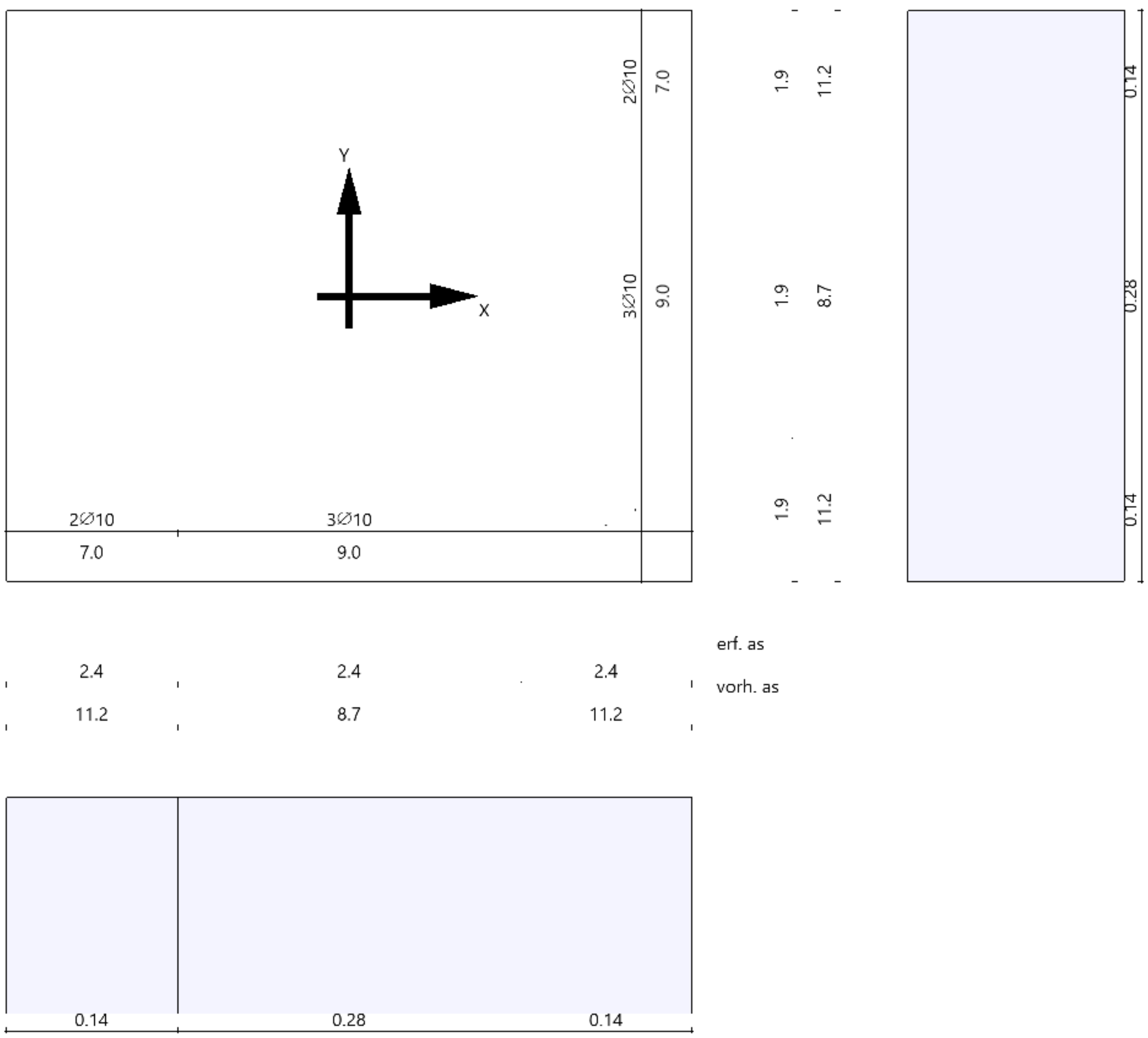
Ergebnislastfall Biegebemessung in y-Richtung

Maßstab 1 : 7.5



Bewehrungsverteilung unten in m, cm²/m

Maßstab 1 : 31.7



Es werden Spitzenwerte der Verteilung nach Heft 240 des Deutsches Ausschusses für Stahlbeton abgedeckt. Daher kann die hier erforderliche Bewehrung höher als die statisch erforderliche Bewehrung sein. Um die Querkrafttragfähigkeit sicherzustellen, ist das Fundament im Durchstanzbereich für Mindestmomente nach Gleichung (NA.6.54.1) bemessen worden, sofern die Schnittgrößenermittlung nicht zu höheren Werten geführt hat.

Durchstanzen

Durchstanznachweis Lastfall 1

Grenzzustand der Tragfähigkeit für Durchstanzen nach DIN EN 1992-1-1/NA/A1:2015-12
Berechungsgrundlagen:
Der Biegebewehrungsgrad ist als Mittelwert unter Berücksichtigung einer Plattenbreite entsprechend der Stützenabmessung zuzüglich 3d pro Seite berechnet. (6.4.4 (1))

plastische Schubspannungsverteilung / Innenstütze (automatisch ermittelt)

Bewehrungsgrad, vorhanden	ρ_{vorh} =	1.00	%	
Beiwert Rotationssymmetrie	β =	1.10		
Schubspannung	v_{Ed} =	0.43	N/mm²	mit β
Tragwiderstand ohne Durchstanzbewehrung	$v_{Rd,c}$ =	1.30	N/mm²	

Keine zusätzliche Stanzbewehrung erforderlich.

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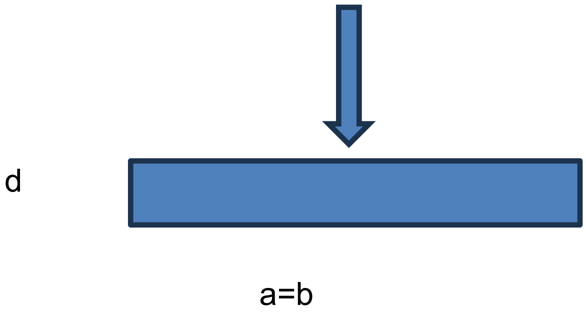
Pos.15.2: Foundation: a= 0,6 m
b= 0,6 m

d= 0,15 m

Concrete C25/30 XC3 XF1

Concrete cover cnom= 35 mm



sigma= 150 kN/m²

Nd= 81 kN

reinforcement d= 10 mm
e= 150 mm

crosswise

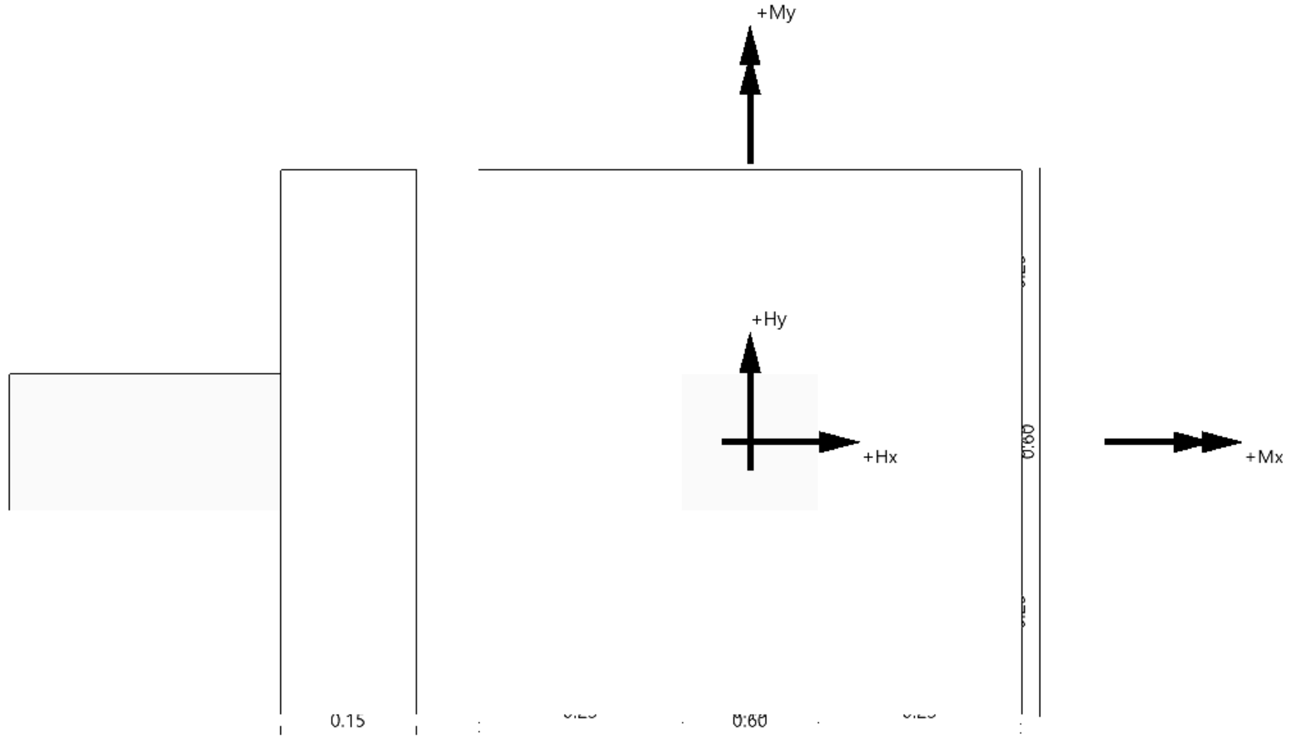
Position: gelati15-2

Fundament (x64) FD+ 01/2024 (FRILO R-2024-1/P01)

System

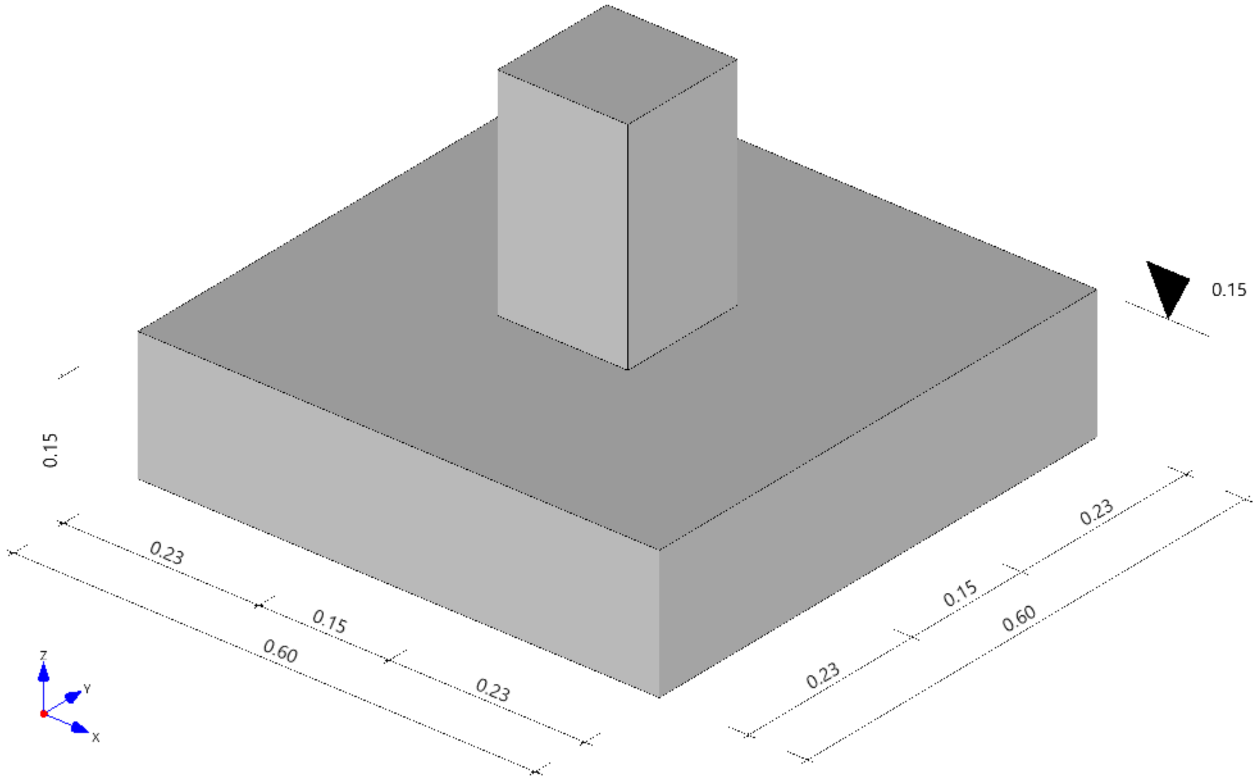
Draufsicht

Maßstab 1 : 8.5



Isometrie

Maßstab 1 : 6.7



Fundament nach DIN EN 1992-1-1/NA/A1:2015-12 und DIN EN 1997-1/NA:2010-12

Bauteil

Bauteil	Beton	Betonstahl	Breite (x) m	Breite (y) m	Höhe (z) m
Fundament	C 25/30	B500A	0.60	0.60	0.15
Stütze	C 25/30	B500A	0.15	0.15	0.00

Einbindetiefe des Fundamentes in den Baugrund 0.15 m. Ohne Grundwasser. Bemessungswert des Sohldruckwiderstands σ_R, = 230.00 kN/m².

Lasten

Stützenlasten - Bemessungswerte

Nr	Bezeichnung	N kN	M_{xI} kNm	M_{xII} kNm	M_{yI} kNm	M_{yII} kNm	H_{xI} kN	H_{xII} kN	H_{yI} kN	H_{yII} kN	Red $_N$ [1]	Red $_{MH}$ [1]	BS [2]	GZ
1	Lastfall 1	81.0	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	1.40	1.40	BSP	STR

1 : Reduktionsfaktoren N für vertikale Lasten und MH für Momente und horizontale Lasten, verwendet für das Erzeugen fehlender Grenzzustände.
2 : BS: Bemessungssituation P: ständig A: außergewöhnlich E: Erdbeben T: vorübergehend

Sollte für einen Nachweis ein Lastfall nicht im erforderlichen Grenzzustand vorliegen, so wird ein Lastfall mit gleicher Bezeichnung und gefordertem Grenzzustand verwendet. Liegt kein korrespondierender Lastfall vor, so wird unter Verwendung der Reduktionsfaktoren ein Lastfall erzeugt. Eigengewicht ist bei den Nachweisen berücksichtigt. Wichte Beton : γ = 25.00 kN/m³. Gesamtfundament ohne Sockel bzw. Stütze 0.054 m³ / 1.35 kN. Torsion aus Horizontallasten wird nicht berücksichtigt.

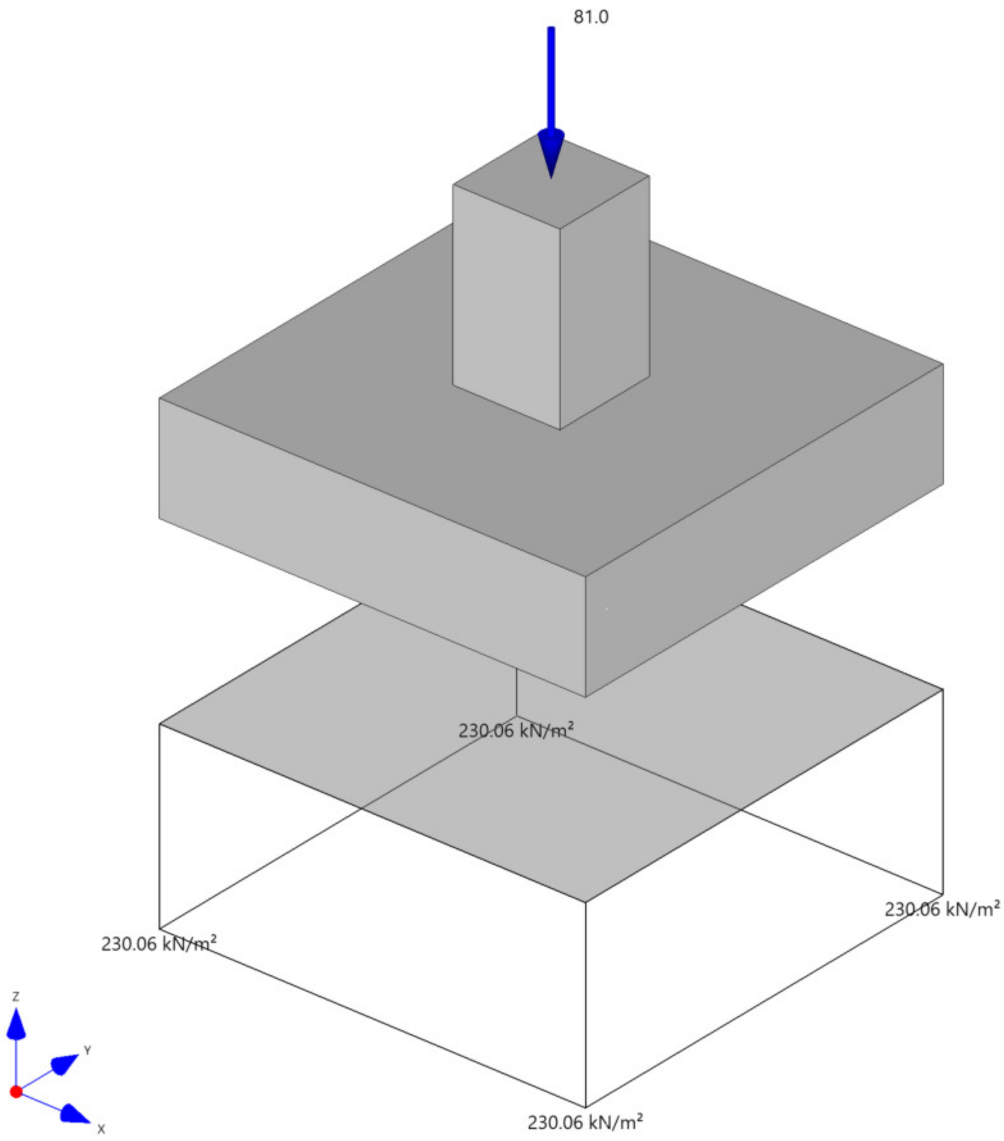
charakteristische Schnittgrößen in der Sohlfuge

LF Nr	Bezeichnung	V kN	ex m	My kNm	ey m	Mx kNm	Hx kN	Hy kN
1	Th.1.O.	59.2	0.00	0.00	0.00	0.00	0.0	0.0
1	Th.2.O.	59.2	0.00	0.00	0.00	0.00	0.0	0.0

Lastfallgrafiken

Lastfall 1 -

Maßstab 1 : 8.2



Ergebnisse

Übersicht Nachweise

Nachweis	Lastfall I	η I	Lastfall II	η II
klaffende Fuge nur ständige Lasten SLS charakteristisch	0 [1]	0.00	0 [1]	0.00
klaffende Fuge ständige und veränderliche Lasten SLS charakteristisch	1 [2]	0.00	1 [2]	0.00
Lagesicherheit	1 [2]	0.00	1 [2]	0.00
Vereinfachter Nachweis ULS	1 [2]	1.00		

1 : Es sind keine maßgebenden Ergebnisse vorhanden.
2 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.

Übersicht Bewehrung

Art	Lastfall	cm²
Biegung $As_{x,u}$ Biegung $As_{y,u}$	1[1] 1[1]	1.2 1.4
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.		

Bemessungswert des Sohldruckwiderstands $\sigma_{R,d}$ = 230.00 kN/m²

σ_{Rd} = 230.00 kN/m². Der Bemessungswert des Sohldruckwiderstands ist direkt vorgegeben worden.

Vereinfachter Nachweis Ergebnislastfall

Nr	GZ	BS	N_d kN	R_0 kN	a' m	b' m	σ_d kN/m²	σ_{Rd} kN/m²	η
1_I	GEO	P	82.8	0.0	0.60	0.60	230.06	230.00	1.00

Der Sohldruck ist mit Sicherheitsbeiwerten behaftet.

Biegung

Bemessung Ergebnislastfälle

LF	$M_{yu,Ed}$ kNm	$M_{xu,Ed}$ kNm	$M_{yo,Ed}$ kNm	$M_{xo,Ed}$ kNm	$A_{s,xu}$ cm²	$A_{s,yu}$ cm²	$A_{s,xo}$ cm²	$A_{s,yo}$ cm²
1 [1]	**4.56**	4.56	0.00	0.00	**1.2***	1.4*	0.0	0.0
*: Mindestbewehrung nach DIN EN 1992-1-1/NA/A1:2015-12 9.2.1.1 (1)								
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.								

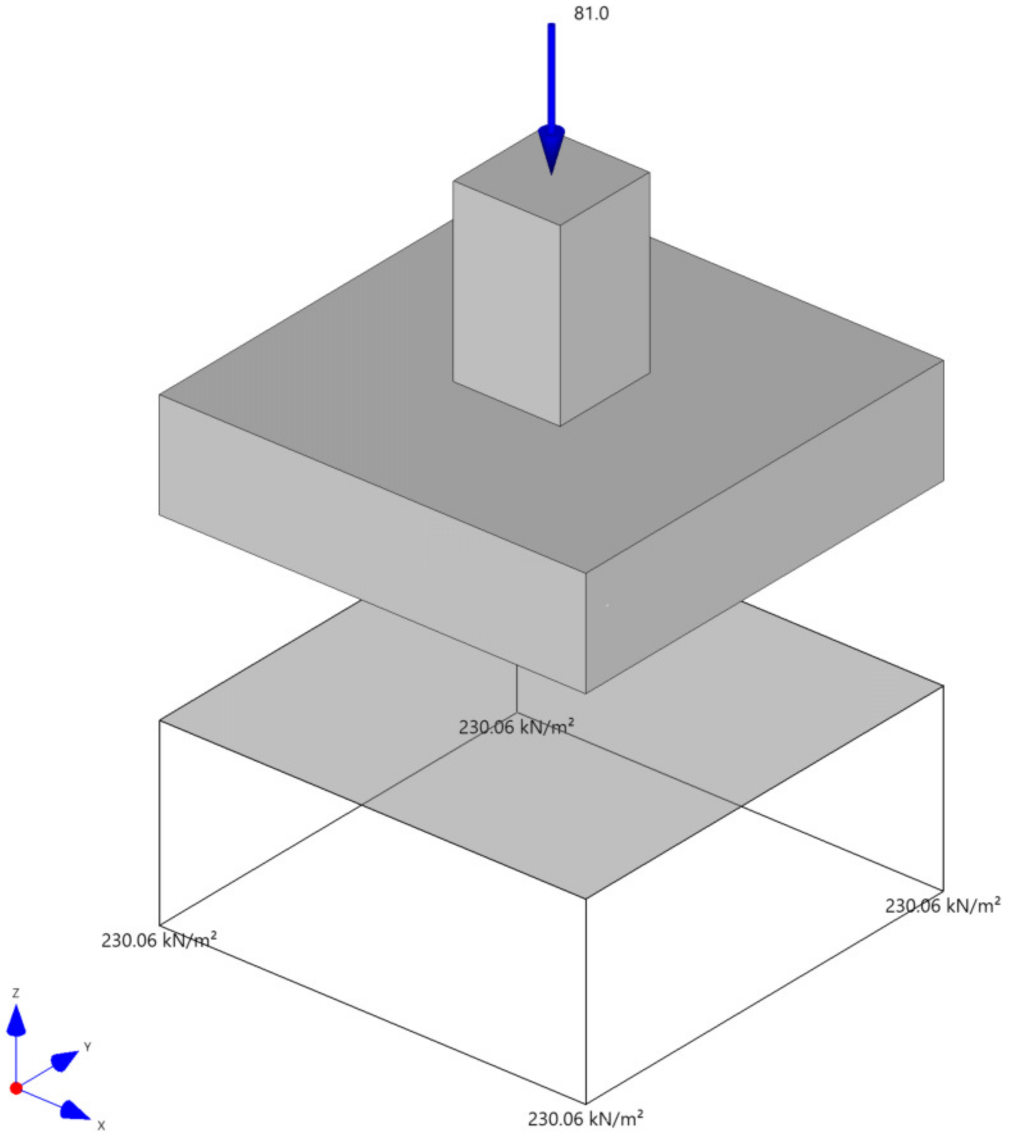
Bewehrungslage Bewehrung in x-Richtung d1,x = 4.0 cm. Bewehrungslage Bewehrung in y-Richtung d1,y = 6.0 cm. Ausgerundetes Biegemoment aus der Achse der Stütze. 20% Querbewehrung wurden berücksichtigt.

Mindestbewehrung zur Sicherstellung der Querkrafttragfähigkeit nach DIN EN 1992-1-1/NA, NCI zu 6.4.5

Mindestmomente $M_{y,min} = \eta_x * v_{Ed} * b_{eff,y} = 0.125 * 75.9 * 0.35 = 3.32$ kNm
Mindestbewehrung $A_{s,x,min}$ = = = 0.7 cm²
Mindestmomente $M_{x,min} = \eta_y * v_{Ed} * b_{eff,x} = 0.125 * 75.9 * 0.35 = 3.32$ kNm
Mindestbewehrung $A_{s,y,min}$ = = = 0.8 cm²

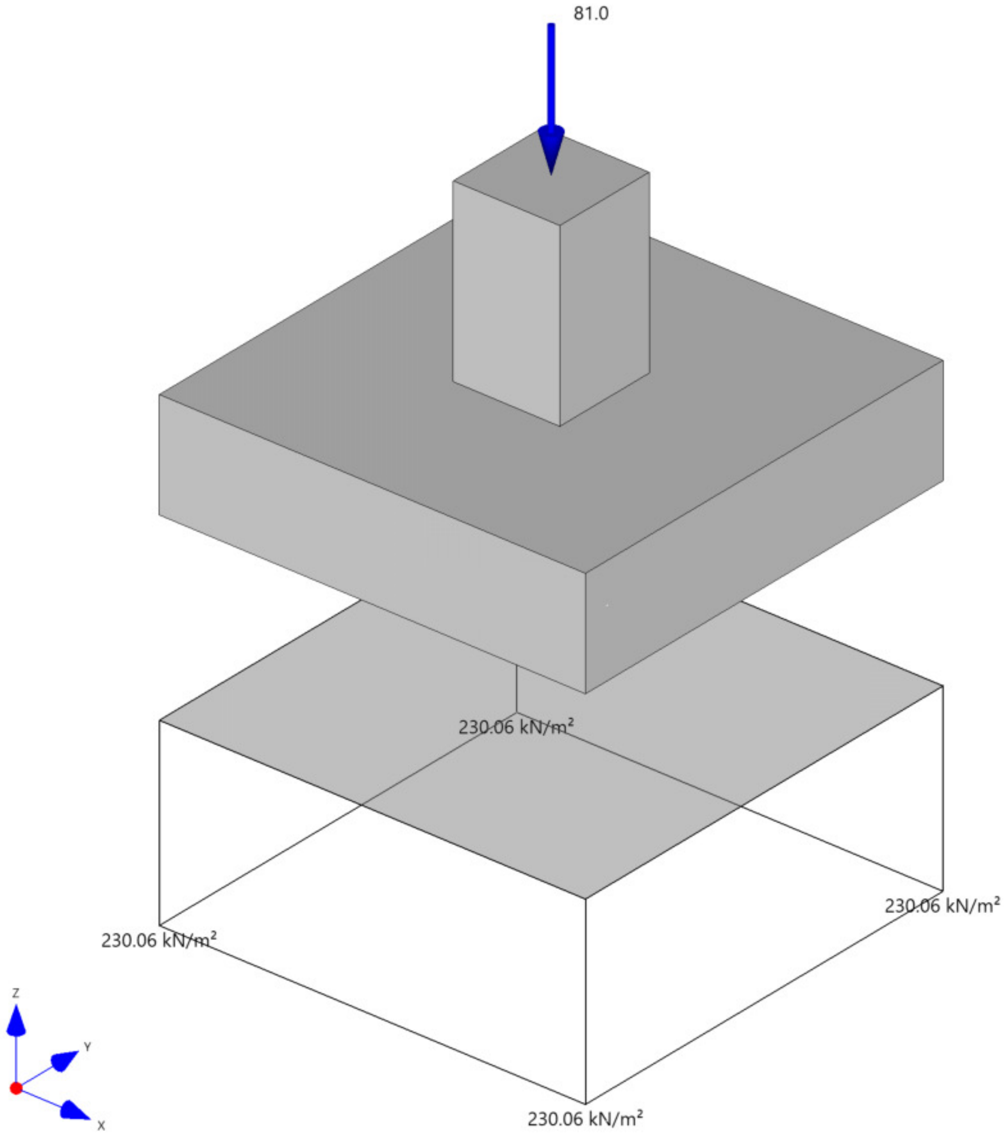
Ergebnislastfall Biegebemessung in x-Richtung

Maßstab 1 : 8.2



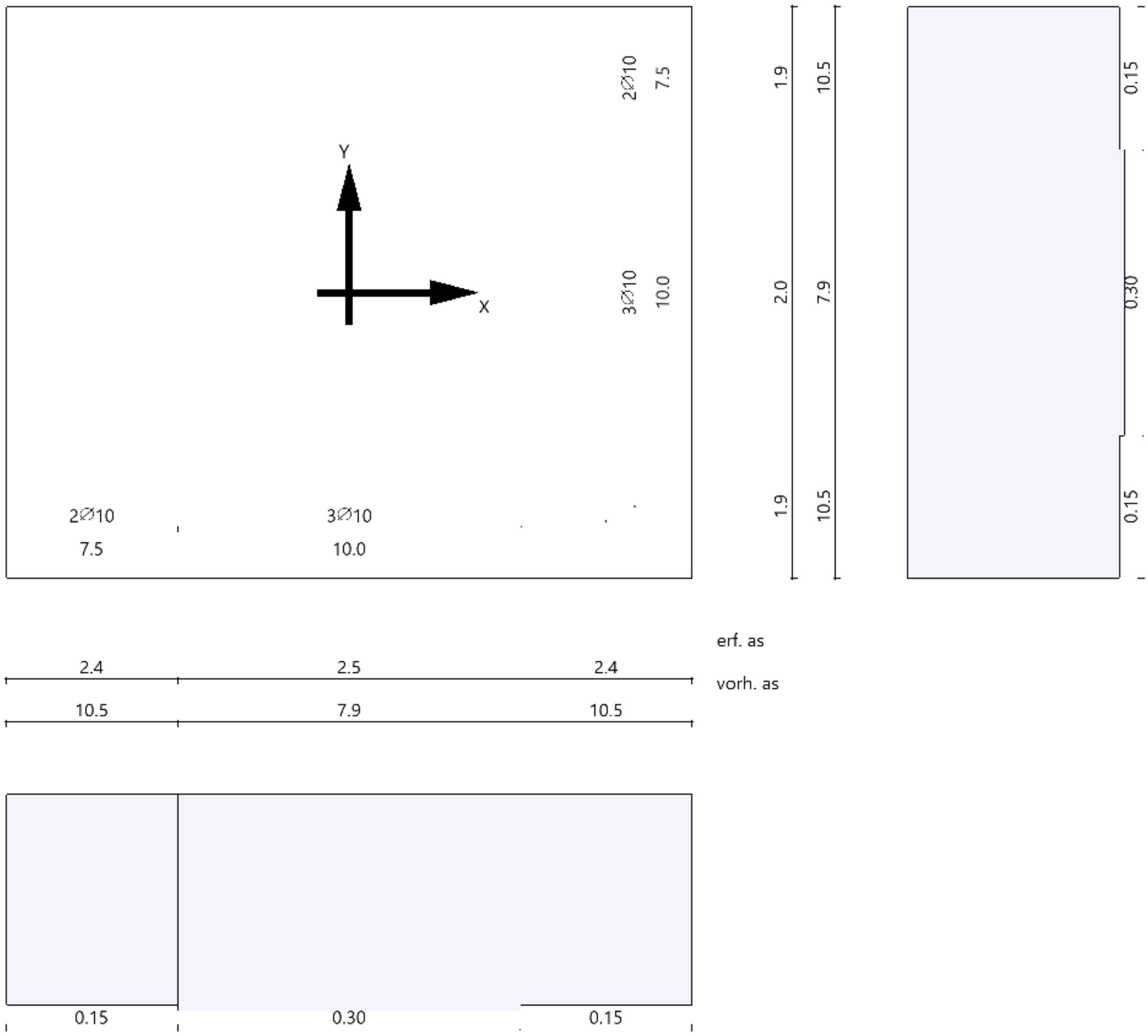
Ergebnislastfall Biegebemessung in y-Richtung

Maßstab 1 : 8.2



Bewehrungsverteilung unten in m, cm²/m

Maßstab 1 : 31.7



Es werden Spitzenwerte der Verteilung nach Heft 240 des Deutsches Ausschusses für Stahlbeton abgedeckt. Daher kann die hier erforderliche Bewehrung höher als die statisch erforderliche Bewehrung sein. Um die Querkrafttragfähigkeit sicherzustellen, ist das Fundament im Durchstanzbereich für Mindestmomente nach Gleichung (NA.6.54.1) bemessen worden, sofern die Schnittgrößenermittlung nicht zu höheren Werten geführt hat.

Durchstanzen

Durchstanznachweis Lastfall 1

Grenzzustand der Tragfähigkeit für Durchstanzen nach DIN EN 1992-1-1/NA/A1:2015-12
Berechungsgrundlagen:
Der Biegebewehrungsgrad ist als Mittelwert unter Berücksichtigung einer Plattenbreite entsprechend der Stützenabmessung zuzüglich 3d pro Seite berechnet. (6.4.4 (1))

plastische Schubspannungsverteilung / Innenstütze (automatisch ermittelt)

Bewehrungsgrad, vorhanden	ρ_{vorh} =	0.92	%	
Beiwert Rotationssymmetrie	β =	1.10		
Schubspannung	v_{Ed} =	0.50	N/mm²	mit β
Tragwiderstand ohne Durchstanzbewehrung	$v_{Rd,c}$ =	1.14	N/mm²	

Keine zusätzliche Stanzbewehrung erforderlich.

Pos.15.3: Foundation:

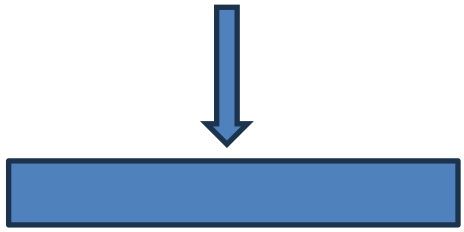
a= 0,7 m
b= 0,7 m

d= 0,15 m

Concrete C25/30 XC3 XF1

Concrete cover cnom= 35 mm

d



a=b

sigma= 150 kN/m²

Nd= 110 kN

reinforcement d= 10 mm
e= 150 mm

crosswise

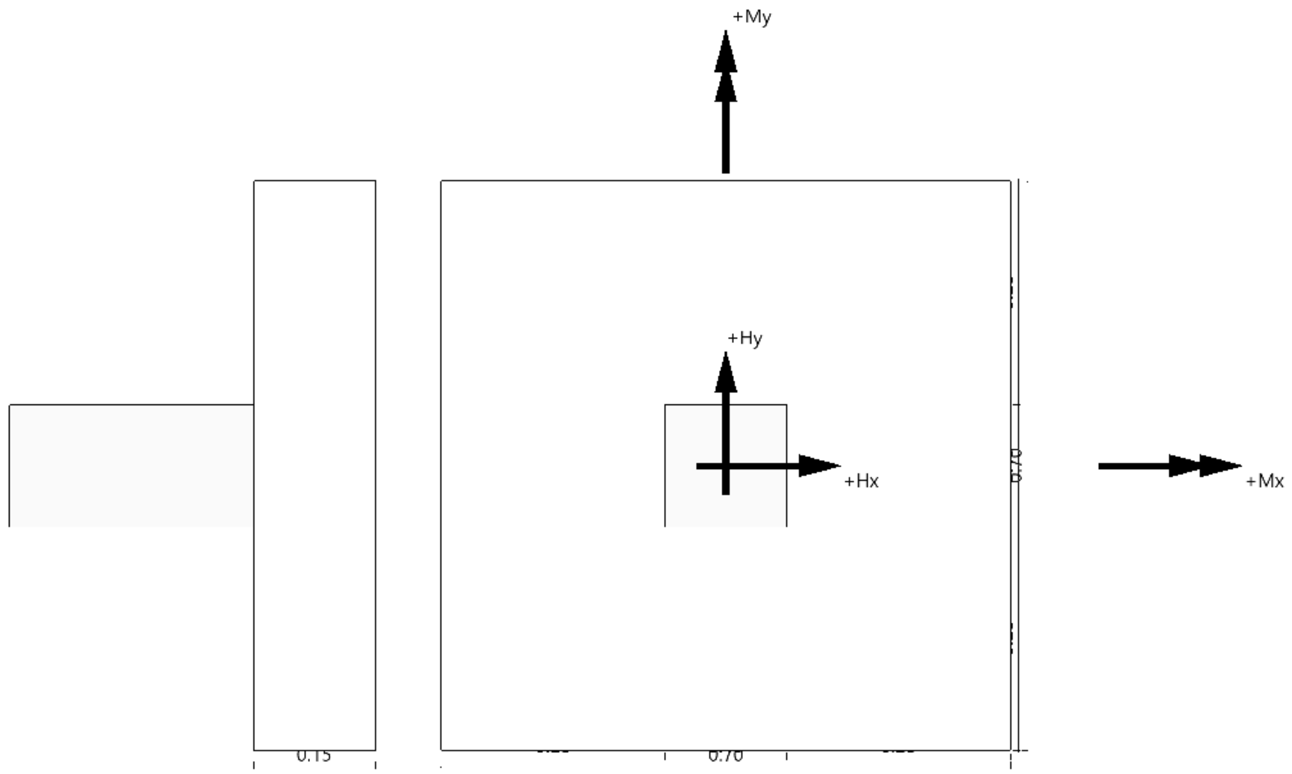
Position: gelati15-3

Fundament (x64) FD+ 01/2024 (FRILO R-2024-1/P01)

System

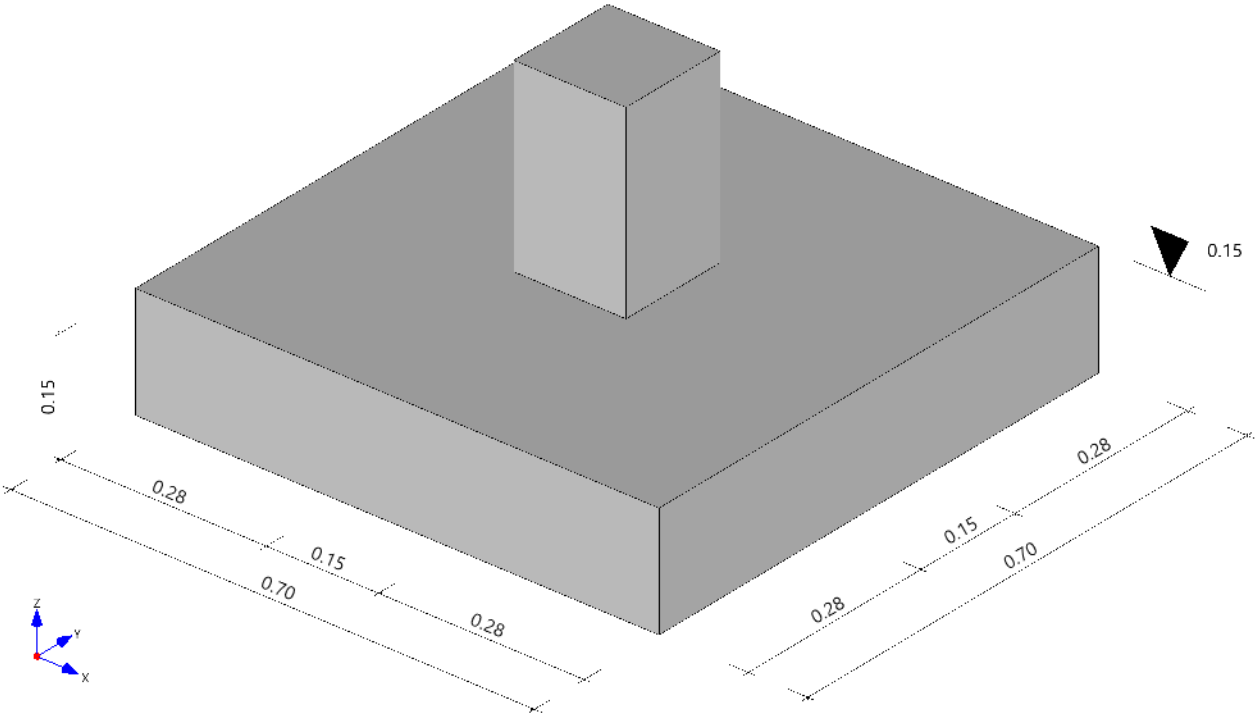
Draufsicht

Maßstab 1 : 9.4



Isometrie

Maßstab 1 : 7.7



Fundament nach DIN EN 1992-1-1/NA/A1:2015-12 und DIN EN 1997-1/NA:2010-12

Bauteil

Bauteil	Beton	Betonstahl	Breite (x) m	Breite (y) m	Höhe (z) m
Fundament Stütze	C 25/30 C 25/30	B500A B500A	0.70 0.15	0.70 0.15	0.15 0.00

Einbindetiefe des Fundamentes in den Baugrund 0.15 m. Ohne Grundwasser. Bemessungswert des Sohldruckwiderstands$\sigma_{R,}$ = 230.00 kN/m².

Lasten

Stützenlasten - Bemessungswerte

Nr	Bezeichnung	N kN	M_{xI} kNm	M_{xII} kNm	M_{yI} kNm	M_{yII} kNm	H_{xI} kN	H_{xII} kN	H_{yI} kN	H_{yII} kN	Red $_N$ [1]	Red $_{MH}$ [1]	BS [2]	GZ
1	Lastfall 1	110.0	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	1.40	1.40	BSP	STR

1 : Reduktionsfaktoren N für vertikale Lasten und MH für Momente und horizontale Lasten, verwendet für das Erzeugen fehlender Grenzzustände.
2 : BS: Bemessungssituation P: ständig A: außergewöhnlich E: Erdbeben T: vorübergehend

Sollte für einen Nachweis ein Lastfall nicht im erforderlichen Grenzzustand vorliegen, so wird ein Lastfall mit gleicher Bezeichnung und gefordertem Grenzzustand verwendet. Liegt kein korrespondierender Lastfall vor, so wird unter Verwendung der Reduktionsfaktoren ein Lastfall erzeugt. Eigengewicht ist bei den Nachweisen berücksichtigt. Wichte Beton : γ = 25.00 kN/m³. Gesamtfundament ohne Sockel bzw. Stütze 0.074 m³ / 1.84 kN. Torsion aus Horizontallasten wird nicht berücksichtigt.

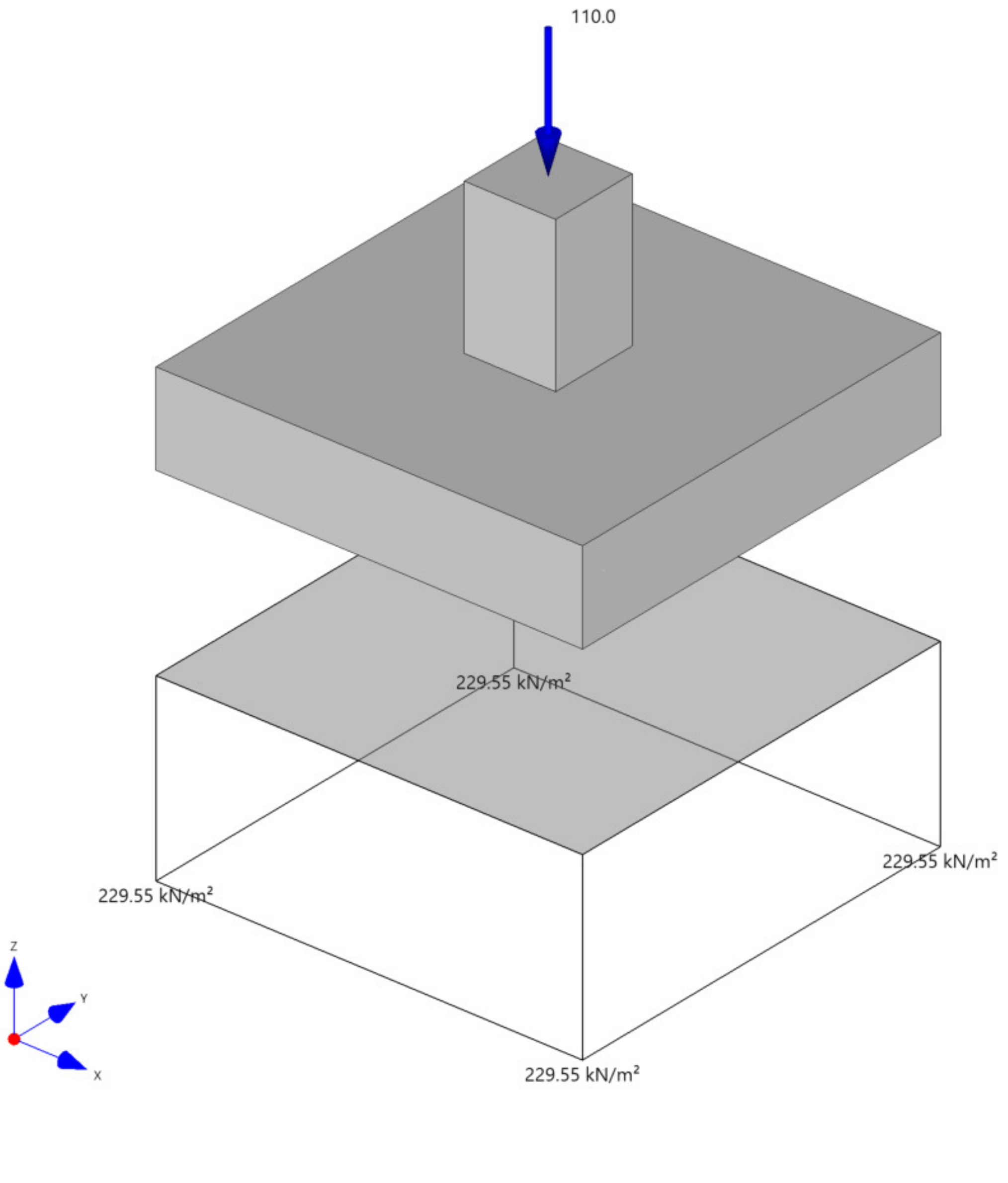
charakteristische Schnittgrößen in der Sohlfuge

LF Nr	Bezeichnung	V kN	ex m	My kNm	ey m	Mx kNm	Hx kN	Hy kN
1	Th.1.O.	80.4	0.00	0.00	0.00	0.00	0.0	0.0
1	Th.2.O.	80.4	0.00	0.00	0.00	0.00	0.0	0.0

Lastfallgrafiken

Lastfall 1 -

Maßstab 1 : 9.5



Ergebnisse

Übersicht Nachweise

Nachweis	Lastfall I	η I	Lastfall II	η II
klaffende Fuge nur ständige Lasten SLS charakteristisch	0 [1]	0.00	0 [1]	0.00
klaffende Fuge ständige und veränderliche Lasten SLS charakteristisch	1 [2]	0.00	1 [2]	0.00
Lagesicherheit	1 [2]	0.00	1 [2]	0.00
Vereinfachter Nachweis ULS	1 [2]	1.00		

1 : Es sind keine maßgebenden Ergebnisse vorhanden.
2 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.

Übersicht Bewehrung

Art	Lastfall	cm²
Biegung $As_{x,u}$ Biegung $As_{y,u}$	1[1] 1[1]	1.6 1.9
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.		

Bemessungswert des Sohldruckwiderstands $\sigma_{R,d}$ = 230.00 kN/m²

σ_{Rd} = 230.00 kN/m². Der Bemessungswert des Sohldruckwiderstands ist direkt vorgegeben worden.

Vereinfachter Nachweis Ergebnislastfall

Nr	GZ	BS	N_d kN	R_0 kN	a' m	b' m	σ_d kN/m²	σ_{Rd} kN/m²	η
1_I	GEO	P	112.5	0.0	0.70	0.70	229.55	230.00	1.00

Der Sohldruck ist mit Sicherheitsbeiwerten behaftet.

Biegung

Bemessung Ergebnislastfälle

LF	$M_{yu,Ed}$ kNm	$M_{xu,Ed}$ kNm	$M_{yo,Ed}$ kNm	$M_{xo,Ed}$ kNm	$A_{s,xu}$ cm²	$A_{s,yu}$ cm²	$A_{s,xo}$ cm²	$A_{s,yo}$ cm²
1 [1]	**7.56**	7.56	0.00	0.00	**1.6**	1.9	0.0	0.0
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.								

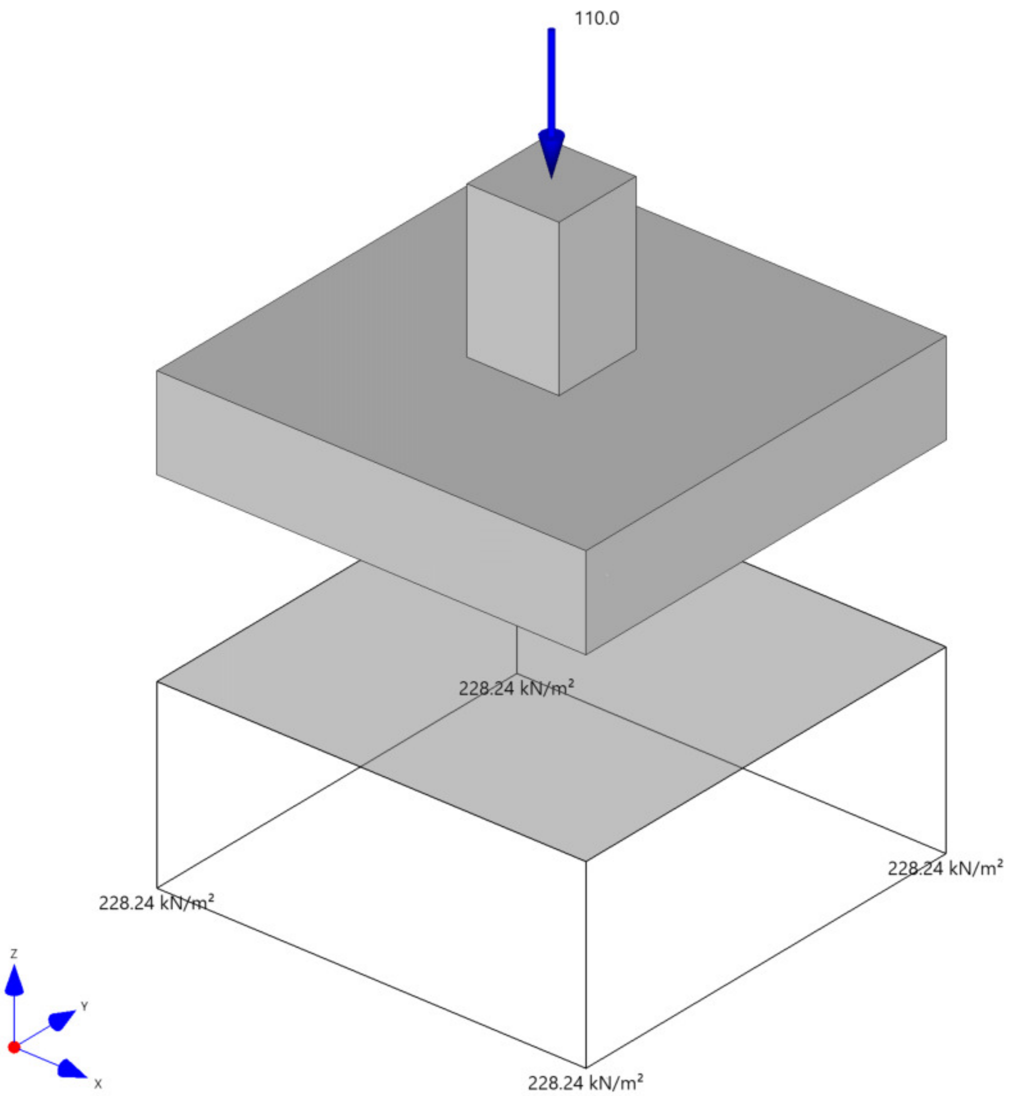
Bewehrungslage Bewehrung in x-Richtung d1,x = 4.0 cm. Bewehrungslage Bewehrung in y-Richtung d1,y = 6.0 cm. Ausgerundetes Biegemoment aus der Achse der Stütze. 20% Querbewehrung wurden berücksichtigt.

Mindestbewehrung zur Sicherstellung der Querkrafttragfähigkeit nach DIN EN 1992-1-1/NA, NCI zu 6.4.5

Mindestmomente	$M_{y,min}$ =	$\eta_x * v_{Ed} * b_{eff,y}$	=	0.125 * 104.9 * 0.39	=	5.12 kNm
Mindestbewehrung	$A_{s,x,min}$ =		=		=	1.1 cm²
Mindestmomente	$M_{x,min}$ =	$\eta_y * v_{Ed} * b_{eff,x}$	=	0.125 * 104.9 * 0.39	=	5.12 kNm
Mindestbewehrung	$A_{s,y,min}$ =		=		=	1.3 cm²

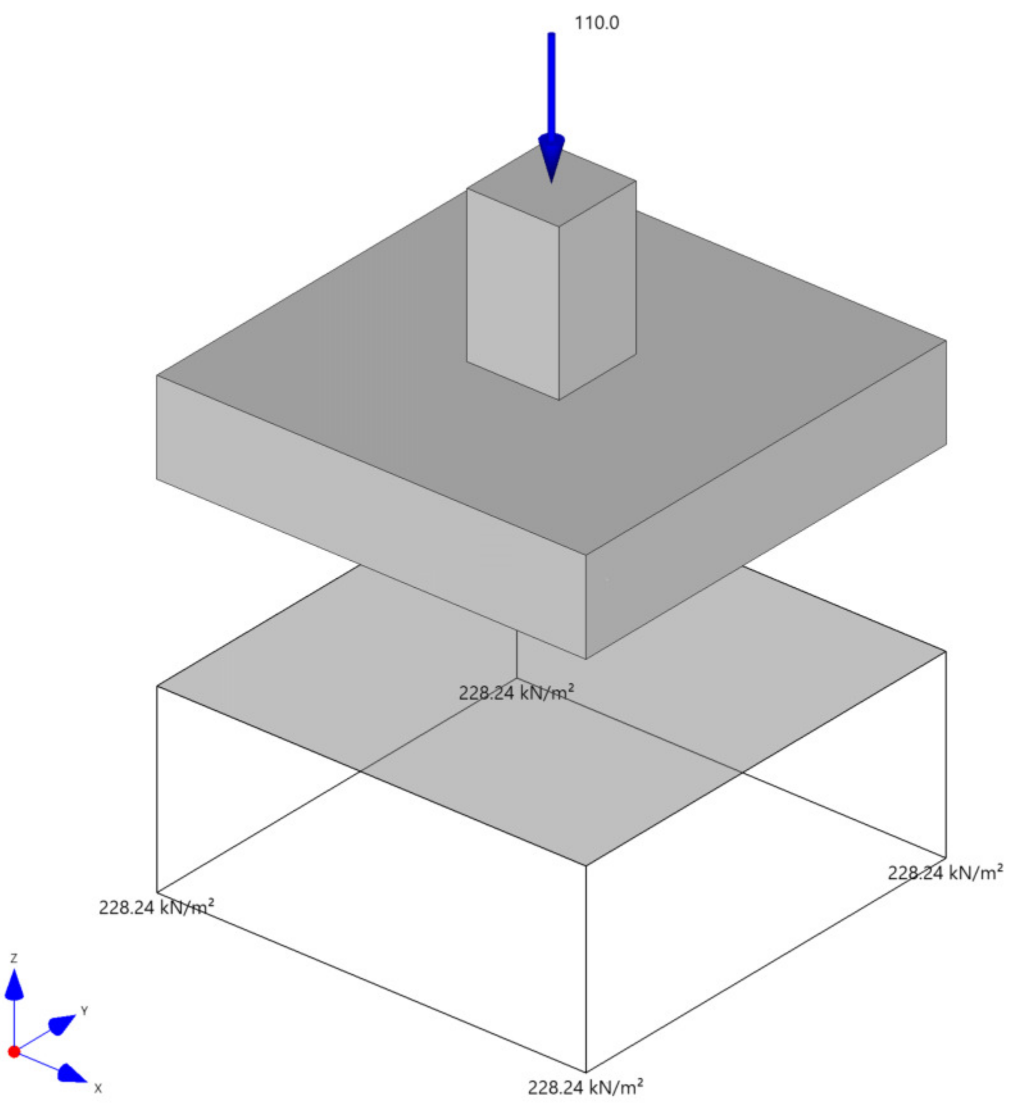
Ergebnislastfall Biegebemessung in x-Richtung

Maßstab 1 : 9.5



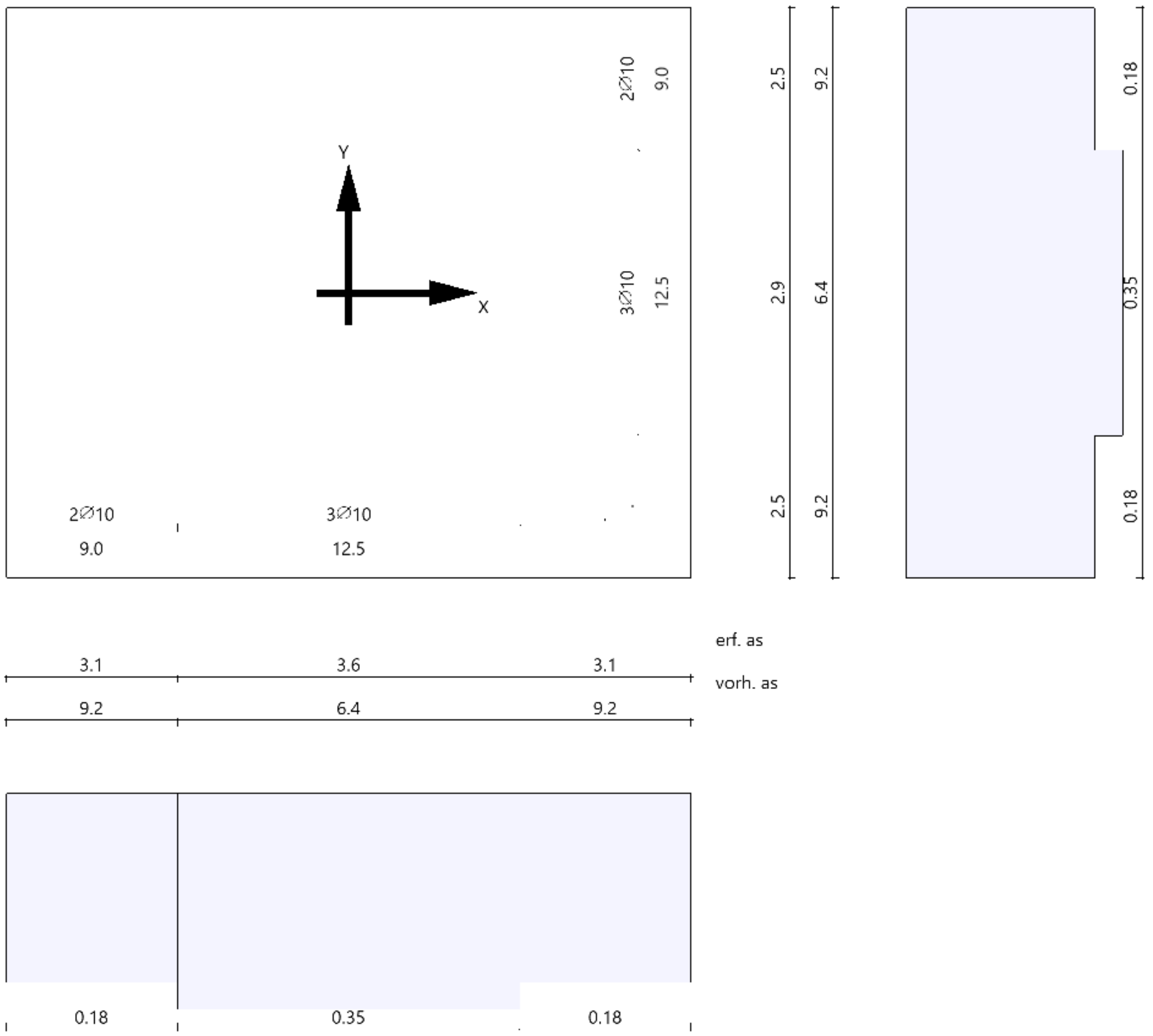
Ergebnislastfall Biegebemessung in y-Richtung

Maßstab 1 : 9.5



Bewehrungsverteilung unten in m, cm²/m

Maßstab 1 : 31.7



Es werden Spitzenwerte der Verteilung nach Heft 240 des Deutsches Ausschusses für Stahlbeton abgedeckt. Daher kann die hier erforderliche Bewehrung höher als die statisch erforderliche Bewehrung sein. Um die Querkrafttragfähigkeit sicherzustellen, ist das Fundament im Durchstanzbereich für Mindestmomente nach Gleichung (NA.6.54.1) bemessen worden, sofern die Schnittgrößenermittlung nicht zu höheren Werten geführt hat.

Durchstanzen

Durchstanznachweis Lastfall 1

Grenzzustand der Tragfähigkeit für Durchstanzen nach DIN EN 1992-1-1/NA/A1:2015-12
Berechungsgrundlagen:
Der Biegebewehrungsgrad ist als Mittelwert unter Berücksichtigung einer Plattenbreite entsprechend der Stützenabmessung zuzüglich 3d pro Seite berechnet. (6.4.4 (1))

plastische Schubspannungsverteilung / Innenstütze (automatisch ermittelt)

Bewehrungsgrad, vorhanden	ρ_{vorh} =	0.78	%	
Beiwert Rotationssymmetrie	β =	1.10		
Schubspannung	v_{Ed} =	0.64	N/mm²	mit β
Tragwiderstand ohne Durchstanzbewehrung	$v_{Rd,c}$ =	0.90	N/mm²	

Keine zusätzliche Stanzbewehrung erforderlich.

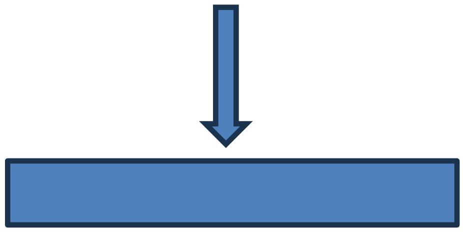
Pos.15.4: Foundation: a= 0,75 m
b= 0,75 m

d= 0,15 m

Concrete C25/30 XC3 XF1

Concrete cover cnom= 35 mm

d



a=b

sigma= 150 kN/m²

Nd= 127 kN

reinforcement d= 10 mm
e= 150 mm

crosswise

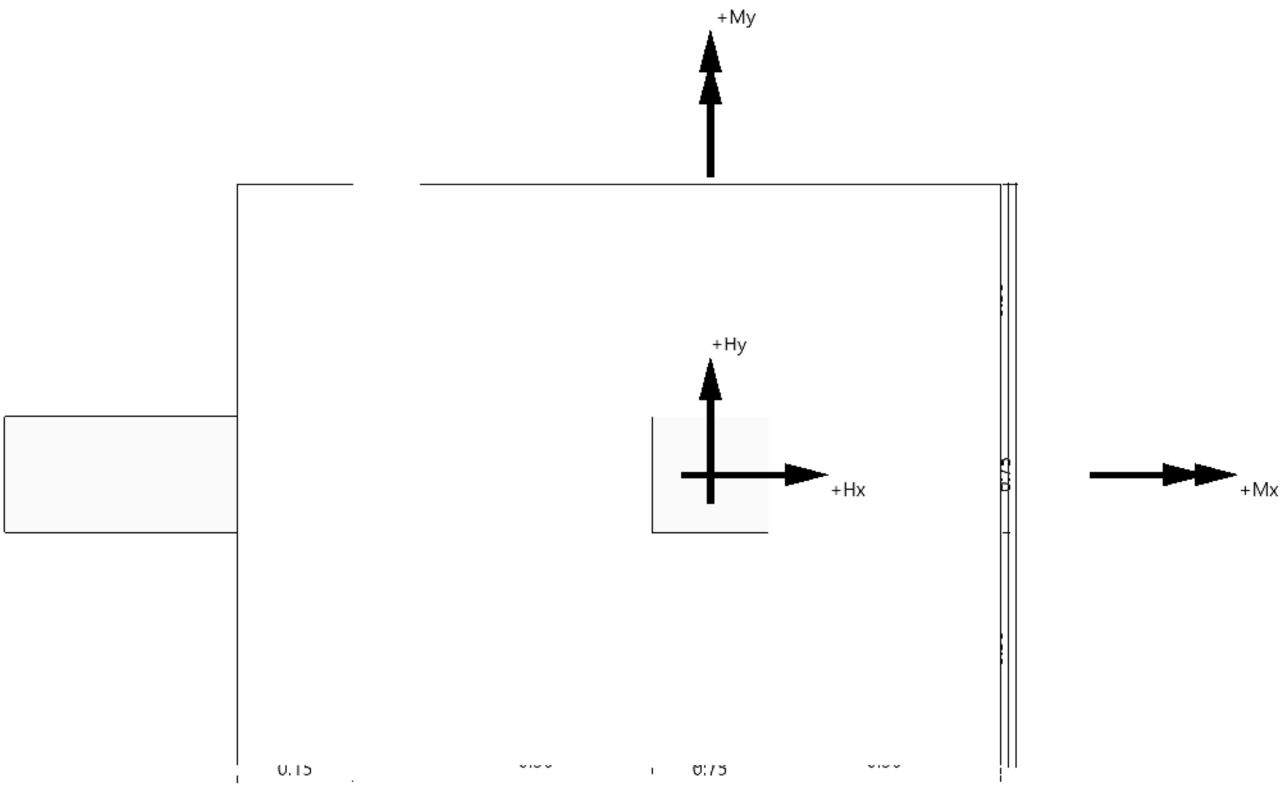
Position: gelati15-4

Fundament (x64) FD+ 01/2024 (FRILO R-2024-1/P01)

System

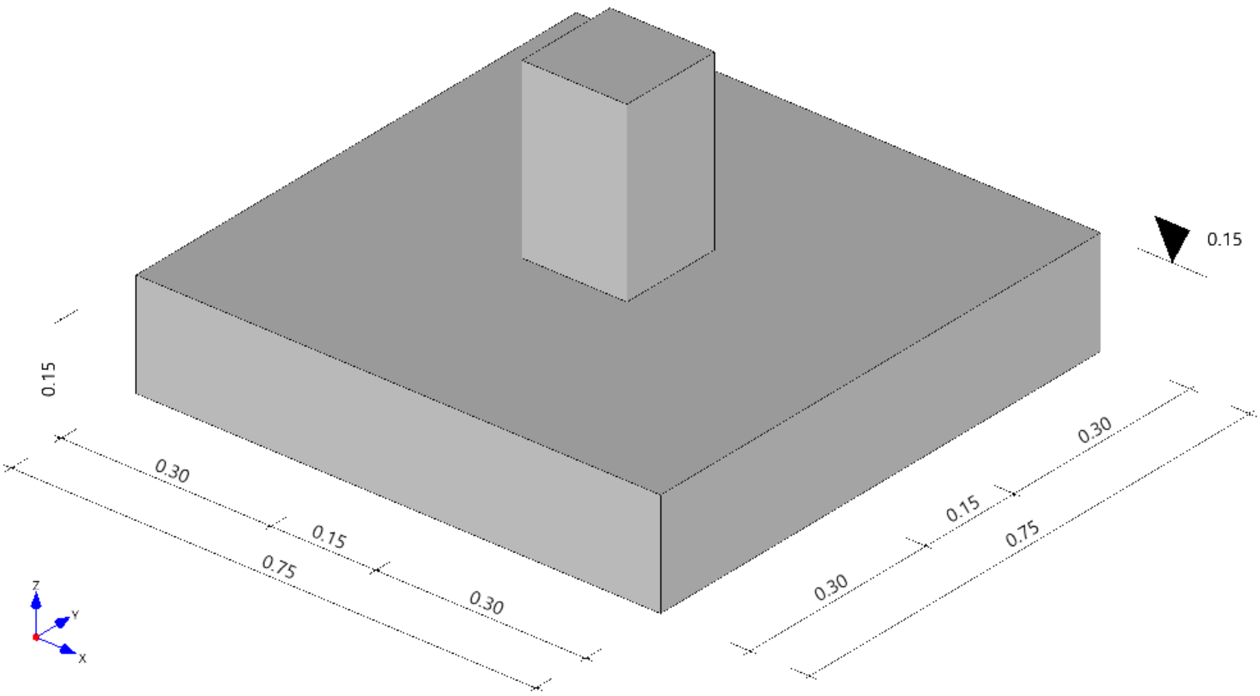
Draufsicht

Maßstab 1 : 9.9



Isometrie

Maßstab 1 : 8.3



Fundament nach DIN EN 1992-1-1/NA/A1:2015-12 und DIN EN 1997-1/NA:2010-12

Bauteil

Bauteil	Beton	Betonstahl	Breite (x) m	Breite (y) m	Höhe (z) m
Fundament Stütze	C 25/30 C 25/30	B500A B500A	0.75 0.15	0.75 0.15	0.15 0.00

Einbindetiefe des Fundamentes in den Baugrund 0.15 m. Ohne Grundwasser. Bemessungswert des Sohldruckwiderstands $\sigma_{R,}$ = 230.00 kN/m².

Lasten

Stützenlasten - Bemessungswerte

Nr	Bezeichnung	N kN	M_{xI} kNm	M_{xII} kNm	M_{yI} kNm	M_{yII} kNm	H_{xI} kN	H_{xII} kN	H_{yI} kN	H_{yII} kN	Red N[1]	Red MH[1]	BS [2]	GZ
1	Lastfall 1	127.0	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	1.40	1.40	BSP	STR

1 : Reduktionsfaktoren N für vertikale Lasten und MH für Momente und horizontale Lasten, verwendet für das Erzeugen fehlender Grenzzustände.
2 : BS: Bemessungssituation P: ständig A: außergewöhnlich E: Erdbeben T: vorübergehend

Sollte für einen Nachweis ein Lastfall nicht im erforderlichen Grenzzustand vorliegen, so wird ein Lastfall mit gleicher Bezeichnung und gefordertem Grenzzustand verwendet. Liegt kein korrespondierender Lastfall vor, so wird unter Verwendung der Reduktionsfaktoren ein Lastfall erzeugt. Eigengewicht ist bei den Nachweisen berücksichtigt. Wichte Beton : γ = 25.00 kN/m³. Gesamtfundament ohne Sockel bzw. Stütze 0.084 m³ / 2.11 kN. Torsion aus Horizontallasten wird nicht berücksichtigt.

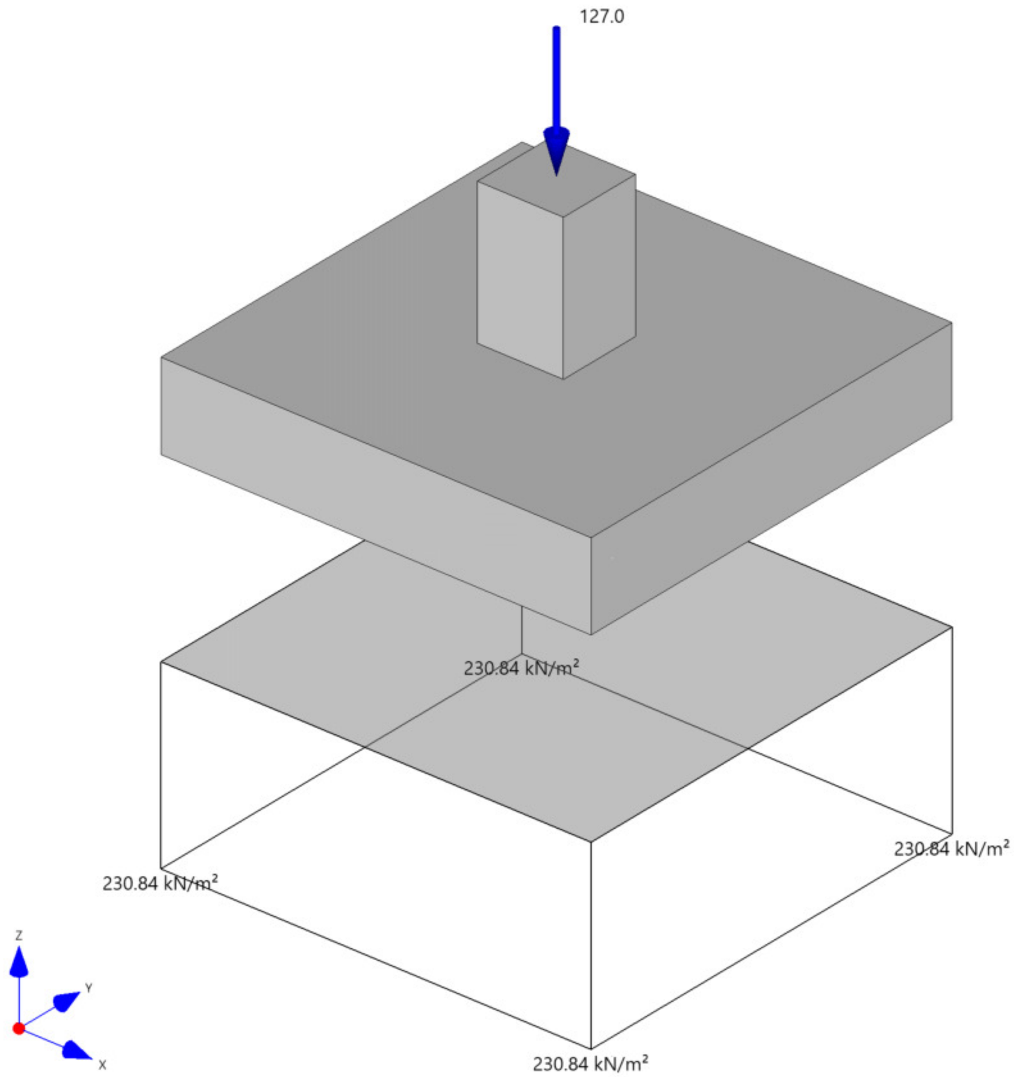
charakteristische Schnittgrößen in der Sohlfuge

LF Nr	Bezeichnung	V kN	ex m	My kNm	ey m	Mx kNm	Hx kN	Hy kN
1	Th.1.O.	92.8	0.00	0.00	0.00	0.00	0.0	0.0
1	Th.2.O.	92.8	0.00	0.00	0.00	0.00	0.0	0.0

Lastfallgrafiken

Lastfall 1 -

Maßstab 1 : 10.1



Ergebnisse

Übersicht Nachweise

Nachweis	Lastfall I	η I	Lastfall II	η II
klaffende Fuge nur ständige Lasten SLS charakteristisch	0 [1]	0.00	0 [1]	0.00
klaffende Fuge ständige und veränderliche Lasten SLS charakteristisch	1 [2]	0.00	1 [2]	0.00
Lagesicherheit	1 [2]	0.00	1 [2]	0.00
Vereinfachter Nachweis ULS	1 [2]	1.00		

1 : Es sind keine maßgebenden Ergebnisse vorhanden.
2 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.

Übersicht Bewehrung

Art	Lastfall	cm²
Biegung $As_{x,u}$ Biegung $As_{y,u}$	1[1] 1[1]	2.0 2.5
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.		

Bemessungswert des Sohldruckwiderstands $\sigma_{R,d}$ = 230.00 kN/m²

σ_{Rd} = 230.00 kN/m². Der Bemessungswert des Sohldruckwiderstands ist direkt vorgegeben worden.

Vereinfachter Nachweis Ergebnislastfall

Nr	GZ	BS	N_d kN	R_0 kN	a' m	b' m	σ_d kN/m²	σ_{Rd} kN/m²	η
1_I	GEO	P	129.8	0.0	0.75	0.75	230.84	230.00	1.00

Der Sohldruck ist mit Sicherheitsbeiwerten behaftet.

Biegung

Bemessung Ergebnislastfälle

LF	$M_{yu,Ed}$ kNm	$M_{xu,Ed}$ kNm	$M_{yo,Ed}$ kNm	$M_{xo,Ed}$ kNm	$A_{s,xu}$ cm²	$A_{s,yu}$ cm²	$A_{s,xo}$ cm²	$A_{s,yo}$ cm²
1 [1]	**9.53**	9.53	0.00	0.00	**2.0**	2.5	0.0	0.0
1 : Bzw. korrespondierender Lastfall mit gleicher Bezeichung.								

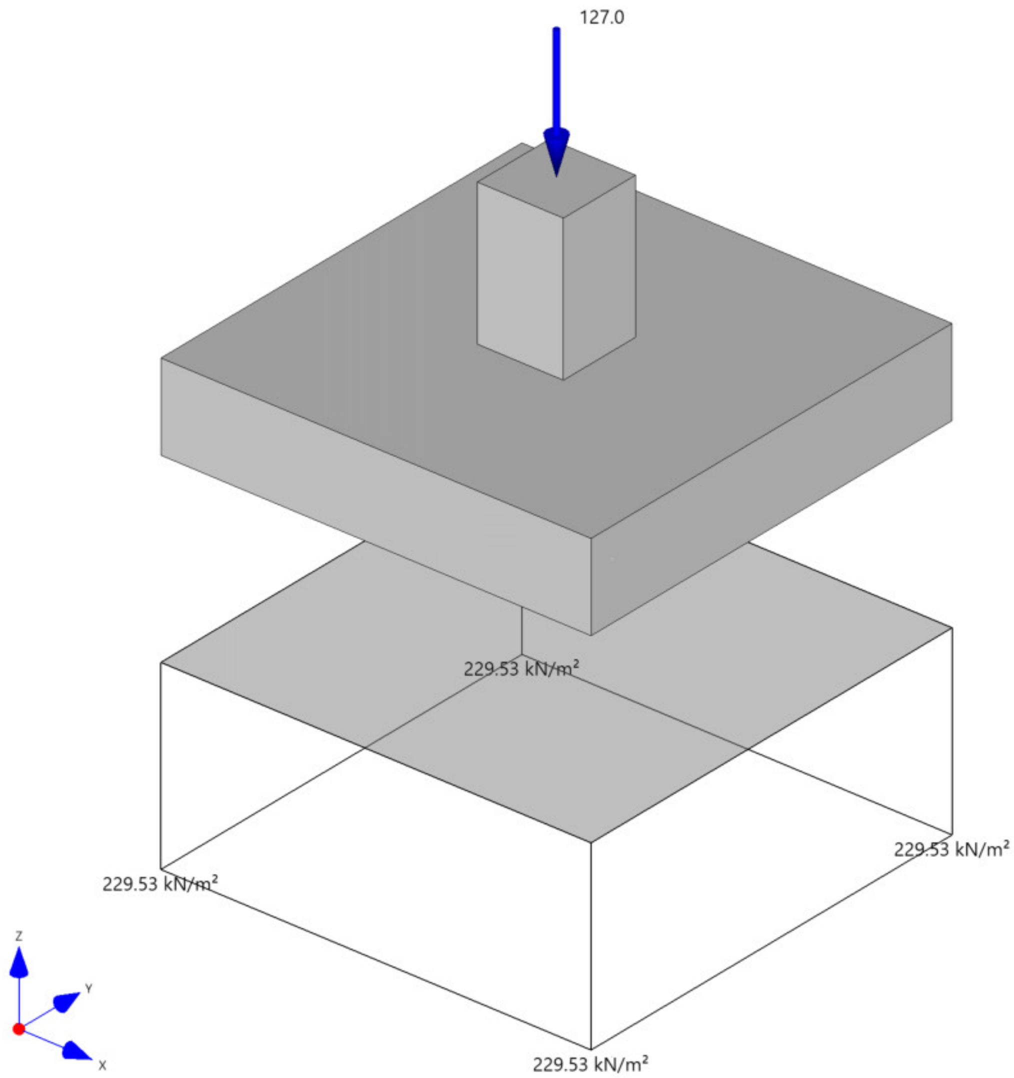
Bewehrungslage Bewehrung in x-Richtung d1,x = 4.0 cm. Bewehrungslage Bewehrung in y-Richtung d1,y = 6.0 cm. Ausgerundetes Biegemoment aus der Achse der Stütze. 20% Querbewehrung wurden berücksichtigt.

Mindestbewehrung zur Sicherstellung der Querkrafttragfähigkeit nach DIN EN 1992-1-1/NA, NCI zu 6.4.5

Mindestmomente	$M_{y,min}$ =	$\eta_x * v_{Ed} * b_{eff,y}$	= 0.125 * 121.9 * 0.40	= 6.10	kNm
Mindestbewehrung	$A_{s,x,min}$ =		=	= 1.3	cm²
Mindestmomente	$M_{x,min}$ =	$\eta_y * v_{Ed} * b_{eff,x}$	= 0.125 * 121.9 * 0.40	= 6.10	kNm
Mindestbewehrung	$A_{s,y,min}$ =		=	= 1.6	cm²

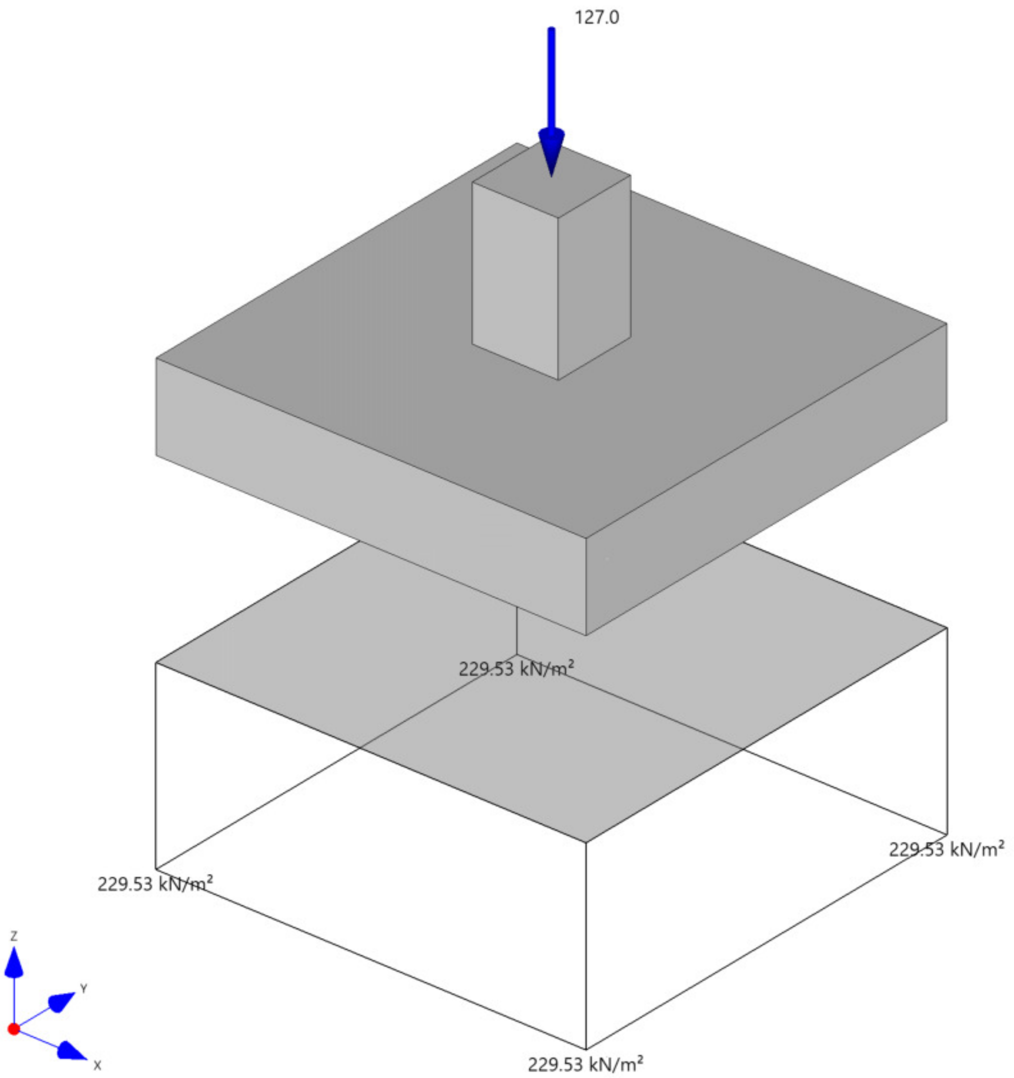
Ergebnislastfall Biegebemessung in x-Richtung

Maßstab 1 : 10.1



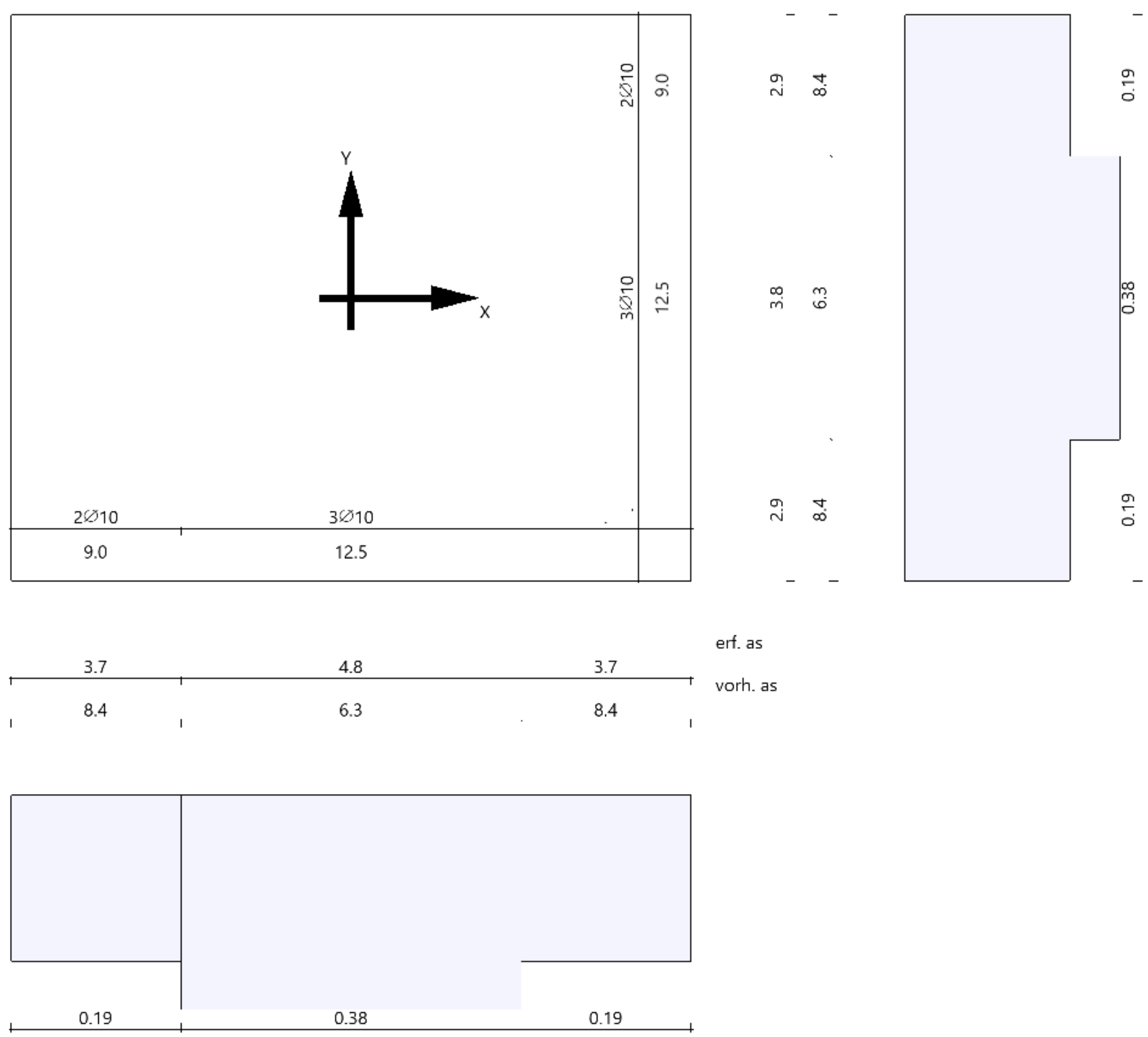
Ergebnislastfall Biegebemessung in y-Richtung

Maßstab 1 : 10.1



Bewehrungsverteilung unten in m, cm²/m

Maßstab 1 : 31.7



Es werden Spitzenwerte der Verteilung nach Heft 240 des Deutsches Ausschusses für Stahlbeton abgedeckt. Daher kann die hier erforderliche Bewehrung höher als die statisch erforderliche Bewehrung sein. Um die Querkrafttragfähigkeit sicherzustellen, ist das Fundament im Durchstanzbereich für Mindestmomente nach Gleichung (NA.6.54.1) bemessen worden, sofern die Schnittgrößenermittlung nicht zu höheren Werten geführt hat.

Durchstanzen

Durchstanznachweis Lastfall 1

Grenzzustand der Tragfähigkeit für Durchstanzen nach DIN EN 1992-1-1/NA/A1:2015-12
Berechungsgrundlagen:
Der Biegebewehrungsgrad ist als Mittelwert unter Berücksichtigung einer Plattenbreite entsprechend der Stützenabmessung zuzüglich 3d pro Seite berechnet. (6.4.4 (1))

plastische Schubspannungsverteilung / Innenstütze (automatisch ermittelt)

Bewehrungsgrad, vorhanden	ρ_{vorh}	=	0.74 %	
Beiwert Rotationssymmetrie	β	=	1.10	
Schubspannung	v_{Ed}	=	0.75 N/mm²	mit β
Tragwiderstand ohne Durchstanzbewehrung	$v_{Rd,c}$	=	0.85 N/mm²	

Keine zusätzliche Stanzbewehrung erforderlich.

Structural Calculation

Project:	Monastery of Gelati: Temporary Roof
Scaffolding system:	Layher Allround + Layher Keder Roof XL + Layher FW System + Steel Beams
Principal:	Locum Tenens of the Partriarchal Throne of Georgia
Structural Engineer:	Dipl.-Ing. Volker Knobloch Andersenstr. 16 D-74078 Heilbronn Germany

Structural calculation, chapters 1 - 13

Attachments: Drawings 1 - 6

Heilbronn, 22. September 2023

Signature: ____________________

Monastery of Gelati - Temporary Roof

Due to restauration work at the monastry a roof is needed.

The construction is build with parts of the scaffolding system Layher Allround, Layher Keder Roof XL, Layher Allround FW System, Layher Twixx Beam, Layher Heavy duty towers and steel beams.

Local wind wind loads and earthquake will be considered. Because the structure is tempoarily and will be checked every year the wind loads will be reduced by 30% according to EC 1991-1-4, EC12811-1 and EC 13658.

The main purpose of the scaffold construction is to protect the building.
It can be used partially to examine the building and for light work in some areas during the summer time.

The following statical calculation will show the proof of stability.

Principles

EC 12811- 1	Tempory works equipment Teil 1: Scaffolds
EC 1991 - 1	Eurocode 1 - Action on structures
EC 1993 - 1	Design of steel structures - Eurocode 3
EC 16508	Tempory works equipment Encapsulation constructions
General construction approvals	Layher Allround Gerüst Zulassungsnr. Z - 8.22 - 64
	Zulassungsnr. Z - 8.22 - 939 Zulassungsnr. Z - 8.22 - 949
Tech. Documentation	Layher Allround scaffolding Layher Roof XL, Layher Flex Beam

Pos.1: Summary of loads

1. Dead load

According to Documents Layher and technical drawings

2. Snow

s,k= 0,25 kN/m²

The snow on the roof has to be removed, when the height of the snow exceeds 10cm

3. Windload

Kutaisi, Georgie

25,9 m/s

q= 0,4193 kN/m²

Windzone 3

qb,o=	0,47	kN/m²	qb,o=	0,47	kN/m²
z=	10	m	z=	20	m
qp=	0,80	kN/m²	qp=	1,03	kN/m²
qb,o=	0,47	kN/m²	qb,o=	0,47	kN/m²
z=	25	m	z=	30	m
qp=	1,12	kN/m²	qp=	1,200	kN/m²
qb,o=	0,47	kN/m²			
z=	35	m			
qp=	1,27	kN/m²			

The whole construction is temporarily. The Construction has to be checked every year. Therefore the wind can be reduced according to EN 12811-1, EN 16508 and EN 1991-1-4, NA Germany

4. Wind load - scaffold in operation

wind pressure	qp=	0,2 kN/m²

5. Earth quake

Eccording to Eurocode

Location Kutaisi

reference peak ground accel.	a,gr=	0,14 g		
building category	Kategorie	II		
Importance factor	gamma I=			1
design ground accel.	ag=	a,gr * 9,81=	1,3734	m/^2

Ground Typ R

Horizontal elastic response spectrum

Ground Typ	S	TB(s)	TC(s)	TD(s)
B - R	1,25	0,05	0,25	2

T,A < T < T,B Se(T)= ag * gamma,I * S * (1 + T/TB * (eta * beta,a - 1))

T,B < T < T,C Se(T)= ag * gamma,I S * eta * beta,a

T,c < T < T,D Se(T)= ag * gamma,I * S * eta * beta,a * (TC/T)

T,d < T Se(T)= ag * gamma,I* S * eta * beta,a * (TC*TD/T^2)

Mit			
	Se(T)	Ordinate elatic response spectrum	
	T	Oscillation time of linear single-mass oscillators	
	ag	design ground accel.	
	gamma,I	Importance factor	
	beta,a	**2,5**	Enhancement coefficient
	eta=	**1**	Damping correction coefficient

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Design spectrum

Sd(T) = Se(T) / q

T,A < T < T,B	Sd(T)=	ag *gamma,I * S * (1 + T/TB * (2,5/q - 1/3))
T,B < T < T,C	Sd(T)=	ag * gamma,I * S * 2,5/ q
T,c < T < T,D	Sd(T)=	ag * gamma,I * S * 2,5 / q * (TC/T)
T,d < T	Sd(T)=	ag * gamma, I *S * 2,5 / q * (TC*TD/T^2)

Behaviour factor q= 1 (Verhaltensbeiwert)

Calculation of T1 H= 18 m

T1 = Ct * H ^(0,75)

Ct= 0,085 Ct = 0,085 Steel frame
H= 18 m Ct = 0,075 concrete frame
Ct = 0,005 others

T1= 0,7428 s

Seismic load:

Fb= Sd(t1) * m * lamda **T,C < T1 < T,D**

0,25 < T1 < 2,0: Sd(T)= ag * gamma,I * S * 2,5 / q * (TC/T)
1,44 m/s²

lamda= 1

Mass of scaffolding M= 1000 kg

Fb= Sd(T1) * M * lamda= 1,4 kN
Fb= 0,0014 * M M in [kg]

For each calculation of parts of the scaffold, the equation mentioned above will be used.

Calculation of T1 H= 20 m

T1 = Ct * H ^(0,75)

Ct= 0,085 Ct = 0,085 Steel frame
H= 20 m Ct = 0,075 concrete frame
Ct = 0,005 others

T1= 0,8039 s

Seismic load:

Fb= Sd(t1) * m * lamda **T,C < T1 < T,D**

0,25 < T1 < 2,0: Sd(T)= ag * gamma,I * S * 2,5 / q * (TC/T)
1,33 m/s²

lamda= 1

Mass of scaffolding M= 1000 kg

Fb= Sd(T1) * M * lamda= 1,33 kN
Fb= 0,0013 * M M in [kg]

For each calculation of parts of the scaffold, the equation mentioned above will be used.

Calculation of T1 H= 25 m

T1 = Ct * H ^(0,75)

Ct= 0,085 Ct = 0,085 Steel frame
H= 25 m Ct = 0,075 concrete frame
Ct = 0,005 others

T1= 0,9503 s

Seismic load:

Fb= Sd(t1) * m * lamda **T,C < T1 < T,D**

0,25 < T1 < 2,0: Sd(T)= ag * gamma,I * S * 2,5 / q * (TC/T)
1,13 m/s²

lamda= 1

Mass of scaffolding M= 1000 kg

Fb= Sd(T1) * M * lamda= 1,13 kN
Fb= 0,0011 * M M in [kg]

For each calculation of parts of the scaffold, the equation mentioned above will be used.

Calculation of T1 H= 30 m

T1 = Ct * H ^(0,75)

Ct= 0,085 Ct = 0,085 Steel frame
H= 30 m Ct = 0,075 concrete frame
Ct = 0,005 others

T1= 1,0896 s

Seismic load:

Fb= Sd(t1) * m * lamda **T,C < T1 < T,D**

0,25 < T1 < 2,0: Sd(T)= ag * gamma,I * S * 2,5 / q * (TC/T)
0,98 m/s²

lamda= 1

Mass of scaffolding M= 1000 kg

Fb= Sd(T1) * M * lamda= 0,98 kN
Fb= 0,001 * M M in [kg]

For each calculation of parts of the scaffold, the equation mentioned above will be used.