

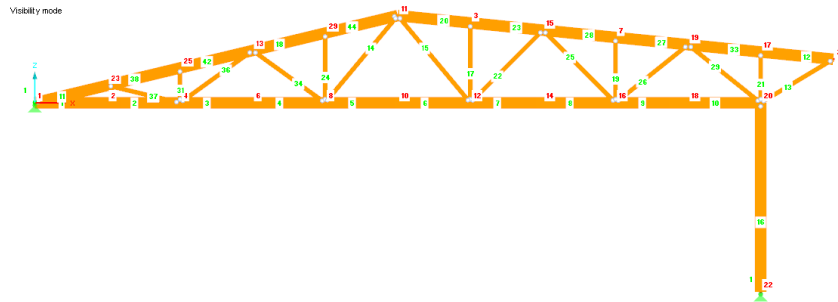


4. STATIČKI PRORAČUN GLAVNOG NOSAČA

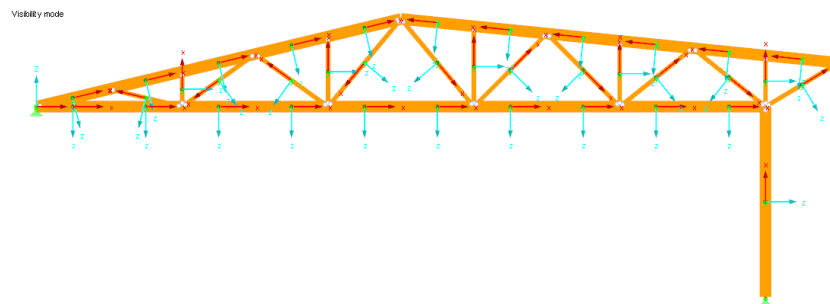
4.1. KARAKTERISTIKE RAČUNALNOG MODELA

4.1.1. Struktura glavnog nosivog sustava u računalnom modelu

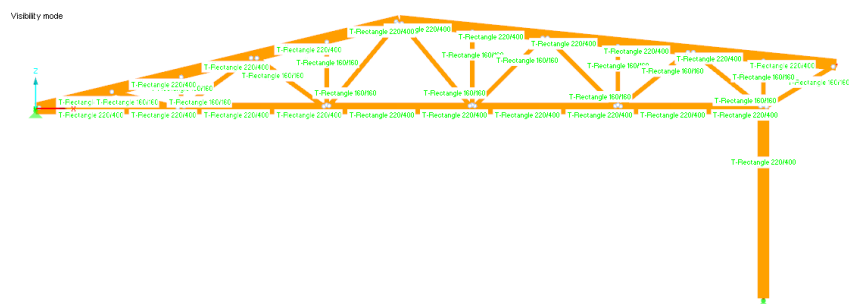
Raspored pozicija glavnog nosivog sustava:



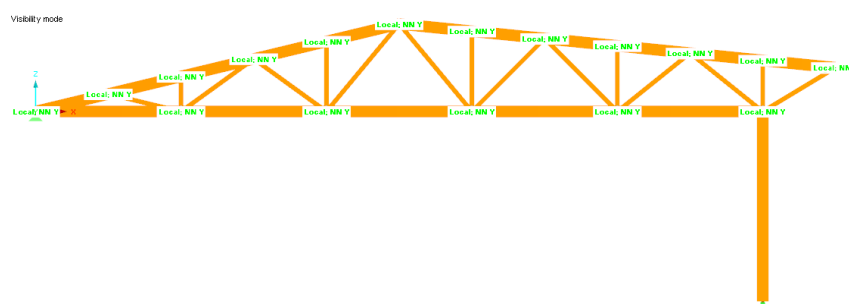
Raspored globalnih i lokalnih osi glavnog nosivog sustava:



Raspored elemenata glavnog nosivog sustava:

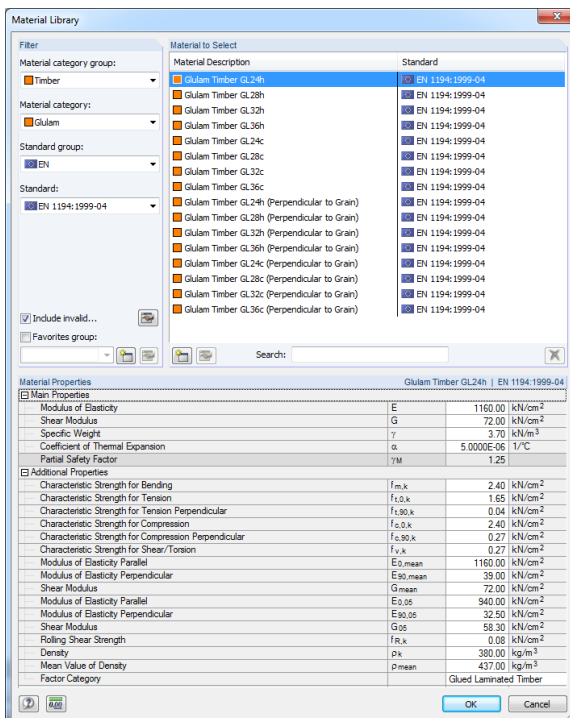


Raspored ležajeva i zglobova glavnog nosivog sustava:

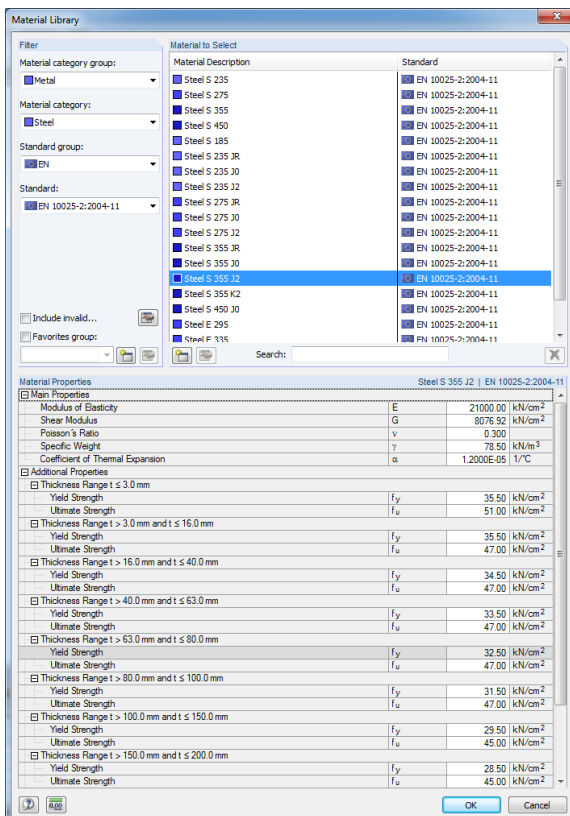


4.1.2. Karakteristike materijala u računalnom modelu

Karakteristike materijala lijepljenog lameliranog drva klase GL24h:

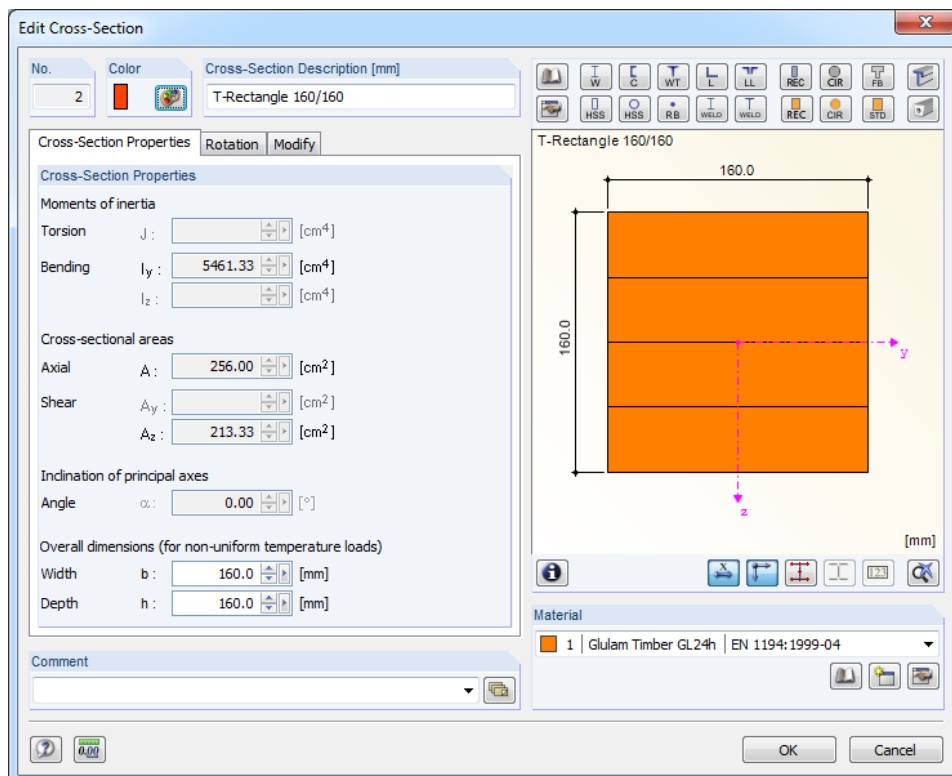
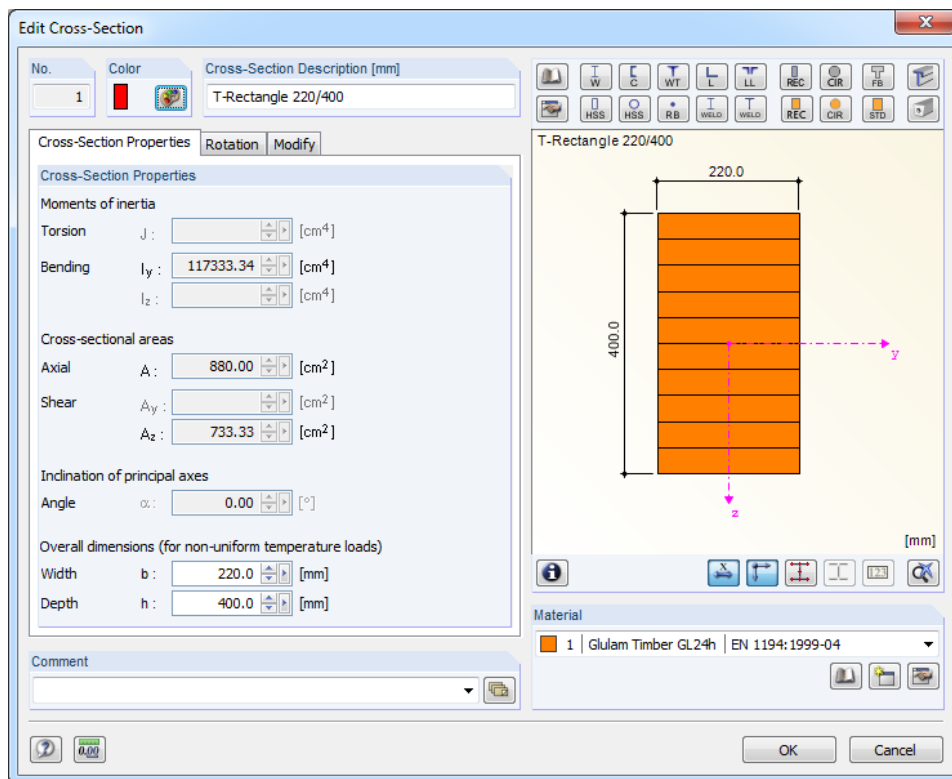


Karakteristike materijala čelika klase S355J2:

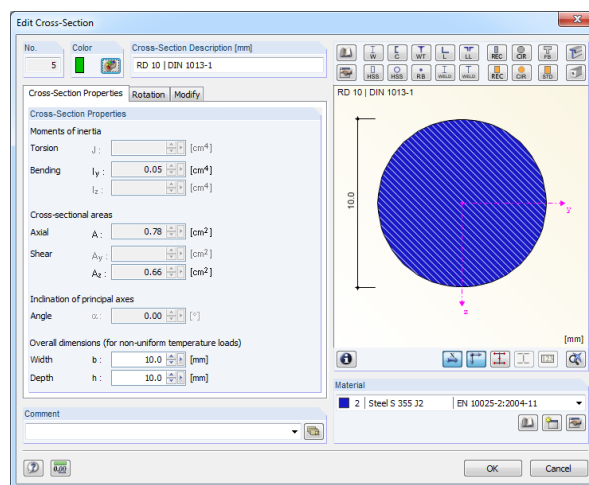
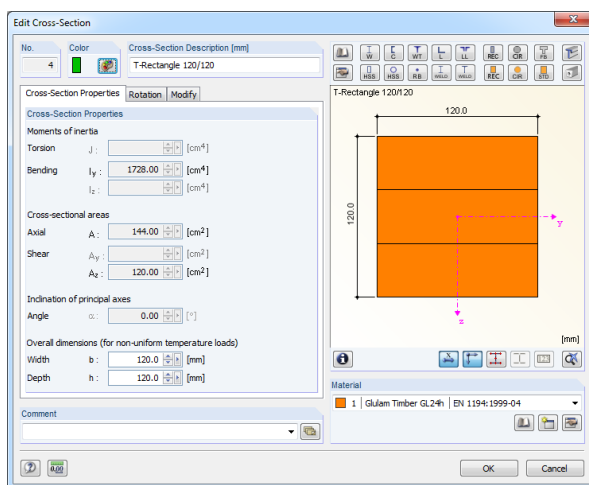
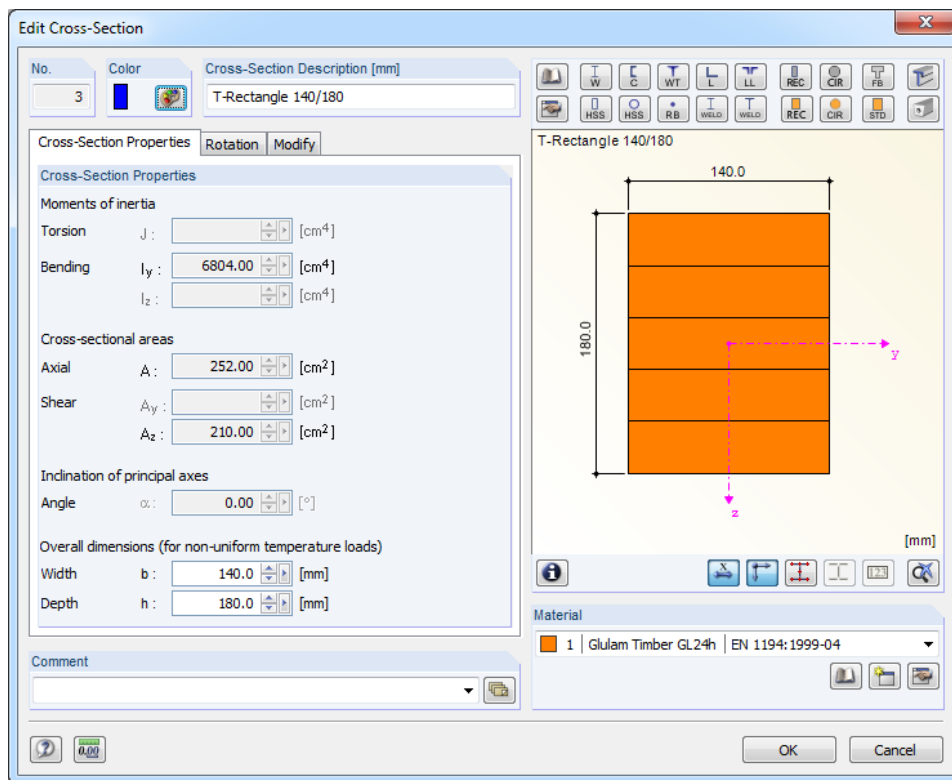


4.1.3. Karakteristike profila (poprečnih presjeka) elemenata glavnog nosivog sustava u računalnom modelu

Karakteristike profila elemenata glavnog nosivog sustava (rešetke):



Karakteristike profila elemenata sekundarnih nosača (podrožnica) i spregova:

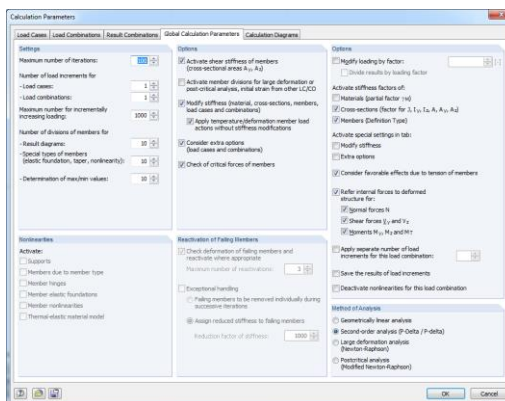


4.1.4. Karakteristike opterećenja, analize opterećenja i kombinacije opterećenja u računalnom modelu

Pregled opterećenja:

Load Case	Load Case Description	To Solve	EN 1990 + 1995 CEN (Timber)	Self-Weight - Factor in Direction				EN 1990 + 1995 CEN (Timber)
			Action Category	Active	X	Y	Z	Load Duration
LC1	STALNO	+	Permanent	+	0,000	0,000	-1,000	Permanent
LC2	SNIJEGsim	+	Snow ($H \leq 1000$ m a.s.l.)	-	0,000	0,000	0,000	Medium-term
LC3	SNIJEGasim	+	Snow ($H \leq 1000$ m a.s.l.)	-	0,000	0,000	0,000	Medium-term
LC4	VJETAR+	+	Wind	-	0,000	0,000	0,000	Short-term
LC5	VJETAR-	+	Wind	-	0,000	0,000	0,000	Short-term

Karakteristike analize opterećenja:



Kombinacije opterećenja:

Load Combin.	DS	Load Combination		To Solve	LC.1		LC.2		LC.3	
		Description			Factor	No.	Factor	No.	Factor	No.
CO1	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	1,500	LC2		
CO2	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	1,500	LC3		
CO3	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	1,500	LC4		
CO4	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,000	LC1	1,500	LC5		
CO5	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,500	LC1	1,500	LC2	0,900	LC4
CO6	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	1,500	LC3	0,900	LC4
CO7	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	0,750	LC2	1,500	LC4
CO8	21	ULS (STR/GEO) - Permanent /transient - Eq. 6.10		+	1,350	LC1	0,750	LC3	1,500	LC4
CO9	101	SLS - Characteristic / Rare		+	1,800	LC1	1,250	LC2		
CO10	101	SLS - Characteristic / Rare		+	1,800	LC1	1,250	LC3		
CO11	101	SLS - Characteristic / Rare		+	1,800	LC1	1,000	LC4		
CO12	101	SLS - Characteristic / Rare		+	1,800	LC1	1,250	LC2	0,500	LC4
CO13	101	SLS - Characteristic / Rare		+	1,800	LC1	1,250	LC3	0,500	LC4
CO14	101	SLS - Characteristic / Rare		+	1,800	LC1	0,250	LC2	1,000	LC4
CO15	101	SLS - Characteristic / Rare		+	1,800	LC1	0,250	LC3	1,000	LC4
CO16	101	SLS - Characteristic / Rare		+	1,250	LC2				
CO17	101	SLS - Characteristic / Rare		+	1,250	LC3				
CO18	101	SLS - Characteristic / Rare		+	1,000	LC4				
CO19	101	SLS - Characteristic / Rare		+	1,250	LC2	0,500	LC4		
CO20	101	SLS - Characteristic / Rare		+	1,250	LC3	0,500	LC4		
CO21	101	SLS - Characteristic / Rare		+	0,250	LC2	1,000	LC4		
CO22	101	SLS - Characteristic / Rare		+	0,250	LC3	1,000	LC4		

4.1.5. Karakteristične vrijednosti pojedinačnih djelovanja po m' glavnog nosivog sustava

Stalno djelovanje:

$$G_k = e \cdot g = 4,00 \cdot 1,05 = 4,20 \text{ kN/m'}$$

Djelovanje snijega:

$$Q_{k,s,sim} = e \cdot s_{sim} = 4,00 \cdot 1,00 = 4,00 \text{ kN/m'}$$

$$Q_{k,s,asim} = e \cdot s_{asim} = 4,00 \cdot 0,50 = 2,00 \text{ kN/m'}$$

Djelovanje vjetra:

$$Q_{k,w,min,A''} = e \cdot w_{min,A''} = 4,00 \cdot (-1,33) = -5,32 \text{ kN/m'}$$

$$Q_{k,w,min,F'} = e \cdot w_{min,F'} = 4,00 \cdot (-1,43) = -5,72 \text{ kN/m'}$$

$$Q_{k,w,min,F''} = e \cdot w_{min,F''} = 4,00 \cdot (-1,59) = -6,36 \text{ kN/m'}$$

$$Q_{k,w,min,G'} = e \cdot w_{min,G'} = 4,00 \cdot (-1,40) = -5,60 \text{ kN/m'}$$

$$Q_{k,w,min,G''} = e \cdot w_{min,G''} = 4,00 \cdot (-1,40) = -5,60 \text{ kN/m'}$$

$$Q_{k,w,max,E} = e \cdot w_{max,E} = 4,00 \cdot 0,07 = 0,32 \text{ kN/m'}$$

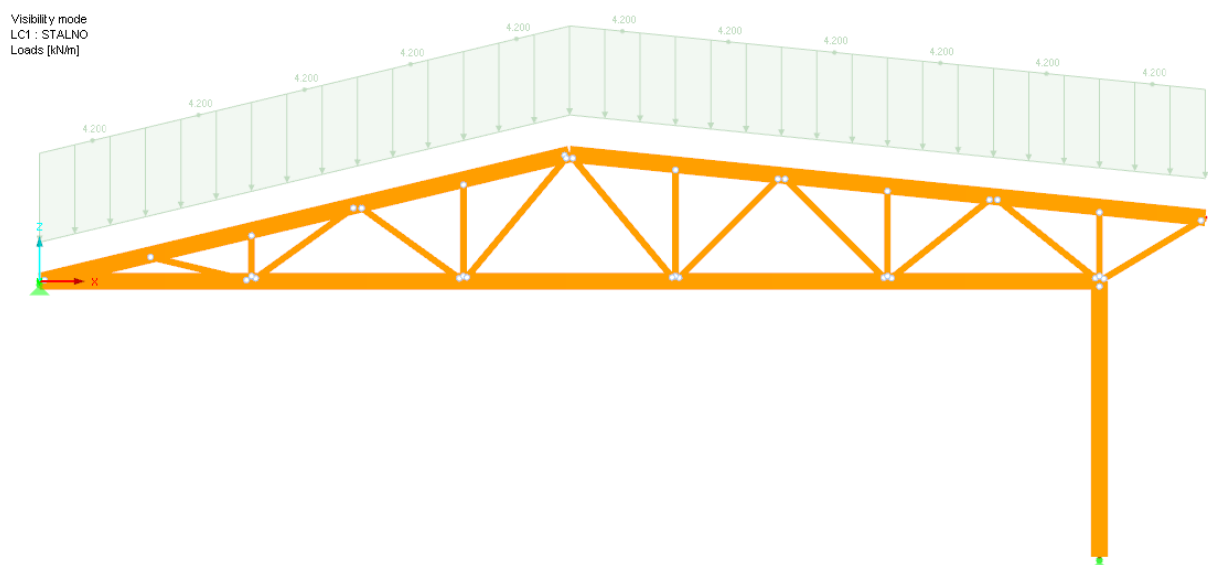
$$Q_{k,w,max,H} = e \cdot w_{max,H} = 4,00 \cdot 0,10 = 0,40 \text{ kN/m'}$$

$$Q_{k,w,max,I} = e \cdot w_{max,I} = 4,00 \cdot 0,13 = 0,52 \text{ kN/m'}$$

$$Q_{k,w,max,J} = e \cdot w_{max,J} = 4,00 \cdot 0,10 = 0,40 \text{ kN/m'}$$

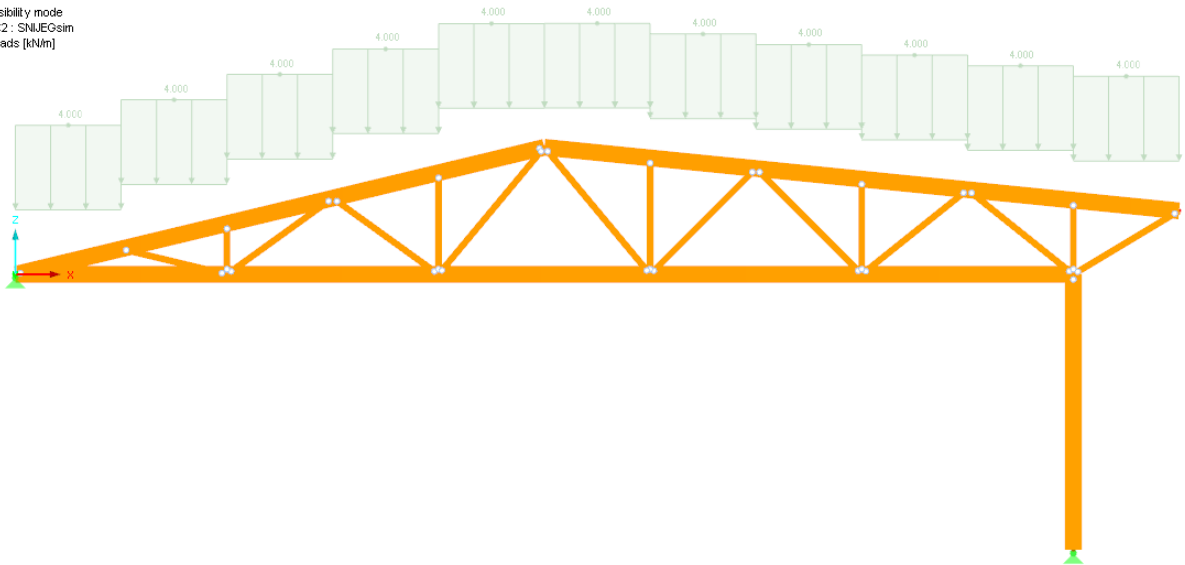
4.1.6. Raspodjela opterećenja na glavni nosivi sustav u računalnom modelu

Raspored stalnog opterećenja na glavni nosivi sustav:



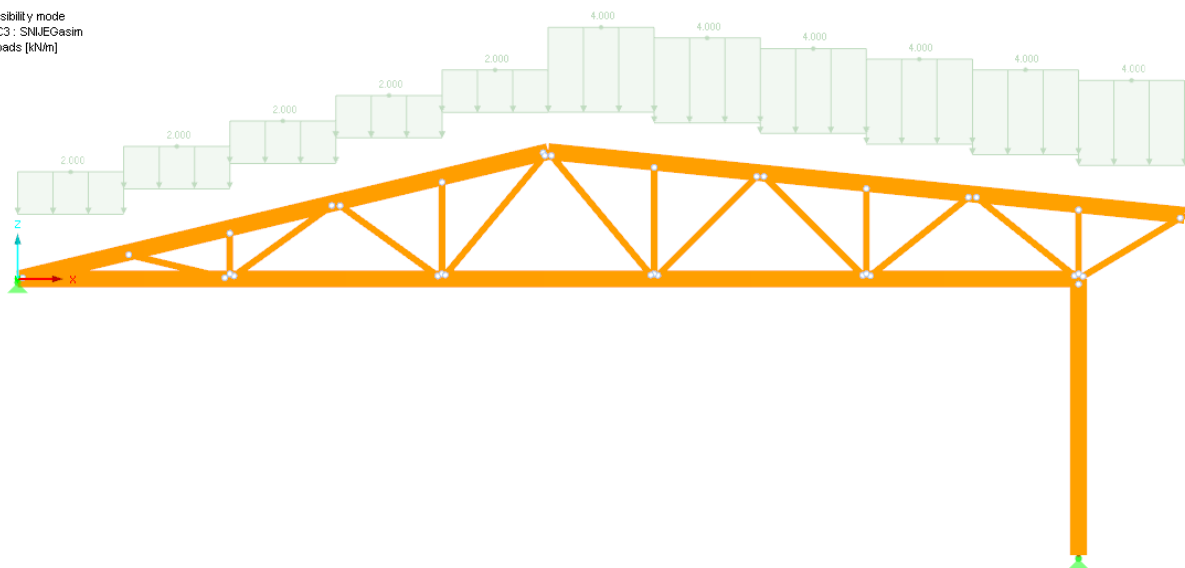
Raspored opterećenja snijegom (simetrično) na glavni nosivi sustav:

Visibility mode
LC2: SNIEGsim
Loads [kN/m]



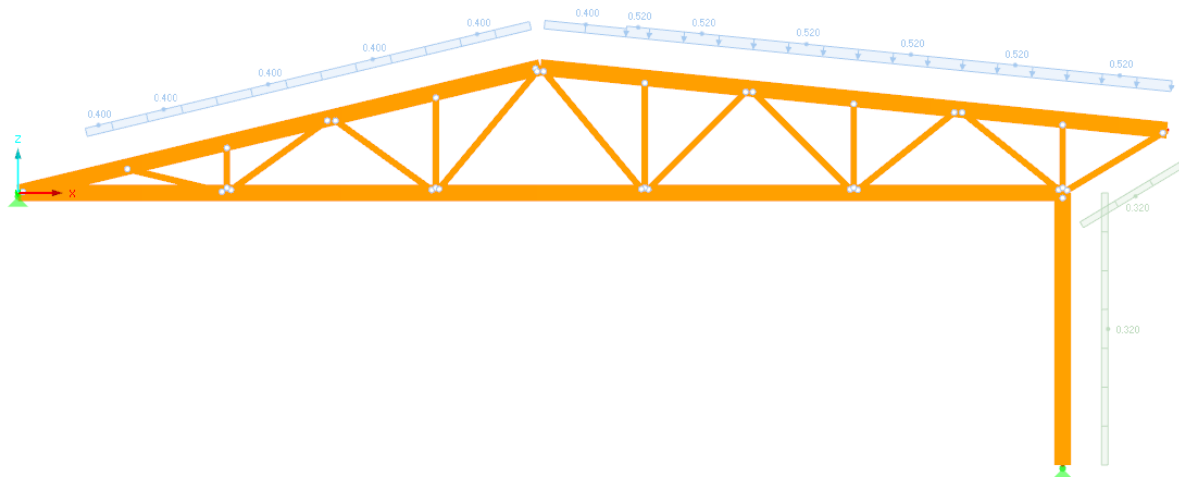
Raspored opterećenja snijegom (asimetrično) na glavni nosivi sustav:

Visibility mode
LC3: SNIEGsim
Loads [kN/m]



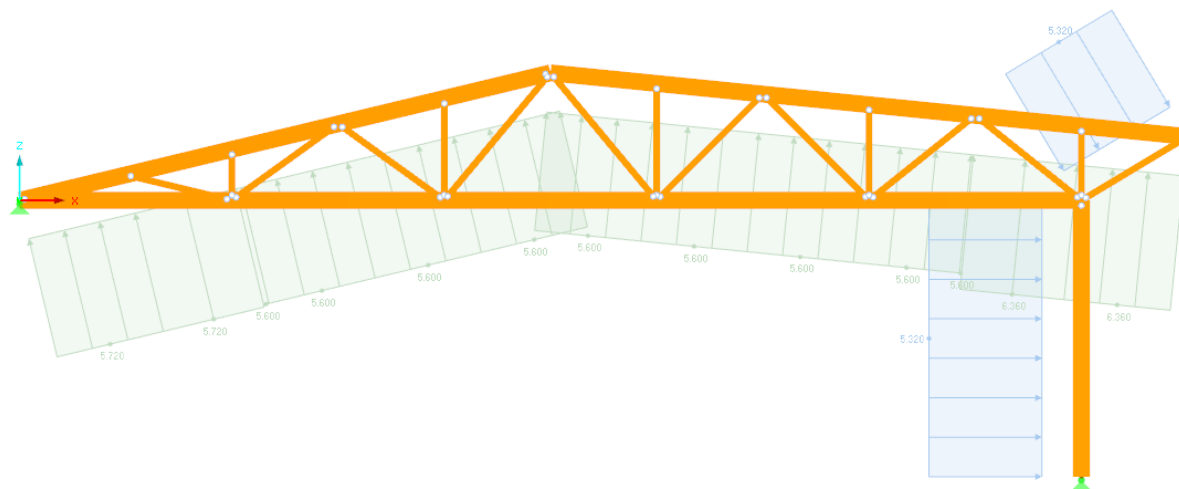
Raspored opterećenja vjetrom (pritiskajuće) na glavni nosivi sustav:

Visibility mode
LC4 : VJETAR+
Loads [kN/m]



Raspored opterećenja vjetrom (odižuće) na glavni nosivi sustav:

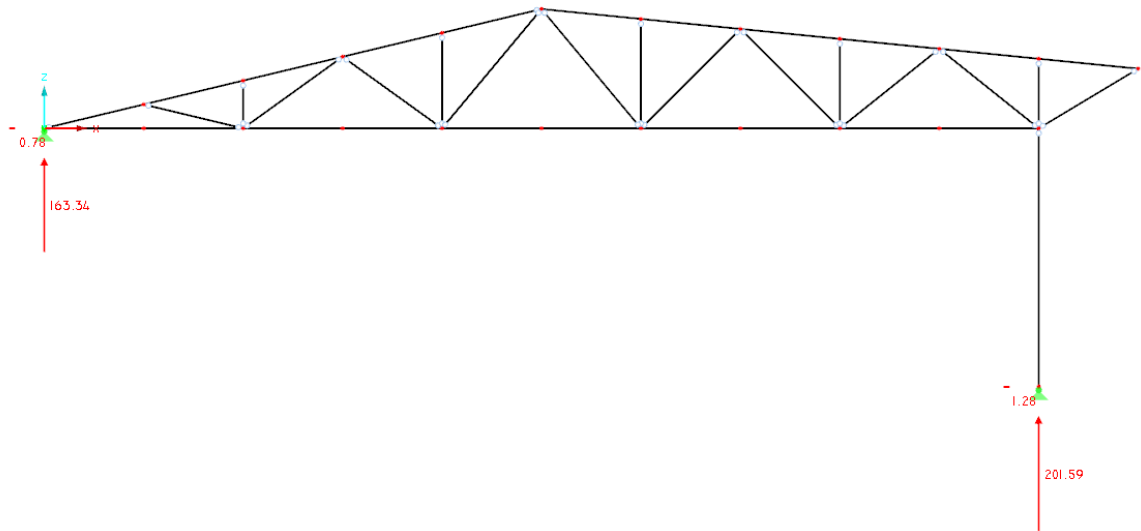
Visibility mode
LC5 : VJETAR-
Loads [kN/m]



4.2. STATIČKI PRORAČUN ZA KGS

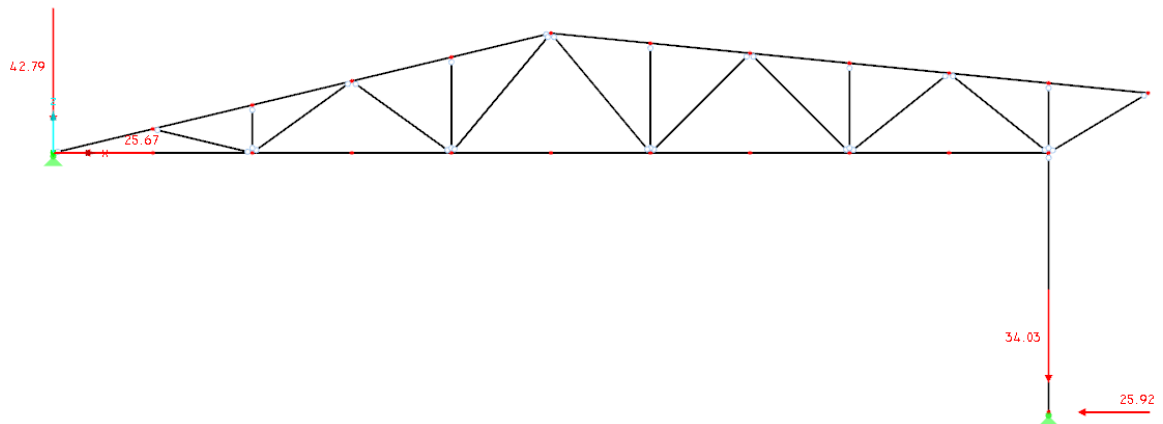
4.2.1. Reakcije u ležajevima za kombinaciju 1.35xST + 1.5xSNIJsim + 1.5x0.6xVJ+

Visibility mode
 Support Reactions [kN]
 CO6: 1.35G + 1.50s1 + 0.90w1



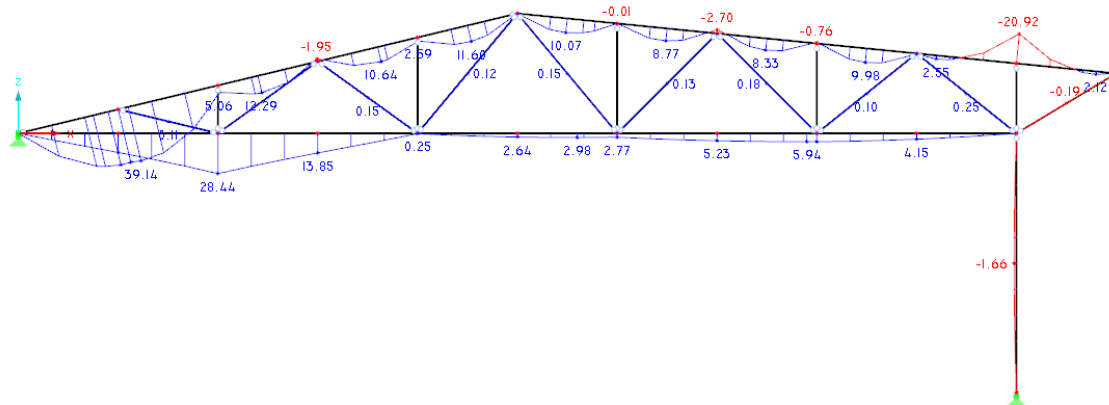
4.2.2. Reakcije u ležajevima za kombinaciju 1.0xST + 1.5xVJ-

Visibility mode
 Support Reactions [kN]
 CO5: G + 1.50w2



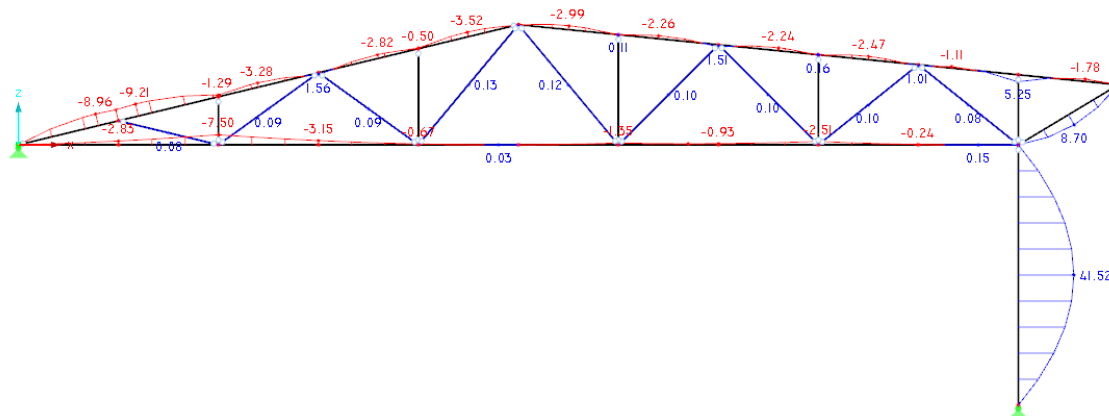
4.2.3. Dijagram momenata za kombinaciju 1.35xST + 1.5xSNIJsim + 1.5x0.6xVJ+

Visibility mode
 Internal Forces M-y [kNm]
 CO6 : 1.35G + 1.5Qs1 + 0.9Qw1



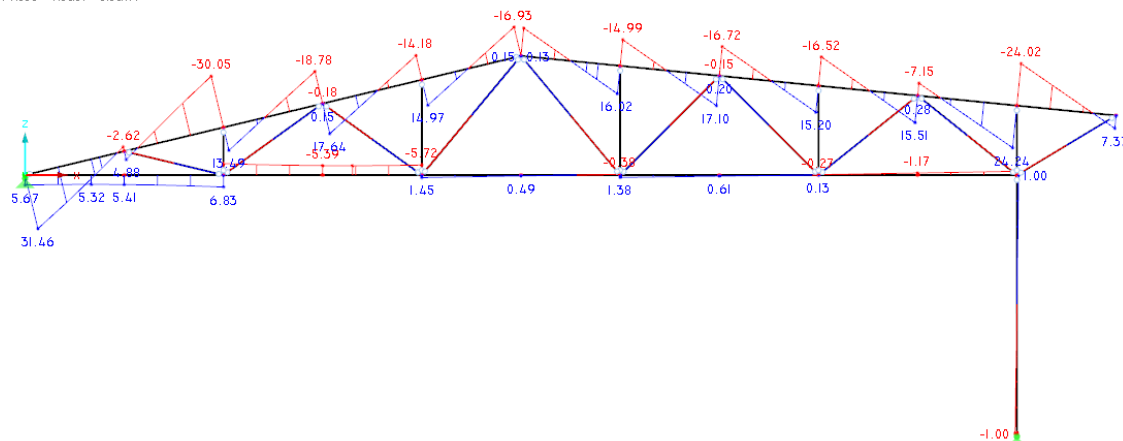
4.2.4. Dijagram momenata za kombinaciju 1.0xST + 1.5xVJ-

Visibility mode
 Internal Forces M-y [kNm]
 CO5 : G + 1.5Qw2



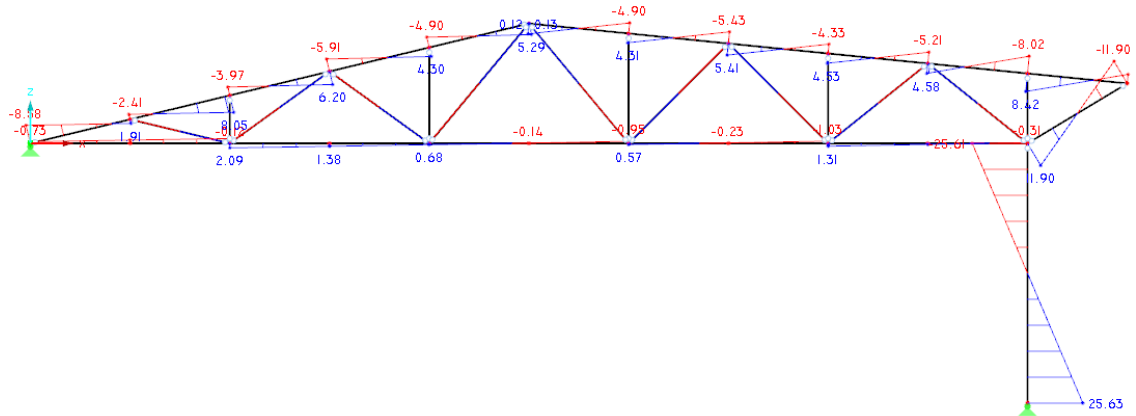
4.2.5. Dijagram poprečnih sila za kombinaciju 1.35xST + 1.5xSNIJsim + 1.5x0.6xVJ+

Visibility mode
 Internal Forces V-z [kN]
 CO6 : 1.35G + 1.5Qs1 + 0.9Qw1



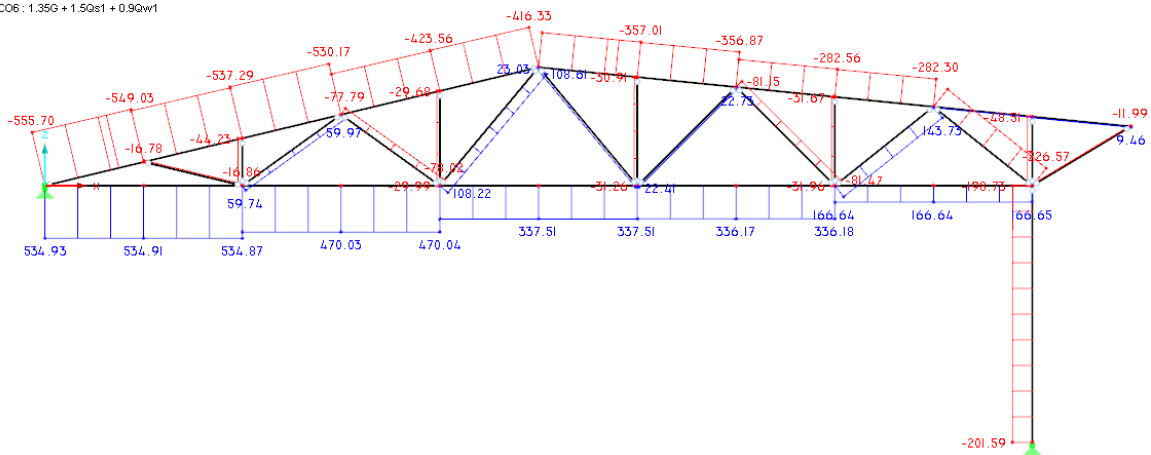
4.2.6. Dijagram poprečnih sila za kombinaciju 1.0xST + 1.5xVJ-

Visibility mode
 Internal Forces V-z [kN]
 CO6 : G + 1.5Qw2



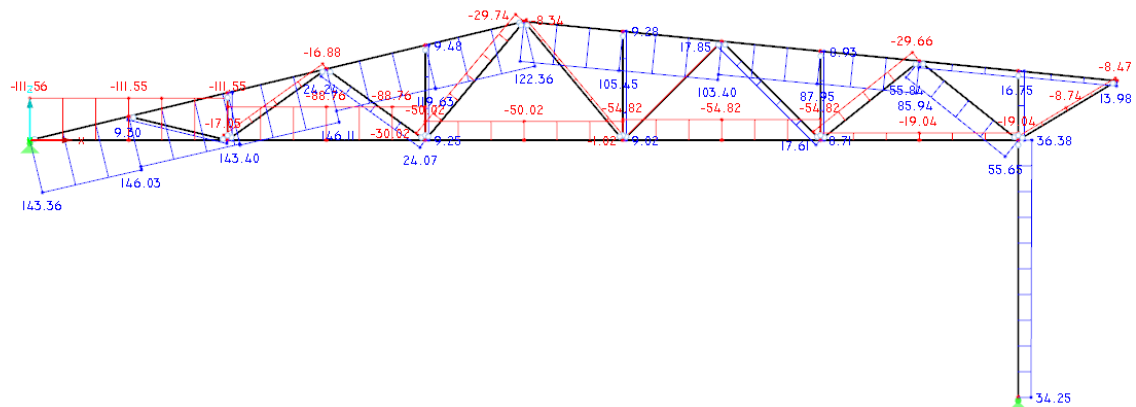
4.2.7. Dijagram uzdužnih sila za kombinaciju 1.35xST + 1.5xSNIJsim + 1.5x0.6xVJ+

Visibility mode
 Internal Forces N [kN]
 CO6 : 1.35G + 1.5Qs1 + 0.9Qw1



4.2.8. Dijagram uzdužnih sila za kombinaciju 1.0xST + 1.5xVJ-

Visibility mode
 Internal Forces N [kN]
 CO6 : G + 1.5Qw2



4.2.9. Mjerodavne vrijednosti unutarnjih sila i momenata

Vrijednosti unutarnjih sila i momenata za prvu mjerodavnu kombinaciju:

ELEMENT	MOMENT [kNm]	POPREČNA SILA [kN]	UZDUŽNA SILA [kN]
GORNJI POJAS	39,14 / 38,36	31,46	-549,71 / -549,03
ISPUNA	0,25	0,28	143,73 / -226,57
DONJI POJAS	13,51 / 28,44	6,83 (-6,54)	534,91 / 534,87
STUP	-1,66	1,00	-201,59
LEŽAJ	-	201,59	-1,28

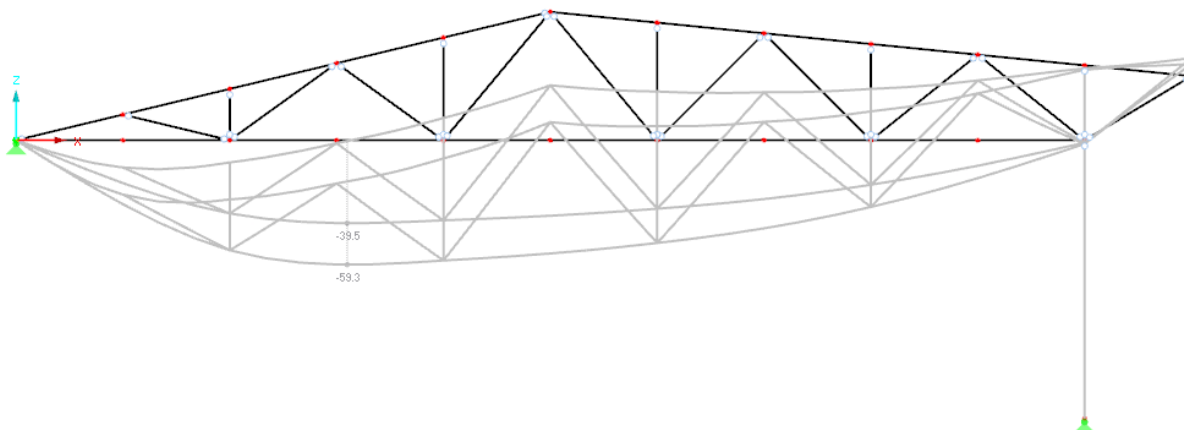
Vrijednosti unutarnjih sila i momenata za drugu mjerodavnu kombinaciju:

ELEMENT	MOMENT [kNm]	POPREČNA SILA [kN]	UZDUŽNA SILA [kN]
GORNJI POJAS	-9,21 / -8,96	-8,58	242,80 / 145,50
ISPUNA	8,70	-11,90	55,84 / -30,02
DONJI POJAS	-2,83 / -7,50	-2,20 (2,09)	-111,55 / -111,55
STUP	41,52	25,63	36,38
LEŽAJ	-	-42,79	-25,92

4.3. STATIČKI PRORAČUNA ZA GSU

4.3.1. Vrijednost maksimalnog progiba od ukupnog djelovanja

Visibility mode
Global Deformations u-Z [mm]
RC2 : SLS - Characteristic / Rare



4.3.2. Vrijednost maksimalnog progiba od promjenjivih snijega

Visibility mode
Global Deformations u-Z [mm]
RC3 : SLS - Characteristic / Rare

