

CROSS SECTION: PETERSEN:1190

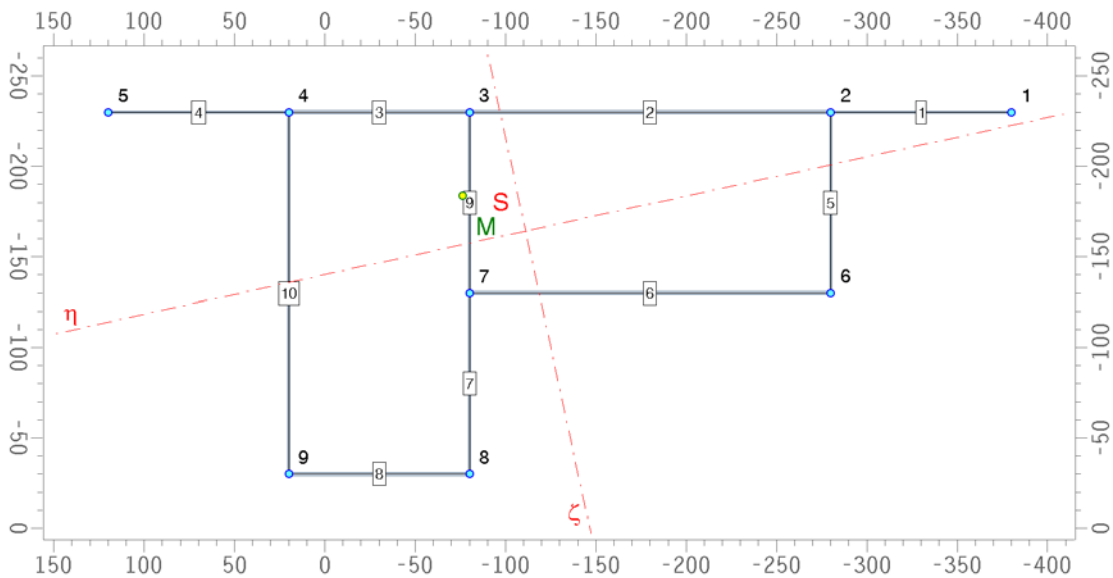
nodes

nodes	y	z	nodes	y	z	nodes	y	z
-	cm	cm	-	cm	cm	-	cm	cm
1	-380.00	-230.00	4	20.00	-230.00	7	-80.00	-130.00
2	-280.00	-230.00	5	120.00	-230.00	8	-80.00	-30.00
3	-80.00	-230.00	6	-280.00	-130.00	9	20.00	-30.00

lines

line	from	to	thickn.A	thickn.E	arch rise	r _{ar}	r _{al}	r _{er}	r _{e1}	Φ _a	Φ _e
-	-	-	cm	cm	cm	cm	cm	cm	cm	°	°
1	1	2	1.20	1.20	0.000	0.00	0.00	0.00	0.00	0.00	0.00
2	2	3	1.60	1.60	0.000	0.00	0.00	0.00	0.00	0.00	0.00
3	3	4	2.00	2.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
4	4	5	1.20	1.20	0.000	0.00	0.00	0.00	0.00	0.00	0.00
5	2	6	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
6	6	7	1.60	1.60	0.000	0.00	0.00	0.00	0.00	0.00	0.00
7	7	8	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
8	8	9	2.00	2.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
9	7	3	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00
10	9	4	1.00	1.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00

plotting



characteristic values

area, centroid and angle of principal axis

A =	1776.80 cm ²	e _y =	-111.48 cm	e _z =	-164.20 cm	α =	12.23 °
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spread

y _{max} =	120.00 cm	y _{min} =	-380.00 cm	b =	500.00 cm	U _a =	1403.20 cm
Z _{max} =	-29.00 cm	Z _{min} =	-231.00 cm	h =	202.00 cm	U _i =	1188.80 cm
						U =	2592.00 cm

Imn-system: moments of inertia and section moduli, clearances and radii of gyration

I _m =	9165618.80 cm ⁴	W _{m+} =	67794.98 cm ³	h _{m+} =	231.48 cm	i _m =	71.82 cm
I _n =	24469667.39 cm ⁴	W _{m-} =	137201.91 cm ³	h _{m-} =	-268.52 cm	i _n =	117.35 cm
I _{mn} =	3481070.61 cm ⁴	W _{n+} =	105708.01 cm ³	h _{n+} =	135.20 cm		
		W _{n-} =	91129.12 cm ³	h _{n-} =	-66.80 cm		

ξηζ-system: moments of inertia and section moduli, clearances and radii of gyration

I _η =	8411019.02 cm ⁴	W _{η+} =	66986.19 cm ³	h _{η+} =	212.42 cm	i _η =	68.80 cm
I _ζ =	25224267.17 cm ⁴	W _{η-} =	73821.75 cm ³	h _{η-} =	-276.49 cm	i _ζ =	119.15 cm
I _p =	33635286.19 cm ⁴	W _{ζ+} =	118749.53 cm ³	h _{ζ+} =	125.56 cm	i _p =	137.59 cm
		W _{ζ-} =	91230.51 cm ³	h _{ζ-} =	-113.94 cm		

shear centre

y _M =	-76.32 cm	y _{SM} =	35.17 cm	η _M =	30.20 cm		
Z _M =	-183.88 cm	Z _{SM} =	-19.69 cm	ζ _M =	-26.69 cm		

shear area coefficient

κ _m =	1.88 -	A _m =	942.84 cm ²	κ _η =	1.94 -	A _η =	914.83 cm ²
κ _n =	4.03 -	A _n =	440.60 cm ²	κ _ζ =	3.98 -	A _ζ =	446.99 cm ²

torsion + warping

I _T =	8559500.87 cm ⁴	I _w =	13496531297.13 cm ⁶	R _{Sy} =	390767354.76 cm ⁵	R _{Sz} =	602973608.57 cm ⁵
C _s =	-39056572125.49 cm ⁶	I _{pM} =	36521414.66 cm ⁴	i _{ωM} =	19.22 cm		
ω _{M+} =	7966.95 cm ²	ω _{M-} =	-5073.98 cm ²	W _{ω+} =	1694065.59 cm ⁴	W _{ω-} =	2659947.52 cm ⁴

section lines

i _M =	143.37 cm	r _η =	-82.93 cm	r _ζ =	53.65 cm	r _ω =	1.42 cm
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plastic characteristic values

W _{ply,max} =	111170.83 cm ³	W _{plz,max} =	171693.69 cm ³	W _{plη,max} =	106799.06 cm ³	W _{plζ,max} =	177109.62 cm ³
W _{ply,red} =	109002.79 cm ³	W _{plz,red} =	165639.83 cm ³	W _{plη,red} =	106677.16 cm ³	W _{plζ,red} =	175682.00 cm ³