

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
Define Center		5	
Define Point A			
Define Point B		Compute blocks	

### Block data

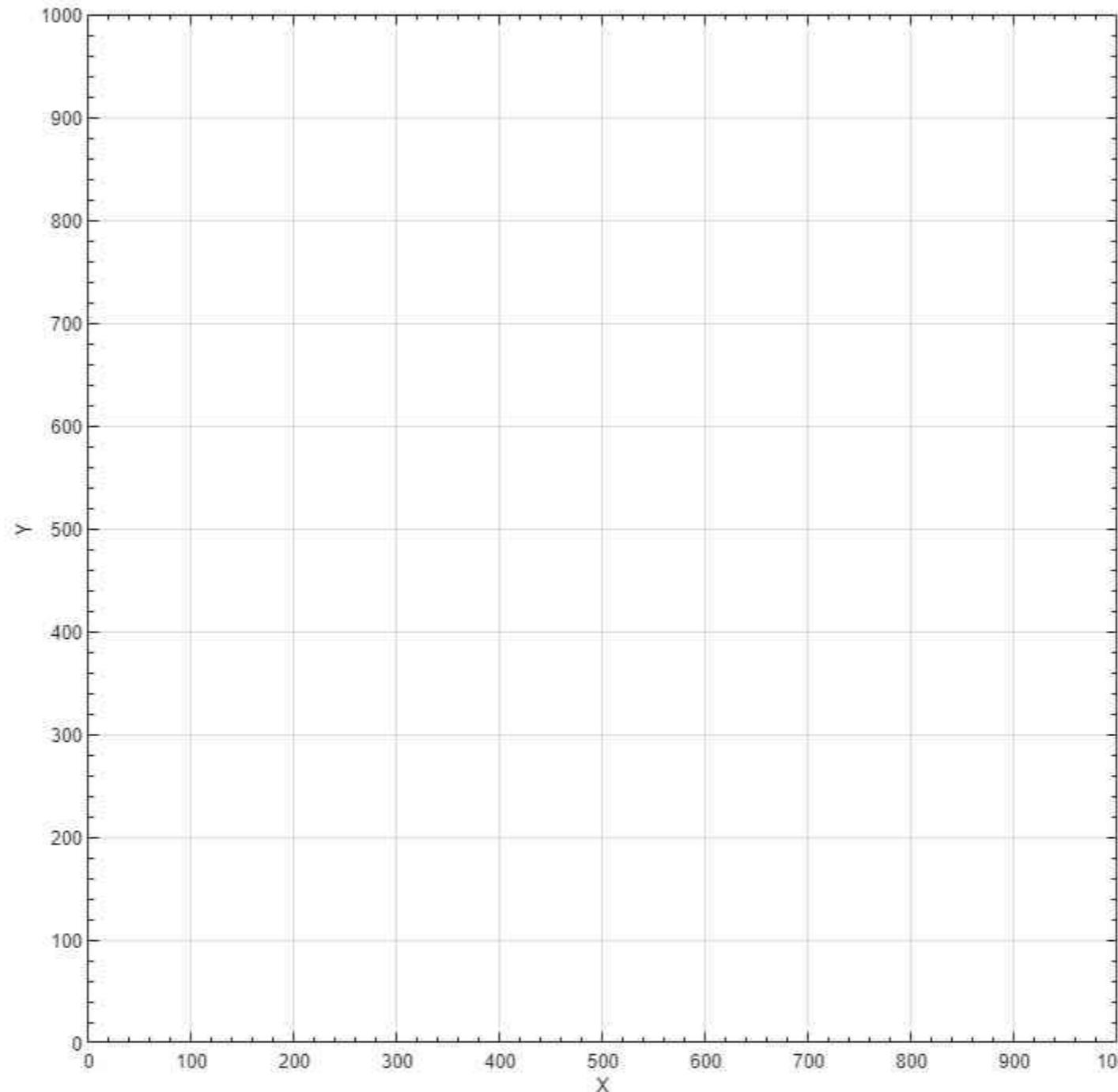
N.	Area	Weight	Xg
1	6.0294e+03	120.5889	930
2	4.3021e+03	86.0429	892
3	3.1257e+03	62.5145	851
4	2.2505e+03	45.0095	821
5	1.6523e+03	33.0455	791
6	1.1450e+03	22.8998	751
7	827.1138	16.5423	724
8	783.6198	15.2724	686
9	939.2885	18.7858	656
10	1.1240e+03	22.4798	621
11	1.2240e+03	24.4808	589
12	1.3187e+03	26.3740	558
13	1.4024e+03	28.0487	521
14	1.4880e+03	29.7597	487
15	1.7222e+03	34.4443	452
16	2.1110e+03	42.2203	417
17	2.4604e+03	49.2085	382
18	2.6982e+03	53.9230	347
19	2.7406e+03	54.8113	313
20	2.6075e+03	52.1504	278
21	2.4810e+03	49.6195	244

N:

### Background Image

Load image	Pick Reference	L:	1
<input checked="" type="checkbox"/> Flip X	Interactive on	<input checked="" type="radio"/>	Target 100
<input type="checkbox"/> Flip Y	scale factor	<input type="text" value="1"/>	Scale Image

### Interactive Area



Current units: [ cm ] [ kg ] [ kgf ] [ kg/cm^2 ]

Graphics Save/Load Example Blocks properties Units

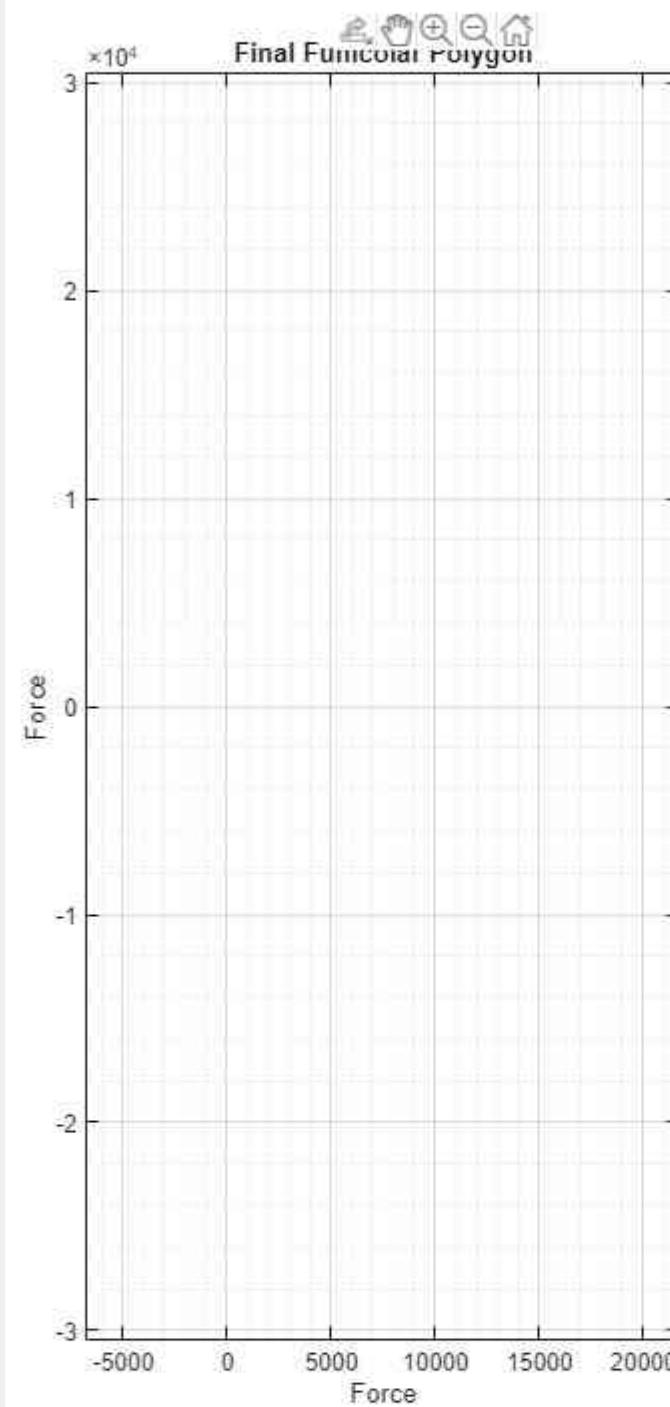
forces factor  Force Magnitude Off  On

alpha W  Background Image Off  On

Sketched Geometry Off  On

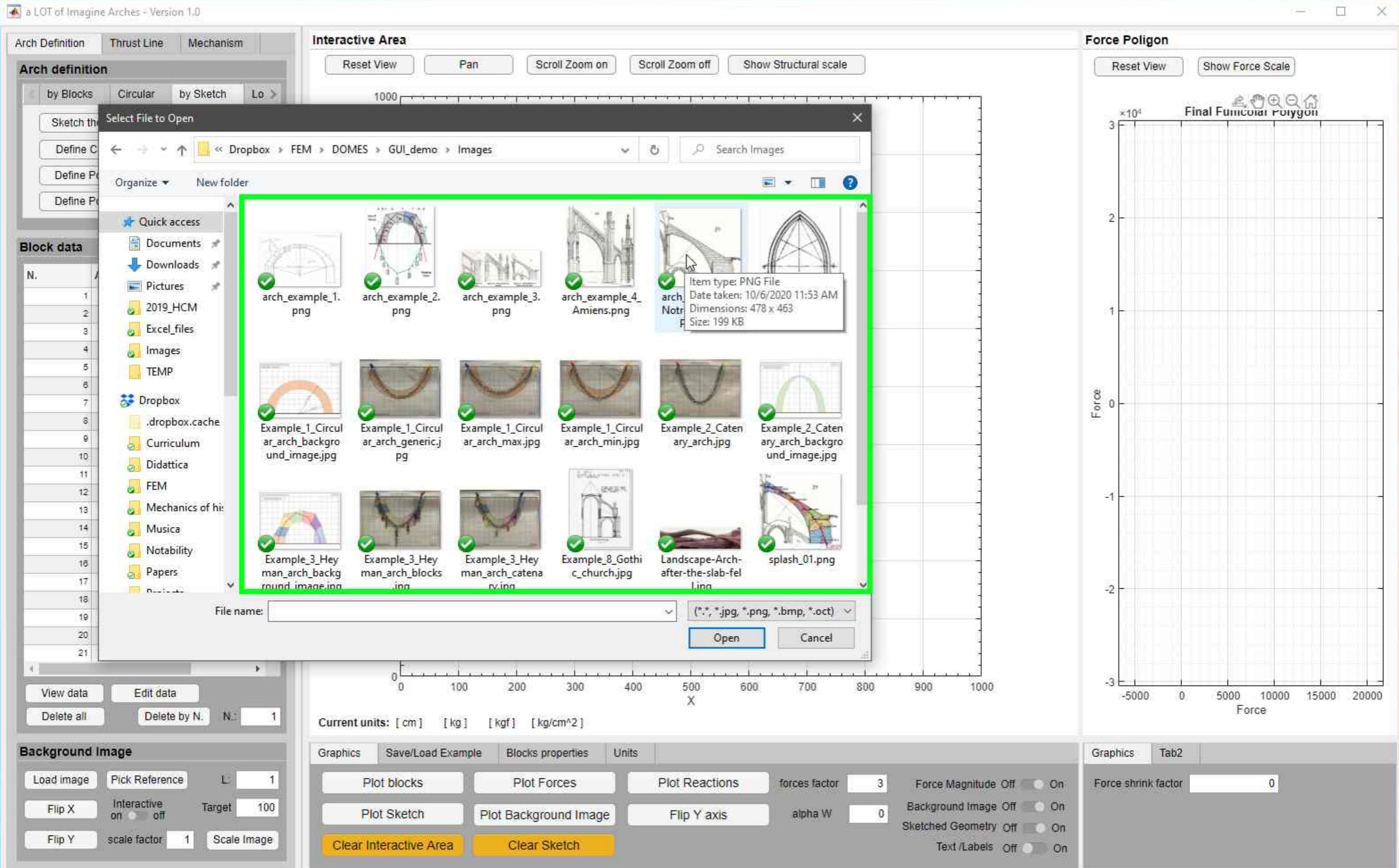
Text / Labels Off  On

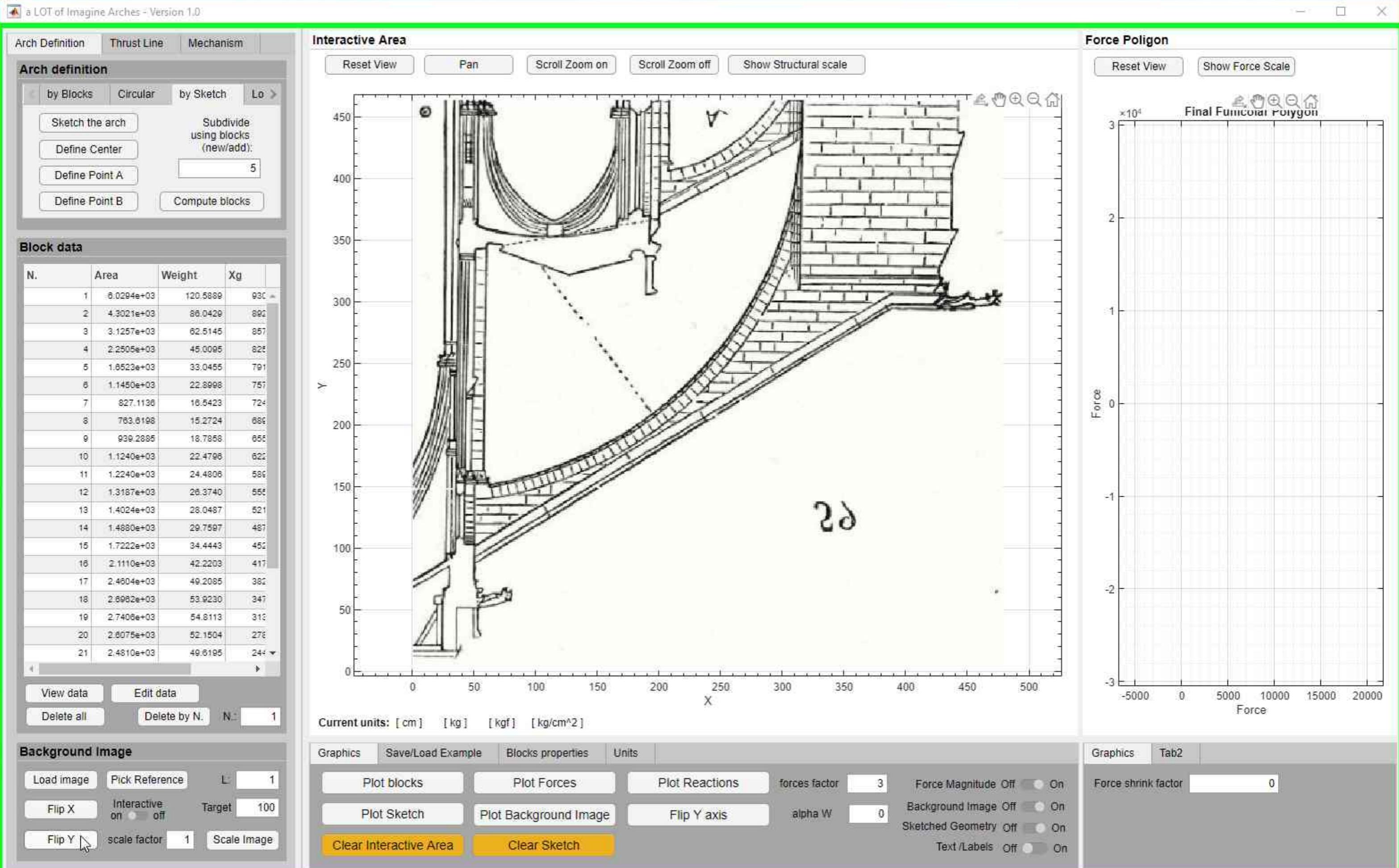
### Force Polygon



Graphics Tab2

Force shrink factor





Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >  
 Sketch the arch   Subdivide using blocks (new/add):  
 Define Center   5  
 Define Point A  
 Define Point B   Compute blocks

### Block data

N.	Area	Weight	Xg
1	6.0294e+03	120.5889	930
2	4.3021e+03	86.0429	892
3	3.1257e+03	62.5145	851
4	2.2505e+03	45.0095	821
5	1.6523e+03	33.0455	791
6	1.1450e+03	22.8998	751
7	827.1138	16.5423	724
8	783.6198	15.2724	689
9	939.2885	18.7858	656
10	1.1240e+03	22.4798	621
11	1.2240e+03	24.4808	589
12	1.3187e+03	26.3740	558
13	1.4024e+03	28.0487	521
14	1.4880e+03	29.7597	487
15	1.7222e+03	34.4443	452
16	2.1110e+03	42.2203	417
17	2.4604e+03	49.2085	382
18	2.6982e+03	53.9230	347
19	2.7406e+03	54.8113	313
20	2.6075e+03	52.1504	278
21	2.4810e+03	49.6195	244

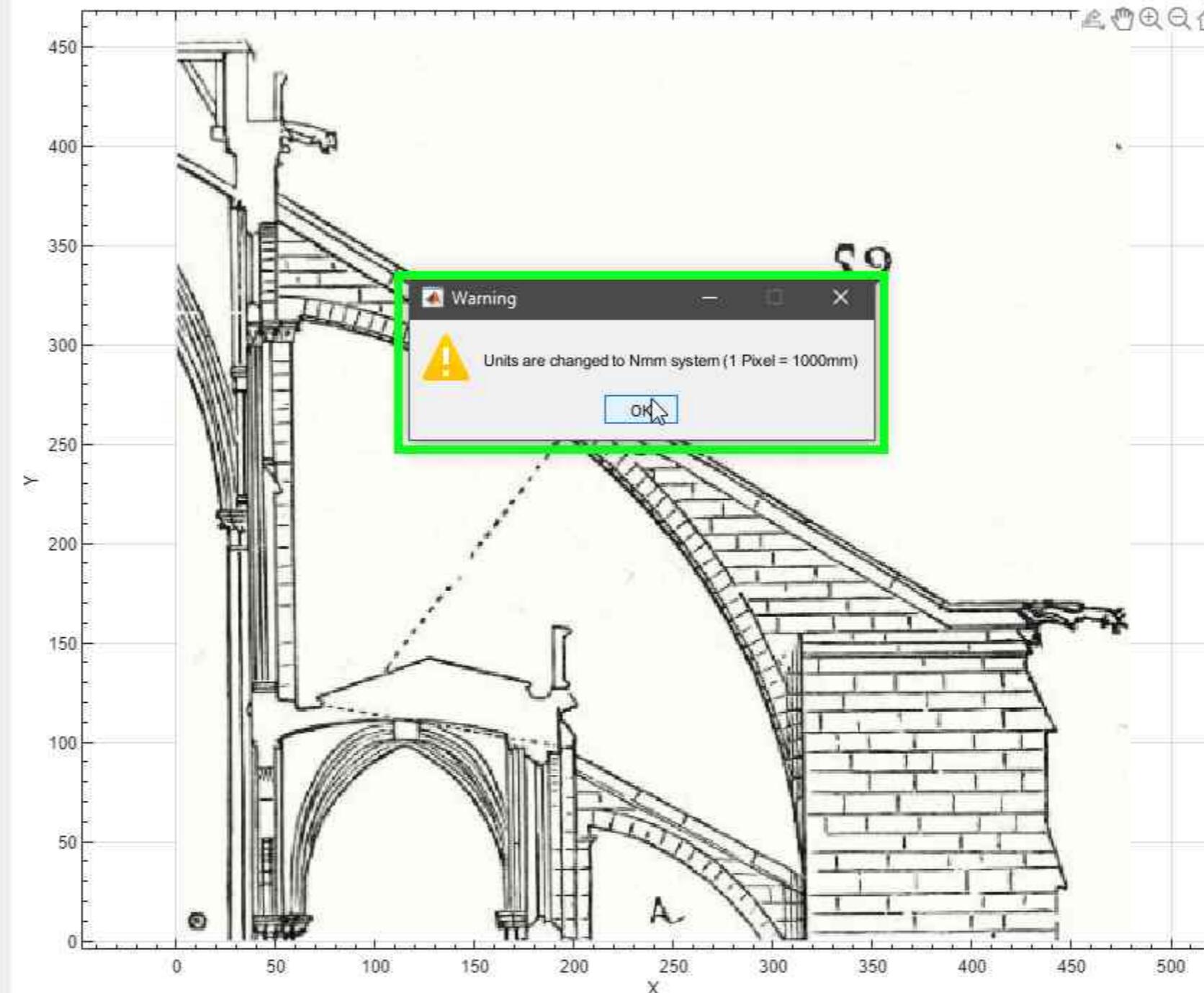
N: 1

### Background Image

Load image   Pick Reference   L: 1  
 Flip X   Interactive on:  off   Target: 100  
 Flip Y   scale factor: 1   Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



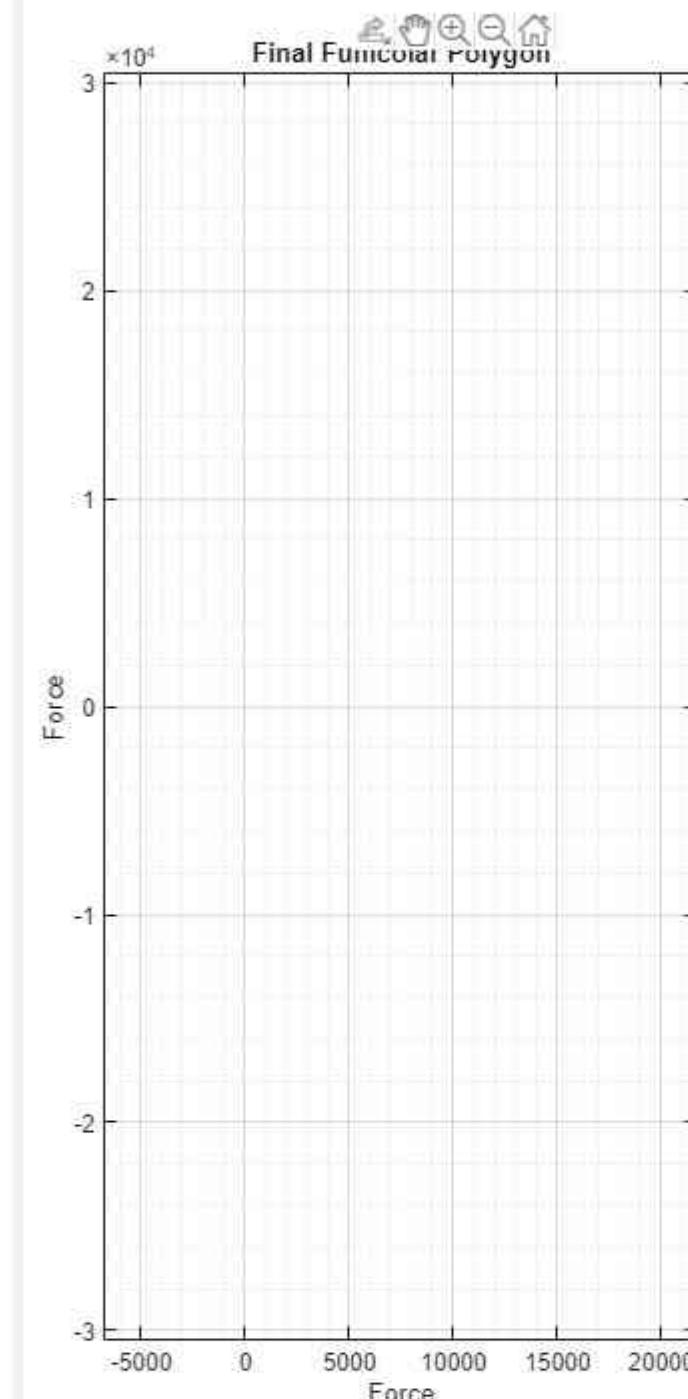
Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3   Force Magnitude Off:  On  
   alpha W: 0   Background Image Off:  On  
  Sketched Geometry Off:  On  
Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Sketch the arch  
Define Center  
Define Point A  
Define Point B

Subdivide  
using blocks  
(new/add):  
5

Compute blocks

### Block data

N.	Area	Weight	Xg
1	6.0294e+03	120.5889	930
2	4.3021e+03	86.0429	892
3	3.1257e+03	62.5145	851
4	2.2505e+03	45.0095	823
5	1.6523e+03	33.0455	791
6	1.1450e+03	22.8998	757
7	827.1138	16.5423	724
8	783.6198	15.2724	689
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10	1.1240e+03	22.4798	624
11	1.2240e+03	24.4808	589
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15	1.7222e+03	34.4443	452
16	2.1110e+03	42.2203	417
17	2.4604e+03	49.2085	382
18	2.6982e+03	53.9230	347
19	2.7406e+03	54.8113	313
20	2.6075e+03	52.1504	278
21	2.4810e+03	49.6195	244

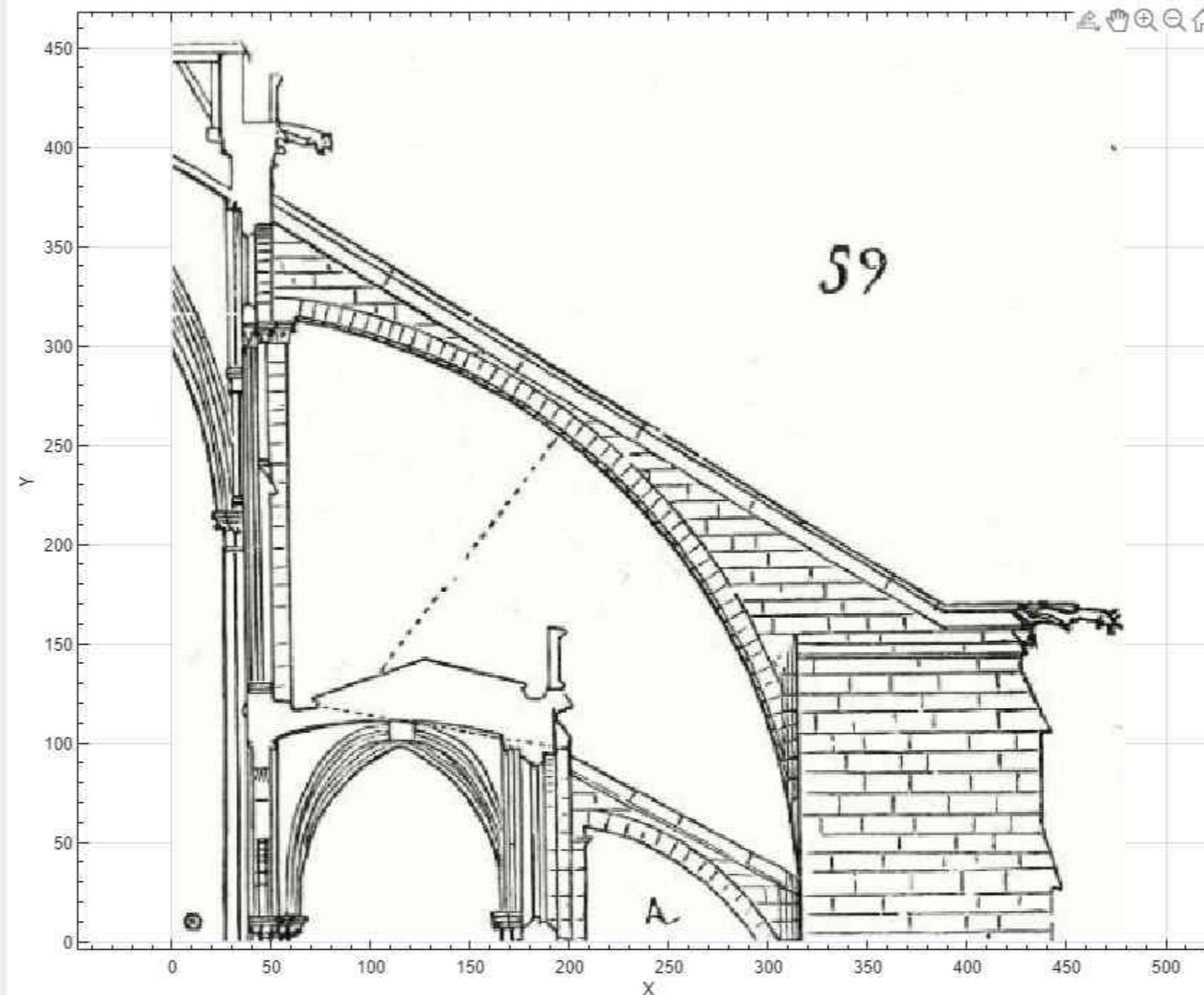
N: 1

### Background Image

Load image   Pick Reference   L: 1  
 Flip X   Interactive on:  off   Target: 100  
 Flip Y   scale factor: 1   Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3   Force Magnitude Off:  On

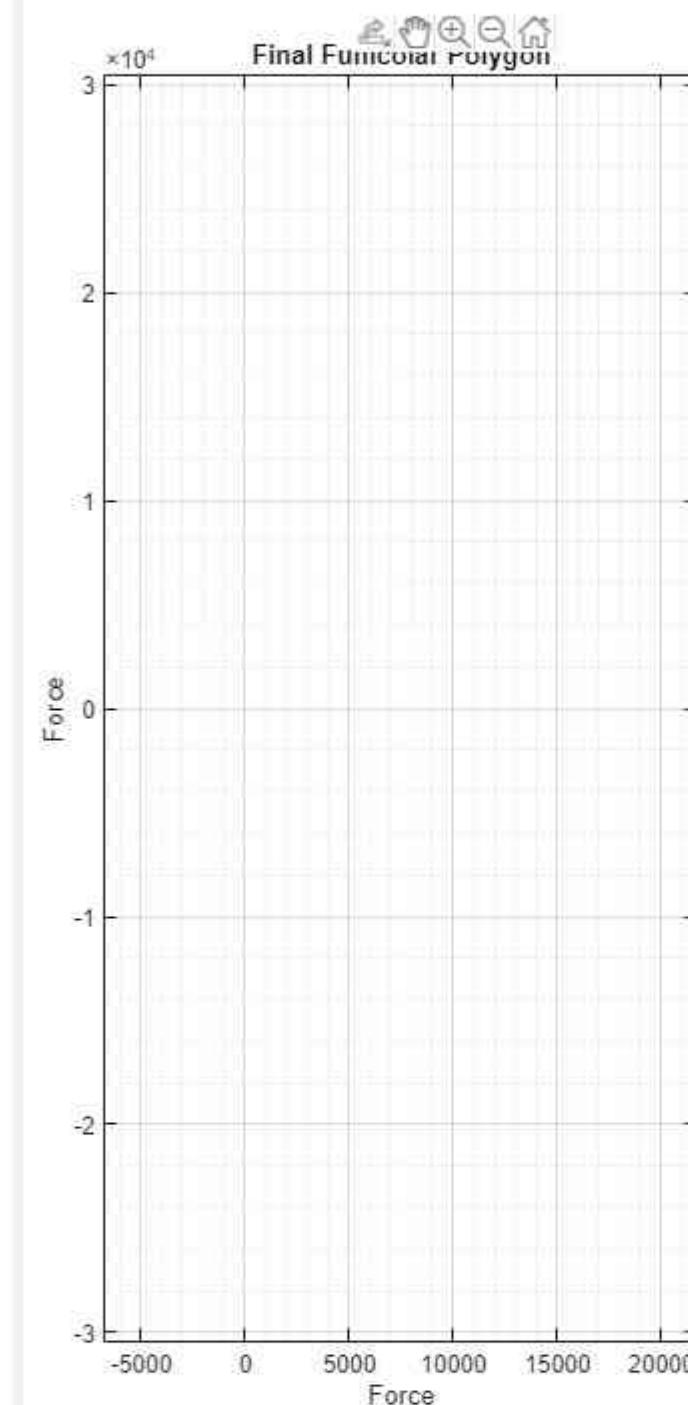
alpha W: 0   Background Image Off:  On

Sketched Geometry Off:  On

Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
<a href="#">Sketch the arch</a>		Subdivide using blocks (new/add):	
<a href="#">Define Center</a>		<input type="text" value="5"/>	
<a href="#">Define Point A</a>			
<a href="#">Define Point B</a>		<a href="#">Compute blocks</a>	

### Block data

N.	Area	Weight	Xg

[View data](#)   [Edit data](#)

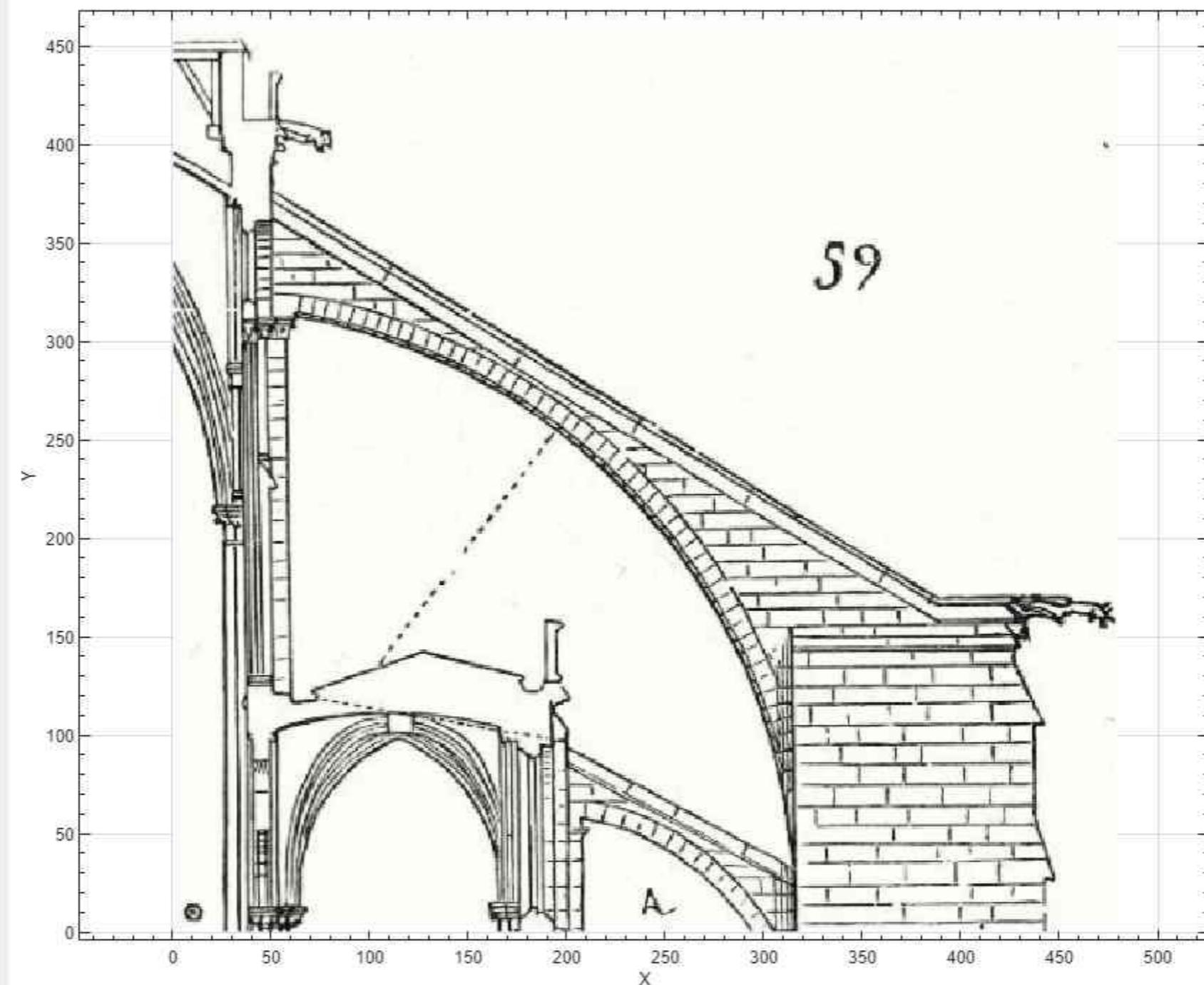
[Delete all](#)   [Delete by N.](#)   N:

### Background Image

<a href="#">Load image</a>	<a href="#">Pick Reference</a>	L:	<input type="text" value="1"/>
<input type="checkbox"/> Flip X	<input checked="" type="checkbox"/> Interactive on	Target:	<input type="text" value="100"/>
<input type="checkbox"/> Flip Y	scale factor:	<input type="text" value="1"/>	<a href="#">Scale Image</a>

### Interactive Area

[Reset View](#)   [Pan](#)   [Scroll Zoom on](#)   [Scroll Zoom off](#)   [Show Structural scale](#)

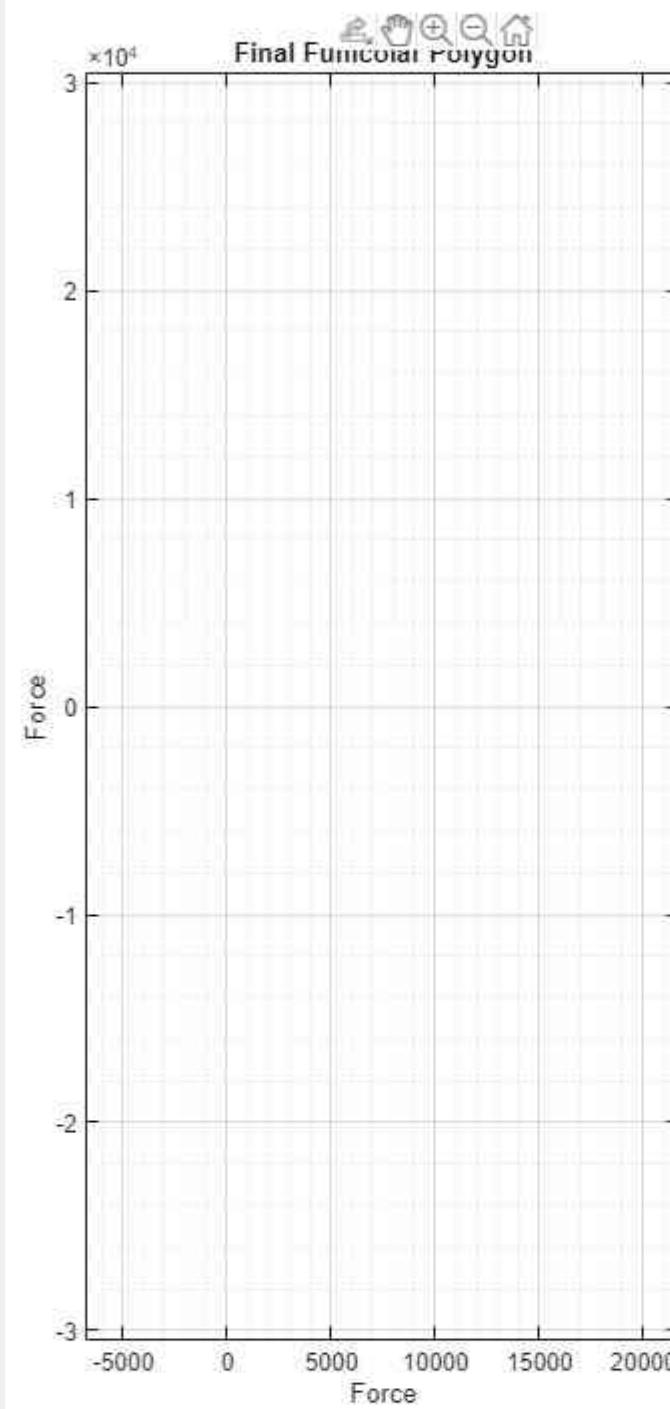


Graphics   Save/Load Example   Blocks properties   Units

[Plot blocks](#)   [Plot Forces](#)   [Plot Reactions](#)   forces factor:  Force Magnitude Off  On  
[Plot Sketch](#)   [Plot Background Image](#)   [Flip Y axis](#)   alpha W:  Background Image Off  On  
[Clear Interactive Area](#)   [Clear Sketch](#)   Sketched Geometry Off  On  
Text / Labels Off  On

### Force Polygon

[Reset View](#)   [Show Force Scale](#)



Graphics   Tab2

Force shrink factor:

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
<b>Sketch the arch</b>		Subdivide using blocks (new/add):	
Define Center			
Define Point A	5		
Define Point B	Compute blocks		

### Block data

N.	Area	Weight	Xg

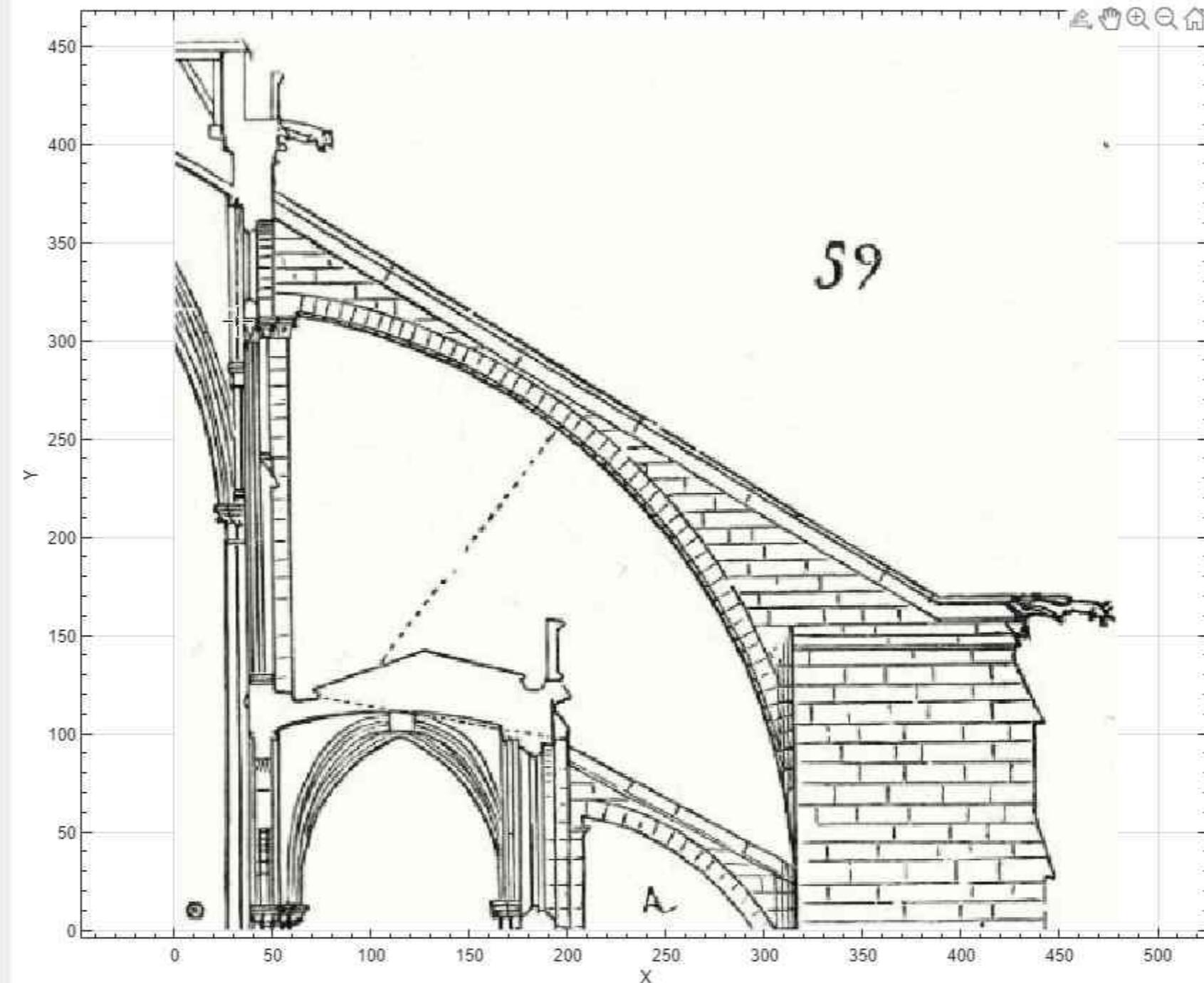
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

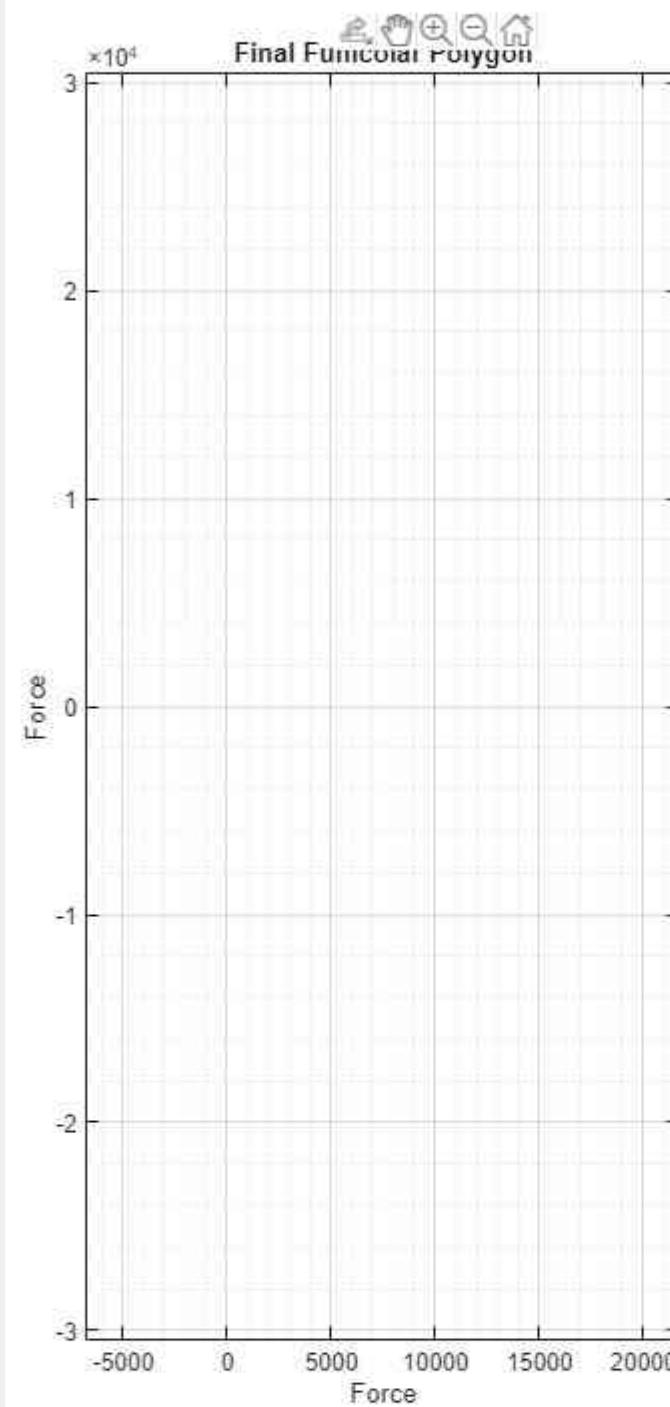


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
Define Center		5	
Define Point A			
Define Point B		Compute blocks	

### Block data

N.	Area	Weight	Xg

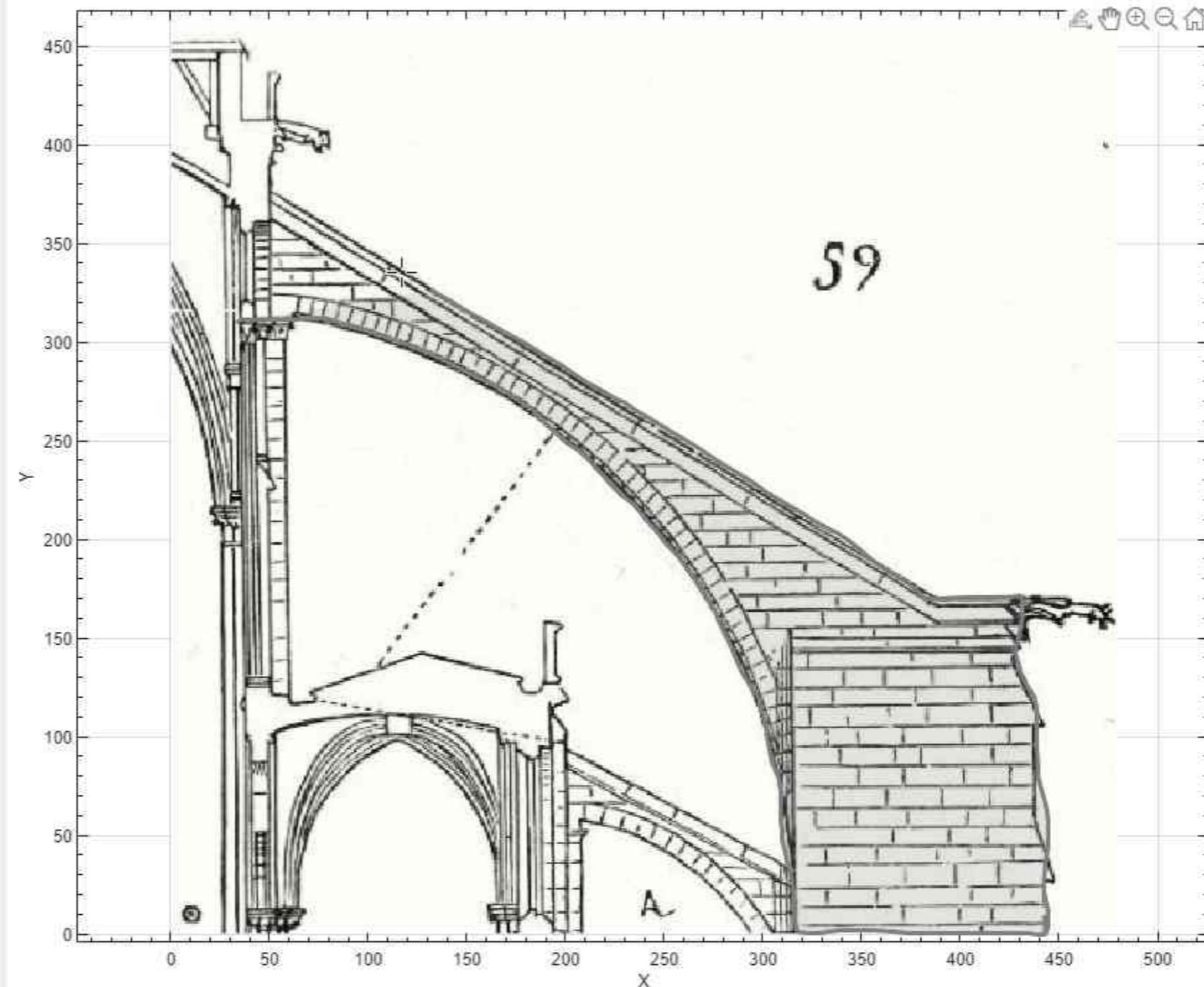
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

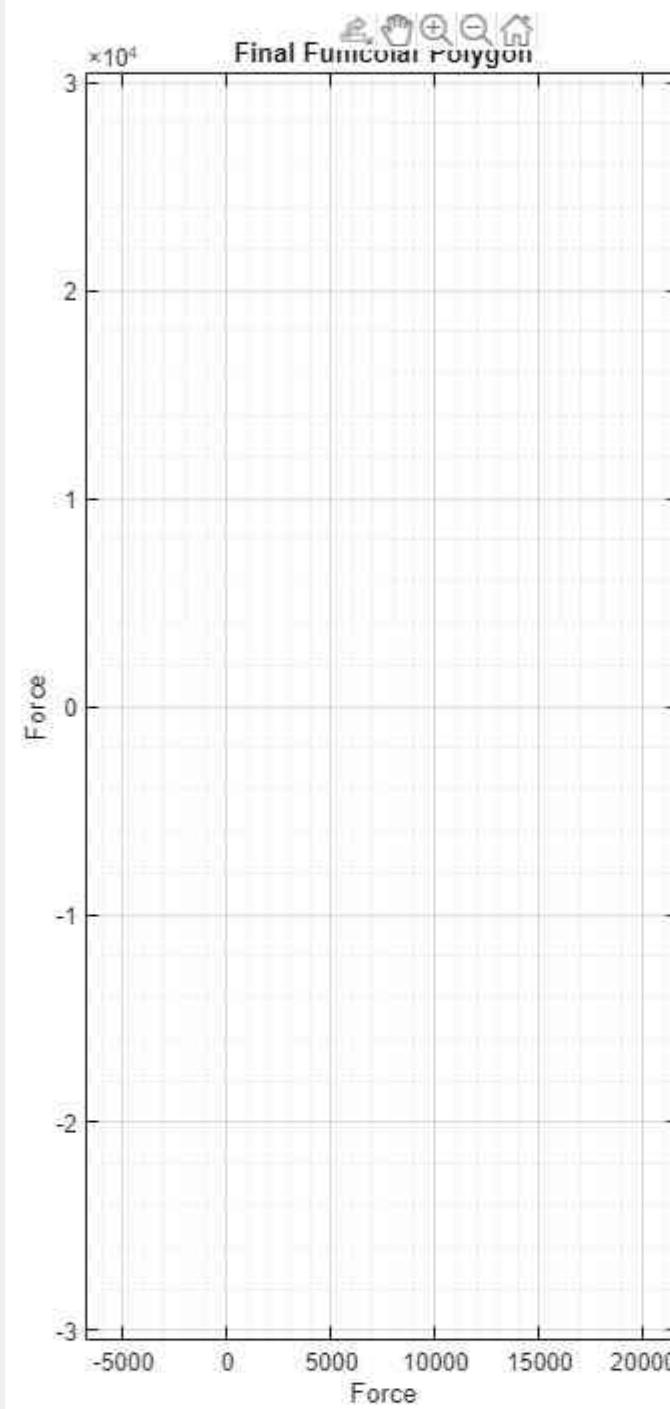


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
<b>Sketch the arch</b>		Subdivide using blocks (new/add):	
Define Center			
Define Point A	5		
Define Point B	Compute blocks		

### Block data

N.	Area	Weight	Xg

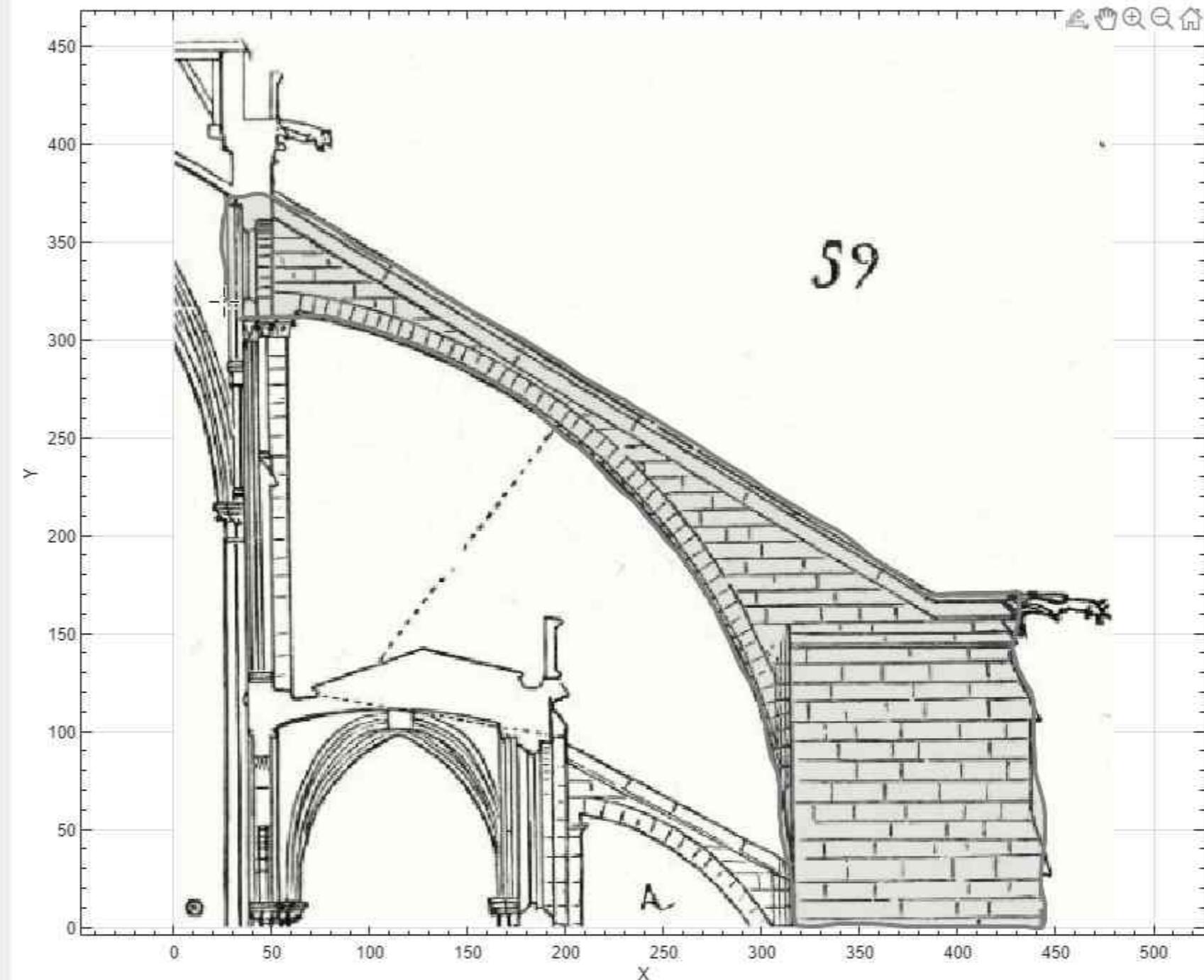
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

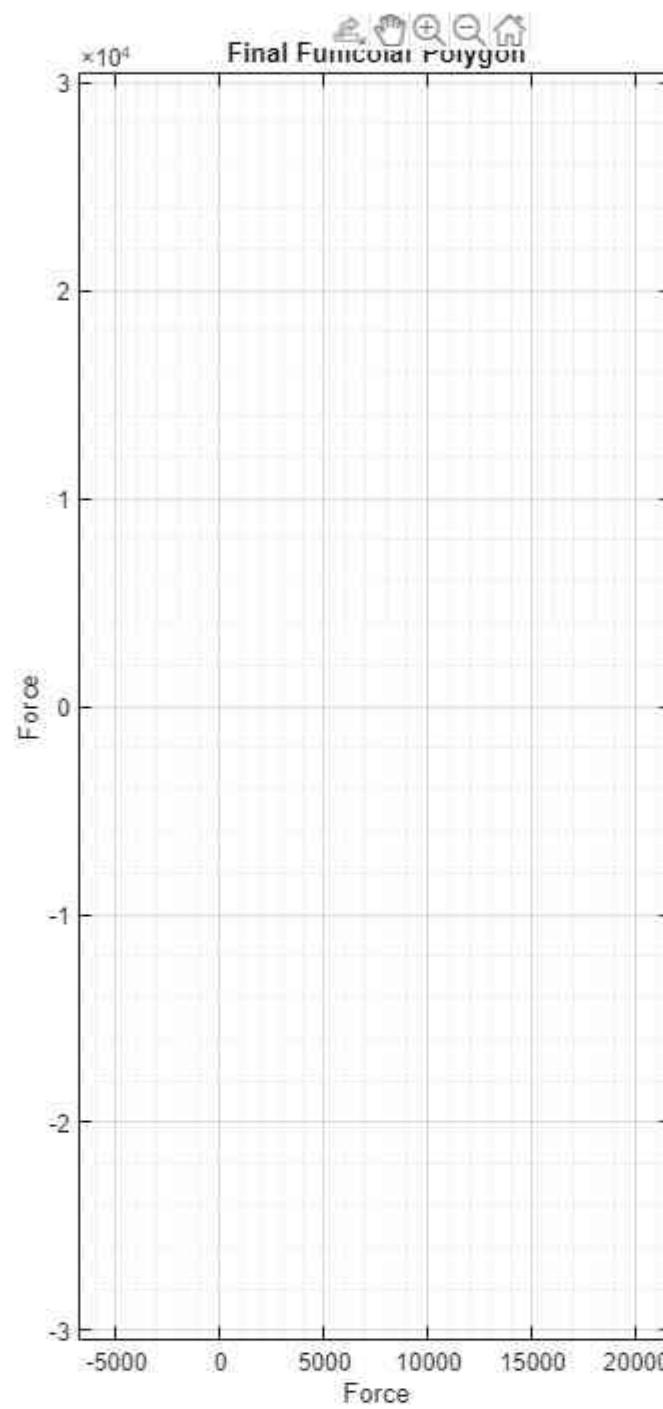


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0



Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
<input type="button" value="Define Center"/>		5	
<input type="button" value="Define Point A"/>			
<input type="button" value="Define Point B"/>		<input type="button" value="Compute blocks"/>	

### Block data

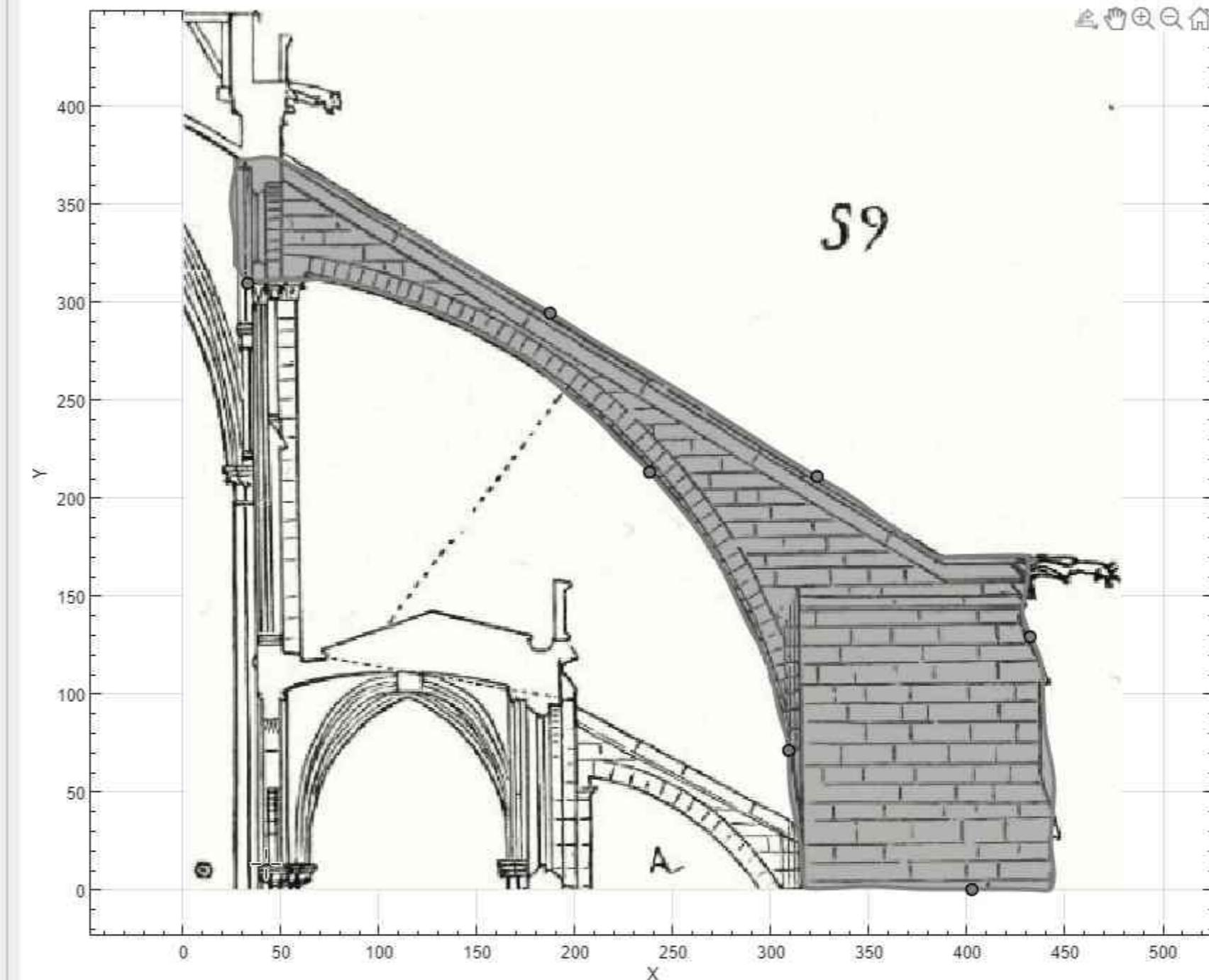
N.	Area	Weight	Xg
<input type="button" value="View data"/>			
<input type="button" value="Edit data"/>			
<input type="button" value="Delete all"/>	<input type="button" value="Delete by N."/>	N:	1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

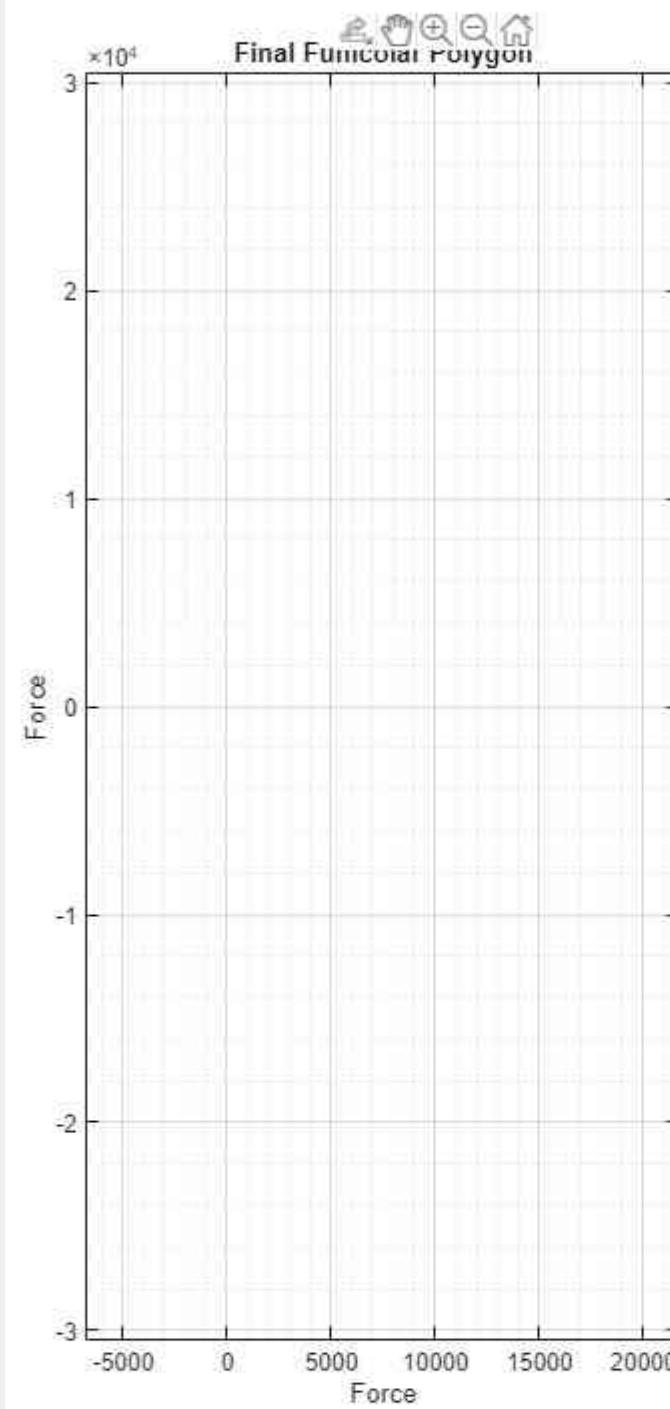
### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



### Force Polygon

Reset View   Show Force Scale



Graphics   Save/Load Example   Blocks properties   Units

<input type="button" value="Plot blocks"/>	<input type="button" value="Plot Forces"/>	<input type="button" value="Plot Reactions"/>	forces factor	3	Force Magnitude Off <input type="radio"/> On
<input type="button" value="Plot Sketch"/>	<input type="button" value="Plot Background Image"/>	<input type="button" value="Flip Y axis"/>	alpha W	0	Background Image Off <input type="radio"/> On
<input type="button" value="Clear Interactive Area"/>	<input type="button" value="Clear Sketch"/>		Sketched Geometry	Off <input type="radio"/> On	Text / Labels Off <input type="radio"/> On

Graphics   Tab2

Force shrink factor

0



Arch Definition   Thrust Line   Mechanism

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by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
Define Center		5	
Define Point A			
Define Point B		Compute blocks	

### Block data

N.	Area	Weight	Xg

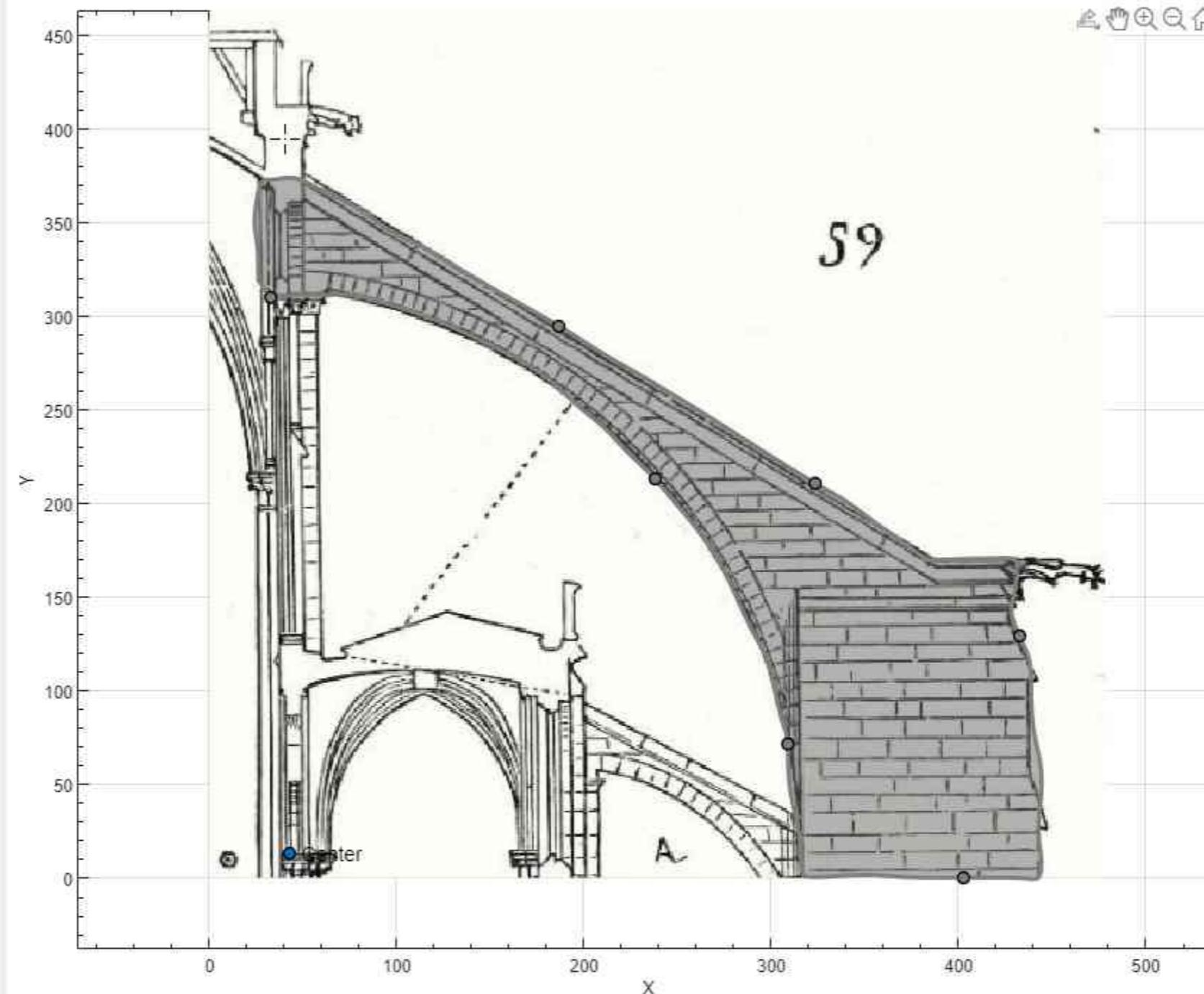
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

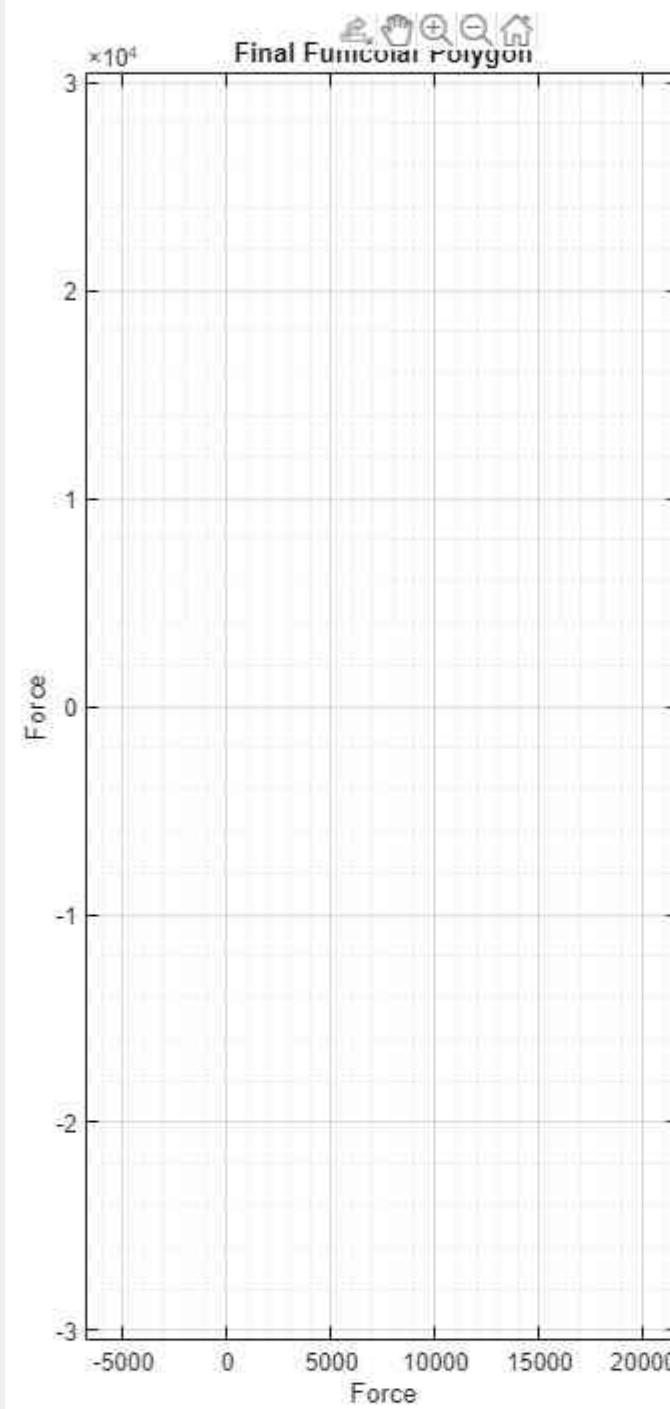


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
Define Center		5	
Define Point A			
Define Point B		Compute blocks	

### Block data

N.	Area	Weight	Xg

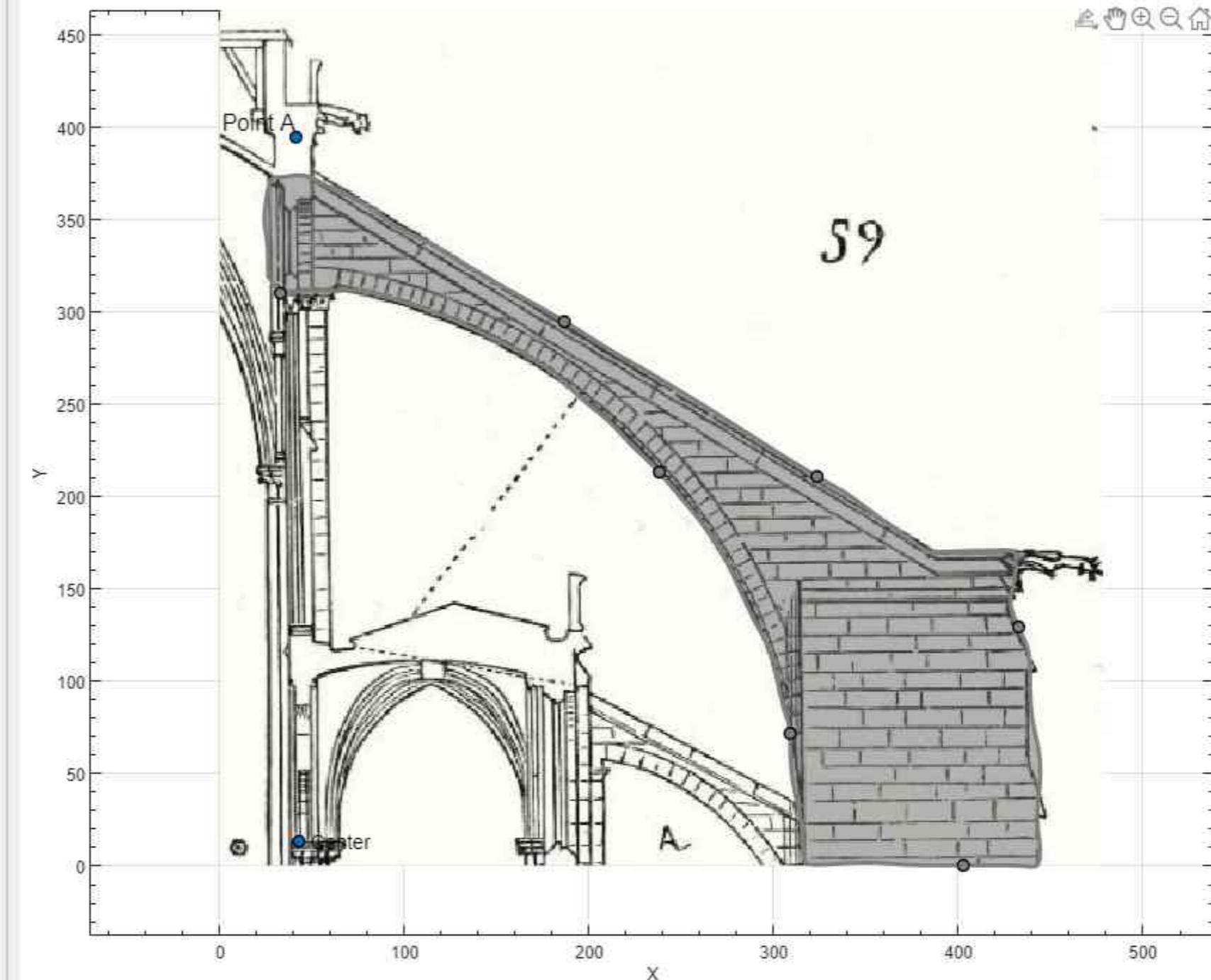
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

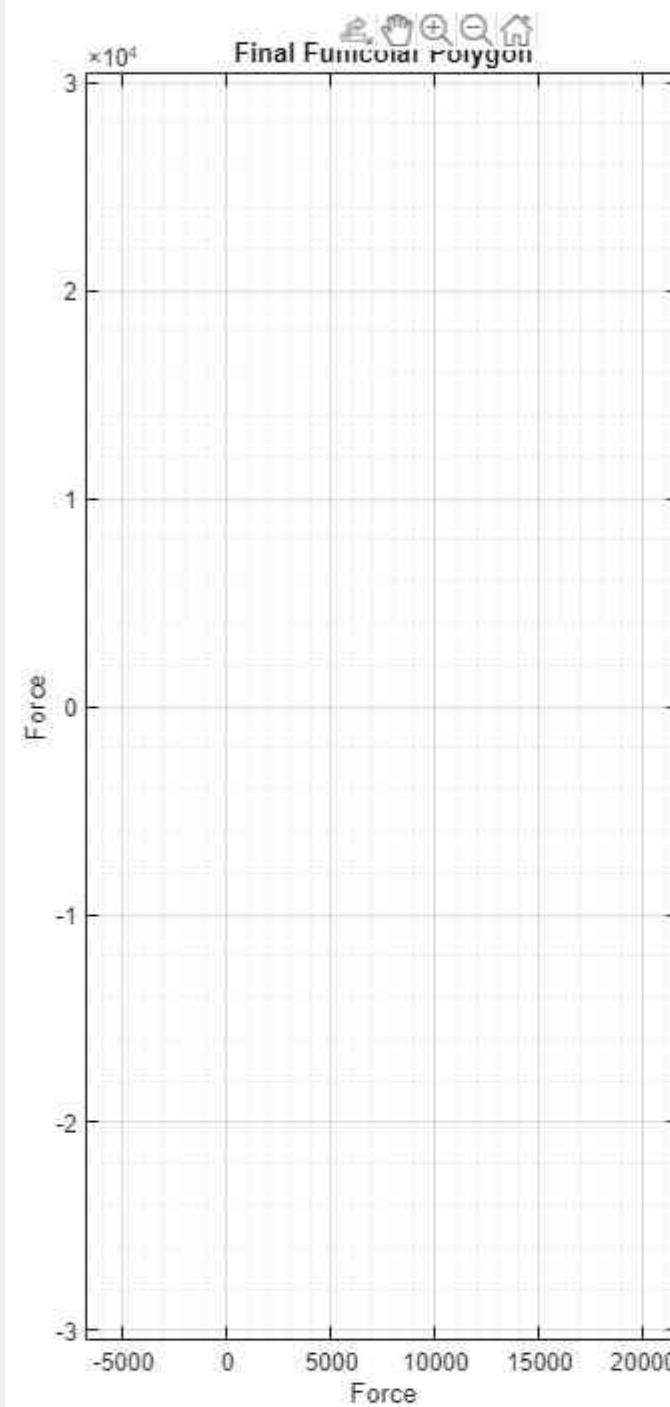


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks	Circular	by Sketch	Lo >
Sketch the arch		Subdivide using blocks (new/add):	
Define Center		5	
Define Point A			
Define Point B		Compute blocks	

### Block data

N.	Area	Weight	Xg

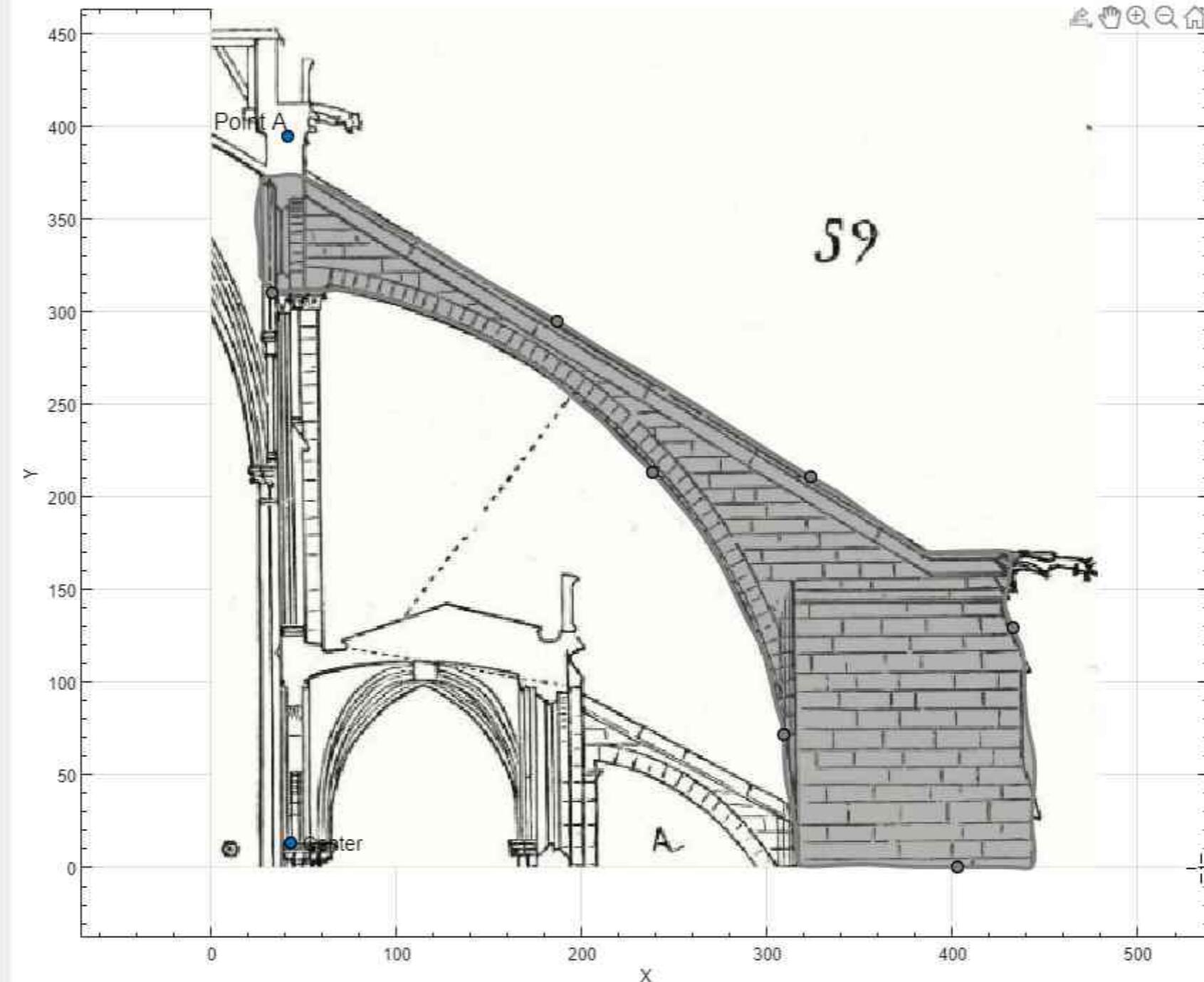
View data   Edit data  
 Delete all   Delete by N.   N: 1

### Background Image

Load image	Pick Reference	L:	1
Flip X	Interactive on: <input checked="" type="radio"/>	Target	100
Flip Y	scale factor	1	Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

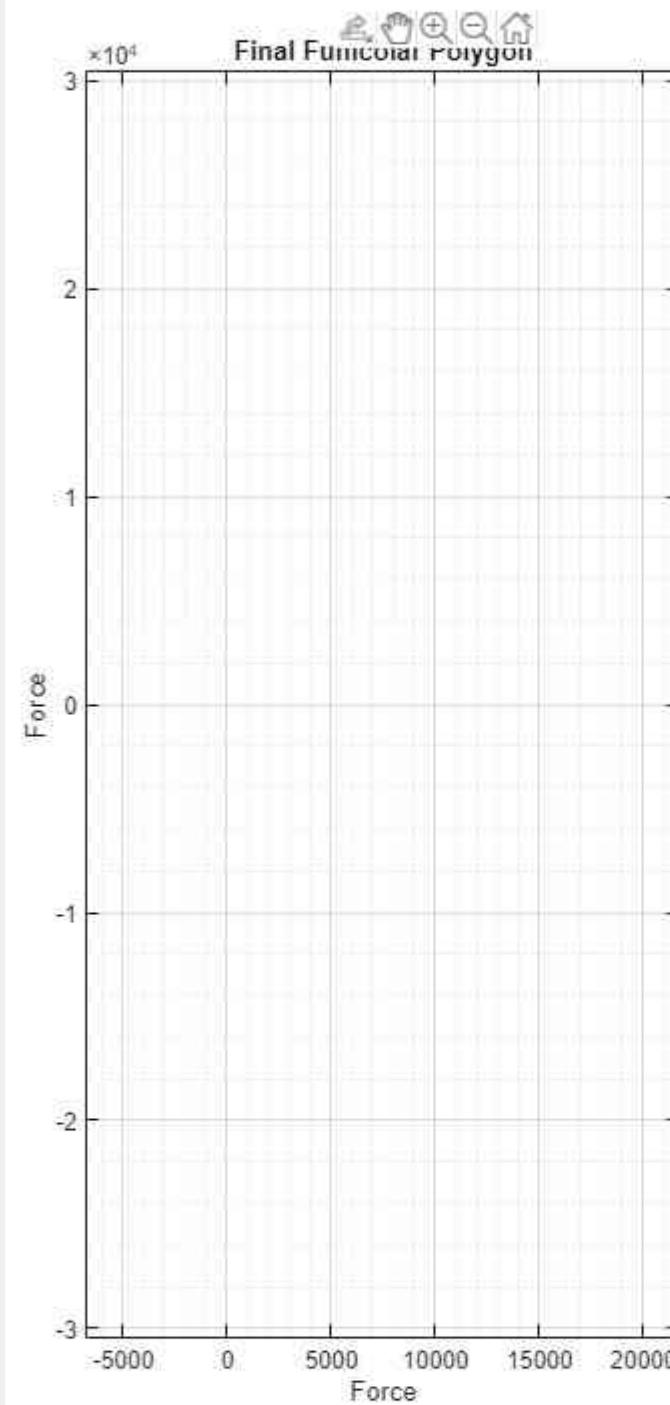


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off:  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off:  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off:  On  
 Text / Labels Off:  On

### Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0









Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points  
6

Thickness  
0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.7489e+03	8.2476e+10	342.07
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N:

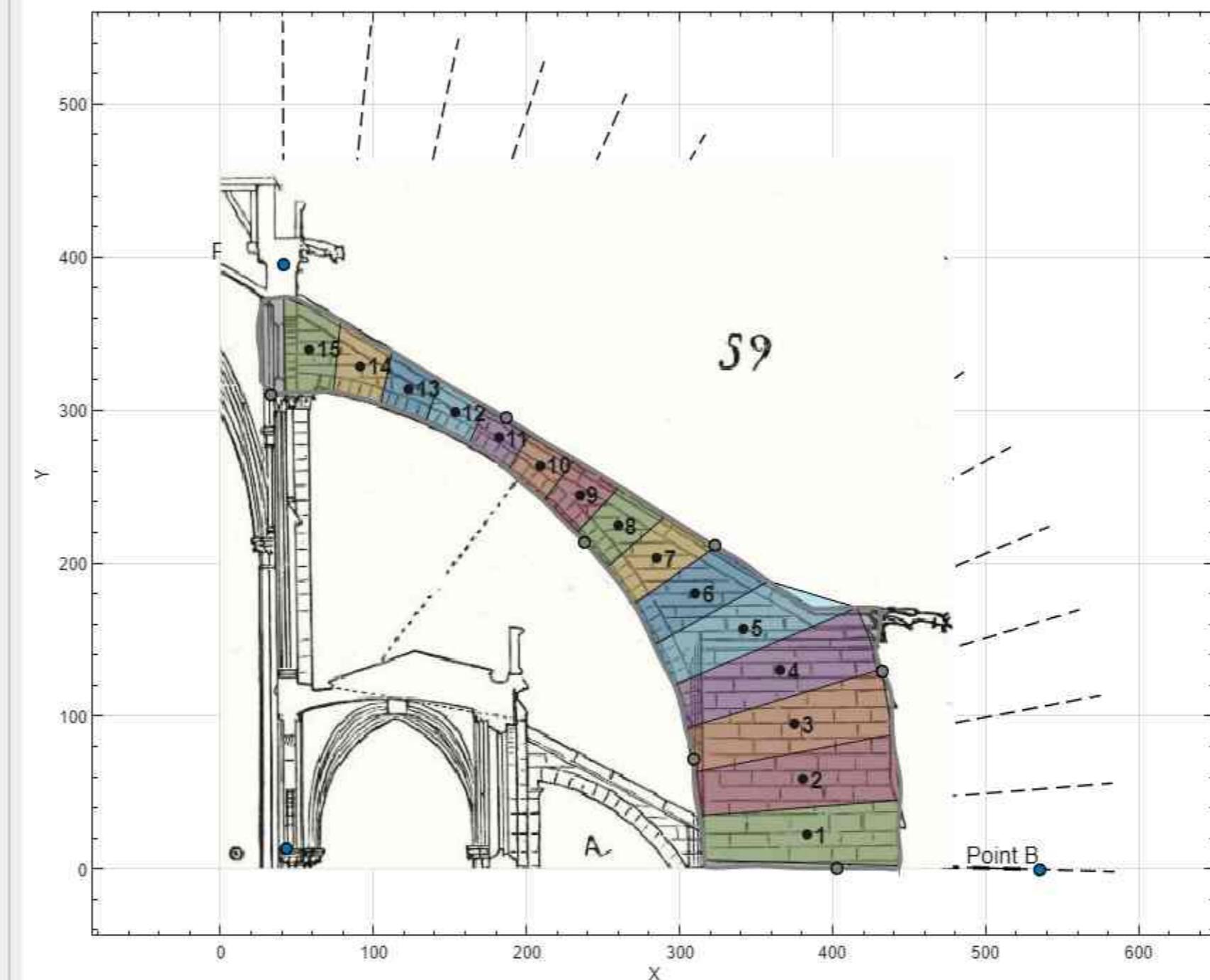
### Background Image

L:

Interactive on  off Target:

scale factor:  Scale Image

### Interactive Area



Graphics   Save/Load Example   Blocks properties   Units

forces factor:

Force Magnitude Off  On

alpha W:

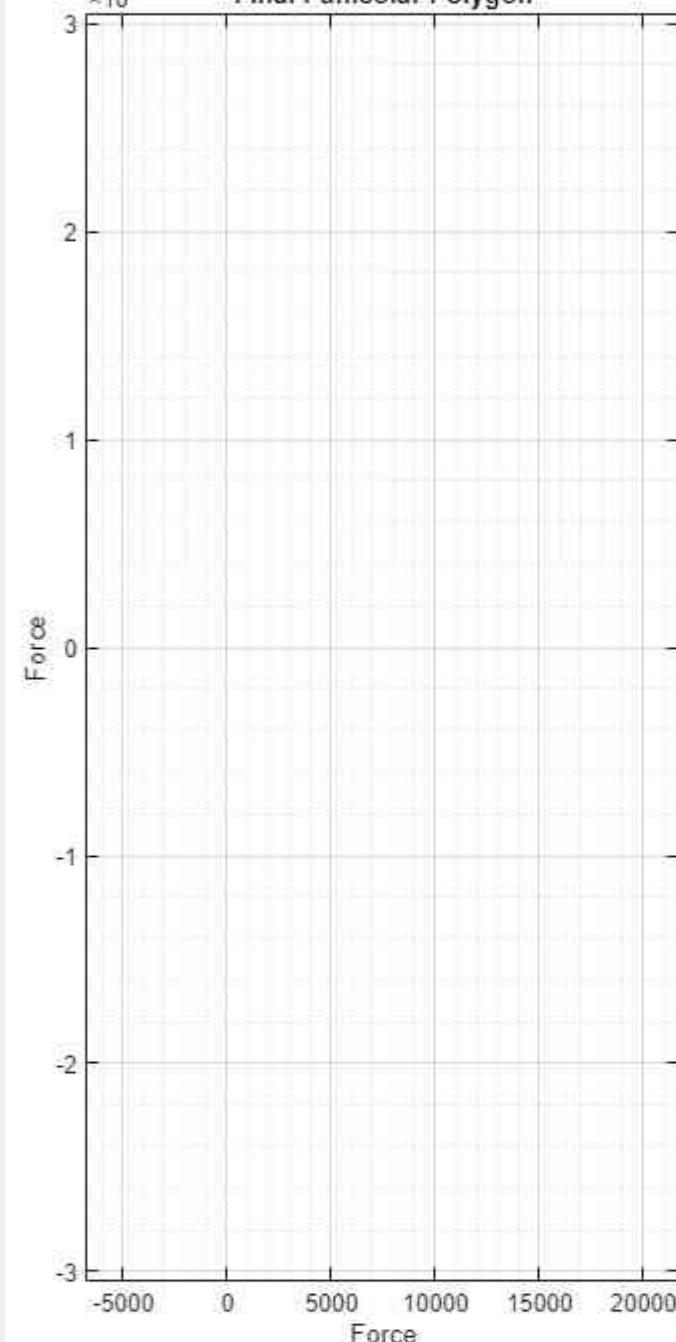
Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

### Force Polygon

$\times 10^4$   
Final Funicular Polygon



Graphics   Tab2

Force shrink factor:



Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block  
Add irregular Block   N. of points: 6  
Thickness: 0

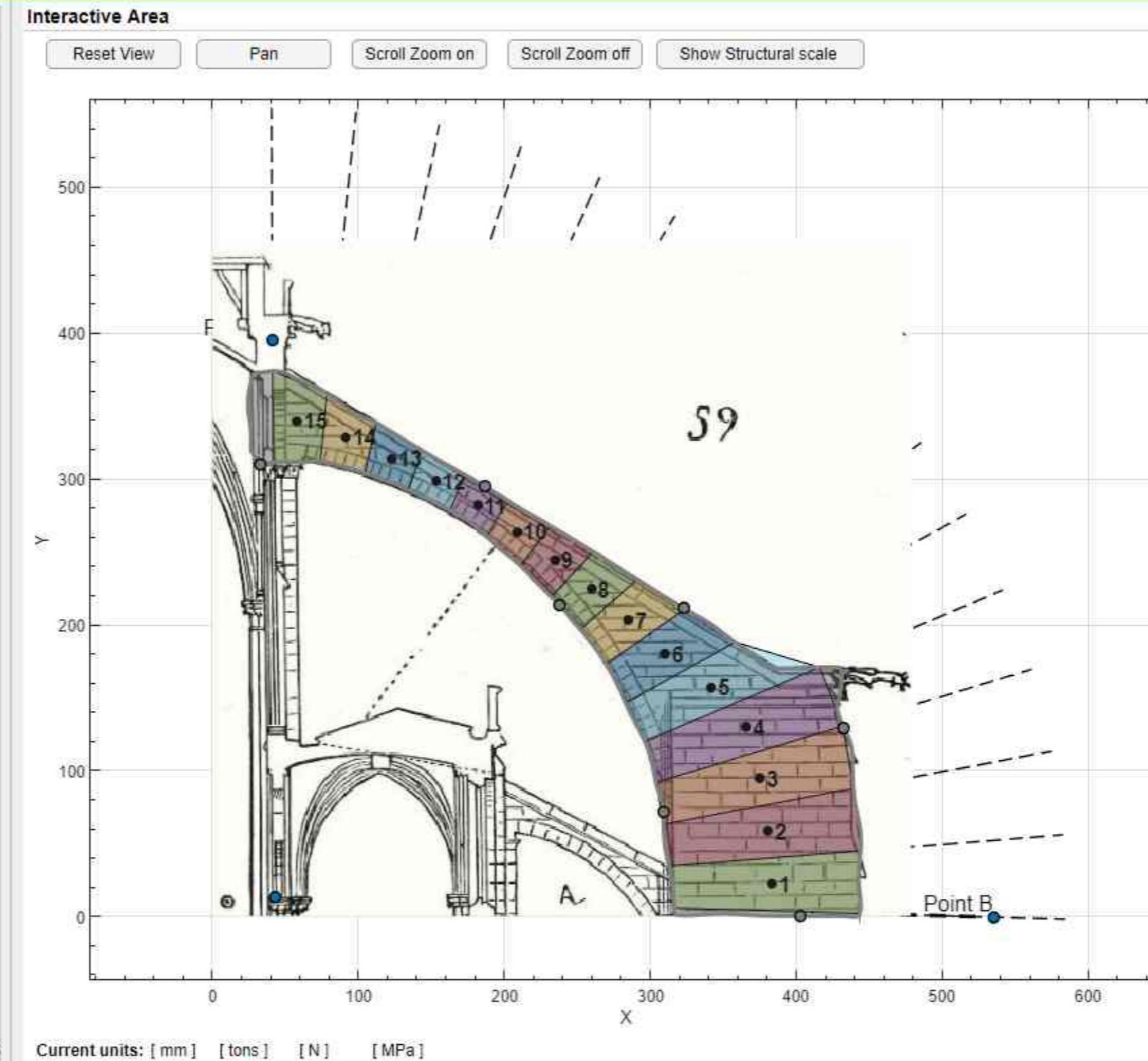
### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.7489e+03	8.2476e+10	342.07
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

View data   Edit data  
Delete all   Delete by N.   N: 1

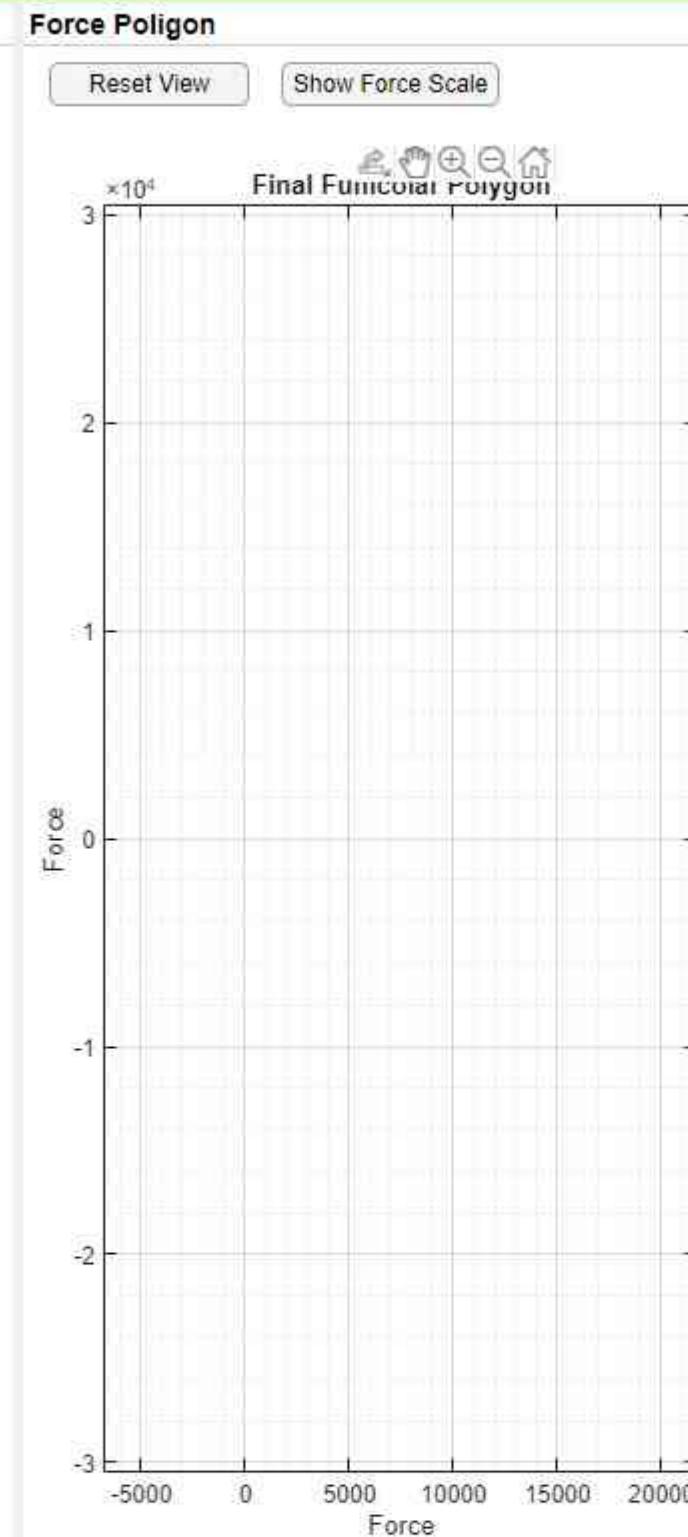
### Background Image

Load image   Pick Reference   L: 1  
Flip X   Interactive on: off   Target: 100  
Flip Y   scale factor: 1   Scale Image



Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off: On  
Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off: On  
Clear Interactive Area   Clear Sketch   Sketched Geometry Off: On  
Text / Labels Off: On



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points 6

Thickness 0

## Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.7489e+03	8.2476e+10	342.07
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

View data   Edit data

Delete all   Delete by N.

N: 1

## Background Image

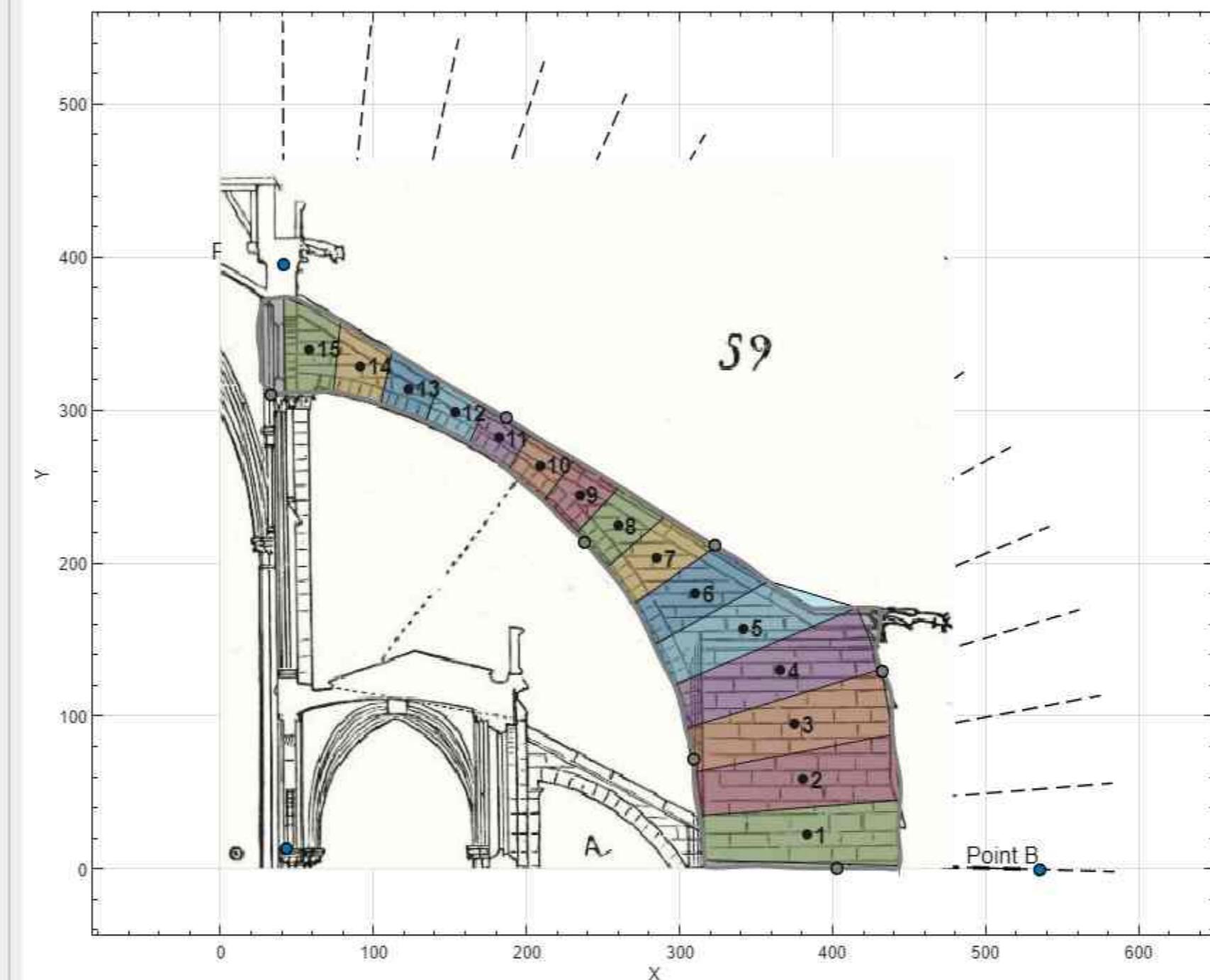
Load image   Pick Reference L: 1

Flip X   Interactive on: off   Target 100

Flip Y   scale factor 1   Scale Image

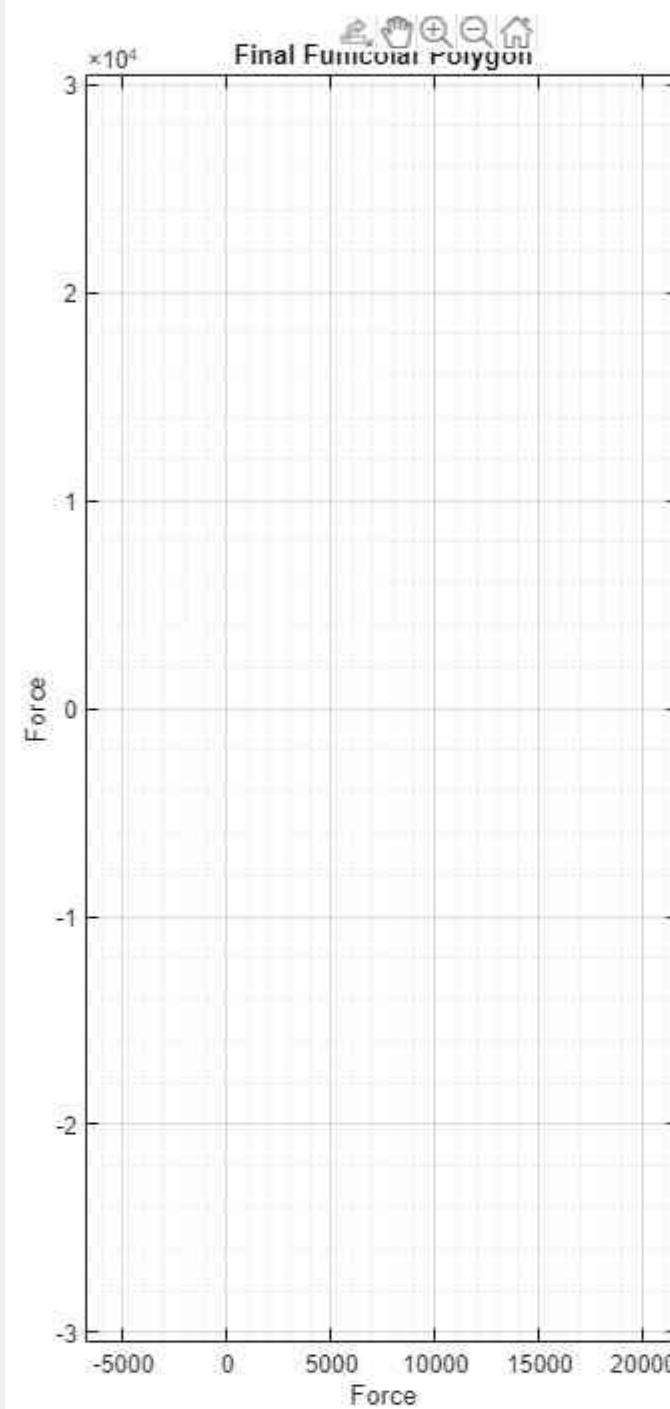
## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



## Force Polygon

Reset View   Show Force Scale



Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Clear Interactive Area

Clear Sketch

Sketched Geometry Off On

Text / Labels Off On

Graphics Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points 6

Thickness 0

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3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.7489e+03	8.2476e+10	342.07
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
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12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

View data   Edit data

Delete all   Delete by N. N: 5

## Background Image

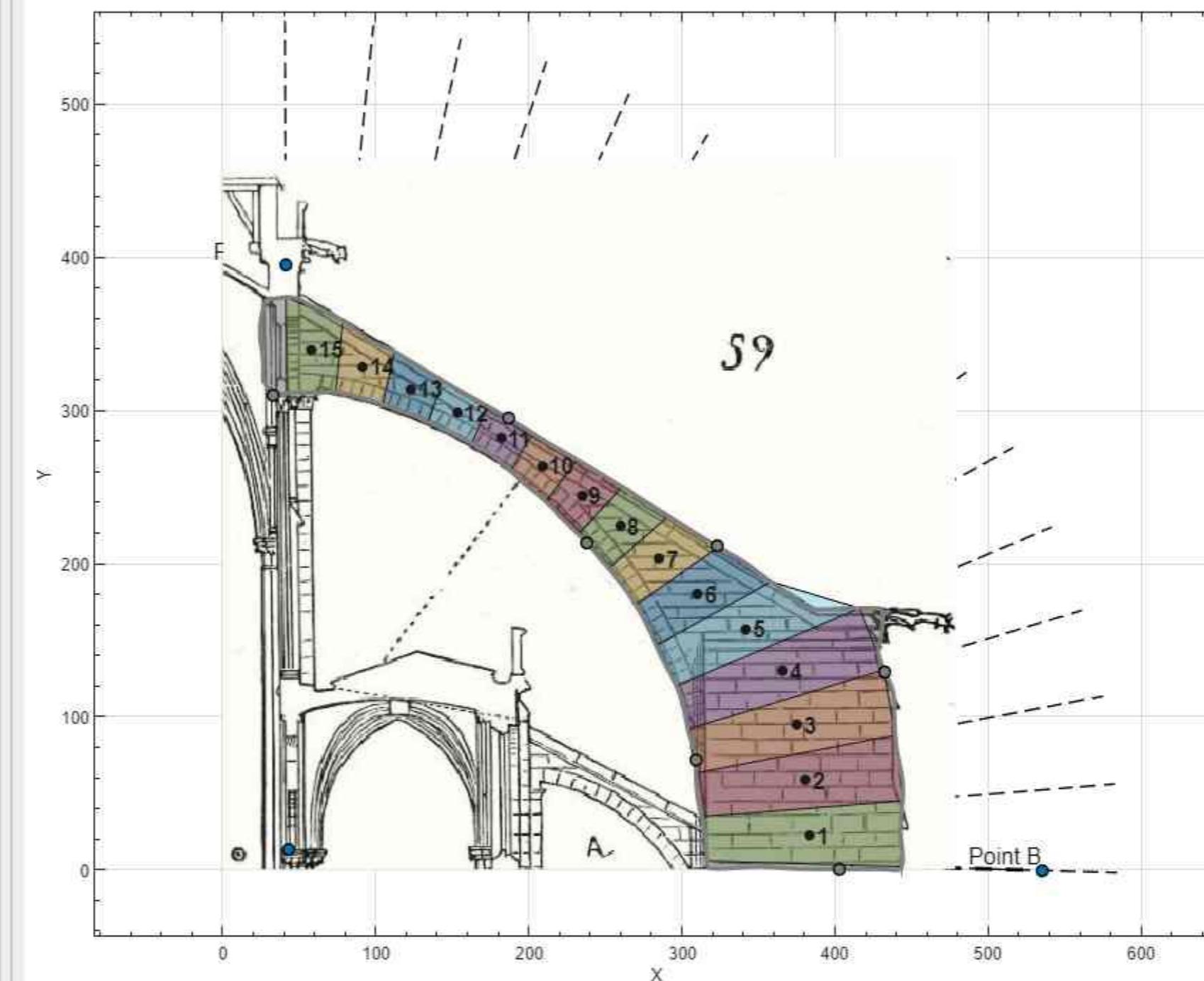
Load image   Pick Reference L: 1

Flip X   Interactive on: off   Target 100

Flip Y   scale factor 1   Scale Image

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Clear Interactive Area

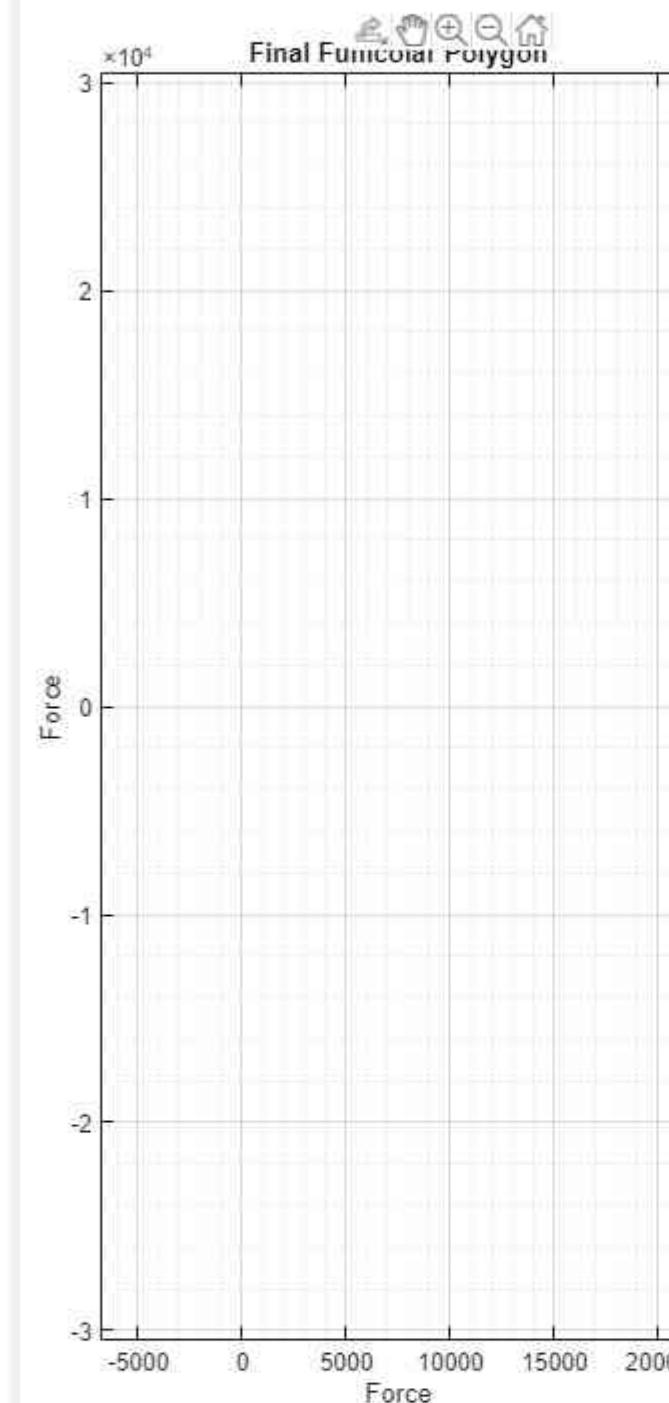
Clear Sketch

Sketched Geometry Off On

Text / Labels Off On

## Force Polygon

Reset View   Show Force Scale



Graphics

Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
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10	834.5797	1.9461e+10	181.91
11	899.4989	1.9789e+10	153.38
12	1.0589e+03	2.3296e+10	123.33
13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

N:

### Background Image

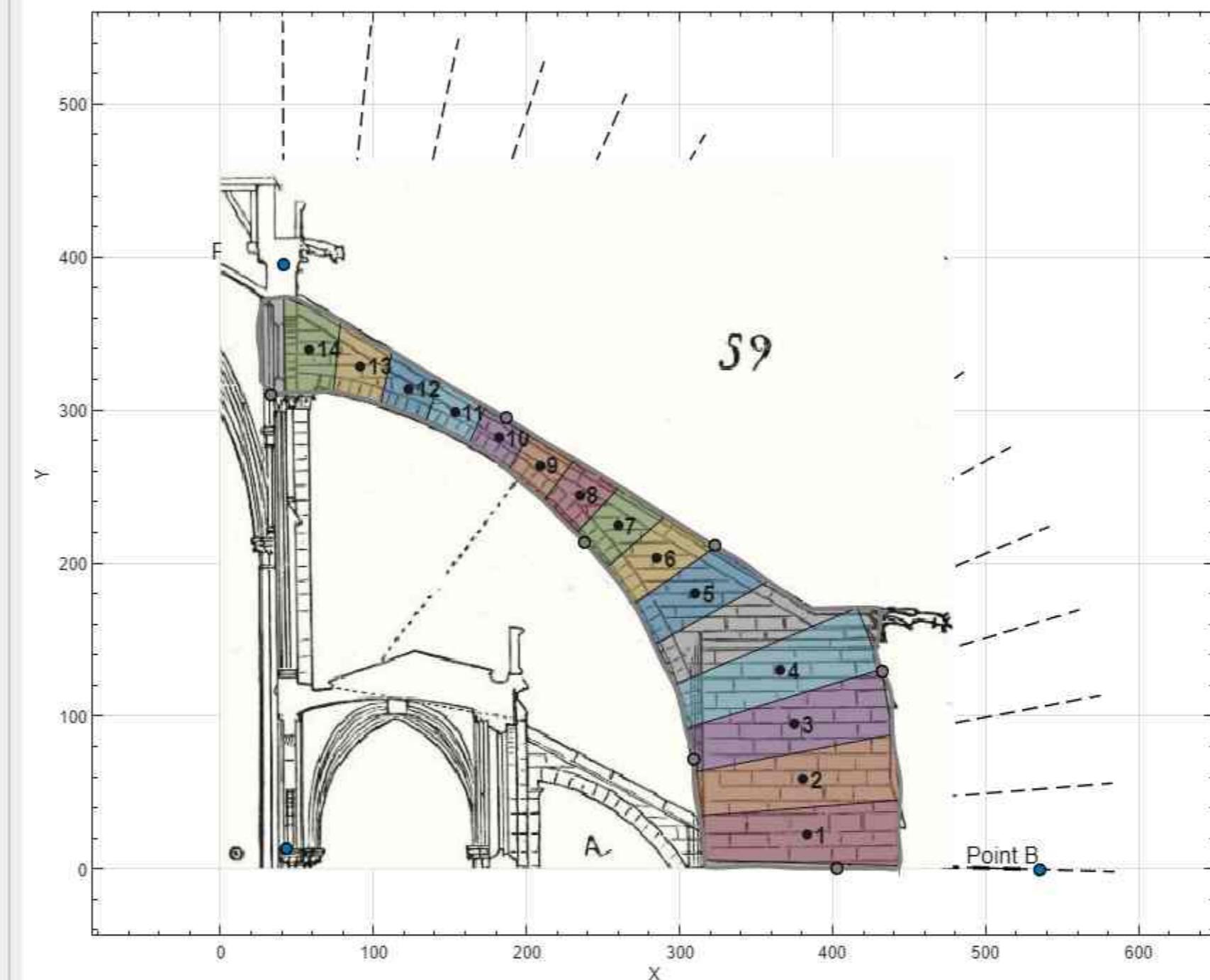
Load image  L:

Flip X  Interactive on  off Target:

Flip Y  scale factor:  Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

forces factor

Force Magnitude Off  On

alpha W

Background Image Off  On

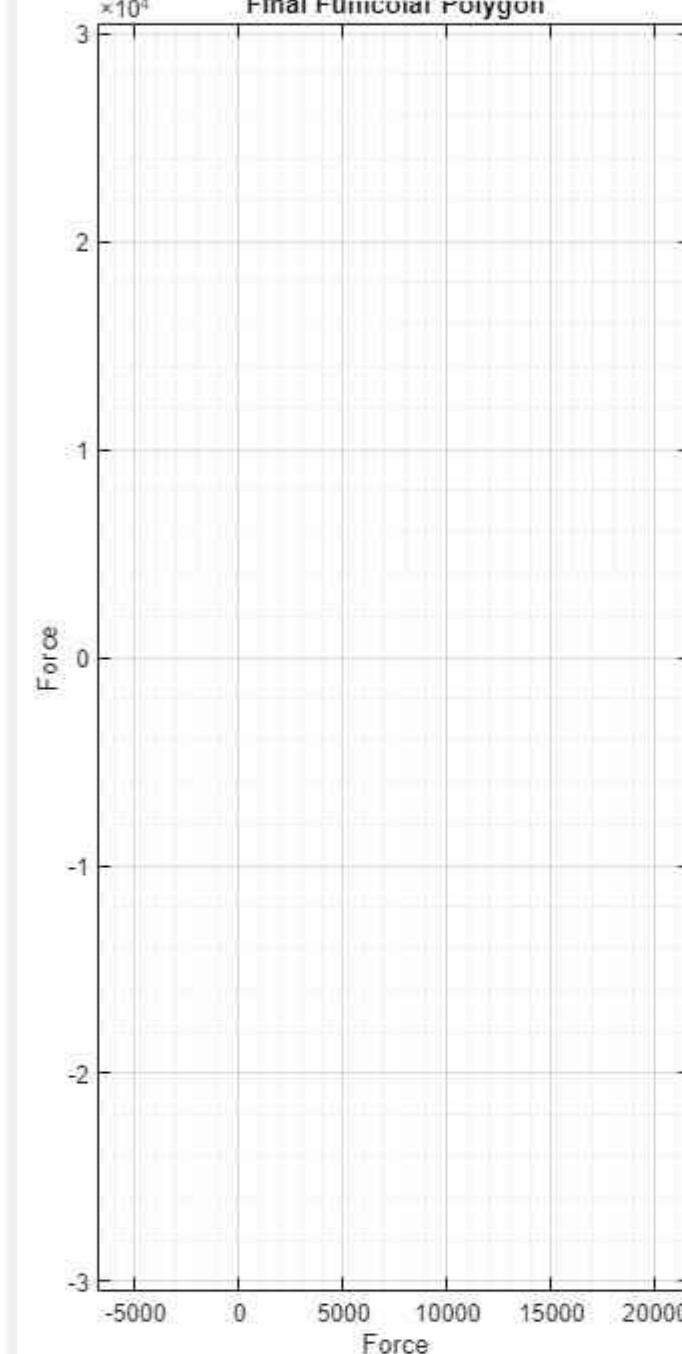
Sketched Geometry Off  On

Text / Labels Off  On

### Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics

Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	2.5307e+03	5.5675e+10	310.56
6	1.9270e+03	4.2394e+10	285.49
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8	1.2235e+03	2.6918e+10	234.75
9	1.0019e+03	2.2042e+10	208.88
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11	899.4989	1.9789e+10	153.38
12	1.0589e+03	2.3296e+10	123.33
13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

N:

### Background Image

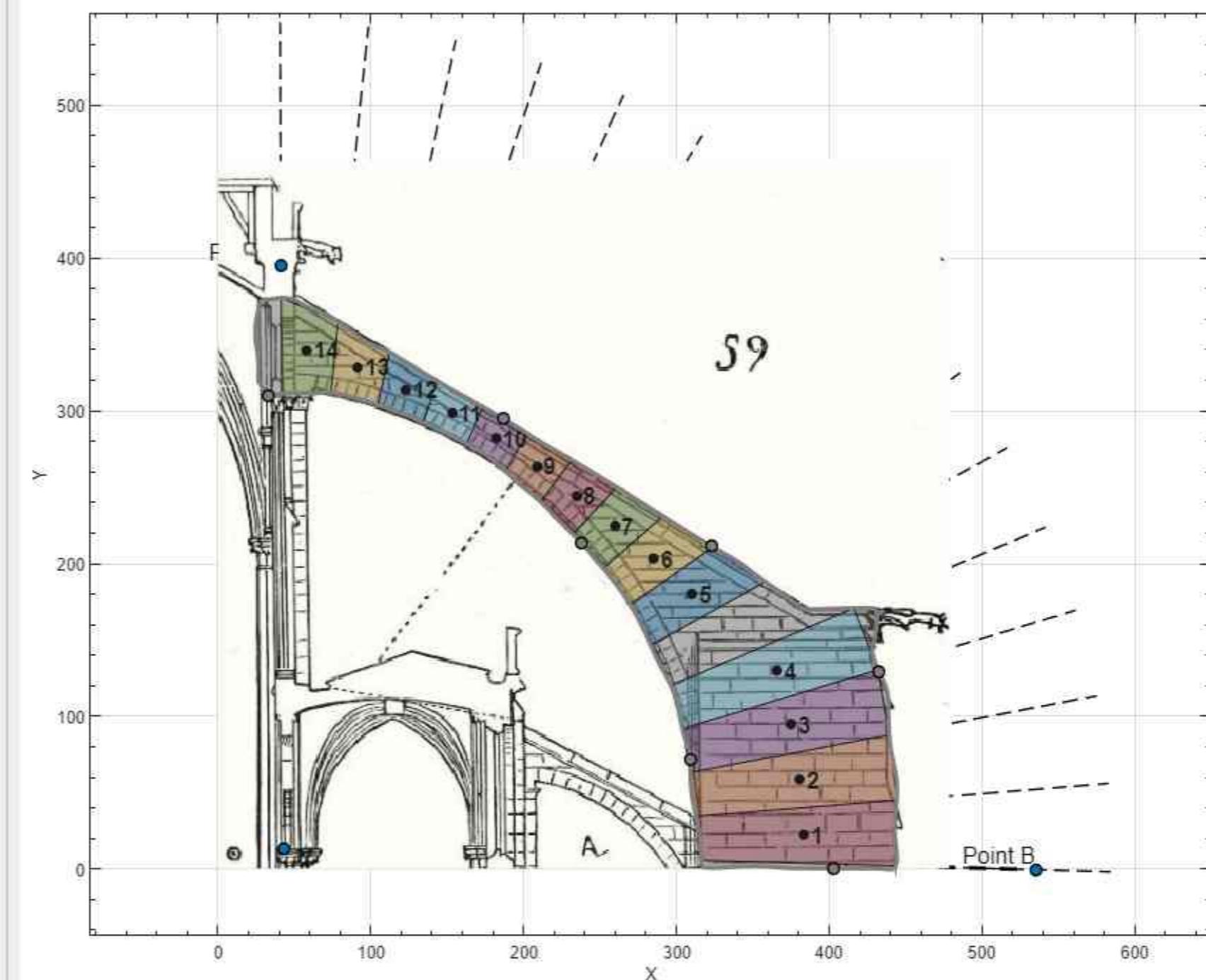
Load image  L:

Flip X   Interactive on:

Flip Y   scale factor:  Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

forces factor

Force Magnitude Off  On

alpha W

Background Image Off  On

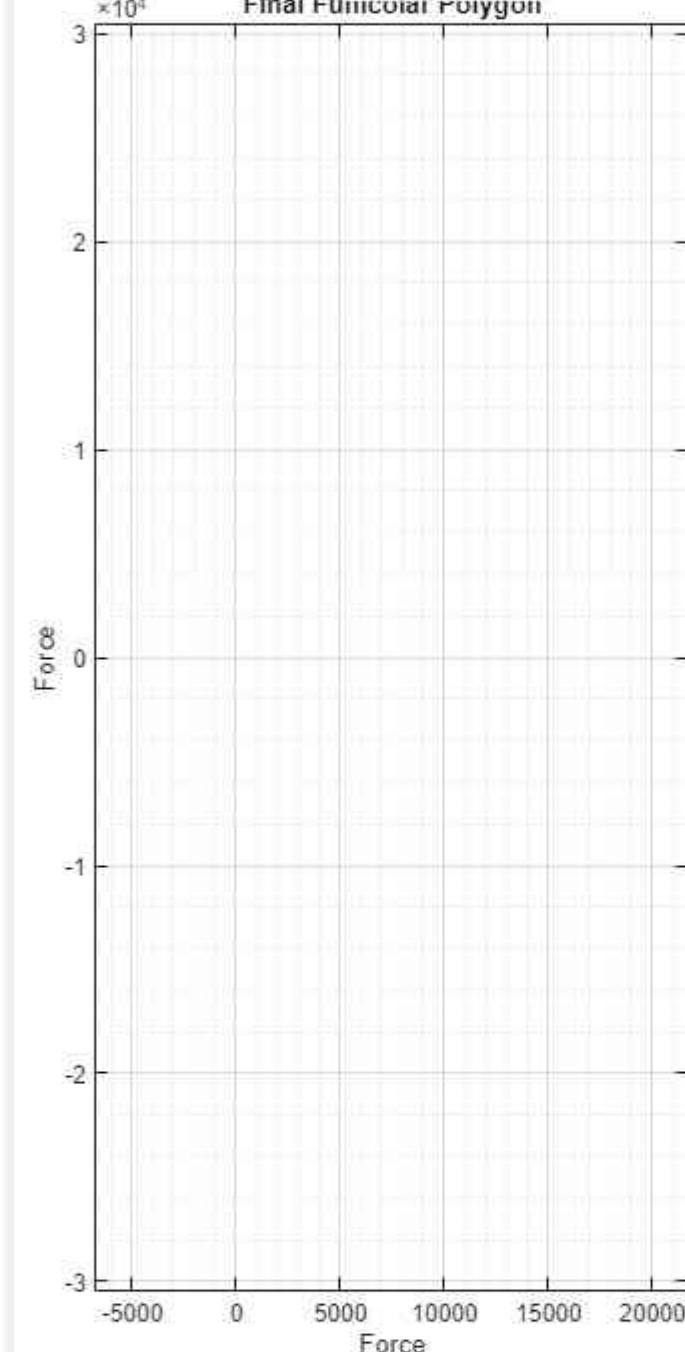
Sketched Geometry Off  On

Text / Labels Off  On

### Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics

Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points 6

Thickness 0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
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12	1.0589e+03	2.3296e+10	123.33
13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

View data

Edit data

Delete all

Delete by N. N: 5

### Background Image

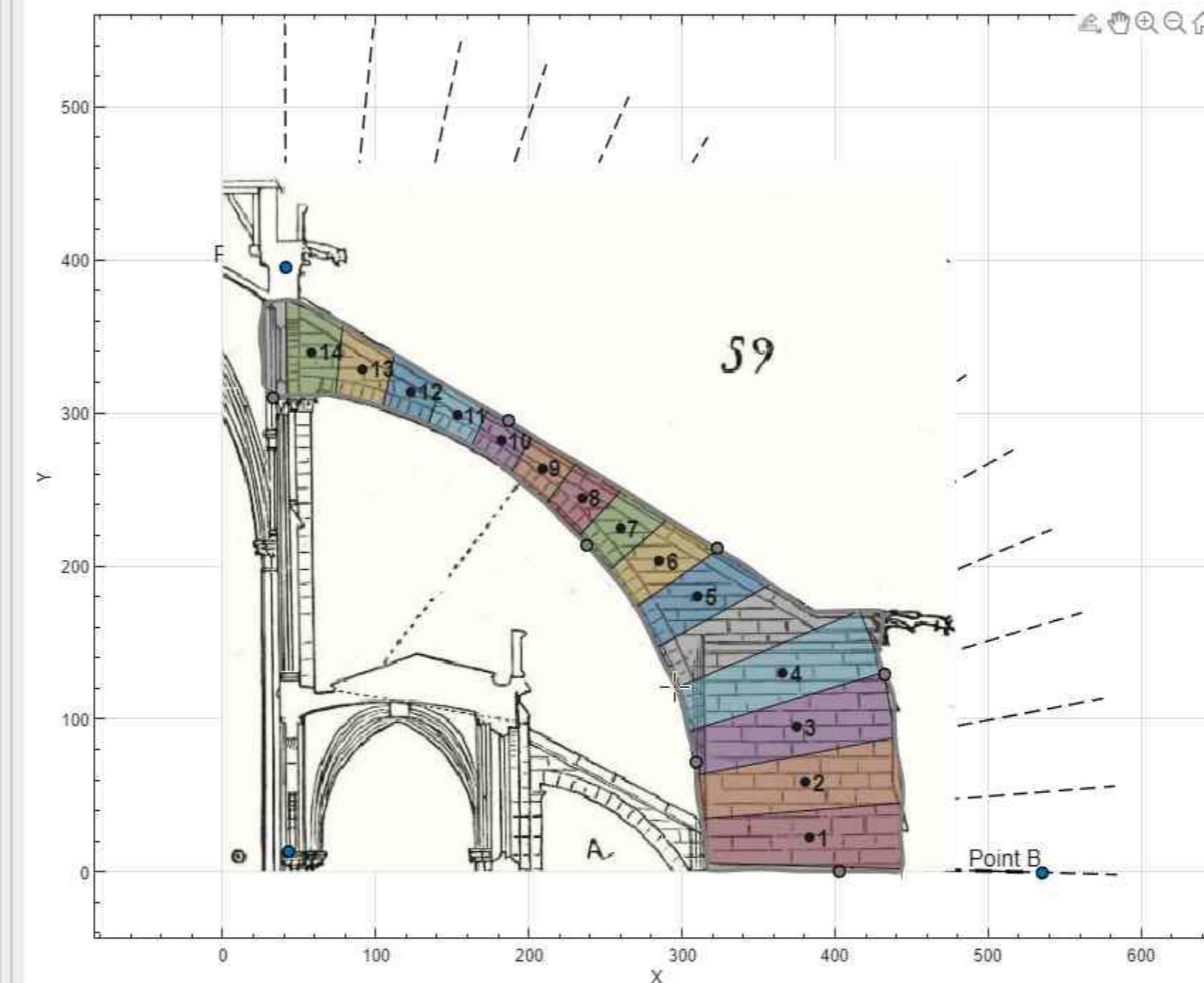
Load image Pick Reference L: 1

Flip X Interactive on: off Target 100

Flip Y scale factor 1 Scale Image

### Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off On

Clear Interactive Area

Clear Sketch

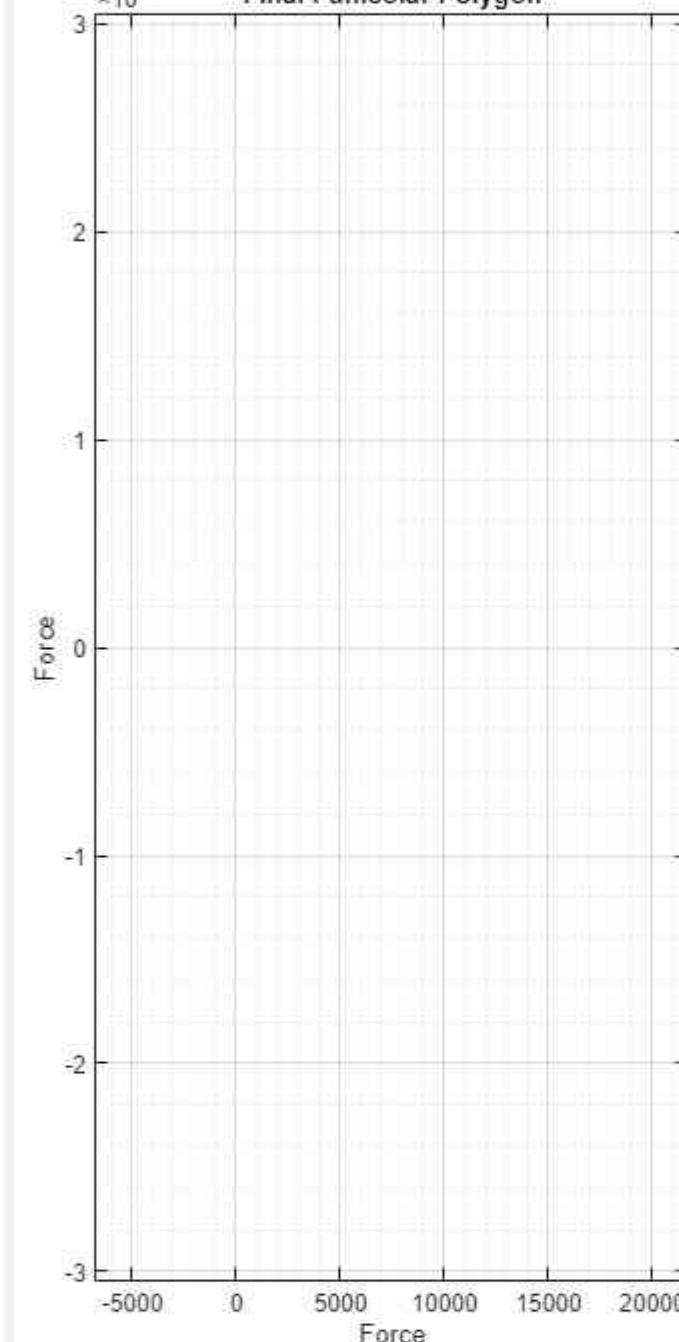
Sketched Geometry Off On

Text / Labels Off On

### Force Polygon

Reset View Show Force Scale

Final Funicular Polygon  $\times 10^4$



Graphics

Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points 6

Thickness 0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
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3	4.8000e+03	1.0560e+11	375.32
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12	1.0589e+03	2.3296e+10	123.33
13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

View data

Edit data

Delete all

Delete by N. N: 5

### Background Image

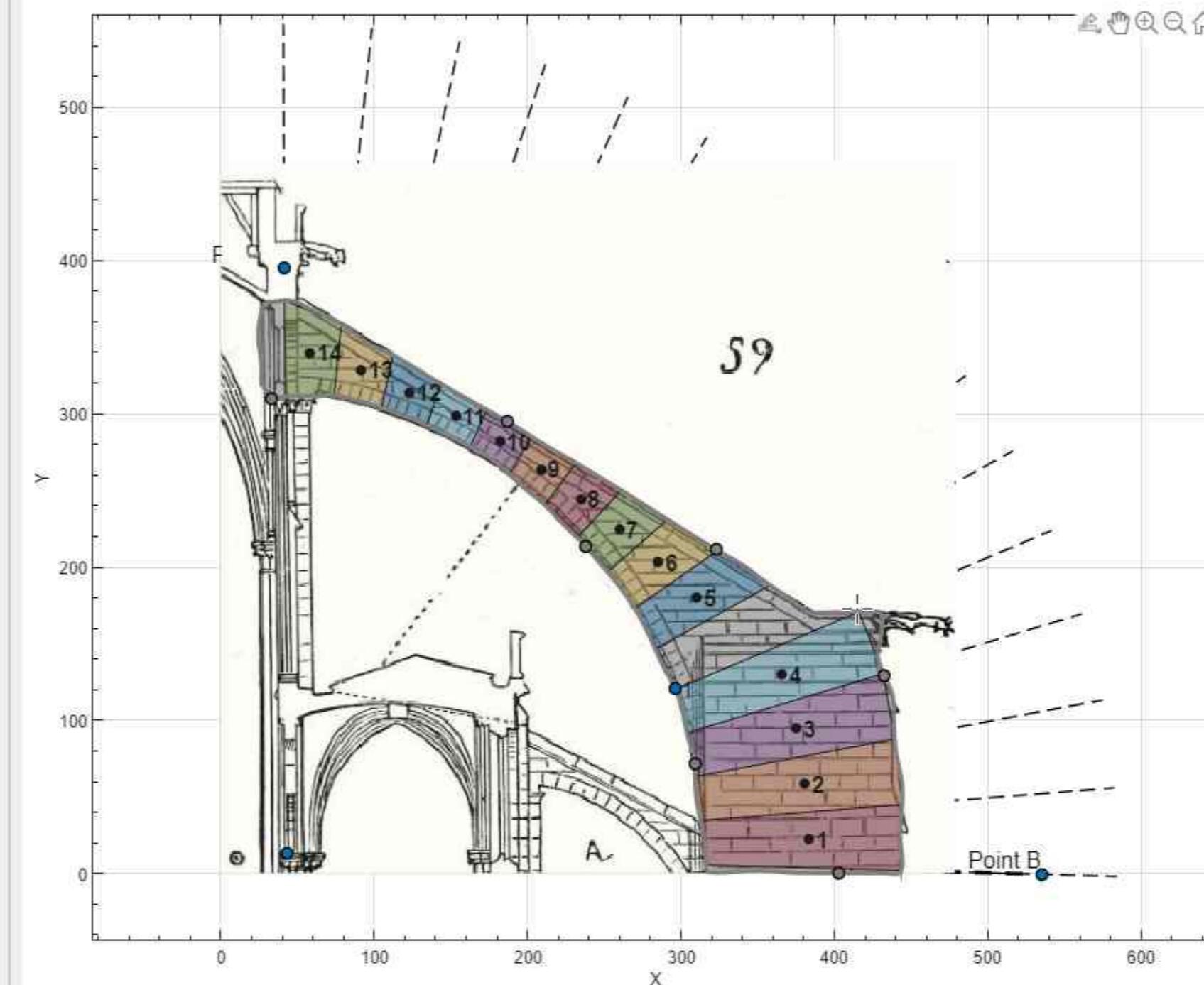
Load image Pick Reference L: 1

Flip X Interactive on: off Target 100

Flip Y scale factor 1 Scale Image

### Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor

3

Force Magnitude Off On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W

0

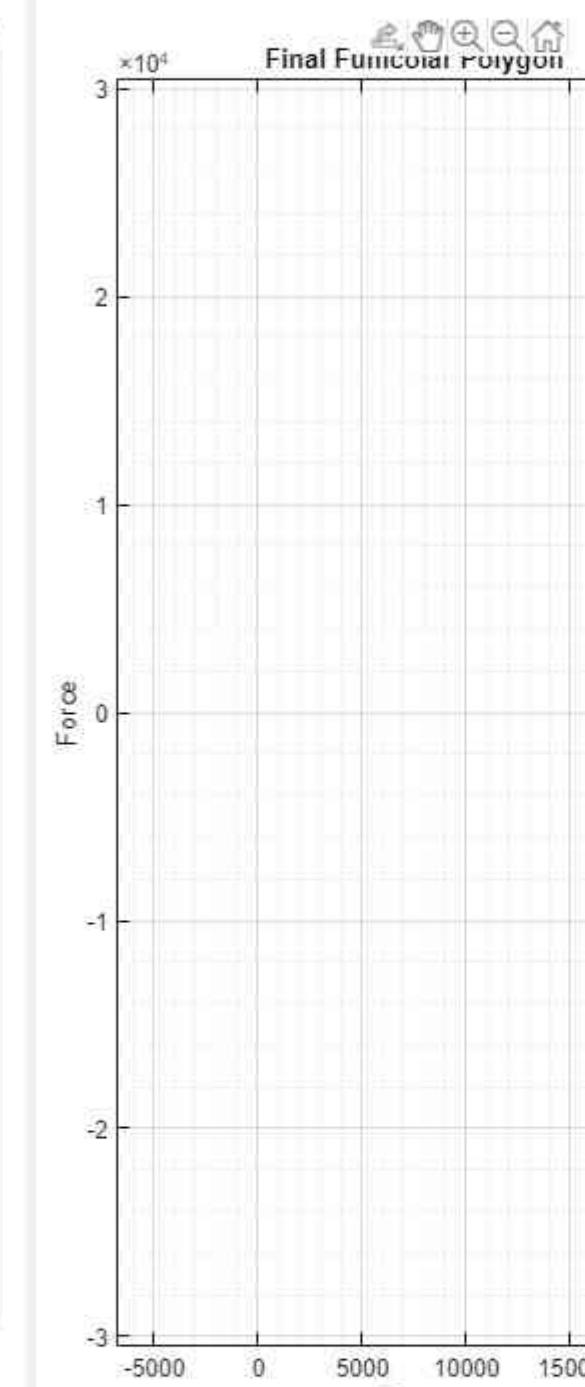
Background Image Off On

Clear Interactive Area

Clear Sketch

### Force Polygon

Reset View Show Force Scale



Graphics

Tab2

Force shrink factor

0

Sketched Geometry Off On

Text / Labels Off On

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points  
6

Thickness  
0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	2.5307e+03	5.5675e+10	310.56
6	1.9270e+03	4.2394e+10	285.49
7	1.5188e+03	3.3409e+10	260.08
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10	834.5797	1.9461e+10	181.91
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12	1.0589e+03	2.3296e+10	123.33
13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

View data

Edit data

Delete all

Delete by N.

N: 5

### Background Image

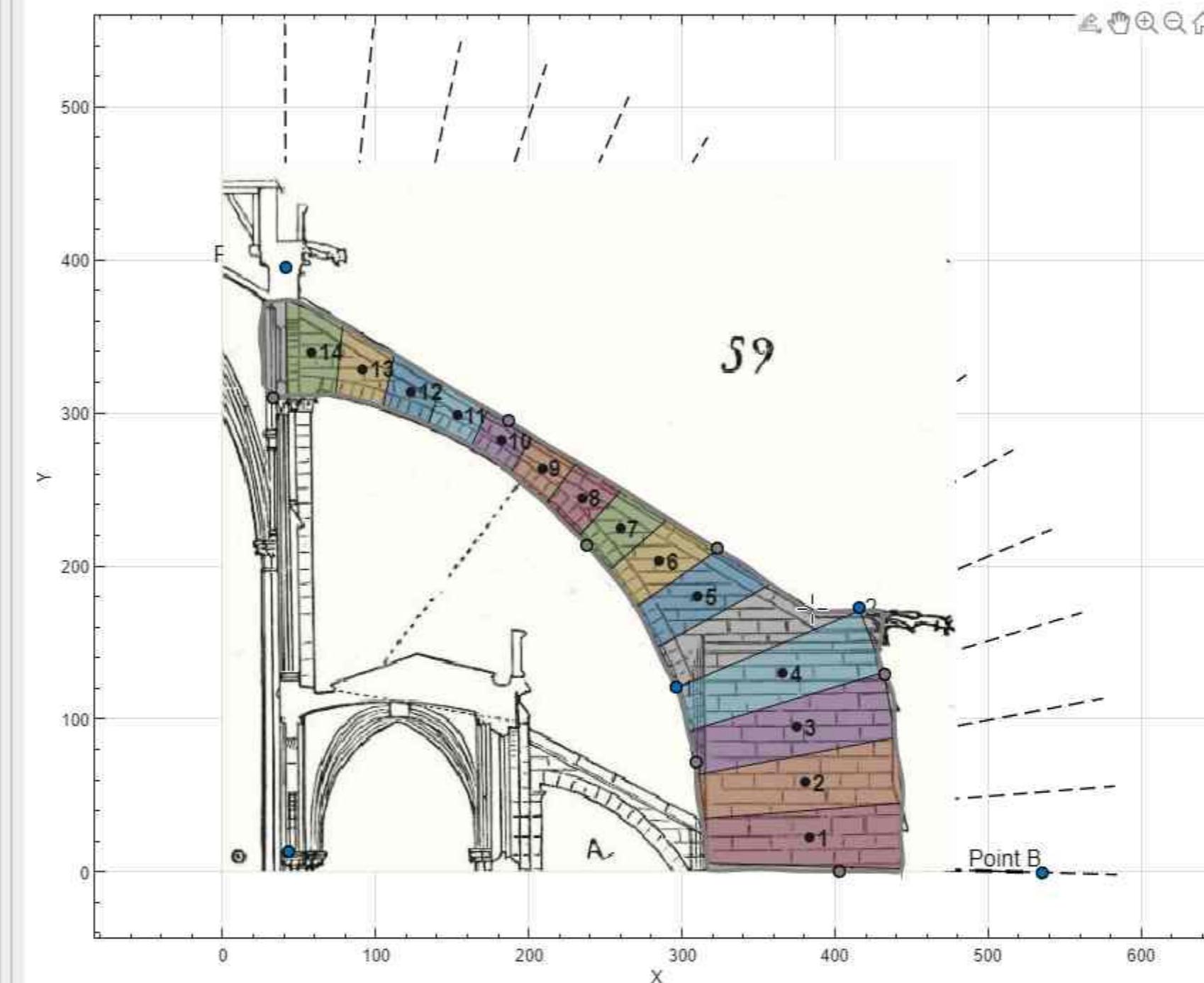
Load image   Pick Reference   L: 1

Flip X   Interactive on: off   Target: 100

Flip Y   scale factor: 1   Scale Image

### Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor: 3

Force Magnitude Off: On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W: 0

Background Image Off: On

Clear Interactive Area

Clear Sketch

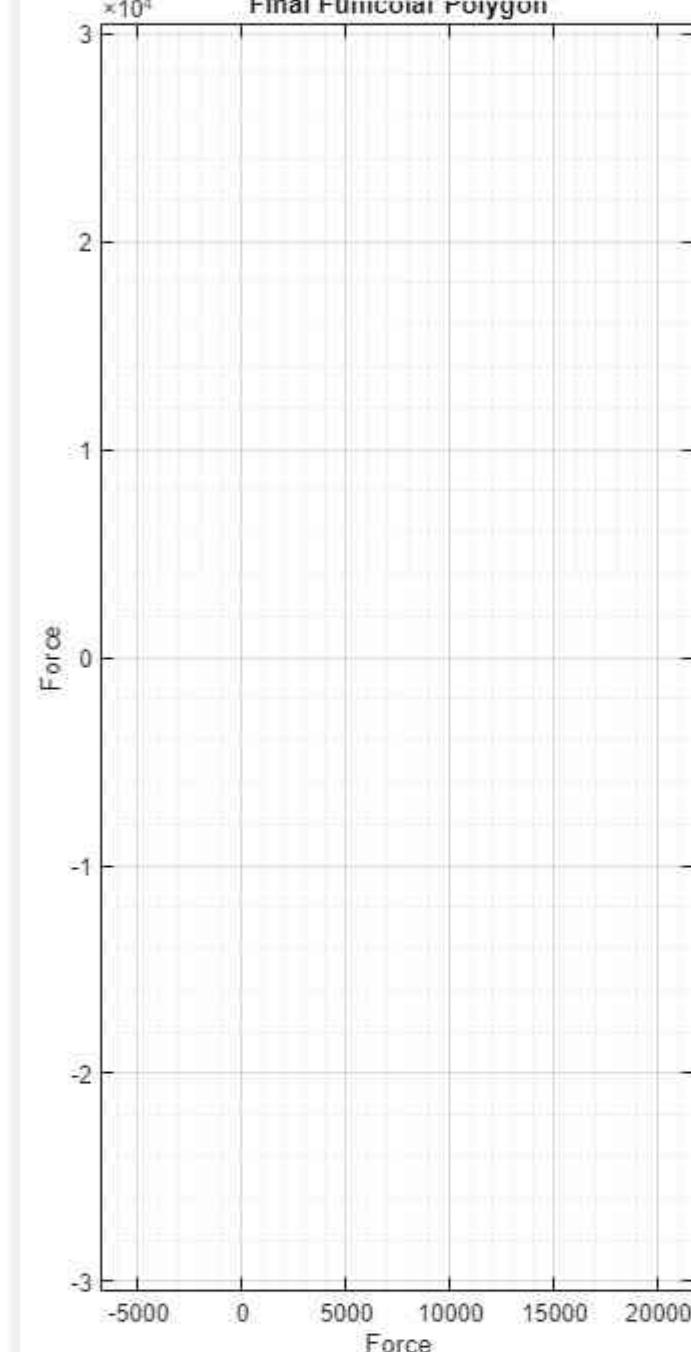
Sketched Geometry Off: On

Text / Labels Off: On

### Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics

Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points 6

Thickness 0

## Block data

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13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

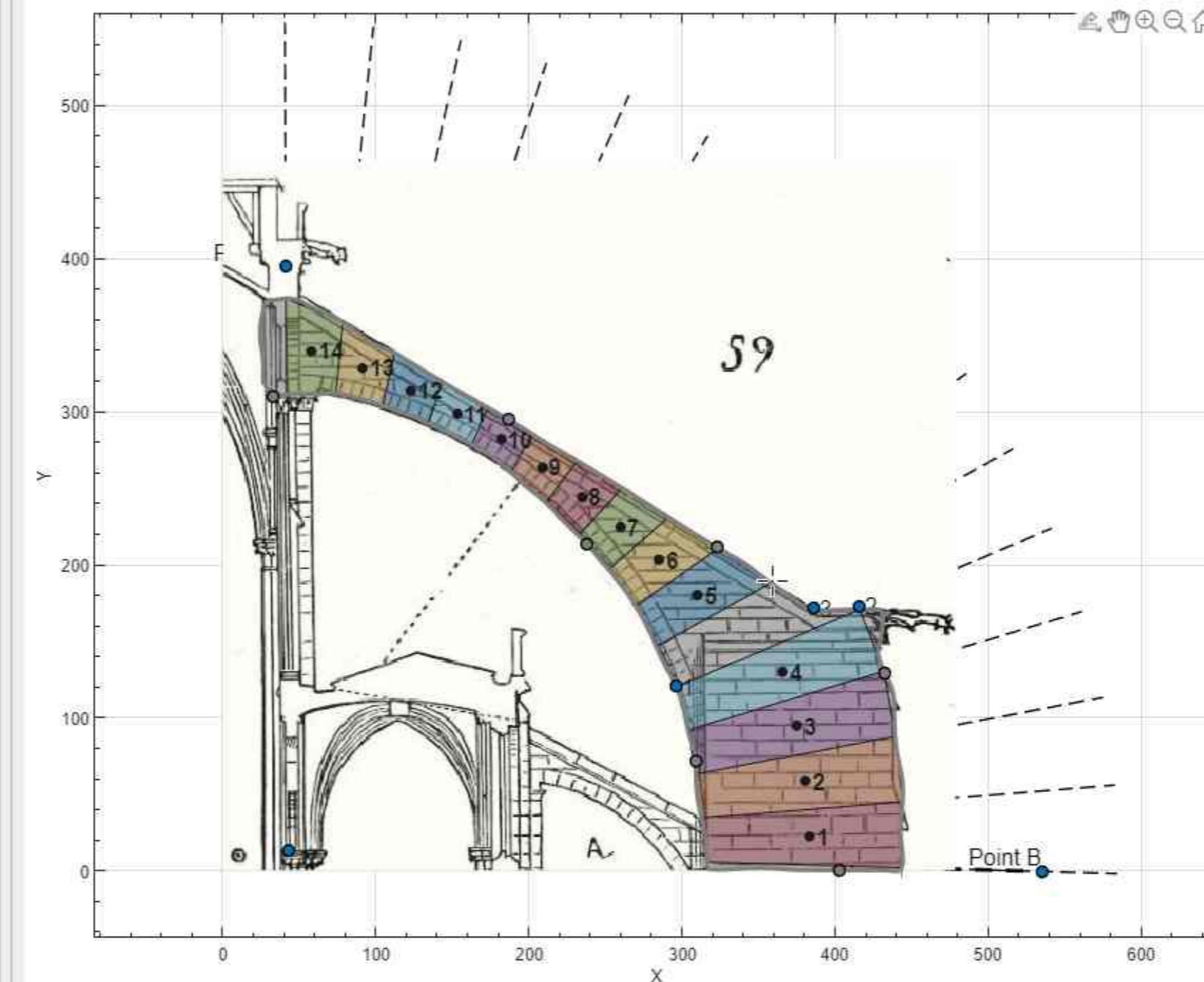
View data   Edit data  
Delete all   Delete by N. N: 5

## Background Image

Load image   Pick Reference L: 1  
Flip X   Interactive on: off   Target 100  
Flip Y   scale factor 1   Scale Image

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

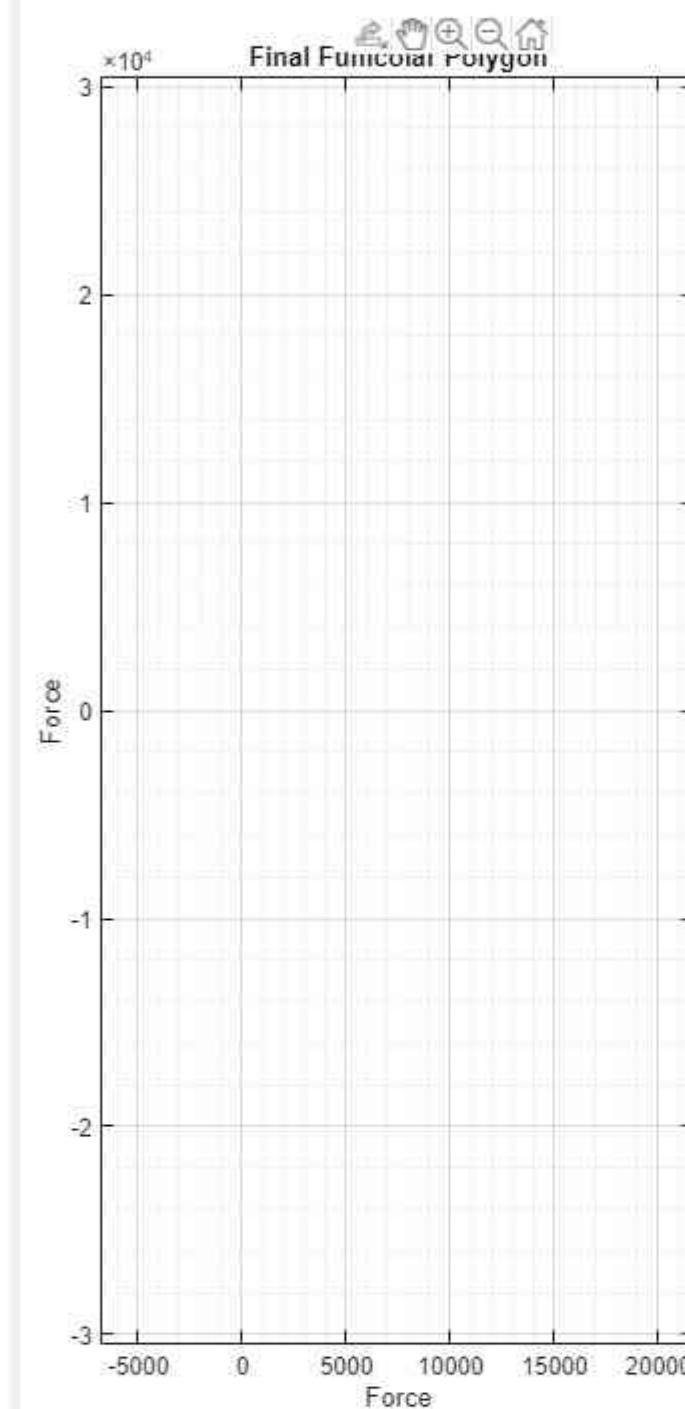


Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units  
         forces factor 3   Force Magnitude Off  On  
         alpha W 0   Background Image Off  On  
      Sketched Geometry Off  On  
Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points 6

Thickness 0

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10	834.5797	1.9461e+10	181.91
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13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

View data   Edit data

Delete all   Delete by N. N: 5

## Background Image

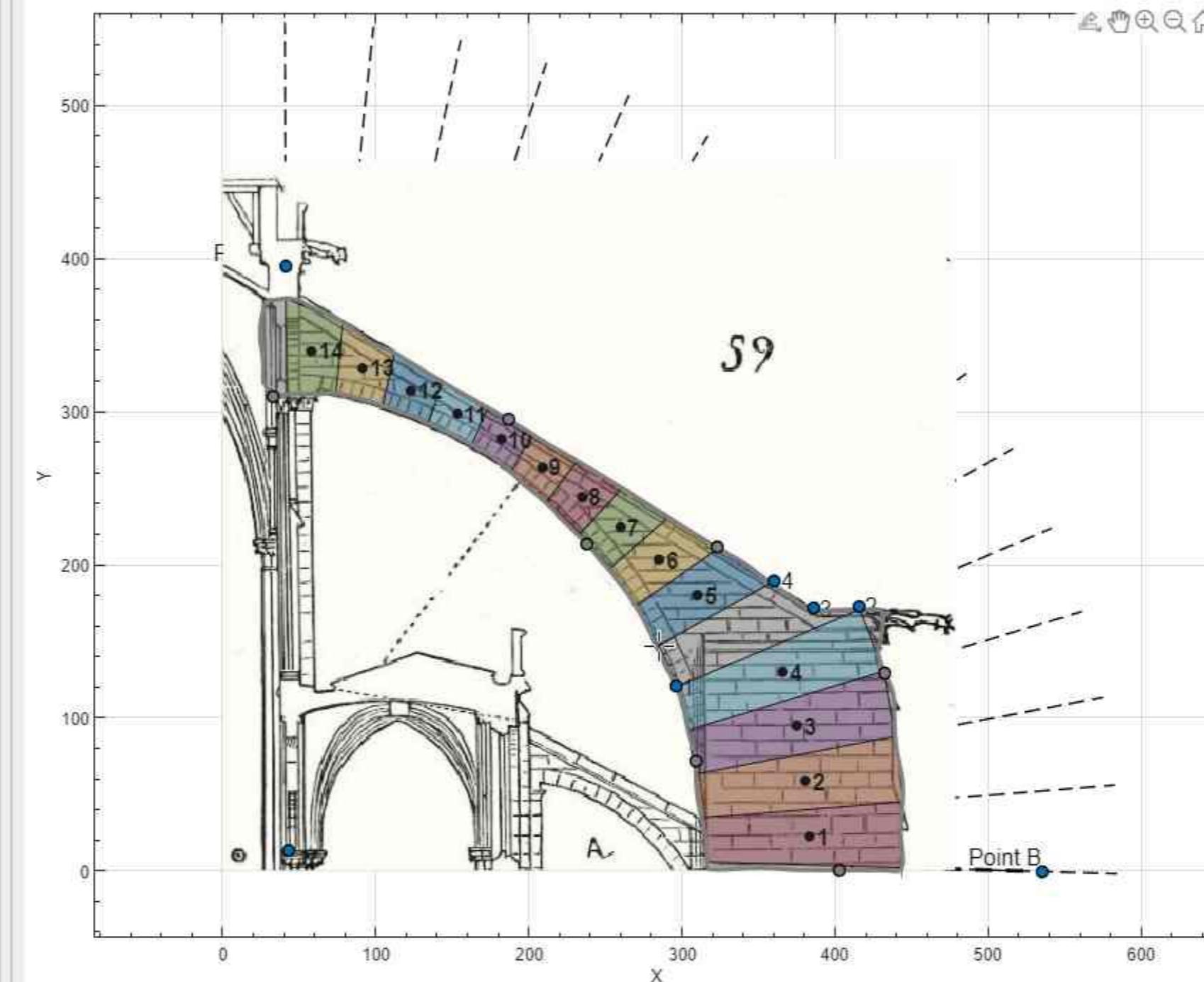
Load image   Pick Reference L: 1

Flip X   Interactive on: off   Target 100

Flip Y   scale factor 1   Scale Image

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor 3   Force Magnitude Off: On

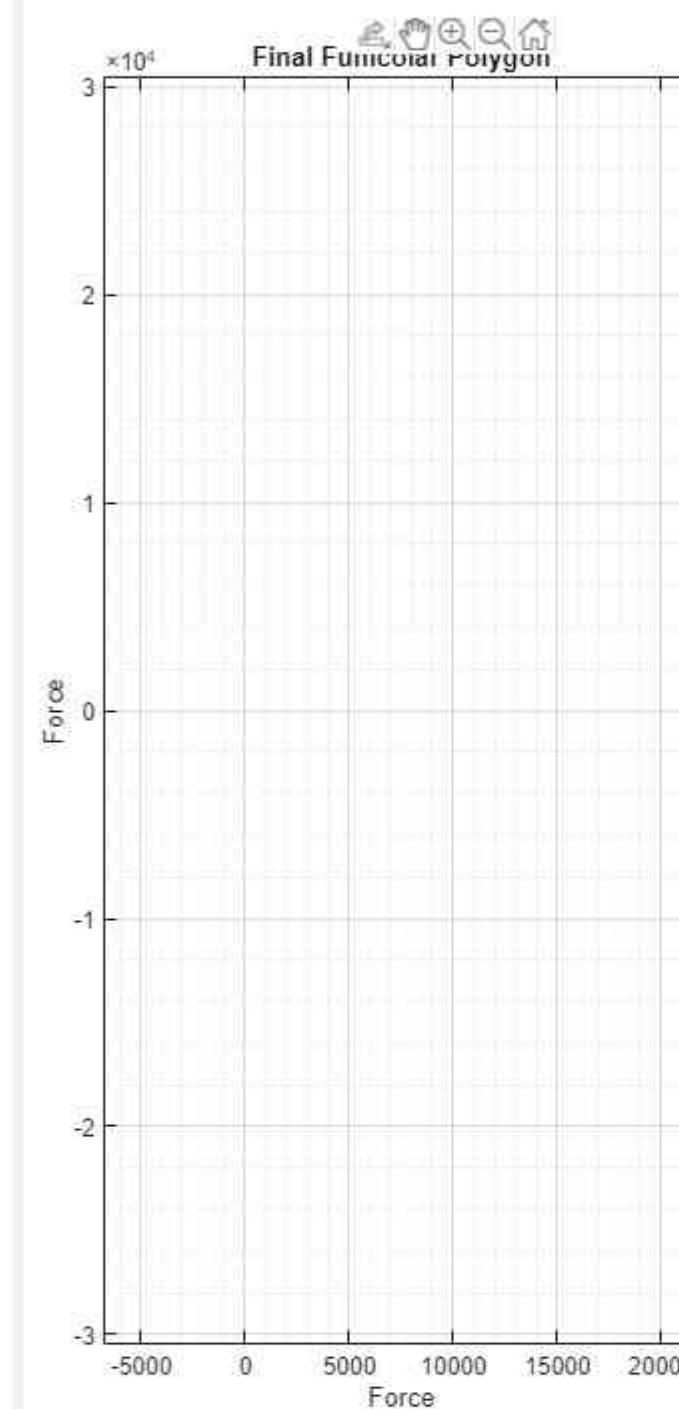
Plot Sketch   Plot Background Image   Flip Y axis   alpha W 0   Background Image Off: On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off: On

Text / Labels Off: On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points 6

Thickness 0

## Block data

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13	1.3896e+03	3.0570e+10	91.77
14	1.9029e+03	4.1683e+10	58.21

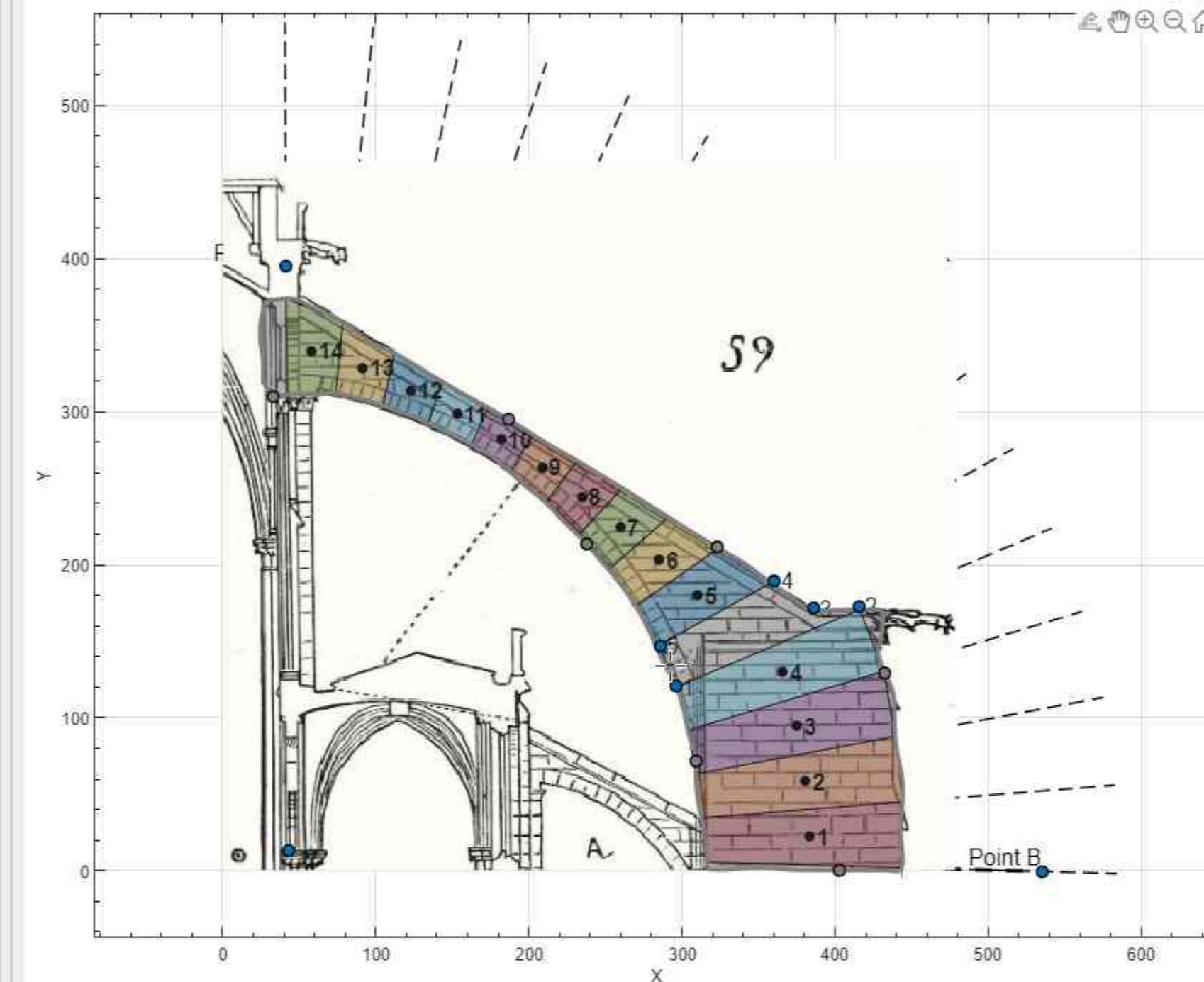
View data   Edit data  
Delete all   Delete by N. N: 5

## Background Image

Load image   Pick Reference L: 1  
Flip X   Interactive on: off   Target 100  
Flip Y   scale factor 1   Scale Image

## Interactive Area

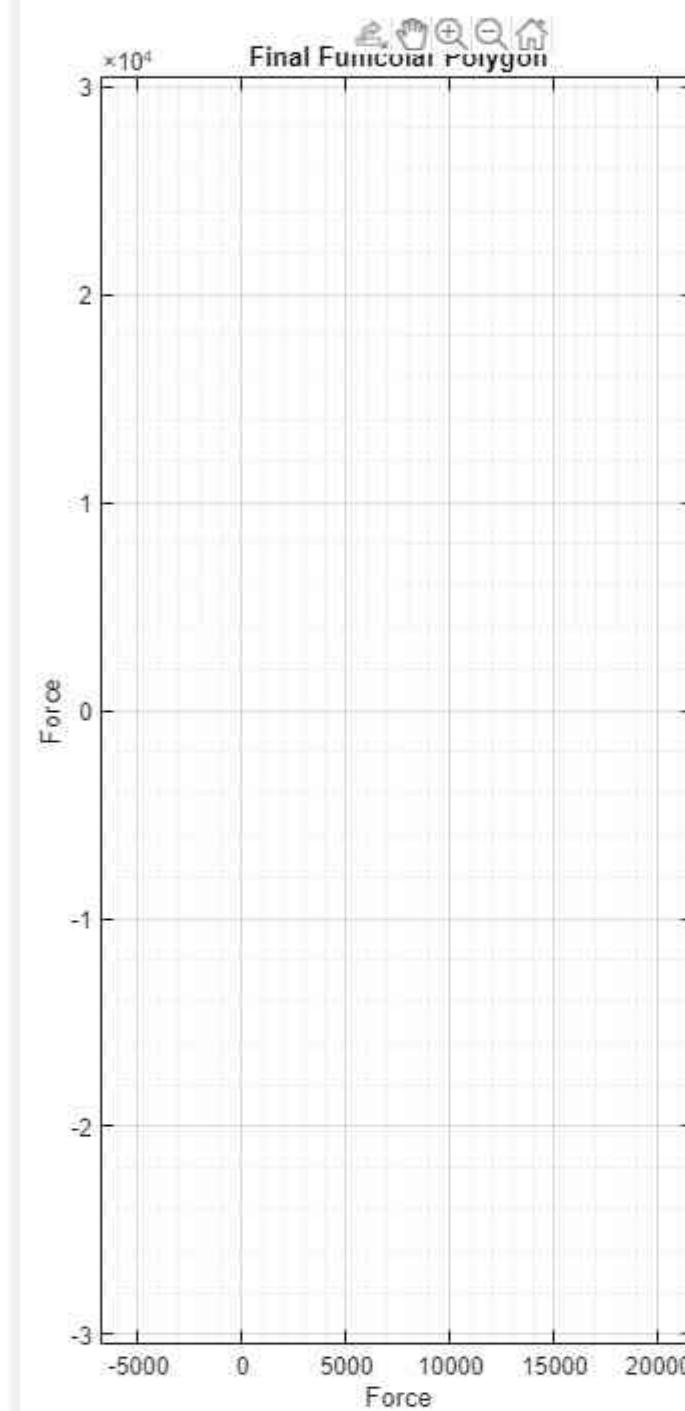
Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Graphics   Save/Load Example   Blocks properties   Units  
         forces factor 3   Force Magnitude Off  On  
         alpha W 0   Background Image Off  On  
      Sketched Geometry Off  On  
Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2  
 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points 6

Thickness 0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

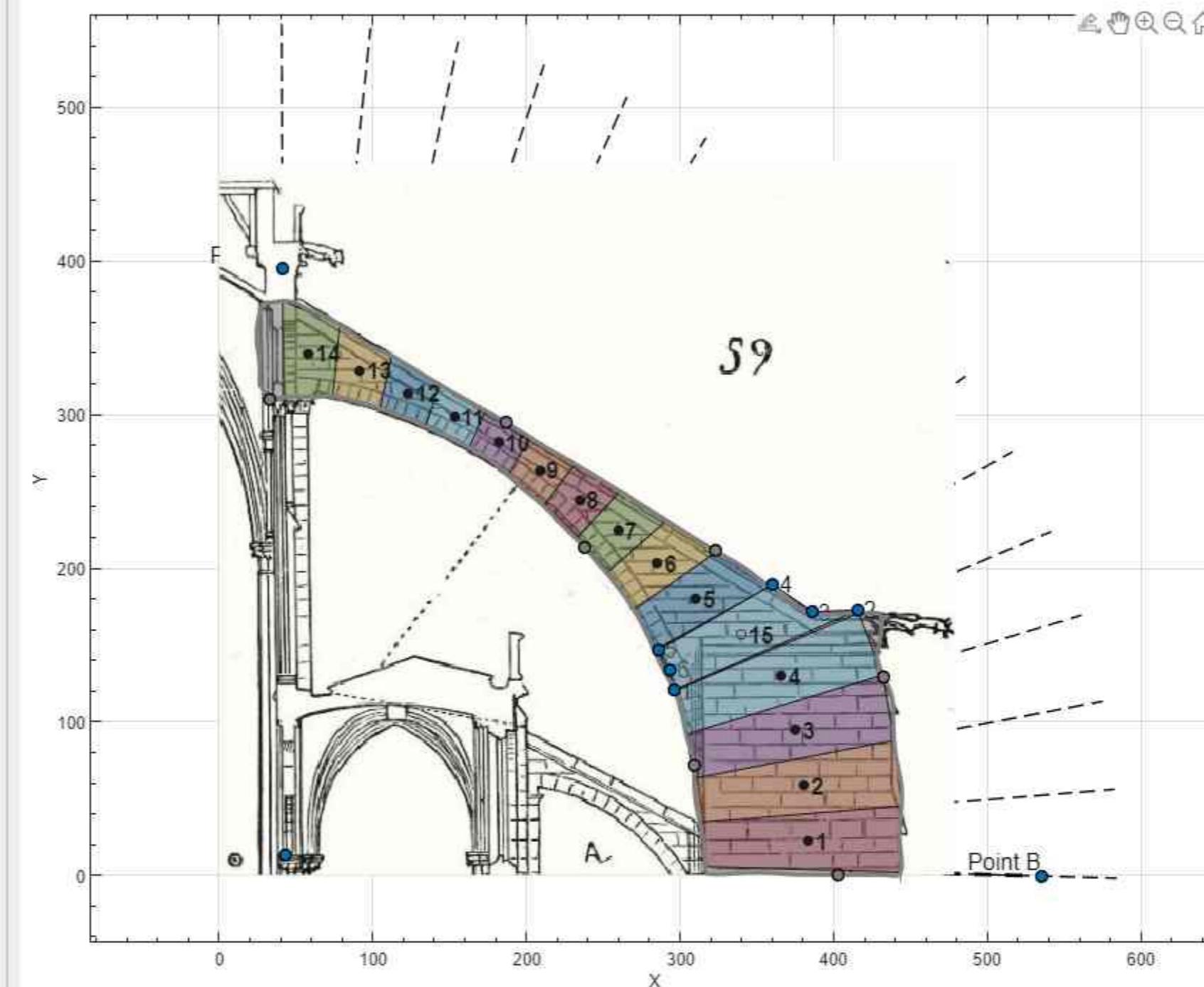
L: 1

Interactive on  off Target 100

scale factor 1

### Interactive Area

### Force Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor 3 Force Magnitude Off  On

alpha W 0 Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

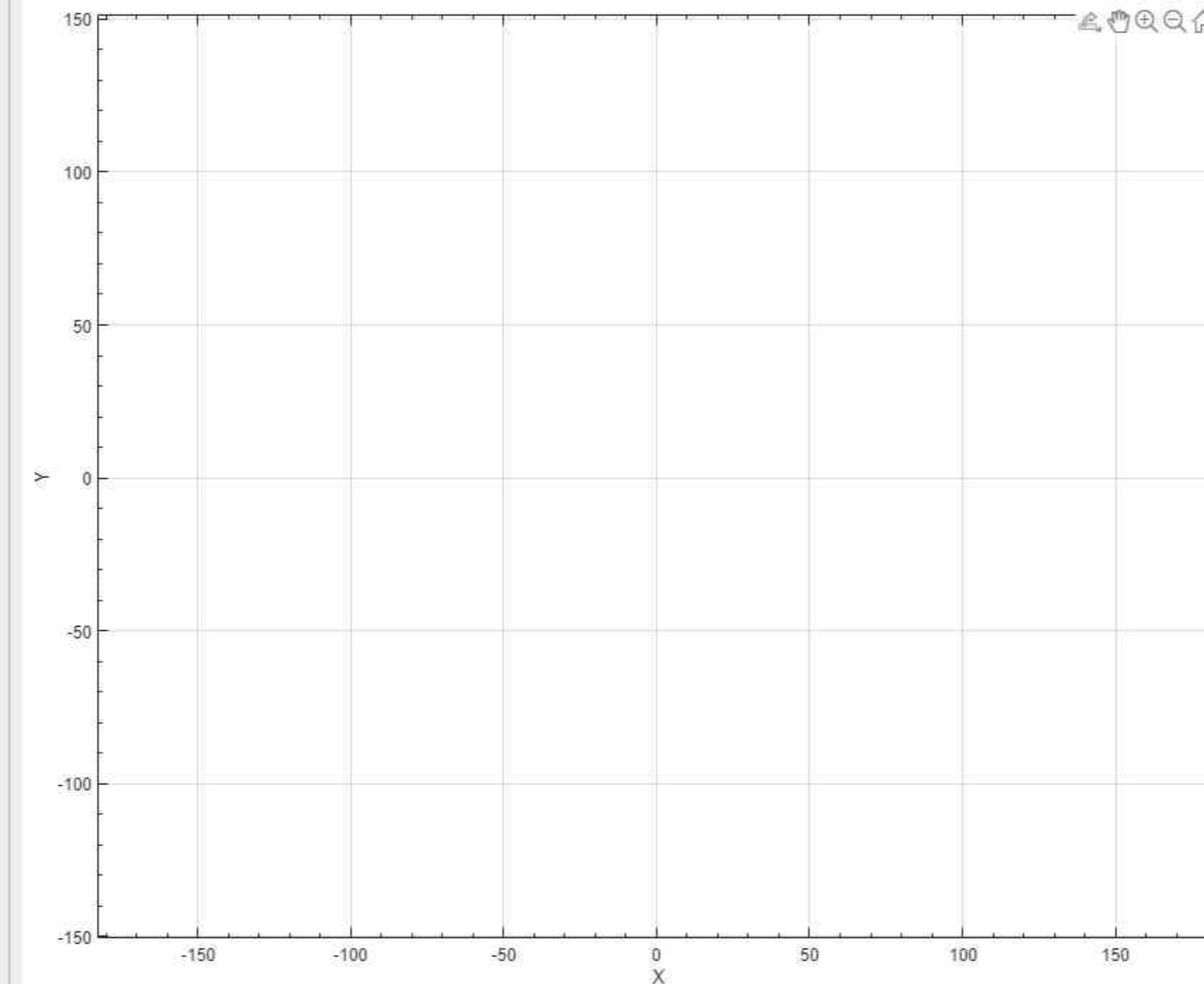
### Background Image

L: 1

Interactive on  off Target: 100

scale factor: 1

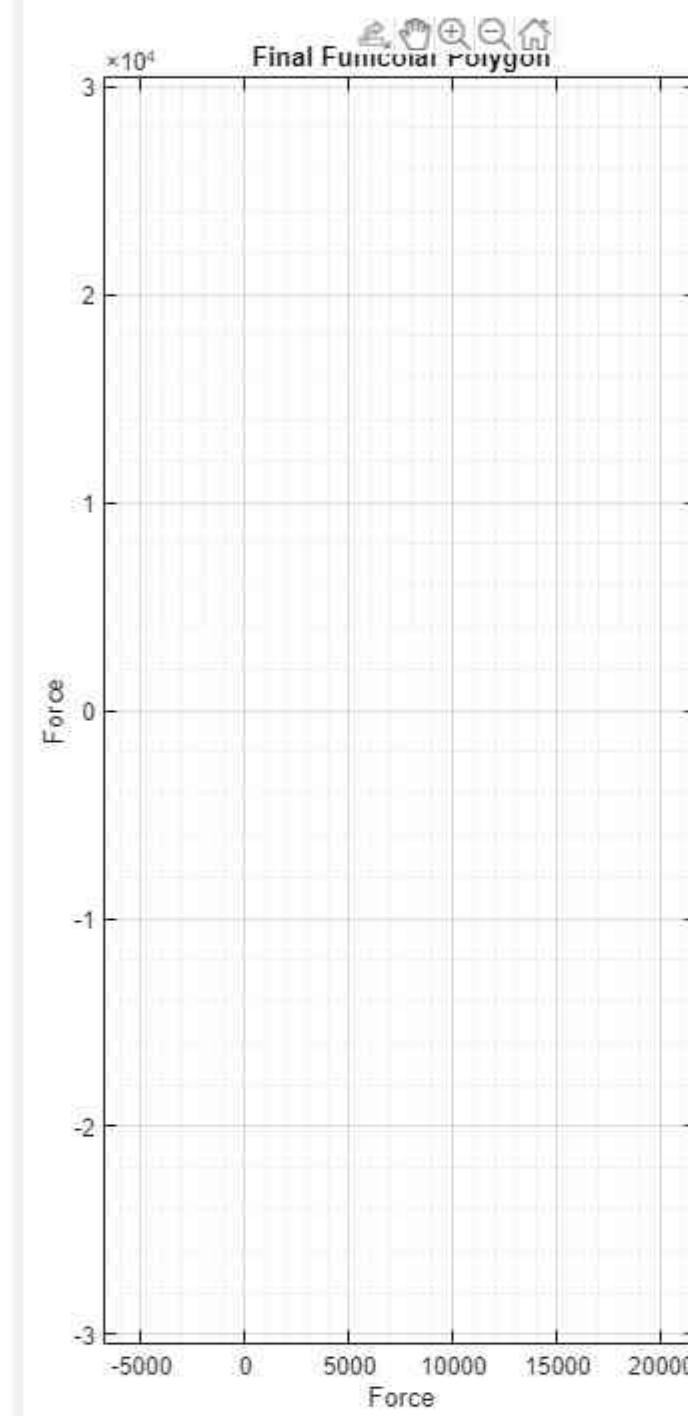
### Interactive Area



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

<input type="button" value="Graphics"/> <input type="button" value="Save/Load Example"/> <input type="button" value="Blocks properties"/> <input type="button" value="Units"/>	<input type="button" value="Plot blocks"/> <input type="button" value="Plot Forces"/> <input type="button" value="Plot Reactions"/> forces factor: 3 Force Magnitude Off: <input type="radio"/> On
<input type="button" value="Plot Sketch"/> <input type="button" value="Plot Background Image"/> <input type="button" value="Flip Y axis"/> alpha W: 0 Background Image Off: <input type="radio"/> On	Sketched Geometry Off: <input type="radio"/> On Text / Labels Off: <input type="radio"/> On
<input type="button" value="Clear Interactive Area"/> <input type="button" value="Clear Sketch"/>	

### Force Polygon



Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

## Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3164e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

## Background Image

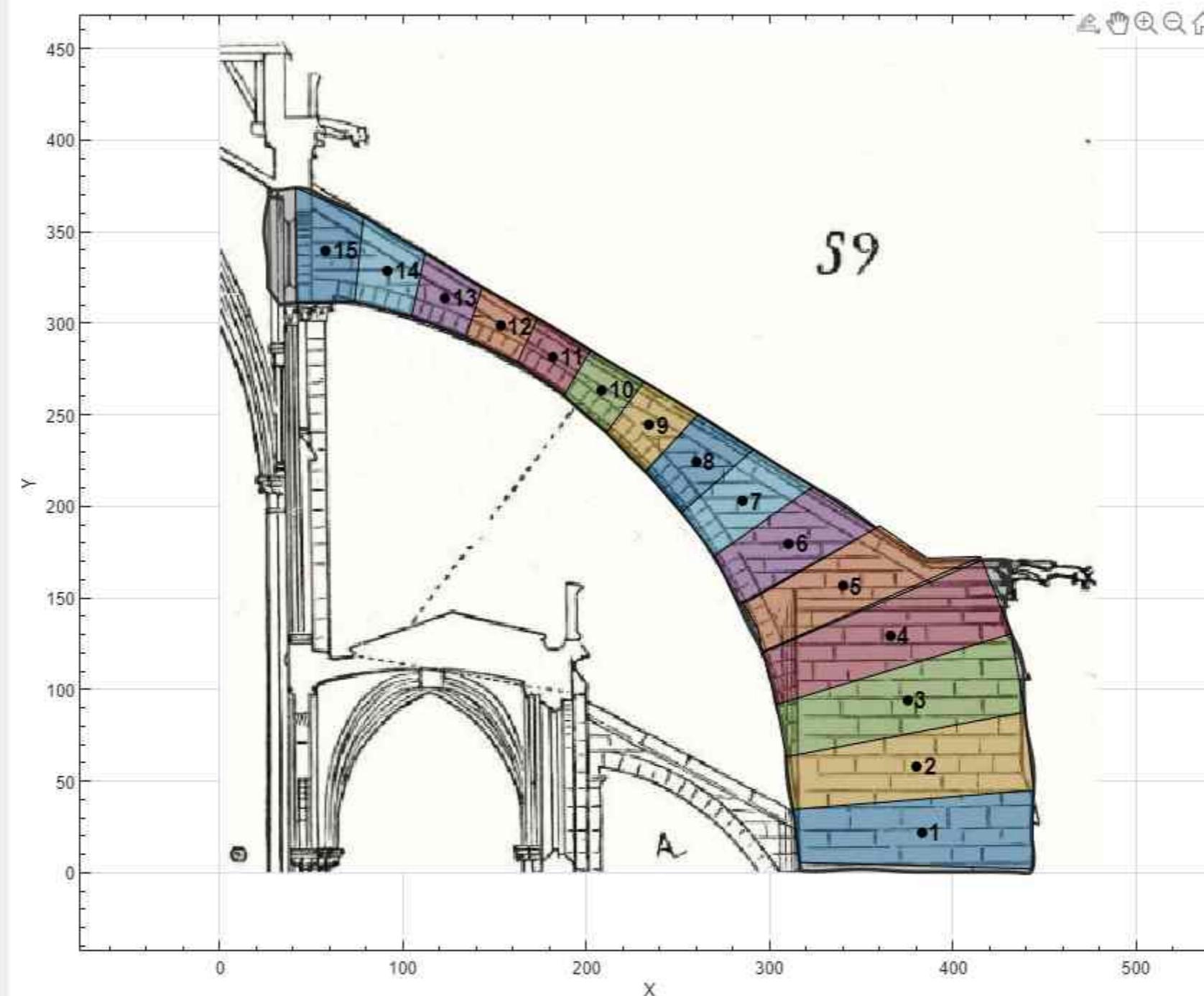
L: 1

Interactive on  off Target: 100

scale factor: 1

## Interactive Area

## Force Polygon



Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off:  On  
   alpha W: 0 Background Image Off:  On  
  Sketched Geometry Off:  On  
Text / Labels Off:  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

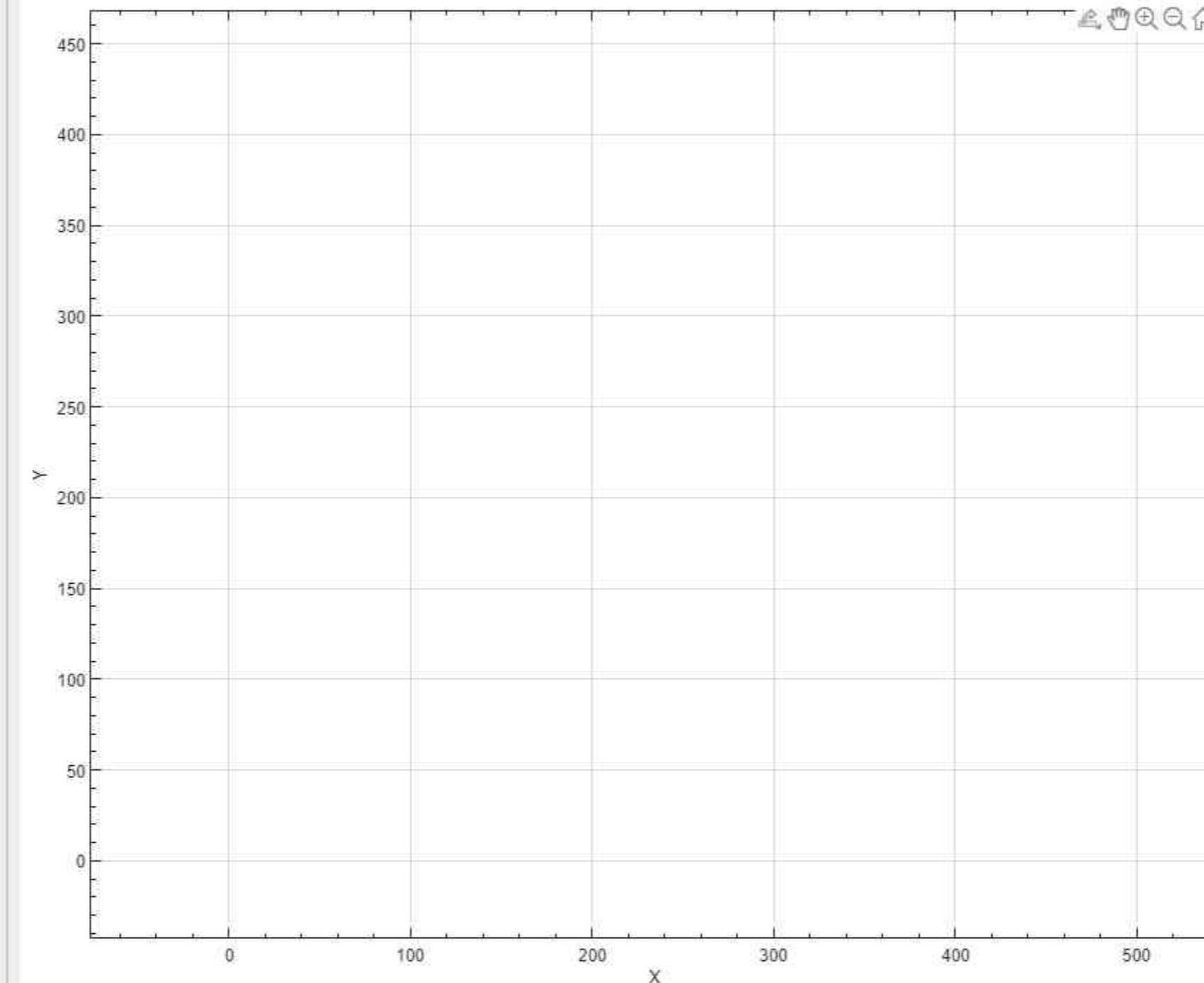
### Background Image

L: 1

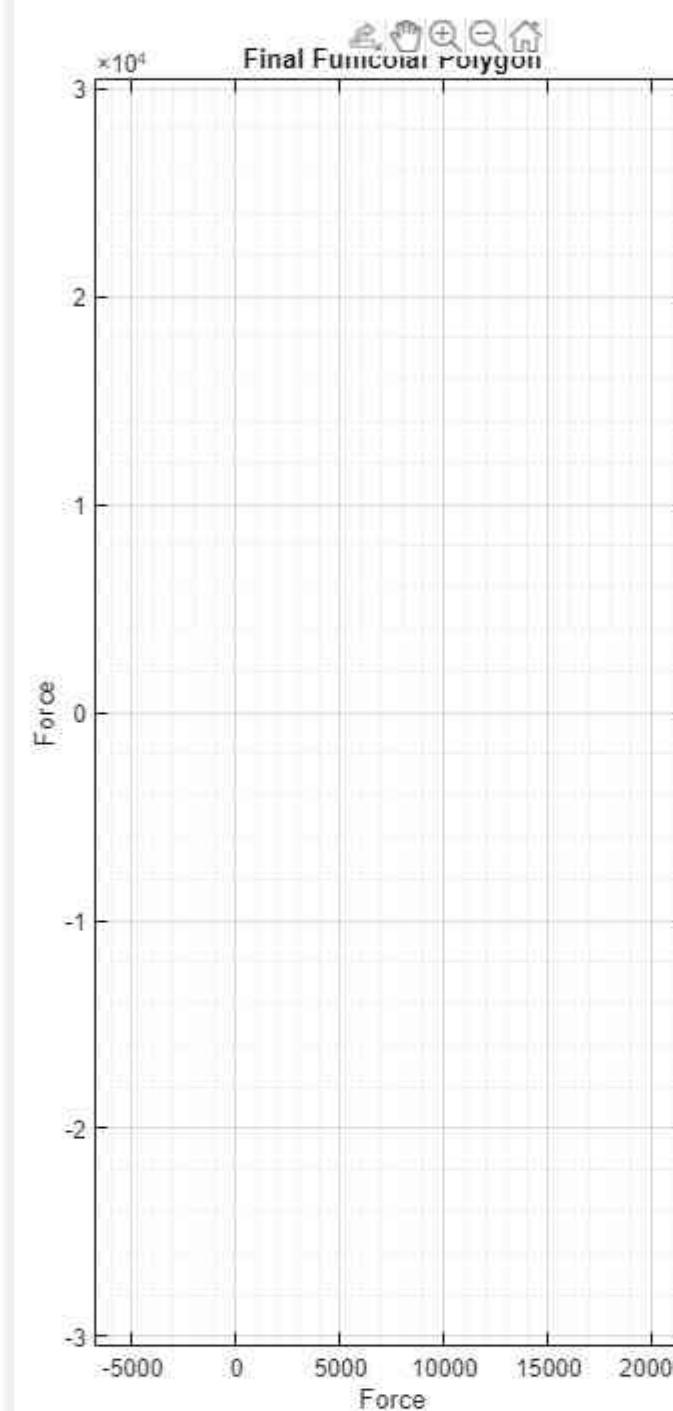
Interactive on  off Target: 100

scale factor: 1

### Interactive Area



### Force Polygon



Graphics

Save/Load Example

Blocks properties

Units

forces factor: 3

Force Magnitude Off  On

alpha W: 0

Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics

Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks    Circular    by Sketch   [Lo >](#)

[Add rectangular block](#)

[Add irregular Block](#)   N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

[View data](#)   [Edit data](#)

[Delete all](#)   [Delete by N.](#)   N:

### Background Image

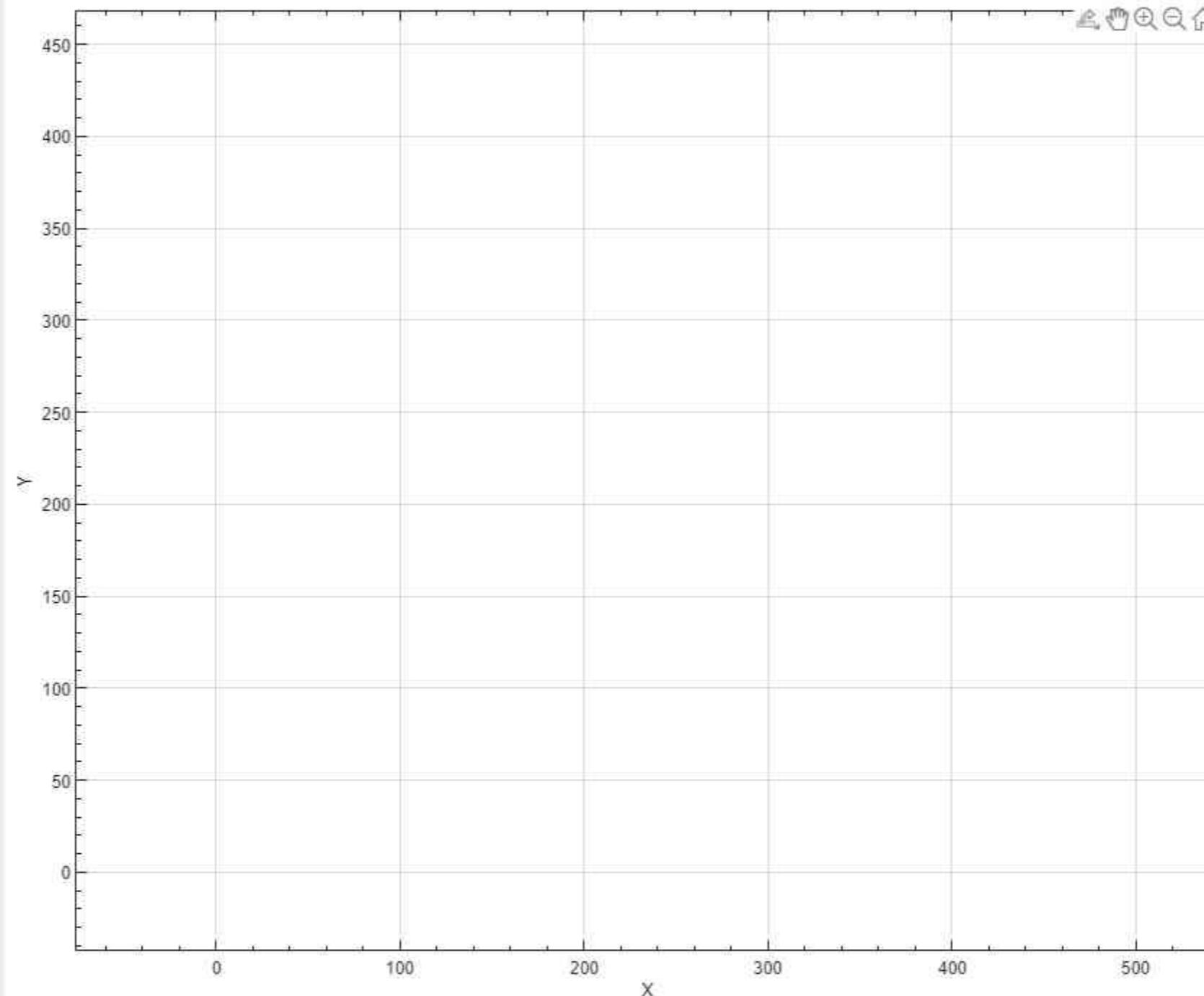
[Load image](#)   [Pick Reference](#)   L:

Flip X    Interactive on    off   Target:

Flip Y   scale factor:    [Scale Image](#)

### Interactive Area

[Reset View](#)   [Pan](#)   [Scroll Zoom on](#)   [Scroll Zoom off](#)   [Show Structural scale](#)



Graphics   Save/Load Example   Blocks properties   Units

[Plot blocks](#)

[Plot Forces](#)

[Plot Reactions](#)

forces factor:

Force Magnitude Off  On

[Plot Sketch](#)

[Plot Background Image](#)

[Flip Y axis](#)

alpha W:

Background Image Off  On

[Clear Interactive Area](#)

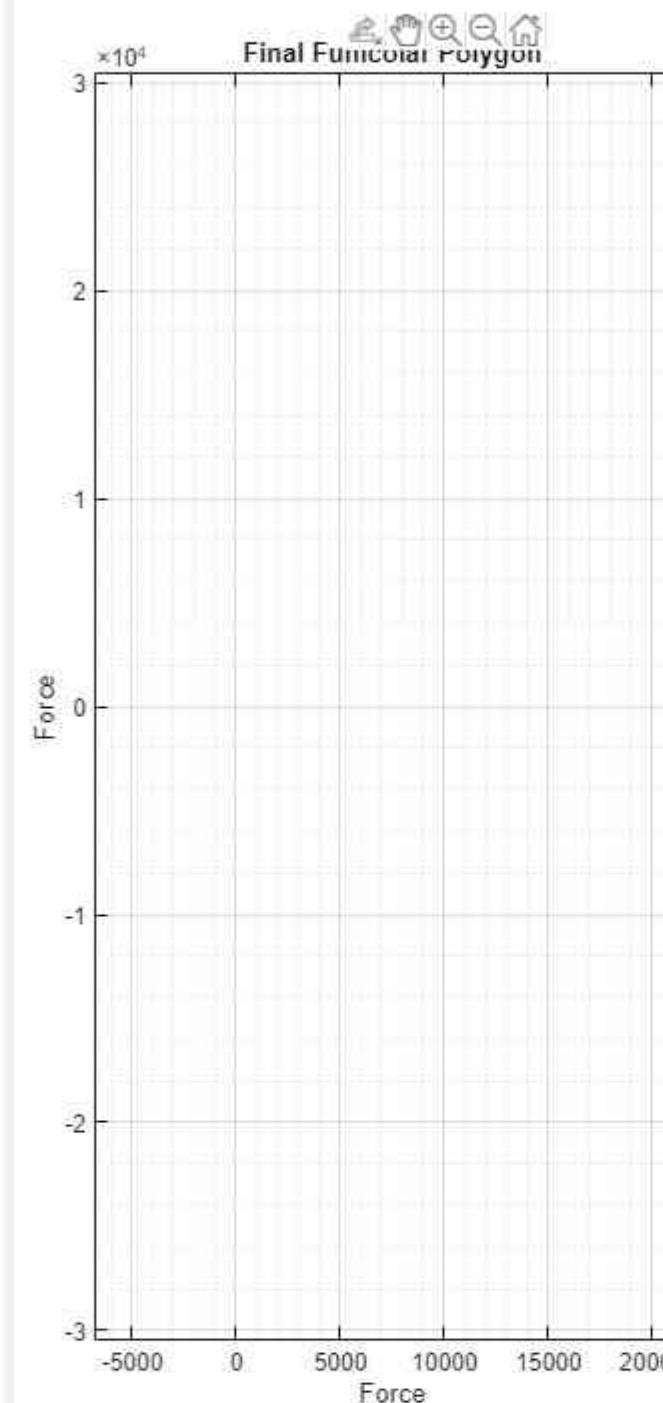
[Clear Sketch](#)

Sketched Geometry Off  On

Text / Labels Off  On

### Force Polygon

[Reset View](#)   [Show Force Scale](#)



Graphics   Tab2

Force shrink factor:

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks    Circular    by Sketch   [Lo >](#)

[Add rectangular block](#)

[Add irregular Block](#)   N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
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13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

[View data](#)   [Edit data](#)

[Delete all](#)   [Delete by N.](#)   N:

### Background Image

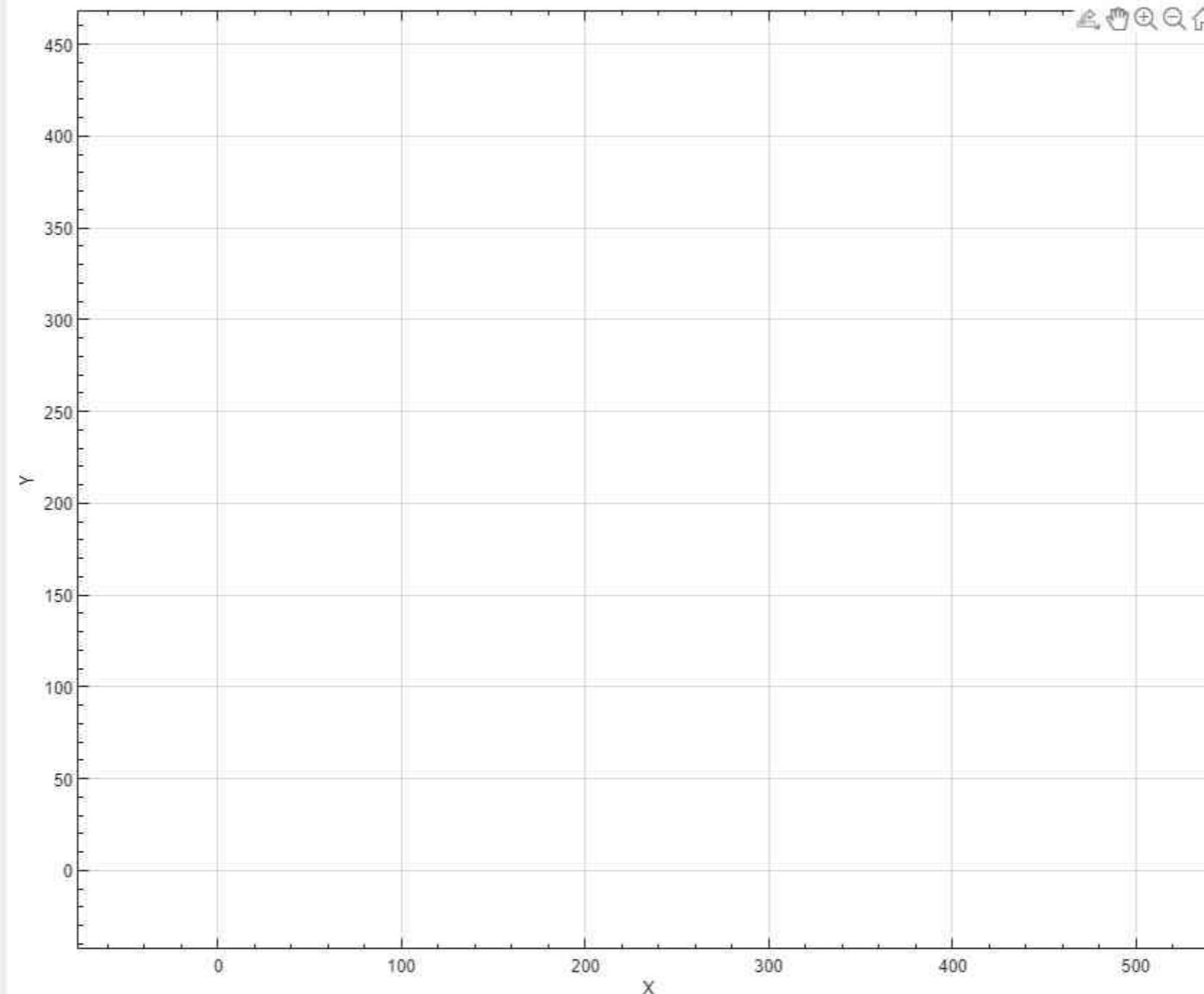
[Load image](#)   [Pick Reference](#)   L:

Flip X    Interactive on   Target

Flip Y   scale factor  [Scale Image](#)

### Interactive Area

[Reset View](#)   [Pan](#)   [Scroll Zoom on](#)   [Scroll Zoom off](#)   [Show Structural scale](#)



Graphics   Save/Load Example   Blocks properties   Units

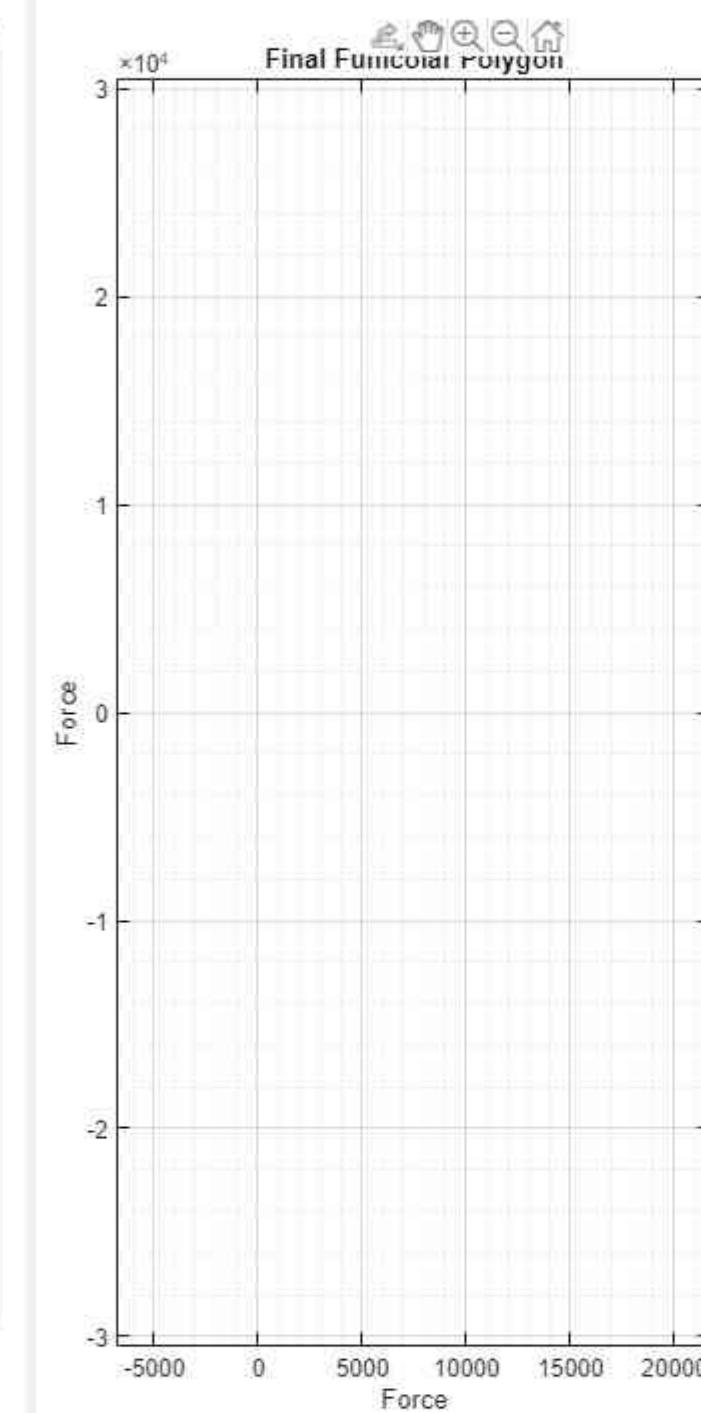
[Plot blocks](#)   [Plot Forces](#)   [Plot Reactions](#)   forces factor  Force Magnitude Off  On

[Plot Sketch](#)   [Plot Background Image](#)   [Flip Y axis](#)   alpha W  Background Image Off  On

[Clear Interactive Area](#)   [Clear Sketch](#)   Sketched Geometry Off  On

### Force Polygon

[Reset View](#)   [Show Force Scale](#)



Graphics   Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N:

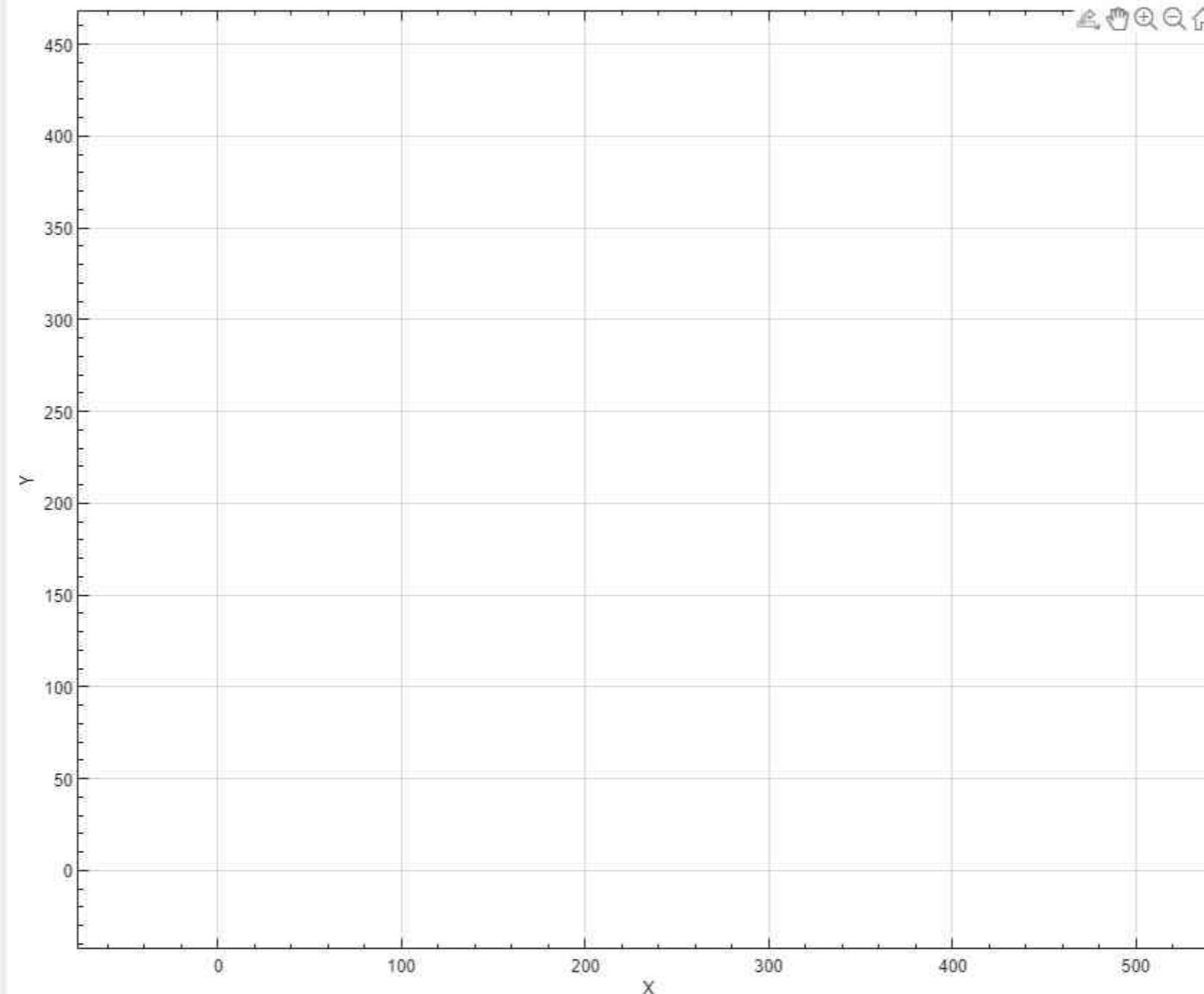
### Background Image

L:

Interactive on:  off Target:

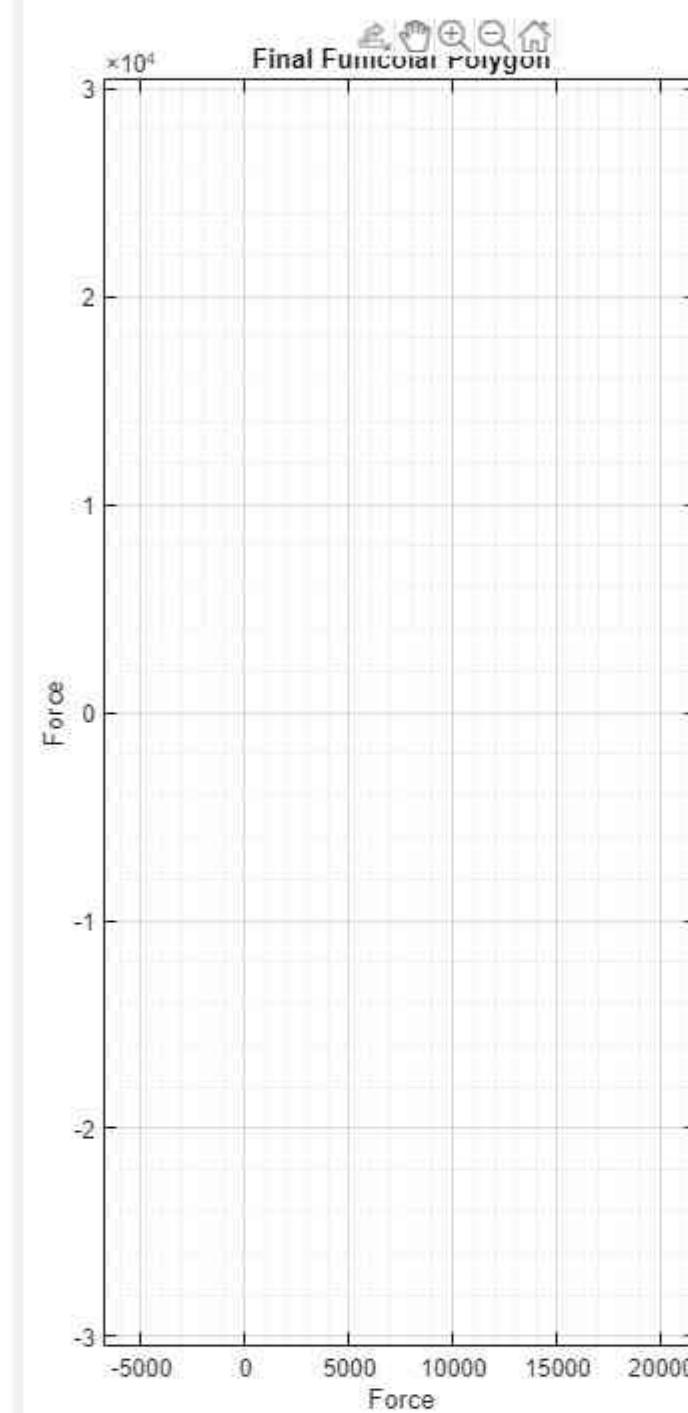
scale factor:  Scale Image

### Interactive Area



<input type="button" value="Graphics"/> <input type="button" value="Save/Load Example"/> <input type="button" value="Blocks properties"/> <input type="button" value="Units"/>	<input type="button" value="Plot blocks"/> <input type="button" value="Plot Forces"/> <input type="button" value="Plot Reactions"/> forces factor: <input type="text" value="3"/> Force Magnitude Off: <input checked="" type="checkbox"/> On
	<input type="button" value="Plot Sketch"/> <input type="button" value="Plot Background Image"/> <input type="button" value="Flip Y axis"/> alpha W: <input type="text" value="0"/> Background Image Off: <input checked="" type="checkbox"/> On
	<input type="button" value="Clear Interactive Area"/> <input type="button" value="Clear Sketch"/> Sketched Geometry Off: <input checked="" type="checkbox"/> On
	<input "="" type="checkbox" value="Text / Labels Off: &lt;input checked="/> On"/>

### Force Polygon



Force shrink factor:



Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks    Circular    by Sketch   [Lo >](#)

[Add rectangular block](#)

[Add irregular Block](#)   N. of points

Thickness

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

[View data](#)   [Edit data](#)

[Delete all](#)   [Delete by N.](#)   N:

### Background Image

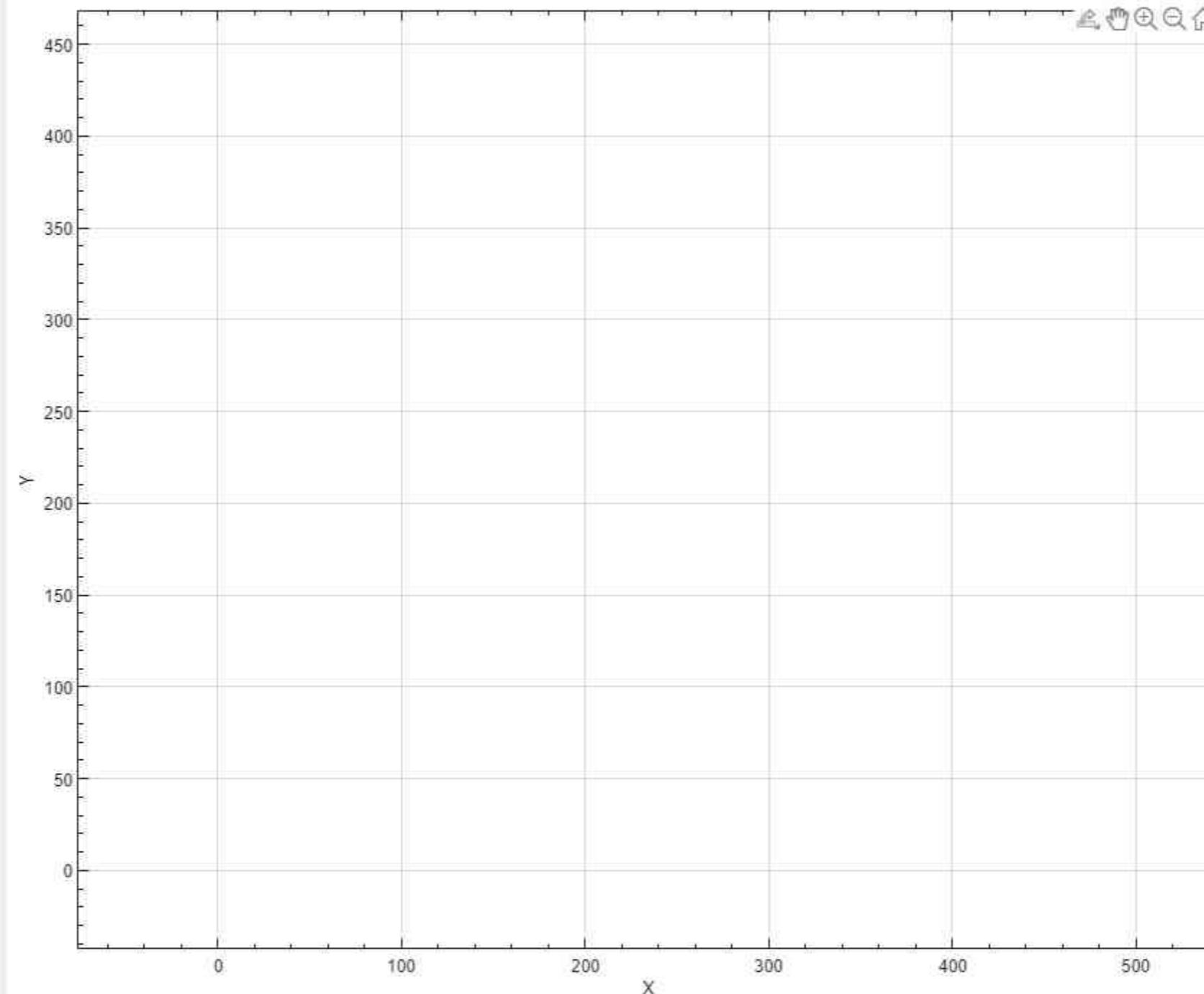
[Load image](#)   [Pick Reference](#)   L:

Flip X    Interactive on    off   Target:

Flip Y   scale factor:    [Scale Image](#)

### Interactive Area

[Reset View](#)   [Pan](#)   [Scroll Zoom on](#)   [Scroll Zoom off](#)   [Show Structural scale](#)



Graphics   Save/Load Example   Blocks properties   Units

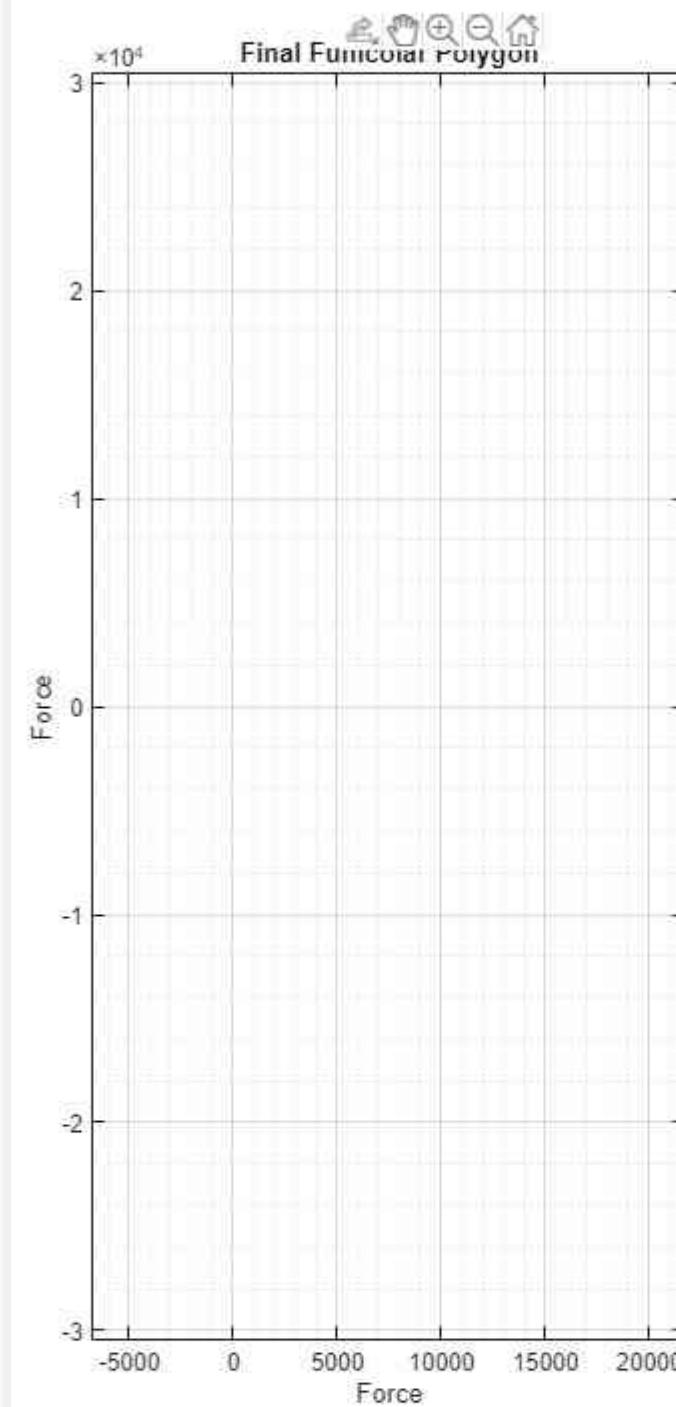
[Plot blocks](#)   [Plot Forces](#)   [Plot Reactions](#)   forces factor:    Force Magnitude Off  On

[Plot Sketch](#)   [Plot Background Image](#)   [Flip Y axis](#)   alpha W:    Background Image Off  On

[Clear Interactive Area](#)   [Clear Sketch](#)   Sketched Geometry Off  On

### Force Polygon

[Reset View](#)   [Show Force Scale](#)



Graphics   Tab2

Force shrink factor:

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
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8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

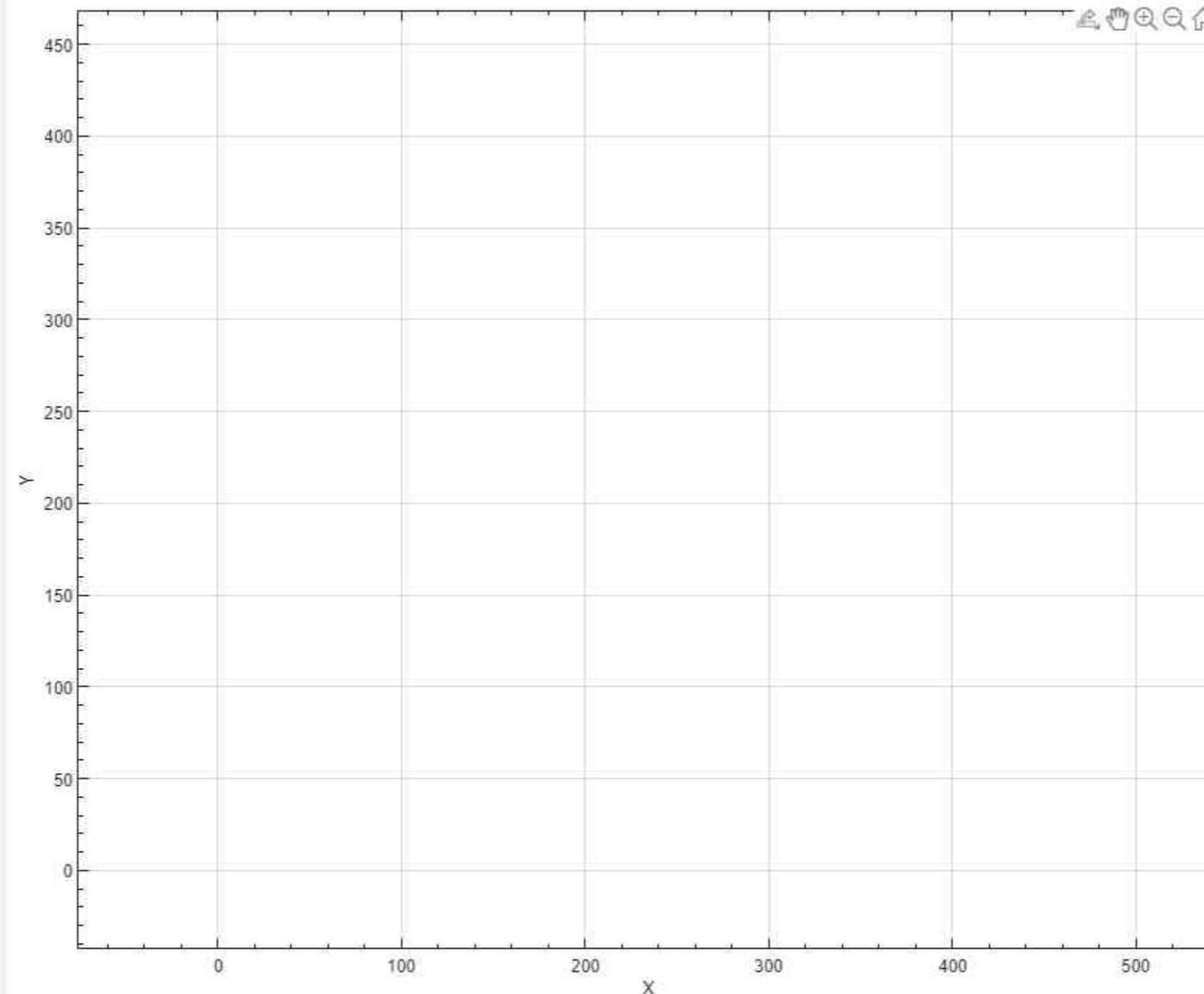
### Background Image

L: 1

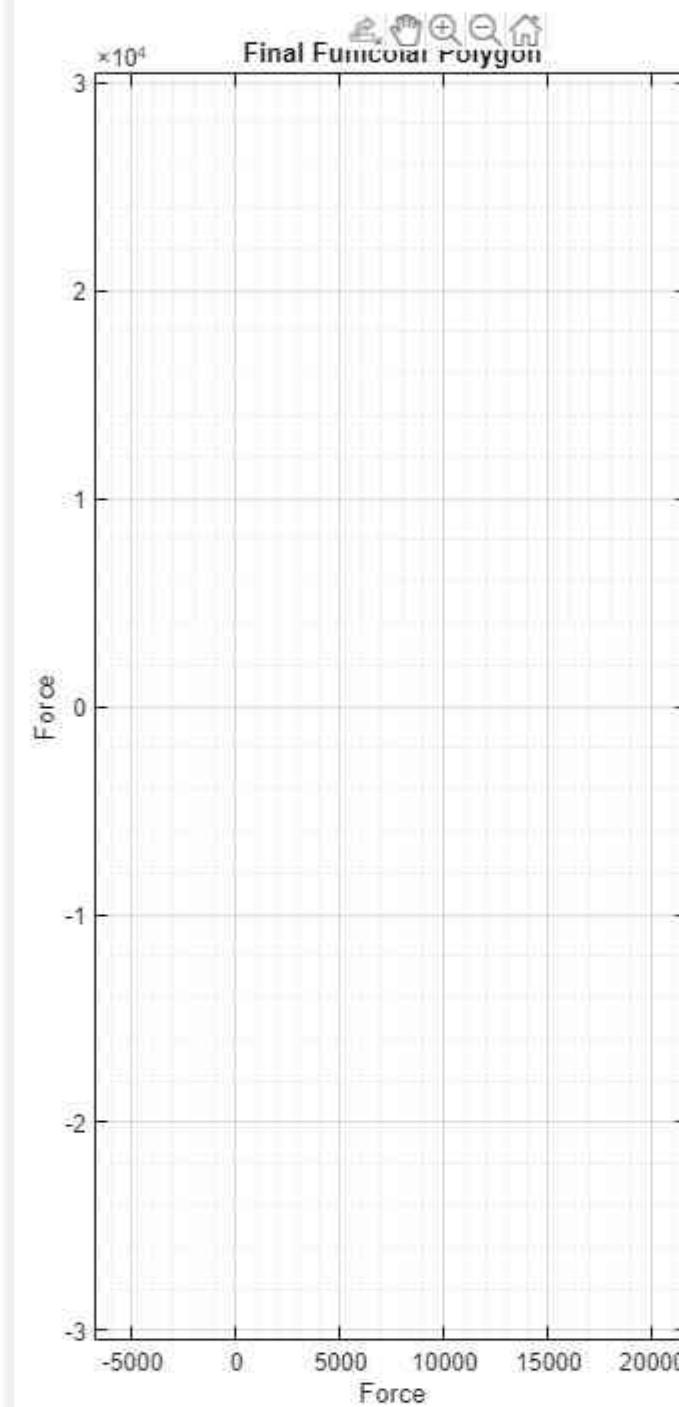
Interactive on  off Target: 100

scale factor: 1

### Interactive Area



### Force Polygon



Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On

alpha W: 0 Background Image Off  On

Sketched Geometry Off  On

Graphics   Tab2

Force shrink factor: 0

Text / Labels Off  On



Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0580e+11	375.32
4	4.7727e+03	1.0500e+11	368.13
5	3.3184e+03	7.2961e+10	340.17
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9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
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12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

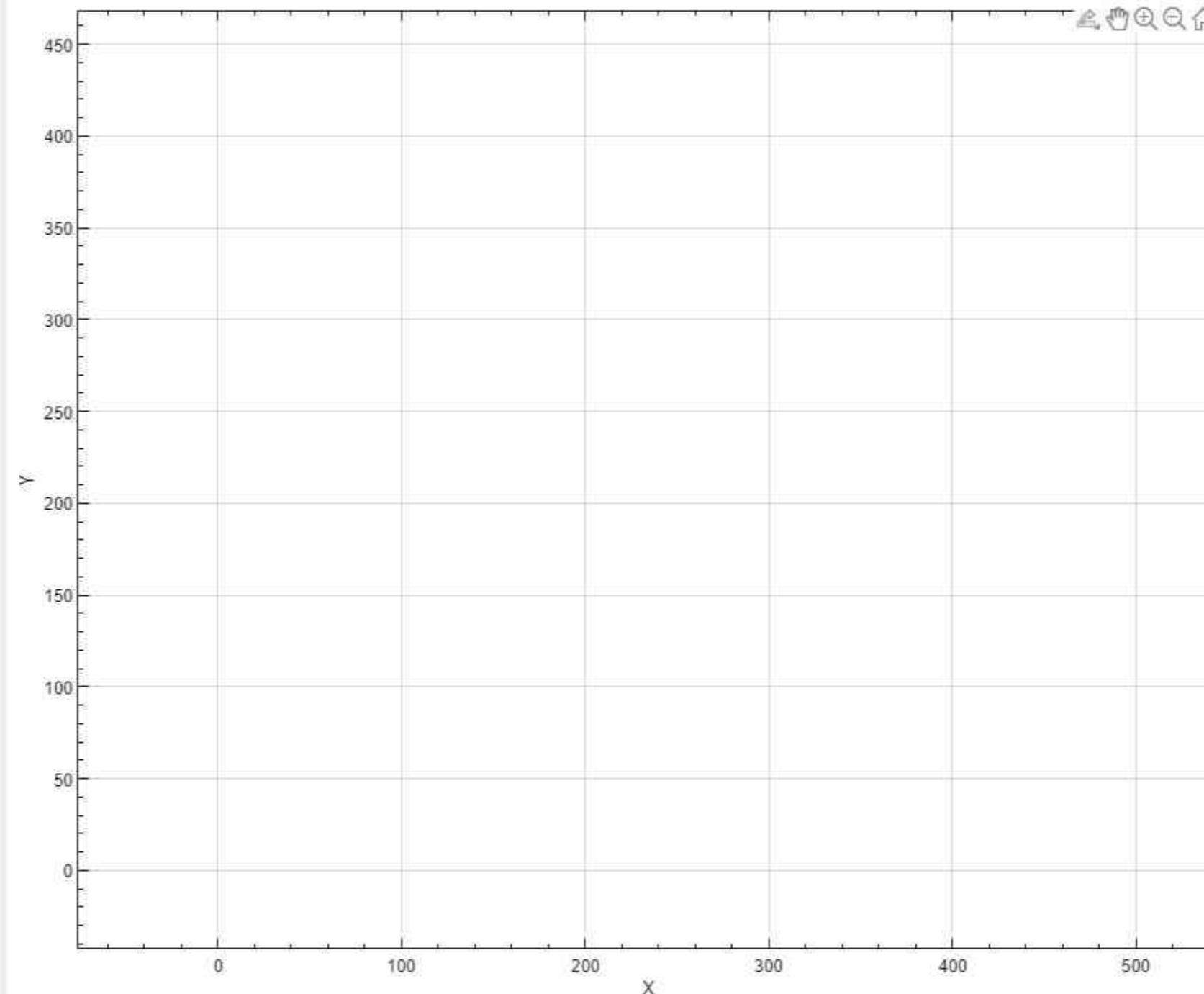
### Background Image

L: 1

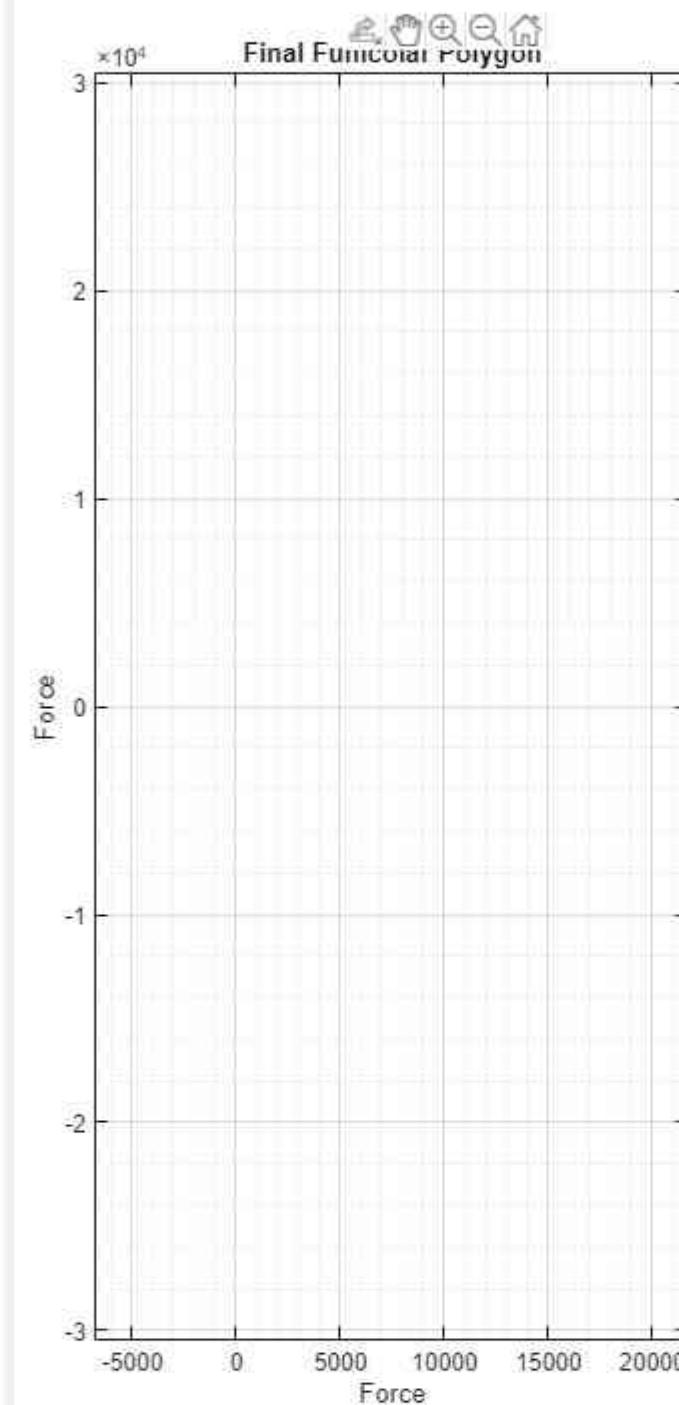
Interactive on  off Target: 100

scale factor: 1

### Interactive Area



### Force Polygon



Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off:  On

alpha W: 0 Background Image Off:  On

Sketched Geometry Off:  On

Text / Labels Off:  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points  
6

Thickness  
0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

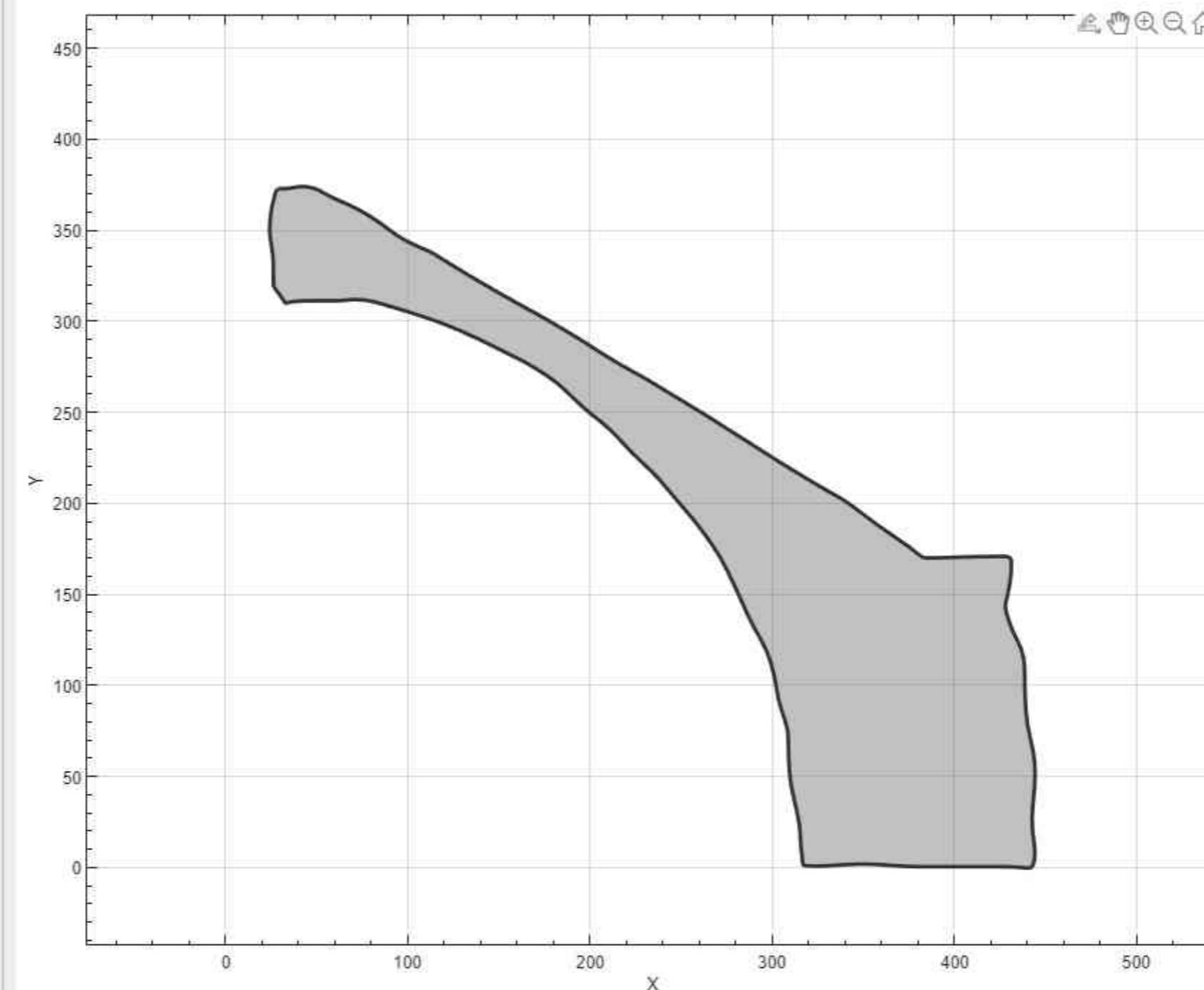
L: 1

Interactive on  off Target: 100

scale factor: 1

### Interactive Area

### Force Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On

alpha W: 0 Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points  
6

Thickness  
0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

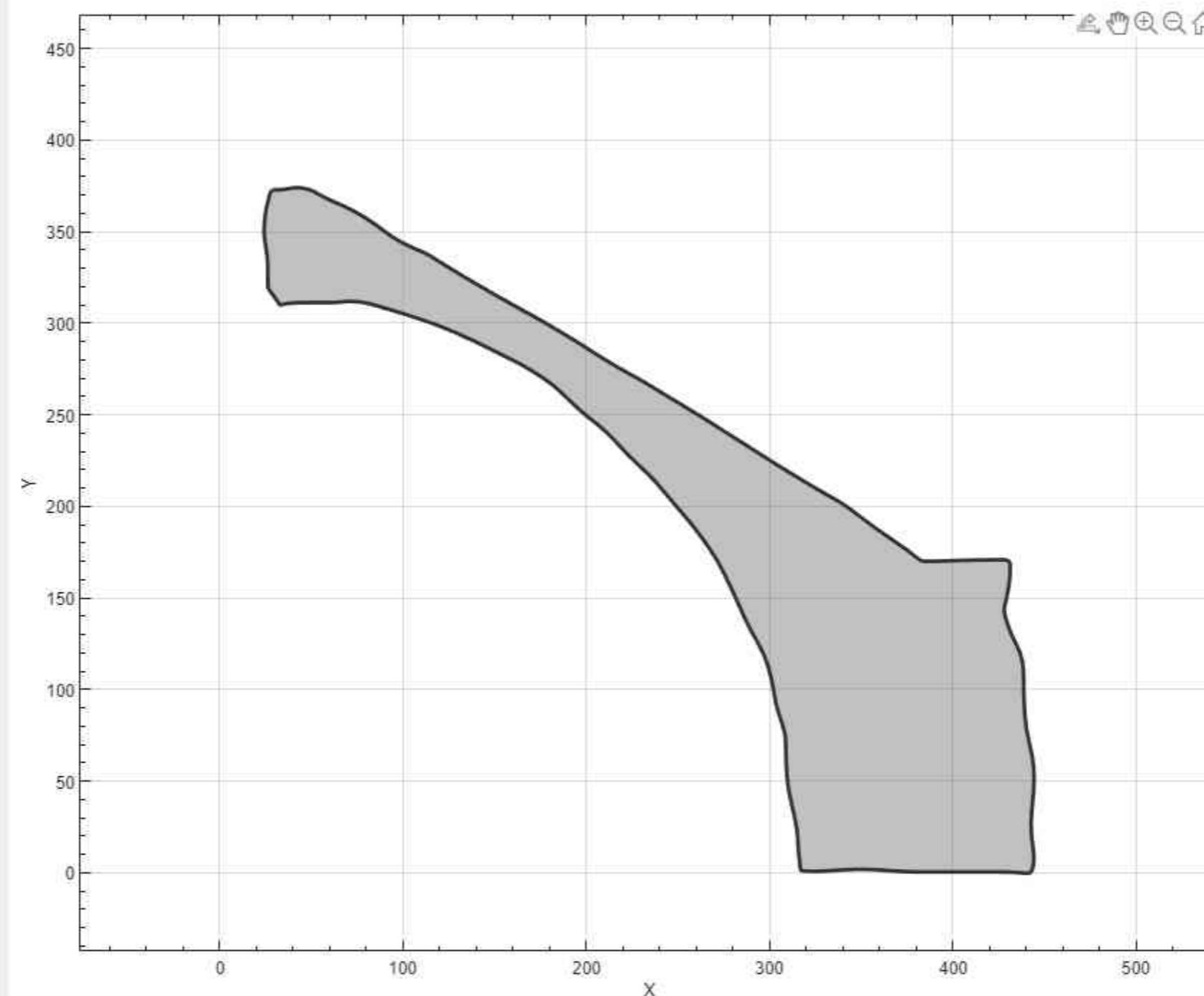
L: 1

Interactive on  off Target: 100

scale factor: 1

### Interactive Area

### Force Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On

alpha W: 0 Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points  
6

Thickness  
0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

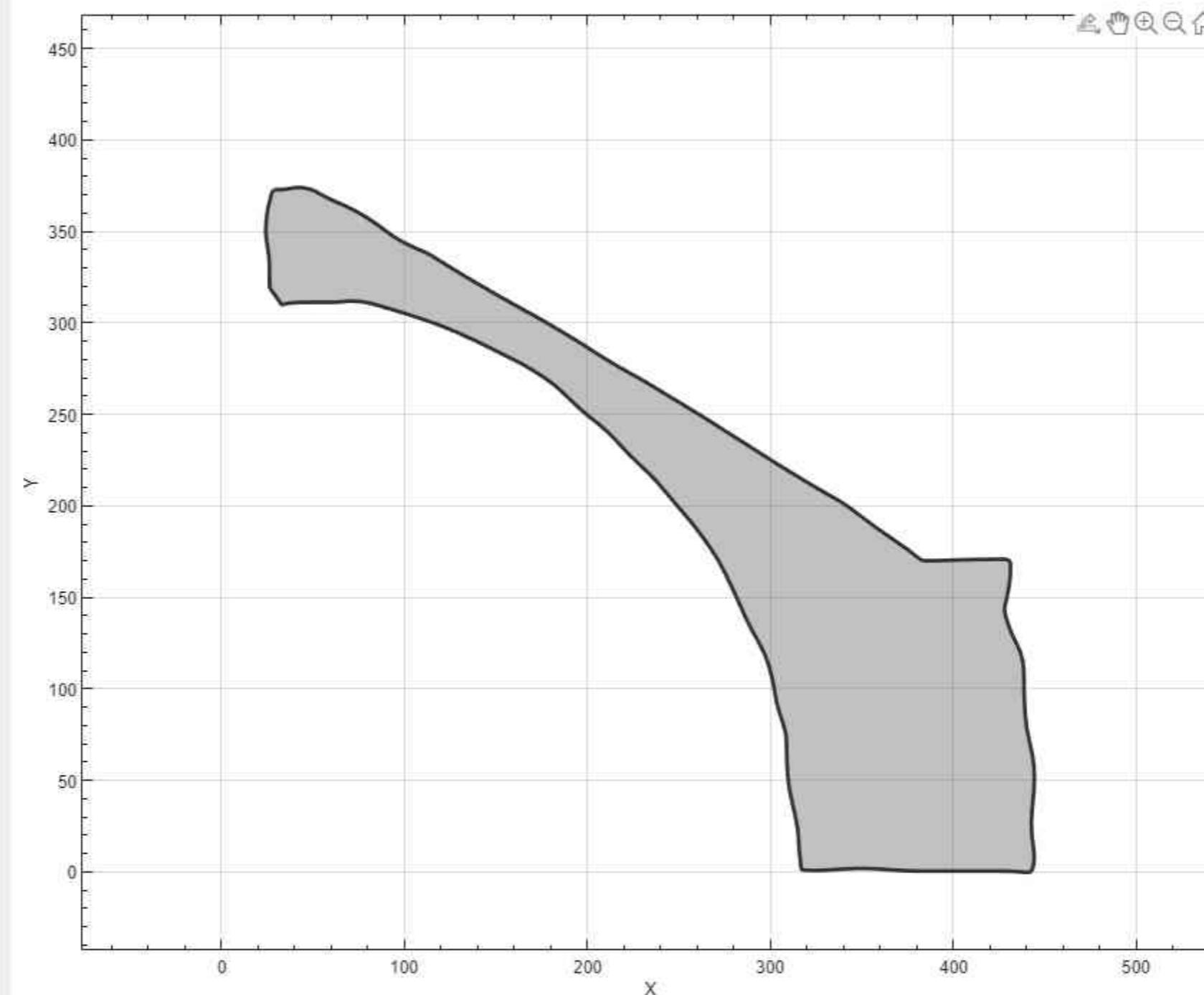
L: 1

Interactive on  off Target: 100

scale factor: 1

### Interactive Area

### Force Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On

alpha W: 0 Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

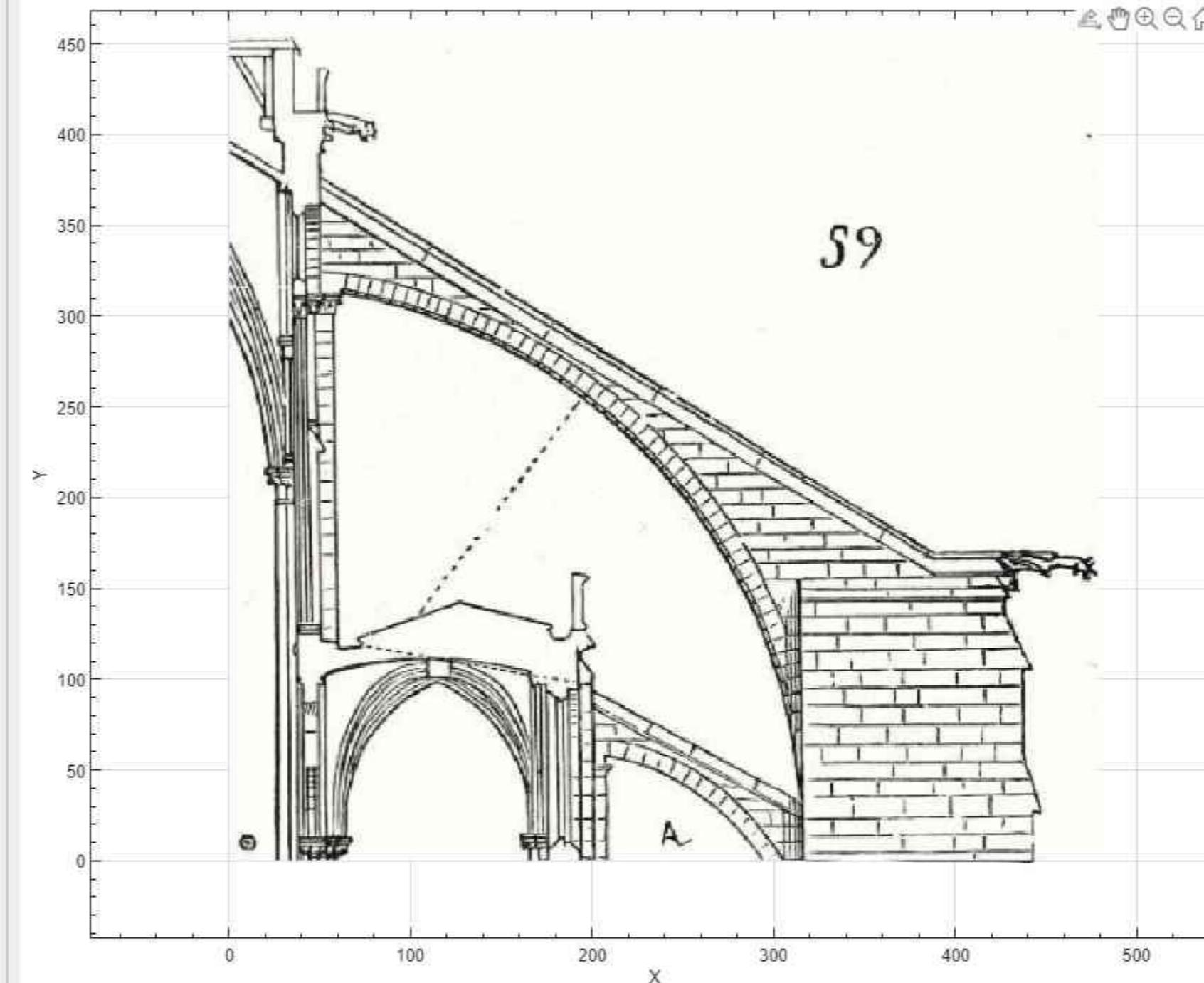
L: 1

Interactive on  off Target: 100

scale factor: 1

### Interactive Area

### Force Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On

alpha W: 0 Background Image Off  On

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block   N. of points   6

Thickness   0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3184e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

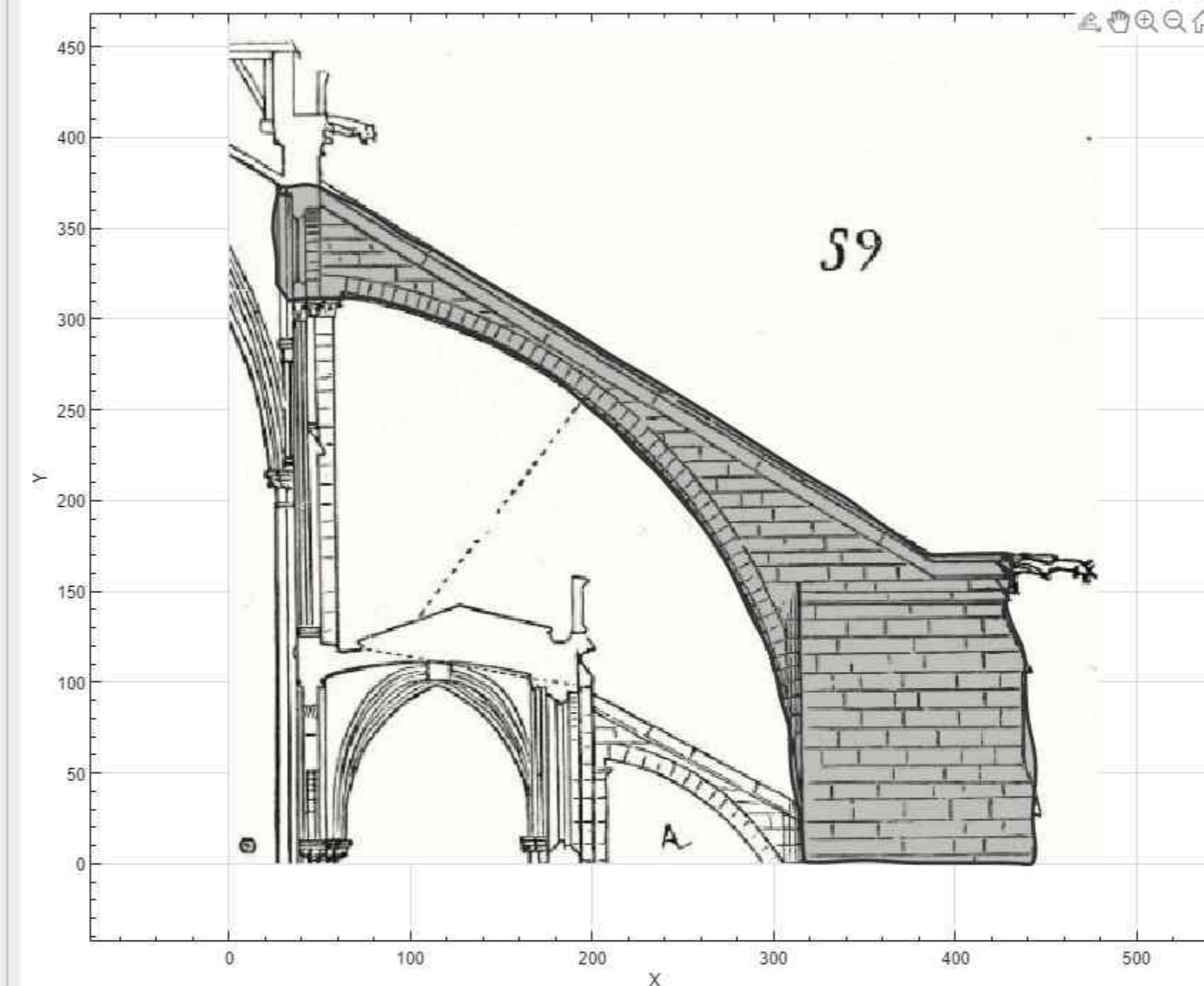
### Background Image

L: 1

Interactive on  off Target: 100

scale factor: 1

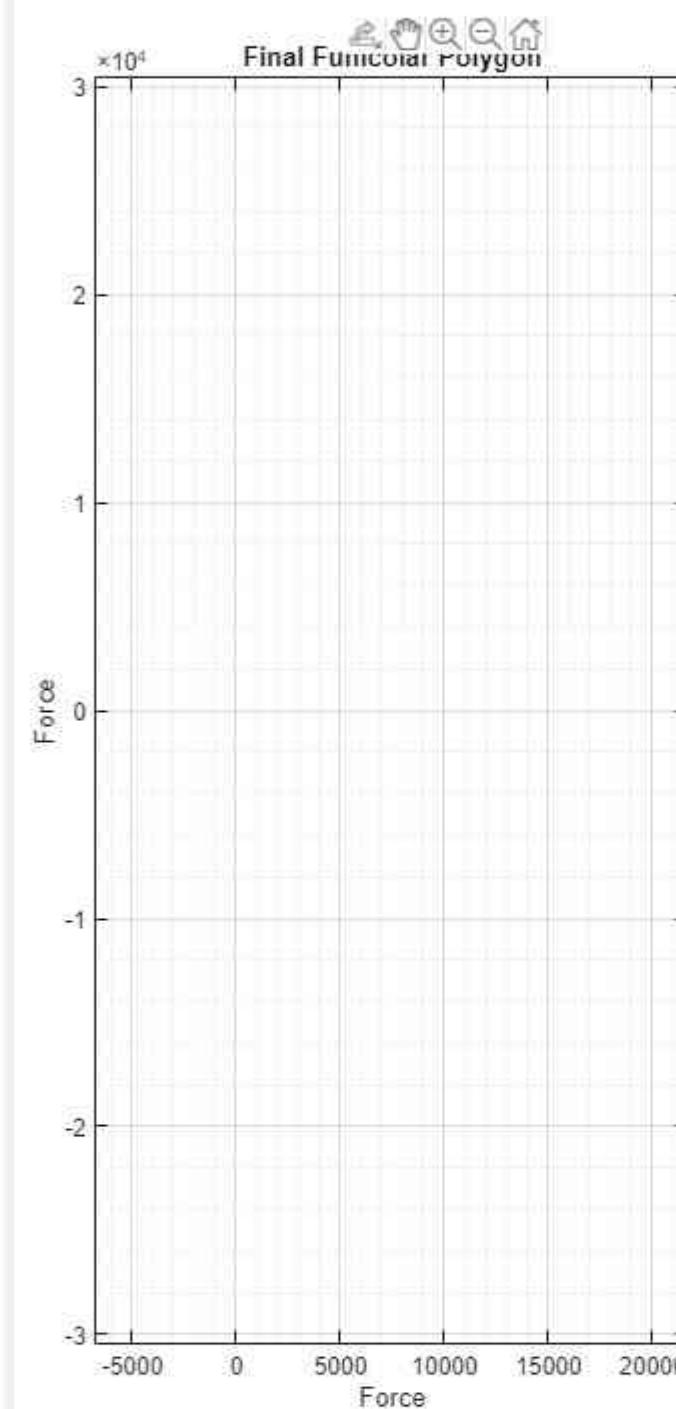
### Interactive Area



Graphics   Save/Load Example   Blocks properties   Units

forces factor: 3 Force Magnitude Off  On  
   alpha W: 0 Background Image Off  On  
  Sketched Geometry Off  On  
Text / Labels Off  On

### Force Polygon



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

### Arch definition

by Blocks   Circular   by Sketch   Lo >

Add rectangular block

Add irregular Block

N. of points 6

Thickness 0

### Block data

N.	Area	Weight	Xg
1	4.6462e+03	1.0222e+11	383.40
2	4.7430e+03	1.0435e+11	380.64
3	4.8000e+03	1.0560e+11	375.32
4	4.7727e+03	1.0500e+11	366.13
5	3.3164e+03	7.2961e+10	340.17
6	2.5307e+03	5.5675e+10	310.56
7	1.9270e+03	4.2394e+10	285.49
8	1.5186e+03	3.3409e+10	260.08
9	1.2235e+03	2.6918e+10	234.75
10	1.0019e+03	2.2042e+10	208.88
11	884.5797	1.9481e+10	181.91
12	899.4989	1.9789e+10	153.38
13	1.0589e+03	2.3296e+10	123.33
14	1.3896e+03	3.0570e+10	91.77
15	1.9029e+03	4.1883e+10	58.21

N: 5

### Background Image

Load image Pick Reference L: 1

Flip X Interactive on: off Target 100

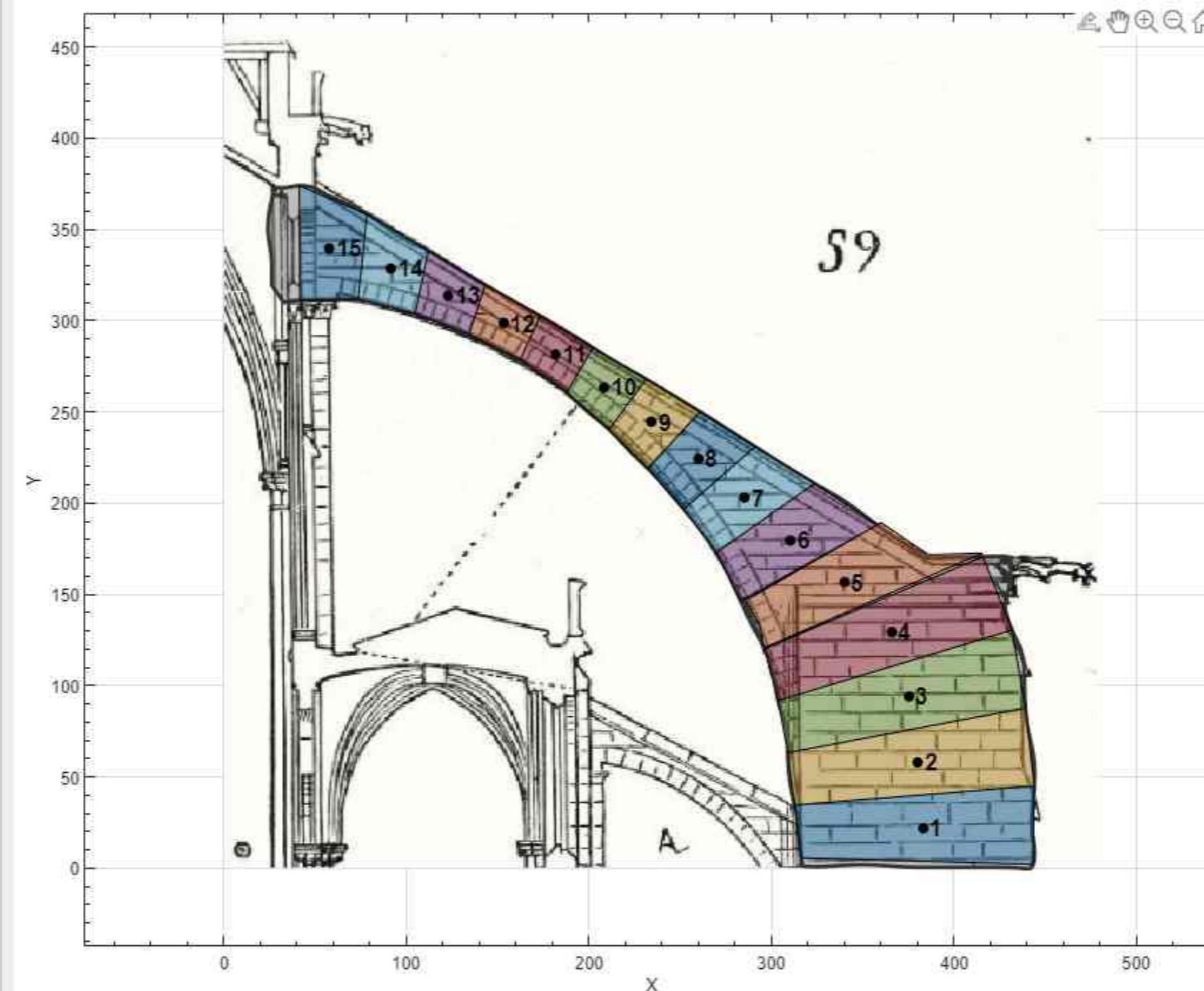
Flip Y scale factor 1 Scale Image

### Interactive Area

Reset View Pan Scroll Zoom on Scroll Zoom off Show Structural scale

### Force Polygon

Reset View Show Force Scale



Graphics Save/Load Example Blocks properties Units

forces factor 3 Force Magnitude Off  On

alpha W 0 Background Image Off  On

Sketched Geometry Off  On

Graphics Tab2

Force shrink factor 0

Text / Labels Off  On

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A

Define Point B

Define Horizontal Thrust

 $1.493e+04$ 

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP

Preliminary FUP

Final FOP

Final FUP

LOT Force factor: 0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min:  $1e+04$  max:  $1.5e+04$  Update Slider

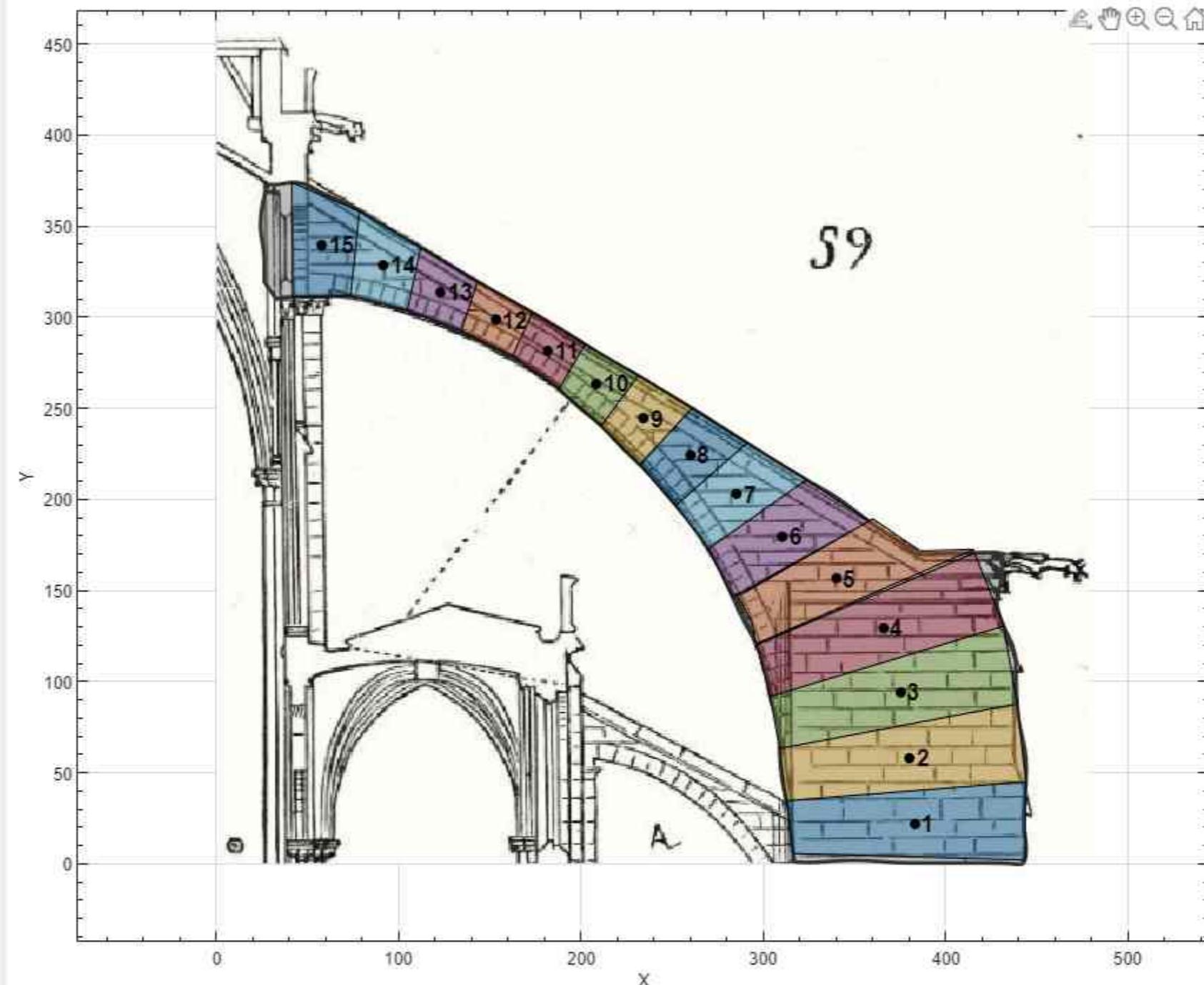
Horizontal Thrust

$e+04$   $1.1e+04$   $1.2e+04$   $1.3e+04$   $1.4e+04$   $1.5e+04$

ID	Thrust
1	$2.7994e+04$
2	$2.4248e+04$
3	$2.0835e+04$
4	$1.7946e+04$
5	$1.5871e+04$
6	$1.4952e+04$
7	$1.5397e+04$
8	$1.7100e+04$
9	$1.9738e+04$
10	$2.2992e+04$
11	$2.6637e+04$
12	$3.0533e+04$
13	$3.4595e+04$
14	$3.8772e+04$

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

Blocks properties

Units

Plot blocks

Plot Forces

Plot Reactions

forces factor

3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W

0

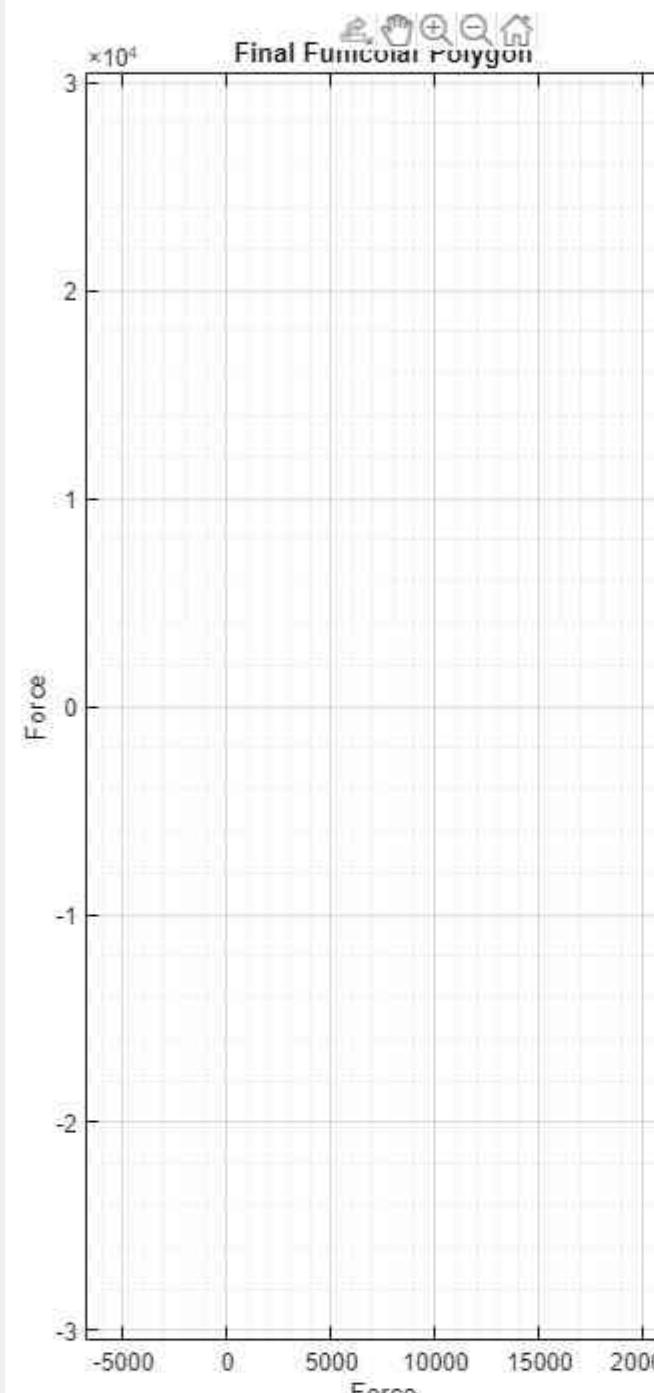
Background Image Off  OnSketched Geometry Off  OnText / Labels Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics

Tab2

Force shrink factor

0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A

Define Point B

Define Horizontal Thrust

1.493e+04

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP

Preliminary FUP

Final FOP

Final FUP

LOT Force factor: 0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min: 1e+04   max: 1.5e+1   Update Slider

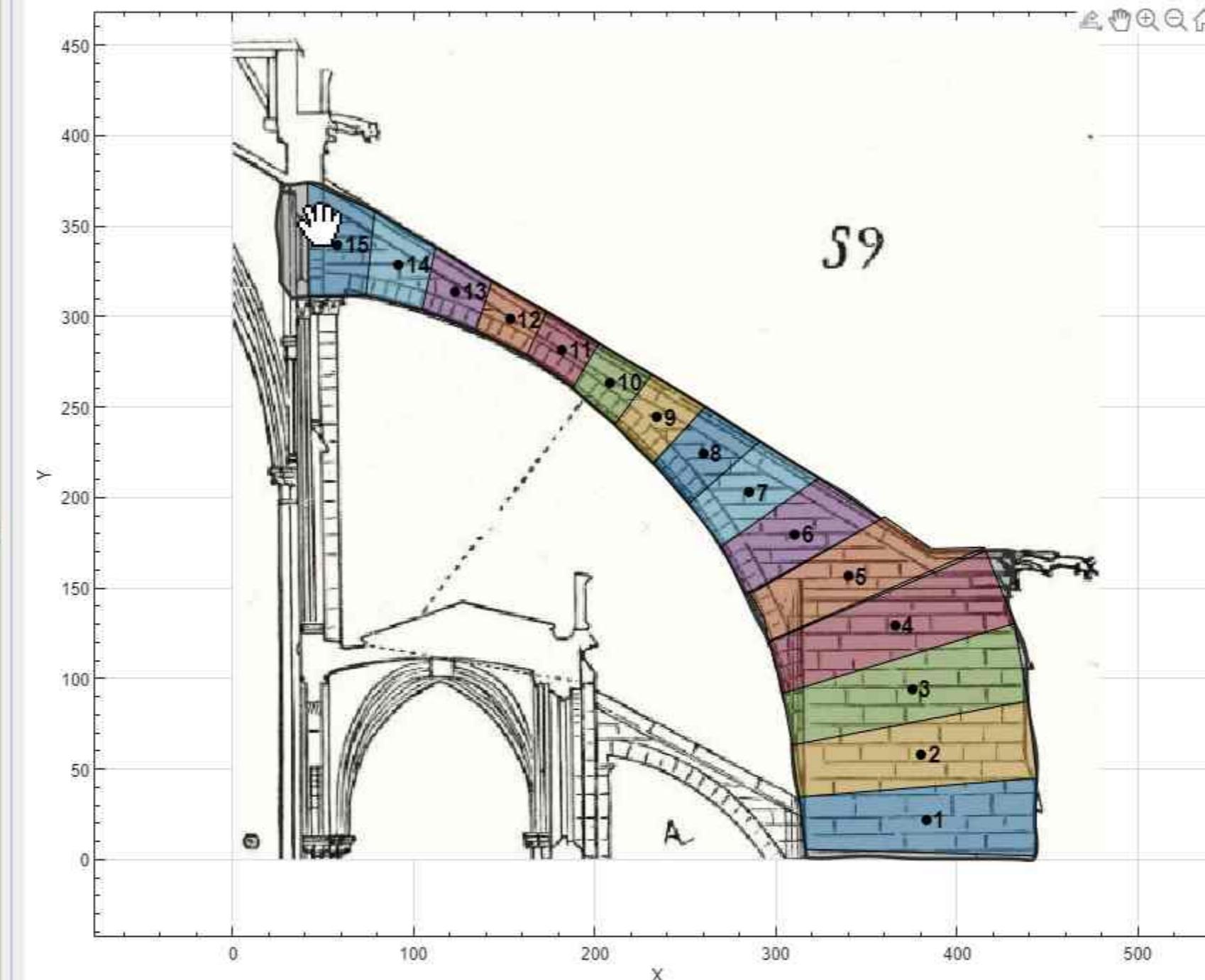
Horizontal Thrust:

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor: 3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W: 0

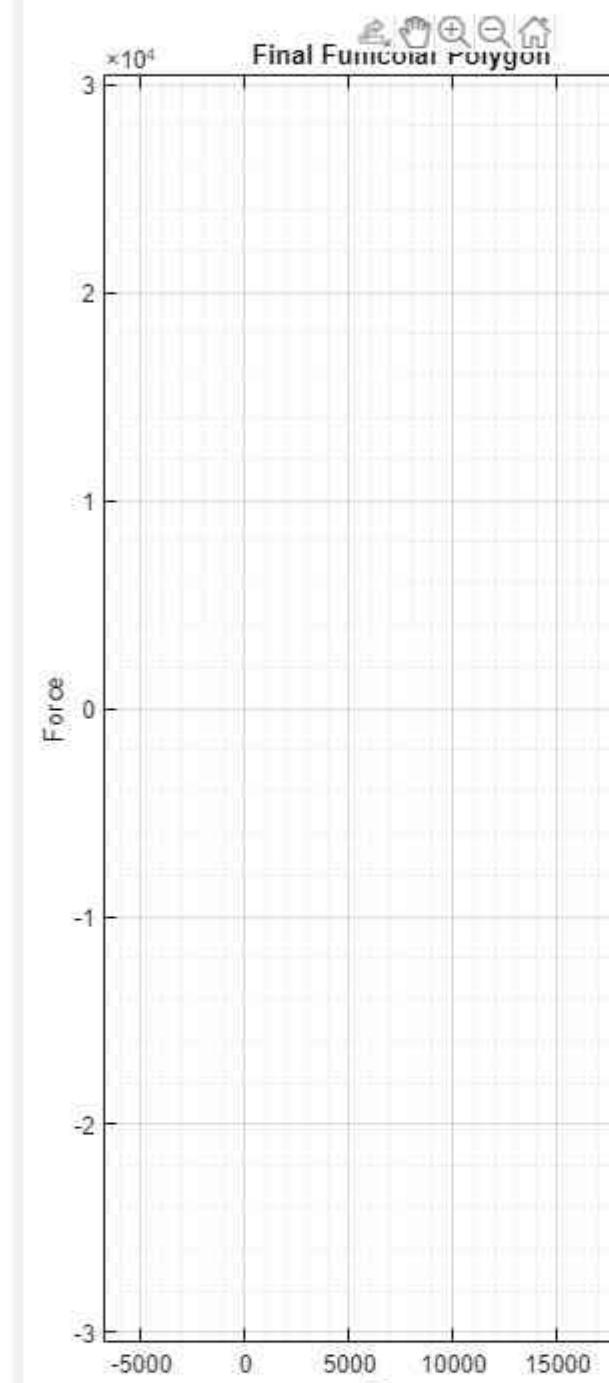
Background Image Off  OnSketched Geometry Off  OnText / Labels Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

**Unknowns**

Define Point A   Define Point B

Define Horizontal Thrust   1.493e+04

**Force polygon (FOP) and Funicular Polygon (FUP)**

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

**Cable analogy**

Plot Cable analogy

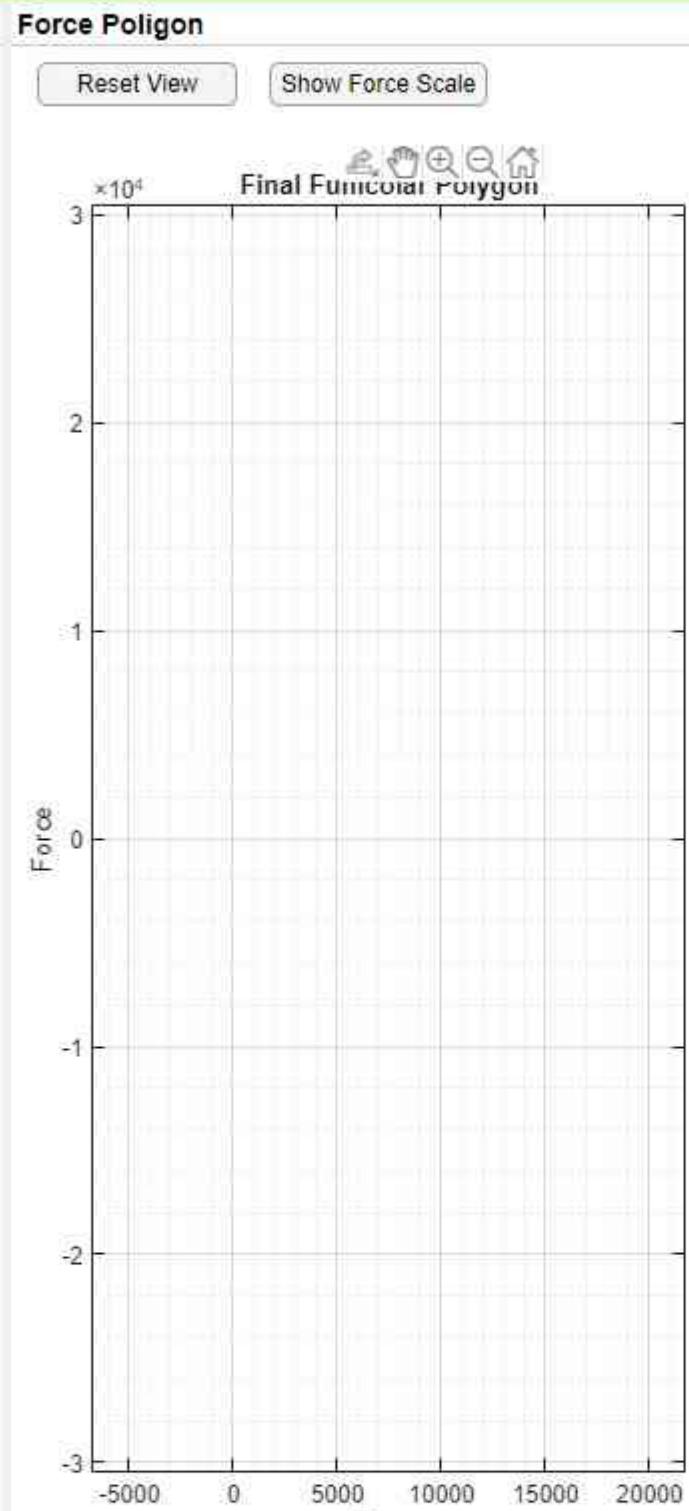
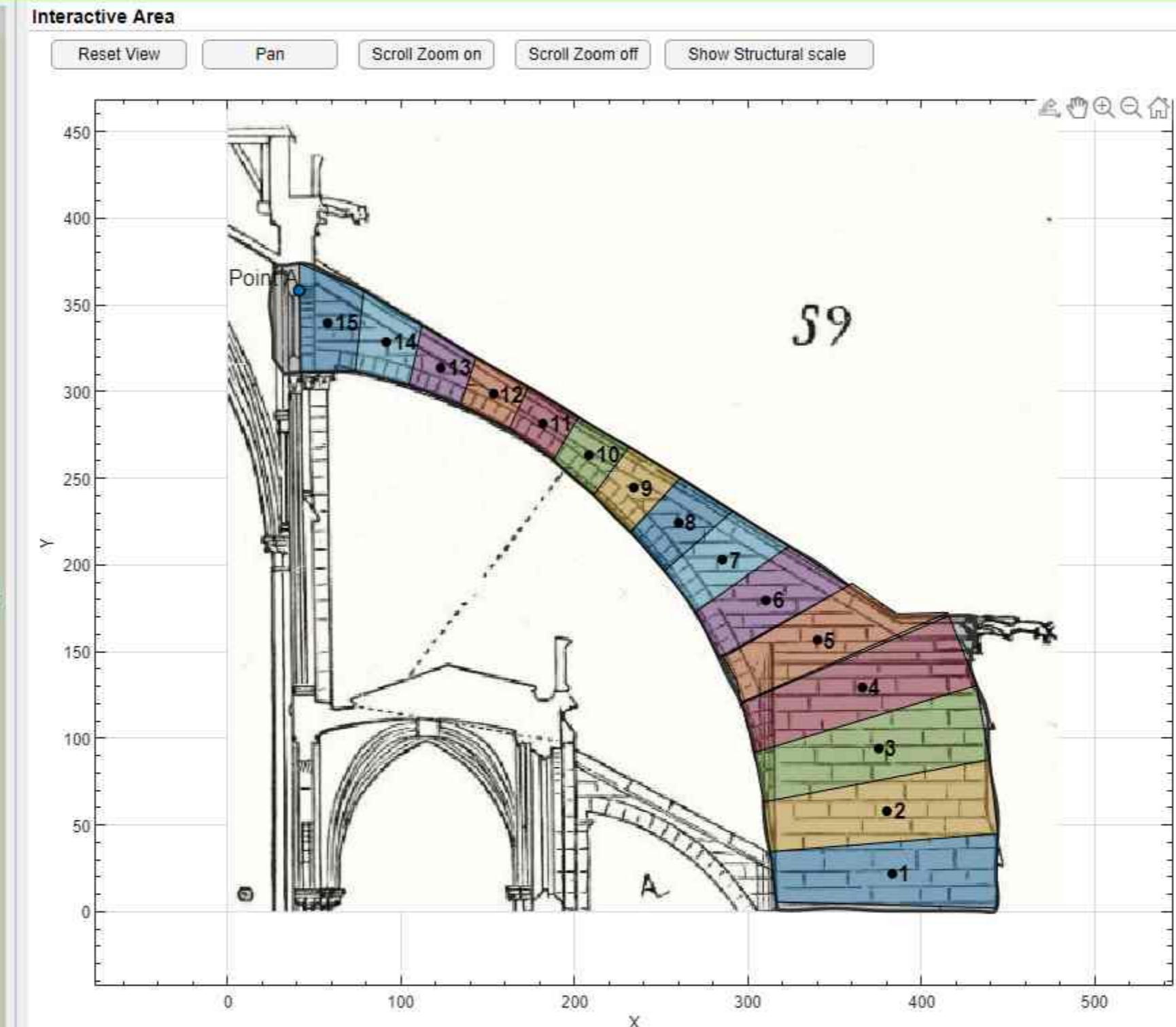
**Interactive FUP (find the Line of Thrust)**

min 1e+04   max 1.5e+1   Update Slider

Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1.493e+04

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

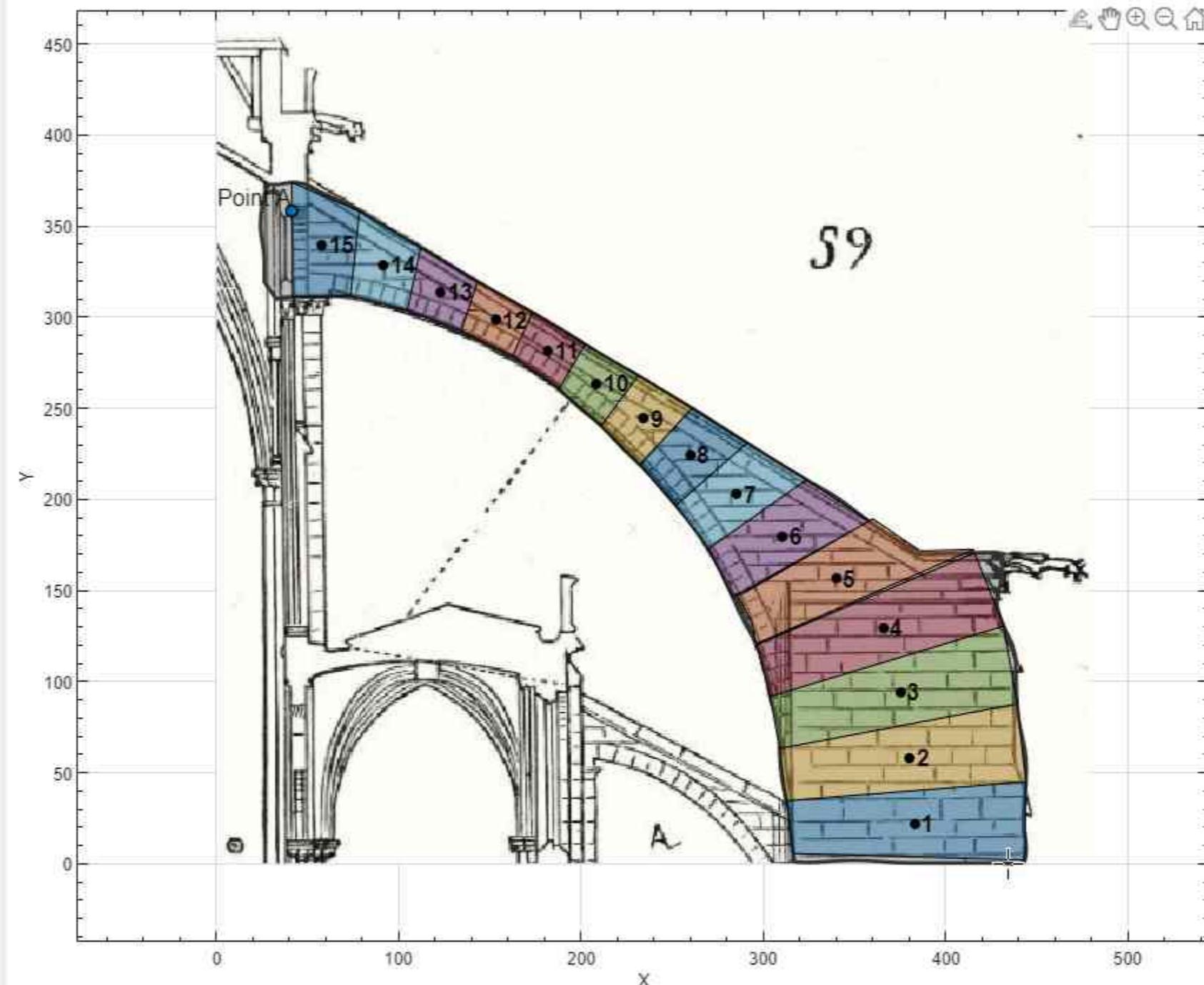
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

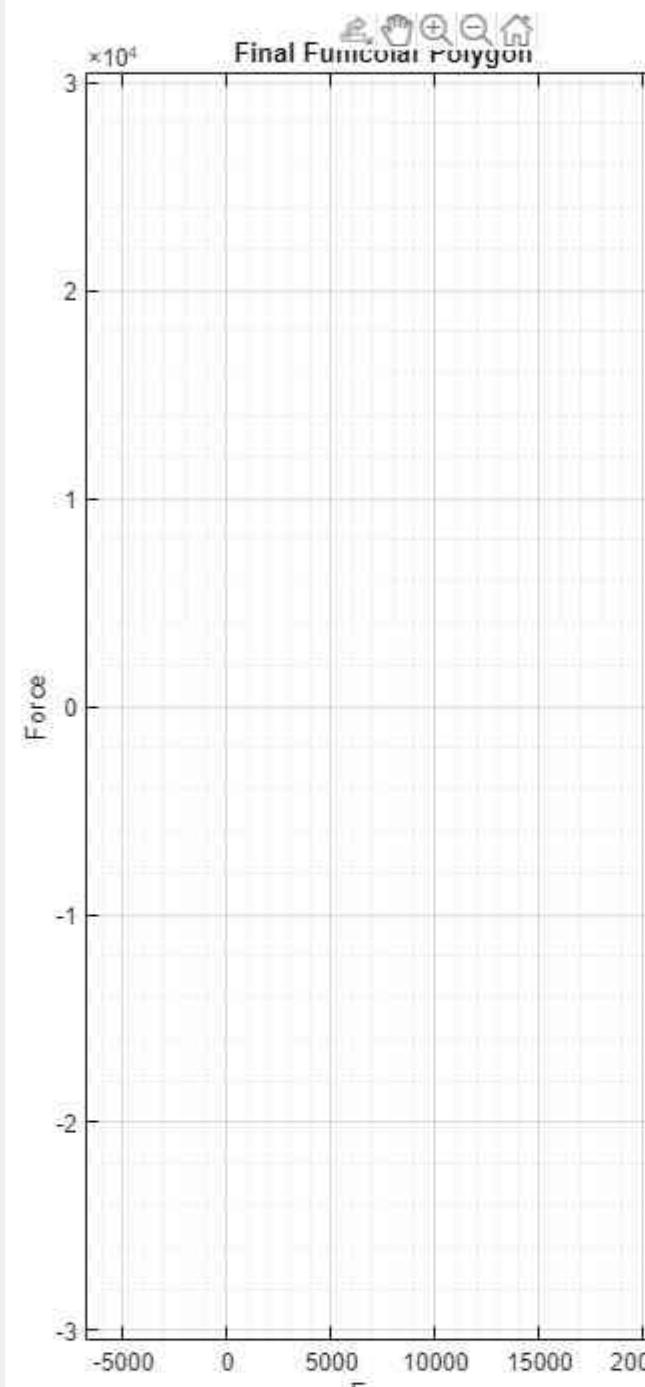
Background Image Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Sketched Geometry Off  On

Text / Labels Off  On

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1.193e+04

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

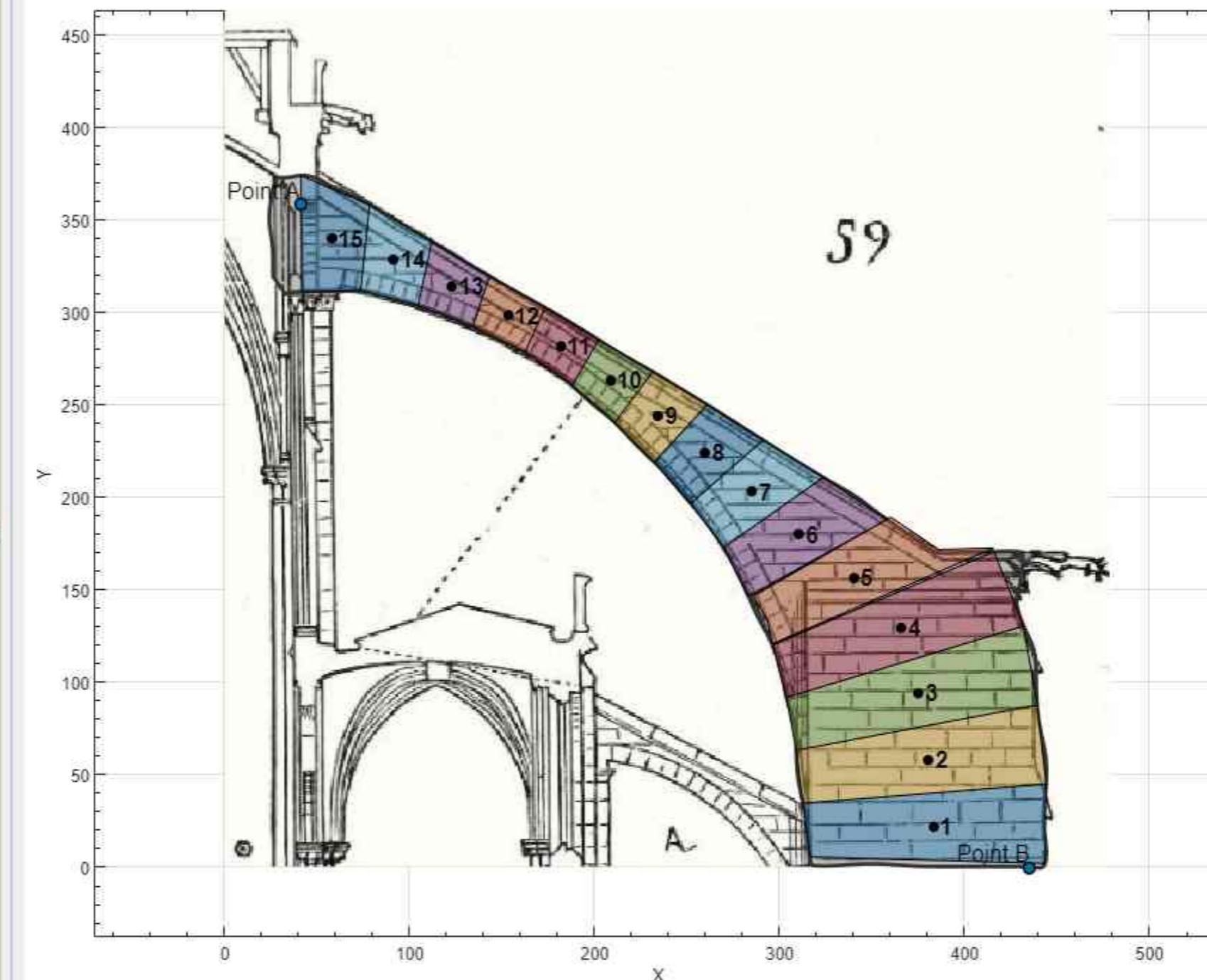
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

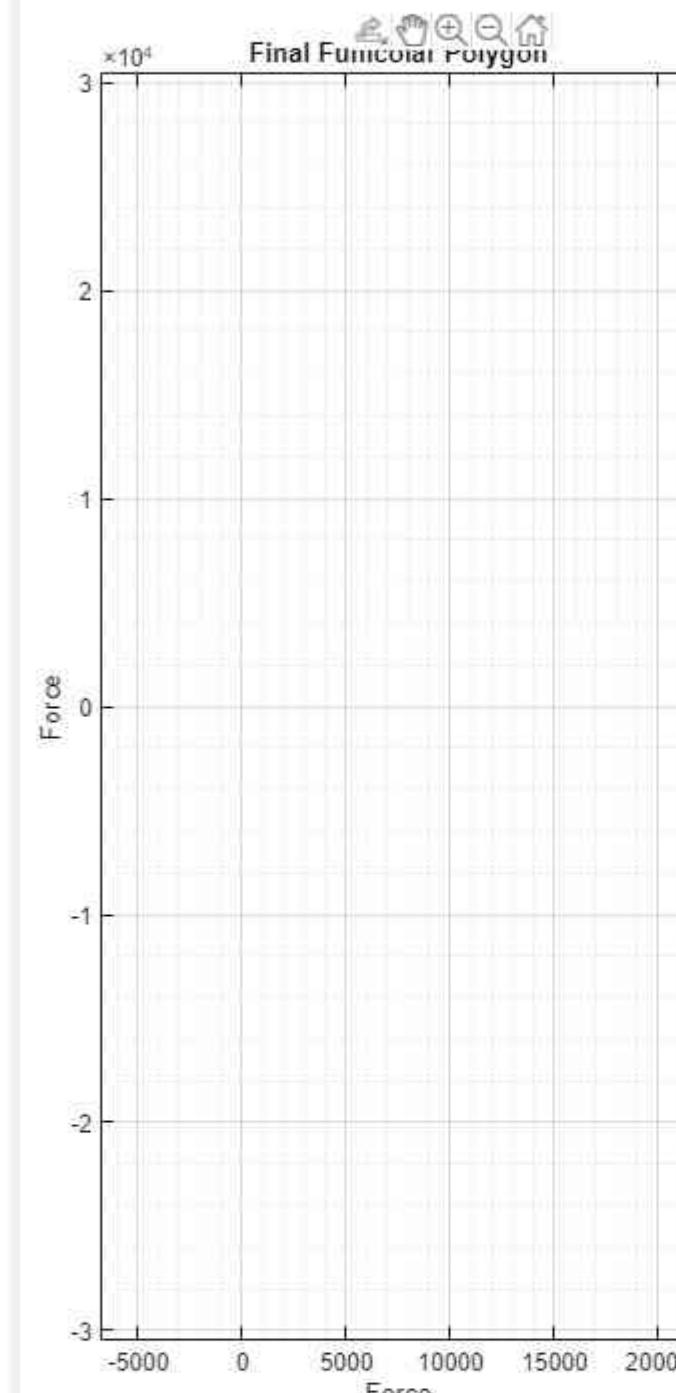
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   14929.577464788734

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

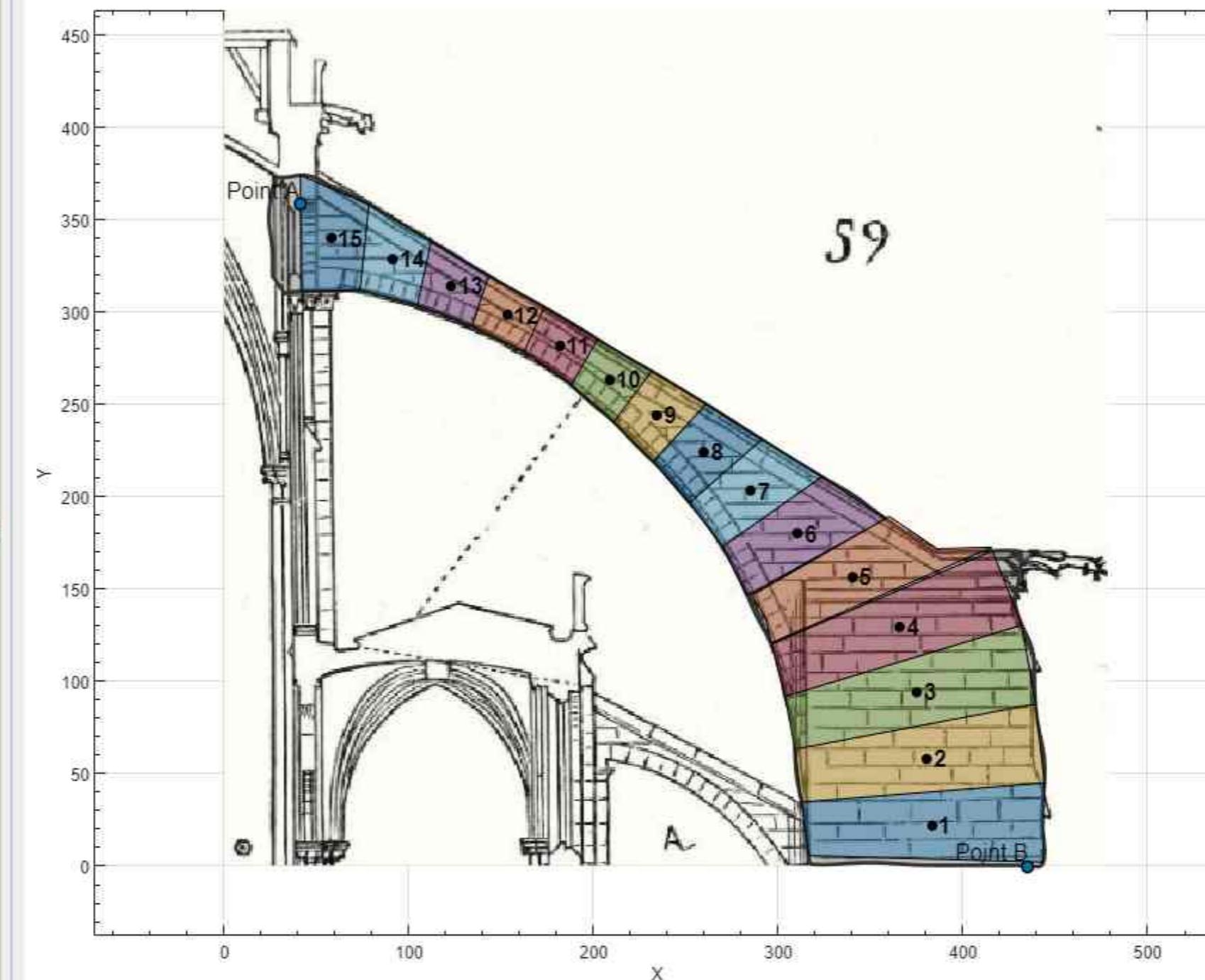
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

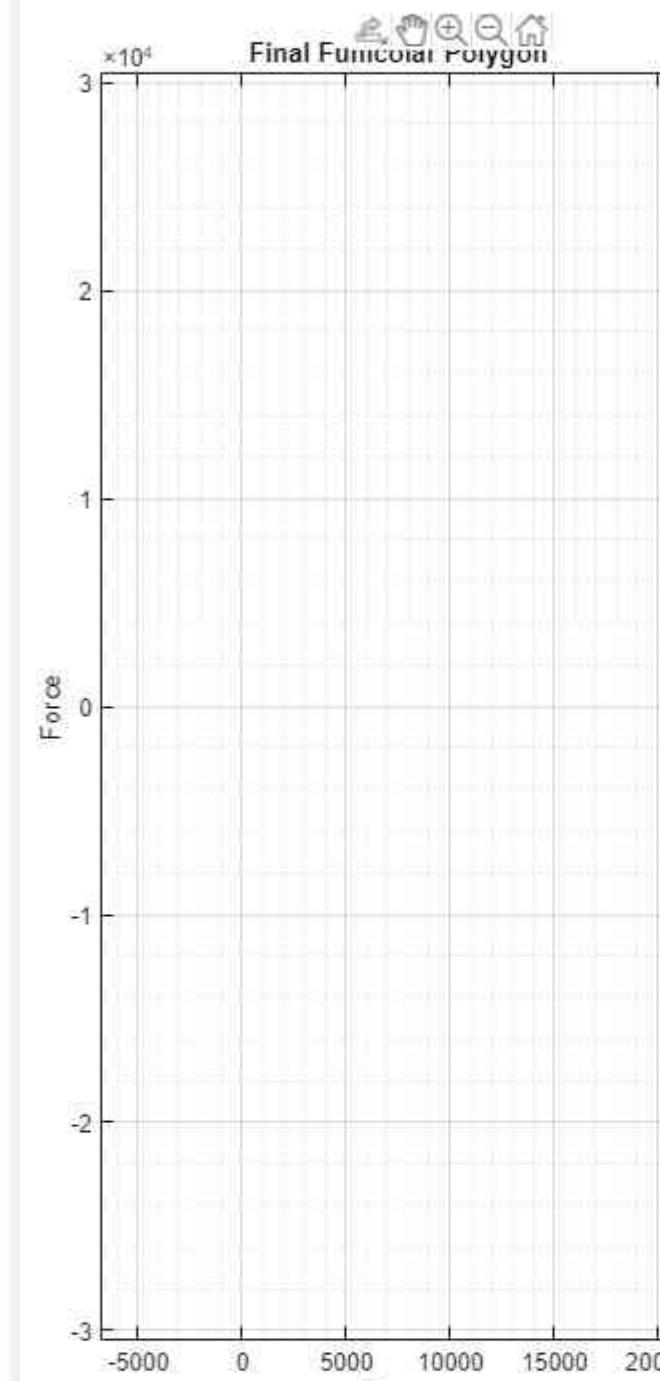
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

**Unknowns**

Define Point A   Define Point B

Define Horizontal Thrust   **14929.577464788734**

**Force polygon (FOP) and Funicular Polygon (FUP)**

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor: 0.0001

**Cable analogy**

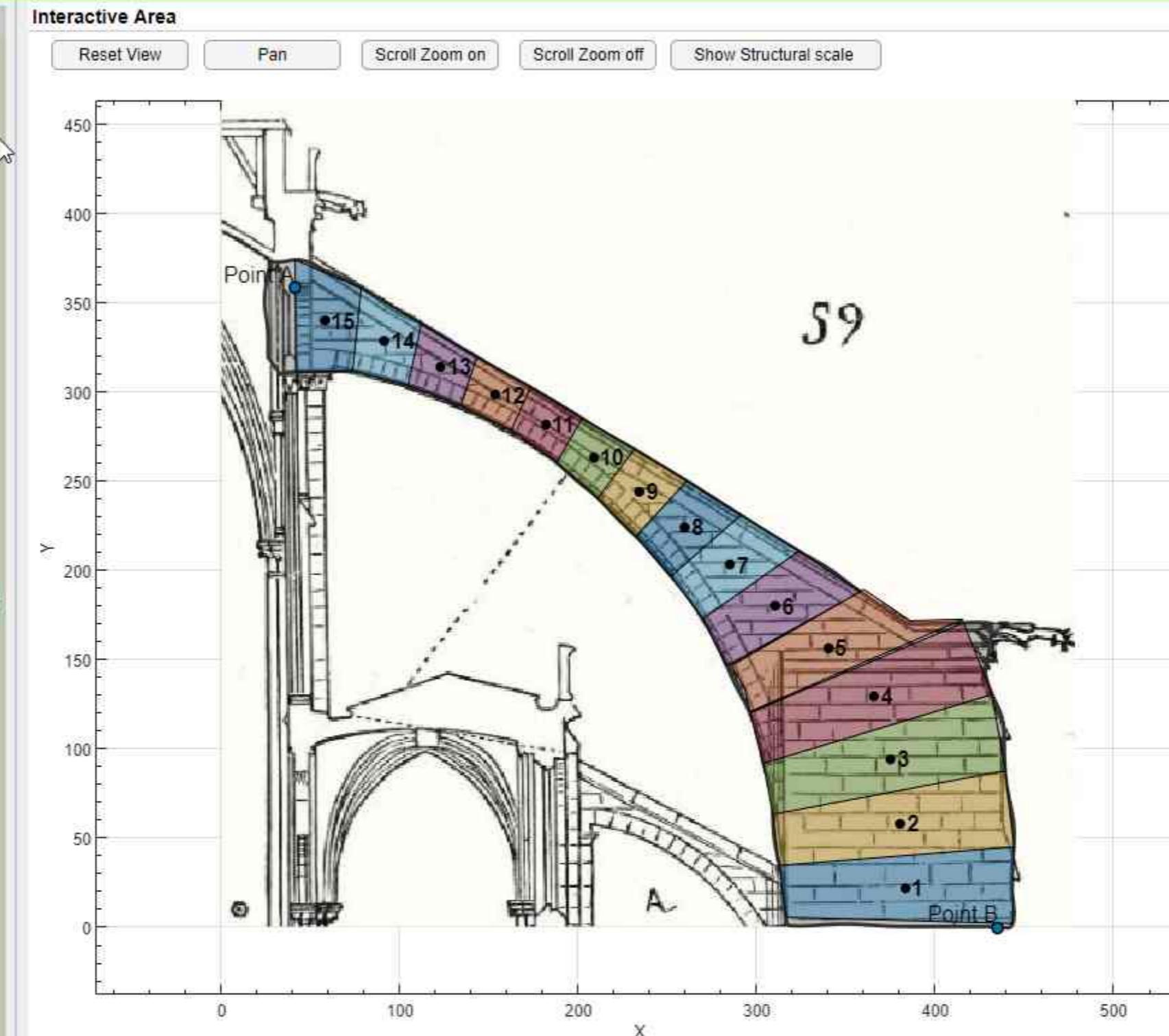
Plot Cable analogy

**Interactive FUP (find the Line of Thrust)**

min: 1e+04   max: 1.5e+1   Update Slider

Horizontal Thrust: 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04



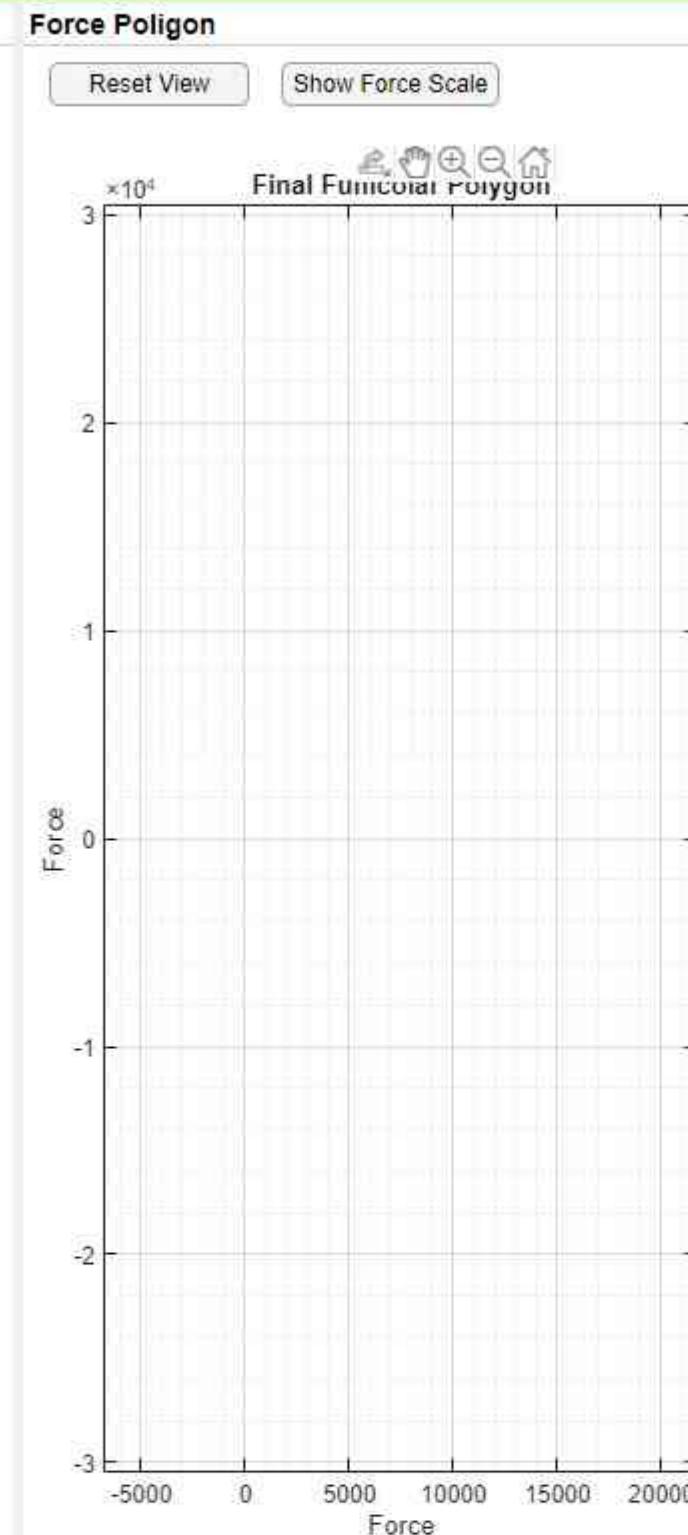
Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor: 3   Force Magnitude Off: On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W: 0   Background Image Off: On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off: On

Text / Labels Off: On



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   14929.577464788734

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor: 0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min: 1e+04   max: 1.5e+1   Update Slider

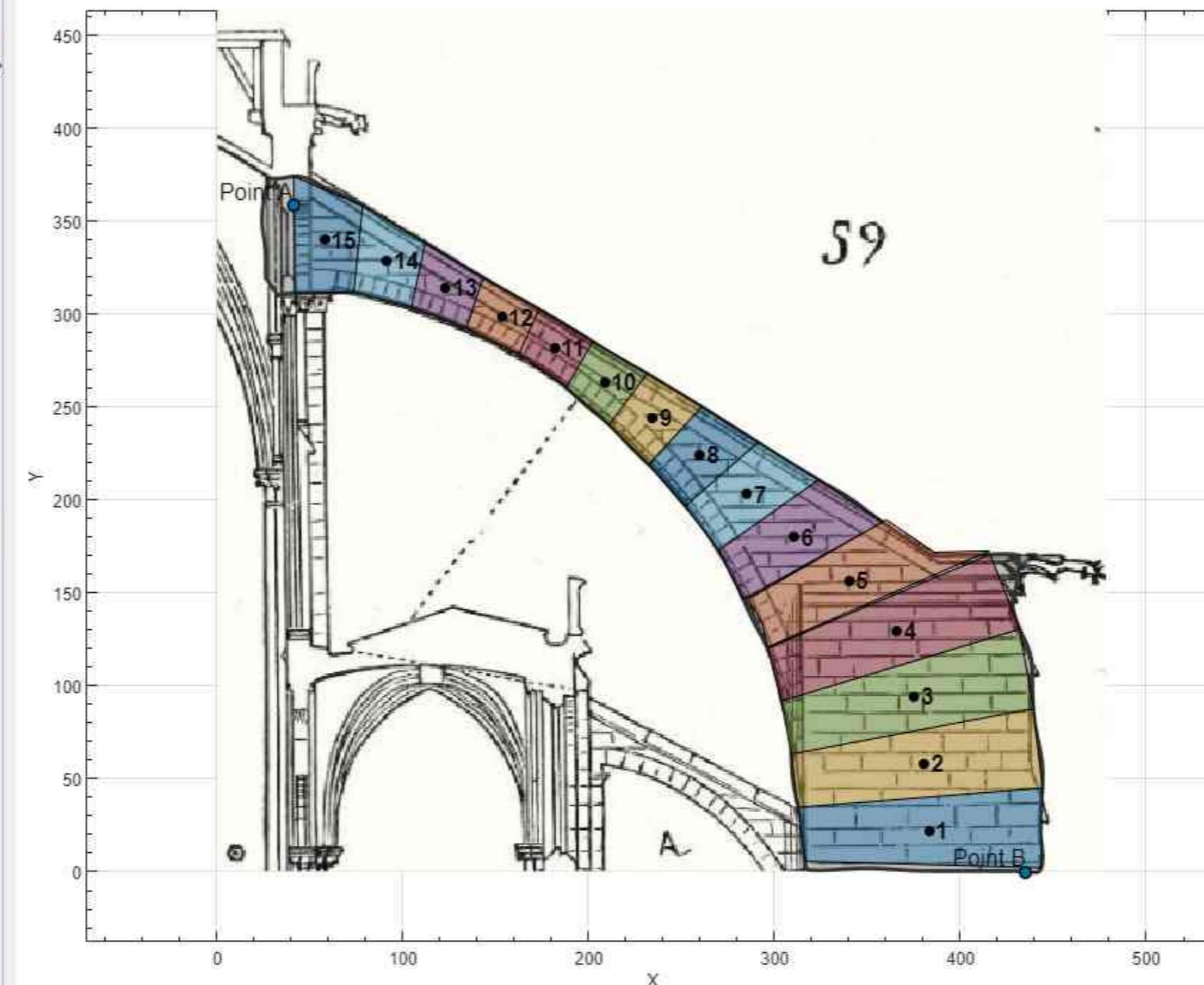
Horizontal Thrust:

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor: 3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W: 0

Background Image Off  On

Clear Interactive Area

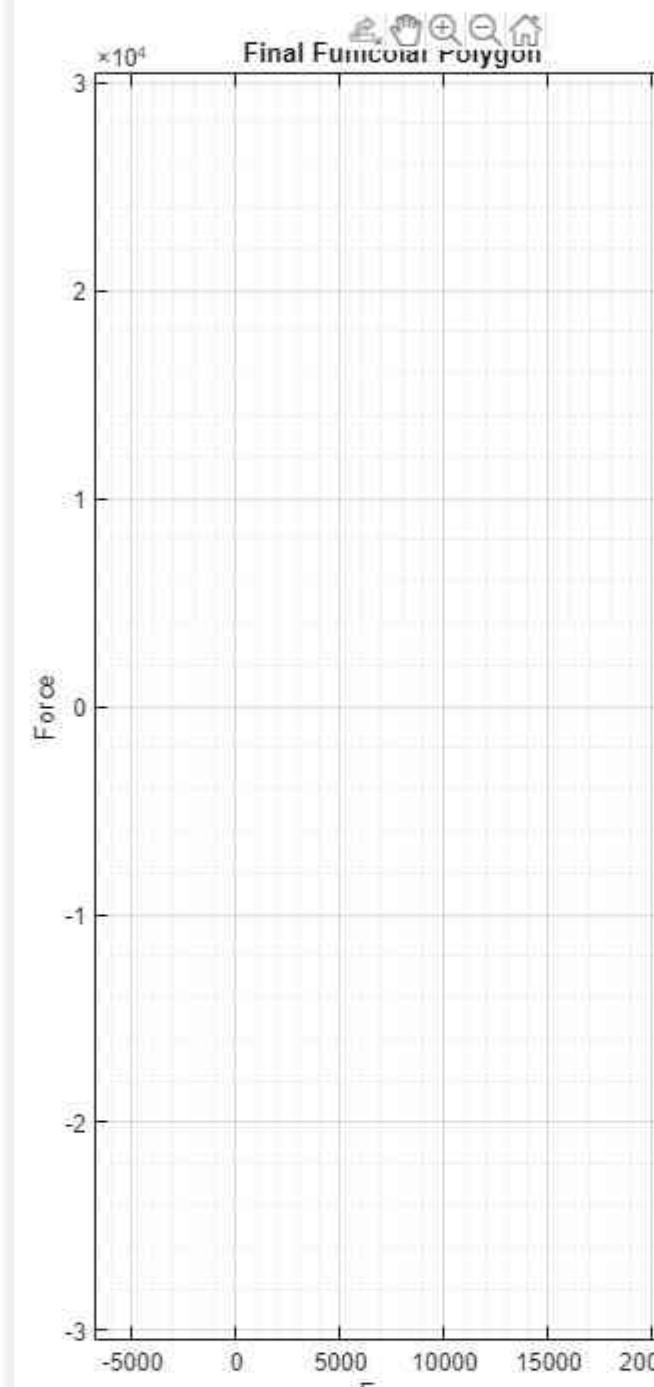
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   10000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

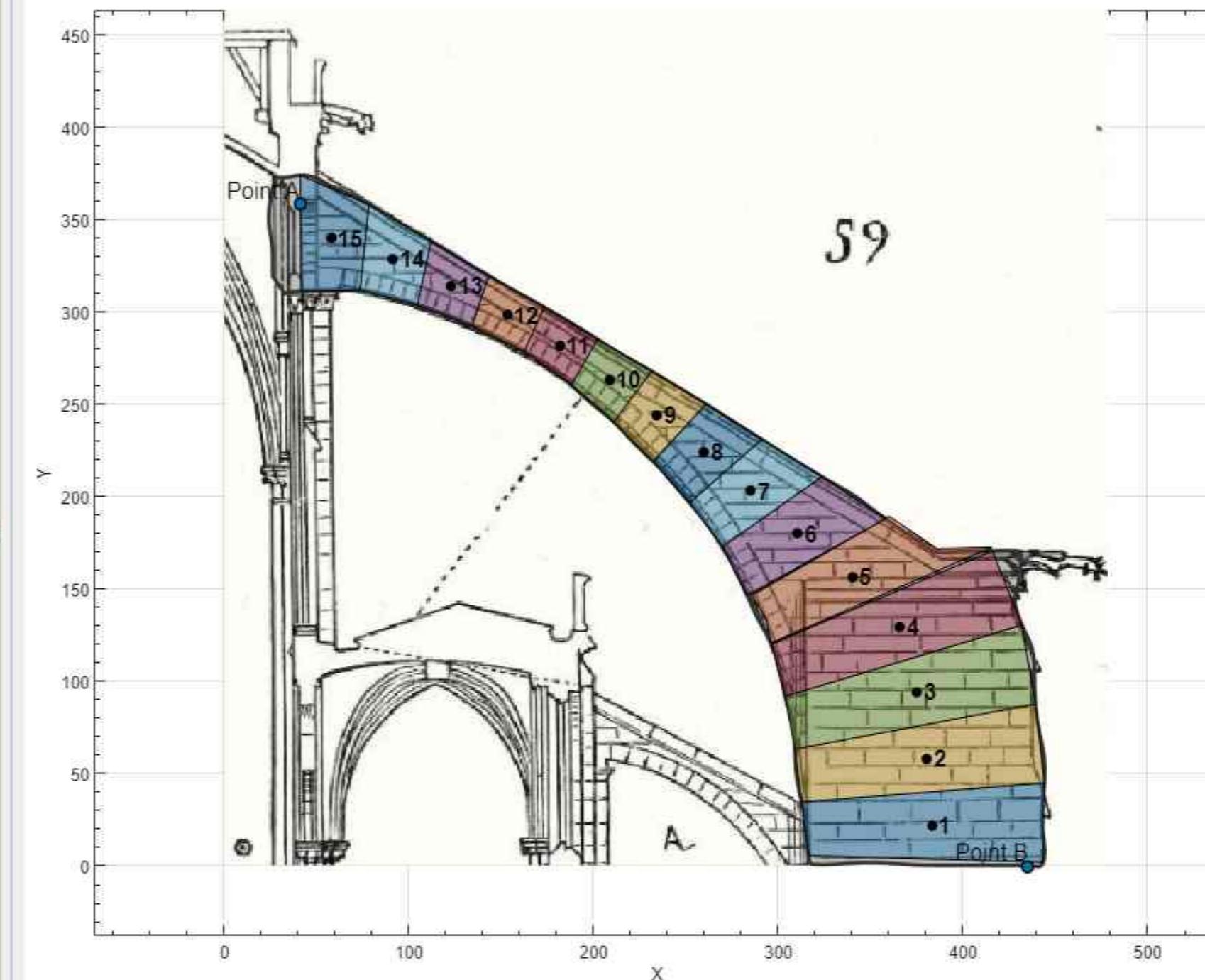
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

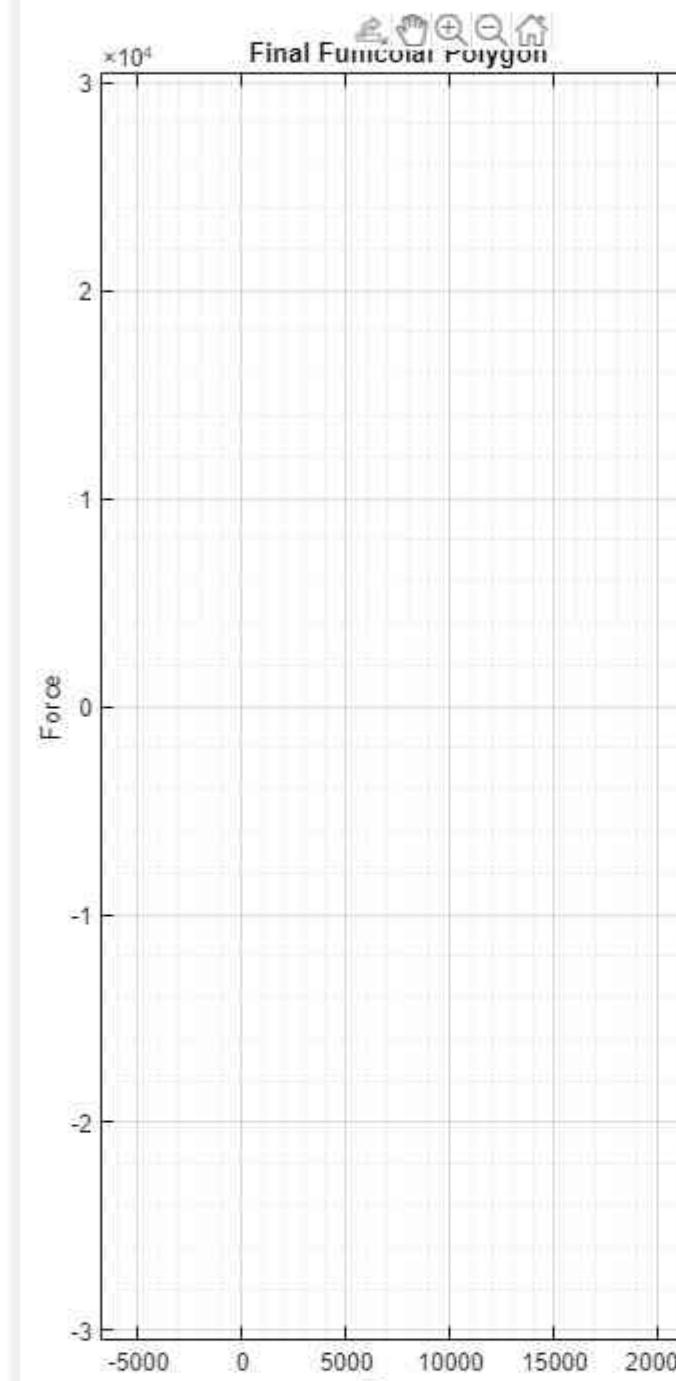
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

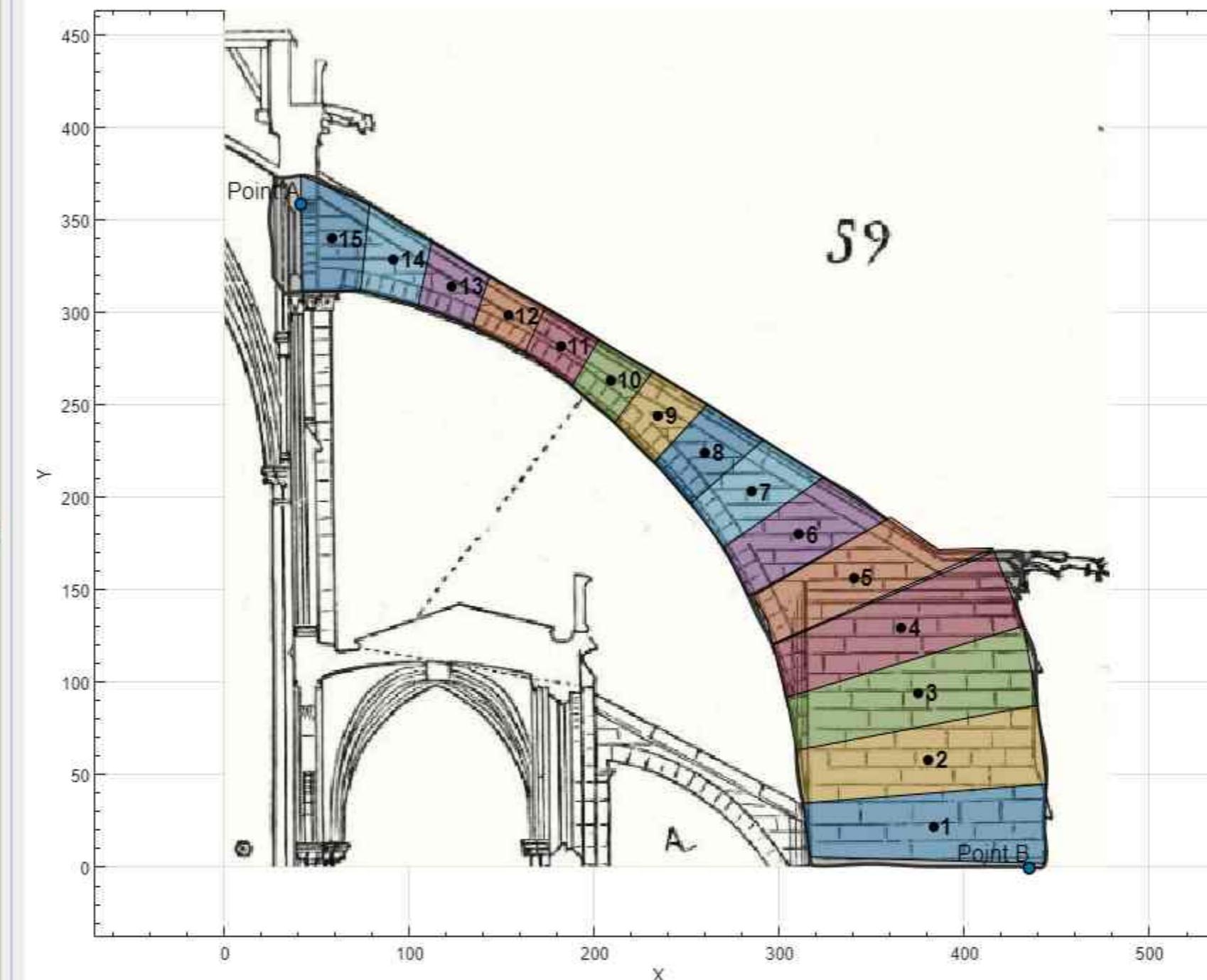
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W

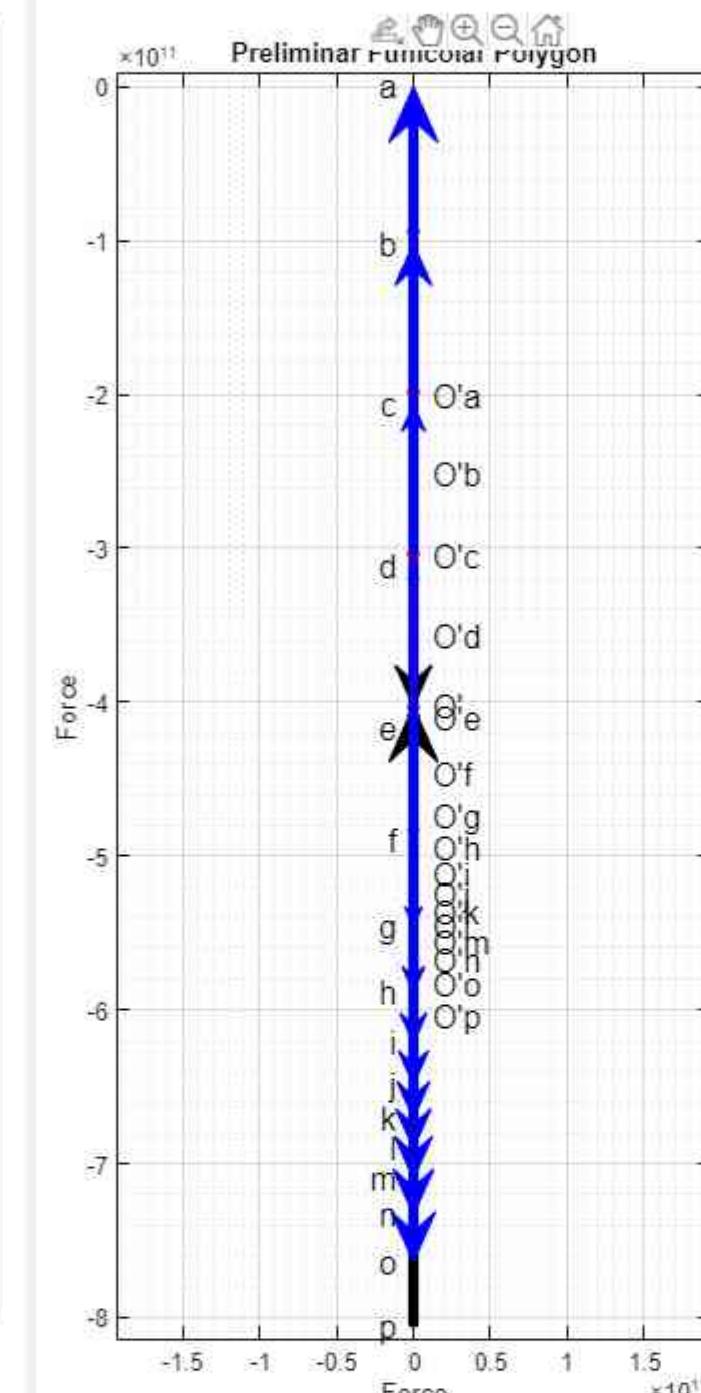
Background Image Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor

Text / Labels Off  On

Arch Definition   Thrust Line   Mechanism

**Unknowns**

Define Point A   Define Point B

Define Horizontal Thrust   10000

**Force polygon (FOP) and Funicular Polygon (FUP)**

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

**Cable analogy**

Plot Cable analogy

**Interactive FUP (find the Line of Thrust)**

min 1e+04   max 1.5e+1   Update Slider

Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

Current units: [ mm ] [ tons ] [ N ] [ MPa ]

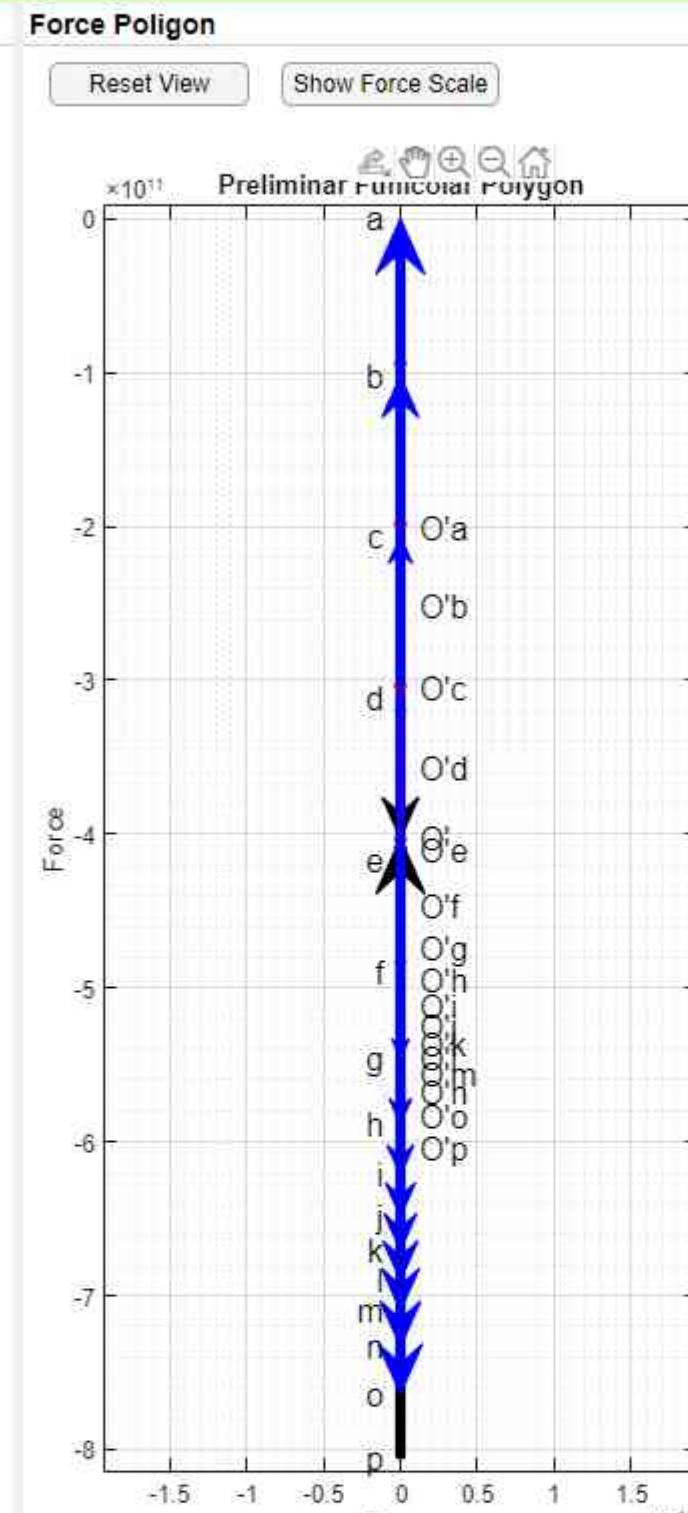
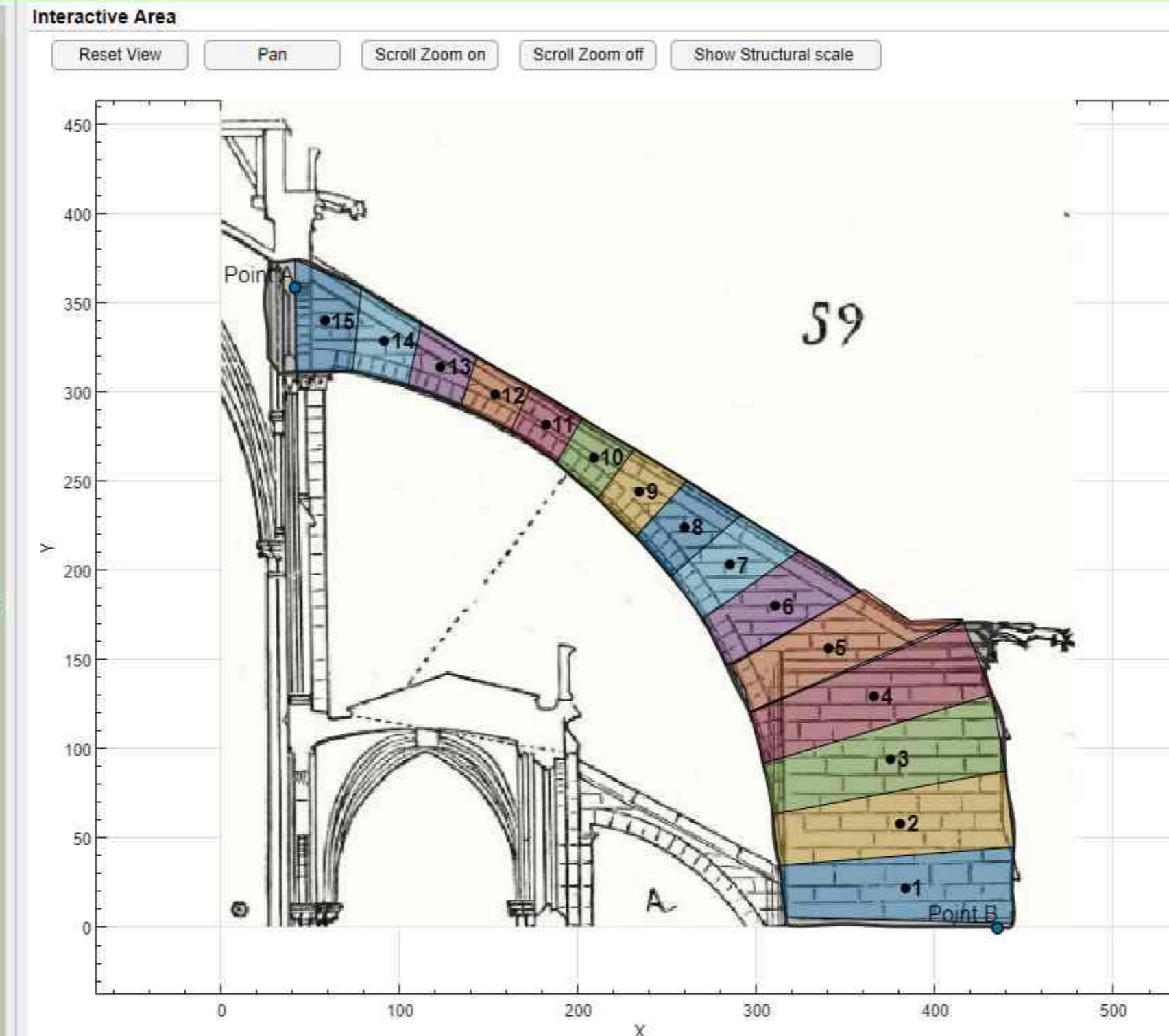
Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On



Graphics   Tab2

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP   Preliminar FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

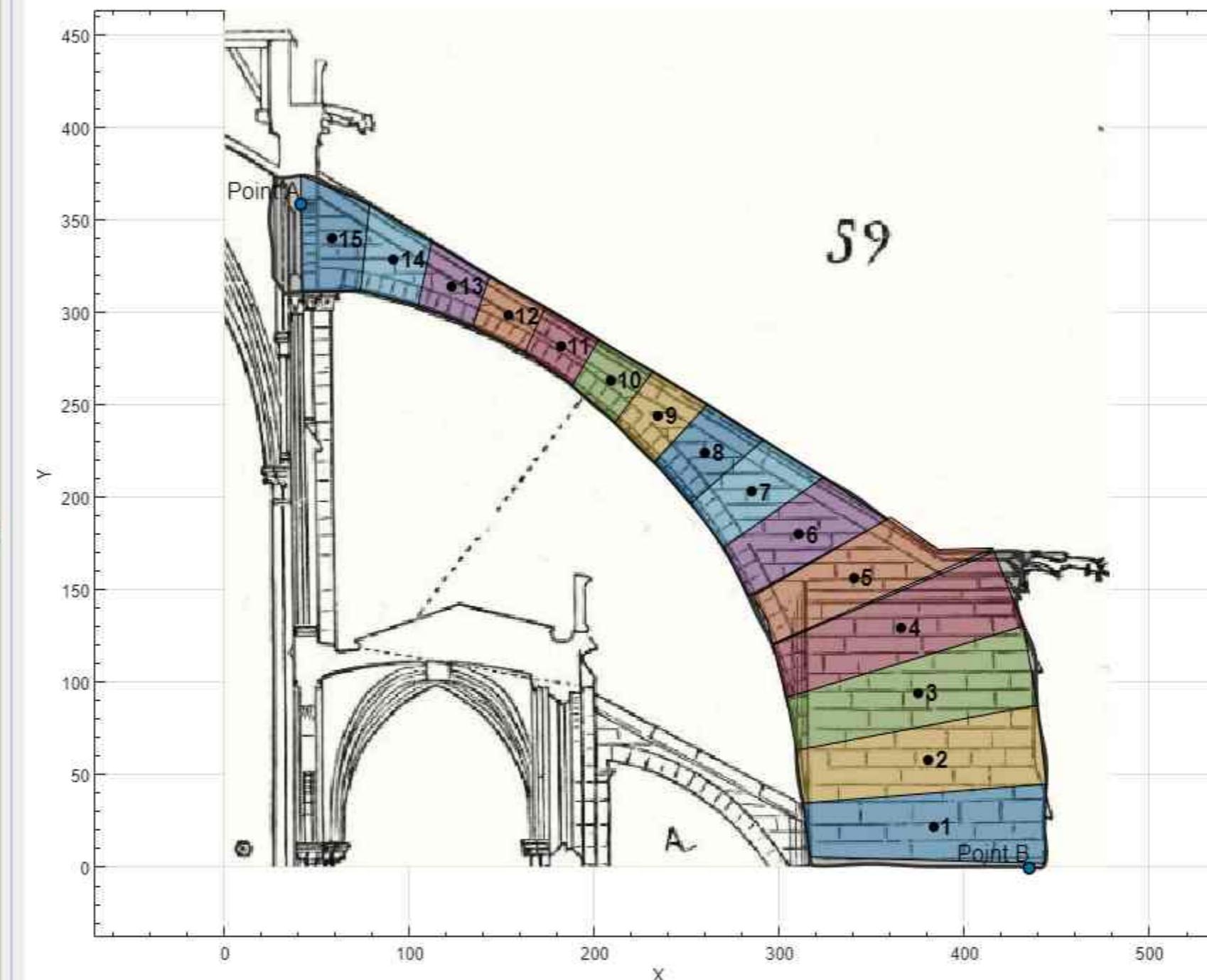
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3   Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0   Background Image Off  On

Sketched Geometry Off  On

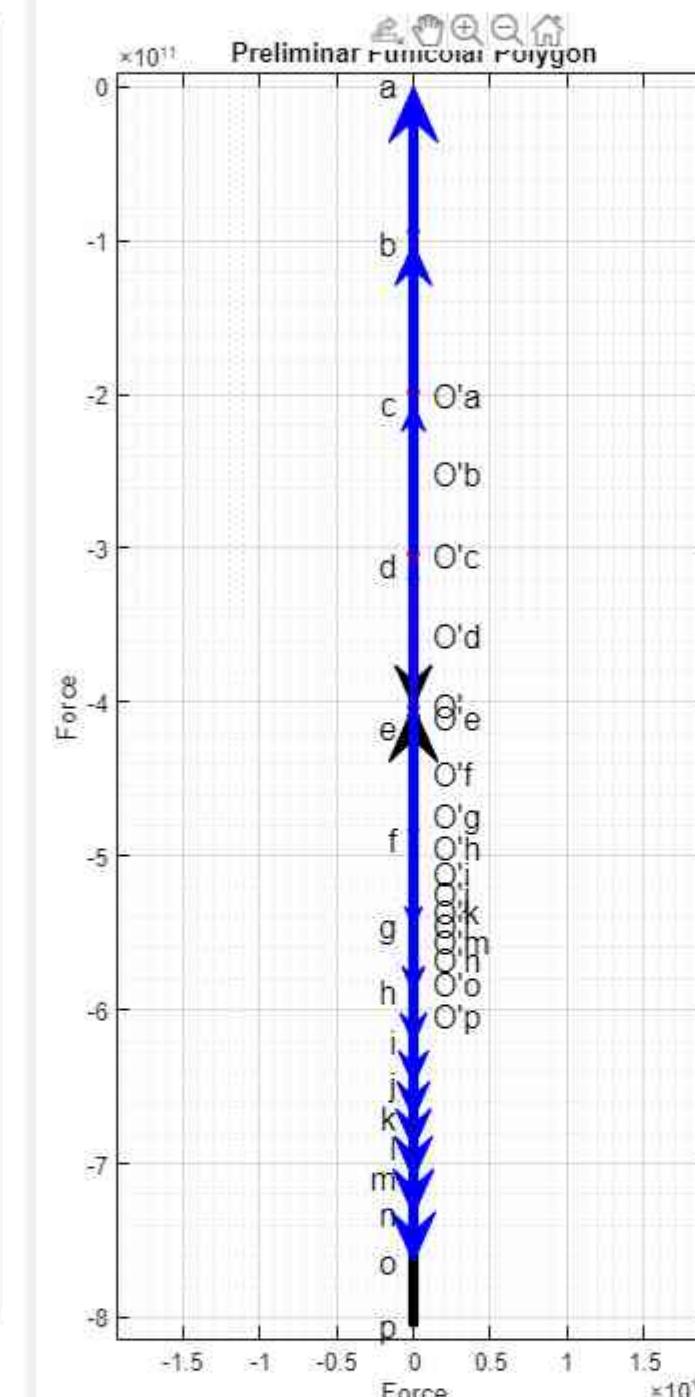
Text / Labels Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

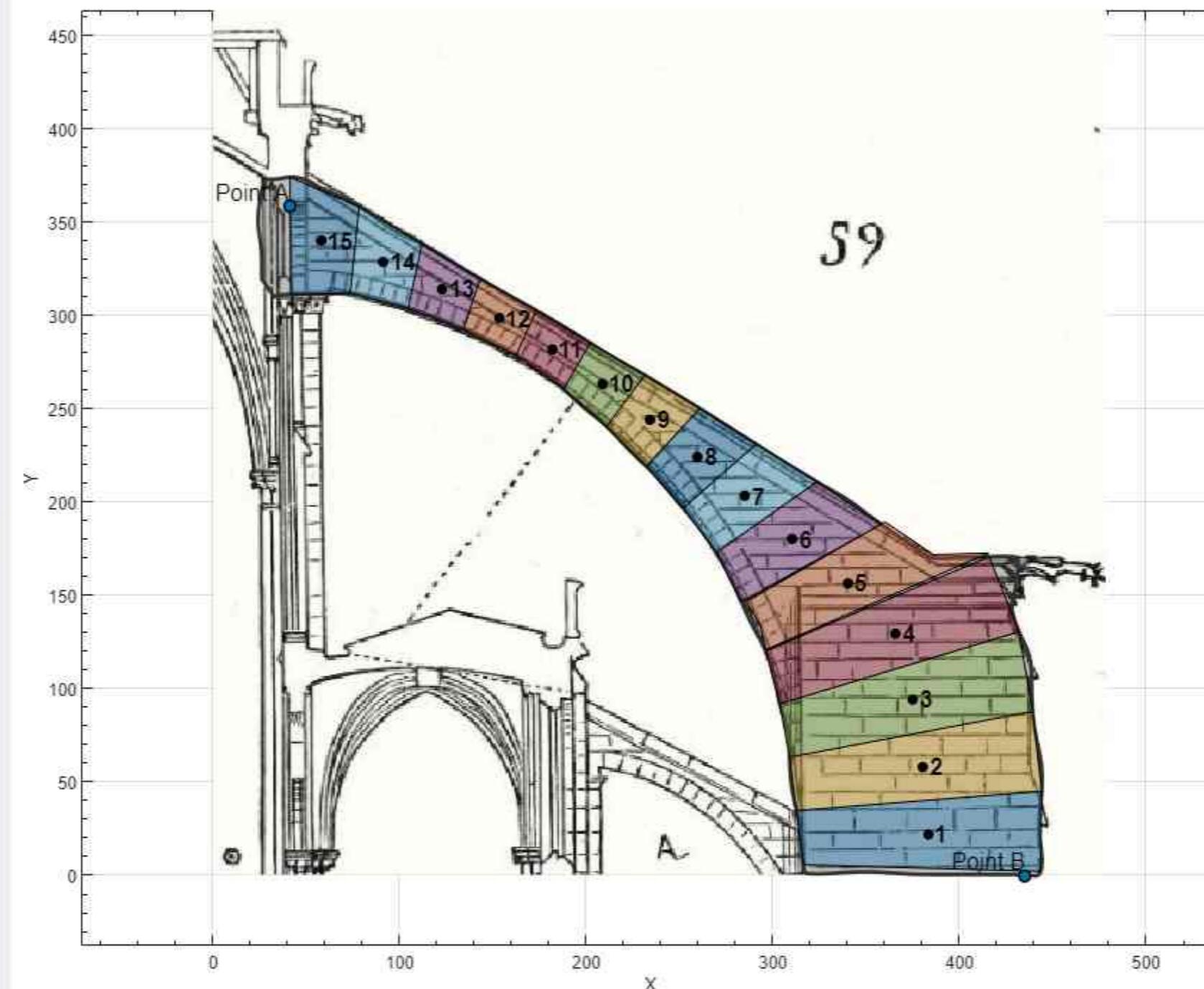
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor  

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W  

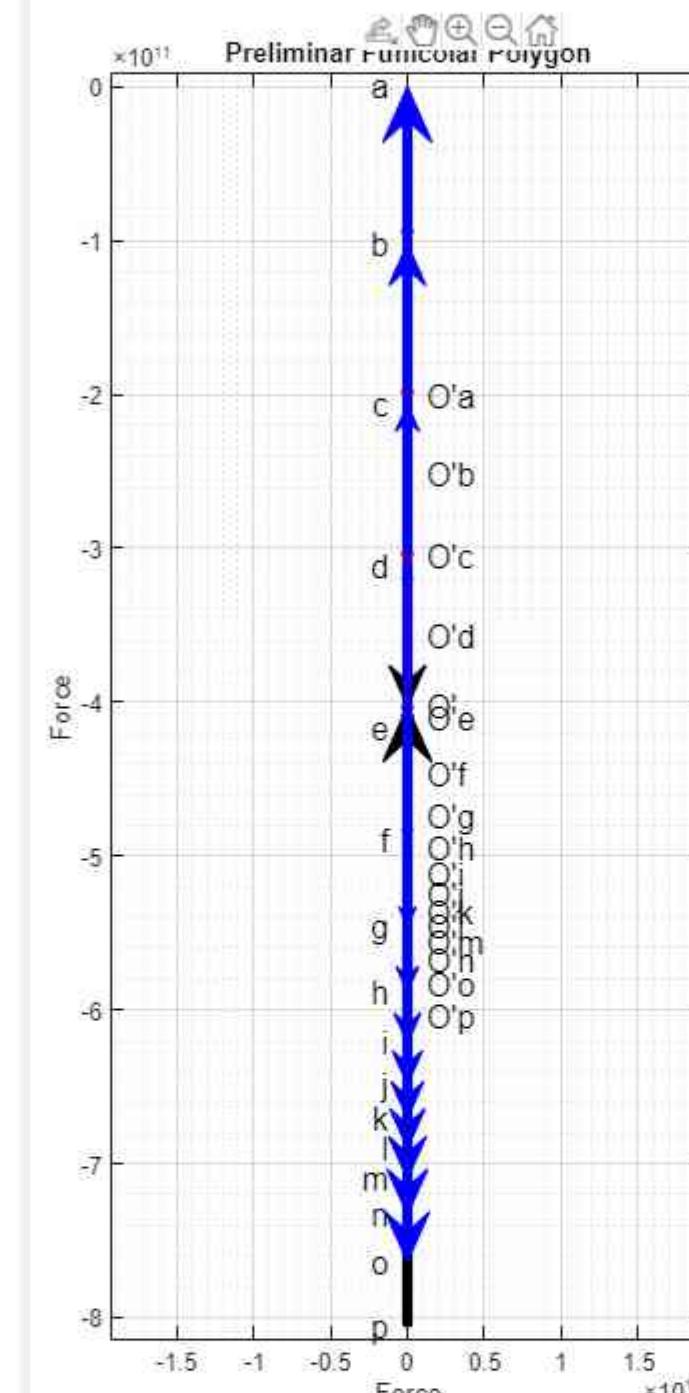
Background Image Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor  

Sketched Geometry Off  On

Text / Labels Off  On



Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP   Preliminar FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

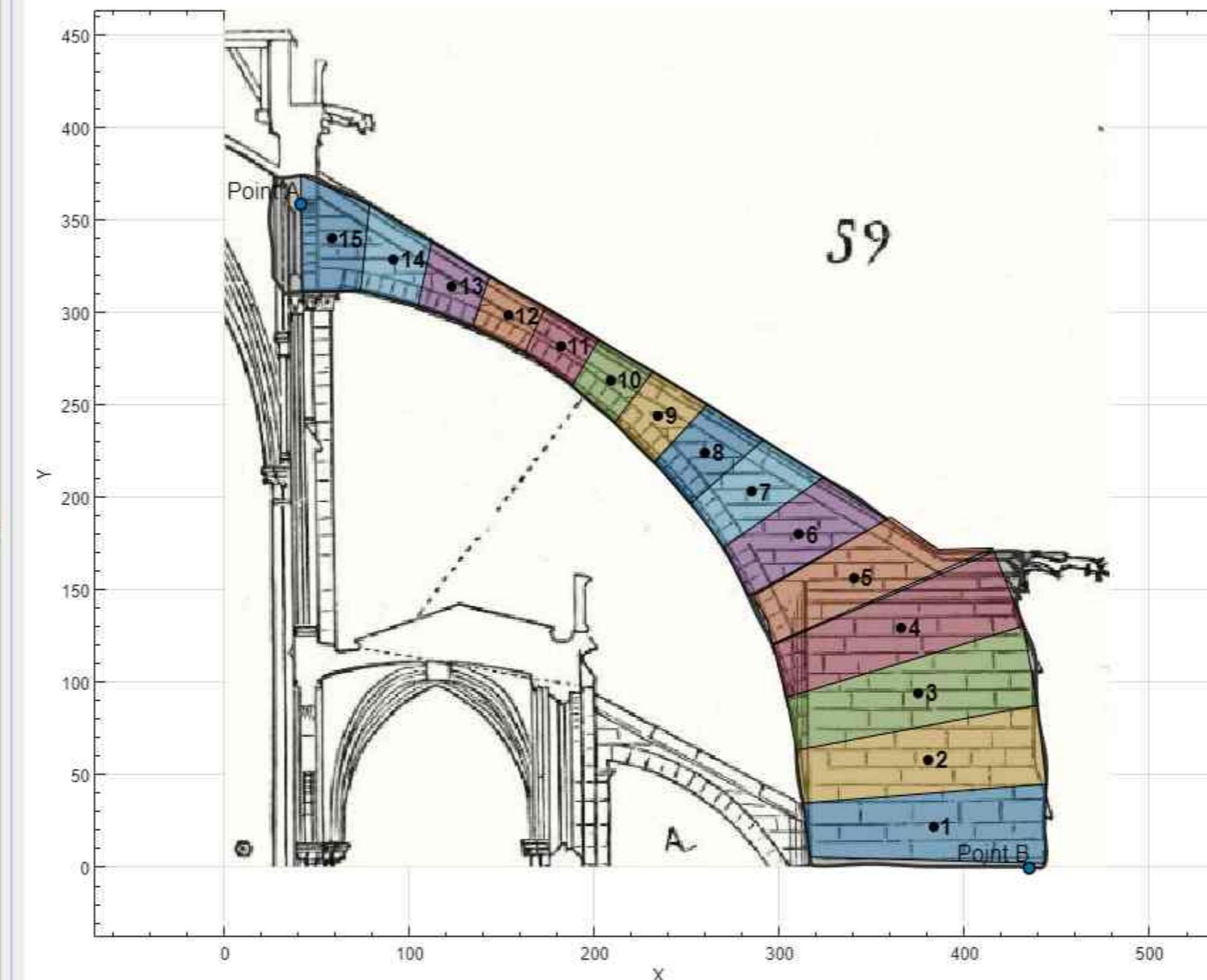
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

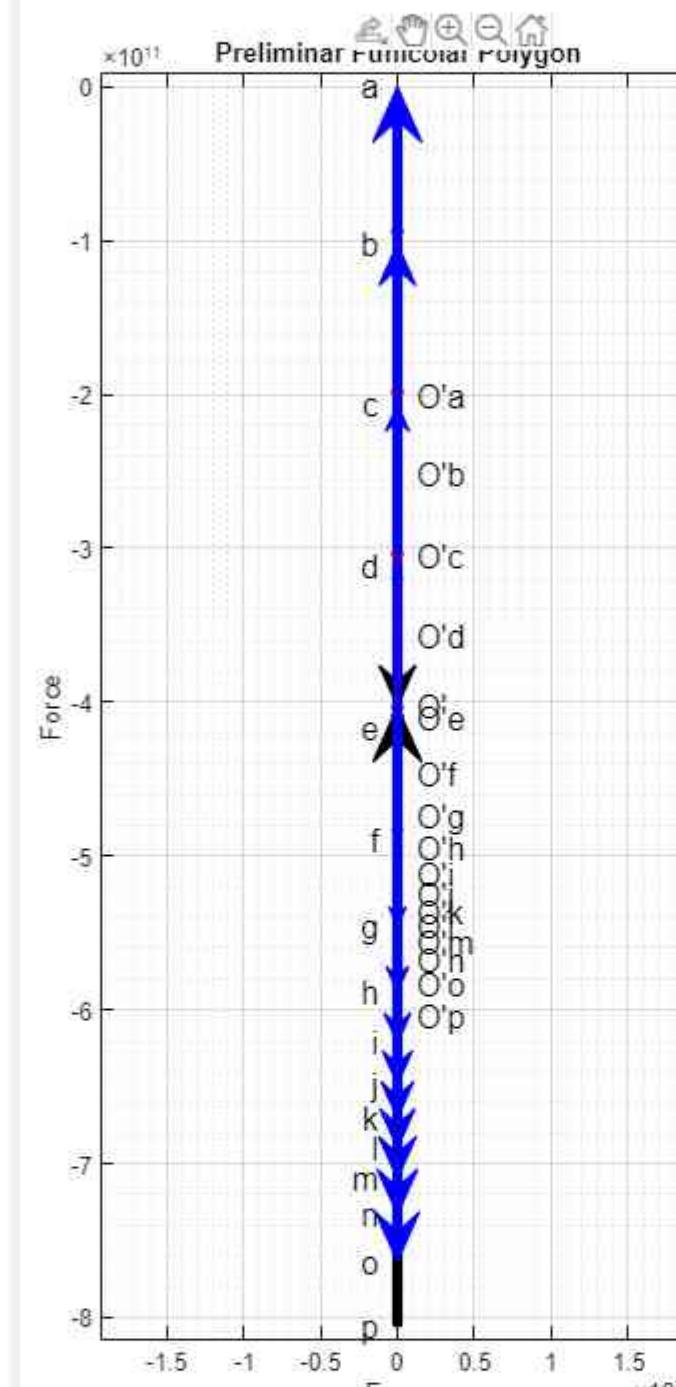
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

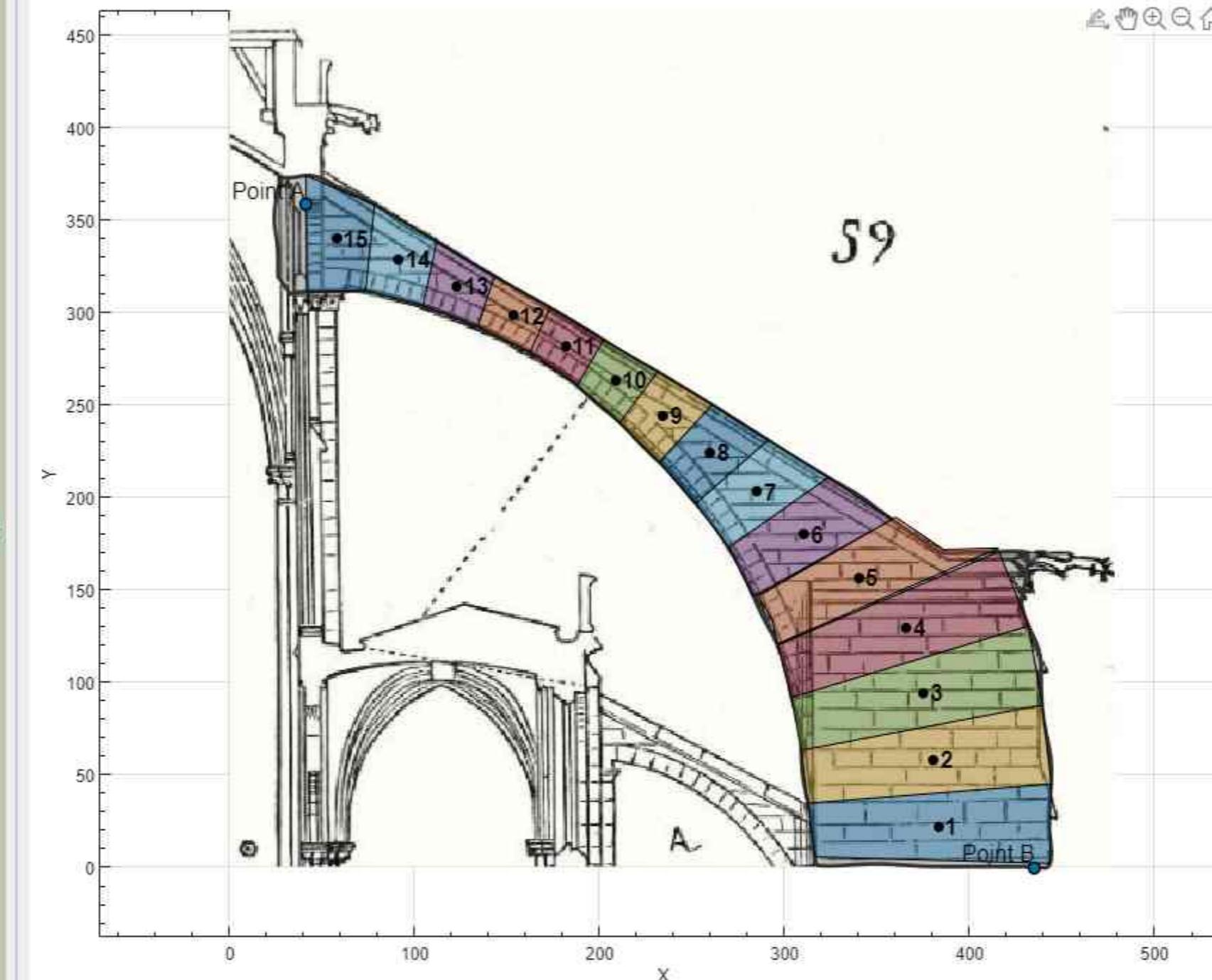
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

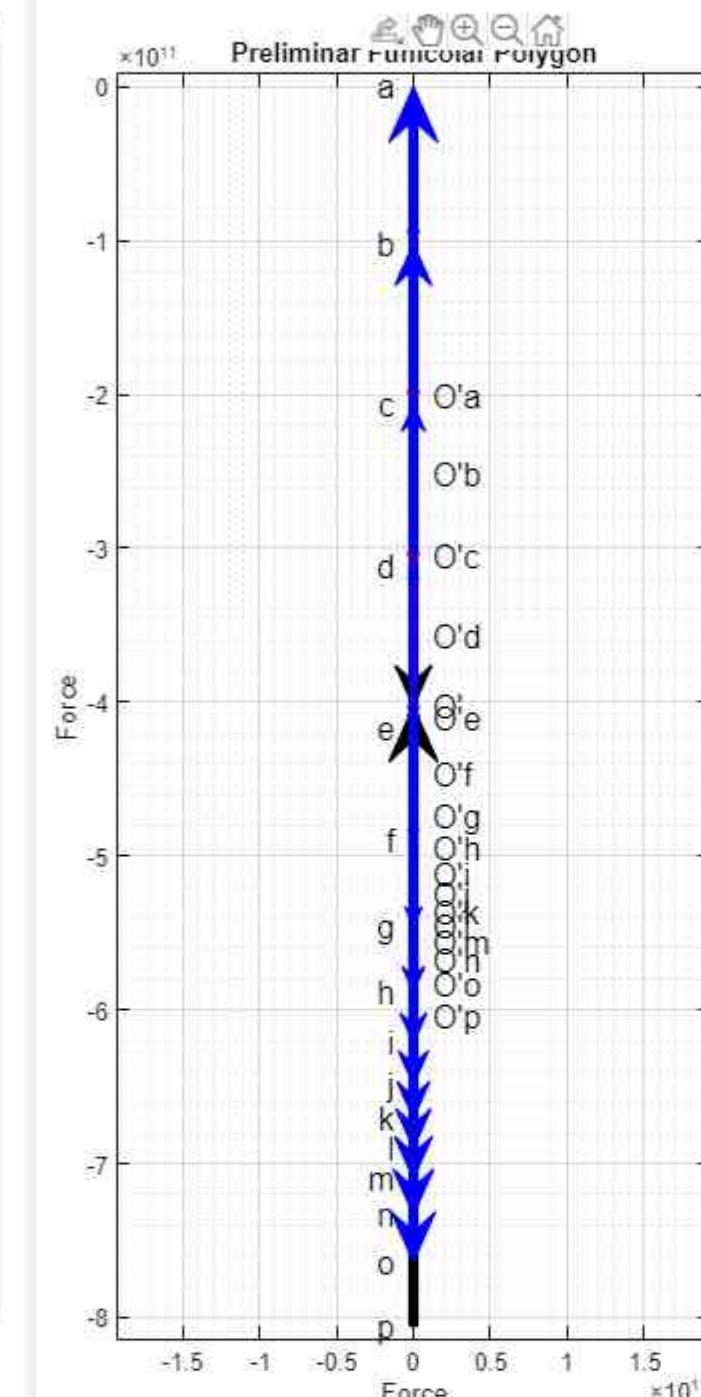
Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

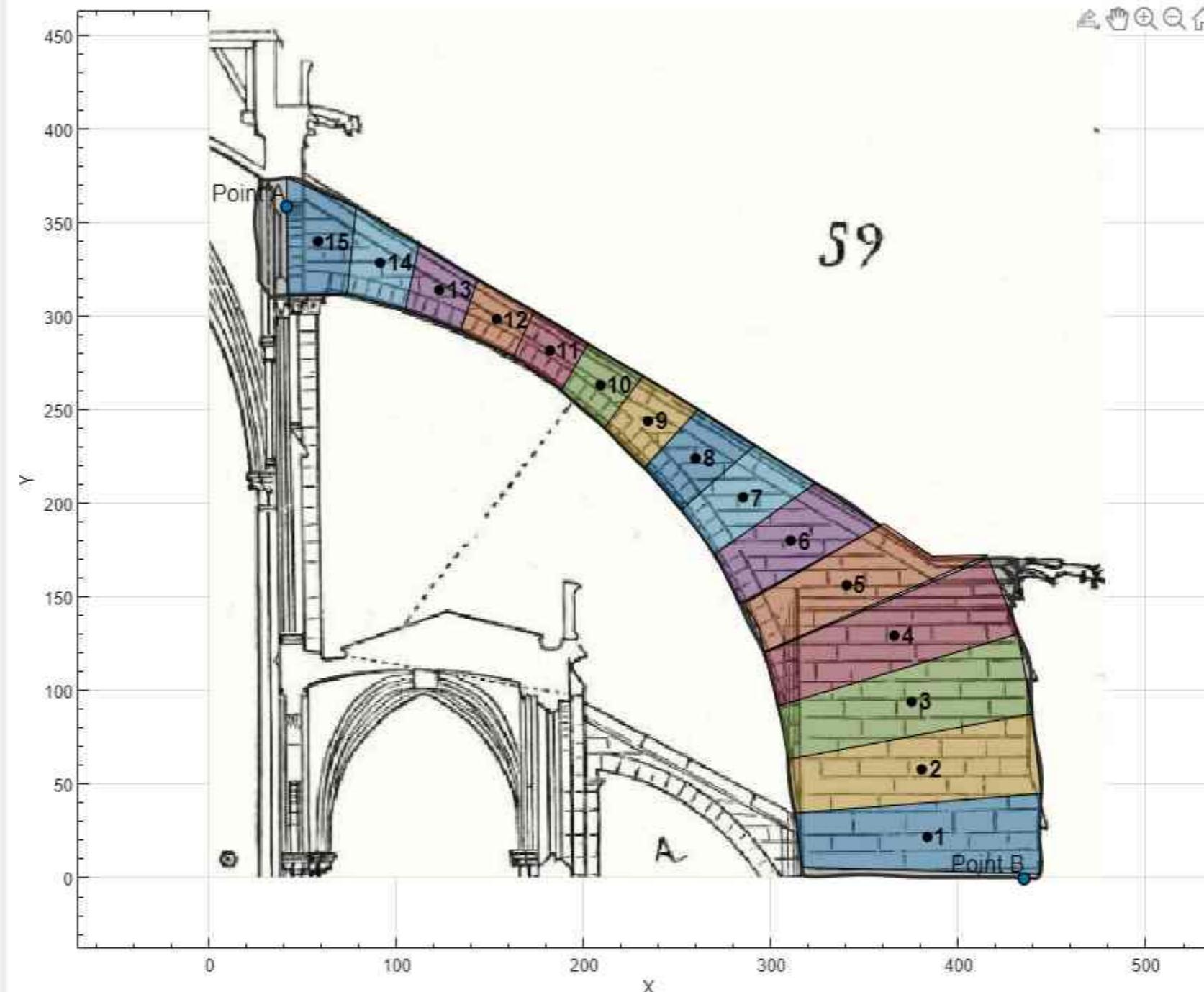
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor  

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W  

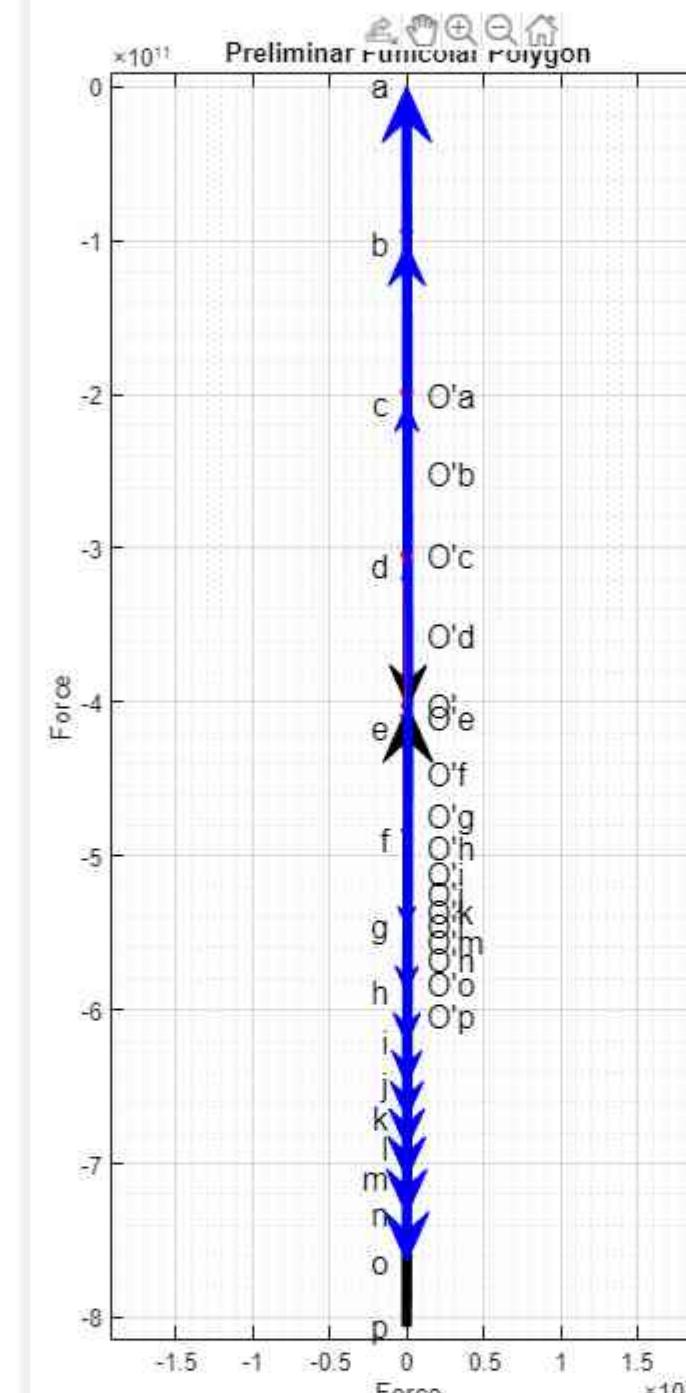
Background Image Off  On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor  

Text / Labels Off  On

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000.000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

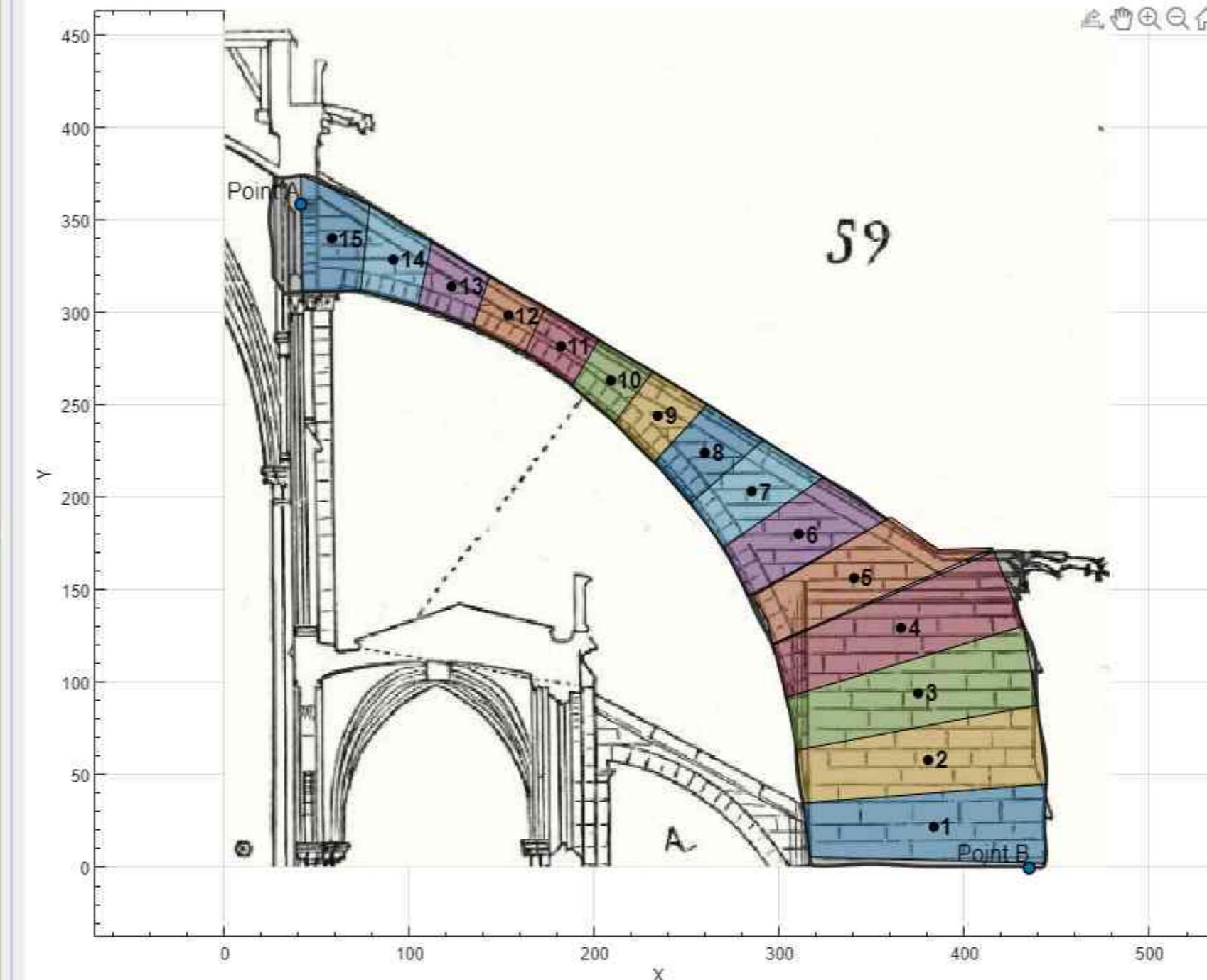
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

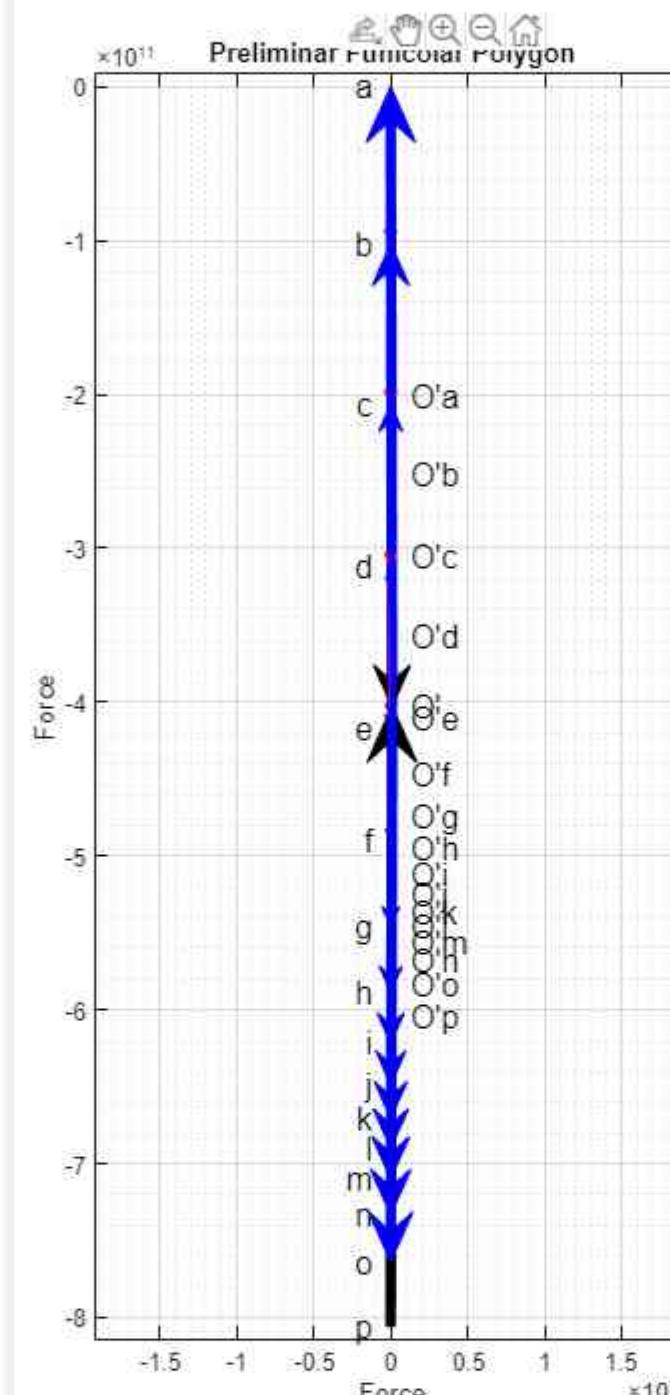
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

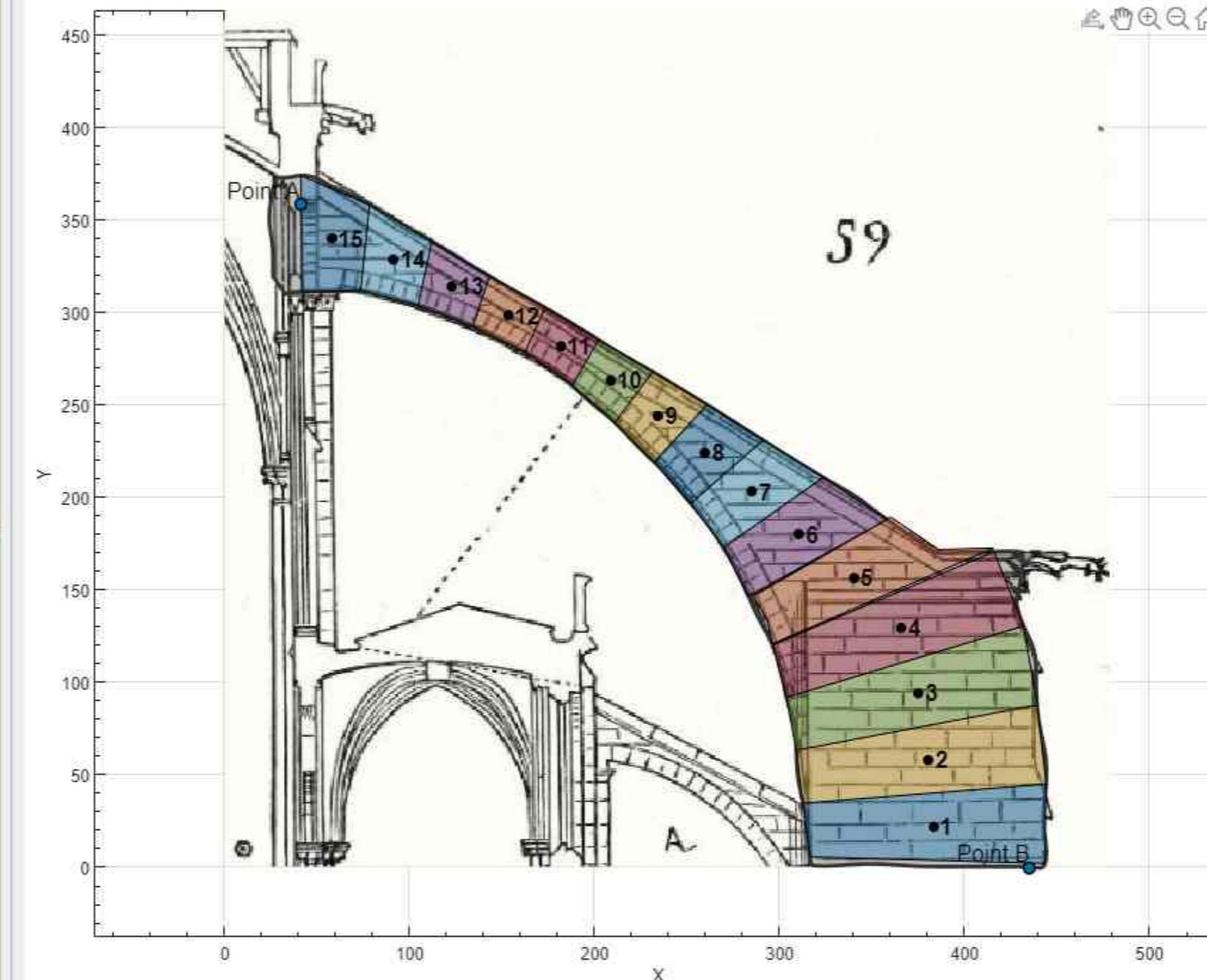
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off   On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off   On

Clear Interactive Area

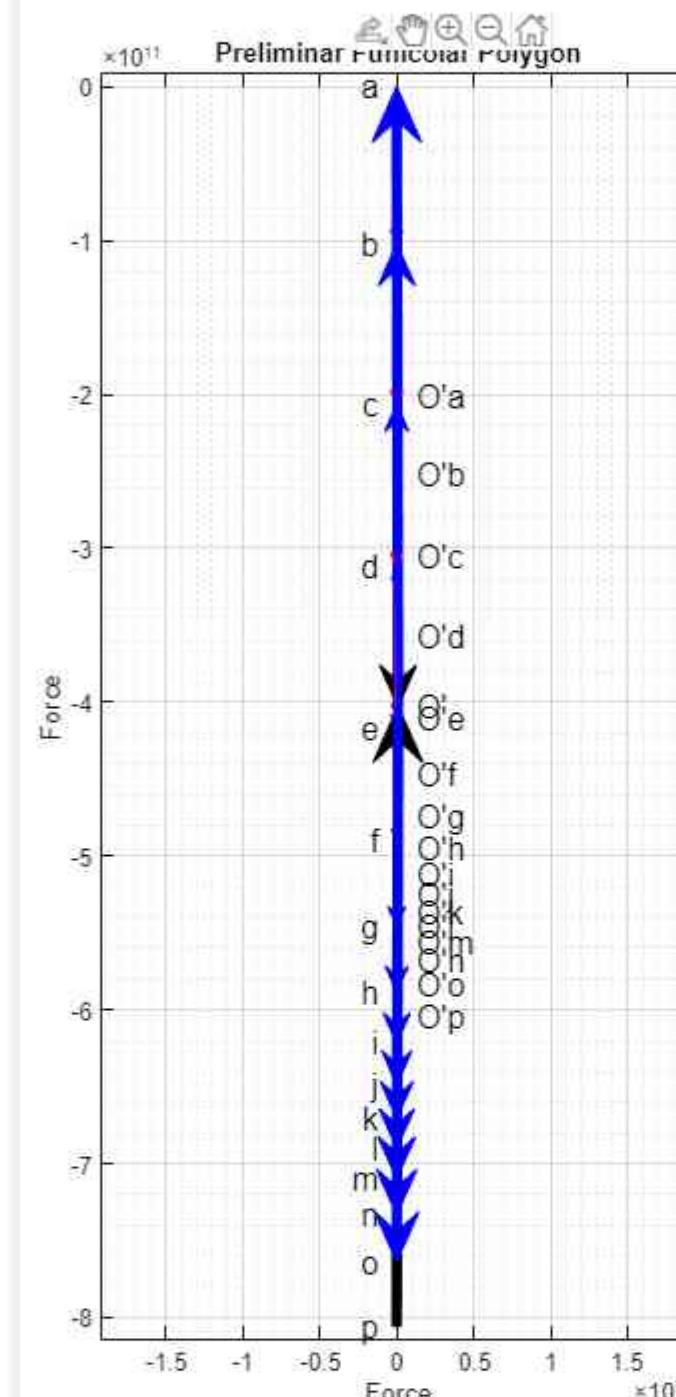
Clear Sketch

Sketched Geometry Off   On

Text / Labels Off   On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor: 0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min: 1e+04   max: 1.5e+1   Update Slider

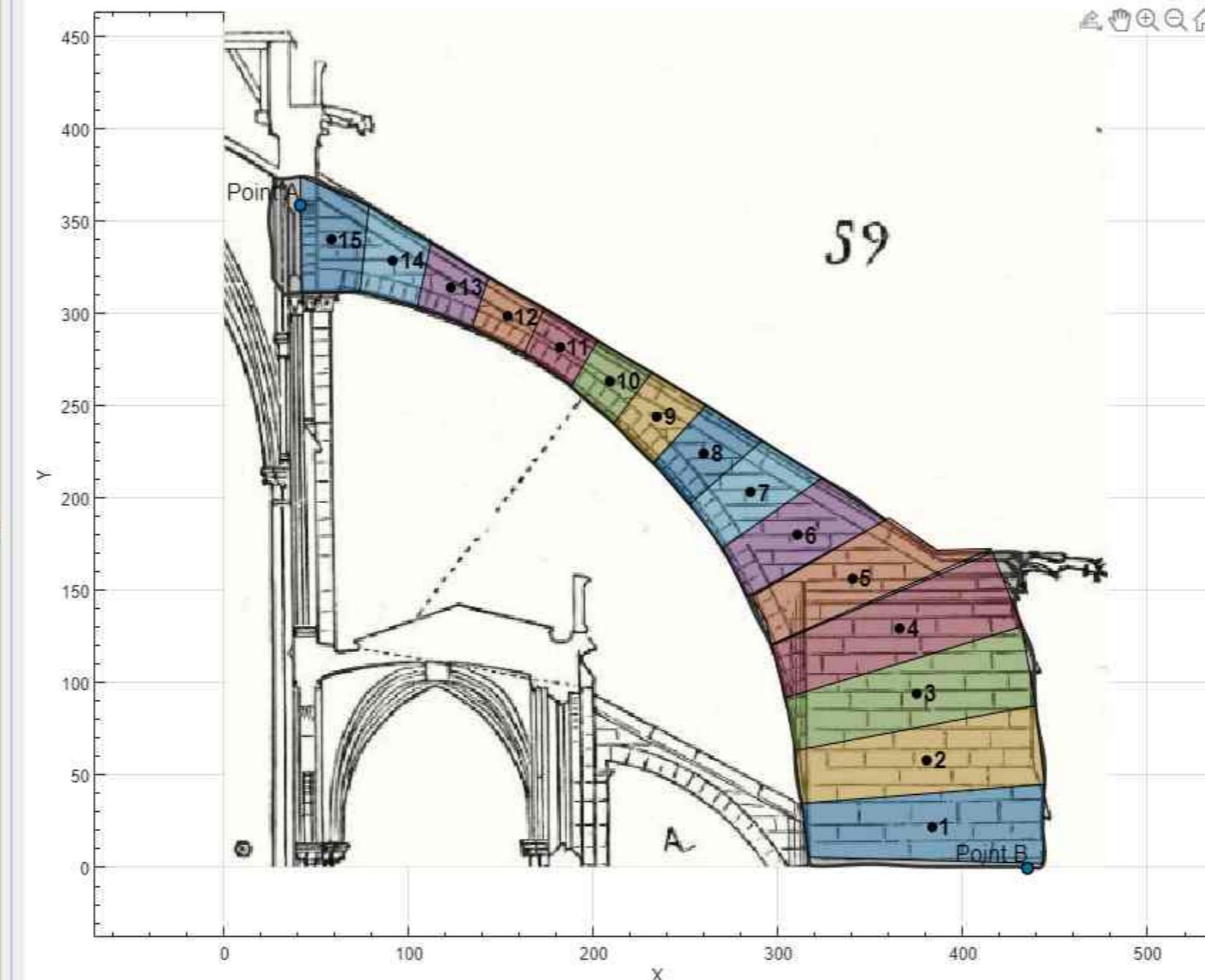
Horizontal Thrust:

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor: 3

Force Magnitude Off: On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W: 0

Background Image Off: On

Sketched Geometry Off: On

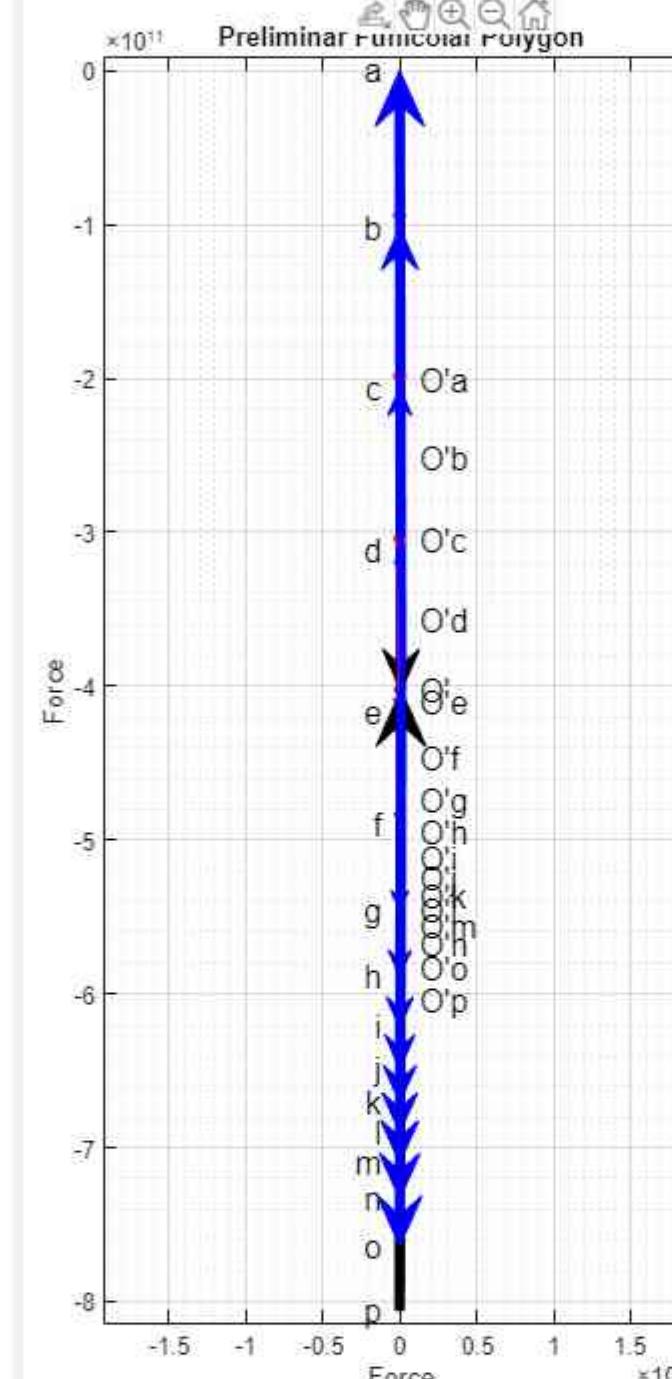
Text / Labels Off: On

Clear Interactive Area

Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor: 0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1e+12

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP   Preliminar FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

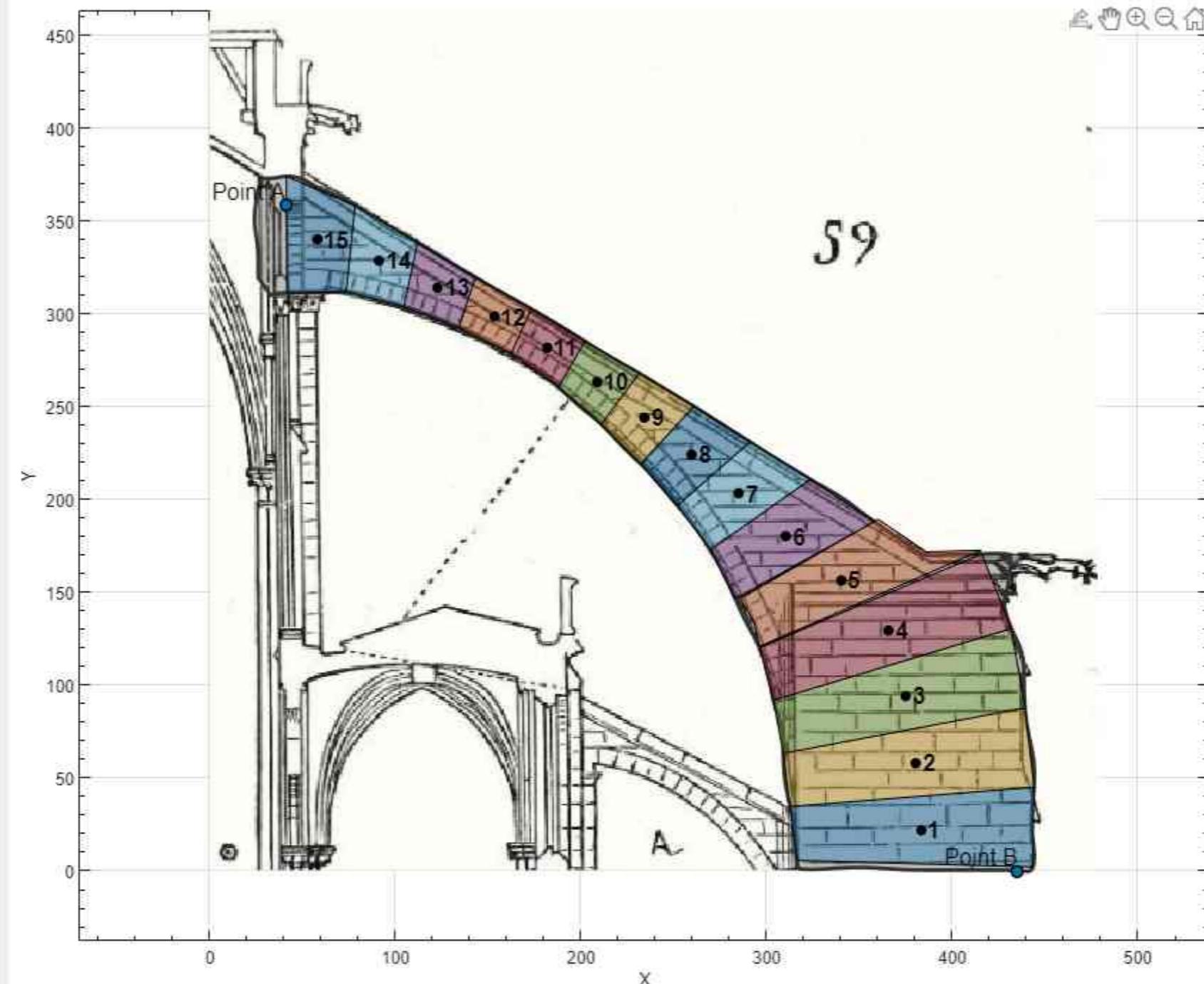
Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

## Force Polygon

Reset View   Show Force Scale



Preliminari Funicular Polygon



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminar FOP   Preliminar FUP

Final FOP   Final FUP

LOT Force factor  

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

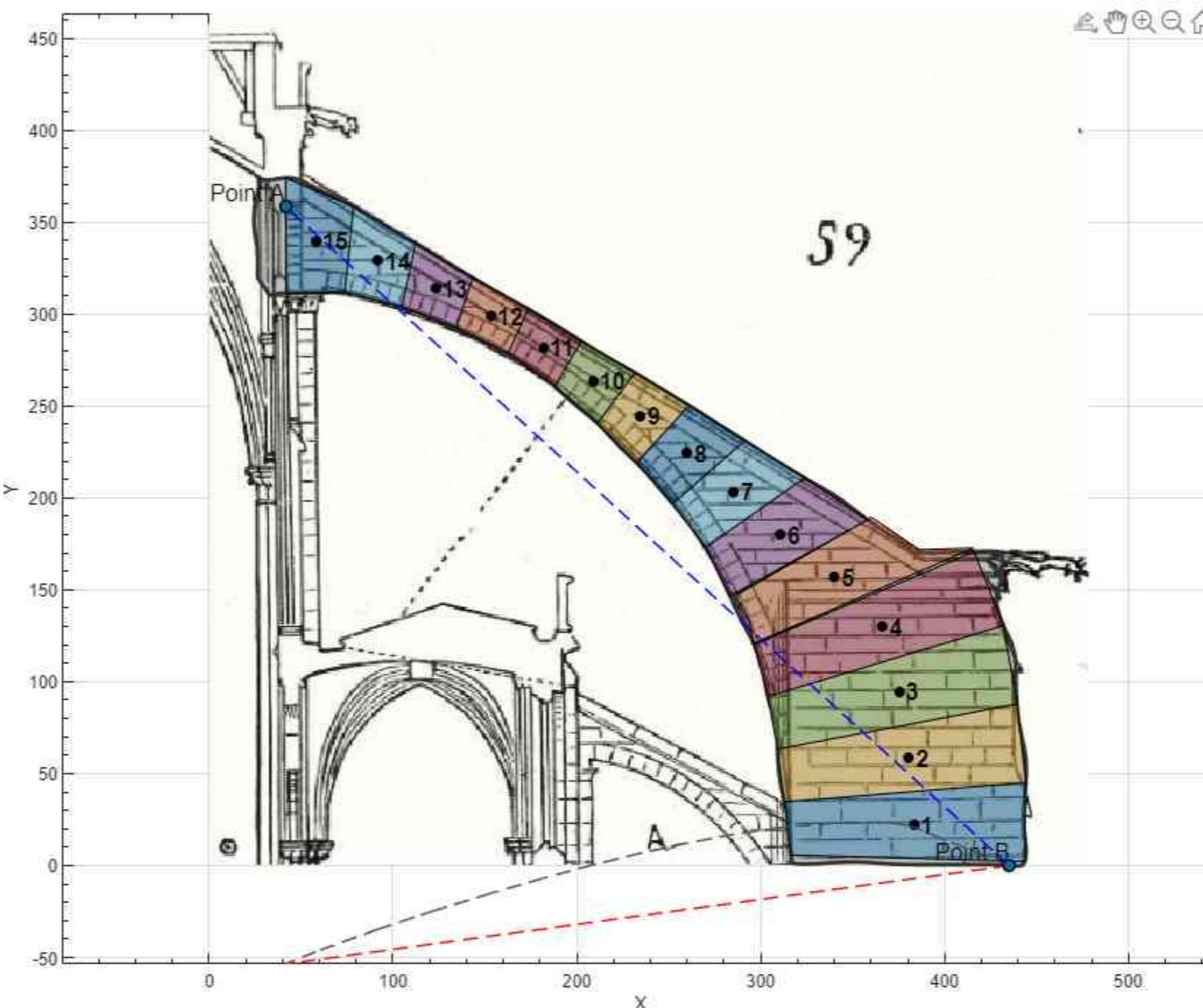
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W

Background Image Off  On

Clear Interactive Area

Clear Sketch

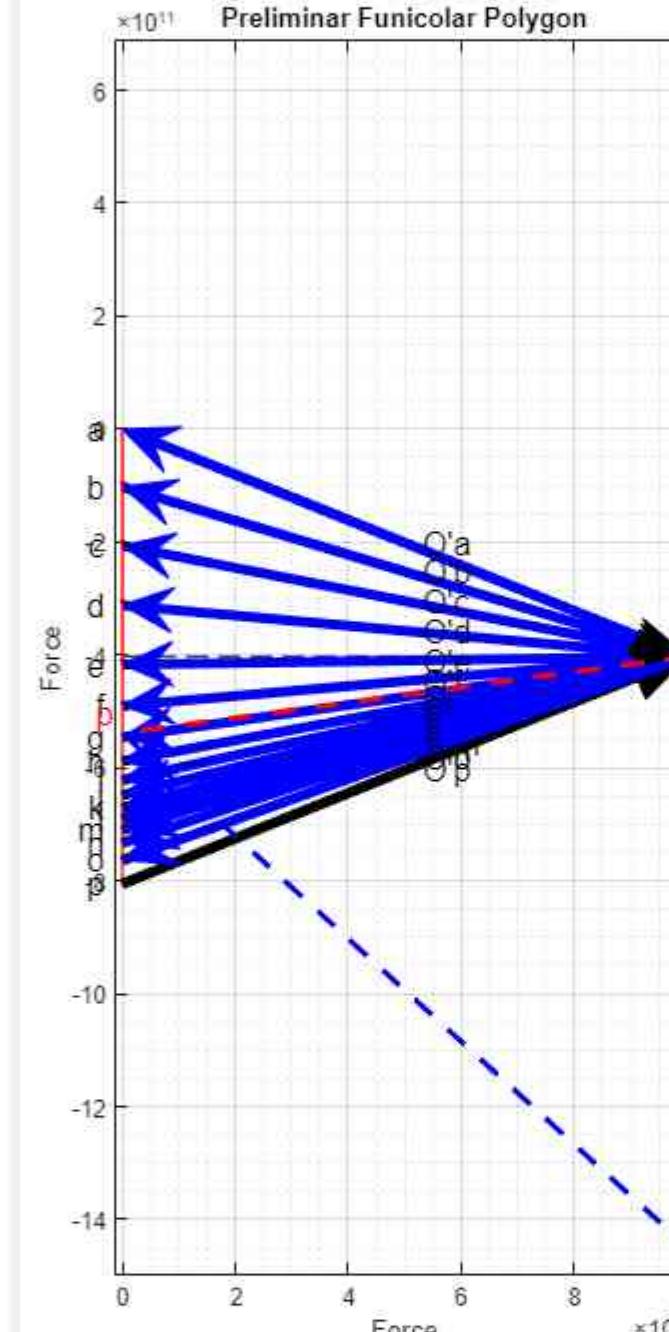
Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Preliminar Funicular Polygon



Graphics   Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1e+12

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   0.0001

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

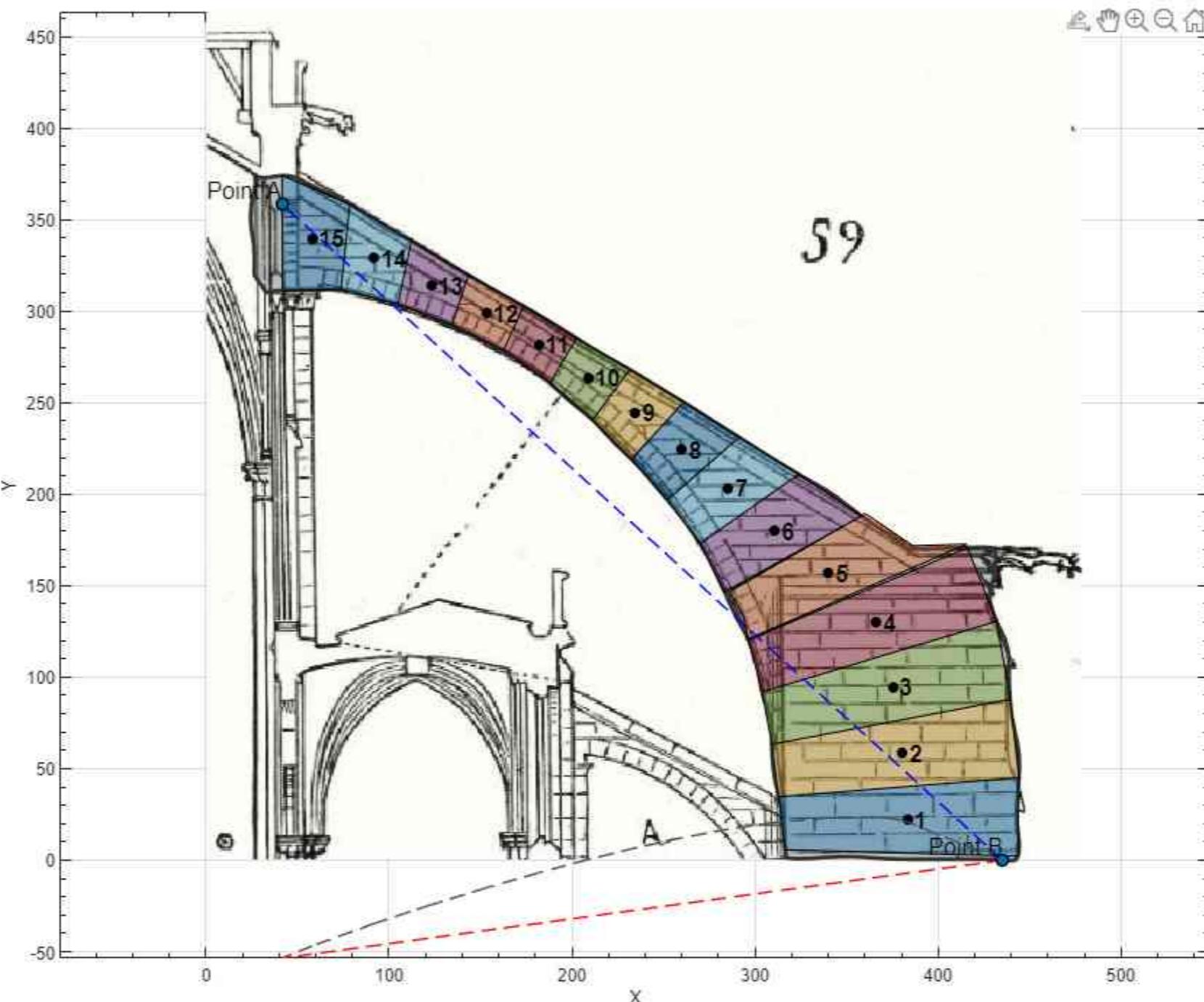
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	2.7994e+04
2	2.4248e+04
3	2.0835e+04
4	1.7946e+04
5	1.5871e+04
6	1.4952e+04
7	1.5397e+04
8	1.7100e+04
9	1.9738e+04
10	2.2992e+04
11	2.6637e+04
12	3.0533e+04
13	3.4595e+04
14	3.8772e+04

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

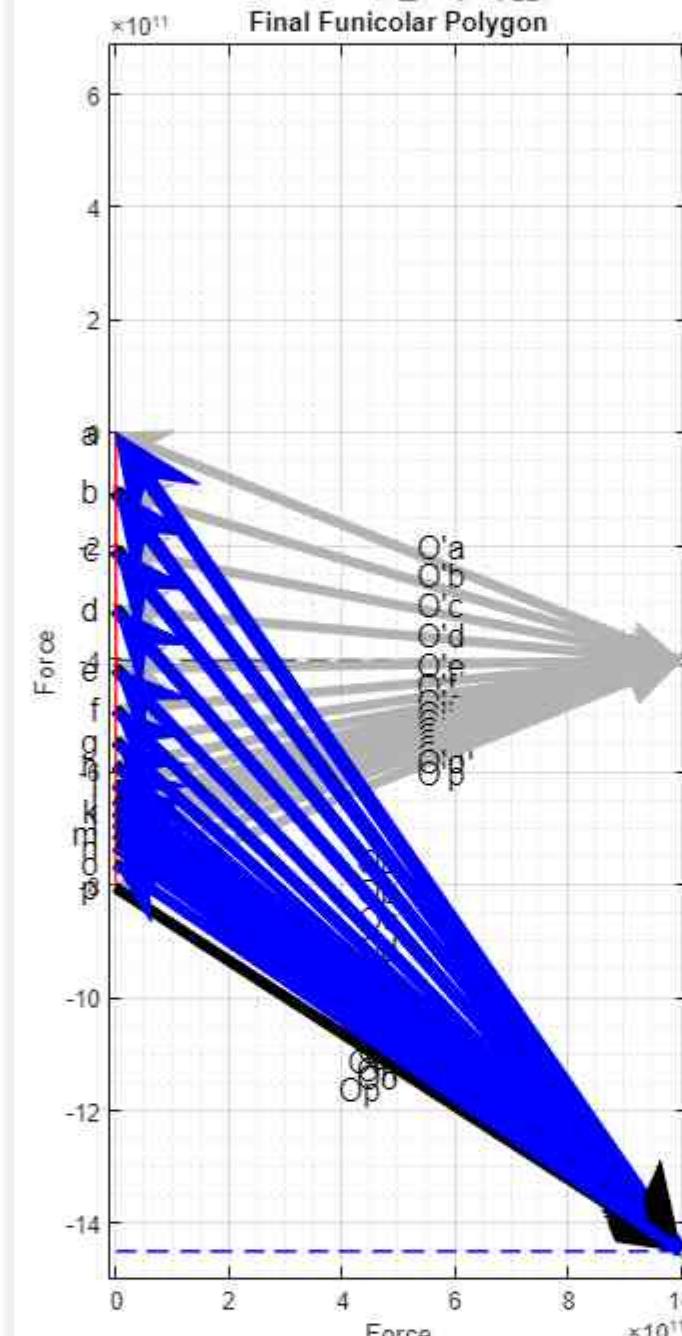
Clear Sketch

## Force Polygon

Reset View   Show Force Scale



Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Text / Labels Off  On

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor  

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

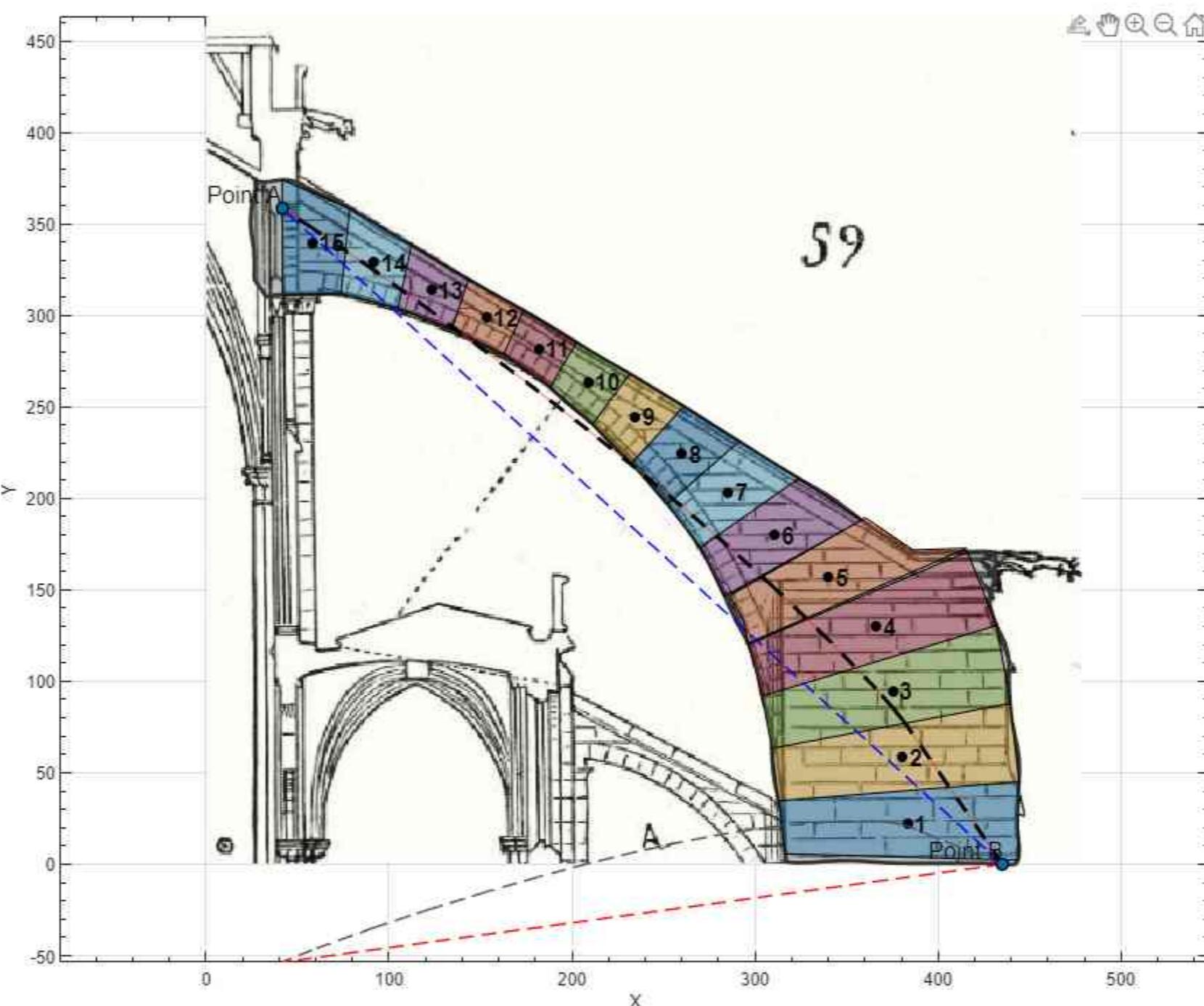
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor  

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W  

Background Image Off  On

Clear Interactive Area

Clear Sketch

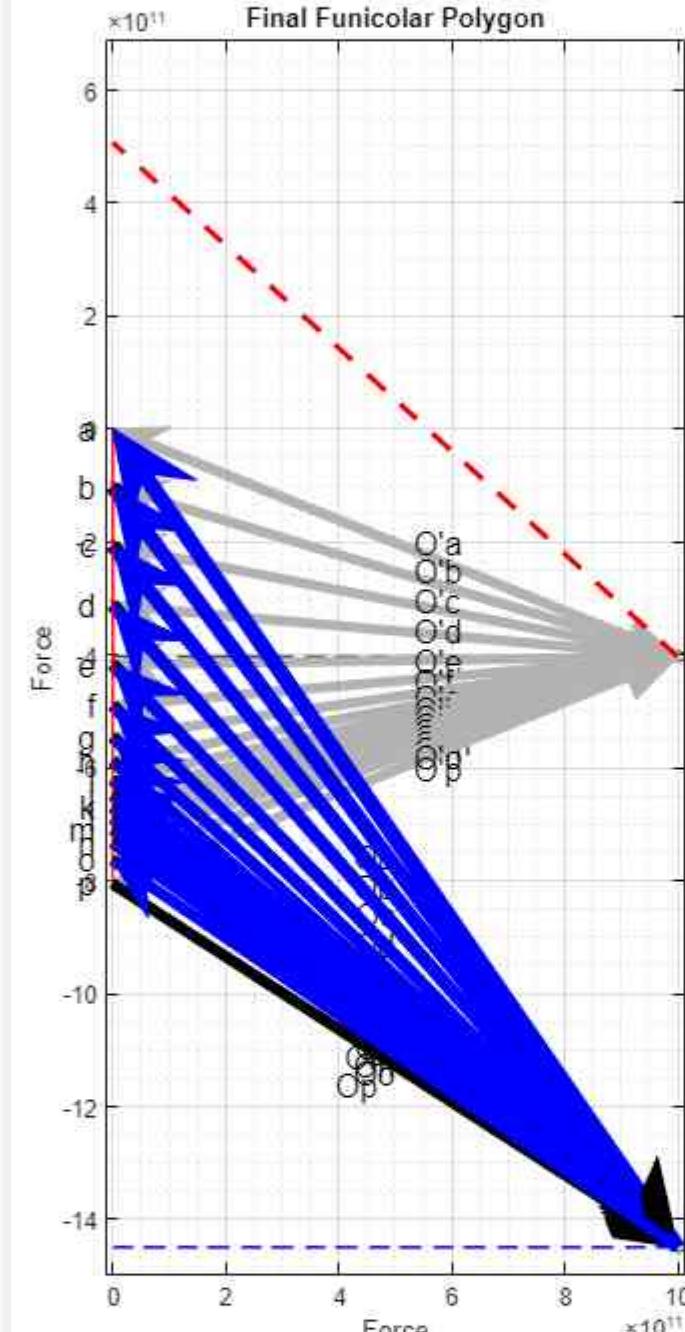
Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor



Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor  

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

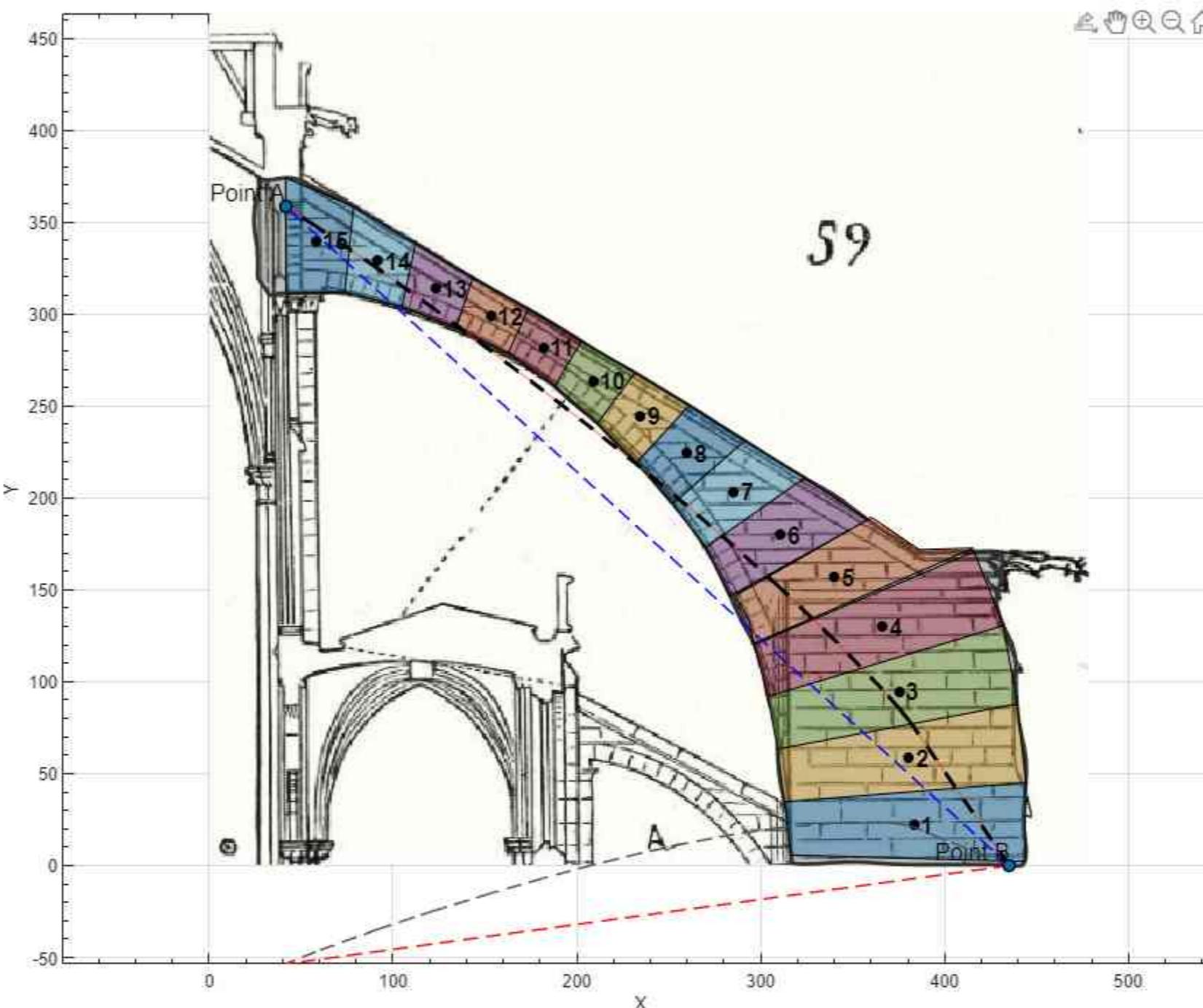
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

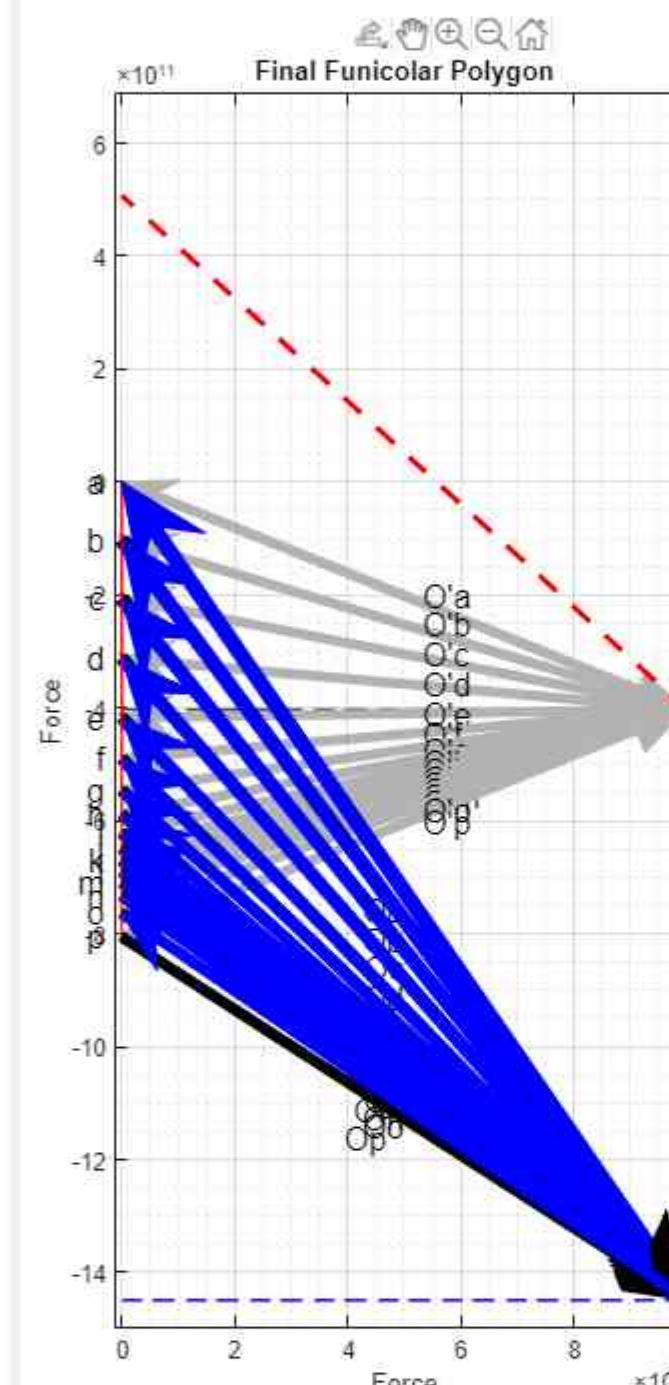
Plot blocks   Plot Forces   Plot Reactions   forces factor  Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W  Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

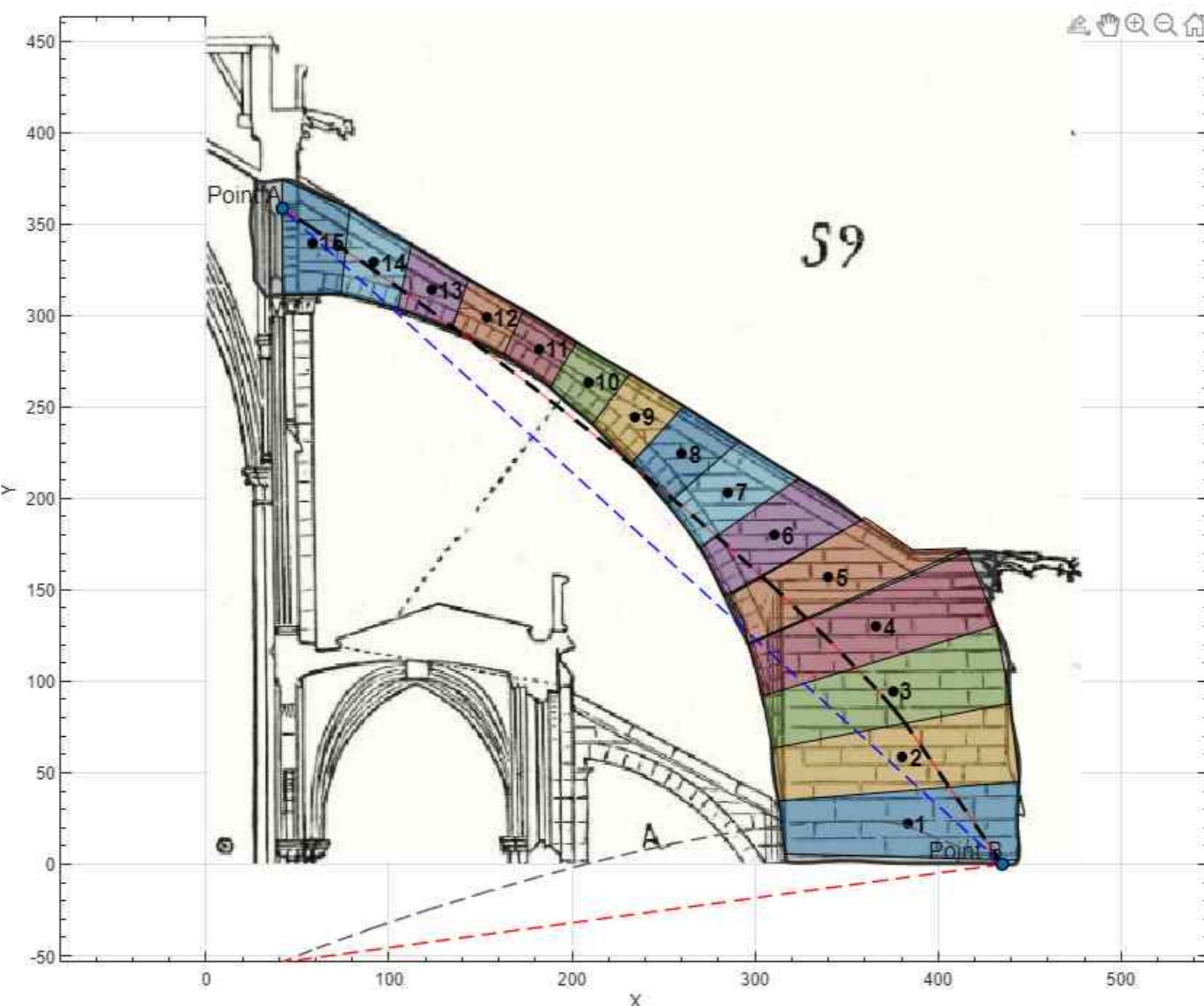
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

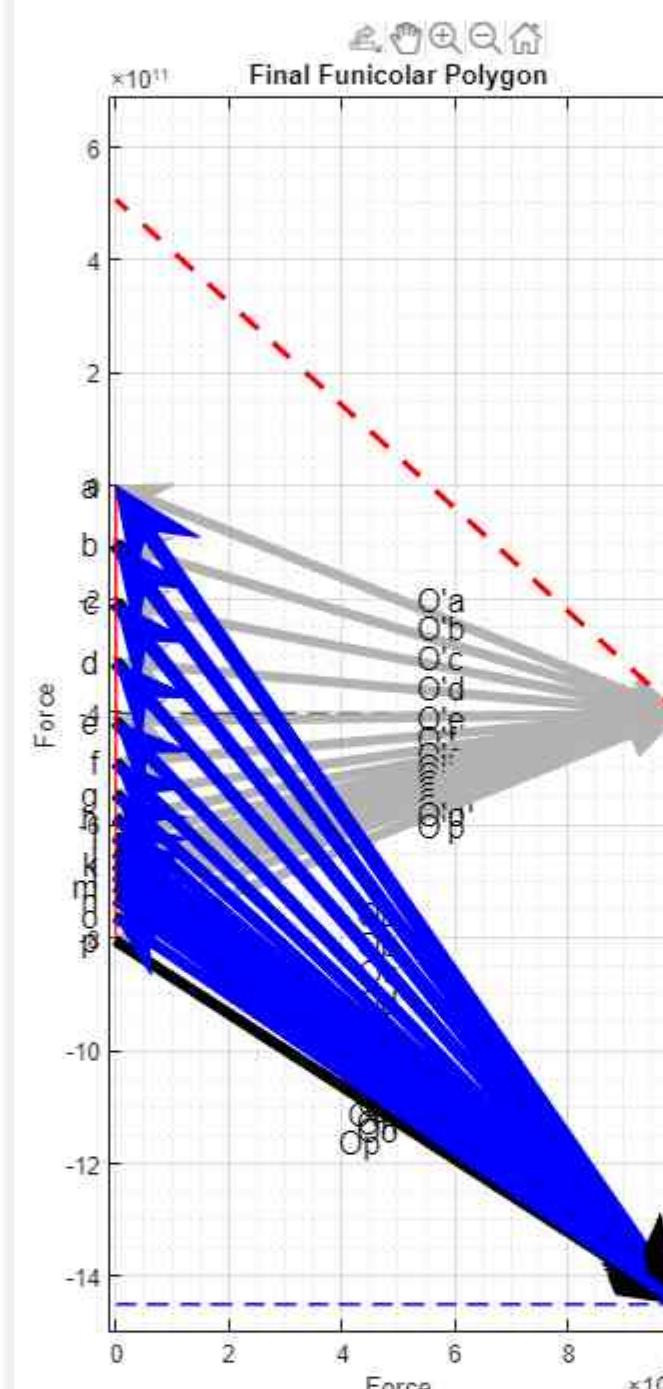
Plot blocks   Plot Forces   Plot Reactions   forces factor  Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W  Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor





Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor  

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

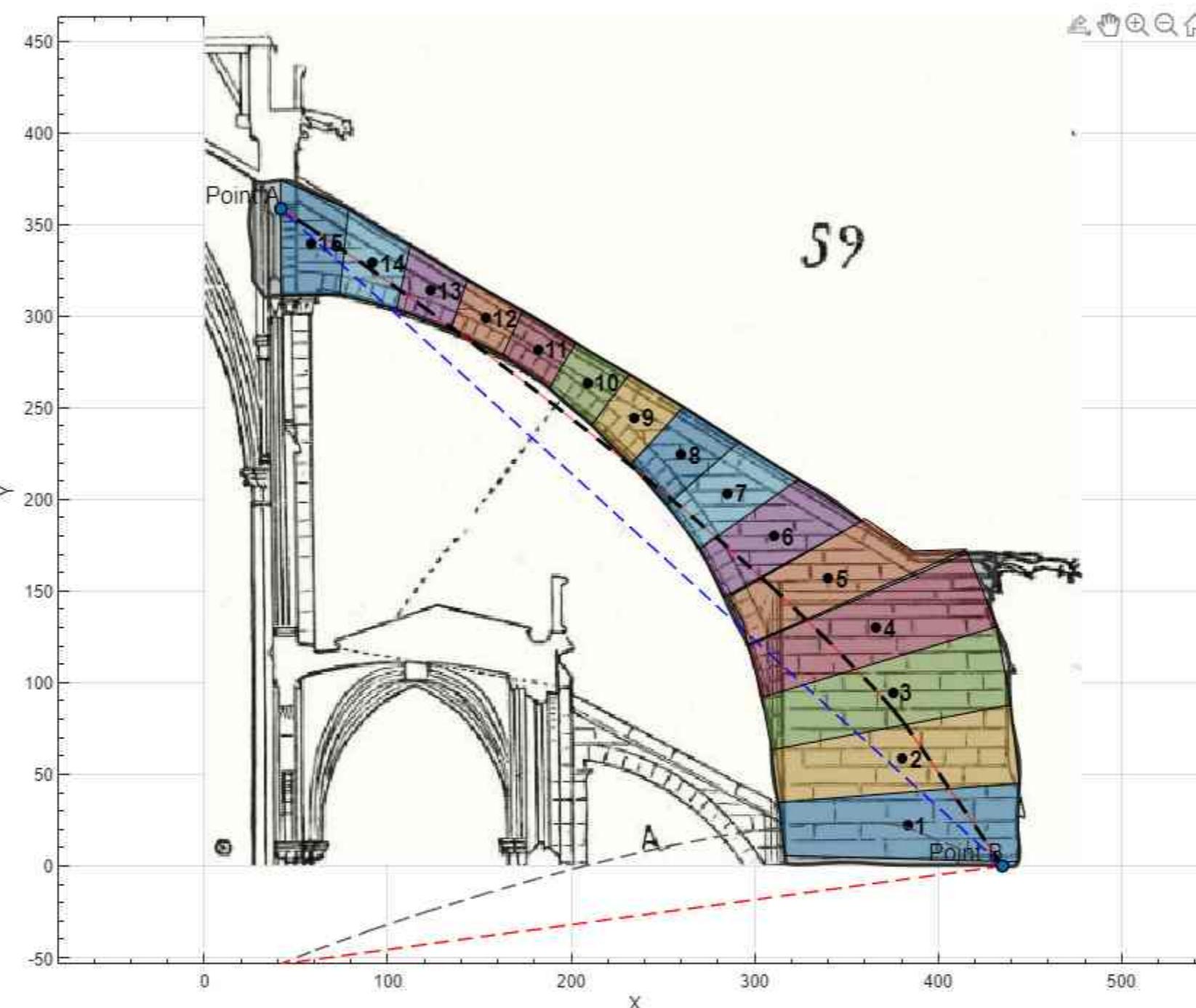
min  max  Update Slider

Horizontal Thrust

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W

Background Image Off  On

Clear Interactive Area

Clear Sketch

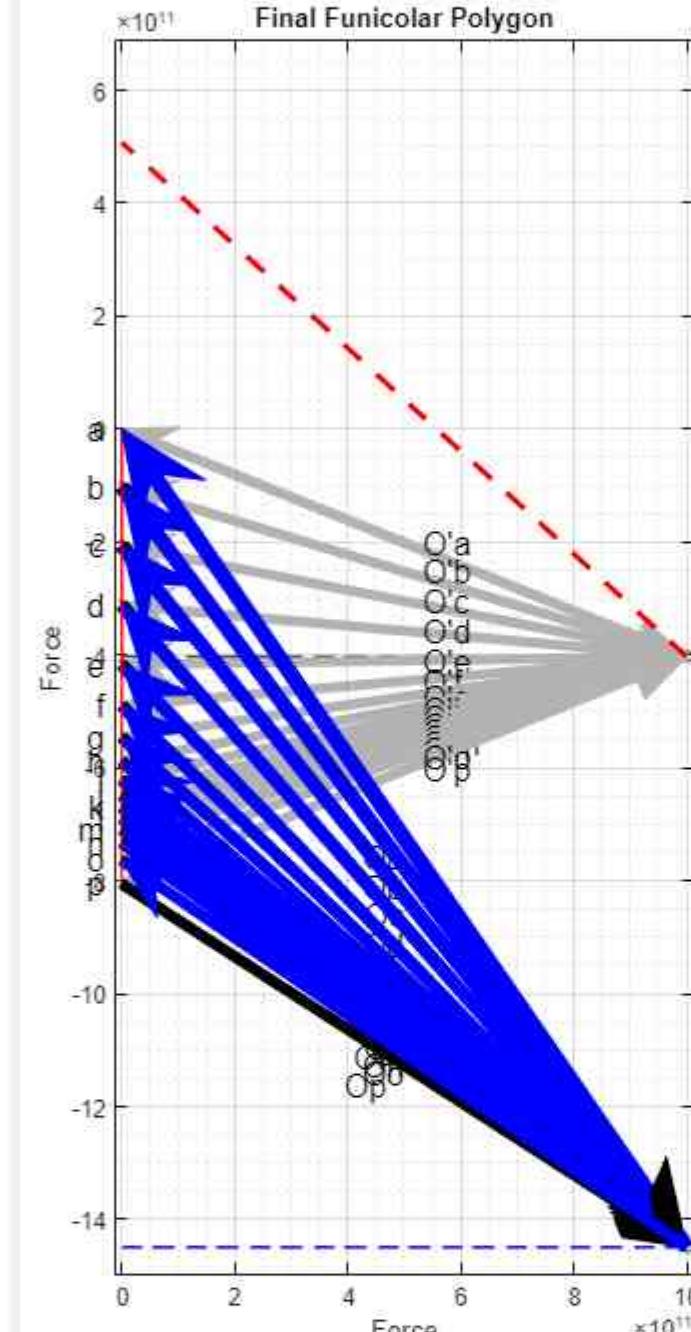
Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust    $1e+12$

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min  $1e+04$    max  $1.5e+1$    Update Slider

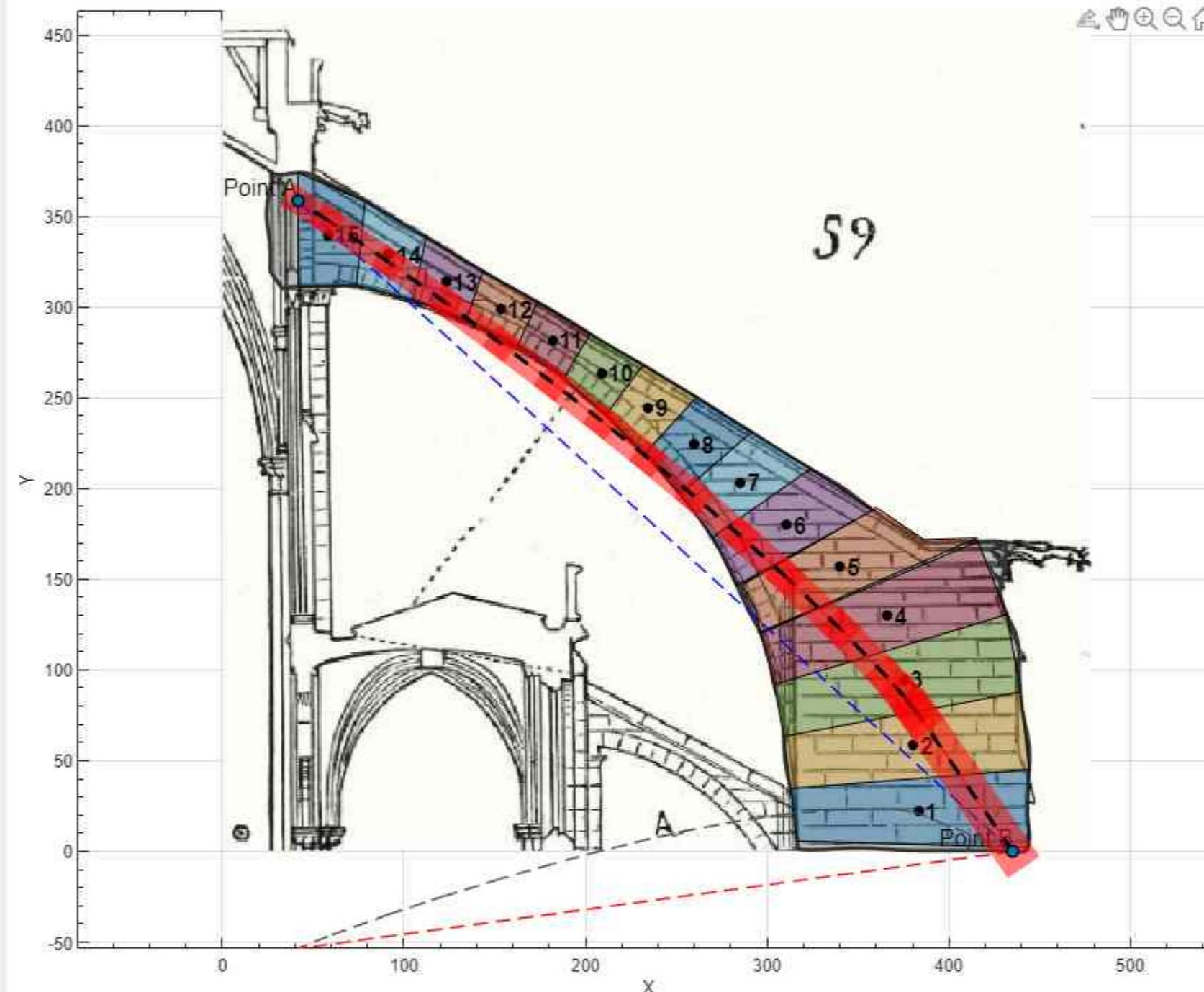
Horizontal Thrust

$1e+04$     $1.1e+04$     $1.2e+04$     $1.3e+04$     $1.4e+04$     $1.5e+04$

ID	Thrust
1	$1.7606e+12$
2	$1.6775e+12$
3	$1.5949e+12$
4	$1.5141e+12$
5	$1.4369e+12$
6	$1.3855e+12$
7	$1.3475e+12$
8	$1.3195e+12$
9	$1.2979e+12$
10	$1.2809e+12$
11	$1.2673e+12$
12	$1.2554e+12$
13	$1.2430e+12$
14	$1.2298e+12$
15	$1.2123e+12$
16	$1.1891e+12$

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off   On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off   On

Clear Interactive Area

Clear Sketch

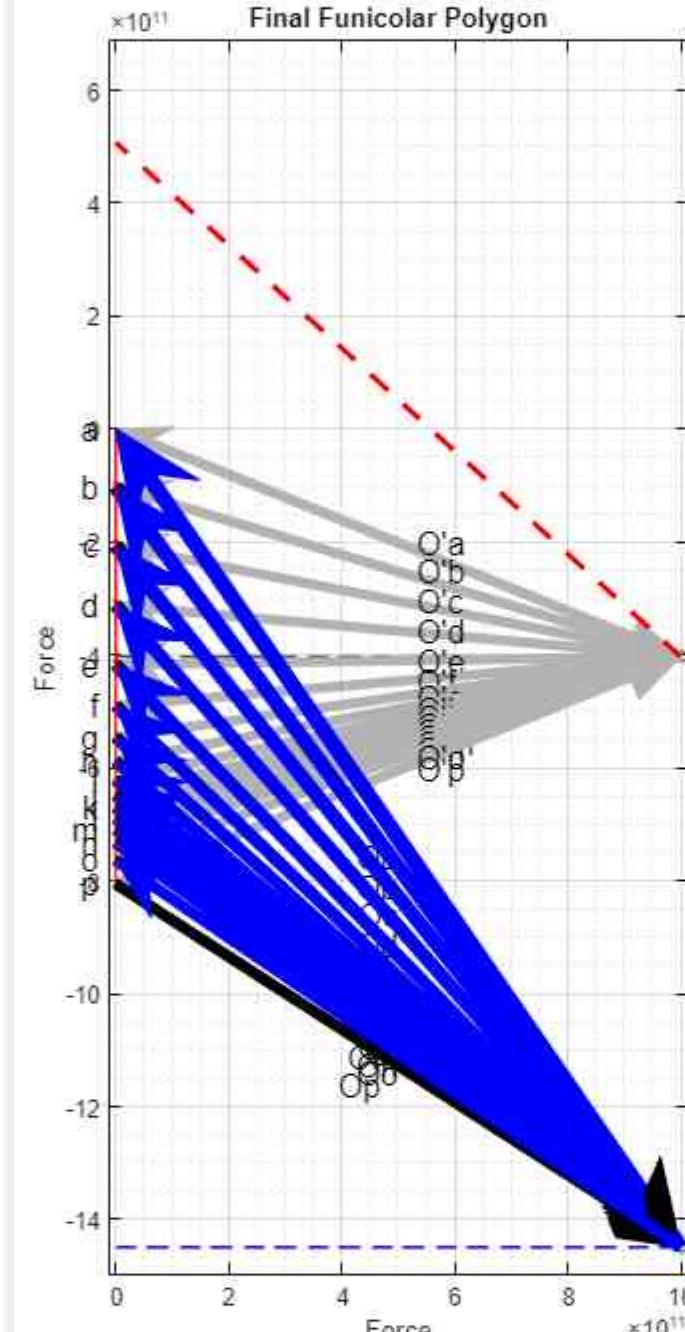
Sketched Geometry Off   On

Text / Labels Off   On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

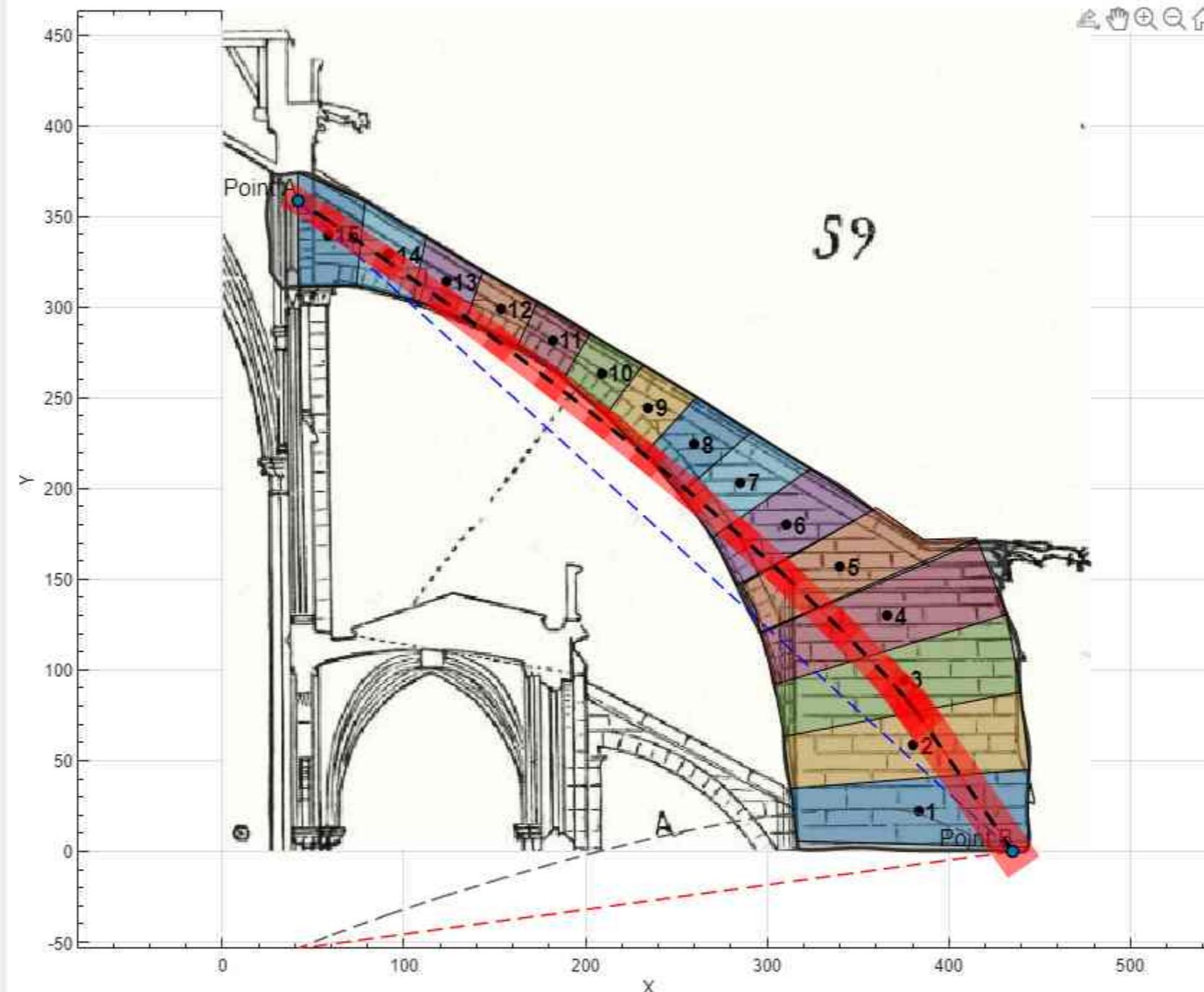
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

Clear Sketch

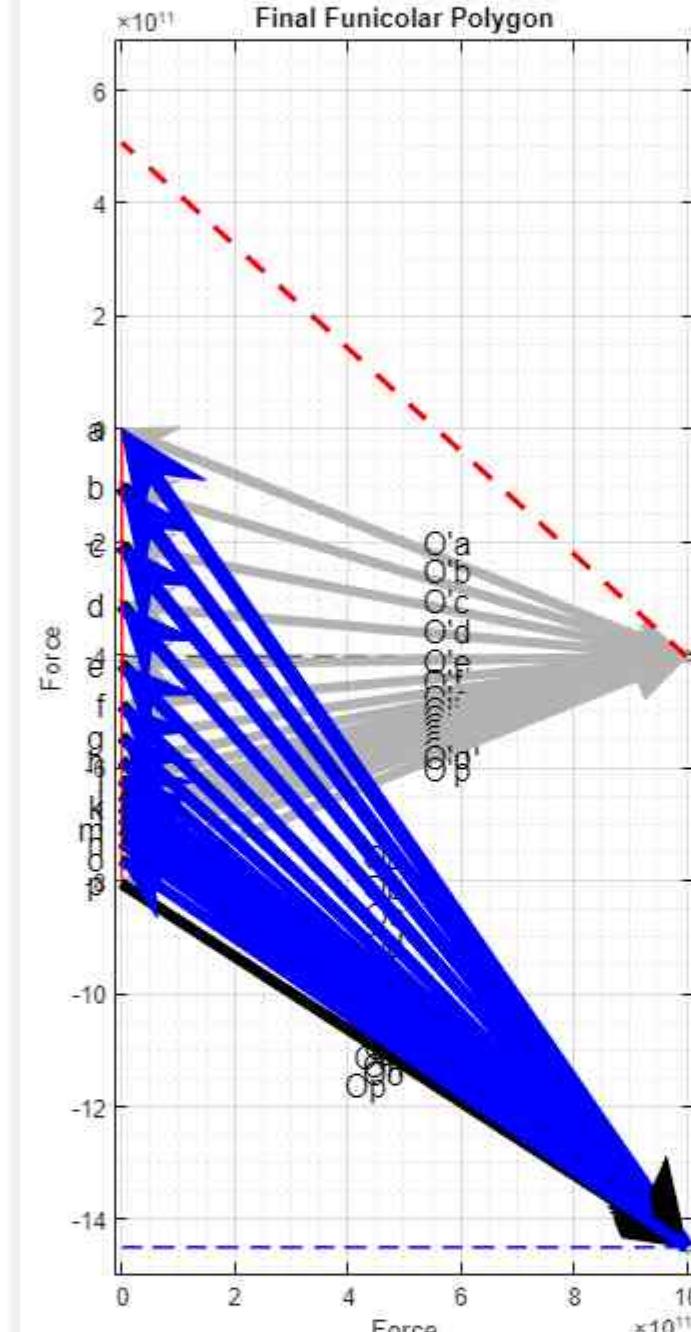
Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   1000000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

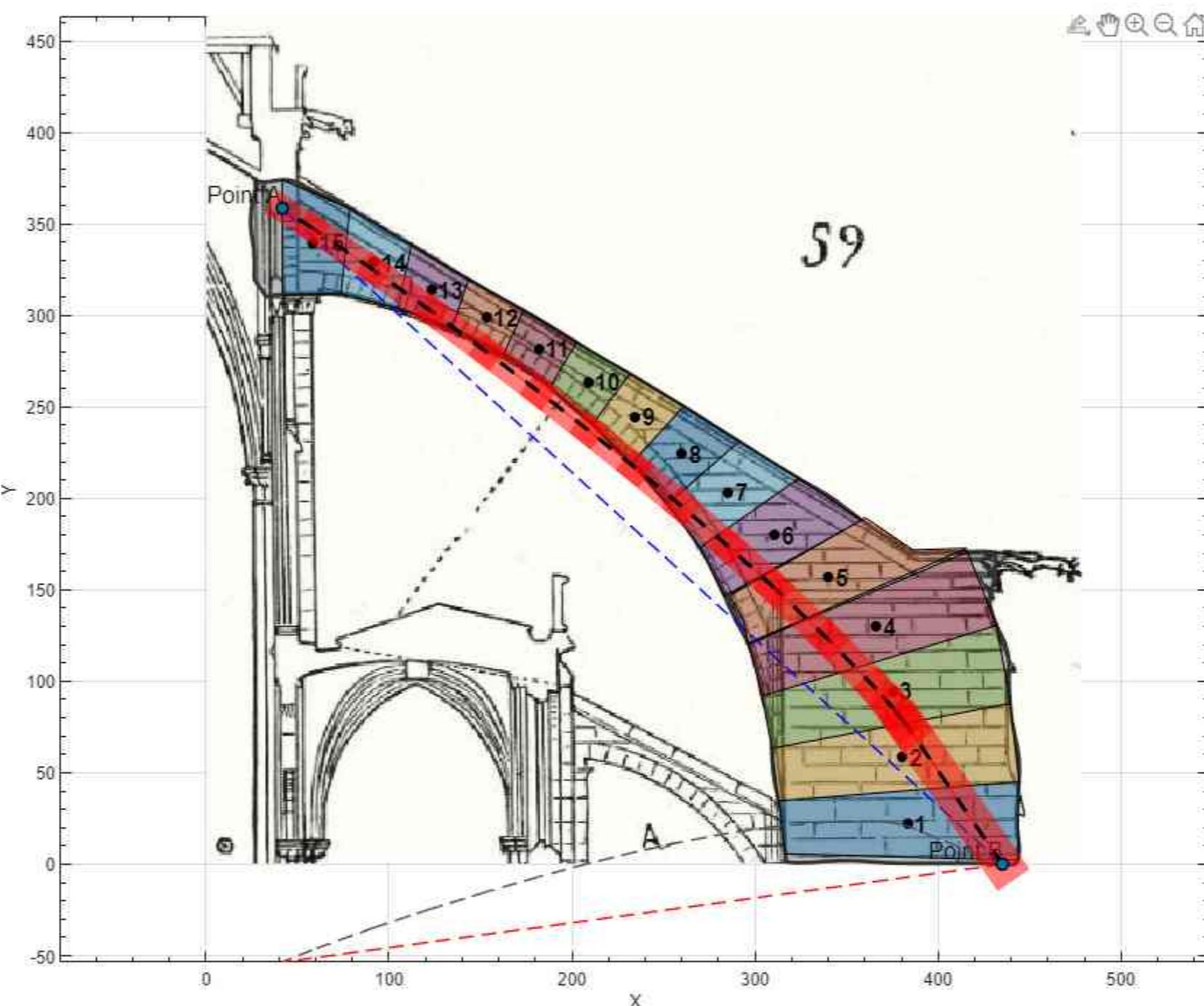
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

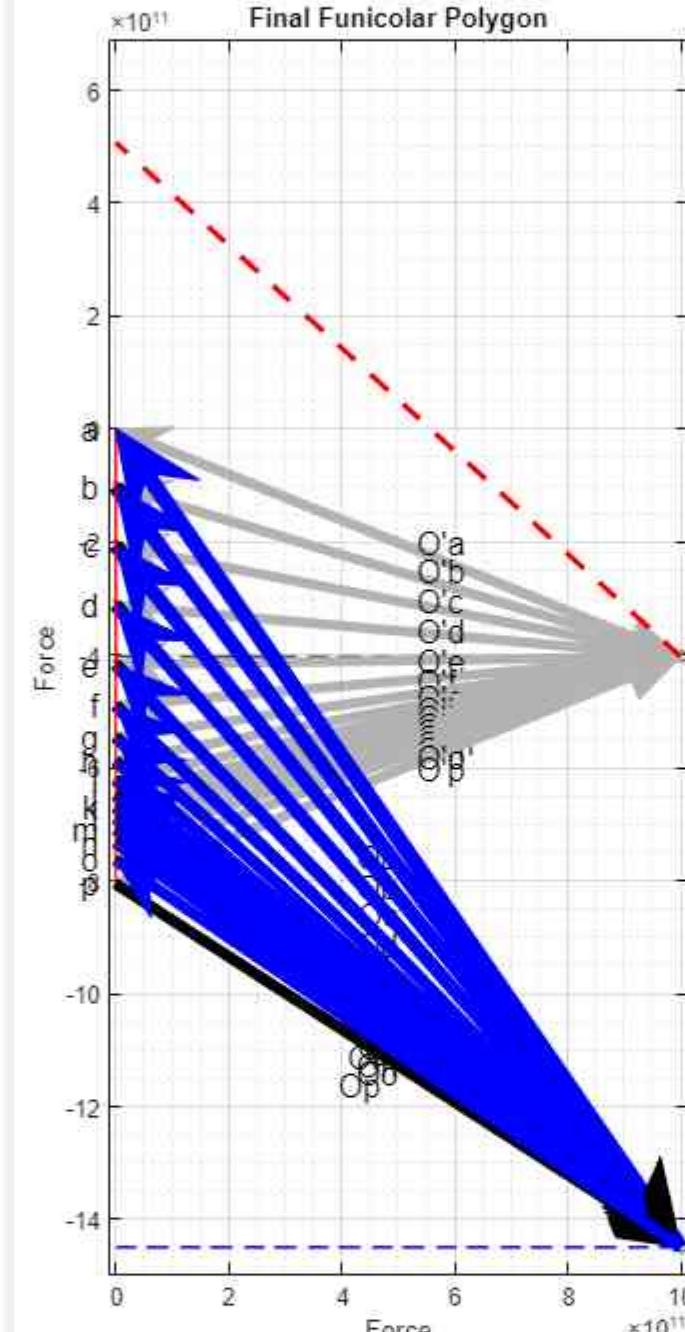
Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust  

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

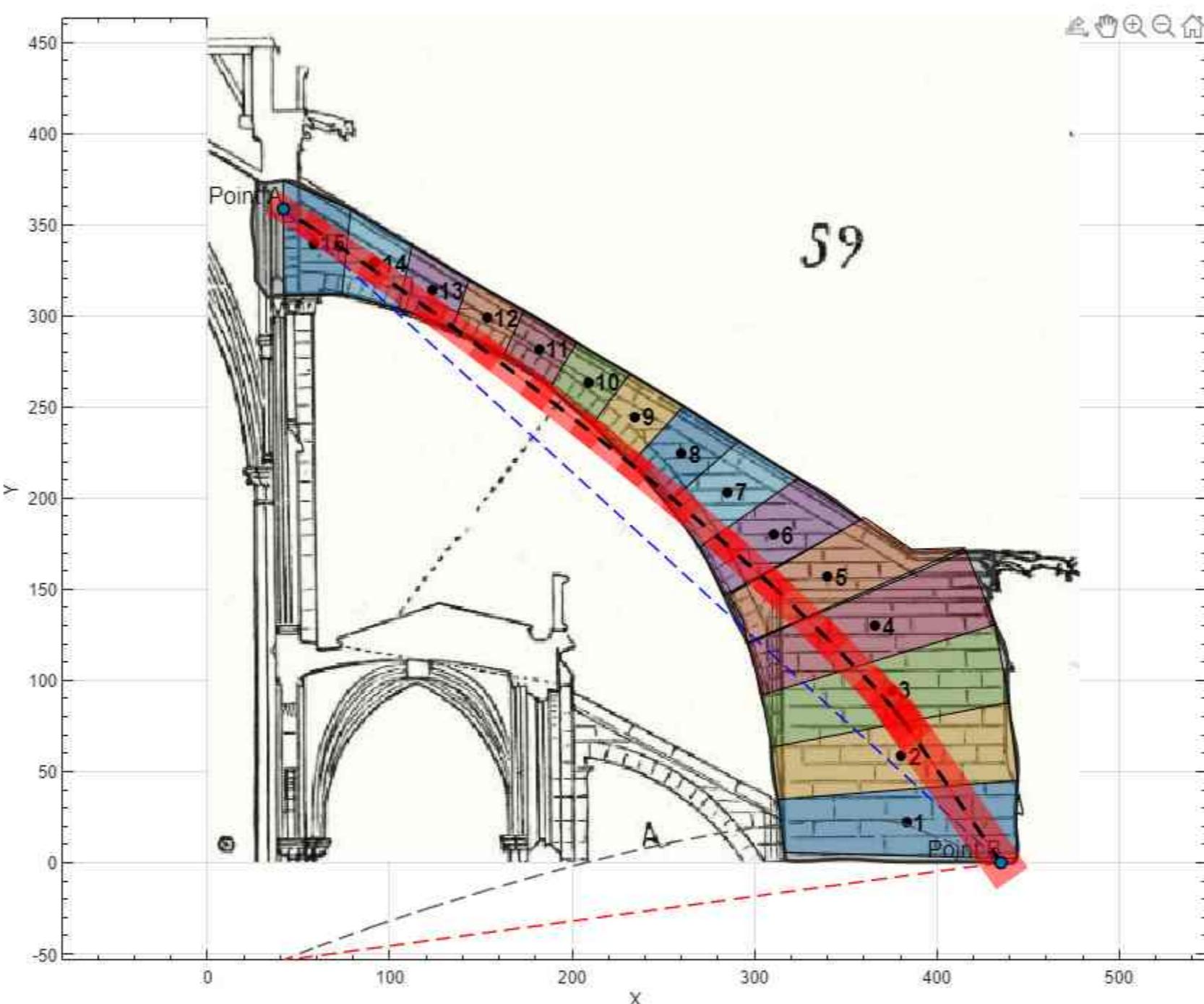
Horizontal Thrust

1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

Clear Sketch

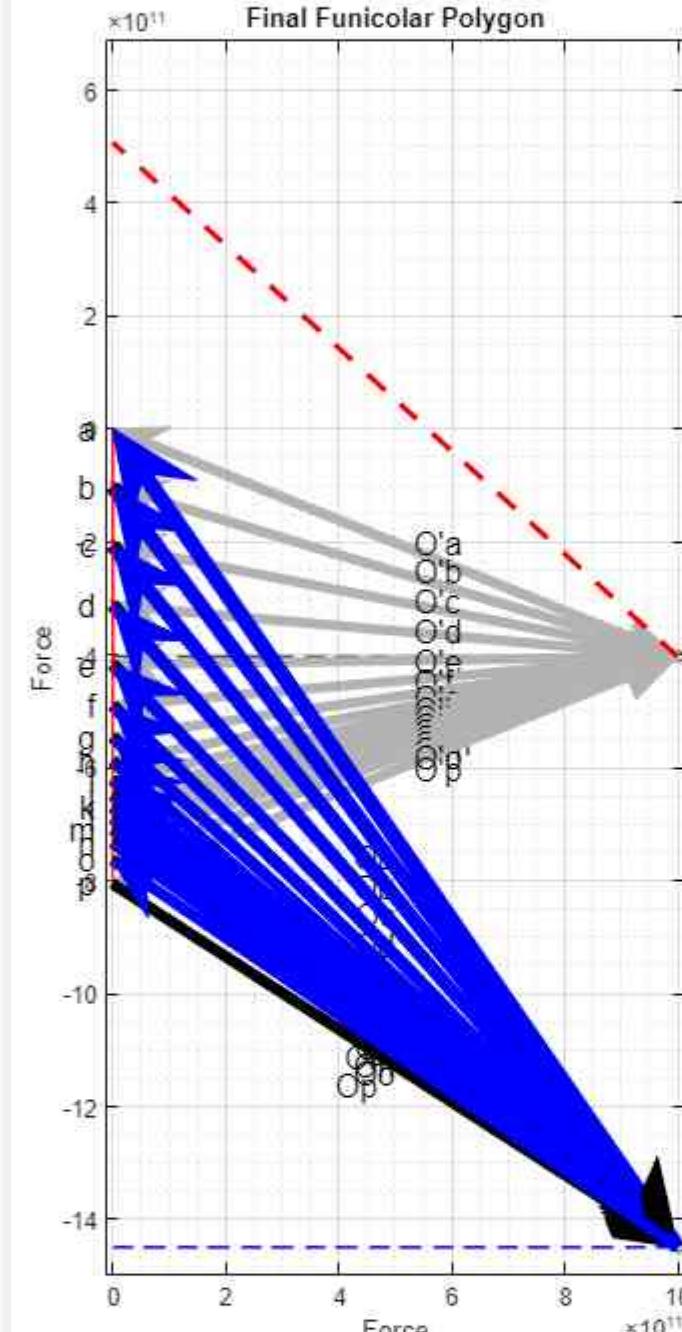
Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   000000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

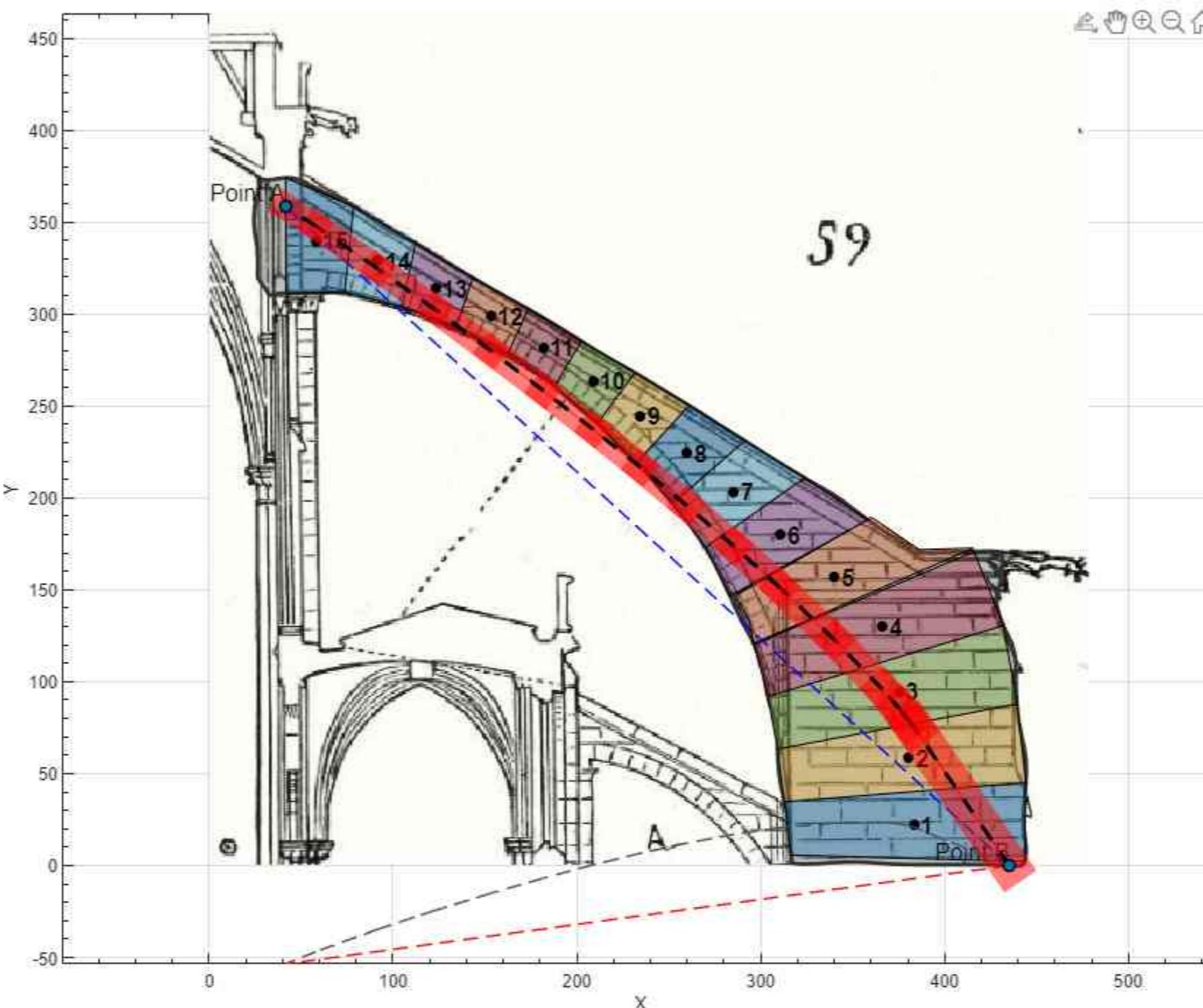
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

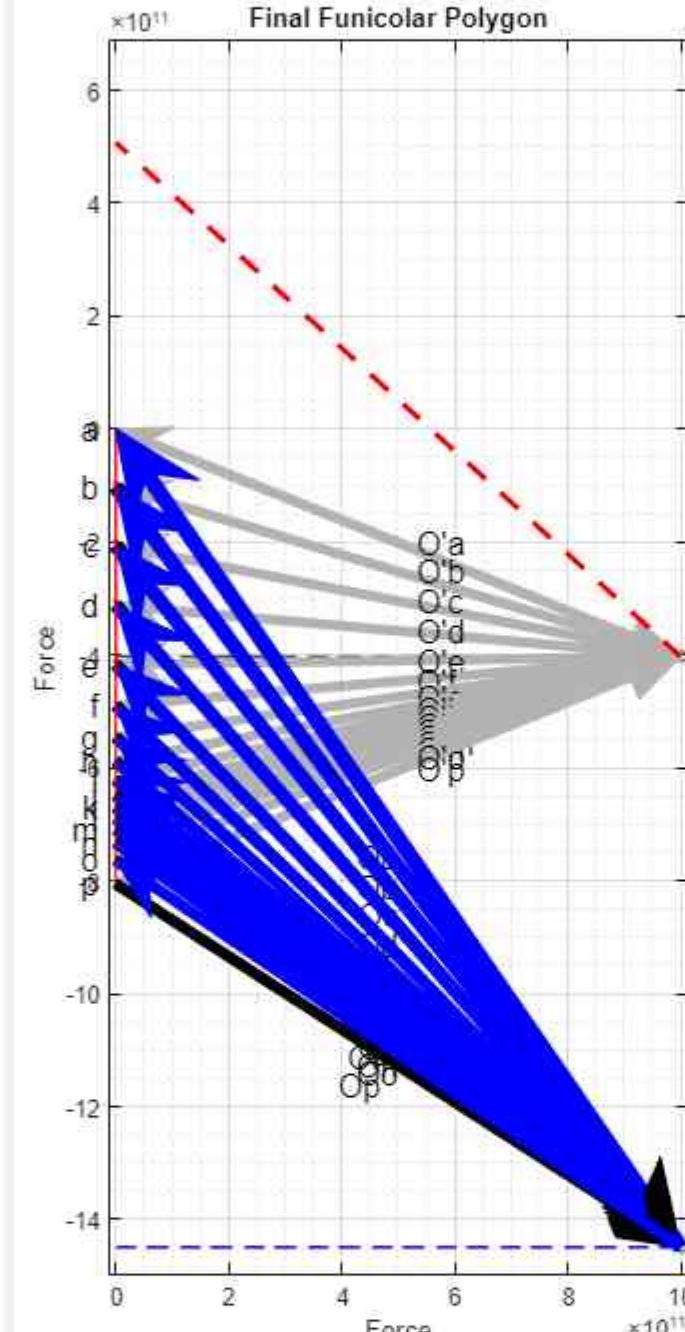
Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale

Final Funicular Polygon



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   500000000000

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

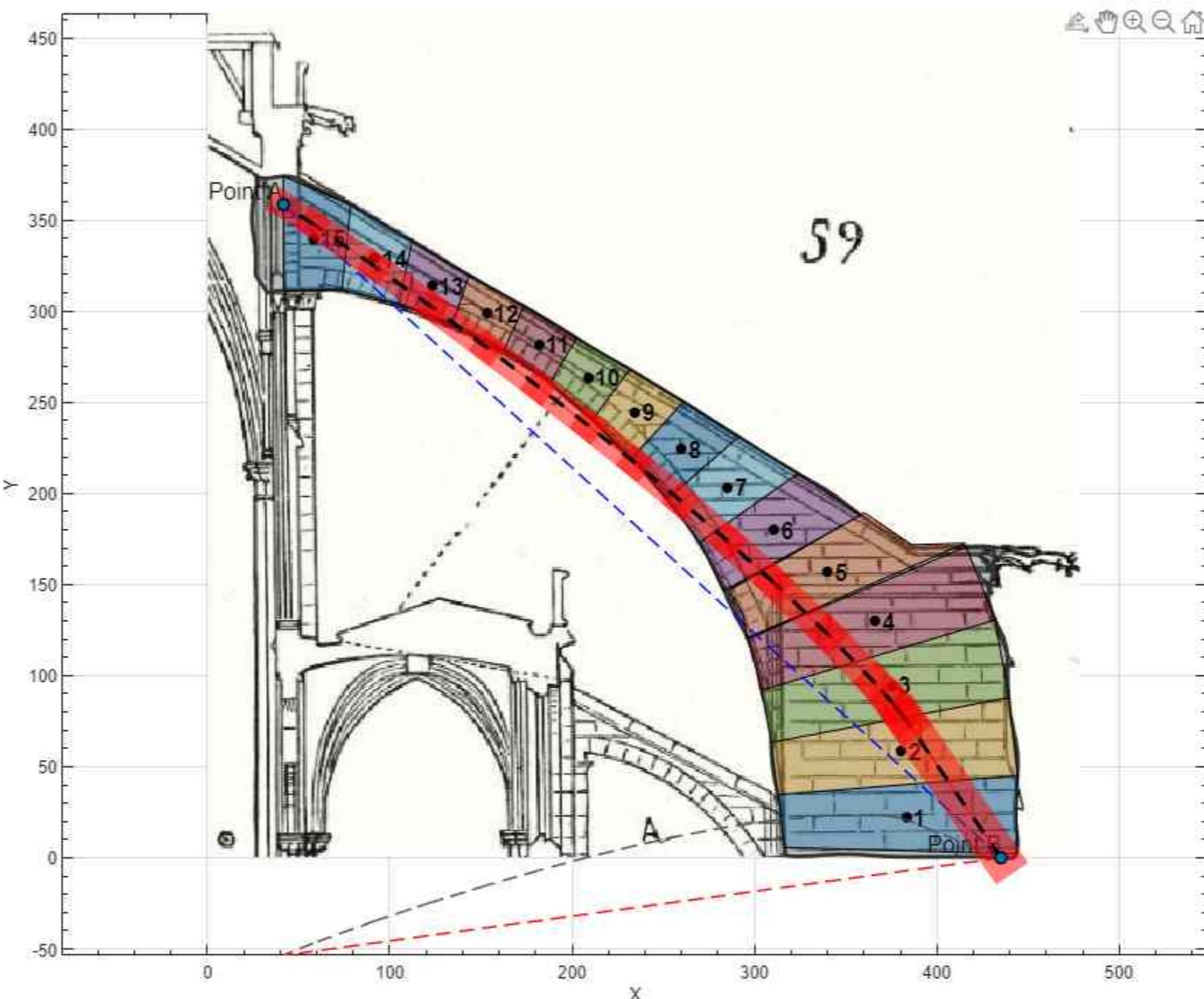
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor   3   Force Magnitude Off  On

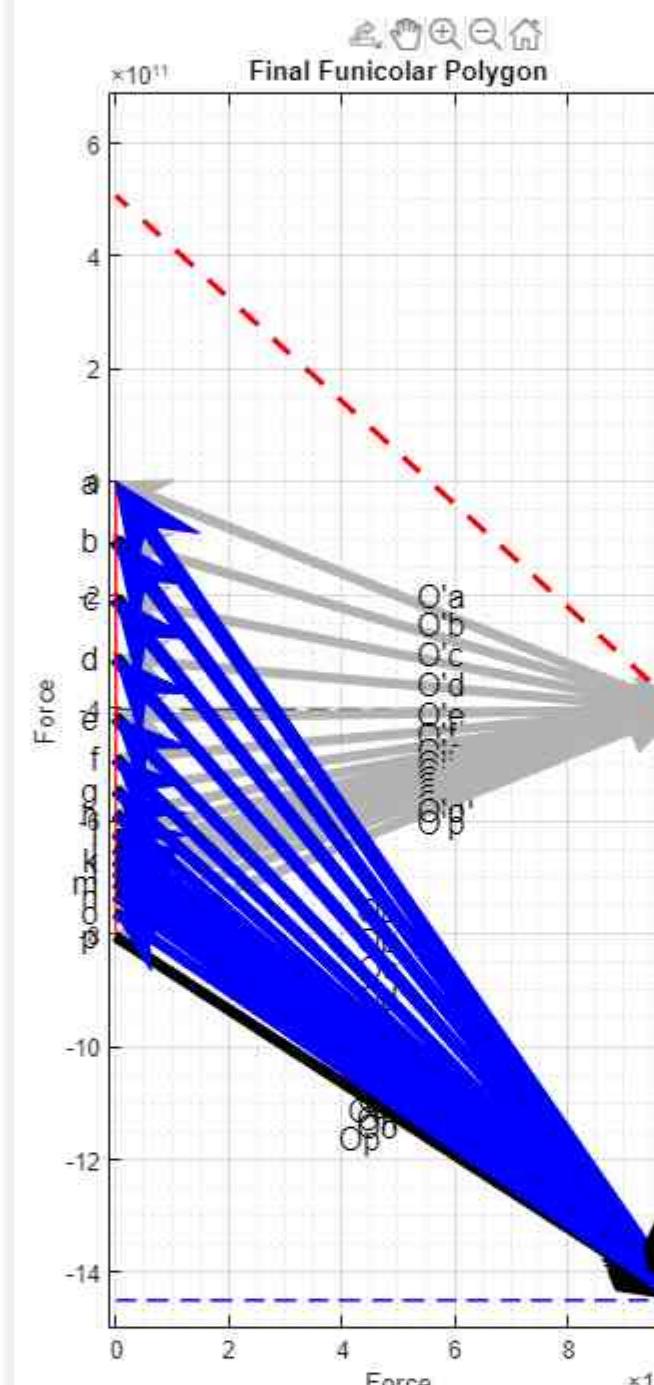
Plot Sketch   Plot Background Image   Flip Y axis   alpha W   0   Background Image Off  On

Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   5e+11

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

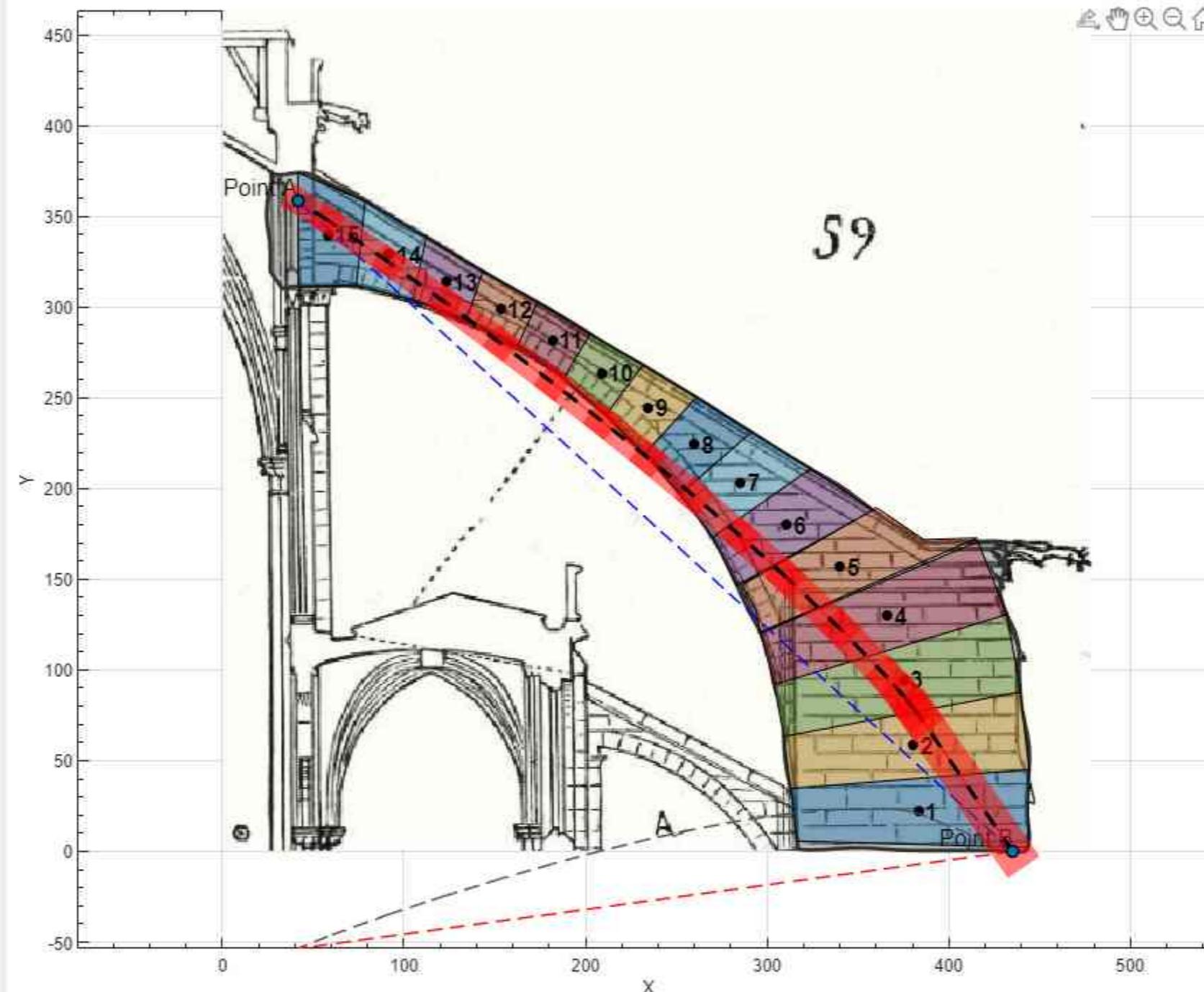
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor   3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W   0

Background Image Off  On

Clear Interactive Area

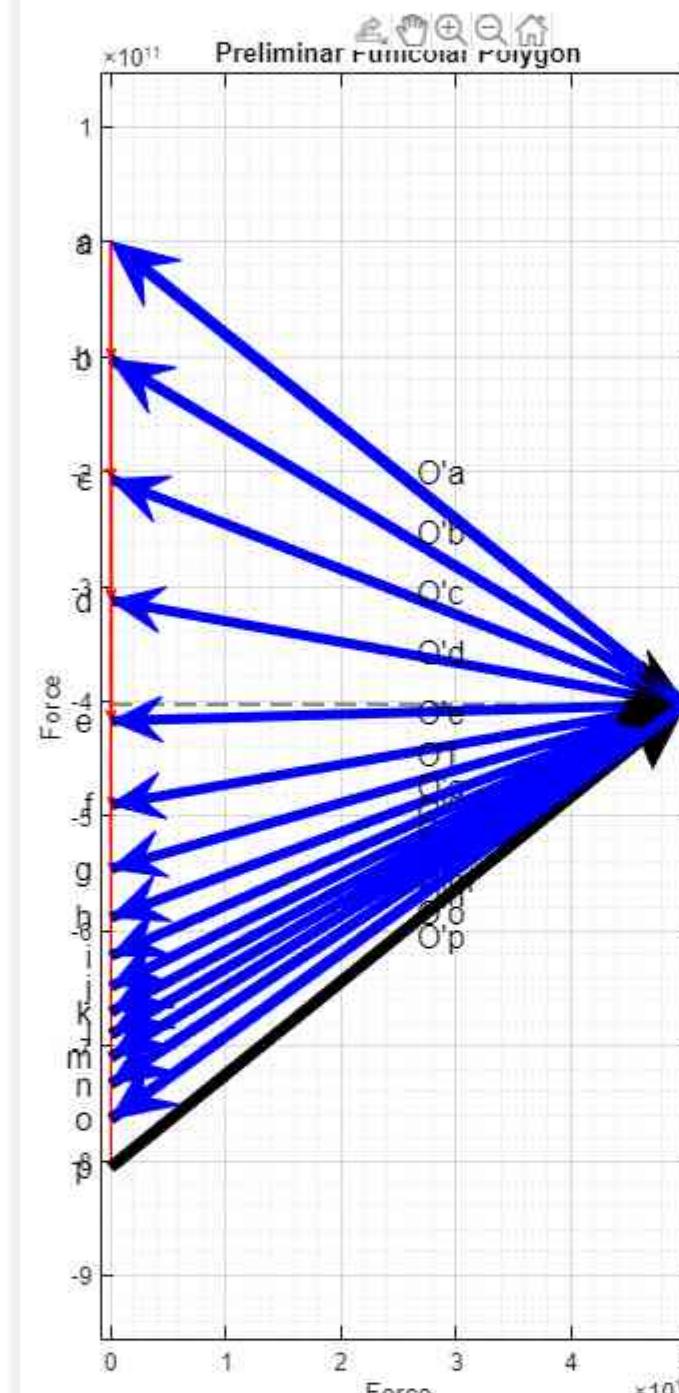
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor   0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   5e+11

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

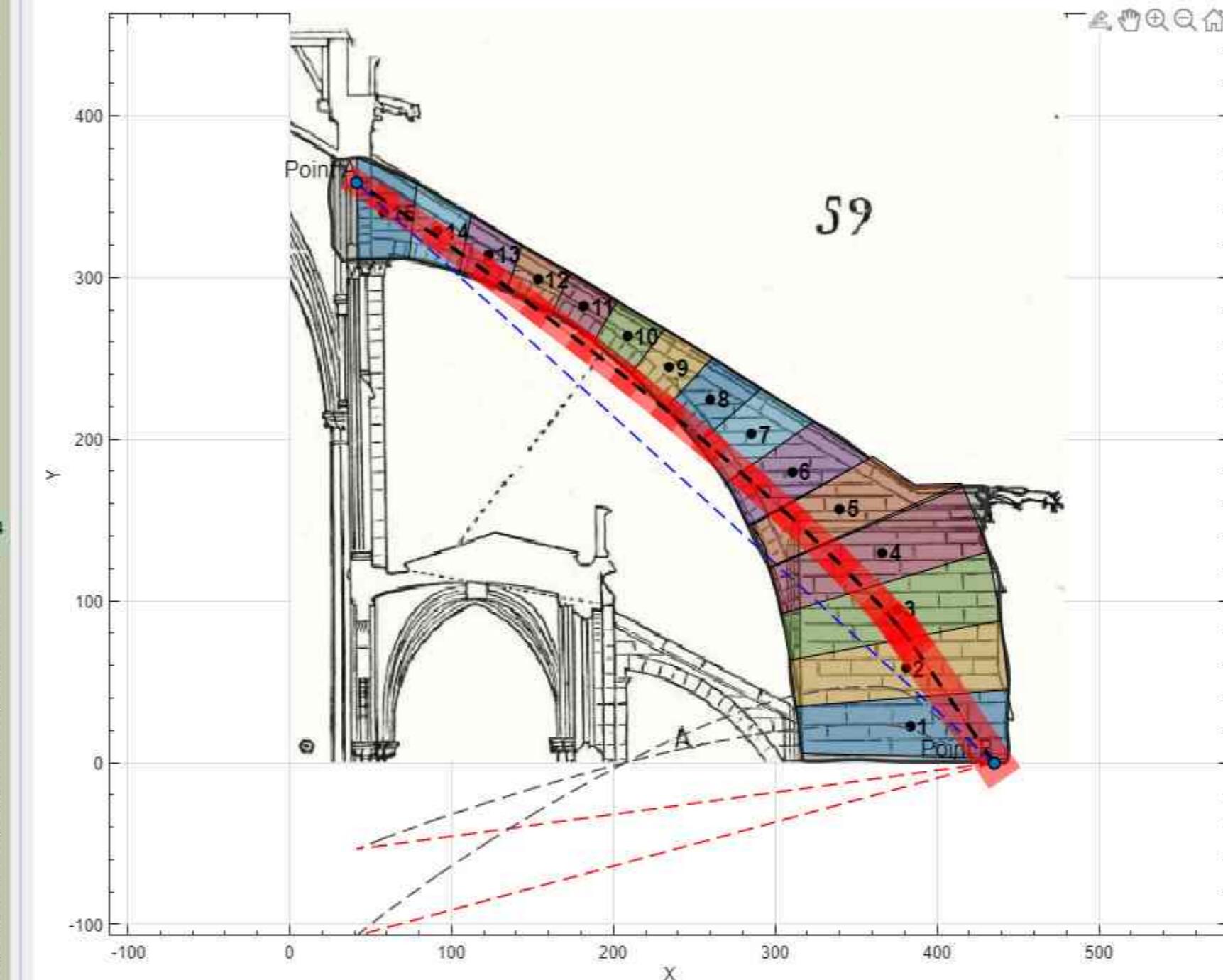
Horizontal Thrust

1e+04   1.1e+04   1.2e+04   1.3e+04   1.4e+04   1.5e+04

ID	Thrust
1	1.7606e+12
2	1.6775e+12
3	1.5949e+12
4	1.5141e+12
5	1.4369e+12
6	1.3855e+12
7	1.3475e+12
8	1.3195e+12
9	1.2979e+12
10	1.2809e+12
11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



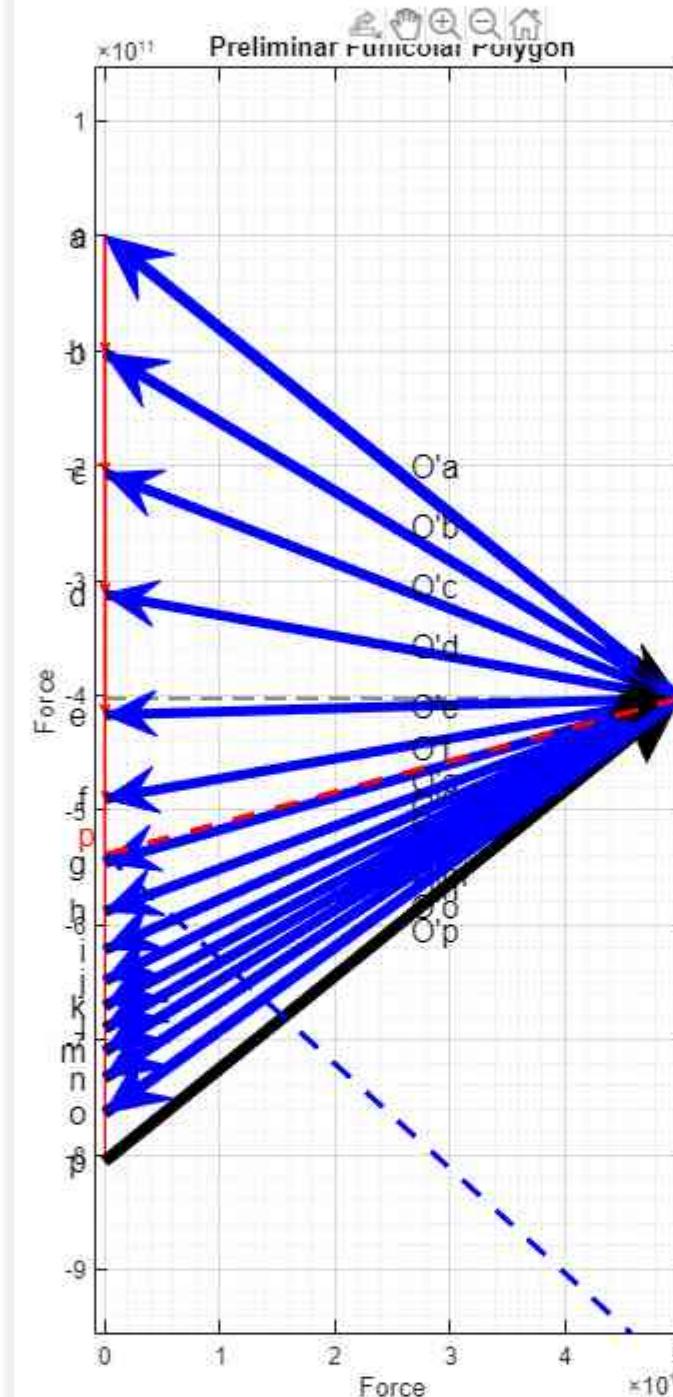
Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor 3   Force Magnitude Off  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W 0   Background Image Off  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On  
 Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Point A   Define Point B

Define Horizontal Thrust   5e+11

## Force polygon (FOP) and Funicular Polygon (FUP)

Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

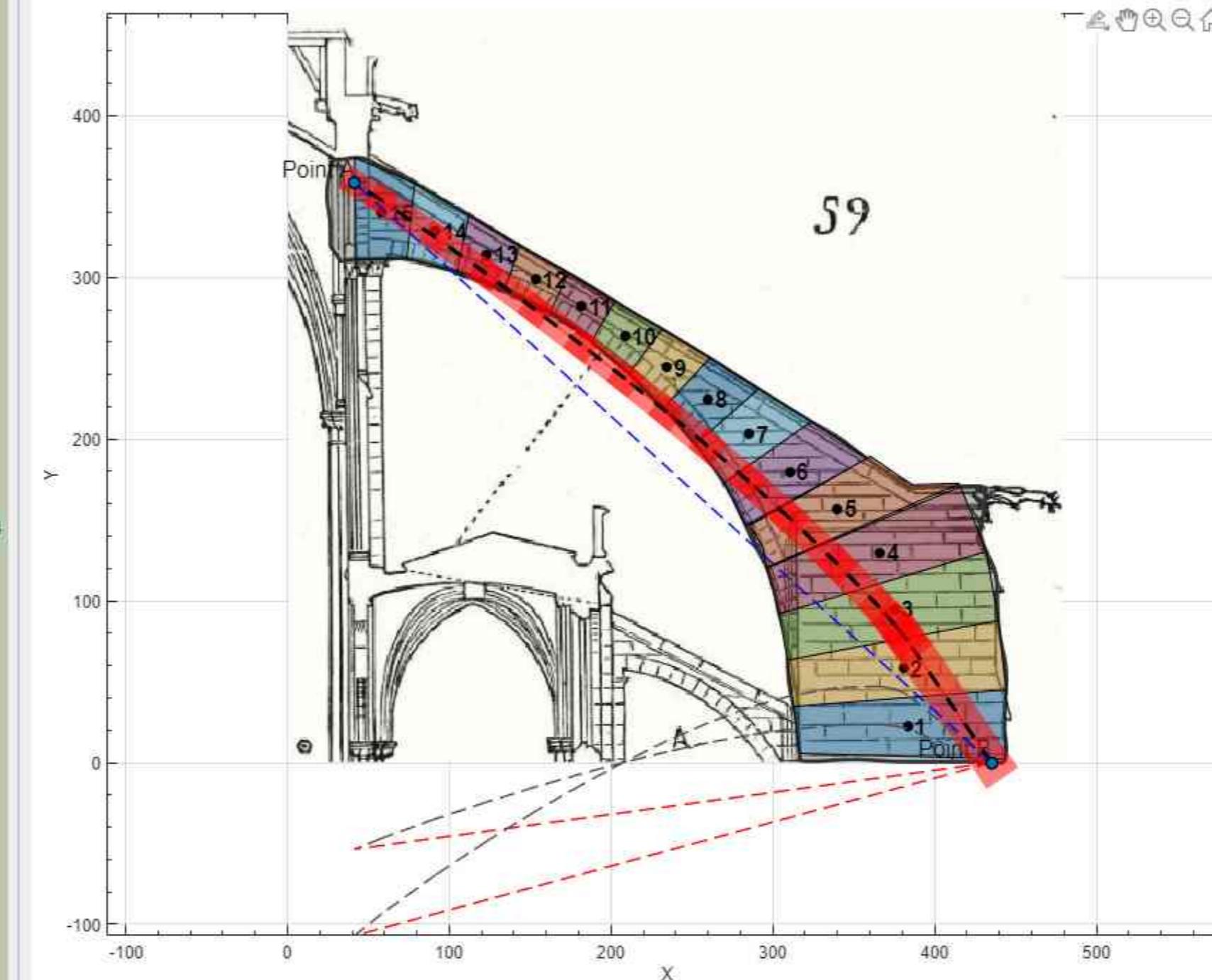
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.7606e+12
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11	1.2673e+12
12	1.2554e+12
13	1.2430e+12
14	1.2298e+12
15	1.2123e+12
16	1.1891e+12

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale

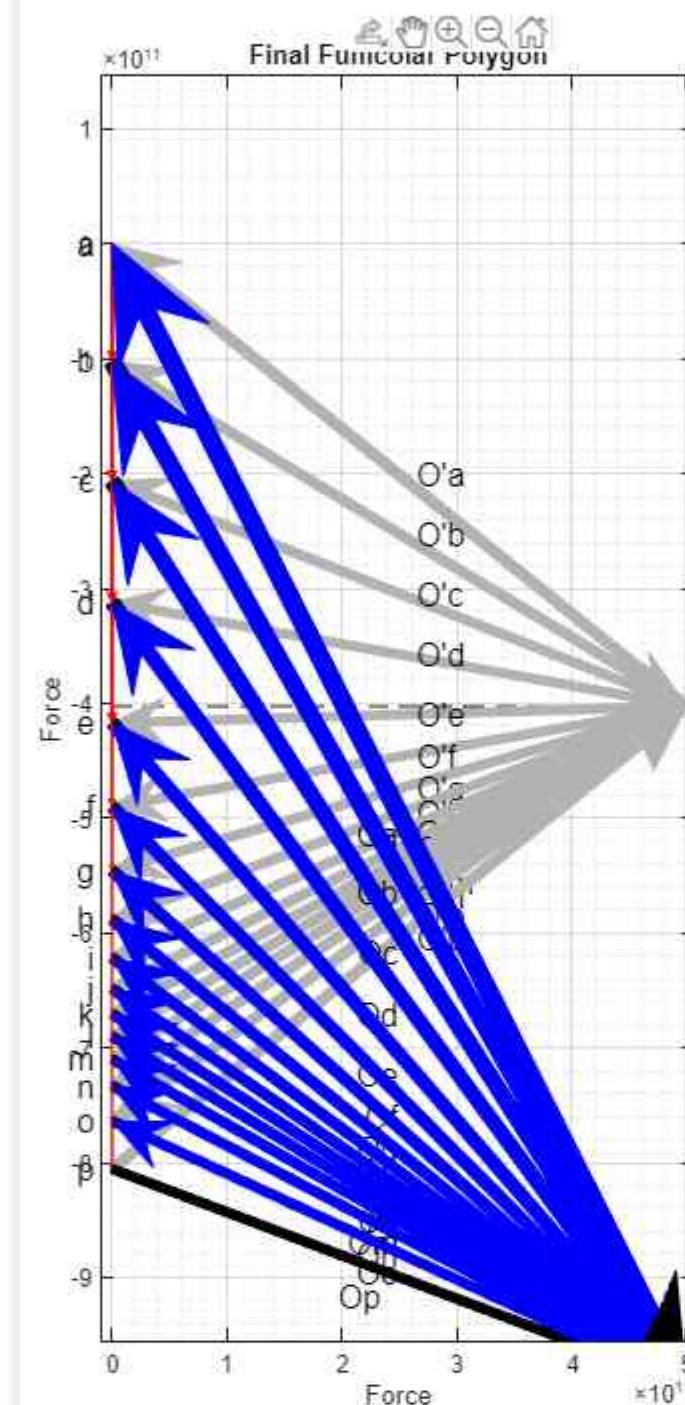


Graphics   Save/Load Example   Blocks properties   Units

Plot blocks   Plot Forces   Plot Reactions   forces factor 3   Force Magnitude Off  On  
 Plot Sketch   Plot Background Image   Flip Y axis   alpha W 0   Background Image Off  On  
 Clear Interactive Area   Clear Sketch   Sketched Geometry Off  On  
 Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor 0

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## Unknowns

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Preliminary FOP   Preliminary FUP

Final FOP   Final FUP

LOT Force factor   20

## Cable analogy

Plot Cable analogy

## Interactive FUP (find the Line of Thrust)

min 1e+04   max 1.5e+1   Update Slider

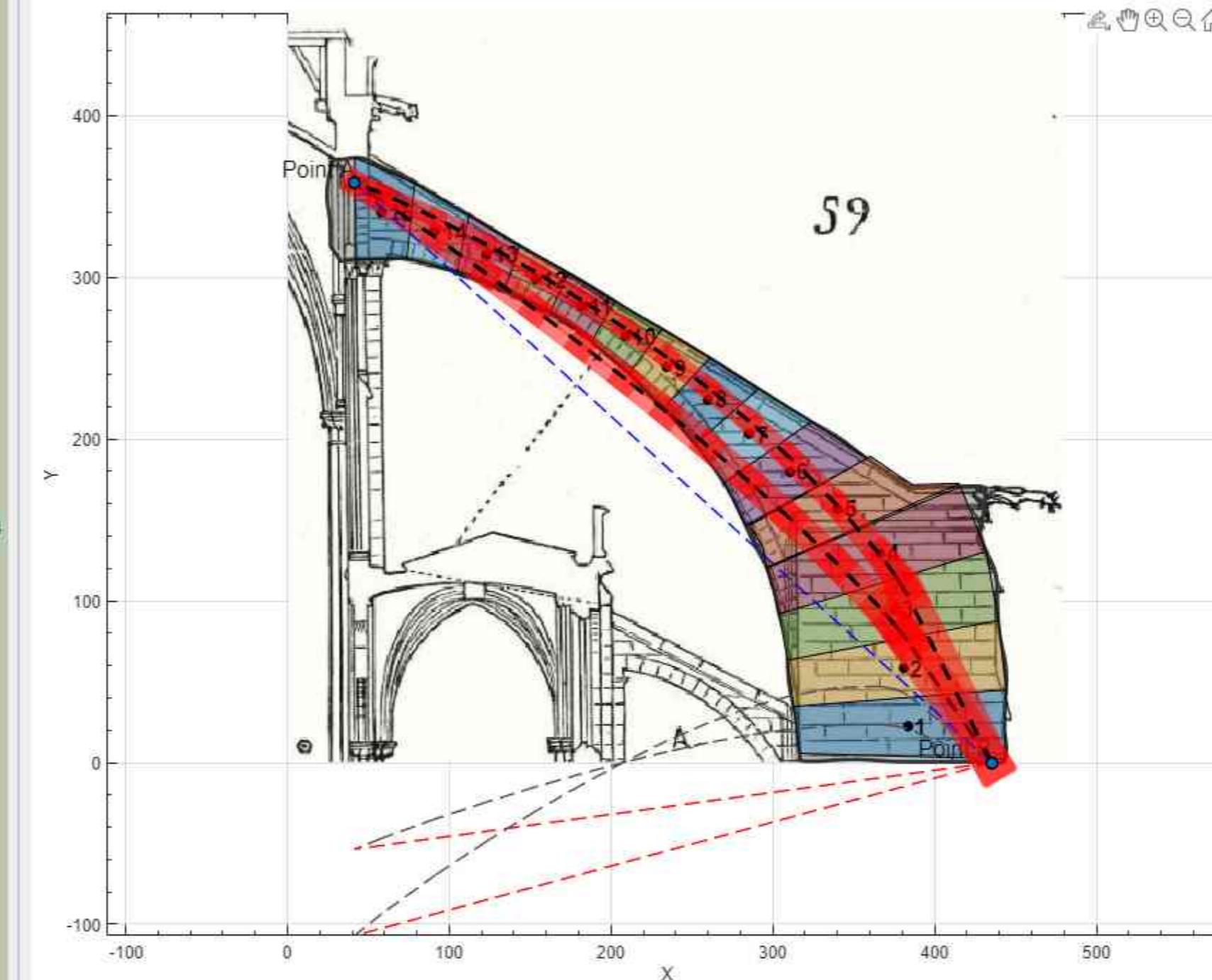
Horizontal Thrust

1e+04 1.1e+04 1.2e+04 1.3e+04 1.4e+04 1.5e+04

ID	Thrust
1	1.1125e+12
2	1.0222e+12
3	9.3263e+11
4	8.4539e+11
5	7.6325e+11
6	7.0974e+11
7	6.7137e+11
8	6.4385e+11
9	6.2335e+11
10	6.0766e+11
11	5.9541e+11
12	5.8507e+11
13	5.7504e+11
14	5.6390e+11
15	5.5043e+11
16	5.3428e+11

## Interactive Area

Reset View   Pan   Scroll Zoom on   Scroll Zoom off   Show Structural scale



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics   Save/Load Example   Blocks properties   Units

Plot blocks

Plot Forces

Plot Reactions

forces factor 3

Force Magnitude Off  On

Plot Sketch

Plot Background Image

Flip Y axis

alpha W 0

Background Image Off  On

Clear Interactive Area

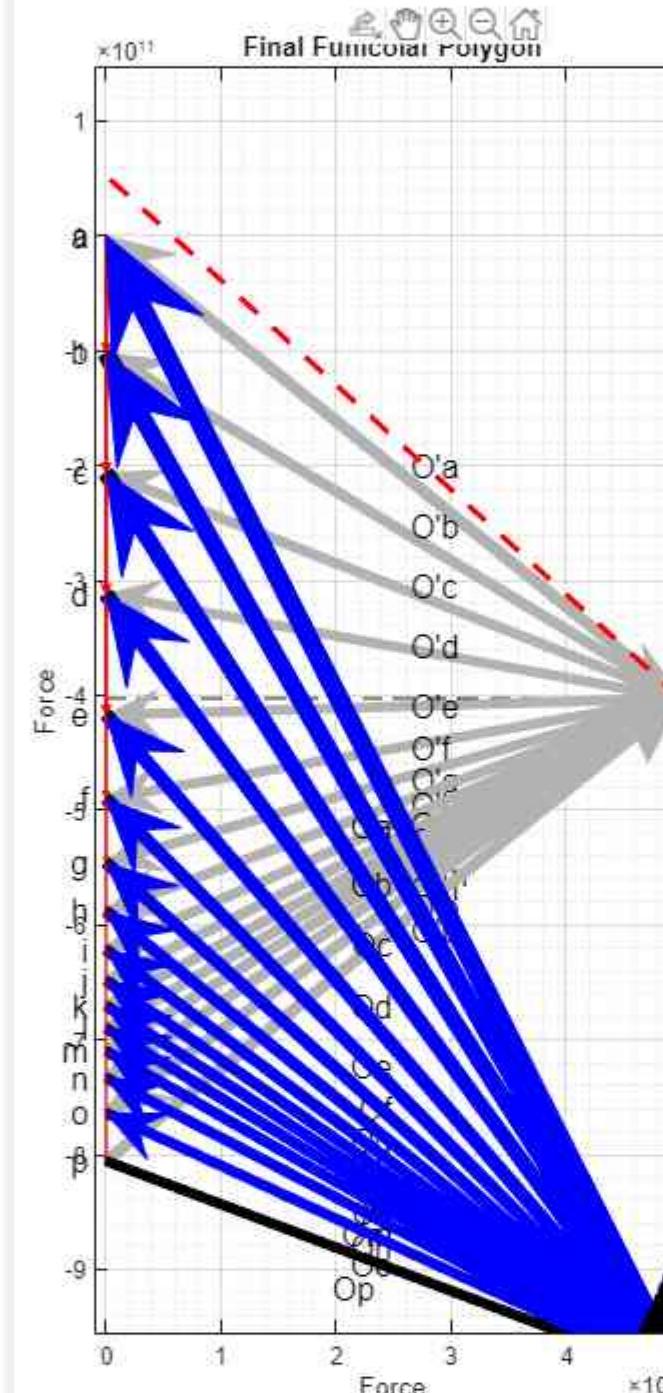
Clear Sketch

Sketched Geometry Off  On

Text / Labels Off  On

## Force Polygon

Reset View   Show Force Scale



Graphics   Tab2

Force shrink factor 0

Arch Definition   Thrust Line   Mechanism

## Unknowns

Define Horizontal Thrust

## Force polygon (FOP) and Funicular Polygon (FUP)

LOT Force factor

## Cable analogy

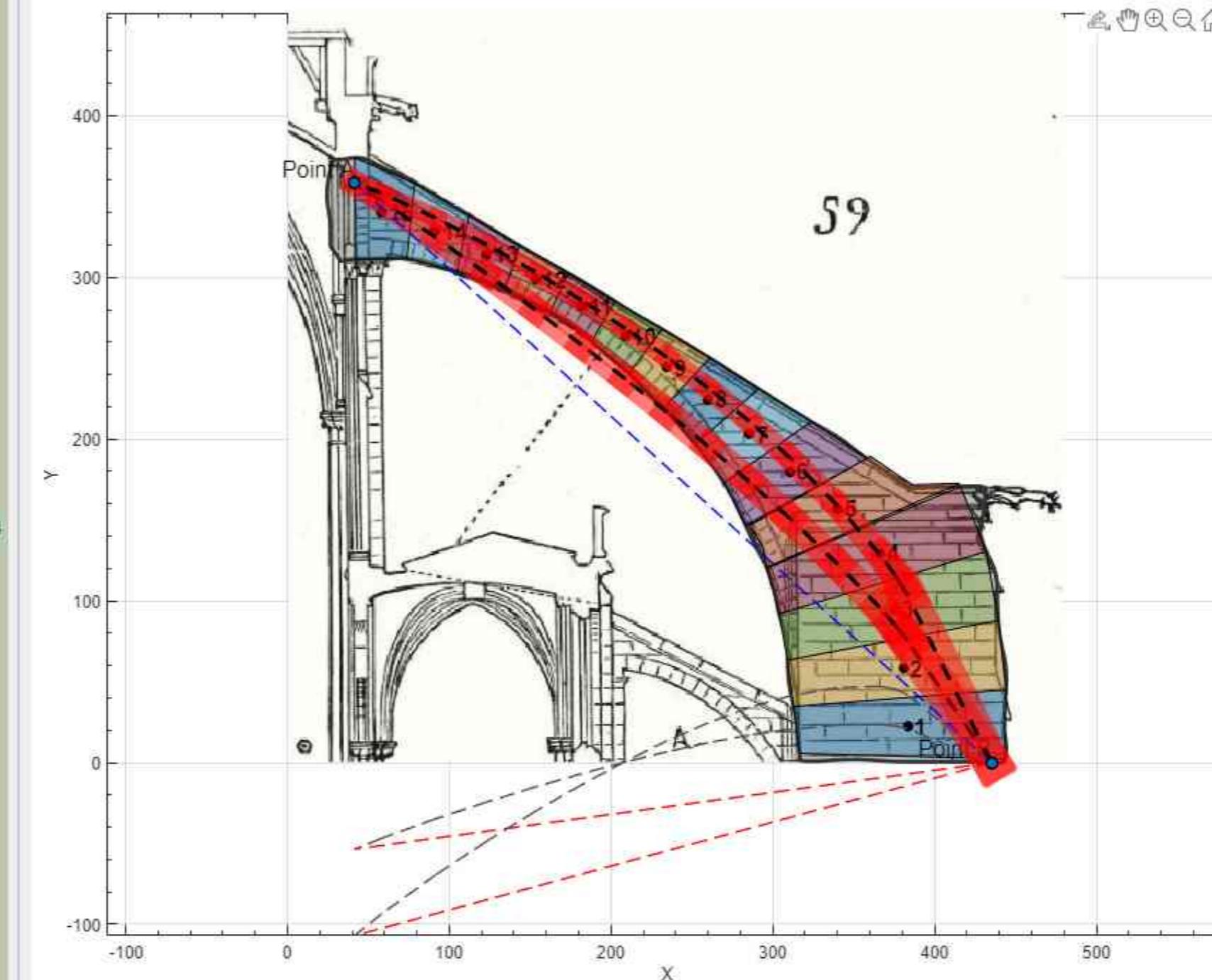
## Interactive FUP (find the Line of Thrust)

min  max

Horizontal Thrust

ID	Thrust
1	1.1125e+12
2	1.0222e+12
3	9.3263e+11
4	8.4539e+11
5	7.6325e+11
6	7.0974e+11
7	6.7137e+11
8	6.4385e+11
9	6.2335e+11
10	6.0766e+11
11	5.9541e+11
12	5.8507e+11
13	5.7504e+11
14	5.6390e+11
15	5.5043e+11
16	5.3428e+11

## Interactive Area



Current units: [ mm ] [ tons ] [ N ] [ MPa ]

Graphics

Save/Load Example

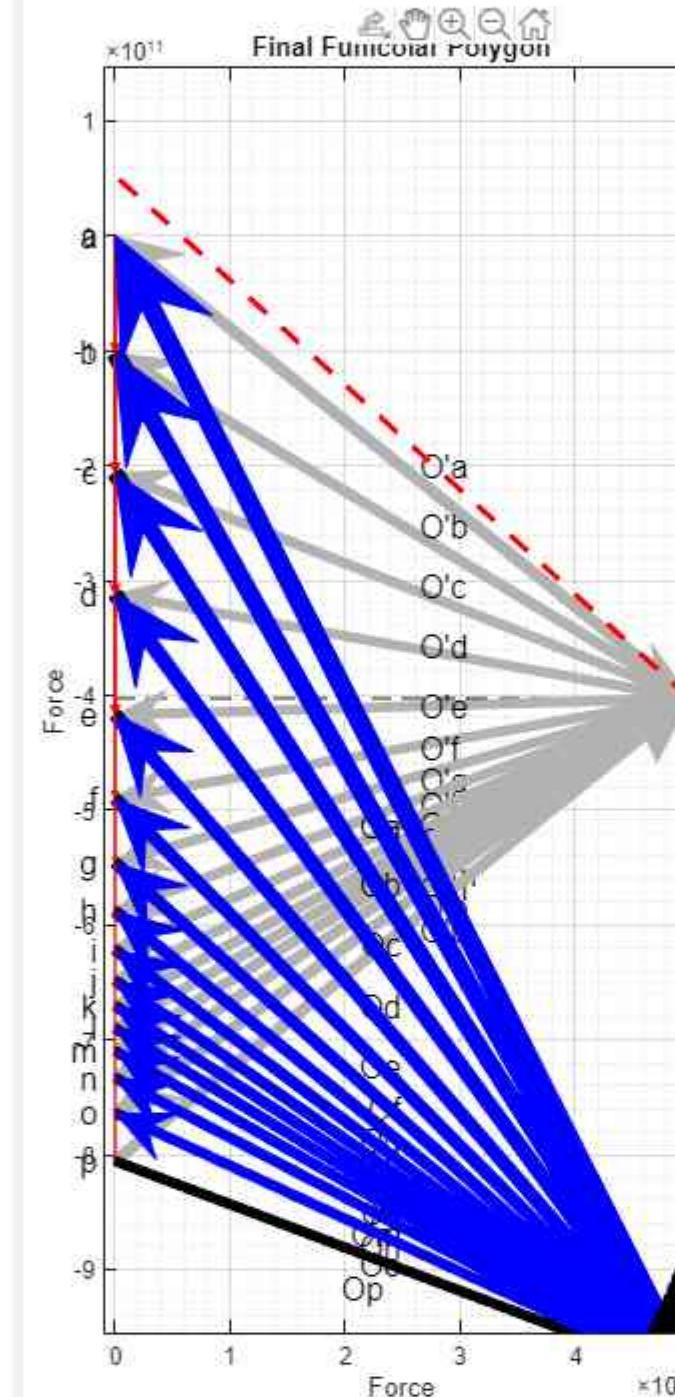
Blocks properties

Units

Si	Modulus/Stress	Force	Mass	Length
Nmm	<input type="radio"/> Pa	<input checked="" type="radio"/> N	<input type="radio"/> kg	<input type="radio"/> m
kg cm	<input type="radio"/> MPa	<input type="radio"/> kN	<input checked="" type="radio"/> tons	<input type="radio"/> cm
	<input type="radio"/> kg/cm^2	<input type="radio"/> kgf	<input type="radio"/> g	<input checked="" type="radio"/> mm

1 Pixel =  unit length

## Force Polygon



Graphics

Tab2

Force shrink factor

0