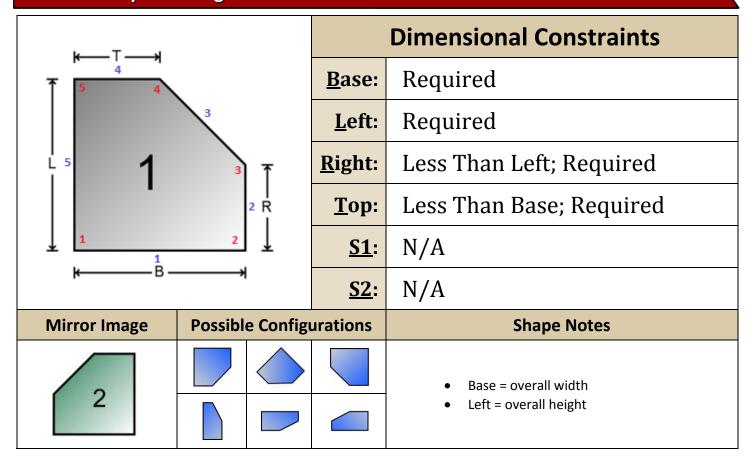
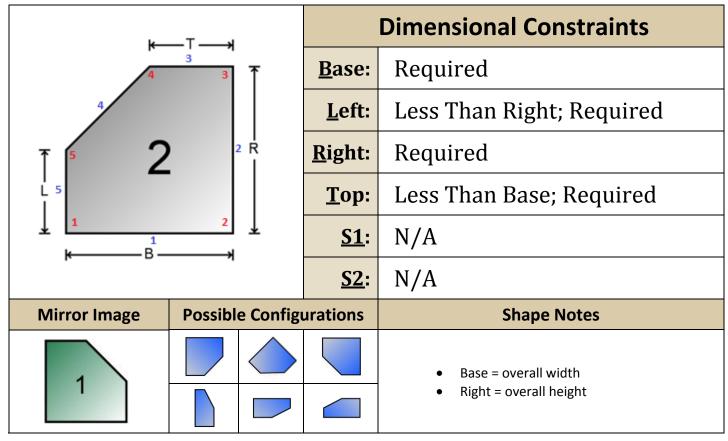
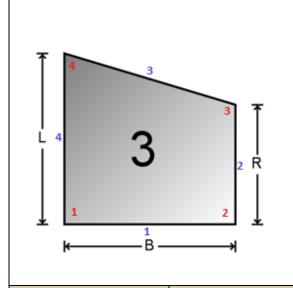


- Cardinal's standard definition of corner identification is based on looking at the end application or viewing residential unit from outside of building looking inward.
- Red numbers inside the shapes denote corner identification.
- Blue numbers outside the shapes denote side identification.



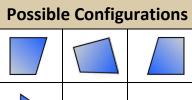




Dimensional Constraints				
<u>B</u> ase:	Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	N/A			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

**Shape Notes** 

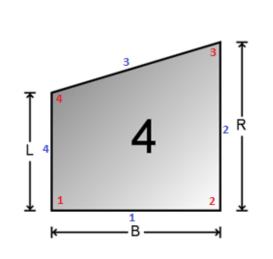
Mirror Imag	e
4	







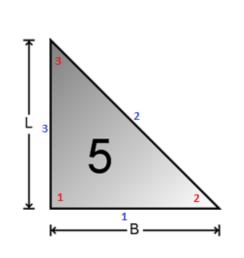
- Base = overall width
- Left = overall height



#### **Dimensional Constraints** Required Base: Less Than Right; Required Left: Required Right: Top: N/A N/A <u>S1</u>: N/A <u>S2</u>: **Shape Notes**

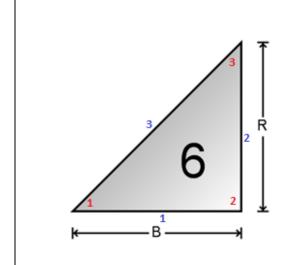
wiii Tor IIIIage	1 0331ble Collingulation			
3				

- Base = overall width
- Right = overall height

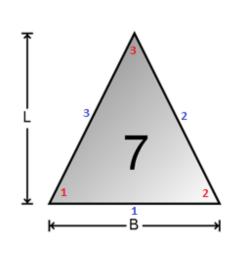


Dimensional Constraints				
<u>B</u> ase:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	N/A			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

Mirror Image	Possible Configurations			Shape Notes
6				<ul> <li>Base = overall width</li> <li>Left = overall height</li> </ul>



Dimensional Constraints			
<u>B</u> ase:	Required		
<u>L</u> eft:	N/A		
Right:	Required		
<u>T</u> op:	N/A		
<u>S1</u> :	N/A		
<u>S2</u> :	N/A		
urations	Shape Notes		



Dimensional Constraints			
Base:	Required		
<u>L</u> eft:	Required		
Right:	N/A		
<u>T</u> op:	N/A		
<u>S1</u> :	N/A		
<u>S2</u> :	N/A		

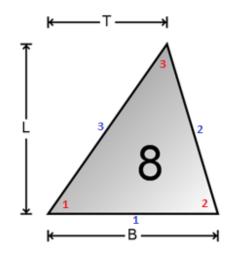
**Shape Notes** 



**Possible Configurations** 



- Base = overall width
- Left = overall height
- Center Point or Isosceles Triangle



	Dimensional Constraints			
Base:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	Less Than Base; Required			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

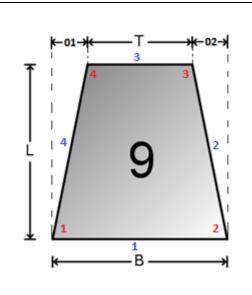
**Shape Notes** 



**Possible Configurations** 



- Base = overall width
- Left = overall height



	Dimensional Constraints		
Base:	Required		
<u>L</u> eft:	Required		
Right:	N/A		
<u>T</u> op:	Less Than Base; Required		
<u>S1</u> :	N/A		
<u>S2</u> :	N/A		

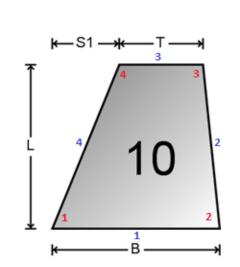
### Possible Configurations







- Base = overall width
- Left = overall height
- Offsets 01 and 02 must be equal



Dimensional Constraints				
Base:	Greater Than S1 + Top; Rqrd			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			

#### **Possible Configurations**





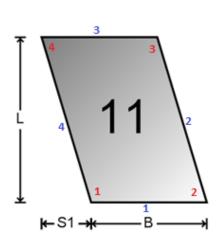






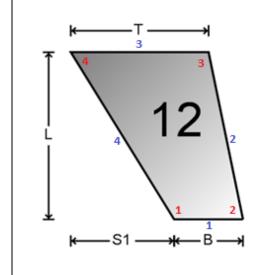


- Base = overall width
- Left = overall height

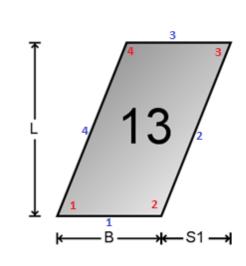


Dimensional Constraints			
<u>B</u> ase:	Required		
<u>L</u> eft:	Required		
Right:	N/A		
<u>T</u> op:	N/A		
<u>S1</u> :	Required		
<u>S2</u> :	N/A		

			<u>SZ</u> :	N/A
Mirror Image	Possible Configurations			Shape Notes
13				<ul> <li>S1 + Base = overall width</li> <li>Left = overall height</li> </ul>

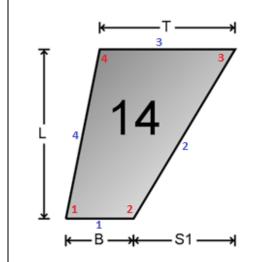


Dimensional Constraints				
<u>B</u> ase:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	Less Than Base + S1; Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			
urations	Shape Notes			



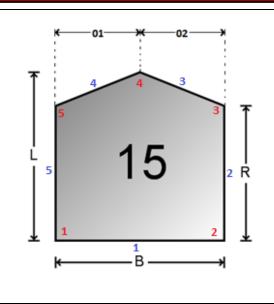
Dimensional Constraints				
<u>B</u> ase:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	N/A			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			

				11/11
Mirror Image	Possible	e Config	urations	Shape Notes
11				<ul> <li>Base + S1 = overall width</li> <li>Left = overall height</li> </ul>



Dimensional Constraints				
<u>B</u> ase:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	Less Than Base + S1; Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			
urations	Shape Notes			

wirror image	Possible Configurations			Snape Notes
12				<ul> <li>Base + S1 = overall width</li> <li>Left = overall height</li> </ul>

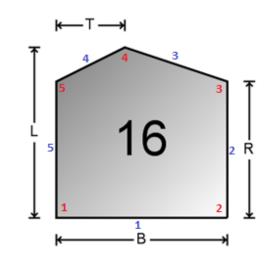


Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	N/A			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

### Possible Configurations

Shape Notes

- Offsets must be equal (01 and 02 = ½ the Base)
  Base = overall width
- Left = overall height

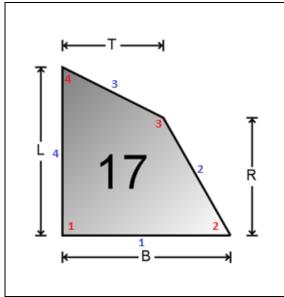


Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	Less Than Base; Required			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

**Shape Notes** 

# 

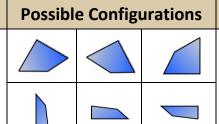
- Base = overall width
- Left = overall height



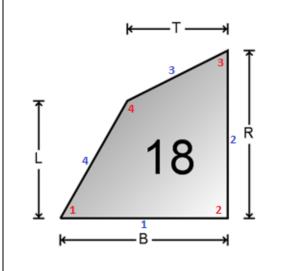
Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	: Less Than Base; Required			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

**Shape Notes** 

Mirror Imag	e
12	
/ 18	



- Base = overall width
- Left = overall height



.T	ı	Dimensional Constraints		
8 2	<b>†</b>	Base:	Required	
		<u>L</u> eft:	Less Than Right; Required	
	R 2 I	Right:	Required	
		<u>T</u> op:	Less Than Base; Required	
	↓	<u>S1</u> :	N/A	
	1	<u>S2</u> :	N/A	
Possible Configurations		urations	Shape Notes	

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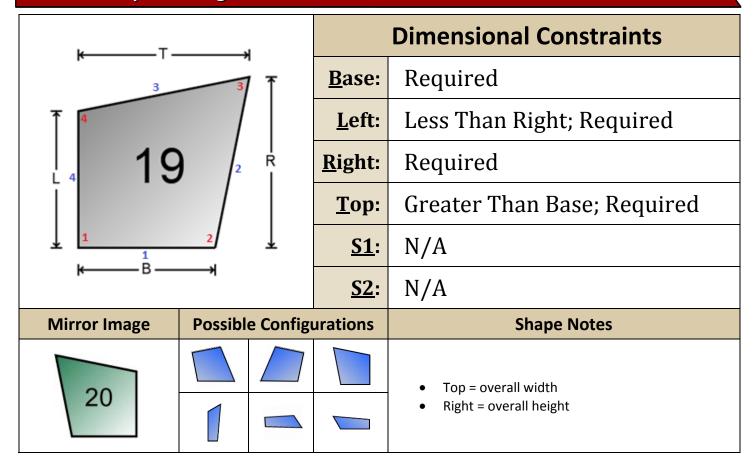


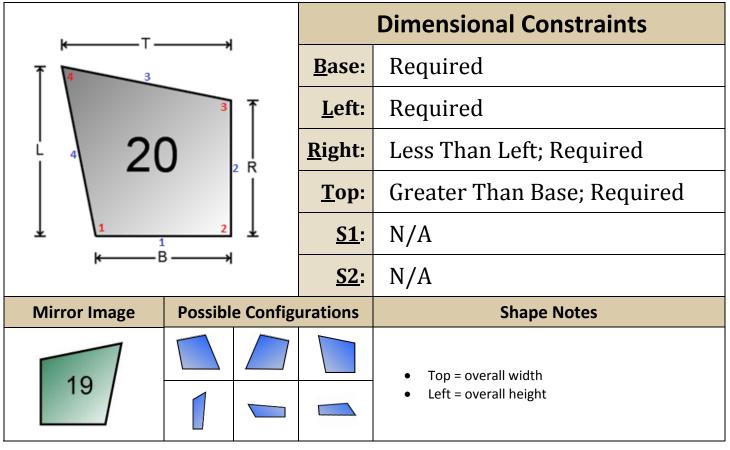


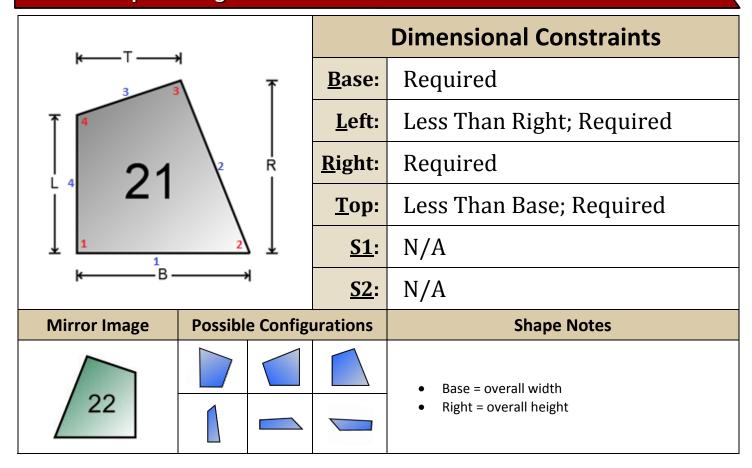


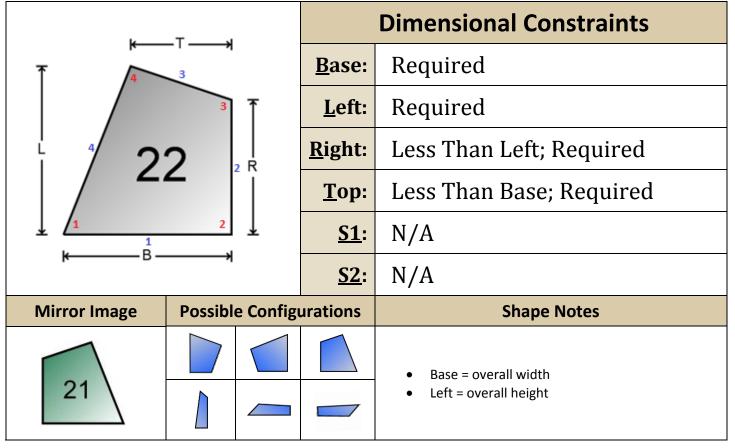


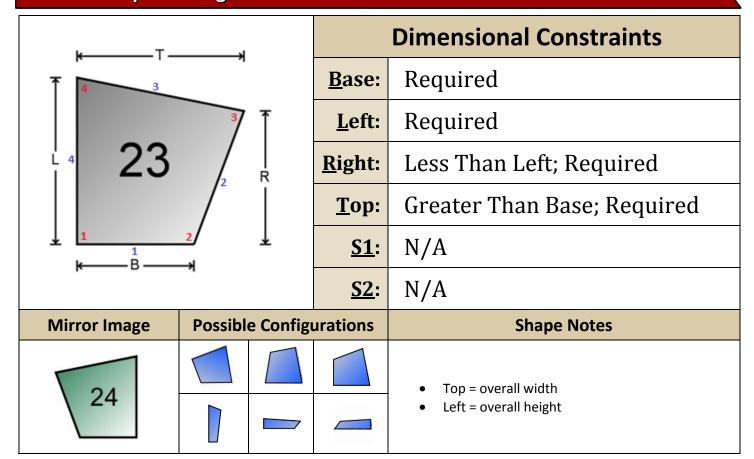
- Base = overall width
- Right = overall height

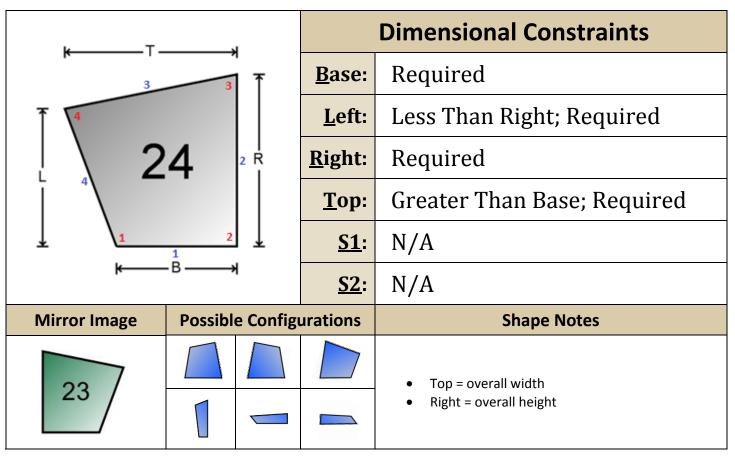


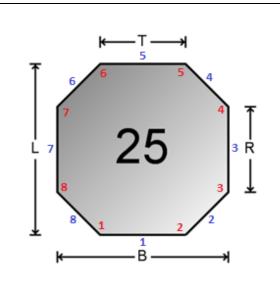












Dimensional Constraints				
Base:	ase: Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	Less Than Base; Required			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

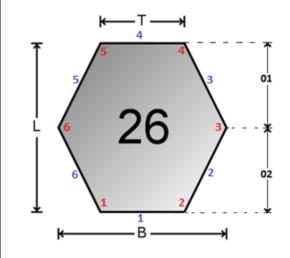
Possible Configurations	Shape Notes
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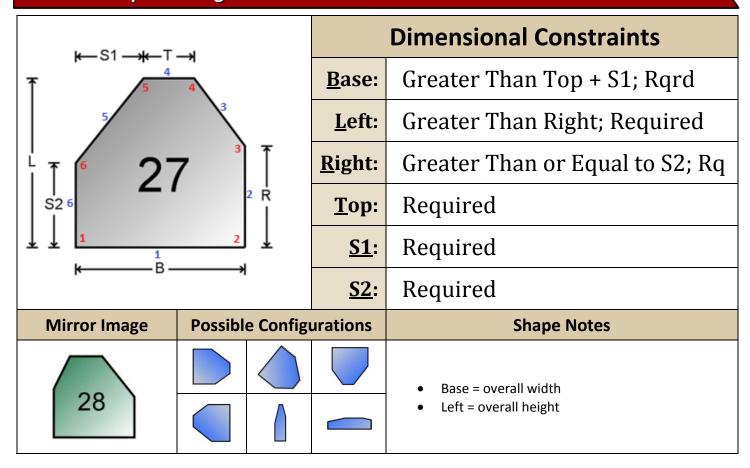


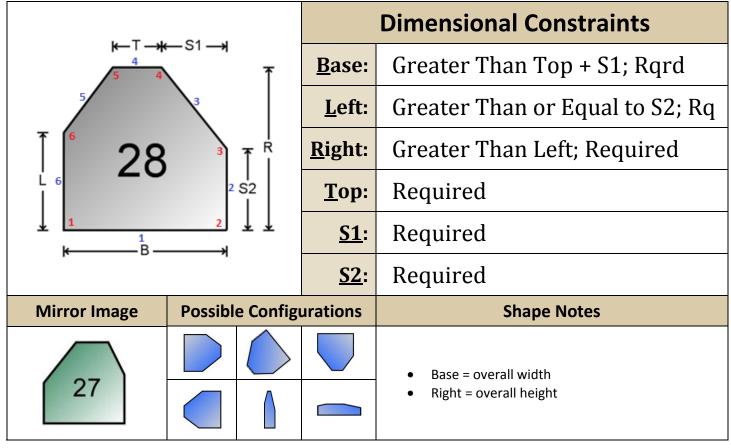
- Base = overall width
- Left = overall height

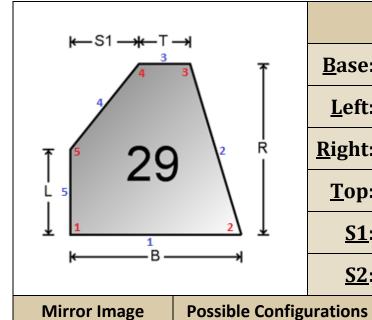


Dimensional Constraints			
<u>B</u> ase:	Required		
<u>L</u> eft:	Required		
Right:	N/A		
<u>T</u> op:	Less Than Base; Required		
<u>S1</u> :	N/A		
<u>S2</u> :	N/A		

## Possible Configurations Base = overall width Left = overall height Offsets must be equal (01 and 02 = ½ the Left)







Dimensional Constraints				
Base:	Greater Than Top + S1; Rqrd			
<u>L</u> eft:	Less Then Right; Required			
Right:	Required			
<u>T</u> op:	Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			

**Shape Notes** 

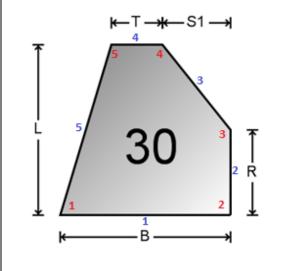
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Г		
	30	
	30	







- Base = overall width
- Right = overall height



<b>Dimensional Constraints</b>				
<u>B</u> ase:	Greater Than Top + S1; Rqrd			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			
ırations	Shape Notes			

29

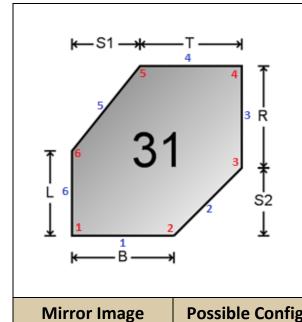








- Base = overall width
- Left = overall height



	Dimensional Constraints				
	<u>B</u> ase:	Less Than Top + S1; Required			
	<u>L</u> eft:	Less Than Right + S2; Required			
	Right:	Required			
•	<u>T</u> op:	Required			
•	<u>S1</u> :	Required			
	<u>S2</u> :	Required			
gı	urations	Shape Notes			

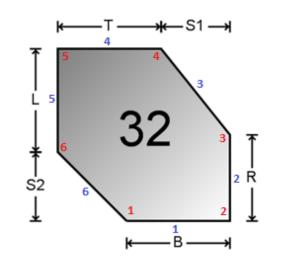
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2







- S1 + Top = overall width
- Right + S2 = overall height



<b>←</b> S1 <b>→</b> I	Dimensional Constraints			
\_31	<u>B</u> ase:	Less Than Top + S1; Required		
3	<u>L</u> eft:	Required		
3 2 R	Right:	Less Than Left + S2; Required		
	<u>T</u> op:	Required		
	<u>S1</u> :	Required		
-B <b>→</b>	<u>S2</u> :	Required		
Possible Configurations		Shape Notes		

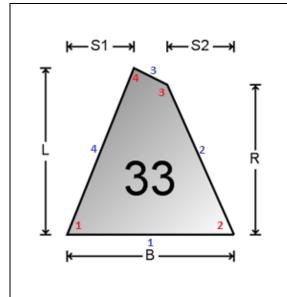
143		
	31	





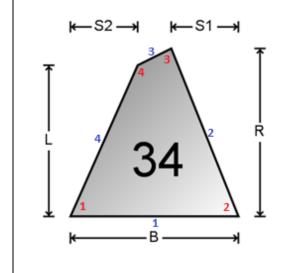


- Top + S1 = overall width
- Left + S2 = overall height

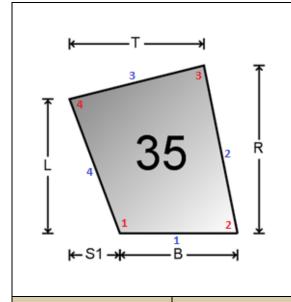


Dimensional Constraints			
<u>B</u> ase:	Greater Than S1 + S2; Required		
<u>L</u> eft:	Required		
Right:	Less Than Left; Required		
<u>T</u> op:	N/A		
<u>S1</u> :	Required		
<u>S2</u> :	Required		

Mirror Image	Possible Configurations			Shape Notes
				<ul><li>Base = overall width</li></ul>
34 \				<ul><li>Left = overall height</li></ul>



—S1 —			<b>Dimensional Constraints</b>			
		<u>B</u> ase:	Greater Than S1 + S2; Required			
		<u>L</u> eft:	Less Than Right; Required			
2 R		Right:	Required			
2		<u>T</u> op:	N/A			
		<u>S1</u> :	Required			
<del></del>		<u>S2</u> :	Required			
Possible Configurations		ırations	Shape Notes			
			Base = overall width			
1 -			Right = overall height			



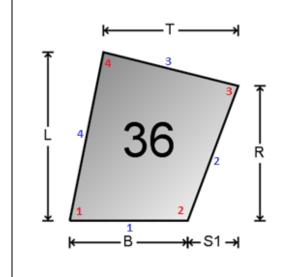
Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Less Than Right; Required			
Right:	Required			
<u>T</u> op:	Less Than Base + S1; Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			

iviirror image	Possibil	e Configi	urations
20			
36	1		

• Base + S1 = overall width

**Shape Notes** 

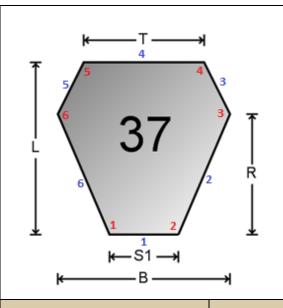
Right = overall height



	<b>Dimensional Constraints</b>
Base:	Required
<u>L</u> eft:	Required
Right:	Less Than Left; Required
<u>T</u> op:	Less Than Base + S1; Required
<u>S1</u> :	Required
<u>S2</u> :	N/A
urations	Shape Notes

Will for illiage	PUSSIDI	e Coming	arations
25			
35			

- Base + S1 = overall width
- Left = overall height



Dimensional Constraints	
Base:	Required
<u>L</u> eft:	Required
Right:	Less Then Left; Required
<u>T</u> op:	Less Than Base; Required
<u>S1</u> :	Less Than Base; Required
<u>S2</u> :	N/A

**Shape Notes** 

**Possible Configurations** 



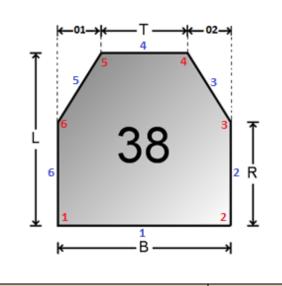








- Base = overall width
- Left = overall height

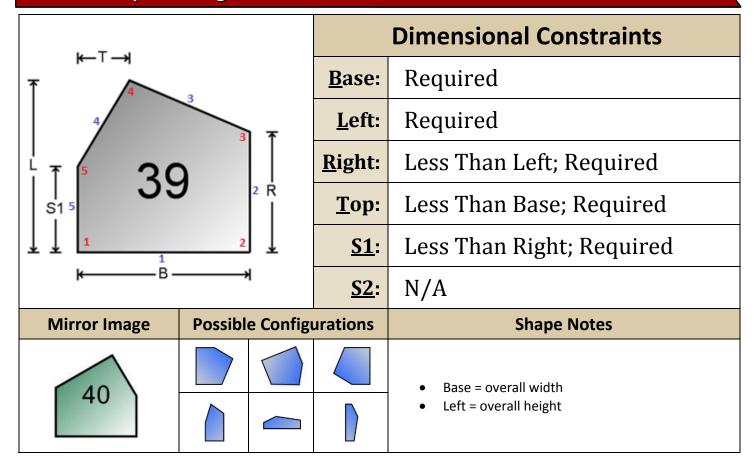


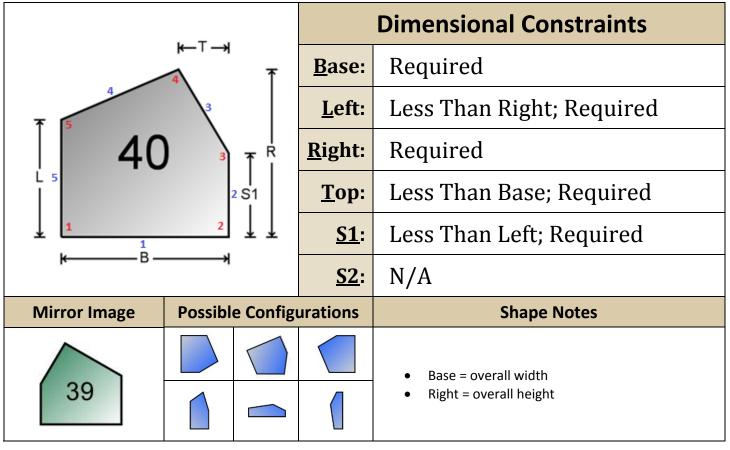
	<b>Dimensional Constraints</b>
Base:	Required
<u>L</u> eft:	Required
Right:	Less Than Left; Required
<u>T</u> op:	Less Than Base; Required
<u>S1</u> :	N/A
<u>S2</u> :	N/A

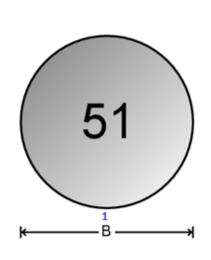
#### **Possible Configurations**



- Base = overall width
  - Left = overall height
  - Offsets 01 and 02 must be equal





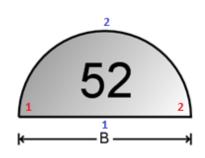


Dimensional Constraints	
Base:	Required
<u>L</u> eft:	N/A
Right:	N/A
<u>T</u> op:	N/A
<u>S1</u> :	N/A
<u>S2</u> :	N/A

Possible Configurations	Shape Notes

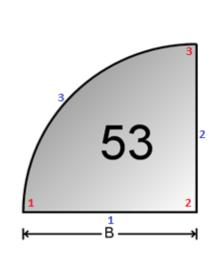


- Base = overall width
- Base = overall height
- Shape is a perfect circle



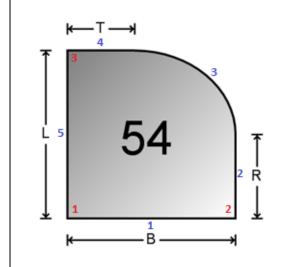
	Dimensional Constraints
Base:	Required
<u>L</u> eft:	N/A
Right:	N/A
<u>T</u> op:	N/A
<u>S1</u> :	N/A
<u>S2</u> :	N/A

Possible Configurations		urations	Shape Notes
			<ul> <li>Base = overall width</li> <li>½ Base = overall height</li> <li>Shape is a perfect half-round</li> </ul>



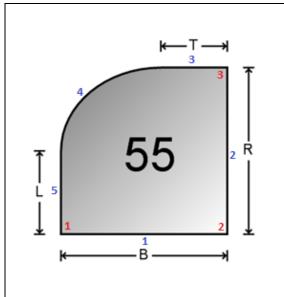
Dimensional Constraints	
Base:	Required
<u>L</u> eft:	N/A
Right:	N/A
<u>T</u> op:	N/A
<u>S1</u> :	N/A
<u>S2</u> :	N/A

Possible Configurations		urations	Shape Notes
			<ul> <li>Base = overall width</li> <li>Base = overall height</li> <li>Shape is a perfect quarter-round</li> </ul>



	Dimensional Constraints
<u>B</u> ase:	Required
<u>L</u> eft:	Required
Right:	Less Then Left; Required
<u>T</u> op:	Less Than Base; Required
<u>S1</u> :	N/A
<u>S2</u> :	N/A
urations	Shape Notes
	<ul> <li>Base = overall width</li> <li>Left = overall height</li> </ul>

- The following equation must be satisfied:
  - $\bullet$  L R = B T



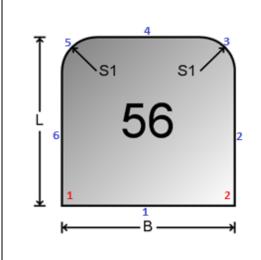
Dimensional Constraints		
<u>B</u> ase:	Required	
<u>L</u> eft:	Less Than Right; Required	
Right:	Required	
<u>T</u> op:	Less Than Base; Required	
<u>S1</u> :	N/A	
<u>S2</u> :	N/A	

Mirror Image	Possibl	e Contigi	urations
5.4			
54			

- Base = overall width
- Right = overall height
- The following equation must be satisfied:

**Shape Notes** 

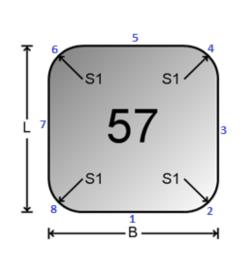
 $\bullet R - L = B - T$ 



Dimensional Constraints		
<u>B</u> ase:	Required	
<u>L</u> eft:	Greater Than S1; Required	
Right:	N/A	
<u>T</u> op:	N/A	
<u>S1</u> :	2 * S1 Less Than Base; Required	
<u>S2</u> :	N/A	

**Shape Notes** 

- Base = overall width
- Left = overall height



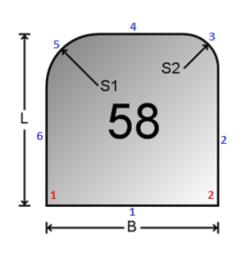
Dimensional Constraints		
Base:	Required	
<u>L</u> eft:	Greater Than 2 * S1; Required	
Right:	N/A	
<u>T</u> op:	N/A	
<u>S1</u> :	2 * S1 Less Than Base; Required	
<u>S2</u> :	N/A	

**Shape Notes** 

**Possible Configurations** 



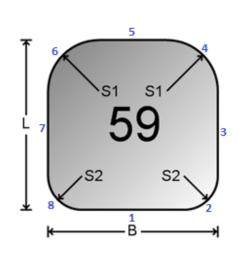
Base = overall widthLeft = overall height



Dimensional Constraints		
<u>B</u> ase:	Greater Than S1 + S2; Required	
<u>L</u> eft:	Required	
Right:	N/A	
<u>T</u> op:	N/A	
<u>S1</u> :	Less Than Left; Required	
<u>S2</u> :	Less Than Left; Required	

<b>Possible Configurations</b>			

- Base = overall width
- Left = overall height

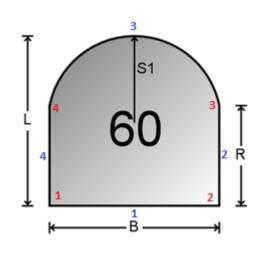


Dimensional Constraints		
Base:	Required	
<u>L</u> eft:	Greater Than S1 + S2; Required	
Right:	N/A	
<u>T</u> op:	N/A	
<u>S1</u> :	2 * S1 Less Than Base; Required	
<u>S2</u> :	2 * S2 Less Than Base; Required	

**Shape Notes** 

Possible Configurations			

- Base = overall width
- Left = overall height

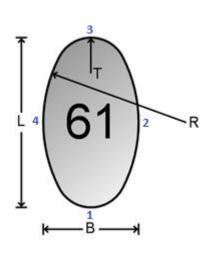


<b>Dimensional Constraints</b>		
<u>B</u> ase:	Less Than 2 * S1; Required	
<u>L</u> eft:	Less Than Right + S1; Required	
Right:	Less Than Left (Optional)	
<u>T</u> op:	N/A	
<u>S1</u> :	Required	
<u>S2</u> :	N/A	

## **Possible Configurations**

- (Base is zero)  $B = SQR(4*(2*S1*(L-R)-(L_R)^2))$ (S1 is zero)  $S1 = \frac{B^2}{4} + \frac{(L-R)^2}{2*(L-R)}$
- (Left is zero)  $L = Part \ 1 Part \ 2$
- $\circ \qquad \mathsf{Part} \ 1 = S1 + R; \ \mathsf{Part} \ 2 = . \ 5 * SQR \big( 4 * (S1 + R)^2 (B^2 + 4 * R^2 + 8 * S1 * R) \big)$

- (Right is zero) R = Part 1 + L S1
- o Part 1 =  $.5 * SQR(4 * (S1 L)^2 (B^2 + 4 * L^2 8 * S1 * L))$
- Base = overall width; Left = overall height



Dimensional Constraints		
Base:	Less Than 2 * Right; Required	
<u>L</u> eft:	Required	
Right:	Greater Than Top; Required	
<u>T</u> op:	Less Than ½ * Base; Required	
<u>S1</u> :	N/A	
<u>S2</u> :	N/A	



**Possible Configurations** 



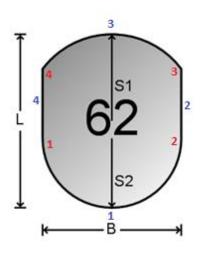
- Base = overall width; Left = overall height
- The overall height (L) can be found using the following equation:

• 
$$L = 2 * \left[ \sqrt{(R-T)^2 - \left(R - \frac{B}{2}\right)^2} + T \right]$$

**Shape Notes** 

• The overall Base can be found using the following equation:

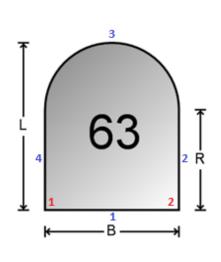
• 
$$B = 2 * \left[ R - \sqrt{((R - T)^2 - \left(\frac{L}{2} - T\right)^2)} \right]$$



Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Required			
Right:	N/A			
<u>T</u> op:	N/A			
<u>S1</u> :	2*S1 >= Base; Required			
<u>S2</u> :	2*S2 >= Base; Required			

<b>Possible Configurations</b>				

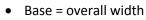
- Base = overall width
- Left = overall height

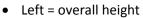


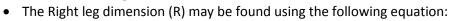
Dimensional Constraints				
<u>B</u> ase: Required				
<u>L</u> eft:	Greater Than ½ * Base; Rqrd			
Right:	Less Than Left (Optional)			
<u>T</u> op:	N/A			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

Possible Colligurations				

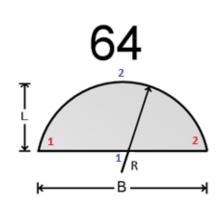






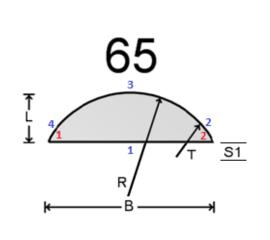


$$\bullet \quad R = L - \frac{B}{2}$$



Dimensional Constraints			
Base:	Required		
<u>L</u> eft:	Less than Right; Required		
Right:	Required		
<u>T</u> op:	N/A		
<u>S1</u> :	N/A		
<u>S2</u> :	N/A		

Possible Configurations		urations	Snape Notes
			• Base = overall width; Left = overall height • (Find the Base) $B = \sqrt{(8*L*R-4*L^2)}$ • (Find the Left) $L = R - \left[\sqrt{\frac{4*R^2-B^2}{2}}\right]$ • (Find the Right) $R = \frac{B^2 + (4*L^2)}{2}$



Dimensional Constraints				
Base:	Base: Required			
<u>L</u> eft:	<b><u>Left:</u></b> Greater Than Top; Required			
Right:	Greater Than Left; Required			
<u>T</u> op:	Less Then Right; Required			
<u>S1</u> :	Required			
<u>S2</u> :	N/A			

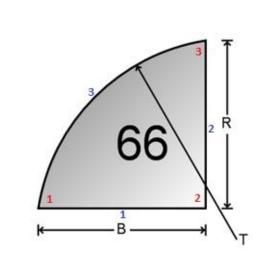


**Possible Configurations** 



- Base = overall width
- Left = overall height
- (Find the Base)  $B = 2 * [SQRT( (r-l-s1)^2 (r-t)^2 ) + SQRT(t^2 s1^2)]$

**Shape Notes** 



		<b>Dimensional Constraints</b>		
	Base:	Less Than Top; Required		
	<u>L</u> eft:	N/A		
6 2 R	Right:	Less Than Top; Required		
	<u>T</u> op:	Required		
2	<u>S1</u> :	N/A		
" \ <sub>T</sub>	<u>S2</u> :	N/A		
Possible Configurations		Shape Notes		

67	

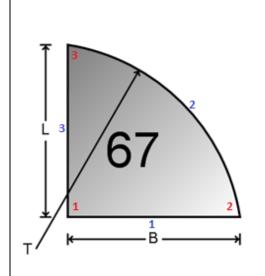






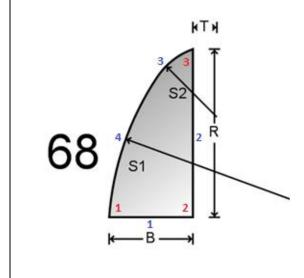
- Base = overall width; Right = overall width
  - Dimensions <u>must</u> satisfy the following equations to avoid shape bulging:

    - $B \le \sqrt{T^2 (T R)^2}$   $R \le \sqrt{T^2 (T B)^2}$



Dimensional Constraints				
<u>B</u> ase:	Base: Less Than Top; Required			
<u>L</u> eft:	<b><u>Left:</u></b> Less Than Top; Required			
Right:	N/A			
<u>T</u> op:	Required			
<u>S1</u> :	N/A			
<u>S2</u> :	N/A			

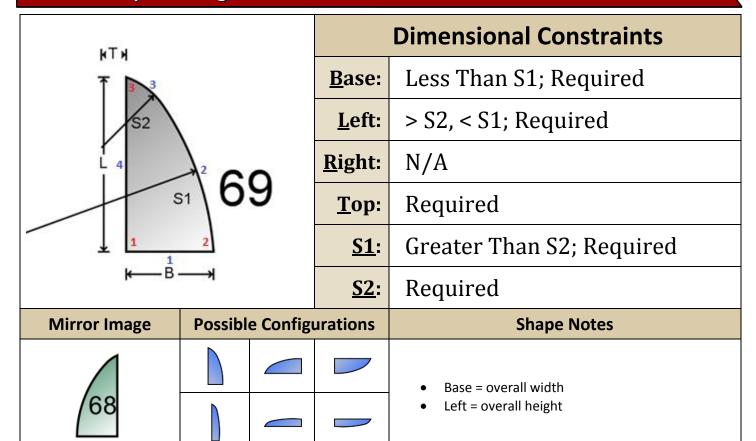
Mirror Image	Possible Configurations		urations	Shape Notes
66				<ul> <li>Base = overall width; Left = overall height</li> <li>Dimensions <u>must</u> satisfy the following equations to avoid shape bulging:</li> <li>B ≤ √T² - (T - L)²</li> <li>L ≤ √T² - (T - B)²</li> </ul>

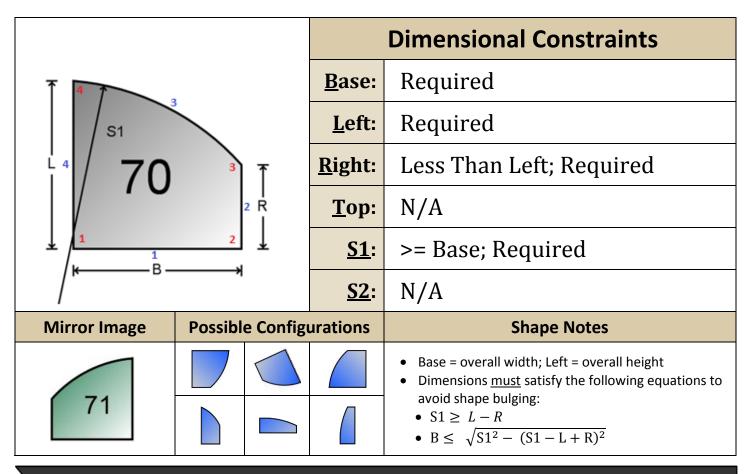


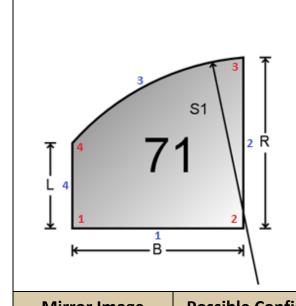
**Mirror Image** 

kТы		Dimensional Constraints		
	<u>B</u> ase:	Less Than S1; Required		
52	<u>L</u> eft:	N/A		
R R	Right:	> S2, < S1; Required		
	<u>T</u> op:	Required		
2	<u>S1</u> :	Greater Than S2; Required		
→1	<u>S2</u> :	Required		
Possible Configurations		Shape Notes		
		Base = overall width		

Right = overall height



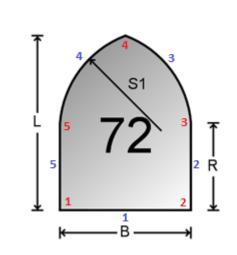




	Dimensional Constraints			
	Base: Required			
	<b><u>Left:</u></b> Less Than Right; Required			
	Right:	Required		
	<u>T</u> op:	N/A		
	<u><b>S1</b></u> : >= Base; Required			
•	<u>S2</u> :	N/A		
gurations		Shape Notes		

iviirror image	Possible Configurations			
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- Base = overall width; Right = overall height
- Dimensions <u>must</u> satisfy the following equations to avoid shape bulging:
  - $S1 \ge R L$
  - $B \le \sqrt{S1^2 (S1 R + L)^2}$



Dimensional Constraints				
Base:	Required			
<u>L</u> eft:	Required			
Right:	Less Than Left; Required			
<u>T</u> op:	N/A			
<u>S1</u> :	>= ½ Base; Required			
<u>S2</u> :	N/A			

Possible Configurations				Shape Notes
			•	Base = overall width; Left = overall height
			•	Dimensions $\underline{\text{must}}$ satisfy the following equation to avoid a "keyhole" condition: • $S1 \ge L - R$