

CONSTRUCTION NOTES & CUT LIST

1. Stiff, strong, and light woods are preferred for the arms. Elm, ash, hickory, and beech are all excellent choices. Because the arms are under considerable stress when the blade is tensioned, IT IS VITALLY IMPORTANT THAT THEY BE FASHIONED ONLY FROM STRAIGHT GRAINED AND DEFECT FREE WOOD so they do not split or break.

2. To reduce the weight of the saw, use a lightweight wood for the stretcher. Pine, cedar, and basswood are all excellent choices.

3. This pattern is designed to work with the hardware & blades from Blackburn Tools (BlackburnTools.com), but may work with others with modification.

4. Arm blank dimensions (2 required):  
 $\frac{3}{32}$ " x  $1\frac{3}{4}$ " x 15"

5. Stretcher blank dimensions (1 required):  
16" blades -  $1\frac{5}{16}$ " x  $1\frac{1}{2}$ " x 18"  
24" blades -  $1\frac{5}{16}$ " x  $1\frac{1}{2}$ " x 26"

6. Handle blank dimensions (2 required):  
 $1\frac{9}{32}$ " x  $1\frac{9}{32}$ " x  $6\frac{1}{2}$ "


7. Toggle blank dimensions (1 required):  
 $\frac{1}{4}$ " x  $\frac{3}{4}$ " x  $8\frac{3}{4}$ "

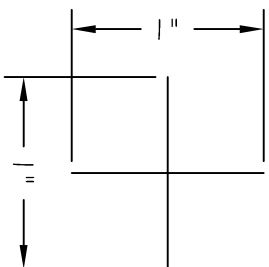
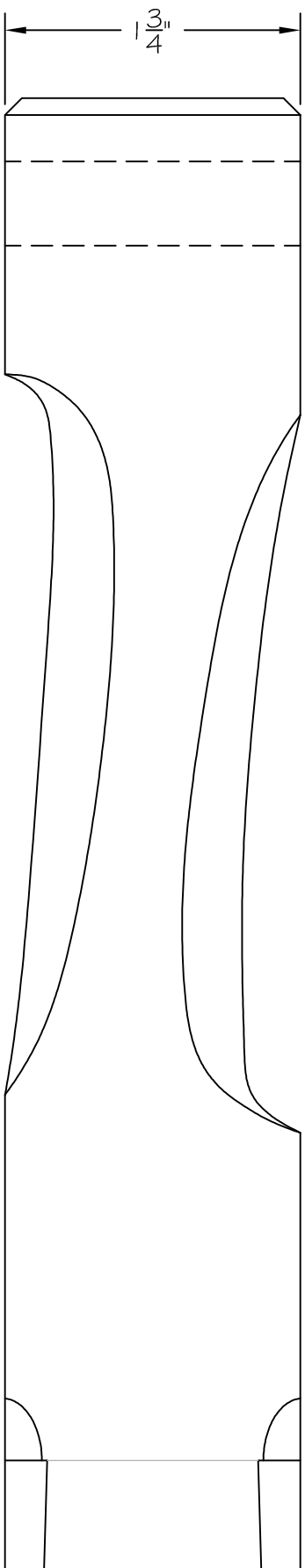
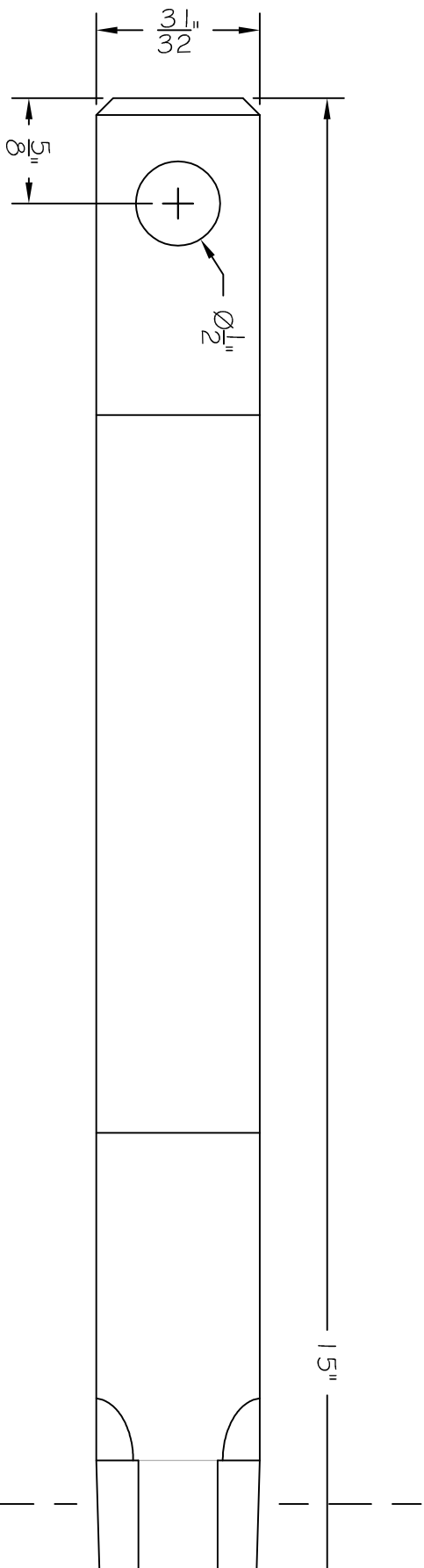
8. Whorl blank dimensions (1 required):  
 $\frac{1}{2}$ " x 1" x 3"

9. Cord (5 to 6 wraps, minimum):  
Waxed hemp is a traditional choice, but modern alternatives with high strength and low stretch properties may prove more practical; mason's line and braided fishing line are two such choices. Keep in mind that the larger the diameter of the cord, the fewer the turns required to tension the saw; this also means that it is more difficult to make small changes in the tension of the blade.


DETENSION THE SAW WHEN NOT IN USE.

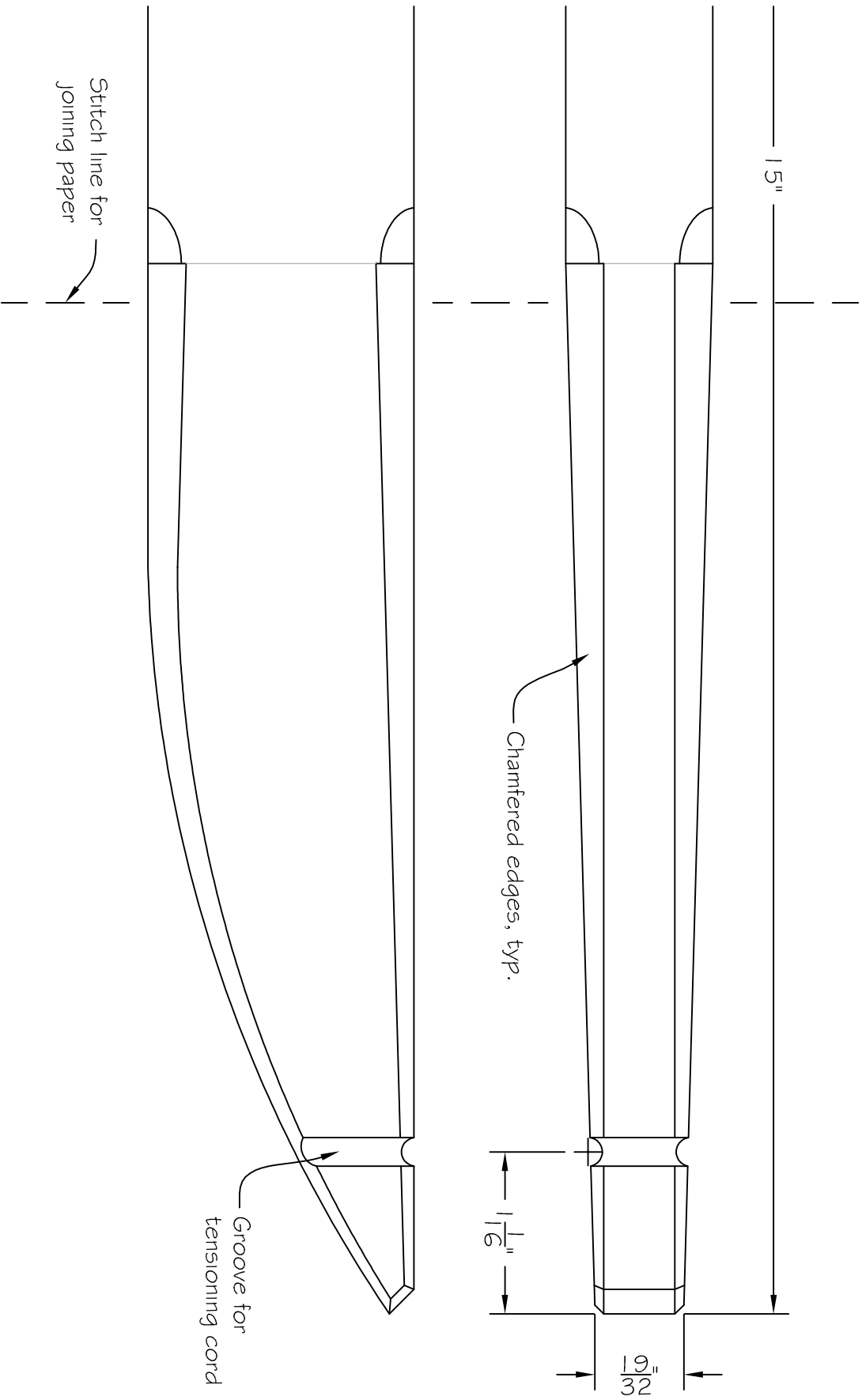
VERIFY ALL DIMENSIONS BEFORE COMMITTING TO ANY CUTS

Date	Scale		
22 November 2016	1:1		
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		<b>Title</b>	Frame saw construction notes
		Sheet 1 of 9	

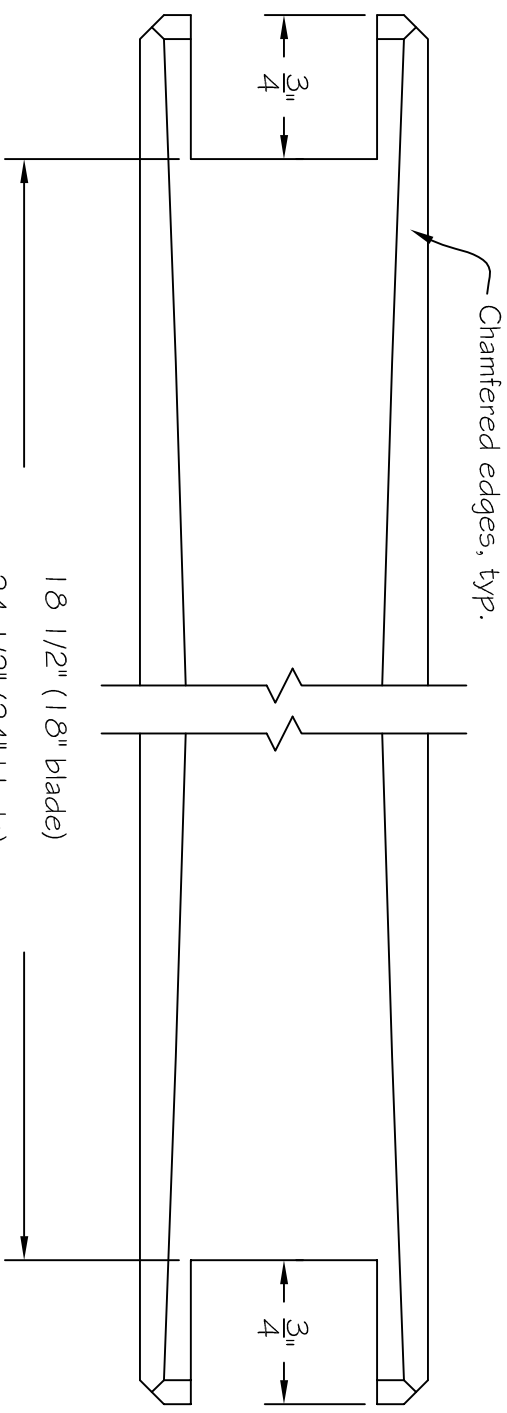
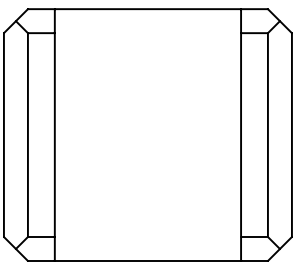


Stitch line for  
joining paper

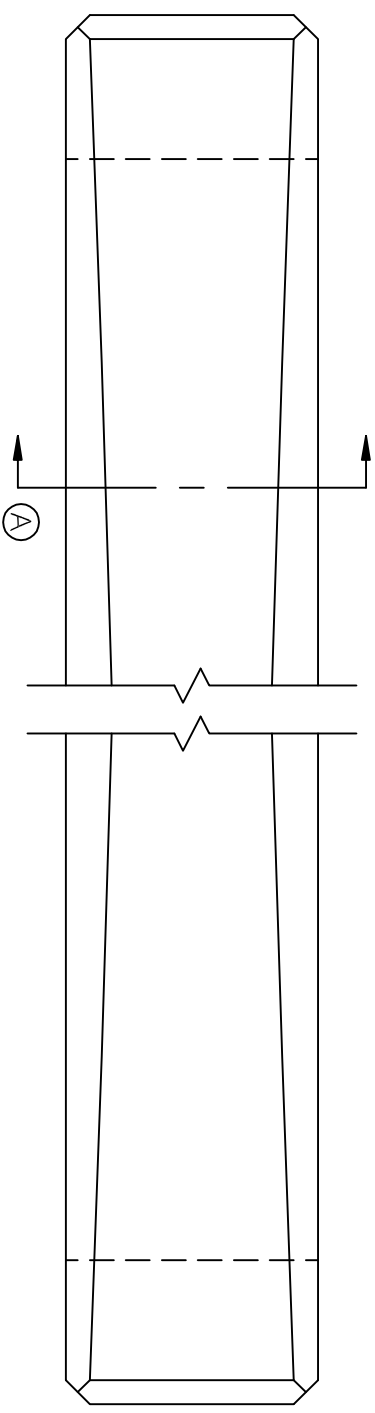
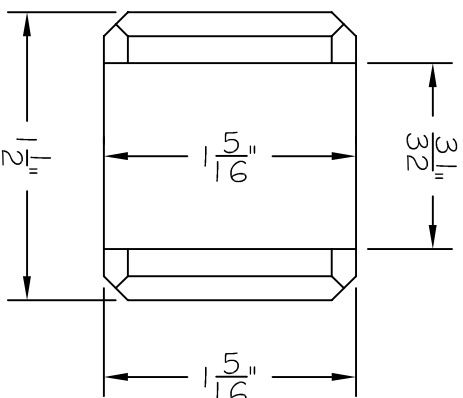
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Title			
Frame saw arm template, first sheet			



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Title	<p><b>BLACKBURN</b></p> <p>ISAAC SMITH  PO BOX 263  UNIONVILLE, PA 19375  <a href="http://BlackburnTools.com">BlackburnTools.com</a></p> <p>Frame saw arm template, second sheet</p>		

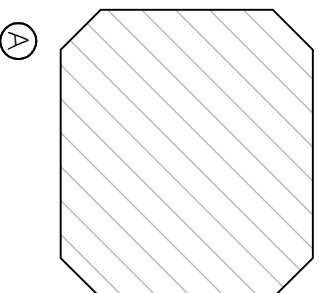


(See note 4 if using other blade)

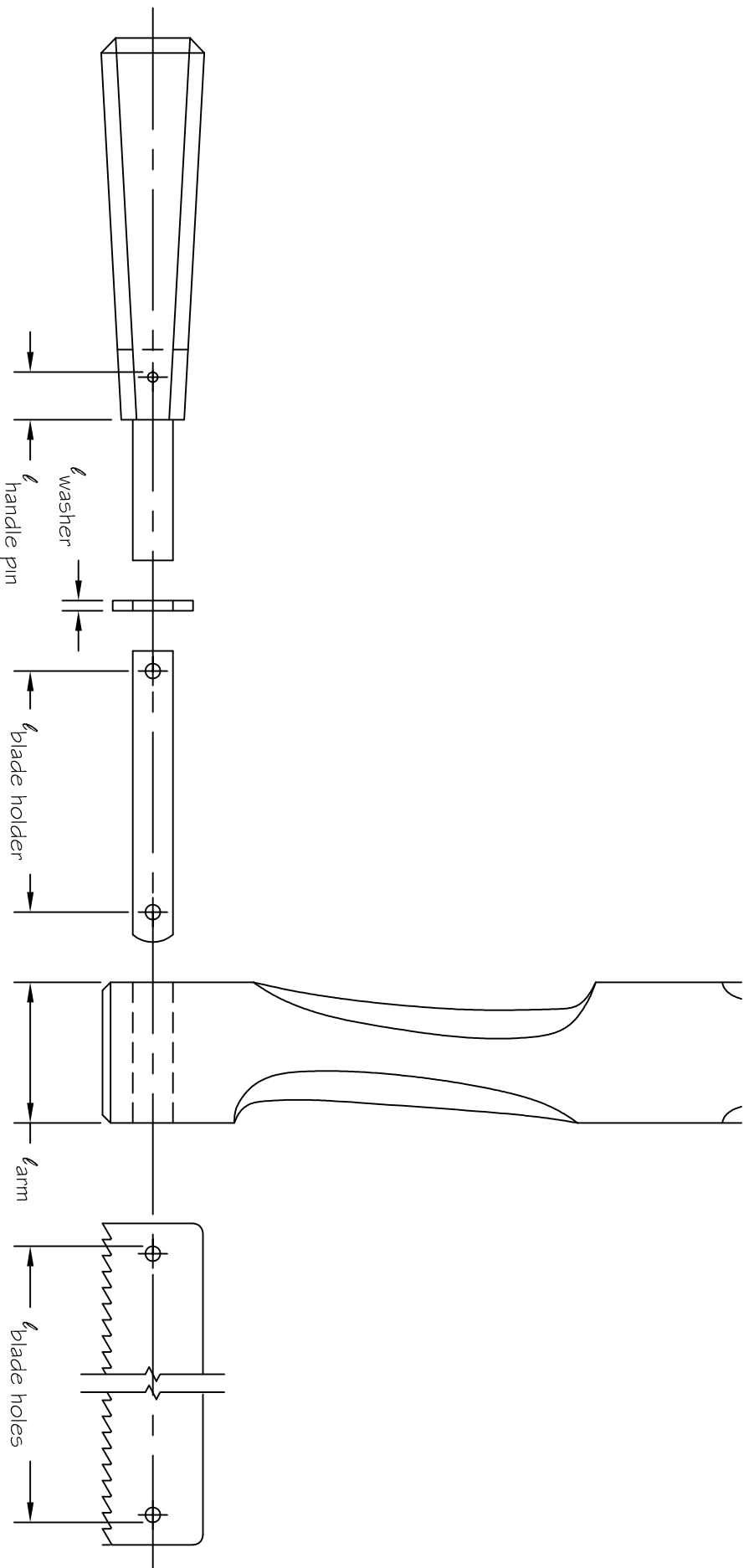


## NOTES

1. Center bridle joint on end of stretcher.
2. Bridle joint on other end is identical.
3. For ease of assembly, cut bridle joint so that it fits just snugly enough to hold parts together.
4. To determine stretcher length for blades not made by Blackburn Tools, see Sheet 5.



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Title	<p><b>BLACKBURN</b></p> <p>ISAAC SMITH PO BOX 263 UNIONVILLE, PA 19375 <a href="http://BlackburnTools.com">BlackburnTools.com</a></p> <p>Frame saw stretcher</p>		




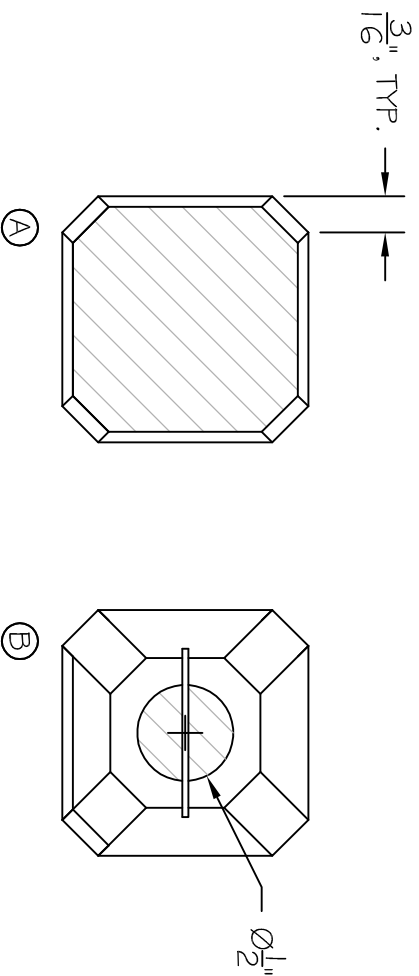
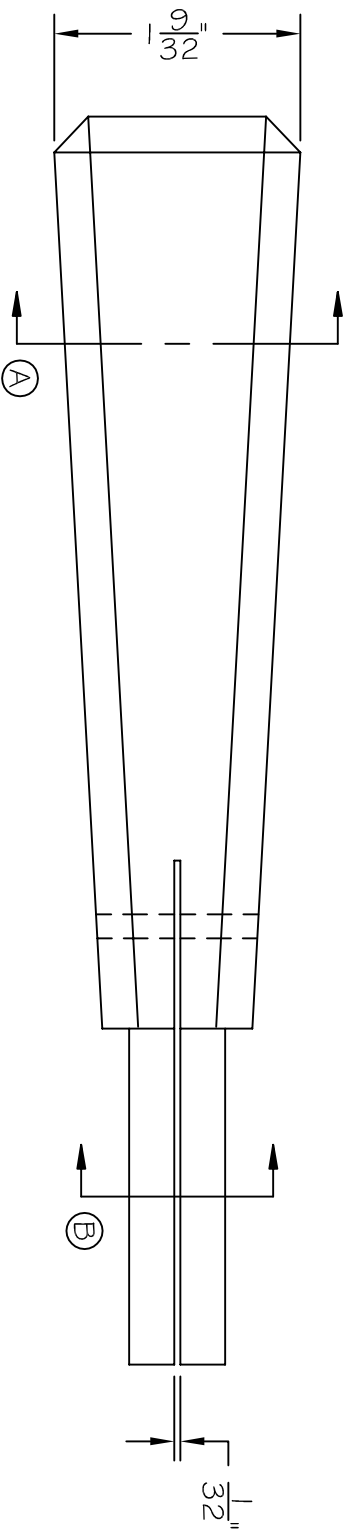
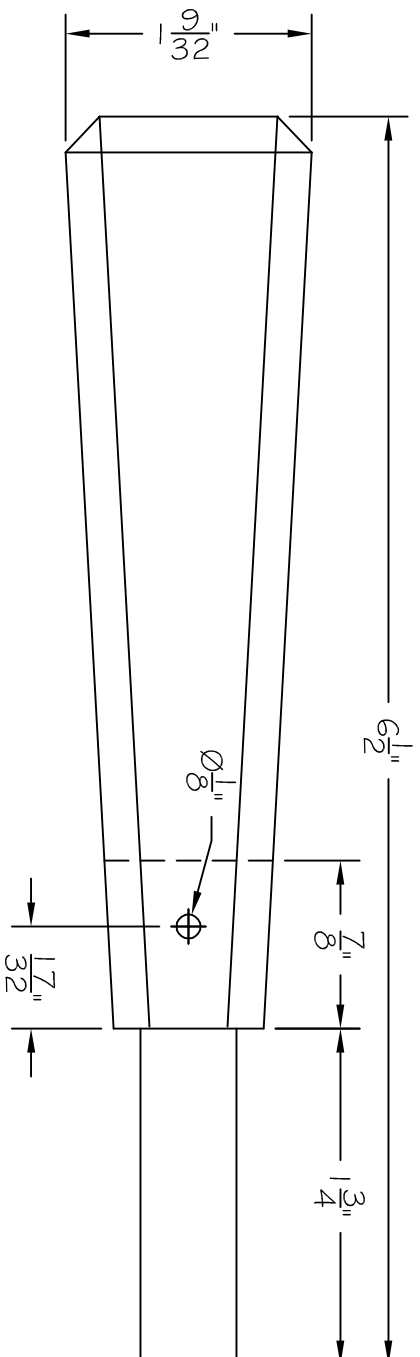
$$\text{Stretcher length} = l_{\text{blade holes}} + l_{\text{blade holder}} - l_{\text{handle pin}} - l_{\text{washer}} - l_{\text{arm}}$$


$$\text{Stretcher length} = l_{\text{blade holes}} + 1 \frac{1}{6}''$$

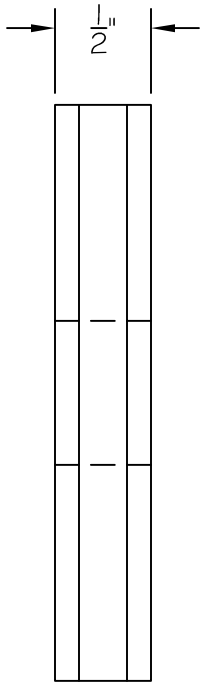
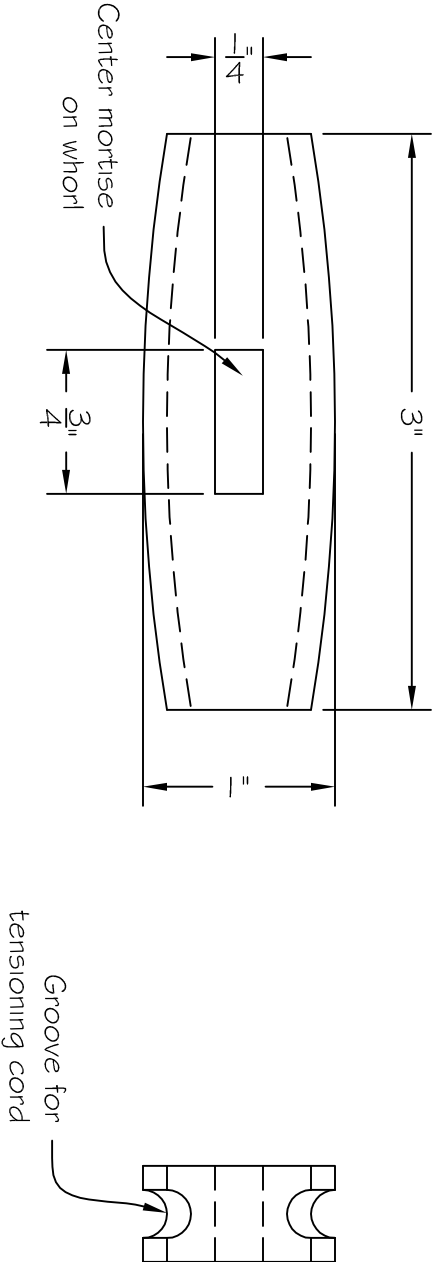
## NOTES


1. The stretcher length calculated above is the distance between the blade joint shoulders, NOT the overall length.
2. This calculation only works when following the plans and using the hardware provided by Blackburn Tools.
3. Verify all measurements before cutting.

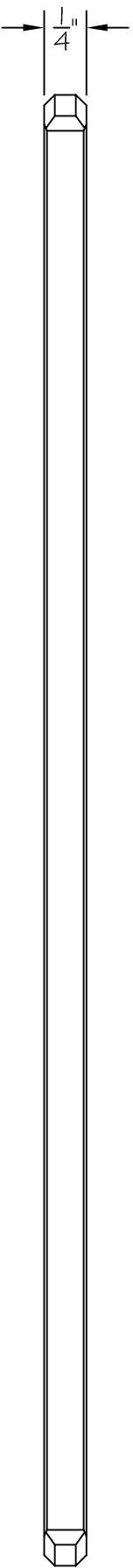
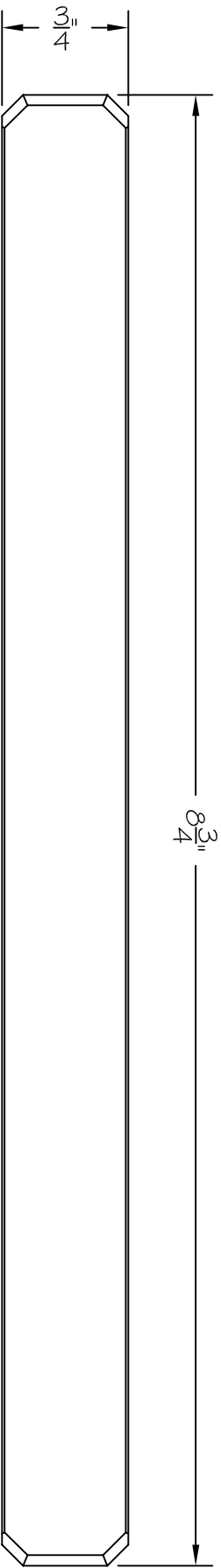
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<div><p>ISAAC SMITH PO BOX 263 UNIONVILLE, PA 19375 <a href="http://BlackburnTools.com">BlackburnTools.com</a></p></div> <div>Title</div> <div>Frame saw stretcher length calculation</div>			




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Sheet 6 of 9		
Title Frame saw handle		

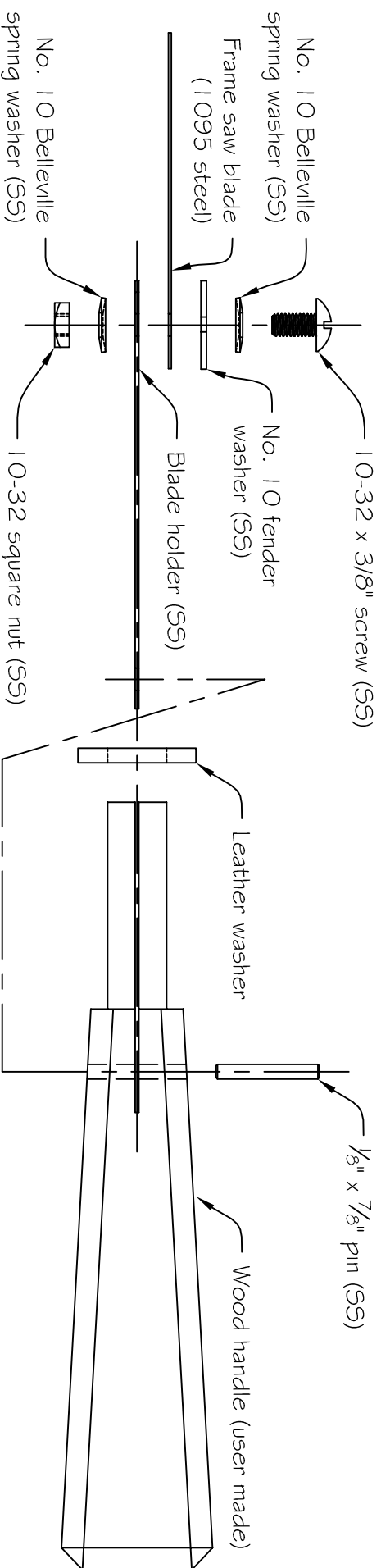


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Title	<div><p>ISAAC SMITH PO BOX 263 UNIONVILLE, PA 19375 <a href="http://BlackburnTools.com">BlackburnTools.com</a></p></div> <p>Frame saw whorl</p>		



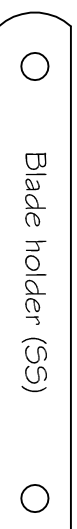
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Sheet 8 of 9		
Title Frame saw toggle		






## NOTES

1. Blade attaches to rounded end of blade holder, as shown below.



Blade attaches to this end

2. Belleville spring washers are oriented with their concave sides facing each other.
3. Use a screwdriver and wrench to tighten the screws and nuts to prevent them from loosening with vibration.

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Sheet 9 of 9		Title Frame saw handle assembly