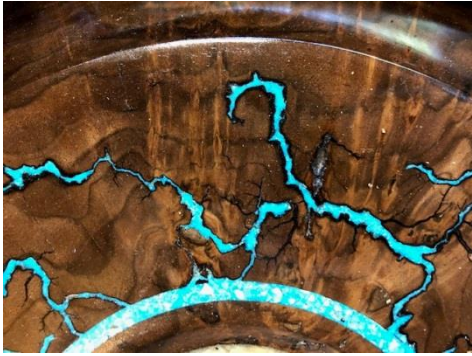
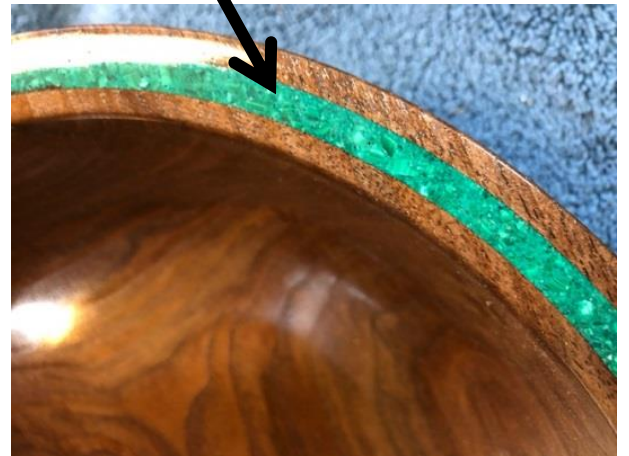


# Stone Inlay

June 2020  
Bob Bley



Today's Live Project



Today's Presentation



# Topics to be covered

1. Stones-How to crush and process
2. Patterns-creating/transferring
3. Cutting the pattern
4. Filling with stone
5. Sanding the stone

# I suggest starting with Craft Supplies



 View Larger  Multiple Views



## Turners Select Crushed Stone

**Our price: \$5.85 – \$14.50**

[View Product Details](#)

Color:

Select




Select options above to check availability

- Uniform and consistent color!
- No large stones though.
- Less grinding! 😊



## **MINERALS FOR INLAY**

*Prepared by Stephen Hatcher ~ summitdesign@comcast.net ~ www.stephenhatcher.com ~ (360) 915-9008*

Mineral	Azurite	Biotite	Calcite	Chrysocolla	Dolomite	Fluorite	Howlite	Malachite	Turquoise
Common Name	same	Black Mica	Alabaster	same	same	same	same	same	same
Color	Deep Blue	Black	Light blue, green, red, orange, black	Light blue to green	White, pink, brown	Purple, red, green, blue	White	Green with streaks	Blue, green
Color Depth	Excellent	Medium	Poor	Excellent	Medium	Poor	Excellent	Excellent	Excellent
Clarity	Poor	Medium	Excellent	Poor	Medium	Excellent	Poor	Poor	Poor
Hardness	3.5 - 4.0	2.5 - 3.0	3.0	2.0 - 4.0	3.5 - 4.0	4.0	3.5	3.5 - 4.0	5.0 - 6.0
Image									

*Color depth refers to how well the color is maintained as the mineral is crushed into smaller sizes (or inlaid in a shallow layer). Clarity refers to how well the crystals reflect and refract light. Excellent clarity is needed for translucent inlays.*

To research other suitable minerals try these on-line references or check books on mineral properties.

[www.theimage.com/mineral/minerals1.html](http://www.theimage.com/mineral/minerals1.html) (an excellent site with mineral names, properties, and photos)

[www.greatsouth.net/](http://www.greatsouth.net/) (my preferred source for buying on-line and an excellent reference)

Look for minerals in the hardness range of 3 to 6. A fingernail is 2.5 and that's getting a little soft while quartz crystals are 7+ and much too hard. The best range is 3 to 4 as it will finish well with hard woods like maple and cherry yet be durable. There are many options.



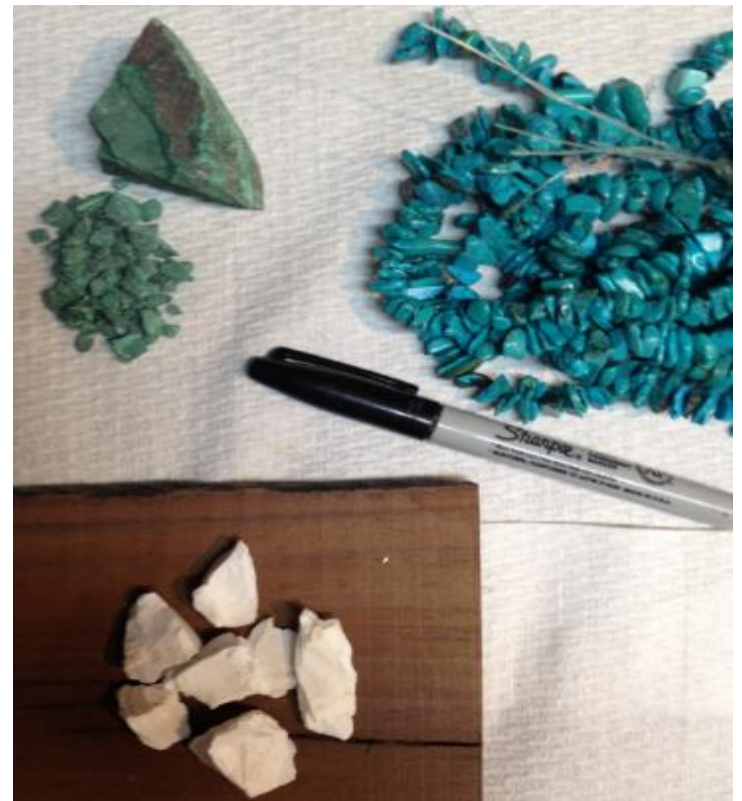
# Bulk Stone Available

## Many Sources

EBay

Gem Shows

Local clubs



# Fake stones might not work.





# Don't mess with imperfect colors.

- Brown will overtake and contaminate the color



Even a small amount of brown will contaminate badly.



# Stone Crushing

Capped  $\frac{3}{4}$ " pipe inside of  
capped 1.5" pipe

(Avoid galvanized as it chips off)



Train rail and sledge on ridged surface  
Eye and lung protection required at all times!  
(Careful what surface you set this on)



# Other stone crushing methods

- Steel bar and metal coffee pot
- With some stones(Calcite) hit it only once or twice and you will retain some large chunks otherwise, you will powderise it too fast. You can always hit it again for finer stone.



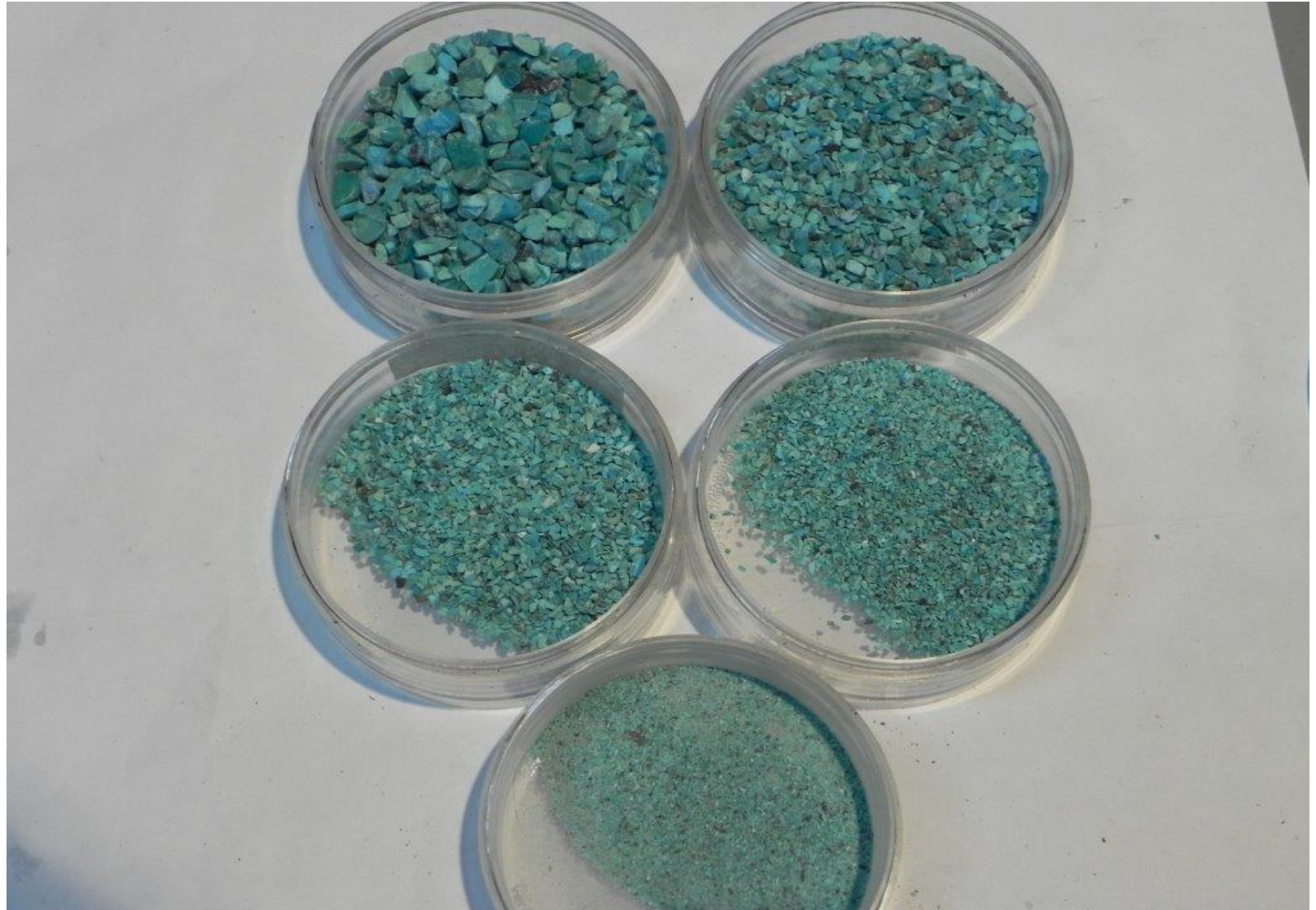


# Sieve/Colander/Strainer



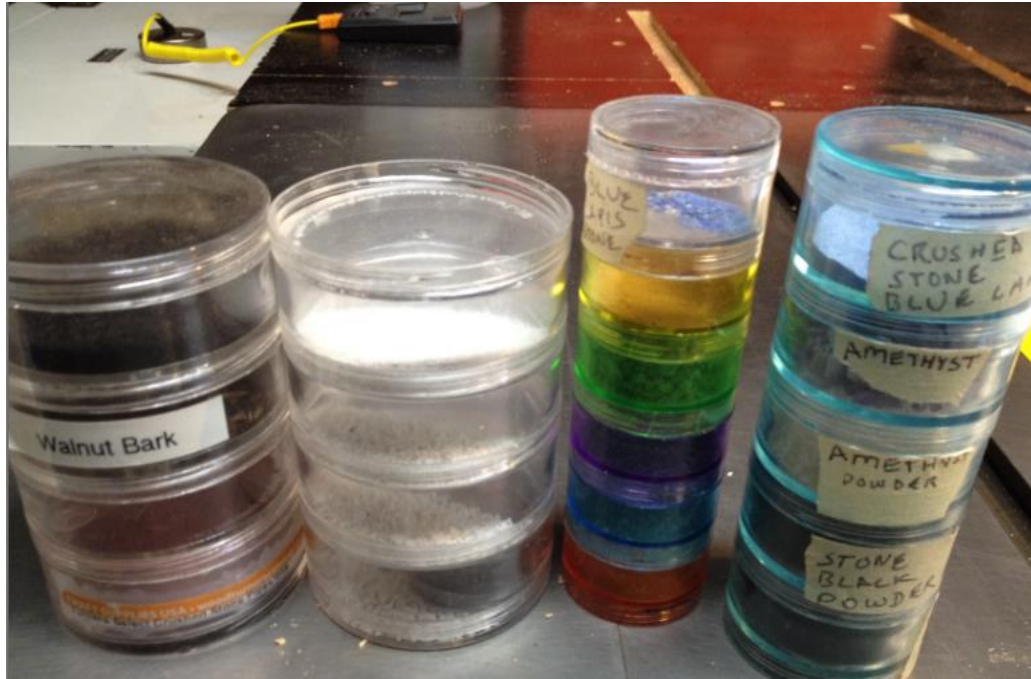
Found on E-bay for  
\$18

# Different size stones based on sieves used





# Stacking Storage



Clear is best. Not too large

Lee Valley



# Stone Applicators-Any tubing



Pen insert

Soda straw

Swizzle stirrer

# Mixing Black and turquoise



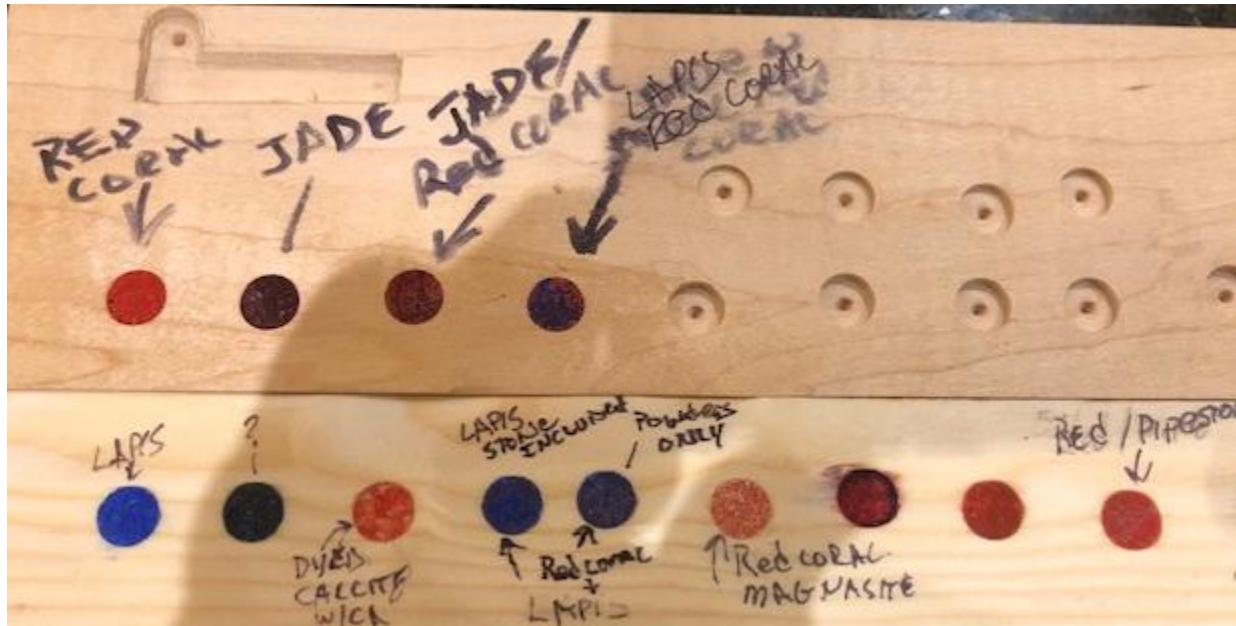
# Mixing large white with fine black



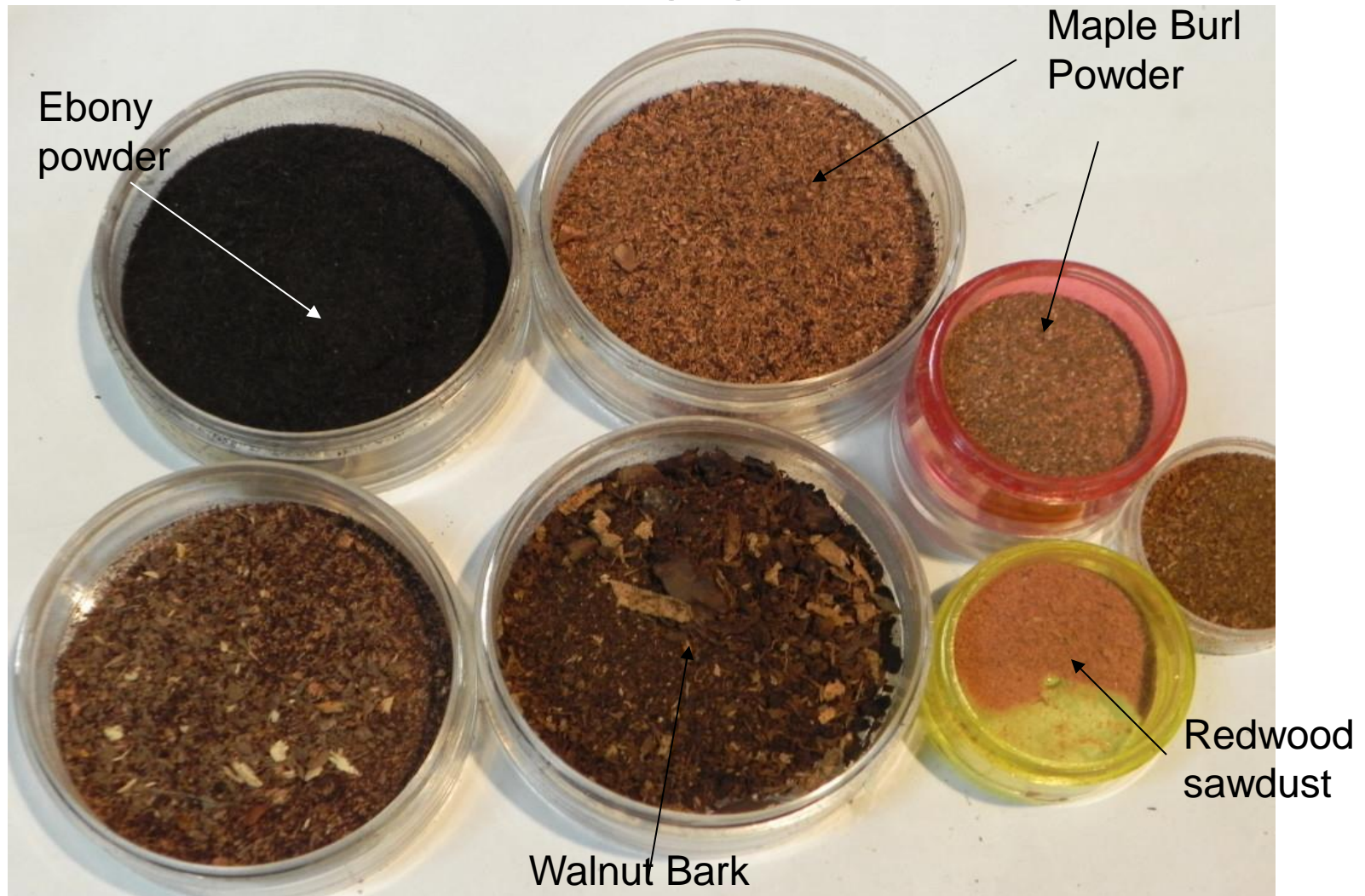
Pick colors that will be visible on the wood.



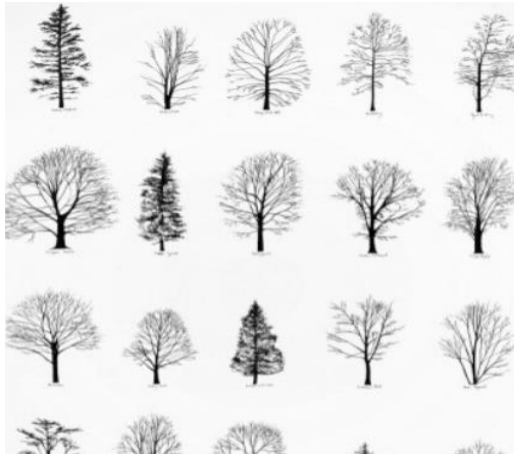
# Test out and label samples



Not just for stone-Can use wood shavings  
or other materials as well. Coffee grinder  
etc



# Finding Patterns-Unlimited Options



Google "Images"

Carpet/Table cloths



Nature photos





# Transfer paper-various colors



Saral Transfer Paper 12in  
Wide - 12 Foot Roll  
Graphite Color



Saral transfer rolls are wax-free, non-toxic, acid free paper allows you to transfer your design from a sketch, pattern, template or free hand to any surface; for tracing or

... [more »](#)

**\$10.29**

+\$0.90 tax and \$4.99 shipping

 [Blick Art Materials](#)



Choose a color or method which will show up on the particular color of wood that you are working with.

White shows well on Walnut

Transfer paper is more visible than this particular pencil

Hand drawings are just fine!

# Various cutters available

Rotary cutting burrs-Carbide and coarse



Non-loading structured carbide coating



Not the smooth diamond coated-They do not cut.





# Various Carvers

- Dremel



- Foredom



**Laser engravers?-**  
accuracy? Issue on curved  
surfaces? Machined look, not  
organic? May be better than  
by hand for perfect curves  
such as Celtic patterns. Re-  
zeroing between colors

- Black and Decker-around \$35

Foot controllers available for all models



# Dremel compatible-Cutter depth Control Bases



Around \$14



Hard to use on curved surfaces!



Around \$50

- Depth of cut-3/16" for translucent materials.
- Shape of recess -Undercut not required, but a perpendicular to surface cut is good.
- Gravity can be a challenge on curved surfaces. Damns and repositioning of piece required
- Painters tape when hole goes all the way through wall.



# My 8 year Old Niece! Carves Our First Piece



Design cut right through  
attached photocopy (glue  
stick)





# Nice, But missing Something Special



18"x 4 ½" Maple Burl



# Pattern cut in 18" Maple burl



# Pattern cut in Maple burl









# Large Calcite stone placed

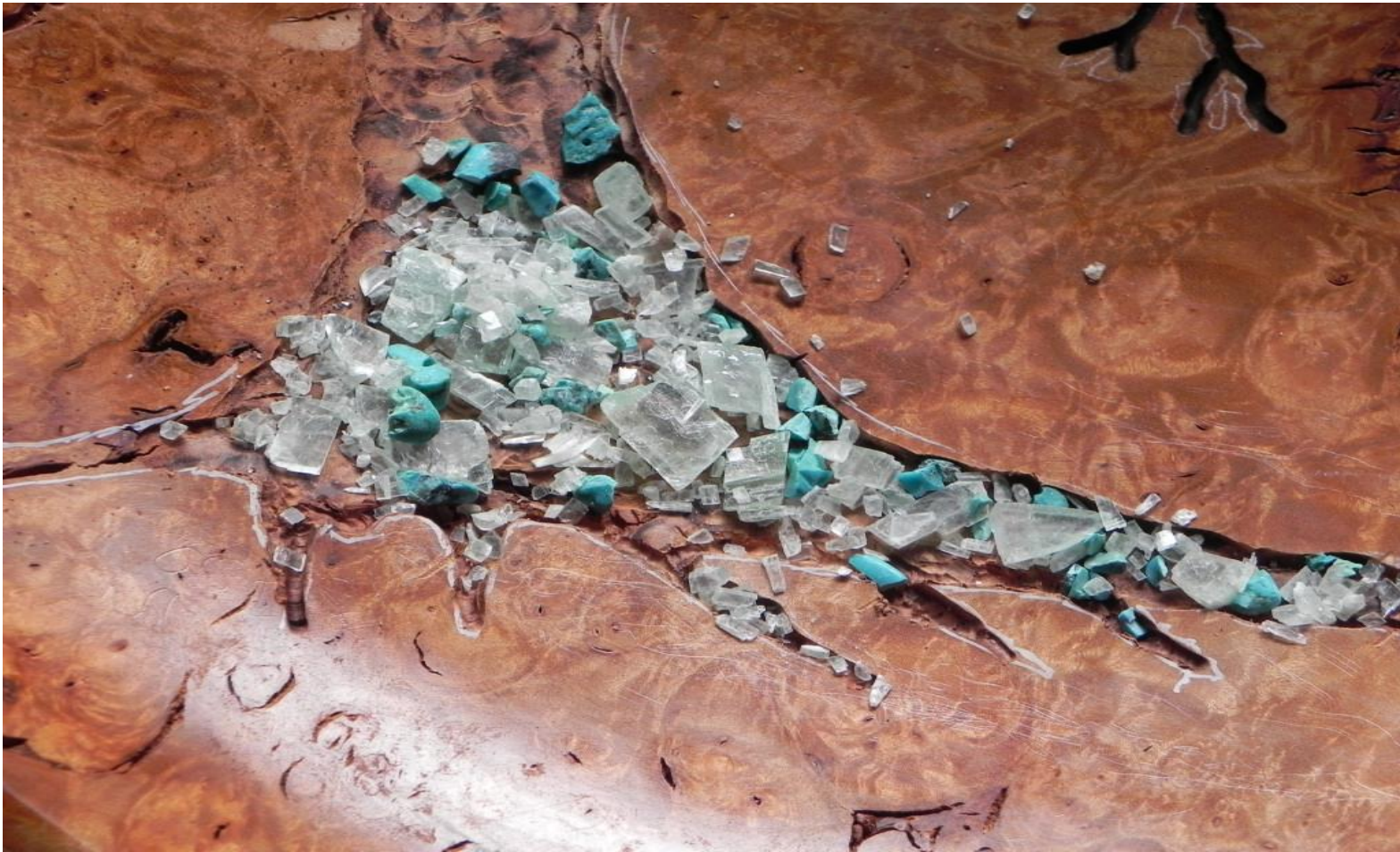


# Large Turquoise stone added





# Smaller Calcite added





# Black powder added



Rest of tree filled with smaller  
mixture of fine black and turquoise



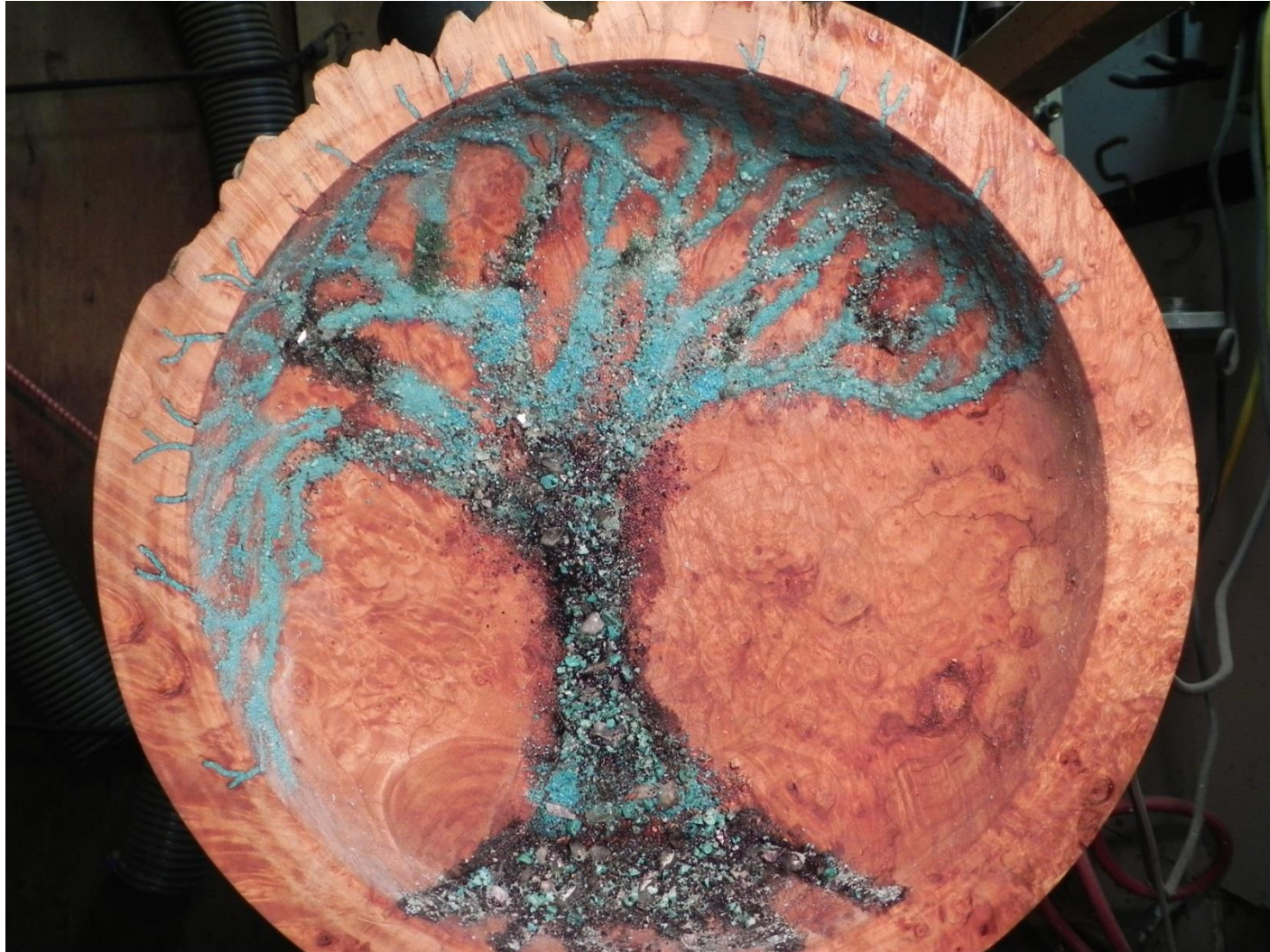


CA applied all over-Good  
Ventilation required!





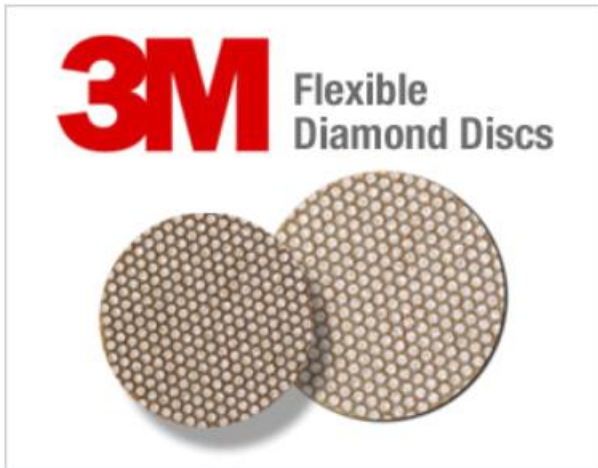
CA applied all over (Different piece)



# Some Special Sanding Discs



**Cubitron ceramic sanding discs**  
**The Sanding Glove**



**Designed for fast leveling  
on stone inlay, glass,  
ceramics, non-ferrous  
metal, etc**

**2"=\$18 and 3"=\$38**

# Tips

- Wood Selection-Preferably a hardwood so excess sanding does not remove neighboring wood as fast as if it was a softwood.
- Sanding pad Selection-Stiff/Ridged backing so it hits the stone only and does not conform around the stone and remove wood.
- You can use gap filing CA to fill spaces/voids.
- Use CA dispenser tips for accuracy.
- Don't keep trying to squeeze the CA bottle for large areas. Turn the bottle upright and let some air into the bottle and it will come right out



# Shellac between each process



Fill small holes after shellac and  
rough sanding-repeat





Leaves milled out and then filled  
with fine Malachite

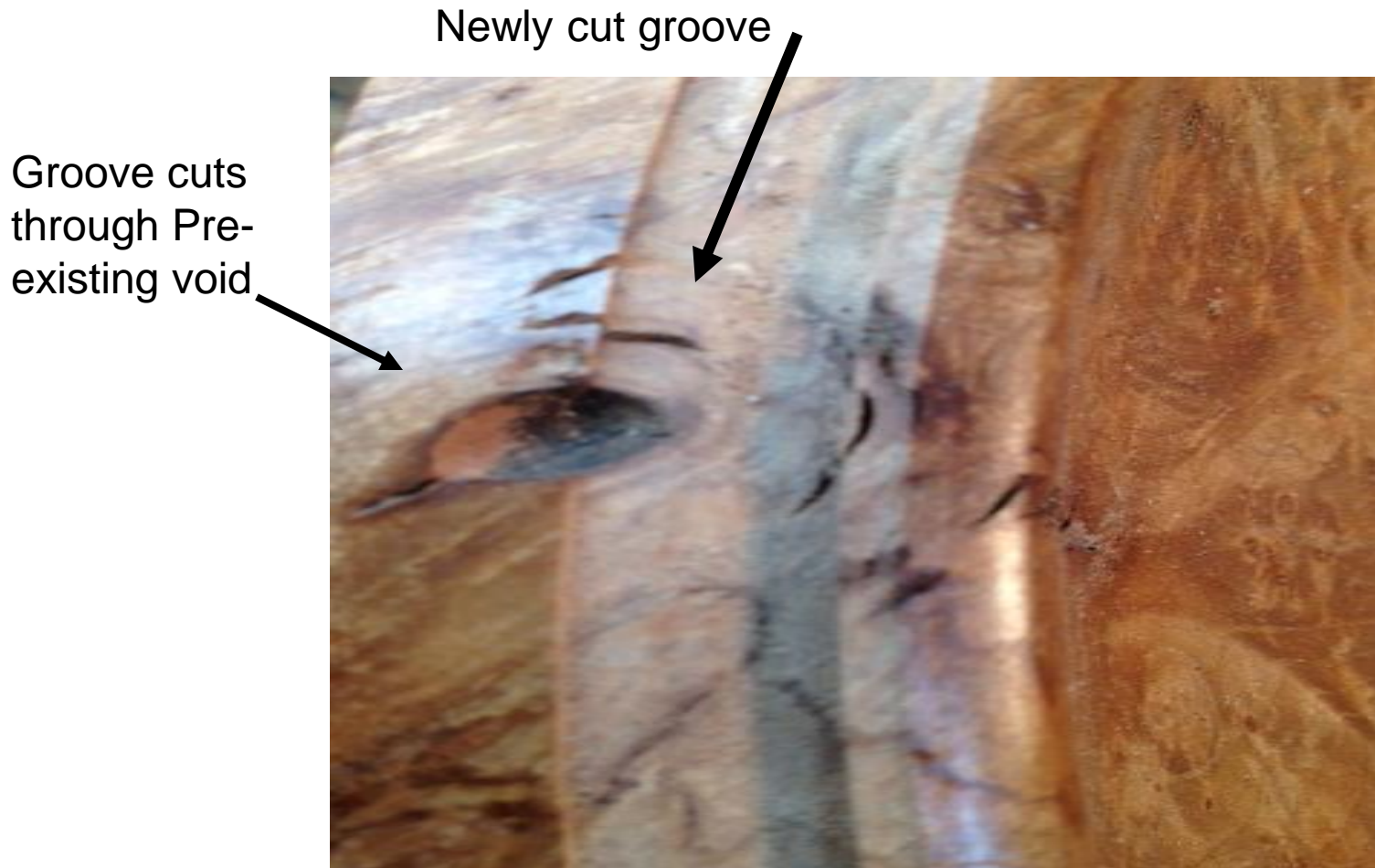




# Leaves filled and rough sanded



# Fill all voids in piece before cutting any patterns or grooves etc!





# Fill to edge of crack





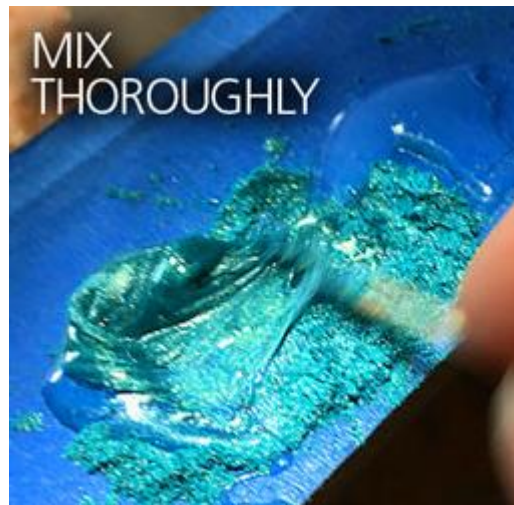
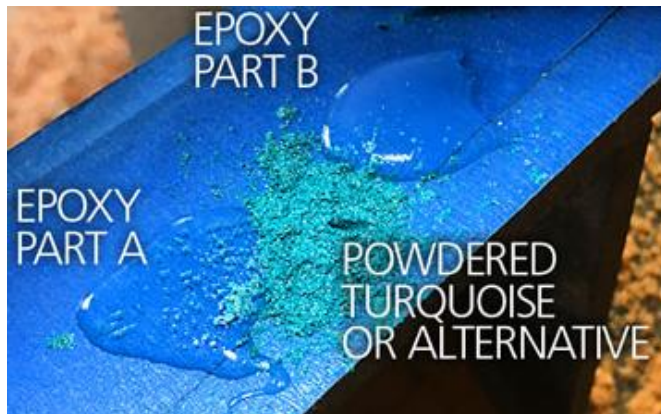
# Saturate with thin CA

Add enough CA to make it look wet. Use tips that come with CA bottles.



# Other options:

- Premixing stone with epoxy (West Systems 105/205)
- Pouring into groove and waiting for cure.
- Premixing thick CA with stone and working quickly



PLACE LARGER TURQUOISE  
IN MEDIUM CA GLUE



PLACE MEDIUM TURQUOISE  
WITH MEDIUM CA GLUE



FILL TOP WITH  
CA GLUE OR EPOXY AND  
TURQUOISE DUST SLURRY



LEVEL SURFACE BY  
TURNING AND/OR SANDING



Depending how high and hard the stone is. First pass used  
diamond wheel (Harbor Freight) to level the big stuff. Can  
use 80 Grit paper  
Stay Away from the wood!

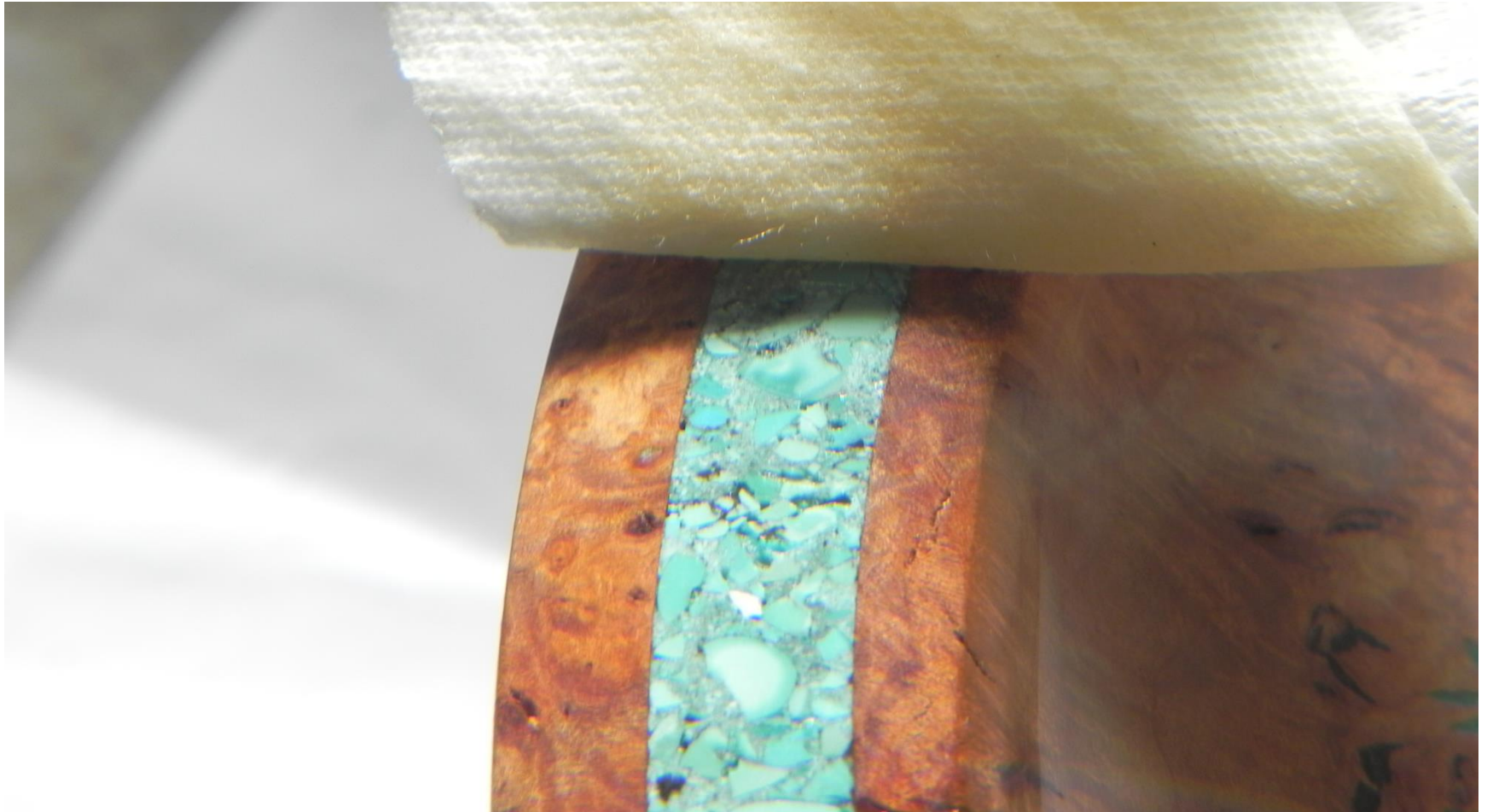




Ventilation or dust collection and  
mask and eye protection required!  
Gloves are also smart



Shellac after sanding and before filling  
each time-so that the CA does not  
penetrate and stain the wood.





Good Lighting and Ventilation required-  
Magnification also very helpful.





# Defining color borders



# Using veneer and paper as dividers





# 3D Printed Forms



Can be printed in  
different colors,  
thicknesses,  
heights





# Before



# Finished Piece





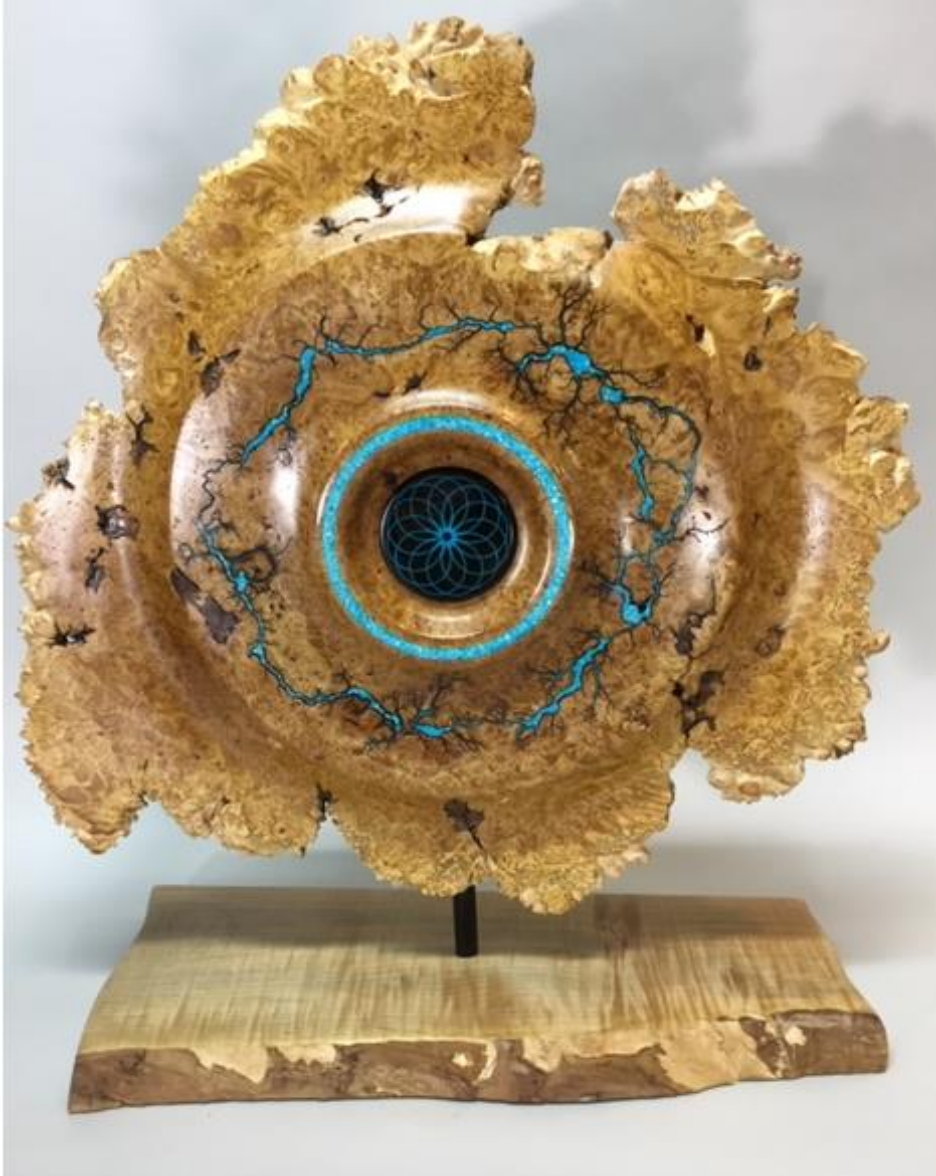
# Finished Piece







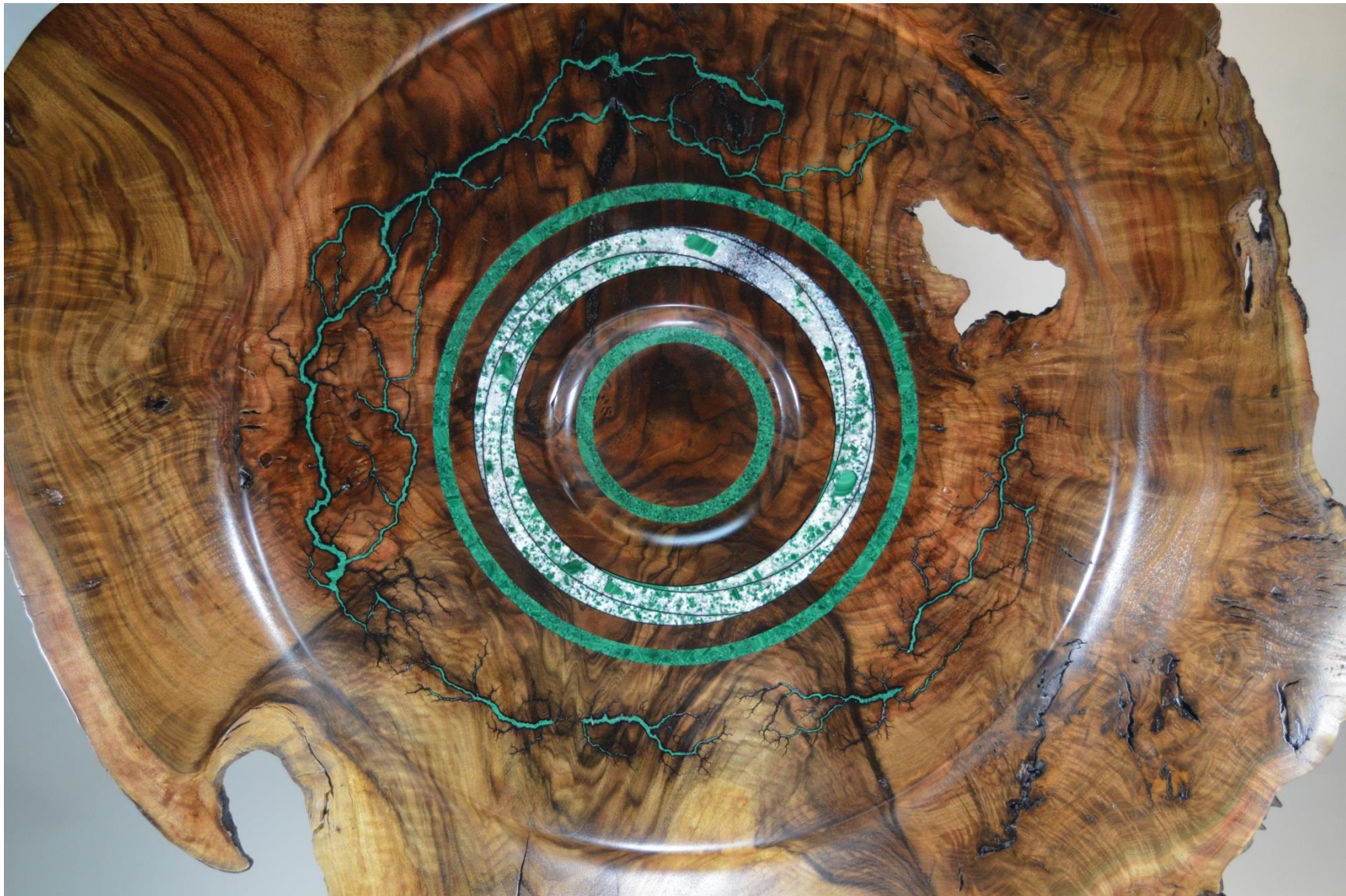




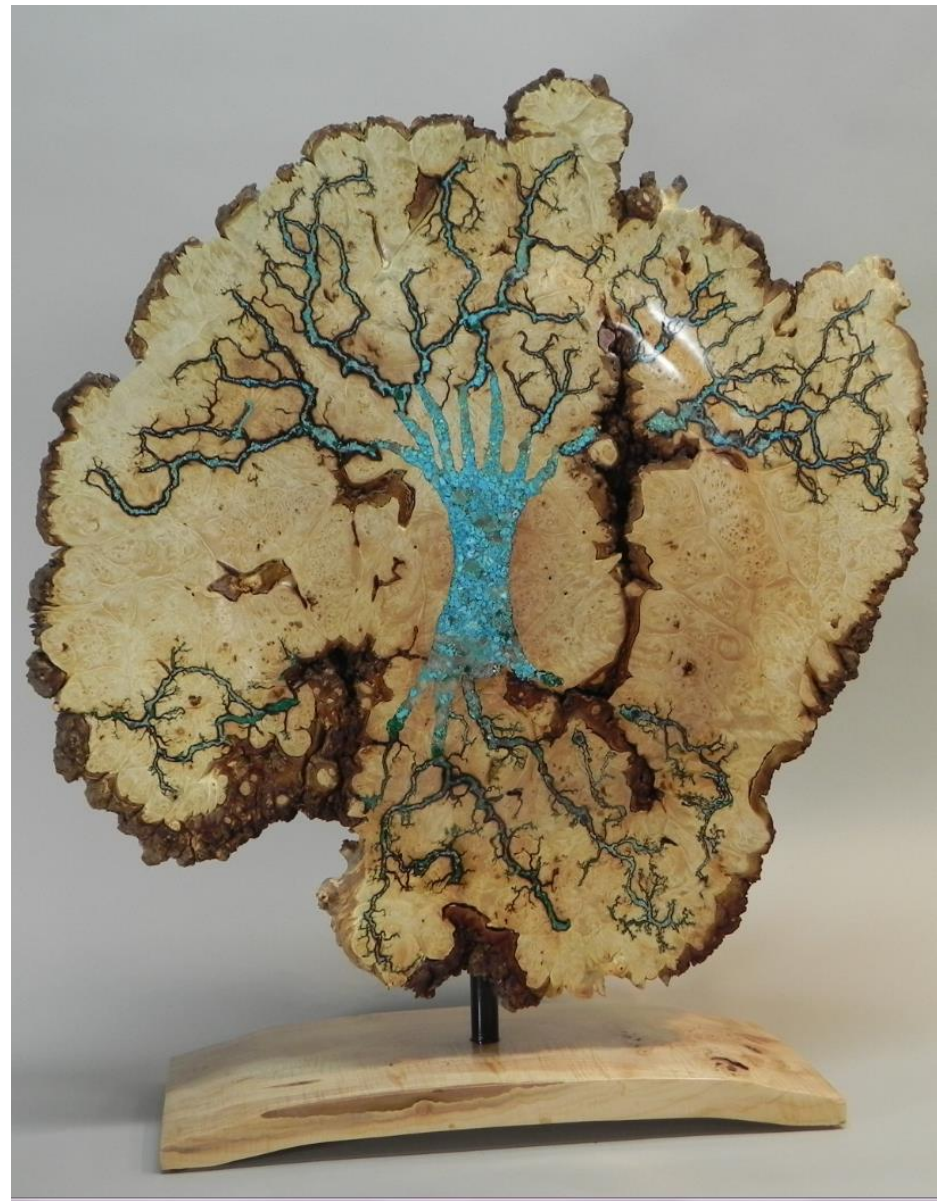
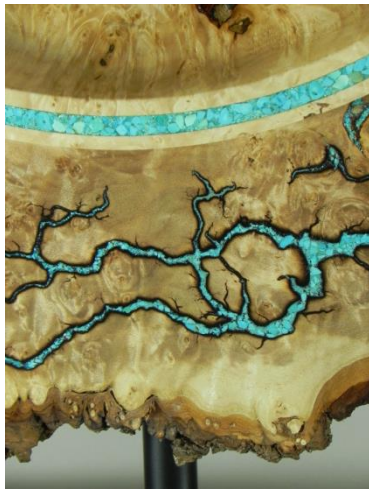




Walnut burl at trunk base-Malachite, Mother of pearl, 39" across







# How many hours required?

## Do you love to sand?

- Times are very approximate-lots of breaks-10-30 minutes of work at a time. I am not real fast.
- Create draw/transfer initial pattern 20-30 min
- Mill/carve out tree pattern-40-60 min
- Fill tree with stone and CA-15 min
- Sanding the rough tree with 80 Grit-30 min
- Repeat 3 and 4 multiple times-30-45 min
- Carve the leaves-1.25 hours (shoot me)
- Fill leaves with stone and CA-15-20 min
- Sanding and repeat filling leaves 45 min
- Filling Rim, sanding and repeat multiple times 1.25 hours
- Final sanding to at least 600 grit on Stone- 5-10 min
- Total about time about 5-7 hours



# Not limited to open forms!



Stephen Hatcher hollow form

# Questions/Suggestions



**“Arnold, will you please stand away  
from that on/off switch.”**