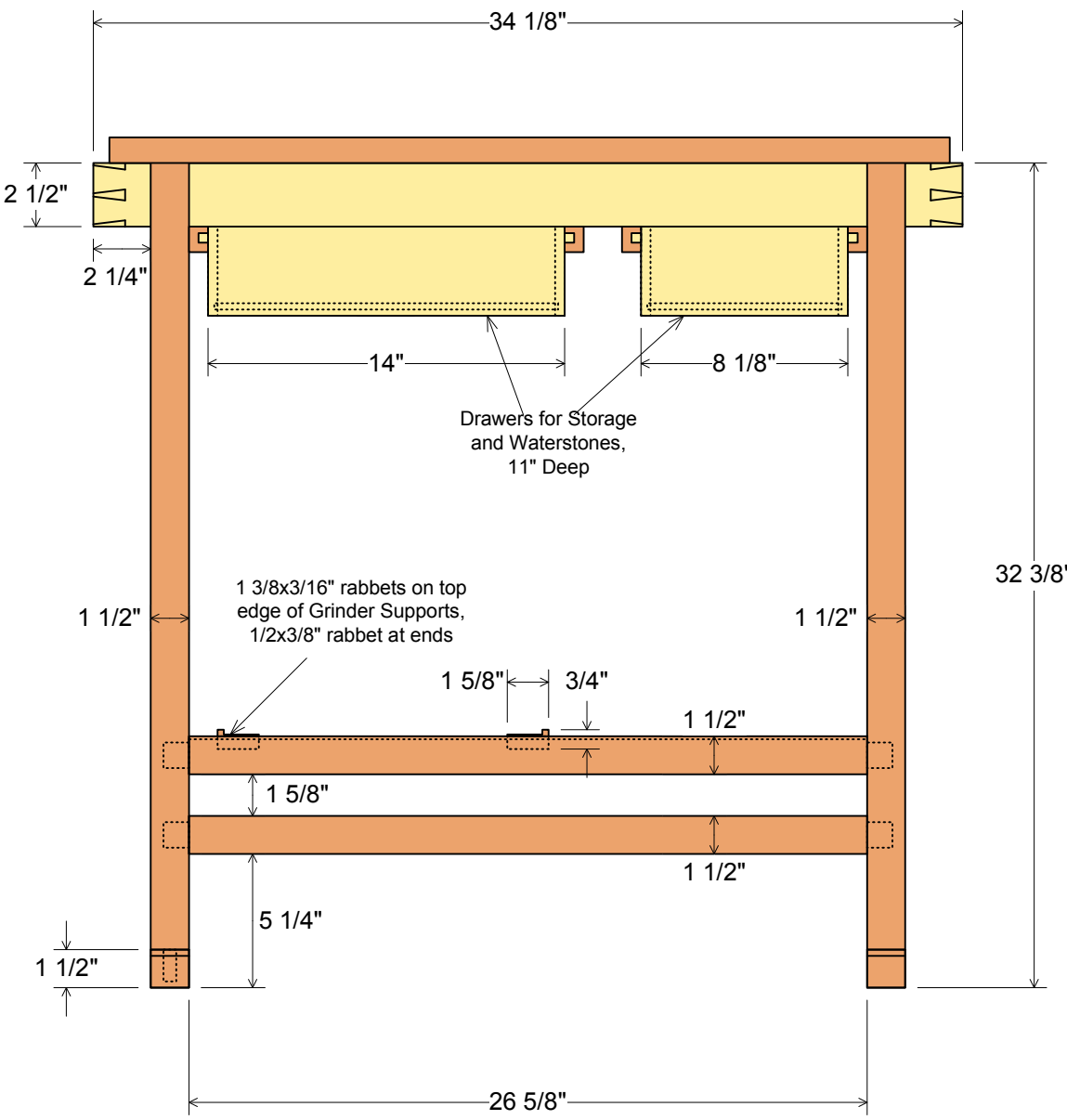

JET

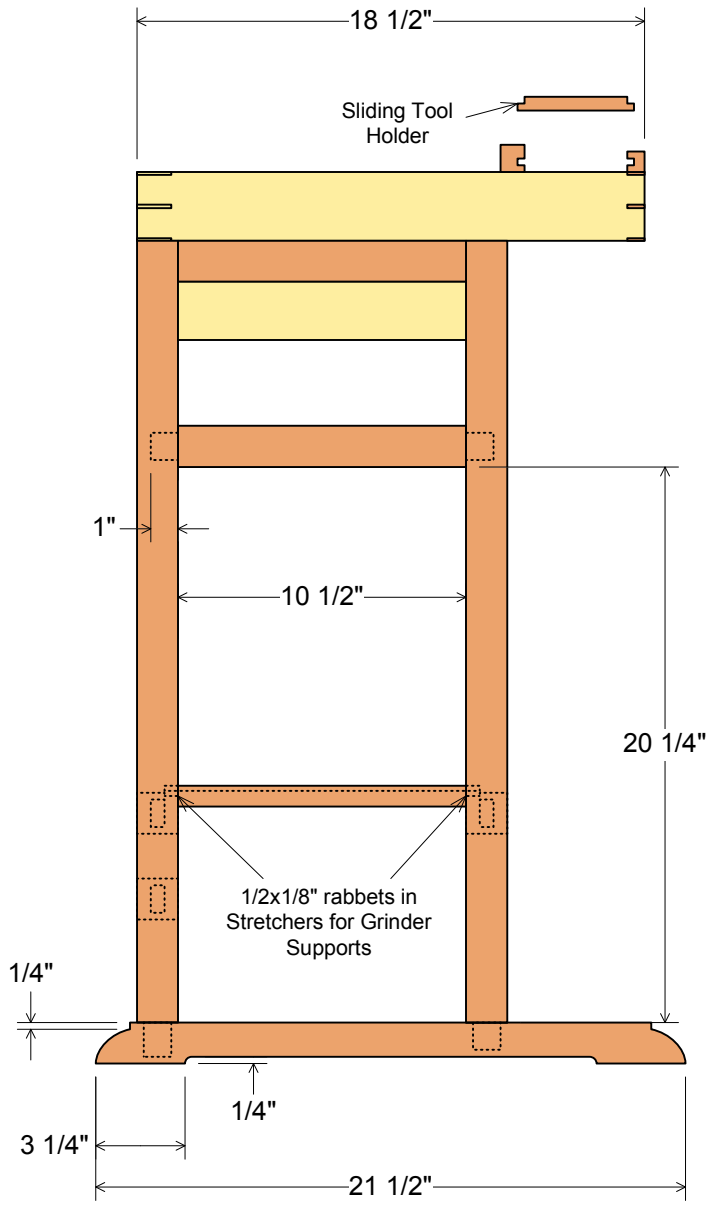
Designed by Tom Figden 2009
www.theunpluggedwoodshop.com
Drawing by Daniel Grant

Dedicated Sharpening Bench

Bench Front View



Bench Side View



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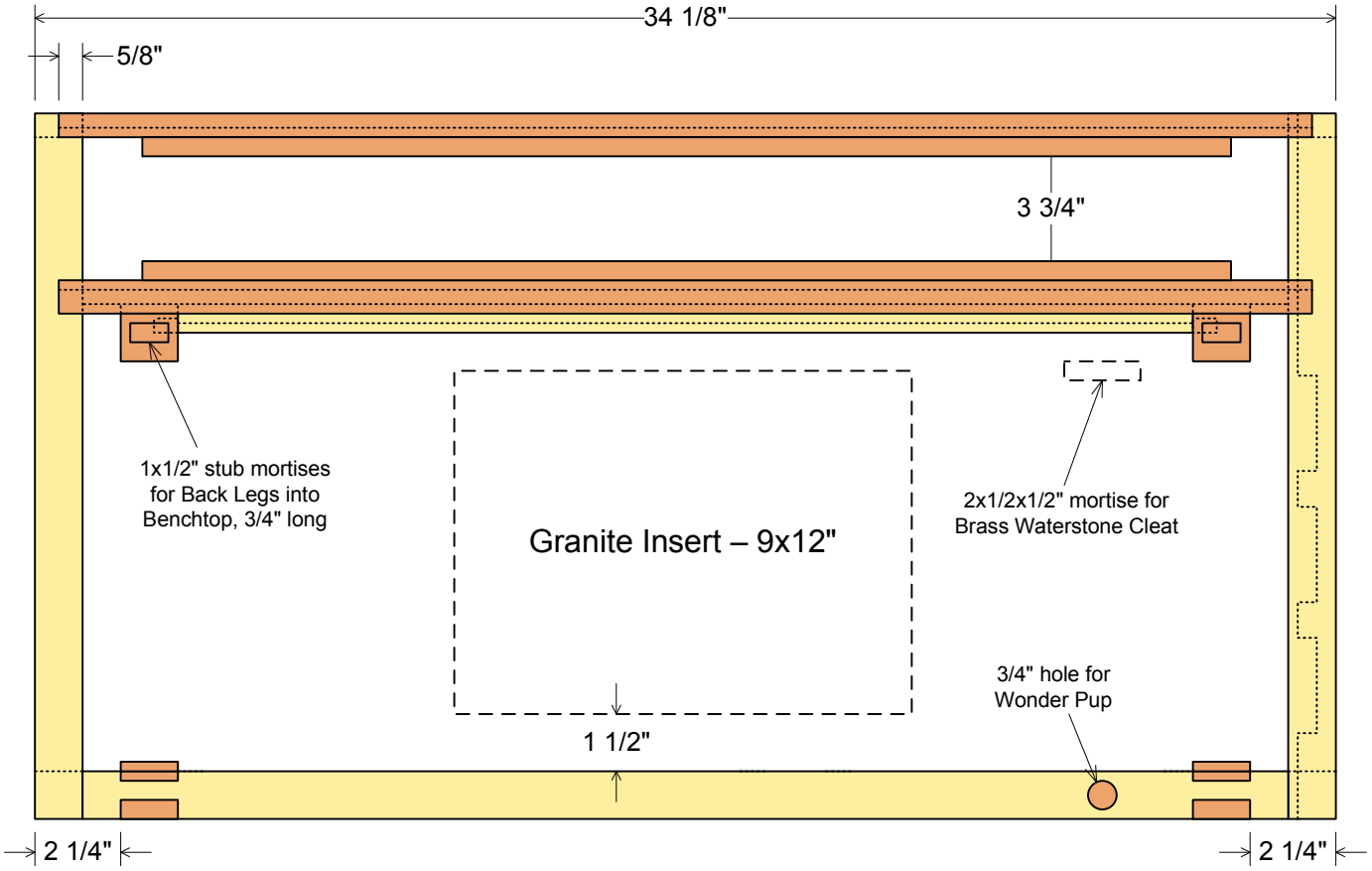
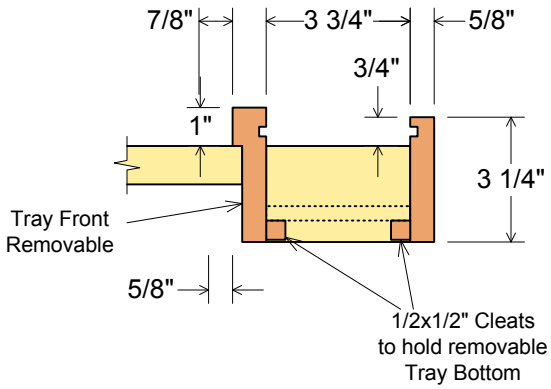
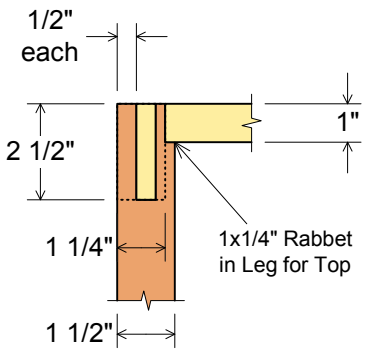
Bench Top View



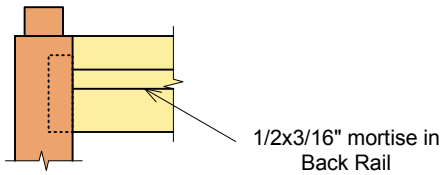
Tool Tray Detail



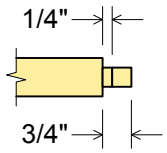
Front Leg Detail



Back Leg Detail



Benchtop Breadboard End Detail (same on each end)



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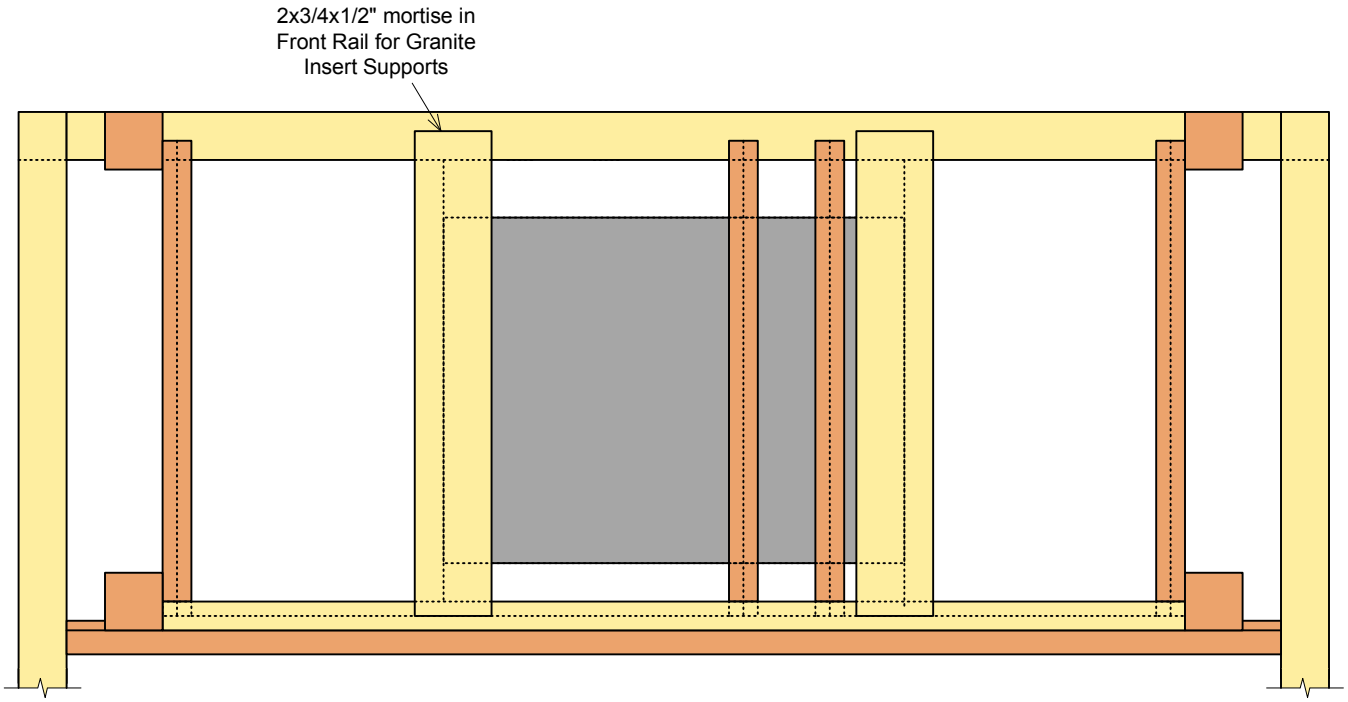
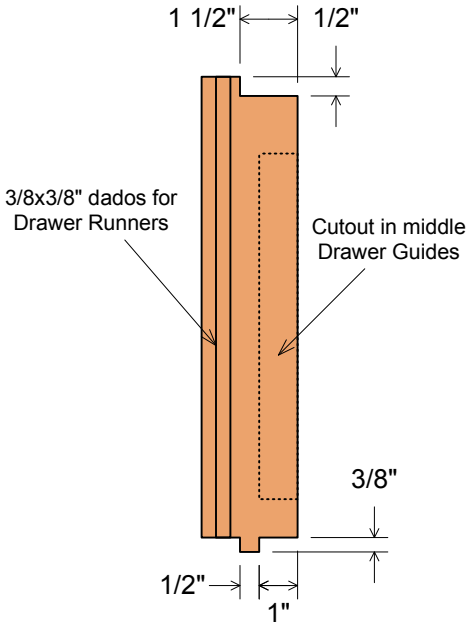
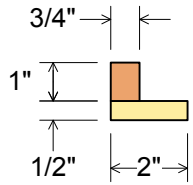
Benchtop Undercarriage
Bottom View



Drawer Guides



Granite Insert Supports
Profile



A Dedicated Sharpening Bench- part 1

November 26th, 2009 in blogs ShareThis

Tom Fidgen, member

An Introduction...

"The best hand tools in the world are worthless in the hands of the woodworker who cannot sharpen the

After reading and experimenting with, practicing and then studying the different techniques of sharpenin I've come to settle on a system that is working for me in my current shop space and that's good! A fresh sharpened hand tool can turn the most challenging joinery tasks into wonderful and relaxed procedures. Your work will be cleaner with tighter fitting joinery and your tools will perform as they were intended to day they were made. The joys of working wood will be that much the greater.

In my own basement work space here in Toronto, I've followed the line and I'm happy with my results; b something I'm not happy with and have been promising myself for months to address is my sharpening location and current set-up.

More from this series

- Part One: An Introduction
- Part Two: A Flat, Square Benchtop
- Part Three: Hand-Cut Joinery
- Part Four: Start the Frame
- Part Five: A Stable Base
- Part Six: Granite Insert Prep
- Part Seven: Glue Up
- Download the Free Plan

One day last year, I noticed a neighbour throwing out a small wooden table. I snatched it up, rescuing it from the eternal wasteland of the land fill site and have been using it as my sharpening table ever since. Prior to the table I was using a sharpening hook system I designed awhile ago. It was basically an over-

sized bench hook with some cleats to hold water stones and a side area for stone storage. The sharpenir hook worked when my bench top wasn't cluttered, (which if you know me you know that it hasn't happe much this past year!) so the routine of moving my work project or tools to make room for the sharpening hook soon became tiresome. The small 'throw away' tables footprint has also become reminiscent of a drunken sailor on shore leave so I've finally decided, with a little help from **FineWoodworking.com**, to build a new bench dedicated to sharpening.

A small scale workbench with large scale workbench strength. The frame has mortise and tenon joinery v a solid 1" thick work surface that has bread board ends fitted into a heavy, through dovetailed apron.

It has a tool tray featuring a unique and convenient way of actually 'holding tools' ! (not just for the hamsters anymore) and I've added some 'off the shelf' items that will also add to the -dare I say- pleasu of sharpening?

Do you currently have a dedicated sharpening area? Is it a re-used piece of furniture or may a purpose made table or bench? I'd love to hear about it- be part of the discussion and share some thoughts.

In the next post I'll assemble my cut list and get right into the project with some stock preparation and g -up the top panels... stay tuned.

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A Dedicated Sharpening Bench- Part 2: A Workbench Surface

November 28th, 2009 in blogs ShareThis

Tom Fidgen, member

Assembling the Cut List...

Working off of my sketches and existing examples of trusted, work bench construction methods, I come with a plan and begin adding up the numbers. This is generally how I approach a new design, from the sketch I mock up some shapes and sizes using off cuts and batons around my shop to see if in the 'real world' things still look like they do on paper. I settle on the overall size and start down my cut list taking into account the joinery.

The top work surface is where I begin and the two panels of 1" thick, quarter-sawn white Oak are cross to length leaving about 1/4" extra for love. The oak used is offcuts from a past project and has been in r shop for over 7 months now, so I know it's extremely stable and will make a great work surface and apro When I originally purchased the wood it was dimensioned before it left the mill so I can surface it all pre quickly. From jointing plane to smoother I'll get the top glued up before I even begin thinking about the apron.

More from this series

- Part One: An Introduction
- Part Three: Hand-Cut Joinery
- Part Four: Start the Frame
- Part Five: A Stable Base
- Part Six: Granite Insert Prep
- Part Seven: Glue Up
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This being a work shop project I'm really trying to keep the budget at a minimum so the bench top and apron are made from off cuts as mentioned with the lower frame made from Ipe. It's an extremely dens exotic I noticed at my local hardware store. They sell it these days as a high-end decking material. This particular stock was already finished at 1 1/2" square and came in 12' lengths. At $15.00 a length I coul go wrong. It does come with its edges all beveled but this being a work bench I can live with it. I'd prefe have square stock to begin but I can deal with the 'off the shelf' lumber for the sake of the budget. Now 1/2" stock may sound a little undersized for a workbench frame but keep in mind the scale of the piece a the fact that this Ipe is like iron!

Jointing the Edge

With the oak cross cut to length I'll go ahead and joint it begin, I clearly mark the planks for grain direction and la them on my bench top, reference faces up. I decide wha two edges I'll be jointing together. I mark the orientatio them with a builders triangle on the face surface and 'fol them back together keeping the inside edges up. This *b matched pair* will be clamped together in my face vise ar jointed simultaneously. I use a bevel-up jointing plane w a nice wide iron at 2 1/4" and work the edges together. take a series of through shavings checking for square as go. I finish off the process with a couple of stop shaving insure no bumps along the edges. Again I check my wor with a reliable straight edge and finally, a light pass agai planing through, end to end. The nice thing about edge jointing two boards together like this is if you're edges a slightly out of square it really doesn't matter; because of book matching we did when we clamped them, once *unfolded* any inconsistencies will cancel each other out. That said, while you're planing, try your best to keep thi square! (*maybe this is one of those rare occasions you c get in some practice time while actually working on a project and not just something from the scrap wood pile*

The Glue Dance

With the edges jointed I'll glue up the panels and set them aside for the night. Here's my method for glu two panels together.

To begin, I set my clamp opening to an 1" wider than the actual piece and lay them down across my ben top. These pieces are just under 3' long so I'll be using 5 clamps, three will go on the bottom and two m across the top.Lay the two planks across the three bottom clamps and a quick dry run will show how thi *should* hopefully go. These two are sitting really nicely together and the joint almost closes itself! It's a g day when that happens...

Because of the stopped shavings I took earlier, when gentle pressure is applied using only the middle clamp, I'm confident the outside edges of the joint will be tight.

So a generous amount of glue is spread and I begin again at the middle clamp bringing the pieces togeth I use downward thumb pressure across the joint to keep the seam flat and won't over tighten this first clamp yet- I'll come back to it in a minute. With the middle of the stock held firmly together, I'll use a couple of 'F' style clamps placed on the outside edges and draw the seam down flush along its length. Th

working out from the center again I st tightening things up. I stagger the pressure as I go, from left to right and then left outside and finally the right outside clamp. With the five clamps secure I'll move back across and re tighten them all down to finish. Take a step back and have a look- double che your grain is running in the proper direction and your building triangle is mated happily back together. This will your last chance to change anything!

Go make a coffee and check your ema come back in an hour and begin cleani up the glue. I'll work between the clan and remove any squeeze out after it h started to cure but before it's too hard to easily scrap away. This is also when I'll usually remove the two outside 'F' clamps; if I leave them on overnight I'll have some deep bruises to deal with tomorrow.

"Top of the morning to ya!" The glue set up overnight so I remove the clamps and get ready to work. A card scraper down the seam removes any final bits of glue- I'm careful not to tear away any wood with i I'm happy with the results- this oak is stable and sits well on my bench top-another good sign! I'll double check with my winding sticks and a metal straight edge taking note of any high spots or twist across the surface.

A few light passes with the jointer followed with a smoothing plane and I'll double check one edge for square. I now have a reference face and edge and can continue on with dimensioning the panel. I'll use panel gauge and scribe the finished width around the perimeter; because this was pre-dimensioned woo and I took my time with the glue-up, I'm happy to say the piece is almost square with just a few light passes along one end. With that, I now have a panel with two long edges, completely parallel and squar with one finished face.

I'll check the thickness throughout the panel to see if it needs any dressing and working from the bottom I'll plane the stock to final thickness. Not much to remove so this process is pretty straight forward. Four sided stock with two ends that still need to be addressed- that's where I'll go from here.

Planing End Grain

I get asked alot how I deal with the long end grain on panels. I think some woodworkers are intimidated when it comes to this area so I'll show you the steps I use.

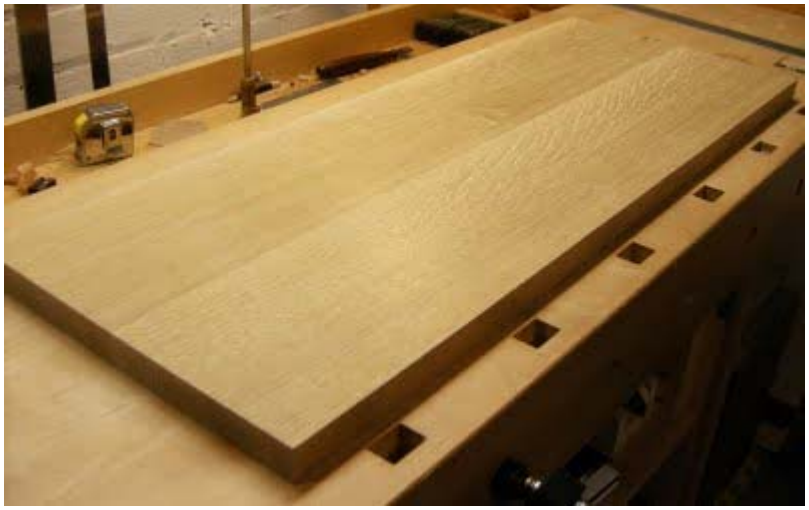
So first things first I'll scribe a deep, crisp line around the perimeter with a knife working off a reliable framing square. The amount of wood I'm removing is very minimal, no more than 1/8". Again, the time I

took to carefully glue up the panel mal these later steps so much easier.

With my line scribed I'll place the pane vertically in my face vise and block up bottom off of the shop floor. From the I'll clamp the left side of the panel in t vise and hold the right side with a surf clamp installed in one of the 3/4" hole have across my work bench apron. My bench didn't come like this but it's a feature I could never live without. Befo I fully tighten the vise and clamp I like place a small level across the top of th piece.

Also, because we're dealing with end grain and I don't want to blow out the face grain on the far edge o the panel,(*spelching*) I'll clamp a piece of scrap wood, thicknessed the same as the work piece and tighte everything down to get started.

I'm using my bevel-up jointer again, se to take a fine shaving and carefully wo my way down. I'm taking light passes, always watching for those first shiny edges starting to appear. It's hard to p into words but you'll know it when you get there. Being careful not to over-sh I work my way down so I can see my scribe line still wrapping the entire perimeter. With that tiny strip left glistening, I know the edge is square. *(but I'll still double check it!)* Now I ca safetly measure up off of this edge an follow the same procedure for the sixt and final side.



So there you have it- a work bench surface, square on all six sides. It may seem like a lot of steps but th above process probably didn't take much longer than it just took me to write this post. I'm ready to begi the bread board ends and assemble my pieces for the apron. That will be next time.
Cheers!

posted in: blogs

A Dedicated Sharpening Bench- Part 3 : Hand-Cu Joinery

November 30th, 2009 in blogs ShareThis

Tom Fidgen, member

Cutting some Joinery

With the bench top work surface squared on six sides I'll measure and lay out the rabbets for the bread board ends.

Deep scribe lines will help eliminate cross grain tearing and when I clamp the piece into my shoulder vise again add my thicknessed backer board to help with the spelching.

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- Part Four: Start the Frame
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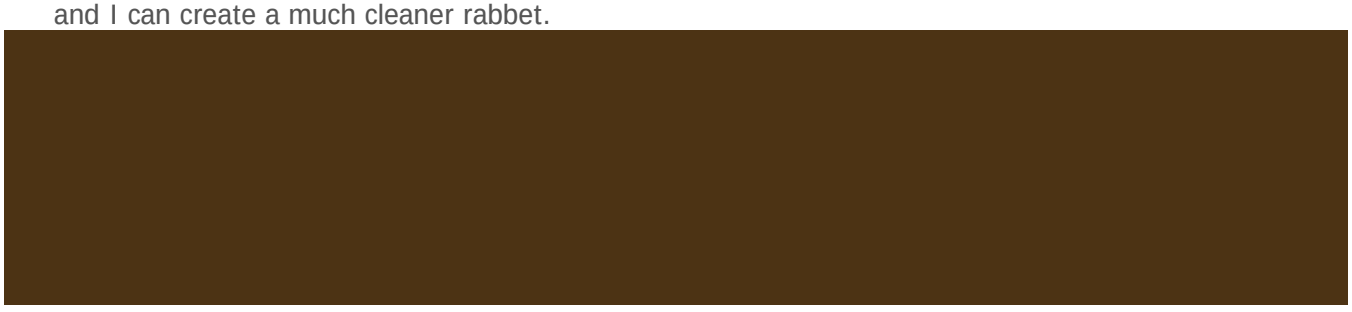
I begin the rabbet with a special purpose rabbet plane but once established I change over to my medium shoulder plane. I find I get a better inside edge with the shoulder plane. I think this may have something do with the nicker on the rabbet; it's necessary when getting the rabbet established but I find the small nicker helps the plane to slowly work its way out from the edge. With the shoulder plane this is eliminate and I can create a much cleaner rabbet.



I should mention that the rabbet plane I was using has a small set screw so I could have stopped and retracted the nicker after the first few passes, but having the shoulder plane ready was a little faster.

With the rabbet cut I'll check for square and flip the board over to cut the bottom edge. This same proce is repeated on the opposite end of the surface establishing the thickness of the bread boards. From here get my apron stock prepared and cut to length making sure I've included all of my joinery. I measure an plough out the dado in the end pieces. Once the grooves are complete I change gears to lay out and cut dovetails for the apron. These dovetails are laid out as you would for any through dovetail except we're dealing with a larger scale. I scribe the thickness of the aprons to their mating pieces, lay out my doveta and start sawing. The oak, at 1 1/4" thick is just about the maximum my small dovetail saw can handle b I get them done and can now lay out the mortises for the bread boards.

I've only cut my dovetails into one end of the apron- I'll wait until I finish and fit the main work surface i the side aprons before I commit to the placement of the opposite front apron.

Bread Board Ends

At this point I can dry fit my dovetails and check my dado is lining up between the pieces. I measure anc divide the long tenon I still have rabbeted into the ends into three tenons. The entire length of the side v have a small shoulder plus these three tenons. I mark out the cuts and the mortise position inside the da For 90% of the mortises I cut I follow this procedure. Once properly laid out I begin with a brace and bit and remove the bulk of the waste.

I then follow with a mortise chisel and clean up the ends as well as determining the final depth. With the mortises chopped, the tenons cut I'll try a dry fit. Now I can establish the opposite end of the front apron and I lay out and cut the through dovetails.

The back apron is laid out and the dovetails are also cut at this point.

I follow with my plough plane and plane out another dado into the top of the rear apron. This groove wil become a channel for a work holding tray later in the build.

From here I cross cut, plane and glue up some pieces to create the back splash which also serves dual d as the front panel on the tool tray.

This also gets a matching groove opposite the rear apron we just finished. I'll bevel the inside of these grooves to make the sliding tool holder a little easier to move.

I have my work surface and apron joinery complete; in the reading and research on work benches I've d I decide to incorporate a through bridal joint for the front legs where they meet the apron. This will crea very strong frame as well as making the front legs of the workbench flush with the front apron- a real benefit when I add some other work holding features to the piece. This being a small work space I try to make the most out of my workshop projects and have them serve dual duty.

I lay out and rip down the deep leg joinery; this is sawn down and then the bulk of the waste is removed with a fret saw and cleaned up with a chisel. The corresponding tongue of the slip joint is cut into the fro apron.

With a good dry fit I'll measure and mark the small shoulder that needs to be cut into the back of each le Since the leg stock is 1 1/2" thick and my apron stock is only 1 1/4" thick, I have 1/4" of material that ne to be removed so the work surface can sit up tight to the apron. I could cut out a small section of the wo surface, leaving the full depth of the legs but I decide to remove the material off of the legs creating a sı shoulder the surface will rest on. I can do another dry fit with the front legs attached and really get a sen of the bench dimensions. I begin with the two apron ends and then dry fit the front into the dovetails. I insert the rear apron and flip the piece over on my bench top. Now I can slide in the front legs and see h I'm doing...so far so good!

Here are some shots of the dry fit assembly thus far:

Top surface with side and front apron attached.

Rear apron dovetails

Tool tray framed with rabbets

That completes the top joinery and front legs for now; I'll get my stock ready for the rest of the frame ar start the mortise and tenons next time...

cheers!

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posted in: blogs

A Dedicated Sharpening Bench - part 4- The Frame

December 2nd, 2009 in blogs ShareThis

Tom Fidgen, member

***Dimensioning Stock* and Lay out**

I mentioned in the first post that I'm using some *'off the shelf'* hardwood for the bench frame; this was great for my budget but not ideal for my hand tools. Because it was 'dimensioned' at the mill (*and I use term very loosely*) I have to re-dimension it all again before I can start laying out my joinery. They're definition of square must be a little different than mine!
The Ipe is an extremely dense South American hardwood and is very unforgiving to hand tools- perfect irony isn't it? Here I am making a new sharpening bench and the wood species I'm using is ripping the edges off of my plane irons so fast that I'm going back and forth to my old sharpening area being remind with each pass how much I'm looking forward to having this new one! Some strange motivation I suppos

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- Part Three: Hand-Cut Joinery
- Part Five: A Stable Base
- Part Six: Granite Insert Prep
- Part Seven: Glue Up
- Download the Free Plan

With that I begin planing and dimensioning, sharpening and planing some more. The reverse grain is ver unusual in this species, its tones and weight are similar to teak but the dust coming off of it is *'Kermit th*

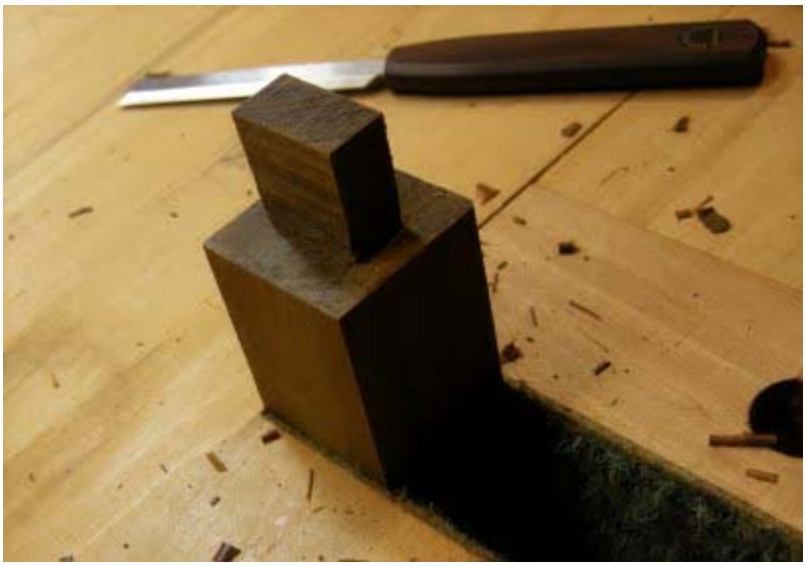
frog green'...If you're ever using Ipe with power tools make sure you wear a mask! I'm finding the small amount of dust coming off while hand planing a little irritating to my nose and throat. When I have all of frame components cross cut to length (including joinery) and all surfaced, I can begin my layout.

Whenever possible I like to lay out my joinery in groupings *ie:* the legs get clamped together and the mortises for the cross stretchers are laid out together. This will help keep things consistent and insure continuity between the pieces. I use a pencil to mark off the thickness of each component and then a de scribe line with my knife for the joinery.

Mortise and Tenons

All of the joinery for the bench frame is mortise and tenon except the front legs into the top apron by wa of the slip joint.(*refer back to part 3*) The Ipe is close to 1 1/2" square so I'll follow the rule of thirds and out 1/2" mortises. I begin at the top of the back legs where they meet the bench top. I saw a tenon into rear leg tops and chop out the mating mortises. Over in my shoulder vise I get out my *favourite* back saw and make some dust. You may notice in the pictures my set up for sawing the tenons- I hold them in the tail vise and have my bench hook next to it on my bench top. This is an efficient set up when you have a of tenons to cut. I start by ripping down the two cheeks and then turn the workpiece and rip the other tw shoulder cuts. Then it's a simple matter of unclamping and sawing at the bench hook without ever havin take a step. I'll get both tenons cut and then back into the tail vise to pare down to the scribe lines.

I've heard some woodworkers say you should saw *'right to your scribe lines'* and I suppose in a perfect world this is true. I unfortunately live a few blocks East of a perfect world so I try to leave a bit of materi to pare away to. This is especially true on the cross cuts where I want a crisp shoulder line.

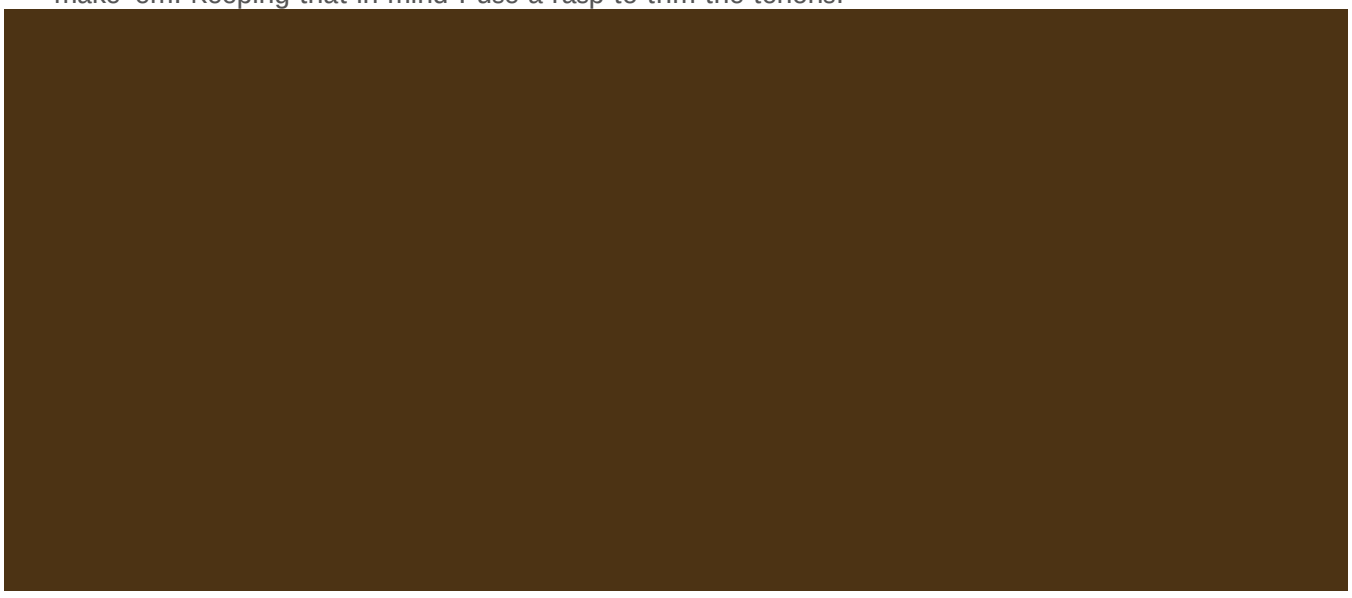


With the tenons cut I'll forget that measuring tapes were ever invented and use the actual work piece to out my mortises. Again, I begin with a pencil and mark out my perimeter and follow with a knife line to determine the actual mortise size.

I begin with a brace and bit and bore out the bulk of the material. These are relatively shallow, stub tenc so I trust my eye and bore down into the oak. For deeper tenons I'll wrap a piece of tape around the bit show me the finished depth and for *really special work pieces* I'll actually make up a wooden 'collar' that slips over the bit creating a built in depth stop. But as mentioned, today I'm using my eyes.

From there I'll use my mortising chisel to chop off the little 'wings' left between auger bit holes and squa up the ends. I'll clean out the bottom and get ready for a dry fit. The brace and bit method of cutting mortises is a fast and accurate method but I should also mention when you first lay out the mortise it's a good idea to scribe in a center line. This will give a point of reference for the bit to find center when drilli The first dry fit shows me that I need to remove a little meat off of the tenon. This is another one of thos *wood working myths*- tenons don't have to look pretty!

I know we see them in our favourite woodworking magazines, all crispy and shining like a new dime but really-?
They *do* need to be straight and they really *should* be square but besides that they can be as rough as y make 'em. Keeping that in mind I use a rasp to trim the tenons.



It's fast and easy and all of those 'scratch marks' left behind will actually make for a better glue joint. Another dry fit and it's on to the next one.

The bench now has four legs standing proudly, although still inverted on my bench top- I decide to addr the bottoms of the legs and the feet. It's a natural progression, but I don't give the sequence too much thought. I suppose you could cut *all* of the legs first and then move onto *all* of the stretchers... I enjoy watching a work piece come together and at the end of my work day I like to see what I've accomplishe So I started with the legs and then onto the feet; at least I'll be able to stand the bench upright and get sense of where things are going for tomorrow!