

DTRR Workshop Fixtures (Free Download)

This plans package for DTRR Workshop Fixtures is now available for free download in pdf format. The package contains 21 pages (8-1/2" x 11") of documents and drawings with 7 Workshop Fixtures featured. These workshop fixtures are quite handy to have in any shop. The designs are simple, fast, and easy to build. They are also relatively inexpensive. With a few minor modifications, you can easily change the dimensions to better suit your needs.

These documents are provided free of charge to any interested persons for informational and educational use only. They are not provided with the intent that anyone should build from the drawings contained within. If one does decide to build these shop fixtures, you should consult a professional to determine what changes or modifications (if any) should be made to make these shop fixtures suitable for your application. Furthermore, you agree to hold me blameless and you take all responsibility if you decide to build the shop fixtures presented here, otherwise you must not use my drawings or documents if you refuse to accept, agree, and abide by these stipulations.

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The workshop fixtures featured in this package of documents were taken from a chapter of a new book I am about to release about backyard boatbuilding. All of the material presented (text and drawings) are all under copyright protection.

As always, your comments and suggestions are welcomed.

Paul Bennett, Milbridge, Maine

Shoestring Shipyard Shop Jigs

Introduction

Building your own boat is a rewarding experience, and even more so if you have the right tools, jigs, and equipment to make life easier. Before building your boat, you should consider building the simple, but very useful shop jigs presented here. Fabricating these items and putting them into use will facilitate your boat building project.

Shoestring Shipyard Shop Jigs are simple, fast, and easy to build. These are great projects to construct before starting your boat building adventure. If you are new to wood working, the experience and skills you gain from building the following projects should make for a better looking boat later on.

I designed the Shoestring Shipyard Shop Jig Series with novice carpenters in mind. Most of the plans are drawn to scale however it's probably best to use the printed dimensions on the drawings. Reproducing the drawings to fit in a book or whatever happens when making .pdf files probably alters the size of the images, so I wouldn't trust the scale.

An investment in your time will be necessary to complete all these projects. Although they are quite simple, taking the time and extra care to do a good job will pay you dividends by resulting in good looking, rugged, long lasting jigs you'll use many times in the years to come. My personal opinion is that it's worth the time, effort, and money to build all of these jigs as they will prove quite useful in a number of projects you may encounter around your home. They're certainly not just for boat building.

You may notice I suggest primer and paint in the materials list on every drawing. You certainly don't have to paint any of these jigs and most don't, however I think it's worth doing and it helps the jig last much longer.

I hope you'll enjoy this experience as a precursor to building your own boat. After many years of building all sorts of furniture, jigs, buildings, and watercraft; I still get excited at the prospect of starting yet another wood working or boat building project.

The best way to get through your project is to read this book all the way through and then read it yet again. Spend some time looking over the drawings carefully and then refer to the book. The next step is to secure your work area and tools, then order your materials. Note that you may have left over scrap wood around your house and it will serve very well

for making the jigs in this book without spending more money. You can also use leftover old paint, etc.

Without further ado, I invite you to begin making sawdust.

Materials

Shoestring Shipyard Shop Jigs and fixtures were designed for simple construction. Although the materials for the major components are specified, use of materials in other thickness' or dimensions can be used to facilitate the use of scraps.

I recommend using standard construction grade plywood (in standard sized 4' x 8' sheets) for all models in Shoestring Shipyard Shop Jigs and fixtures where plywood is called for. Exterior plywood should be used so it won't be prone to de-lamination if it gets wet.

For components requiring use of dimensional lumber, I recommend the use of kiln dried Eastern Spruce. This is more commonly known as a K-D Stud, which is sold for building construction and available at most lumberyards in the Northeast, US. It's sold as 2 x 4's, 2 x 6's, etc. and has an actual thickness of 1 1/2".

Other parts of the country probably won't have spruce. You should therefore use whatever wood is indigenous to your geographical area. Use whatever is used for building construction. If you live in the Pacific Northwest, you'll probably use Douglas fir. If you live in the Southeast, you might be using southern yellow pine or cypress.

The wood you use will probably have to be ripped down to the proper dimension. This is where a table saw comes in handy.

For fasteners and hardware, I recommend using common bright nails or wood screws.

You'll need carpenter's glue during assembly of your jigs and I've discovered using Titebond III™ to perform best for such applications. If you already have carpenter's glue in your shop of another brand, go ahead and use it. There's no need to make a special purchase just for these projects.

Shoestring Shipyard Sawhorses

Read the drawing, which means interpreting all of the information that is presented on the drawing sheet so you'll know how to build the jig as designed. Don't get apprehensive. I purposely designed Shoestring Shipyard Shop Jigs & fixtures to be simple, and made the drawings so most first time builders can understand them.

You'll note the sawhorses are comprised of 2x4 studs and plywood gussets, along with a little glue and a few nails.

If you have a portable power circular saw, you can cut all of the 2x4 components to length quickly. You can use a hand cross-cut saw but it will require more time and a bit of sweat.

Before sawing, you'll note the legs are angled at 15 degrees at the top and bottom so that the tops of the legs are flat with the top of the horse and the bottoms are flat with the floor. Save some sawing time & effort by cutting these angles directly from the wood stock. The first leg you cut will require a second cut on the opposite end so you'll have both angles for the one leg cut, and the leftover wood stock has one angle already cut so you'll only have to make one more angle cut for the next leg.

The top horizontal part of the sawhorse (strongback) can be ripped on a table saw set at 15 degrees along each side after it is cut to length. This allows the tops of the legs to fit flush against top of the sawhorse strongback.

A protractor and a bevel gauge will allow you to set your saw angles and to draw the same angles onto the plywood used to make gussets.

Assembly can begin once the components are cut out. Don't use any glue for assembling the legs to the strongback. I usually attach the legs on one side first and then turn the sawhorse over to attach the other two legs.

Lining up the legs so that they fit properly and perpendicular to the strongback is a tricky operation. A second pair of hands may be handy here. It also might be best to pre-drill and use wood screws, however I have a pneumatic (framing) nail gun, so I can hold, align, and nail the legs to the strong back by myself quickly, accurately, and efficiently.

You can then fit, glue, and nail the plywood gussets in place.

Congratulations – you've just built your first sawhorse. You can now build as many more as you might need. If you are planning on building a

Shoestring Shipyard boat design, you may wish to have at least three sawhorses. You don't have to paint them but I recommend you do.

You can use your Shoestring Shipyard sawhorses to help build the other jigs in this book.

NOTE from Author/Designer:

These sawhorses are very handy when constructing building for your railroad and for use in the maintenance shop as well. We'll have several of these on hand during the development and construction of Downeast Thunder Railroad.

Shoestring Shipyard Panel Cutting Jig

This is a very simple jig to build, yet it is one of the most handy to have when building a Shoestring Shipyard boat design. If you are only planning to build an 8' dinghy, just one jig will suffice. If you are building larger boats, you'll need two to three of these jigs.

This jig is used by placing it end to end across a couple of sawhorses. It allows you to place a full sized sheet (4'x8') of plywood flat on top so you can easily work the plywood and you don't have to work off the floor. You can lay out your lines on the plywood and cut out the parts (it's ok to cut into this jig) by setting the depth of the saw blade for about 1/16" more than the thickness of the plywood. This jig also holds your boats side panels flat and at a reasonable work height while making scarf or butt joints and epoxy gluing the ends of panels together (use waxed paper between the jig and plywood panels).

Start construction by pre-cutting the 2 x 4 stock you've collected for this project.

You can see what you're going to need from the plans, so simply pre-cut the two-by-fours to length. Set your table saw for the proper distance, and rip the long two-bys such that you have 4 skinny strips as shown in the drawings. Cut notches out of the shorter studs to fit the skinny strips you've ripped. Use the dimensions on the drawings to figure the appropriate distances the short studs will be apart and where to locate the strips.

Glue the notches and install the strips. Install brass wood screws through the studs into the skinny strips from underneath the jig, facing upwards.

It helps if you dry-fit the parts, pre-drill, and countersink the screw holes first. It's the glue that really holds this jig together. Screws are used as temporary clamps while the glue is setting up, and they are brass so your saw blade won't be damaged if the saw blade should be set too deep when cutting a plywood panel later on. It's also why the screws are installed from beneath the jig, facing up.

Since it only takes a few minutes to build this jig; why not build a few of them while you have your table saw set up to rip the skinny strips?

You'll find this jig is useful for other purposes. It can be used as a paint rack or a drying rack. It can also be used as a support base for thin

plywood to make a temporary table (yard sale or flea market, etc.). Let your imagination go wild. This jig will prove to be one of the best pieces of equipment you have ever had in your shop.

NOTE from author/designer:

I included the panel cutting jig in this package because it so very handy to have on hand for multiple uses. In the case of Downeast Thunder Railroad, these jigs will be used as painting racks for small pieces because several parts being painted the same color can be easily clamped to the jig.

This handy little jig is so inexpensive and easy to build, why not whip one up?

Shoestring Shipyard Tool Bench

Now that you have sawhorses and at least one panel cutting jig, the fabrication of the Shoestring Tool Bench will be much easier for you. You can use sawhorses to support the two-by stock while cutting to size and notching the legs, plus you can add the panel cutting jig across the sawhorses to measure and cut plywood & pegboard components.

Gather your wood stock and begin cutting the two-by stock first. Cut notches in the legs as shown in the plans. Try to make these notches so you can get the two-by into position within the notch but without forcing it, yet it should still fit somewhat snug.

Begin assembly by fitting the lower horizontal shelf supports into the notched uprights, and fasten the other two horizontal supports not notched. Use glue and nails to fasten.

Measure, cut, and fit the lower plywood shelf. Again: Use glue and nails to fasten.

Fit, glue, and fasten the upper work surface horizontal supports. Then measure cut, glue and fasten the upper work surface/shelf.

Fit and fasten the top/backside two-by cross support.

Measure, cut, and fasten the pegboard to the back of the upper tool bench two-by frame (nails or screws are all that is necessary – no glue here). Make sure the shiny side of the pegboard is facing the tool bench.

Prime and paint the bench to suit your taste. Painting seals the plywood and allows an easier time of sweeping up dirt and debris from the bench.

Note: It's considerably cheaper to use OSB rather than plywood, but it really does need to be painted and sealed before any moisture gets to it.

Now you have a bench that will hold a number of your tools in easy reach, plus you have a small work surface if needed. Portable power tools can be stored on the lower shelf, and smaller hand tools can be hung with wire pegboard tool hangers. You can also fashion and install holders or bins for commonly used nail, screws and other fasteners.

You can install dowels, pegs, or metal hangers on the side of the bench to hang electrical extension cords and such.

At this point, you are well on your way to developing your own "Shoestring Shipyard."

Shoestring Shipyard Work Bench

The tool bench is not very handy as a work surface when it's full of tools and equipment, plus it's a bit small for most needs. That is why the Shoestring Work Bench should also be built for your shop.

It is a bit longer and has plenty of storage space on the lower shelf for wood stock or more tools and/or equipment. Construction is very much the same as the Shoestring Tool Bench for this work bench.

Begin by measuring and cutting the two-by components and notch out as necessary – checking your fits. Begin assembly with the upright (legs) and the lower horizontal shelf supports. Fit, glue, and screw (or nail) together. The next step is to install the lower plywood (or OSB) shelf panel into position.

Fit, glue, and fasten the upper horizontal work surface supports. Fit, glue, and fasten the top plywood (or OSB) work bench surface.

Prime and paint the work bench.

Now you have a work surface which can be used to help build the remaining fixtures and store various wood stocks within easy reach.

You can mount an electrical box to the side of the bench for convenience, and you can also install wood working vises, etc. This makes for a more versatile bench.

If you have enough room in your shop, you may wish to build more of these benches.

Remember you can always change the dimensions to make the bench suit your needs and space requirements. You can make these benches taller or lower, wider, narrower, shorter, or longer. It's easy to change any of the dimensions as long as you remember to add to your materials list if you are making your fixture larger.

Shoestring Shipyard 12” Wide Shelves

Having plenty of storage shelf space seems to be a problem in almost every shop I’ve ever been in. There really isn’t any need for lack of shelving providing wall space is available.

Commercial shelving systems are very expensive and still require almost as much time to install as simply building your own shelf system.

The plans I’ve provided are simple and fairly straight-forward to follow. Use wood scraps for most or all of the components. The shelves themselves are plywood or OSB ripped to size on your table saw. You can also use pine boards if you wish. You can make as many as these shelves as desired, and you can vary their length in 16” increments.

Most wall studs are set 16” apart (on center). The shelves are anchored to the shop wall at each wall stud, and that is why the shelf length is recommended to be in 16” increments.

Make up as many shelves as you have space for. Prime and paint them, then mount them on your shop walls.

Shelves are ideal for holding power tools, all kinds of fasteners, and just about anything else you can think of. I don’t know of anyone who has complained about having too much shelf space.

The nice thing about these shelves is you can build them almost for nothing.

Note from author/designer:

Most Downeast Thunder Railroad support buildings were designed for 2 x 6 stud wall construction with the studs spaced 24” O.C. therefore the shelves should be built in 24” increments accordingly, or to whatever stud spacing you might have in your present shop.

Shoestring Shipyard Storage Rack

This storage rack is a wonderful shop addition in the war against lack of storage space. The Shoestring Shipyard Storage Rack is heavily built and quite strong. It can hold some very heavy machinery and hardware.

You'll want at least one, perhaps more if space allows. You just can't have too much storage space.

Fabrication of components and assembly is the same procedure used for building the Shoestring Shipyard Work Bench. The only variation is more shelves stacked higher.

Feel free to vary the dimensions to suit your needs or space requirements.

Shoestring Shipyard Step Stool

The Shoestring Shipyard Step Stool is quite small in relative size to the other Shoestring Shipyard Shop fixtures, yet is just as handy and useful as any other. You'll use it all the time reaching for items on the Shoestring Shipyard Shelves, or for getting into a more advantageous position while working on your boat building project.

You might also use it to sit on for work that is close to the ground. Sometimes the stool is handy for supporting various objects you are working on, along with numerous other uses. You might want at least a couple so you can stretch a plank across them when you need to work a little higher off the ground.

You don't have to spend a lot of money on materials. Simply put together a few wood scraps from other wood projects and you can have your stool(s) for just about free.

It really does not matter if you use plywood or dimensional lumber, or a combination.

Remember to prime and paint your Shoestring Step Stool after you get it built. The stool will be more attractive and will be easier to keep clean.

Note on paints: If you don't have any old house paint kicking around the house; go to the local hardware/paints store and see if they have any "oops paint" for sale. That is a can of paint they mixed and messed up on the color blend – they typically sell "oops paint" for around 7 to 9 dollars per gallon, more or less depending on your location. It pays to shop around.

As long as you don't care too much about the color, you can get some great deals. I typically look for latex based, exterior, porch & deck enamel.

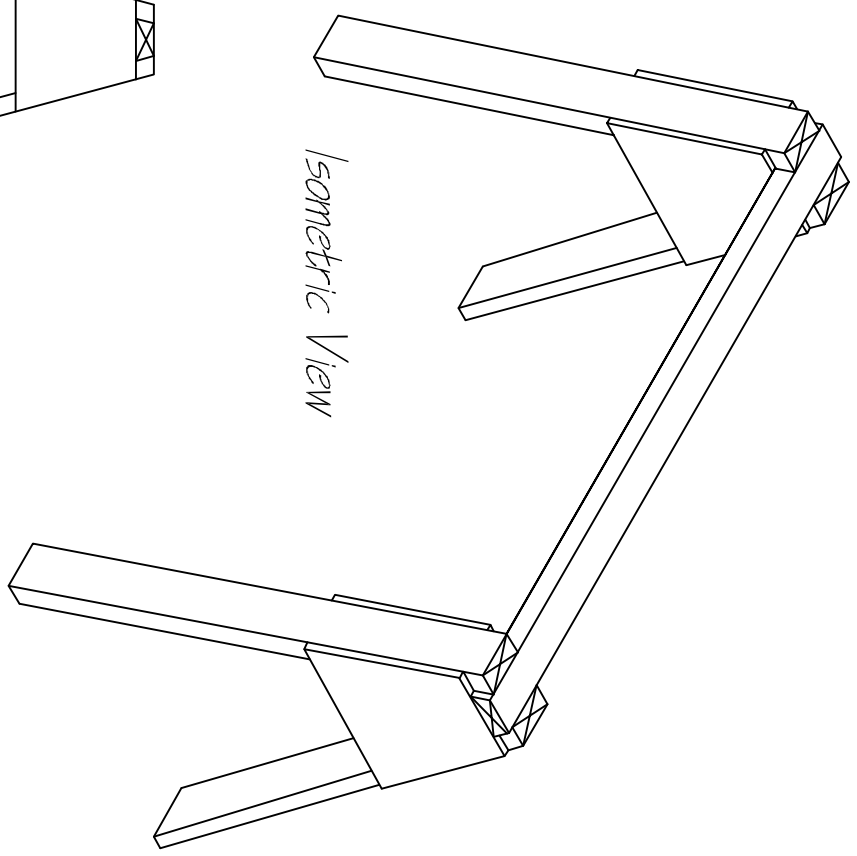
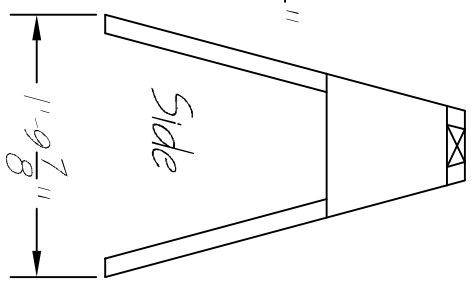
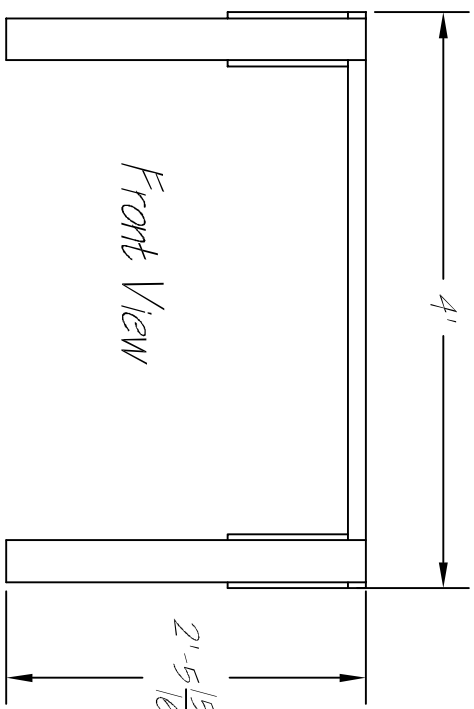
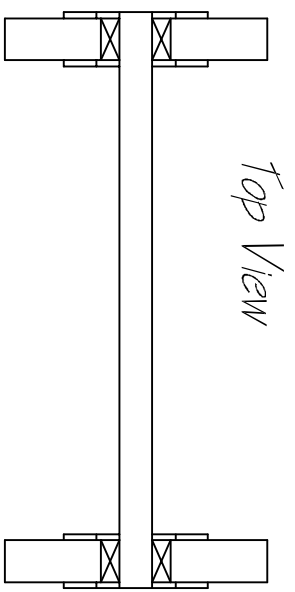
Note from author/designer:

I included this stool because it is such a handy thing to have in any kind of shop. Volunteers working at Downeast Thunder Railroad will see several of these stools around. Don't throw your wood scraps away; make a few stools with them instead. Once built, they will last for many years.

Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Sawhorses

BWG # SJ-100

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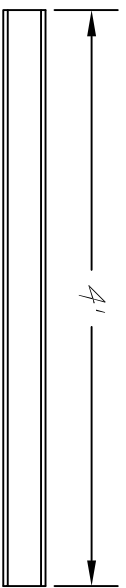


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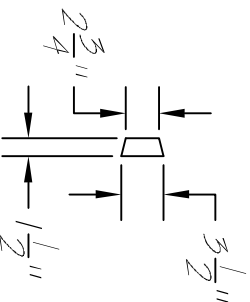
Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Sawhorses

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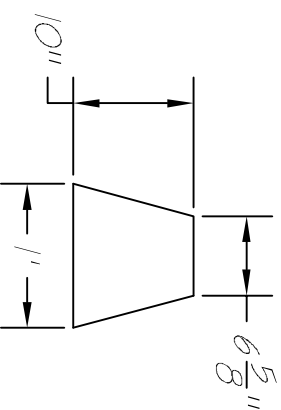
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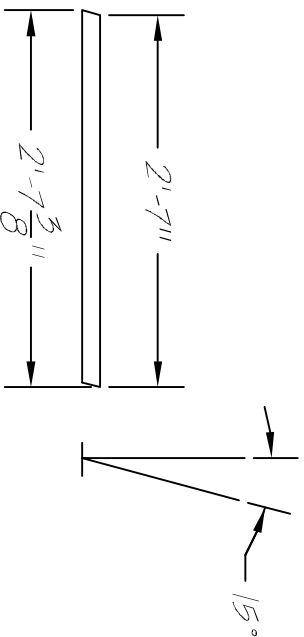
Strut Top View
Cut From 2x4 KD Stud (2) Req.
For 2 Sawhorses



Strut Cross Section



1/2" Plywood Gussets
(8) Req. for 2 Sawhorses

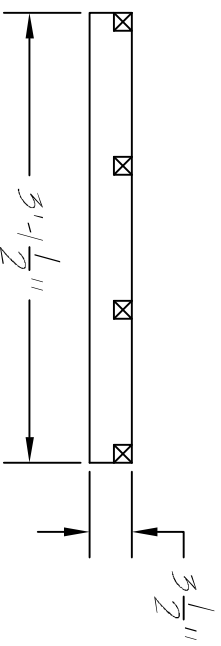
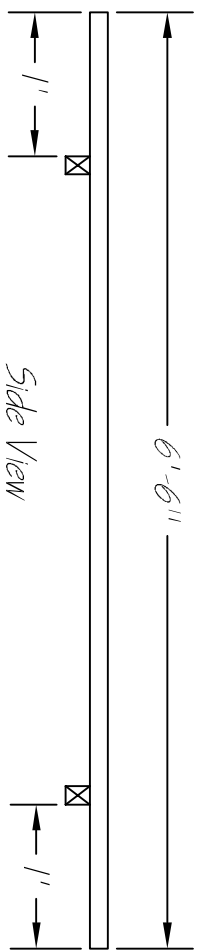
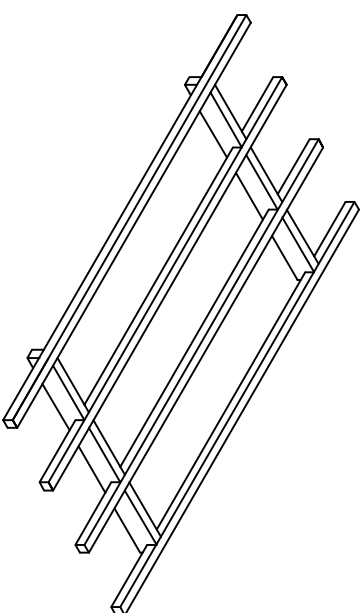
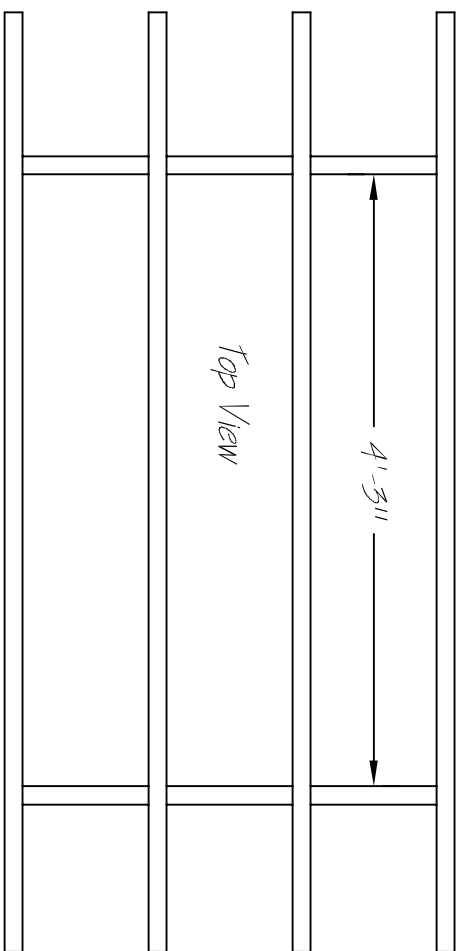


Legs
Cut From 2x4 KD Studs (8) Req.
For 2 Sawhorses

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Shoestring Shipyard Shop Jig Series
 Shoestring Shipyard Panel Cutting Jig

Scale: 3/4" = 1'



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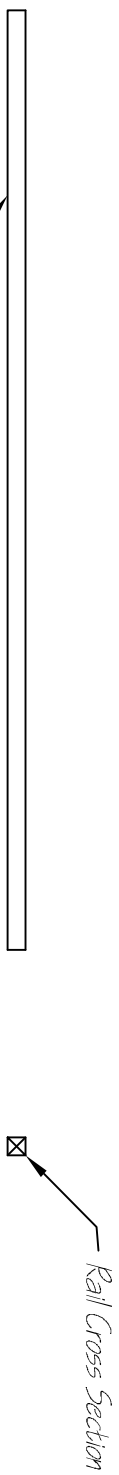
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DWG # SJ-200

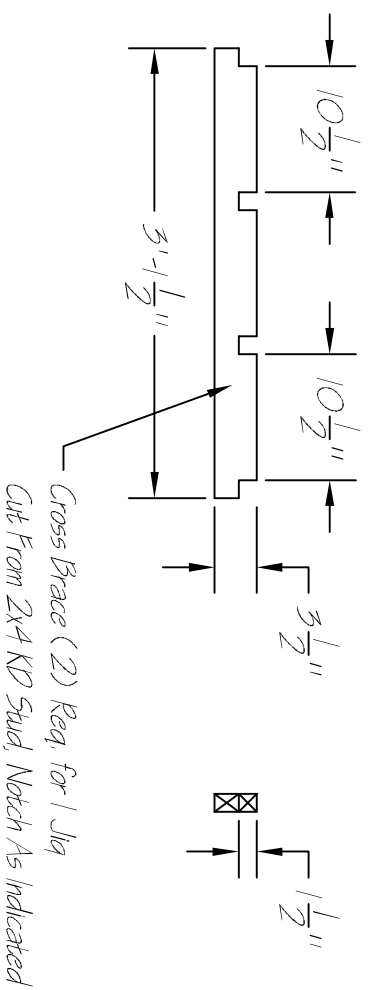
Shoestring Shipyard Shop Jig Series Shoestring Shipyard Panel Cutting Jig

Scale: 3/4" = 1'



Rails - (4) Req. for 1 Jig
Cut Rail 1-1/2" x 1-1/2" x 6'6" from 2x4 KD Stud

Note: All Notches in Cross Brace are 1-1/2" x 1-1/2"



Cross Brace (2) Req. for 1 Jig
Cut From 2x4 KD Stud, Notch As Indicated

Note: Brass Screws are countersunk 1" into the wood from the cross brace into each rail. The joint is further secured with carpenter's glue

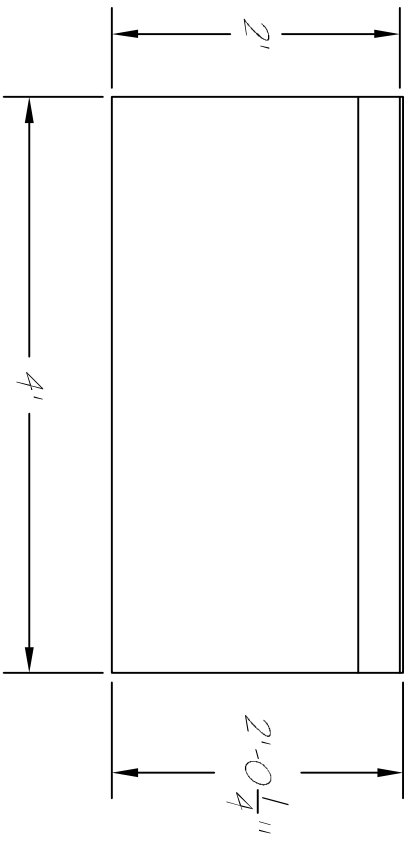
Materials (for 1 panel cutting jig):

- (3) 2x4x8' KD Studs
- (8) #12x2" Brass Wood Screws
- Carpenter's Glue
- Primer
- Paint

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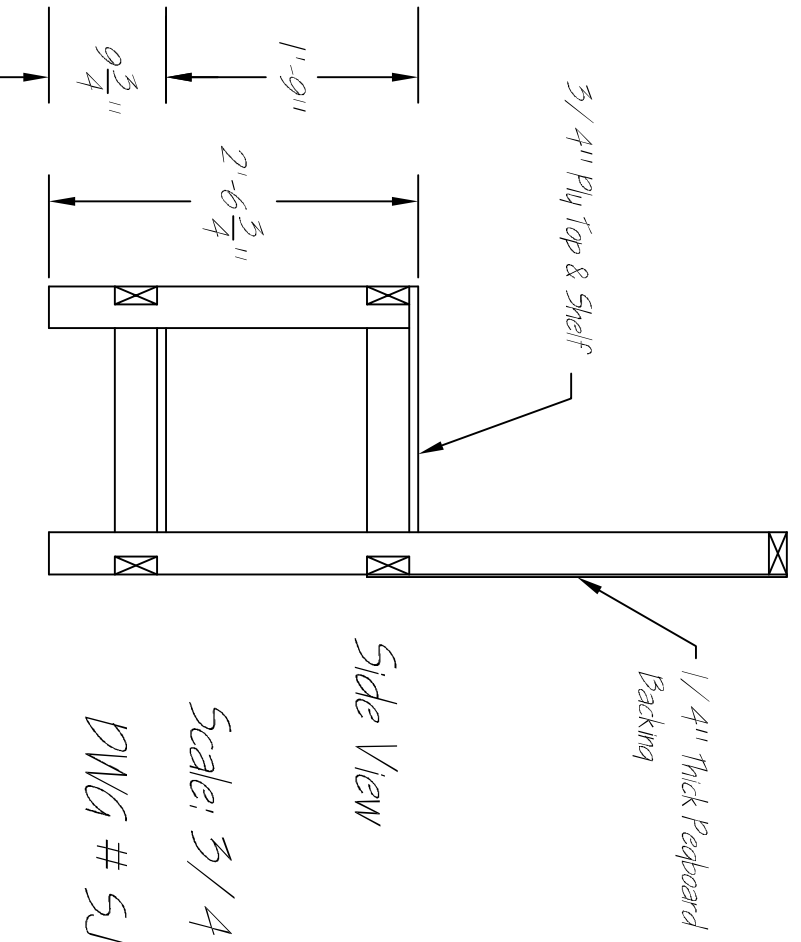
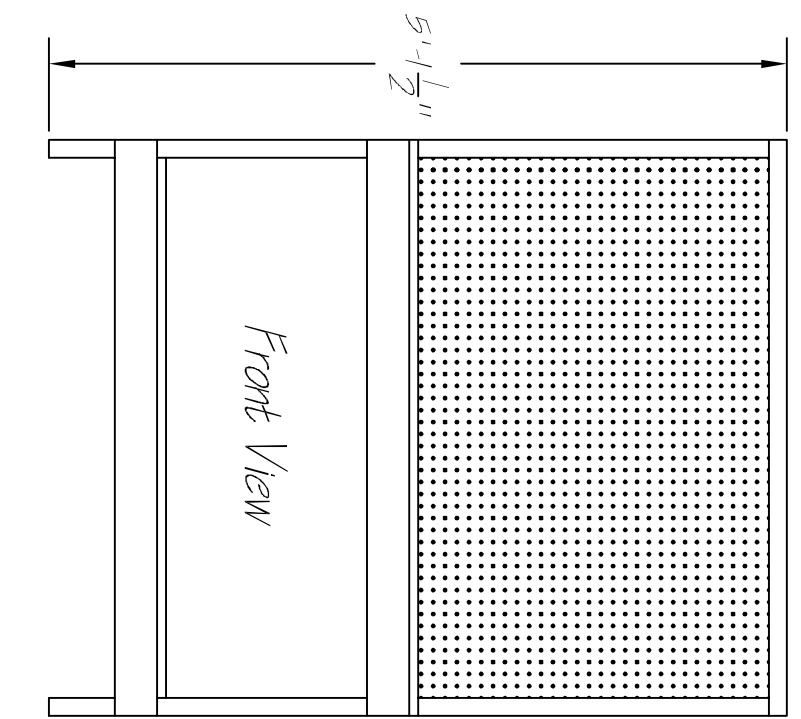
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DWG # SJ-201

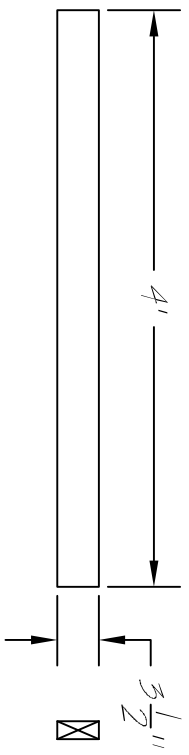


Top View

Shoestring Shipyard Shop Jig Series
 Shoestring Shipyard Tool Bench
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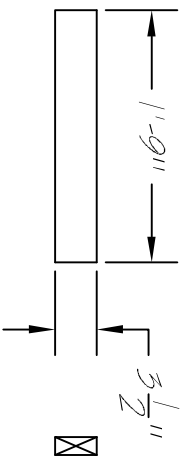


Scale: 3/4" = 1'
 DWG # SJ-300



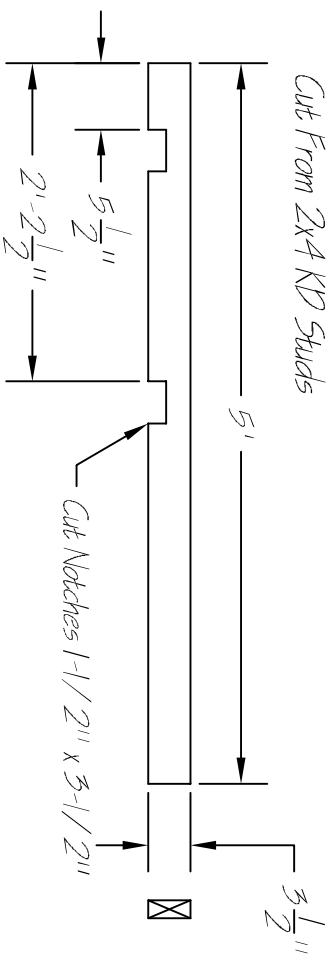
Cross Rails - (5) Required For 1 Bench
Cut From 2x4 KD Studs

DMG # SJ-301



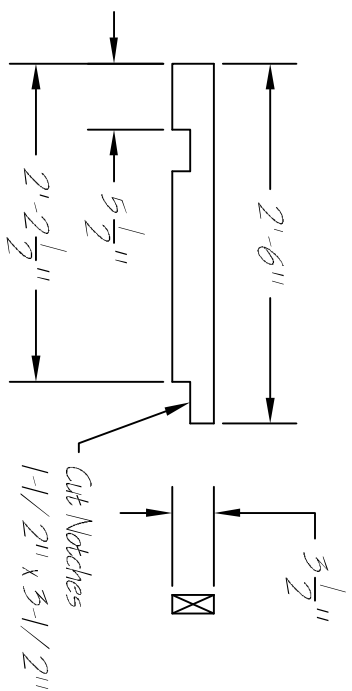
End Rails - (4) Required For 1 Bench
Cut From 2x4 KD Studs

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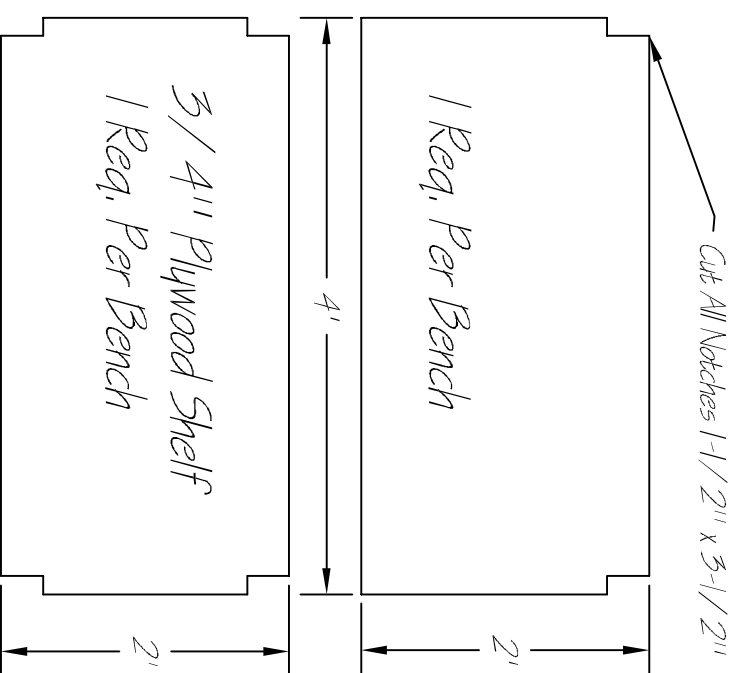


Rear Legs - (2) Required For 1 Bench
Cut From 2x4 KD Studs

Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Tool Bench



Front Legs - (2) Required For 1 Bench
Cut From 2x4 KD Studs

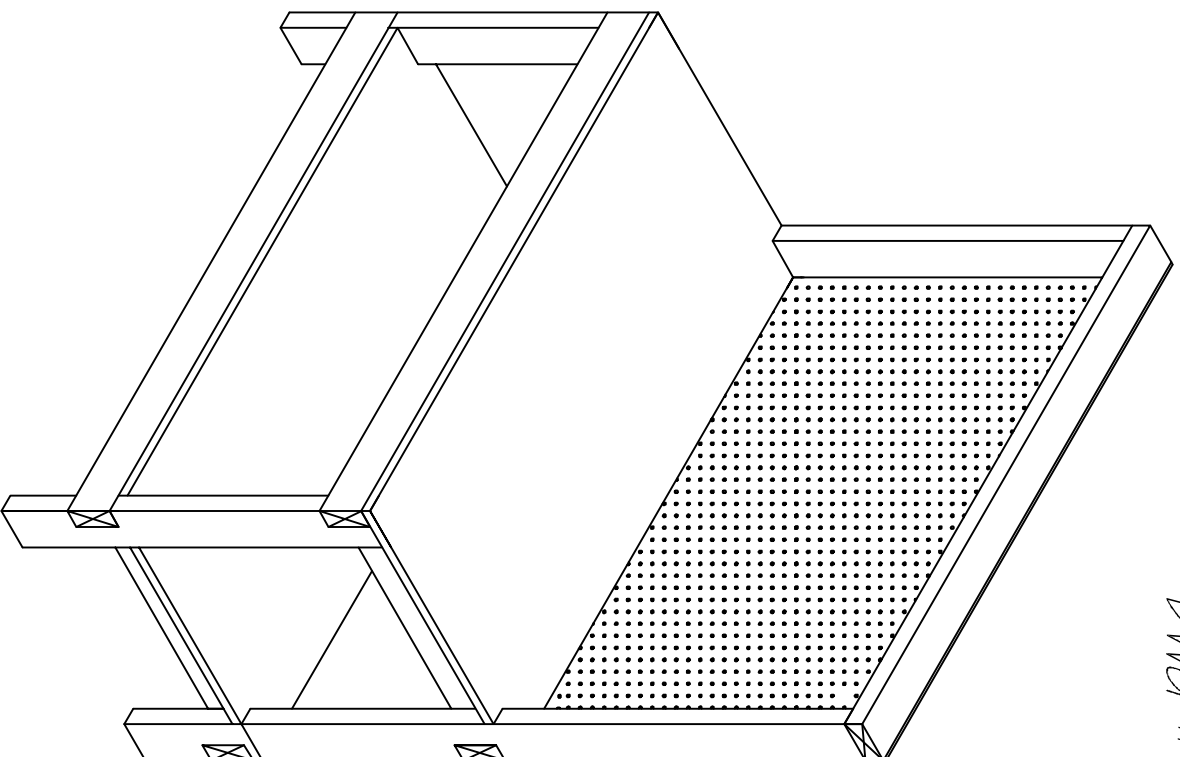


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Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Tool Bench
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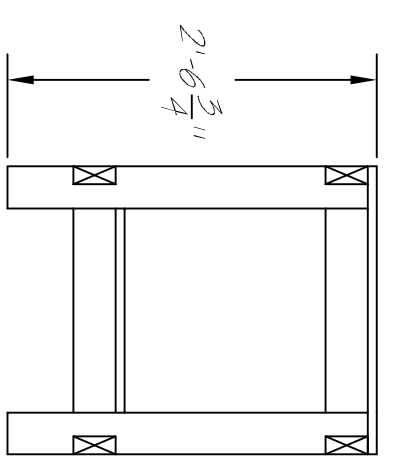
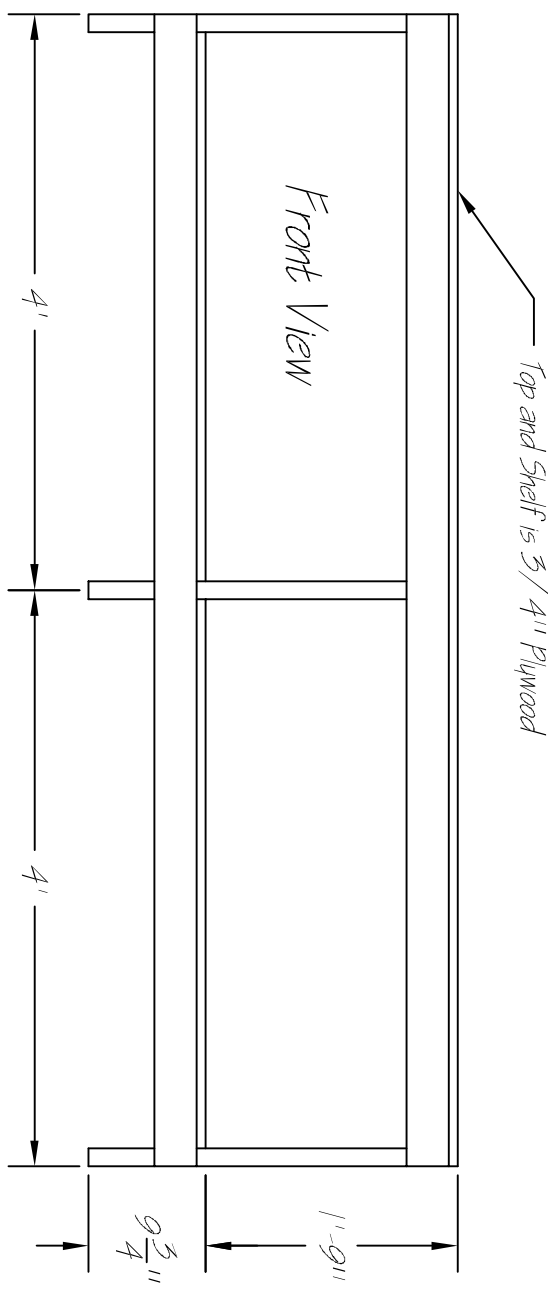
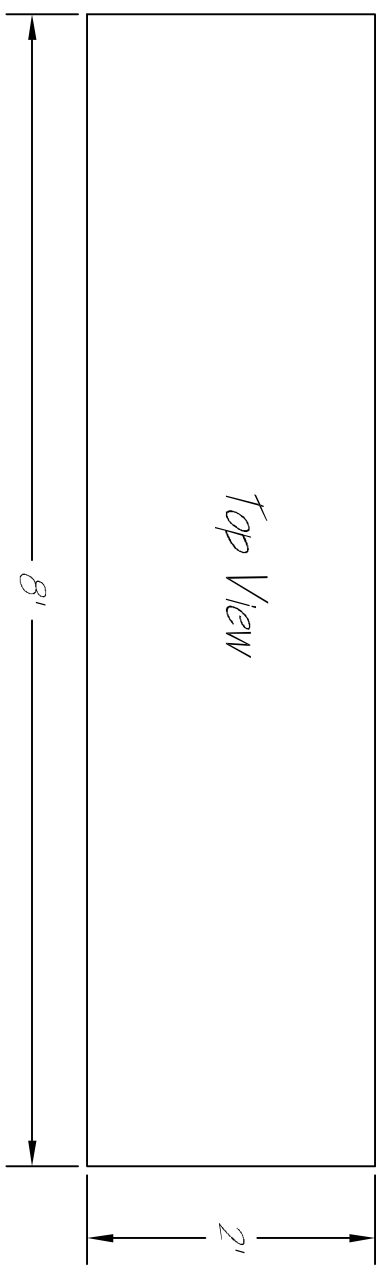
BWG # 51-302

Isometric View



Scale: 3/4" = 1'

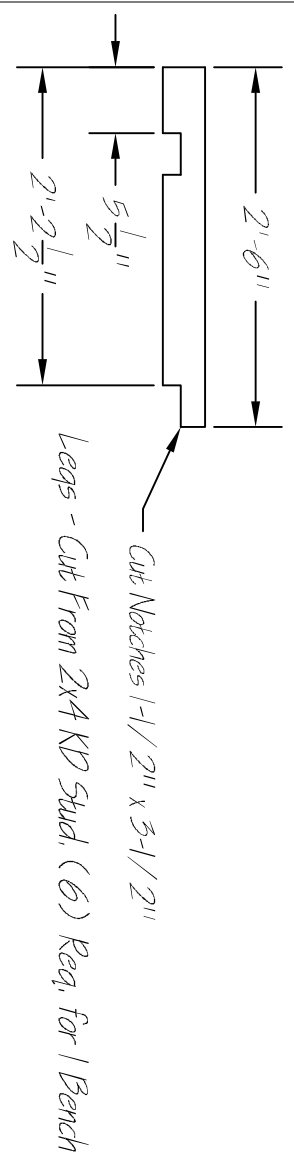
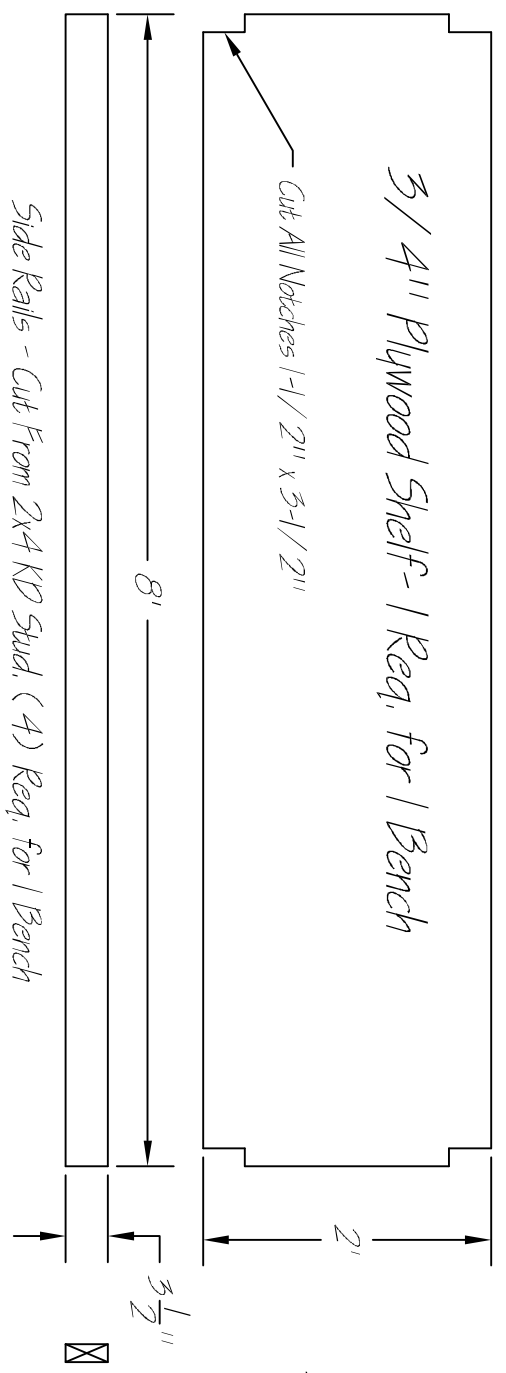
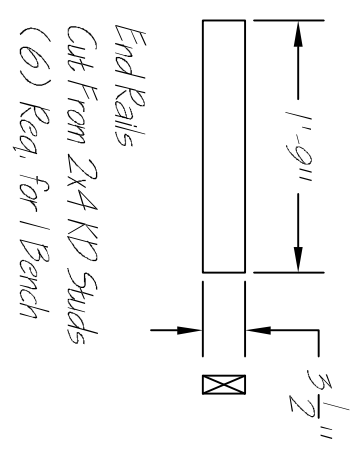
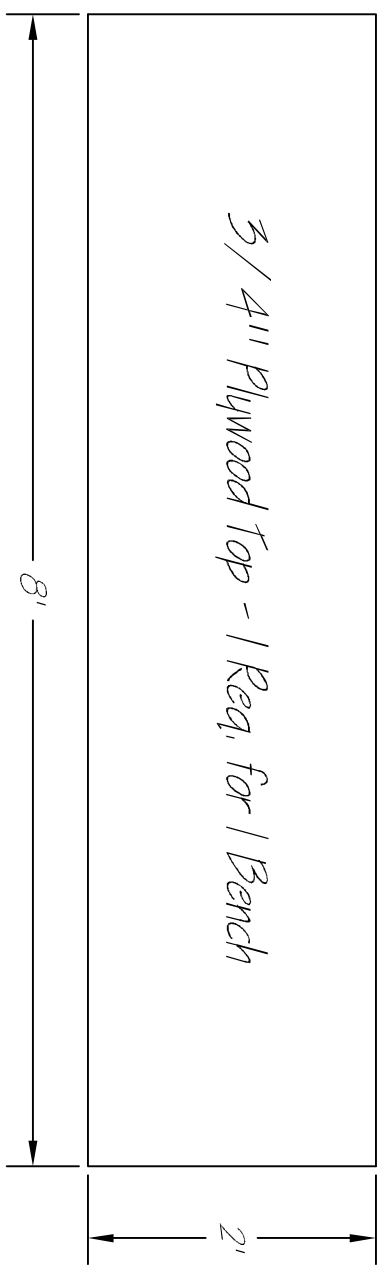
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Scale: 3/4" = 1'

BWG # SJ-400

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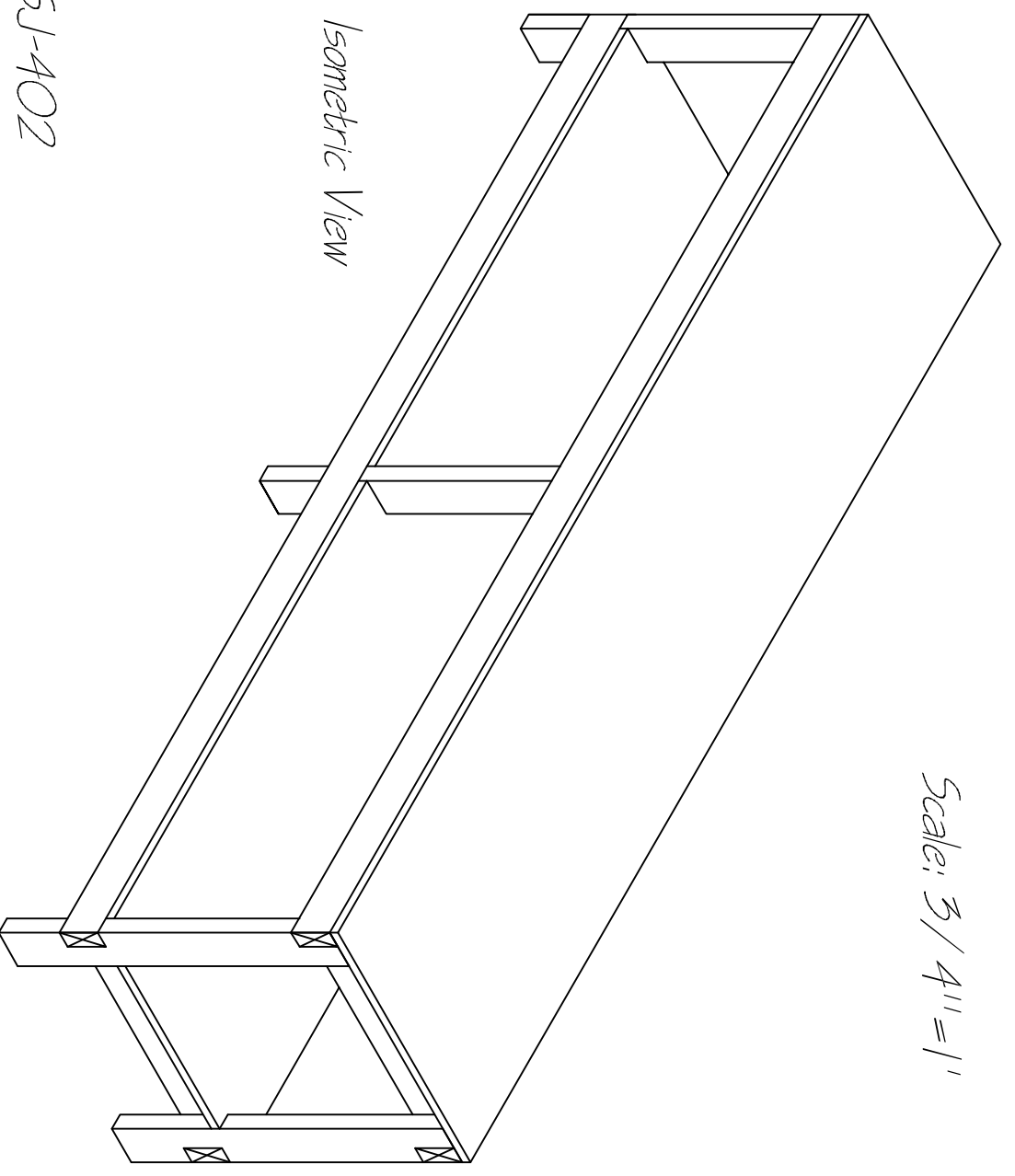


Scale: 3 / 4" = 1'

BWG # SJ-401

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Shoestring Shipyard Work Bench (C) 2012 Shoestring Shipyard All Rights Reserved

Scale: 3 / 4" = 1'

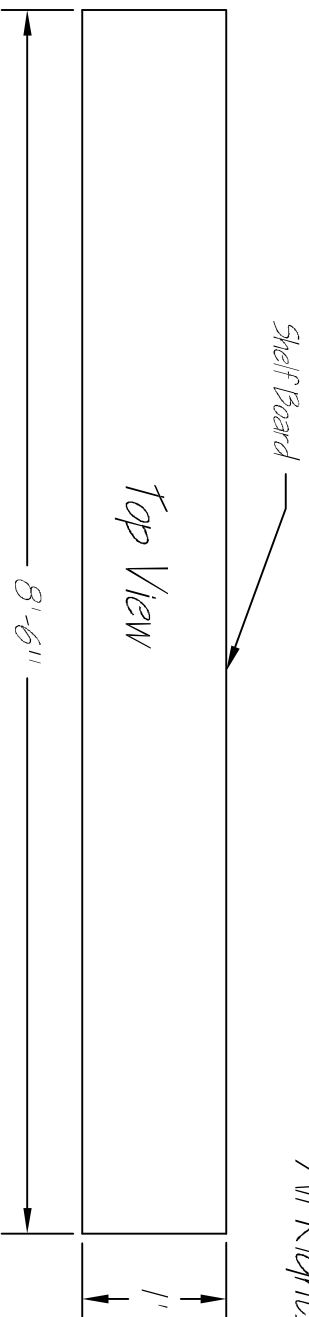


Isometric View

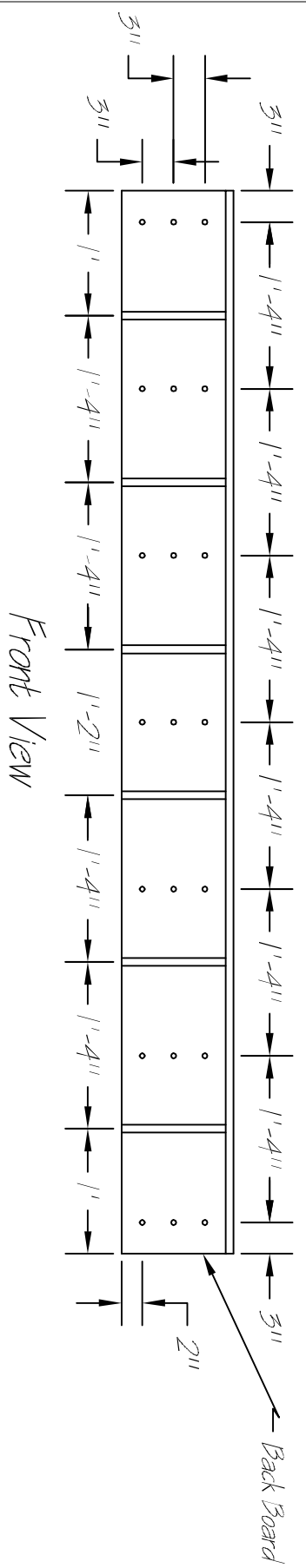
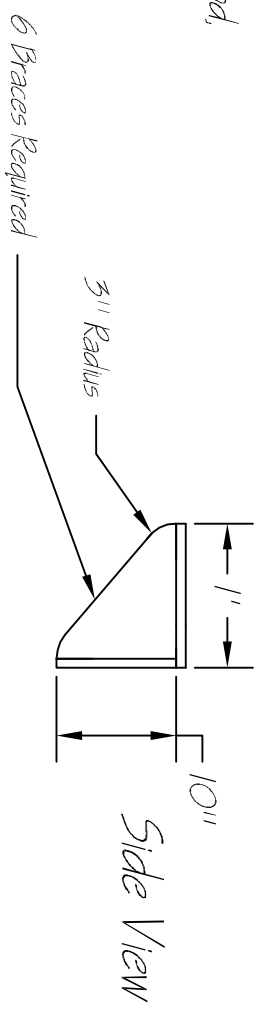
BWG # SJ-402

Shoestring Shipyard Shop Jig Series
 Shoestring Shipyard 12" (Wide) Wall Shelf

Designed by: Paul J. Bennett
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Note: Build using 3/4" Plywood,
 #12 Wood Screws, and
 Carpenter's Glue



Scale: 3/4" = 1'

DWG # SJ-500

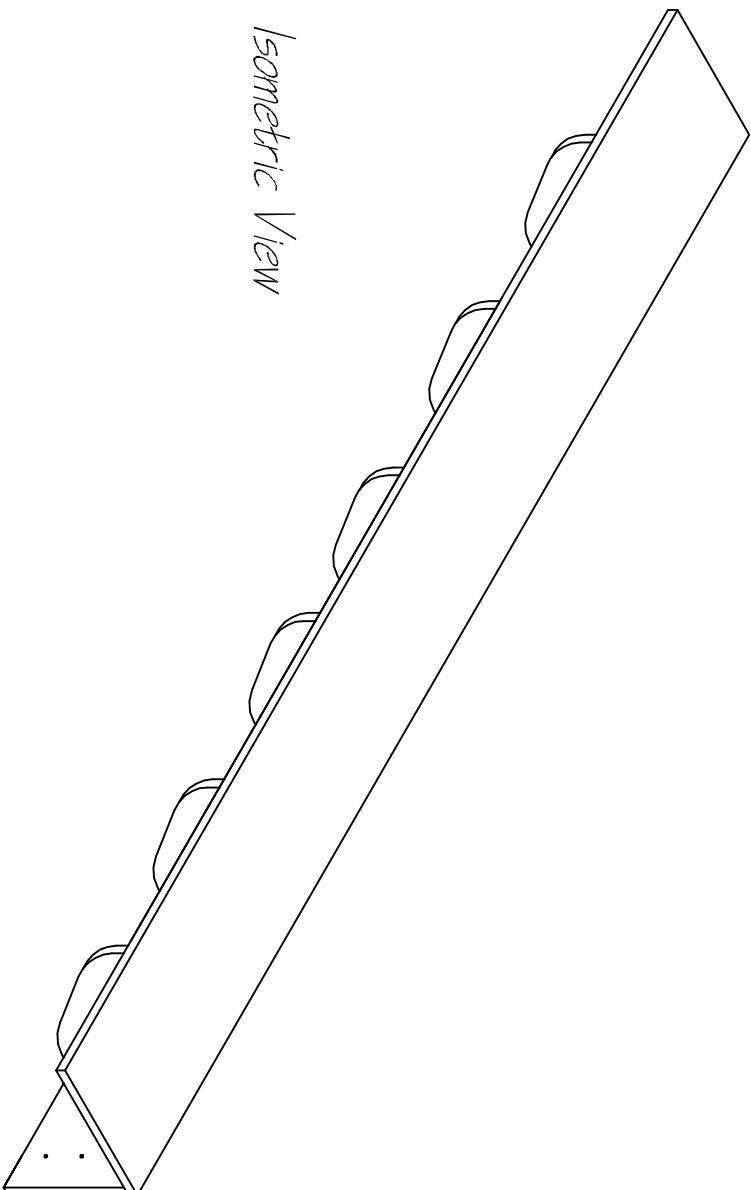
Shoestring Shipyard Shop Jig Series

Shoestring Shipyard 12" (Wide) Wall Shelf

Designed by: Paul J. Bennett

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Isometric View

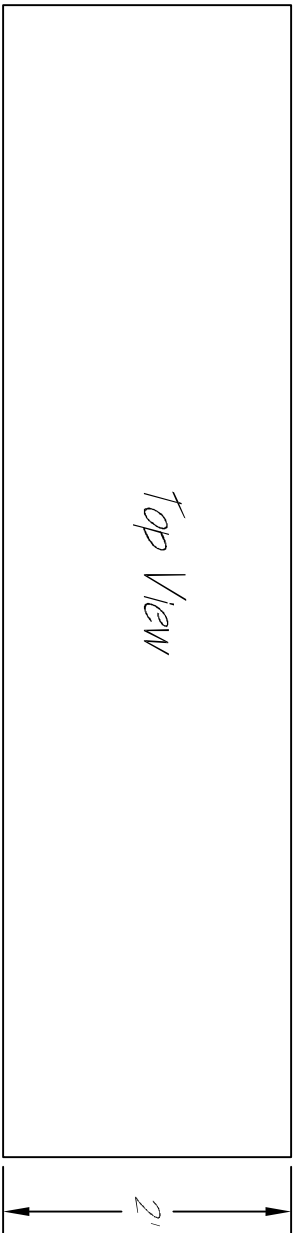
Scale: 3/4" = 1'

BWG # SJ-501

Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Storage Rack

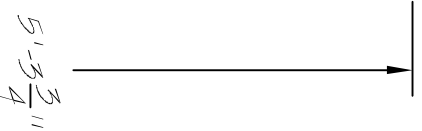
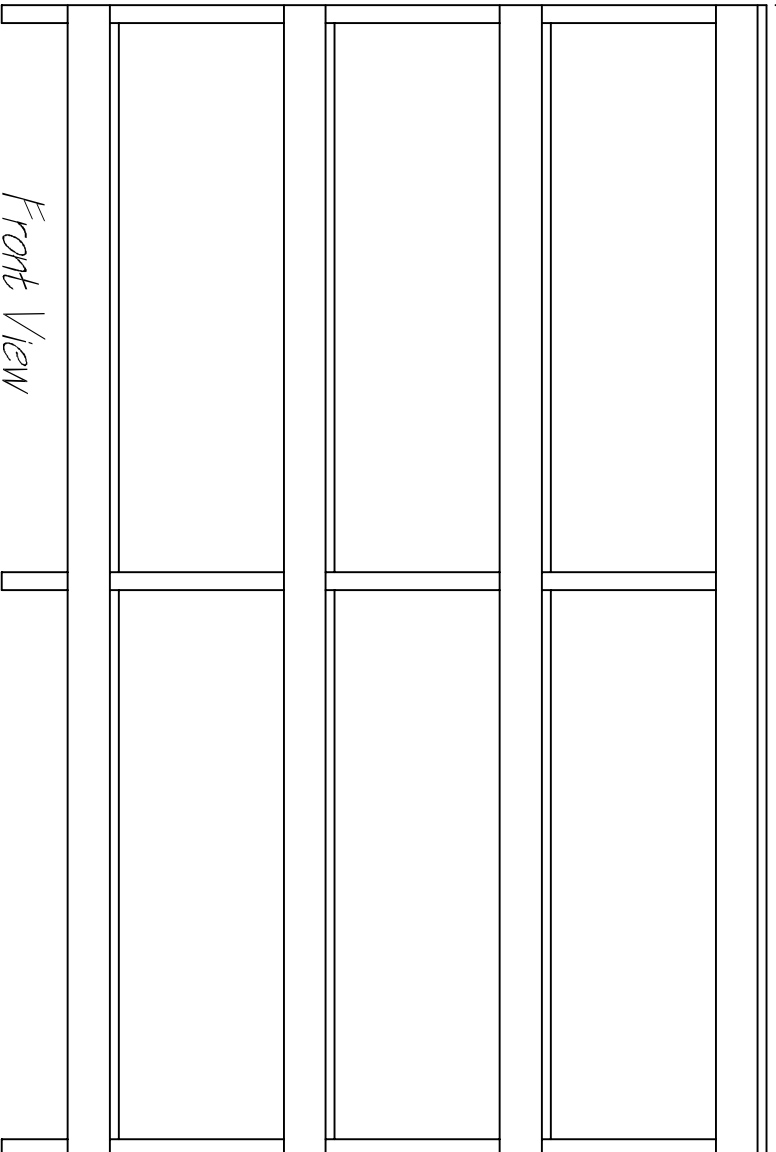
Designed by: Paul J. Bennett
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Top View



DWG # SJ-600
Scale: 3/4" = 1'

8'

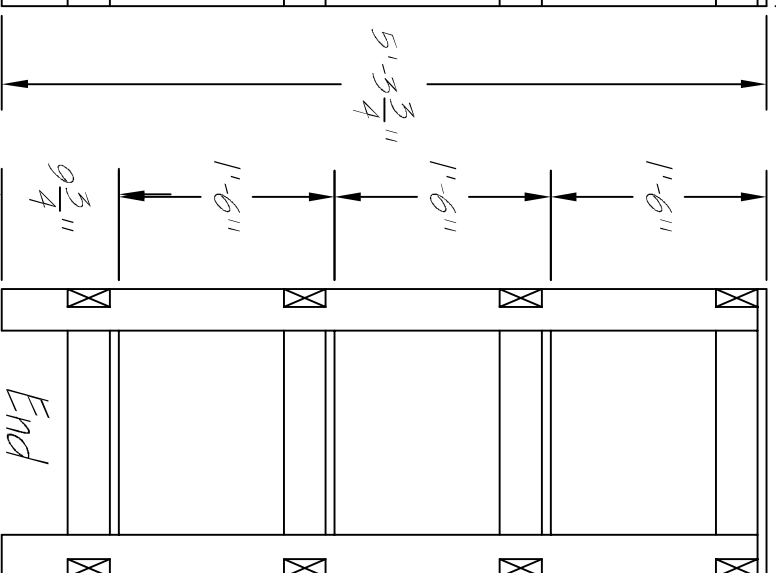


1'-6''

1'-6''

1'-6''

9 ³/₄''



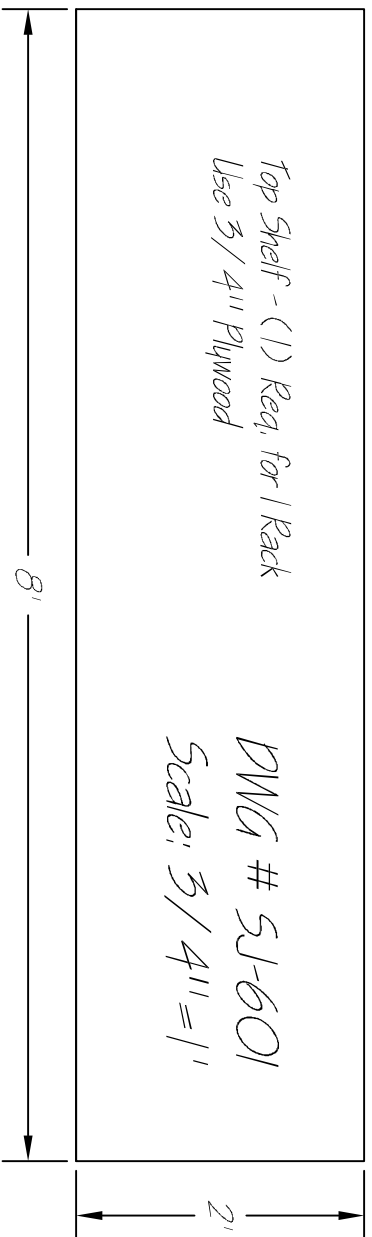
Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Storage Rack

Designed by: Paul J. Bennett
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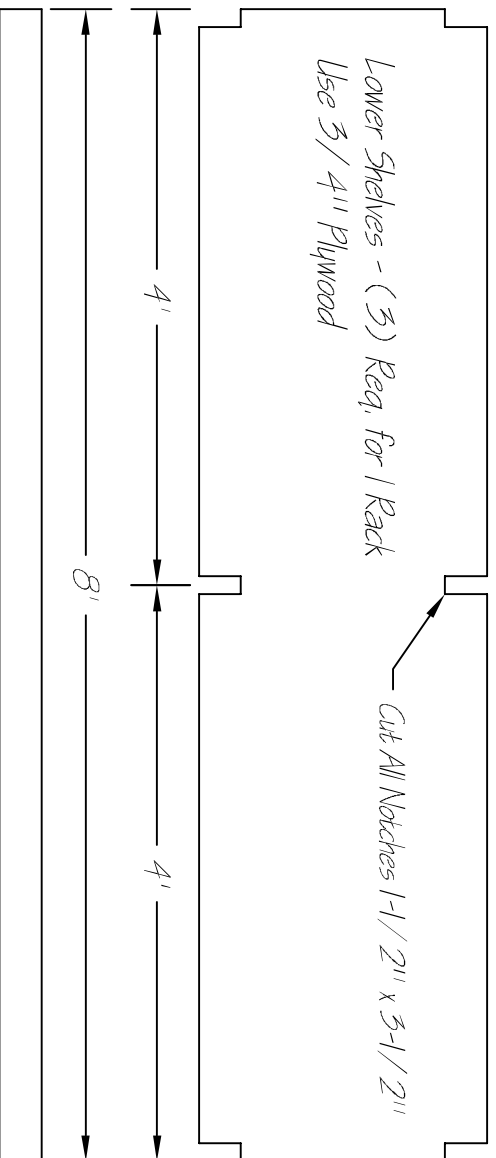
Top Shelf - (1) Req. for 1 Rack
Use 3/4" Plywood

DMG # SJ-601
Scale: 3/4" = 1'

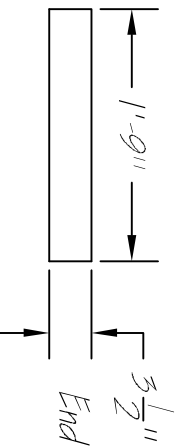


Lower Shelves - (3) Req. for 1 Rack
Use 3/4" Plywood

Cut All Notches 1-1/2" x 3-1/2"



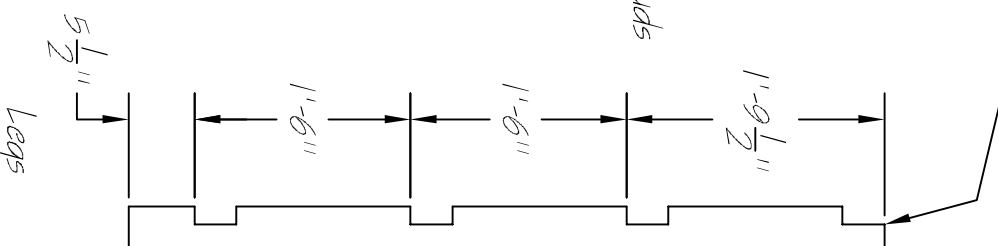
Side Rails - (8) 2 x 4 x 8' KD Studs Req. for 1 Rack



End Rails - (12) 2 x 4 x 1' 9" KD Studs Req. for 1 Rack

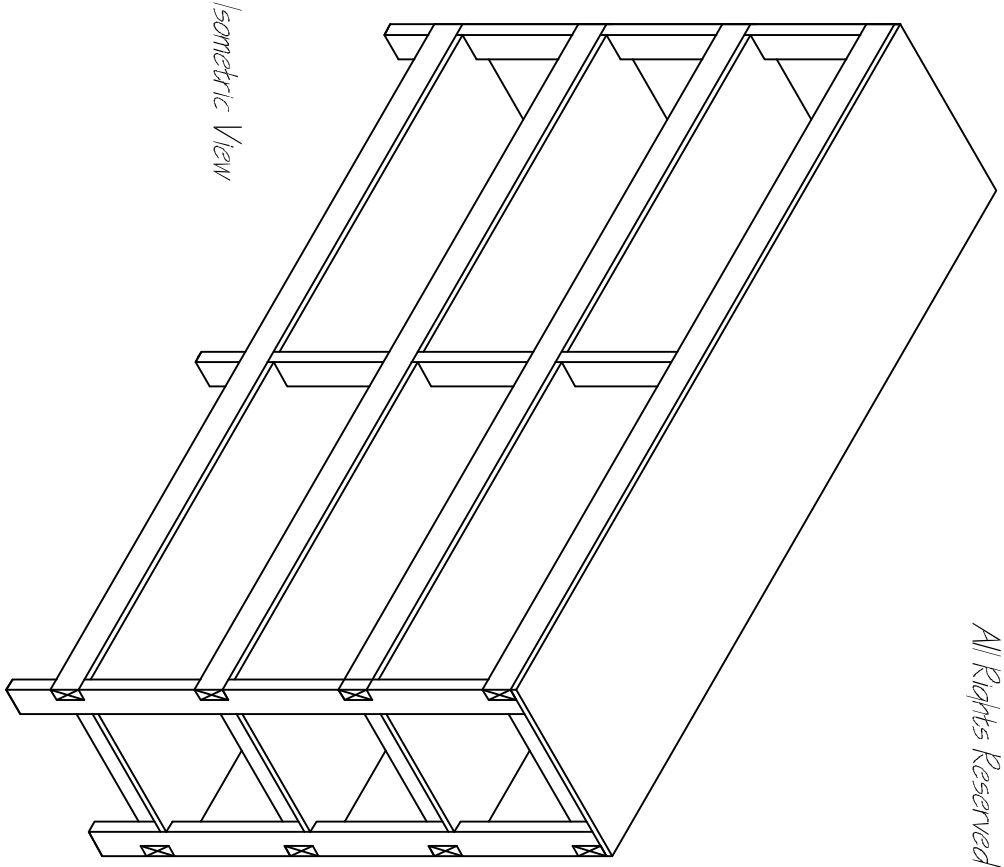
Note: Cut Legs
From 2x4 KD Studs
(6) Req. To
Build 1 Rack

Cut Notches
1-1/2" x 3-1/2"



Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Storage Rack

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Isometric View

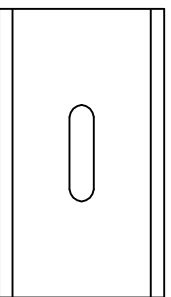
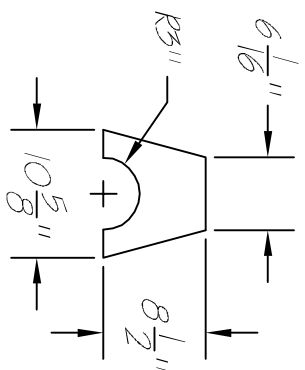
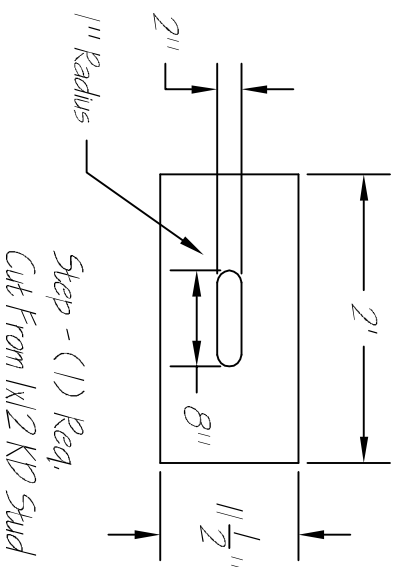
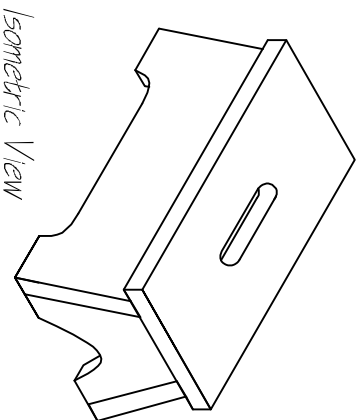
DWG # SJ-602

Scale: 1/2" = 1'

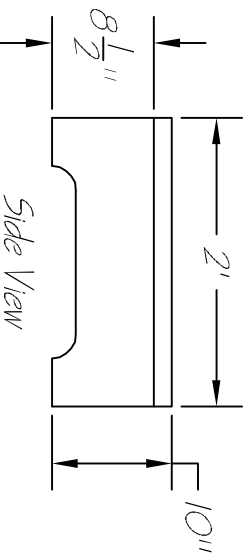
Shoestring Shipyard Shop Jig Series
Shoestring Shipyard Step Stool

Designed by: Paul J. Bennett
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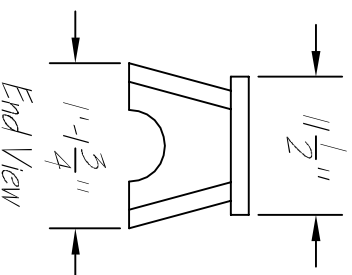
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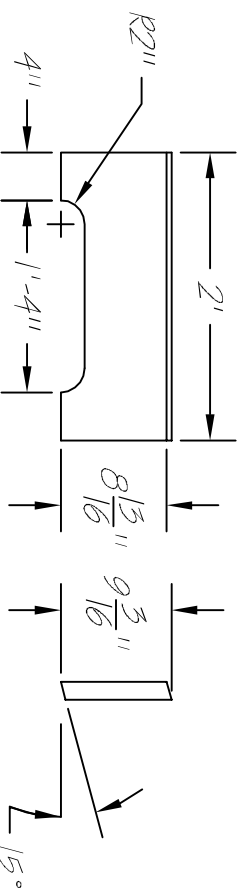
Top View



Side View



End View



Sides - (2) Req.
Cut From 1x10 KD Stud

Ends - (2) Req.
Cut From 1x12 KD Stud

DWG # SJ-700

Scale: 3/4" = 1'