

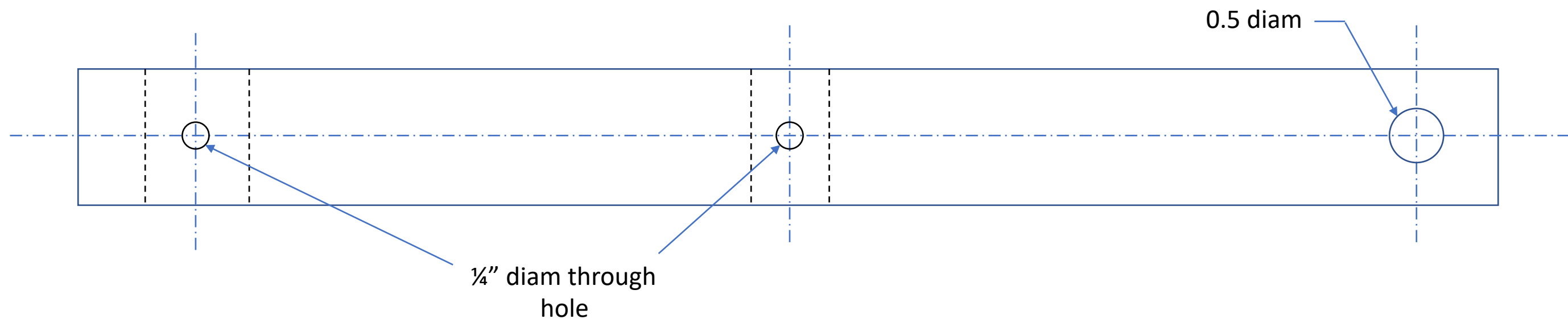
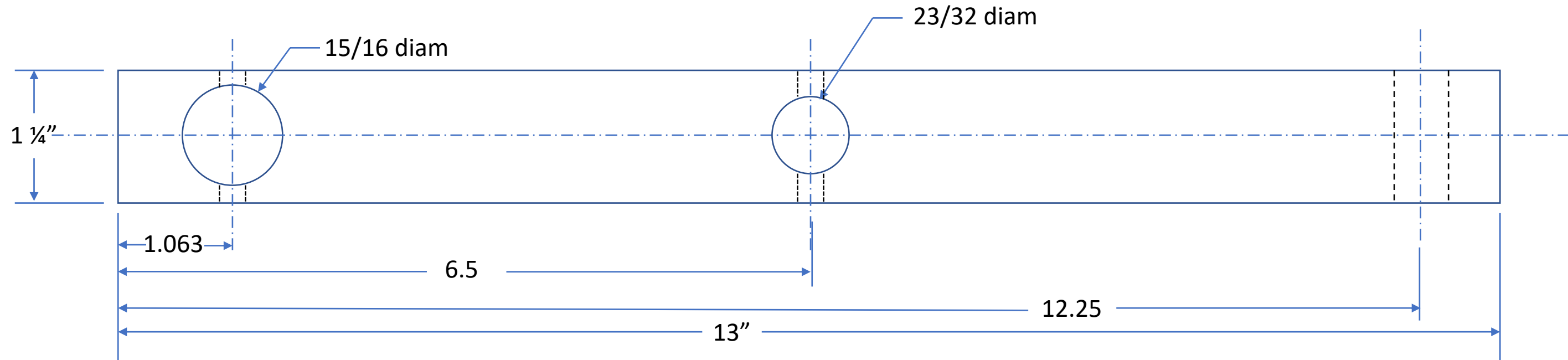
The Newfoundland Dog Christmas Tree Cart

Original design by Dave Supko, Branchville, NJ.

This document illustrates the cart as built by Mark Fernald,
following Dave's design.

Long Square Aluminum Tube

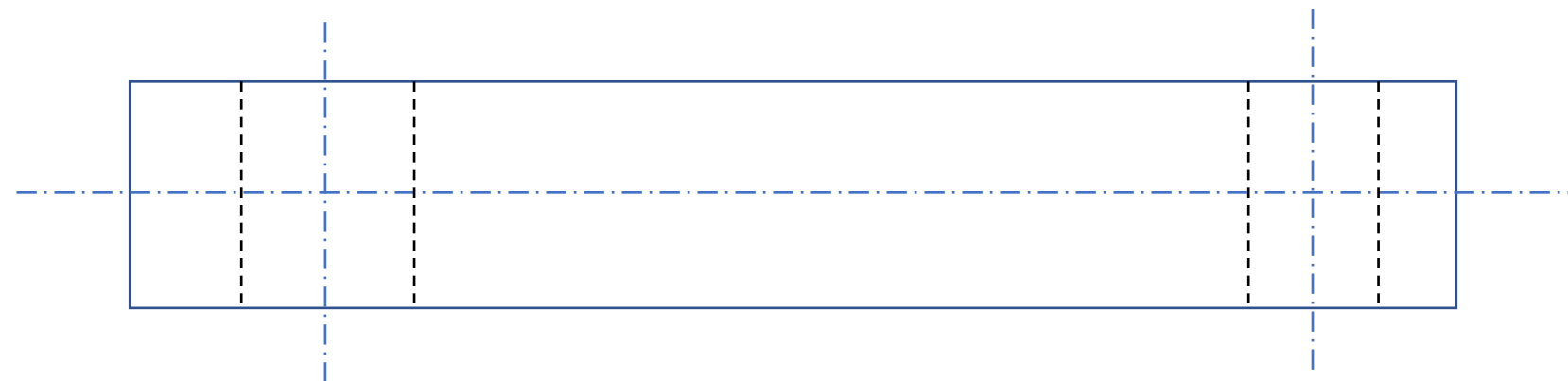
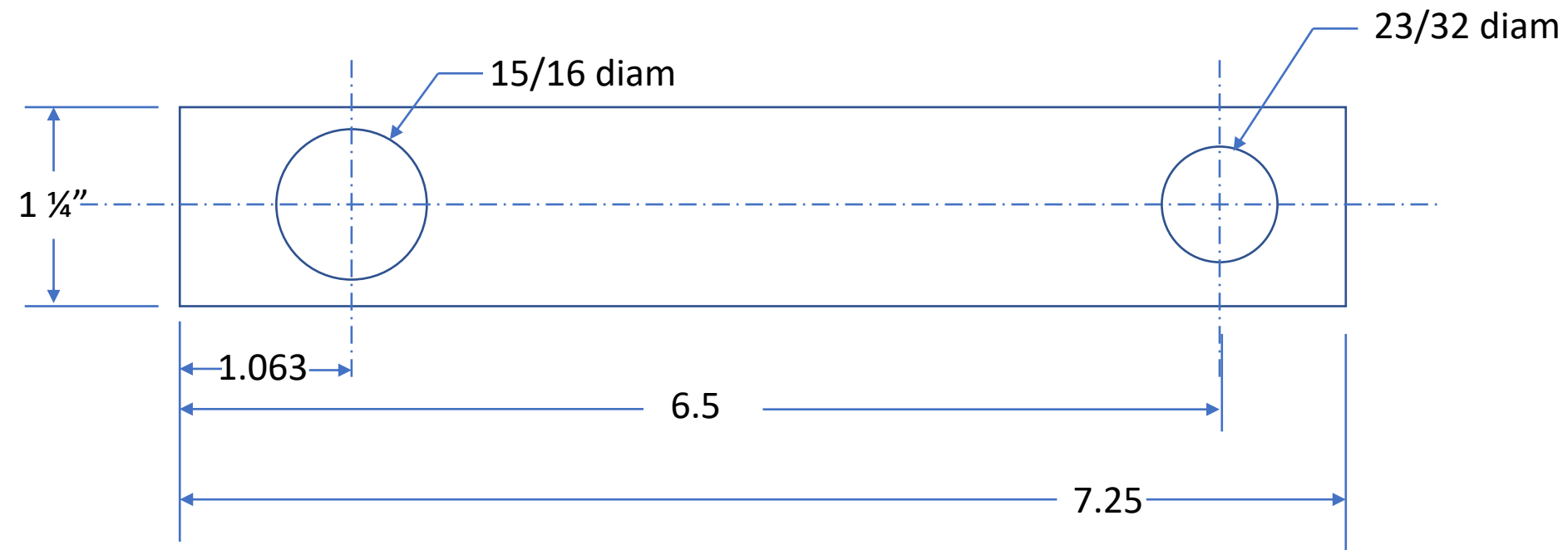
All dimensions in inches



1 1/4" square aluminum tube
1/8" wall thickness

Short Square Aluminum Tube

All dimensions in inches



1 1/4" square aluminum tube
1/8" wall thickness

20" x 30" Conduit Loop

1/2" conduit 90 degree bend

1/2" conduit coupling

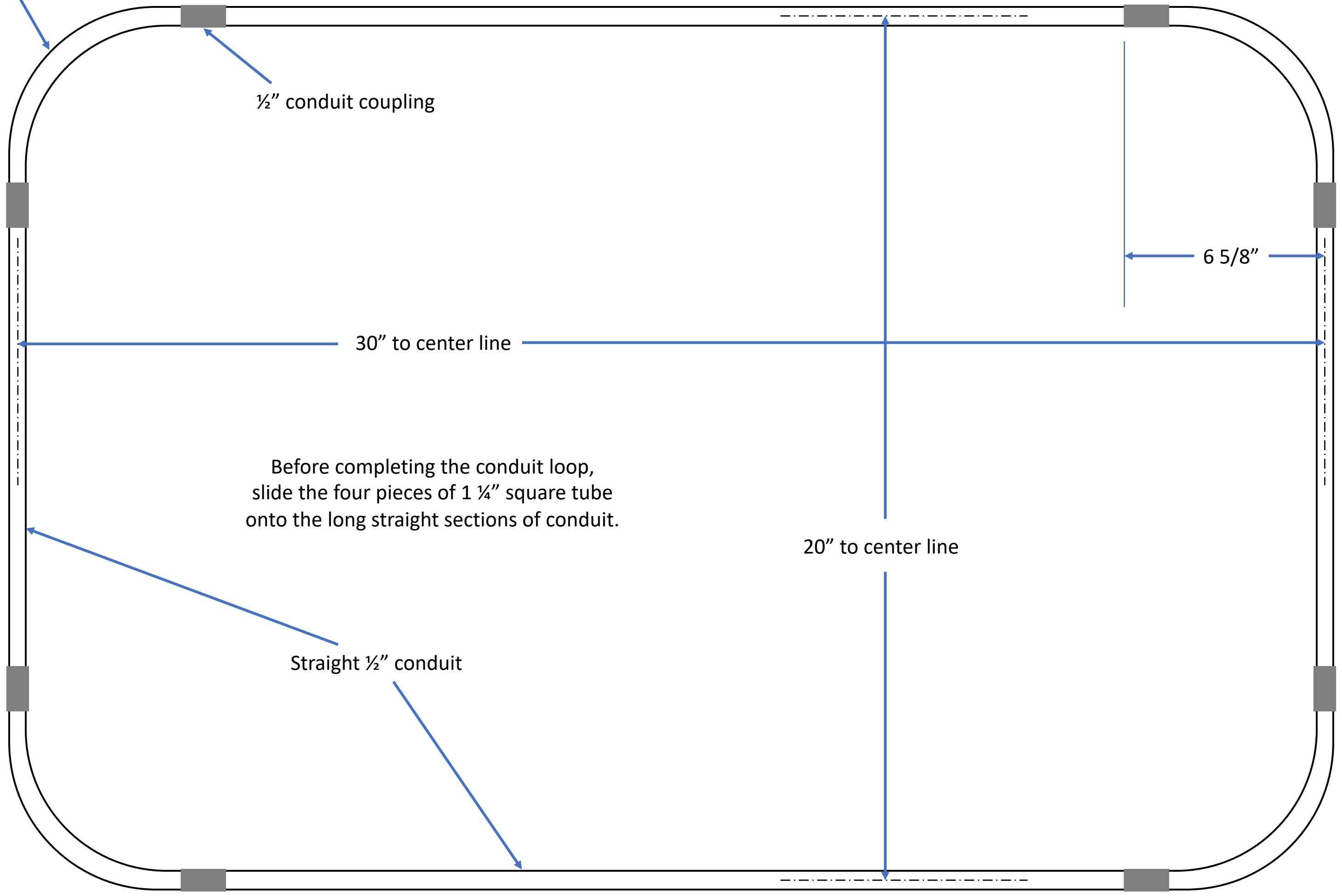
30" to center line

6 5/8"

Before completing the conduit loop,
slide the four pieces of 1 1/4" square tube
onto the long straight sections of conduit.

20" to center line

Straight 1/2" conduit



Halex

1/2 in. 90-Degree Electric Metallic Tube (EMT) Elbow

★★★★★ (15) Questions & Answers (3)



Hover Image to Zoom

377

Includes 20 units (19¢ /unit)




\$3.79

- Connects EMT conduit for 90-degree bends and easy wire pulling
- Indoor or outdoor application
- 16-gauge galvanized steel
- [View More Details](#)

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RACO

1/2 in. EMT Set-Screw Coupling, 5-Pack

★★★★★ (12) Questions & Answers (3)



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933

Includes 5 units (50¢ /unit)

\$2.50

- Used to affix two ends of EMT conduit together
- Designed for use in dry locations only
- When taped, they can be used for concrete-tight applications
- [View More Details](#)

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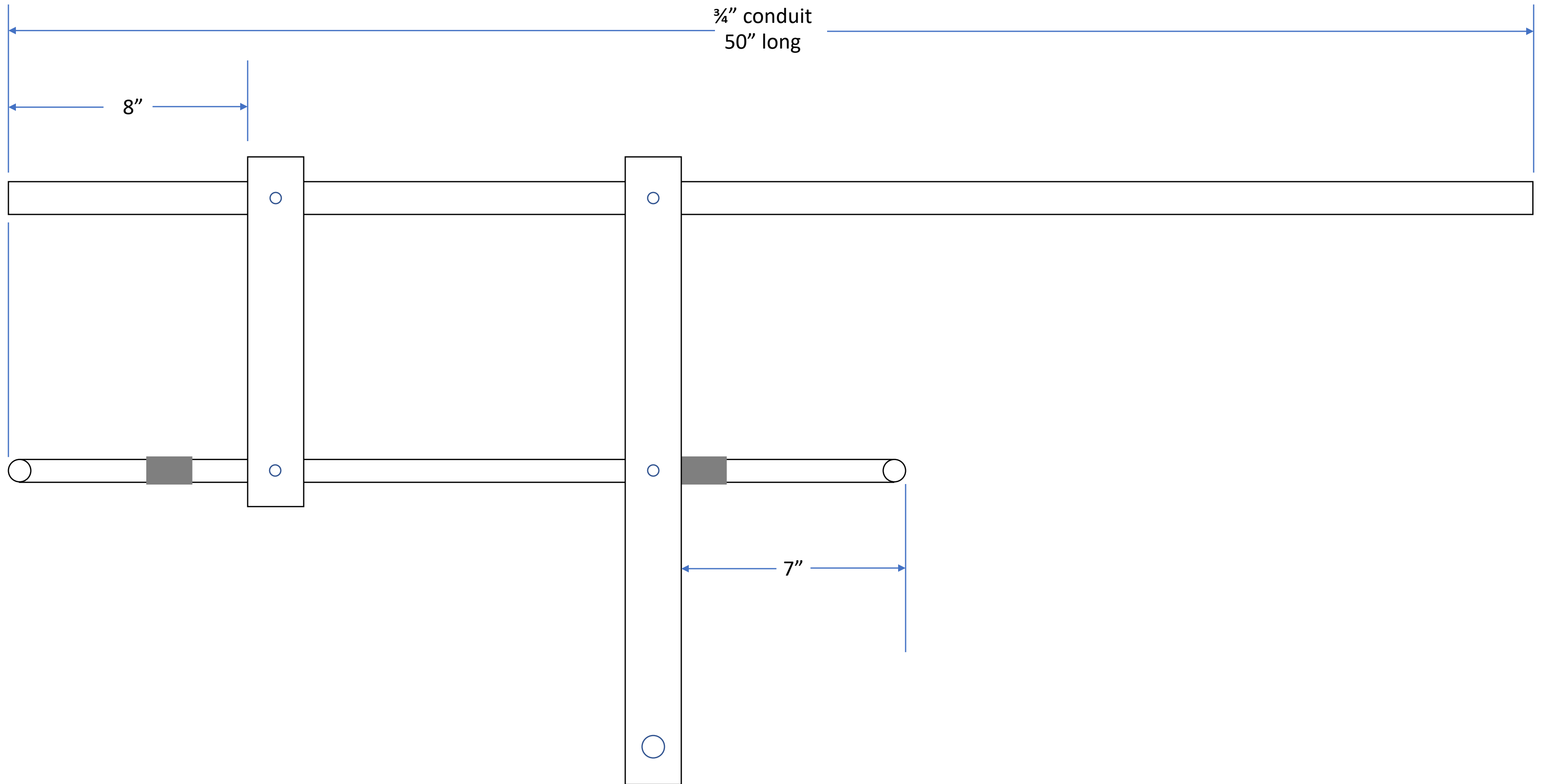
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In use, remove the two set screws and mark the location of the holes on the conduit.
Drill two 3/32" pilot holes and install two #8 x 1/2" sheet metal screws to hold
the coupler in place.

Assembly of Cart Frame

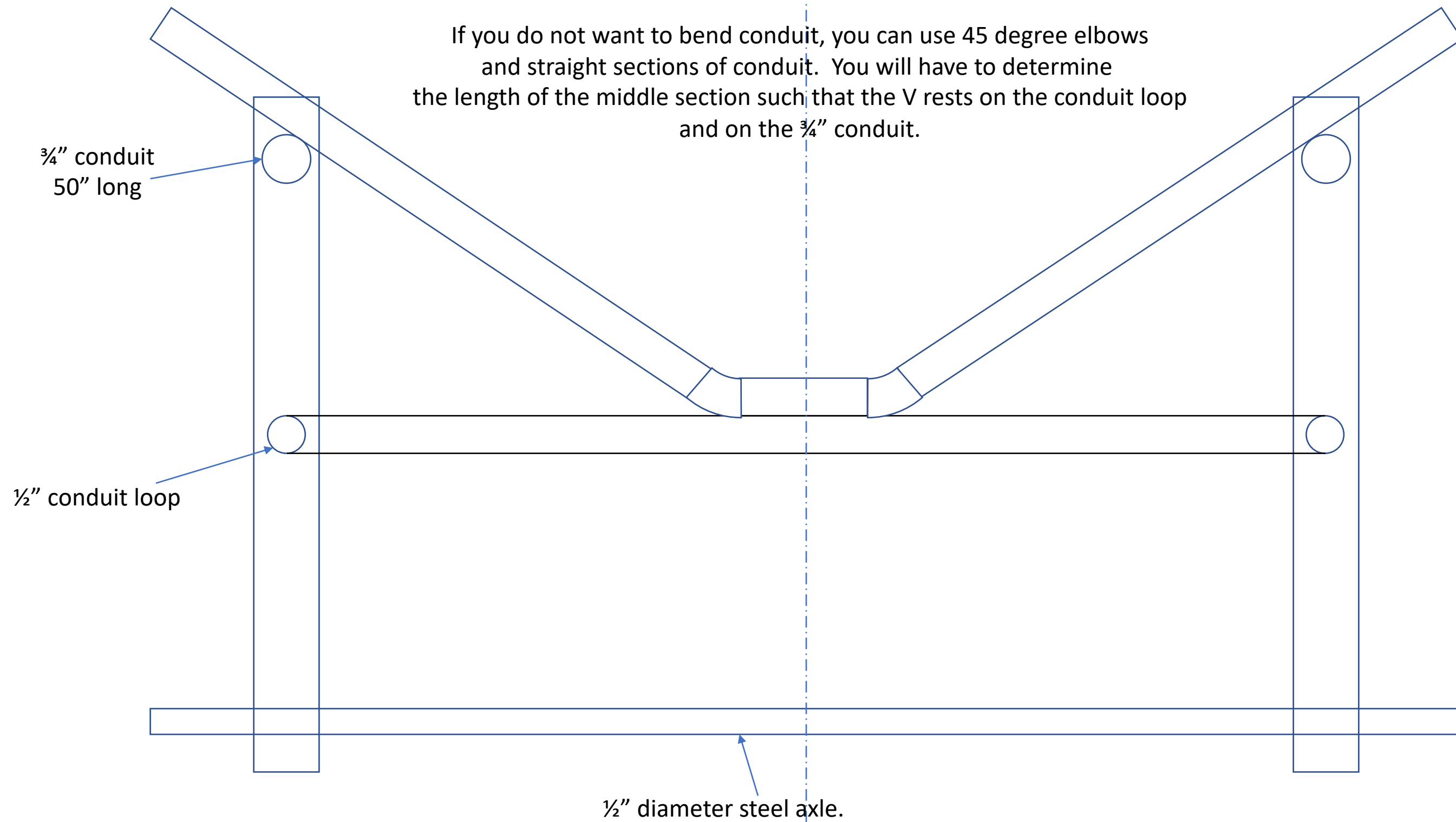


The tricky part!

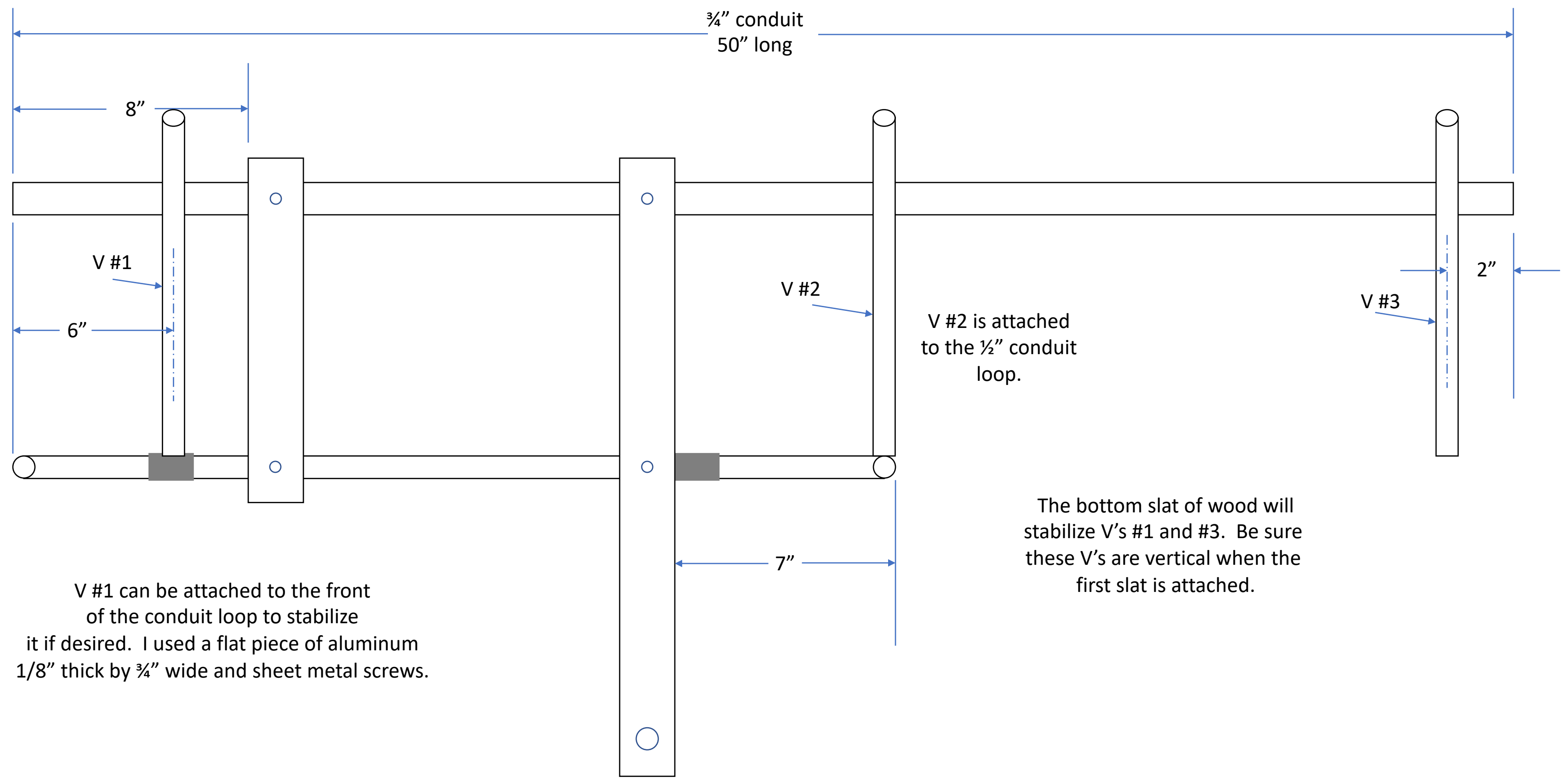
Bend three Vee's from $\frac{1}{2}$ " conduit that are all the same.
They need to contact the $\frac{1}{2}$ " conduit loop and rest on the $\frac{3}{4}$ " conduit.
There needs to be a flat spot in the middle 2.5" wide so
the middle slat can be attached.

Each Vee is made from a 30" piece of $\frac{1}{2}$ " conduit.

If you do not want to bend conduit, you can use 45 degree elbows
and straight sections of conduit. You will have to determine
the length of the middle section such that the V rests on the conduit loop
and on the $\frac{3}{4}$ " conduit.



Position of Vee's



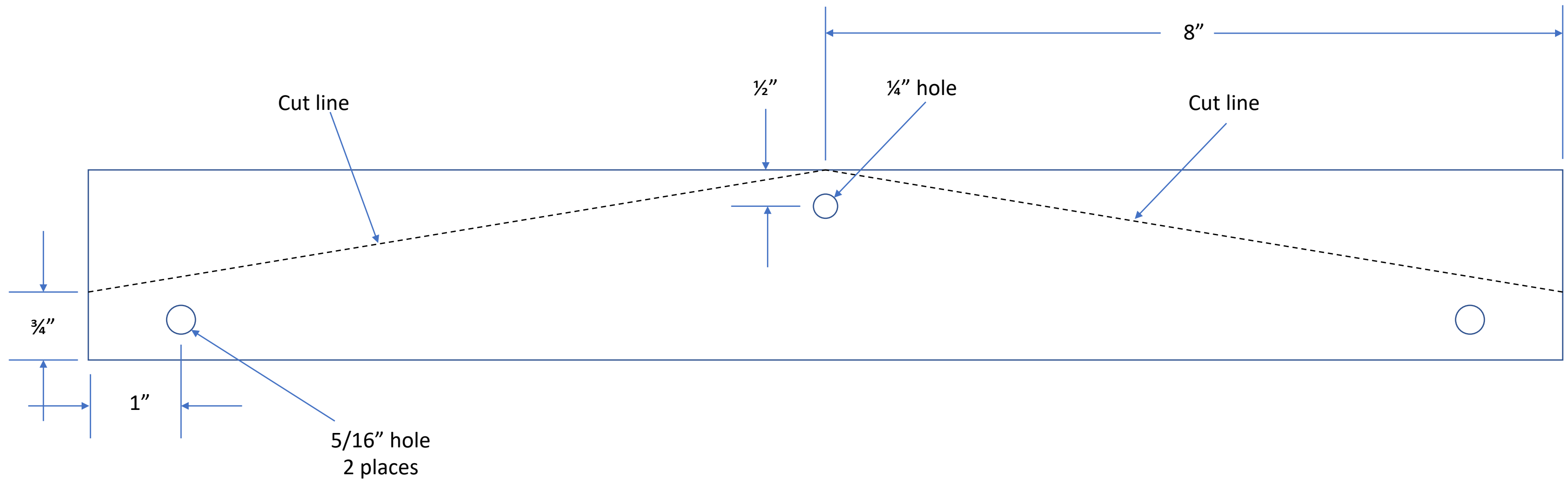
V #1 can be attached to the front of the conduit loop to stabilize it if desired. I used a flat piece of aluminum 1/8" thick by 3/4" wide and sheet metal screws.

V #2 is attached to the 1/2" conduit loop.

The bottom slat of wood will stabilize V's #1 and #3. Be sure these V's are vertical when the first slat is attached.

The Tree

Made from 1/8" by 2" aluminum flat stock 16" long.



The tree is attached to the front of the conduit loop with a 1/4-20 bolt.
I put a flat washer between the tree and the conduit.
The nut should be tightened so that the tree will rotate freely.
The chain is used to attach the traces to the tree so that
the traces do not need to be adjusted for this cart.

The square tubes are attached to the conduit with $\frac{1}{4}$ - 20 bolts 1 $\frac{1}{2}$ " long. I used $\frac{1}{4}$ -20 hex nuts with a nylon insert as self locking nuts.

Likewise, the V's are attached to the conduit with $\frac{1}{4}$ -20 bolts 2" long.

I obtained the 1 $\frac{1}{4}$ " square aluminum tube from Grainger industrial supply. There happened to be a store near me in Manchester, NH. Do not use 1" square tube commonly available at Home Depot or Lowes. The $\frac{3}{4}$ " conduit requires a $\frac{15}{16}$ " diameter hole. Not much metal left over with a 1" square tube.

The shafts are $\frac{1}{2}$ " steel conduit 60" long. The shafts slide into the $\frac{3}{4}$ " conduit up to the bolts that attach the first V. Shafts are held in place with two $\frac{1}{4}$ " hitch pins 1 $\frac{1}{2}$ " long. I wrapped electrical tape around the ends of the shafts so they would fit snugly into the $\frac{3}{4}$ " conduit and not rattle excessively. I used $\frac{1}{4}$ -20 eye bolts as brakes on the shafts, attached with $\frac{1}{4}$ -20 wing nuts with nylon inserts. I put the brakes 8" back from the end of the shaft, but several holes at 1" intervals could be drilled for adjusting the brake for individual dogs. The shafts are not symmetrical and should be marked "right" and "left". I put corresponding marks on the $\frac{3}{4}$ " conduit.

I painted the wood slats before installation. They are attached with 1 $\frac{1}{4}$ " exterior screws with $\frac{3}{32}$ " pilot holes drilled in the conduit V's. I used 7 slats spaced evenly along the V.

Mark Fernald

Amherst, NH

603 673 6175

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- 20in. x 1.75in. tire size
- Staggered knobby tread
- 150-lb. load capacity
- 1/2in. bore diameter

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Product Summary

The Ironton® 20in. Pneumatic Plastic Spoked Wheel is ideal for garden carts. Has 5 spokes and rim made of rugged, impact-resistant white polypropylene. Aluminum alloy hub has 1/2in. ball bearing bore to fit 1/2in. axle. Black pneumatic tire on plastic wheel has a 150-lb. load capacity.

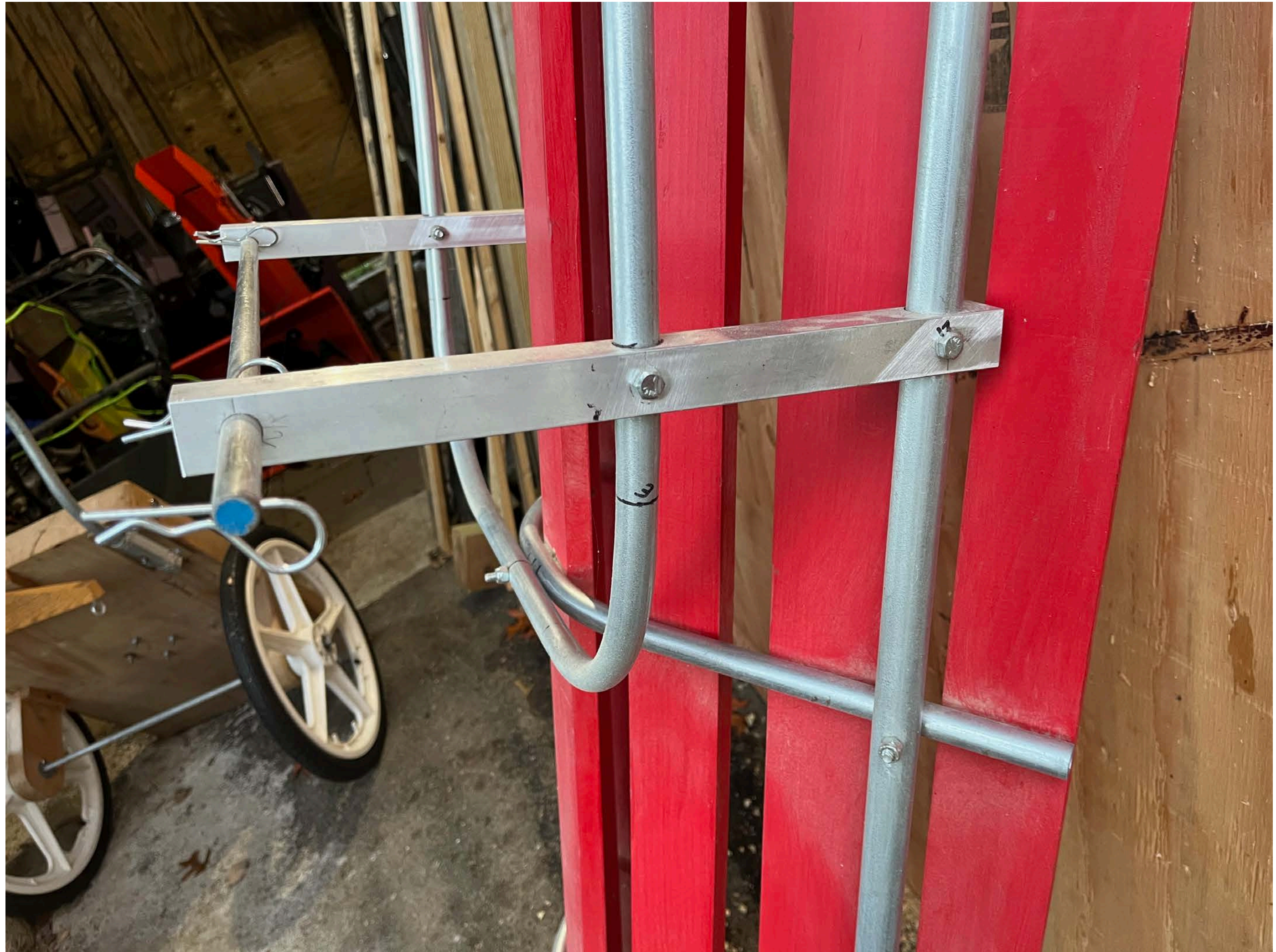
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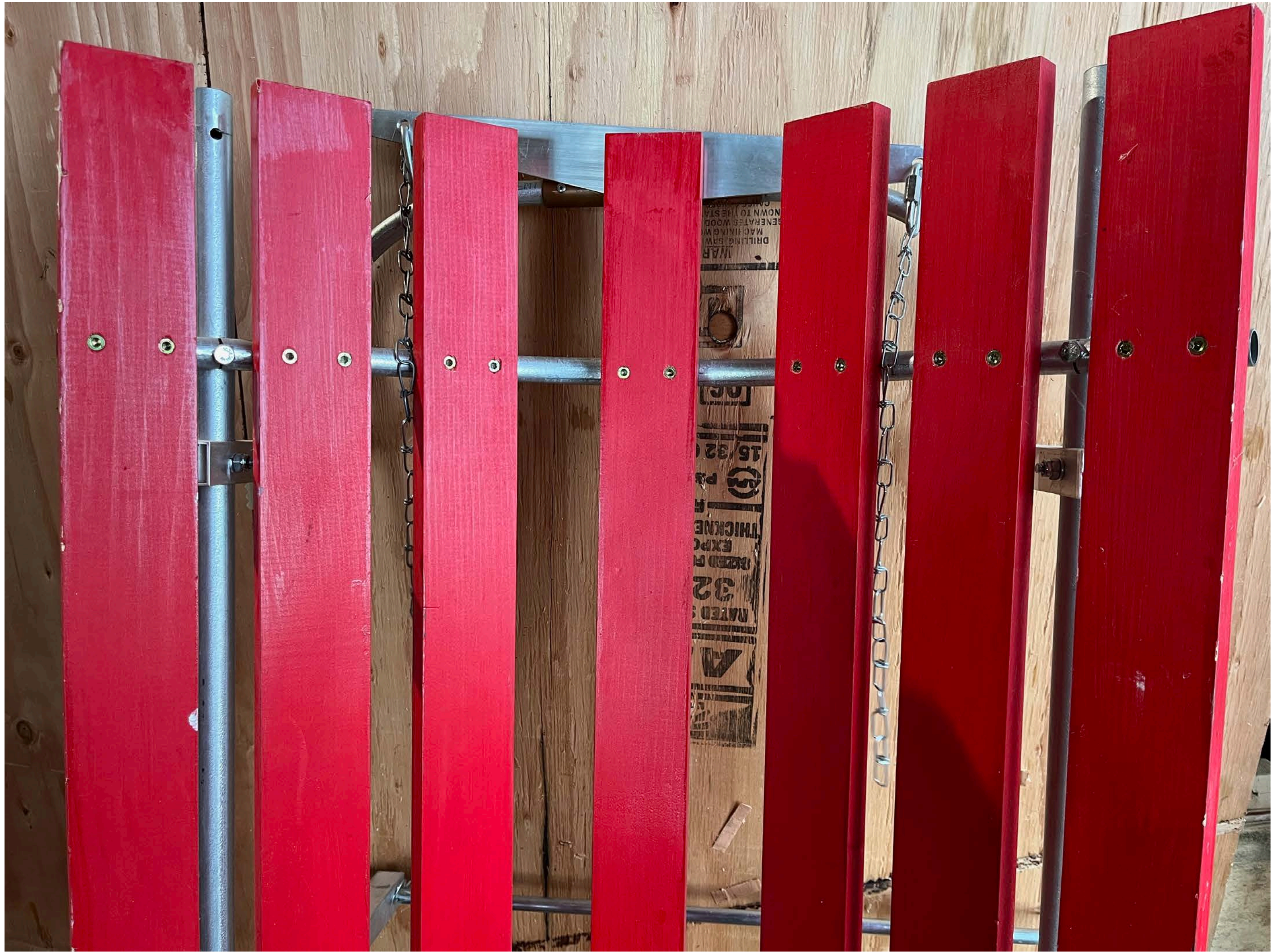












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