

# Portable Engine Hoist

I have removed and reinstalled my AeroVee engine several times for various reasons. My plane lives at a tie-down so I don't have a place to keep an engine hoist. And when I had a prop strike in 2016 on an ISLAND (Nantucket) and needed to remove the engine to bring it home to work on, I again needed an engine hoist that was transportable.

I made this hoist from wood 2x4's and a 2x8, and when taken apart it fits in my sedan. The rear seat folds down and so I can put the long log of the "T" up the middle, between the driver and passenger, and the short legs of the "T" just fit left to right in the trunk. You may have to measure your own vehicle to see what will fit, but keeping the legs as long as possible will help with stability.

I had thought about putting everything on wheels, but I would have had to substantially beef up the horizontal legs. Also, with the engine hanging from the cross beam even 46" long legs would have a difficult time keeping the assembly from toppling if the engine got to swinging.

## Materials List:

- (5) 2x4 x 8' (cut per details)
- (1) 2x8 x 8' (cut to minimum 78" long)
- (4) Tee brackets
- (4) 5/16" x 6" bolts
- (4) 5/16" nuts
- (8) fender washers for 5/16" dia bolts
- (2) dozen 3" long wood screws
- (4) dozen 4d (1-1/2" long) nails
- 5' – 6' of medium or heavy nylon rope
- Harbor Freight 1/4 ton chain hoist (Haul Master #67144) – or similar

## Harbor Freight Chain Hoist

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### 1/4 ton Lever Manual Chain Hoist



Haul-Master® - Item#67144



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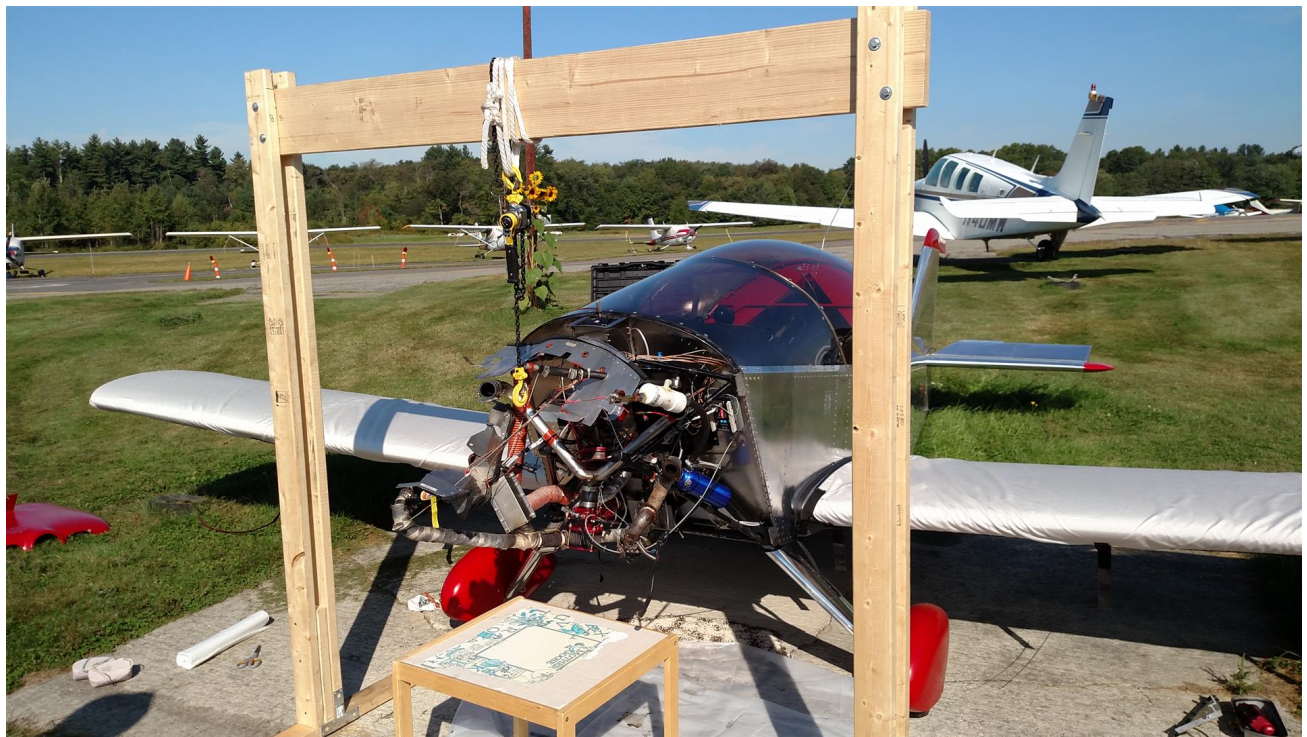
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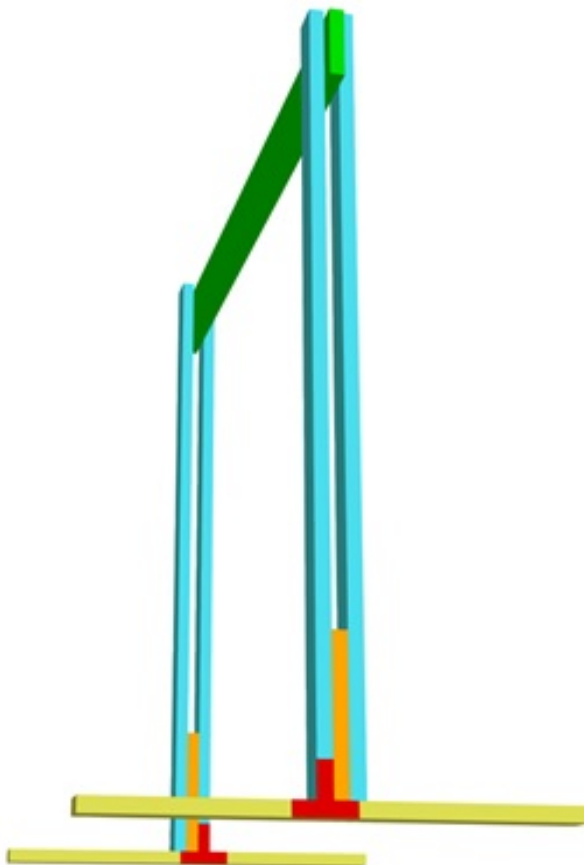
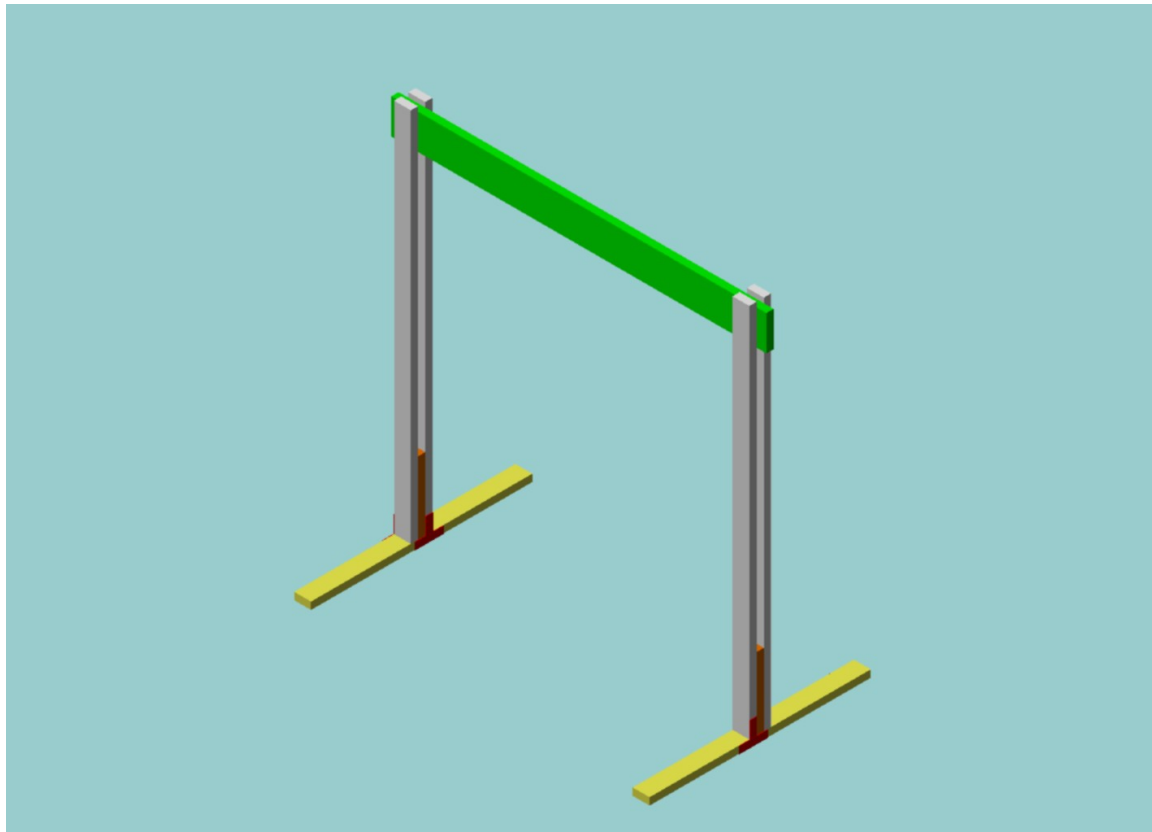
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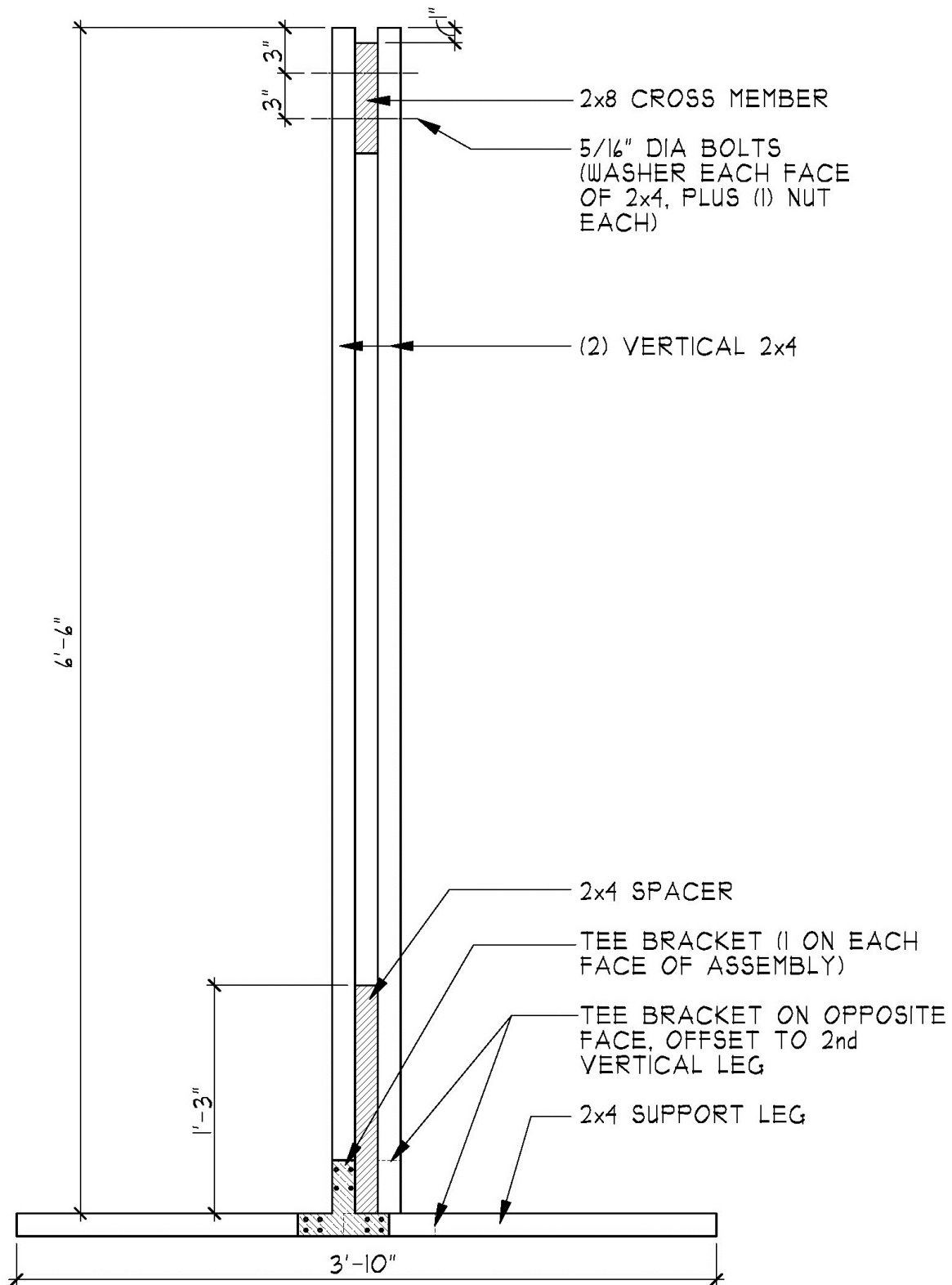
## Use:

1. Put together the system with the bolts, nuts and washers.
2. Wrap the rope 2 or 3 times around the center of the 2x8 beam and tie it off. Leave a little slack, and put the top hook of the chain hoist around the turns of rope.
3. The chain hoist has an up/down ratchet. Use a long nylon strap, or rope, slung around the prop hub, and attached to the rear engine holes with hooks or carabineers. The chain hoist hook goes at the balance point along the strap.
4. Rather than moving the engine hoist back and forth (no wheels), you move the plane backward after unattaching the engine, and you roll the plane forward to reattach the engine.

Here is the finished product in use.

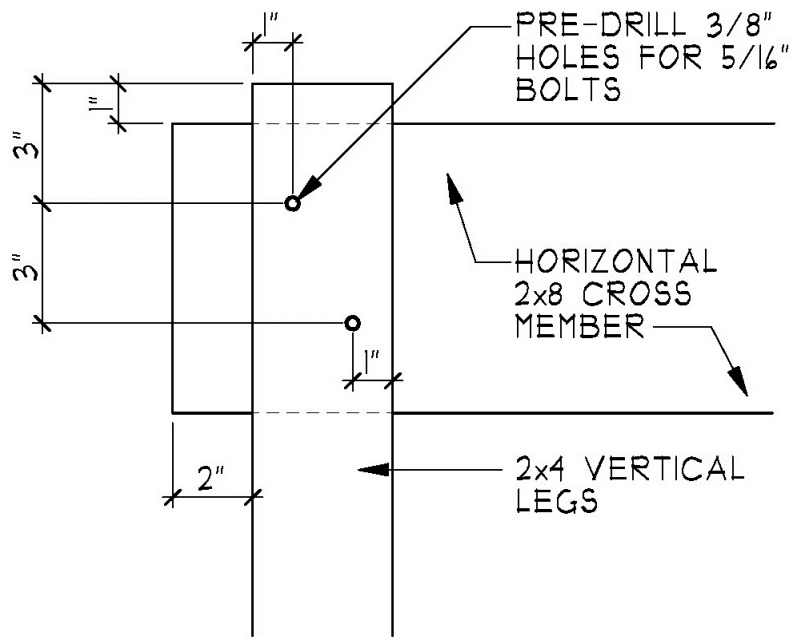






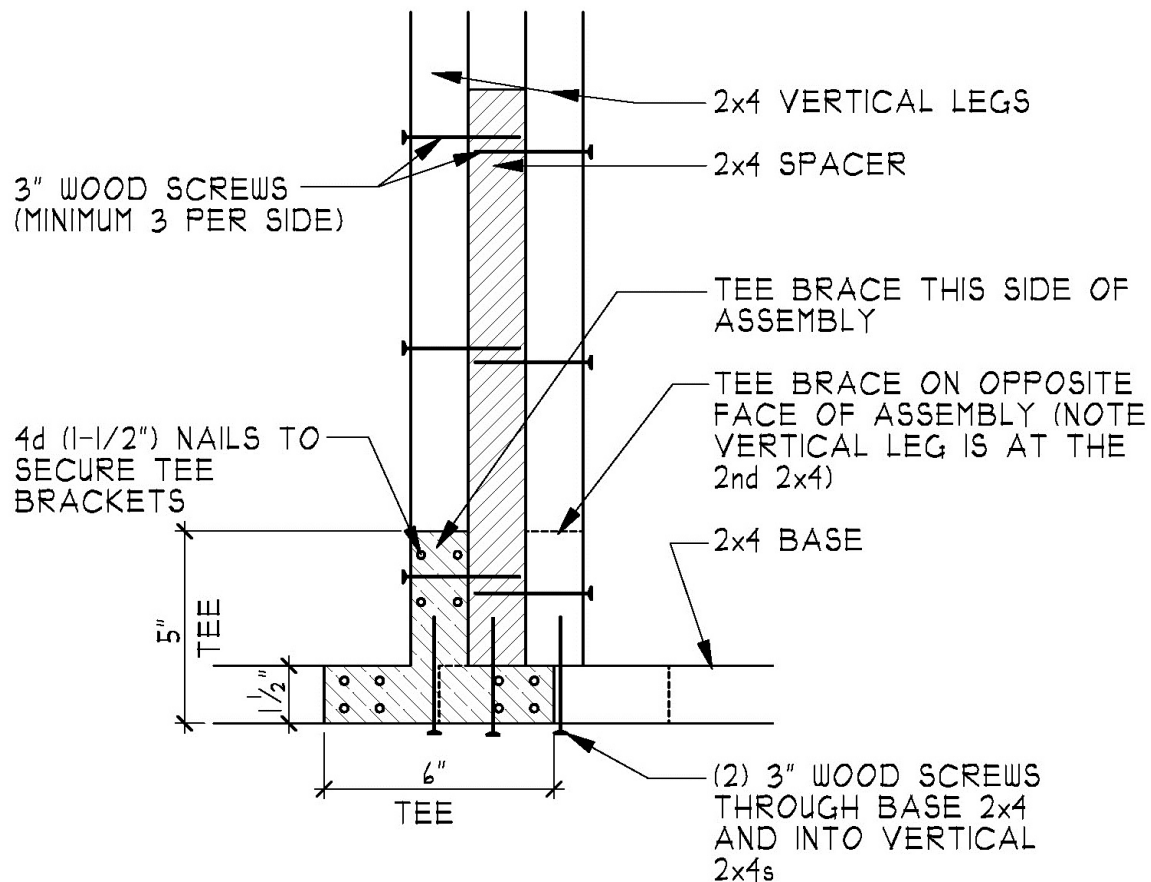
**1** **TYPICAL SUPPORT ASSEMBLY (x2)**  
SCALE: NO SCALE





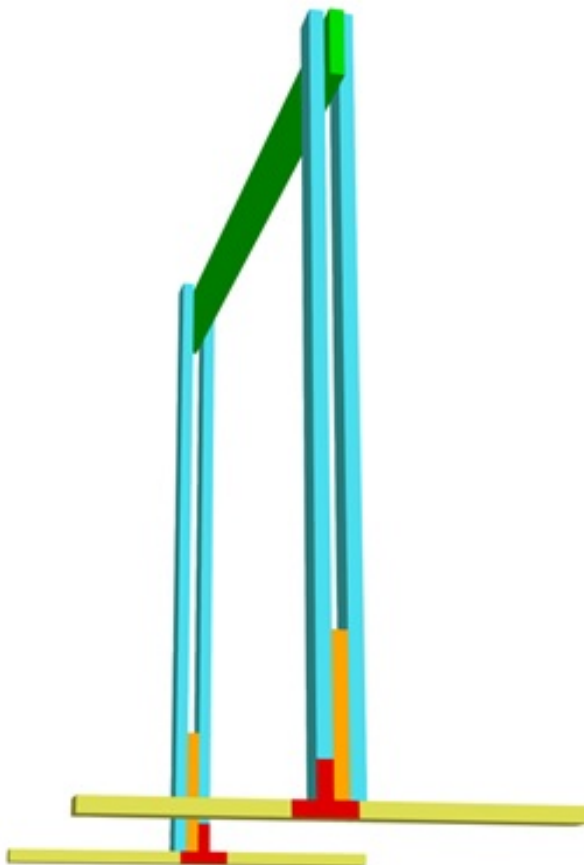
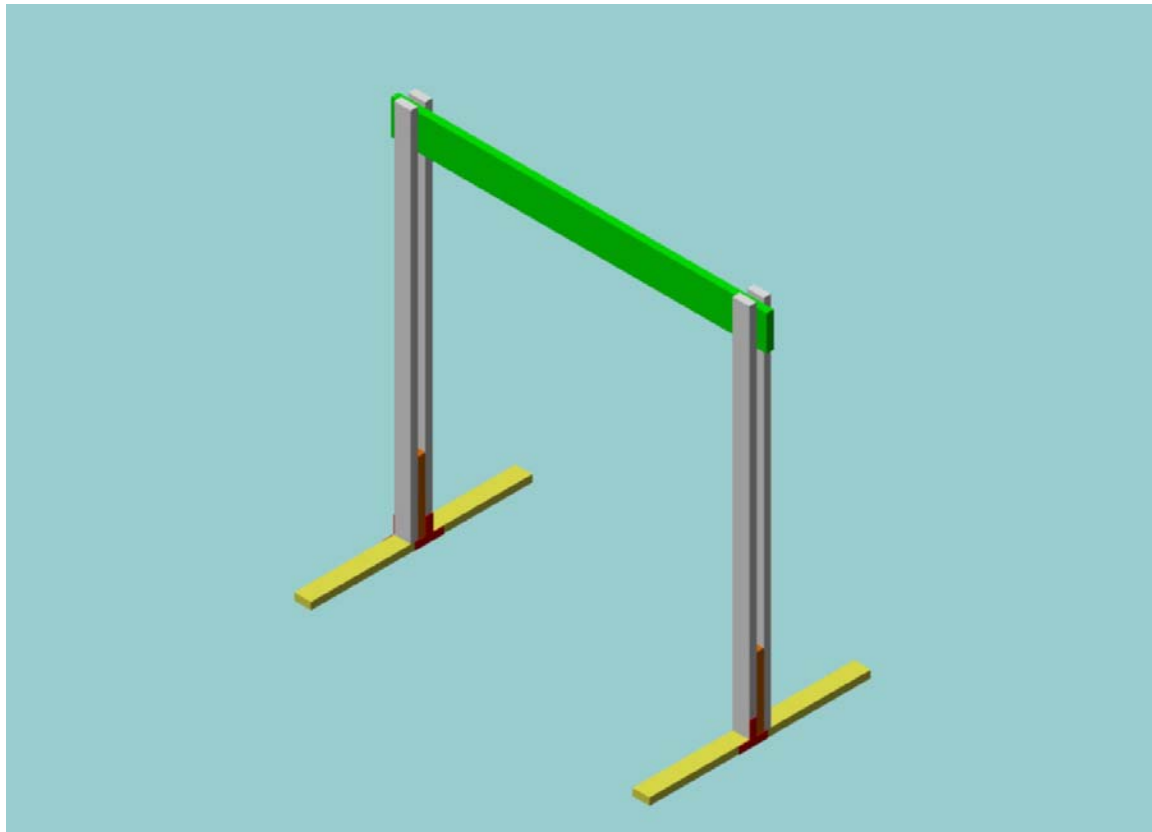
## 2 CROSS MEMBER DETAIL

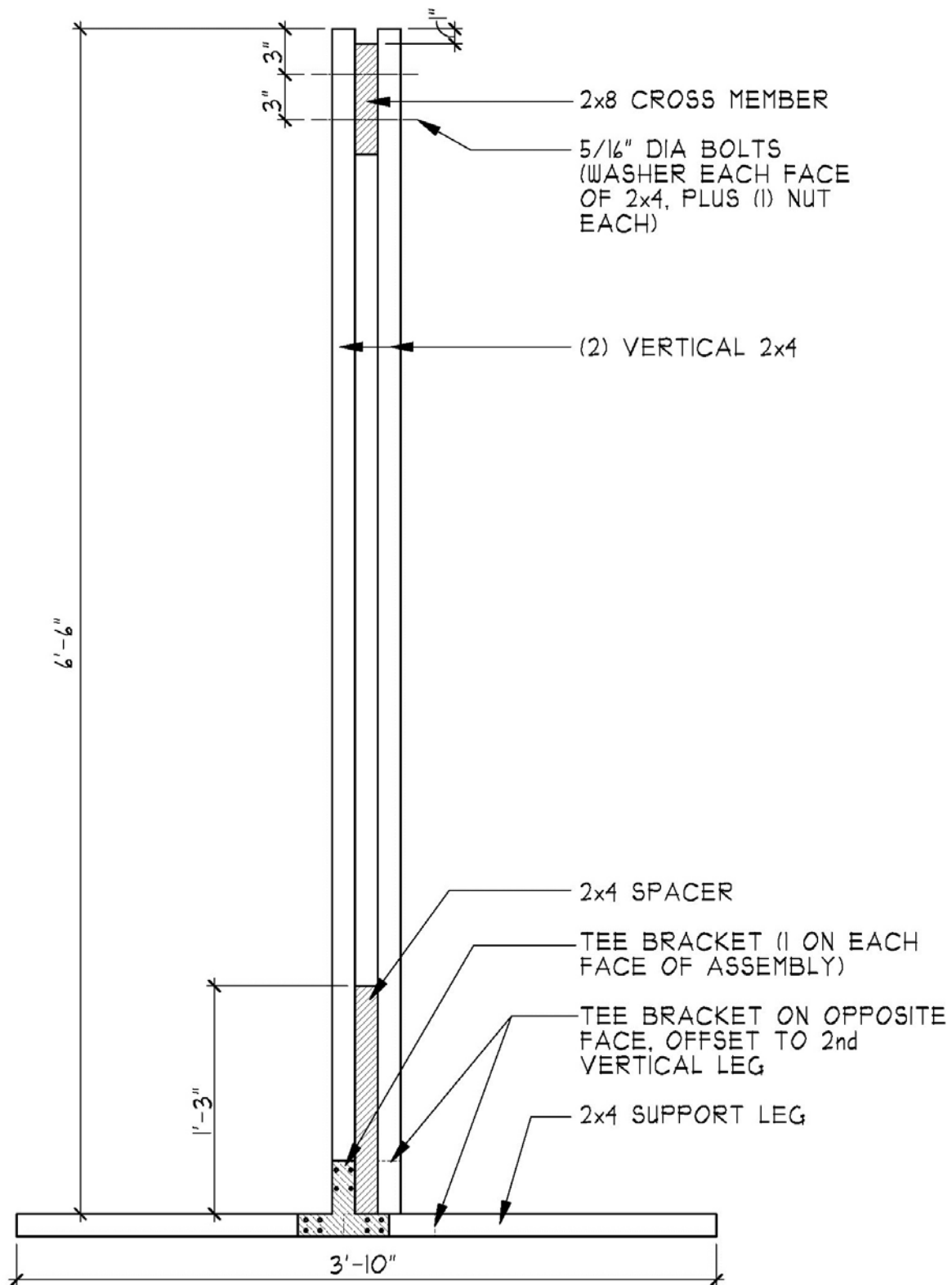
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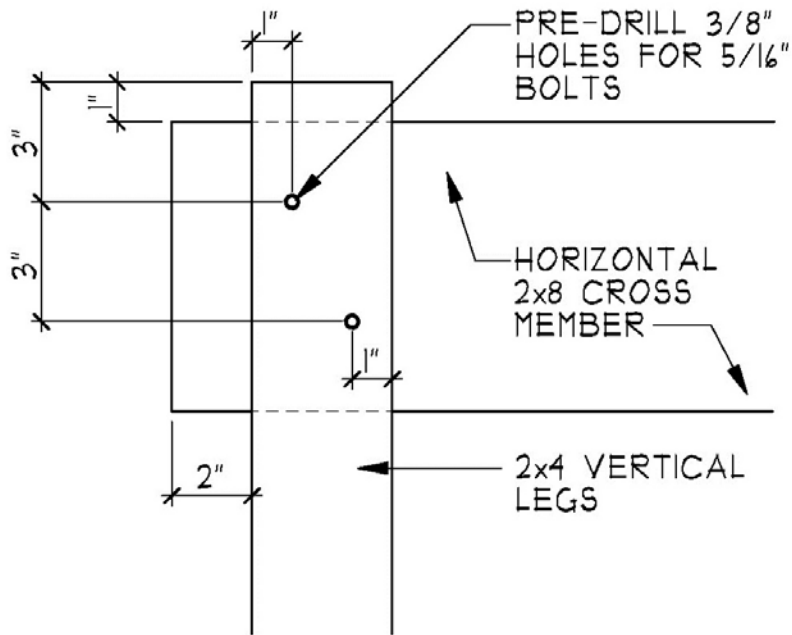
## 3 BASE DETAIL

SCALE: NO SCALE



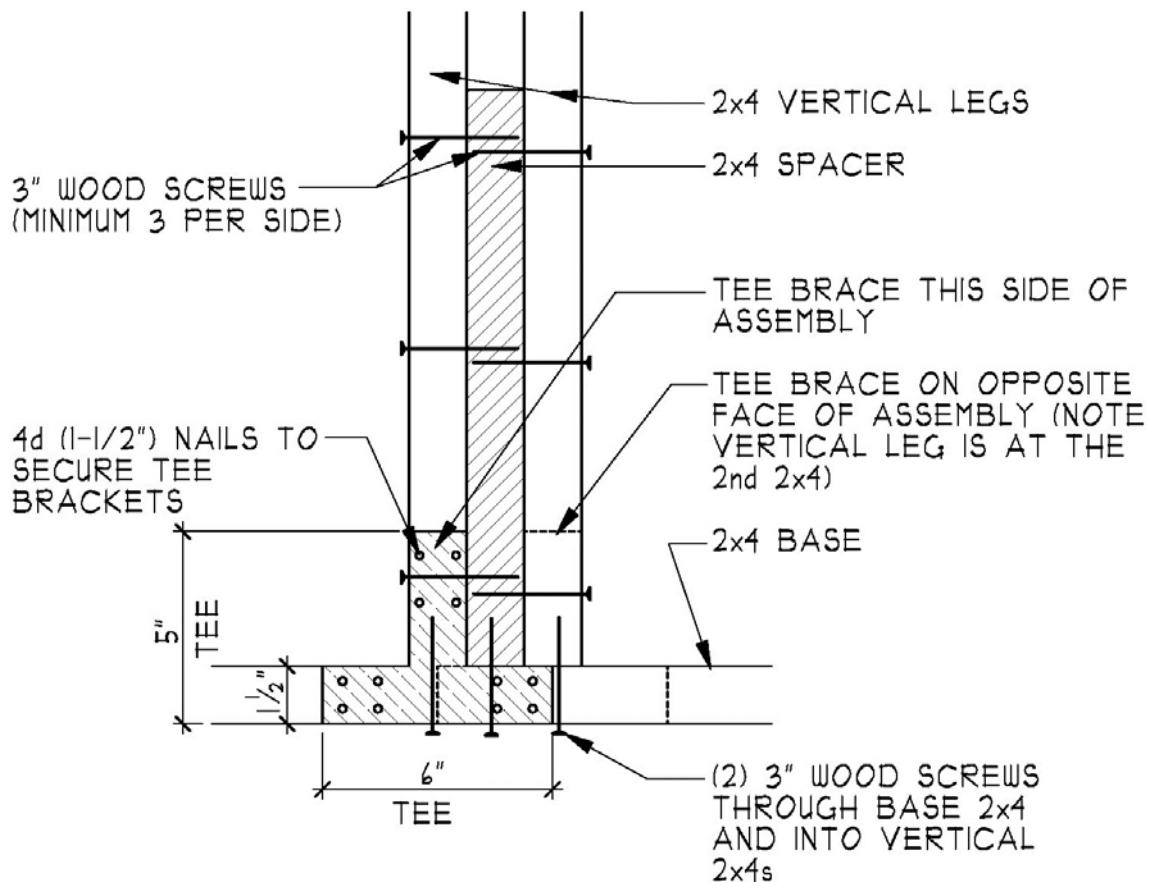


**1** TYPICAL SUPPORT ASSEMBLY (x2)  
SCALE: NO SCALE



## 2 CROSS MEMBER DETAIL

SCALE: NO SCALE



## 3 BASE DETAIL

SCALE: NO SCALE