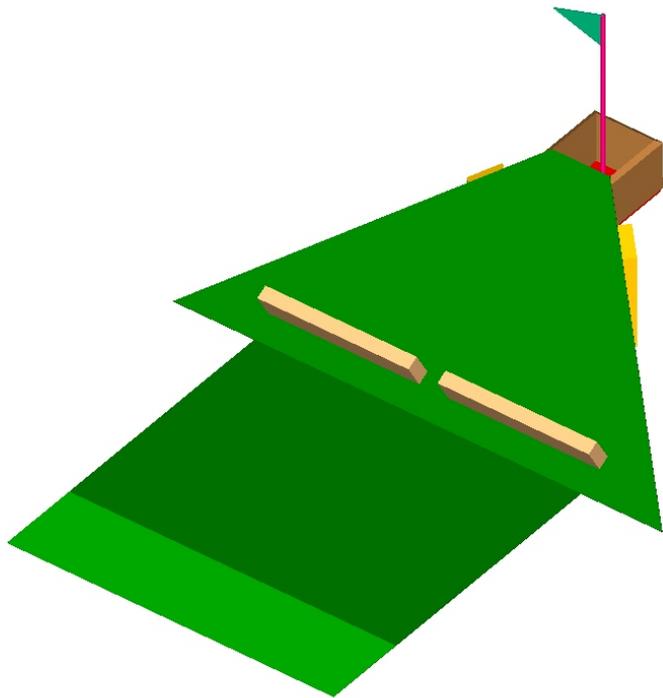


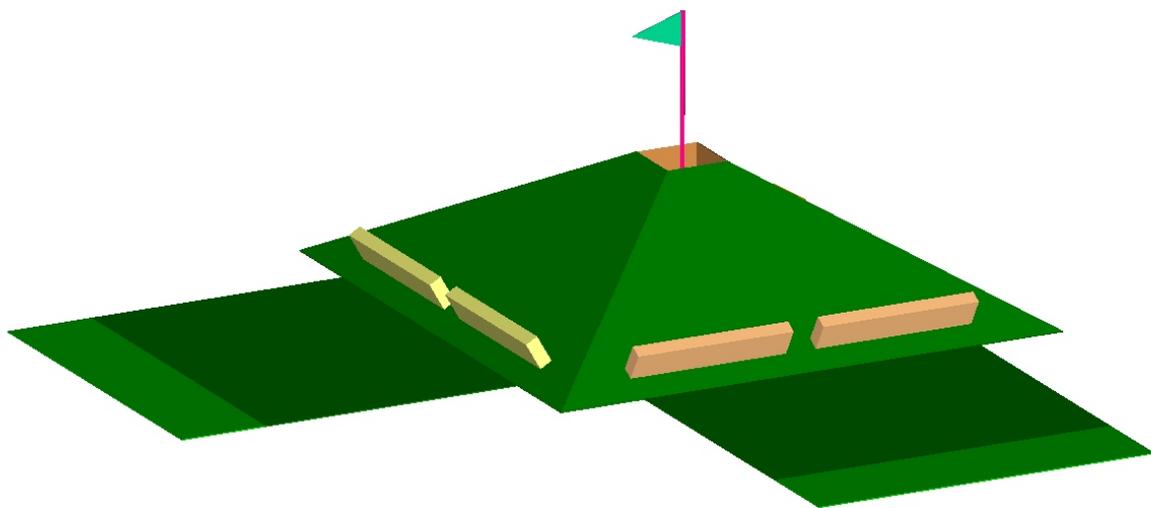
# Plans for the 2013 Invention Challenge Pyramid

Paul MacNeal

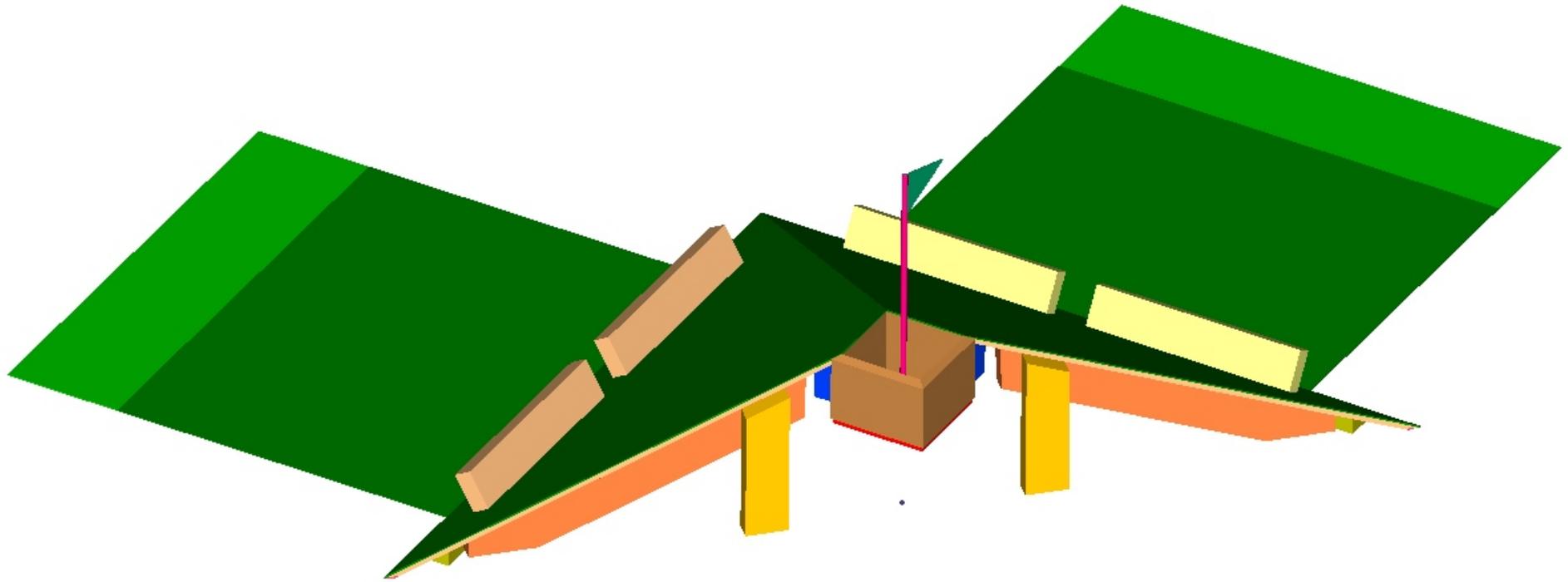
Updated September 19, 2013



Single Slope Pyramid



Double Slope Pyramid



Double Slope Pyramid – View from back

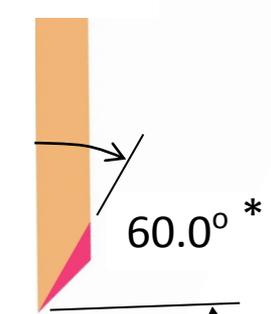
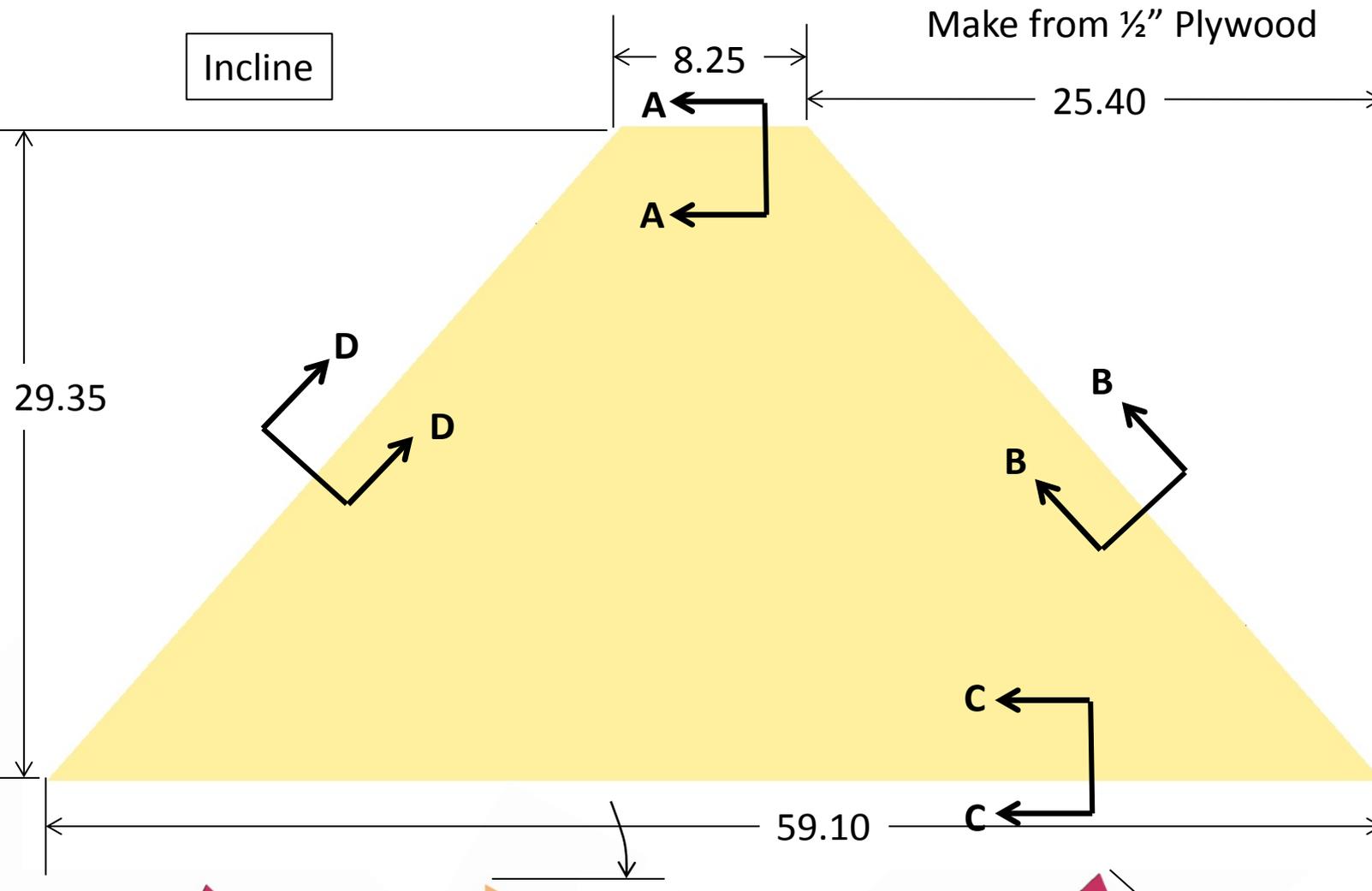
# Assembly Instructions

- Cut all pieces per each detailed sheet (all dimensions are in inches)
- Attach top beam to incline with 3 or 4 screws
- Attach each side beam and mirrored side beam to incline with 6 screws each
- Attach upright posts to side beams using 3 bolt, nut, washer sets **at a position to maintain the 30 degree slope of the incline.**
- Build target referring to target assembly sheet
- Attach target to top beam with 3 bolts
- Glue or staple grass mat to incline allowing the bottom piece to overhang
- Screw entrance guards to incline approximately 3 inches from the edge using 8 screws from below
- Attach leveling pads to the incline using 2 screws each if the contest area will be sloping. Be sure to cut multiple thicknesses of wood to place under the leveling pads and the upright posts to help level the target.

Call Paul MacNeal at (818)618-7824 if there are any questions or concerns.

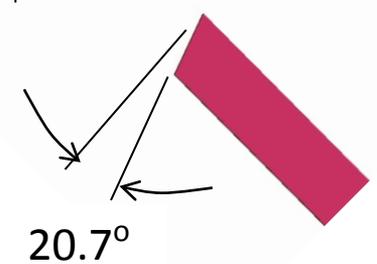
# Pyramid Parts List

Component	Single Slope Quantity	Double Slope Quantity
Incline	1	2
Entrance Guard	2	4
Top Beam	1	2
Side Beam	1	2
Side Beam – mirrored	1	2
Target side wall	4	4
Target bottom	1	1
Flagpole holder	1	1
Flagpole	1	1
Upright Post	2	2
Leveling Pad	Optional	Optional
Grass mat	1	2
Bolts, nuts, washers	6 sets	10 sets
T-nuts & flat-head screws	3 sets	6 sets
Wood screws	50+	100+

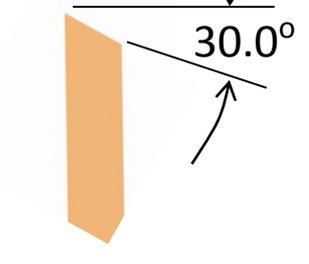


Section C-C

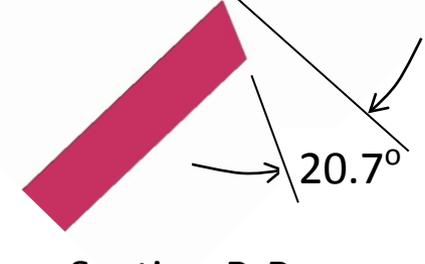
\* If too difficult, cut at 45° and use sanding disk to remove the rest



Section D-D



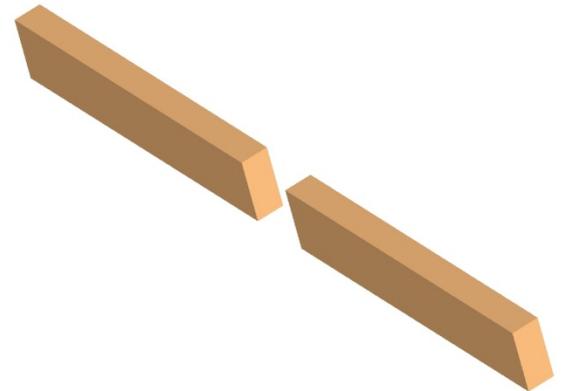
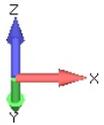
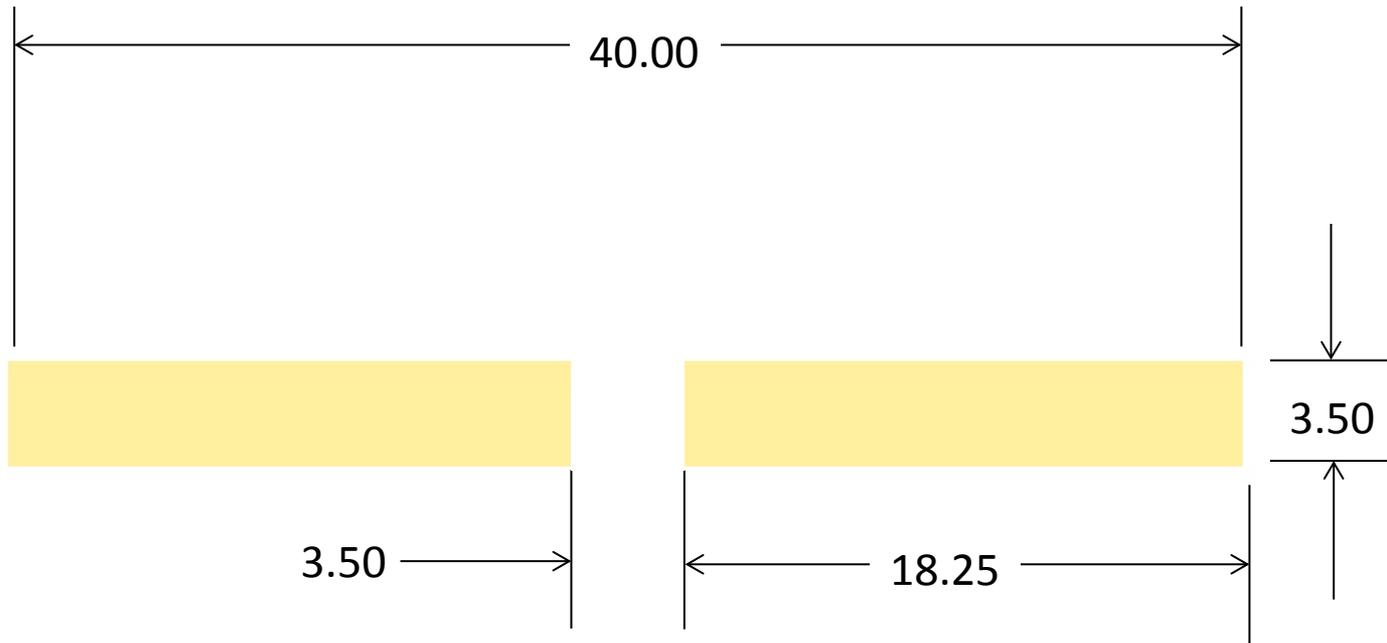
Section A-A



Section B-B

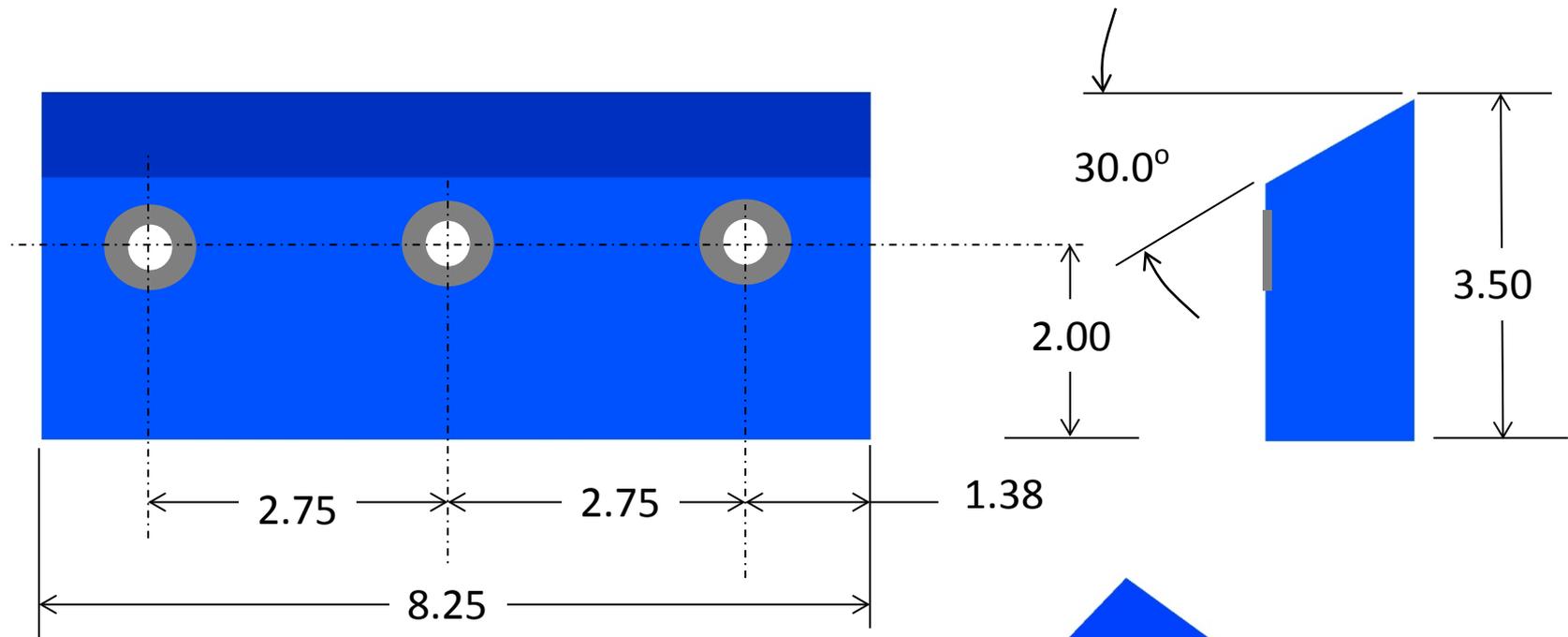
Entrance Guard

Make from 2 x 4 Stud

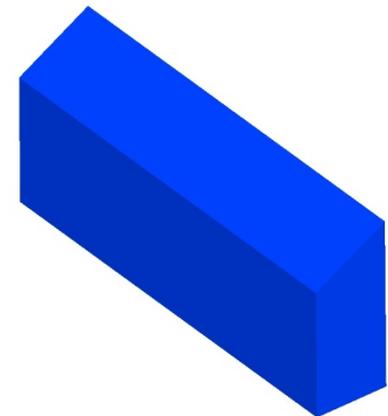


Top Beam

Make from 2 x 4 Stud

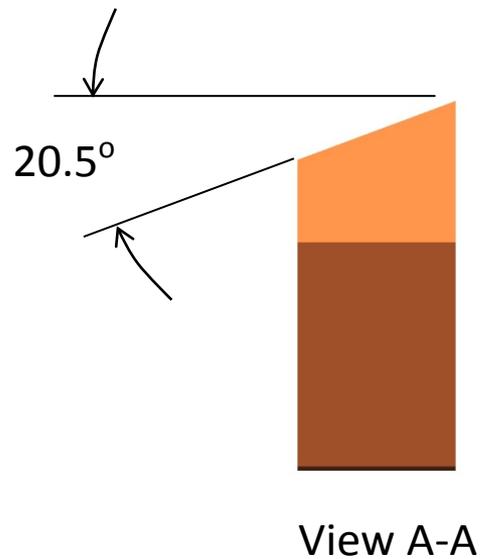
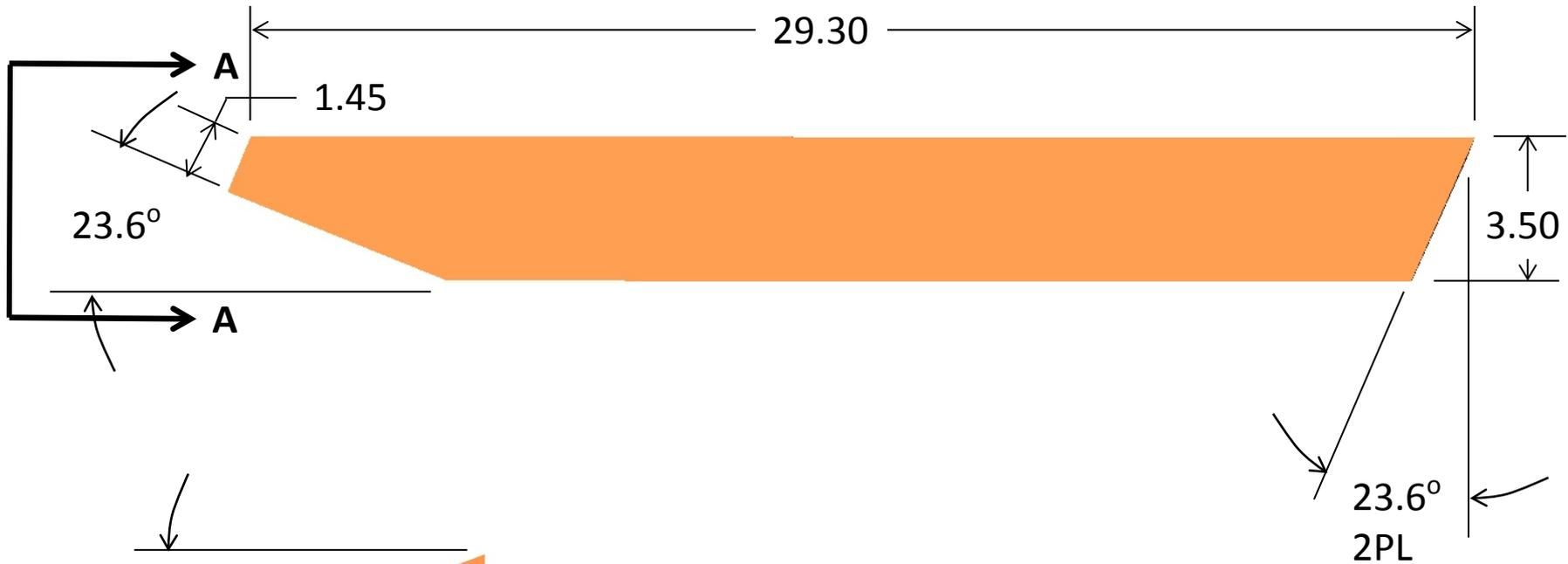


- Install three #10 T-Nuts after drilling a  $\frac{1}{4}$ " hole

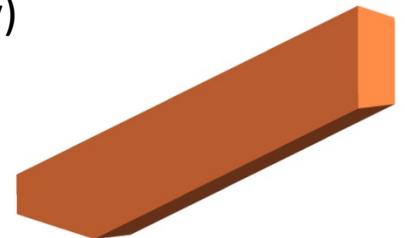


Side Beam

Make from 2 x 4 Stud

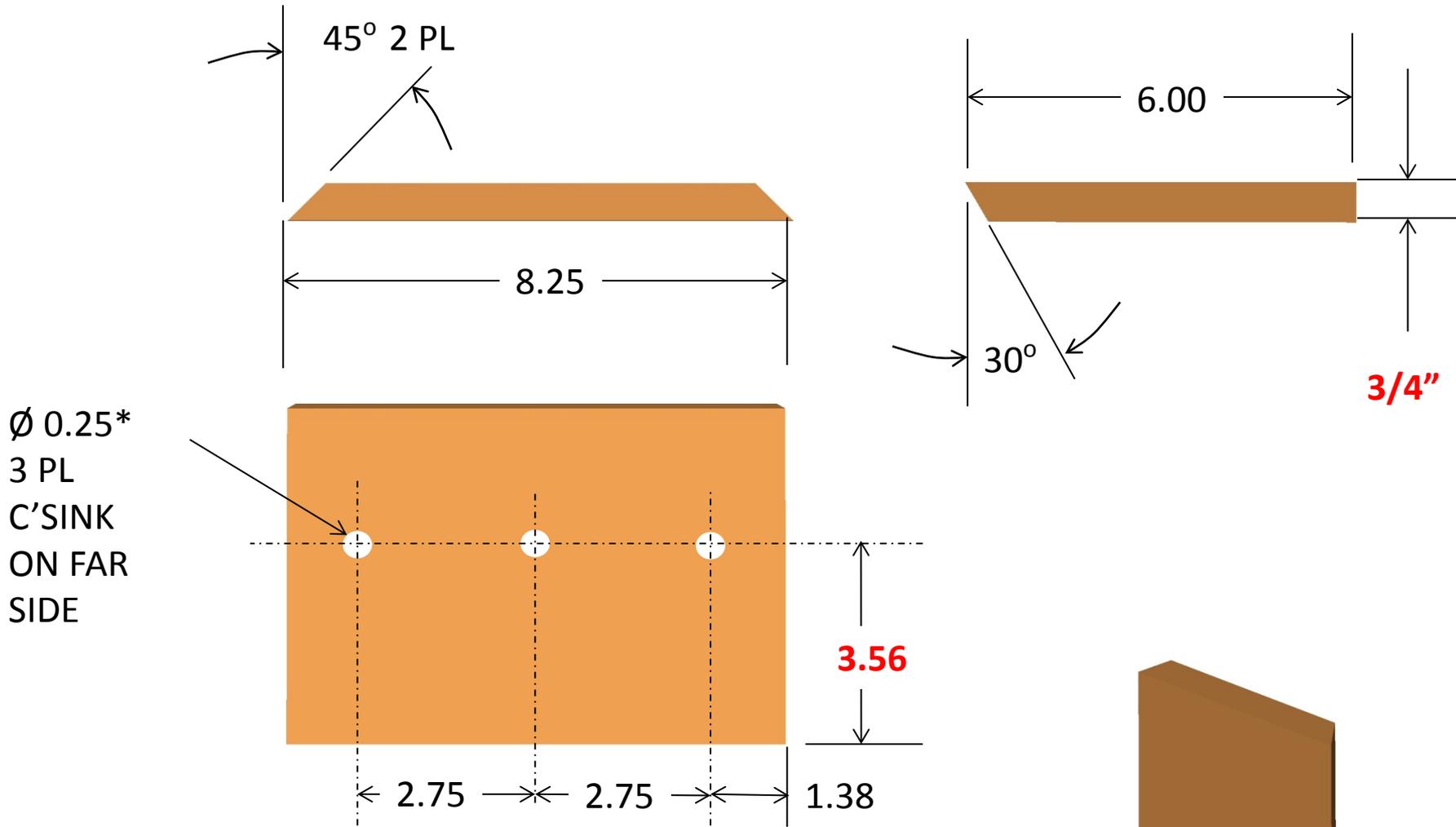


- Create a mirror image of this beam for the other side (i.e. the 20.5° slant goes the other way)



Target Side Wall

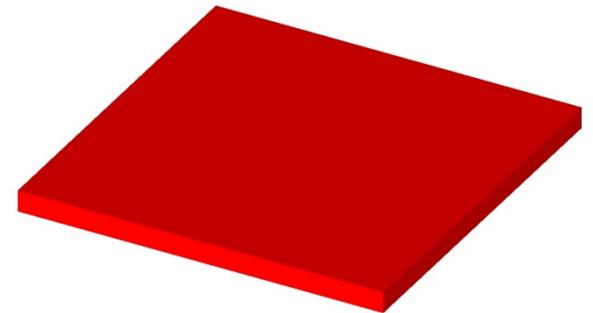
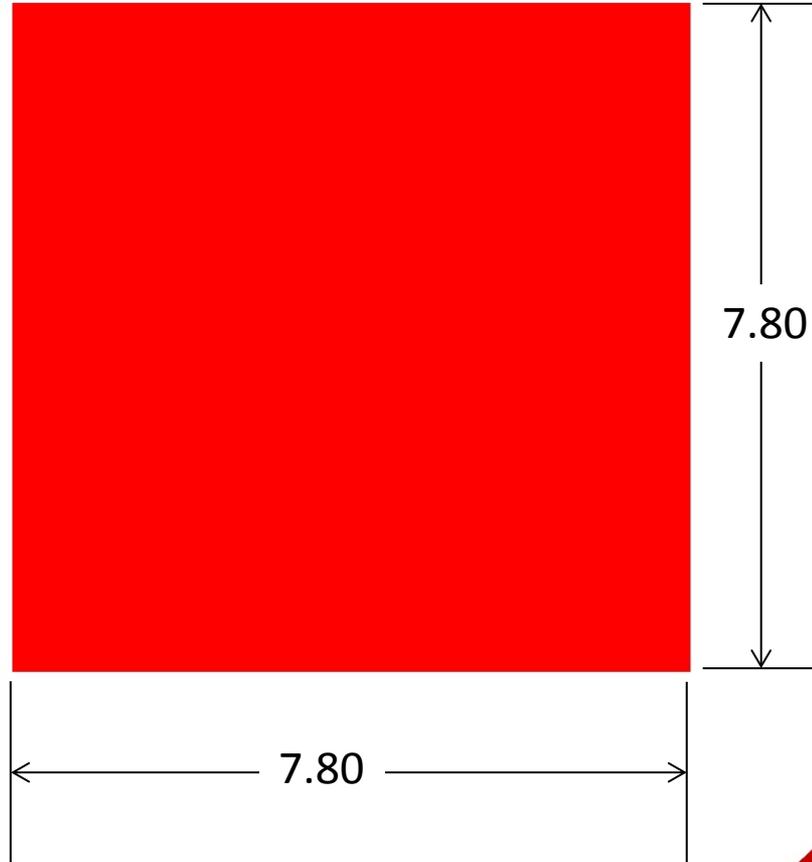
Make from 1 x 8 Board



\*NOTE: Make two boards with the holes and two boards without holes

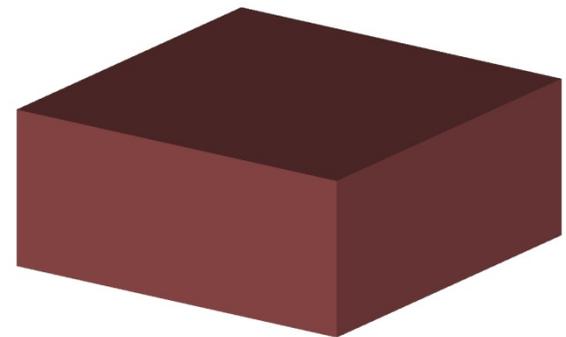
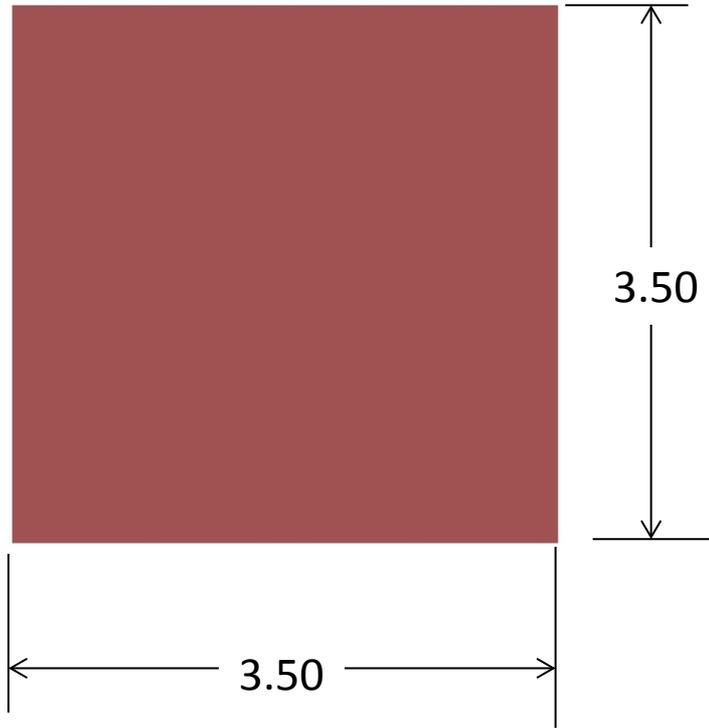
Target Bottom

Make from 1 / 2" Plywood



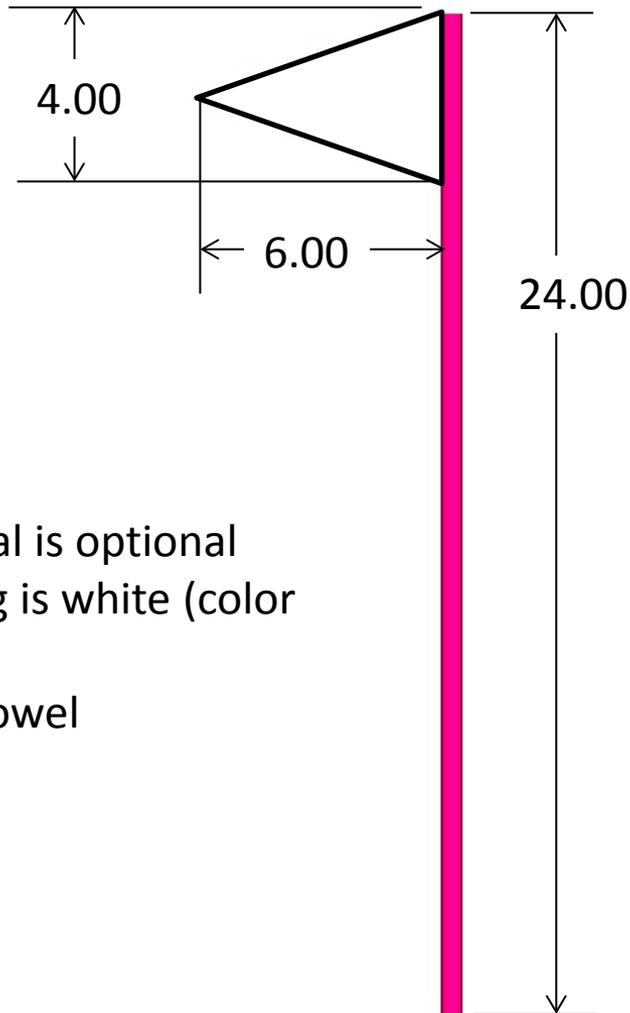
Flagpole Holder

Make from 2 x 4 Stud



# Flagpole with Flag

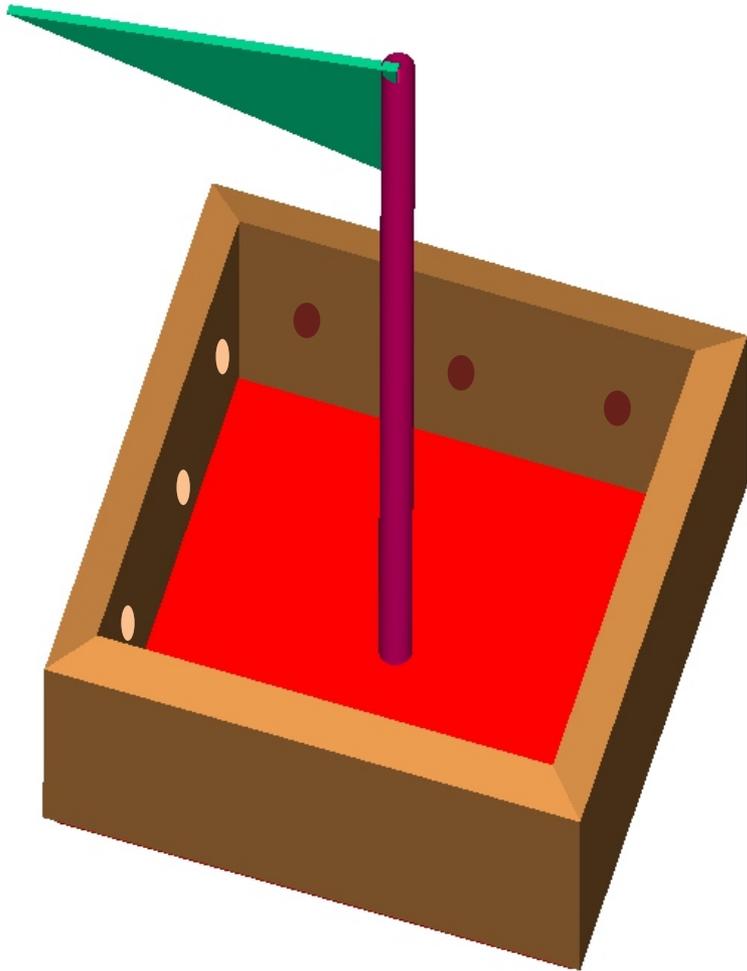
Make from  $\frac{1}{2}$ " Dowel



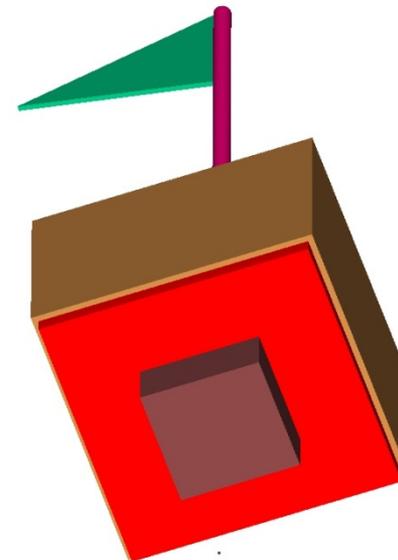
- Flag material is optional
- Color of flag is white (color is optional)
- Attach to dowel



## Target Assembly

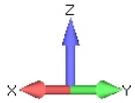
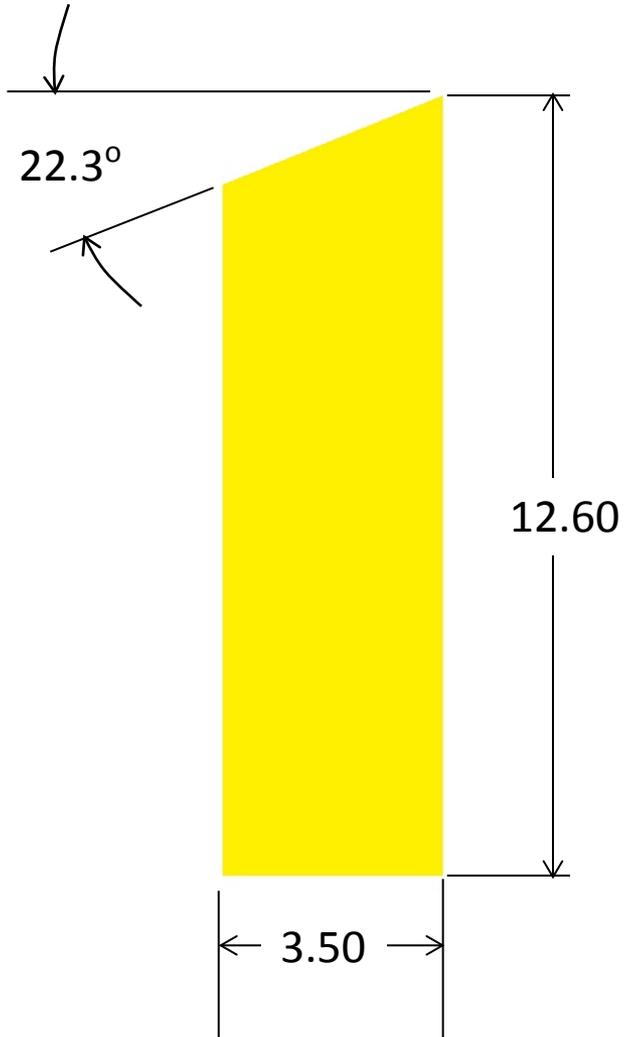


- Glue and screw four sides at each corner
- Screw bottom to sides using small screws
- Make sure that two adjacent sides have the three holes
- Glue and/or screw flagpole holder to target bottom
- In the center of the bottom plate drill a  $9/16$ " diameter hole to a depth of 1.75" (do not break through the holder)



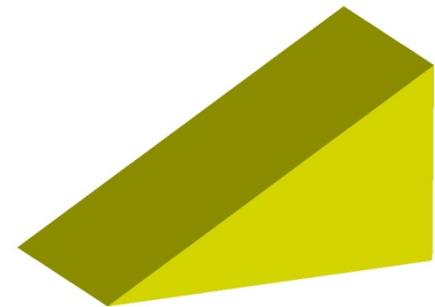
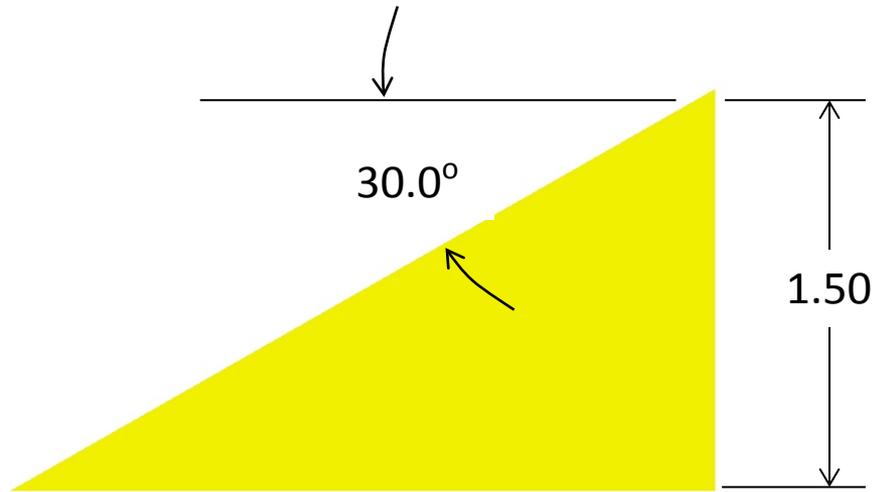
Upright Post

Make from 2 x 4 Stud

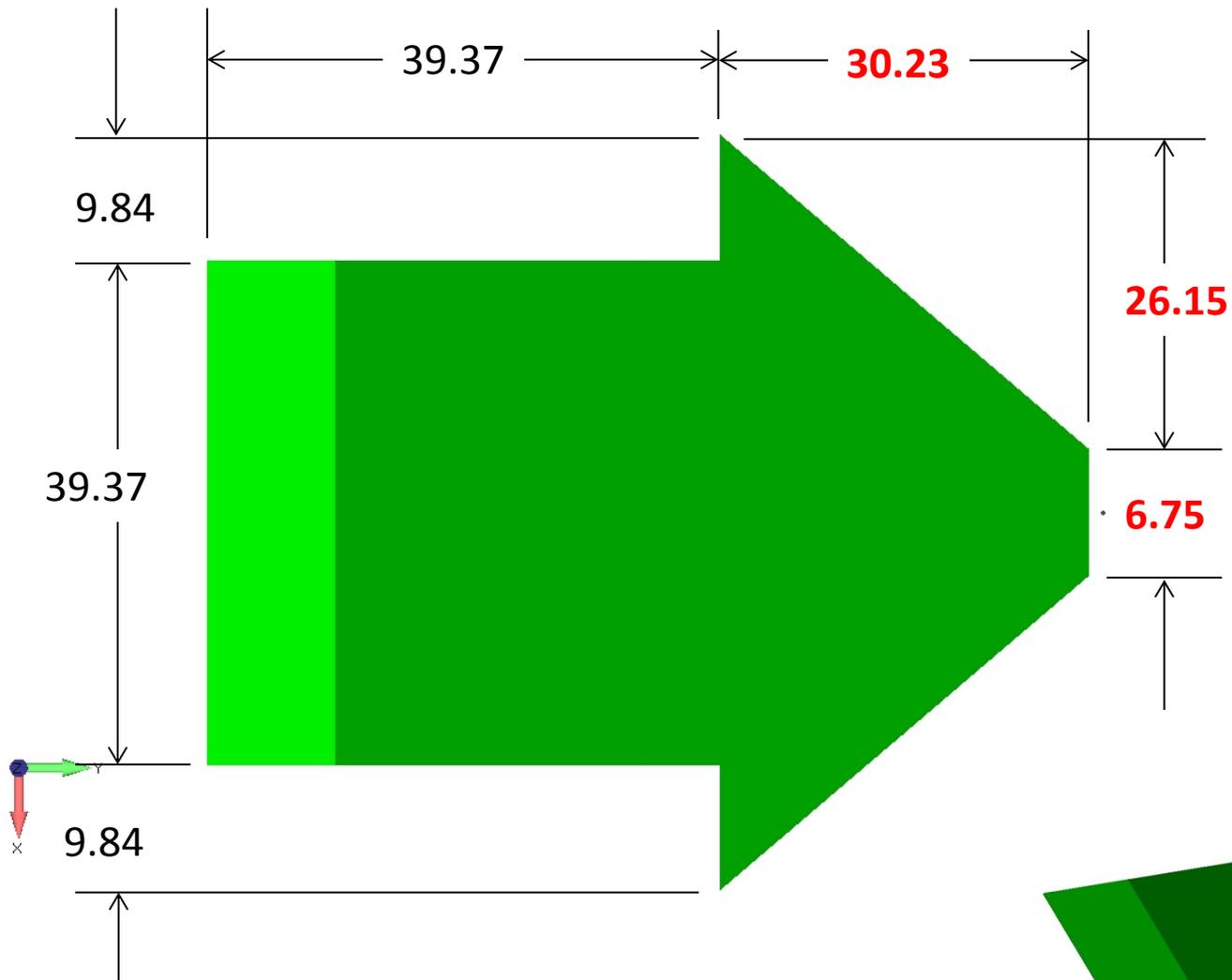


Leveling Pad

Make from 2 x 4 Stud



Grass Flat Pattern – roll purchased from Lowe's\*



\*Indoor/Outdoor Grass Area Rug (6' x 7.5')  
Item #: 204470

