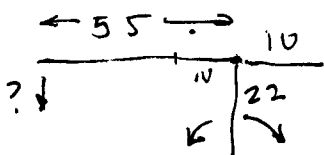
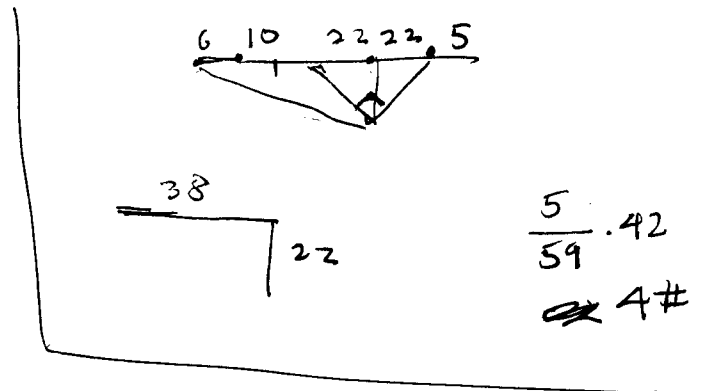
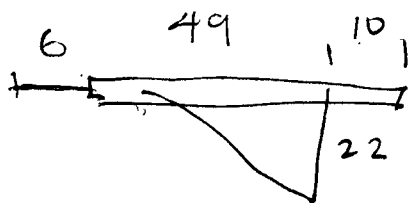


30 MAY 13; Roderick

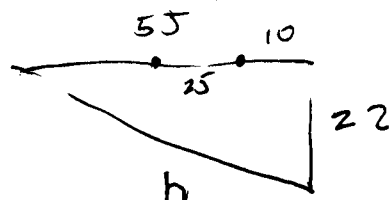
TONGUE WEIGHT



THROW AWAY COUNTER BALANCE
10"



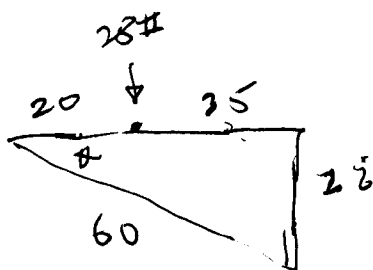
LET $h = 39/59 \approx \frac{2}{3}$ OF
WEIGHT. $= \frac{2}{3} 42\# = 28\#$



$$h = \sqrt{55^2 + 22^2}$$

$$= 11 \sqrt{5^2 + 2^2}$$

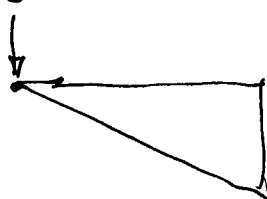
$$= 11 \sqrt{29}$$



≈ 60 $\nearrow 5.4?$

$\frac{35}{55} \cdot 28\# \approx 18\#$

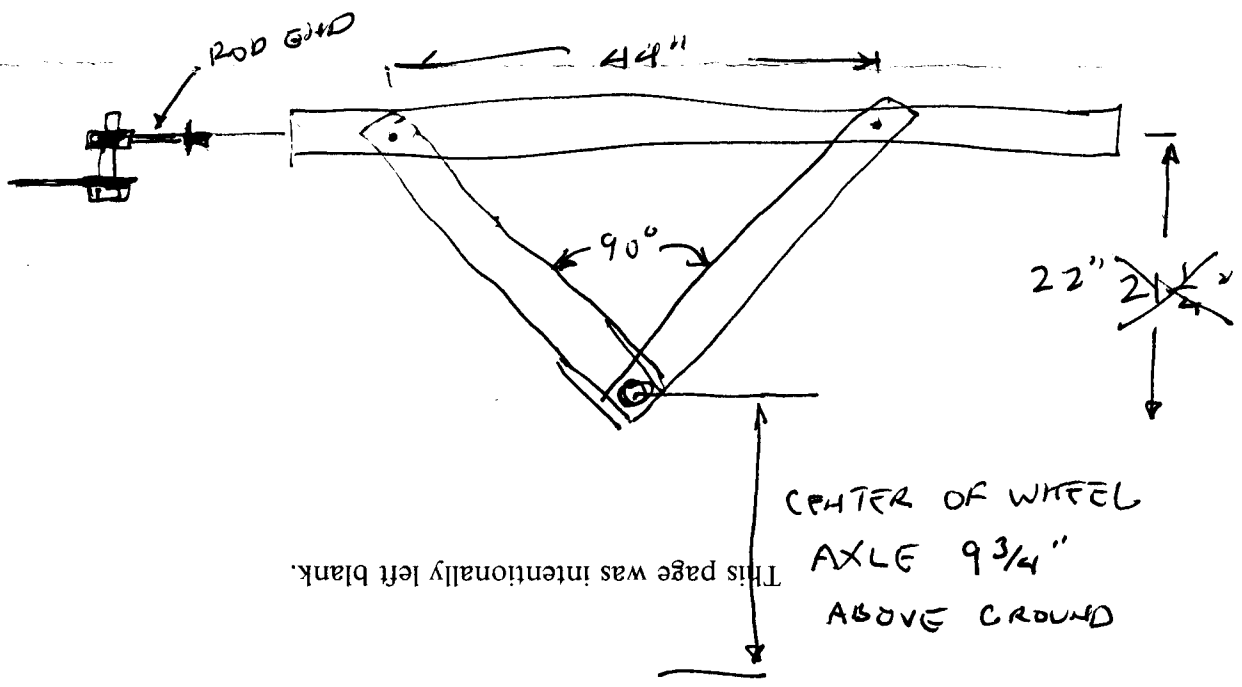
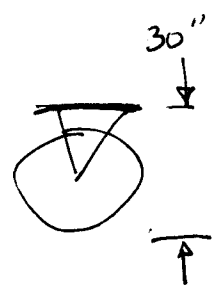
$\frac{7}{11} \cdot 28 = \frac{196}{11}$



18 #

$18\# \cdot \frac{55}{60} \approx 16.5\#$
TWO NUM

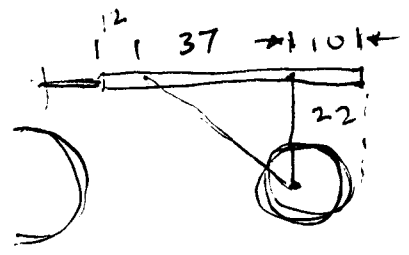
BIKE, REAR RACK IS 30" OFF GROUND.
TRAILER HITCH MIGHT BE 31"



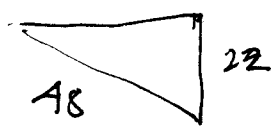
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CENTER OF WHEEL
AXLE 9 3/4"
ABOVE GROUND

GO WITH 22" INSTEAD OF 2 1/4" FOR INTENTIONAL
DOWNWARD TILT.



6' = 72" CUT OFF 23.5"
LEAVES 48.5" PIECE



ALMOST 30-60-90
TRIANGLE.

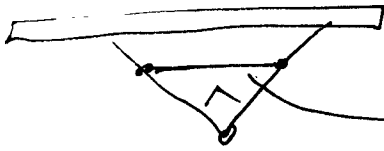
1.7
22
34
34
47.8



03 Jun 13

Roderick.

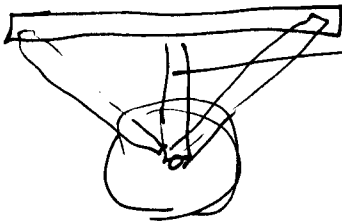
TRAILER SIDE STRUTS



IF HAVE SYMMETRICAL
90° ANGLE AT BOTTOM,
MAY NEED ADDITIONAL
SUPPORT TO KEEP STRUTS
FROM SPREADING APART.

ARAMID FIBER?

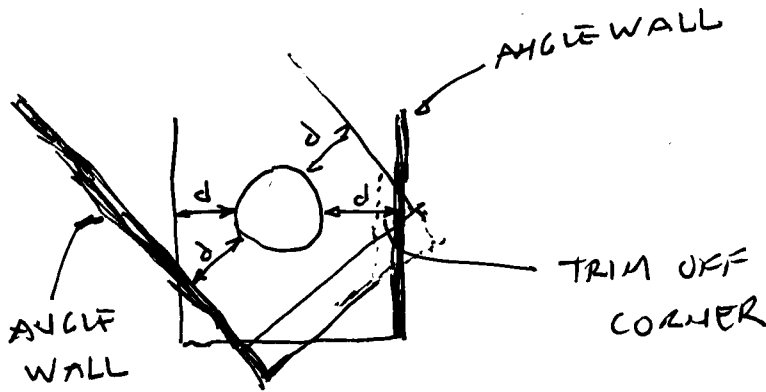
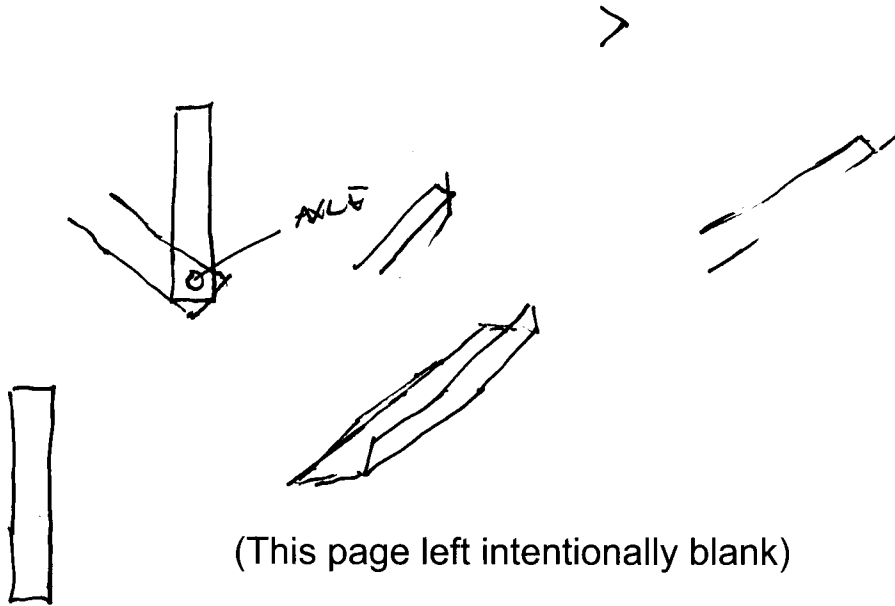
OR JUST A TIE-DOWN
STRAP



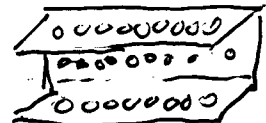
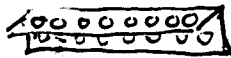
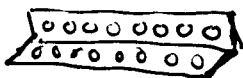
~~STRUTS~~
STRONG CENTRAL PILLAR
BEARS MOST OF WEIGHT
IN COMPRESSION, WITH
SMALL DIAGONAL BRACES
FOR EXTRA SUPPORT,

MECHANICAL WORK.

- TEST ABRASIVE METAL-CUTTING BLADE ON TABLE SAW.



EX

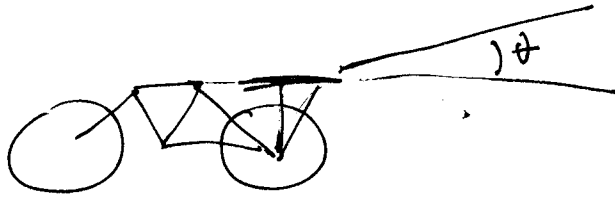


CAN ALSO
USE ANGLE STEEL TO
REINFORCE PANEL FRAME AT
PULL POINTS

USE 2 PLS FOR
TOW BAR
OVERLAPPED

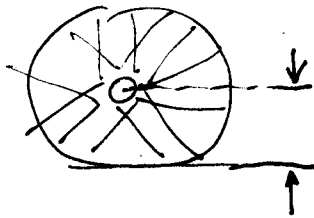
USE TOW BAR AS
GUIDE FOR DRILLING
HOLES IN PANEL FRAME

27 APR 14; Roderick



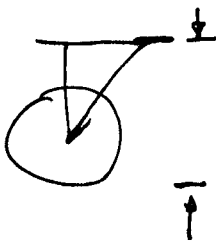
WANT BACK OF PANEL
SLIGHTLY HIGHER THAN
FRONT, SO IF ANY
WIND PRESSURE FROM MOTION,
IT PUSHES DOWN,

IDEALLY, PANEL ABSOLUTELY LEVEL WHEN BIKE IS
ON STAND. BUT THEN, REAR WHEEL ~~WOULD~~ BIKE WOULD
PROBABLY STILL BE WEIGHTED DOWN BY TONGUE
WEIGHT OF PANEL.



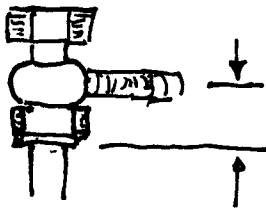
AXLE HEIGHT OFF GROUND (TO CENTER OF AXLE)

$9\frac{1}{2}'' - 9\frac{5}{8}''$



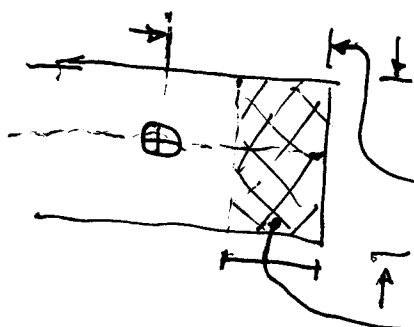
GROUND TO TOP OF RACK,
~~WHEEL~~ WHILE ON STAND

30.5''



BASE OF NUT TO CENTERLINE
OF ROD END

$\frac{5}{8}''$ MIN 1'' MAX



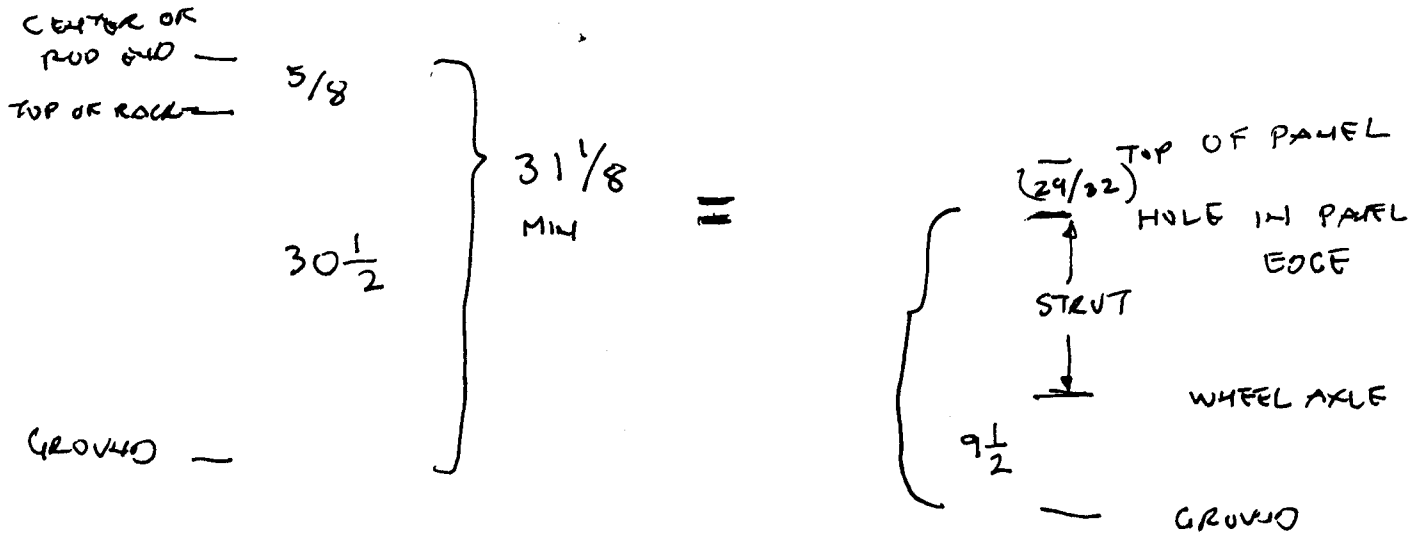
PANEL THICKNESS $1\frac{13}{16}''$

DISTANCE TO HOLE FOR MAIN
VERTICAL STRUT 2.5''

INTERNAL STRUCTURE, AVOID 1''

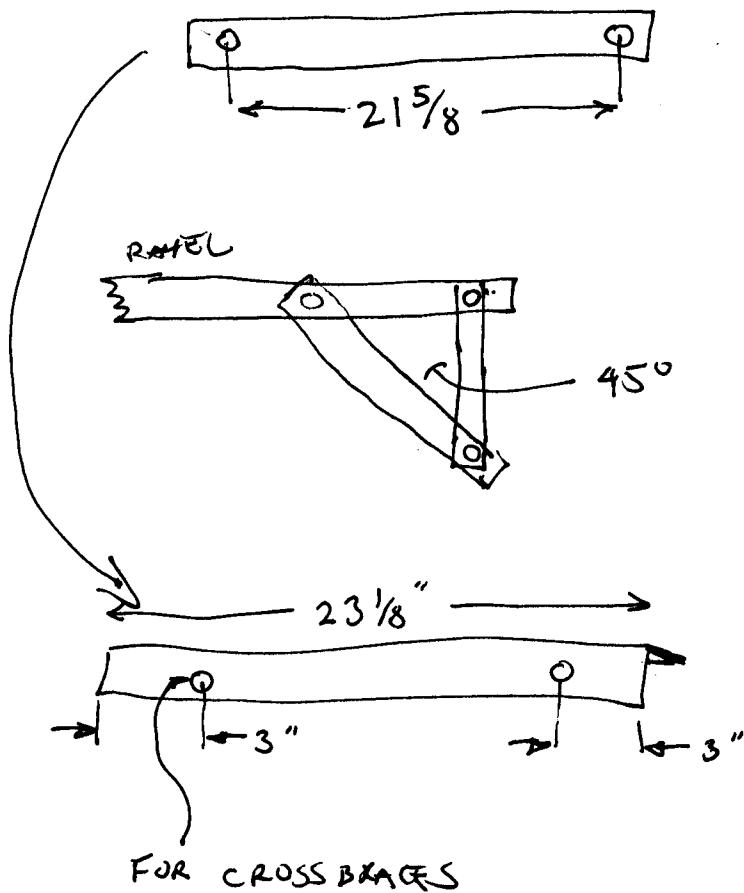
27 APR 14; Roderick.

DIMENSION STACK FOR VERTICAL STRUT



$$31 \frac{1}{8} - 9 \frac{1}{2} = 21 \frac{5}{8} = \text{HOLE-TO-HOLE LENGTH OF STRUT.}$$

~~ADD 1/2" ON EACH END,~~
~~MAKING TOTAL 22 5/8"~~
 MAYBE ADD 3/4" TO EACH END, MAKING 23 1/8"

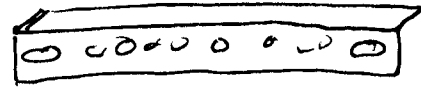
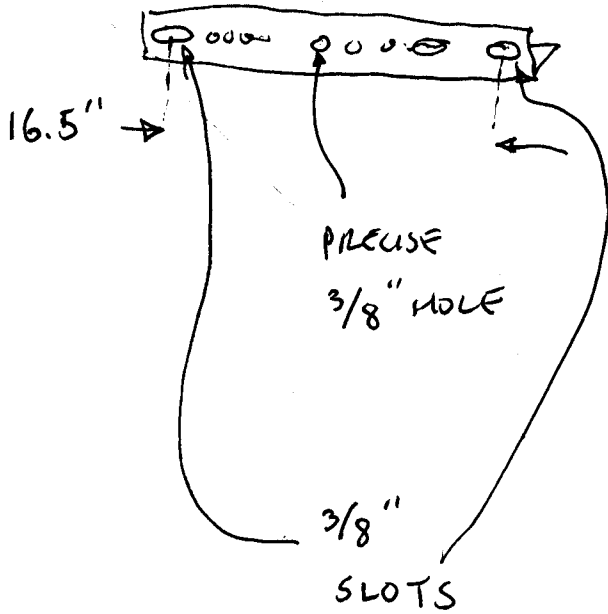


DIAGONAL BRACE, HOLE-TO-HOLE SHOULD BE $21 \frac{5}{8} * \sqrt{2}$
 $\approx 30.58" \approx 30 \frac{9}{16}$
 CLOSER TO $30 \frac{19}{32}$

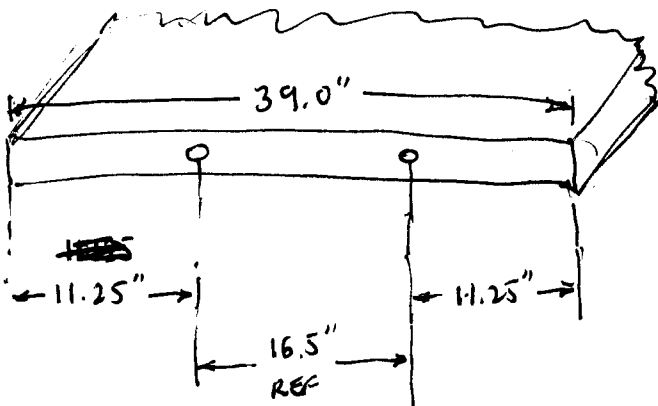
$$+ 1.5" \text{ ON EACH END}$$

$$= 32 \frac{3}{32}$$

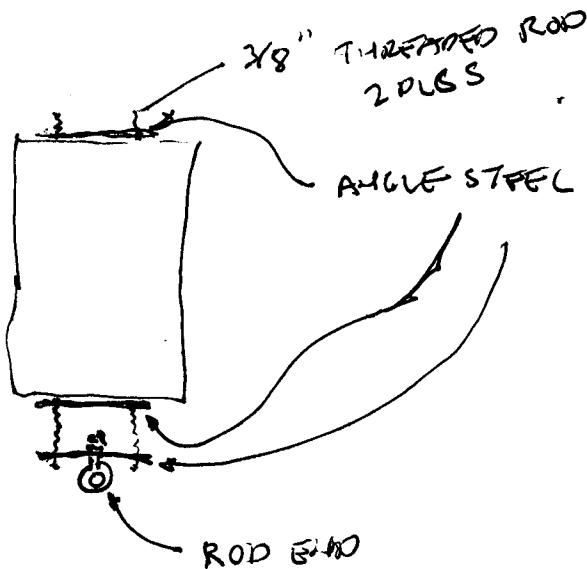
TOWING MECHANISM FOR PANEL PRE-PUNCHED ANGLE STEEL



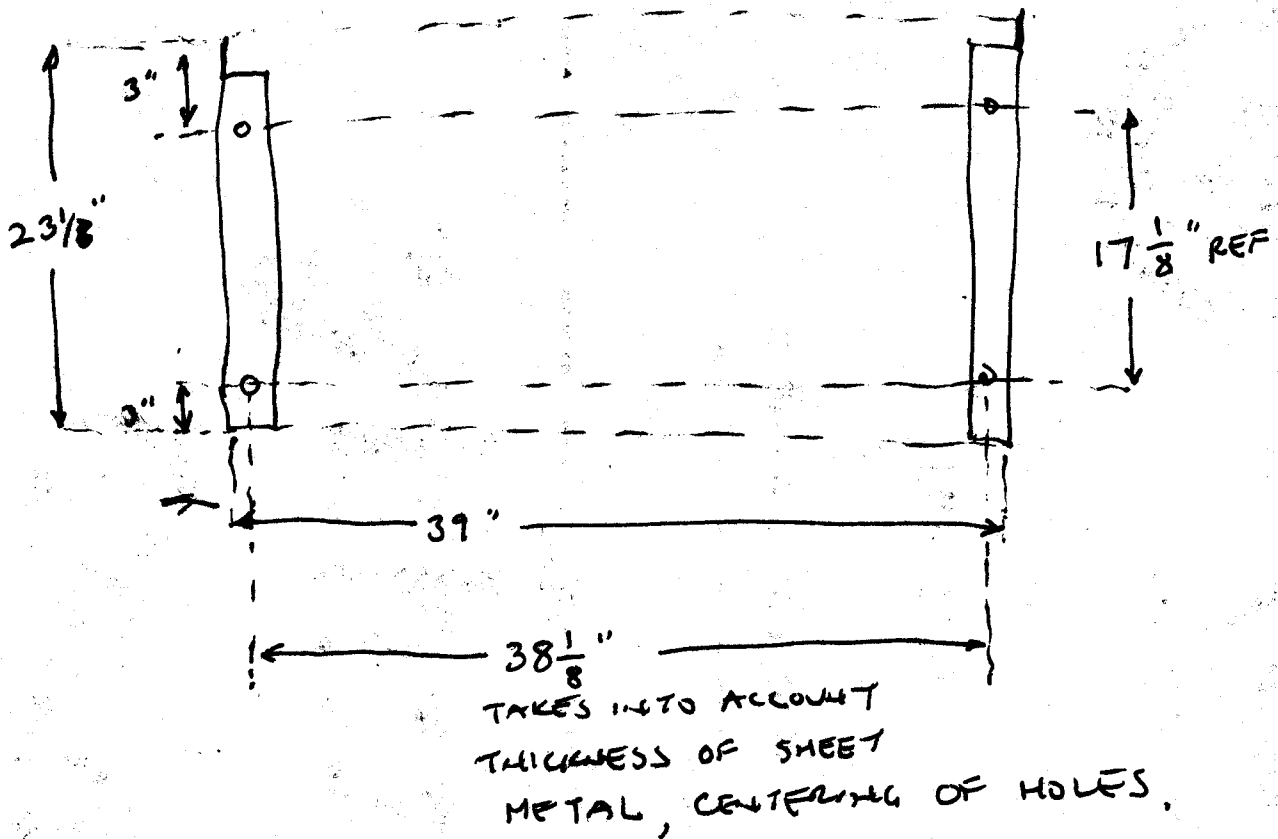
2 ~~PIES~~ PIECES
STACKED FOR
EXTRA STRENGTH.



PANEL EDGE



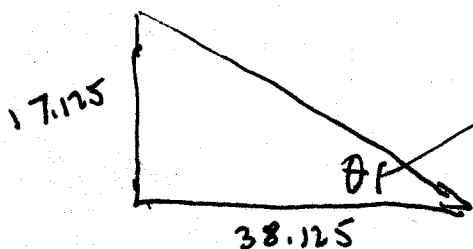
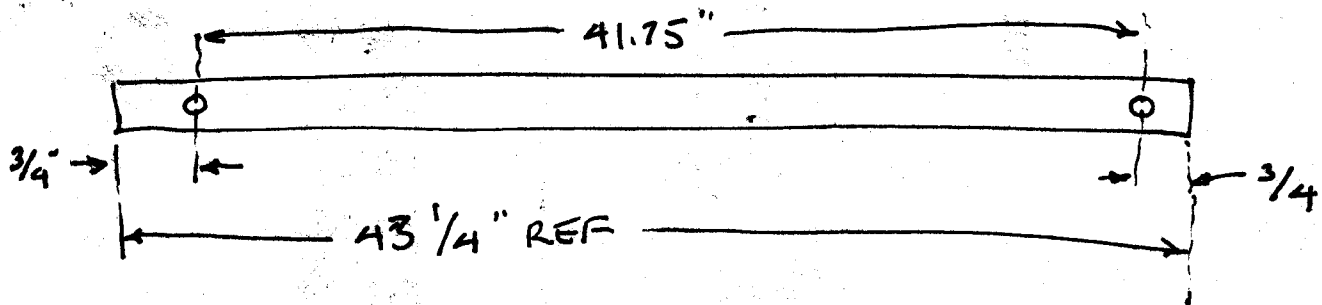
03 MAY 14
Roderick



DIAGONAL HOLE-TO-HOLE

$$= \sqrt{17.125^2 + 38.125^2} = 41.79" \text{ APPROX.}$$

AGREES WELL WITH ACTUAL 41.75" MEASURED.



$$\theta = \tan^{-1} \left(\frac{17.125}{38.125} \right) = \tan^{-1} (0.449)$$
$$\approx 24.2^\circ$$