

## WHEELCHAIR FENCING FRAME CONSTRUCTION

- (1) START WITH ONE 4 FT X 8 FT  $\frac{3}{4}$  INCH PLYWOOD BOARD
- (2) MEASURE IN 4 FT ON THE LONG SIDE, AND MAKE MARKS, (TOP & BOTTOM.) DRAW A LINE BETWEEN THESE MARKS. SEE DIAGRAM 1.

**(NOTE: DO NOT CUT BOARD YET!)**

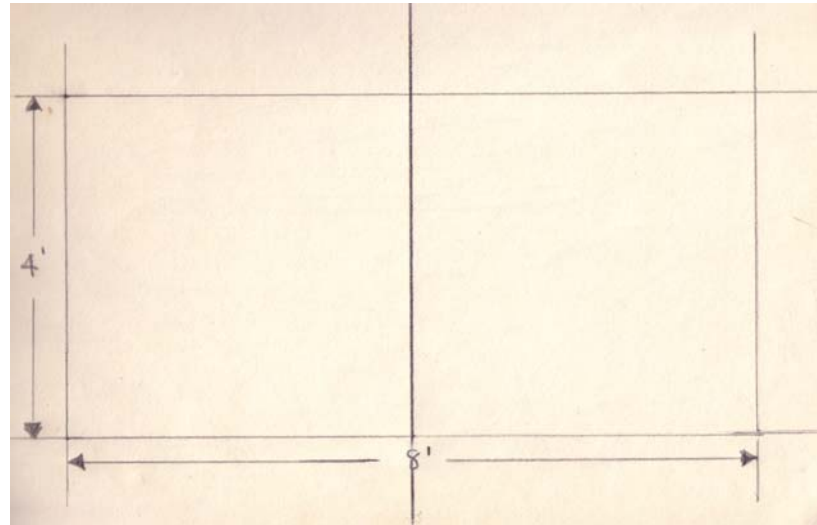


DIAGRAM 1

(3) DRAW A LINE FROM ONE CORNER TO THE OPPOSITE CORNER AND REPEAT IN ADJACENT CORNER UNTIL YOU HAVE AN “X” MARK THROUGH THE CENTER OF THE BOARD AS INDICATED IN DIAGRAM 2 BELOW. (HINT: USE THE 5 FT 1” X 1” SQUARE TUBING RAIL AS A GUIDE FOR LAYING DOWN THE LINES ON THE PLYWOOD.)

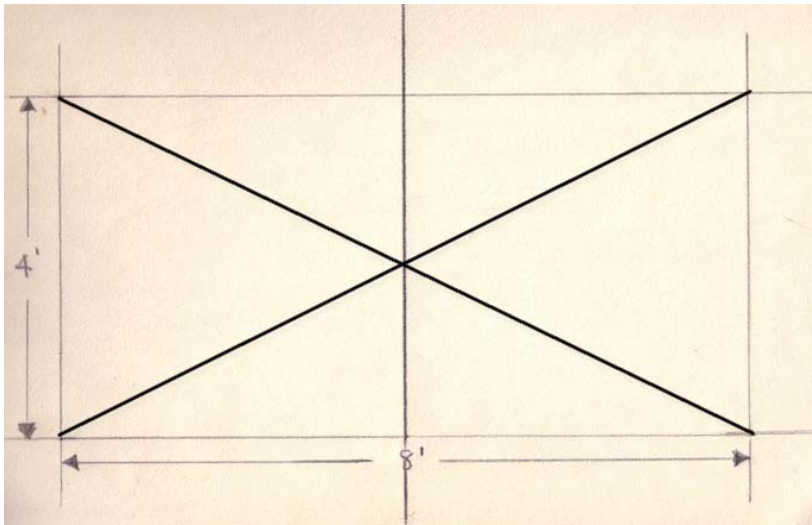


DIAGRAM 2

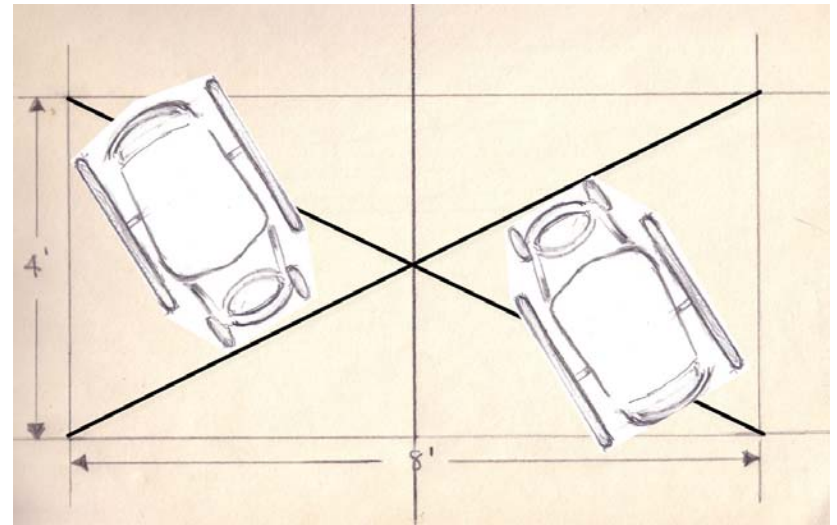
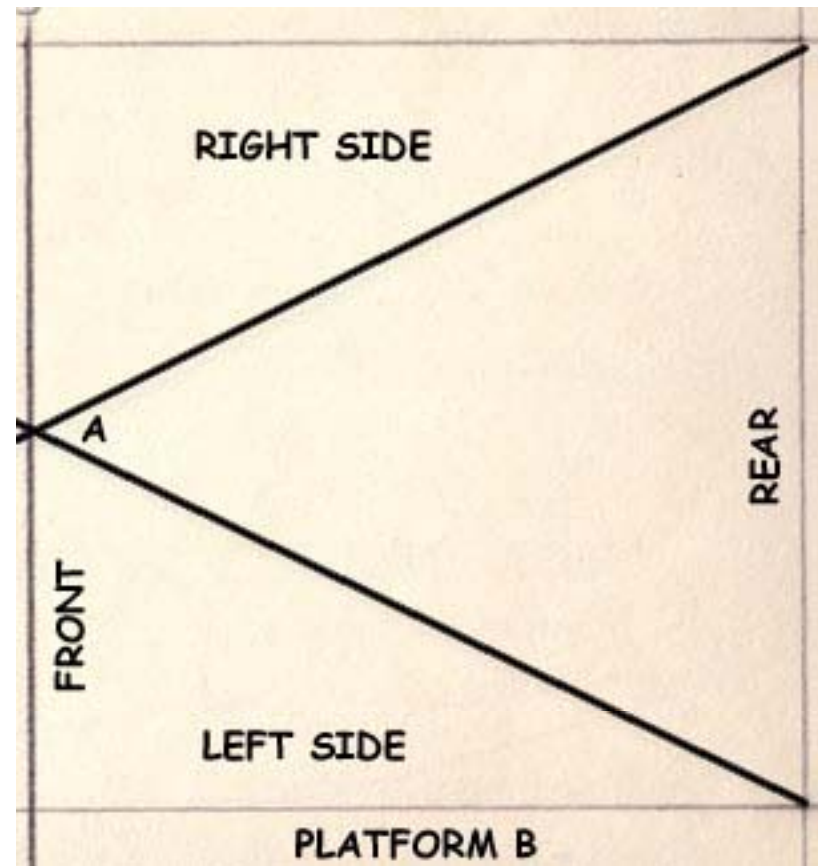
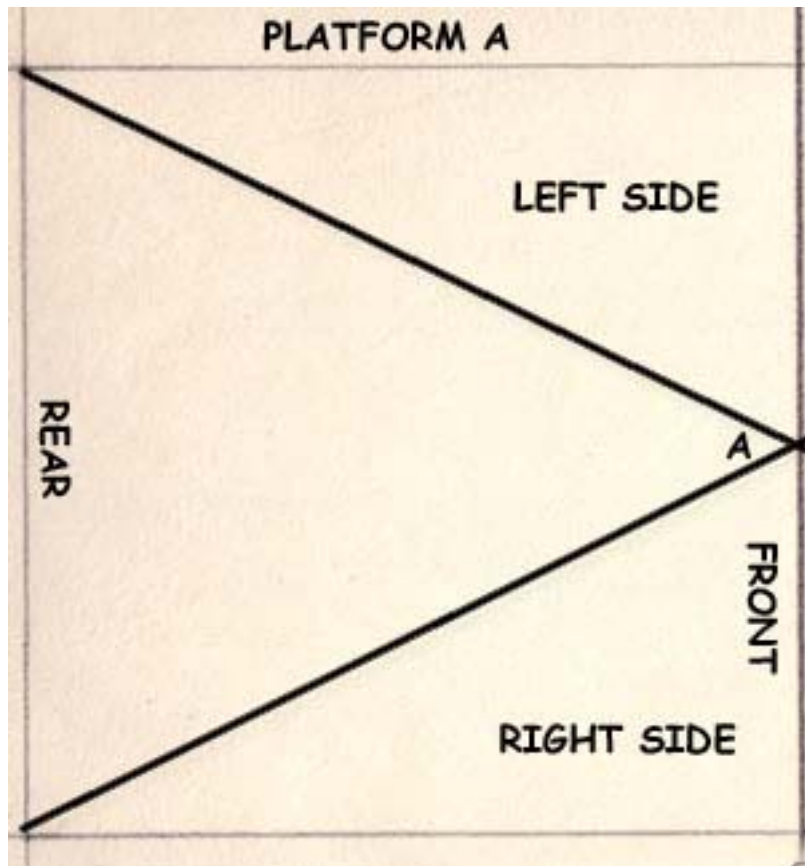


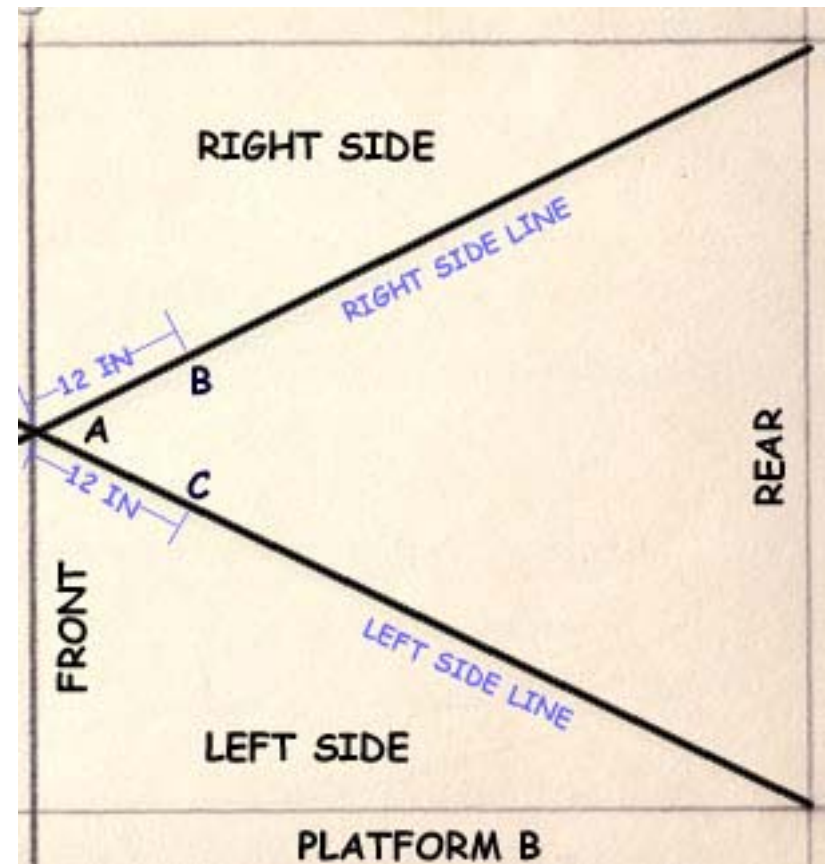
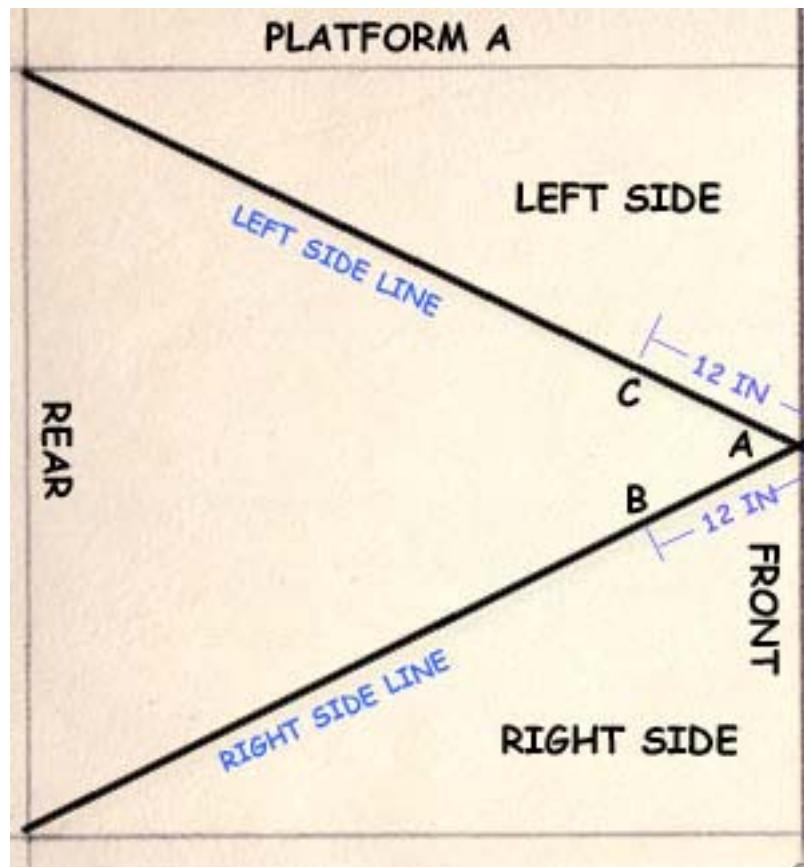
DIAGRAM 3

DIAGRAM 3 ILLUSTRATES WHAT THE “RIGHT-TO-RIGHT” CONFIGURATION USING THE “X” LINES TO APPROPRIATELY LINE UP THE WHEELCHAIRS SHOULD LOOK LIKE WHEN WE ARE DONE.

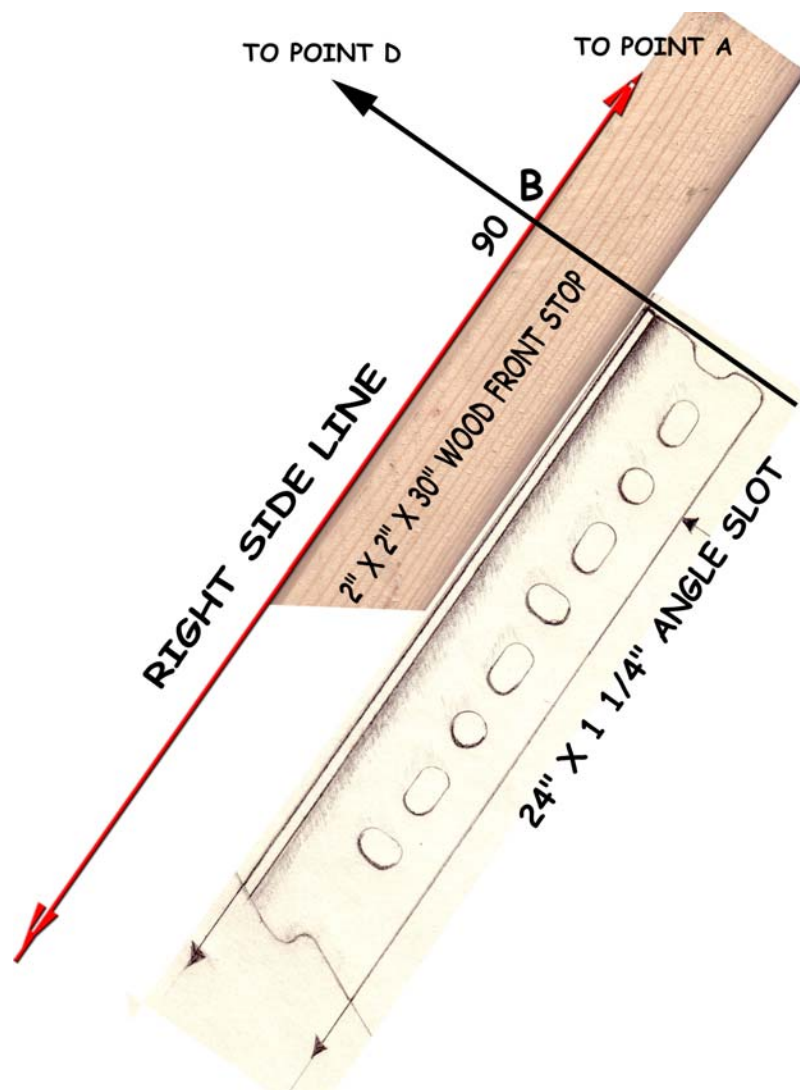
(4) CUT AND SEPARATE THE 4 X 8 FT PLYWOOD BOARD INTO TWO EQUAL 4 X 4 FT SQUARES. LET'S CALL THE FIRST, PLATFORM "A" AND THE SECOND, PLATFORM "B". I HAVE ADDITIONALLY LABELED ALL FOUR SIDES OF EACH PLATFORM, RIGHT, LEFT, FRONT, & REAR.



- (5) BEGIN WITH PLATFORM "A" AND MEASURE 12 INCHES FROM THE FRONT SIDE AND START FROM CENTERPOINT A. WE WILL CALL THIS POINT B. REPEAT THIS MEASURE ALONG THE LEFT SIDE LINE, AGAIN, START FROM CENTERPOINT A. WE WILL CALL THIS POINT C. (REPEAT THIS PROCEDURE TO FIND POINTS B & C ON PLATFORM "B.")



- (6) USING A PRECUT 24 INCH  $1\frac{1}{4}$  X  $1\frac{1}{4}$  INCH ANGLE SLOT, ATTACH A 2 X 2 X 30 INCH WOOD "FRONT STOP," CENTERED W/ ANGLE SLOT USING 3 12 X 1 INCH WOOD SCREWS. THIS IS THE FRONT STOP THAT WILL BE USED TO LINE UP YOUR FRONT CASTERS TO THE RIGHT OR LEFT SIDE LINES DEPENDING ON WHETHER YOU NEED A RIGHT-HAND OR LEFT-

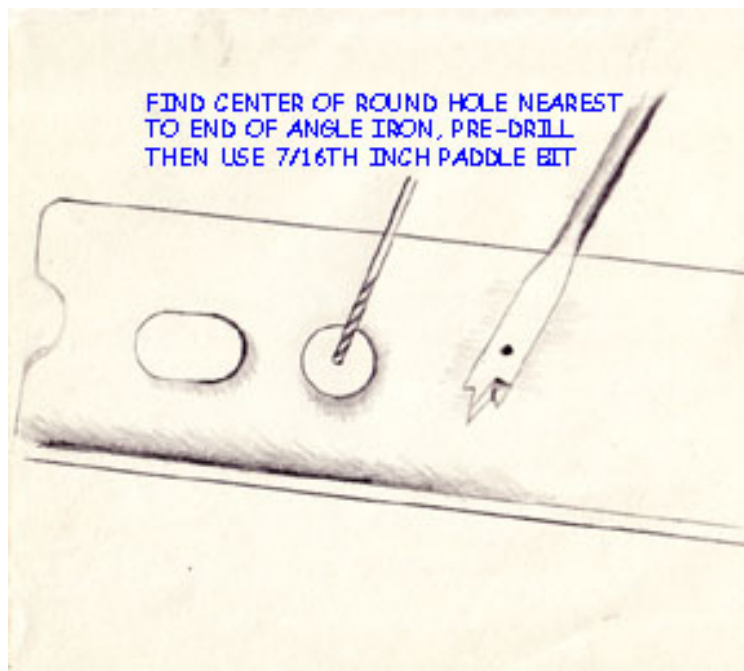


HAND FENCING CONFIGURATION.

- (7) LINE UP THE EXPOSED SIDE OF THE 2 X 2 X 30 INCH FRONT STOP TO THE RIGHT SIDE LINE W/ THE EDGE OF THE ANGLE SLOT PERPENDICULAR TO POINT B. FIND THE PRE-CUT ROUND HOLE CLOSEST TO THE SIDE EDGE OF THE ANGLE SLOT AND TRACE THE HOLE DIRECTLY ONTO THE PLYWOOD. DO THIS AT BOTH ENDS OF THE ANGLE SLOT. (THE DISTANCE BETWEEN THE

TWO HOLES SHOULD BE APPROX. 21 INCHES.)

(8) REMOVE ANGLE SLOT AND MARK THE CENTER OF EACH HOLE AND DRILL STARTER HOLES WITH  $7/64^{\text{TH}}$  INCH DRILL BIT COMPLETELY THROUGH PLYWOOD, THEN REPEAT WITH  $7/16^{\text{TH}}$  INCH PADDLE DRILL BIT. TURN PLYWOOD OVER AND TAMP INTO DRILLED HOLES,  $7/16^{\text{TH}}$  X  $3/8^{\text{TH}}$  INCH T-NUTS UNTIL T-NUTS ARE FLUSH WITH BOTTOM SURFACE OF PLYWOOD.

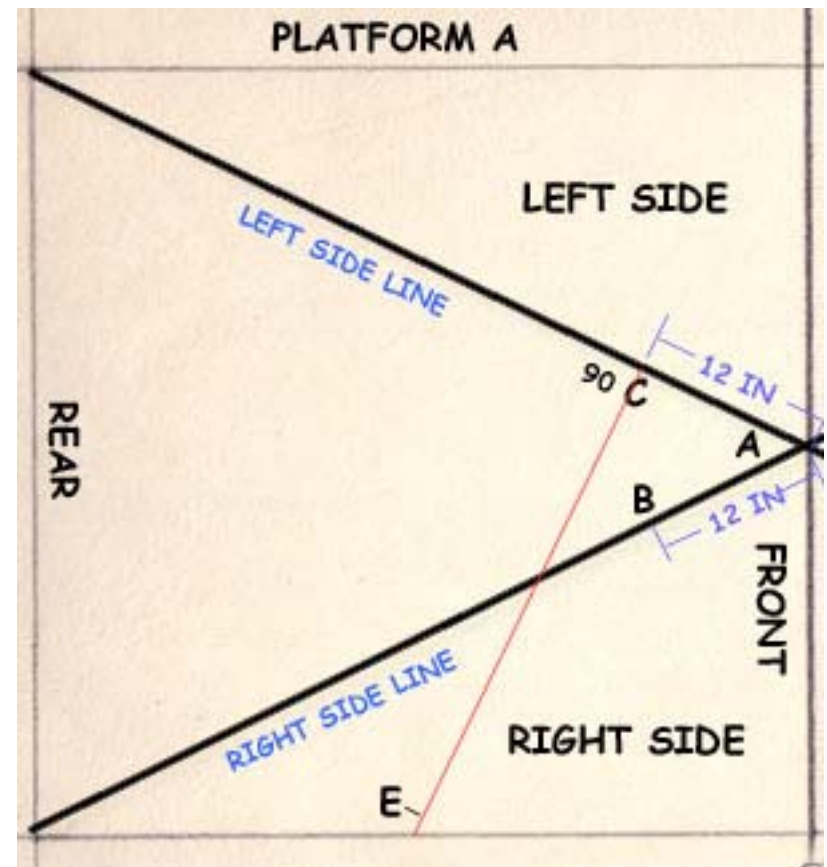
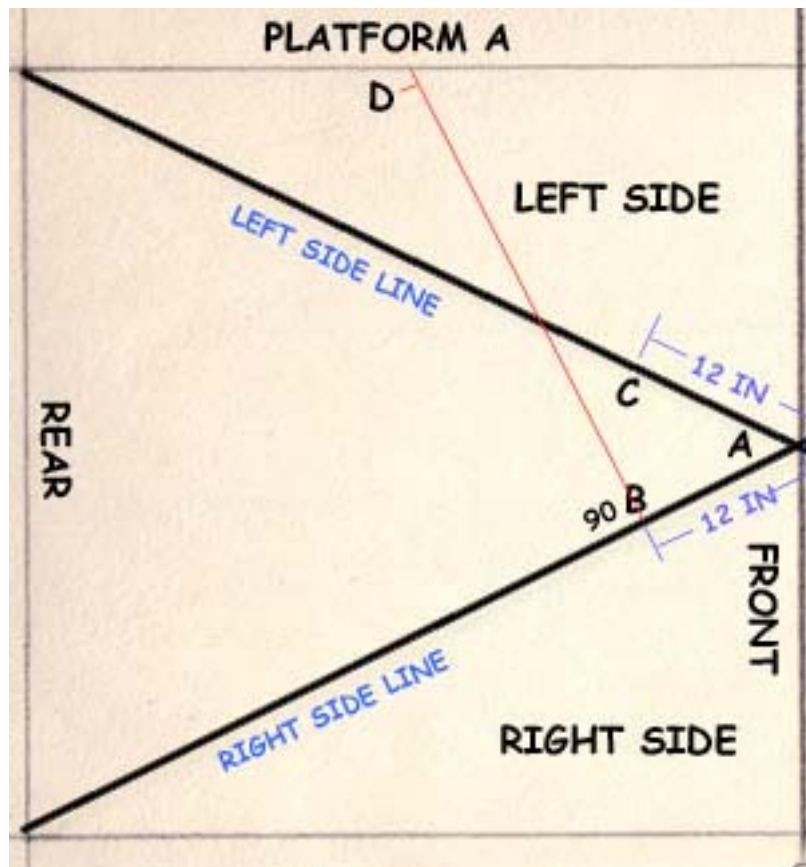


**REPEAT THIS PROCEDURE WITH ANGLE SLOT ALONG LEFT SIDE LINE, BUT NOW USE POINT C AS YOUR REFERENCE POINT.**

NOTE: NOW THERE ARE FOUR  $7/16^{\text{TH}}$  INCH HOLES DRILLED IN THE PLYWOOD WITH FOUR  $7/16^{\text{TH}}$  X  $3/8$  INCH T-NUTS TAMPED IN PLACE, FLUSH WITH THE UNDERSIDE SURFACE OF THE PLYWOOD.

**YOU HAVE NOW COMPLETED THE FRONT HALF OF A FOUR POINT TIE-DOWN SYSTEM FOR BOTH PLATFORMS "A" & "B."**

(9) RETURN TO POINT B ON PLATFORM "A" AND USING A RIGHT ANGLE TOOL, MEASURE UP  $90^\circ$  FROM THE RIGHT SIDE LINE AND 30 INCHES FROM POINT B AND MAKE A MARK AND CALL IT POINT D. REPEAT PROCEDURE BEGINNING WITH POINT C, MEASURE DOWN  $90^\circ$  FROM THE LEFT SIDE LINE AND 30 INCHES FROM POINT C AND MAKE A MARK AND CALL IT POINT E. (REPEAT THIS PROCEDURE FOR PLATFORM B.)

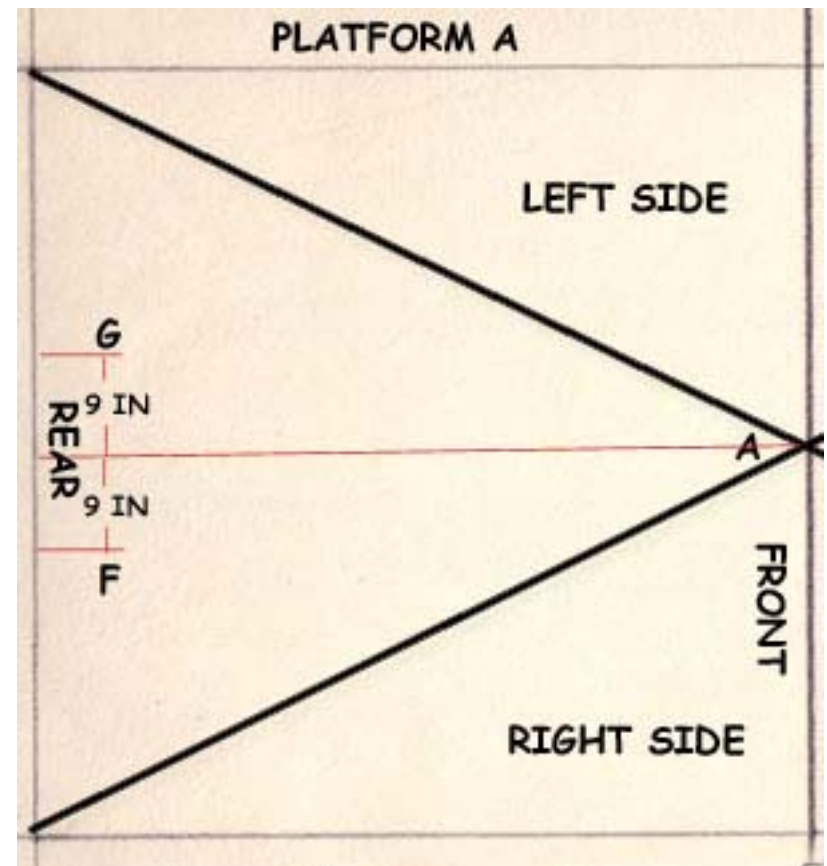


**NOTE: THIS SHOULD TAKE YOU TO 1 ½ INCHES TO THE SIDE EDGE OF THE PLYWOOD BOARD. IF YOU ARE ANY CLOSER, REDUCE MEASUREMENT TO MAINTAIN AT LEAST 1 ½ INCHES FROM THE SIDE EDGE OF PLATFORM (BOTH LEFT AND RIGHT SIDES FOR BOTH PLATFORMS A & B!) DRILL D & E, FIRST WITH 7/64<sup>TH</sup> INCH DRILL BIT, THEN 7/16<sup>TH</sup> INCH PADDLE DRILL BIT AND TURN PLYWOOD OVER AND TAMP INTO UNDERSIDE OF PLYWOOD 3/8<sup>TH</sup> X 7/16<sup>TH</sup> T-NUTS UNTIL T-NUTS ARE FLUSH WITH UNDERSIDE SURFACE OF PLYWOOD.**

(10) BEGINNING AT CENTERPOINT A OF THE FRONT EDGE OF PLATFORM “A,” USE A RIGHT ANGLE TOOL TO DRAW A LINE 90° TO THE REAR EDGE OF THE PLATFORM.

MEASURE 9 INCHES LEFT AND RIGHT OF THE CENTER LINE FROM THE REAR SIDE EDGE OF THE PLATFORM AND AT 1 ½ INCHES FROM THE REAR EDGE, MAKE MARKS AND CALL THESE POINTS, F AND G RESPECTIVELY. (REPEAT PROCEDURE WITH PLATFORM “B.”)

ONCE AGAIN, USING A 7/64<sup>TH</sup> INCH DRILL BIT, MAKE A STARTER HOLE AT



POINTS F & G AND THEN DRILL WITH 7/16<sup>TH</sup> INCH PADDLE DRILL BIT, THEN TURN PLYWOOD OVER AND TAMP INTO PLACE, 7/16<sup>TH</sup> X 3/8<sup>TH</sup> INCH T-NUTS UNTIL T-NUTS ARE FLUSH WITH UNDERSIDE SURFACE OF PLYWOOD .

**NOTE: WITH THE ADDITION OF THESE FOUR NEW HOLES, (D,E,F,& G) AND T-NUTS TAMPED INTO PLACE, ON THE UNDERSIDE OF BOTH PLATFORMS A & B, WE HAVE FINISHED THE SECOND PART OF OUR FOUR POINT TIE-DOWN SYSTEM. THERE SHOULD NOW BE EIGHT 7/16<sup>TH</sup> INCH HOLES DRILLED THROUGH THE PLYWOOD BOARD AND EIGHT 7/16<sup>TH</sup> X 3/8<sup>TH</sup> INCH T-NUTS TAMPED IN PLACE FOR TYING DOWN THE WHEELCHAIRS, FRONT AND BACK.**

WE ARE NOW READY TO BEGIN BUILDING THE RECEIVERS AND 5 FT X 1" X 1" RAILS THAT WILL BE USED TO ADJUST THE DISTANCE BETWEEN THE TWO PLATFORMS TO OBTAIN THE PROPER DISTANCE BETWEEN THE FENCERS.



- (11) BEGIN WITH 1 ¼ INCH SQUARE TUBING AND CUT FOUR SECTIONS 12 INCHES LONG WITH THE LEADING ENDS HAVING A 45° ANGLE OPENING AND A PRE-DRILLED ½ INCH HOLE 3 INCHES FROM THE FRONT OF THE RECEIVER

WITH A  $\frac{1}{2}$  INCH NUT, COURSE THREAD, WELDED IN THE SAME LOCATION.

**(NOTE:)** USE ADDITIONAL ANGLE SLOT TABS WELDED ON LEFT AND RIGHT SIDES OF  $1 \frac{1}{4}$  INCH RECEIVERS TO FIX TO PLYWOOD. THE TABS ILLUSTRATED HERE ARE 1 X 1 INCH WITH  $\frac{3}{8}$  INCH ROUND HOLES PRE-CUT IN ANGLE SLOT.

(12) DETERMINE WHICH TWO HOLES MAY PROVIDE THE BEST POINT TO SECURE THE RECEIVER, (PREFERABLY ONE ON EACH SIDE OF THE RECEIVER.) TRACE HOLES AND MARK THE CENTER OF THE HOLES DIRECTLY ONTO THE PLYWOOD. REMOVE RECEIVER AND PREDRILL WITH  $\frac{7}{64}$ <sup>TH</sup> INCH DRILL BIT FOLLOWED BY  $\frac{7}{16}$ <sup>TH</sup> INCH PADDLE BIT COMPLETELY THROUGH PLYWOOD. TAMP INTO UNDERSIDE OF PLYWOOD BOARD  $\frac{7}{16}$ <sup>TH</sup> X  $\frac{3}{8}$ <sup>TH</sup> INCH T-NUTS.

**(NOTE:)** THE DISTANCE BETWEEN THE SIDE EDGE OF THE RECEIVER TO THE SIDE EDGE OF THE PLYWOOD IS 2 INCHES. TO ENSURE PROPER ALIGNMENT, PLACE 5 FT X 1 INCH SQUARE TUBING RAIL INTO BOTH RECEIVERS (ONE SIDE OF RAIL SYSTEM) AND LINE UP SIDE EDGE OF TABS 2 INCHES FROM RIGHT SIDE OF PLYWOOD AND MAKE SURE THAT THE FRONT OF THE RECEIVER DOES NOT PROJECT BEYOND THE FRONT SIDE OF EITHER PLATFORM.

REPEAT WITH 2<sup>ND</sup> SET OF 1 ¼ INCH SQUARE TUBING RECEIVERS AND 5 FT X 1 INCH SQUARE TUBING RAIL.

**(NOTE:) VERY IMPORTANT TO CHECK ALIGNMENT AND RECHECK TO MAKE SURE THAT RAIL RECEIVERS AND RAILS EASILY SLIDE IN AND OUT BEFORE, DURING AND AFTER ATTACHING!**

**FINALLY USE RATCHET TIE-DOWNS LOOPED THROUGH WHEELCHAIR FRAME TO SECURE TWO-POINTS IN FRONT AND TWO-POINTS IN REAR OF WHEELCHAIR. TIGHTEN FRONT STRAPS FIRST AND REAR STRAPS LAST TO MAINTAIN ALIGNMENT OF FRONT CASTERS, FLUSH WITH FRONT STOP.**



**PLYWOOD MEDIUM GRADE 4 X 8 FT**  
**24" X 1 1/4" X 1 1/4" ANGLE SLOT**  
**2 1/2" X 3/8 INCH EYE BOLTS**  
**5/16<sup>TH</sup> INCH FLAT WASHERS**  
**7/16<sup>TH</sup> X 3/8 INCH T-NUTS**  
**4 FT 1 1/4" X 1 1/4" SQUARE TUBING**  
**5 FT X 1" X 1" SQUARE TUBING (RAILS)**  
**3/8" X 3/4" HEX BOLTS**  
**1/2" X 3/4" HEX BOLTS COURSE THREAD**  
**1/2" COURSE THREAD HEX NUTS**  
**24"X1"X 1" ANGLE SLOT (W 3/8" HOLES)**

**RATCHET TIE-DOWN 6 FT LENGTH**  
**WELDING AND METAL FABRICATION**



1  
 2  
 8  
 8  
 24  
 1  
 2  
 8  
 4  
 4  
 1  
 4

