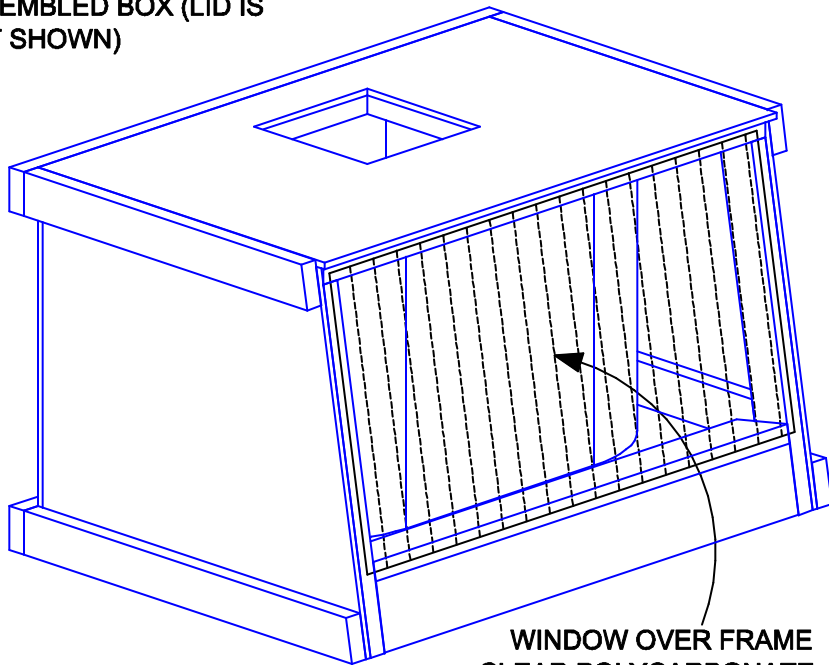
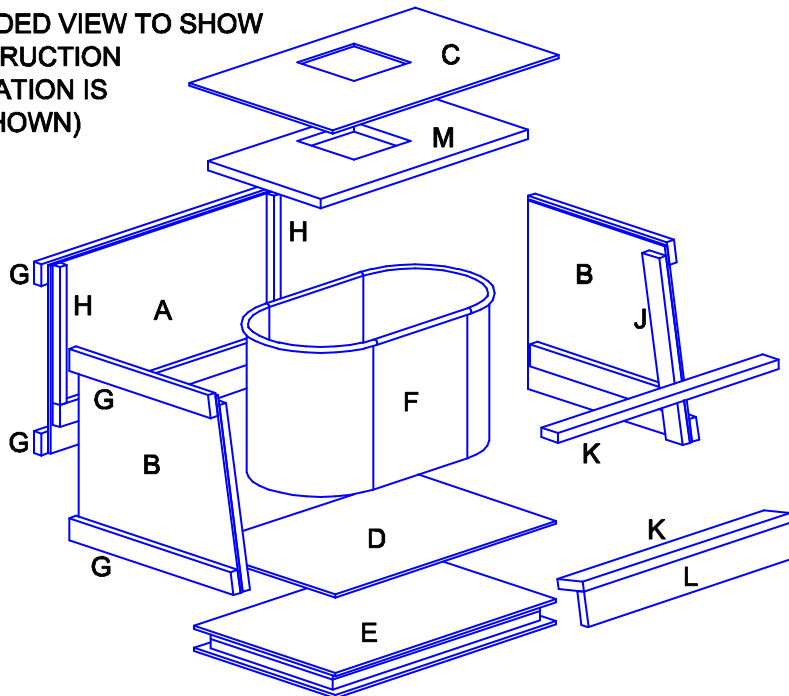


ASSEMBLED BOX (LID IS NOT SHOWN)



WINDOW OVER FRAME  
CLEAR POLYCARBONATE  
(EG: "SUNTUF")

EXPLODED VIEW TO SHOW  
CONSTRUCTION  
(INSULATION IS NOT SHOWN)



## INSULATED WATER TROUGH BOX FOR HORSES WITH SOLAR HEAT COLLECTOR

BY STEVEN FAHEY

THIS DESIGN INSULATES A 4X2 WATER TROUGH. THE RIM OF THE TROUGH ACTUALLY MEASURES 44" LONG AND 24" WIDE. IT IS 24" DEEP. BECAUSE OF THE ROUNDED RIM, THERE WILL BE SOME SPACE AROUND ALL SIDES, BUT THE RIM ITSELF SHOULD BE SNUG.

### MATERIALS YOU WILL NEED:

1/2" THICK ORIENTED-STRAND BOARD ("OSB")

2X4 LUMBER

2X6 LUMBER

1.5" FOAM INSULATION (R=7.5)

1.5" SQUARE WOOD (OR USE MORE 2X4's)

SCREWS ("DECK" SCREWS) IN LENGTHS 2" LONG AND 3" LONG

TWO 4X8 SHEETS

ABOUT 48'

ABOUT 8'

TWO 2X8 SHEETS

ABOUT 5'

### MAKE WITH OSB:

A) BACK BOARD 48" X 30"

B) SIDE BOARD 29" X 30" (TOP) 10° SLOPE

C) LID BOARD 48" X 30" (WITH 12"x12" CUTOUT)

D) FLOOR BOARD 48" X 36"

E) BASE SANDWICH 48" X 36" OSB (WITH 2 LAYERS FOAM)

F) PAINT THE TROUGH BLACK. MATTE OR FLAT BLACK IS BEST.

G) THE 2x4's AROUND THE TOP AND BOTTOM RIM GIVE THE BOX MOST OF ITS STRENGTH. ATTACH THE TOP RIM 2X4'S ABOUT 1/2" ABOVE THE OSB WALLS. THE LID WILL FIT IN THE RIM.

H) THE SMALL VERTICAL PIECES JOIN THE EDGES OF THE OSB.

J) THE FRAME AROUND THE ANGLED FACE IS WHERE THE CLEAR WINDOW WILL BE ATTACHED. USE 2x4's.

K) THE TOP FRAME (2X4) SITS ON TOP OF THE INCLINED FRAME.

THE TOP OF THIS FRAME MUSTN'T BE HIGHER THAN THE WALLS.

K) THE SILL (2x6) IS INCLINED 10° TO MATCH THE SIDES. IT MUST TOUCH THE FLOOR SO THAT AIR WON'T CIRCULATE UP AND DOWN.

L) COMPLETE THE SKIRT WITH 2x6 UNDER THE SILL

M) WHEN ASSEMBLED, THE RIM OF THE TROUGH SHOULD SIT ABOUT 1.5" BELOW THE RIM OF THE BOX. FIT THE LID INSULATION SNUGLY INSIDE.

IF THE LID IS NOT SNUG IN THE RIM, HOLD IT DOWN WITH SCREWS.

PUT THE WINDOW ON LAST. DRILL HOLES IN THE POLYCARBONATE (OR BETTER YET USE A HAND-PUNCH) BEFORE SCREWING IT TO THE FRAME. PUT SOME FOAM OR PUTTY AROUND THE EDGE TO SEAL IT.

DO NOT ATTACH THE FLOOR TO THE WALLS OF THE BOX. SET THE INNER FRAME TO REST ON THE SANDWICH AND FLOOR.

SOME DAY YOU WILL BE GLAD THAT YOU CAN LIFT THE BOX OFF OF THE TROUGH WHILE IT IS STILL FULL OF WATER!