

SECTION A-A

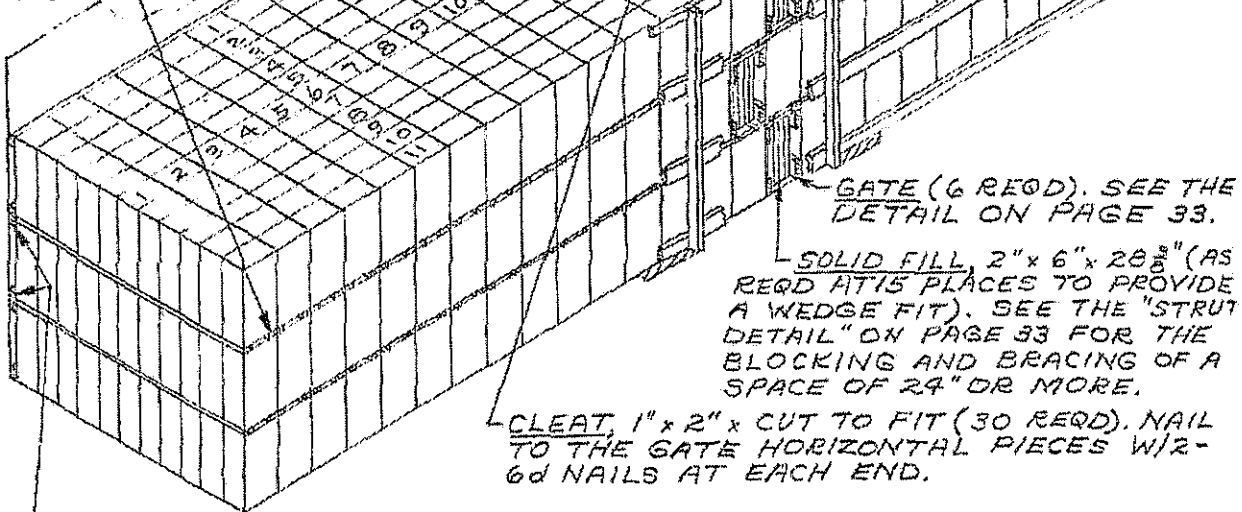
-SIDE FILL, 2"x4" x CUT TO FIT FROM CAR END WALL TO DOOR OPENING (8 REQD FOR 9'-2" WIDE CAR). POSITION AT TOP AND BOTTOM OF LOAD. NAIL TO CAR SIDEWALL W/1-10d NAIL EVERY 12". ADD 1"x4" AND/OR 2"x4" MATERIAL TO EACH SIDE FILL FOR SHIPMENTS IN A 9'-4" WIDE CAR.

3 LAYERS = 957 BOXES = 145,877 LBS.*
 2 LAYERS = 638 BOXES = 98,124 LBS.
 *CAUTION: DO NOT EXCEED LOAD LIMIT OF CAR.

CAUTION: BOXES MUST BE POSITIONED WITH OPENING END UP.

DOORWAY PROTECTION (2 REQD). SEE THE DETAILS ON PAGE 35. NOTE THAT THE VERTICAL PIECES MAY NEED TO BE 2"x4" OR 2"x6" IN LIEU OF THE 2"x3" AS SPECIFIED.

DECKING ASSEMBLY (58 REQD). SEE DETAIL ON PAGE 33.



GATE (6 REQD). SEE THE DETAIL ON PAGE 33.

SOLID FILL, 2"x6"x 28 3/8" (AS REQD AT 15 PLACES TO PROVIDE A WEDGE FIT). SEE THE "STRUT DETAIL" ON PAGE 33 FOR THE BLOCKING AND BRACING OF A SPACE OF 24" OR MORE.

CLEAT, 1"x2" x CUT TO FIT (30 REQD). NAIL TO THE GATE HORIZONTAL PIECES W/2-6d NAILS AT EACH END.

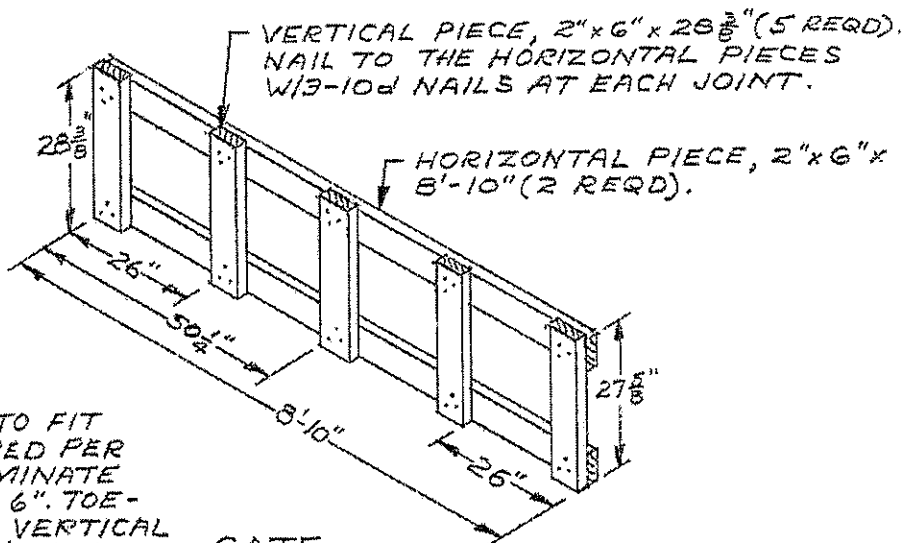
SIDE FILL, 2"x6" x CUT TO FIT FROM CAR END WALL TO DOOR OPENING (8 REQD FOR 9'-2" WIDE CAR). POSITION AT JOINTS OF LAYERS AND NAIL TO CAR SIDEWALL W/1-10d NAIL EVERY 12". ADD 1"x6" AND/OR 2"x6" TO EACH SIDE FILL FOR SHIPMENTS IN 9'-4" WIDE CARS.

TYPICAL LOAD OF PROPELLANT PACKED IN M2 AND MK 7 STEEL BOXES IN A 40'-6" LONG BY 9'-2" OR 9'-4" WIDE CONVENTIONAL BOX CAR

INDICATES THE MKT OR M2 STEEL BOX WITH DECKING ASSEMBLY POSITIONED ON TOP.

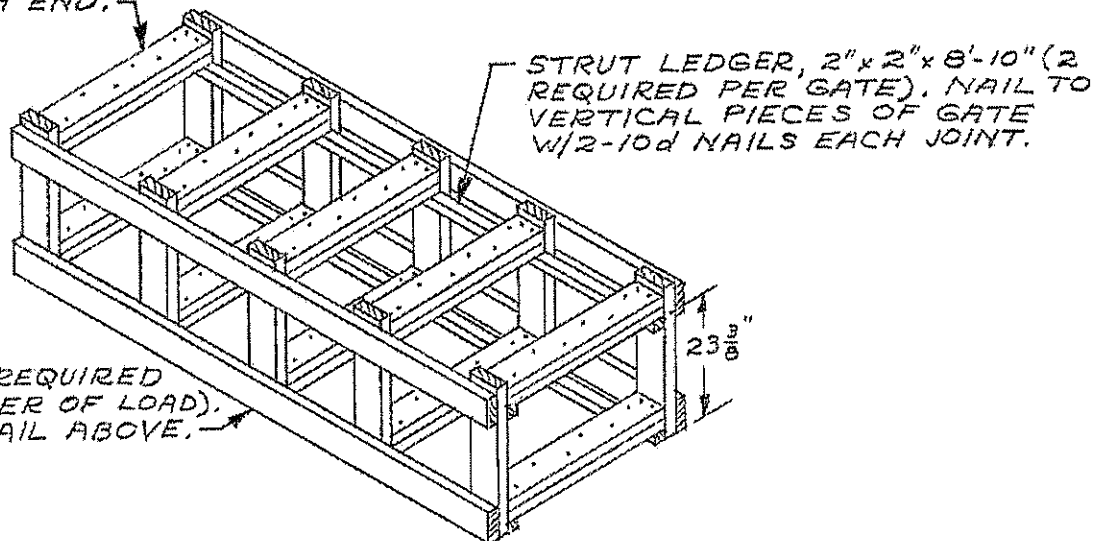
BEARING PIECE, 1" x 4" x 8'-8" (2 REQD). NAIL TO THE TIE PIECES W/3-6d NAILS AT EACH END.

TIE PIECE, 1" x 2" x 14" (2 REQD).
DECKING ASSEMBLY



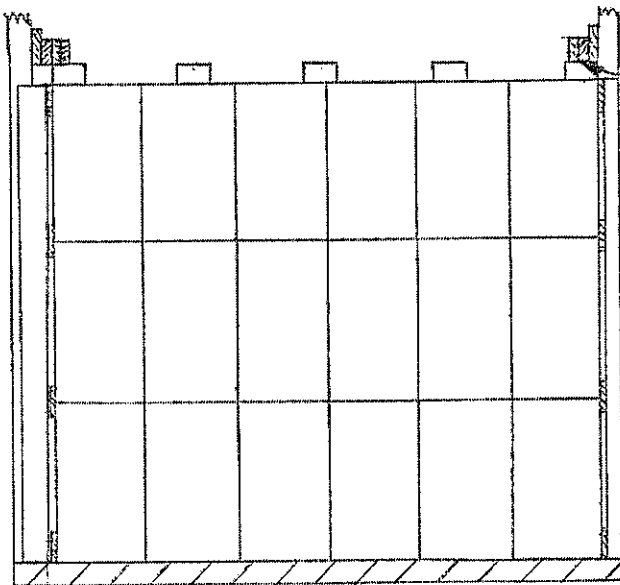
STRUT, 2" x 6" x CUT TO FIT (DOUBLED) (10 REQUIRED PER LAYER OF LOAD). LAMINATE W/1-10d NAIL EVERY 6". TOE-NAIL TOP PIECE TO VERTICAL PIECES OF GATES W/2-12d NAILS EACH END.

GATE



GATE (2 REQUIRED PER LAYER OF LOAD). SEE DETAIL ABOVE.

STRUT DETAIL



GATE HOLD DOWN CLEAT, 2"x4"x42" (2 REED, 1 DOUBLED & 1 TRIPLED). NAIL FIRST PIECE TO GATE HOLD DOWN W/6-10d NAILS. NAIL ADDITIONAL PIECES IN A LIKE MANNER.

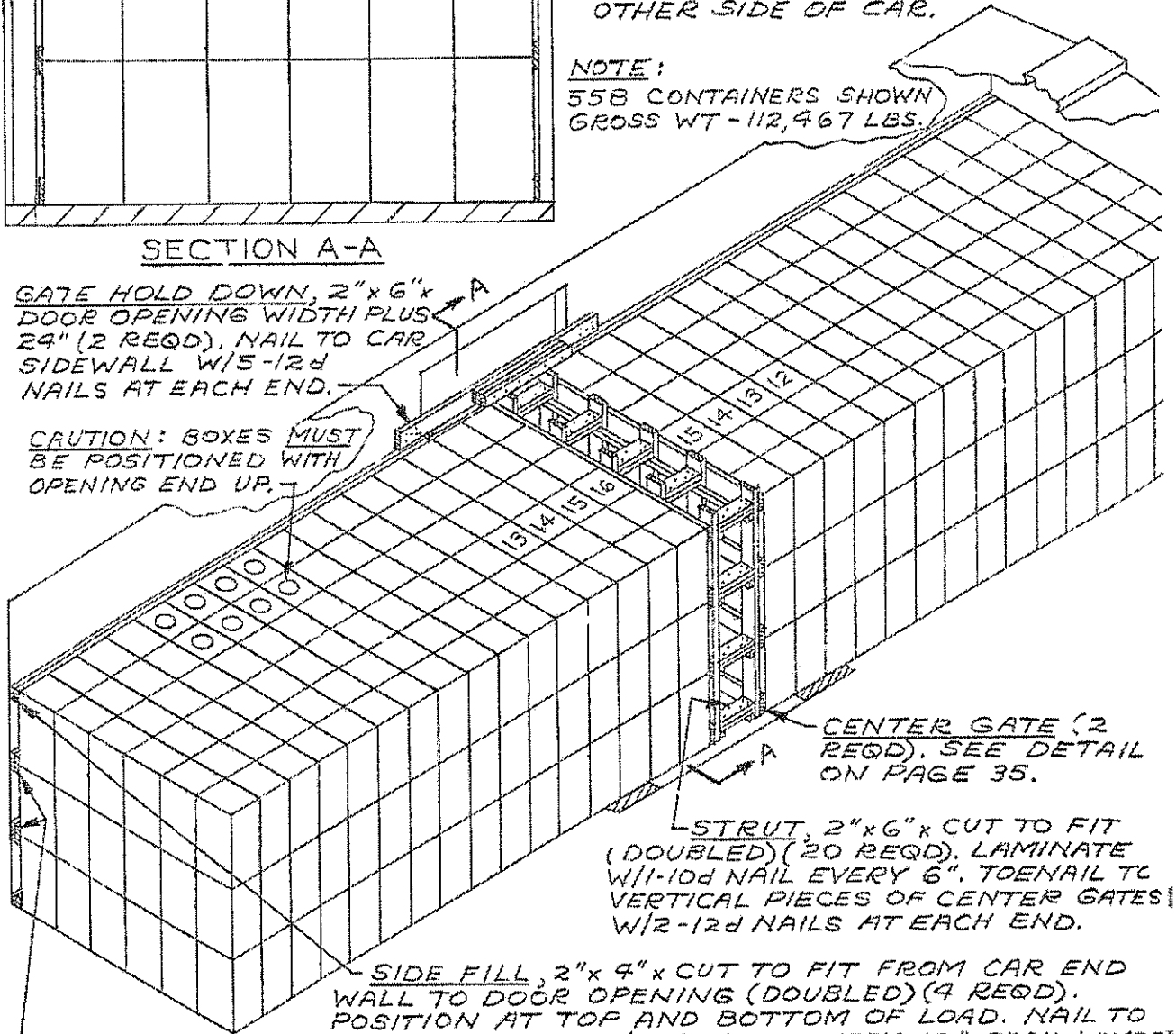
DOORWAY PROTECTION (2 REED), SEE THE DETAIL ON PAGE 35. NOTE THAT 2"x6" VERTICAL PIECES MUST BE USED FOR THE ASSEMBLY ON OTHER SIDE OF CAR.

NOTE:
558 CONTAINERS SHOWN
GROSS WT - 112,467 LBS.

SECTION A-A

GATE HOLD DOWN, 2"x6"x DOOR OPENING WIDTH PLUS 24" (2 REED). NAIL TO CAR SIDEWALL W/5-12d NAILS AT EACH END.

CAUTION: BOXES MUST BE POSITIONED WITH OPENING END UP.



CENTER GATE (2 REED). SEE DETAIL ON PAGE 35.

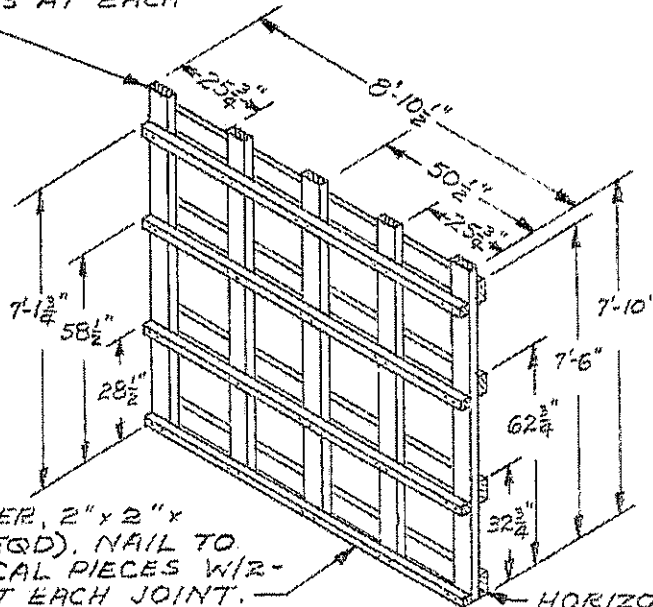
STRUT, 2"x6"x CUT TO FIT (DOUBLED) (20 REED). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO VERTICAL PIECES OF CENTER GATES W/2-12d NAILS AT EACH END.

SIDE FILL, 2"x4"x CUT TO FIT FROM CAR END WALL TO DOOR OPENING (DOUBLED) (4 REED). POSITION AT TOP AND BOTTOM OF LOAD. NAIL TO CAR SIDEWALL W/1-10d NAIL EVERY 12" EACH LAYER.

SIDE FILL, 2"x6"x CUT TO FIT FROM CAR END WALL TO DOOR OPENING (DOUBLED) (4 REED). POSITION AT JOINTS OF LAYERS AND NAIL TO CAR SIDEWALL W/1-10d NAIL EVERY 12" FOR EACH LAYER.

TYPICAL LOAD OF PROPELLANT PACKED IN M24 METAL-LINED WOODEN BOX IN A 40'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR

VERTICAL PIECE, 2"x6"x 7'-10" (5 REQD). NAIL TO THE HORIZONTAL PIECES W/3-10d NAILS AT EACH JOINT.



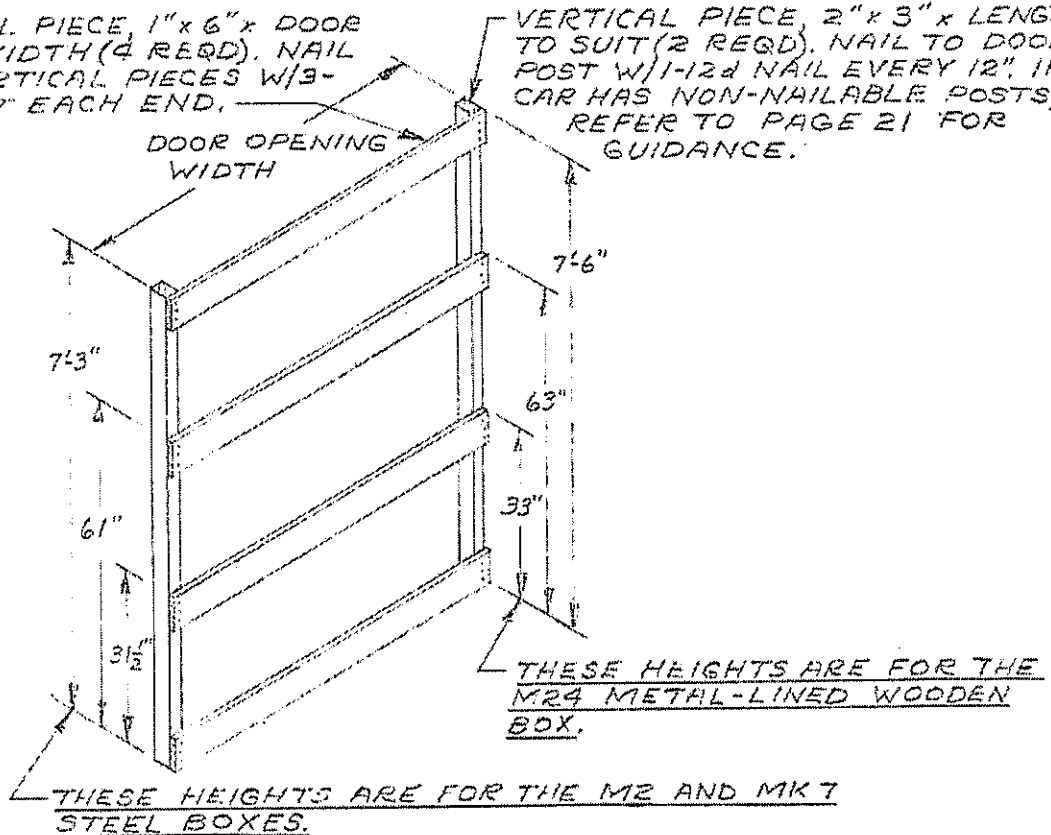
STRUT LEDGER, 2"x2"x 8'-10 1/2" (9 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2"x6" x 8'-10 1/2" (9 REQD).

CENTER GATE

HORIZONTAL PIECE, 1"x6" x DOOR OPENING WIDTH (4 REQD). NAIL TO THE VERTICAL PIECES W/3-6d NAILS AT EACH END.

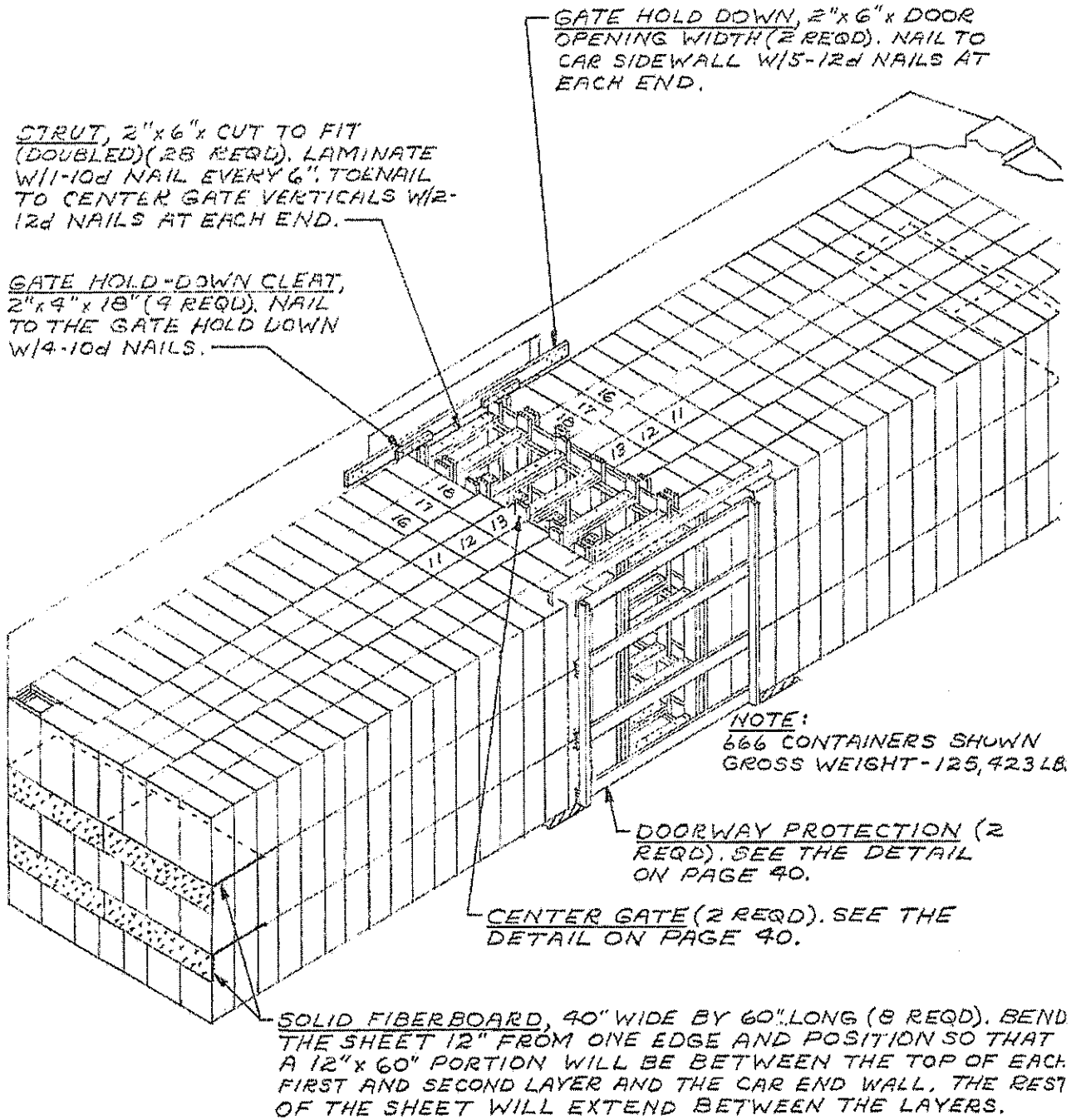
VERTICAL PIECE, 2"x3" x LENGTH TO SUIT (2 REQD). NAIL TO DOOR POST W/1-12d NAIL EVERY 12". IF CAR HAS NON-NAILABLE POSTS, REFER TO PAGE 21 FOR GUIDANCE.



THESE HEIGHTS ARE FOR THE M2 AND MK 7 STEEL BOXES.

THESE HEIGHTS ARE FOR THE M24 METAL-LINED WOODEN BOX.

DOORWAY PROTECTION



TYPICAL LOAD OF PA54 CONTAINERS WITH PROPELLANT IN A 40'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR

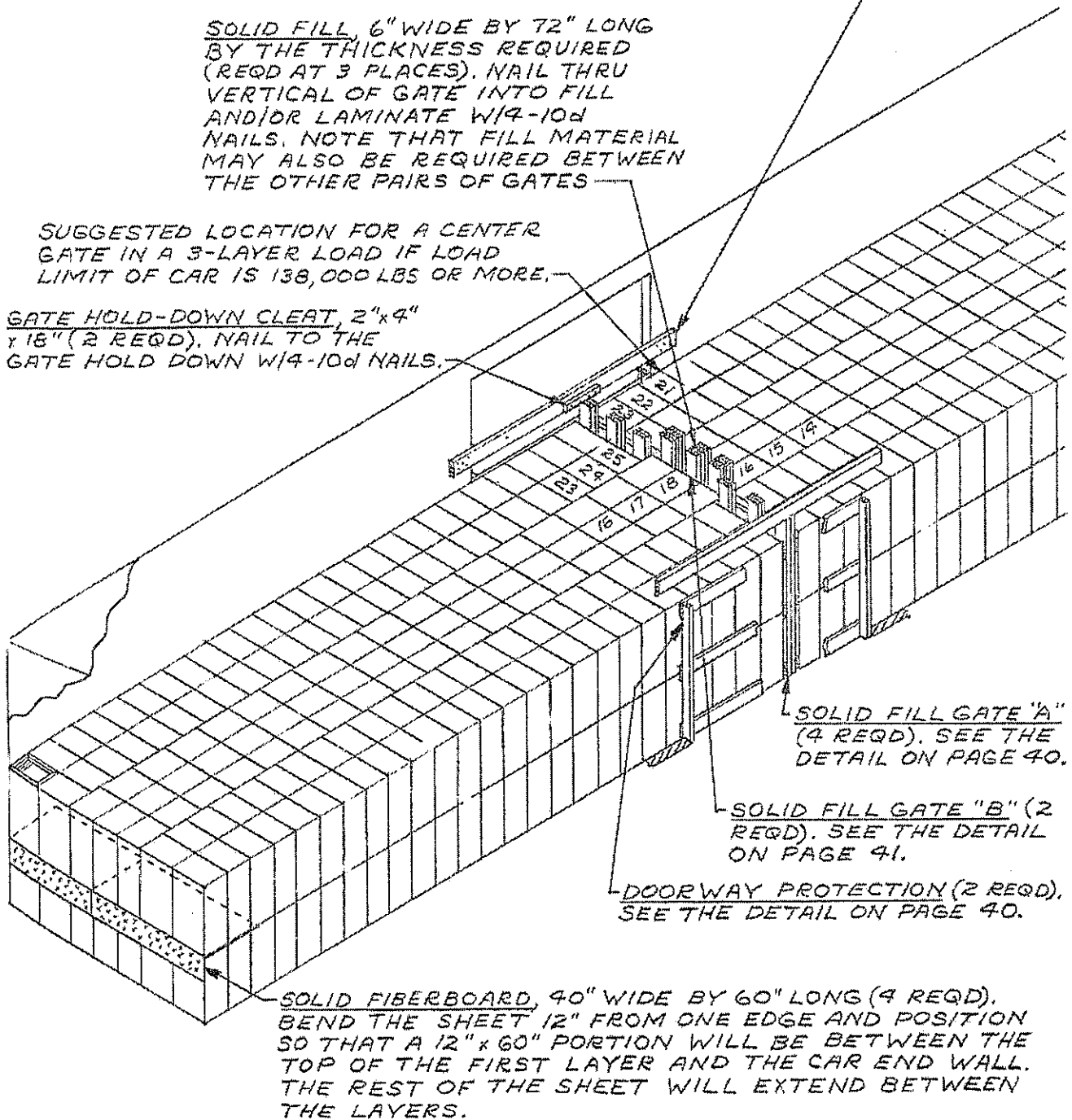
NOTE:
 588 CONTAINERS SHOWN
 GROSS WEIGHT-109,980 LBS

GATE HOLD DOWN, 2"x6" DOOR
OPENING WIDTH PLUS 24" (2 REQD).
NAIL TO CAR SIDEWALL W/5-12d
NAILS AT EACH END.

SOLID FILL, 6" WIDE BY 72" LONG
BY THE THICKNESS REQUIRED
(REQD AT 3 PLACES). NAIL THRU
VERTICAL OF GATE INTO FILL
AND/OR LAMINATE W/4-10d
NAILS. NOTE THAT FILL MATERIAL
MAY ALSO BE REQUIRED BETWEEN
THE OTHER PAIRS OF GATES

SUGGESTED LOCATION FOR A CENTER
GATE IN A 3-LAYER LOAD IF LOAD
LIMIT OF CAR IS 138,000 LBS OR MORE.

GATE HOLD-DOWN CLEAT, 2"x4"
18" (2 REQD). NAIL TO THE
GATE HOLD DOWN W/4-10d NAILS.



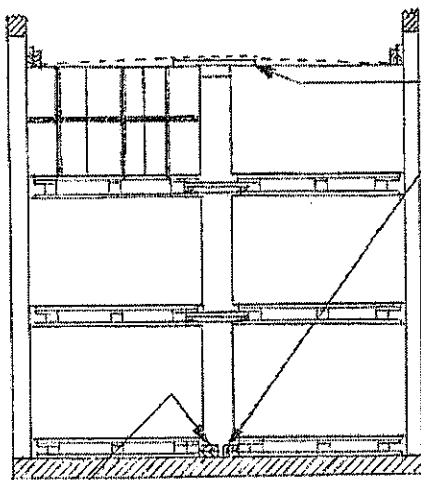
SOLID FILL GATE "A"
(4 REQD). SEE THE
DETAIL ON PAGE 40.

SOLID FILL GATE "B" (2
REQD). SEE THE DETAIL
ON PAGE 41.

DOORWAY PROTECTION (2 REQD).
SEE THE DETAIL ON PAGE 40.

SOLID FIBERBOARD, 40" WIDE BY 60" LONG (4 REQD).
BEND THE SHEET 12" FROM ONE EDGE AND POSITION
SO THAT A 12" x 60" PORTION WILL BE BETWEEN THE
TOP OF THE FIRST LAYER AND THE CAR END WALL.
THE REST OF THE SHEET WILL EXTEND BETWEEN
THE LAYERS.

TYPICAL LOAD OF PA54 CONTAINERS WITH
PROPELLANT IN A 50'-6" LONG BY 9'-2"
WIDE CONVENTIONAL BOX CAR



SECTION A-A

SPACER BLOCK (2 REQD). SEE THE DETAIL ON PAGE 41.

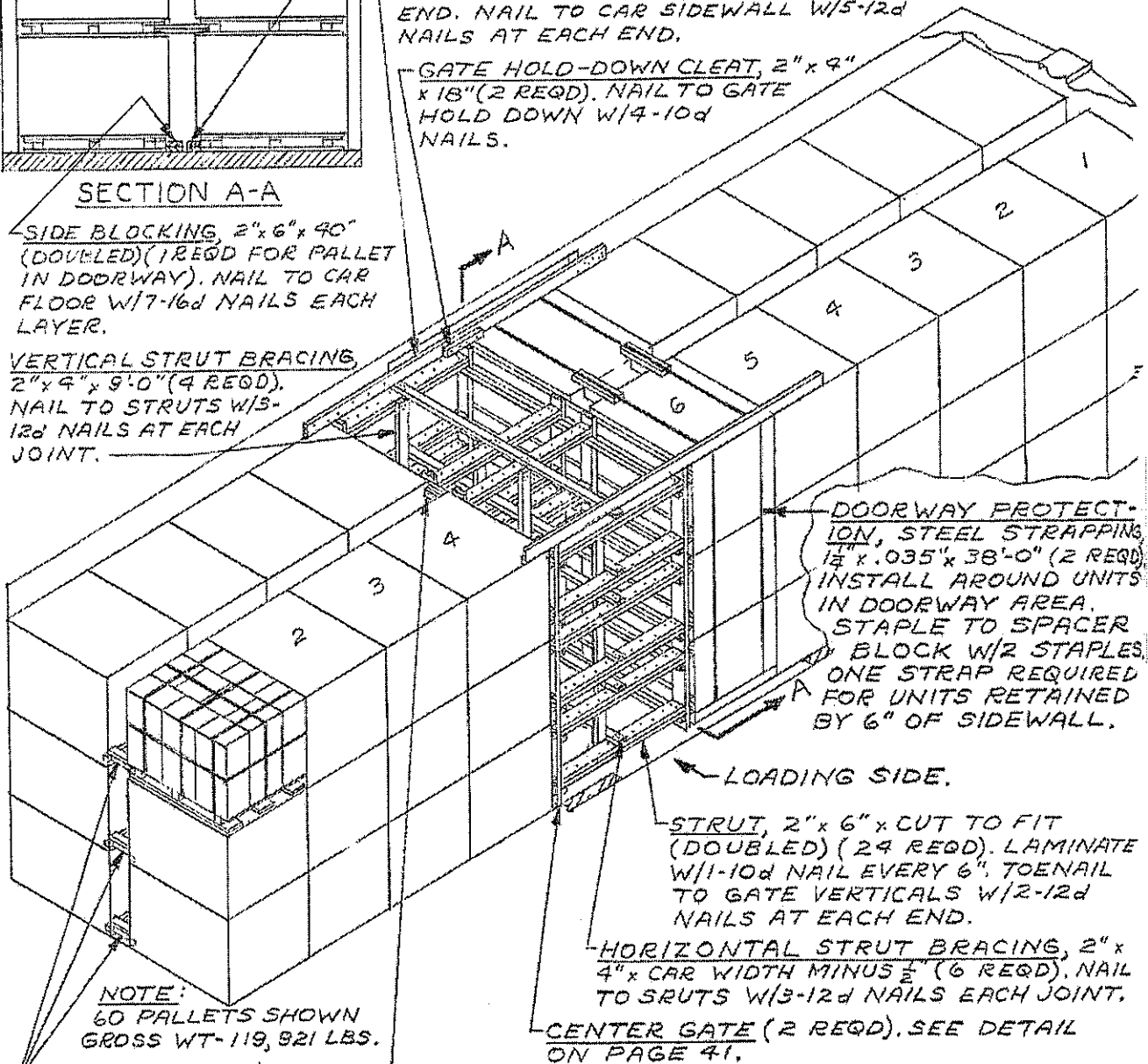
SIDE BLOCKING, 2"x4"x40" (DOUBLED) (1 REQD FOR PALLET IN DOORWAY). NAIL TO CAR FLOOR W/7-16d NAILS EACH LAYER.

GATE HOLD DOWN, 2"x6"x12" PAST CENTER GATE ON ONE END AND 12" PAST DOOR OPENING ON OPPOSITE END. NAIL TO CAR SIDEWALL W/5-12d NAILS AT EACH END.

GATE HOLD-DOWN CLEAT, 2"x4"x18" (2 REQD). NAIL TO GATE HOLD DOWN W/4-10d NAILS.

SIDE BLOCKING, 2"x6"x40" (DOUBLED) (1 REQD FOR PALLET IN DOORWAY). NAIL TO CAR FLOOR W/7-16d NAILS EACH LAYER.

VERTICAL STRUT BRACING, 2"x4"x9'-0" (4 REQD). NAIL TO STRUTS W/5-12d NAILS AT EACH JOINT.



DOORWAY PROTECTION, STEEL STRAPPING, 1/2" x .035" x 38'-0" (2 REQD). INSTALL AROUND UNITS IN DOORWAY AREA. STAPLE TO SPACER BLOCK W/2 STAPLES. ONE STRAP REQUIRED FOR UNITS RETAINED BY 6" OF SIDEWALL.

LOADING SIDE.

STRUT, 2"x6"x CUT TO FIT (DOUBLED) (24 REQD). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO GATE VERTICALS W/2-12d NAILS AT EACH END.

HORIZONTAL STRUT BRACING, 2"x4"x CAR WIDTH MINUS 1/2" (6 REQD). NAIL TO STRUTS W/3-12d NAILS EACH JOINT.

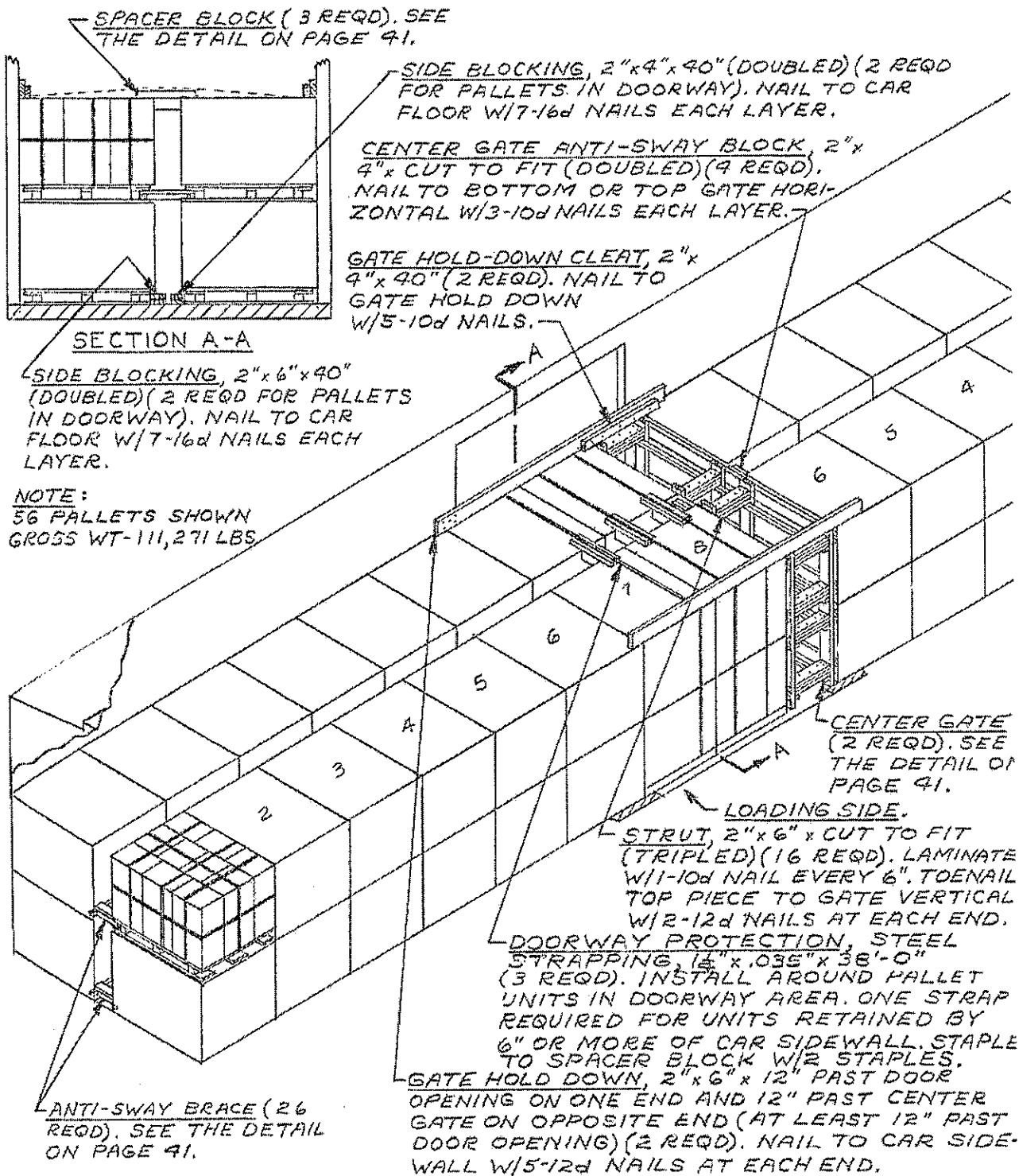
CENTER GATE (2 REQD). SEE DETAIL ON PAGE 41.

CENTER GATE ANTI-SWAY BLOCK, 2"x4"x CUT TO FIT (DOUBLED) (4 REQD). NAIL TO BOTTOM OR TOP GATE HORIZONTAL W/3-10d NAILS EACH LAYER.

NOTE:
60 PALLETS SHOWN
GROSS WT-119,921 LBS.

ANTI-SWAY BRACE (29 REQD). SEE THE DETAIL ON PAGE 41.

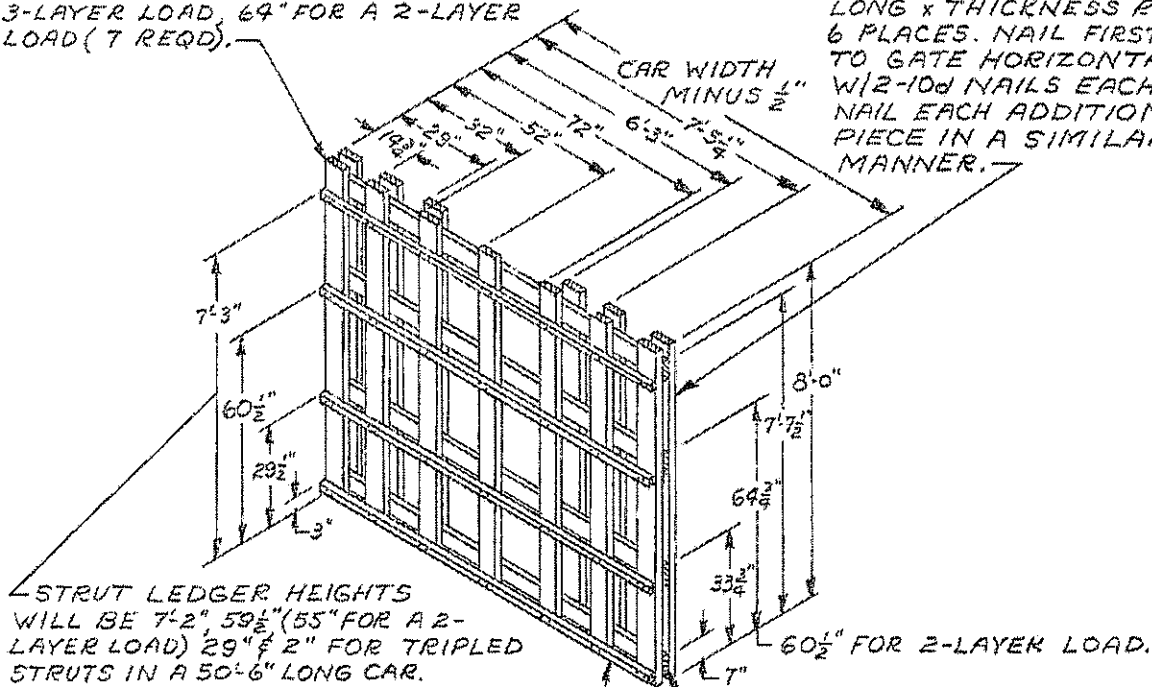
TYPICAL LOAD OF PALLETIZED PA54 CONTAINERS
WITH PROPELLANT IN A 40'-6" LONG BY
9'-2" WIDE CONVENTIONAL BOX CAR



TYPICAL LOAD OF PALLETIZED PA54 CONTAINERS
WITH PROPELLANT IN A 50'-6" LONG BY
9'-2" WIDE CONVENTIONAL BOX CAR

VERTICAL PIECE, 2"x6"x8'-0" FOR A 3-LAYER LOAD, 64" FOR A 2-LAYER LOAD (7 REQD).

SOLID FILL, 6" WIDE x 8'-0" LONG x THICKNESS REQD AT 6 PLACES. NAIL FIRST PIECE TO GATE HORIZONTAL PIECE W/2-10d NAILS EACH JOINT. NAIL EACH ADDITIONAL PIECE IN A SIMILAR MANNER.

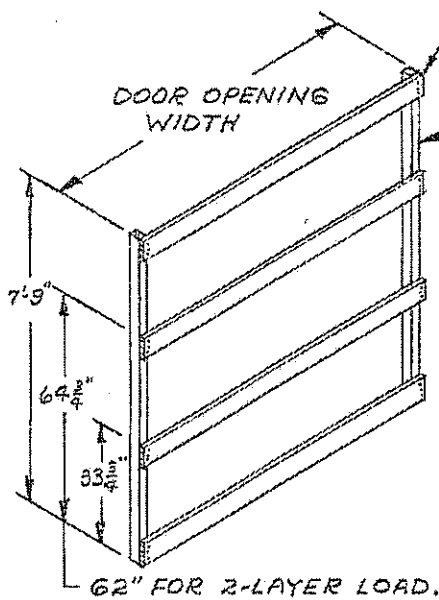


STRUT LEDGER HEIGHTS WILL BE 7'-2", 59 1/2" (55" FOR A 2-LAYER LOAD) 29" & 2" FOR TRIPLED STRUTS IN A 50'-6" LONG CAR.

STRUT LEDGER, 2"x2"x CAR WIDTH MINUS 1/2" (4 REQD). NAIL TO VERTICAL PIECES W/2-10d NAILS EACH JOINT.

HORIZONTAL PIECE, 2"x6"x CAR WIDTH MINUS 1/2" (4 REQD). NAIL TO VERTICAL PIECES W/3-10d NAILS EACH JOINT.

CENTER GATE



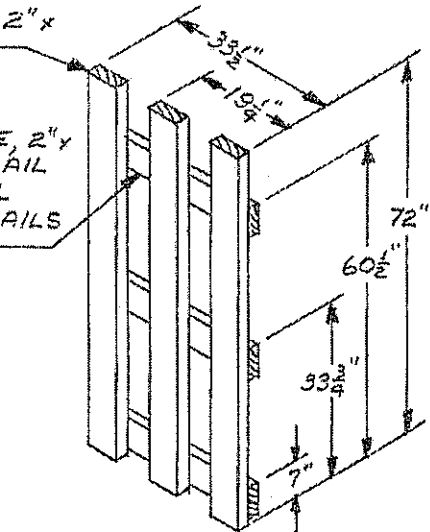
DOORWAY PROTECTION

HORIZONTAL PIECE, 1"x6"x DOOR OPENING WIDTH (4 REQD). NAIL TO THE VERTICAL PIECES W/3-6d NAILS AT EACH END.

VERTICAL PIECE, 2"x3"x 7'-9" (2 REQD). NAIL TO A DOOR POST W/1-12d NAIL EVERY 12". IF CAR HAS NON-NAILABLE POSTS, REFER TO PAGE 21 FOR GUIDANCE.

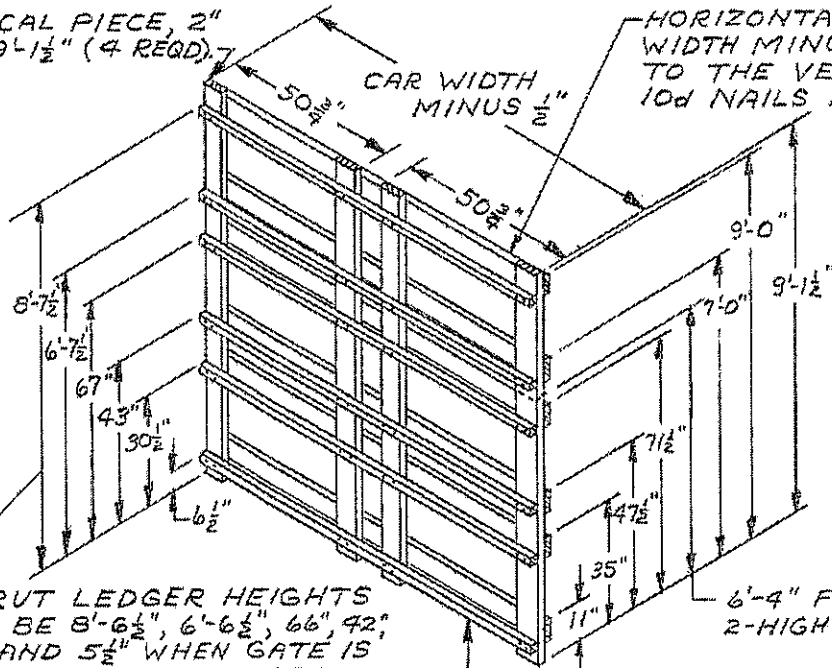
VERTICAL PIECE, 2"x6"x 72" (3 REQD).

HORIZONTAL PIECE, 2"x6"x 33 1/2" (3 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT



SOLID FILL GATE A

VERTICAL PIECE, 2" x 6" x 9'-1 1/2" (4 REQD).



HORIZONTAL PIECE, 2" x 6" x CAR WIDTH MINUS 1/2" (6 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

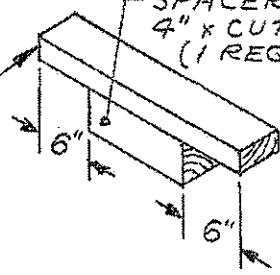
STRUT LEDGER HEIGHTS WILL BE 8'-6 1/2", 6'-6 1/2", 66", 42", 29 1/2" AND 5 1/2" WHEN GATE IS TO BE USED FOR A LOAD IN A 50'-6" LONG CAR.

STRUT LEDGER, 2" x 2" x CAR WIDTH MINUS 1/2" (6 REQD). NAIL TO VERTICAL PIECES W/2-10d NAILS EACH JOINT.

CENTER GATE

SUPPORT PIECE, 2" x 4" x LENGTH TO SUIT (1 REQD). NAIL TO SPACER PIECE W/3-12d NAILS.

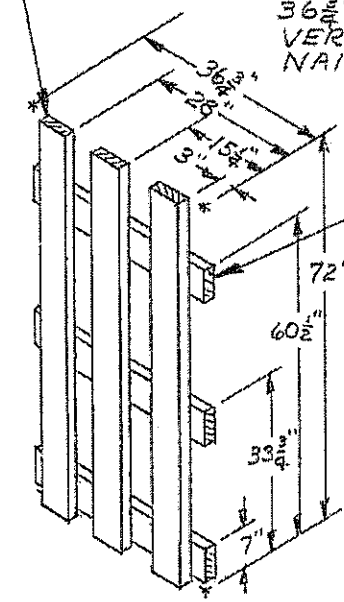
SPACER PIECE, 4" x 4" x CUT TO FIT (1 REQD).



SPACER BLOCK

VERTICAL PIECE, 2" x 6" x 72" (3 REQD).

LATERAL PIECE, 2" x 6" x 36 3/4" (3 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

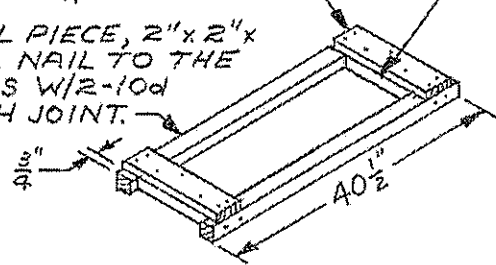


SOLID FILL GATE B

CLEAT, 1" x 4" x LENGTH TO SUIT (2 REQD). NAIL TO THE LONGITUDINAL PIECES W/2-6d NAILS AT EACH END AND TO A CROSS BRACE W/3-6d NAILS.

LONGITUDINAL PIECE, 2" x 2" x 40 1/2" (2 REQD). NAIL TO THE CROSS BRACES W/2-10d NAILS AT EACH JOINT.

CROSS BRACE, 2" x 4" x CUT TO FIT (2 REQD).



ANTI-SWAY BRACE