

**SECTION A-A**

TOP-OF-LOAD ANTI-SWAY BRACE (6 REQD). SEE THE DETAIL ON PAGE 51. WIRE TIE EACH END TO A PALLET UNIT WITH NO. 8 GAGE WIRE.

SECOND-LAYER ANTI-SWAY BRACE (7 REQD). SEE DETAIL ON PAGE 45.

SEPARATOR GATE (5 REQD). SEE THE DETAIL ON PAGE 44.

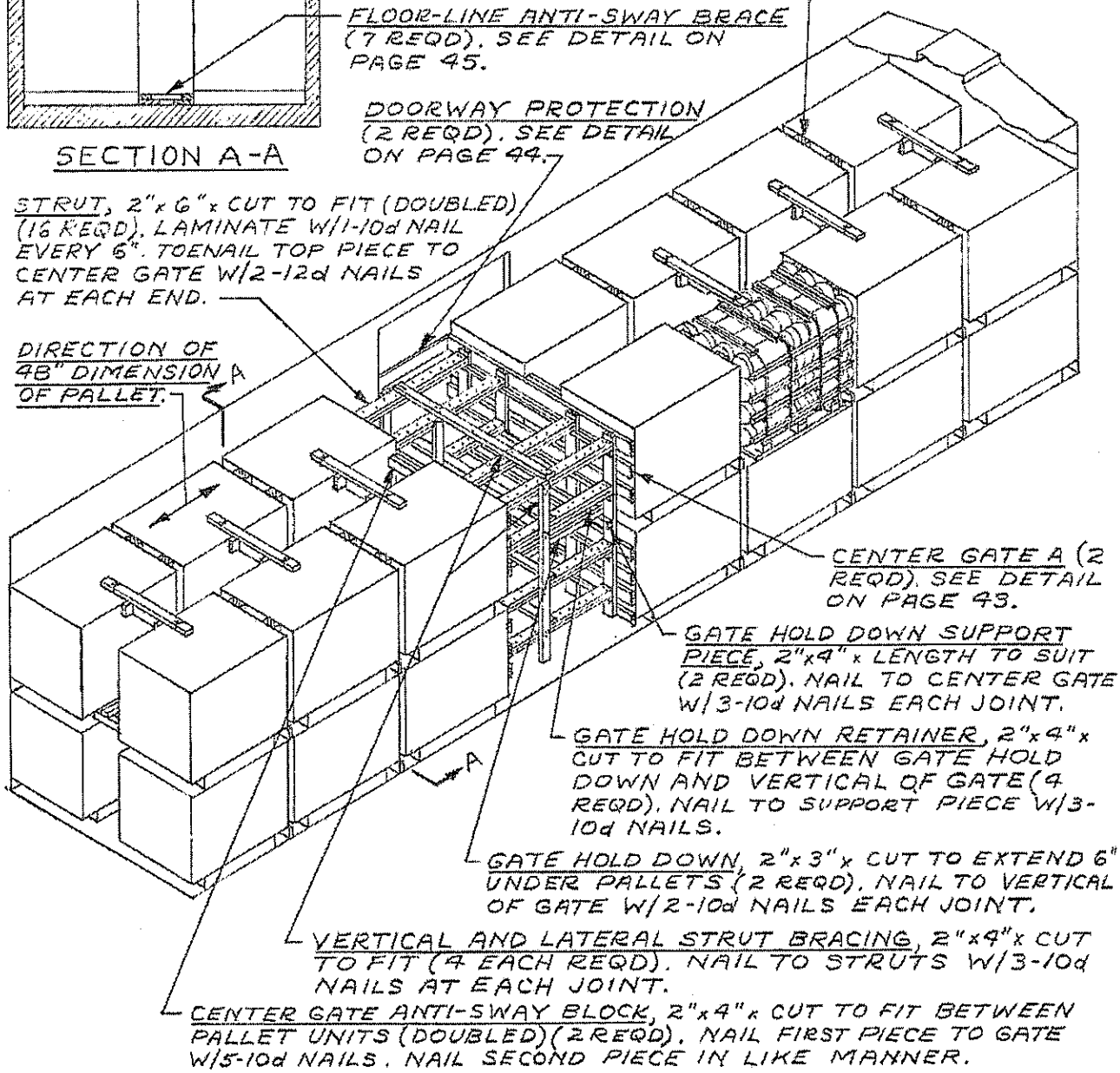
**NOTE:**  
28 PALLETS SHOWN  
GROSS WT-54,613 LBS.

FLOOR-LINE ANTI-SWAY BRACE (7 REQD). SEE DETAIL ON PAGE 45.

DOORWAY PROTECTION (2 REQD). SEE DETAIL ON PAGE 44.

STRUT, 2"x6"x CUT TO FIT (DOUBLED) (16 REQD). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TOP PIECE TO CENTER GATE W/2-12d NAILS AT EACH END.

DIRECTION OF 48" DIMENSION A OF PALLET.



CENTER GATE A (2 REQD). SEE DETAIL ON PAGE 43.

GATE HOLD DOWN SUPPORT PIECE, 2"x4" x LENGTH TO SUIT (2 REQD). NAIL TO CENTER GATE W/3-10d NAILS EACH JOINT.

GATE HOLD DOWN RETAINER, 2"x4" x CUT TO FIT BETWEEN GATE HOLD DOWN AND VERTICAL OF GATE (4 REQD). NAIL TO SUPPORT PIECE W/3-10d NAILS.

GATE HOLD DOWN, 2"x3" x CUT TO EXTEND 6" UNDER PALLETS (2 REQD). NAIL TO VERTICAL OF GATE W/2-10d NAILS EACH JOINT.

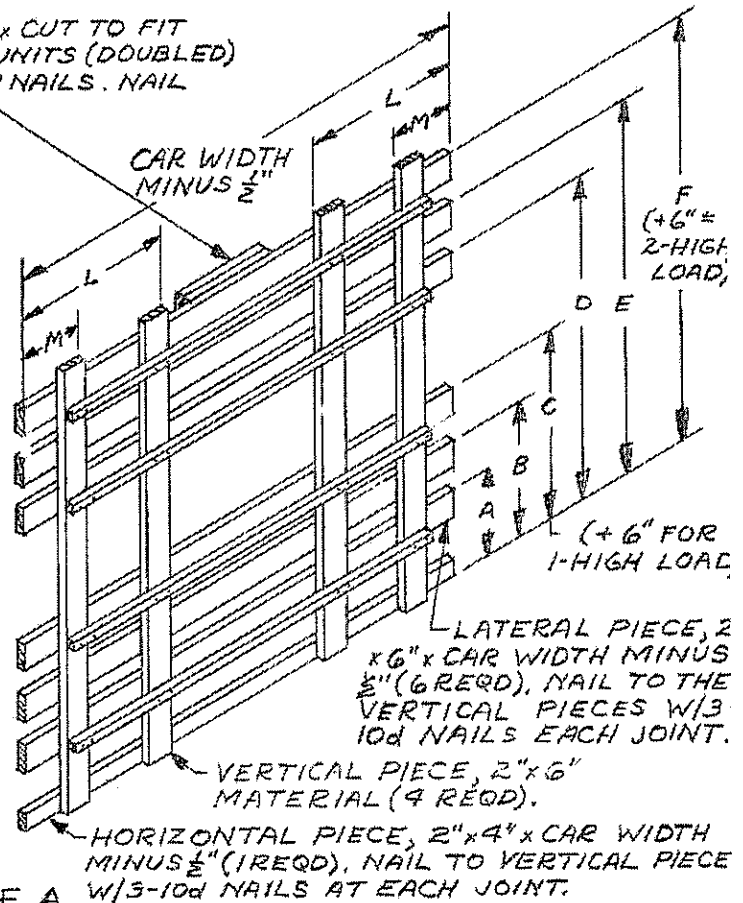
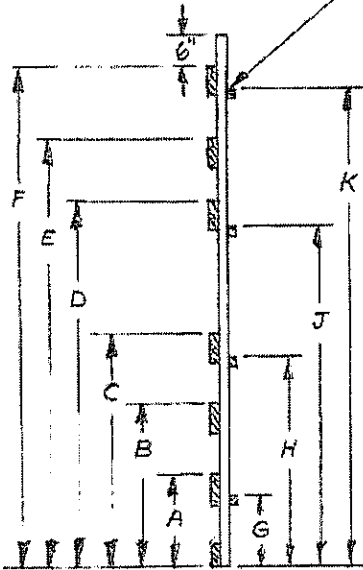
VERTICAL AND LATERAL STRUT BRACING, 2"x4" x CUT TO FIT (4 EACH REQD). NAIL TO STRUTS W/3-10d NAILS AT EACH JOINT.

CENTER GATE ANTI-SWAY BLOCK, 2"x4" x CUT TO FIT BETWEEN PALLET UNITS (DOUBLED) (2 REQD). NAIL FIRST PIECE TO GATE W/5-10d NAILS. NAIL SECOND PIECE IN LIKE MANNER.

TYPICAL LOAD OF PALLETIZED PROPELLING CHARGES IN A 40'-6" LONG BY 8'-6" WIDE CONVENTIONAL BOX CAR

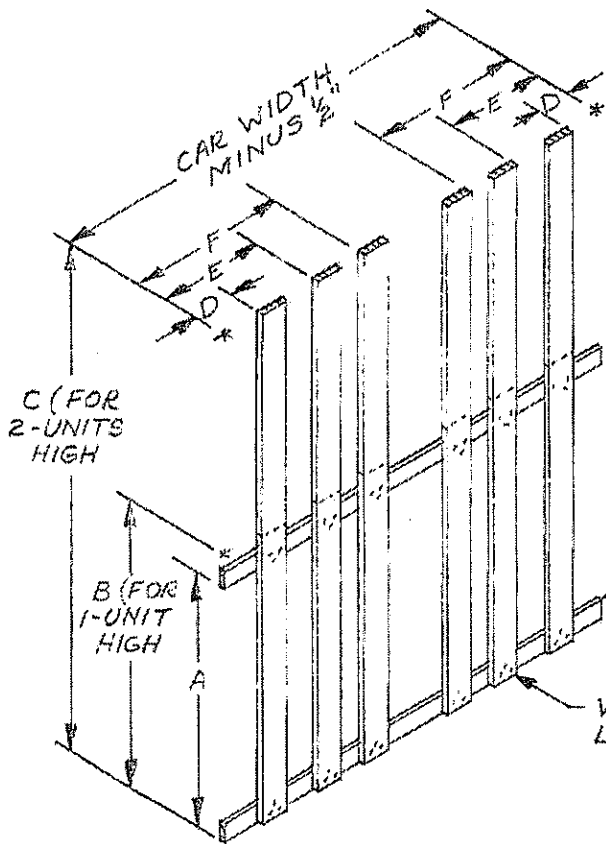
GATE ANTI-SWAY BLOCK, 2"x4"x CUT TO FIT BETWEEN LATERALLY ADJACENT UNITS (DOUBLED) (1 REQD). NAIL FIRST PIECE W/5-10d NAILS. NAIL SECOND PIECE IN LIKE MANNER.

STRUT LEDGER, 2"x2"x LENGTH TO SUIT (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



CENTER GATE A

CENTER GATE CHART						
DIMENSION	AMMO, AND CNTR MODEL NO.					
	8" M10	155MM M13	8" φ 155 M18	8" M19	175MM M460 W/COVER	175MM M460
A	20"	17 $\frac{1}{2}$ "	17 $\frac{3}{4}$ "	19 $\frac{1}{4}$ "	18 $\frac{1}{4}$ "	18 $\frac{1}{2}$ "
B	30 $\frac{3}{4}$ "	29 $\frac{1}{2}$ "	30 $\frac{1}{2}$ "	29 $\frac{1}{4}$ "	28 $\frac{3}{8}$ "	28 $\frac{1}{2}$ "
C	41"	41"	43 $\frac{3}{4}$ "	39 $\frac{1}{2}$ "	38 $\frac{1}{4}$ "	38 $\frac{1}{2}$ "
D	69 $\frac{1}{4}$ "	64 $\frac{1}{2}$ "	68 $\frac{1}{4}$ "	66 $\frac{3}{4}$ "	63 $\frac{5}{8}$ "	64 $\frac{3}{4}$ "
E	6'-7 $\frac{1}{2}$ "	6'-4"	6'-9"	6'-4 $\frac{3}{4}$ "	6'-1 $\frac{1}{4}$ "	6'-2 $\frac{3}{4}$ "
F	7'-6 $\frac{1}{4}$ "	7'-4"	7'-10"	7'-2 $\frac{3}{4}$ "	6'-11 $\frac{1}{2}$ "	7'-0 $\frac{3}{4}$ "
G	15 $\frac{5}{8}$ "	13"	13 $\frac{1}{2}$ "	15"	14 $\frac{1}{4}$ "	14 $\frac{1}{2}$ "
H	36 $\frac{3}{8}$ "	37"	39 $\frac{1}{2}$ "	35 $\frac{1}{4}$ "	34"	34 $\frac{1}{2}$ "
J	65"	60 $\frac{1}{4}$ "	64"	62 $\frac{1}{2}$ "	59 $\frac{1}{4}$ "	60 $\frac{3}{4}$ "
K	7'-2"	7'-0"	7'-6"	6'-10 $\frac{3}{8}$ "	6'-7 $\frac{1}{4}$ "	6'-6 $\frac{3}{4}$ "
L	35 $\frac{1}{4}$ "	33 $\frac{1}{4}$ "	37"	33"	33 $\frac{1}{2}$ "	34"
M	14"	12 $\frac{1}{4}$ "	12 $\frac{3}{4}$ "	13 $\frac{3}{4}$ "	13 $\frac{1}{2}$ "	14"
N	55 $\frac{1}{2}$ "	52"	54 $\frac{1}{4}$ "	53 $\frac{1}{2}$ "	51 $\frac{3}{4}$ "	52 $\frac{3}{4}$ "



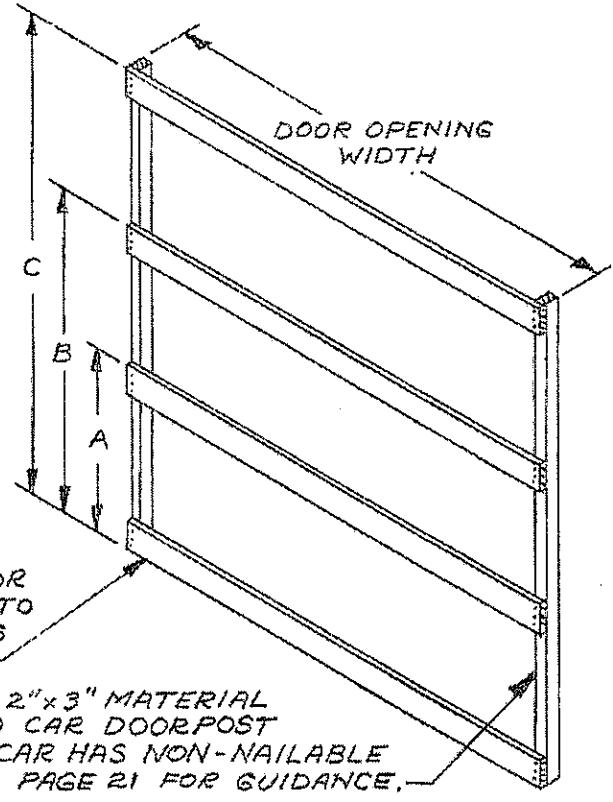
SEPARATOR GATE							
CNTR	AMMO	DIMENSIONS					
		A	B	C	D	E	F
M10	8"	49 1/4"	54 1/4"	8'-3"	9 1/4"		30 3/4"
M13	155MM	46"	51"	7'-8"	7 3/4"	18 1/2"	28 3/4"
M18	8" & 155	50 1/2"	55 1/4"	8'-6"	8 1/4"	21 1/4"	32 1/4"
M19	8"	47 1/4"	52 1/4"	8'-0"	8 3/4"		28 1/2"
M460 (W/COVER)	175MM	45 1/2"	50 1/2"	7'-8"	8 1/4"		28 1/4"
M460	175MM	46 1/2"	51 1/2"		8 1/2"		27 1/2"

LATERAL PIECE, 1"x4" x CAR WIDTH MINUS 1/2" (2 REQD). NAIL TO VERTICAL PIECES W/3-6d NAILS AT EACH JOINT. CLINCH.

VERTICAL PIECE, 1"x6" x LENGTH TO SUIT (AS REQD).

SEPARATOR GATE

DOORWAY PROTECTION				
CNTR	AMMO	DIMENSIONS		
		A	B	C
M10	8"	41"	68 1/2"	7'-5"
M13	155MM	40"	63"	7'-2"
M14	155MM	46"	54"	7'-8"
M16	155MM	44"	56"	7'-10"
M18	8" & 155	44"	56"	7'-10"
M19	8"	39"	67"	7'-2"
M460 (W/COVER)	175MM	42"	58"	7'-4"
M460	175MM	41"	66"	7'-4"
GREEN BAG	175MM	46"	6'-0 1/2"	8'-1 1/2"



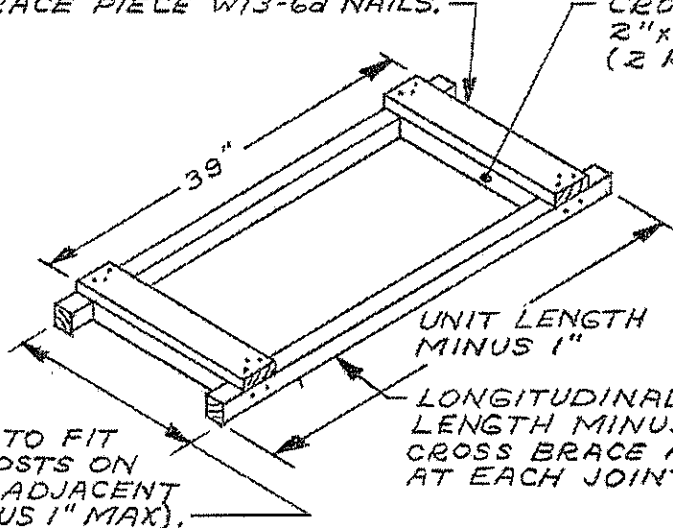
HORIZONTAL PIECE, 1"x6" x DOOR OPENING WIDTH (4 REQD). NAIL TO VERTICAL PIECES W/3-6d NAILS AT EACH END.

VERTICAL PIECE, 2"x3" MATERIAL (2 REQD). NAIL TO CAR DOORPOST W/12d NAILS. IF CAR HAS NON-NAILABLE POSTS, REFER TO PAGE 21 FOR GUIDANCE.

DOORWAY PROTECTION

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

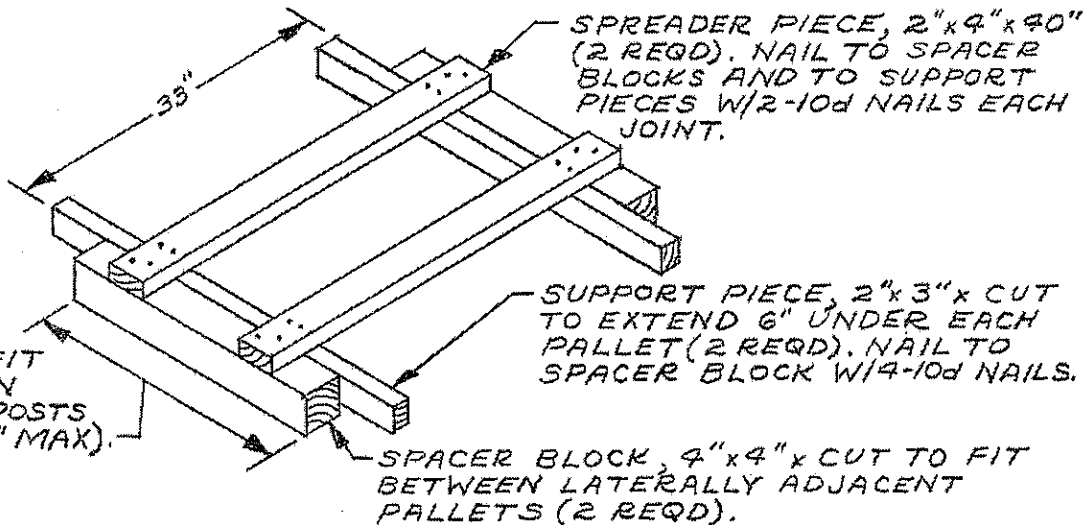
CROSS BRACE PIECE, 2" x 4" x CUT TO FIT (2 REQD).



LONGITUDINAL PIECE, 2" x 2" x UNIT LENGTH MINUS 1" (2 REQD). NAIL TO CROSS BRACE PIECES W/2-10d NAILS AT EACH JOINT.

FABRICATE TO FIT BETWEEN POSTS ON LATERALLY ADJACENT POSTS (MINUS 1" MAX).

ANTI-SWAY BRACE ASSEMBLY



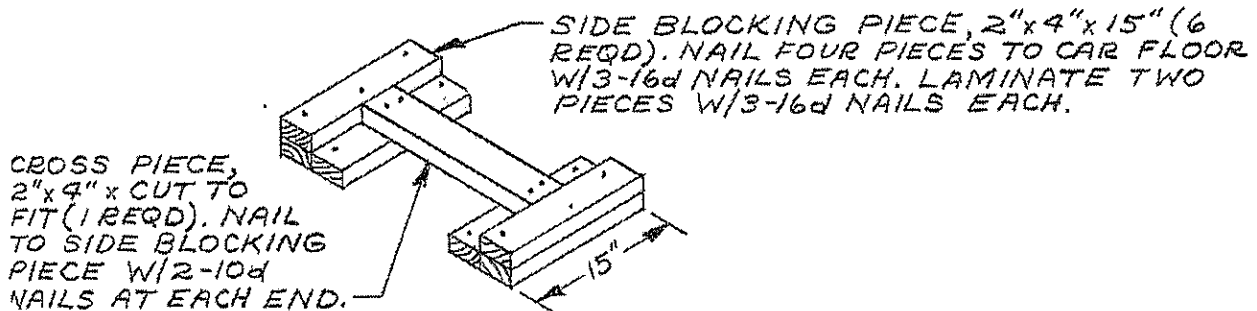
SPREADER PIECE, 2" x 4" x 40" (2 REQD). NAIL TO SPACER BLOCKS AND TO SUPPORT PIECES W/2-10d NAILS EACH JOINT.

SUPPORT PIECE, 2" x 3" x CUT TO EXTEND 6" UNDER EACH PALLET (2 REQD). NAIL TO SPACER BLOCK W/4-10d NAILS.

CUT TO FIT BETWEEN PALLET POSTS (MINUS 1" MAX).

SPACER BLOCK, 4" x 4" x CUT TO FIT BETWEEN LATERALLY ADJACENT PALLETS (2 REQD).

SECOND-LAYER ANTI-SWAY BRACE

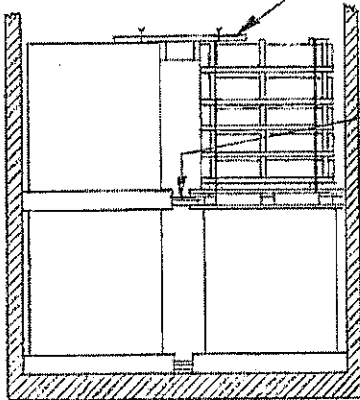


SIDE BLOCKING PIECE, 2" x 4" x 15" (6 REQD). NAIL FOUR PIECES TO CAR FLOOR W/3-16d NAILS EACH. LAMINATE TWO PIECES W/3-16d NAILS EACH.

CROSS PIECE, 2" x 4" x CUT TO FIT (1 REQD). NAIL TO SIDE BLOCKING PIECE W/2-10d NAILS AT EACH END.

FLOOR-LINE ANTI-SWAY BRACE

TOP-OF-LOAD ANTI-SWAY BRACE (8 REQD). SEE THE DETAIL ON PAGE 51. WIRE TIE EACH END TO A PALLET UNIT WITH NO. 8 GAGE WIRE.



SECTION A-A

ANTI-SWAY BRACE ASSEMBLY (20 REQD, 10 EACH LAYER). SEE THE DETAIL ON PAGE 45.

NOTE:

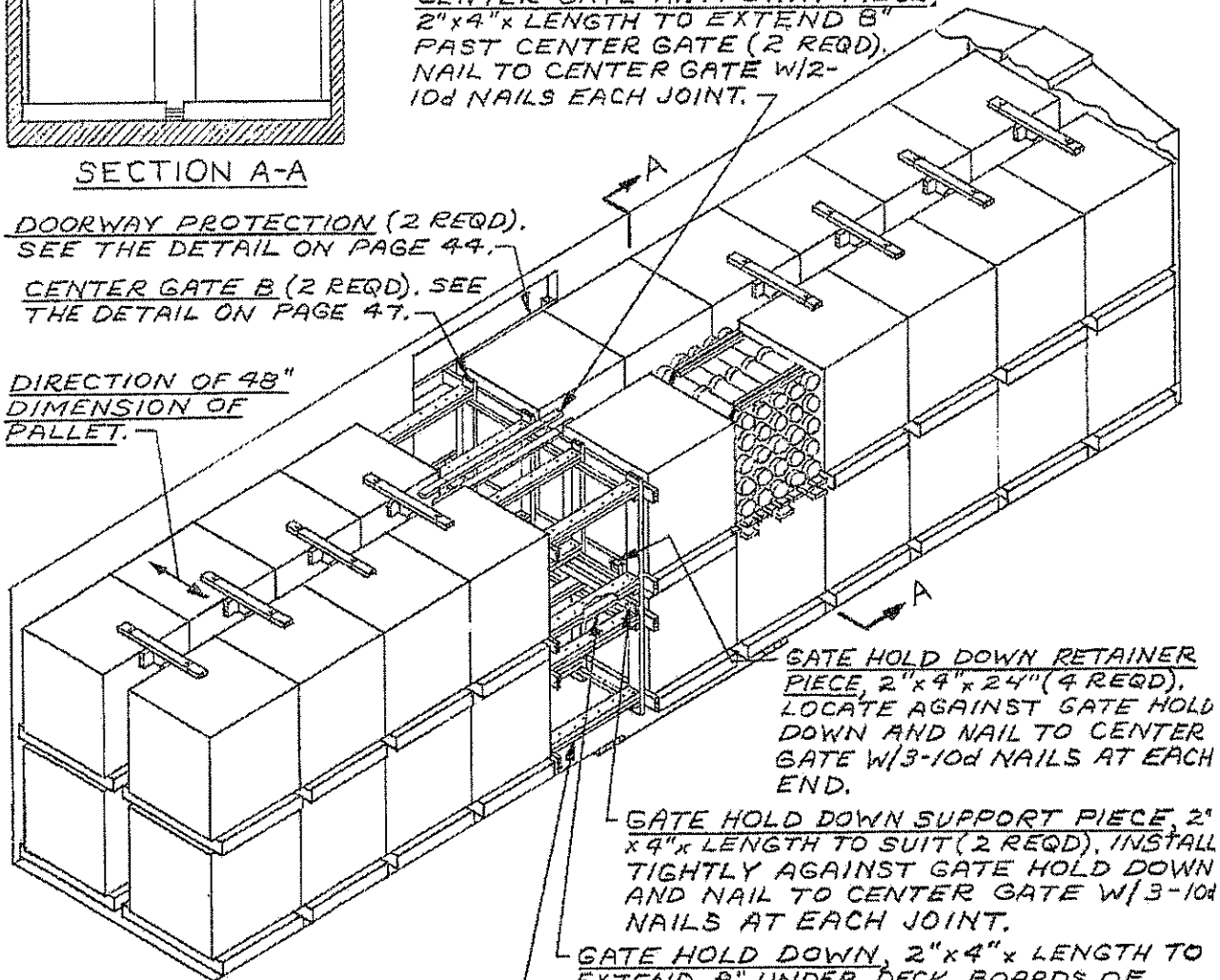
40 PALLETS SHOWN  
GROSS WT. - 63,720 LBS.

CENTER GATE ANTI-SWAY PIECE, 2"x4"x LENGTH TO EXTEND 8" PAST CENTER GATE (2 REQD). NAIL TO CENTER GATE W/2-10d NAILS EACH JOINT.

DOORWAY PROTECTION (2 REQD). SEE THE DETAIL ON PAGE 44.

CENTER GATE B (2 REQD). SEE THE DETAIL ON PAGE 47.

DIRECTION OF 48" DIMENSION OF PALLET.



GATE HOLD DOWN RETAINER PIECE, 2"x4"x24" (4 REQD). LOCATE AGAINST GATE HOLD DOWN AND NAIL TO CENTER GATE W/3-10d NAILS AT EACH END.

GATE HOLD DOWN SUPPORT PIECE, 2"x4"x LENGTH TO SUIT (2 REQD). INSTALL TIGHTLY AGAINST GATE HOLD DOWN AND NAIL TO CENTER GATE W/3-10d NAILS AT EACH JOINT.

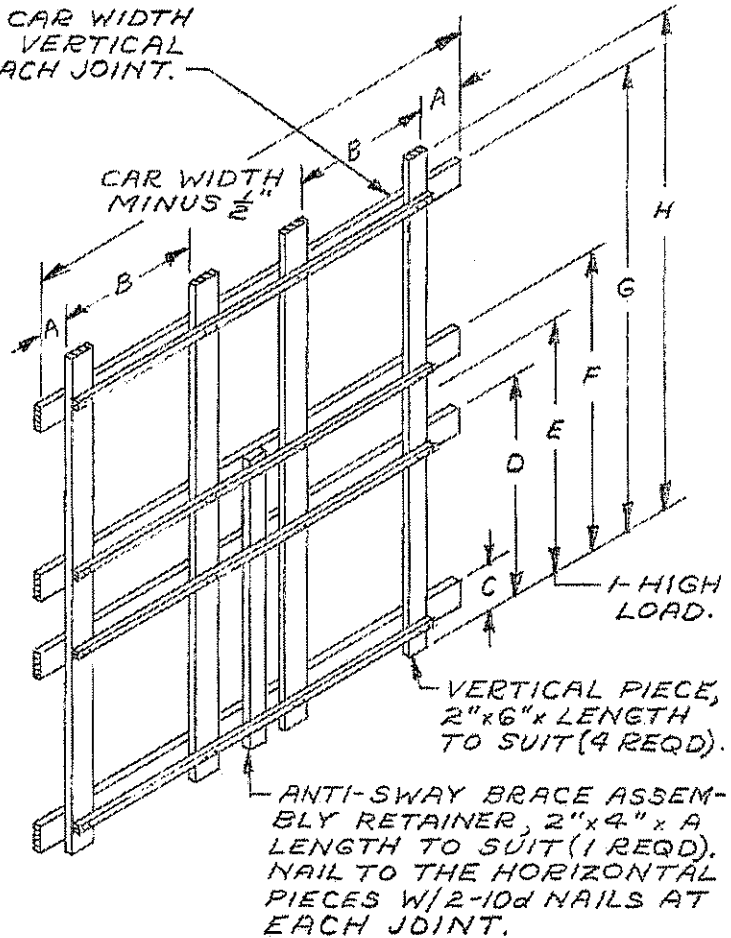
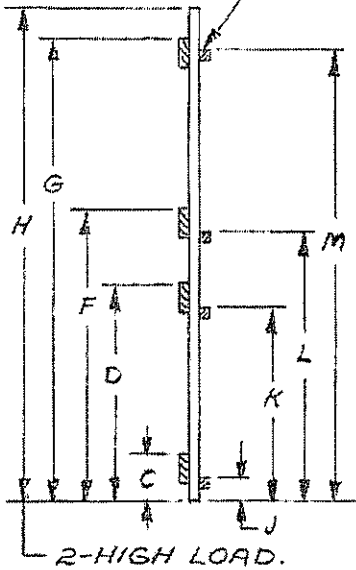
GATE HOLD DOWN, 2"x4"x LENGTH TO EXTEND 8" UNDER DECK BOARDS OF PALLETS (2 REQD). NAIL TO GATE HOLD DOWN SUPPORT PIECE W/2-10d NAILS AT EACH JOINT.

STRUT, 2"x6"x CUT TO FIT (DOUBLED) (16 REQD). LAMINATE W/1-10d NAIL EVERY 6". TO NAIL TOP PIECE TO CENTER GATE W/2-12d NAILS AT EACH END.

TYPICAL LOAD OF PALLETIZED PROPELLING CHARGES IN A 40'-6" LONG BY 8'-6" WIDE CONVENTIONAL BOX CAR

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

STRUT LEDGER, 2"x2" x LENGTH TO SUIT (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



CENTER GATE B

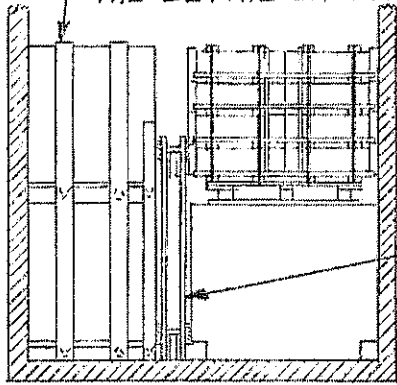
CENTER GATE CHART

AMMO, AND CNTR MODEL NO.

D I M.	AMMO, AND CNTR MODEL NO.							
	8"	155MM	155MM	155MM	8" & 155MM	175 MM	175 MM	175 MM
	M10	M13	M14	M16	M18	GREEN BG	M460 W/COVER	M460
A	4"	2 $\frac{1}{2}$ "	8 $\frac{3}{8}$ "	6"	2 $\frac{1}{2}$ "	8 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	3 $\frac{1}{2}$ "
B	45"	44"	25 $\frac{3}{8}$ "	29 $\frac{3}{4}$ "	42"	28"	31 $\frac{1}{2}$ "	46"
C	9 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	9 $\frac{3}{4}$ "	9 $\frac{1}{4}$ "	9 $\frac{1}{4}$ "	17"	13 $\frac{1}{2}$ "	9"
D	40 $\frac{3}{4}$ "	41 $\frac{1}{4}$ "	43 $\frac{1}{4}$ "	44"	44"	45"	43"	37"
E	49 $\frac{1}{2}$ "	48"	48"	51"	51"	52"	46"	46 $\frac{1}{2}$ "
F	59"	55 $\frac{1}{2}$ "	57 $\frac{3}{4}$ "	59 $\frac{1}{2}$ "	59 $\frac{1}{2}$ "	59"	58 $\frac{3}{4}$ "	55"
G	7'-6"	7'-4"	7'-7 $\frac{1}{4}$ "	7'-10 $\frac{1}{4}$ "	7'-10 $\frac{1}{4}$ "	7'-11"	7'-4 $\frac{1}{2}$ "	7'-2"
H	8'-3"	7'-10"	8'-0"	8'-5"	8'-5"	8'-4"	7'-7"	7'-8"
J	5 $\frac{1}{2}$ " *	4 $\frac{1}{4}$ " *	5"	4 $\frac{3}{4}$ "	4 $\frac{3}{4}$ " *	12 $\frac{1}{2}$ "	9" *	5" *
K	37 $\frac{5}{8}$ " *	36 $\frac{1}{2}$ " *	39"	39 $\frac{3}{4}$ "	39 $\frac{3}{4}$ " *	40 $\frac{1}{2}$ "	38 $\frac{3}{4}$ " *	33" *
L	55" *	51" *	53 $\frac{1}{2}$ "	55"	55" *	54 $\frac{1}{2}$ "	54 $\frac{1}{4}$ " *	51" *
M	7'-2" *	6'-11 $\frac{1}{4}$ " *	7'-3"	7'-6"	7'-6" *	7'-6 $\frac{1}{2}$ "	7'-0" *	6'-10" *

\* MINUS  $\frac{3}{8}$ " AND USE TRIPLED STRUTS IN 50'-6" CAR.

SEPARATOR GATE (8 REQD). SEE THE DETAIL ON PAGE 51.



SECTION A-A

NOTE:  
48 PALLETS SHOWN  
GROSS WT-92, 128 LBS.

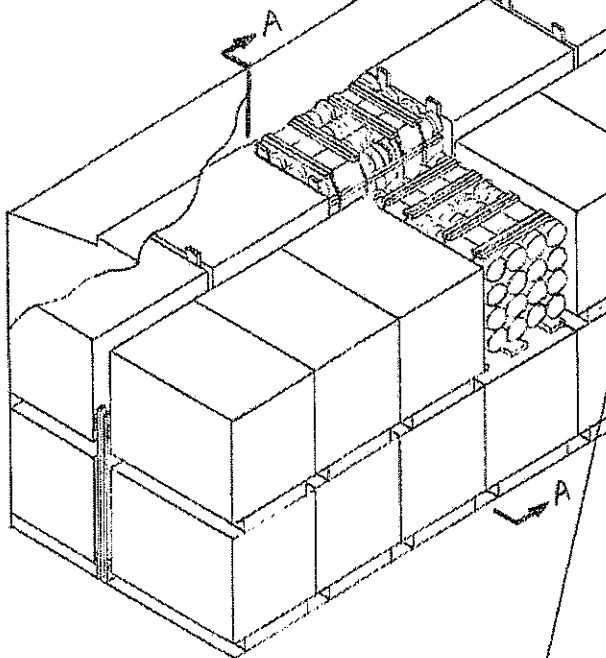
DIRECTIONS OF 48" DIMENSIONS OF THE PALLETS.

CENTER GATE C (2 REQD)  
SEE THE DETAIL ON PAGE 49.7

FILLER ASSEMBLY (14 REQD). SEE "FILLER A" OR "FILLER B" DETAIL ON PAGE 50.

DOORWAY PROTECTION (2 REQD). SEE DETAIL ON PAGE 44.7

STRUT, 2"x6" x CUT TO FIT (DOUBLED) (8 REQD). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO CENTER GATES W/2-12d NAILS AT EACH END.



CENTER GATE D (2 REQD). SEE DETAIL ON PAGE 49.

GATE HOLD DOWN SUPPORT PIECE, 2"x4" BY LENGTH TO SUIT (2 REQD). NAIL TO CENTER GATE W/3-10d NAILS AT EACH JOINT.

GATE HOLD DOWN, 2"x4" BY CUT TO EXTEND 6" UNDER PALLETS (2 REQD). NAIL TO CENTER GATE W/2-10d NAILS AT EACH JOINT.

GATE HOLD DOWN RETAINER, 2"x4"x24" (4 REQD), NAIL TO CENTER GATE W/3-10d NAILS EACH END.

STRUT, 2"x6" x CUT TO FIT (TRIPLED) (8 REQD), LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO CENTER GATES W/2-12d NAILS AT EACH END.

FILLER RETAINER (1 REQD). NAIL TO FILLER ASSEMBLIES W/3-10d NAILS AT EACH END.

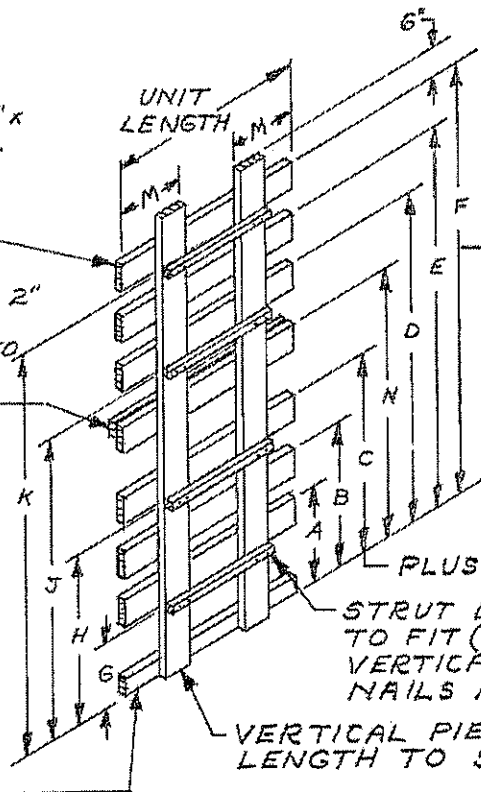
CENTER GATE SIDE BLOCKING, 2"x4"x12" (DOUBLED) (2 REQD). NAIL TO CAR FLOOR W/2-12d NAILS EACH LAYER.

TYPICAL LOAD OF PALLETIZED PROPELLING CHARGES IN A 50'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR

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

GATE HOLD-DOWN PIECE, 2" x 3" x LENGTH TO SUIT (DOUBLED) (1 REQD). NAIL TO HORIZONTAL PIECE W/6-10d NAILS EACH LAYER.

HORIZONTAL PIECE, 2"x4" x LENGTH TO SUIT (1 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.



SEE "CENTER GATE CHART" ON PAGE 47 FOR LETTERED DIMENSIONS.

PLUS 6" FOR I-HIGH LOAD.  
STRUT LEDGER, 2"x2" x CUT TO FIT (4 REQD). NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH END.

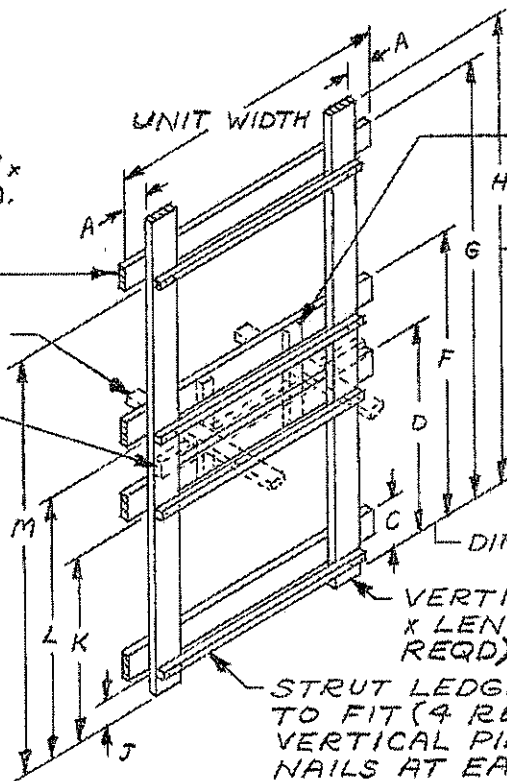
VERTICAL PIECE, 2"x6" x LENGTH TO SUIT (2 REQD).

CENTER GATE C

HORIZONTAL PIECE, 2"x6" x LENGTH TO SUIT (4 REQD). NAIL TO THE VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

GATE HOLD DOWN.

GATE HOLD DOWN SUPPORT PIECE.



GATE HOLD DOWN RETAINER PIECE.

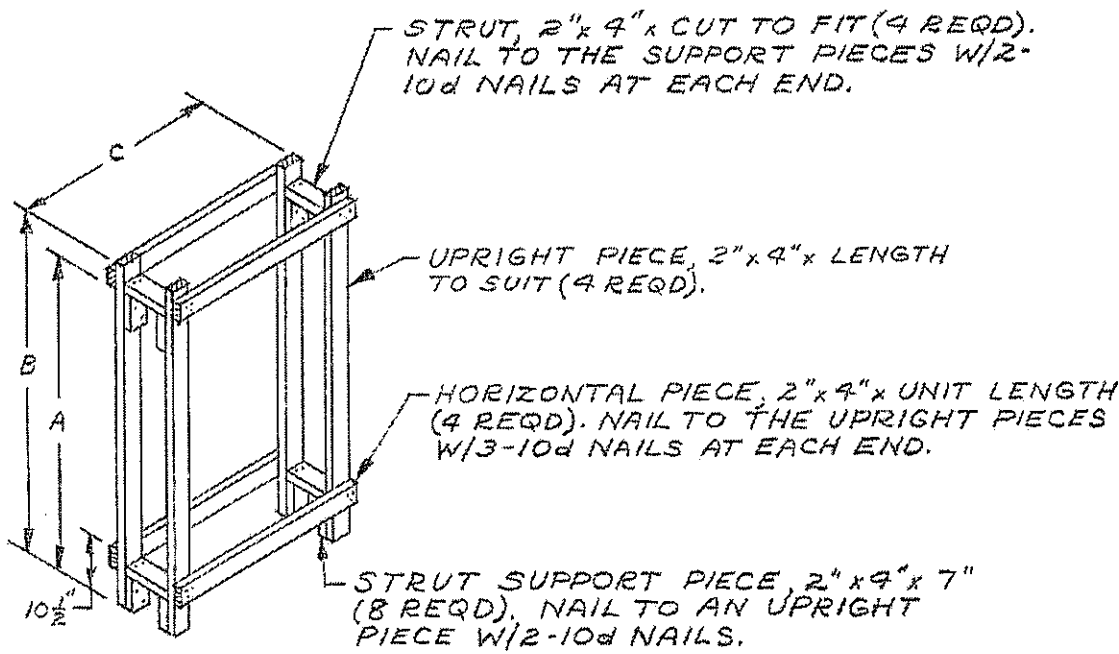
SEE "CENTER GATE CHART" ON PAGE 47 FOR LETTERED DIMENSIONS.

DIM. "E" FOR I-HI LOAD.

VERTICAL PIECE, 2"x6" x LENGTH TO SUIT (2 REQD).

STRUT LEDGER, 2"x2" x CUT TO FIT (4 REQD). NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH END.

CENTER GATE D

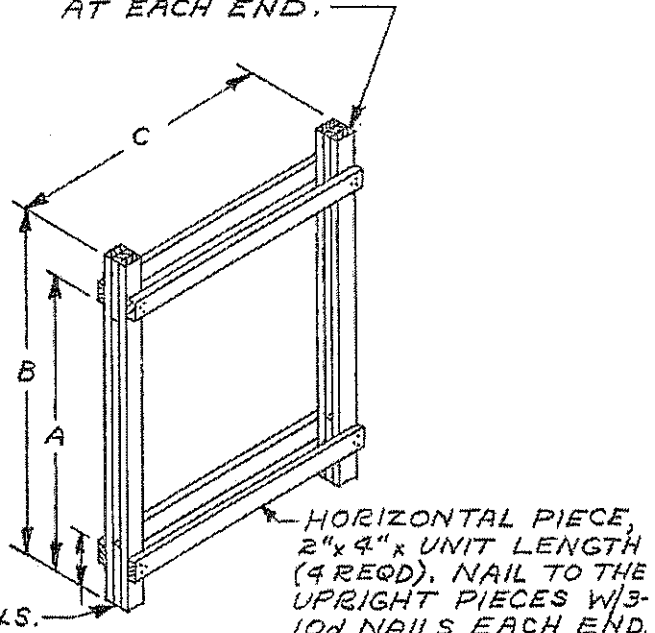


**FILLER A**

TO BE USED BETWEEN LATERALLY ADJACENT PALLET UNITS WHEN SPACE IS 10" OR GREATER. FILLER MAY BE PREFABRICATED OR MAY BE ASSEMBLED IN PLACE.

UPRIGHT PIECE, 2" x 4" x LENGTH TO SUIT (4 REQD). NAIL TO THE FILLER PIECES W/3-10d NAILS AT EACH END.

FILLER A OR B				
CNTR	AMMO	DIMENSIONS		
		A	B	C
M10	8"	65 <sup>3</sup> / <sub>4</sub> "	72"	42 <sup>3</sup> / <sub>4</sub> "
M13	155MM	60"	65"	39 <sup>1</sup> / <sub>2</sub> "
M18	8" & 155	64 <sup>1</sup> / <sub>4</sub> "	69"	43 <sup>1</sup> / <sub>2</sub> "
M19	8"	62 <sup>3</sup> / <sub>4</sub> "	68"	40 <sup>1</sup> / <sub>2</sub> "
M460	175MM	60 <sup>1</sup> / <sub>2</sub> "	65 <sup>1</sup> / <sub>2</sub> "	39 <sup>1</sup> / <sub>2</sub> "
M460 W/COVER	175MM	60"	65"	39 <sup>1</sup> / <sub>2</sub> "

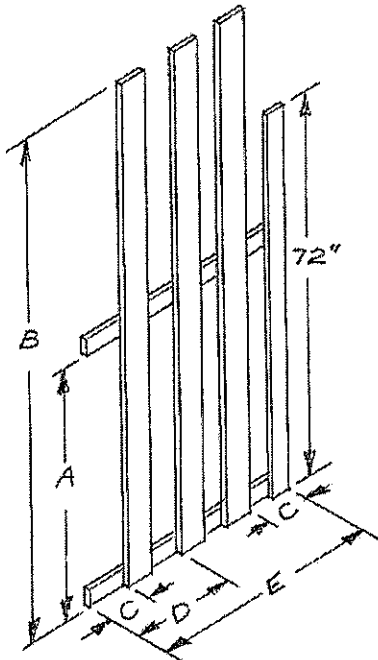


**FILLER B**

TO BE USED BETWEEN LATERALLY ADJACENT PALLET UNITS WHEN SPACE IS LESS THAN 10".

FILLER PIECE, 4" WIDE x 12" LONG MATERIAL OF A THICKNESS TO SUIT (4 REQD). IF APPLICABLE, LAMINATE W/3 PROPER SIZE NAILS.

SEPARATOR GATE						
CNTR	AMMO	DIMENSIONS				
		A	B	C	D	E
M10	8"	45 $\frac{1}{2}$ "	8'3"	8 $\frac{3}{4}$ "		43 $\frac{1}{4}$ "
M13	155MM	46"	7'8"	8 $\frac{1}{4}$ "	21 $\frac{1}{4}$ "	40"
M18	8" $\phi$ 155	50 $\frac{1}{4}$ "	8'6"	8 $\frac{1}{4}$ "	21 $\frac{1}{4}$ "	44"
M19	8"	47 $\frac{1}{2}$ "	8'0"	8 $\frac{3}{4}$ "		41"
M460 W/COVER	175MM	45 $\frac{1}{2}$ "	7'8"	8 $\frac{3}{4}$ "		40"
M460	175MM	46 $\frac{1}{2}$ "	7'10"	8 $\frac{3}{4}$ "		40"

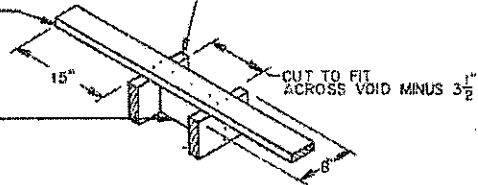


SEPARATOR GATE

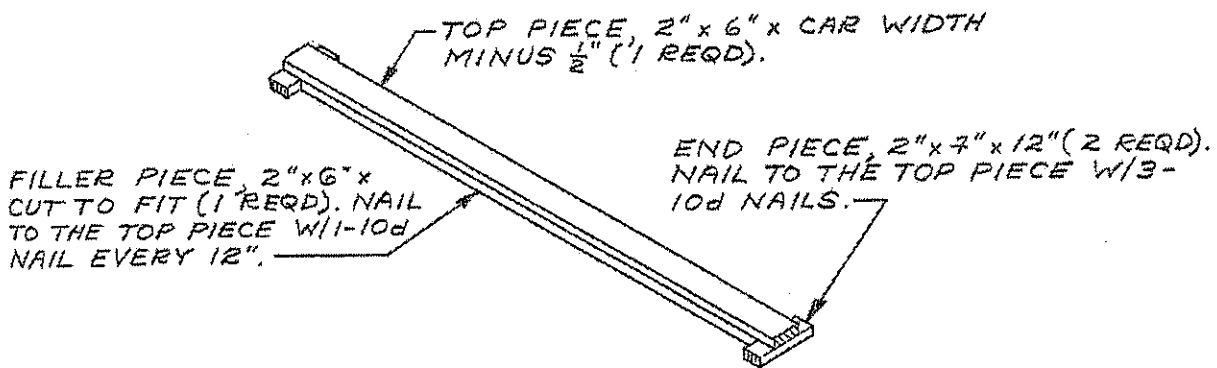
SUPPORT PIECE, 2" x 4" x LENGTH TO SUIT (1 REQD). NAIL TO SPACER PIECE W/2-10d NAILS AND TO BUFFER PIECES W/2-10d NAILS AT EACH JOINT.

BUFFER PIECE, 2" x 6" x 8" (2 REQD). NAIL TO SPACER PIECE W/3-10d NAILS.

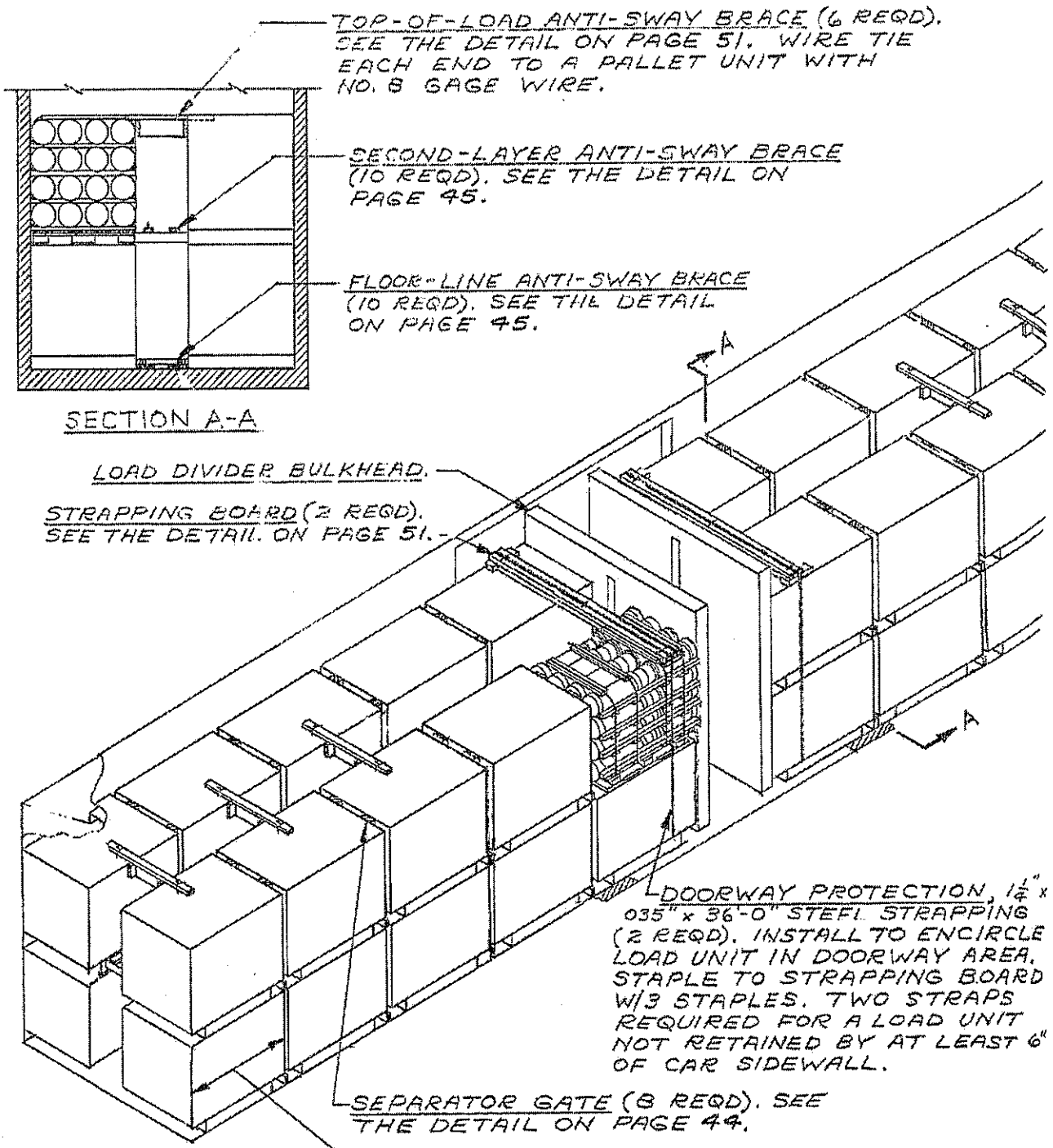
SPACER PIECE, 2" x 6" x CUT TO FIT (1 REQD).



TOP-OF-LOAD ANTI-SWAY BRACE



STRAPPING BOARD



TOP-OF-LOAD ANTI-SWAY BRACE (6 REQD).  
SEE THE DETAIL ON PAGE 51. WIRE TIE  
EACH END TO A PALLET UNIT WITH  
NO. 8 GAGE WIRE.

SECOND-LAYER ANTI-SWAY BRACE  
(10 REQD). SEE THE DETAIL ON  
PAGE 45.

FLOOR-LINE ANTI-SWAY BRACE  
(10 REQD). SEE THE DETAIL  
ON PAGE 45.

SECTION A-A

LOAD DIVIDER BULKHEAD.  
STRAPPING BOARD (2 REQD).  
SEE THE DETAIL ON PAGE 51.

DOORWAY PROTECTION, 1 1/2" x  
3/8" x 36'-0" STEEL STRAPPING  
(2 REQD). INSTALL TO ENCIRCLE  
LOAD UNIT IN DOORWAY AREA.  
STAPLE TO STRAPPING BOARD  
W/3 STAPLES. TWO STRAPS  
REQUIRED FOR A LOAD UNIT  
NOT RETAINED BY AT LEAST 6"  
OF CAR SIDEWALL.

SEPARATOR GATE (8 REQD). SEE  
THE DETAIL ON PAGE 44.

DIRECTION OF 48"  
DIMENSION OF PALLET.

NOTE:  
40 PALLETS SHOWN  
GROSS WT. - 76,640 LBS.

REFER TO PAGES 22 THRU 26 FOR NOTES ON LOAD DIVIDER CARS.

TYPICAL LOAD OF PALLETIZED PROPELLING  
CHARGES IN A 50'-6" LONG BY 9'-2" WIDE  
CAR EQUIPPED WITH LOAD DIVIDERS

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