

APPROVED BY BUREAU OF EXPLOSIVES <i>A. J. Grammuck</i> MILITARY ASSISTANT
DATE 10/31/69

LOADING & BRACING (CL & LCL) IN BOX CARS OF MC-I CHEMICAL BOMBS, PACKED TWO PER WOODEN PALLET

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⊙ INCLUDES PROCEDURES FOR CONVENTIONAL
BOX CARS AND BOX CARS EQUIPPED WITH
MECHANICAL BRACING DEVICES OF VARIOUS
DESIGN AND MANUFACTURE

MASTER DLP	FILED BY C-3/ <i>Wey</i>	APSA <i>Wey</i>	SUBMITTED <i>[Signature]</i>
CREATED BY JDS WSH	CHK BY <i>[Signature]</i>		COMMANDEER OFFICER, SAVANNAH ARMY DEPOT
REVISIONS			EXAMINED AND APPROVED <i>[Signature]</i> AUTHORITY: PROCUREMENT & SUPPLY AGENCY
			APPROVED IN ORDER BY COMMANDING GENERAL U. S. ARMY MATRIEL COMMAND <i>[Signature]</i>
			U. S. ARMY MATERIEL COMMAND
			DECEMBER 1969
CLASS	DIVISION	DRAWING	FILE
19	48	4552	CB5PI

DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. LOADS AS SHOWN HEREIN ARE BASED ON BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS, OR ARE BASED ON CONVENTIONAL BOX CARS. LOADS AS SHOWN ARE ALSO BASED ON CARS WHICH HAVE 6'-0" WIDE DOORWAY OPENINGS; HOWEVER, CARS WHICH HAVE WIDER DOORWAY OPENINGS MAY BE USED.
- C. BOX CARS EQUIPPED WITH CONVENTIONAL SLIDING DOORS HAVE BEEN SHOWN. HOWEVER, THE DEPICTED OUTLOADING PROCEDURES ARE ALSO APPLICABLE FOR CARS EQUIPPED WITH PLUG DOORS. **CAUTION:** DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER AUXILIARY OR MAIN. SEE PAGES 20 AND 21 FOR SPECIAL PROVISIONS APPLICABLE TO CARS EQUIPPED WITH PLUG DOORS.
- D. OUTLOADING PROCEDURES SPECIFIED ON PAGES 4 THRU 9 ARE FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES, AND MAY BE ADAPTED AS REQUIRED TO FACILITATE THE USE OF BOX CARS EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES. HOWEVER, FIXED OR ADJUSTABLE WALL MEMBERS AND DOORWAY MEMBERS WITHIN THESE CARS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED HEREIN. **CAUTION:** BOX CARS EQUIPPED WITH MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.
1. FOR BLOCKING THE LOADS WHICH ARE DEPICTED HEREIN, A CROSS MEMBER WILL NOT BE RELIED UPON TO RETAIN MORE LADING ON EITHER SIDE THAN AS SHOWN. **CAUTION:** A CROSS MEMBER WILL NOT BE RELIED UPON TO RETAIN MORE THAN 2,000 POUNDS OF LADING ON EITHER SIDE IF THE LADING UNITS ARE POSITIONED WITHIN A CAR IN ACCORDANCE WITH A LOADING PATTERN NOT SHOWN HEREIN, SUCH AS 1-WIDE DOWN THE CENTER OF THE CAR. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM AND CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE SPACING OF THE LOCKING HOLES IN THE WALL MEMBERS PERMITS. LOCKING BARS (LEVER JACKS) SHOULD BE USED FOR THIS PURPOSE. AN ADDITIONAL 1/2" OF ADJUSTMENT CAN BE MADE BY TURNING A CROSS MEMBER END-FOR-END WHEN LOCKING PINS ON THE MEMBER ARE OFF-CENTER. **NOTE:** IT IS RECOMMENDED THAT EACH CROSS MEMBER BE INSTALLED WITH THE ENDS ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM THE END OF THE CAR).
 2. **CAUTION:** ALL BLOCKING AND BRACING COMPONENTS IN EMPTY CARS AND ALL UNUSED COMPONENTS IN LOADED CARS MUST BE "SECURED" FOR SHIPMENT --- ADJUSTABLE WALL MEMBERS TO VERTICAL WALL ATTACHMENT RAILS, AND CROSS MEMBERS TO ADJUSTABLE WALL MEMBERS OR TO FIXED HORIZONTAL WALL MEMBERS OR TO DOORWAY MEMBERS, AND DOORWAY MEMBERS TO DOOR POSTS. COMPONENTS ASSIGNED TO EACH CAR MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS.
 3. IF A CAR HAS A "BOWED END", RATHER THAN SQUARING OFF THE END BY INSTALLING DUNNAGE, ADDITIONAL CROSS MEMBERS CAN BE INSTALLED NEAR THE END WALL OF THE CAR TO PROVIDE A "SQUARED" END. THESE CROSS MEMBERS SHOULD BE INSTALLED AT THE SAME HEIGHTS AS THE CROSS MEMBERS USED THROUGHOUT THE LOAD AS BLOCKING MEMBERS. ALSO, THE SAME QUANTITY OF CROSS MEMBERS MUST BE INSTALLED AT AN ADDED LOCATION AS USED AT THE NEXT LOAD BLOCKING STATION WHICH IS AT THE SAME HEIGHT AND TOWARD THE DOOR AREA OF THE CAR.
- E. OUTLOADING PROCEDURES SPECIFIED ON PAGES 10 THRU 17 ARE FOR CONVENTIONAL TYPE BOX CARS OF VARIOUS LENGTH AND WIDTH COMBINATIONS.
- F. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE BOX CAR BEING LOADED OR THE QUANTITY TO BE SHIPPED; HOWEVER, APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- G. DETAILS OF PALLETIZED BOMB UNIT:
- UNIT DIMENSIONS ----- 55" LONG X 32" WIDE X 22-7/8" HIGH.
GROSS WEIGHT ----- 1,400 POUNDS (APPROX).

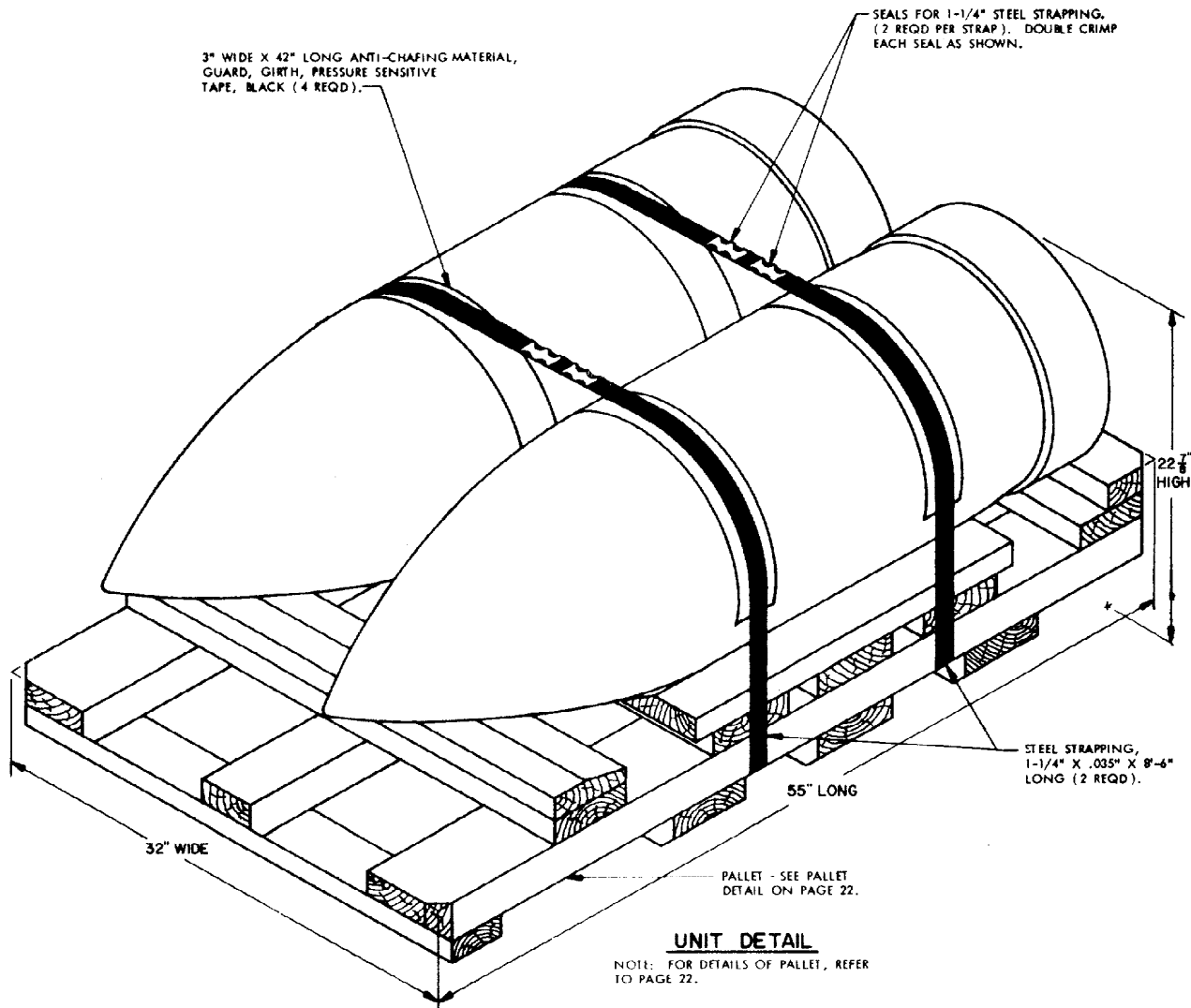
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GENERAL NOTES (CONT'D)

- H. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE.
- J. THROUGHOUT THIS PROCEDURAL DRAWING PORTIONS OF THE BLOCKING COMPONENTS AND OF THE DEPICTED CARS, SUCH AS A CAR SIDE WALL, HAVE BEEN OMITTED FROM THE LOAD VIEWS FOR CLARITY PURPOSES.

MATERIAL SPECIFICATIONS

- LUMBER ----- : DUNNAGE LUMBER, TM 743-200-1; FED SPEC MM-L-751.
- NAILS ----- : COMMON, CEMENT COATED OR CHEMICALLY ETCHED,
FED SPEC FF-N-105.
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.
- STRAPPING, STEEL ----- : TYPE I OR IV, CLASS A OR B, FED SPEC QQ-S-781.
- TAPE, PRESSURE SENSITIVE CLASS 1, FED SPEC PPP-T-60.



PALLETIZING GUIDANCE

1. PLACE BOMBS ON PALLET AS SHOWN WITH THE BASE OF EACH BOMB RESTING TIGHTLY AGAINST THE BASE END STOP MEMBER.
2. APPLY ANTI-CHAFING TAPE AS REQUIRED TO PREVENT ANY DIRECT CONTACT BETWEEN THE STEEL STRAPPING AND/OR THE BODIES OF THE BOMBS.
3. INSTALL 1-1/4" STRAPPING AS SHOWN AND POSITION SO THAT EACH STRAP RUNS STRAIGHT UP THE SIDES AND ACROSS THE TOP OF THE BOMBS.
4. TENSION THE STRAPPING TAUT SO THAT EACH STRAP CRUSHES SLIGHTLY INTO THE OUTSIDE EDGES OF THE 3" X 4" STRINGERS OF THE PALLET.
5. FORM EACH STRAP JOINT OVER THE VOID AT THE TOP OF THE UNIT WITH TWO (2) DOUBLE CRIMPED SEALS AS SHOWN.

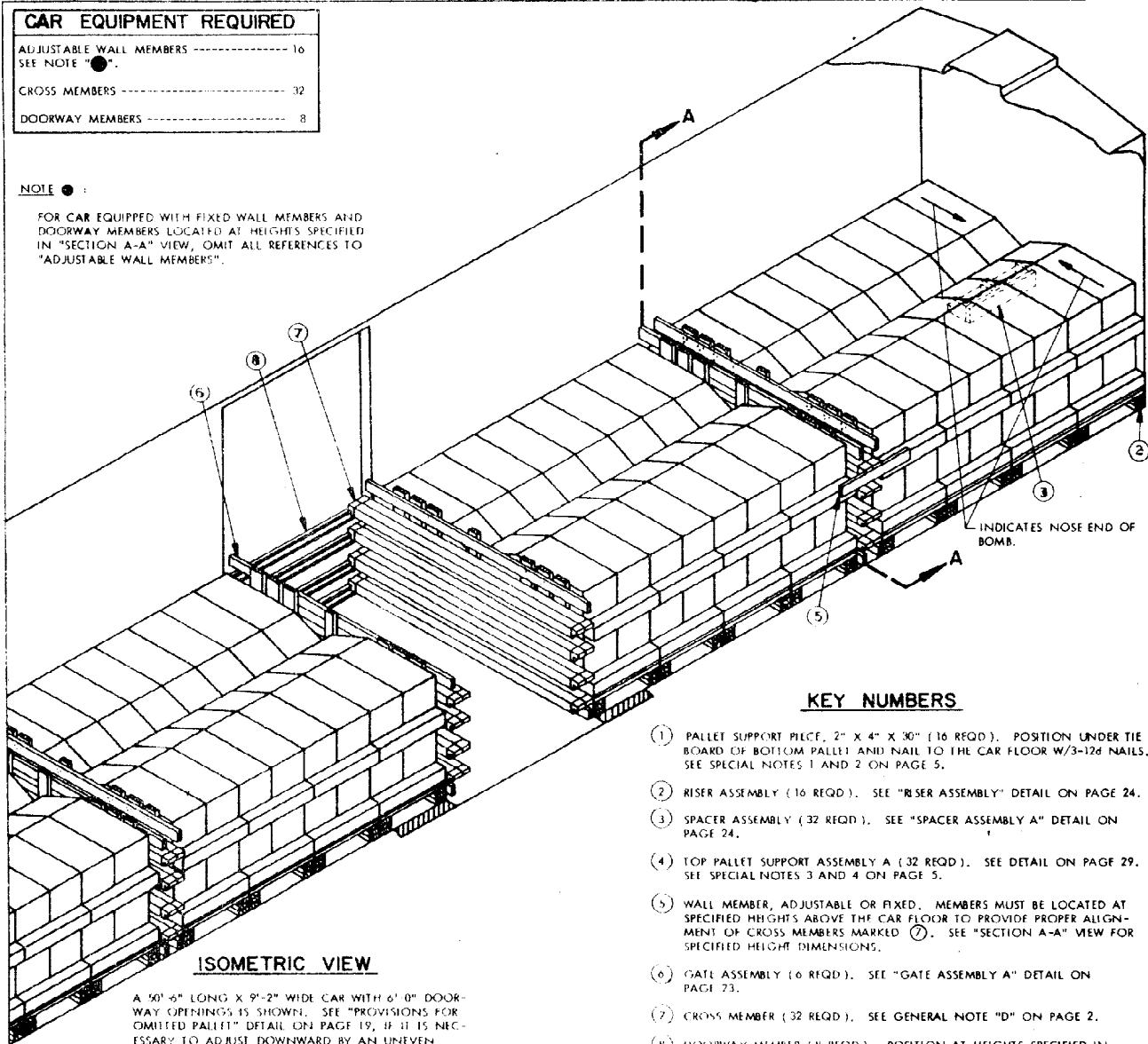
**PALLETIZATION OF 750 POUND
MC-1 CHEMICAL BOMB (2 PER PALLET)**

CAR EQUIPMENT REQUIRED

ADJUSTABLE WALL MEMBERS -----	16
SEE NOTE "C".	
CROSS MEMBERS -----	32
DOORWAY MEMBERS -----	8

NOTE :

FOR CAR EQUIPPED WITH FIXED WALL MEMBERS AND DOORWAY MEMBERS LOCATED AT HEIGHTS SPECIFIED IN "SECTION A-A" VIEW, OMIT ALL REFERENCES TO "ADJUSTABLE WALL MEMBERS".

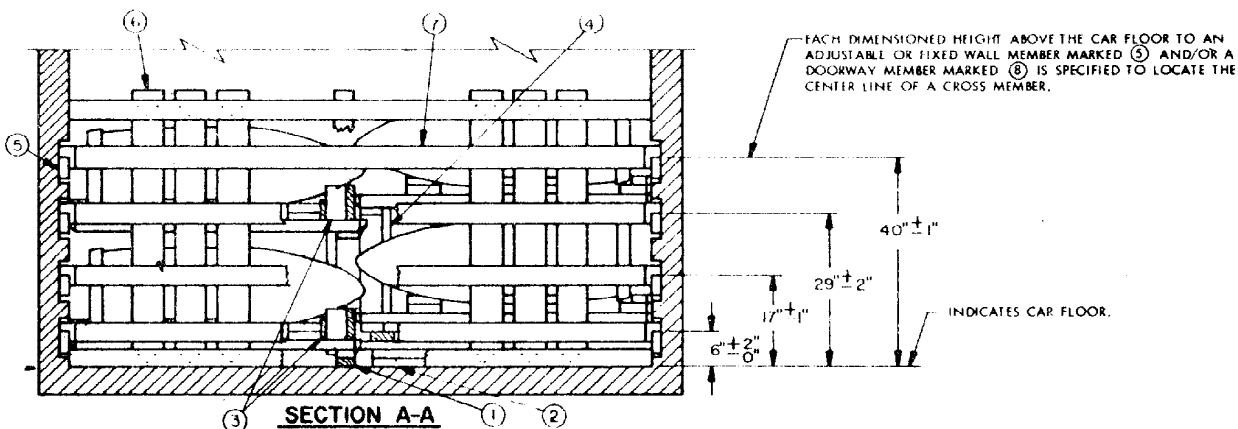


ISOMETRIC VIEW

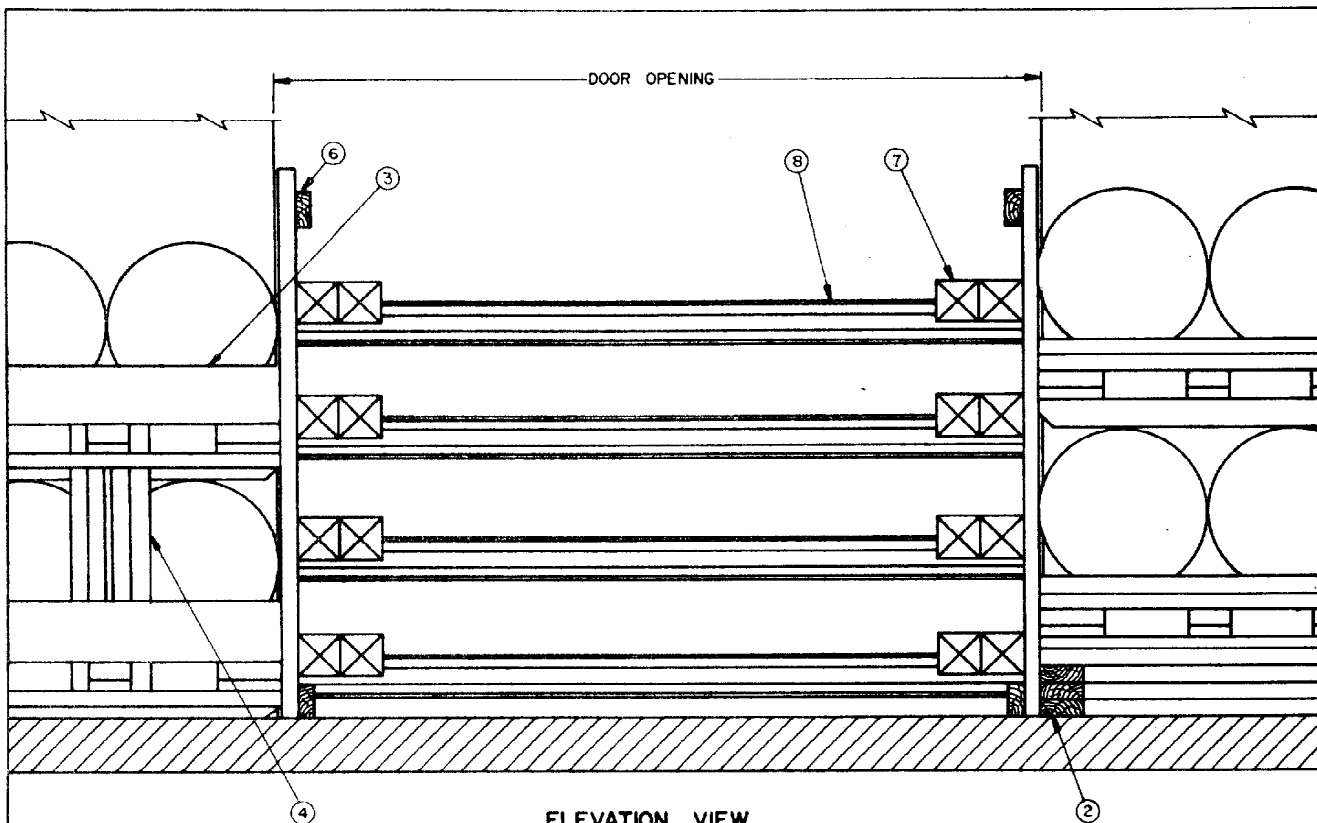
A 50'-6" LONG X 9'-2" WIDE CAR WITH 6'-0" DOORWAY OPENINGS IS SHOWN. SEE "PROVISIONS FOR OMITTED PALLET" DETAIL ON PAGE 19, IF IT IS NECESSARY TO ADJUST DOWNWARD BY AN UNEVEN NUMBER FROM THE LOAD QUANTITY SHOWN.

KEY NUMBERS

- (1) PALLET SUPPORT PIECE, 2" X 4" X 30" (16 REQD.). POSITION UNDER TIE BOARD OF BOTTOM PALLET AND NAIL TO THE CAR FLOOR W/3-12d NAILS. SEE SPECIAL NOTES 1 AND 2 ON PAGE 5.
- (2) RISER ASSEMBLY (16 REQD.). SEE "RISER ASSEMBLY" DETAIL ON PAGE 24.
- (3) SPACER ASSEMBLY (32 REQD.). SEE "SPACER ASSEMBLY A" DETAIL ON PAGE 24.
- (4) TOP PALLET SUPPORT ASSEMBLY A (32 REQD.). SEE DETAIL ON PAGE 29. SEE SPECIAL NOTES 3 AND 4 ON PAGE 5.
- (5) WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED (7). SEE "SECTION A-A" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- (6) GATE ASSEMBLY (6 REQD.). SEE "GATE ASSEMBLY A" DETAIL ON PAGE 23.
- (7) CROSS MEMBER (32 REQD.). SEE GENERAL NOTE "D" ON PAGE 2.
- (8) DOORWAY MEMBER (8 REQD.). POSITION AT HEIGHTS SPECIFIED IN "SECTION A-A" VIEW.



**LOADING PROCEDURES FOR CARS 9'-2" WIDE OR LESS BY 50'-6" LONG
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)**



ELEVATION VIEW

THIS ELEVATION VIEW SHOWS PALLETS WITH RISER ② ON THE RIGHT END OF THE CAR. ON THE LEFT END OF THE CAR THE NEAR-SIDE ROW OF PALLETS IS OMITTED TO SHOW PIECES ③ AND ④. IT ALSO DEPICTS THE LOCATION OF CROSS MEMBERS ⑦ RELATIVE TO THE UNEQUAL HEIGHTS OF BOMBS ACROSS THE WIDTH OF THE CAR.

SPECIAL NOTES:

1. PIECE MARKED ① MUST BE POSITIONED PRIOR TO LOADING PALLET UNITS.
2. PIECE MARKED ① WILL RAISE THE NOSE END OF THE PALLET APPROXIMATELY 5/8".
3. THE "TOP PALLET SUPPORT ASSEMBLY A" IS REQUIRED TO PREVENT THE TOP PALLET UNIT FROM TIPPING IF THE BOMB MOVES FORWARD DURING TRANSPORT.
4. IF THE PALLETS OVERLAP 5/8" OR MORE USE ONE "TOP PALLET SUPPORT ASSEMBLY B" IN LIEU OF TWO "TOP PALLET SUPPORT ASSEMBLY A". SEE "SECTION D-D" ON PAGE 12 AND "TOP PALLET SUPPORT ASSEMBLY B" DETAIL ON PAGE 29.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	86	29
1" X 6"	50	25
2" X 2"	142	48
2" X 4"	648	432
2" X 6"	439	439
NAILS	NO. REQD	POUNDS
6d (2")	256	1-3/4
10d (3")	1,148	17-3/4
12d (3-1/4")	512	8-3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	64	89,600 LBS
DUNNAGE		2,461 LBS
TOTAL WEIGHT		92,061 LBS

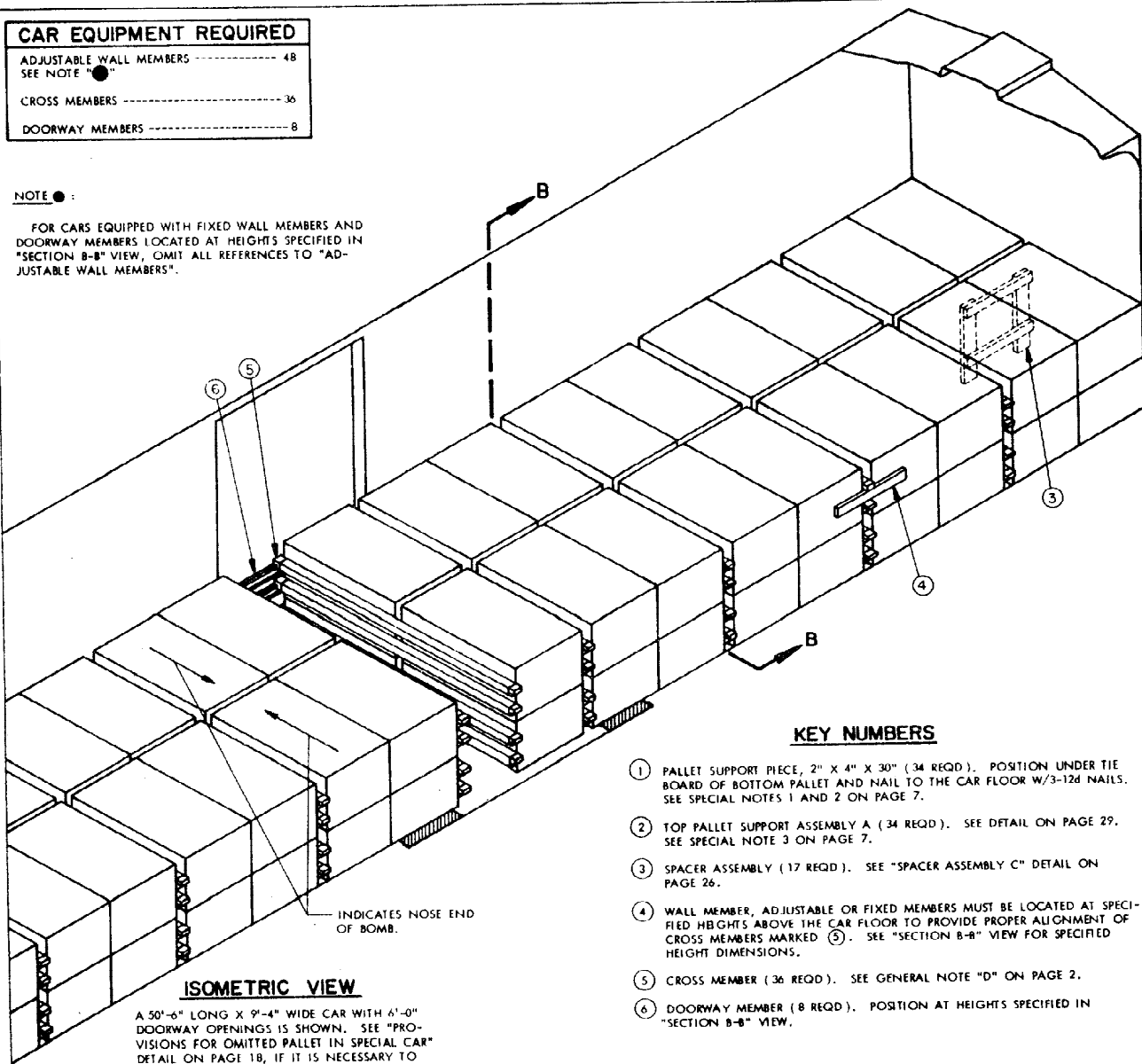
LOADING PROCEDURES FOR CARS 9'-2" WIDE OR LESS BY 50'-6" LONG
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)

CAR EQUIPMENT REQUIRED

ADJUSTABLE WALL MEMBERS	----- 48
SEE NOTE "B"	
CROSS MEMBERS	----- 36
DOORWAY MEMBERS	----- 8

NOTE ● :

FOR CARS EQUIPPED WITH FIXED WALL MEMBERS AND DOORWAY MEMBERS LOCATED AT HEIGHTS SPECIFIED IN "SECTION B-B" VIEW, OMIT ALL REFERENCES TO "ADJUSTABLE WALL MEMBERS".

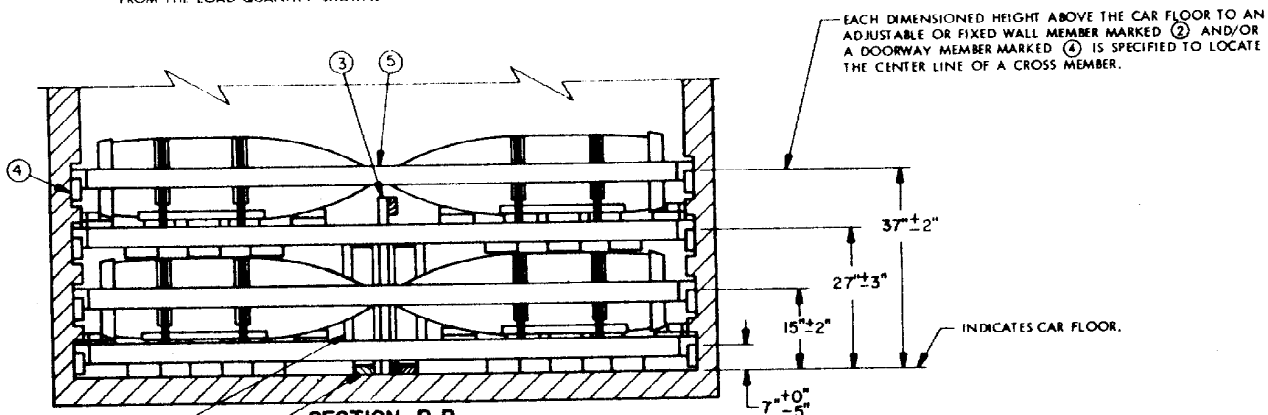


ISOMETRIC VIEW

A 50'-6" LONG X 9'-4" WIDE CAR WITH 6'-0" DOORWAY OPENINGS IS SHOWN. SEE "PROVISIONS FOR OMITTED PALLET IN SPECIAL CAR" DETAIL ON PAGE 18, IF IT IS NECESSARY TO ADJUST DOWNWARD BY AN UNEVEN NUMBER FROM THE LOAD QUANTITY SHOWN.

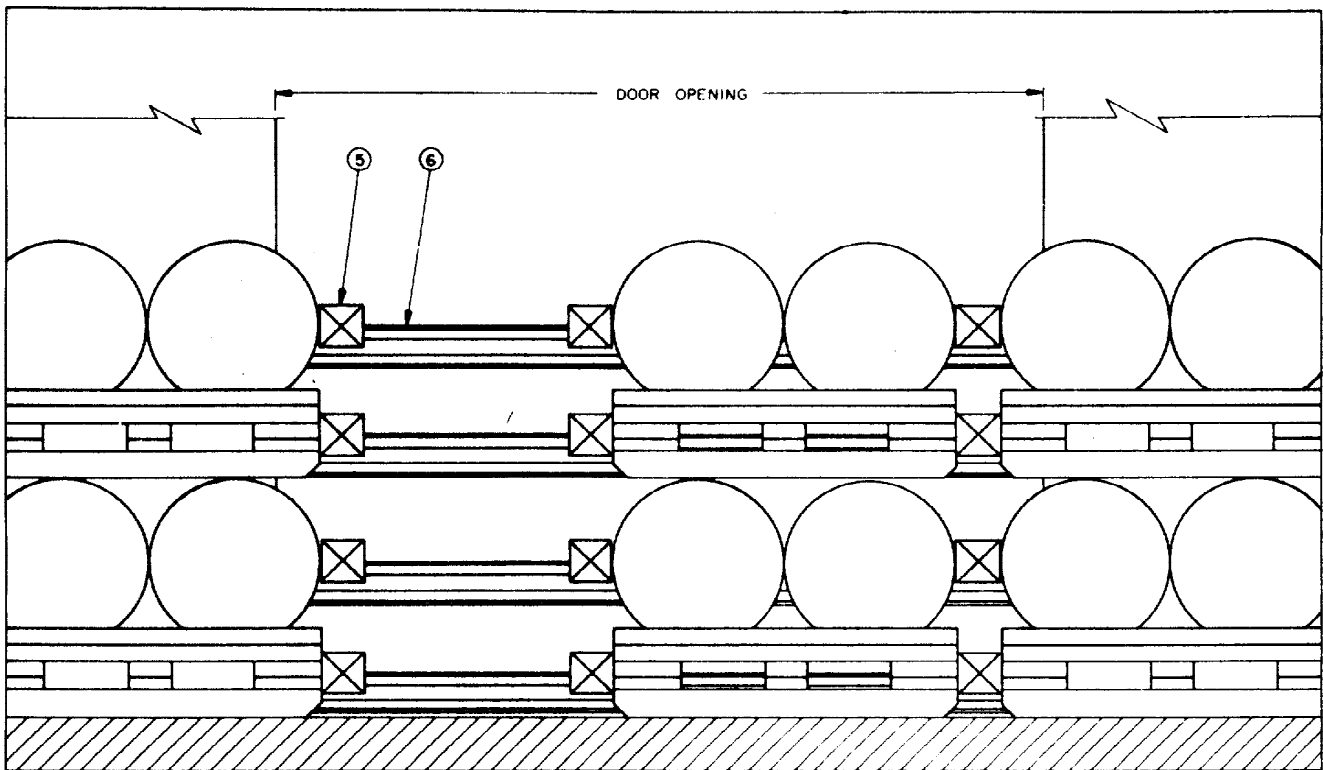
KEY NUMBERS

- ① PALLET SUPPORT PIECE, 2" X 4" X 30" (34 REQD.). POSITION UNDER TIE BOARD OF BOTTOM PALLET AND NAIL TO THE CAR FLOOR W/3-12d NAILS. SEE SPECIAL NOTES 1 AND 2 ON PAGE 7.
- ② TOP PALLET SUPPORT ASSEMBLY A (34 REQD.). SEE DETAIL ON PAGE 29. SEE SPECIAL NOTE 3 ON PAGE 7.
- ③ SPACER ASSEMBLY (17 REQD.). SEE "SPACER ASSEMBLY C" DETAIL ON PAGE 26.
- ④ WALL MEMBER, ADJUSTABLE OR FIXED MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED ⑤. SEE "SECTION B-B" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- ⑤ CROSS MEMBER (36 REQD.). SEE GENERAL NOTE "D" ON PAGE 2.
- ⑥ DOORWAY MEMBER (8 REQD.). POSITION AT HEIGHTS SPECIFIED IN "SECTION B-B" VIEW.



SECTION B-B

LOADING PROCEDURES FOR CARS WIDER THAN 9'-2" BY 50'-6" LONG
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)



ELEVATION VIEW

PIECES MARKED ①, ②, AND ③ HAVE BEEN OMITTED FOR CLARITY.

SPECIAL NOTES:

1. PIECE MARKED ① MUST BE POSITIONED PRIOR TO LOADING PALLET UNITS.
2. PIECE MARKED ② WILL RAISE THE NOSE END OF THE PALLET APPROXIMATELY 5/8".
3. THE "TOP PALLET SUPPORT ASSEMBLY A" IS REQUIRED TO PREVENT THE TOP PALLET UNIT FROM TIPPING IF THE BOMB MOVES FORWARD DURING TRANSPORT.

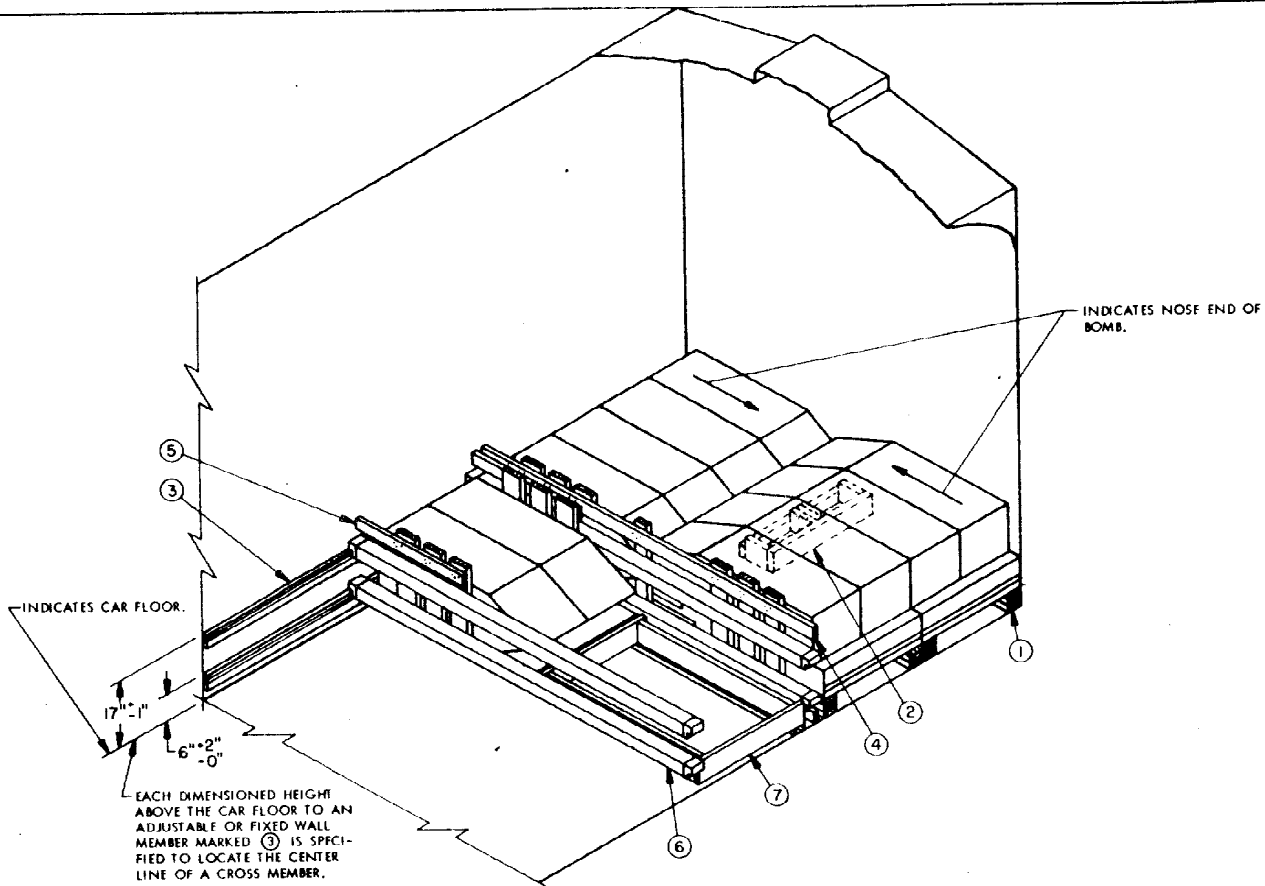
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	65	33
2" X 2"	220	74
2" X 4"	131	88
2" X 6"	226	226
NAILS	NO. REQD	POUNDS
10d (3")	170	2-3/4
12d (3-1/4")	646	11

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	68	95,200 LBS
DUNNAGE		1,067 LBS
TOTAL WEIGHT		96,267 LBS

**LOADING PROCEDURES FOR CARS WIDER THAN 9'-2" BY 50'-6" LONG
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)**



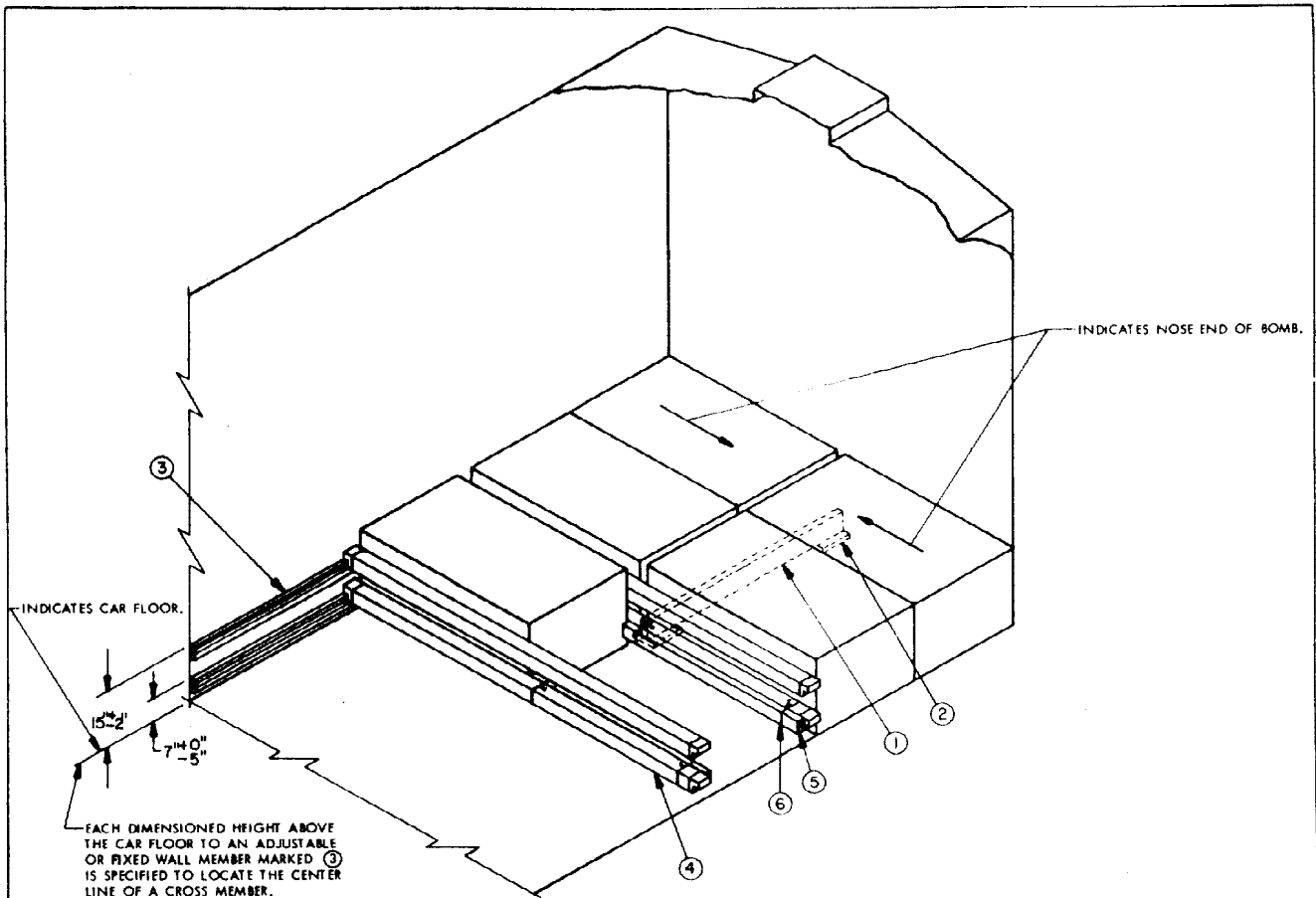
TYPICAL LCL

9'-0" WIDE CAR SHOWN

KEY NUMBERS

- ① RISER ASSEMBLY (2 REQD). SEE "RISER ASSEMBLY" DETAIL ON PAGE 24.
- ② SPACER ASSEMBLY (2 REQD). SEE "SPACER ASSEMBLY A" DETAIL ON PAGE 24.
- ③ WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED ⑥.
- ④ GATE ASSEMBLY (1 REQD). SEE "GATE ASSEMBLY A" DETAIL ON PAGE 23.
- ⑤ GATE ASSEMBLY (2 REQD). SEE "GATE ASSEMBLY B" DETAIL ON PAGE 23.
- ⑥ CROSS MEMBER (4 REQD). SEE GENERAL NOTE "D" ON PAGE 2.
- ⑦ SIDE BLOCKING ASSEMBLY (1 REQD). SEE "SIDE BLOCKING ASSEMBLY A" DETAIL ON PAGE 26.

**TYPICAL LCL PROCEDURES
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)**



TYPICAL LCL

9'-4" WIDE CAR SHOWN

KEY NUMBERS

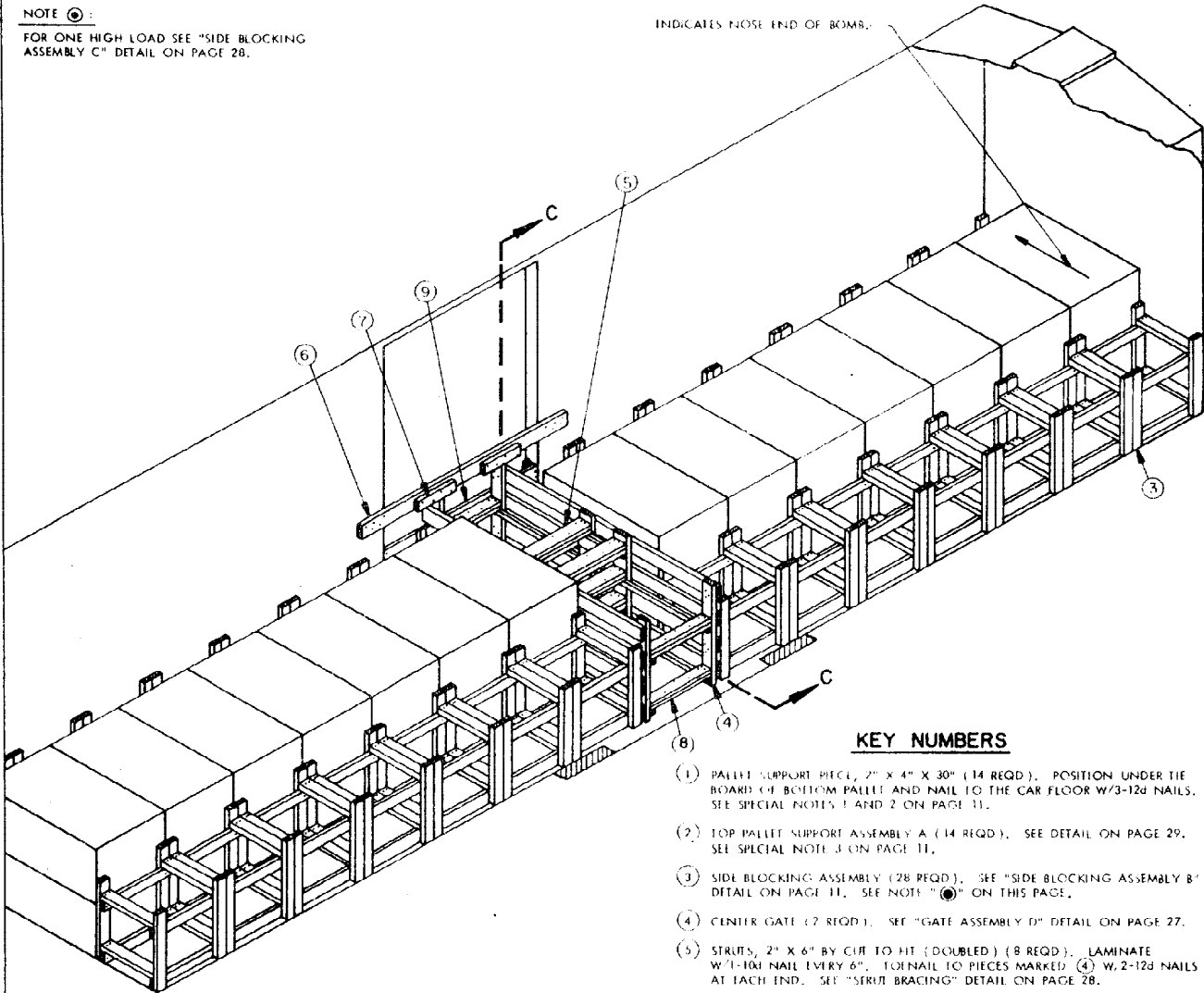
- ① SOLID FILL, 6" WIDE MATERIAL X WIDTH AND LENGTH TO SUIT (AS REQUIRED TO FILL EXCESS SPACE BETWEEN PALLET). POSITION ON EDGE.
- ② CLEAT, 1" X 6" X 9" (2 REQD.). POSITION AS SHOWN AND NAIL TO LOWER EDGE OF PIECE MARKED ① W/3-10d NAILS.
- ③ WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED ④.
- ④ CROSS MEMBER (4 REQD.). SEE GENERAL NOTE "D" ON PAGE 2.
- ⑤ SIDE BLOCKING, 2" X 4" X CUT TO FIT BETWEEN PALLET AND SIDE WALL OF CAR (2 REQD.).
- ⑥ NO. 8 GAGE BLACK ANNEALED WIRE 30" LONG (4 REQD.). INSTALL TO ENCIRCLE PIECE MARKED ④ AND PIECE MARKED ⑤ AND TWIST-TIE WIRE ENDS TOGETHER TIGHTLY.

TYPICAL LCL PROCEDURES
(FOR CARS HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS)

NOTE ● :

FOR ONE HIGH LOAD SEE "SIDE BLOCKING ASSEMBLY C" DETAIL ON PAGE 28.

INDICATES NOSE END OF BOMB.

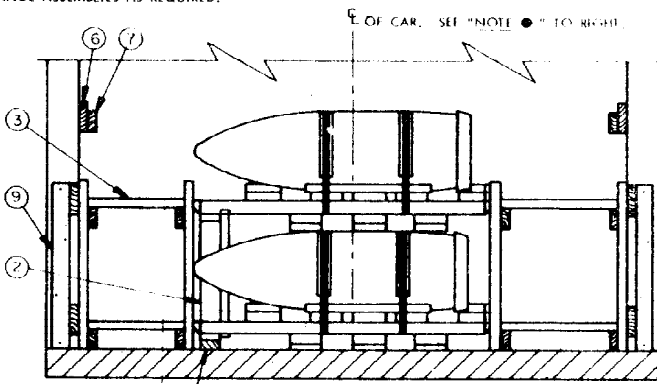


ISOMETRIC VIEW

A 40'-6" LONG X 8'-6" WIDE CAR WITH 6'-0" DOORWAY OPENINGS IS SHOWN. FOR BLOCKING A PARTIAL THIRD LAYER, SEE "K-BRACE ASSEMBLY" DETAIL ON PAGE 17; ADJUST THE HEIGHTS AND QUANTITIES OF OTHER DUNNAGE ASSEMBLIES AS REQUIRED.

KEY NUMBERS

- (1) PALLET SUPPORT PIECE, 2" X 4" X 30" (14 REQD.). POSITION UNDER THE BOARD OF BOTTOM PALLET AND NAIL TO THE CAR FLOOR W/3-12d NAILS. SEE SPECIAL NOTES 1 AND 2 ON PAGE 11.
- (2) TOP PALLET SUPPORT ASSEMBLY A (14 REQD.). SEE DETAIL ON PAGE 29. SEE SPECIAL NOTE 3 ON PAGE 11.
- (3) SIDE BLOCKING ASSEMBLY (28 REQD.). SEE "SIDE BLOCKING ASSEMBLY B" DETAIL ON PAGE 11. SEE NOTE "●" ON THIS PAGE.
- (4) CENTER GATE (2 REQD.). SEE "GATE ASSEMBLY D" DETAIL ON PAGE 27.
- (5) STRUTS, 2" X 6" BY CUT TO HT. (DOUBLED) (8 REQD.). LAMINATE W/1-10d NAIL EVERY 6". TO NAIL TO PIECES MARKED (4) W/2-12d NAILS AT EACH END. SEE "STRUT BRACING" DETAIL ON PAGE 28.
- (6) GATE HOLD DOWN, 2" X 6" BY DOOR OPENING WIDTH PLUS 24" (2 REQD.). NAIL TO CAR SIDE WALL W/5-12d NAILS AT EACH END.
- (7) HOLD DOWN CLEAT, 2" X 4" X 18" (4 REQD.). CENTER ABOVE GATE MARKED (4) AND NAIL TO PIECE MARKED (6) W/4-10d NAILS.
- (8) STRUTS, 2" X 4" BY CUT TO HT. (DOUBLED) (4 REQD.). LAMINATE W/1-10d NAIL EVERY 6". TO NAIL TO PIECES MARKED (4) W/2-12d NAILS AT EACH END.
- (9) DOORWAY PROTECTION (2 REQD.). SEE "DOORWAY PROTECTION" DETAIL ON PAGE 25.

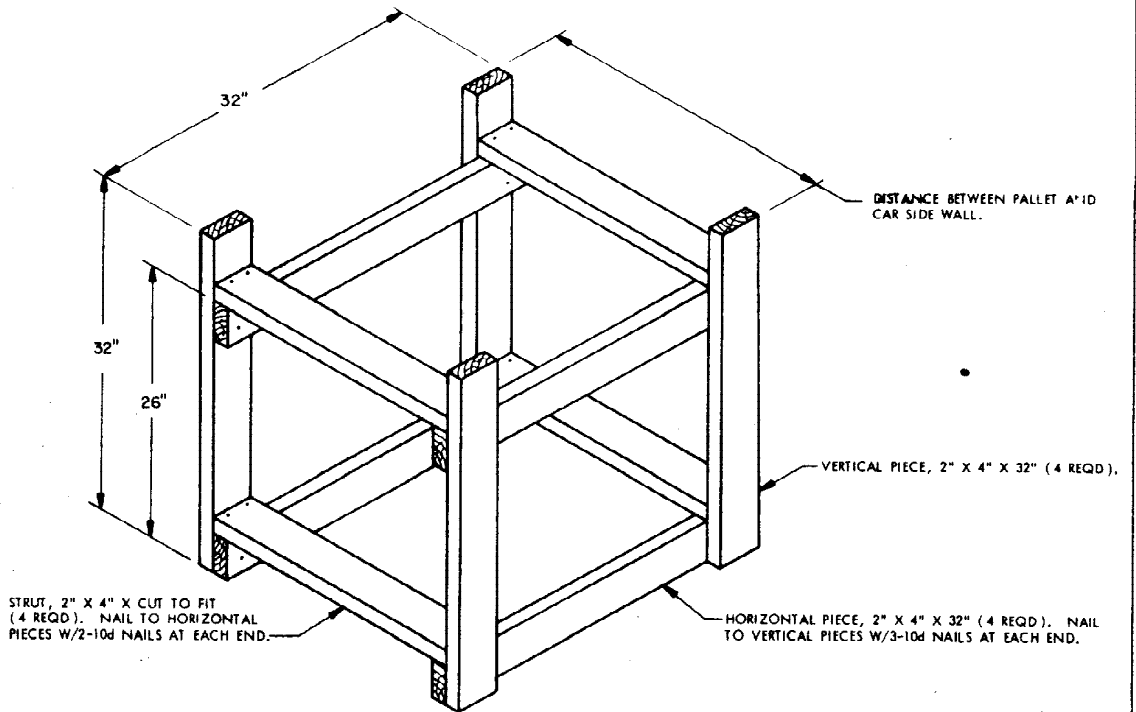


SECTION C-C

**LOADING PROCEDURES FOR CARS LESS THAN 9'-0" WIDE BY 40'-6" LONG
(FOR CONVENTIONAL CARS)**

NOTE ● :

PALLET UNITS WILL BE LOADED IN A CAR AS SHOWN; WITH THE FORWARD SIDE OF MIDDLE SKID OF PALLET ON CENTER LINE OF CAR.



SIDE BLOCKING ASSEMBLY B

SPECIAL NOTES:

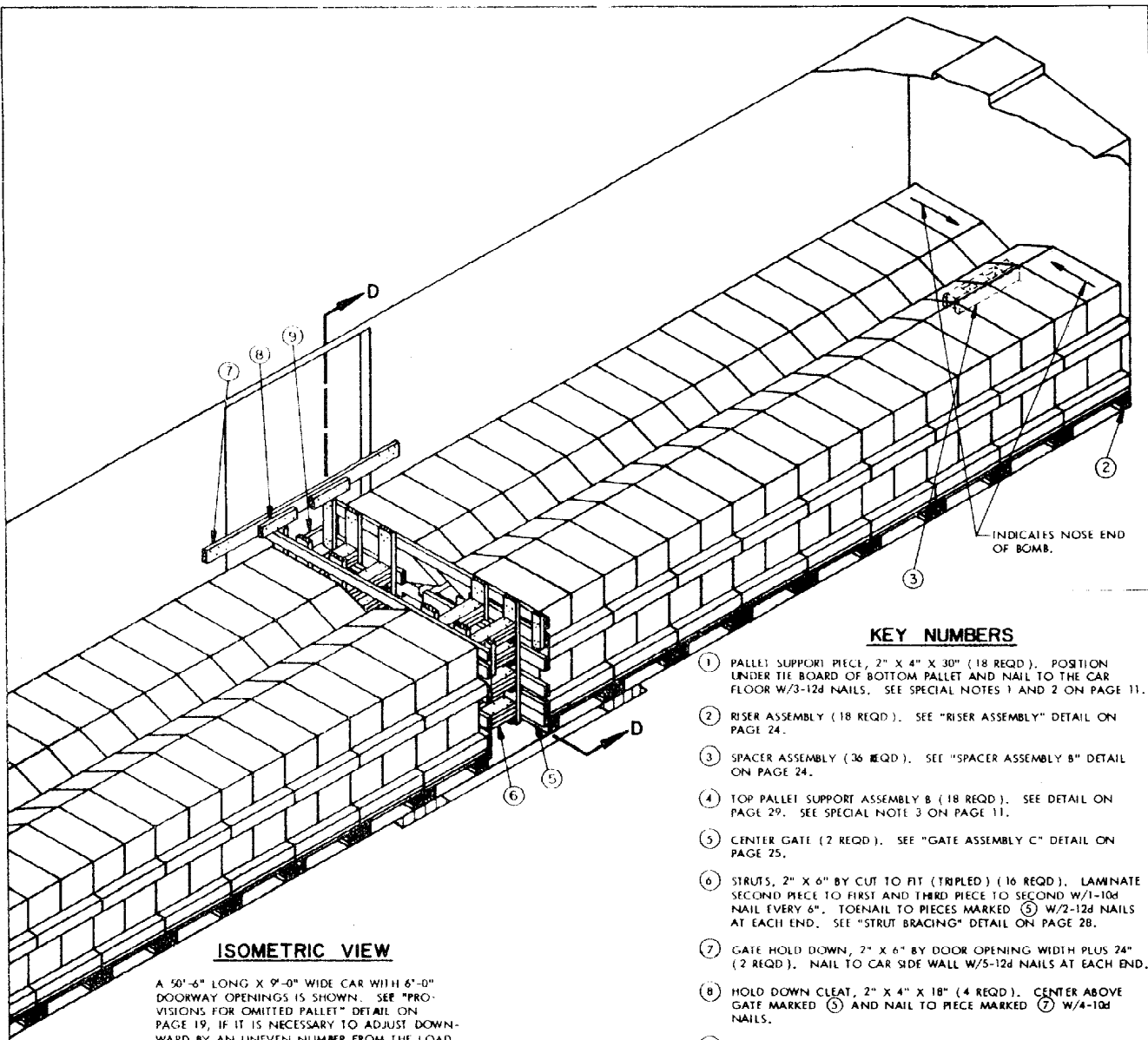
1. PIECE MARKED ① MUST BE POSITIONED PRIOR TO LOADING PALLET UNITS.
2. PIECE MARKED ① WILL RAISE THE NOSE END OF THE PALLET APPROXIMATELY 5/8".
3. THE "TOP PALLET SUPPORT ASSEMBLY A" IS REQUIRED TO PREVENT THE TOP PALLET UNIT FROM TIPPING IF THE BOMB MOVES FORWARD DURING TRANSPORT.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	27	14
2" X 2"	114	38
2" X 3"	11	6
2" X 4"	862	575
2" X 6"	216	216
NAILS	NO REQD	POUNDS
10d (3")	1,356	20-1/4
12d (3-1/4")	350	6

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	28	39,200 LBS
DUNNAGE		2,140 LBS
TOTAL WEIGHT		41,340 LBS

**LOADING PROCEDURES FOR CARS LESS THAN 9'-0" WIDE BY 40'-6" LONG
(FOR CONVENTIONAL CARS)**

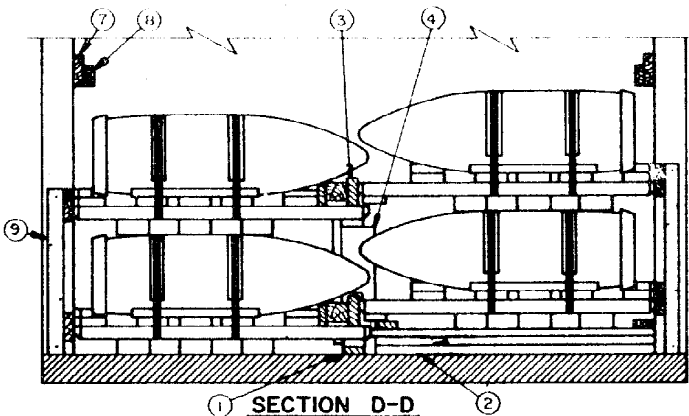


ISOMETRIC VIEW

A 50'-6" LONG X 9'-0" WIDE CAR WITH 6'-0" DOORWAY OPENINGS IS SHOWN. SEE "PROVISIONS FOR OMITTED PALLET" DETAIL ON PAGE 19, IF IT IS NECESSARY TO ADJUST DOWNWARD BY AN UNEVEN NUMBER FROM THE LOAD QUANTITY SHOWN.

KEY NUMBERS

- ① PALLET SUPPORT PIECE, 2" X 4" X 30" (18 REQ'D). POSITION UNDER TIE BOARD OF BOTTOM PALLET AND NAIL TO THE CAR FLOOR W/3-12d NAILS. SEE SPECIAL NOTES 1 AND 2 ON PAGE 11.
- ② RISER ASSEMBLY (18 REQ'D). SEE "RISER ASSEMBLY" DETAIL ON PAGE 24.
- ③ SPACER ASSEMBLY (36 REQ'D). SEE "SPACER ASSEMBLY B" DETAIL ON PAGE 24.
- ④ TOP PALLET SUPPORT ASSEMBLY B (18 REQ'D). SEE DETAIL ON PAGE 29. SEE SPECIAL NOTE 3 ON PAGE 11.
- ⑤ CENTER GATE (2 REQ'D). SEE "GATE ASSEMBLY C" DETAIL ON PAGE 25.
- ⑥ STRUTS, 2" X 6" BY CUT TO FIT (TRIPLED) (16 REQ'D). LAMINATE SECOND PIECE TO FIRST AND THIRD PIECE TO SECOND W/1-10d NAIL EVERY 6". TOENAIL TO PIECES MARKED ⑤ W/2-12d NAILS AT EACH END. SEE "STRUT BRACING" DETAIL ON PAGE 28.
- ⑦ GATE HOLD DOWN, 2" X 6" BY DOOR OPENING WIDTH PLUS 24" (2 REQ'D). NAIL TO CAR SIDE WALL W/5-12d NAILS AT EACH END.
- ⑧ HOLD DOWN CLEAT, 2" X 4" X 18" (4 REQ'D). CENTER ABOVE GATE MARKED ⑤ AND NAIL TO PIECE MARKED ⑦ W/4-10d NAILS.
- ⑨ DOORWAY PROTECTION (2 REQ'D). SEE "DOORWAY PROTECTION" DETAIL AND NOTE "C" ON PAGE 25.

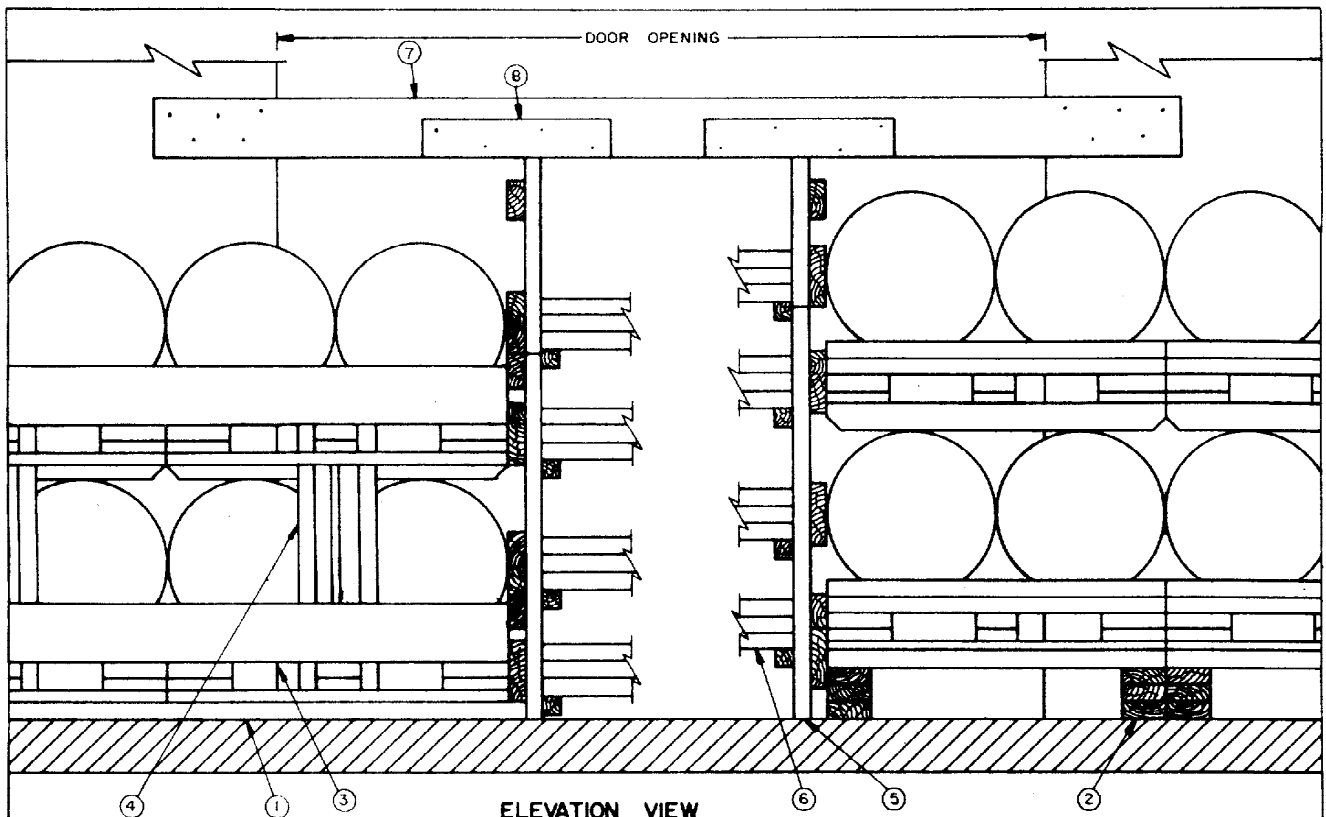


SECTION D-D

**LOADING PROCEDURES FOR CARS 9'-0" TO 9'-2" WIDE BY 50'-6" LONG
(FOR CONVENTIONAL CARS)**

BILL OF MATERIAL

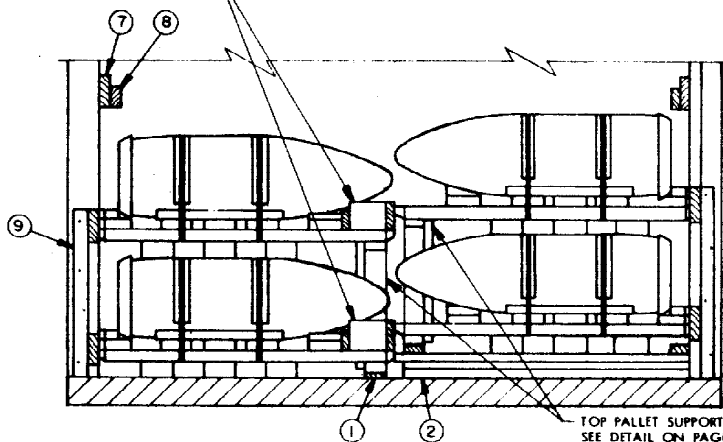
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	96	32
1" X 8"	21	14
2" X 2"	110	37
2" X 3"	12	6
2" X 4"	732	488
2" X 6"	282	282
2" X 8"	42	56
4" X 4"	54	72
NAILS	NO. REQ'D	POUNDS
6d (2")	324	2
10d (3")	1,292	20
12d (3-1/4")	406	7



ELEVATION VIEW

THIS ELEVATION VIEW SHOWS PALLETS WITH RISER ② ON RIGHT END OF CAR. ON THE LEFT END OF THE CAR THE NEAR-SIDE ROW OF PALLETS IS OMITTED TO SHOW PIECES ③ AND ④. STRUTS ⑥ ARE BROKEN IN ORDER TO SHOW THE DIFFERENT HEIGHTS AND ⑦ IS OMITTED FOR CLARITY.

SPACER ASSEMBLY A (36 REQD).
SEE DETAIL ON PAGE 24.



SECTION OF A 9'-2" WIDE CAR

IF THE PALLETS IN THE CAR BEING LOADED DO NOT OVERLAP 5/8" OR MORE USE "SPACER ASSEMBLY A" IN LIEU OF "SPACER ASSEMBLY B" AND "TOP PALLET SUPPORT ASSEMBLY A" IN LIEU OF "TOP PALLET SUPPORT ASSEMBLY B". ALL OTHER BLOCKING IS SAME AS SHOWN FOR THE 9'-0" WIDE CAR.

TOP PALLET SUPPORT ASSEMBLY A (36 REQD).
SEE DETAIL ON PAGE 29.

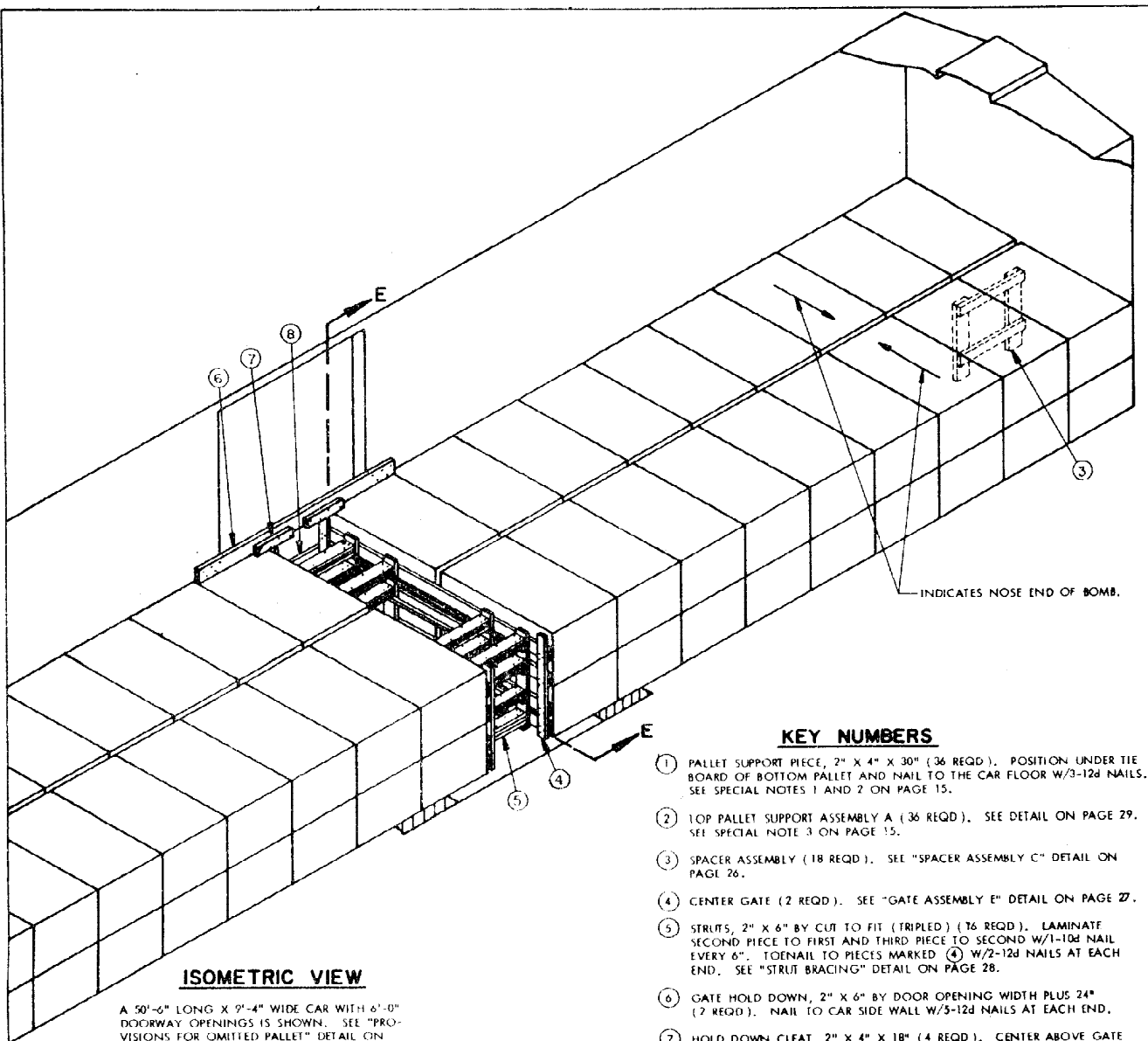
SPECIAL NOTES:

1. PIECE MARKED ① MUST BE POSITIONED PRIOR TO LOADING PALLET UNITS.
2. PIECE MARKED ① WILL RAISE THE NOSE END OF THE PALLET APPROXIMATELY 5/8".
3. THE "TOP PALLET SUPPORT ASSEMBLY B" IS REQUIRED TO PREVENT THE TOP PALLET UNIT FROM TIPPING IF THE BOMB MOVES FORWARD DURING TRANSPORT.

LOAD AS SHOWN (9'-0" WIDE CAR)

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	72	100,800 LBS
DUNNAGE		2,497 LBS
TOTAL WEIGHT		103,297 LBS

**LOADING PROCEDURES FOR CARS 9'-0" TO 9'-2" WIDE BY 50'-6" LONG
(FOR CONVENTIONAL CARS)**

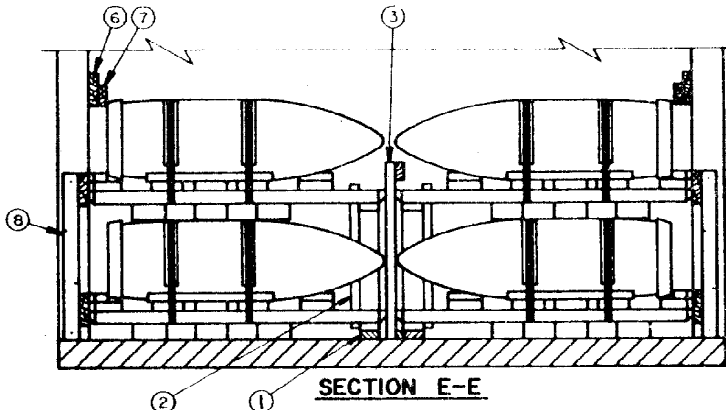


ISOMETRIC VIEW

A 50'-6" LONG X 9'-4" WIDE CAR WITH 6'-0" DOORWAY OPENINGS IS SHOWN. SEE "PROVISIONS FOR OMITTED PALLET" DETAIL ON PAGE 19, IF IT IS NECESSARY TO ADJUST DOWNWARD BY AN UNEVEN NUMBER FROM THE LOAD QUANTITY SHOWN. OMIT SPACER ASSEMBLY (3) WHEN USING ABOVE DETAIL.

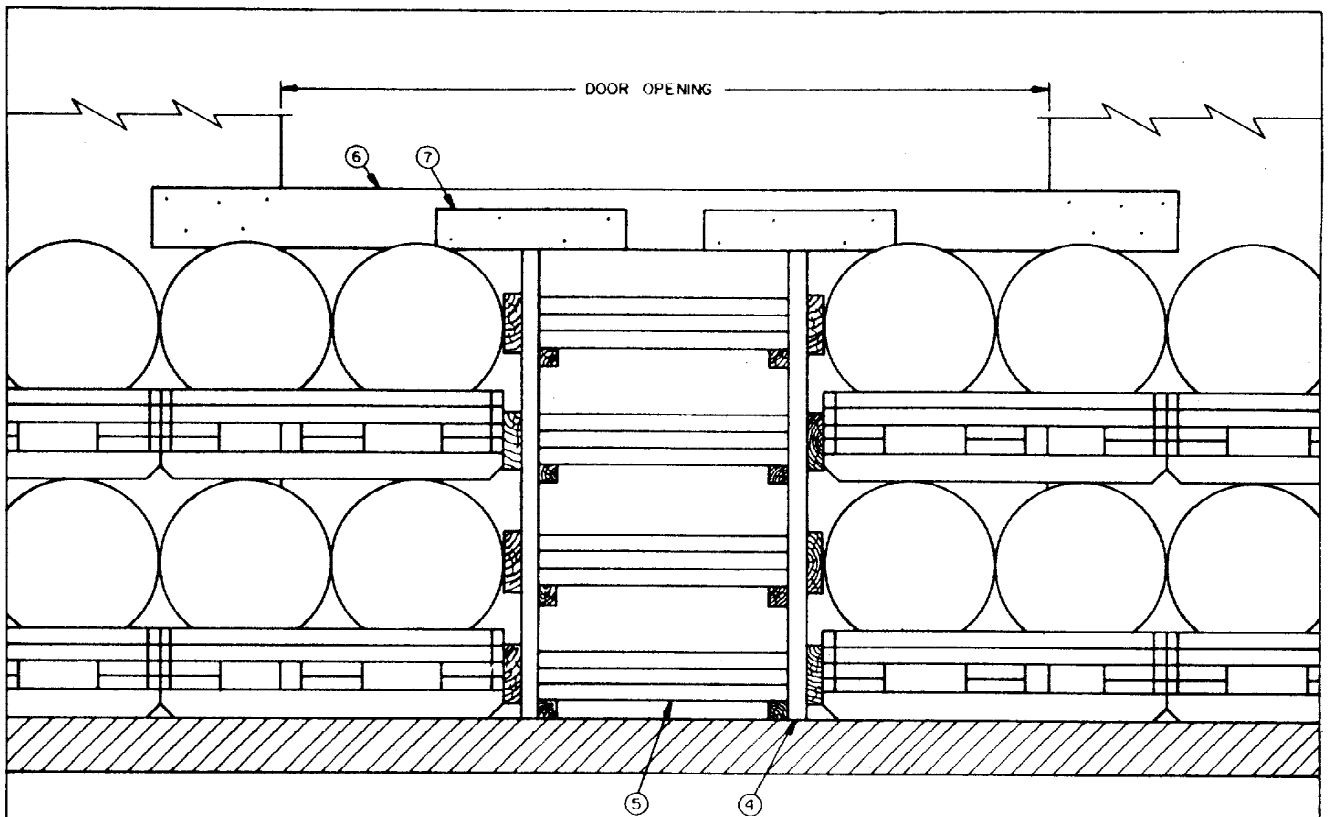
KEY NUMBERS

- (1) PALLET SUPPORT PIECE, 2" X 4" X 30" (36 REQD.). POSITION UNDER TIE BOARD OF BOTTOM PALLET AND NAIL TO THE CAR FLOOR W/3-12d NAILS. SEE SPECIAL NOTES 1 AND 2 ON PAGE 15.
- (2) TOP PALLET SUPPORT ASSEMBLY A (36 REQD.). SEE DETAIL ON PAGE 29. SEE SPECIAL NOTE 3 ON PAGE 15.
- (3) SPACER ASSEMBLY (18 REQD.). SEE "SPACER ASSEMBLY C" DETAIL ON PAGE 26.
- (4) CENTER GATE (2 REQD.). SEE "GATE ASSEMBLY E" DETAIL ON PAGE 27.
- (5) STRUTS, 2" X 6" BY CUT TO FIT (TRIPLED) (76 REQD.). LAMINATE SECOND PIECE TO FIRST AND THIRD PIECE TO SECOND W/1-10d NAIL EVERY 6". TOENAIL TO PIECES MARKED (4) W/2-12d NAILS AT EACH END. SEE "STRUT BRACING" DETAIL ON PAGE 28.
- (6) GATE HOLD DOWN, 2" X 6" BY DOOR OPENING WIDTH PLUS 24" (7 REQD.). NAIL TO CAR SIDE WALL W/3-12d NAILS AT EACH END.
- (7) HOLD DOWN CLEAT, 2" X 4" X 18" (4 REQD.). CENTER ABOVE GATE MARKED (4) AND NAIL TO PIECE MARKED (6) W/4-10d NAILS.
- (8) DOORWAY PROTECTION (2 REQD.). SEE "DOORWAY PROTECTION" DETAIL ON PAGE 25.



SECTION E-E

LOADING PROCEDURES FOR CARS WIDER THAN 9'-2" BY 50'-6" LONG
(FOR CONVENTIONAL CARS)



ELEVATION VIEW

PIECES MARKED ①, ②, ③, AND ⑧ HAVE BEEN OMITTED FOR CLARITY.

SPECIAL NOTES:

1. PIECE MARKED ① MUST BE POSITIONED PRIOR TO LOADING PALLET UNITS.
2. PIECE MARKED ① WILL RAISE THE NOSE END OF THE PALLET APPROXIMATELY 5/8".
3. THE "TOP PALLET SUPPORT ASSEMBLY A" IS REQUIRED TO PREVENT THE TOP PALLET UNIT FROM TIPPING IF THE BOMB MOVES FORWARD DURING TRANSPORT.

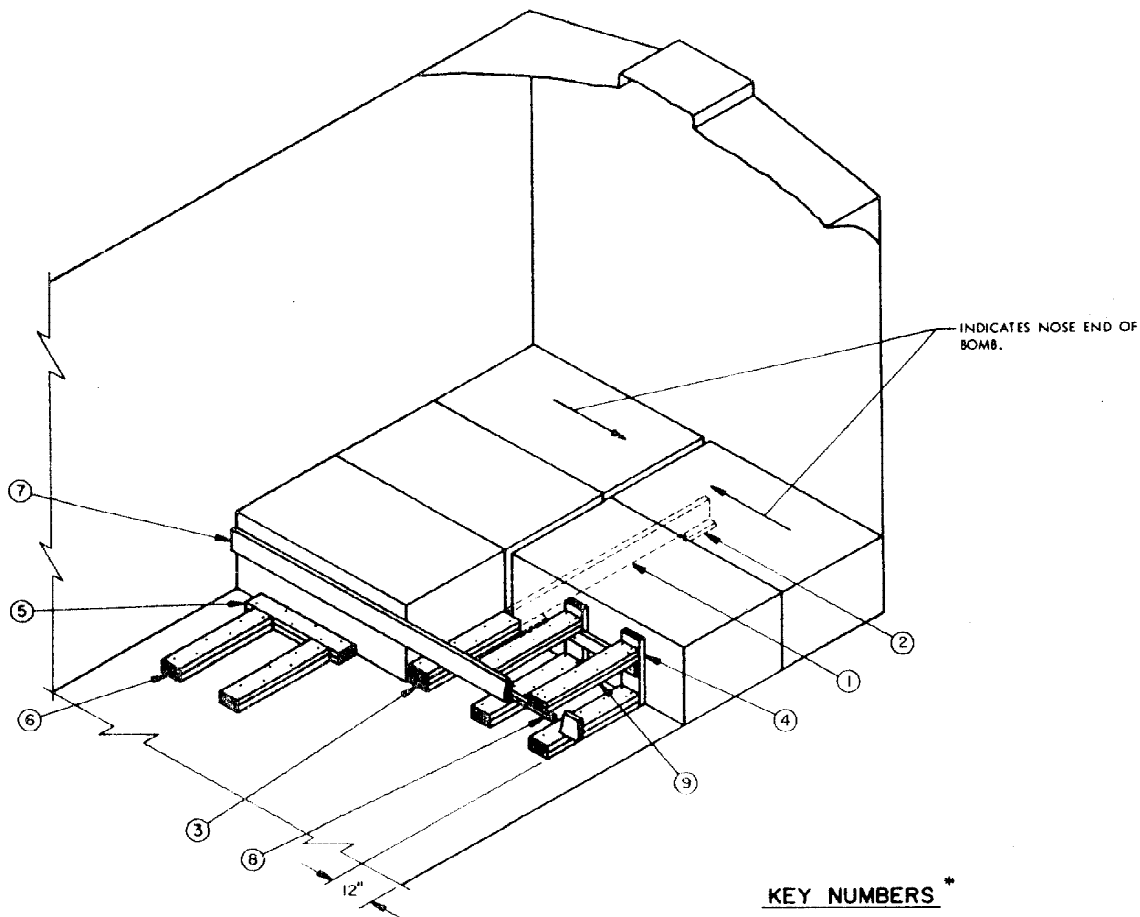
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	69	35
2" X 2"	292	98
2" X 3"	12	6
2" X 4"	159	106
2" X 6"	475	475
NAILS	NO. REQD	POUNDS
10d (3")	500	8
12d (3-1/4")	784	13-1/4

LOAD AS SHOWN

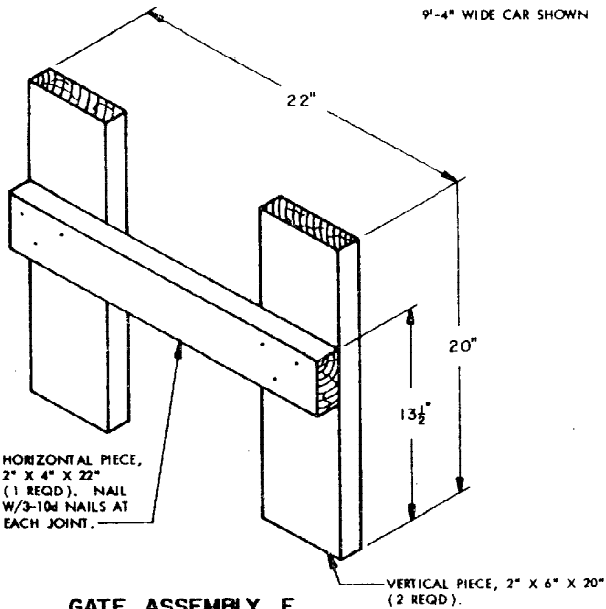
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	72	100,800 LBS
DUNNAGE		1,822 LBS
TOTAL WEIGHT		102,622 LBS

PROCEDURES FOR CARS WIDER THAN 9'-2" BY 50'-6" LONG FOR CONVENTIONAL CARS



TYPICAL LCL

9'-4" WIDE CAR SHOWN



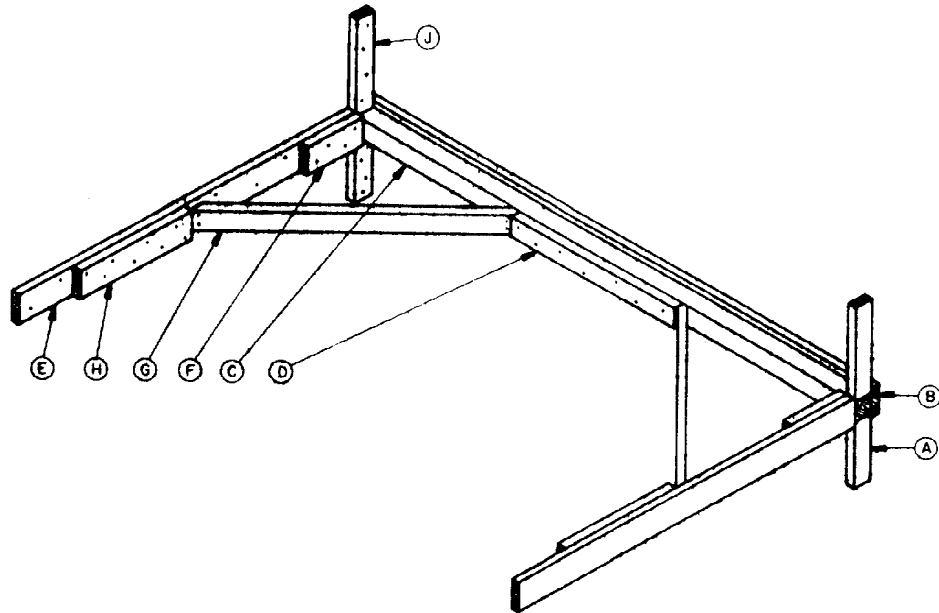
GATE ASSEMBLY F

KEY NUMBERS *

- ① SOLID FILL, 6" WIDE MATERIAL X WIDTH AND LENGTH TO SUIT (AS REQUIRED TO FILL EXCESS SPACE BETWEEN PALLET). POSITION ON EDGE.
- ② CLEAT, 1" X 6" X 9" (2 REQD). POSITION AS SHOWN AND NAIL TO LOWER EDGE OF PIECE MARKED ① W/3-10d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 30" (TRIPLED) (1 REQD). NAIL FIRST PIECE TO CAR FLOOR W/6-16d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.
- ④ GATE ASSEMBLY (1 REQD). SEE "GATE ASSEMBLY F" DETAIL ON THIS PAGE.
- ⑤ HEADER, 2" X 6" X 30" (DOUBLED) (1 REQD). NAIL FIRST PIECE TO CAR FLOOR W/5-16d NAILS. NAIL SECOND PIECE TO FIRST W/5-40d NAILS.
- ⑥ BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (4 REQD). POSITION AS SHOWN AND NAIL FIRST PIECE TO CAR FLOOR W/6-16d NAILS. NAIL SECOND PIECE TO FIRST W/6-40d NAILS. AS REQUIRED, TOENAIL TO PIECE MARKED ③ W/2-12d NAILS.
- ⑦ K-BRACE ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 17.
- ⑧ STRUT LEDGER, 2" X 2" X 24" (1 REQD). POSITION TOP OF STRUT LEDGER 13-1/2" ABOVE THE CAR FLOOR AND NAIL TO PIECE MARKED ④ W/5-10d NAILS.
- ⑨ STRUTS, 2" X 6" X CUT TO FIT (DOUBLED) (2 REQD). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO PIECE MARKED ③ AND PIECE MARKED ④ W/2-12d NAILS AT EACH END.

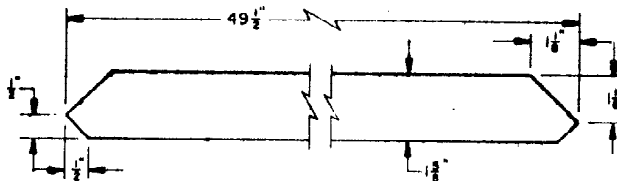
* LOAD BLOCKING DUNNAGE, SHOWN AS PIECES MARKED ④, ③ AND ②, IS ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 16,000 POUNDS.

**TYPICAL LCL PROCEDURES
(FOR CONVENTIONAL BOX CAR)**



K-BRACE ASSEMBLY

K-BRACE AS SHOWN IS ADEQUATE FOR RETAINING A MAXIMUM LCL OR PARTIAL-LAYER LOAD OF 4,000 POUNDS; TWO (2) BRACE ASSEMBLIES INSTALLED AGAINST ONE PARTIAL LAYER WILL RETAIN 8,000 POUNDS OF LADING. REFER TO DRAWING 19-48-4016-SM1001 FOR BLOCKING HEAVIER LOADS.



DIAGONAL BRACE

2" X 4" MATERIAL

KEY LETTERS

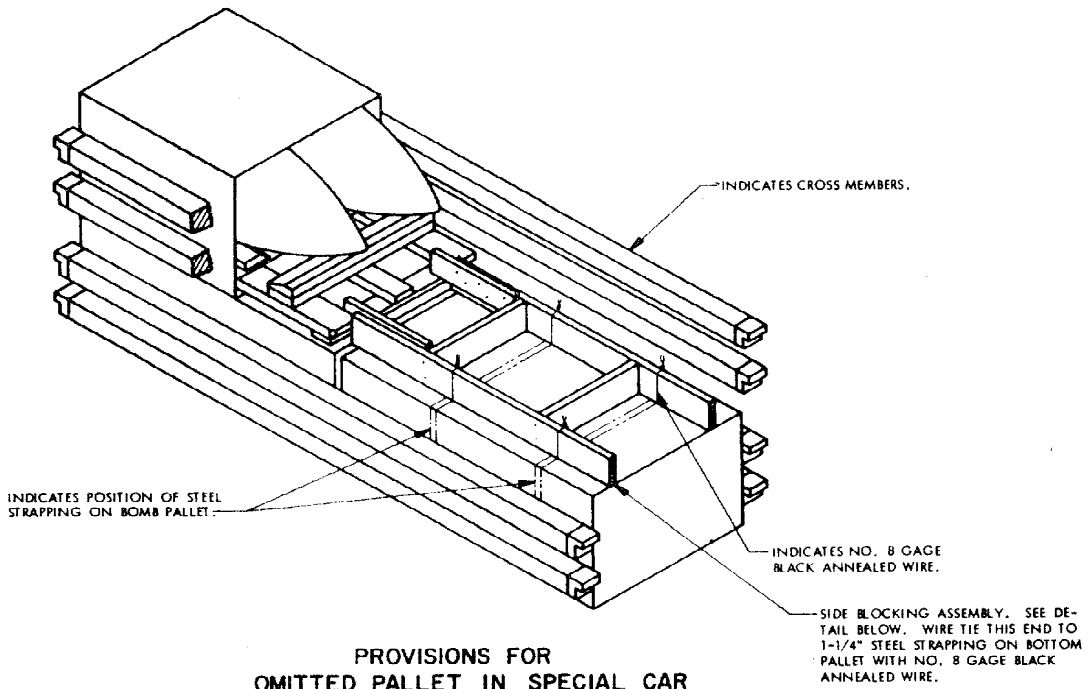
- (A) WALL CLEAT, 2" X 4" X 13" (2 REQ'D). NAIL TO CAR SIDE WALL W/4-12d NAILS.
- (B) HORIZONTAL, 2" X 6" X CAR WIDTH (CUT TO FIT) (1 REQ'D). NAIL TO PIECE MARKED (C) W/1-12d NAIL EVERY 6".
- (C) CROSS CAR BRACE, 4" X 4" X CAR WIDTH (CUT TO FIT) (1 REQ'D).
- (D) CENTER CLEAT, 2" X 4" X 28" FOR AN 8'-6" WIDE CAR OR 2" X 4" X 36" FOR A 9'-2" WIDE CAR (1 REQ'D). NAIL TO PIECE MARKED (E) W/7-12d NAILS.
- (E) HORIZONTAL WALL CLEAT, 2" X 6" X 72" (2 REQ'D). NAIL TO CAR SIDE WALL W/16-12d NAILS.
- (F) POCKET CLEAT, 2" X 6" X 12" (2 REQ'D). NAIL TO PIECE MARKED (E) W/4-16d NAILS.
- (G) DIAGONAL BRACE, 2" X 4" X 49-1/2" (2 REQ'D). SEE "DIAGONAL BRACE" DETAIL ON THIS PAGE. TOENAIL TO PIECE MARKED (B) AND TO PIECE MARKED (E) W/2-16d NAILS AT EACH END.

(CONTINUED AT RIGHT)

(KEY LETTERS CONTINUED)

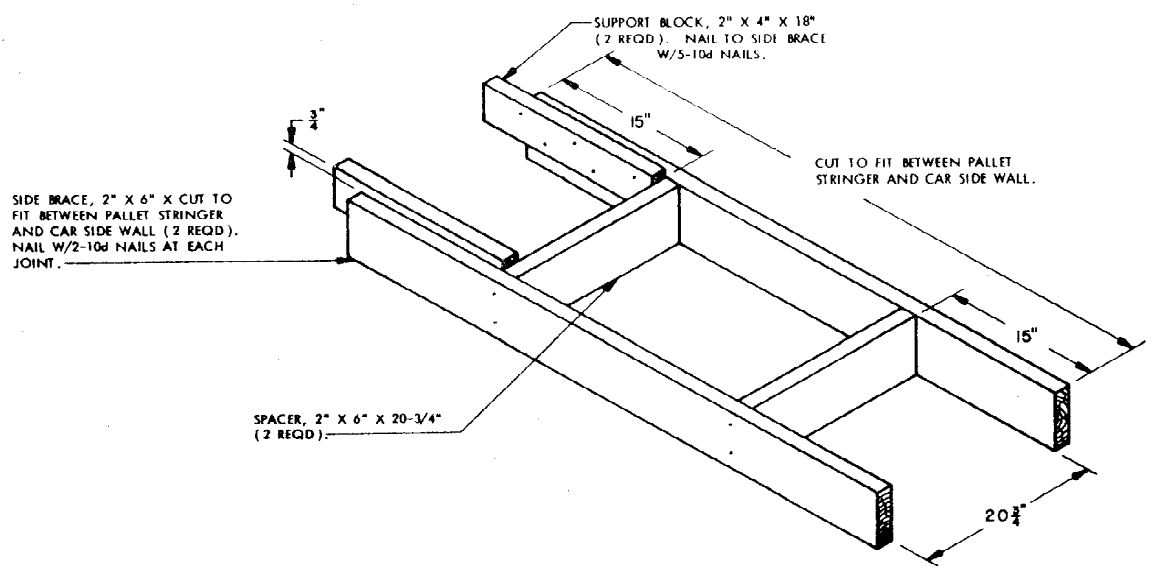
- (H) BACK-UP CLEAT, 2" X 6" X 24" (2 REQ'D), NAIL TO PIECE MARKED (E) W/8-16d NAILS.
- (J) HOLD-DOWN CLEAT, 2" X 4" X 18" (2 REQ'D). NAIL TO CAR SIDE WALL W/4-12d NAILS.

TYPICAL LCL PROCEDURES
(FOR CONVENTIONAL BOX CAR)



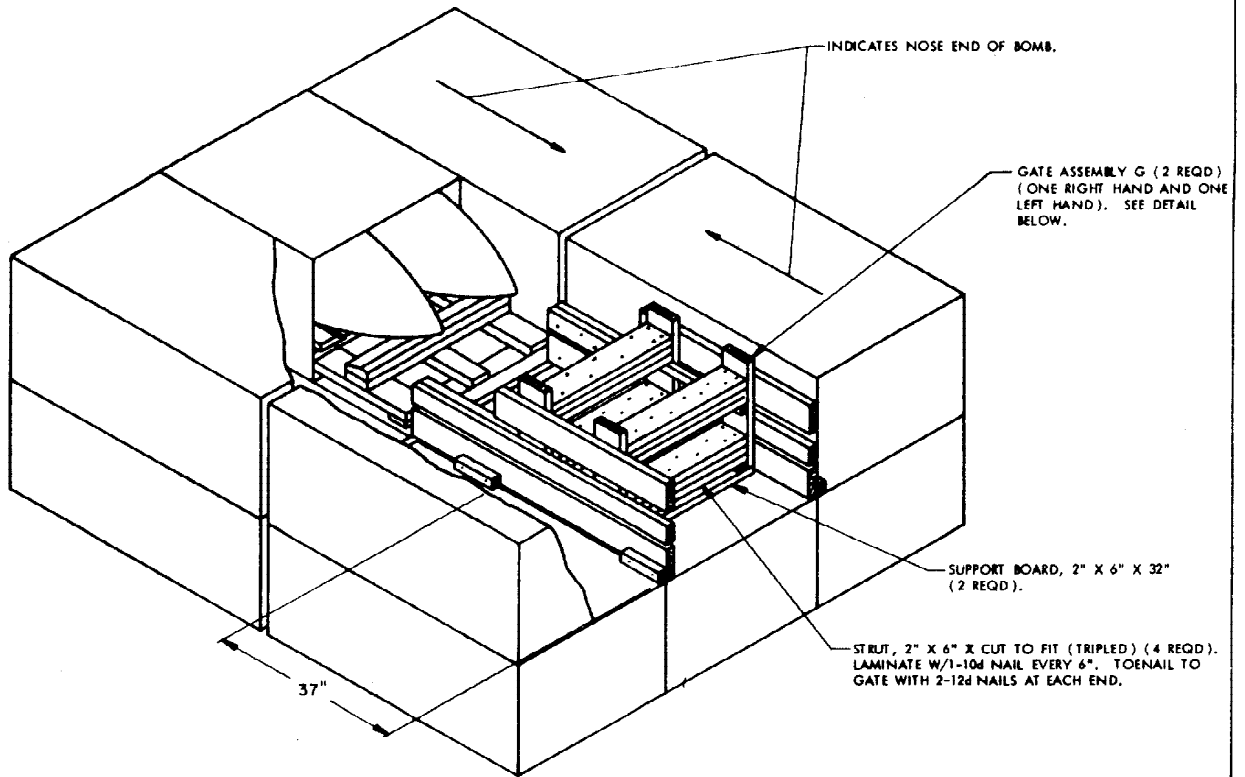
PROVISIONS FOR OMITTED PALLET IN SPECIAL CAR

THIS METHOD MAY ONLY BE USED IN THE LOAD SHOWN ON PAGE 18.



SIDE BLOCKING ASSEMBLY D

PROVISIONS FOR OMITTED PALLET



PROVISIONS FOR OMITTED PALLET IN SPECIAL AND/OR CONVENTIONAL CAR

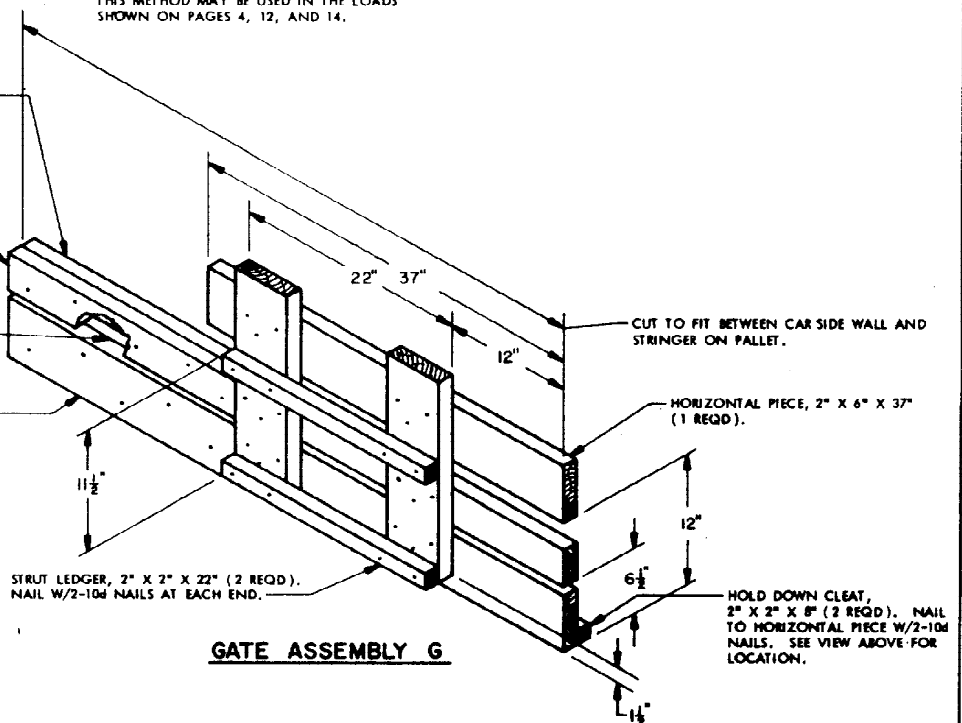
THIS METHOD MAY BE USED IN THE LOADS
SHOWN ON PAGES 4, 12, AND 14.

HORIZONTAL PIECE, 2" X 4" X CUT TO FIT
BETWEEN CAR SIDE WALL AND STRINGER ON
PALLET (1 REQD).

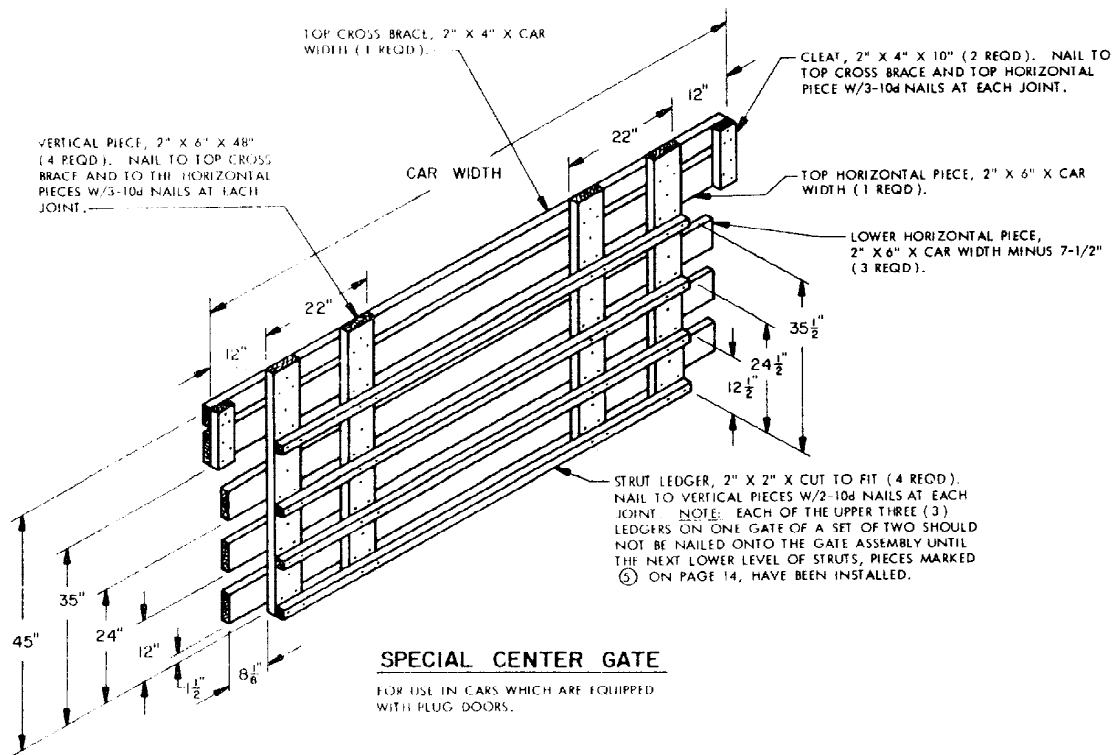
CLEAT, 2" X 4" X CUT TO FIT BETWEEN
STRINGER ON PALLET AND VERTICAL
PIECE (1 REQD). LAMINATE TO HOR-
IZONTAL PIECE W/5-10d NAILS.

HORIZONTAL PIECE, 2" X 6" X CUT TO
FIT BETWEEN CAR SIDE WALL AND
STRINGER ON PALLET (1 REQD).

CLEAT, 2" X 6" X CUT TO FIT BETWEEN
STRINGER ON PALLET AND VERTICAL
PIECE (1 REQD). LAMINATE TO HOR-
IZONTAL PIECE W/5-10d NAILS.



PROVISIONS FOR OMITTED PALLET



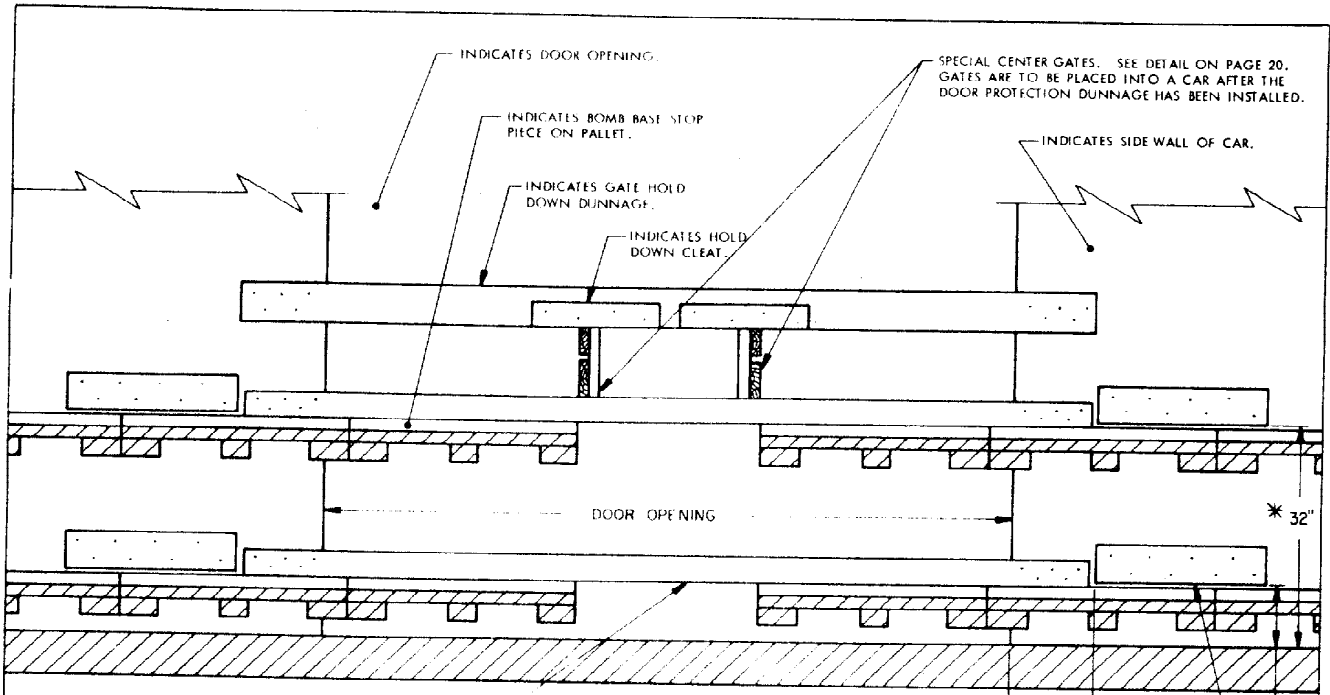
SPECIAL CENTER GATE

FOR USE IN CARS WHICH ARE EQUIPPED WITH PLUG DOORS.

SPECIAL NOTES

1. THIS PAGE AND PAGE 21 DELINEATE SPECIAL PROVISIONS WHICH MUST BE UTILIZED WHEN OUTLOADING IN A CONVENTIONAL TYPE BOX CAR WHICH HAS PLUG DOORS, PROVIDING THE LOAD IS OF A CONFIGURATION SO THAT A PALLET UNIT EXTENDS INTO THE DOORWAY AREA OF A PLUG DOOR AT LEAST FIFTEEN (15) INCHES. CARS WITHIN THIS CATEGORY CAN HAVE DOORS OF MANY CONFIGURATIONS: A CONVENTIONAL SLIDING MAIN DOOR WITH A PLUG AUXILIARY DOOR, OR A SINGLE PLUG DOOR, OR A DOUBLE PLUG DOOR. ALL OF THESE DOOR CONFIGURATIONS CAN BE ON CARS EITHER AS "THROUGH" DOORS OR AS "STAGGERED" DOORS.
2. AN 8'-0" WIDE DOOR OPENING IS SHOWN IN THESE SPECIAL PROVISIONS; HOWEVER, THE PROVISIONS AS SHOWN ARE APPLICABLE TO ANY WIDTH DOOR OPENING.
3. THE PURPOSE OF THESE SPECIAL PROVISIONS IS TO PROVIDE THE SPECIFICATIONS FOR INSTALLING ADEQUATE DOOR PROTECTION DUNNAGE.
4. EACH OF THE 4" X 4" PIECES USED TO SPAN A DOOR MUST BE OF ONE-PIECE MATERIAL; SPLICING IS NOT PERMITTED.
5. IF A CAR HAS A "COMBINATION" DOOR (1-SLIDING AND 1-PLUG INSTALLED SIDE BY SIDE), THE ONE-PIECE 4" X 4" DOOR SPANNERS MUST BE OF AN ADEQUATE LENGTH TO SPAN BOTH DOORS AS THOUGH THEY WERE ONE.
6. THE METHOD FOR INSTALLING THE SPECIAL DOOR PROTECTION DUNNAGE ON THE OFF-SIDE OF A CAR IS OBVIOUS. ON THE NEAR-SIDE, THE LOADING SIDE, SPECIAL HANDLING WILL BE REQUIRED IN SOME CARS. AFTER PLACING THE LOWER LAYER PALLETS INTO THE LOADING SIDE DOORWAY AREA, IT WILL BE NECESSARY TO:
 - A. SLIDE ONE END OF THE LOWER 4" X 4" DOOR SPANNER PIECE BACK OVER THE TOP OF ONE OF THE PRE-POSITIONED WALL CLEATS A SHORT DISTANCE TO FACILITATE LOWERING THE OTHER END TO THE PROPER LEVEL.
 - B. LOWER THE OTHER END OF THE DOOR SPANNER UNTIL IT IS JUST ABOVE THE BOMB BASE STOP PIECE ON THE LOWER LAYER PALLETS.
 - C. SLIDE THE SPANNER IN THE DIRECTION OPPOSITE OF THE DIRECTION USED WITHIN STEP-A ABOVE, AND UNTIL ITS END CONTACTS THE IMMEDIATELY ADJACENT PRE-POSITIONED WALL CLEAT.
 - D. PRESS THE SPANNER DOWNWARD ALONG ITS ENTIRE LENGTH SO THAT THE BOTTOM SURFACE IS IN CONTACT WITH THE TOP SURFACE OF EACH BOMB BASE STOP PIECE ON THE LOWER LAYER PALLETS.
7. AFTER THE DOORS ON A CAR ARE CLOSED AND READY FOR THE INSTALLATION OF "CAR SEALS", A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH, EACH CAR SEAL USED TO "SEAL" THE CAR. THE WIRE WILL BE THREADED THROUGH THE HOLE IN THE DOOR LATCH ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER.

PROVISIONS FOR CARS EQUIPPED WITH PLUG DOORS



**SECTION F-F
DOORWAY PROTECTION**

THIS SECTION VIEW DEPICTS THE PROPER INSTALLATION OF DOOR PROTECTION DUNNAGE AND THE "SPECIAL CENTER GATE" ASSEMBLIES. CAUTION: DUNNAGE MATERIAL MUST NOT BE NAILED TO A PLUG DOOR.

NOTE *

FOR LOAD AS SHOWN ON PAGES 4 & 5 ON SIDE OF CAR USING THE RISER, PIECE MARKED ②, THE 9" AND 32" DIMENSIONS WILL BE CHANGED TO 14" AND 37" RESPECTIVELY.

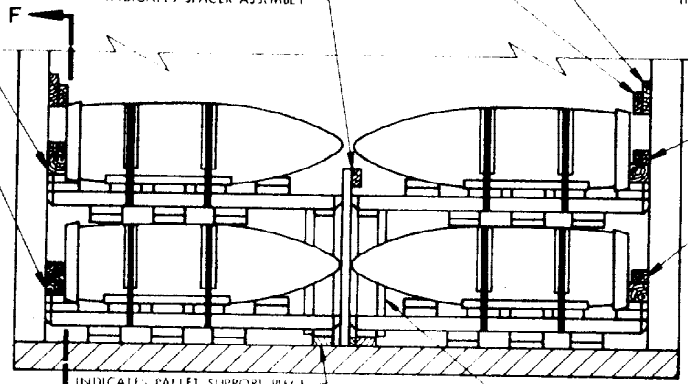
WALL CLEAT, 2" X 6" X 24" (DOUBLED) (8 REQD). PRE-POSITION THE FIRST PIECE AS SHOWN AND NAIL TO SIDE WALL OF CAR W/8-10d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.

DOOR PROTECTION, 4" X 4" X DOOR OPENING WIDTH PLUS 24" (4 REQD).

INDICATES GATE HOLD DOWN DUNNAGE

INDICATES HOLD DOWN CLEAT

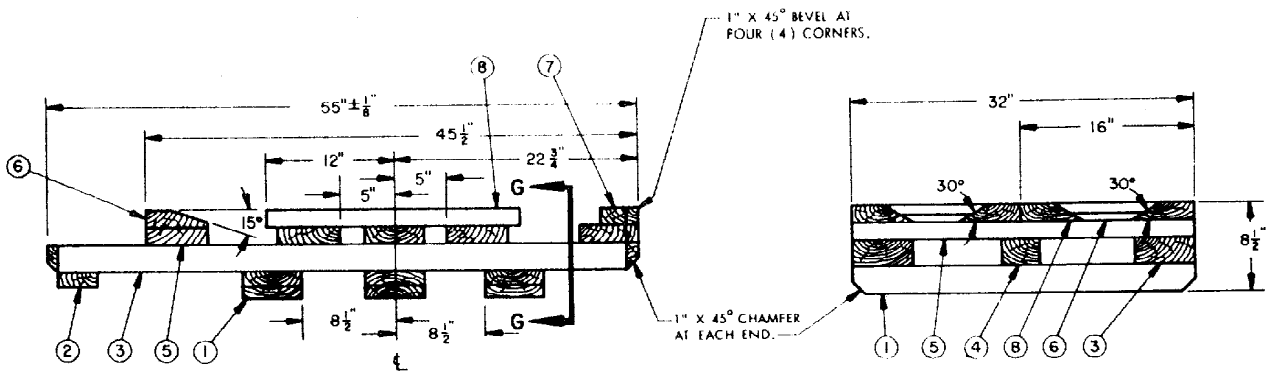
INDICATES SPACER ASSEMBLY



TYPICAL SECTION

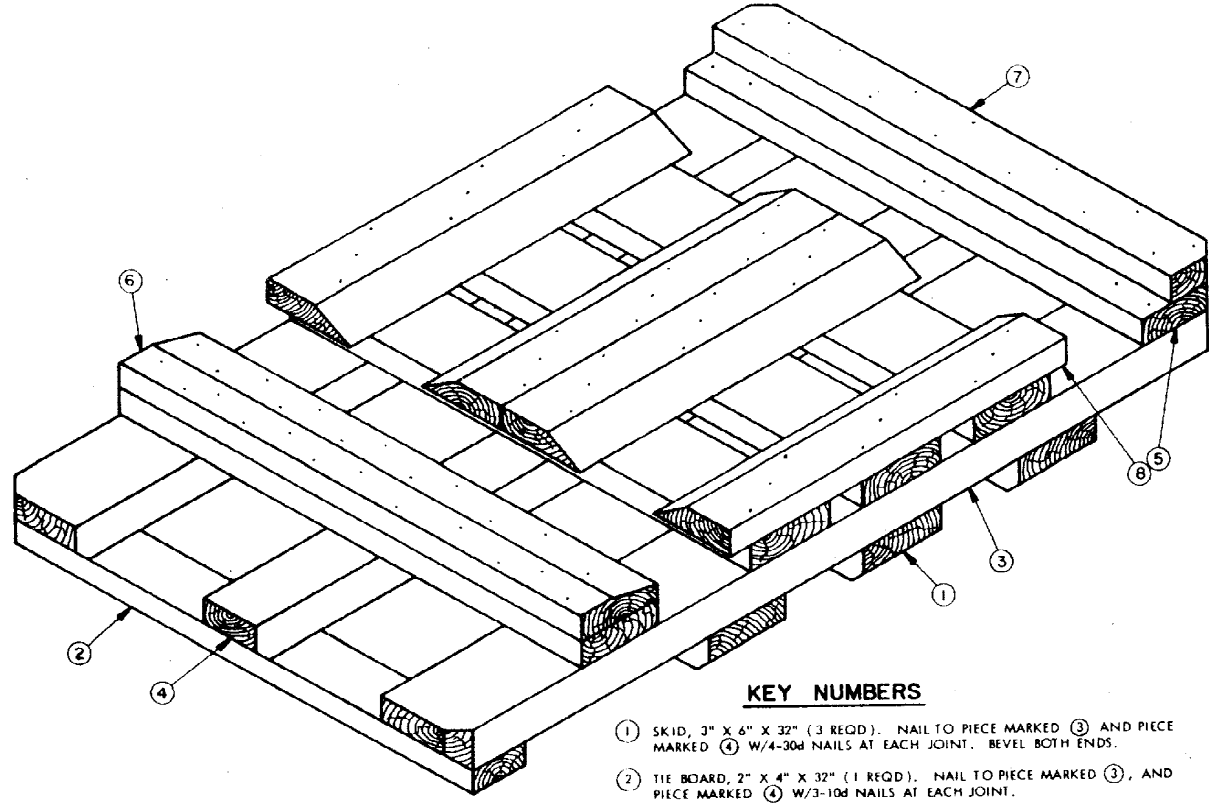
REFERENCE:

"SECTION E-E" VIEW ON PAGE 14.



ELEVATION VIEW

SECTION G-G



ISOMETRIC VIEW

KEY NUMBERS

- ① SKID, 3" X 6" X 32" (3 REQD). NAIL TO PIECE MARKED ③ AND PIECE MARKED ④ W/4-30d NAILS AT EACH JOINT. BEVEL BOTH ENDS.
- ② TIE BOARD, 2" X 4" X 32" (1 REQD). NAIL TO PIECE MARKED ③, AND PIECE MARKED ④ W/3-10d NAILS AT EACH JOINT.
- ③ END STRINGER, 3" X 6" X 55" (2 REQD).
- ④ CENTER STRINGER, 3" X 4" X 55" (1 REQD).
- ⑤ DECK BOARD, 2" X 6" X 32" (5 REQD). NAIL TO PIECE MARKED ③ AND PIECE MARKED ④ W/5-10d NAILS AT EACH JOINT.
- ⑥ NOSE END STOP, 2" X 6" X 32" (1 REQD). BEVEL AT 15° AS SHOWN AND NAIL TO PIECE MARKED ⑤ W/24-10d NAILS.
- ⑦ BASE END STOP, 2" X 4" X 32" (1 REQD). NAIL TO PIECE MARKED ⑤ W/14-10d NAILS.
- ⑧ CLEAT, 2" X 6" X 24" (4 REQD). BEVEL AT 30° AS SHOWN AND NAIL TO PIECES MARKED ⑤ W/3-10d NAILS AT EACH JOINT.

PALLET MATERIAL SPECIFICATIONS

LUMBER: SOUTHERN YELLOW PINE, DOUGLAS FIR OR HEMLOCK;
FED SPEC MM-1-751.

NAILS: COMMON, CEMENT COATED OR CHEMICALLY ETCHED;
FED SPEC FF-N-105.
ALTERNATIVE: ANNULAR-RING TYPE NAIL OF SAME SIZE.

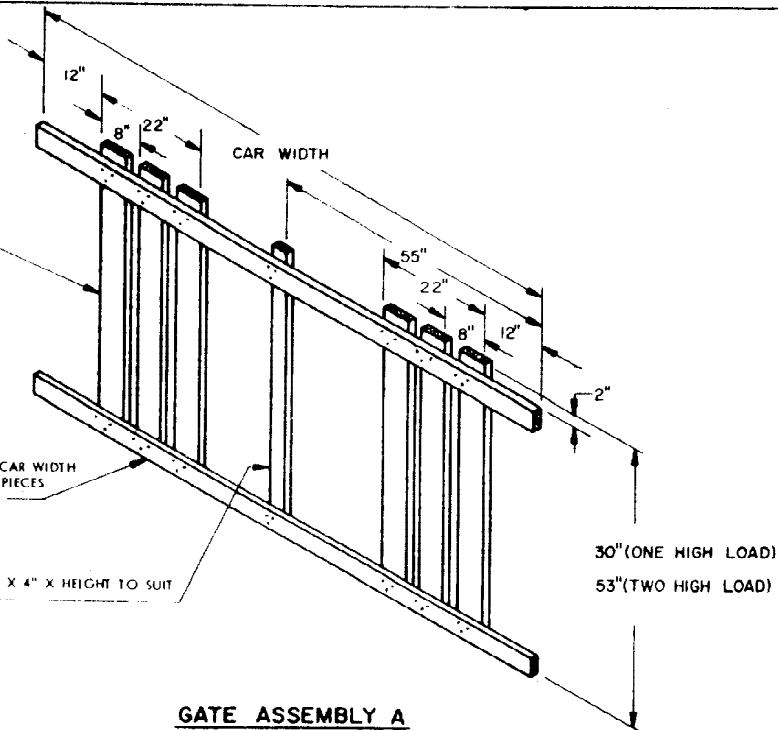
BILL OF MATERIAL PER PALLET		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	5.4	3.6
2" X 6"	24.0	24.0
3" X 4"	4.6	4.6
3" X 6"	17.2	25.8
NAILS	NO. REQD	POUNDS
10d (3")	158	2.5
30d (4-1/2")	36	1.8

PALLET DETAIL

VERTICAL PIECE, 2" X 6" X HEIGHT TO SUIT (6 REQD.).

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

VERTICAL PIECE, 2" X 4" X HEIGHT TO SUIT (1 REQD.).

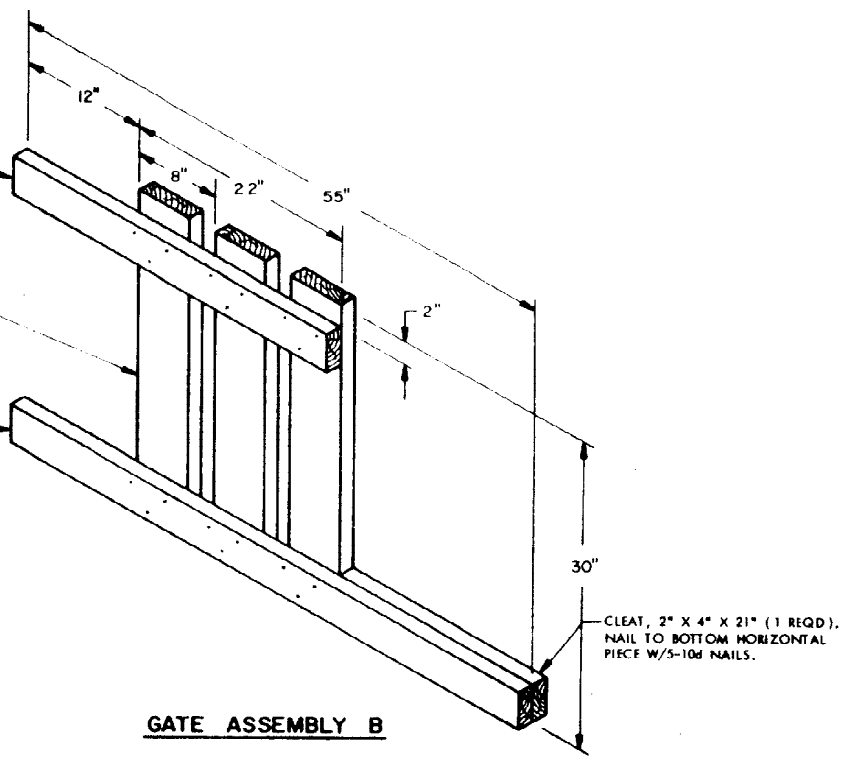


GATE ASSEMBLY A

TOP HORIZONTAL PIECE, 2" X 4" X 34" (1 REQD.). NAIL TO VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 30" (3 REQD.).

BOTTOM HORIZONTAL PIECE, 2" X 4" X 55" (1 REQD.). NAIL TO VERTICAL PIECES W/3-10d NAILS AT EACH JOINT.



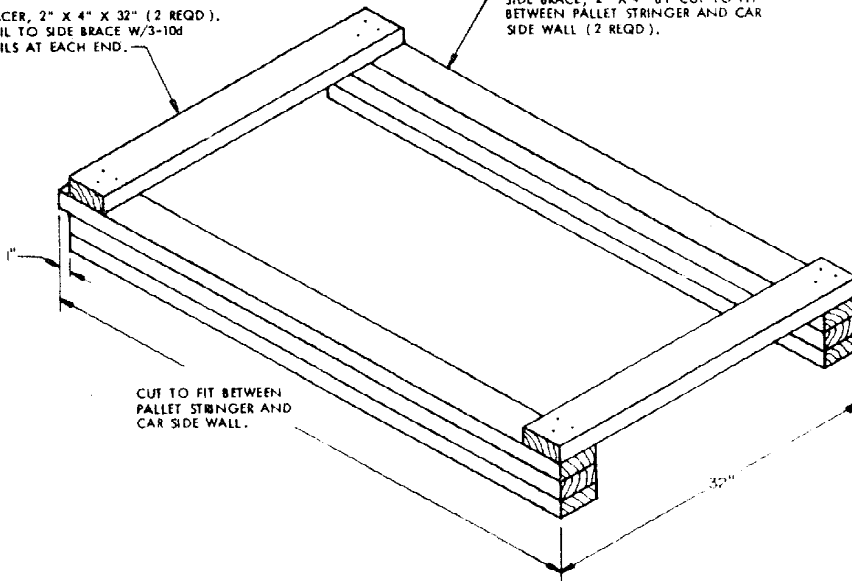
CLEAT, 2" X 4" X 21" (1 REQD.). NAIL TO BOTTOM HORIZONTAL PIECE W/5-10d NAILS.

GATE ASSEMBLY B

DETAILS

SPACER, 2" X 4" X 32" (2 REQD).
NAIL TO SIDE BRACE W/3-10d
NAILS AT EACH END.

SIDE BRACE, 2" X 4" BY CUT TO FIT
BETWEEN PALLET STRINGER AND CAR
SIDE WALL (2 REQD).



CUT TO FIT BETWEEN
PALLET STRINGER AND
CAR SIDE WALL.

SUPPORT CLEAT, 2" X 4" BY CUT
TO FIT BETWEEN PALLET STRINGER
AND CAR SIDE WALL MINUS 1"
(DOUBLED) (2 REQD). NAIL
FIRST BRACE TO SIDE BRACE
W/7-10d NAILS. NAIL SECOND
PIECE TO FIRST IN A LIKE
MANNER.

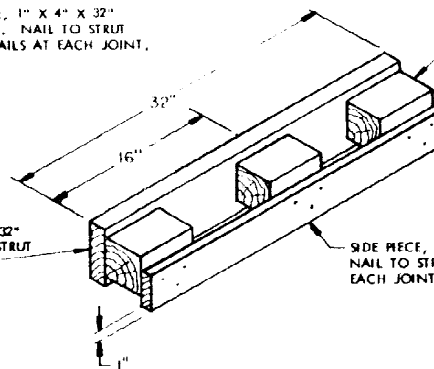
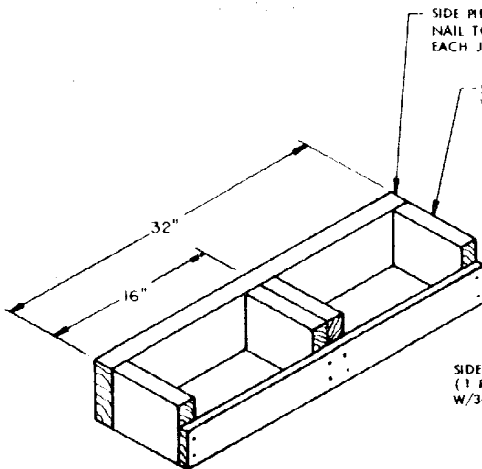
RISER ASSEMBLY

SIDE PIECE, 2" X 6" X 32" (1 REQD).
NAIL TO STRUT W/3-10d NAILS AT
EACH JOINT.

STRUT, 2" X 6" BY CUT
TO FIT (4 REQD).

SIDE PIECE, 1" X 4" X 32"
(1 REQD). NAIL TO STRUT
W/2-6d NAILS AT EACH JOINT.

STRUT, 4" X 4" X 6" (3 REQD).



SIDE PIECE, 2" X 6" X 32"
(1 REQD). NAIL TO STRUT
W/3-10d NAILS.

SIDE PIECE, 1" X 4" X 32" (1 REQD).
NAIL TO STRUT W/3-6d NAILS AT
EACH JOINT.

SPACER ASSEMBLY A

FOR USE IN CARS HAVING AN IN-
SIDE WIDTH OF 9'-0" TO 9'-2".

SPACER ASSEMBLY B

FOR USE IN CARS HAVING AN IN-
SIDE WIDTH OF 8'-11" TO 9'-0".
ADDITIONAL AND/OR THICKER PIECES
MAY BE LAMINATED TO THE SIDE
PIECES IN ORDER TO FILL THE VOID.

DETAILS

VERTICAL PIECE, 2" X 6" X 54" (4 REQD).
NAIL TO CROSS BRACE AND HORIZONTAL PIECES
W/3-10d NAILS AT EACH JOINT.

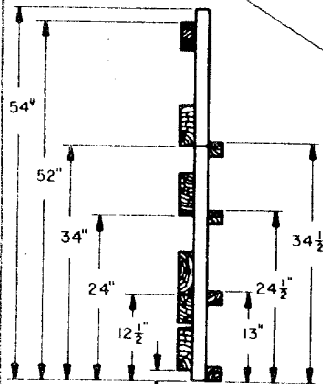
CLEAT, 2" X 4" X 20" (1 REQD). NAIL
TO TOP CROSS BRACE AND TOP HORI-
ZONTAL PIECE W/3-10d NAILS AT EACH
JOINT.

HORIZONTAL PIECE, 2" X 6" X 36"
(7 REQD).

STRUT LEDGER, 2" X 2" X 22" (8 REQD).
NAIL TO VERTICAL PIECES W/2-10d NAILS
AT EACH JOINT. NOTE: EACH OF THE
UPPER THREE (3) LEDGERS ON ONE GATE
OF A SET OF TWO SHOULD NOT BE NAIL-
ED ONTO THE GATE ASSEMBLY UNTIL THE
NEXT LOWER LEVEL OF STRUTS, PIECES
MARKED (6) ON PAGE 12 HAVE BEEN IN-
STALLED.

CROSS BRACE, 2" X 4" X CAR WIDTH
(2 REQD).

CLEAT, 2" X 4" X 15" (1 REQD).
NAIL TO TOP CROSS BRACE AND
TOP HORIZONTAL PIECE W/3-10d
NAILS AT EACH JOINT.

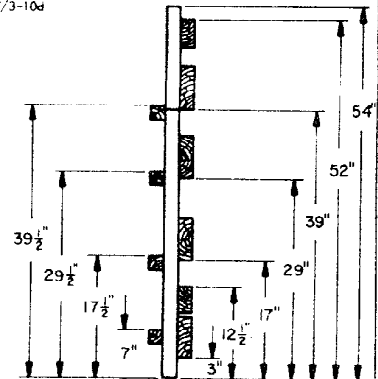


SIDE A

SEE NOTE (6).

HORIZONTAL PIECE, 2" X 6" X 60"
(1 REQD). TO HOLD SPACER,
PIECE MARKED (3) ON PAGE 12,
IN POSITION.

GATE ASSEMBLY C

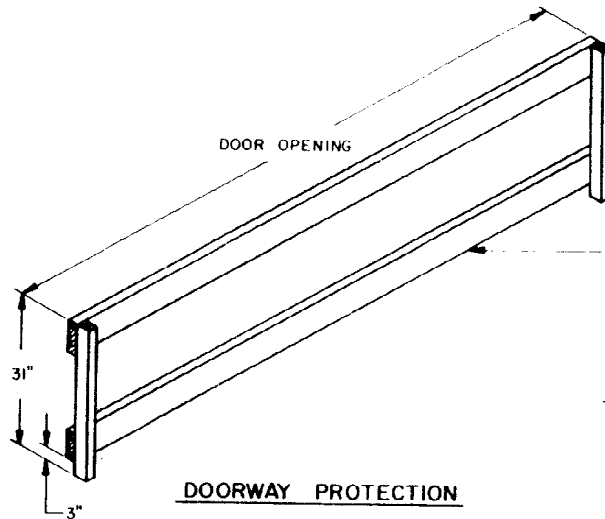


SIDE B

SEE NOTE (6).

NOTE (6):

WHEN "GATE ASSEMBLY C" IS USED
IN CARS HAVING PLUG DOORS THIS
DIMENSION WILL BE 8-1/4" FOR THE
THREE LOWER HORIZONTAL PIECES
AND THE BOTTOM CROSS BRACE.



DOORWAY PROTECTION

VERTICAL PIECE, 2" X 2" X HEIGHT TO
SUIT (2 REQD). NAIL TO DOOR POST
W/12d NAILS.

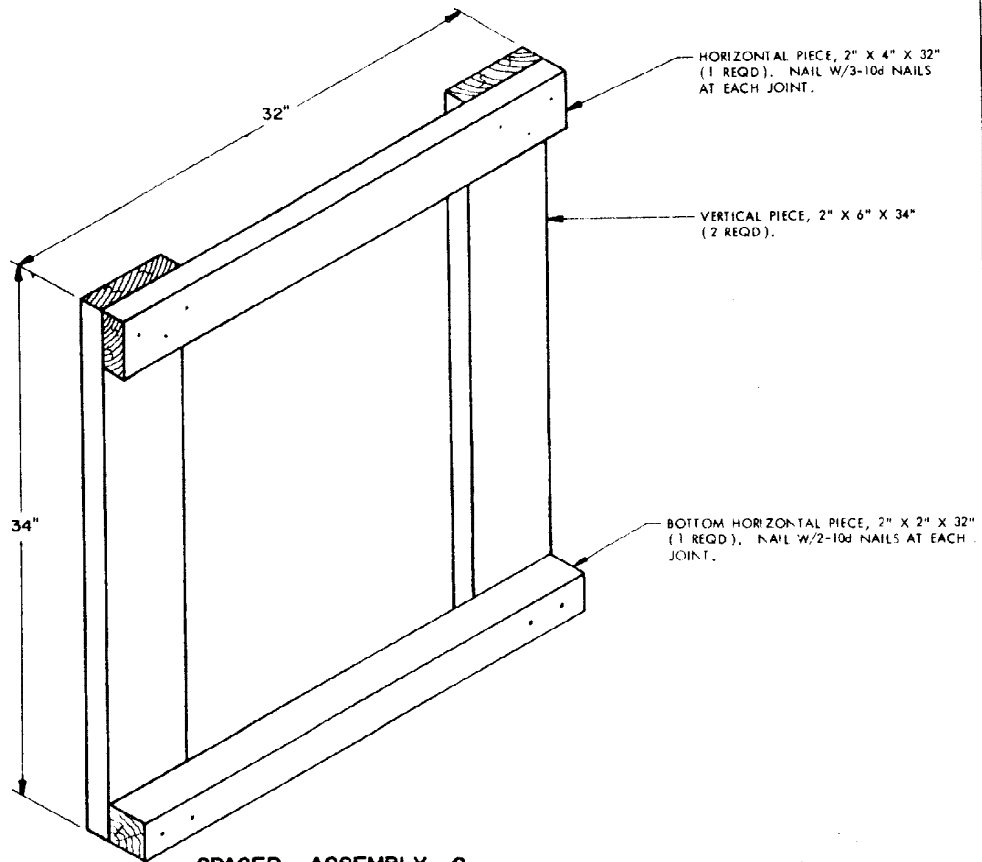
HORIZONTAL PIECE, 2" X 6" X DOORWAY OPENING
WIDTH (2 REQD). NAIL TO VERTICAL PIECES W/2-10d
NAILS AT EACH JOINT.

NOTE (7):

WHEN DOORWAY PROTECTION IS USED WITH
LOAD AS SHOWN ON PAGE 12, ON SAME SIDE
AS THE RISER (PIECE MARKED (2)) 31" HIGH
VERTICAL PIECE MUST BE CHANGED TO 36" HIGH
AND 3" DIMENSION FROM FLOOR TO BOTTOM
HORIZONTAL PIECE MUST BE CHANGED TO 8".

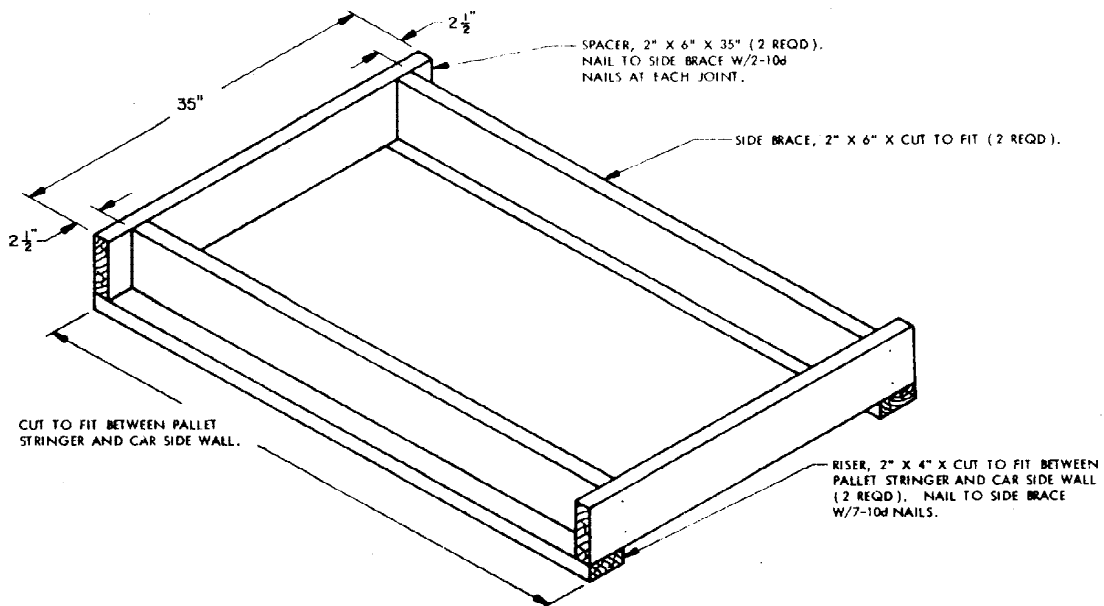
NOTE: DOORWAY PROTECTION DUNNAGE IS
NOT REQUIRED IF ALL OF THE DOORS IN A
CAR ARE OF THE PLUG TYPE. REFER TO PAGES
20 AND 21 FOR SPECIAL DOORWAY PROTECTION
PROVISIONS WHICH MUST BE IMPLEMENTED IF
THE CAR BEING LOADED HAS A "PLUG" DOOR
AND A PALLET UNIT EXTENDS INTO THE DOOR-
WAY AREA PAST A DOOR POST MORE THAN
FIFTEEN (15) INCHES.

DETAILS



SPACER ASSEMBLY C

THICKNESS OF VERTICAL PIECE MAY BE CHANGED TO FILL EXCESS SPACE.



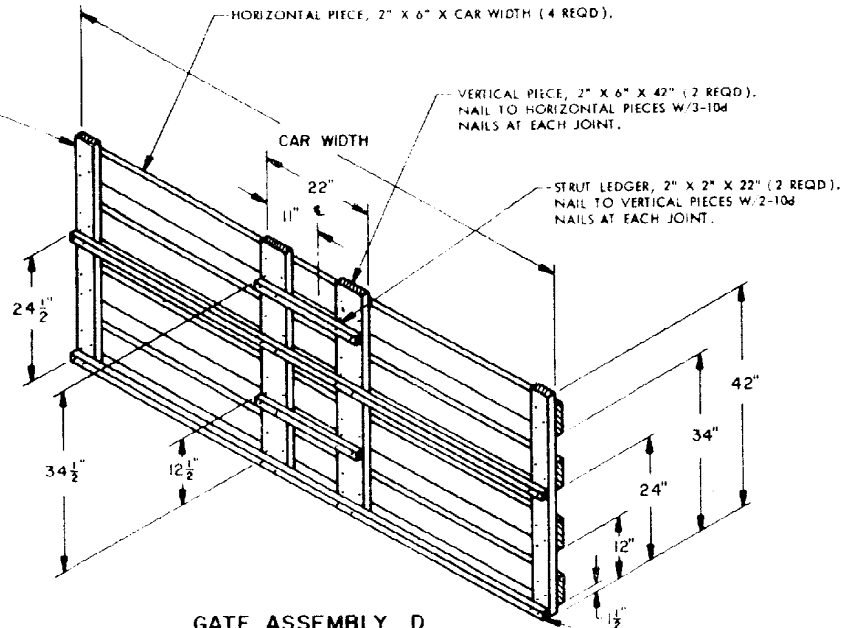
SIDE BLOCKING ASSEMBLY A

DETAILS

VERTICAL BRACE, 2" X 4" X 42" (2 REQD).
NAIL TO HORIZONTAL PIECES W/3-10d
NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2" X 6" X CAR WIDTH (4 REQD).

VERTICAL PIECE, 2" X 6" X 42" (2 REQD).
NAIL TO HORIZONTAL PIECES W/3-10d
NAILS AT EACH JOINT.

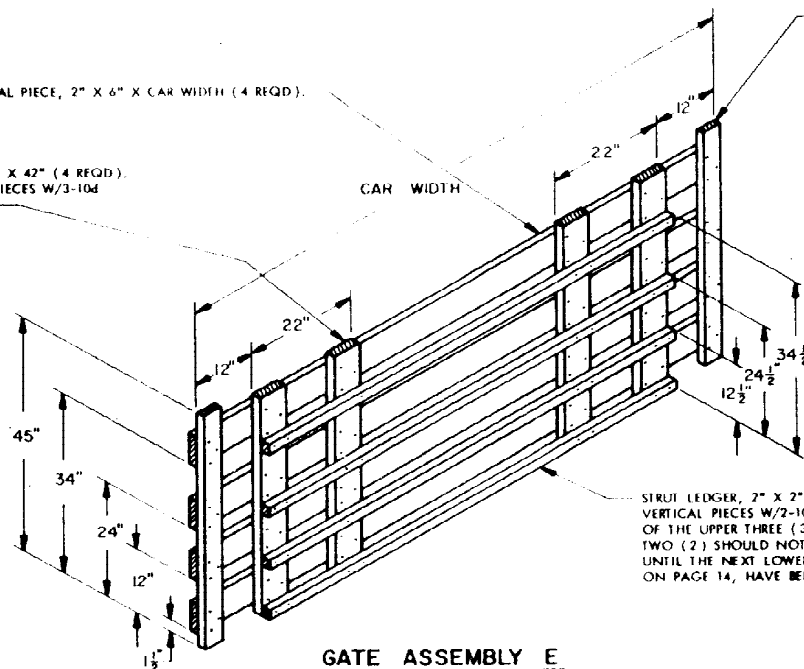


GATE ASSEMBLY D

STRUT LEDGER, 2" X 2" X CAR WIDTH
(2 REQD). NAIL TO VERTICAL PIECES
W/2-10d NAILS AT EACH JOINT.

HORIZONTAL PIECE, 2" X 6" X CAR WIDTH (4 REQD).

VERTICAL PIECE, 2" X 6" X 42" (4 REQD).
NAIL TO HORIZONTAL PIECES W/3-10d
NAILS AT EACH JOINT.



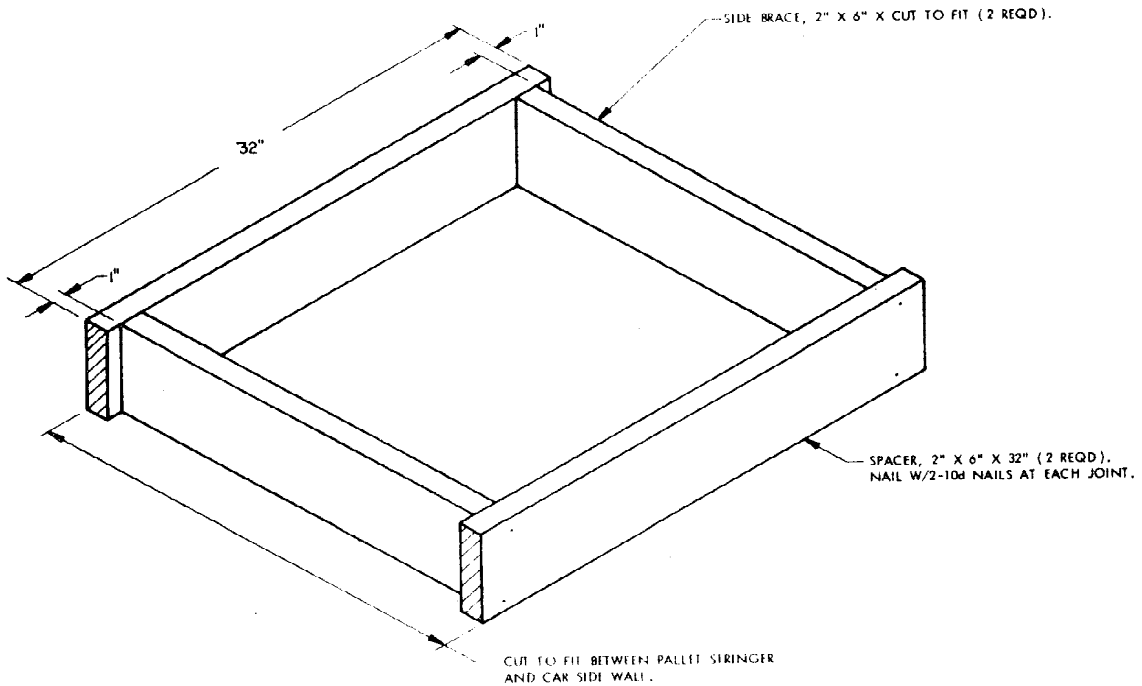
VERTICAL BRACE, 2" X 4" X 45"
(2 REQD). NAIL TO HORIZONTAL
PIECES W/3-10d NAILS AT EACH JOINT.

STRUT LEDGER, 2" X 2" X CUT TO FIT (4 REQD). NAIL TO
VERTICAL PIECES W/2-10d NAILS AT EACH JOINT. NOTE: EACH
OF THE UPPER THREE (3) LEDGERS ON ONE GATE OF A SET OF
TWO (2) SHOULD NOT BE NAILED ONTO THE GATE ASSEMBLY
UNTIL THE NEXT LOWER LEVEL OF STRUTS, PIECES MARKED ③
ON PAGE 14, HAVE BEEN INSTALLED.

GATE ASSEMBLY E

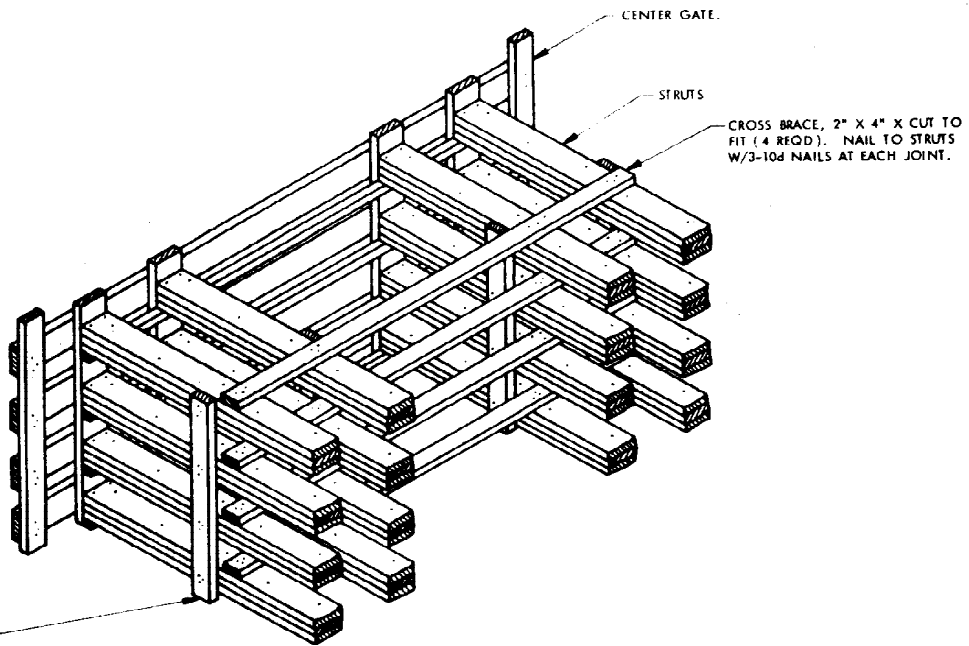
IF THE CAR BEING LOADED HAS A "PLUG" DOOR AND
A PALLET UNIT EXTENDS INTO THE DOORWAY AREA
PAST A DOOR POST MORE THAN FIFTEEN (15) INCHES,
DISREGARD THE GATE DESIGN SPECIFIED ABOVE. RE-
FER TO PAGE 20 FOR PROPER GATE SPECIFICATIONS.

DETAILS



SIDE BLOCKING ASSEMBLY C

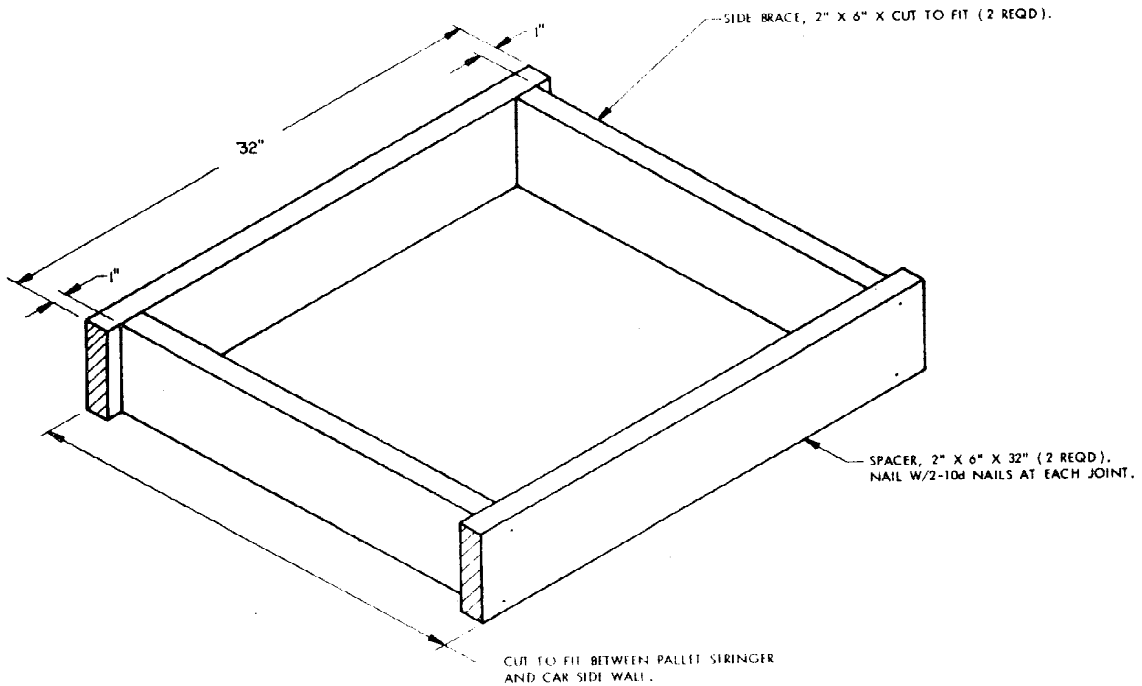
FOR USE WITH A ONE-HIGH LOAD POSITIONED IN THE CENTER OF THE CAR AS ON PAGE 10.



STRUT BRACING

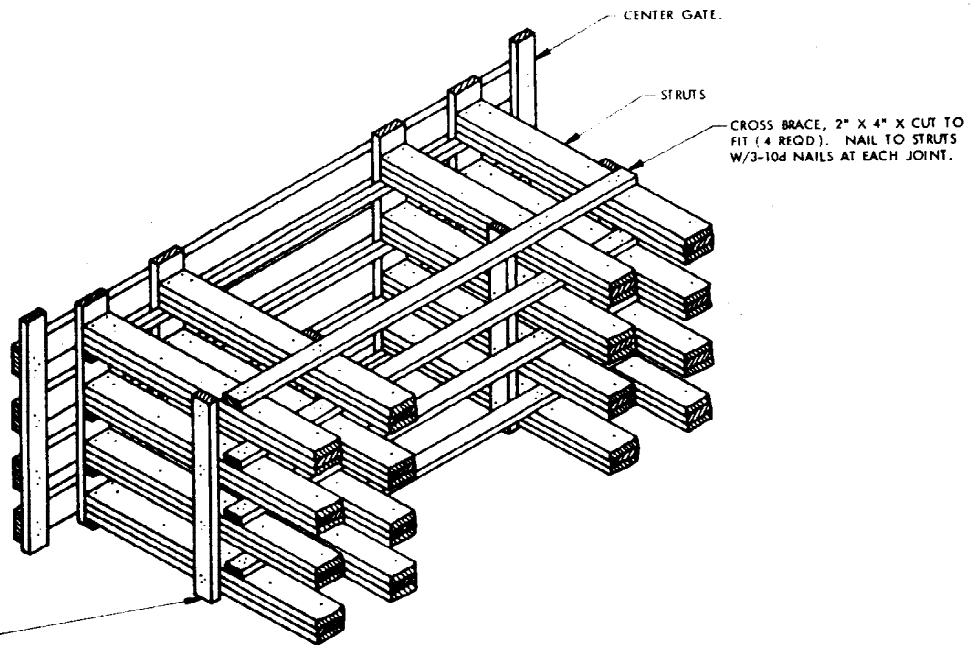
REQUIRED FOR STRUTS WHICH ARE LONGER THAN 72\".

DETAILS



SIDE BLOCKING ASSEMBLY C

FOR USE WITH A ONE-HIGH LOAD POSITIONED IN THE CENTER OF THE CAR AS ON PAGE 10.



STRUT BRACING

REQUIRED FOR STRUTS WHICH ARE LONGER THAN 72".

DETAILS