REV NO. 1 APPROVED BY
BUREAU OF EXPLOSIVES

SUPERVISOR, MILITARY & INVERMODAL SERVICES

DATE 6/5/80

LANCE

LOADING AND BRACING (CL & LCL) IN MECHANICAL BOX CARS^O OF CONTROL SURFACE, M30 PACKED IN THE M596 CONTAINER OR A PLYWOOD CONTAINER, AND THE M29 PACKED IN THE M597 CONTAINER (PALLETIZED AND UNPALLETIZED)

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THIS DRAWING, INCLUDING, REVISION NUMBER 1, SUPERSEDES DRAWING 19-48-5494-GM5A173, DATED JUNE 1971.

THE TERM, "MECHANICAL CARS", APPLIES TO BOX CARS HAVING MECHANICAL BRACING DEVICES OF VARIOUS DESIGN AND MANUFACTURE, USUALLY CONSISTING OF WALL MEMBERS, CROSS MEMBERS, AND DOORWAY MEMBERS.

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GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE LANCE CONTROL SURFACE M30 WHEN PACKED IN THE M596 CONTAINER OR IN A PLYWOOD CONTAINER, AND THE M29 WHEN PACKED IN THE M597 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE M596, M597, AND/OR THE PLYWOOD CONTAINER, WITH CONTENTS.
- C. FOR DETAILS OF THE M596 CONTAINER, SEE USAMICOM DRAWING NO. 10245730 AND "CONTAINER" DETAIL ON PAGE 4 OF THIS DRAWING.

CONTAINER DIMENSIONS ---- 56" LONG BY 27-3/4" WIDE BY 6-3/4" HIGH. GROSS WEIGHT ----- 97 POUNDS (APPROX), TARE WEIGHT ------ 65 POUNDS (APPROX), CUBE -------- 6.1 CUBIC FEET.

D. FOR DETAILS OF THE M597 CONTAINER, SEE USAMICOM DRAWING NO. 10245740 AND "CONTAINER" DETAIL ON PAGE 4 OF THIS DRAWING.

CONTAINER DIMENSIONS ---- 69-1/2" LONG BY 27-3/4" WIDE BY 6-3/4" HIGH. GROSS WEIGHT ------ 117 POUNDS (APPROX).

TARE WEIGHT ------ 77 POUNDS (APPROX).

CUBE ------ 7.5 CUBIC FEET.

E. FOR DETAILS OF THE PLYWOOD CONTAINER, SEE USAMICOM DRAWING NO. 10166845 AND "CONTAINER" DETAIL ON PAGE 4 OF THIS DRAWING.

F. FOR DETAILS OF THE M596 CONTAINER PALLET UNIT, SEE US ARMY DARCOM DRAWING NO. 19-48-5236-GM20LC1 AND THE "PALLETIZED UNIT" DETAIL ON PAGE 5 OF THIS DRAWING.

G. FOR DETAILS OF THE M597 CONTAINER PALLET UNIT, SEE US ARMY DARCOM DRAWING NO. 19-48-5236-GM20LC1 AND THE "PALLETIZED UNIT" DETAIL ON PAGE 5 OF THIS DRAWING.

H. FOR DETAILS OF THE PLYWOOD CONTAINER PALLET UNIT, SEE US ARMY DARCOM DRAWING NO. 19-48-5236-GM20LC1 AND THE "PALLETIZED UNIT" DETAIL ON PAGE 5 OF THIS DRAWING.

PALLET UNIT DIMENSIONS ---- 62" LONG BY 26" WIDE BY 34" HIGH.
GROSS WEIGHT ------- 481 POUNDS (APPROX).
CUBE ------ 31.7 CUBIC FEET.

- J. THE DEPICTED OUTLOADING PROCEDURES SPECIFIED ARE FOR 50'-6" LONG BY 8'-11" WIDE BOX CARS WHICH ARE EQUIPPED WITH MECHANICAL BRACING DEVICES, AND THE PROCEDURES 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. CAUTION: BOX CARS WHICH ARE EQUIPPED WITH MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED. NARROWER OR WIDER CARS CAN BE USED.
 - 1. A CROSS MEMBER, WHEN USED AS SPECIFIED BY ANY ONE OF THE OUTLOADING METHODS CONTAINED IN THIS DRAWING, WILL NOT BE RELIED UPON TO RETAIN MORE LADING WEIGHT ON EITHER SIDE THAN AS SHOWN FOR THE SPECIFIC OUTLOADING METHOD BEING USED, 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 ENDS ATTACHED AS NEARLY AS POSSIBLE IN MATED POSITIONS (AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM THE END OF CAR). (CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER -----: SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.

PLYWOOD ----: GROUP B OR C, GRADE ** C-D (EXTERIOR); FED SPEC NN-P-530.

NAILS ------: FED SPEC FF-N-105, COMMON.

WIRE -----:: ANNEALED, BLACK, FED SPEC QQ-W-461.

*IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER EXTERIOR GRADE MAY BE SUBSTITUTED.

(GENERAL NOTES CONTINUED)

- 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 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 OF THE CAR TO PROVIDE A "SQUARED" END. THESE CROSS MEMBERS SHOULD BE INSTALLED IN THE SAME QUANTITY AND AT THE SAME HEIGHTS AS THE CROSS MEMBERS USED THROUGHOUT THE LOAD AS LOAD BLOCKING MEMBERS.
- K. THE SELECTION OF RAIL CARS FOR THE TRANSPORT OF THE DESIGNATED ITEMS WILL BE IN ACCORDANCE WITH AR 55-355, CHAPTER 213, FOR EXPLOSIVES OR OTHER DANGEROUS ARTICLES, IN FULL. THE SELECTION OF RAIL CARS IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY CARS WHICH HAVE "SOUND" FLOORS AND ARE IN OTHERWISE PROPER CONDITION, IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENT, WILL BE SELECTED. WHEN SELECTING RAIL CARS, EVERY EFFORT SHOULD BE MADE TO OBTAIN BOX CARS THAT DO NOT HAVE BOWED END WALLS. CARS WITH BOWED END WALLS CAN BE USED, HOWEVER, IF AN END WALL IS BOWED OUTWARD MORE THAN TWO INCHES (2"), EITHER FROM SIDE-TO-SIDE OR FROM FLOOR-TO-ROOF, ADDITIONAL CROSS MEMBERS MUST BE POSITIONED AT THE "BOWED" END OF THE RAIL CAR. SEE GENERAL NOTE "J-3".
- L. CAUTION: UNPALLETIZED CONTAINERS WILL NOT BE STACKED MORE THAN SIX (6) HIGH.
- M. NOTICE: A SHIPMENT WILL BE POSITIONED IN THE RAIL CAR IN COMPLIANCE WITH THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR. THE APPROVED BLOCKING, BRACING AND STAYING METHODS FOR THE LOADS SPECIFIED MUST BE FOLLOWED. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE CAR TO BE LOADED, OR THE QUANTITY TO BE SHIPPED. FOR A LOAD QUANTITY OTHER THAN SPECIFIED, THE APPROVED METHODS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- N. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN BOX CARS WHICH ARE PARTIALLY LOADED WITH THE DESIGNATED ITEMS, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED.
- O. THE OUTLOADING PROCEDURES SPECIFIED CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE DRAWING TITLE.
- P. IF THE CAR BEING USED FOR A SHIPMENT IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDE WALL OF THE CAR, THAT GUIDANCE SHOULD BE APPLIED FOR THE NAILING OF THE APPLICABLE DUNNAGE PIECES. IF A NAIL SIZE IS NOT SPECIFIED, 30d NAILS SHOULD BE USED.
- Q. EXCEPT FOR PLYWOOD, DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- R. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OR A SIDE WALL OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- S. IN SOME INSTANCES CONTAINERS WILL ALREADY BE UNITIZED WHEN OFFERED FOR LOADING. THESE UNITS SHOULD BE INSPECTED AND, AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED OR TIGHTENED.
- T. NOTICE: WHEN POSITIONING UNITS IN A CAR THEY SHOULD BE PLACED TIGHTLY AGAINST A CAR SIDEWALL AND/OR AGAINST A LATERALLY ADJACENT UNIT, AS APPLICABLE, AND ARE TO BE PRESSED TIGHTLY TOGETER LENGTHWISE SO AS TO ACHIEVE A TIGHT LOAD. TO AID IN ACHIEVING TIGHTNESS LENGTHWISE IN A FULL LOAD, A LOAD-COMPRESSSING JACK MAY BE EMPLOYED IN THE CENTER AREA OF THE CAR TO MOVE THE UNITS INTO THEIR FINAL SHIPPING POSITION. A HYDRAULIC JACK IS RECOMMENDED FOR THIS OPERATION. CAUTION: WHEN USING A JACK TO COMPACT A LOAD, THE JACK MUST BE USED AGAINST STRONG POINTS OF THE UNITS, SUCH AS THE JOINTS BETWEEN THE LAYERS OF BOXES ON THE UNIT. PADDING, OF 2-INCH (2") THICK LUMBER OR ANY OTHER MATERIAL OF SIMILAR CONSISTENCY, SHOULD BE PLACED BETWEEN THE JACK AND THE LADING.
- U. THE USE OF AN OFFSET LOADING PATTERN WILL FACILITATE LOADING AND UNLOADING OPERATIONS IN THE DOORWAY AREA OF THE CAR. WHEN POSSIBLE TO DO SO, A FULL LOAD SHOULD BE BUILT USING AN OFFSET LOADING PATTERN, FOR INSTANCE, A LOAD CONSISTING OF AN EVEN NUMBER OF LOAD UNITS AND HAVING TWO MORE LOAD UNITS IN ONE END OF THE CAR THAN IN THE OPPOSITE END, OR A LOAD CONSISTING OF AN ODD NUMBER OF LOAD UNITS AND HAVING ONE OR THREE MORE LOAD UNITS IN ONE END THAN IN THE OTHER IS CONSIDERED TO BE AN OFFSET LOAD.

(CONTINUED ON PAGE 3)

(GENERAL NOTES CONTINUED)

- V. ALL THE LOADS SHOWN HEREIN ARE TYPICAL. BECAUSE OF THIS FACT, IT IS MOST LIKELY THAT THE ACTUAL QUANTITY TO BE SHIPPED WILL NOT BE DEPICTED IN ANY OF THE LOADING PROCEDURES HEREIN. A LOAD PLAN SHOULD BE DEVELOPED WHICH WILL BE THE MOST EFFICIENT AS TO THE AMOUNT OF DUNNAGE REQUIRED AND THE EASE OF LOADING FOR THE QUANTITY TO BE SHIPPED.
- W. 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.
- X. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.

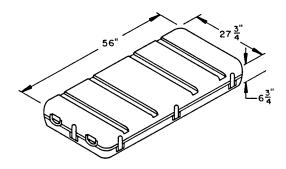
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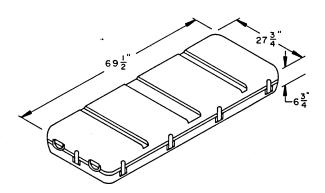
REVISIONS

REVISION NO. 1 DATED MAY 1980, CONSISTS OF:

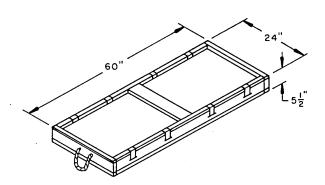
- 1. ADDED PROCEDURES FOR THE CONTROL SURFACE, M30, IN PLYWOOD CONTAINER.
- 2. DELETED "X" FROM ALL CONTROL SURFACE AND CONTAINER MODEL NUMBERS.
- 3. CHANGED DRAWING FILE NUMBER FROM GM5A173 TO GM5LC4.
- 4. UPDATED GENERAL NOTES, MATERIAL SPECIFICATIONS, AND DRAWING FORMAT.



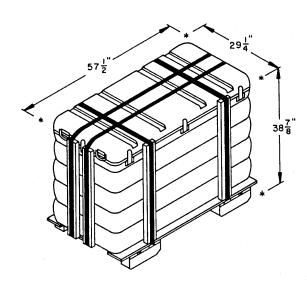
M596 CONTAINER



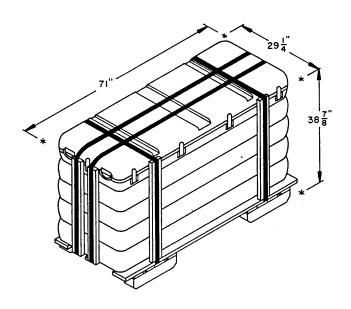
M597 CONTAINER



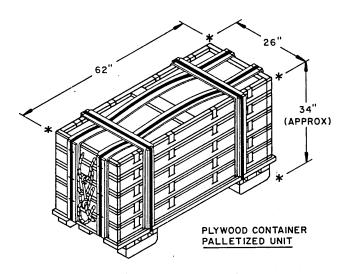
PLYWOOD CONTAINER



M596 CONTAINER PALLETIZED UNIT

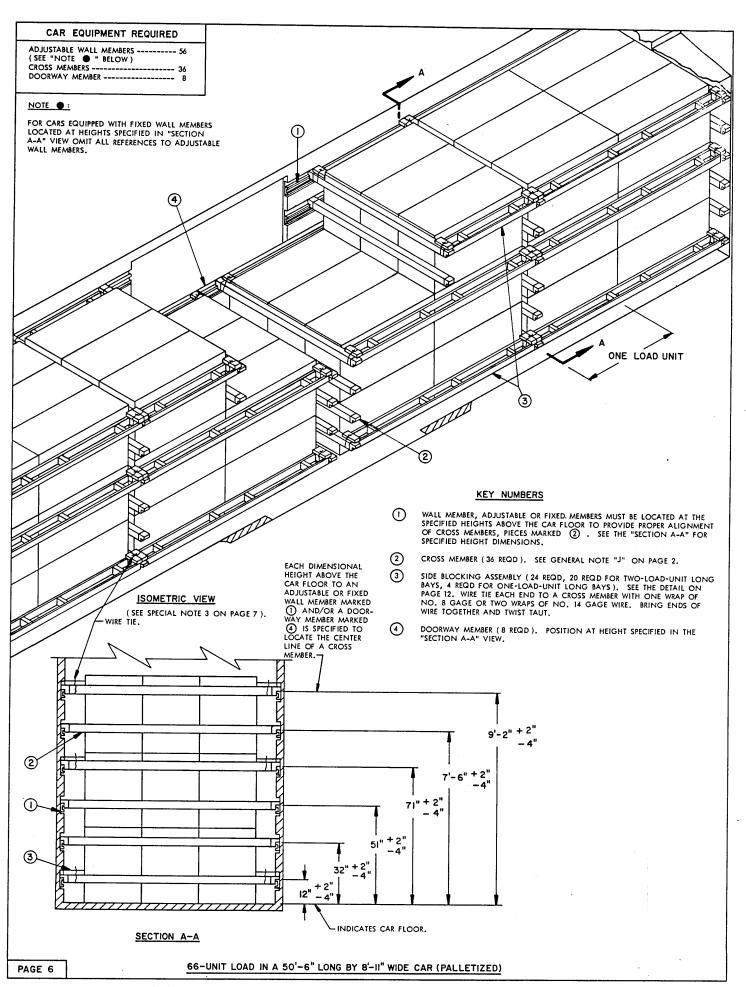


M597 CONTAINER PALLETIZED UNIT



PALLETIZED UNIT DETAILS

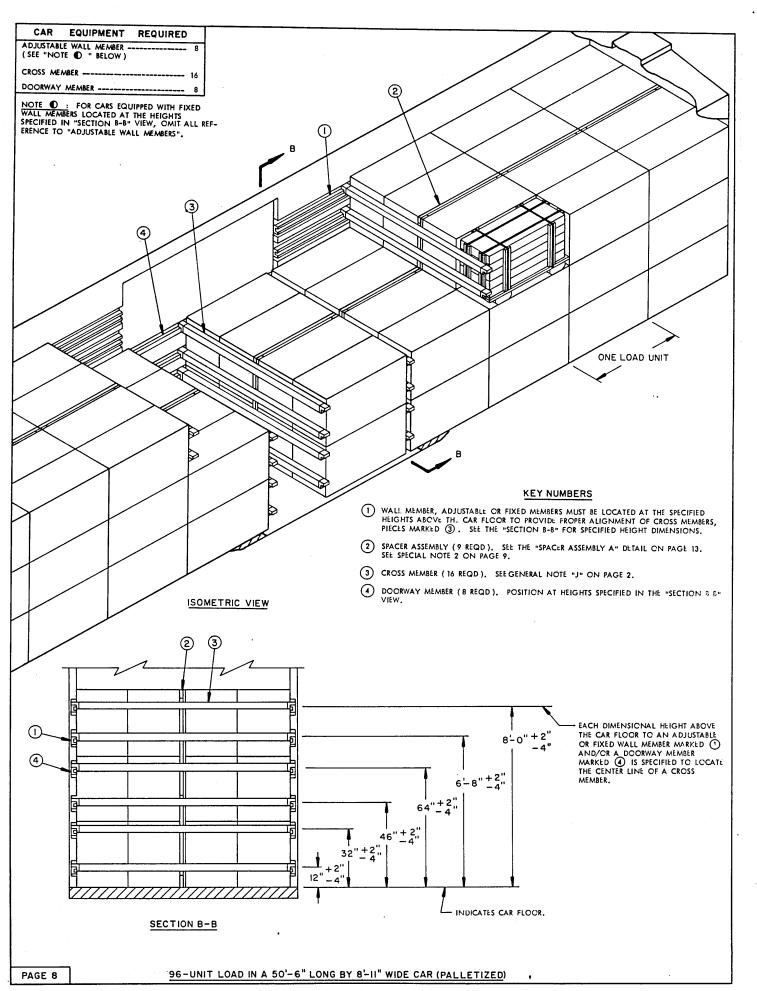
PAGE 5



- 1. A 50'-6" LONG BY 8'-11" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND WITH 10'-0" DOOR OPENINGS IS SHOWN. CARS WITH LARGER OR SMALLER DOORWAY OPENINGS MAY BE USED; HOWEVER, IT WILL BE DIFFICULT TO LOAD CARS THAT HAVE DOORWAYS THAT ARE LESS THAN 8'-0" WIDE.
- 2. A NARROWER OR WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE WIDTH OF THE "SIDE BLOCKING ASSEMBLY".
- 3. THE LOAD AS SHOWN IS FOR A SHIPMENT OF THE MS97 CONTAINER WHEN FALLETIZED. WHEN SHIPPING PALLETIZED UNITS OF THE M596 CONTAINERS, THE FOLLOWING ADJUSTMENTS WILL BE NECESSARY. CHANGE THE LENGTH OF THE "SIDE BLOCKING ASSEMBLY", THE NUMBER OF SIDE BLOCKING ASSEMBLIES TO BE USED, AND ADDITIONALLY, ONE MORE LOAD UNIT MAY BE PLACED IN THE CAR FOR A FULL LOAD.
- 4. TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, ONE OR MORE CONTAINERS MAY BE OMITTED FROM THE TOP LAYER OF THE LOAD. ADJUST THE LONGITUDINAL LOCATION OF THE CROSS MEMBERS RETAINING THE TOP LAYER. ALSO, IF THE CAR BEING USED CONTAINS TWELVE (12) DOORWAY MEMBERS, A FULL THIRD LAYER OF CONTAINERS MAY BE LOADED IN THE CAR.
- 5. A "UNIT SEPARATOR ASSEMBLY" AS SHOWN ON PAGE 12, MUST BE SUBSTITUTED IN PLACE OF EACH OMITTED CONTAINER.
- 6. BY APPLYING THE DEPICTED PROCEDURES, SIXTY (60) PALLET UNITS OF M596 CONTAINERS CAN BE SHIPPED IN A 40'-6" LONG CAR IF THE THRU DOOR OPENINGS ARE 9'-0" OR LESS IN WIDTH; FIFTY-FOUR (54) PALLET UNITS OF M597 CONTAINERS CAN BE SHIPPED IN A 40'-6" LONG CAR PROVIDING THE THRU DOOR OPENINGS ARE AT LEAST 9'-0" WIDE.
- 7. FOR SHIPMENT OF LESS-THAN-CAR-LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 10 AND 11.
- 8. WHEN LOADING THE PALLETIZED PLYWOOD CONTAINER, REFER TO THE APPLICABLE GUIDANCE ON PAGES 8 AND 9.

| BILL OF MATERIAL | | | |
|------------------|-------------|------------|--|
| LUMBER | LINEAR FEET | BOARD FEET | |
| 2" X 4" | 638 | 422 | |
| NAILS | NO. REQD | POUNDS | |
| 10d (3") | 736 | 11-1/4 | |

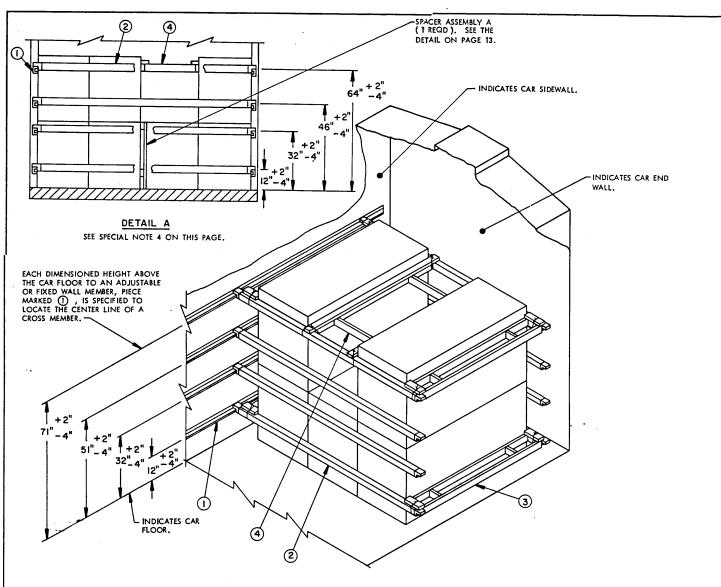
LOAD AS SHOWN



- A 50'-6" LONG BY 8'-11" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND WITH 10'-0" DOOR OPENINGS IS SHOWN. CARS WITH LARGER OR SMALLER DOORWAY OPENINGS MAY BE USED; HOWEVER, IT WILL BE DIFFICULT TO LOAD CARS THAT HAVE DOORWAYS THAT ARE LESS THAN 8'-0" WIDE.
- 2. A NARROWER OR WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE WIDTH OF THE "SPACER ASSEMBLY A".
- TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, ONE OR MORE PALLETIZED UNITS
 MAY BE OMITTED FROM THE TOP LAYER OF A LOAD BY USING THE PROCEDURES
 DEPICTED ON PAGE 10. A "UNIT SEPARATOR ASSEMBLY" AS SHOWN ON PAGE 12,
 MUST BE SUBSTITUTED IN PLACE OF EACH OMITTED PALLETIZED UNIT.
- 4. IF THE CAR BEING USED CONTAINS TWELVE (12) DOORWAY MEMBERS, A FULL THIRD LAYER OF PALLETIZED UNITS MAY BE LOADED IN THE CAR. THIS WOULD MAKE A TOTAL LOAD OF 108 PALLETIZED UNITS IN LIEU OF THE 96 PALLETIZED SHOWN IN THE LOAD ON PAGE 8.
- 5. FOR SHIPMENT OF LESS-THAN-CAR-LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 10 AND 11.
- 6. WHEN LOADING THE PALLETIZED M596 OR M597 CONTAINERS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 6 AND 7.

| | BILL OF MATERIAL | |
|--------------------|------------------|------------|
| LUMBER | LINEAR FEET | BOARD FEET |
| 1" X 4" 2" X 4" | 248 124 | 83 83 |
| NAILS | NO. REQD | POUNDS |
| 6d (2") | 312 | 3 |

LOAD AS SHOWN



(SEE SPECIAL NOTES)

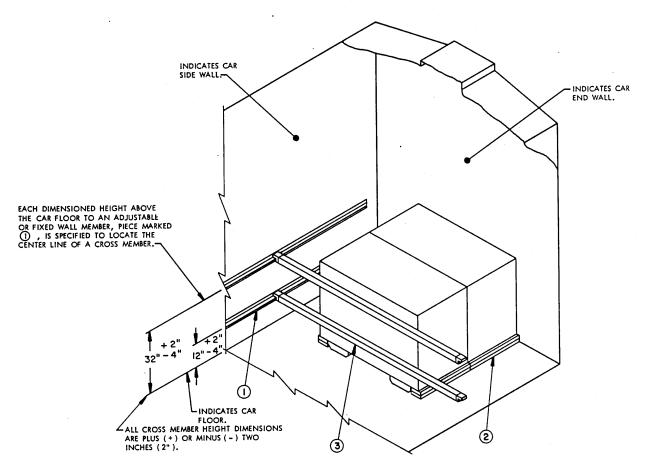
SPECIAL NOTES:

- AN 8'-11" WIDE BOX CAR IS SHOWN. A NARROWER OR WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE WIDTH OF THE SIDE BLOCKING.
- PALLETIZED UNITS OF THE M597 CONTAINER ARE SHOWN IN THE TYPICAL LCL (5-UNIT LOAD). FOR A SHIPMENT OF PALLETIZED M596 CONTAINERS, ADJUSTMENTS WILL HAVE TO BE MADE TO THE "SIDE BLOCKING ASSEMBLIES" AND "UNIT SEPARATOR ASSEMBLY".
- THE "UNIT SEPARATOR ASSEMBLY" IS SHOWN IN THE LOAD VIEW ONLY TO DEPICT A TYPICAL INSTALLATION; SIX (6) UNITS CAN BE LOADED IN ONE TWO-LAYER BAY.
- 4. WHEN LOADING THE PALLETIZED PLYWOOD CONTAINERS SEE "DETAIL A"
 ON THIS PAGE. A TYPICAL LOAD OF SEVEN (7) PLYWOOD CONTAINERS
 IS SHOWN. EIGHT (8) CROSS MEMBERS ARE REQUIRED (FOUR AT EACH
 END OF THE LADING). NOTE: IF LOADING FOUR OR EIGHT PALLETIZED
 UNITS THEY MAY BE POSITIONED AGAINST THE CAR END WALL AS SHOWN
 IN THE LOAD ON PAGE 8.
- 5. FOR AN ALTERNATIVE METHOD, SEE THE LOAD ON PAGE 11.

KEY NUMBERS

- WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT THE SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE FOR ALIGNMENT OF CROSS MEMBERS MARKED ②.
- 2 CROSS MEMBER (8 REQD). SEE GENERAL NOTE "J" ON PAGE 2.
- 3) SIDE BLOCKING ASSEMBLY (4 REQD), SEE DETAIL ON PAGE 12. WIRE TIE EACH END TO A CROSS MEMBER WITH ONE WRAP OF NO. 8 GAGE WIRE OR TWO WRAPS OF NO. 14 GAGE WIRE, BRING ENDS OF WIRE TOGETHER AND TWIST TAUT.
- (4) UNIT SEPARATOR ASSEMBLY (1 REQD), SEE DETAIL ON PAGE 12. WIRE TIE EACH CORNER OF AN ASSEMBLY TO A CROSS MEMBER AS SHOWN WITH ONE WRAP OF NO. 8 GAGE WIRE OR TWO WRAPS OF NO. 14 GAGE WIRE. BRING ENDS OF WIRE TOGETHER AND TWIST TAUT.

TYPICAL LCL (5-UNIT LOAD) IN AN 8'-II" WIDE CAR (PALLETIZED)



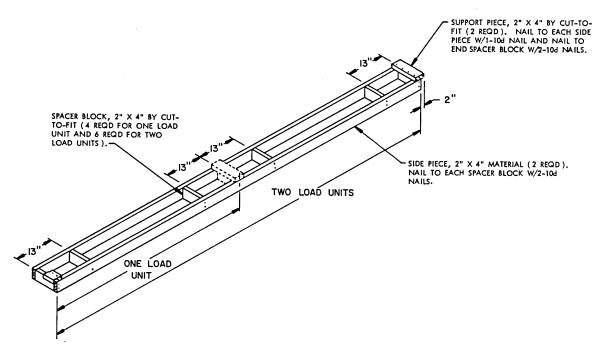
(SEE SPECIAL NOTES)

SPECIAL NOTES:

- I. AN 8'-11" WIDE BOX CAR IS SHOWN. A NARROWER OR WIDER CAR CAN BE USED.
- THE UNITS HAVE BEEN POSITIONED CROSS WISE IN THE BOX CAR TO PROVIDE FOR A MORE STABLE LOAD.
- PALLETIZED UNITS OF THE M596 CONTAINER ARE SHOWN IN THE TYPICAL LCL (2-UNIT LOAD). THE SAME BLOCKING AND BRACING PROCEDURES MAY BE USED FOR A SHIPMENT OF PALLETIZED M596 CONTAINERS OR PALLETIZED PLYWOOD CONTAINERS.
- 4. FOR AN ALTERNATIVE METHOD, SEE THE LOAD ON PAGE 10.

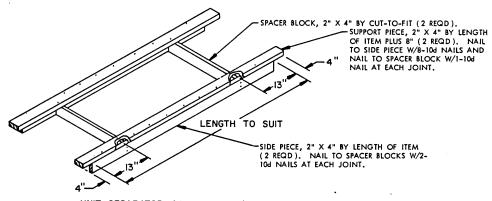
KEY NUMBERS

- WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT THE SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE FOR ALIGNMENT OF CROSS MEMBERS MARKED ③.
- SIDE BLOCKING, 2" X 6" X 29" (DOUBLED) (4 REQD). PRE-POSITION SO THAT THE BLOCKING CONTACTS SKIDS OF UNIT. NAIL FIRST PIECE TO CAR FLOOR W/5-16d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.
- 3 CROSS MEMBER (2 REQD). SEE GENERAL NOTE "J" ON PAGE 2.



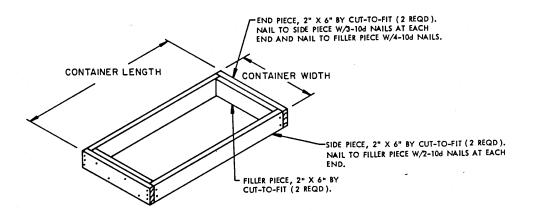
SIDE BLOCKING ASSEMBLY

THIS ASSEMBLY SHOULD BE OF A WIDTH THAT WILL PROVIDE FOR AN EASY-TO-FIT INSTALLATION, BUT NOT MORE THAN ONE-HALF INCH (1/2") OF UNBLOCKED SPACE IS PERMITTED AT EITHER SIDE OF THE LOAD, A TOTAL OF ONE INCH (1"). THIS ASSEMBLY IS APPLICABLE FOR USE WITH LOADS OF PALLETIZED M596 OR M597 CONTAINERS AS SHOWN IN THE LOADS ON PAGES 6 AND 10.



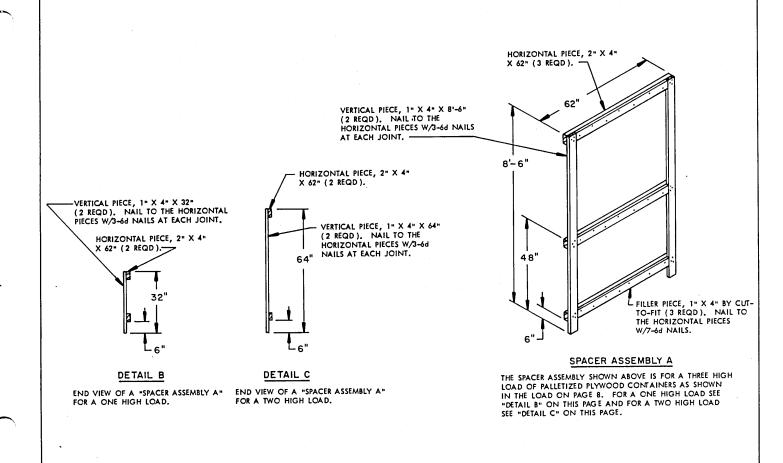
UNIT SEPARATOR ASSEMBLY

THIS ASSEMBLY SHOULD BE OF A WIDTH THAT WILL PROVIDE FOR A TIGHT FIT BETWEEN LATERALLY ADJACENT UNITS. THIS ASSEMBLY IS TO BE USED WHEN ONE PALLETIZED UNIT OF M596, M597, OR PLYWOOD CONTAINERS IS OMITTED FROM A LOAD, AS SHOWN IN THE LOAD ON PAGE 10.



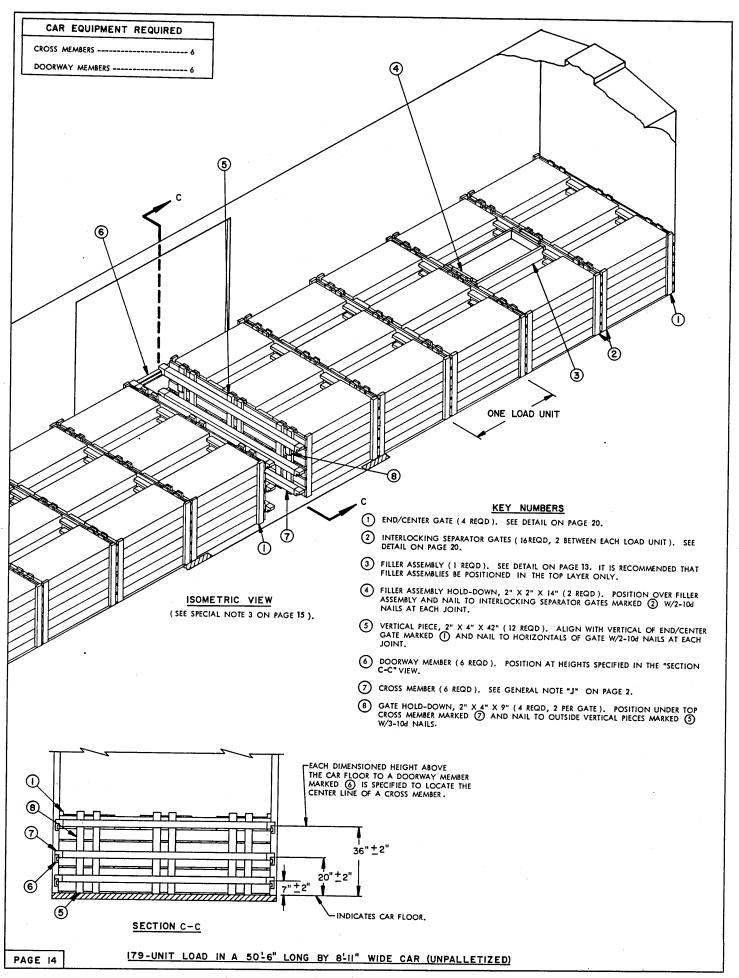
FILLER ASSEMBLY

THIS ASSEMBLY SHOULD BE OF A WIDTH AND LENGTH SO THAT THE VOID OF THE OMITTED CONTAINER IS FULLY BLOCKED. THIS ASSEMBLY IS APPLICABLE FOR USE WITH UNPALLETIZED LOADS OF M596, M597, OR PLYWOOD CONTAINERS AS SHOWN IN THE LOAD ON PAGE 14. POSITION IN THE TOP LAYER ONLY.



DETAILS

PAGE 13

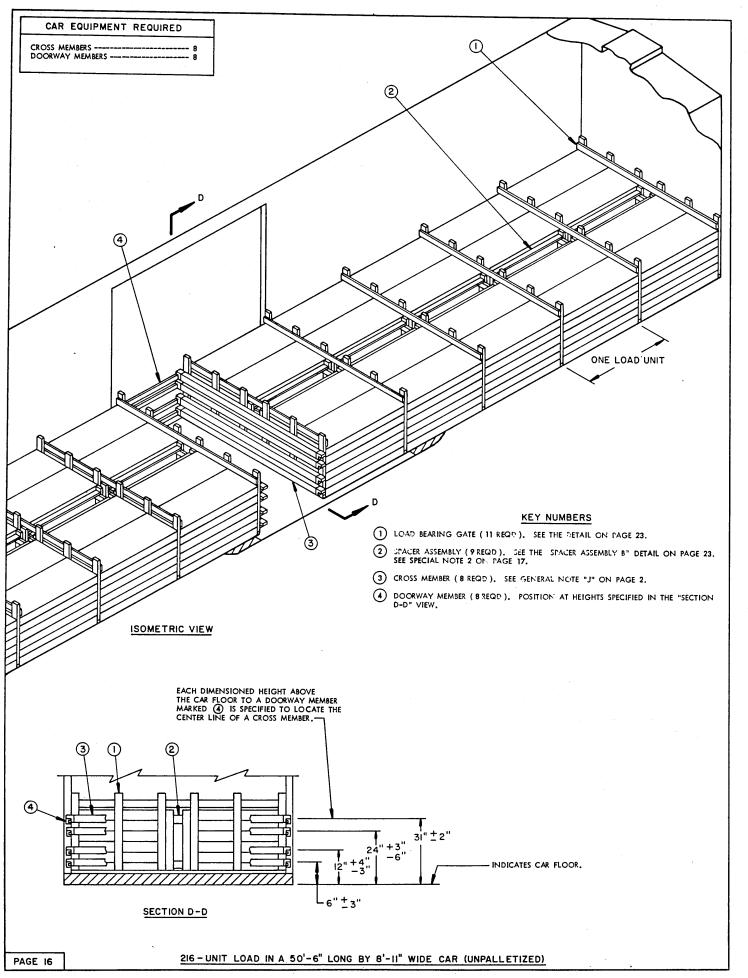


- A 50'-6" LONG BY 8'-11" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND WITH 10'-0" DOOR OPENINGS IS SHOWN. CARS WITH LARGER OR SMALLER DOORWAY OPENINGS MAY BE USED.
- 2. A NARROWER OR WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE LENGTH OF THE SPACER BLOCK ON THE GATES.
- 3. THE LOAD AS SHOWN IS FOR A SHIPMENT OF THE M596 CONTAINER. WHEN SHIP-PING THE M597 CONTAINER, EIGHT (8) LOAD UNITS MAY BE POSITIONED IN THE CAR AND SIX (6) SETS OF INTERLOCKING SEPARATOR GATES WILL BE REQUIRED.
- 4. TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, ONE OR MORE LAYERS MAY BE OMITTED FROM THE TOP OF THE LOAD, OR A "FILLER ASSEMBLY" AS SHOWN IN THE DEPICTED LOAD CAN BE USED FOR EACH OMITTED CONTAINER.
- 5. WHEN OMITTING A LAYER FROM THE LOAD AND/OR A LOAD UNIT , REDUCE THE HEIGHT OF THE GATES ACCORDINGLY AND ADJUST THE LONGITUDINAL LOCATION OF THE CROSS MEMBERS RETAINING THE TOP LAYER.
- 6. CAUTION: UNPALLETIZED CONTAINERS WILL NOT BE STACKED MORE THAN SIX (6) HIGH.
- BY APPLYING THE DEPICTED PROCEDURES, ONE-HUNDRED AND FORTY-FOUR (144)
 M596 CONTAINERS CAN BE SHIPPED IN A 40'-6" LONG CAR; ONE-HUNDRED AND EIGHT (108) M597 CONTAINERS CAN BE SHIPPED IN A 40'-6" LONG CAR.
- 8. FOR SHIPMENT OF LESS-THAN-CAR-LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 18 AND 19.
- 9. WHEN LOADING THE PALLETIZED PLYWOOD CONTAINER, REFER TO THE APPLICABLE GUIDANCE ON PAGES 16 AND 17.

| BILL OF MATERIAL | | | |
|--|-------------------------|-------------------------|--|
| LUMBER | LINEAR FEET | BOARD FEET | |
| 1" X 4" 1" X 6" 2" X 4" 2" X 6" | 420 642 437 18 | 138 321 289 18 | |
| NAILS | NO. REQD | POUNDS | |
| 6d (2") 10d (3") | 1,306 892 | 7-3/4 13-3/4 | |

LOAD AS SHOWN

| ITEM | QUANTITY | WEIGH | (APPROX |
|---------------|--------------|-----------------|------------|
| PALLET UNIT (| M596) - 179 | 17,363 1,554 | LBS LBS |
| TOTAL WEI | GHT | 18,917 | LBS |

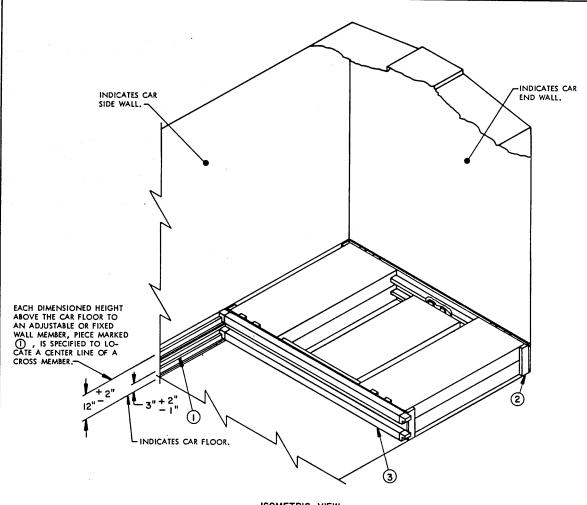


- A 50"-6" LONG BY 8"-11" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND WITH 10"-0" DOOR OPENINGS IS SHOWN. CARS WITH LARGER OR SMALLER DOORWAY OPENINGS MAY BE USED.
- 2. A NARROWER OR WIDER CAR CAN BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE WIDTH OF THE SPACER ASSEMBLY B" ON PAGE 23.
- TO SATISFY A LESS-THAN-FULL-LOAD QUANTITY, ONE OR MORE LAYERS MAY BE OMITTED FROM THE TOP OF THE LOAD, OR A "FILLER ASSEMBLY" AS SHOWN IN THE LOAD ON PAGE 14.
- 4. WHEN OMITTING A LAYER FROM THE LOAD AND/OR A LOAD UNIT, REDUCE THE HEIGHT OF THE LOAD BEARING GATES ACCORDINGLY AND ADJUST THE LONG-ITUDINAL LOCATION OF THE CROSS MEMBERS RETAINING THE TOP LAYER.
- 5. CAUTION: UNPALLETIZED CONTAINERS WILL NOT BE STACKED MORE THAN SIX (6) HIGH.
- 6. FOR SHIPMENT OF LESS-THAN-CAR-LOADS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 18 AND 19.
- 7. WHEN LOADING THE M596 OR M597 CONTAINERS, REFER TO THE APPLICABLE GUIDANCE ON PAGES 14 AND 15.

| | BILL OF MATERIAL | |
|-------------------------------|-------------------|-----------------|
| LUMBER | LINEAR FEET | BOARD FEET |
| 1" X 4" 2" X 2" 2" X 4" | 272 101 355 | 91 34 237 |
| NAILS | NO. REQD | POUNDS |
| 6d (2") 10d (3") | 342 348 | 2 5-1/2 |

LOAD AS SHOWN

| ITEM | QUANTITY | WEIGHT (APPROX) |
|--------------|-----------|-----------------------|
| PLYWOOD CONT | AINER 216 | 18,144 LBS 732 LBS |
| TOTAL | WEIGHT | 18,876 LBS |



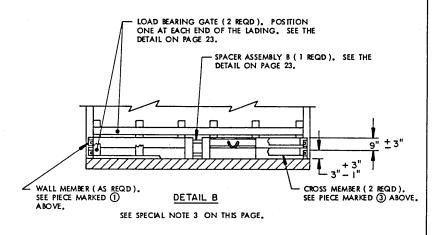
(SEE SPECIAL NOTES)

SPECIAL NOTES:

- AN 8'-11" WIDE BOX CAR IS SHOWN. A WIDER OR NARROWER CAR CAN BE USED BY ADJUSTING THE LENGTH OF THE BEARING PIECES ON THE GATES.
- THE M597 CONTAINER IS SHOWN IN THIS TYPICAL LCL (5-UNIT LOAD).
 THE SAME BLOCKING PROCEDURES MAY BE USED WHEN SHIPPING THE M596
 CONTAINER.
- 3. WHEN LOADING THE PLYWOOD CONTAINERS, SEE "DETAIL B" ON THIS PAGE. A TYPICAL LOAD OF EIGHT (8) PLYWOOD CONTAINERS IS SHOWN, TWO CROSS MEMBERS ARE REQUIRED. "FILLER ASSEMBLIES" AS SHOWN IN THE LOAD ON PAGE 14 MAY BE USED IN THE TOP LAYER ONLY.
- 4. FOR AN ALTERNATIVE METHOD, SEE THE LOAD ON PAGE 19.

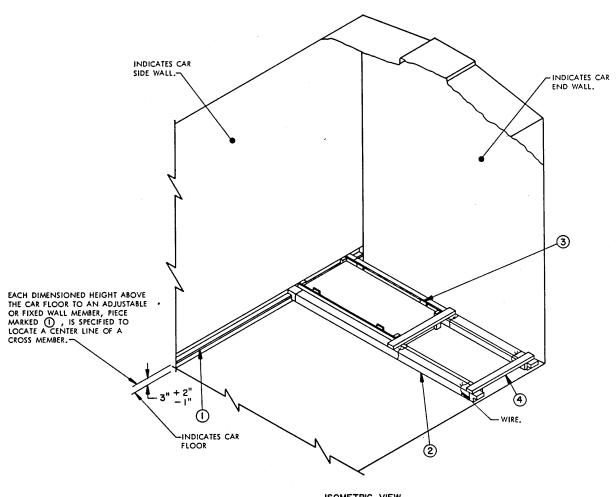
KEY NUMBERS

- WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE FOR ALIGNMENT OF CROSS MEMBERS MARKED ③.
- 2 GATE (2 REQD). SEE THE "GATE A" DETAIL ON PAGE 21.
- 3 CROSS MEMBER (2 REQD). SEE GENERAL NOTE "J" ON PAGE 2.



TYPICAL LCL (5-UNIT LOAD) IN AN 8-II" WIDE CAR (UNPALLETIZED)

PAGE 18



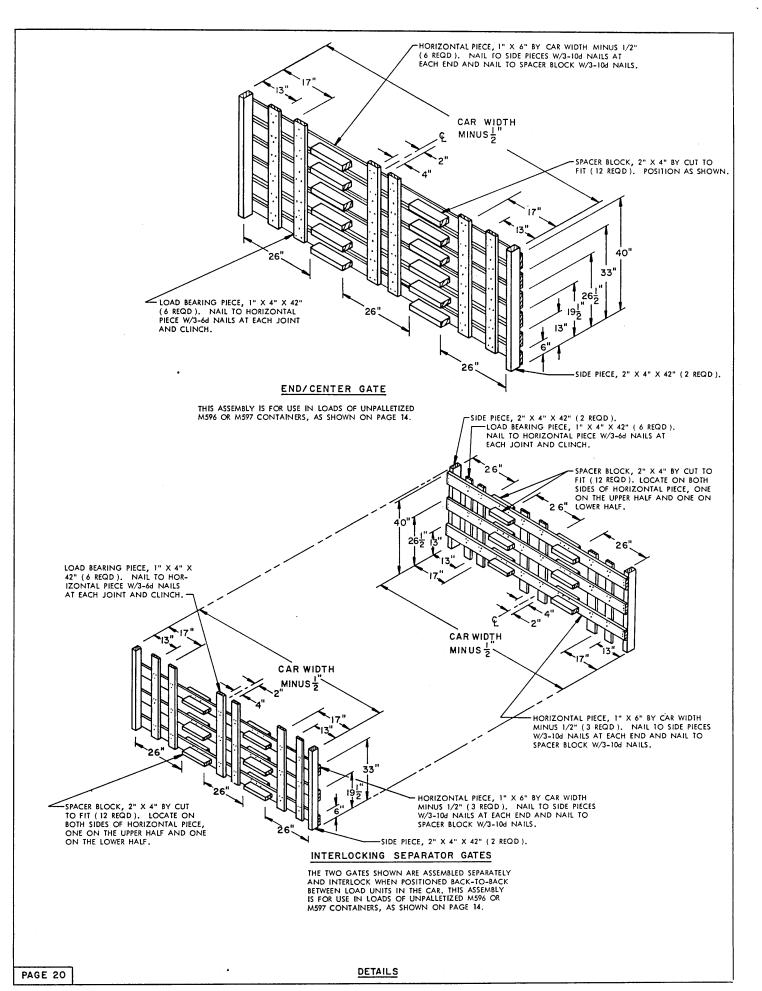
(SEE SPECIAL NOTES)

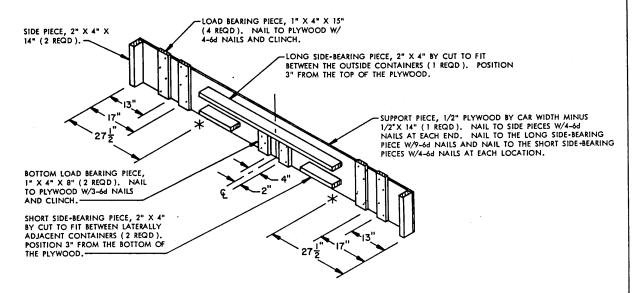
SPECIAL NOTES:

- AN 8'-11" WIDE BOX CAR IS SHOWN. A WIDER OR NARROWER CAR CAN BE USED BY ADJUSTING THE LENGTH OF THE BOTTOM PIECE OF THE "SIDE FILL ASSEMBLY".
- THE M596 CONTAINER IS SHOWN IN THIS TYPICAL LCL (1-UNIT LOAD).
 IF A SHIPMENT OF THE M597 CONTAINER IS DESIRED, ADJUSTMENTS WILL
 HAVE TO BE MADE TO "GATE B" AND THE SIDE FILL ASSEMBLY.
- 3. THIS METHOD IS ALSO APPLICABLE TO THE PLYWOOD CONTAINER.

KEY NUMBERS

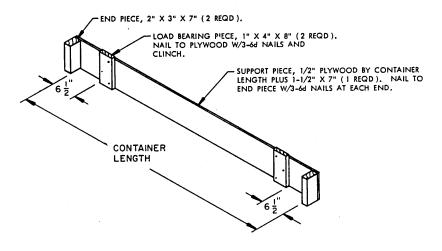
- (1) WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE FOR ALIGNMENT OF CROSS MEMBERS MARKED (2).
- 2 CROSS MEMBER (2 REQD). SEE GENERAL NOTE "J" ON PAGE 2.
- 3 GATE (2 REQD). SEE THE "GATE B" DETAIL ON PAGE 21.
- (4) SIDE FILL ASSEMBLY (1 REQD), SEE DETAIL ON PAGE 22. WIRE TIE EACH CORNER OF AN ASSEMBLY TO A CROSS MEMBER AS SHOWN WITH ONE WRAP OF NO. 8 GAGE WIRE OR TWO WRAPS OF NO. 14 GAGE WIRE, BRING ENDS OF WIRE TOGETHER AND TWIST TAUT.





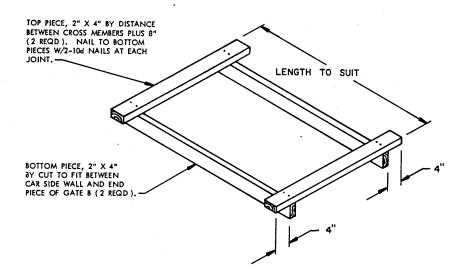
GATE A

THIS ASSEMBLY IS FOR USE IN LCL LOADS OF UNPALLETIZED M596 OR M597 CONTAINERS, AS SHOWN ON PAGE 18.



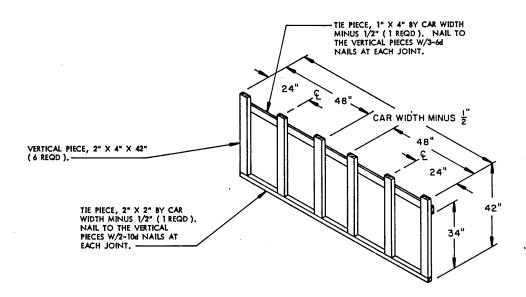
GATE B

THIS ASSEMBLY IS FOR USE IN LCL LOADS OF UNPALLETIZED M596, M597, OR PLYWOOD CONTAINERS, AS SHOWN ON PAGE 19.



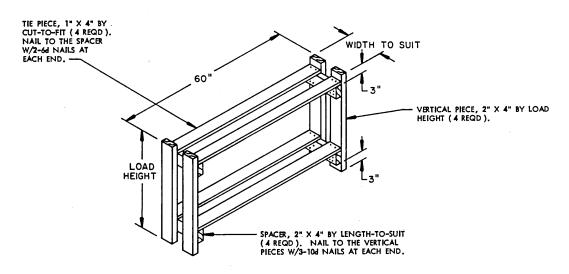
SIDE FILL ASSEMBLY

THIS ASSEMBLY IS FOR USE IN LOADS OF UNPALLETIZED M596, M597, OR PLYWOOD CONTAINERS, AS SHOWN ON PAGE 19.



LOAD BEARING GATE

THIS ASSEMBLY IS TO BE USED IN LOADS OF UNPALLETIZED PLYWOOD CONTAINERS, AS SHOWN IN THE LOAD ON PAGE 16. THE VERTICAL PIECES WILL PROVIDE SOLID CONTACT BETWEEN THE PLYWOOD CONTAINERS AND ALSO ALLOW SPACE FOR THE ROPE HANDLES ON EACH END OF THE PLYWOOD CONTAINER.



SPACER ASSEMBLY B

THIS ASSEMBLY IS TO BE USED IN LOADS OF UNPALLETIZED PLYWOOD CONTAINERS, AS SHOWN IN THE LOAD ON PAGE 16. NOTE: IF THE LOAD IS ONLY TWO CONTAINERS HIGH, USE 2" X 2" IN LIEU OF 2" X 4" FOR THE SPACER PIECES.

PAGE 24

PROJECT GM 625-70