. APPROVED BY
BUREAU OF EXPLOSIVES
A. F. Grammek
SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE 10/31/74

LOADING AND BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS OF THE M56 MINE DISPERSING SYSTEM RELOAD KIT, PACKED IN THE XM602 SHIPPING CONTAINER

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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. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE M56 MINE DISPERSING SYSTEM, RELOAD KIT, PACKED IN THE XM602 SHIPPING CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE XM602 SHIPPING CONTAINER WITH CONTENTS.
- C. FOR DETAILS OF THE XM602 SHIPPING CONTAINER SEE DRAWING NO. 9272787.

 CONTAINER DIMENSIONS -- 37-1/2" LONG BY 32-1/4" WIDE BY 18-1/4" HIGH.

 GROSS WEIGHT------775 POUNDS (APPROX).
- D. THE OUTLOADING PROCEDURES SPECIFIED HEREIN 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 ITEM DESIGNATED WITHIN THE TITLE OF THIS DOCUMENT.
- E. SELECTION OF A VEHICLE TO BE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 213, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. THE LOADS AS SHOWN ARE BASED ON 40'-0" LONG CONVENTIONAL TYPE VAN TRAILERS OF ANY WIDTH, HAVING WOOD, OR WOOD AND METAL, OR METAL FLOORS, AND THEY ARE LIMITED TO HIGHWAY MOVEMENTS ONLY. SEE GENERAL NOTE "Q".
- G. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.
- H. NOTICE: A SHIPMENT WILL BE POSITIONED IN THE TRAILER CONSISTENT WITH STATE WEIGHT LAWS. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED AND COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED MAY BE USED, HOWEVER, THE APPROVED METHODS SHOWN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- J. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, 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.
- K. CAUTION: DO NOT NAIL BLOCKING SHOWN HEREIN TO THE TRAILER WALLS.
 ALL NAILING WILL BE WITHIN THE DUNNAGE OR THE TRAILER FLOOR, AS
 INDICATED.
- L. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIRS OF CRIMPS PER SEAL MUST BE USED. <u>CAUTION</u>: EXERCISE CARE DURING STRAP TENSIONING TO PREVENT DAMAGE TO CONTAINERS.
- M. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE OR 1-5/8" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE OR 1-5/8" THICK BY 5-5/8" WIDE.
- N. 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 OF THE TRANSFORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. 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.
- O. PORTIONS OF THE TRAILER BODIES DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

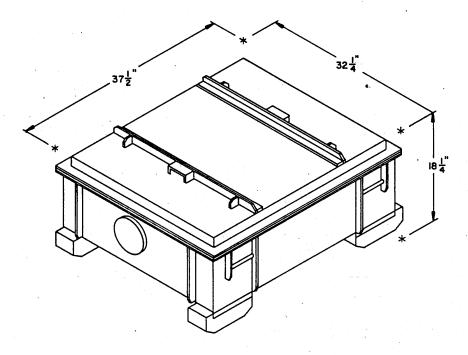
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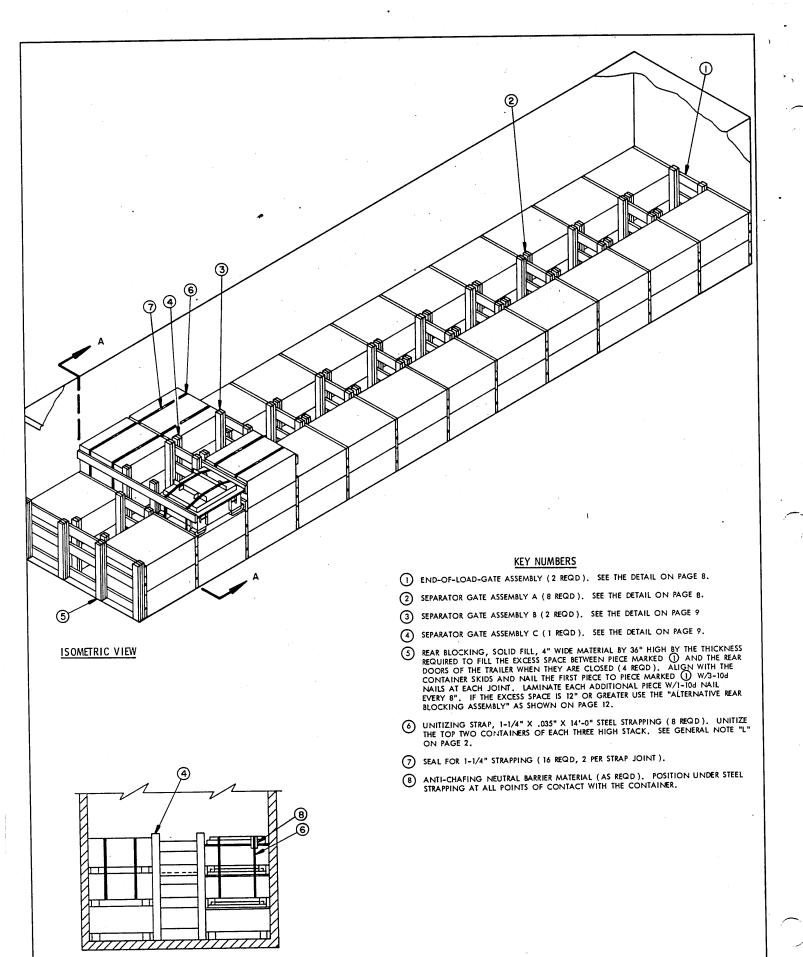
MATERIAL SPECIFICATIONS

<u>MA</u>	TERIAL SPECIFICATIONS
<u>LUMBER</u> :	SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
<u>NAILS</u> ::	COMMON, CEMENT COATED OR CHEMICALLY ETCHED. REF: FED SPEC FF-N-105. ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.
STRAPPING, STEEL:	TYPE I OR IV, FINISH A, B, OR C, FED SPEC QQ-S-781.
STRAP SEAL::	COMMERCIAL GRADE.
ANTI-CHAFING MATERIAL - :	NEUTRAL BARRIER MATERIAL, MIL-B-121 (OR EQUAL).

(GENERAL NOTES CONTINUED)

- P. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO DEPICTED OUTLOADING METHODS.
- Q. ALTHOUGH THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE BASED ON A 40-FOOT LONG TRAILER, THESE PROCEDURES ARE ALSO APPLICABLE TO LONGER TRAILERS, SUCH AS 42-OR 45-FOOT LONG TRAILERS. TO UTILIZE THE ADDITIONAL AVAILABLE SPACE WITHIN THE LONGER TRAILERS, AND PROVIDED THAT WEIGHT LIMITATIONS ARE NOT EXCEEDED, ADDITIONAL STACKS OF LADING ITEMS MAY BE SHIPPED WITHIN A LOAD. THE DEPICTED BLOCKING AND BRACING PROCEDURES WILL BE FOLLOWED AS CLOSELY AS POSSIBLE, MAKING ONLY CHANGES NECESSITATED BY THE VARIOUS TRAILER LENGTHS. THE BLOCKING AND BRACING PROCEDURES DEPICTED FOR A FULL LOAD ARE ADEQUATE FOR A MAXIMUM LOAD. SPECIFIC GUIDANCE CONCERNING LTL LOADS IS AS SPECIFIED FOR EACH TYPICAL LTL PROCEDURE SHOWN HEREIN. THE SPECIFICATIONS OF THIS DRAWING ARE ALSO APPLICABLE TO TRAILERS THAT ARE SHORTER THAN 40 FEET. IF A SHORTER TRAILER IS USED ADJUSTMENTS TO THE LOADING PATTERN AND TO THE SPECIFIED BLOCKING WILL BE MADE AS REQUIRED TO SATISFY THE SHORTER VEHICLE.





PAGE 4

52-CONTAINER LOAD IN A 40'-0" LONG TRAILER

SECTION A-A

SPECIAL NOTES:

- 1. A 52-CONTAINER LOAD IS SHOWN IN A 7'-6" WIDE (INSIDE DIMENSION) BY 40'-0" LONG VAN TRAILER, A NARROWER OR WIDER TRAILER MAY BE USED.
- 2. THE TRAILER SHOWN HAS SQUARE CORNERS, IF THE TRAILER BEING LOADED HAS ROUNDED CORNERS A "FORWARD BLOCKING ASSEMBLY" MUST BE USED IN LIEU OF THE FORWARD "END-OF-LOAD-GATE ASSEMBLY". SEE LOAD ON PAGE 6 AND THE DETAIL ON PAGE 10.
- 3. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED BY OMITTING INDIVIDUAL CONTAINERS FROM THE TOP LAYER AND SUBSTITUTING AN OMITTED CONTAINER ASSEMBLY AS SHOWN IN THE LOAD ON PAGE 6 AND DETAILED ON PAGE 11.
- 4. FOR LESS-THAN-TRAILER LOAD SEE PAGES 6 AND 7.
- 5. IF THE TRAILER BEING LOADED HAS AN INSIDE LENGTH OF 42'-3" OR GREATER, THE FOUR CONTAINERS SHOWN IN THE THIRD LAYER MAY BE POSITIONED AT THE REAR OF THE LOAD FORMING THIRTEEN-TWO CONTAINER HIGH STACKS. DELETE PIECES MARKED ③, ④, ⑥, ⑦, AND ⑧. FOUR MORE PIECES MARKED ② WILL BE REQUIRED. SEE GENERAL NOTE "Q" ON PAGE 2.

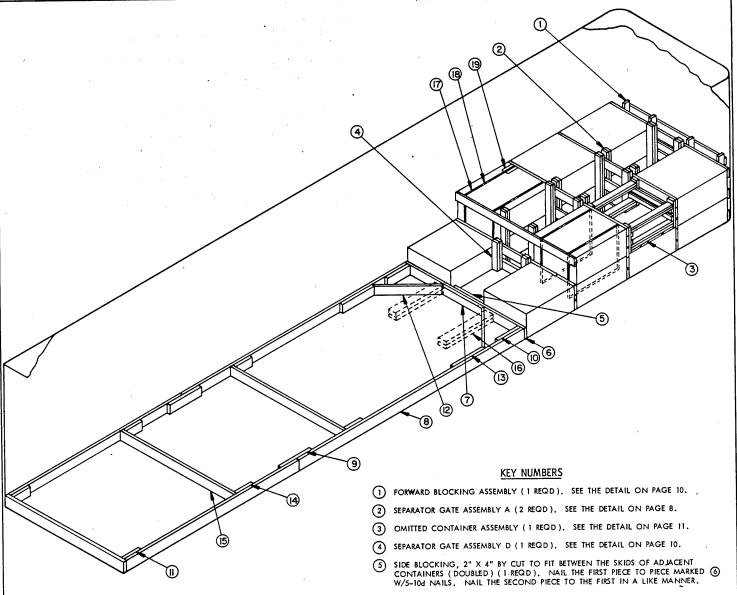
BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" X 4" 2" X 6"	300 315	20 0 31 5		
NAILS	NO. REQD	POUNDS		
10d (3")	868	13 -1/2		

STEEL STRAPPING, 1-1/4" X .035" ------ 112' REQD ---- 16 LBS SEALS FOR 1-1/4" STRAPPING --------- 16 REQD ---- 1 LB ANTI-CHAFING NEUTRAL BARRIER MATERIAL AS REQD - NIL

LOAD AS SHOWN

52-CONTAINER LOAD IN A 40'-0" LONG TRAILER

PAGE 5



ISOMETRIC VIEW

SPECIAL NOTES:

- A 13-CONTAINER LOAD IS SHOWN IN A 7'-6" WIDE (INSIDE DIMENSION)
 VAN TRAILER WHICH IS EQUIPPED WITH OR WITHOUT A NAILABLE FLOOR AND
 HAS ROUNDED CORNERS. WIDER OR NARROWER TRAILERS CAN BE USED.
 IF THE TRAILER HAS SQUARE CORNERS USE AN "END-OF-LOAD-GATE
 ASSEMBLY" AS SHOWN IN THE LOAD ON PAGE 4 IN LIEU OF THE "FORWARD
 BLOCKING ASSEMBLY".
- 2. THE DEPICTED "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED (6) THRU
 (5) IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 18,000 POUNDS.
- 3. PIECES MARKED (6) ARE FOR USE IN A TRAILER WHICH HAS A NAILABLE FLOOR AND SHOULD BE USED, IF POSSIBLE, IN LIEU OF PIECES MARKED (6) THRU (19) WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS. FOUR (4) BACK-UP CLEATS, SHOWN AS PIECES MARKED (6) ARE ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 26,000 POUNDS. THE TWO BACK-UP CLEATS POSITIONED IN LINE WITH THE CONTAINER SKIDS AND LOCATED AGAINST THE SIDE WALL OF THE TRAILER HAVE BEEN OMITTED, IN THE ISOMETRIC VIEW ABOVE, FOR CLARITY. HOWEVER, ALL FOUR CLEATS MUST BE INSTALLED IN THE LOAD.

(KEY NUMBERS CONTINUED)

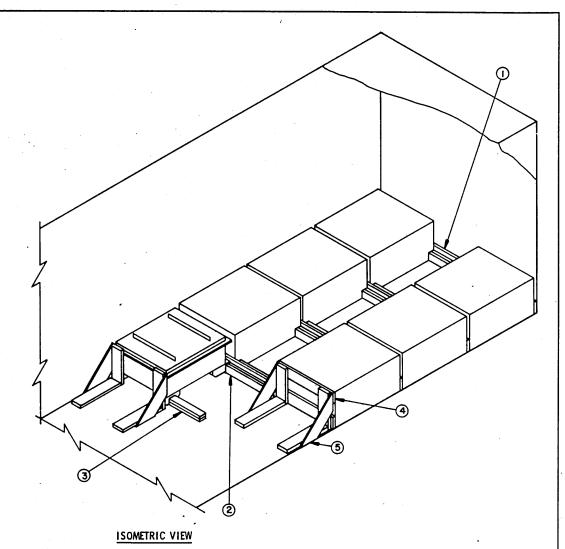
- (8) SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD, 2 PER STRAP JOINT).
- (19) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER STEEL STRAPPING AT ALL POINTS OF CONTACT WITH THE CONTAINER.

- (6) HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (2 REQD).
- (7) CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO THE FORWARD HEADER MARKED

 (8) W/B-10d NAILS. SEE GENERAL NOTE "N" ON PAGE 2.
- (B) SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN FORWARD AND REAR PIECES MARKED (6) (2 REQD).
- SPLICE PIECE, 2" X 6" X 24" (2 REQD). CENTER ON A JOINT OF PIECES MARKED B AND NAIL W/4-10d NAILS AT EACH END.
- (1) POCKET CLEAT, 2" X 6" X 18" (2 REQD). NAIL TO PIECE MARKED (B) W/5-10d NAILS. TOENAIL TO THE ADJACENT PIECE MARKED (G) W/3-12d NAILS.
- (1) STRUT RETAINING BLOCK, 2" X 6" X 12" (2 REQD). NAIL TO PIECE MARKED (8) W/3-10d NAILS. TOENAIL TO THE REAR PIECE MARKED (6) W/3-12d NAILS.
- DIAGONAL BRACE, 2" X 6" BY CUT TO FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT 45° ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT PIECE MARKED (6) AND TO PIECE MARKED (8) W/2-12d NAILS AT EACH END.
- (13) SIDE CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO PIECE MARKED (8) W/8-10d NAILS.
- (4) STRUT BRACING SUPPORT PIECE, 2" X 6" X 12" (4 REQD). POSITION SO THAT PIECES MARKED (5) ARE EQUALLY SPACED ON THE LENGTH OF PIECE MARKED (8) NAIL TO PIECE MARKED (8) W/3-10d NAILS.
- (15) STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 3" (CUT TO FIT) (2 REQD).
 NAIL TO PIECE MARKED (4) W/2-12d NAILS AT EACH END. ONE STRUT BRACE
 IS REQUIRED FOR EACH 7'-0" LENGTH OF SIDE STRUTS MARKED (8).
- BACK-UP CLEAT, 2" X 4" X 36" (DOUBLED) (4 REQD). ALIGN WITH THE CONTAINER SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. TOENAIL THE SECOND PIECE TO THE FORWARD HEADER MARKED (6) W/2-12d NAILS, SEE SPECIAL NOTE 3 ON THIS PAGE AND GENERAL NOTE "N" ON PAGE 2.
- (1) UNITIZING STRAP, 1-1/4" X .035" X 14'-0" STEEL STRAPPING (4 REQD). UNITIZE THE REAR TWO-HIGH STACKS, SEE GENERAL NOTE "L" ON PAGE 2.

TYPICAL LTL (13-CONTAINER LOAD)

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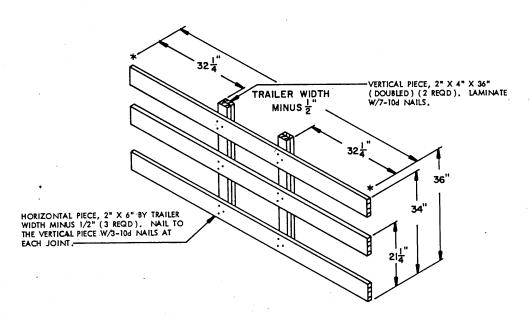


SPECIAL NOTES:

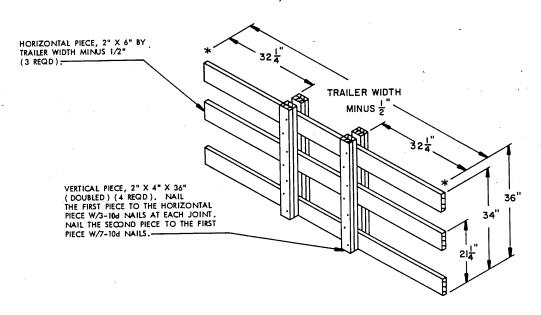
- 1. A 7-CONTAINER LOAD IS SHOWN IN A 7'-6" WIDE (INSIDE DIMENSION)
 VAN TRAILER WHICH HAS A NAILABLE FLOOR AND SQUARE CORNERS. WIDER
 OR NARROWER TRAILERS MAY BE USED, IF THE TRAILER HAS ROUNDED CORNERS
 AT THE FORWARD END LAMINATE 6" WIDE BY THICKNESS TO SUIT SOLID FILL
 TO THE FORWARD PIECE MARKED ① TO FILL THE EXCESS SPACE BETWEEN
 PIECE MARKED ① AND THE FRONT WALL OF THE TRAILER.
- 2. THESE PROCEDURES ARE LIMITED TO A ONE CONTAINER HIGH LOAD.
- EACH LTL BRACE AS SPECIFIED FOR LONGITUDINAL BRACING WILL RETAIN 2,000
 POUNDS OF LADING. ALSO, A MINIMUM OF TWO (2) LTL BRACES MUST BE
 USED AGAINST THE END OF EACH CONTAINER.
- 4. LTL BRACES MAY ALSO BE USED FOR LATERAL BRACING IN LIEU OF PIECE MARKED ③

KEY NUMBERS

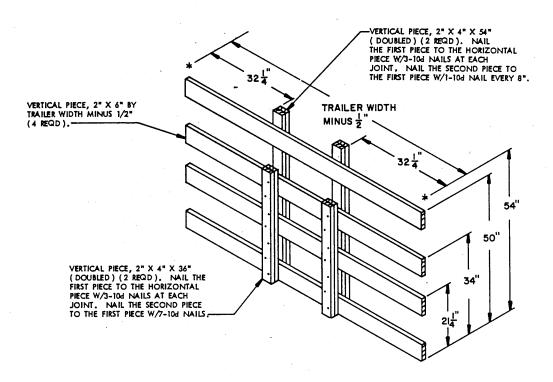
- 1 HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (4 REQD). POSITION BETWEEN CONTAINER SKIDS AS SHOWN.
- 2 SIDE BLOCKING, 2" X 4" BY CUT TO FIT BETWEEN THE SKIDS OF ADJACENT CONTAINERS (DOUBLED) (7 REQD), NAIL THE FIRST PIECE TO PIECE MARKED () W/5-10d NAILS, NAIL THE SECOND PIECE TO THE FIRST PIECE IN A LIKE MANNER.
- 3 SIDE BLOCKING, 2" X 4" X 18" (DOUBLED) (1 REQD). CENTER ON THE CONTAINER SKID AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- 4 FILLER PIECE, 2" X 4" X 32" (1 REQD), CENTER ON THE CONTAINER FLANGE AND NAIL TO THE LTL BRACE W/3-10d NAILS AT EACH JOINT.
- (5) LTL BRACE (4 REQD), POSITION AS SHOWN AND NAIL EACH BRACE TO THE TRAILER FLOOR W/10-6d NAILS. SEE THE DETAIL ON PAGE 11 AND GENERAL NOTE "N" ON PAGE 2.



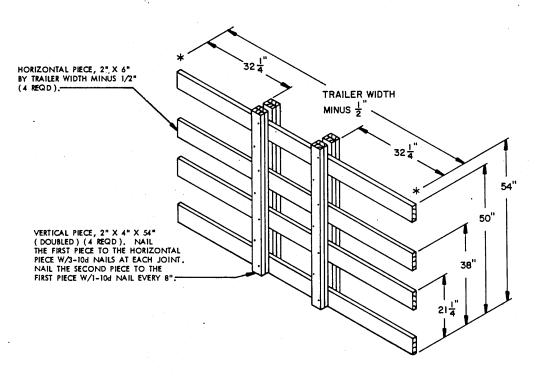
END-OF-LOAD-GATE ASSEMBLY



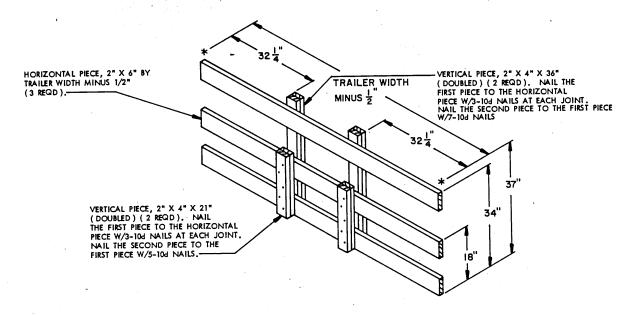
SEPARATOR GATE ASSEMBLY A



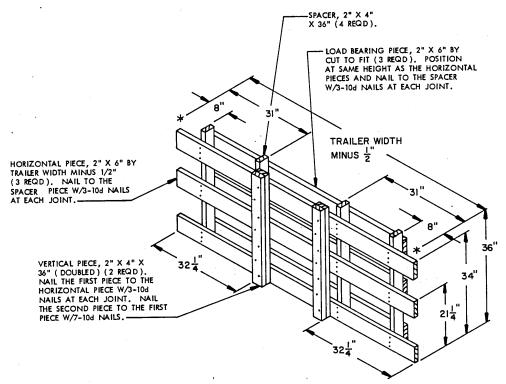
SEPARATOR GATE ASSEMBLY B



SEPARATOR GATE ASSEMBLY C

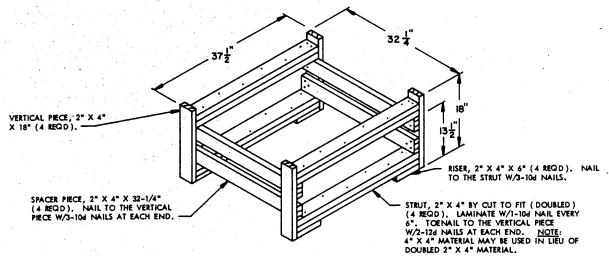


SEPARATOR GATE ASSEMBLY D



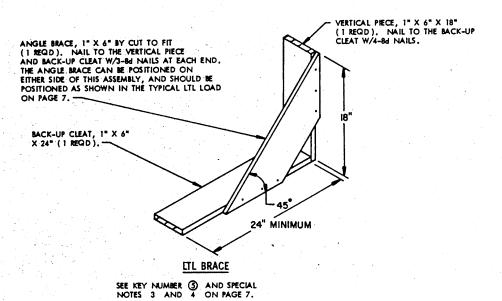
FORWARD BLOCKING ASSEMBLY

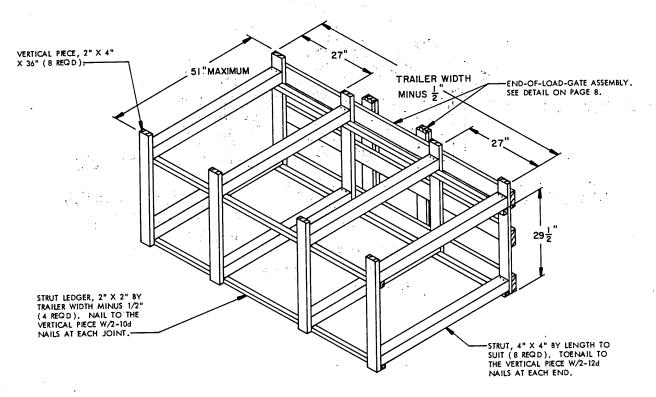
IF THE TRAILER BEING USED HAS ROUNDED CORNERS AT THE FORWARD END WITH A RADIUS GREATER THAN 6", ADDITIONAL PIECES MAY BE LAMINATED TO THE FRONT HORIZONTALS TO PROVIDE FOR THE GREATER RADIUS. SEE SPECIAL NOTE 2 ON PAGE 5 AND KEY NUMBER ① ON PAGE 6.



OMITTED CONTAINER ASSEMBLY

MUST BE USED IN THE TOP LAYER ONLY. SEE SPECIAL NOTE 3 ON PAGE 5 AND KEY NUMBER ③ ON PAGE 6.





ALTERNATIVE REAR BLOCKING ASSEMBLY

SEE KEY NUMBER (3) ON PAGE 4. IF THE EXCESS SPACE BETWEEN THE END-OF-LOAD GATE ASSEMBLY AND THE REAR DOORS OF THE TRAILER EXCEEDS 12", BUT IS LESS THAN 51", THE ALTERNATIVE REAR BLOCKING ASSEMBLY SHOWN ABOVE WILL BE USED. IF THE EXCESS SPACE EXCEEDS 51", REFER TO THE APPLICABLE TYPICAL LTL PROCEDURE.