

APPROVED BY

BUREAU OF EXPLOSIVES

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DATE 1/6/70

LOADING AND BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS[⊙] OF THE M36 SERIES INCENDIARY BOMB (CLUSTER) PACKED TWO PER WOOD PALLET

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[⊙] THIS DOCUMENT INCLUDES PROCEDURES FOR CONVENTIONAL TYPE TRAILERS AND FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES AS APPROVED BY THE BUREAU OF EXPLOSIVES, ASSOCIATION OF AMERICAN RAILROADS.

CAUTION:

PROCEDURES SHOWN HEREIN FOR MECHANICAL BRACING DEVICE EQUIPPED TRAILERS ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENT, NOT FOR CONTAINER/TRAILER-ON-FLAT-CAR MOVEMENTS.

DO NOT SCALE

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GENERAL NOTES

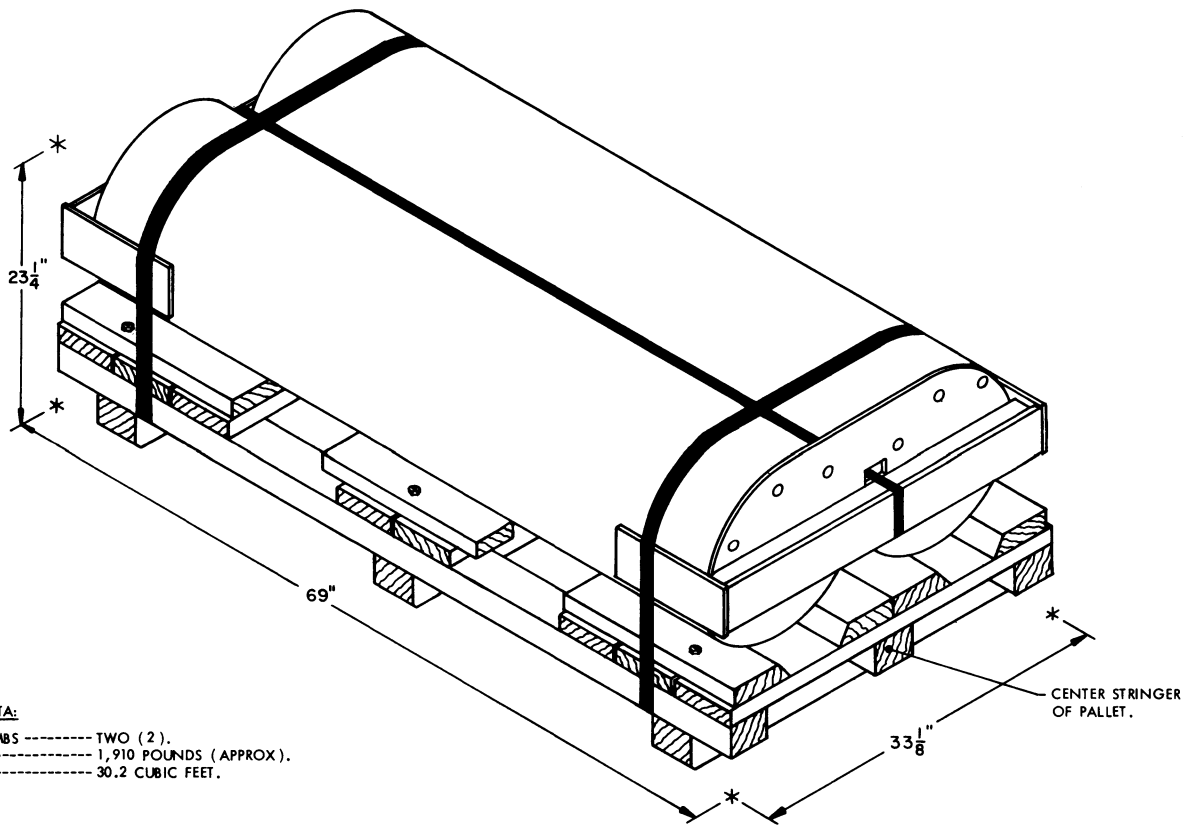
(GENERAL NOTES CONTINUED)

- 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 HEREIN ARE APPLICABLE TO THE M36 SERIES INCENDIARY BOMB (CLUSTER) WHEN PALLETIZED TWO PER WOOD PALLET. SUBSEQUENT REFERENCE TO UNIT HEREIN MEANS THE PALLETIZED UNIT OF BOMBS.
- C. FOR DETAIL OF UNIT SEE AIR FORCE TPO 1325-143-7124, REVISION D, AND "DETAIL OF PALLET UNIT" DEPICTED ON PAGE 3 OF THIS DRAWING:
- UNIT DIMENSIONS ----- 69" LONG X 33-1/8" WIDE X 23-1/4" HIGH.
GROSS WEIGHT ----- 1,910 POUNDS (APPROX).
CUBE ----- 30.2 CUBIC FEET.
- D. THE LOADS AS SHOWN HEREIN ARE FOR CLOSED OR OPEN TOP VAN TRAILERS OF ANY WIDTH AND OF VARIOUS LENGTHS, AND THEY ARE LIMITED TO HIGHWAY MOVEMENTS ONLY. THE DEPICTED LOADS ARE BASED ON TRAILERS OF THE CONVENTIONAL TYPE OR ARE BASED ON TRAILERS WHICH ARE EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES (CROSS MEMBERS AND WALL MEMBERS) AND APPLY TO TRAILERS HAVING WOOD, WOOD AND METAL, OR METAL FLOORS.
- E. IF THE TRAILER BEING USED IS EQUIPPED WITH A MECHANICAL LOAD BLOCKING SYSTEM, THE CROSS MEMBER ATTACHMENT FACILITIES WITHIN THE TRAILER MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED HEREIN. **CAUTION:** TRAILERS EQUIPPED WITH FACILITIES WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED. THE HEIGHT REQUIREMENTS SPECIFIED WITHIN THIS DRAWING FOR INSTALLATION OF CROSS MEMBERS ARE IDENTICAL WITH THOSE RECOMMENDED BY THE BUREAU OF EXPLOSIVES PAMPHLET 6C, AND APPENDICES THERETO.
1. VOIDS LENGTHWISE WITHIN A LOAD MUST BE HELD TO A MINIMUM. CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE HOLE SPACING IN THE CROSS MEMBER ATTACHMENT FACILITY PERMITS. EACH CROSS MEMBER WILL 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 TRAILER).
 2. CROSS MEMBERS IN EMPTY TRAILERS OR THOSE UNUSED IN LOADED TRAILERS MUST BE SECURED FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH TRAILER MUST REMAIN THERewith EVEN THOUGH UNUSED DURING SOME SHIPMENTS.
 3. **CAUTION:** TWO (2) CROSS MEMBERS LOCATED AT SPECIFIED HEIGHTS WILL NOT BE RELIED UPON TO RETAIN MORE THAN TEN (10) PALLET UNITS WITHIN A LAYER.
- F. 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.
- G. **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. HOWEVER, THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE 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 HEREIN.
- J. FOR CONVENTIONAL TYPE TRAILERS EQUIPPED WITH REAR CORNER POSTS, THE REAR BLOCKING HEADER WILL BE CUT TO FIT BETWEEN THE CORNER POSTS SO AS TO CONTACT THE REAR DOORS OF THE TRAILER, WHEN THEY ARE CLOSED.
- K. **CAUTION:** DO NOT NAIL BLOCKING SHOWN HEREIN TO THE TRAILER WALLS. ALL NAILING WILL BE WITHIN THE DUNNAGE OR TO 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) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- M. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-5/8" THICK BY 3-5/8" 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 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.
- 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.
- P. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.

(CONTINUED AT THE RIGHT)

MATERIAL SPECIFICATIONS

- LUMBER** ----- : SEE TM 743-200-1, DUNNAGE LUMBER; 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, B, OR C, FED SPEC QQ-5-781.
- STRAP SEAL** ----- : COMMERCIAL GRADE.

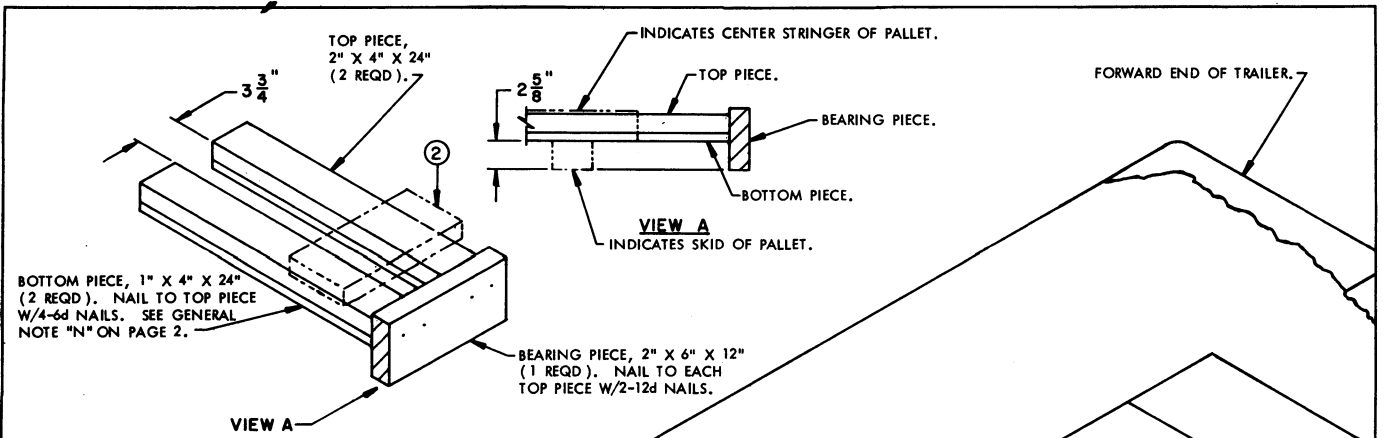


PALLET UNIT DATA:

NUMBER OF BOMBS ----- TWO (2).
 GROSS WEIGHT ----- 1,910 POUNDS (APPROX).
 CUBE ----- 30.2 CUBIC FEET.

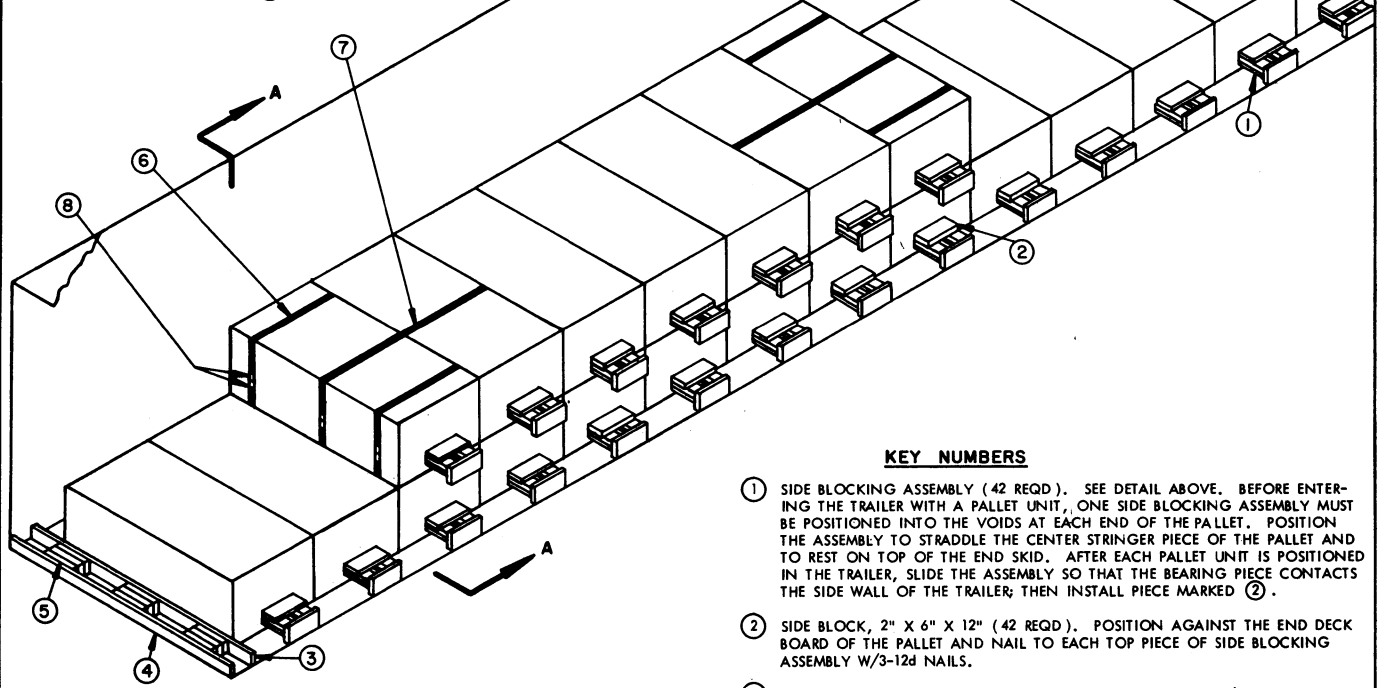
UNIT DETAIL

FOR ADDITIONAL UNIT DATA, SEE
 AIR FORCE TPO 1325-143-7124,
 REVISION D.



BOTTOM PIECE, 1" X 4" X 24" (2 REQD). NAIL TO TOP PIECE W/4-6d NAILS. SEE GENERAL NOTE "N" ON PAGE 2.

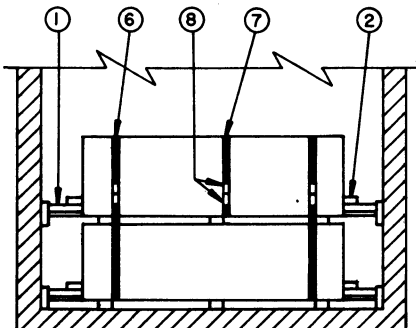
SIDE BLOCKING ASSEMBLY
PIECE MARKED ①.



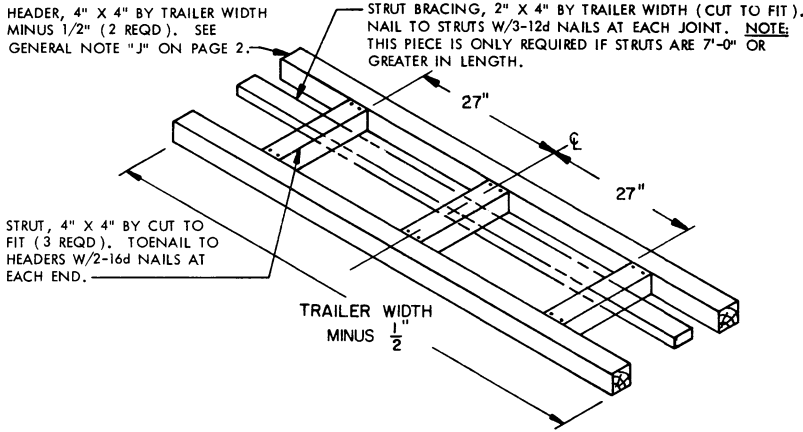
ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING ASSEMBLY (42 REQD). SEE DETAIL ABOVE. BEFORE ENTERING THE TRAILER WITH A PALLET UNIT, ONE SIDE BLOCKING ASSEMBLY MUST BE POSITIONED INTO THE VOIDS AT EACH END OF THE PALLET. POSITION THE ASSEMBLY TO STRADDLE THE CENTER STRINGER PIECE OF THE PALLET AND TO REST ON TOP OF THE END SKID. AFTER EACH PALLET UNIT IS POSITIONED IN THE TRAILER, SLIDE THE ASSEMBLY SO THAT THE BEARING PIECE CONTACTS THE SIDE WALL OF THE TRAILER; THEN INSTALL PIECE MARKED ②.
- ② SIDE BLOCK, 2" X 6" X 12" (42 REQD). POSITION AGAINST THE END DECK BOARD OF THE PALLET AND NAIL TO EACH TOP PIECE OF SIDE BLOCKING ASSEMBLY W/3-12d NAILS.
- ③ REAR-OF-LOAD HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (1 REQD).
- ④ REAR HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (1 REQD). NAIL REAR HEADER TO SOLID FILL MARKED ⑤ W/3-10d NAILS AT EACH JOINT. IF THE TRAILER IS EQUIPPED WITH REAR CORNER POSTS, SEE GENERAL NOTE "J" ON PAGE 2.
- ⑤ SOLID FILL, 4" WIDE MATERIAL BY 12" LONG BY REQUIRED THICKNESS TO FILL VOID BETWEEN HEADERS MARKED ③ AND ④. REQUIRED AT THREE (3) LOCATIONS. ALIGN TO CENTER ON PALLET SKIDS AND NAIL TO HEADER MARKED ③ AND/OR SELF W/3-10d NAILS AT EACH LOCATION. SEE SPECIAL NOTE 3 ON PAGE 5.
- ⑥ STACK UNITIZING STRAP, 1-1/4" X .035" X 15'-0" STEEL STRAPPING (4 REQD, 2 AT EACH LOCATION). PRE-POSITION. STRAP TO ENCIRCLE THE FIRST AND SECOND LAYER UNITS AT EACH END OF THE PARTIAL SECOND LAYER.
- ⑦ LAYER UNITIZING STRAP, 1-1/4" X .035" X 17'-0" STEEL STRAPPING (2 REQD, 1 AT EACH LOCATION). PRE-POSITION. STRAP TO ENCIRCLE THE TWO (2) SECOND LAYER UNITS AT EACH END OF THE PARTIAL SECOND LAYER.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (12 REQD, 2 PER STRAP JOINT). SEE GENERAL NOTE "L" ON PAGE 2.

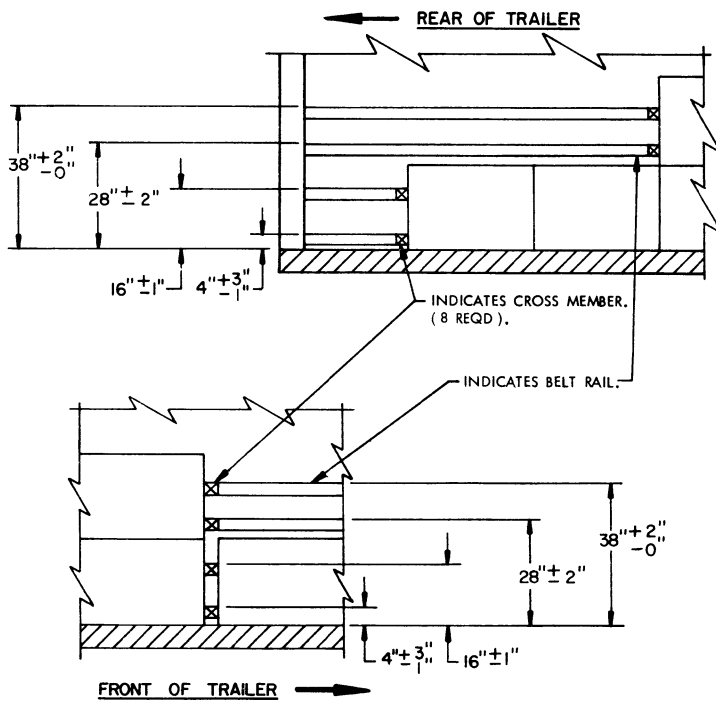


SECTION A-A



ALTERNATIVE REAR BLOCKING ASSEMBLY

SEE SPECIAL NOTE 3 AT RIGHT.



SPECIAL ELEVATION VIEWS COVERING APPLICATION OF MECHANICAL BLOCKING

SEE SPECIAL NOTE 4 AT RIGHT.

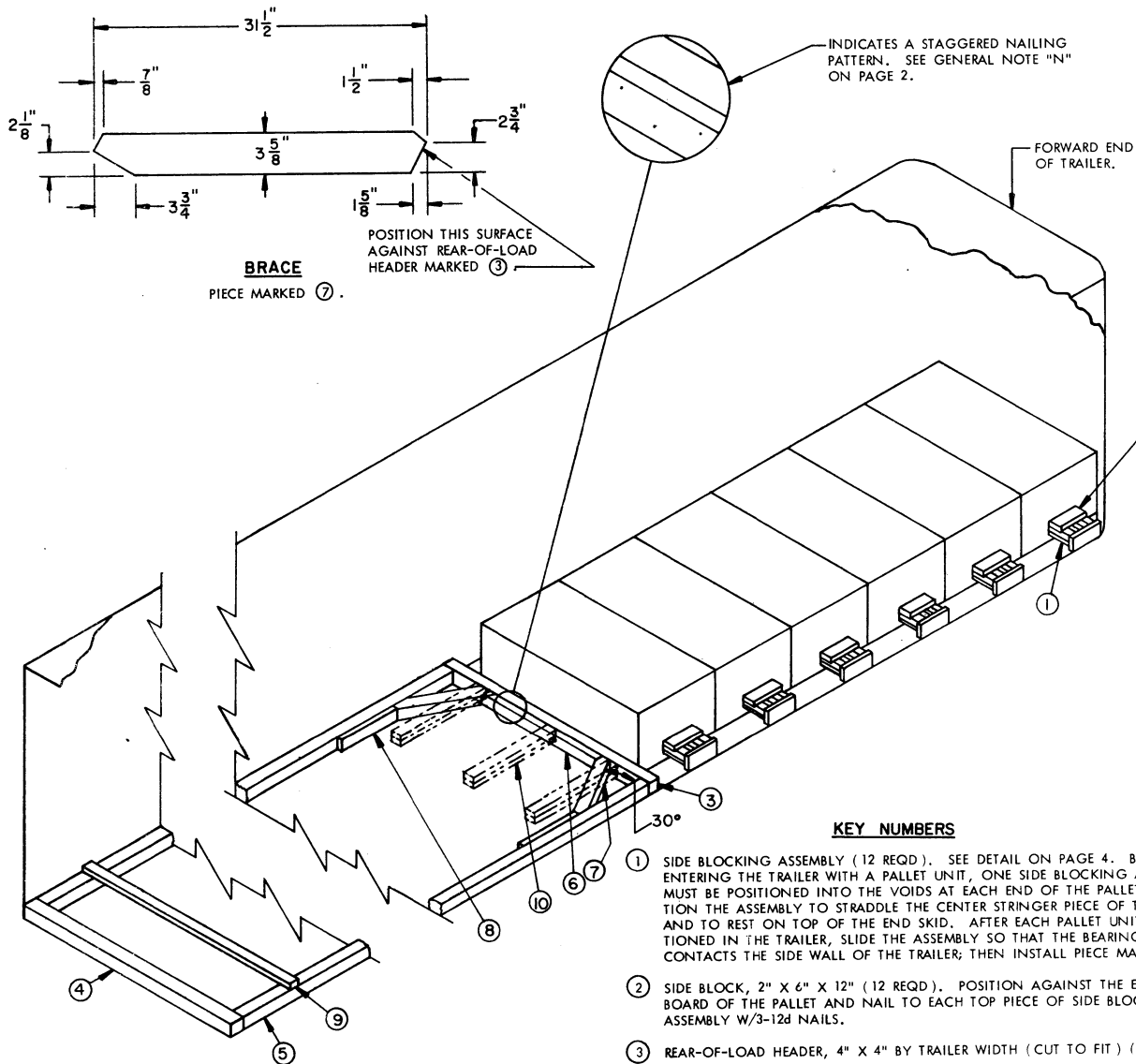
SPECIAL NOTES:

1. A 21-UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) TRAILER WHICH HAS ROUNDED-CORNERS AT THE FORWARD END AND IS NOT EQUIPPED WITH REAR CORNER POSTS AT THE REAR END. A WIDER OR NARROWER TRAILER MAY BE USED. WHEN A SHORTER TRAILER IS OFFERED FOR OUTLOADING, THE LENGTH OF THE PARTIAL SECOND LAYER MAY BE INCREASED AS THE LENGTH OF THE TRAILER DECREASES. A 32'-0" LONG TRAILER IS THE MINIMUM LENGTH TRAILER THAT CAN BE USED TO SHIP A 21-UNIT LOAD.
2. CARE WILL BE EXERCISED DURING LOADING OPERATIONS SO THAT THE UNITS ARE CENTERED LATERALLY IN THE TRAILER TO ASSURE PROPER LOAD DISTRIBUTION.
3. WHEN THE DISTANCE BETWEEN THE REAR OF THE LOAD AND THE REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED MEASURES 12" OR MORE, THE ALTERNATIVE REAR BLOCKING ASSEMBLY AS DETAILED ABOVE WILL BE USED IN LIEU OF SOLID FILL METHOD SHOWN IN THE "ISOMETRIC VIEW" AS PIECES MARKED ③, ④ AND ⑤. ALSO, IF THE DISTANCE MEASURES 60" OR MORE, THE "K-BRACE" TYPE OF REAR BLOCKING AS SHOWN IN THE LOAD VIEW ON PAGE 6 MAY BE USED IN LIEU OF THE ALTERNATIVE REAR BLOCKING ASSEMBLY. SEE GENERAL NOTE "J" ON PAGE 2.
4. IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, SUCH AS WALL BELT RAILS AND LOAD BLOCKING CROSS MEMBERS, WHICH CONFORM TO SPECIFICATIONS SET FORTH WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C AND THE APPENDICES THERETO, THEY MAY BE USED AT THE LOCATIONS AND HEIGHTS AS SPECIFIED IN THE "SPECIAL ELEVATION VIEWS COVERING APPLICATION OF MECHANICAL BLOCKING" DEPICTED ON THIS PAGE. PIECES MARKED ③ THRU ⑤ WILL BE OMITTED. THE LOADING PATTERN AS SHOWN REQUIRES A MECHANICAL SYSTEM LENGTH OF AT LEAST 39'-3" AS MEASURED FROM THE FRONT WALL OF THE TRAILER. TRAILERS WITH SHORTER SYSTEM LENGTHS MAY BE USED BY ADJUSTING THE QUANTITY OF PALLET UNITS WITHIN EACH LAYER. CAUTION: A 10-UNIT LONG LAYER IS THE MAXIMUM LENGTH LAYER THAT CAN BE RETAINED BY TWO (2) CROSS MEMBERS LOCATED AT THE SPECIFIED HEIGHTS. SEE GENERAL NOTE "E" ON PAGE 2.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	168	56
2" X 4"	192	128
2" X 6"	84	84
NAILS	NO. REQD	POUNDS
6d (2")	336	2-1/4
10d (3")	36	3/4
12d (3-1/4")	420	7
STEEL STRAPPING, 1-1/4" X .035"	94' REQD	13 LBS
SEAL FOR 1-1/4" STRAPPING	12 REQD	1 LB

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	21	40,110 LBS
DUNNAGE		694 LBS
TOTAL WEIGHT		40,804 LBS



ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE LTL OUTLOADING PROCEDURES DEPICT THE USE OF BOTH "K-BRACE" BLOCKING AND "NAILED, FLOOR-LINE" BLOCKING, FOR THE BRACING OF A PARTIAL LOAD SHIPMENT.
2. THE TYPICAL LTL LOAD IS SHOWN FOR A 7'-6" WIDE (INSIDE DIMENSION) TRAILER THAT HAS ROUNDED CORNERS AT THE FORWARD END. NARROWER OR WIDER TRAILERS CAN BE USED.
3. THE "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED ③ THROUGH ⑨, IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 24,000 POUNDS.
4. THREE (3) BACK-UP CLEATS, SHOWN AS PIECE MARKED ⑩, ARE ADEQUATE FOR RETAINING NOT MORE THAN 14,000 POUNDS OF LADING. BACK-UP CLEATS ARE FOR USE IN A TRAILER WHICH HAS A NAILABLE FLOOR AND SHOULD BE USED, IF POSSIBLE, IN LIEU OF PIECES MARKED ④ THROUGH ⑨.
5. THE LTL PROCEDURES SPECIFIED ON THIS PAGE CAN ALSO BE USED TO BLOCK A 2-HIGH LTL LOAD, PROVIDING THE SECOND LAYER CONTAINS AT LEAST TWO CONTAINERS SO THAT THE "UNITIZING PROCEDURES" SPECIFIED ON PAGES 4 AND 5 CAN BE APPLIED (REFERENCE IS MADE TO PIECES MARKED ⑥, ⑦ AND ⑧ ON PAGE 4).
6. IF THE TRAILER BEING OUTLOADED IS EQUIPPED WITH MECHANICAL BRACING DEVICES, OMIT PIECES ③ THRU ⑩ AND APPLY PROCEDURES SPECIFIED IN THE "SPECIAL ELEVATION VIEWS COVERING APPLICATION OF MECHANICAL BLOCKING" DETAILS AND SPECIAL NOTE 4 ON PAGE 5. ALSO SEE GENERAL NOTE "E" ON PAGE 2.

KEY NUMBERS

- ① SIDE BLOCKING ASSEMBLY (12 REQD). SEE DETAIL ON PAGE 4. BEFORE ENTERING THE TRAILER WITH A PALLET UNIT, ONE SIDE BLOCKING ASSEMBLY MUST BE POSITIONED INTO THE VOIDS AT EACH END OF THE PALLET. POSITION THE ASSEMBLY TO STRADDLE THE CENTER STRINGER PIECE OF THE PALLET AND TO REST ON TOP OF THE END SKID. AFTER EACH PALLET UNIT IS POSITIONED IN THE TRAILER, SLIDE THE ASSEMBLY SO THAT THE BEARING PIECE CONTACTS THE SIDE WALL OF THE TRAILER; THEN INSTALL PIECE MARKED ②.
- ② SIDE BLOCK, 2" X 6" X 12" (12 REQD). POSITION AGAINST THE END DECK BOARD OF THE PALLET AND NAIL TO EACH TOP PIECE OF SIDE BLOCKING ASSEMBLY W/3-12d NAILS.
- ③ REAR-OF-LOAD HEADER, 4" X 4" BY TRAILER WIDTH (CUT TO FIT) (1 REQD).
- ④ REAR HEADER, 4" X 4" BY TRAILER WIDTH (CUT TO FIT) (1 REQD). POSITION SO AS TO CONTACT REAR DOORS OF TRAILER WHEN THEY ARE CLOSED, OR POSITION AGAINST CORNER POSTS IF TRAILER IS SO EQUIPPED.
- ⑤ SIDE STRUT, 4" X 4" BY CUT TO FIT BETWEEN HEADERS MARKED ③ AND ④. TOENAIL TO PIECES MARKED ③ AND ④ W/2-16d NAILS AT EACH END.
- ⑥ SPACER CLEAT, 2" X 4" X 50" (1 REQD). NAIL TO HEADER MARKED ③ W/8-12d NAILS.
- ⑦ DIAGONAL BRACE, 4" X 4" X 31-1/2" (2 REQD). SEE "BRACE" DETAIL ABOVE FOR BEVEL CUTS REQUIRED. NAIL TO PIECES MARKED ③ AND ⑤ W/2-16d NAILS AT EACH END.
- ⑧ SIDE CLEAT, 2" X 4" X 24" (2 REQD). NAIL TO PIECE MARKED ⑤ W/6-12d NAILS.
- ⑨ STRUT BRACING, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (MINIMUM OF 1 REQD). POSITION EVERY 7'-0". NAIL TO PIECES MARKED ⑤ W/2-12d NAILS AT EACH END.
- ⑩ BACK-UP CLEAT, 2" X 4" X 36" (DOUBLED) (3 REQD). ALIGN WITH SKIDS OF THE PALLET AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/9-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "N" ON PAGE 2 AND SPECIAL NOTE 4 AT LEFT.