APPROVED BY

BUREAU OF EXPLOSIVES

My Milliary a INTERMODAL SERVICES

DATE 1190

LOADING AND BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS OF SIMULATOR, ATOMIC EXPLOSION, MI42, PACKED ONE PER METAL DRUM, UNITIZED 2 DRUMS PER SPECIAL TYPE II SKID BASE

# INDEX

<u>ITEM</u> <u>P</u>	AGE (S)
GENERAL NOTES, AND MATERIAL SPECIFICATIONS	
54-UNIT LOAD IN A 40'-0' LONG TRAILER	4,5
TYPICAL LTL (8-UNIT LOAD)	7
DETAILSTYPICAL LTL (1-UNIT LOAD) MECHANICAL BRACING EQUIPPED TRAILER	

THIS DOCUMENT INCLUDES OUTLOADING PROCEDURES FOR CONVENTIONAL TYPE TRAILERS AND FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES AS APPROVED BY THE BUREAU OF EXPLOSIVES, ASSOCIATION OF AMERICAN RAIL-ROADS. CAUTION: THE PROCEDURES SHOWN HEREIN, FOR BOTH TYPES OF TRAILERS, ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENTS; NOT FOR CONTAINER/TRAILER-ON-FLAT-CAR MOVEMENTS.

	REVIS	SIONS	IF P84	men 200	7. rew	
$\vdash$	17		RSH 8	um gal.	the for	
			Da	viel	C 72	TEADINESS CONSIAND
			MATERIEL O	EVELOPMENT AN	MANDING SENERAL O READINESS COMM	U. S. ARMY AND (DARCOM)
			1	Any Ti	NSE AMERITION CO	MTER AND BCHOOL
		U. S.	ARMY C	ARCOM	DRAWING	
			SEPTEMBER 1980			
			CLASS	DIVISION	DRAWING	FILE
			19	48	4150	

DO NOT SCALE

#### **GENERAL NOTES**

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5)
- THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE SIMULATOR, ATOMIC EXPLOSION, M142, PACKED 1 PER METAL DRUM, UNITIZED. SUBSEQUENT REFERENCE TO SKIDDED UNIT HEREIN MEANS THE SKIDDED UNIT OF TWO (2) DRUMS WITH CONTENTS.
- C. FOR DETAIL OF THE SKIDDED UNIT, SEE PAGE 3 OF THIS DRAWING AND US ARMY DARCOM DRAWING 19-48-4138/105-20PA 1000

DIMENSIONS = 25-1/4" LONG X 49-1/2" WIDE X 41" HIGH.
GROSS WEIGHT = 311 POUNDS (APPROX).

- D. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED DRUMS WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE.
- THE LOADS AS SHOWN HEREIN ARE FOR CLOSED OR OPEN TOP VAN TRAILERS
  WHICH ARE 89" TO 93" WIDE (INSIDE DIMENSION) AND OF VARIOUS LENGTHS,
  UP TO AND INCLUDING 45"-0" LONG. THEY ARE LIMITED TO HIGHWAY MOVEMENT ONLY. THE DEPICTED LOADS ARE BASED ON TRAILERS OF THE CONVENTIONAL P.
  TYPE OR ARE BASED ON TRAILERS WHICH ARE EQUIPPED WITH SELF-CONTAINED
  MECHANICAL BRACING DEVICES (CROSS MEMBERS AND WALL MEMBERS) AND
  APPLY TO TRAILERS HAVING WOOD, WOOD AND METAL, OR METAL FLOORS.
  SEE GENERAL NOTE "U" ON THIS PAGE.
  THE OUTLOADING PROCEDURES SPECIFIED IN THE ISOMETRIC VIEWS ARE FOR
  CONVENTIONAL TYPE VAN TRAILERS.
- CONVENTIONAL TYPE VAN TRAILERS.
- G. THE OUTLOADING PROCEDURES SPECIFIED IN THE "PARTIAL ELEVATION VIEW" ON THE OUTLOADING PROCEDURES SPECIFIED IN THE "PARTIAL ELEVATION VIEW" ON PAGE 5 AND THE "ISOMETRIC VIEW" ON PAGE 10, ARE FOR TRAILERS EQUIPPED WITH VARIOUS TYPES OF SELF CONTAINED MECHANICAL BRACING DEVICES, AND ARE LIMITED TO HIGHWAY MOVEMENT ONLY. THE HEIGHT REQUIREMENTS SPECIFIES WITHIN THIS DRAWING FOR THE INSTALLATION OF CROSS MEMBERS ARE IDENTICAL WITH THOSE RECOMMENDED BY THE BUREAU OF EXPLOSIVES PAMPHLET 6C, AND APPENDICES THERETO. CAUTION: TRAILERS EQUIPPED WITH WALL MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.
  - VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM. MEMBERS MUST BE PLACED A GAINST 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).
  - CROSS MEMBERS IN EMPTY TRAILERS AND THOSE NOT USED IN LOADED TRAILERS MUST BE SECURED FOR SHIPMENT, COMPONENTS ASSIGNED TO EACH TRAILER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME
  - ONE (1) CROSS MEMBER WILL BE REQUIRED FOR EACH 10,000 POUNDS OF LADING, AND SHOULD NOT BE RELIED UPON TO RETAIN A GREATER WEIGHT. CROSS MEMBERS WILL NOT BE DOUBLED; THAT IS, TWO CROSS MEMBERS AT THE SAME HEIGHT LOCATION WILL NOT BE PLACED SIDE BY SIDE.
- H. 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.
- 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. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRACTOR AND OF THE SEMI-TRAILER CARRYING THE LADING MUST NOT EXCEED THE MAXIMUM GROSS WEIGHT ALLOWED FOR THE STATE OR STATES THRU WHICH THE LOAD IS TO BE TRANSPORTED BY MOTOR CARRIER. LIKEWISE, THE GROSS WEIGHT ON A SINGLE OR TANDEM AXLE MUST NOT EXCEED THE MAXIMUM ALLOWABLE WEIGHT. IF THERE IS ANY DOUBT AS TO WHETHER ANY AXLES ARE OVER-LOADED, OR ANY DOUBT AS TO WHETHER THE TOTAL GROSS WEIGHT EXCEEDS THE OR ANY DOUBT AS TO WHETHER THE TOTAL GROSS WEIGHT EXCEEDS THE
  MAXIMUM ALLOWED, PROPER WEIGHT DISTRIBUTION SHOULD BE VERIFIED BY
  ACTUALLY WEIGHING THE LOADED VEHICLE.

(CONTINUED AT RIGHT)

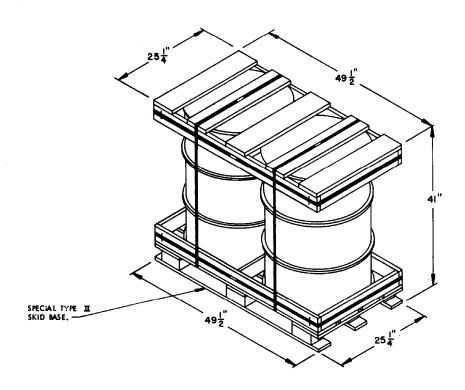
# MATERIAL SPECIFICATIONS

LUMBER ----- : SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751. NAILS -----: FED SPEC FF-N-105, COMMON. STRAPPING, STEEL -----: CLASS 1, TYPE 1 OR IX , HEAVY DUTY, FINISH A OR B ( GRADE 2 ), OR C; FED SPEC QQ-5-781. SEAL, STRAP -----: TYPE D, STYLE I, II, OR IV, CLASS H; FED SPEC QQ-S-781. STAPLE, STRAP -----: TYPE III, STYLE 3, 1-17/32" SIDE BY 3/4" LEG LENGTH, OR EQUIVALENT; FED SPEC FF-N-105. STRAP ANCHOR PLATE --- : FSN 5340-252-3014 ( 1-1/4" STRAP ). STRAP ANCHOR PLATE NAIL -----: PSN 5315-290-7140.

WIRE ----- : FED SPEC QQ-W-461.

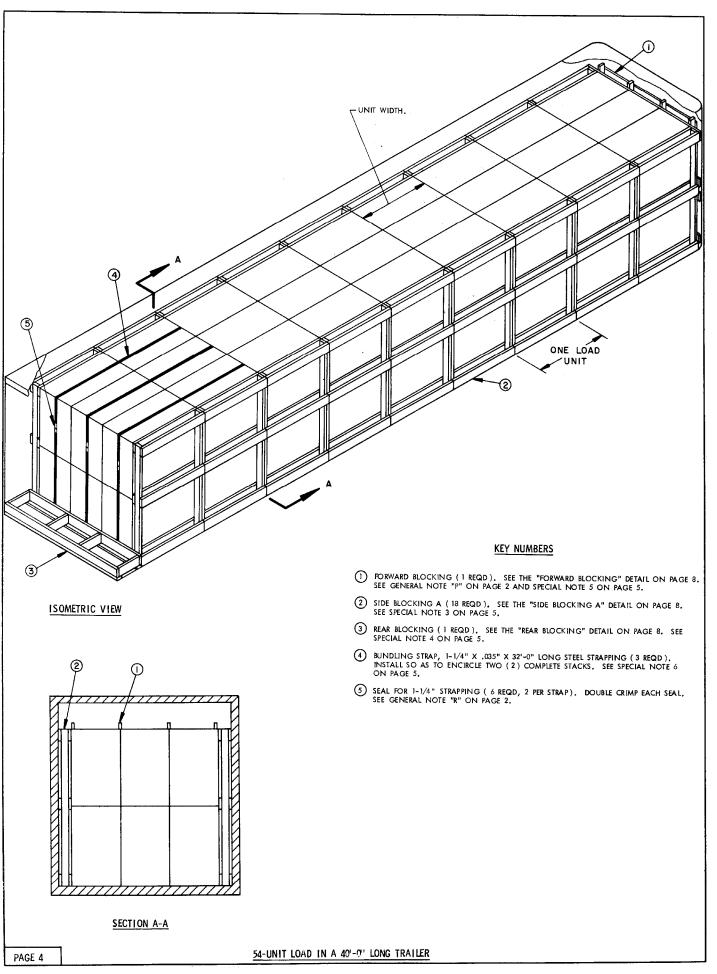
#### ( GENERAL NOTES CONTINUED )

- K. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO SUIT THE CAPACITY OF THE TRAILER BEING LOADED OR THE QUANTITY TO BE SHIPPED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE LOADS.
- OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS 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 HEREIN.
- M. FOR TRAILERS NOT EQUIPPED WITH REAR CORNER POSTS, REAR BLOCKING MUST BE EXTENDED TO CONTACT THE REAR DOORS WHEN THEY ARE CLOSED.
- N. IN SOME INSTANCES DRUMS WILL ALREADY BE UNITIZED WHEN OFFERED FOR LOADING. THESE UNITS SHOULD BE INSPECTED AND, AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED OR RETENSIONED.
- O. 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 AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE,
- 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 A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN 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.
- Q. 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.
- R. WHEN STEEL STRAPPING 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 TO SEAL THE JOINT.
- WHEN REFERING TO THE SKIDDED UNIT LENGTH OR UNIT WIDTH THE 25-1/4" DIMENSION OF THE PALLET BASE CONSTITUTES THE LENGTH AND THE 49-1/2" DIMENSION CONSTITUTES THE WIDTH. SEE THE PALLETIZED UNIT ON PAGE 3.
- FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING
- U. TO ACHIEVE SHIPMENTS OF MORE SKIDDED UNITS THAN DEPICTED IN THE FULL LOAD AS SHOWN IN THIS DOCUMENT, LONGER TRAILERS, IF DESIRED, CAN BE USED WITH THE SAME REAR BLOCKING AND ADJUSTMENTS TO THE OTHER OUTLOADING PROCEDURES. SEE GENERAL NOTE "E" ON THIS PAGE.



# SKIDDED UNIT

SKIDDED UNIT DETAIL



#### SPECIAL NOTES:

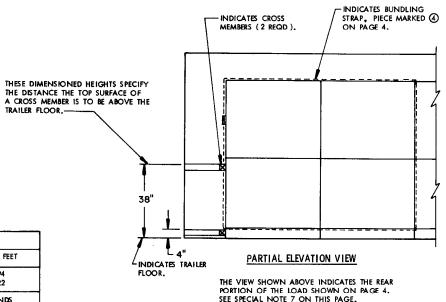
- A LOAD OF 54 SKIDDED UNITS IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE VAN TRAILER.
- A WIDER OR NARROWER TRAILER THAN SHOWN MAY BE USED FOR SHIPPING THE DEPICTED LOAD. ADJUST THE WIDTH OF THE "SIDE BLOCKING A" ASSEMBLY AS NEFFESSARY
- 3. THE SIDE BLOCKING MAY BE OMITTED IF THE SPACE BETWEEN LATERALLY ADJACENT UNITS IS 5" OR LESS, AS MEASURED FROM CONTAINER TO CONTAINER ON LATERALLY ADJACENT UNITS.
- 4. IF THE VOID AT THE REAR OF THE LOAD, BETWEEN THE SKIDDED UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS NO REAR BLOCKING 5 REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE "ALTERNATIVE REAR BLOCKING" AS SHOWN AT RIGHT.
- IF THE TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR WITH AN INSTALLED BULKHEAD, OMIT THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED (1), AND POSITION THE SKIDDED UNITS DIRECTLY AGAINST THE FORWARD PORTIONS OF THE TRAILER.
- 6. AT ANY LOCATION WHERE LOAD UNIT CONSISTS OF FOUR UNITS, THE STACK CONTAINING AN ODD UNIT MUST BE SECURED TO THE STACK IMMEDIATELY FORWARD (OR REARWARD) WITH A BUNDLING STRAP, TO PROVIDE LATERAL STABILITY FOR THE ODD UNIT AND A "SIDE BLOCKING B" ASSEMBLY SHOWN ON PAGE 8 INSTALLED AT THE ONE-TIER HIGH SIDE OF THE LOAD UNIT. NOTE THAT LOADS SHOULD BE PLANNED SO THAT THERE WILL NOT BE A LONE UNIT IN A TOP TIER. IF A LOAD UNIT CONSISTS OF FIVE UNITS, OMIT THE CENTER UNIT FROM THE TOP TIER.
- 7. IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, SUCH AS A WALL BELT RAIL AND LOAD BLOCKING CROSS MEMBERS, WHICH CONFORM TO SPECIFICATIONS SET FORTH WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C AND APPENDICES THERETO, THEY MAY BE USED AT THE REAR OF THE LOAD AS SHOWN IN THE "PARTIAL ELEVATION VIEW" ON THIS PAGE. THE MECHANICAL BRACING DEVICE SYSTEM OF A TRAILER MUST HAVE A LENGTH OF AT LEAST 38"-0" AS MEASURED FROM THE FRONT WALL OF THE TRAILER.

SOLID FILL, 4" AND 6" WIDE MATERIAL BY TRAILER WIDTH MINUS 1/2" IN LENGTH BY THE THICKNESS REQUIRED TO CONTACT REAR CORNER POSTS OF THE TRAILER WHEN THEY ARE CLOSED. POSITION PIECES ON EDGE, ONE ON TOP OF THE OTHER AS SHOWN, AND LAMINATE W/1-10d NAIL EVERY 12".

TRAILER IS EQUIPPED WITH REAR CORNER POSTS, INSTALL SOLID FILL, 4" AND 6" WIDE BY 48" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN THE REAR BLOCKING AND THE REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. POSITION PIECES ON EGGE, ONE ON TOP OF THE OTHER AS SHOWN, AND NAIL TO THE REAR BLOCKING WILL TO THE REAR BLOCKING AND THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

# ALTERNATIVE REAR BLOCKING

THIS REAR BLOCKING IS DESIGNED FOR USE AT THE REAR END OF THE LOAD SHOWN ON PAGE 4 WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS LESS THAN 9".



BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" X 4" 2" X 6"	290 522	194 522		
NAILS	NO. REQD	POUNDS		
10d (3")	536	8-1/4		

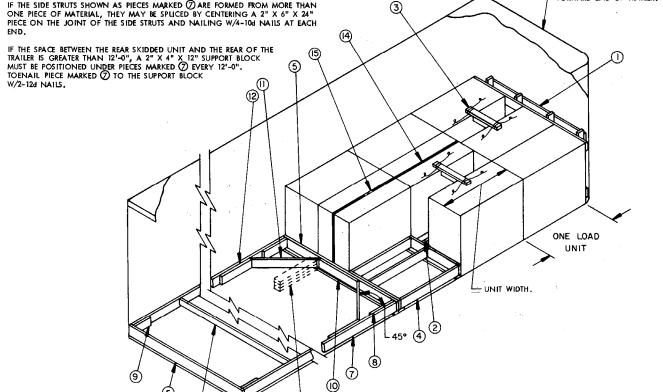
LOAD AS SHOWN

54-UNIT LOAD IN A 40'-0' LONG TRAILER

PAGE 5



IF THE SIDE STRUTS SHOWN AS PIECES MARKED 2 ARE FORMED FROM MORE THAN ONE PIECE OF MATERIAL, THEY MAY BE SPLICED BY CENTERING A 2" X 6" X 24" PIECE ON THE JOINT OF THE SIDE STRUTS AND NAILING W/4-104 NAILS AT EACH



**6** 

➅

#### SPECIAL NOTES:

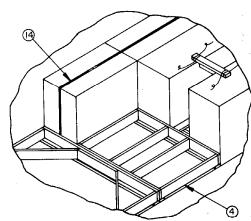
# ISOMETRIC VIEW

(13)

- THESE OUTLOADING PROCEDURES DEPICT THE USE OF K-BRACE BLOCKING IN A
  7'-6" WIDE ( INSIDE DIMENSION ) VAN TRAILER WHICH IS EQUIPPED WITH OR WITHOUT

  3 NAILABLE FLOORS AND REAR CORNER POSTS.
- 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 (7) THROUGH (13) WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS. FOUR (4) BACK UP CLEATS, SHOWN AS PIECES MARKED (6), ARE ADEQUATE FOR RETAINING A MAXIMUM SIZE LTL LOAD OF 20,000 POUNDS.
- THE ANTI-SWAY BRACE PIECE MARKED 2 AND TOP-OF-LOAD ANTI-SWAY BRACE PIECE MARKED 3 MAY BE OMITTED IF THE TOTAL EXCESS SPACE ACROSS THE TRAILER IS NOT MORE THAN 6".
- THE DEPICTED K-BRACE BLOCKING WILL RETAIN A MAXIMUM SIZE LTL LOAD.
- IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, AS DESCRIBED IN GENERAL NOTE "G" ON PAGE 2, THEY MAY BE USED IN LIEU OF THE DEPICTED BLOCKING. SEE THE "ISOMETRIC VIEW" ON PAGE 10 FOR POSITIONING OF CROSS MEMBERS.

#### (CONTINUED AT TOP OF PAGE)



ALT INSTALLATION OF FILLER

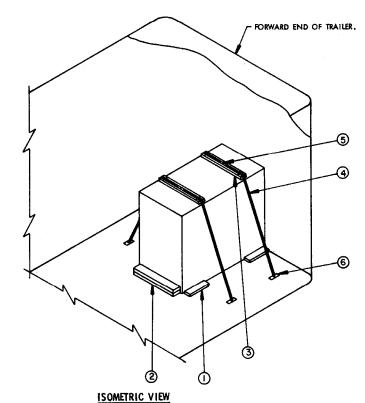
THIS VIEW DEPICTS A "FILLER ASSEMBLY" PROPERLY INSTALLED IN THE PLACE OF TWO SKIDDED UNITS OMITTED FROM A 3-WIDE LOAD UNIT. NOTE RELOCATION OF THE BUNDLING STRAP, PIECE MARKED (4).

KEY NUMBERS TO FORWARD BLOCKING (1 REQD). SEE DETAIL ON PAGE 8. SEE GENERAL NOTE "P" ON PAGE 2 AND SPECIAL NOTE 5 ON PAGE 5.

FORWARD END OF TRAILER.

- ANTI-SWAY BRACE (2 REQD). SEE DETAIL ON PAGE 9. INSTALL IN THE VOID AREA BETWEEN TWO LATERALLY ADJACENT ROWS OF SKIDDED UNITS. SEE SPECIAL NOTE 3 ON THIS PAGE.
- TOP-OF-LOAD ANTI-SWAY BRACE (2 REQD). SEE DETAIL ON PAGE 9. WIRE TIE TO A SKID STRAP WITH NO. 14 GAGE WIRE AS SHOWN BY THE "TIE WIRE APPLICATION" DETAIL ON THAT PAGE. SEE SPECIAL NOTE 3 ON THIS PAGE.
- FILLER ASSEMBLY ( 1 REQD ). SEE DETAIL ON PAGE 9. NAIL TO A HEADER, PIECE MARKED 3. 4
- (3) HEADER, 2" X 6" BY TRAILER WIDTH ( CUT-TO-FIT ) ( 2 REQD ).
- HEADER SUPPORT AND STRUT LEDGER PIECE, 2" X 4" BY TRAILER WIDTH (CUT-TO-FIT) (2 REQD). NAIL TO BOTTOM EDGE OF HEADER MARKED ③ W/1-104 NAIL EVERY 8". 6
- SIDE STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN HEADERS MARKED (3) (2 REQD). SEE SPECIAL NOTE 6 ON THIS PAGE.
- (8) POCKET CLEAT, 2" X 6" X 18" (2 REQD). NAIL TO STRUT MARKED T W/5-10d NAILS. TOENAIL TO THE ADJACENT HEADER MARKED (5) W/3-12d NAILS.
- STRUT RETAINING BLOCK, 2" X 6" X 12" ( 2 REQD ). NAIL TO STRUT MARKED 5 W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER MARKED 5 W/3-12d NAILS. 9
- CENTER CLEAT, 2" X 6" X 30" ( 1 REQD ). NAIL TO HEADER MARKED (5) W/6-10d
- DIAGONAL BRACE, 2" X 6" BY CUT-TO-FIT (2 REQD). DOUBLE REVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT HEADER MARKED 3 AND STRUT MARKED 7 W/2-16d NAILS AT EACH END.
- (2) BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A STRUT MARKED (2) W/8-10d
- STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 3-1/4" (CUT-TO-FIT) (MINIMUM OF 1 REQD), INSTALL ONE (1) NEAR REAR END OF STRUTS MARKED ② AS SHOWN. ONE (1) ADDITIONAL PIECE REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. TOE NAIL TO STRUTS MARKED ② W/4-124 NAILS AT EACH END. CAUTION: USE CARE WHEN TOENAILING TO PREVENT NAILING THRU AND INTO A SIDE WALL OF A (13) TRAILER.
- BUNDLING STRAPS, 1-1/4" X .035" X 25'-0" LONG STEEL STRAPPING (1 REQD).
  PREPOSITION AND INSTALL TO ENCIRCLE TWO (2) SKIDDED UNITS, AS SHOWN. (<del>4</del>)
- SEAL FOR 1-1/4" STRAPPING (2 REQD). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "R" ON PAGE 2.
- BACK-UP CLEAT, 2" X 4" X 30" (TRIPLED) (4 REQD). POSITION ONE AGAINST EACH END OF THE HEADER MARKED ③ AND EQUALLY SPACE THE CENTER TWO. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12J NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER. TOENAIL THE TOP PIECE TO A HEADER PIECE MARKED ⑤ W/2-12J NAILS. SEE SPECIAL NOTE 2 ON THIS PAGE.

TYPICAL LTL (8-UNIT LOAD)

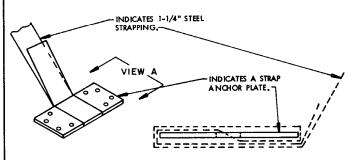


# SPECIAL NOTES:

- 1. A 1-UNIT LOAD IS SHOWN IN A ROUNDED FRONT TRAILER WHICH IS 71-6"
  WIDE (INSIDE DIMENSION) AND WHICH IS EQUIPPED WITH A NAILABLE FLOOR.
  WIDER OR NARROWER TRAILERS, OR TRAILERS WITH SQUARE FRONTS MAY BE
- 2. THE DEPICTED PROCEDURES CAN BE USED FOR THE SHIPMENT OF A 2-UNIT LOAD BY REPEATING WHAT IS SHOWN FOR THE 1-UNIT LOAD.

### **KEY NUMBERS**

- SIDE BLOCKING, 2" X 4" X 12" ( 12 REQD ). NAIL TO TRAILER FLOOR W/3-12d NAILS. SEE GENERAL NOTE "P" ON PAGE 2.
- (2) HEADER, 2" X 4" X 24" DOUBLED (1 REQD). NAIL FIRST PIECE TO TRAILER FLOOR W/6-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- (3) STRAPPING BOARD, 2" X 4" X 24" (2 REQD).
- $\bigoplus$  hold-down strap, 1-1/4" X .035" X 14'-0" long steel strapping (2 reqd ). Staple to piece marked  $\mbox{\textcircled{3}}$  W/2 staples.
- (5) SEAL FOR 1-1/4" STRAP (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "R" ON PAGE 2.
- (6) STRAP ANCHOR PLATE (4 REQD). SEE "APPLICATION OF STRAPPING TO STRAP ANCHOR PLATE" DETAIL ON THIS PAGE. NAIL TO THE TRAILER FLOOR W/6 STRAP ANCHOR PLATE NAILS.



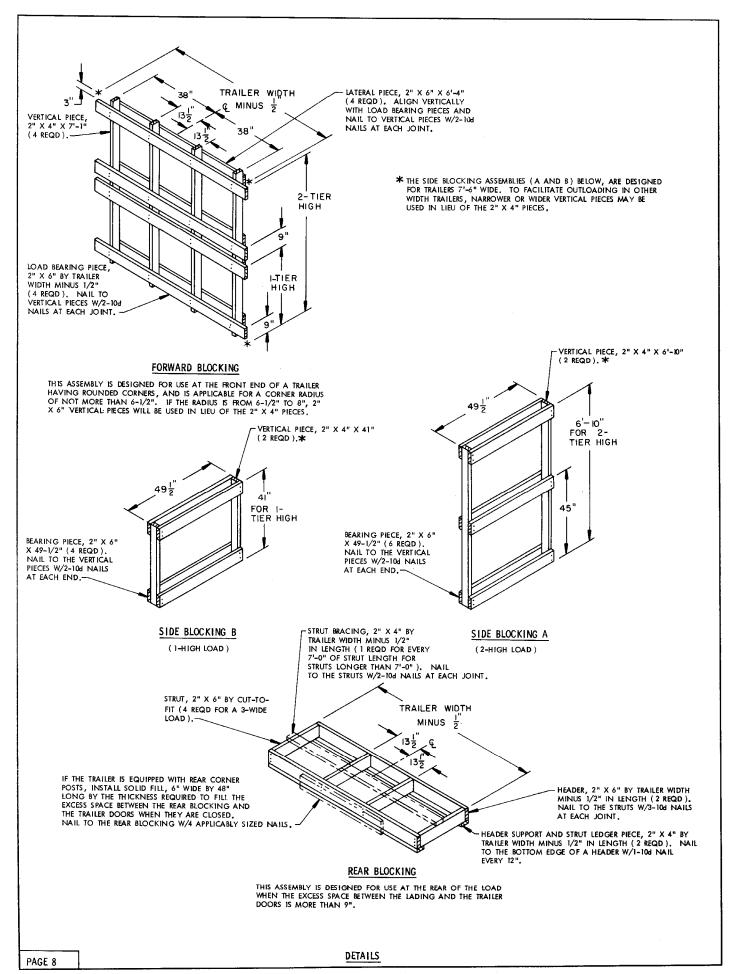
ISOMETRIC VIEW

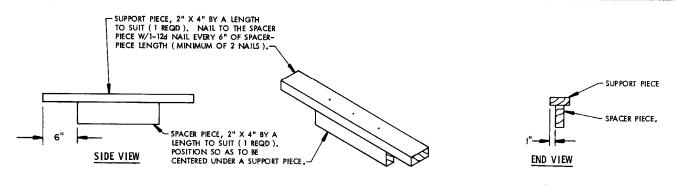
VIEW A

APPLICATION OF STRAPPING TO STRAP ANCHOR PLATE

TYPICAL LTL (1-UNIT LOAD)

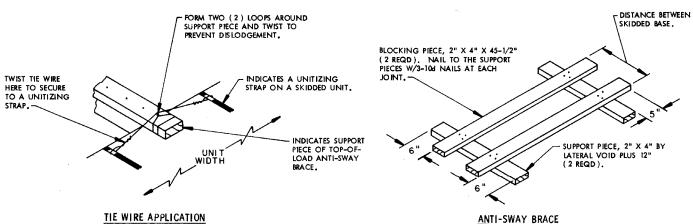
PAGE 7





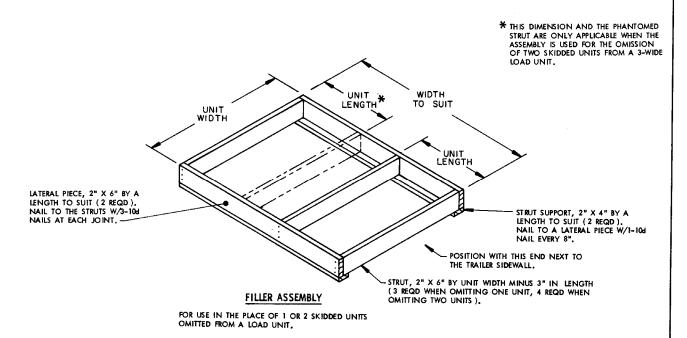
# TOP-OF-LOAD ANTI-SWAY BRACE

THIS ASSEMBLY IS DESIGNED FOR USE IN 1-TIER LOADS BETWEEN THE TOPS OF LATERALLY ADJACENT SKIDDED UNITS TO PREVENT THE UNITS FROM TOPPLING INTO THE VOID AREA. THE ASSEMBLY WILL BE WIRE TIED TO UNIT STRAPS TO PREVENT DISPLACEMENT.



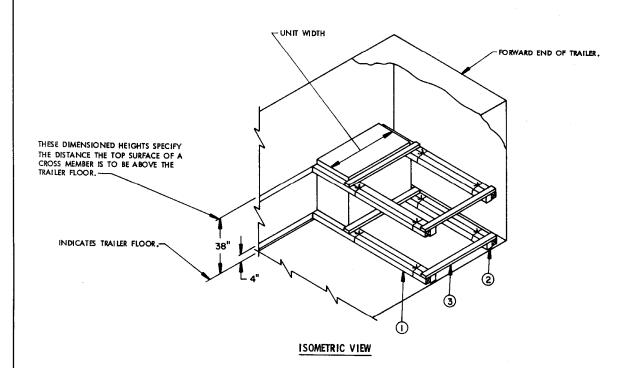
THIS VIEW DEPICTS THE SECUREMENT OF A TOP-OF-LOAD ANTI-SWAY BRACE TO THE TOP OF A SKIDDED UNIT BY WIRE TYING TO THE UNITIZING STRAPS WITH NO. 14 GAGE WIRE.

# ANTI-SWAY BRACES SHOULD BE ASSEMBLED IN PLACE IN ORDER TO OBTAIN A SNUG FIT BETWEEN THE LADING AND THE BLOCKING PIECES OF THE BRACE.



**DETAILS** 

PAGE 9



### SPECIAL NOTES:

- 1. A 7'-6" WIDE ( INSIDE DIMENSION ) VAN TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES IS SHOWN, TRAILERS OF OTHER WIDTHS CAN BE USED.
- 2. IN ADDITION TO BEING USED FOR SHIPMENTS OF ONE SKIDDED UNIT, THE DEPICTED PROCEDURES CAN ALSO BE USED IN CONJUNCTION WITH THE OUTLOADING PROCEDURES ON PAGE 5 FOR THE ADJUSTMENT OF A LOAD QUANTITY.

# KEY NUMBERS

- (1) CROSS MEMBER (4 REQD), POSITION IN TWO (2) BLOCKING STATIONS AT THE HEIGHTS AS SPECIFIED BY THE ISOMETRIC VIEW ABOVE. SEE GENERAL NOTE "G" ON PAGE 2.
- 2 SIDE BLOCKING, 4" X 4" BY CUT-TO-FIT BETWEEN THE SKIDDED UNIT AND THE TRAILER SIDEWALL (4 REQD). WIRE TIE TO A CROSS MEMBER W/2 WRAPS OF NO. 14 GAGE WIRE AT EACH END.
- $\ensuremath{\mathfrak{J}}$  Support Piece, 2" X 4" X 55-1/2" ( 4 REQD ). NAIL TO SIDE BLOCKING MARKED  $\ensuremath{\mathfrak{D}}$  W/3-12d NAILS AT EACH END.