JAVELIN

LOADING AND BRACING (TL & LTL) IN VAN TRAILERS OF GUIDED MISSILES PACKED ONE PER CYLINDRICAL PLASTIC CONTAINER, UNITIZED SIX CONTAINERS PER 4-WAY ENTRY WOODEN PALLET

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CAUTION: THE PROCEDURES SHOWN HEREIN ARE ONLY APPLICALBE FOR HIGHWAY MOVEMENTS; NOT FOR TRAILER-ON-FLATCAR (TOFC) MOVEMENTS.

U.S. ARMY MATERIEL COMMAND DRAWING

	APPROVED, U.S. ARMY AVIATION AND MISSILE COMMAND	ENGINEER	BASIC	LAURA FIEFFER		DO	NOTSCA	LE
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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 LOADS JAVELIN GUIDED MISSILES PACKED ONE PER CYLINDRICAL PLASTIC CONTAINER CONTAINER. FOR DETAIL OF THE PALLET UNIT, SEE AMC DRAWING 19-48-5270-GM20JV2 AND PAGE 3
- C. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN CONVENTIONAL TYPE VAN TRAILERS AND APPLY TO TRAILERS HAVING WOOD, OR WOOD AND METAL, OR ALL METAL FLOORS. REGARDLESS OF THE DIMENSIONS OF THE VAN TRAILERS SHOWN, THE PROCEDURES ARE ALSO APPLICABLE FOR TRAILERS WHICH ARE 89" THRU 99" IN WIDTH AND FOR TRAILERS OF OTHER LENGTHS FROM THE SHORTEST TO THE LONGEST AVAILABLE (REF: 24' TO 53'), AND FOR STRAIGHT TRUCK VANS. THE SPECIFIED BRACING IS ADEQUATE FOR LOADS WEIGHING UP TO AND INCLUDING THE MAXIMUM WEIGHTS PERMITTED BY LAW.
- D. SELECTION OF A VEHICLE FOR THE TRANSPORT OF THE DESIGNATED ITEM IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY VEHICLES IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS WILL BE SELECTED FOR USE.
- E. 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 SEMITRAILER 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 SINGLE OR TANDEM AXLE MUST NOT EXCEED THE MAXIMUM ALLOWABLE WEIGHT. IF THERE IS ANY DOUBT AS TO WHETHER THE TOTAL GROSS WEIGHT OR AXLE WEIGHT EXCEEDS THE MAXIMUM ALLOWED, WEIGHT SHOULD BE VERIFIED BY ACTUALLY WEIGHING THE LOADED VEHICLE.
- F. 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. 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.
- G. THE "LOAD AS SHOWN" FOR MOST OF THE FULL LOADS DEPICTED HEREIN IS BASED ON AN APPROXIMATE LADING WEIGHT OF 30,000 POUNDS. THE SPECIFIED BLOCKING AND BRACING FOR THE FULL LOADS IS ADEQUATE FOR THE RETENTION OF LOADS, UP TO 45,000 POUNDS, IF IT IS DESIRED TO INCREASE THE LADING WEIGHT.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH PALLET UNITS OF JAVELIN MISSILES, 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.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

<u>LUMBER</u> :	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
<u>NAILS</u> :	ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS).
<u>PLYWOOD</u> :	COMMERCIAL ITEM DESCRIPTION A-A-55057, INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
STRAPPING, STEEL:	ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.
SEAL, STRAP:	ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.

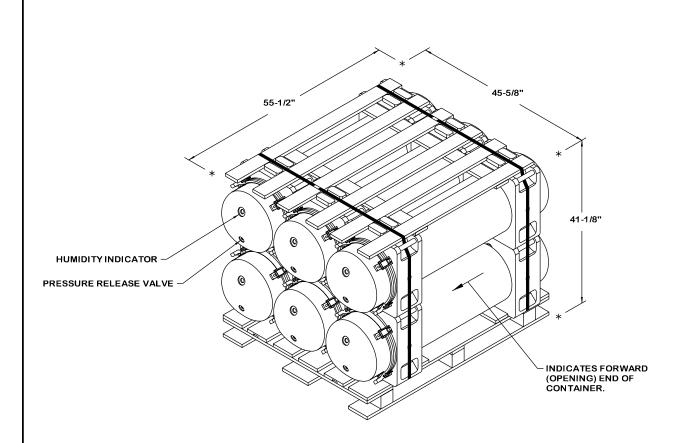
WIRE, CARBON STEEL -: ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, 0.0800" DIA, GRADE 1006 OR BETTER.

ANTI-CHAFING
MATERIAL - - - - -: MIL-B-121 (OR EQUAL); NEUTRAL BARRIER

(GENERAL NOTES CONTINUED)

- J. SOME LOADS ARE SHOWN IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END. IF THE CONVENTIONAL VAN 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 PALLET UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER.
- K. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO SEALS, BUTTED TOGETHER WITH TWO PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP-TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 3 FOR GUIDANCE.
- L. 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.
- M. 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. 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 THE PIECE ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- N. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES WHICH ARE TO BE USED IN THE DELINEATED TRAILER LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS. STAPLES WHICH ARE 2-1/2" OR LESS IN LENGTH SHOULD BE IN ACCORDANCE WITH ASTM F1667 AS NEARLY AS PRACTICABLE. STAPLES WHICH ARE LONGER THAN 2-1/2" WILL BE A COMMERCIAL GRADE, OF A QUALITY EQUIVALENT TO THOSE MANUFACTURED BY SENCO PRODUCTS INCORPORATED. NOTE: STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- O. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- P. THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 6". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE SIDE OR CENTER DUNNAGE ASSEMBLIES. NAIL EACH ADDITIONAL PIECE TO THE BUFFER PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS AND QUANTITY OF THE LUMBER USED IN THESE ASSEMBLIES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE PALLET UNIT.
- Q. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THE 9". USE THE "REAR BLOCKING ASSEMBLY A" AS DEPICTED ON PAGE 21. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B", AS SHOWN ON PAGE 22. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO PIECE MARKED 4 ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE. CAUTION: THE NAILED HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
- R. CAUTION: WHEN POWER OR PNEUMATIC NAILERS ARE BEING USED IN THE APPLICATION OF NAILED FLOORLINE BLOCKING OR BRACING, PALLET UNITS BEING LOADED INTO THE CONVEYANCE MUST BE POSITIONED TO ALLOW A CLEAR PATH OF EXIT FOR THE OPERATOR AT ALL TIMES, SHOULD AN EMERGENCY EXIT BECOME NECESSARY.
- S. PALLET UNITS WHICH DO NOT CONTAIN A FULL QUANTITY OF ITEMS CAN BE TRANSPORTED. SEE THE "SHIPMENT OF A PARTIAL PALLET UNIT" DETAILS ON PAGE 27. FOR "SHIPMENT OF LEFTOVER CONTAINERS" SEE THE DETAILS ON PAGE 26.

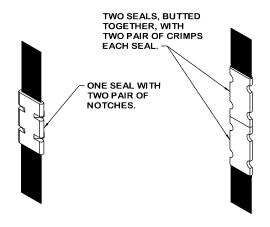
(CONTINUED ON PAGE 3)



PALLET UNIT DATA

(GENERAL NOTES CONTINUED FROM PAGE 2)

- T. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIP-MENT OF PALLET UNITS OF JAVELIN CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED GUIDED MISSILE, OR WHEN THEY ARE EMPTY.
- U. ANTI-CHAFING MATERIAL MAY BE INSTALLED AT POINTS OF CONTACT BETWEEN CONTAINERS AND STEEL STRAPPING, IF DESIRED, TO PREVENT CHAFING DAMAGE TO CONTAINER PAINT AND MARKINGS.
- V. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454 KG.



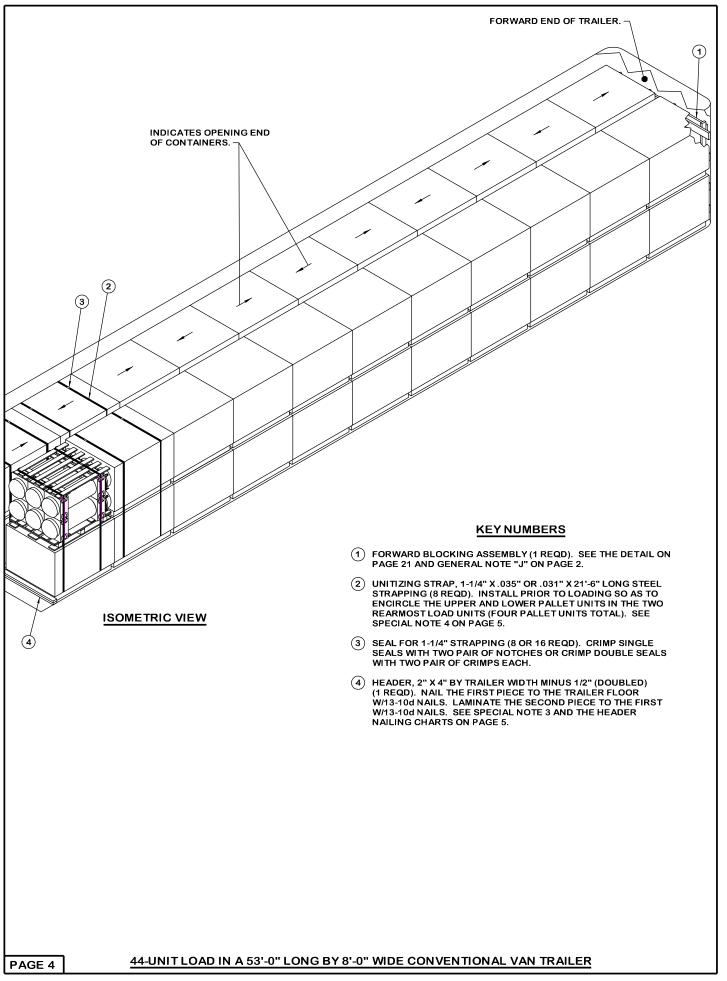
STRAP JOINT A

METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.

STRAP JOINT B

METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

END-OVER-END LAP JOINT DETAILS



FORWARD HEADER NAILING CHART			
#NAILS	MAX. LOAD WEIGHT (LBS)		
3	15,000		
4	20,000		
5	25,000		
6	30,000		
7	35,000		
8	40,000		
9	45,000		

HEADERS AT THE FRONT END OF A LOAD OR AT THE FRONT END OF A DIVIDED LOAD WILL BE DOUBLED 2" X 6" MATERIAL. THE NUMBER OF NAILS INDICATED ABOVE REFERS TO THE NUMBER OF NAILS USED IN EACH LAMINATION OF A HEADER, FOR EXAMPLE 8 NAILS MEANS THE FIRST BOARD IS NAILED TO THE TRAILER FLOOR W/8-10d NAILS, AND THE SECOND BOARD IS LAMINATED TO THE FIRST W/8-20d NAILS, FOR A TOTAL OF 8-10d AND 8-20d NAILS PER HEADER.

REAR HEADER NAILING CHART *			
# NAILS	max. load weight (lbs)		
6 7 8 9 10 11 12 13 14 15 16 17 18	15,000 17,500 20,000 22,500 25,000 27,500 30,000 32,500 35,000 37,500 40,000 42,500		

* HEADERS AT THE REAR OF A FULL LOAD OR AT THE REAR END OF A DIVIDED LOAD WILL BE DOUBLED 2" X 4" MATERIAL. THE NUMBER OF NAILS INDICATED ABOVE REFERS TO THE NUMBER OF NAILS USED IN EACH LAMINATION OF A HEADER, FOR EXAMPLE 8 NAILS MEANS THE FIRST BOARD IS NAILED TO THE TRAILER FLOOR W/8-10d NAILS, AND THE SECOND BOARD IS LAMINATED TO THE FIRST W/8-10d NAILS, FOR A TOTAL OF 16-10d NAILS. NOTE: REAR HEADERS MAY BE HANDLED IN THE SAME MANNER AS FORWARD HEADERS, USING 2" X 6" MATERIAL WITH 10d AND 20d NAILS, IF DESIRED.

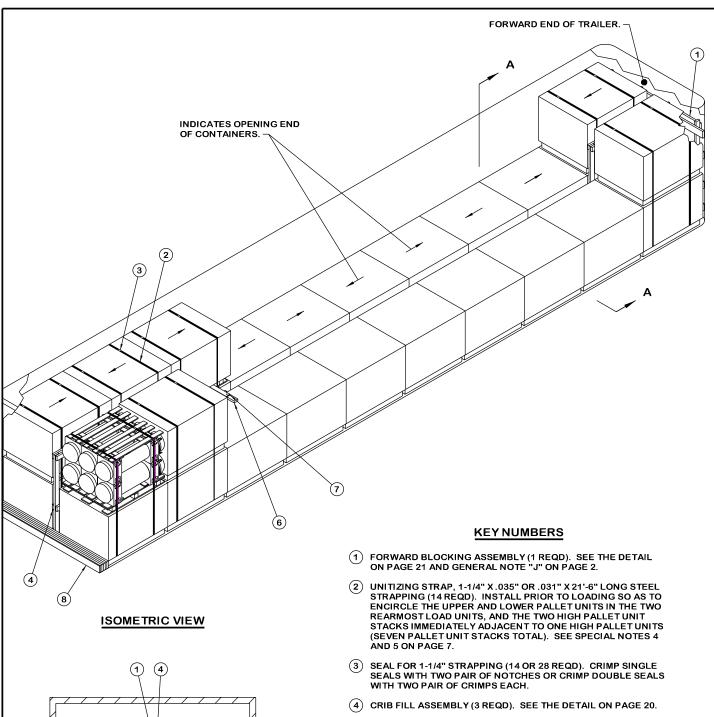
BILL OF MATERIAL LUMBER LINEAR FEET BOARD FEET 2" x 4" 43 29 2" x 6" 59 59 NAILS NO. REQD POUNDS 10d (3") 90 1-1/2 STEEL STRAPPING, 1-1/4" - - 172' REQD - - 24.57 LBS SEAL FOR 1-1/4" STRAPPING - - 8 REQD - - 0.37 LBS

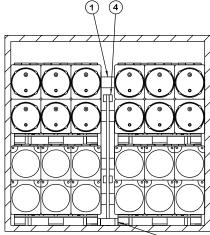
SPECIAL NOTES:

- A 53'-0" LONG BY 8'-0" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- 2. ANTI-SWAY BRACES AND CRIB FILL ASSEMBLIES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG. SEE THE LOAD ON PAGE 6 FOR DETAILS
- 3. IF USE OF THE HEADER, PIECE MARKED (4), IS NOT DESIRED OR NOT POSSIBLE, SUCH AS WHEN THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE HEADER, THE FOLLOWING CRITERIA WILL BE USED TO SELECT AN APPROPRIATE REAR BLOCKING ASSEMBLY. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 21. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B", AS DEPICTED ON PAGE 22. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED.
- 4. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, AS IN THE DEPICTED LOAD, UNITIZING STRAPS, PIECE MARKED (2), MUST BE INSTALLED ON THE REARMOST TWO STACKS IN EACH APPLICABLE ROW.
- 5. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A 2-TIER LOAD CAN BE REDUCED BY A MULTIPLE OF FOUR UNITS BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD; OR, THE ENTIRE TOP TIER CAN BE LEFT OFF; OR, ONE OR MORE UNITS CAN BE ADDED TO OR OMITTED FROM THE TOP TIER
- 6. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO PAGE 26 FOR GUIDANCE.
- 7. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

LOAD AS SHOWN

TIEM	QUANTITY	METCHI (APP	ROX)
PALLET UNIT DUNNAGE			
TOTAL	WFTGHT	 30, 780 LBS	(APPROX)





THE UNITIZING STRAPS AND SEALS, PIECES MARKED ②

SECTION A-A

PAGE 6

- (5) ANTI-SWAY BRACE (7 REQD). SEE THE DETAIL ON PAGE 20.
- (6) TOP-OF-LOAD ANTI-SWAY BRACE (1 REQD). SEE THE DETAIL ON PAGE 25.
- TIE WIRE, NO. 14 GAGE WIRE, 24" LONG (2 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE TOP-OF-LOAD ANTI-SWAY BRACE AND THE PALLET TOP DUNNAGE ASSEMBLY. BRING ENDS TOGETHER AND TWIST TAUT.
- (8) REAR BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 21 AND SPECIAL NOTE 3 ON PAGE 7.

AND (3), HAVE BEEN OMITTED FOR CLARITY PURPOSES.

27-UNIT LOAD IN A 48'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TRAILER

- A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- 2. ANTI-SWAY BRACES, CRIB FILL ASSEMBLIES AND TOP-OF-LOAD ANTI-SWAY BRACES MAY BE OMITTED WHEN THE SPACE BE-TWEEN LATERALLY ADJACENT UNITS IS 6" OR LESS, AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG.
- 3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS DETAILED ON PAGE 22. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO PIECE MARKED 4 ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
- 4. A PALLET UNIT AT EACH END OF A SECOND LAYER PORTION OF THE LOAD MUST BE UNITIZED TO A PALLET UNIT IN THE FIRST LAYER USING UNITIZING STRAPS, PIECE MARKED (2).
- 5. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, AS IN THE DEPICTED LOAD, UNITIZING STRAPS, PIECE MARKED (2), MUST BE INSTALLED ON THE REARMOST TWO STACKS IN EACH APPLICABLE ROW.
- 6. THE TOP-OF-LOAD ANTI-SWAY BRACE, SHOWN AS PIECE MARKED (B), IS ONLY REQUIRED FOR THE BRACING OF AN ODD UNIT IN THE SECOND LAYER. IF ANOTHER PALLET UNIT IS POSITIONED OPPOSITE THE ODD UNIT, CRIB FILL WILL BE INSTALLED IN LIEU OF PIECE MARKED (B).
- 7. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A 2-TIER LOAD CAN BE REDUCED BY A MULTIPLE OF FOUR UNITS BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD; OR, THE ENTIRE TOP TIER CAN BE LEFT OFF; OR, ONE OR MORE UNITS CAN BE ADDED TO OR OMITTED FROM THE TOP TIER.
- 8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO PAGE 26 FOR GUIDANCE.
- 9. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

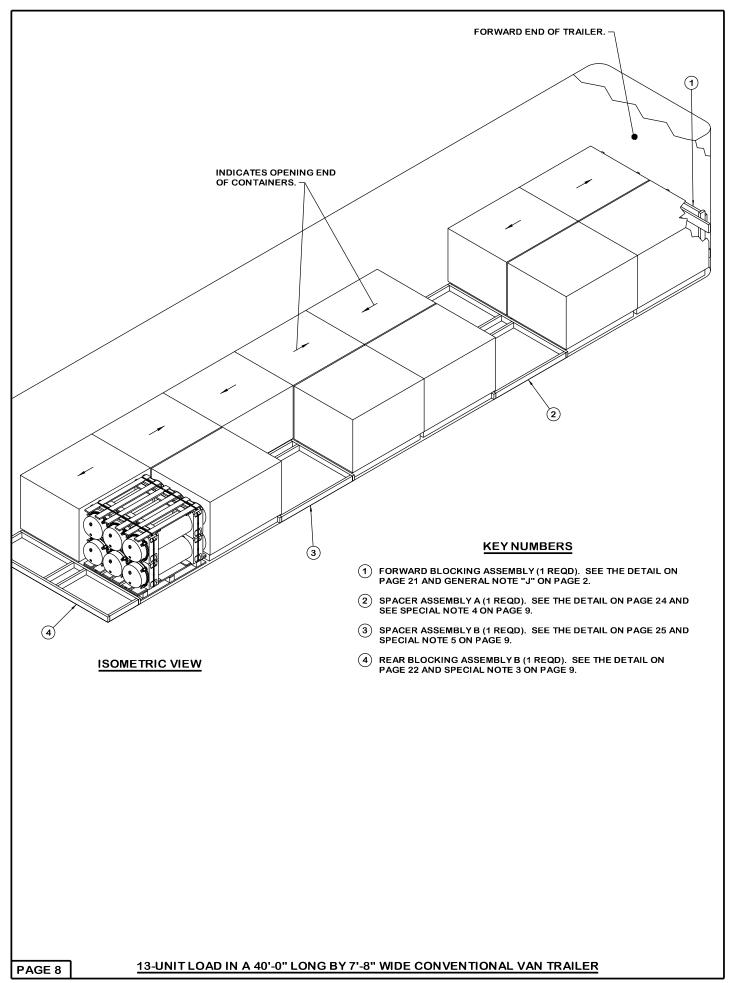
BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
1" X 6" 2" X 4" 2" X 6"	9 201 107	5 134 107		
NAILS	NO. REQD	POUNDS		
6d (2") 8 1/4 10d (3") 280 4-1/2				

STEEL STRAPPING, 1-1/4" - - 301' REQD - - 43.00 LBS SEAL FOR 1-1/4" STRAPPING - - 14 REQD - - 0.64 LBS WIRE, .0800" DIA - - - - - - 4' REQD - - 0.07 LBS

LOAD AS SHOWN

PALLET UNIT - - - - 27 - - - - 18,765 LBS
DUNNAGE - - - - - - - - - - - - 19,303 LBS (APPROX)

27-UNIT LOAD IN A 48'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TRAILER



- 1. A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- 2. ANTI-SWAY BRACES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG. SEE THE LOAD ON PAGE 6 FOR DETAILS.
- 3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 21. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO PIECE MARKED 40 N PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
- 4. SPACER ASSEMBLY "A", SHOWN AS PIECE MARKED 2 IN THE LOAD ON PAGE 8, IS TO BE USED FOR THE PURPOSE OF FILLING LONGITUDINAL VOID, AND IS SHOWN AS TYPICAL ONLY. IF THE TRAILER TO BE LOADED IS LONGER THAN 40'-0", THE LOCATION OF THE ASSEMBLY, AND/OR THE STRUT LENGTHS, MAY BE DIFFERENT FROM WHAT IS SHOWN. IF A SHORTER TRAILER IS USED FOR THE DEPICTED LOAD, THIS ASSEMBLY MAY NOT BE REQUIRED. NOTE THAT A SPACER ASSEMBLY "A" MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.
- 5. SPACER ASSEMBLY "B", SHOWN AS PIECE MARKED ③ IN THE LOAD ON PAGE 8, IS ONLY SHOWN TO DEPICT A TYPICAL INSTALLATION. IF A PALLET UNIT IS LOADED IN PLACE OF THE SPACER ASSEMBLY "B", PIECE MARKED ③ WILL NOT BE REQUIRED. NOTE THAT A SPACER ASSEMBLY "B" MUST BE POSITIONED WHERE THERE WILL BE A PALLET UNIT AT EACH END. A SPACER ASSEMBLY "B" MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.
- 6. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY A MULTIPLE OF TWO UNITS BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD; OR, ONE OR MORE UNITS CAN BE ADDED TO OR OMITTED FROM THE LOAD.
- 7. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO PAGE 26 FOR GUIDANCE.
- 8. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

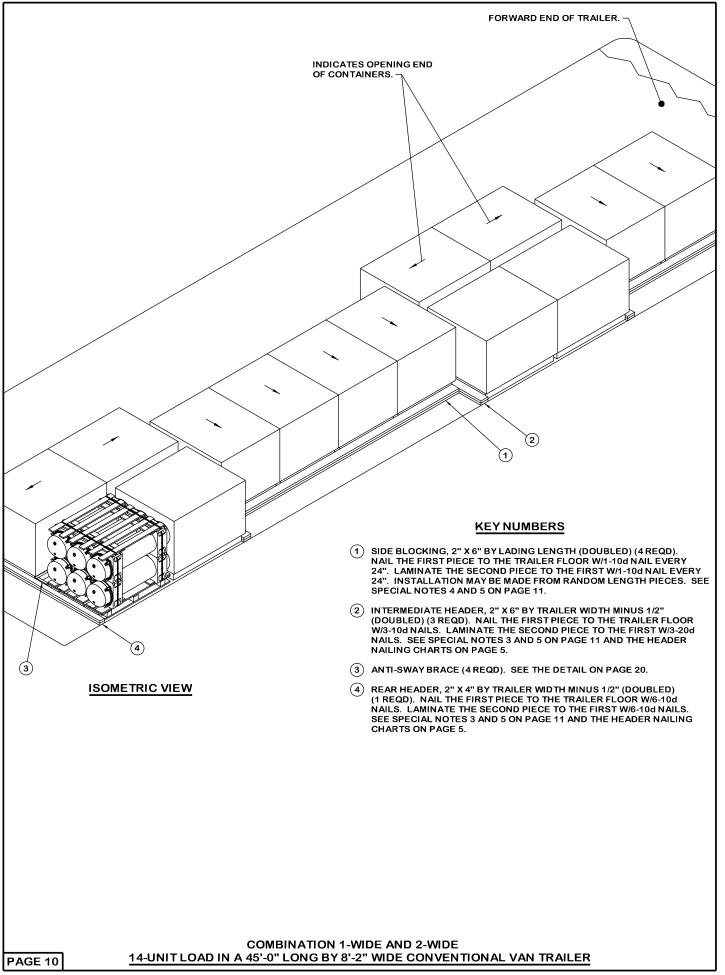
BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" x 4" 2" x 6"	92 59	61 59		
NAILS	NO. REQD	POUNDS		
10d (3")	76	1-1/4		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
	13	

TOTAL WEIGHT - - - - - - 9,275 LBS (APPROX)

13-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER



- 1. A 45'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- 2. ANTI-SWAY BRACES MAY BE OMITTED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS IS 6" OR LESS, AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG.
- 3. IF USE OF THE REAR HEADER, PIECE MARKED (4), IS NOT DESIRED OR NOT POSSIBLE, SUCH AS WHEN THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE HEADER, THE FOLLOWING CRITERIA WILL BE USED TO SELECT AN APPROPRIATE REAR BLOCKING ASSEMBLY. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 21. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B", AS DEPICTED ON PAGE 22. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED.
- 4. IF DESIRED, SIDE SPACERS "A" AND/OR "B", AS DEPICTED ON PAGES 23 AND 24, MAY BE USED IN LIEU OF THE SIDE BLOCKING, PIECE MARKED (1). SEE THE LOAD ON PAGE 12 FOR DETAILS.
- 5. SIDE BLOCKING AND HEADERS, PIECES MARKED ①, ②, AND ④, MUST BE POSITIONED AGAINST THE PALLET, NOT THE CONTAINERS. SIDE BLOCKING MAY BE PRE-POSITIONED ON ONE SIDE OF THE TRAILER, IF DESIRED, TO SIMPLIFY LOADING. ALSO, 2" X 8" MATERIAL MAY BE SUBSTITUTED FOR THE 2" X 4" OR 2" X 6" SIDE BLOCKING OR HEADER MATERIAL, IF DESIRED.
- 6. THE LOADING PROCEDURES SHOWN ON PAGE 10 ARE LIMITED TO 1-LAYER LOADS; PALLET UNITS WILL NOT BE STACKED.
- 7. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. THE LOAD CAN BE INCREASED BY REPLACING SOME OF THE 1-WIDE UNITS WITH 2-WIDE UNITS, OR THE LOAD CAN BE REDUCED BY REPLACING 2-WIDE PORTIONS WITH SINGLE UNITS.
- 8. IF A PALLET UNIT WHICH DOES NOT CONTAIN A FULL QUANTITY OF CONTAINERS IS TO BE TRANSPORTED, THAT SHORT UNIT SHOULD BE POSITIONED AT THE REAR OF THE LOAD. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 26 FOR GUIDANCE.

BILL OF MATERIAL					
LUMBER	LINEAR FEET	BOARD FEET			
2" x 4" 2" x 6"	100 138	67 138			
NAILS	NO. REQD	POUNDS			
10d (3") 20d (4")	85 9	1-1/2 1/2			

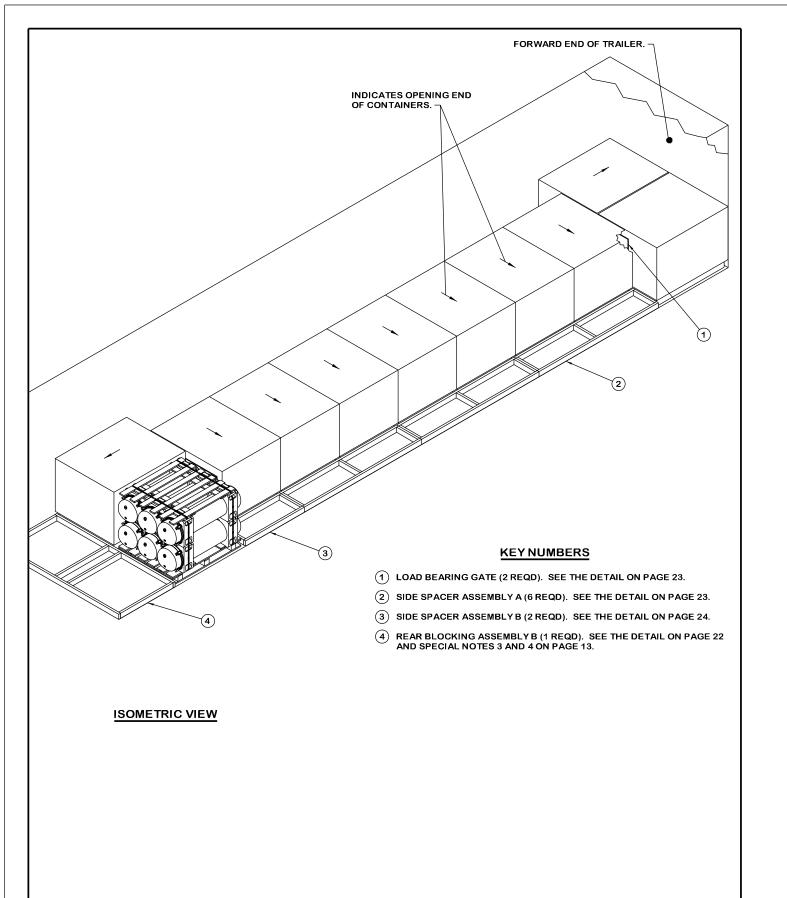
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
	14	

TOTAL WEIGHT - - - - - - 10, 141 LBS (APPROX)

COMBINATION 1-WIDE AND 2-WIDE

14-UNIT LOAD IN A 45'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TRAILER



COMBINATION 1-WIDE AND 2-WIDE 11-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER

- A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- ANTI-SWAY BRACES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG. SEE THE LOAD ON PAGE 6 FOR DETAILS.
- 3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 21. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO PIECE MARKED (4) ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
- 4. IF THE TRAILER BEING LOADED IS EQUIPPED WITH A WOOD OR WOOD AND METAL FLOOR, AND IF DESIRED, NAILED SIDE BLOCK-ING MAY BE USED IN LIEU OF THE SIDE SPACERS, PIECES MARKED (3) AND (4). SIDE BLOCKING SHOULD BE DOUBLED 2" X 6" MATE-RIAL. SEE THE LOAD ON PAGE 10 FOR DETAILS.
- 5. THE LOADING PROCEDURES SHOWN ON PAGE 12 ARE LIMITED TO 1-LAYER LOADS; PALLET UNITS WILL NOT BE STACKED.
- 6. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. THE LOAD CAN BE INCREASED BY REPLACING SOME OF THE 1-WIDE UNITS WITH 2-WIDE UNITS, OR THE LOAD CAN BE REDUCED BY REPLACING 2-WIDE PORTIONS WITH SINGLE UNITS.
- 7. IF A PALLET UNIT WHICH DOES NOT CONTAIN A FULL QUANTITY OF CONTAINERS IS TO BE TRANSPORTED, THAT SHORT UNIT SHOULD BE POSITIONED AT THE REAR OF THE LOAD. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 26 FOR GUIDANCE.

BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" x 3" 2" x 4"	3 166	2 111		
NAILS	NO. REQD	POUNDS		
10d (3")	116	2		
PLYWOOD, 1/2" 12.00 SQ FT REQD16.50 LBS				

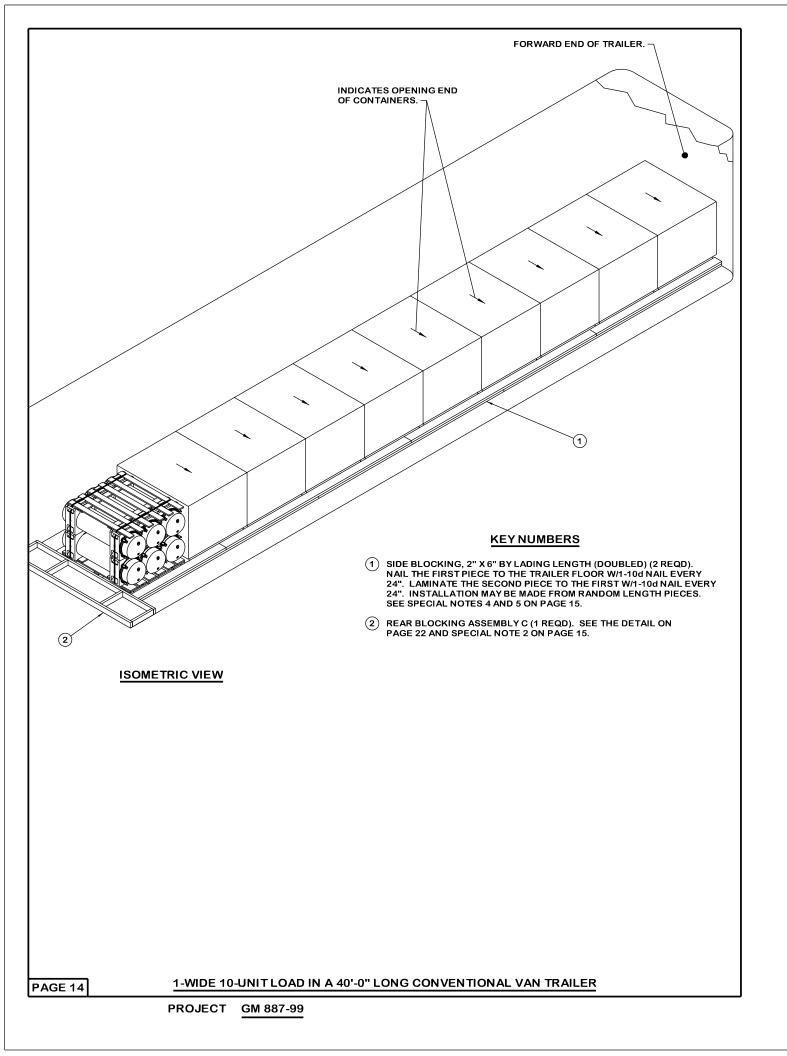
LOAD AS SHOWN

 ITEM
 QUANTITY
 WEIGHT (APPROX)

 PALLET UNIT - - - - - 11 - - - - 7,645 LBS
 DUNNAGE - - - - 242 LBS

TOTAL WEIGHT - - - - - - 7,887 LBS (APPROX)

COMBINATION 1-WIDE AND 2-WIDE
11-UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE CONVENTIONAL VAN TRAILER



- 1. A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
- 2. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS GREATER THAN 1-1/2" AND LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 21. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY C" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO PIECE MARKED 4 ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
- 3. IF DESIRED, SIDE SPACERS "A" AND/OR "B", AS DEPICTED ON PAGES 23 AND 24, MAY BE USED IN LIEU OF THE SIDE BLOCKING, PIECE MARKED (1). SEE THE LOAD ON PAGE 12 FOR DETAILS.
- 4. SIDE BLOCKING, PIECE MARKED ①, MUST BE POSITIONED AGAINST THE PALLET, NOT THE CONTAINERS. SIDE BLOCKING MAY BE PRE-POSITIONED ON ONE SIDE OF THE TRAILER, IF DESIRED, TO SIMPLIFY LOADING. ALSO, 2" X 8" MATERIAL MAY BE SUBSTITUTED FOR THE 2" X 6" SIDE BLOCKING MATERIAL, IF DESIRED.
- 5. THE LOADING PROCEDURES SHOWN ON PAGE 14 ARE LIMITED TO 1-LAYER LOADS; PALLET UNITS WILL NOT BE STACKED.
- 6. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED.
- 7. IF A PALLET UNIT WHICH DOES NOT CONTAIN A FULL QUANTITY OF CONTAINERS IS TO BE TRANSPORTED, THAT SHORT UNIT SHOULD BE POSITIONED AT THE REAR OF THE LOAD. REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 26 FOR GUIDANCE.

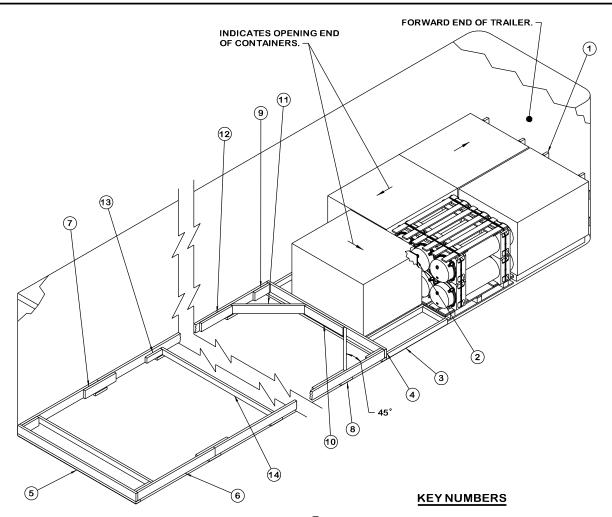
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
2" x 4" 2" x 6"	21 153	14 153	
NAILS	NO. REQD	POUNDS	
10d (3")	88	1-1/2	

LOAD AS SHOWN

ITEM	QUANTITY	$\underline{\text{WEIGHT}}$ (APPROX)
	10	

TOTAL WEIGHT - - - - - 7,284 LBS (APPROX)

1-WIDE 10-UNIT LOAD IN A 40'-0" LONG CONVENTIONAL VAN TRAILER



ISOMETRIC VIEW

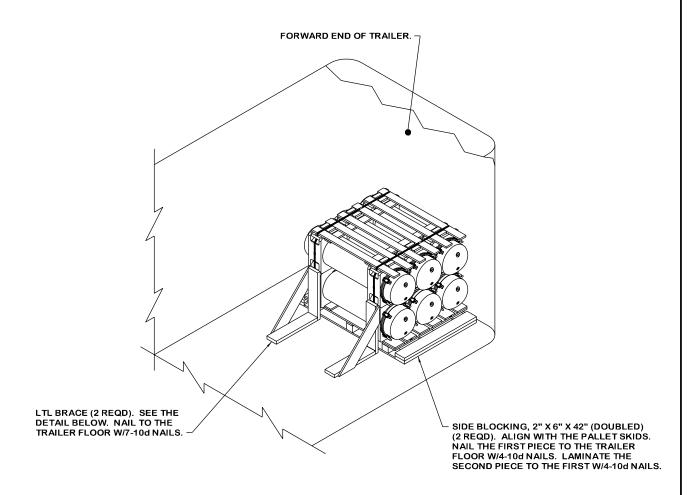
(KEY NUMBERS CONTINUED)

- (10) CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO A HEADER, PIECE MARKED (4), W/6-10d NAILS.
- 11 DIAGONAL BRACE, 2" X 6" BY CUT TO FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45°CUTS. INSTALL AT A 45°ANGLE AS SHOWN AND TOENAIL TO THE ADJACENT HEADER AND SIDE STRUT, PIECES MARKED (4) AND (6), W/2-16d NAILS AT EACH END
- 12) BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT, PIECE MARKED (6), W/8-10d NAILS.
- (13) STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED (6), W/3-10d NAILS. SEE SPECIAL NOTE 5 ON PAGE 17.
- (14) STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQUIRED). NAIL TO THE POCKET CLEATS, PIECES MARKED (9), AND/OR TO THE STRUT BRACE RETAINING CLEATS, PIECES MARKED (13), W/2-12d NAILS AT EACH END. SEE SPECIAL NOTE 5 ON PAGE 17.

- 1 FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 21 AND GENERAL NOTE "J" ON PAGE 2.
- (2) LOAD BEARING GATE (1 REQD). SEE THE DETAIL ON PAGE 23.
- (3) SIDE SPACER ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 24. NAIL TO A HEADER, PIECE MARKED(4), W/2-10d NAILS. SEE SPECIAL NOTE 3 ON PAGE 17.
- (4) HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). SEE SPECIAL NOTE 7 ON PAGE 17.
- (5) HEADER AND SIDE STRUT SUPPORT, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER, PIECE MARKED (4), W/1-10d NAIL EVERY 8".
- 6 SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN THE FORWARD AND REAR HEADERS, PIECES MARKED (4) (2 REQD). SEE SPECIAL NOTE 4 ON PAGE 17.
- (7) SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF PIECES MARKED (6) AND NAIL TO SIDE STRUT MARKED (6) W/4-10d NAILS AT EACH END. SEE SPECIAL NOTE 4 ON PAGE 17.
- (8) RISER PIECE, 2" X 4" X 9" (AS REQD). CENTER UNDER THE JOINTS OF PIECES MARKED (1) AND (2), (3) AND (4), AND UNDER THE SPLICE OF THE SIDE STRUTS IF APPLICABLE. NAIL THE FIRST PIECE TO THE SIDE STRUT MARKED (6) W/2-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- 9 POCKET CLEAT, 2" X 6" X 12" (4 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑥, W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER, PIECE MARKED ④, W/3-12d NAILS.

TYPICAL LTL (5-UNIT) LOAD IN A CONVENTIONAL VAN TRAILER

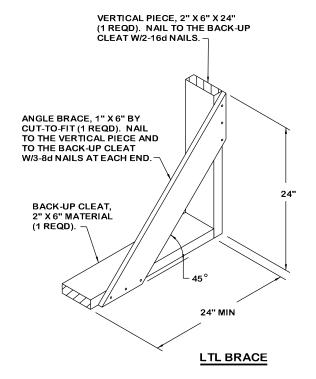
- 1. A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
- 2. ANTI-SWAY BRACES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM CONTAINER STACKING LUG TO CONTAINER STACKING LUG. SEE THE LOAD ON PAGE 6 FOR DETAILS.
- 3. THE SIDE SPACER ASSEMBLIES, PIECE MARKED ③, ARE SHOWN ONLY TO DEPICT A TYPICAL INSTALLATION. SIDE SPACER ASSEMBLIES WILL BE USED WHEN A PALLET UNIT IS OMITTED. THEY MAY OR MAY NOT BE REQUIRED, DEPENDING ON THE QUANTITY OF PALLET UNITS TO BE SHIPPED.
- 4. DEPENDING ON THE NUMBER OF UNITS BEING LOADED, EACH OF THE SIDE STRUTS, PIECES MARKED (§), MAY NEED TO BE FORMED FROM MORE THAN ONE PIECE OF MATERIAL. IF SUCH IS THE CASE, THE SIDE STRUTS MUST BE SPLICED. SPLICING CAN BE ACCOMPLISHED BY CENTERING A 2" X 6" X 24" PIECE ON THE JOINT OF THE SIDE STRUTS AND NAILING IT TO THE SIDE STRUTS W/4-10d NAILS AT EACH END. CAUTION: A RISER PIECE, PIECE MARKED (§), MUST BE POSITIONED UNDER EACH SPLICE JOINT. NOTE: THE STRUT BRACE PIECE(S), PIECE MARKED (§), MAY BE NAILED TO THE SPLICE PIECES IF DESIRED, IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS, PIECE MARKED (§).
- 5. ALL LTL LOADS, REGARDLESS OF THEIR SIZE, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO PIECE MARKED (§). IF THE SIDE STRUTS, PIECE MARKED (§), ARE LONGER THAN 7'-0", AN ADDITIONAL STRUT BRACE, TWO STRUT BRACE RETAINING CLEATS, AND TWO RISER PIECES, MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT LENGTH.
- 6. THE "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED (4) THRU (4), IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 20,000 POUNDS.
- 7. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, THE NAILED-HEADER METHOD OF REAR BLOCKING MUST BE INSTALLED IN LIEU OF THE "K-BRACE" TYPE BLOCKING. REFER TO PIECE MARKED ④ ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE. NOTE THAT THE NAILED-HEADER METHOD OF REAR BLOCKING MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS AND NAILABLE FLOORS, AND MAY BE USED IN LIEU OF PIECES MARKED ③ THRU ① WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.
- 8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED TWO CONTAINERS MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 26 FOR GUIDANCE.
- REFER TO PAGE 27 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.



ISOMETRIC VIEW

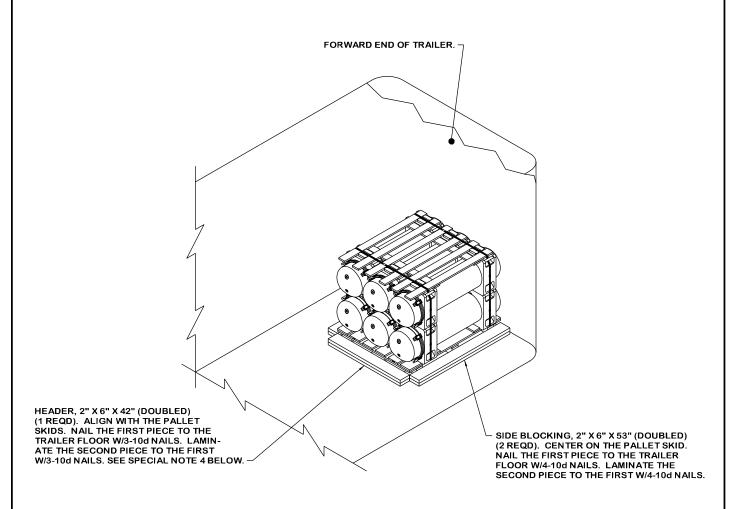
SPECIAL NOTES:

- A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
- 2. THE POSITIONING OF A UNIT IS OPTIONAL. LTL BRACES MUST CONTACT EITHER SIDE OF THE UNIT, NOT THE AFT OR FORWARD END. UNITS MAY ALSO BE LOCATED IN THE CORNER OF THE TRAILER, IF DESIRED. IF THE TRAILER DOES NOT HAVE A SQUARE FRONT, A FORWARD BLOCKING ASSEMBLY MUST BE INSTALLED WHEN POSITIONING A UNIT IN THE CORNER OF THE TRAILER. SEE THE DETAIL ON PAGE 21.
- MORE THAN ONE PALLET UNIT CAN BE SHIPPED, PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. THE LOAD SHOULD BE FORMED IN A ROW.
- 4. EACH LTL BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL SUPPORT 2,000 POUNDS OF LADING; HOWEVER, NOT LESS THAN TWO BRACES WILL BE USED AGAINST EACH PALLET UNIT ACROSS THE WIDTH OF THE TRAILER.



PAGE 18

TYPICAL LTL (1-UNIT) LOAD IN A CONVENTIONAL VAN TRAILER (LTL BRACE METHOD)

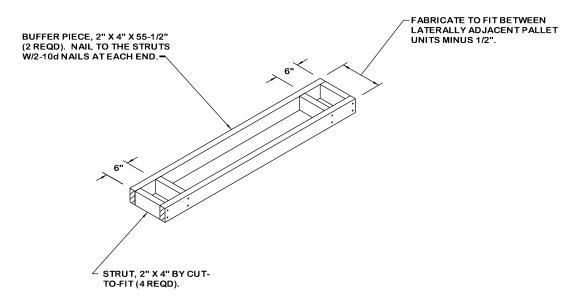


ISOMETRIC VIEW

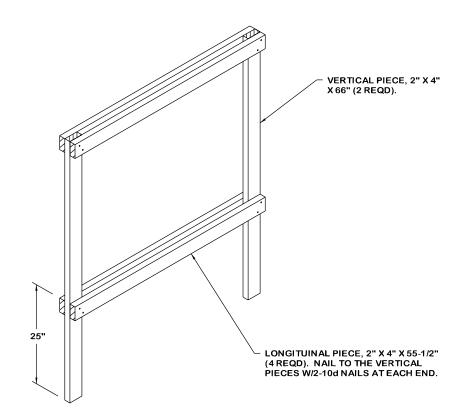
SPECIAL NOTES:

- A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
- 2. THE POSITIONING OF A UNIT IS OPTIONAL. THE PALLET UNIT MAY BE TURNED WITH ONE SIDE AGAINST THE FORWARD WALL OF THE TRAILER, IF DESIRED. UNITS MAY ALSO BE LOCATED IN THE CORNER OF THE TRAILER, IF DESIRED. IF THE TRAILER DOES NOT HAVE A SQUARE FRONT, A FORWARD BLOCKING ASSEMBLY MUST BE INSTALLED WHEN POSITIONING A UNIT IN THE CORNER OF THE TRAILER. SEE THE DETAIL ON PAGE 21.
- 3. MORE THAN ONE PALLET UNIT CAN BE SHIPPED. THE LOAD SHOULD BE FORMED IN ROWS, WITH THE UNITS POSITIONED AGAINST OPPOSITE SIDEWALLS. THE PROPER ANTI-SWAY BRACES, IF REQUIRED, WILL BE INSTALLED BETWEEN THE LATERALLY ADJACENT UNITS. SEE THE DETAIL ON PAGE 20.
- 4. THE HEADER AS APPLIED ABOVE FOR LONGITUDINAL BRACING WILL SUPPORT 7,500 POUNDS OF LADING; A TRAILER WIDTH HEADER WILL SUPPORT UP TO A FULL TRAILER LOAD OF PALLET UNITS. SEE THE HEADER NAILING CHARTS ON PAGE 5.

TYPICAL LTL (1-UNIT) LOAD IN A CONVENTIONAL VAN TRAILER (NAILED HEADER METHOD)

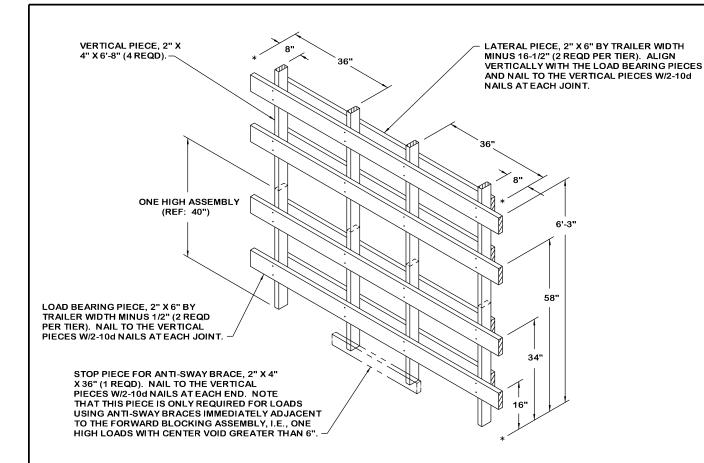


ANTI-SWAY BRACE



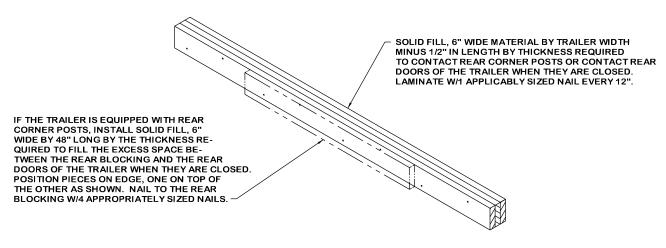
CRIB FILL ASSEMBLY

NOTE: IF THE VOID TO BE FILLED IS MORE THAN 7"
ROTATE THE VERTICAL PIECES 90°. IF THE VOID TO
BE FILLED IS BETWEEN 3" AND 5", REPLACE THE 2"
LONGITUDINAL PIECES WITH 1" LONGITUDINAL PIECES.



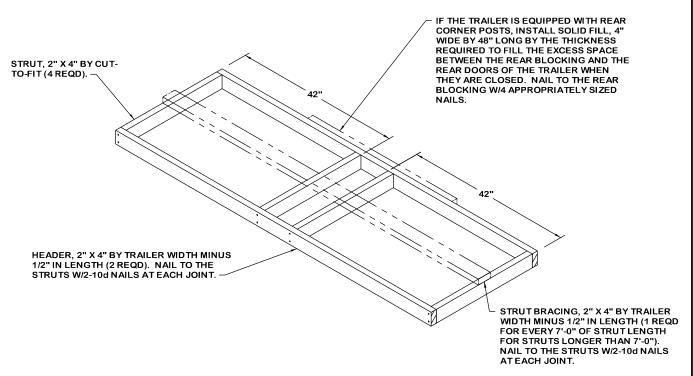
FORWARD BLOCKING ASSEMBLY

THE ASSEMBLY AS DEPICTED ABOVE IS APPLICABLE FOR A TWO-TIER LOAD. FOR A ONE-TIER LOAD, ELIMINATE THE TOP TWO LATERAL PIECES AND THE TOP TWO LOAD BEARING PIECES AND SHORTEN THE VERTICAL PIECES TO 40", AS DEPICTED ABOVE. THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT END OF A TRAILER HAVING ROUNDED CORNERS, AND IS APPLICABLE FOR A CORNER RADIUS OF NOT MORE THAN 6-1/2". IF THE RADIUS IS FROM 6-1/2" TO 8", 2" X 6" VERTICAL PIECES WILL BE USED IN LIEU OF THE 2" X 4" PIECES. IF THE TRAILER TO BE LOADED HAS LARGE-ANGLED CORNERS AT THE FORWARD END, REFER TO PAGE 28 FOR GUIDANCE.



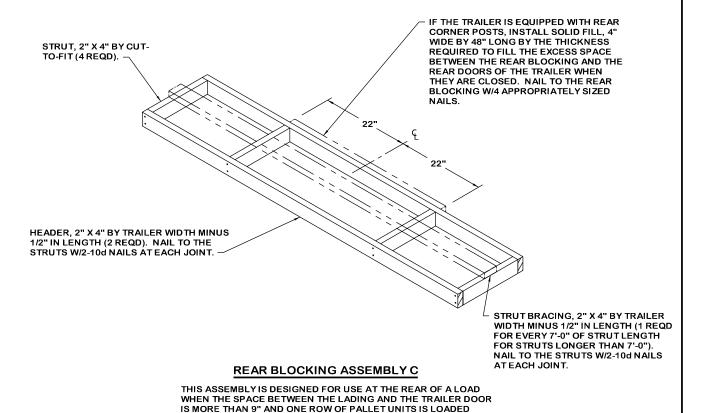
REAR BLOCKING ASSEMBLY A

THIS REAR BLOCKING ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 1-1/2" OR LESS THAN 9".



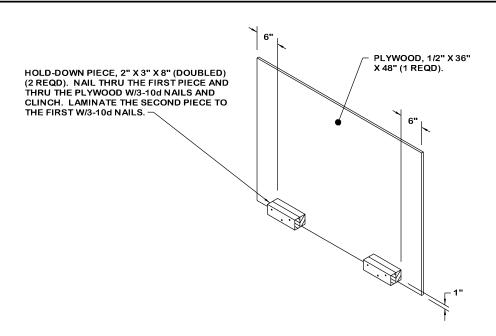
REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOOR IS MORE THAN 9" AND TWO ROWS OF PALLET UNITS ARE LOADED ADJACENT TO THE TRAILER DOORS. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.



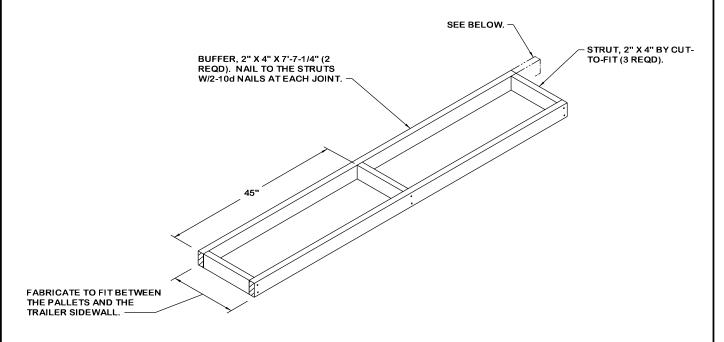
ADJACENT TO THE TRAILER DOORS. NOTE THAT THE ABOVE VIEW IS ROTATED 180 $^{\circ}$ FROM THE POSITION IN WHICH IT WILL BE

INSTALLED.



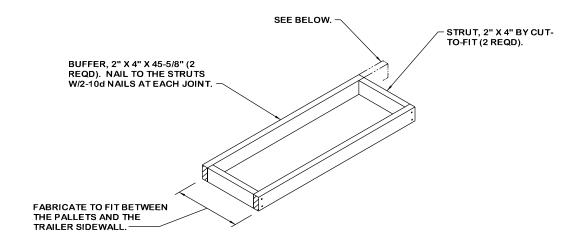
LOAD BEARING GATE

INSTALL WITH THE HOLD-DOWN PIECES UNDER THE PALLET OF THE ONE-WIDE PALLET UNIT. NOTE: WHEN THE LOAD BEARING GATE IS USED BETWEEN THE FIRST AND SECOND ROWS OF SINGLE LAYER PALLET UNITS IN A LARGE-ANGLED FRONT CORNER TRUCK, THE WIDTH OF THE PLYWOOD MUST BE DECREASED FROM 48" TO 45". WHEN THE LOAD BEARING GATE IS USED BETWEEN THE FIRST AND SECOND ROWS OF DOUBLE LAYER PALLET UNITS IN A LARGE-ANGLED FRONT CORNER TRUCK, THE WIDTH OF THE PLYWOOD MUST BE DECREASED FROM 48" TO 45" AND THE HEIGHT OF THE PLYWOOD MUST BE INCREASED TO 6'-6". SEE THE LOADS ON PAGE 28.



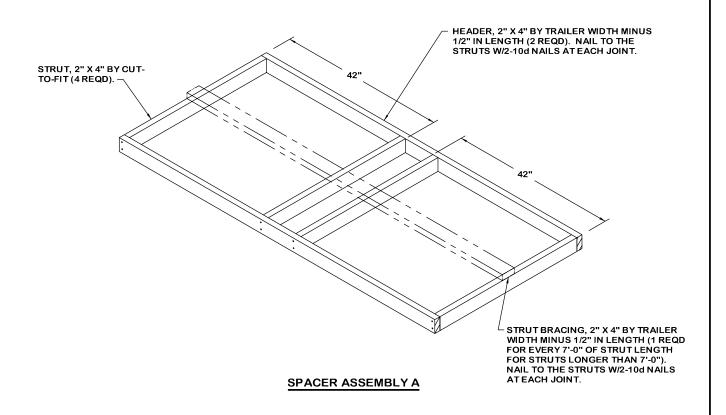
SIDE SPACER ASSEMBLY A

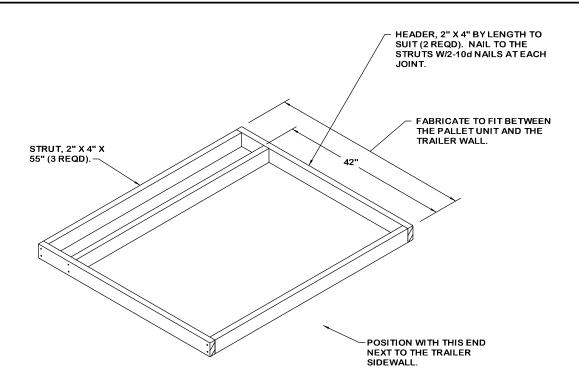
THIS ASSEMBLY IS TWO PALLET UNITS LONG. IF THE TRAILER BEING LOADED HAS ROUNDED CORNERS, AND THE ASSEMBLY IS TO BE USED ADJACENT TO THE FORWARD WALL, LENGTHEN ONE END OF ONE BUFFER PIECE BY 7", AS DEPICTED ABOVE.



SIDE SPACER ASSEMBLY B

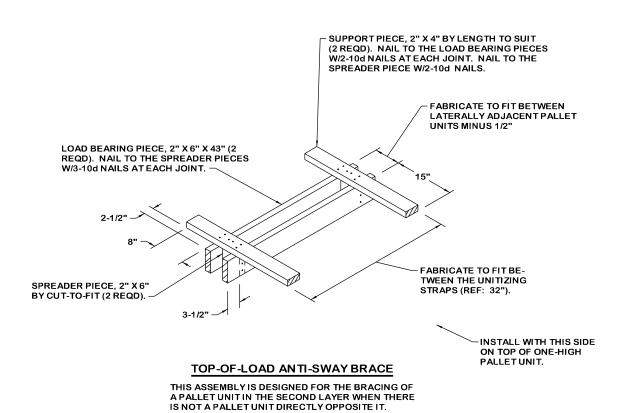
THIS ASSEMBLY IS ONE PALLET UNIT LONG. IF THE TRAILER BEING LOADED HAS ROUNDED CORNERS, AND THE ASSEMBLY IS TO BE USED ADJACENT TO THE FORWARD WALL, LENGTHEN ONE END OF ONE BUFFER PIECE BY 7", AS DEPICTED ABOVE.





SPACER ASSEMBLY B

IF THE VAN TRAILER TO BE LOADED IS 90" OR LESS IN WIDTH, ELIMINATE THE INTERIOR STRUT.



- 1. SHIPMENTS OF PALLET UNITS OF JAVELIN MISSILES SHOULD CONSIST OF FULL-HEIGHT UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER CONTAINERS. LEFTOVER CONTAINERS ARE DESCRIBED AS ONE OR TWO CONTAINERS.
- 2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOTS TO POSTS, CAMPS, AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE, AND PACK PLANTS TO DEPOTS. CAUTION: A LOAD CONTAINING LEFTOVER CONTAINERS IN AN AMOUNT WHICH IS LESS THAN A FULL LAYER, AND SECURED TO THE TOP OF A FULL OR PARTIAL UNIT, MUST NOT BE DESTINED FOR SHIPMENT OVERSEAS BY WATER CARRIER.
- 3. THE PROCEDURES ON THIS PAGE ARE PRESENTED AS GUIDANCE IN THE SECUREMENT OF LEFTOVER CONTAINERS FOR SHIPMENT. THE PROCEDURES ARE ALSO APPLICABLE FOR SECUREMENT OF LEFTOVER CONTAINERS TO PARTIAL PALLET UNITS FOR SHIPMENT ON TOP OF A LOAD. SEE SPECIAL NOTE 5 ON PAGE 27 FOR LIMITATIONS. IN ADDITION, THE PROCEDURES ARE APPLICABLE FOR SECURING LEFTOVER CONTAINERS TO A PARTIAL UNIT FOR SHIPMENT WITHIN A TIER.
- 4. THE PROCEDURES DEPICTED ON THIS PAGE ARE APPLICABLE FOR THE SHIPMENT OF LEFTOVER CONTAINERS IN ANY OF THE LOADS DEPICTED HEREIN.

POSITION CONTAINER SO AS TO BE CENTERED ON THE LENGTH AND WIDTH OF THE UNIT AS NEAR AS PRACTICABLE.

SEAL FOR 1-1/4" STRAPPING (2 REQD). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

SECUREMENT OF ONE CONTAINER

SEAL FOR 1-1/4" STRAPPING

(2 REQD). CRIMP EACH SEAL

UNITIZING STRAP, 1-1/4" X .035"

OR .031" X 16'-6" LONG STEEL

0

0

0

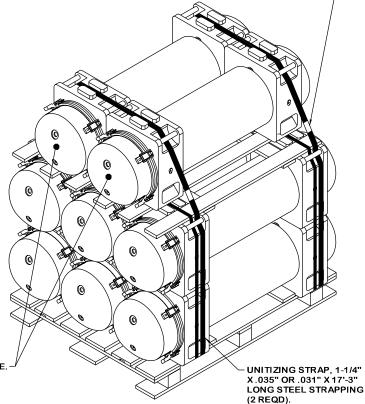
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STRAPPING (2 REQD).

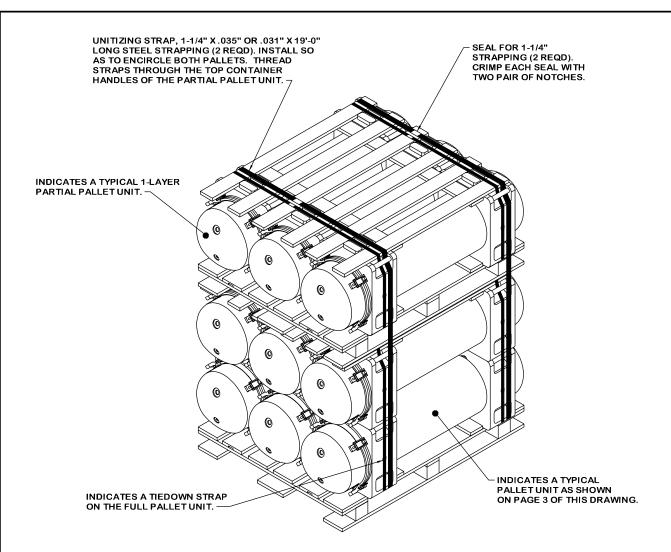
WITH TWO PAIR OF NOTCHES.



POSITION CONTAINERS SO AS TO BE CENTERED ON THE LENGTH AND WIDTH OF THE UNIT AS NEAR AS PRACTICABLE.

SECUREMENT OF TWO CONTAINERS

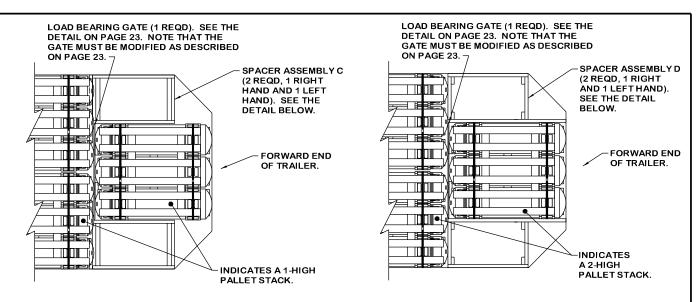
PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS



SECUREMENT OF A PARTIAL PALLET UNIT ON TOP OF A FULL PALLET UNIT

SPECIAL NOTES:

- 1. SHIPMENTS OF PALLET UNITS OF JAVELIN MISSILES SHOULD CON-SIST OF FULL-HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT OR THE QUAN-TITY OF ITEMS NEEDED TO FILL A REQUISITION MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LESS-THAN-FULL PALLET UNITS WITHIN A LOAD. THE PROCEDURES ON THIS PAGE ARE PRE-SENTED AS GUIDANCE IN THE SHIPMENT OF THESE PARTIAL UNITS.
- A PARTIAL PALLET UNIT MUST CONSIST OF ONE FULL LAYER OF CONTAINERS IN ORDER FOR THE TOP DUNNAGE ASSEMBLY TO PROPERLY FUNCTION. A LAYER MAY CONSIST OF EMPTY CON-TAINERS, THOUGH, AS DESCRIBED IN THE GENERAL NOTES OF AMC DRAWING 19-48-5270-GM20JV2.
- 3. A LESS-THAN-FULL HEIGHT PALLET UNIT CAN BE SHIPPED BY POSITIONING IT EITHER ON THE TOP TIER OF A LOAD OR ON THE TOP OF A LOWER PORTION OF A LOAD WHEN THE LOAD CONTAINS A PARTIAL TIER IN THE END OF THE TRAILER. THE PARTIAL UNIT WILL BE STRAPPED TO THE PALLET UNIT DIRECTLY BELOW WITH TWO VERTICAL UNITIZING STRAPS. SEE THE "SECUREMENT OF A PARTIAL UNIT ON TOP OF A PARTIAL UNIT ON TOP OF A FULL PALLET UNIT" VIEW ABOVE FOR GUIDANCE.
- 4. A PARTIAL PALLET UNIT MUST NOT BE POSITIONED ON THE REARMOST PALLET UNIT IN THE LOAD, EXCEPT AS DELINEATED ON PAGE 14.
- 5. LEFTOVER CONTAINERS, IN AN AMOUNT WHICH IS LESS THAN THE QUANTITY IN ONE LAYER OF A UNIT, CAN BE SECURED TO THE TOP OF A PARTIAL UNIT FOR SECUREMENT ON TOP OF A LOAD. THE LEFTOVER CONTAINERS MUST BE SECURED TO THE PARTIAL UNIT WITH THEIR OWN STRAPPING, SEPARATE FROM THE STRAPS FOR THE PARTIAL UNIT. SEE THE DETAILS ON PAGE 26 FOR GUIDANCE IN STRAP APPLICATION.

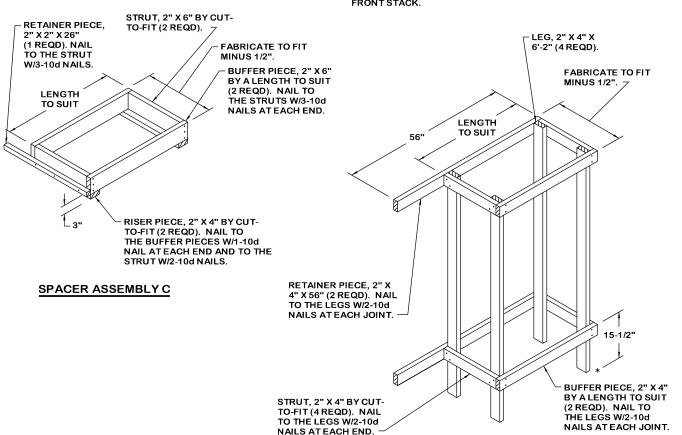


ALTERNATIVE FORWARD LOADING PATTERN A

THIS PROCEDURE IS APPLICABLE TO THE LOADING OF ONE PALLET UNIT (1-WIDE, 1-HIGH) IN THE FORWARD END OF A VAN TRAILER HAVING LARGE-ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE. A 92" WIDE TRAILER IS SHOWN, NARROW TRAILERS CAN BE USED.

ALTERNATIVE FORWARD LOADING PATTERN B

THIS PROCEDURE IS APPLICABLE TO THE LOADING OF A STACK OF TWO (1-WIDE, 2-HIGH) PALLET UNITS IN THE FORWARD END OF A VAN TRAILER HAVING LARGE-ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURES MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE. NOTE THAT IF THE LOAD UNIT BEHIND THE STACKED PALLET UNITS IN THE FRONT IS ONLY ONE HIGH, TWO UNITIZING STRAPS MUST BE INSTALLED AROUND THOSE PALLET UNITS IN THE FRONT STACK.



SPACER ASSEMBLY D

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A 2-HIGH PALLET STACK LOCATED IN THE FRONT OF AN ANGLED-CORNER CONVENTIONAL VAN TRAILER AS SHOWN IN THE "ALTERNATIVE FORWARD LOADING PATTERN B" VIEW ABOVE. NOTE THAT THIS VIEW DEPICTS THE ASSEMBLY POSITIONED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED IN A LOAD. RIGHT HAND AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.

PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH LARGE-ANGLED FRONT CORNERS