

LOADING AND BRACING (TL & LTL) IN VAN TRAILERS OF MODULAR ARTILLERY CHARGE SYSTEM (MACS) M232 PACKED 5 PER CYLINDRICAL METAL CONTAINERS



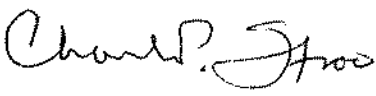
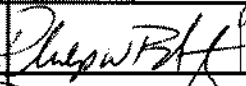
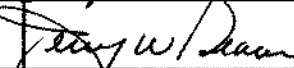
PA103A2 SERIES CONTAINER

INDEX

ITEM	PAGE(S)
GENERAL NOTES AND MATERIAL SPECIFICATIONS	2
PALLET UNIT DETAIL	3
17 UNIT LOAD IN A 40'-0" LONG BY 7'-6" WIDE VAN TRAILER	4, 5
20 UNIT LOAD IN A 40'-0" LONG BY 7'-8" WIDE VAN TRAILER	6, 7
TYPICAL LTL PROCEDURES	8-10
DETAILS	11-14
PROCEDURES FOR CONVENTIONAL VAN TRAILERS WITH ROLL UP TYPE DOORS	15
PROCEDURES FOR THE SHIPMENT OF LEFTOVER CONTAINERS	16
SHIPMENT OF A PARTIAL PALLET UNIT	17

CAUTION: THE OUTLOADING PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE TO HIGHWAY MOVEMENTS, NOT TRAILER ON FLATCAR MOVEMENTS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND		CAUTION: VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 18.							
		DO NOT SCALE			JANUARY 2007				
		ENGINEER OR TECHNICIAN	BASIC REV.	PATRICK DOUGHERTY					
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U.S. ARMY DEFENSE AMMUNITION CENTER		ENGINEERING DIRECTORATE							

PROJECT CA 255/50A-88

GENERAL NOTES

(GENERAL NOTES CONTINUED)

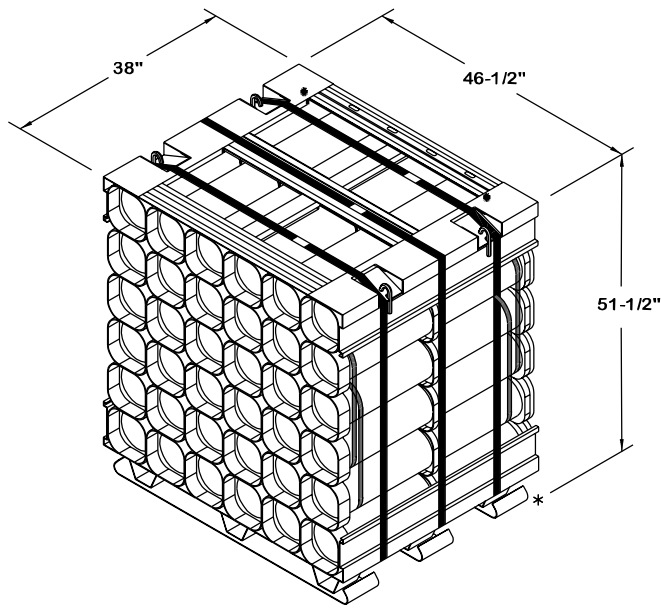
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE MODULAR ARTILLERY CHARGE SYSTEM (MACS), M232, PACKED 5 PER PA103A2 CYLINDRICAL METAL CONTAINER. SUBSEQUENT REFERENCE TO PALLET UNIT HEREIN MEANS THE PALLET UNIT WITH AMMUNITION ITEMS. SEE PAGE 3 AND AMC DRAWING 19-48-4231/50A-20PM1006 FOR DETAILS OF THE PALLET UNIT.
- 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 A 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 43,000 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 MACS, 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. 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.

CONTINUED AT RIGHT

- 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 ANTI-SWAY BRACES. 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 C" AS DEPICTED ON PAGE 14. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", OR "REAR BLOCKING ASSEMBLY B", AS SHOWN ON PAGE 13. 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 THE "NAILED HEADER METHOD PROCEDURES" AND NAILING CHARTS ON PAGE 15. 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 17. FOR "SHIPMENT OF LEFTOVER CONTAINERS" SEE THE DETAILS ON PAGE 16.
- T. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF PALLET UNITS OF PA102E2 CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED MACS, OR WHEN THEY ARE EMPTY.
- U. 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.

MATERIAL SPECIFICATIONS

- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
- NAILS - - - - - : ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMSM).
- SEAL, STRAP - - - - : ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.
- STRAPPING, STEEL - - : ASTM D3953; FLAT STRAPPING, TYPE 1 OR 2, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.



PALLET UNIT

CONTAINER - - - - -	36 @ 51 LBS (APPROX)
UNIT WEIGHT - - - - -	2,101 LBS (APPROX)
CUBE - - - - -	52.7 CU. FT. (APPROX)



ONE SEAL WITH
TWO PAIR OF
NOTCHES.

STRAP JOINT A

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

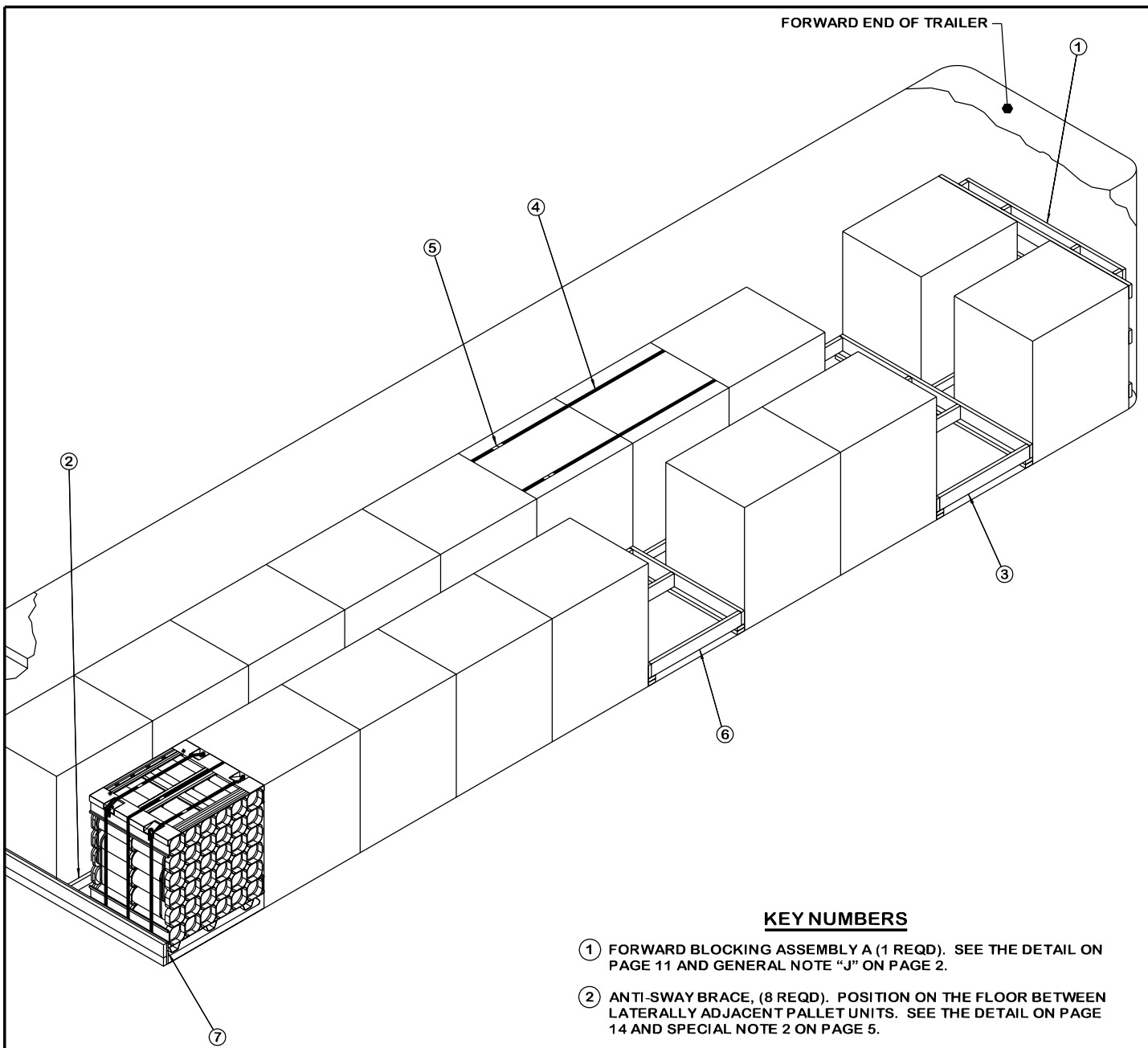


TWO SEALS, BUTTED
TOGETHER, WITH
TWO PAIR OF CRIMPS
EACH SEAL.

STRAP JOINT B

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

END-OVER-END LAP JOINT DETAILS



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 11 AND GENERAL NOTE "J" ON PAGE 2.
- ② ANTI-SWAY BRACE, (8 REQD). POSITION ON THE FLOOR BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE DETAIL ON PAGE 14 AND SPECIAL NOTE 2 ON PAGE 5.
- ③ SPACER ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 12. SEE SPECIAL NOTE 3 ON PAGE 5.
- ④ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 24'-7" LONG STEEL STRAPPING (2 REQD). INSTALL SO AS TO ENCIRCLE TWO PALLET UNITS. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑤ SEAL FOR 1-1/4" STRAPPING (4 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑥ SPACER ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 12 AND SPECIAL NOTE 5 ON PAGE 5.
- ⑦ REAR BLOCKING ASSEMBLY C (1 REQD). SEE THE DETAIL ON PAGE 14 AND SPECIAL NOTE 6 ON PAGE 5.

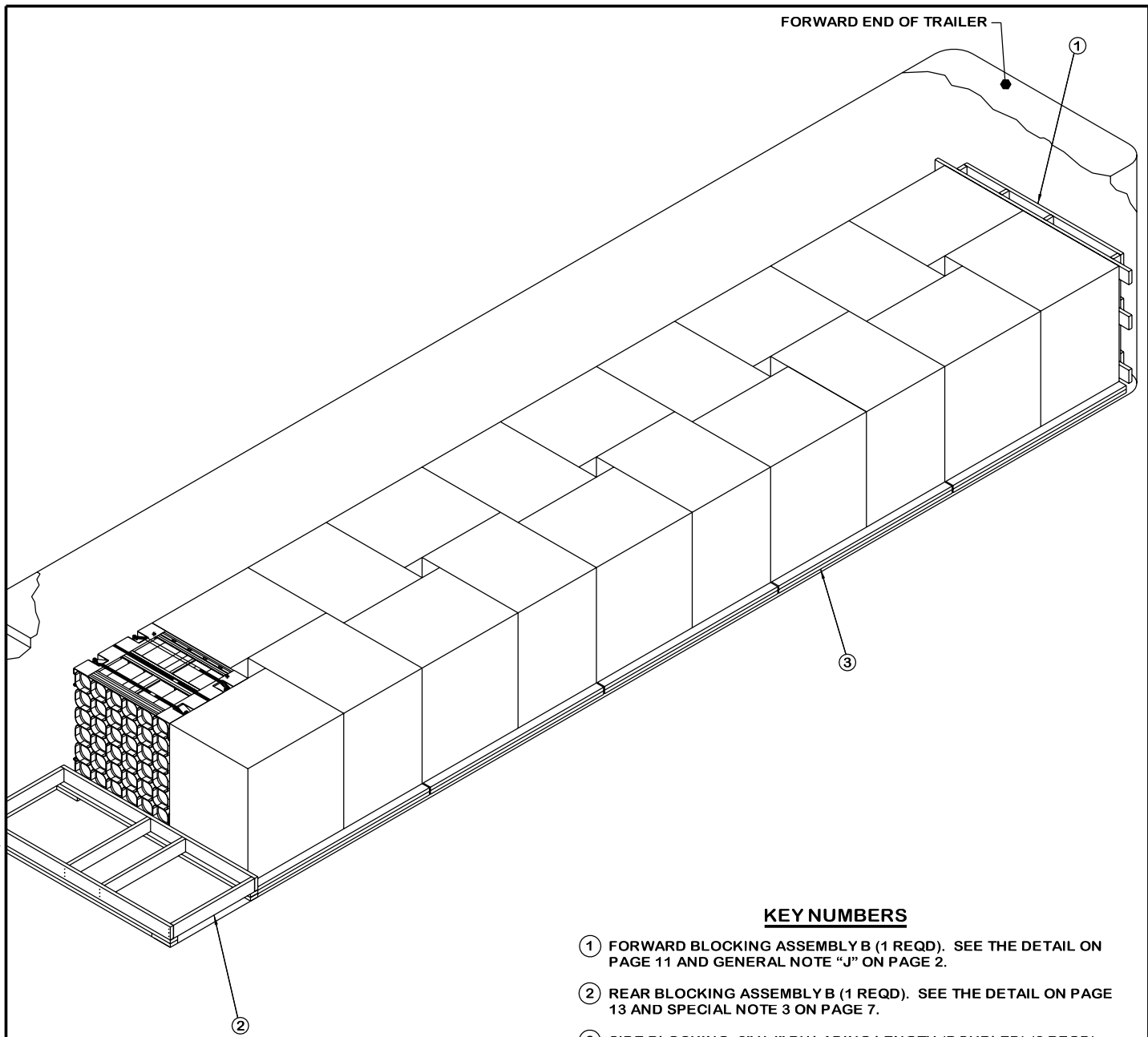
SPECIAL NOTES:

1. A 17 UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) VAN TRAILER. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. ANTI-SWAY BRACES, SHOWN AS PIECES MARKED ② IN THE LOAD SHOWN ON PAGE 4, ARE TO BE POSITIONED BETWEEN ALL LATERALLY ADJACENT PALLET UNITS. ANTI-SWAY BRACES ARE NOT REQUIRED IF THE SPACE BETWEEN LATERALLY ADJACENT UNITS IS 6" OR LESS, AS MEASURED FROM PALLET ADAPTER TO PALLET ADAPTER.
3. SPACER ASSEMBLY "A" SHOWN AS PIECE MARKED ③ IN THE LOAD SHOWN ON PAGE 4 IS USED TO PROVIDE FOR PROPER WEIGHT DISTRIBUTION, AND IS SHOWN AS TYPICAL ONLY. IF THE TRAILER TO BE LOADED IS LONGER THAN 40', 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 MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.
4. A PALLET UNIT THAT DOES NOT HAVE A PALLET UNIT DIRECTLY OPPOSITE MUST BE SECURED BY INSTALLING BUNDLING STRAPS, SHOWN AS PIECES MARKED ④ IN THE LOAD SHOWN ON PAGE 4, AROUND THAT PALLET UNIT AND THE PALLET UNIT IMMEDIATELY ADJACENT.
5. THE SPACER ASSEMBLY SHOWN AS PIECE MARKED ⑥ IN THE LOAD SHOWN ON PAGE 4 IS ONLY SHOWN TO DEPICT A TYPICAL INSTALLATION. IF A PALLET UNIT IS LOADED IN PLACE OF THE SPACER ASSEMBLY, BUNDLING STRAPS, PIECES MARKED ④ WILL NOT BE REQUIRED. NOTE THAT A SPACER ASSEMBLY MUST BE POSITIONED WHERE THERE WILL BE A PALLET UNIT AT EACH END; A SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY, PIECE MARKED ①.
6. IF THE VOID AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS, THEN REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", THEN USE REAR BLOCKING ASSEMBLY "C" AS DETAILED ON PAGE 14. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, THEN USE THE REAR BLOCKING ASSEMBLY "A" AS DETAILED ON PAGE 13. **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 THE HEADER NAILING CHARTS ON PAGE 15 FOR GUIDANCE.
7. REFER TO PAGE 17 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
8. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FOUR MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 16 FOR GUIDANCE.
9. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGE 15. THE NAILED HEADER METHOD IS SHOWN ON PAGE 15. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
1" X 6"	8	4
2" X 4"	137	92
2" X 6"	58	58
NAILS	NO. REQD	POUNDS
10d (3")	228	4
STEEL STRAPPING, 1-1/4" - 50.00' REQD - - - 7.10 LBS		
SEAL FOR 1-1/4" STRAPPING - - 4 REQD - - - - - NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	17 - - - - -	35, 717 LBS
DUNNAGE - - - - -	- - - - -	326 LBS
TOTAL WEIGHT - - - - -		36, 043 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 11 AND GENERAL NOTE "J" ON PAGE 2.
- ② REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 13 AND SPECIAL NOTE 3 ON PAGE 7.
- ③ SIDE BLOCKING, 2" X 4" BY LADING LENGTH (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". LAMINATE THE SECOND PIECE TO THE FIRST IN A SIMILAR MANNER. INSTALLATION MAY BE MADE FROM RANDOM LENGTH PIECES. SEE SPECIAL NOTE 2 ON PAGE 7.

SPECIAL NOTES:

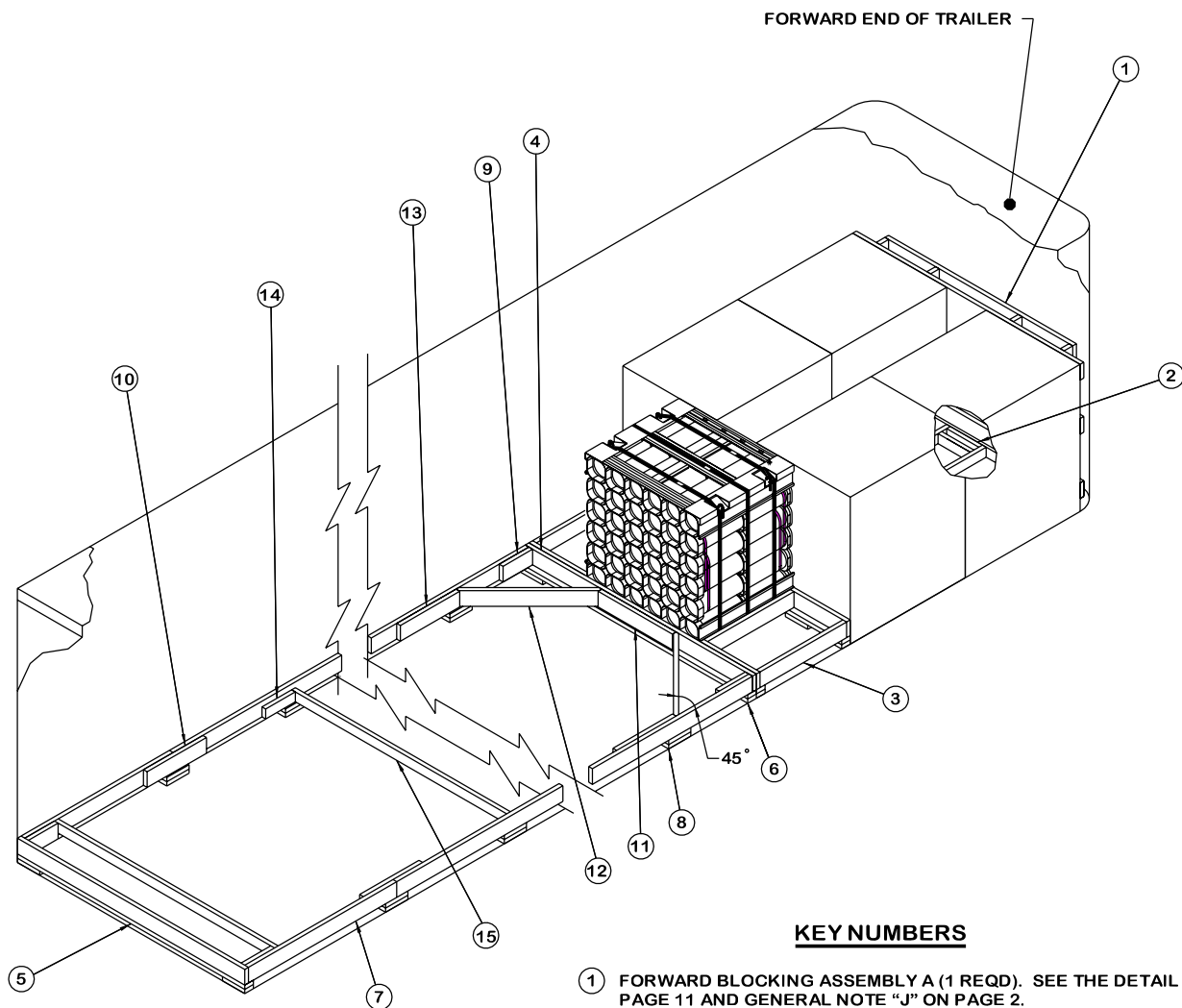
1. A 20 UNIT LOAD IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) VAN TRAILER. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. THE SIDE BLOCKING SHOWN AS PIECE MARKED ③ SHALL BE INSTALLED IN PLACE ON EITHER SIDE OF THE TRAILER PRIOR TO LOADING EACH GROUP OF FOUR PALLET UNITS.
3. IF THE VOID AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR MEASURES 1-1/2" OR LESS, THEN REAR BLOCKING IS NOT REQUIRED. IF THE VOID AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", THEN USE REAR BLOCKING ASSEMBLY "C" AS DETAILED ON PAGE 14. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, THEN USE THE REAR BLOCKING ASSEMBLY "B" AS DETAILED ON PAGE 13. **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 THE HEADER NAILING CHARTS ON PAGE 15 FOR GUIDANCE.
4. REFER TO PAGE 17 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
5. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FOUR MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 16 FOR GUIDANCE.
6. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGE 15. THE NAILED HEADER METHOD IS SHOWN ON PAGE 15. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	2	1
2" X 4"	190	127
2" X 6"	73	73
NAILS	NO. REQD	POUNDS
10d (3")	302	5

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	20	42,020 LBS
DUNNAGE		205 LBS
TOTAL WEIGHT		42,225 LBS (APPROX)



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

- ⑪ CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO A HEADER, PIECE MARKED ④, W/6-10d NAILS.
- ⑫ DIAGONAL PIECE, 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 HEADER AND SIDE STRUT, PIECES MARKED ④ AND ⑦ W/2-16d NAILS AT EACH END.
- ⑬ BACK UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/8-10d NAILS.
- ⑭ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/3-10d NAILS. SEE SPECIAL NOTE 4 ON PAGE 9.
- ⑮ STRUT BRACE, 2' X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQD). NAIL TO THE POCKET CLEATS, PIECE MARKED ⑨, AND/OR TO THE STRUT BRACE RETAINING CLEATS, PIECE MARKED ⑬, W/2-12d NAILS AT EACH END. SEE SPECIAL NOTE 4 ON PAGE 9.

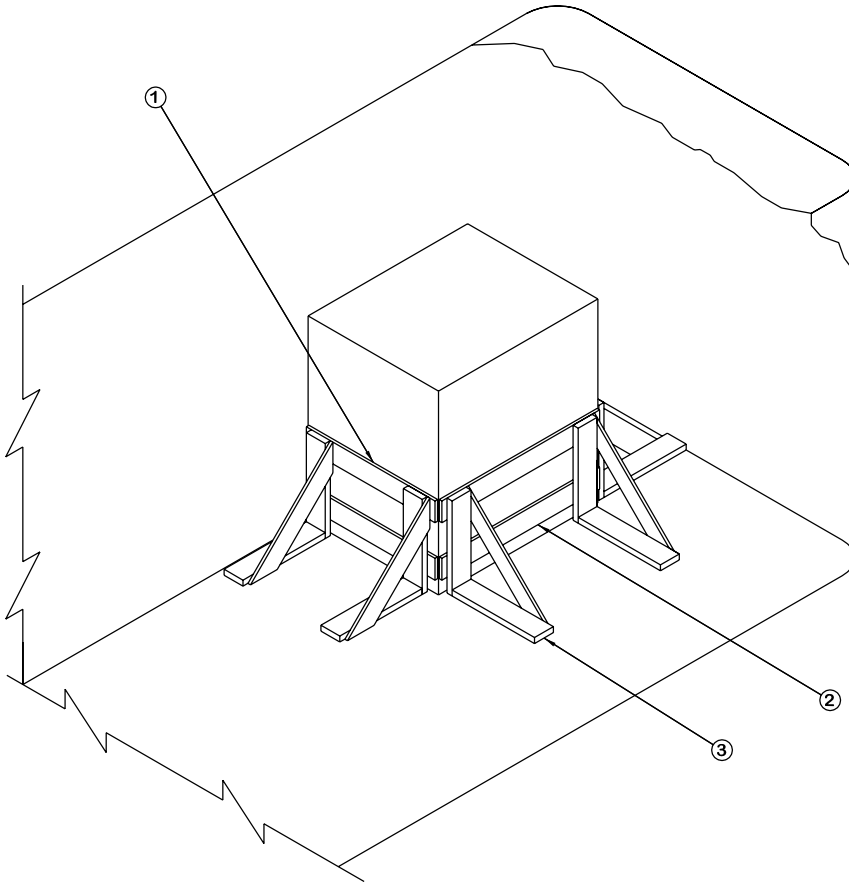
KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 11 AND GENERAL NOTE "J" ON PAGE 2.
- ② ANTI-SWAY BRACE (2 REQD). POSITION ON THE FLOOR BETWEEN LATERALLY ADJACENT PALLET UNITS. SEE THE DETAIL ON PAGE 14.
- ③ SPACER ASSEMBLY C (2 REQD). SEE THE DETAIL ON PAGE 12. NAIL TO A HEADER, PIECE MARKED ④, W/2-10d NAILS. SEE SPECIAL NOTE 2 ON PAGE 9.
- ④ HEADER, 2" X 6" BY TRAILER WIDTH (2 REQD). SEE SPECIAL NOTE 8 ON PAGE 9.
- ⑤ HEADER AND SIDE STRUT SUPPORT, 2" X 4" BY TRAILER WIDTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER, PIECE MARKED ④, W/1-10d NAIL EVERY 8".
- ⑥ RISER PIECE, 2" X 4" X 9" (4 REQD). POSITION UNDER EACH END OF HEADER AND SIDE STRUT SUPPORT PIECES MARKED ⑤. NAIL TO PIECE MARKED ⑤ W/2-10d NAILS.
- ⑦ SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN THE FORWARD AND REAR HEADERS, PIECES MARKED ④ (2 REQD). SEE SPECIAL NOTE 3 ON PAGE 9.
- ⑧ RISER PIECE, 2" X 4" X 9" (DOUBLED), (AS REQD). CENTER UNDER THE JOINTS OF PIECES MARKED ⑫ AND ⑬, ⑭ AND ⑮, AND UNDER THE SPLICE OF PIECES MARKED ⑦ W/2-10d NAILS. NAIL THE FIRST PIECE TO THE SIDE STRUT W/2-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A SIMILAR MANNER.
- ⑨ POCKET CLEAT, 2" X 6" X 12" (AS REQD). NAIL TO A SIDE STRUT, PIECE MARKED ⑦, W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER, PIECE MARKED ④, W/3-12d NAILS.
- ⑩ SPLICE PIECE, 2" X 4" X 24" (AS REQD). CENTER ON JOINT OF PIECES MARKED ⑦ AND NAIL TO SIDE STRUT MARKED ⑦ W/4-10d NAILS AT EACH END. SEE SPECIAL NOTE 3 ON PAGE 9.

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SPECIAL NOTES:

1. A 7'-6" WIDE (INSIDE DIMENSION) VAN TRAILER IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE SPACER ASSEMBLIES, PIECE MARKED ③, ARE SHOWN ONLY TO DEPICT A TYPICAL INSTALLATION. 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.
3. DEPENDING ON THE NUMBER OF UNITS BEING LOADED, EACH OF THE SIDE STRUTS, PIECES MARKED ⑦, MAY NEED TO BE FABRICATED FROM MORE THAN ONE LENGTH OF LUMBER. IF SUCH IS THE CASE, THE SIDE STRUTS MAY 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 ⑧ MUST BE POSITIONED UNDER EACH SPLICE JOINT. NOTE: IF DESIRED, THE STRUT BRACING PIECE(S), PIECE MARKED ⑮, MAY BE NAILED TO THE SPLICE PIECES IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑭.
4. ALL LTL LOADS, REGARDLESS OF THEIR SIZE, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO PIECE MARKED ⑨. IF THE SIDE STRUTS, PIECES MARKED ⑦, ARE LONGER THAN 7'-0", AN ADDITIONAL STRUT BRACE, PIECE MARKED ⑮, AND TWO STRUT BRACE RETAINING CLEATS, PIECES MARKED ⑭, AND TWO RISER PIECES MARKED ⑧, MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT.
5. THE "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED ④ THRU ⑮, IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 20,000 POUNDS.
6. REFER TO PAGE 17 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.
7. LEFTOVER CONTAINERS IN AN AMOUNT NOT TO EXCEED FOUR MAY BE SECURED TO THE TOP OF A FULL PALLET UNIT FOR SHIPMENT. REFER TO THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 16 FOR GUIDANCE.
8. TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY BE USED; HOWEVER, SPECIAL REAR BLOCKING MUST BE INSTALLED. SEE THE "PROCEDURES FOR CONVENTIONAL VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS" ON PAGE 15. THE NAILED HEADER METHOD SHOWN ON PAGE 15 SHOULD BE USED IF POSSIBLE IN LIEU OF PIECES MARKED ④ THRU ⑮ WHICH APPLY TO TRAILERS HAVING NON NAILABLE FLOORS. NOTE THAT THE SPECIAL REAR BLOCKING FOR TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS.



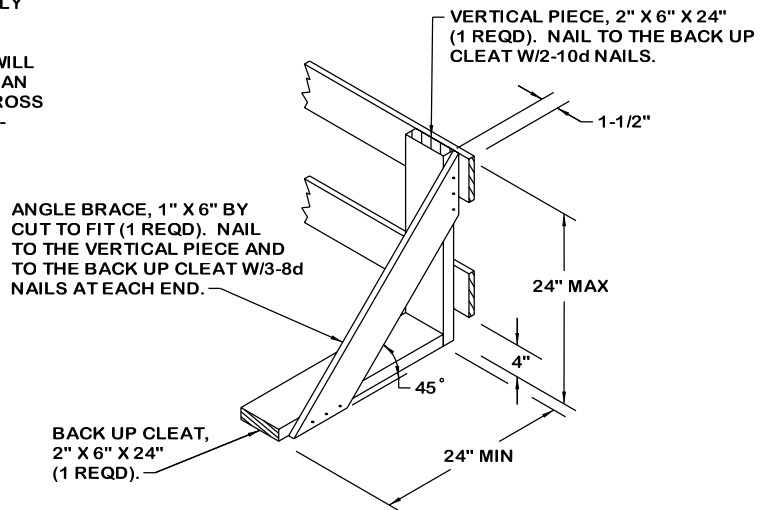
ISOMETRIC VIEW

SPECIAL NOTES:

1. A 7'-6" WIDE (INSIDE DIMENSION) TRAILER WHICH HAS A NAIL-ABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE POSITIONING OF A SINGLE PALLET UNIT IS OPTIONAL. IF THE TRAILER HAS A SQUARE FRONT, THE TWO FORWARD LTL BRACES MAY BE OMITTED AND THE UNIT POSITIONED AGAINST THE END WALL.
3. MORE THAN ONE PALLET UNIT CAN BE SHIPPED PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. THE LOAD SHOULD BE FORMED IN ROWS, WITH THE UNITS POSITIONED AGAINST OPPOSITE SIDE WALLS. THE "ANTI-SWAY BRACE", DETAILED ON PAGE 14, MUST BE INSTALLED BETWEEN LATERALLY ADJACENT PALLET UNITS.
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. ADDITIONAL BRACES MAY BE INSTALLED FOR THE RETENTION OF A HEAVIER LOAD.

KEY NUMBERS

- ① LOAD BEARING PIECE, 1" X 6" X 37-1/2" (4 REQD). LOCATE AT THE HEIGHTS AS SPECIFIED IN THE "LTL BRACE" DETAIL BELOW. NAIL TO THE LTL BRACES W/4-6d NAILS AT EACH JOINT.
- ② LOAD BEARING PIECE, 1" X 6" X 46" (2 REQD). LOCATE AT THE HEIGHTS AS SPECIFIED IN THE "LTL BRACE" DETAIL BELOW. NAIL TO THE LTL BRACES W/4-6d NAILS AT EACH JOINT.
- ③ LTL BRACE (6 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO THE TRAILER FLOOR W/10-10d NAILS.



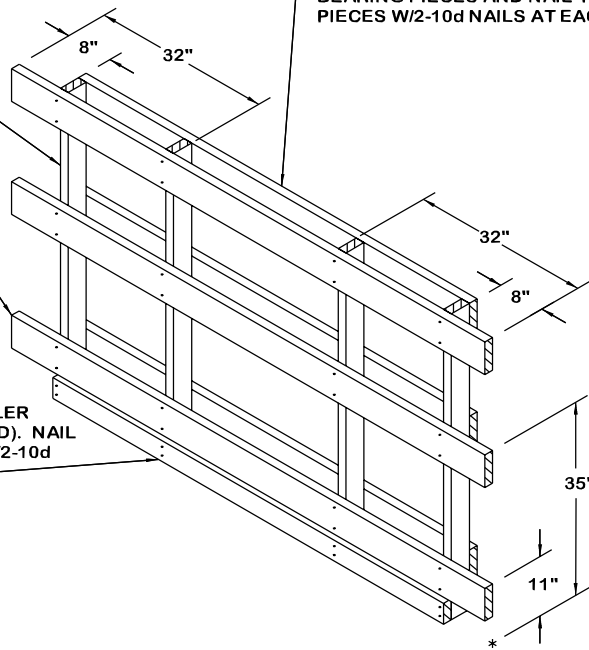
LTL BRACE

VERTICAL PIECE, 2" X 4" X 51" (4 REQD).

LOAD BEARING PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

STOP PIECE, 2" X 4" BY TRAILER WIDTH MINUS 16-1/2" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH LOCATION.

LATERAL PIECE, 2" X 6" BY TRAILER WIDTH MINUS 16-1/2" IN LENGTH (3 REQD). ALIGN VERTICALLY WITH LOAD BEARING PIECES AND NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



FORWARD BLOCKING ASSEMBLY A

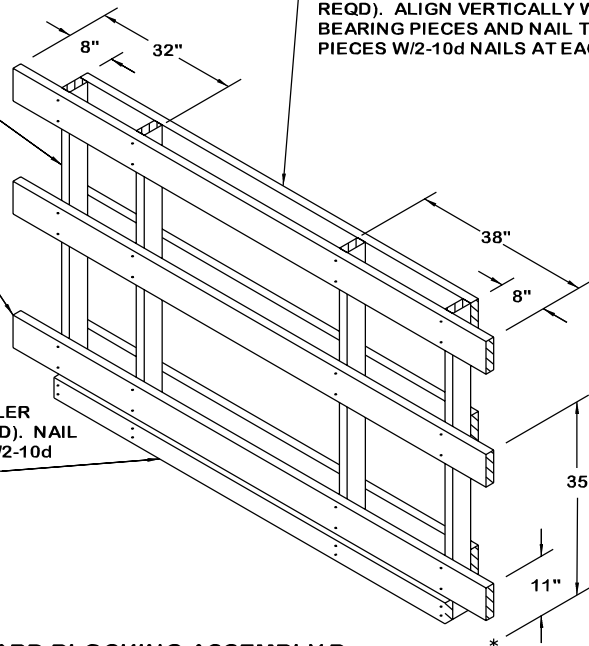
THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT OF A TRAILER HAVING ROUNDED CORNERS, AND IS APPLICABLE FOR A CORNER RADIUS OF NOT MORE THAN 6-1/2". IF THE RADIUS IS FROM 6-1/2" TO 8", 2" X 6" VERTICAL PIECES WILL BE USED IN LIEU OF 2" X 4" PIECES.

VERTICAL PIECE, 2" X 4" X 51" (4 REQD).

LOAD BEARING PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

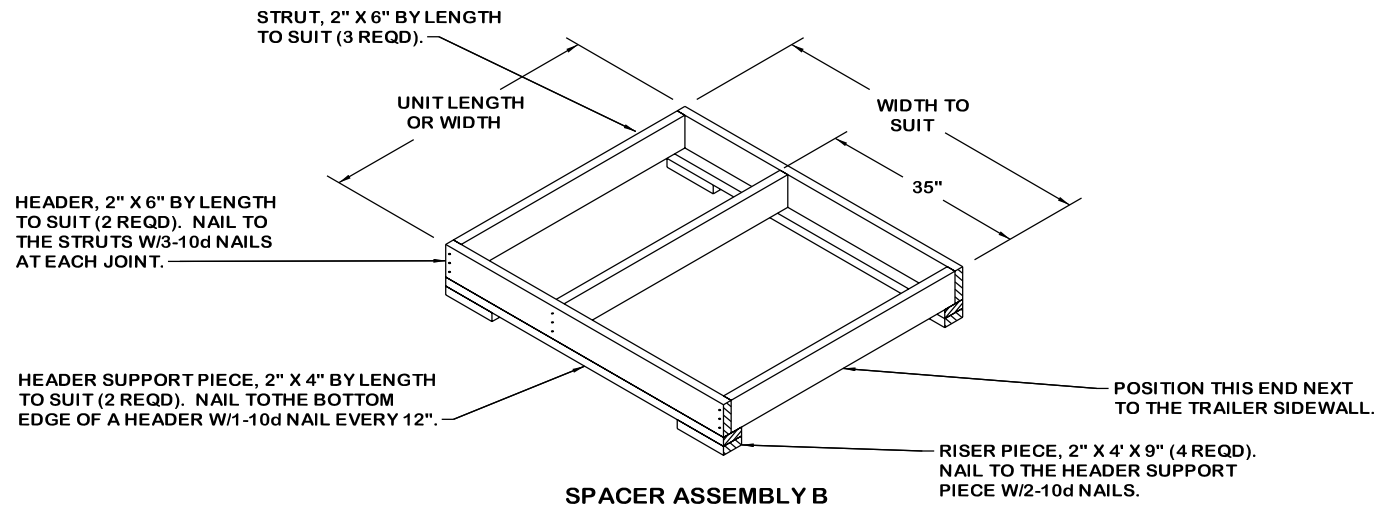
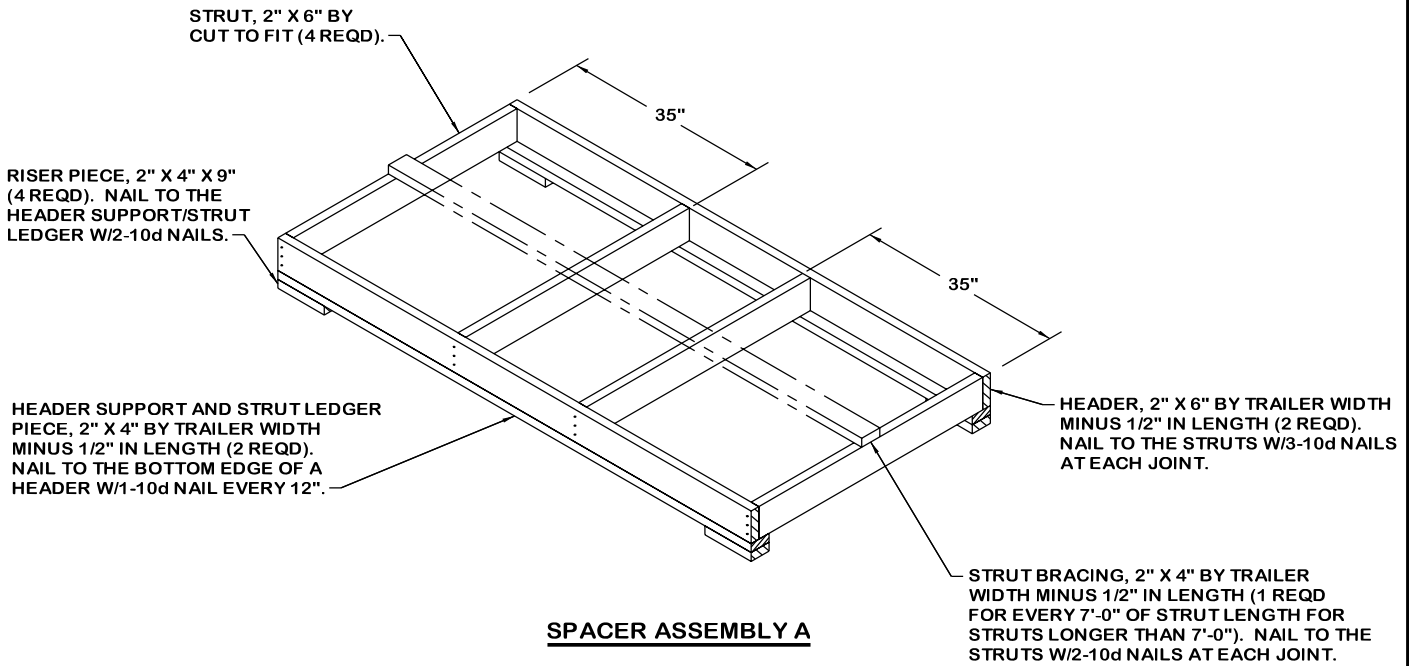
STOP PIECE, 2" X 4" BY TRAILER WIDTH MINUS 16-1/2" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH LOCATION.

LATERAL PIECE, 2" X 6" BY TRAILER WIDTH MINUS 16-1/2" IN LENGTH (3 REQD). ALIGN VERTICALLY WITH LOAD BEARING PIECES AND NAIL TO VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

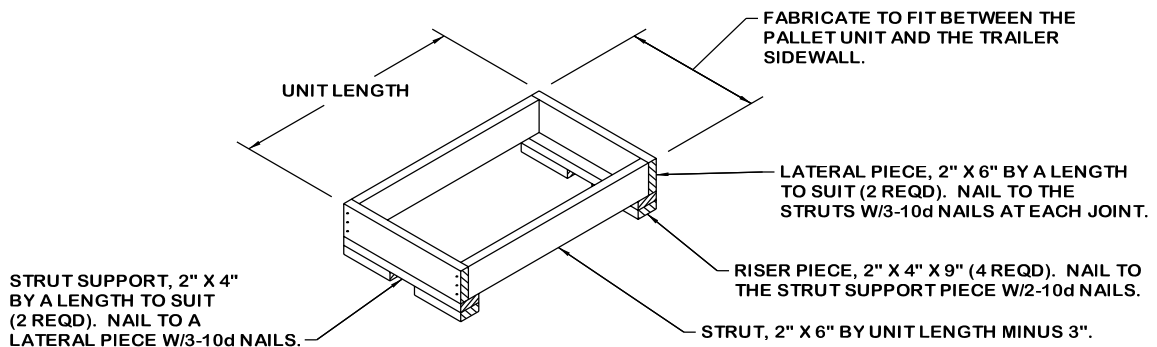


FORWARD BLOCKING ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT 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 2" X 4" PIECES. FOR USE IN CHIMNEY STACKED LOADS AS SHOWN ON PAGE 6.



THIS ASSEMBLY IS DESIGNED FOR THE USE IN PLACE OF A PALLET UNIT WHICH IS OMITTED FROM THE LOAD IN A VAN TRAILER AS SHOWN IN THE LOAD ON PAGE 4.

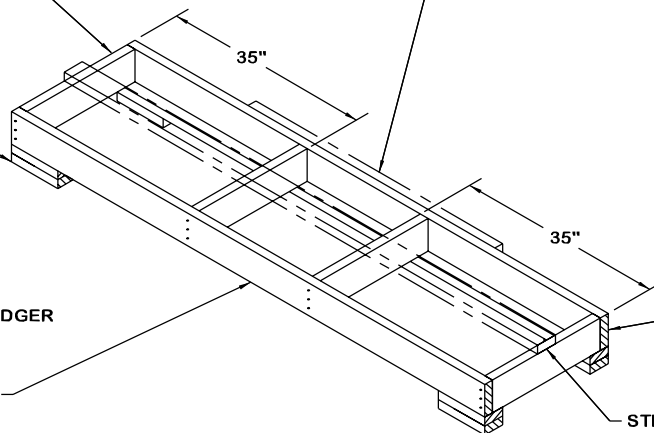


THIS ASSEMBLY IS DESIGNED FOR USE AS LATERAL BRACING OF A SINGLE PALLET UNIT AS SHOWN IN THE LOAD ON PAGE 8.

STRUT, 2" X 6" BY CUT TO FIT (4 REQD).

RISER PIECE, 2" X 4" X 9" (4 REQD). NAIL TO THE HEADER SUPPORT/STRUT LEDGER W/2-10d NAILS.

HEADER SUPPORT AND STRUT LEDGER PIECE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER W/1-10d NAIL EVERY 12".



IF THE TRAILER IS EQUIPPED WITH REAR CORNER POSTS, INSTALL SOLID FILL 6" WIDE BY 48" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN THE REAR BLOCKING ASSEMBLY AND THE TRAILER DOORS WHEN THEY ARE CLOSED. NAIL TO THE REAR BLOCKING ASSEMBLY W/4 APPLICABLY SIZED NAILS.

HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (1 REQD FOR EVERY 7'-0" OF STRUT LENGTH FOR STRUTS LONGER THAN 7'-0"). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

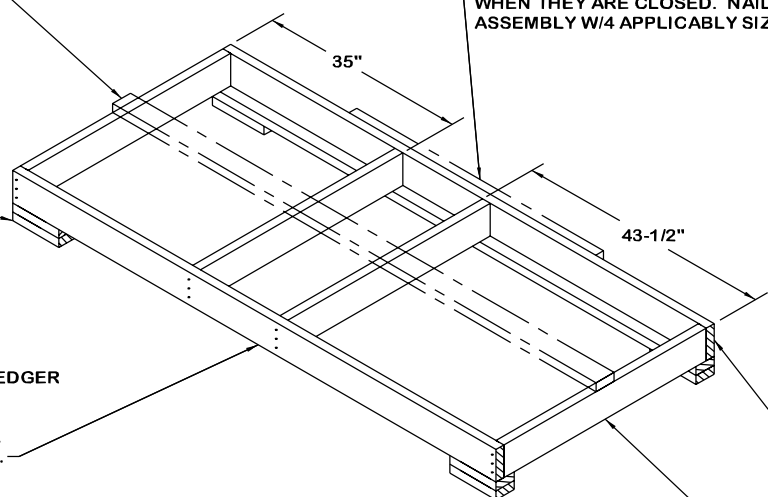
REAR BLOCKING ASSEMBLY A

THIS ASSEMBLY IS FOR USE AT THE REAR END OF A LENGTHWISE POSITIONED LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 9". NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (1 REQD FOR EVERY 7'-0" OF STRUT LENGTH FOR STRUTS LONGER THAN 7'-0"). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

RISER PIECE, 2" X 4" X 9" (4 REQD). NAIL TO THE HEADER SUPPORT/STRUT LEDGER W/2-10d NAILS.

HEADER SUPPORT AND STRUT LEDGER PIECE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE BOTTOM EDGE OF A HEADER W/1-10d NAIL EVERY 12".



IF THE TRAILER IS EQUIPPED WITH REAR CORNER POSTS, INSTALL SOLID FILL 6" WIDE BY 48" LONG BY THE THICKNESS REQUIRED TO FILL THE EXCESS SPACE BETWEEN THE REAR BLOCKING ASSEMBLY AND THE TRAILER DOORS WHEN THEY ARE CLOSED. NAIL TO THE REAR BLOCKING ASSEMBLY W/4 APPLICABLY SIZED NAILS.

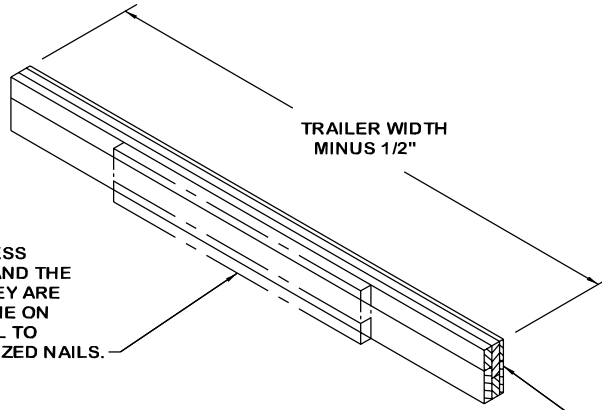
HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

STRUT, 2" X 6" BY CUT TO FIT (4 REQD).

REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS FOR USE AT THE REAR END OF A CHIMNEY STACKED LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 9". NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

IF THE 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 EDGE, ONE ON TOP OF THE OTHER AS SHOWN, AND NAIL TO THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

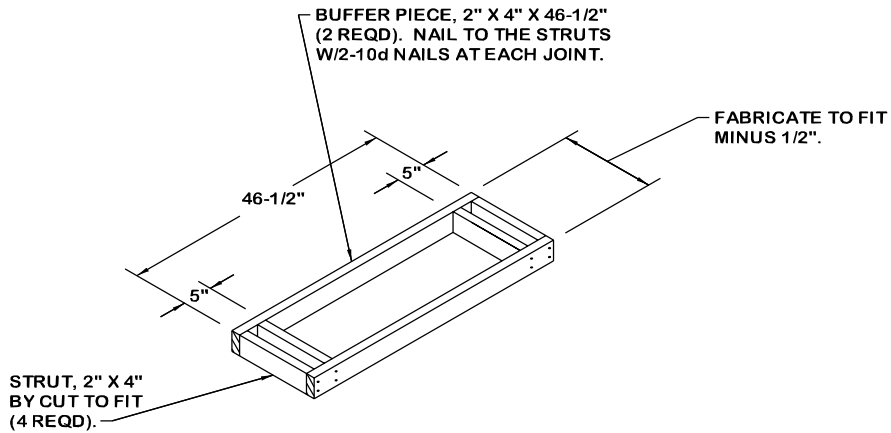


TRAILER WIDTH
MINUS 1/2"

SOLID FILL, 4" AND 6" WIDE MATERIAL BY TRAILER WIDTH MINUS 1/2" IN LENGTH BY THE THICKNESS REQUIRED TO CONTACT REAR DOORS 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".

REAR BLOCKING ASSEMBLY C

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



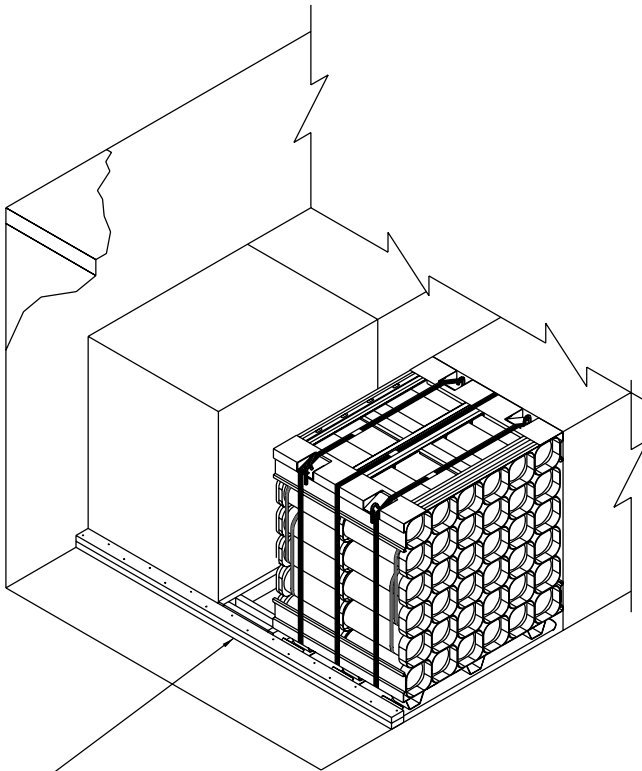
BUFFER PIECE, 2" X 4" X 46-1/2" (2 REQD). NAIL TO THE STRUTS W/2-10d NAILS AT EACH JOINT.

FABRICATE TO FIT MINUS 1/2".

STRUT, 2" X 4" BY CUT TO FIT (4 REQD).

ANTI SWAY BRACE

THIS ASSEMBLY IS DESIGNED FOR USE ON THE FLOOR BETWEEN LATERALLY ADJACENT PALLET UNITS. NOTE THAT AN ASSEMBLY NEED NOT BE CONSTRUCTED FOR A TIGHT FIT; UP TO 1/2" VOID IS PERMITTED.



HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" IN LENGTH (DOUBLED) (1 REQD). POSITION AGAINST THE REAR BLOCKING ASSEMBLY. NAIL THE FIRST PIECE TO THE TRAILER FLOOR IN ACCORDANCE WITH THE APPROPRIATE HEADER NAILING CHART AT RIGHT. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

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	15,000
7	17,500
8	20,000
9	22,500
10	25,000
11	27,500
12	30,000
13	32,500
14	35,000
15	37,500
16	40,000
17	42,500
18	45,000

* 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.

SPECIAL NOTES;

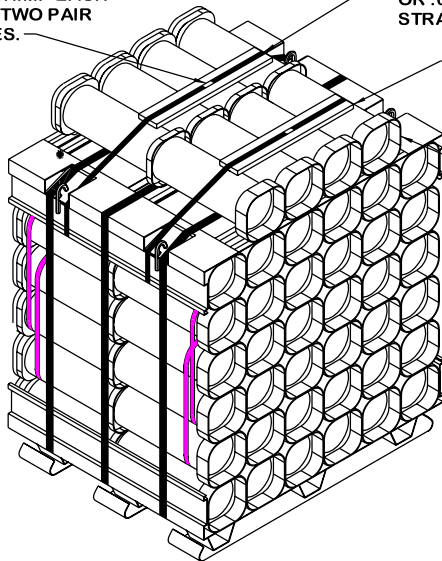
1. THE NAILED HEADER METHOD OF REAR BLOCKING DEPICTED ABOVE CAN ONLY BE USED IN TRAILERS HAVING A NAILABLE FLOOR AREA BETWEEN THE LADING AND THE METAL THRESHOLD, OR A THRESHOLD PLATE IF THE TRAILER IS SO EQUIPPED, OF AT LEAST 14".
2. THE NAILED HEADER METHOD OF REAR BLOCKING IS ADEQUATE FOR THE RETENTION OF THE MAXIMUM LOAD.
3. THE NAILED HEADER METHOD, ALTHOUGH DESIGNED ESPECIALLY FOR TRAILERS HAVING ROLL UP TYPE DOORS, MAY ALSO BE USED IN TRAILERS EQUIPPED WITH HINGED DOORS, AS EITHER REAR OR FORWARD HEADERS, OR AS BOTH.

SEAL FOR 3/4" STRAP (2 REQD). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

UNITIZING STRAP, 3/4" X .035" OR .031" X 10'-2" LONG STEEL STRAPPING (2 REQD).

STRAPPING BOARD, 1" X 4" X 22-1/2" FOR FOUR CONTAINERS (2 REQD).

POSITION CONTAINERS SO AS TO BE CENTERED ON THE CONTAINERS BELOW.



SECUREMENT OF FOUR CONTAINERS

SPECIAL NOTES:

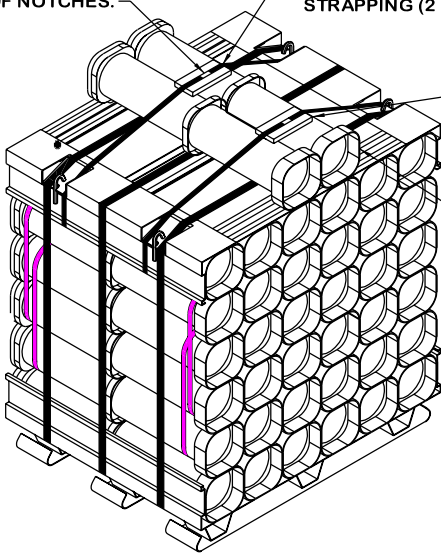
1. SHIPMENTS OF CONTAINERS SHOULD CONSIST OF FULL HEIGHT AND FULL LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE, HOWEVER, THE END OF A LOT, OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER CONTAINERS. LEFTOVER CONTAINERS ARE DESCRIBED AS A QUANTITY OF CONTAINERS WHICH IS INSUFFICIENT TO FORM A FULL LAYERED PARTIAL UNIT AS SHOWN ON PAGE 17.
2. SHIPMENT OF LEFTOVER CONTAINERS IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOT TO POSTS, CAMPS, AND STATIONS, OR UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE, AND PACK PLANT 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 APPLICABLE FOR THE SHIPMENT OF LEFTOVER CONTAINERS IN ANY OF THE LOADS DEPICTED HEREIN.

SEAL FOR 3/4" STRAP (2 REQD). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

UNITIZING STRAP, 3/4" X .035" OR .031" X 10'-1" LONG STEEL STRAPPING (2 REQD).

STRAPPING BOARD, 1" X 7-1/2" FOR TWO CONTAINERS (2 REQD).

POSITION CONTAINERS SO AS TO BE CENTERED ON THE CONTAINERS BELOW.

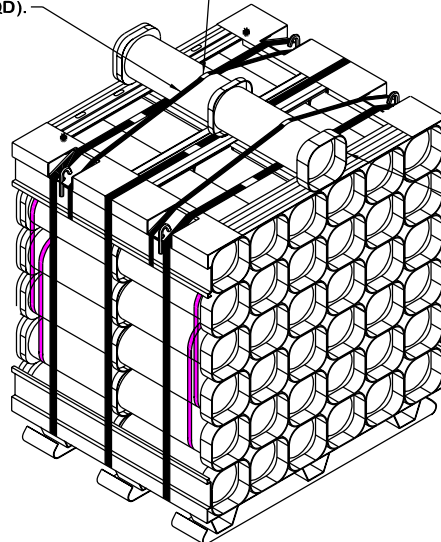


SECUREMENT OF TWO CONTAINERS

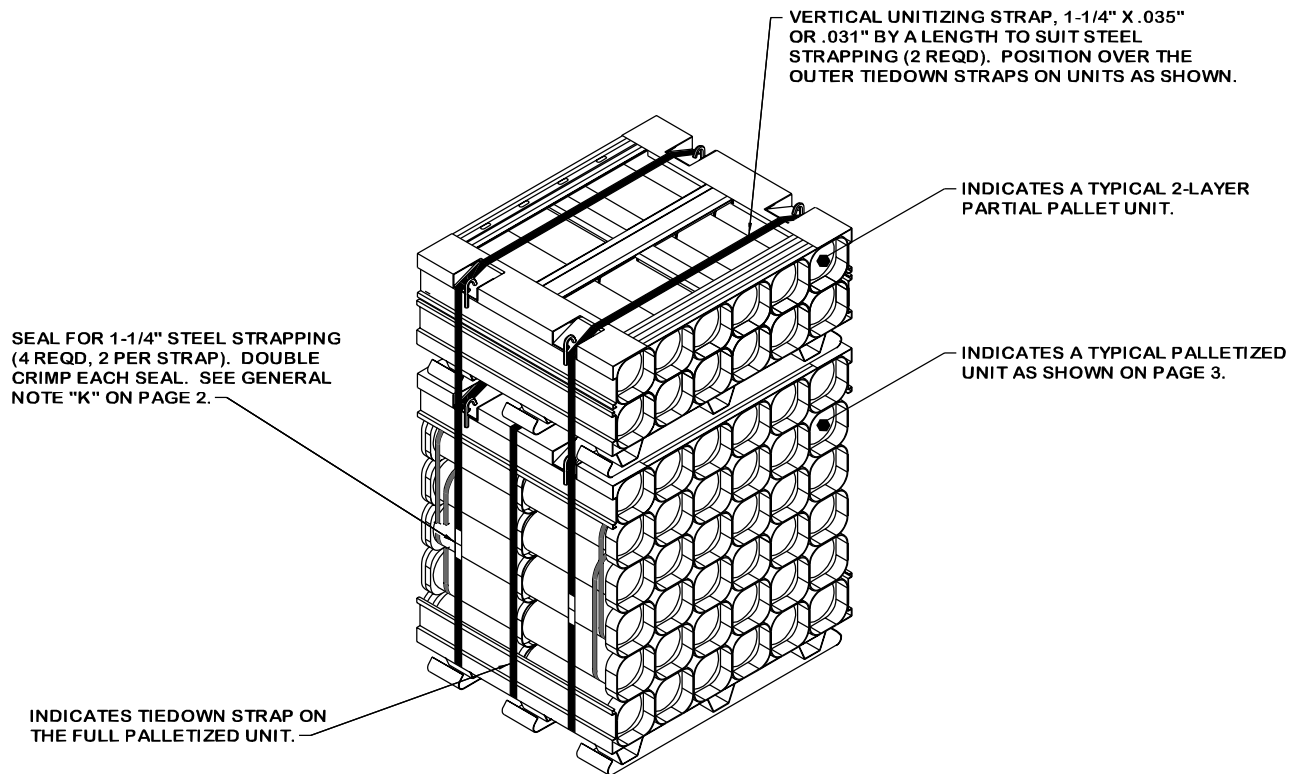
UNITIZING STRAP, 3/4" X .035" OR .031" X 10'-0" LONG STEEL STRAPPING (2 REQD).

SEAL FOR 3/4" STRAP (2 REQD). CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.

POSITION CONTAINER SO AS TO BE CENTERED ON THE LOAD.



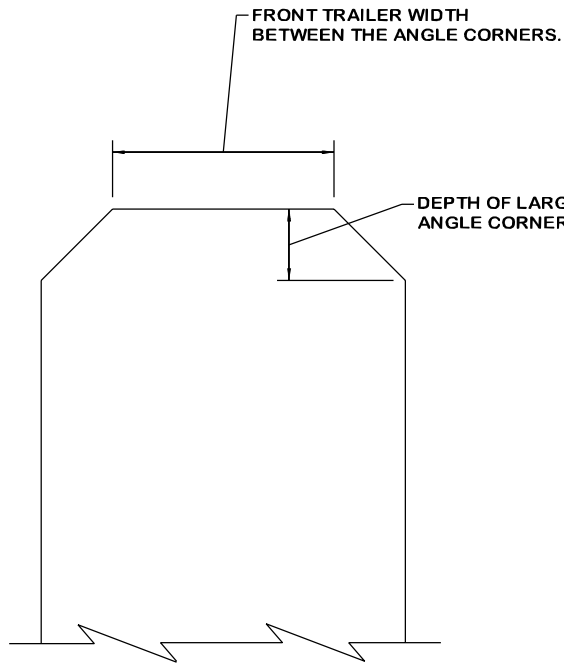
SECUREMENT OF ONE CONTAINER



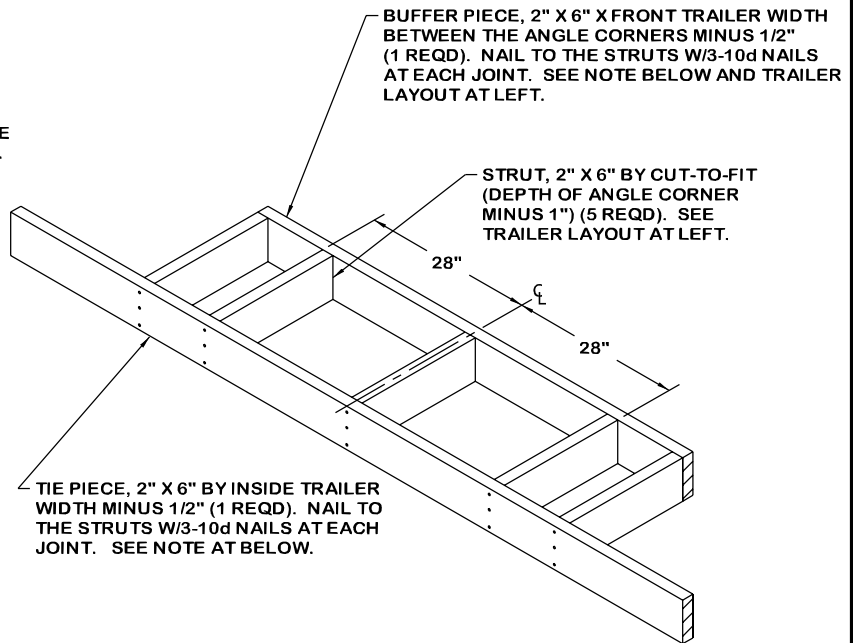
**SECUREMENT OF A PARTIAL PALLET UNIT
ON TOP OF A FULL PALLET UNIT**

SPECIAL NOTES:

1. THE VIEW SHOWN DEPICTS A PARTIAL 2-LAYER PALLET UNIT POSITIONED ON TOP OF A FULL HEIGHT PALLET UNIT AND UNITIZED WITH TWO VERTICAL UNITIZING STRAPS. PLACEMENT WITHIN THE LOAD IS OPTIONAL, EXCEPT THAT IT WILL NOT BE POSITIONED IN THE REAR LOAD UNIT, OR WITHIN A GROUP THAT IS BUNDLED TOGETHER.
2. SHIPMENT OF PALLET UNITS SHOULD CONSIST OF FULL HEIGHT AND FULL LAYER 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 LESS THAN FULL PALLET UNITS WITHIN A LOAD. THE PROCEDURES ON THIS PAGE AND ON PAGE 16 ARE PRESENTED AS GUIDANCE IN THE SHIPMENT OF THESE PARTIAL UNITS.
3. THE SHIPMENT OF A "PARTIAL PALLET UNIT" PROCEDURES ON THIS PAGE ARE APPLICABLE FOR LOADS IN CONVENTIONAL TYPE VAN TRAILERS.
4. FOR SHIPMENT OF ONE THROUGH FOUR "LEFTOVER" CONTAINERS, SEE THE PROCEDURES ON PAGE 16.



LAYOUT FOR VAN TRAILER WITH LARGE-ANGLED FRONT CORNERS



FORWARD SPACER ASSEMBLY C

NOTE: THIS FORWARD SPACING ASSEMBLY IS DESIGNED FOR TWO ROWS OF CONTAINERS LOADED IN TRAILER WITH LARGE ANGLE FRONT CORNERS. IF THE TRAILER HAS SUFFICIENT NAILING AREA AT THE FRONT OF THE LOAD, A NAILED HEADER MAY BE USED IN PLACE OF THE SPACER ASSEMBLY. SEE THE "NAILED HEADER PROCEDURE METHODS" ON PAGE 15 FOR GUIDANCE.