



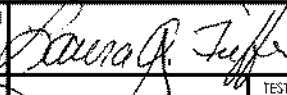
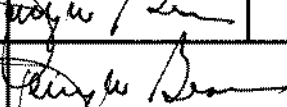
LOADING AND BRACING (TL & LTL) IN VAN TRAILERS* OF COMPUTER CONTROL GROUP, MAU-169 AND MAU-209, PACKED IN CNU-317 CONTAINERS, PALLETIZED

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

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY FIELD SUPPORT 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 28.					
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APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND  U.S. ARMY DEFENSE AMMUNITION CENTER		TRANSPORTATION ENGINEERING DIVISION					
		VALIDATION ENGINEERING DIVISION	TESTED	CLASS	DIVISION	DRAWING	FILE
		ENGINEERING DIRECTORATE			19	48	8674

GENERAL NOTES

(GENERAL NOTES CONTINUED)

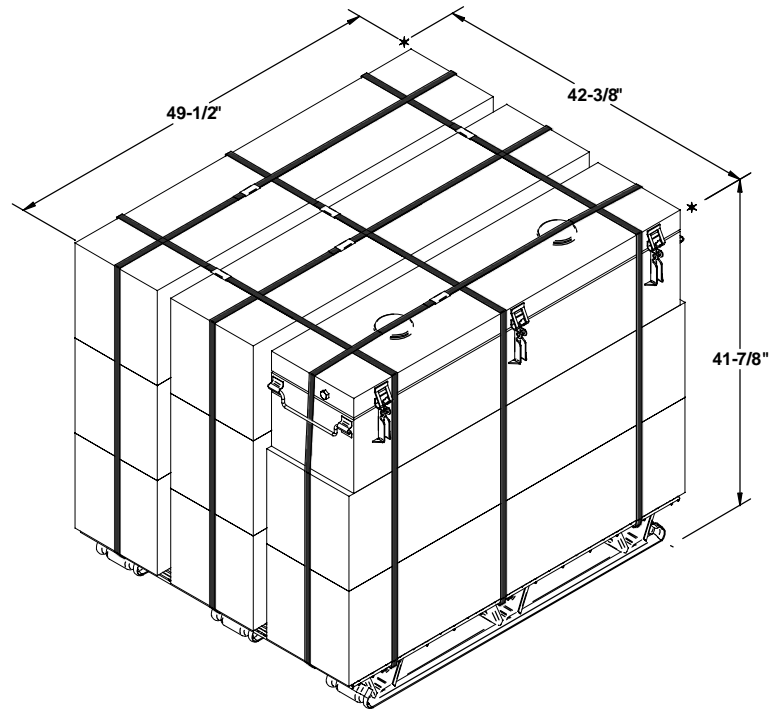
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO LOADS OF COMPUTER CONTROL GROUP, MAU 169 AND MAU 209 PACKED IN CNU-317 CONTAINERS. FOR DETAILS OF THE PALLET UNIT, SEE NAVSEA DRAWING NO. 6214415 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. 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.
- E. **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.
- F. 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.
- G. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH PALLET UNITS OF COMPUTER CONTROL GROUPS, 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)

- H. 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 AND POSITION THE PALLET UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER.
- J. 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 24 FOR GUIDANCE.
- K. 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.
- L. **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.
- M. 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.
- N. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- O. 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 CRIB FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE TO THE BUFFER PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS AND LENGTH OF THE LUMBER USED IN THESE ASSEMBLIES MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE PALLET UNIT.
- P. 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 THE REAR HEADER ON PAGE 6 AND THE HEADER NAILING CHARTS ON PAGE 7 FOR GUIDANCE. **CAUTION:** THE NAILED HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
- Q. **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.
- R. 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 26. FOR SHIPMENT OF LEFTOVER CONTAINERS SEE THE DETAILS ON PAGE 25.
- S. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF PALLET UNITS OF CNU-317 CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED MUNITION, OR WHEN THEY ARE EMPTY.
- T. 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.

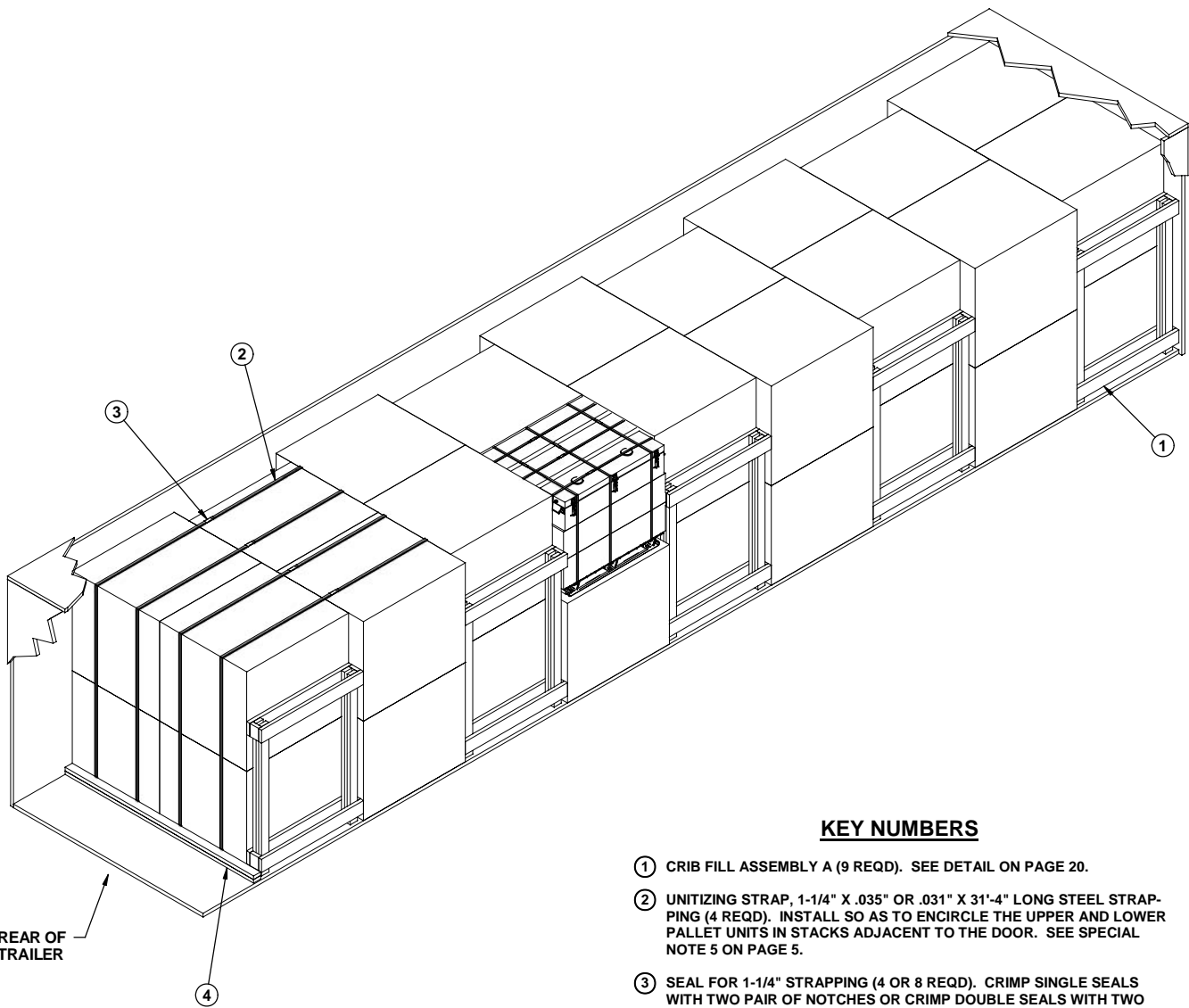
MATERIAL SPECIFICATIONS

LUMBER - - - - -	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
NAILS - - - - -	ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS).
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.



PALLET UNIT DETAIL

GROSS WEIGHT - - - - - 990 LBS (APPROX)
CUBE 58.3 - - - - - CUBIC FEET (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① CRIB FILL ASSEMBLY A (9 REQD). SEE DETAIL ON PAGE 20.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 31'-4" LONG STEEL STRAPPING (4 REQD). INSTALL SO AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO THE DOOR. SEE SPECIAL NOTE 5 ON PAGE 5.
- ③ SEAL FOR 1-1/4" STRAPPING (4 OR 8 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 24.
- ④ HEADER, 2" X 4" X TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/15-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/15-10d NAILS. SEE SPECIAL NOTE 6 ON PAGE 5.

SPECIAL NOTES:

1. A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED. THE LOAD ON PAGE 4 IS DEPICTED IN A VAN TRAILER EQUIPPED WITH A SQUARE FRONT OR WITH AN INSTALLED BULKHEAD. IF A TRAILER HAVING ROUNDED CORNERS IS TO BE LOADED, A FORWARD BLOCKING ASSEMBLY, AS DEPICTED ON PAGE 21, WILL BE REQUIRED.
2. CRIB FILL ASSEMBLIES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 22 OR A NAILED HEADER 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 OR A NAILED HEADER AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED. REFER TO THE HEADER NAILING CHARTS ON AT RIGHT FOR GUIDANCE.
4. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
5. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND EACH OF THE TWO REAR MOST STACKS IN EACH APPLICABLE ROW.
6. ALTERNATE THE POSITION OF THE LATERAL VOID IN THE LOAD TO ENSURE A UNIFORM LOAD, AS DEPICTED IN THE LOAD ON PAGE 4.
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 1-TIER 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 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 THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 25 FOR GUIDANCE.
9. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

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.

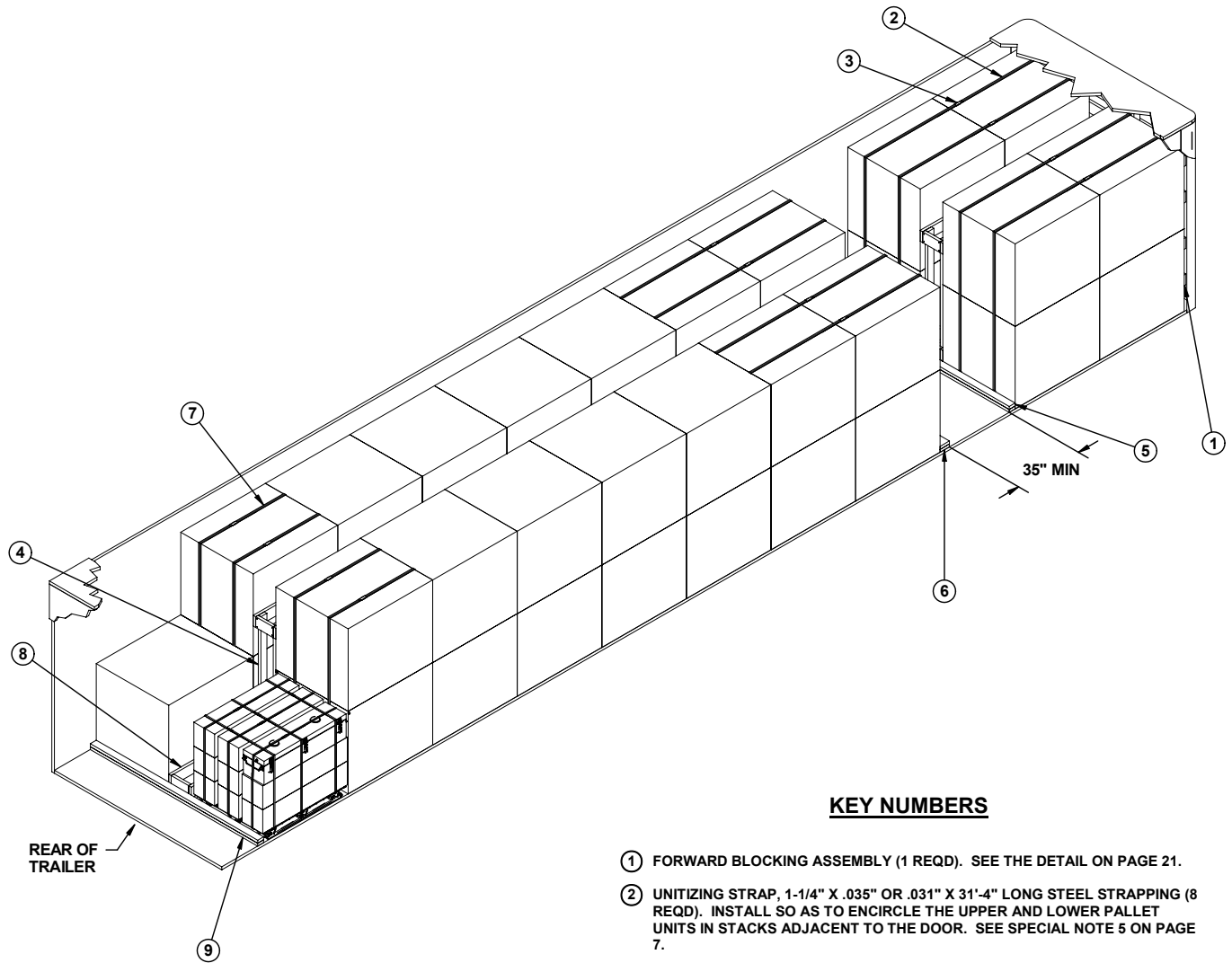
REAR HEADER NAILING CHART*	
#NAILS	MAX. LOAD WEIGHT (LBS)
6	15,000
7	17,500
8	20,000
9	22,500
10	25,000
11	27,500
12	30,000
13	32,500
14	35,000
15	37,500
16	40,000
17	42,500
18	45,000

* 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.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	204	136
2" X 6"	162	162
NAILS	NO. REQD	POUNDS
10d (3")	303	5
STEEL STRAPPING, 1-1/4" - 126' REQD - 18.0 LBS		
SEAL FOR 1-1/4" STRAPPING - 4 REQD - 0.18 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	36 - - - - -	35,640 LBS
DUNNAGE - - - - -	- - - - -	617 LBS
TOTAL WEIGHT - - - - -		36,257 LBS (APPROX)



REAR OF TRAILER

ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 21.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 31'-4" LONG STEEL STRAPPING (8 REQD). INSTALL SO AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO THE DOOR. SEE SPECIAL NOTE 5 ON PAGE 7.
- ③ SEAL FOR 1-1/4" STRAPPING (12 OR 24 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 24.
- ④ CRIB FILL ASSEMBLY A (9 REQD). SEE DETAIL ON PAGE 20.
- ⑤ REAR HEADER, 2" X 4" X TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS. SEE HEADER NAILING CHARTS ON PAGE 5.
- ⑥ FORWARD HEADER, 2" X 6" X TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/7-20d NAILS. SEE HEADER NAILING CHARTS ON PAGE 5.
- ⑦ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 23'-0" LONG STEEL STRAPPING (4 REQD). INSTALL PRIOR TO LOADING SO AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO ONE-HIGH STACKS. SEE SPECIAL NOTE 5 ON PAGE 7.
- ⑧ ANTI-SWAY BRACE (1 REQD). SEE DETAIL ON PAGE 20.
- ⑨ REAR HEADER, 2" X 4" X TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/13-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/13-10d NAILS. SEE HEADER NAILING CHARTS ON PAGE 5.

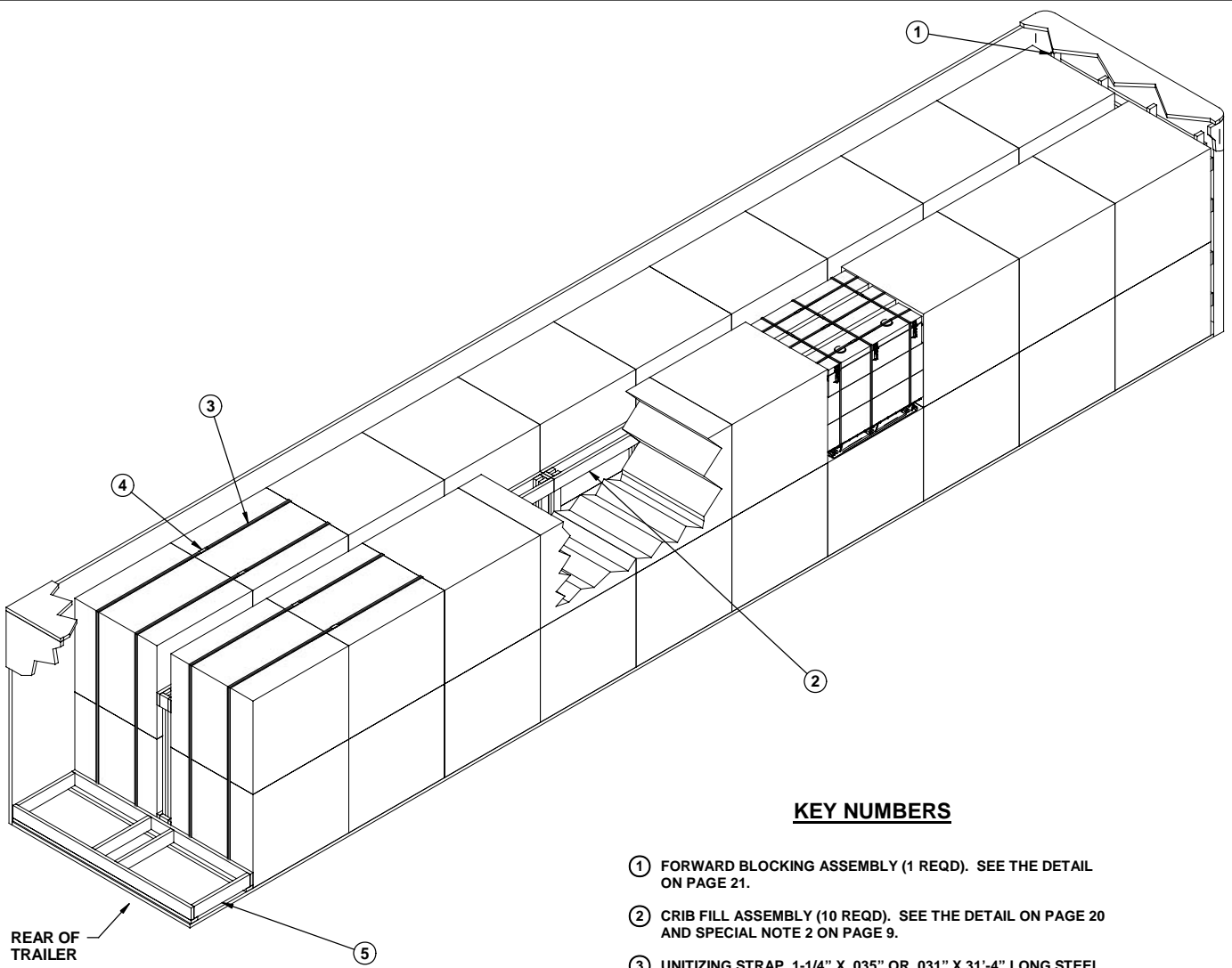
SPECIAL NOTES:

1. A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. IF A TRAILER WITH SQUARE FRONT CORNERS IS TO BE LOADED, THE FORWARD BLOCKING ASSEMBLY PIECE DEPICTED ON PAGE 6, MAY BE OMITTED. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. ANTI-SWAY BRACES AND CRIB FILL ASSEMBLIES MAY BE OMITTED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS IS 6" OR LESS, AS MEASURED FROM PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 22 OR A NAILED HEADER, 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 OR A NAILED HEADER, AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
4. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
5. IF A STACK AT THE REAR OR FRONT OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND THE TWO REARMOST STACKS IN EACH APPLICABLE ROW.
6. THE SPLIT IN THE LOAD CONFIGURATION ON PAGE 6 IS SHOWN AS TYPICAL ONLY. PALLETS MAY BE SHIFTED FORE OR AFT, THE QUANTITY IN EACH LOAD BAY MAY BE ADJUSTED, OR ALL THE PALLETS MAY BE GROUPED TOGETHER IN ONE LOAD BAY AS NEEDED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED OR THE SUPPLIED EQUIPMENT.
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 LOAD CAN BE REDUCED BY A MULTIPLE OF TWO UNITS BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD.
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 25 FOR GUIDANCE.
9. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	249	166
2" X 6"	266	266
NAI LS	NO. REQD	POUNDS
10d (3")	413	6-1/2
20d (4")	7	1/4
STEEL STRAPPING, 1-1/4" - 343' REQD - 30.5 LBS		
SEAL FOR 1-1/4" STRAPPING - 12 REQD - 0.60 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	38	37,620 LBS
DUNNAGE		900 LBS
TOTAL WEIGHT		38,520 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 21.
- ② CRIB FILL ASSEMBLY (10 REQD). SEE THE DETAIL ON PAGE 20 AND SPECIAL NOTE 2 ON PAGE 9.
- ③ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 31'-4" LONG STEEL STRAPPING (4 REQD). INSTALL AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO THE DOOR.
- ④ SEAL FOR 1-1/4" STRAPPING (4 OR 8 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 24.
- ⑤ REAR BLOCKING ASSEMBLY B (1 REQD). SEE DETAIL ON PAGE 22 AND SPECIAL NOTE 3 ON PAGE 9.

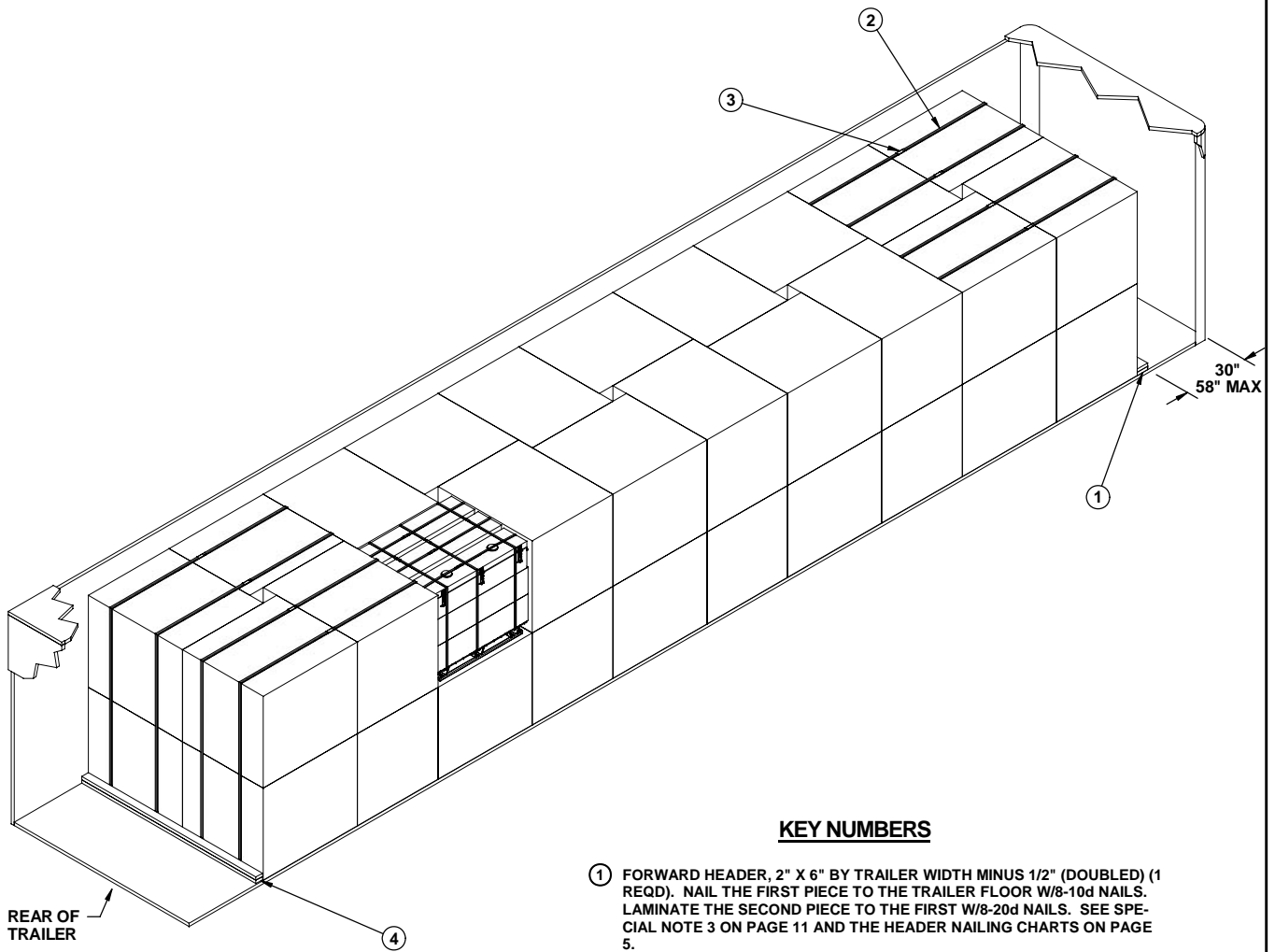
SPECIAL NOTES:

1. A 45'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WITH ROUNDED FRONT IS SHOWN. IF A TRAILER WITH SQUARE FRONT CORNERS IS TO BE LOADED, THE FORWARD BLOCKING ASSEMBLY PIECE DEPICTED ON PAGE 8 MAY BE OMITTED. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. CRIB FILL ASSEMBLIES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" 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 THE REAR HEADER ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
4. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
5. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND EACH OF THE TWO REARMOST STACKS IN EACH APPLICABLE ROW.
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 THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 25 FOR GUIDANCE.
8. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	253	169
2" X 6"	260	260
NAI LS	NO. REQD	POUNDS
10d (3")	424	6-1/2
STEEL STRAPPING, 1-1/4" - 126' REQD - 18.0 LBS		
SEAL FOR 1-1/4" STRAPPING - 4 REQD - 0.18 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - -	40 - - - -	39,600 LBS
DUNNAGE - - - - -	- - - - -	881 LBS
<hr/>		
TOTAL WEIGHT - - - -	- - - -	40,481 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/8-20d NAILS. SEE SPECIAL NOTE 3 ON PAGE 11 AND THE HEADER NAILING CHARTS ON PAGE 5.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 31'-0" LONG STEEL STRAPPING (8 REQD). INSTALL AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO THE DOOR.
- ③ SEAL FOR 1-1/4" STRAPPING (4 OR 8 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 24
- ④ REAR HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/16-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/16-10d NAILS. SEE SPECIAL NOTE 3 ON PAGE 11 AND THE HEADER NAILING CHARTS ON PAGE 5.

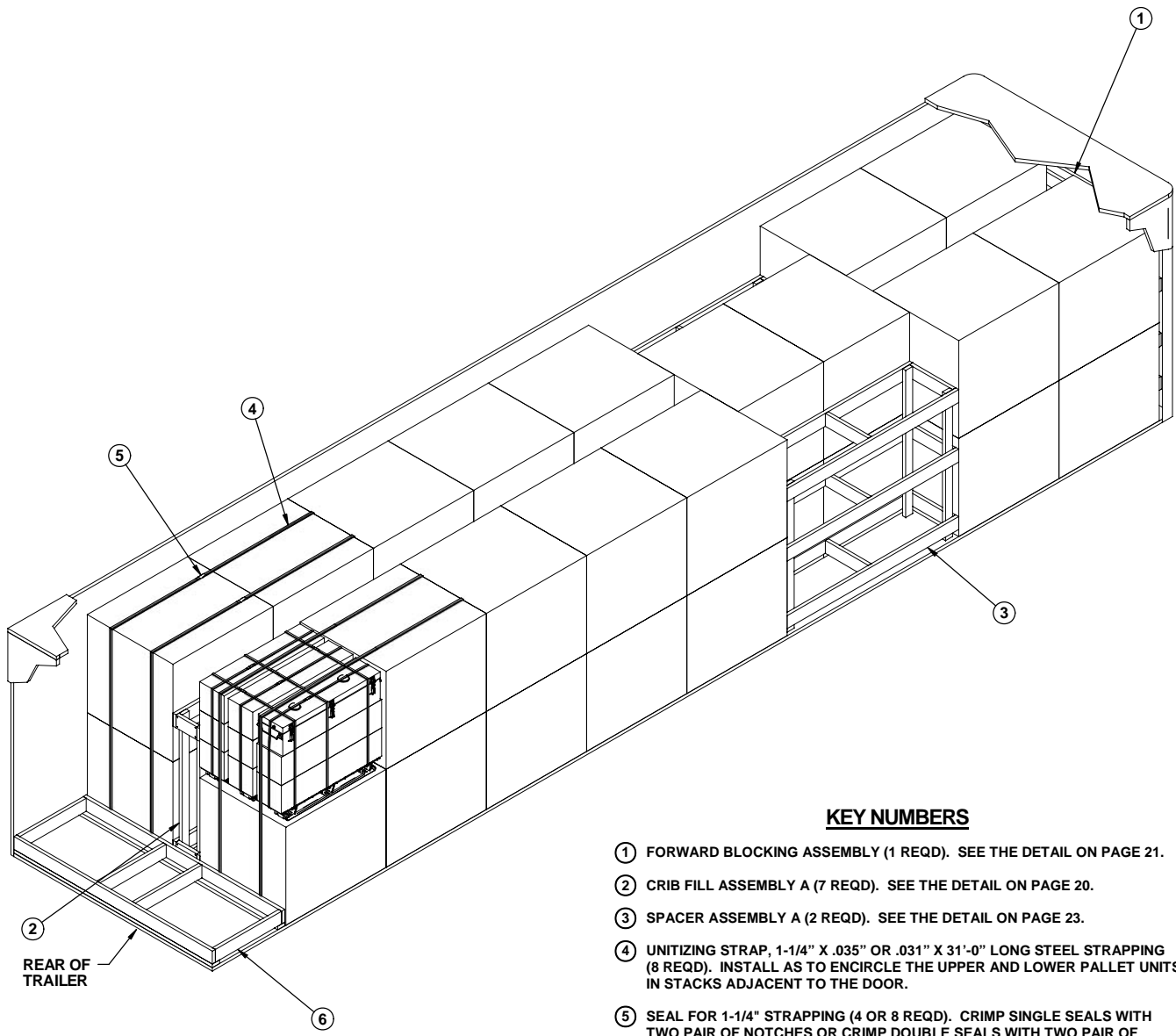
SPECIAL NOTES:

1. A 45'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. CRIB FILL ASSEMBLIES ARE REQUIRED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS EXCEEDS 6", AS MEASURED FROM PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 22 OR A NAILED HEADER, 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 OR A NAILED HEADER, AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
4. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
5. IF A STACK AT THE REAR OF THE LOAD OR AT THE FRONT OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND EACH OF THE TWO REARMOST STACKS IN EACH APPLICABLE ROW.
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. 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 25 FOR GUIDANCE.
8. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	16	11
2" X 6"	16	16
NAI LS	NO. REQD	POUNDS
10d (3")	40	3/4
20d (4")	8	1/3
STEEL STRAPPING, 1-1/4" - 241' REQD - 35.0 LBS		
SEAL FOR 1-1/4" STRAPPING - 8 REQD - 0.36 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	40	39,600 LBS
DUNNAGE		89 LBS
TOTAL WEIGHT		39,689 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

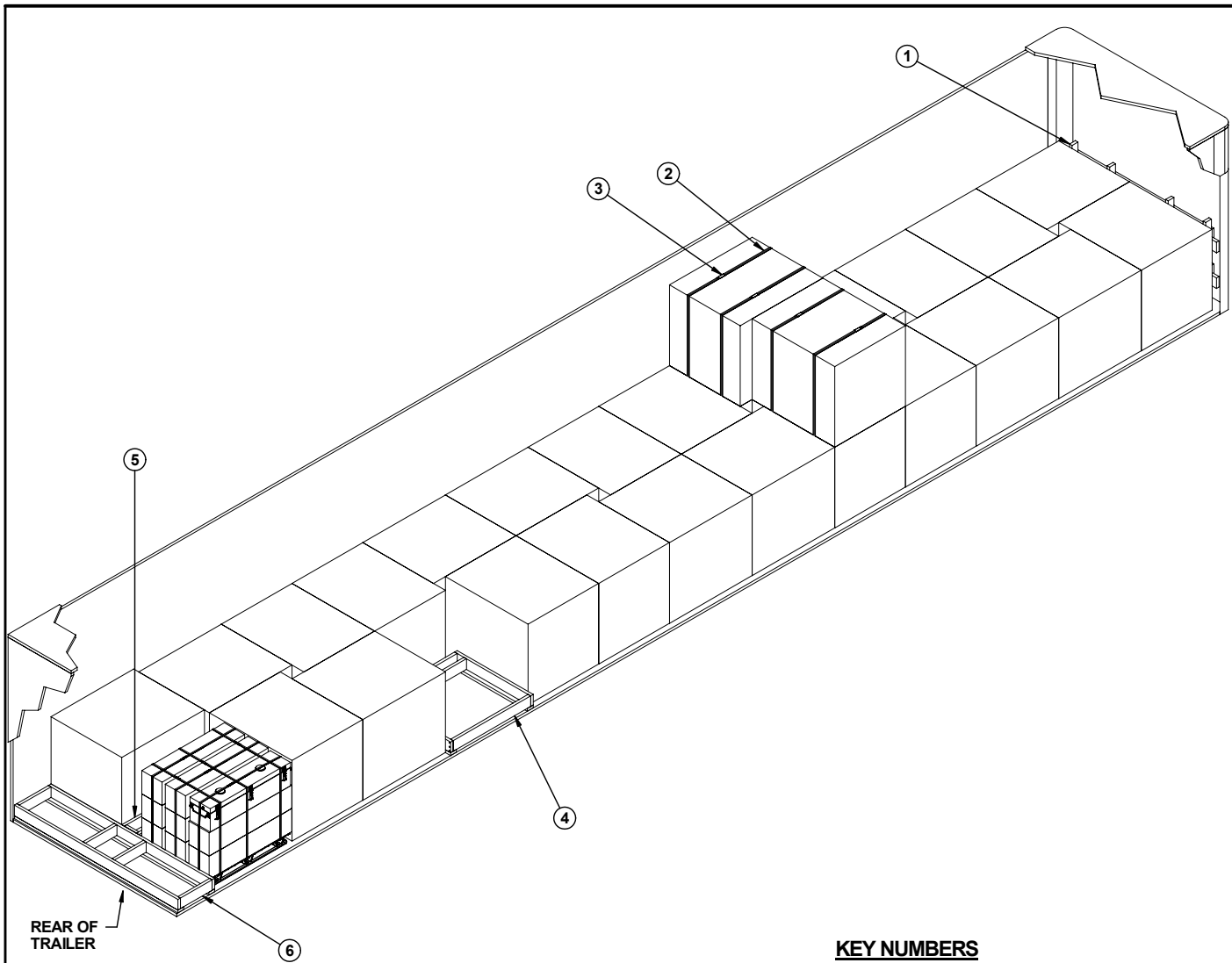
- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 21.
- ② CRIB FILL ASSEMBLY A (7 REQD). SEE THE DETAIL ON PAGE 20.
- ③ SPACER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 23.
- ④ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 31'-0" LONG STEEL STRAPPING (8 REQD). INSTALL AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO THE DOOR.
- ⑤ SEAL FOR 1-1/4" STRAPPING (4 OR 8 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 23.
- ⑥ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 22 AND SPECIAL NOTE 3 ON PAGE 13.

SPECIAL NOTES:

1. A 40'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. IF A TRAILER WITH SQUARE FRONT CORNERS IS TO BE LOADED, THE FORWARD BLOCKING ASSEMBLY PIECE DEPICTED ON PAGE 12 MAY BE OMITTED. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. CRIB FILL ASSEMBLIES MAY BE OMITTED WHEN THE SPACE BETWEEN LATERALLY ADJACENT UNITS IS 6" OR LESS, AS MEASURED FROM PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 22. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS SHOWN. **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 REAR HEADER 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 BLOCKING MAY BE USED IN LIEU OF THE SPACER ASSEMBLIES PROVIDED THAT UNITIZING STRAPS ARE APPLIED AROUND THE TWO-HIGH STACKS IMMEDIATELY ADJACENT TO THE SIDE BLOCKING ARE APPLIED. SIDE BLOCKING SHOULD BE DOUBLED 2" X 6" MATERIAL.
5. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
6. IF A STACK AT THE REAR OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND EACH OF THE TWO REARMOST STACKS IN EACH APPLICABLE ROW.
7. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED.
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 25 FOR GUIDANCE.
9. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	233	156
2" X 6"	343	343
NAILS	NO. REQD	POUNDS
10d (3")	508	8
STEEL STRAPPING, 1-1/4" - 39' REQD - 5.91 LBS		
SEAL FOR 1-1/4" STRAPPING - 4 REQD - 0.18 LBS		

LOAD AS SHOWN		
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	32	31,680 LBS
DUNNAGE		1,022 LBS
TOTAL WEIGHT		32,702 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 21.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 23'-0" LONG STEEL STRAPPING (4 REQD). INSTALL PRIOR TO LOADING SO AS TO ENCIRCLE THE UPPER AND LOWER PALLET UNITS IN STACKS ADJACENT TO ONE-HIGH STACKS OR TO THE DOOR. SEE SPECIAL NOTE 4 ON PAGE 15.
- ③ SEAL FOR 1-1/4" STRAPPING (4 OR 8 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE "END-OVER-END LAP JOINT DETAILS" ON PAGE 24.
- ④ FILLER ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 24.
- ⑤ ANTI-SWAY BRACE (1 REQD). SEE DETAIL ON PAGE 20.
- ⑥ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 22 AND SPECIAL NOTE 3 ON PAGE 15.

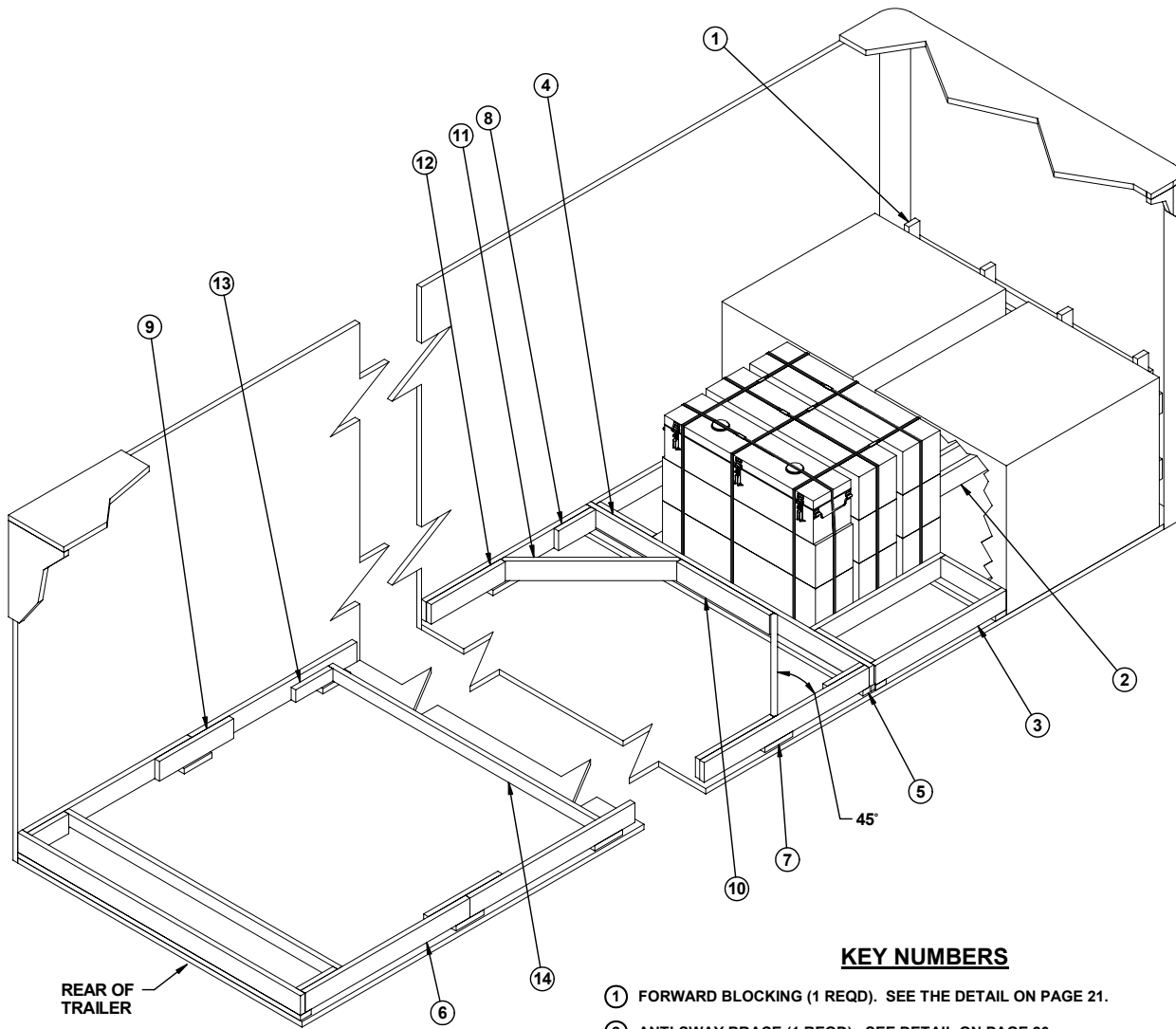
SPECIAL NOTES:

1. A 53'-0" LONG BY 8'-2" 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 PALLET UNIT TO PALLET UNIT.
3. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE PALLET UNITS AND THE REAR DOOR IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY B" AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE THE "REAR BLOCKING ASSEMBLY A" 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 THE REAR HEADER ON PAGE 4 AND THE HEADER NAILING CHARTS ON PAGE 5 FOR GUIDANCE.
4. UNITIZING STRAPS MUST BE APPLIED AROUND TWO-HIGH STACKS WHICH ARE IMMEDIATELY ADJACENT EITHER LATERALLY OR LONGITUDINALLY TO ONE-HIGH UNITS. THE UNITIZING STRAPS MUST BE INSTALLED PRIOR TO FINAL POSITIONING OF THE STACK.
5. IF A STACK AT THE REAR OF THE LOAD OR AT THE FRONT OF THE LOAD IS MORE THAN ONE UNIT HIGH, UNITIZING STRAPS MUST BE INSTALLED AROUND EACH OF THE REARMOST STACKS IN EACH APPLICABLE ROW.
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 THE "PROCEDURES FOR SHIPMENT OF LEFTOVER CONTAINERS" ON PAGE 25 FOR GUIDANCE.
7. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	38	26
2" X 6"	83	83
NAI LS	NO. REQD	POUNDS
10d (3")	114	1-3/4
STEEL STRAPPING, 1-1/4" - 90' REQD - 5.91 LBS		
SEAL FOR 1-1/4" STRAPPING - 4 REQD - 0.18 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	- - - 27 - - - - -	26,730 LBS
DUNNAGE	- - - - -	226 LBS
TOTAL WEIGHT - - - - -		26,956 LBS (APPROX)



ISOMETRIC VIEW

REAR OF TRAILER

KEY NUMBERS

- ① FORWARD BLOCKING (1 REQD). SEE THE DETAIL ON PAGE 21.
- ② ANTI-SWAY BRACE (1 REQD). SEE DETAIL ON PAGE 20.
- ③ SPACER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 23. 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 W/1-10d NAIL EVERY 8".
- ⑥ SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN THE FORWARD AND REAR HEADERS (2 REQD). SEE SPECIAL NOTE 4 ON PAGE 17.
- ⑦ RISER PIECE, 2" X 4" X 9" (AS REQD). CENTER UNDER THE JOINTS OF THE DIAGONAL BRACE AND BACK-UP CLEAT, AND UNDER THE JOINTS OF THE STRUT BRACE RETAINING CLEAT AND STRUT BRACE, AND UNDER THE SPLICE OF SIDE STRUT IF APPLICABLE. NAIL TO SIDE STRUT W/2-10d NAILS.
- ⑧ POCKET CLEAT, 2" X 6" X 12" (4 REQD). NAIL TO A SIDE STRUT W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER W/3-12d NAILS.
- ⑨ SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF PIECE AND NAIL TO SIDE STRUT W/4-10d NAILS AT EACH END. SEE SPECIAL NOTE 4 ON PAGE 17.
- ⑩ CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO A HEADER W/6-10d NAILS.

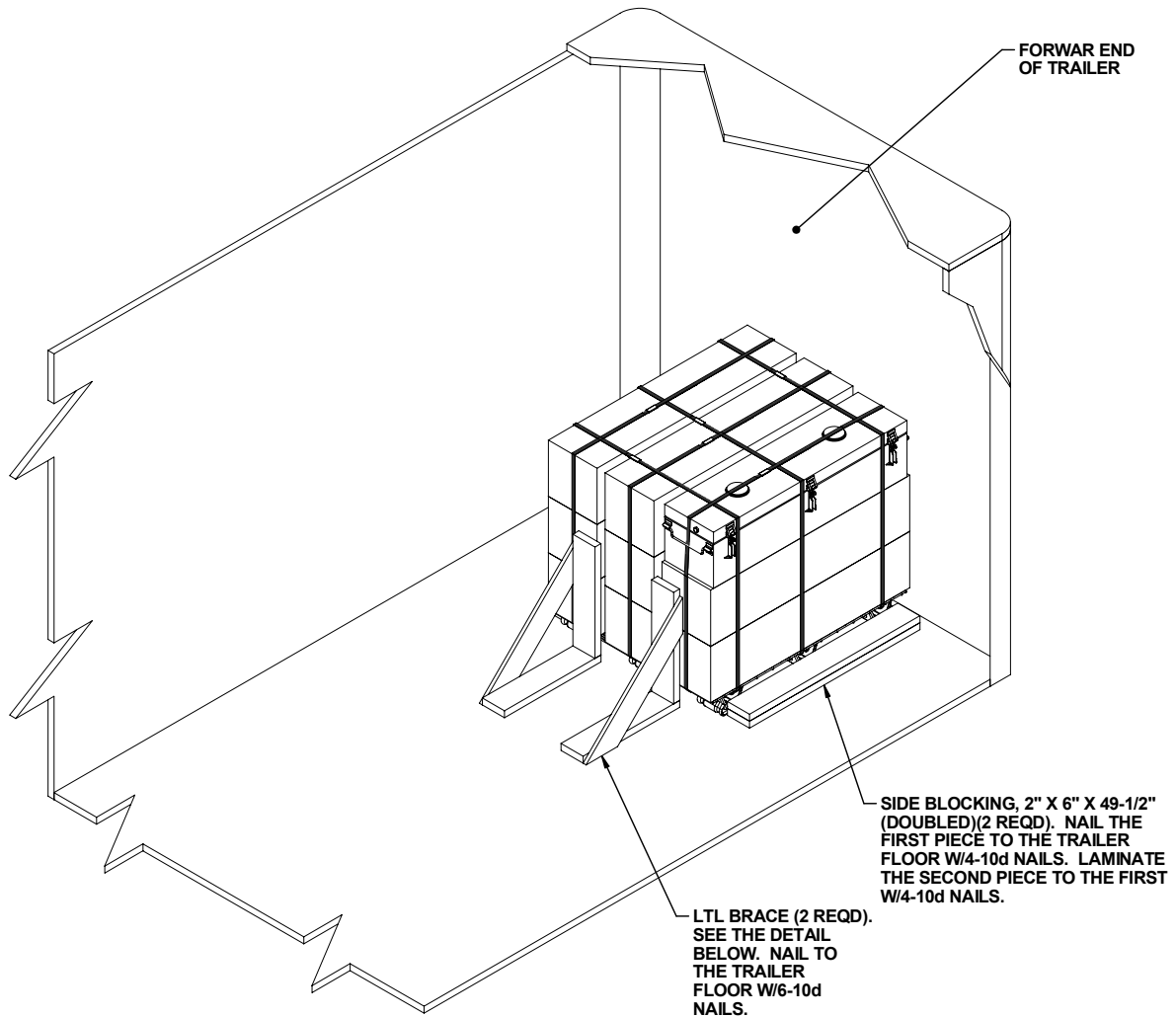
(KEY NUMBERS CONTINUED)

- 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 W/2-16d NAILS AT EACH END.
- ⑫ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT W/8-10d NAILS.
- ⑬ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT 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 AND/OR TO THE STRUT BRACE RETAINING CLEATS, W/2-12d NAILS AT EACH END. SEE SPECIAL NOTE 5 ON PAGE 17.

(CONTINUED AT LEFT)

SPECIAL NOTES:

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 PALLET UNIT TO PALLET UNIT.
3. THE SPACER ASSEMBLIES ARE SHOWN ONLY TO DEPICT A TYPICAL INSTALLATION. SIDE SPACER ASSEMBLIES WILL BE USED WHEN A PALLET UNIT IS LOADED WITH THE CONTAINERS PARALLEL TO THE TRAILER WIDTH. 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 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 MUST BE POSITIONED UNDER EACH SPLICE JOINT. IF DESIRED, THE STRUT BRACE PIECE(S) MAY BE NAILED TO THE SPLICE PIECES IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS.
5. ALL LTL LOADS, REGARDLESS OF THEIR SIZE, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO POCKET CLEAT. IF THE SIDE STRUTS ARE LONGER THAN 7'-0", AN ADDITIONAL STRUT BRACE, AND 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 ⑭, 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 THE HEADER 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 ④ THRU ⑭ 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 25 FOR GUIDANCE.
9. REFER TO PAGE 26 FOR GUIDANCE IN THE SHIPMENT OF PARTIAL PALLET UNITS.



ISOMETRIC VIEW

VERTICAL PIECE, 2" X 6" X 24"
(1 REQD). NAIL TO THE
BACK-UP CLEAT W/2-6d
NAILS.

ANGLE BRACE, 1" X 6" BY
CUT-TO-FIT (1 REQD).
NAIL TO THE VERTICAL
PIECE AND TO THE
BACK-UP CLEAT W/3-8d
NAILS AT EACH END

24" MIN

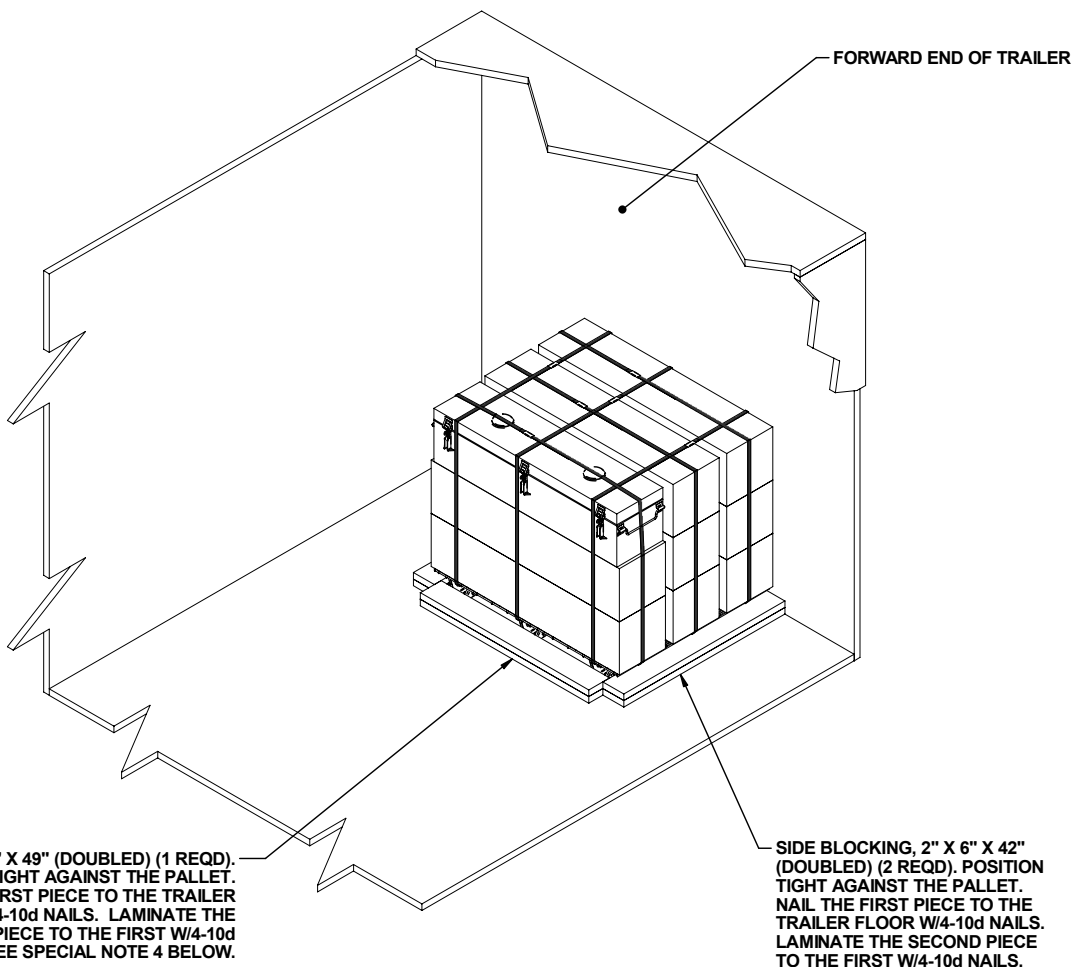
24" MIN

BACK-UP CLEAT, 2" X 6"
MATERIAL (1 REQD).

LTL BRACE

SPECIAL NOTES:

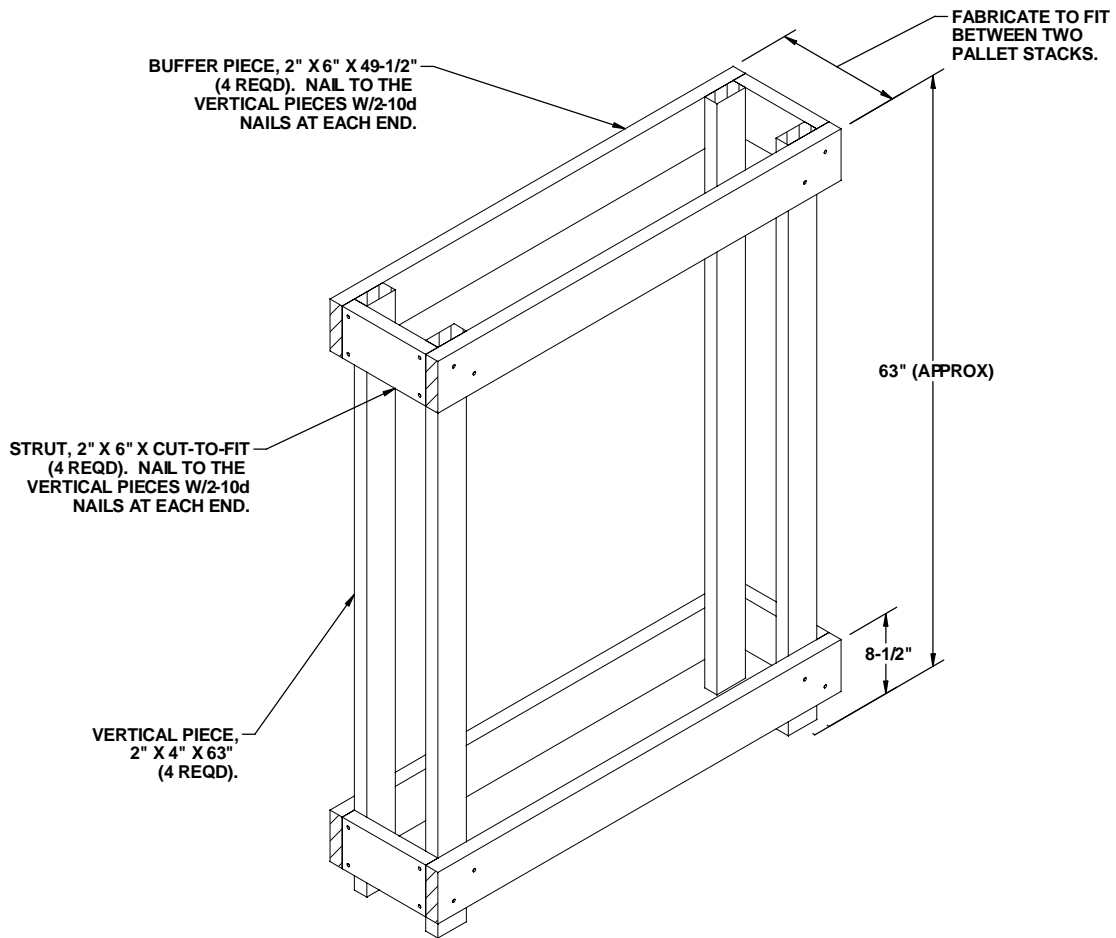
1. A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. THE POSITIONING OF A UNIT IS OPTIONAL. LTL BRACES MUST CONTACT EITHER THE AFT OR FORWARD END OF THE UNIT, NOT THE SIDES. UNITS MAY ALSO BE LOCATED IN THE CORNER OF 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, PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. 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. 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.



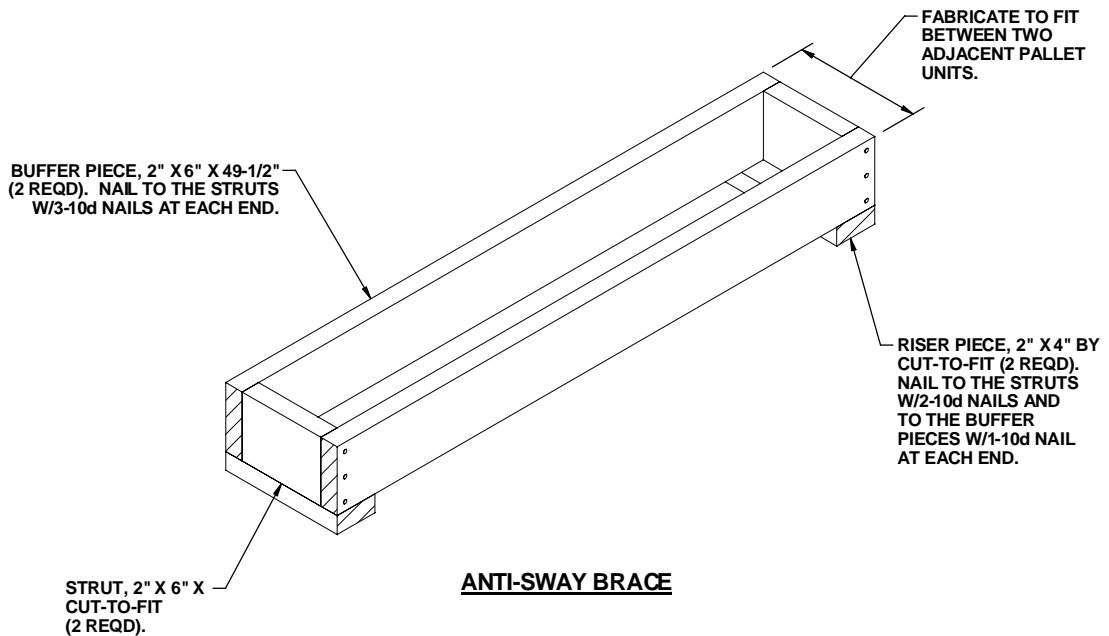
ISOMETRIC VIEW

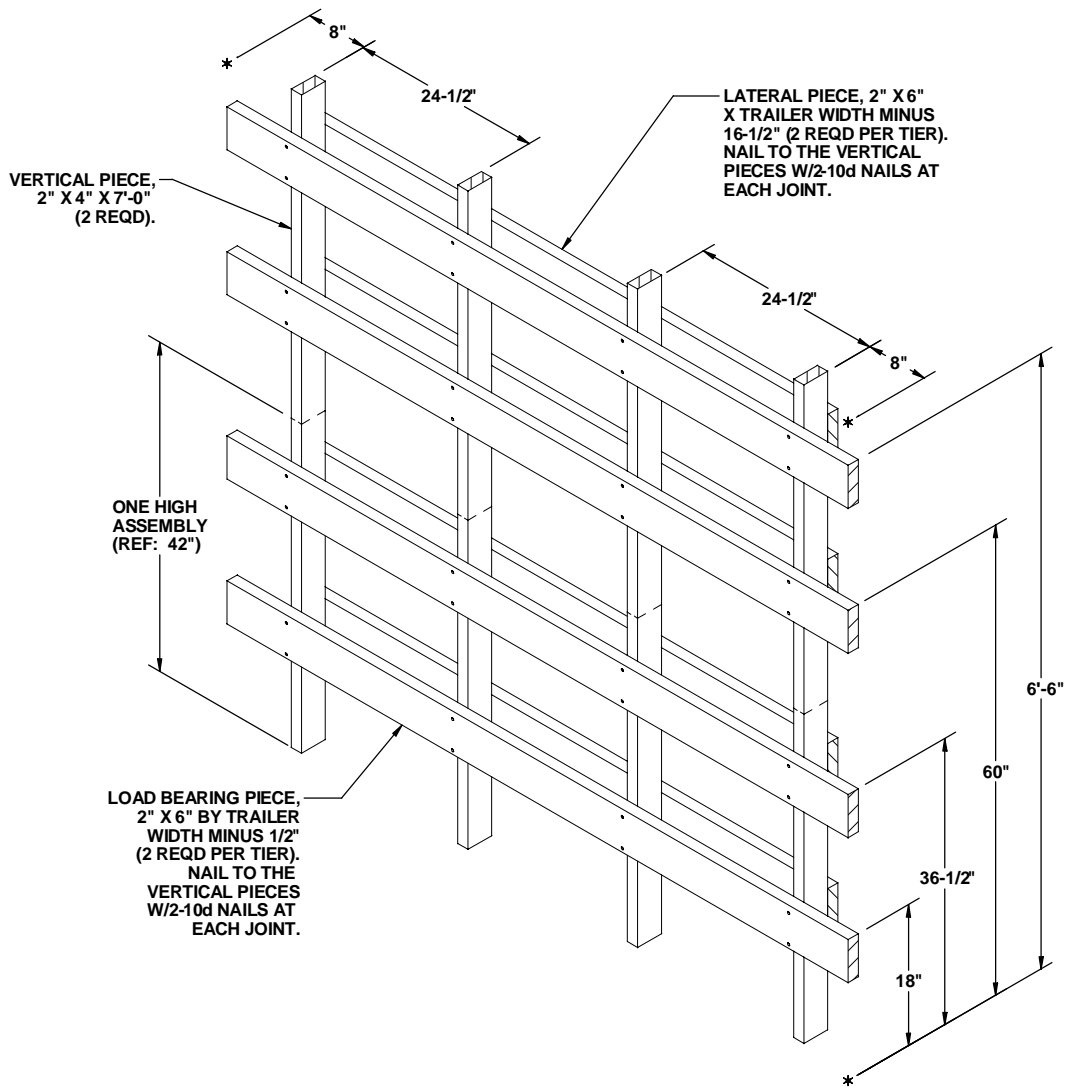
SPECIAL NOTES:

1. AN 8'-2" 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. UNITS MAY BE LOCATED IN THE CORNER OF THE TRAILER. 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 SIDE-WALLS. 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 10,000 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.



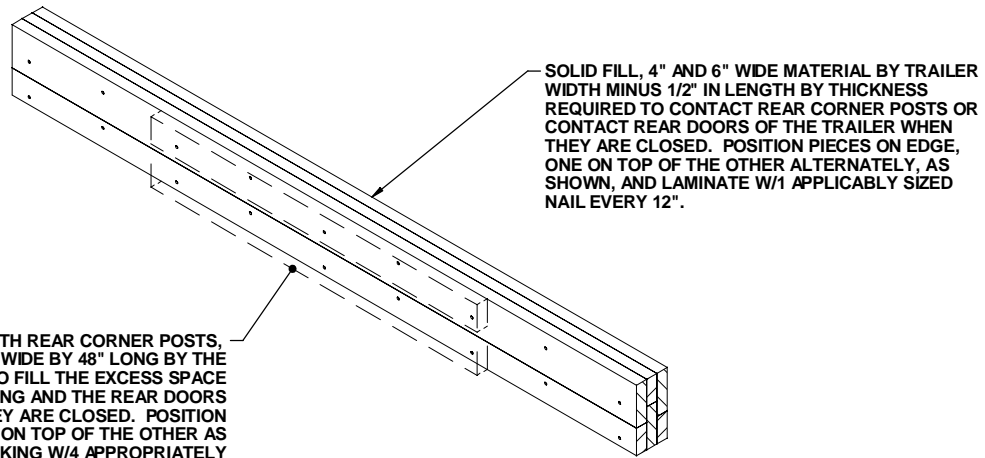
CRIB FILL ASSEMBLY A





FORWARD BLOCKING ASSEMBLY

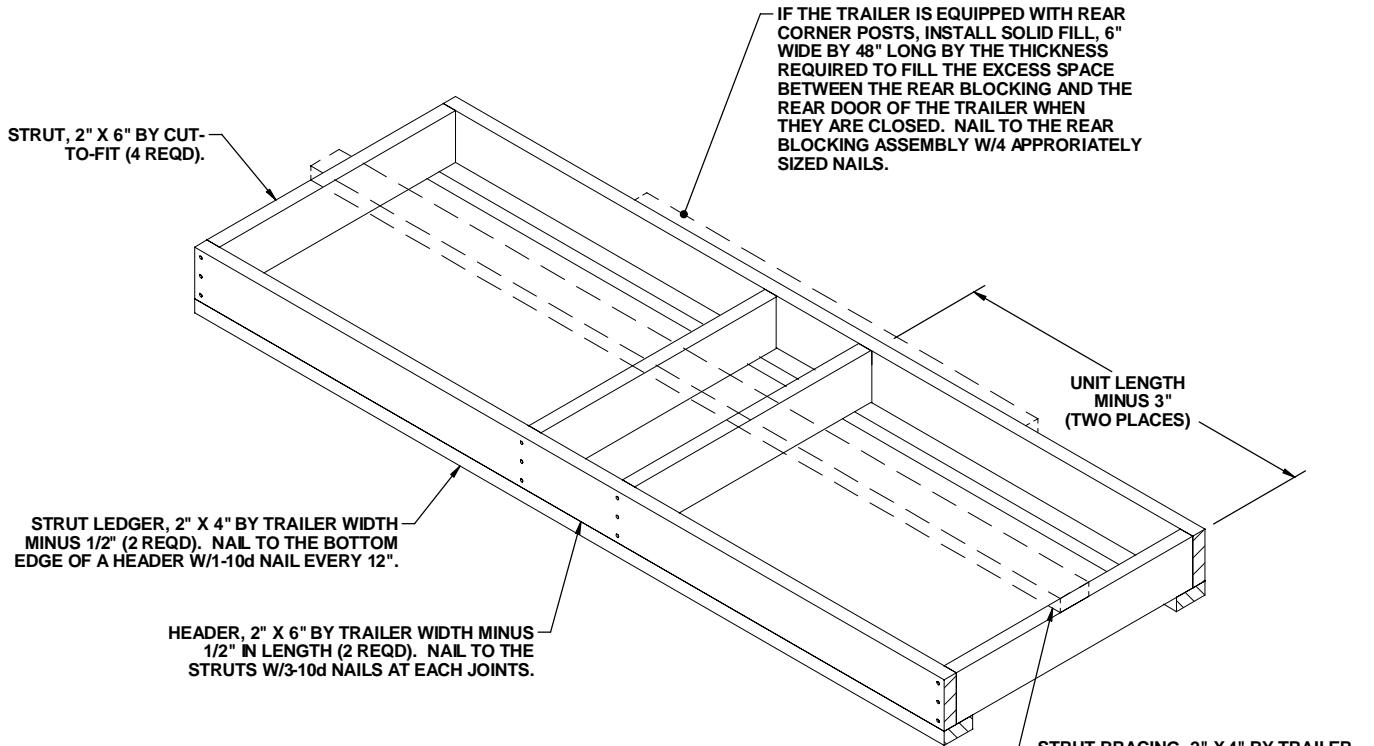
THE ASSEMBLY AS DEPICTED ABOVE IS APPLICABLE FOR A TWO-TIER LOAD. FOR A ONE-TIER LOAD, ELIMINATE THE TOP TWO LATERAL PIECES AND THE TOP TWO LOAD BEARING PIECES AND SHORTEN THE VERTICAL PIECES TO 42", AS DEPICTED ABOVE. THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT END OF A TRAILER HAVING ROUNDED CORNERS, 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 27 FOR GUIDANCE.



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

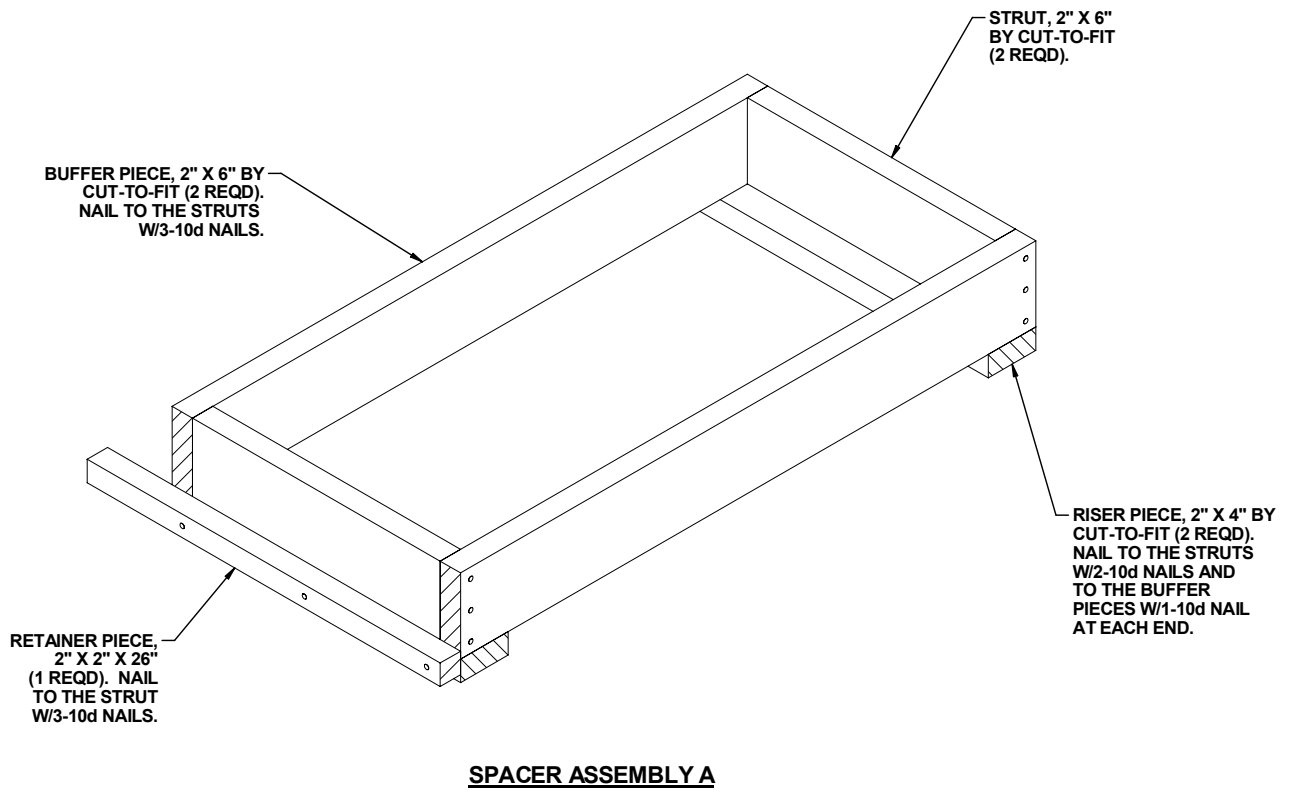
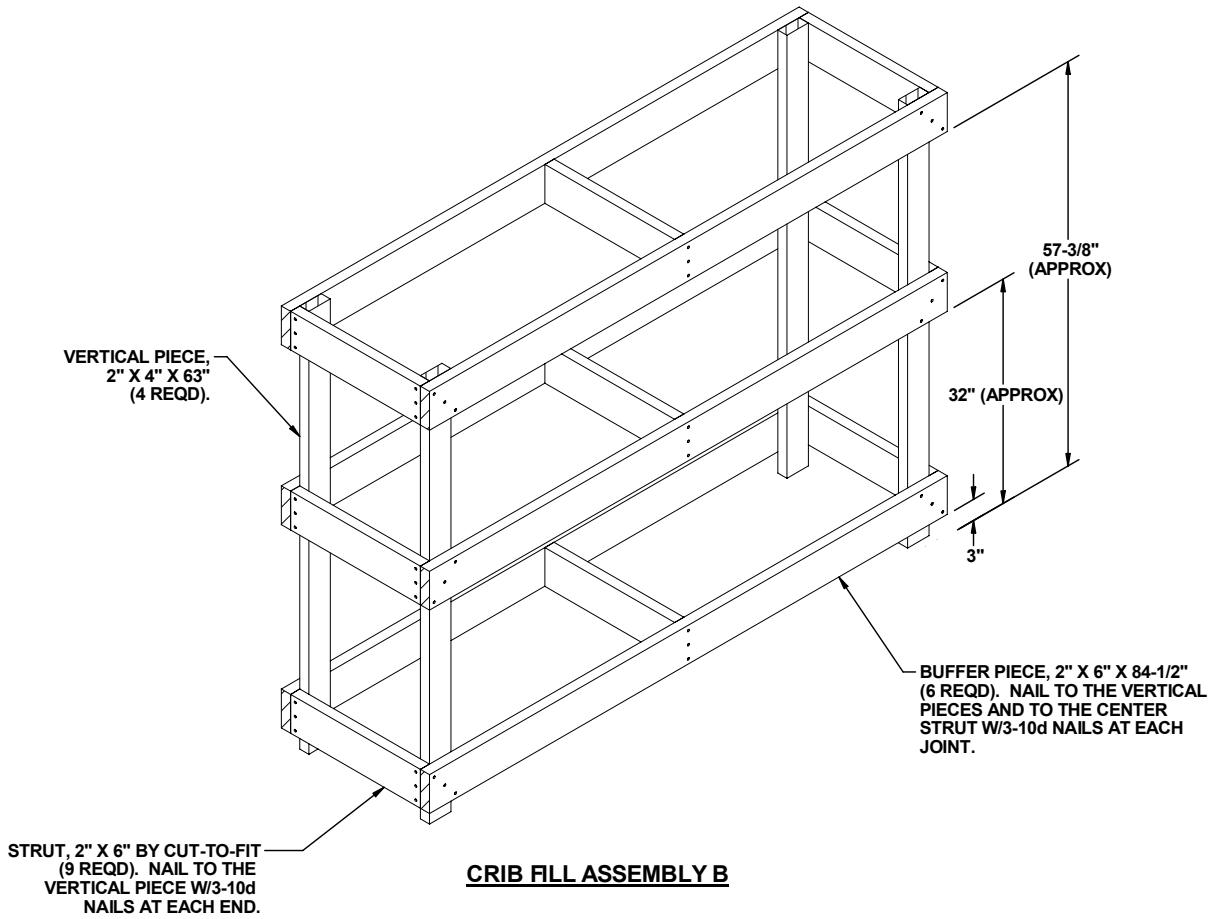
REAR BLOCKING ASSEMBLY A

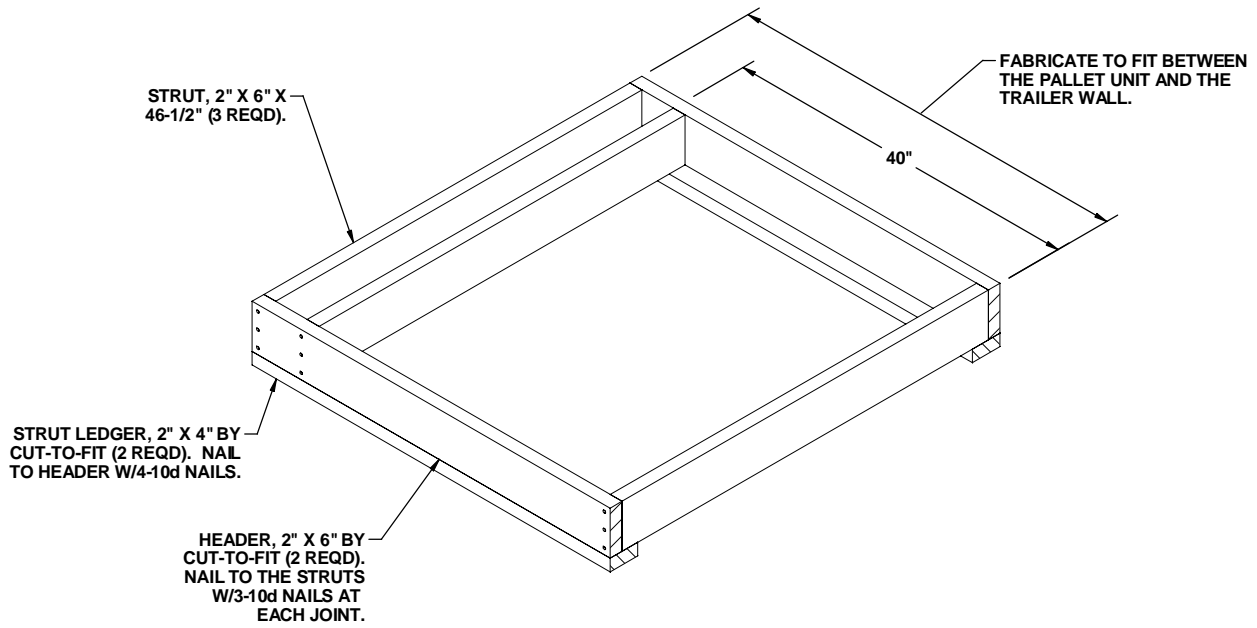
THIS REAR BLOCKING ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF THE LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 1-1/2" BUT LESS THAN 9".



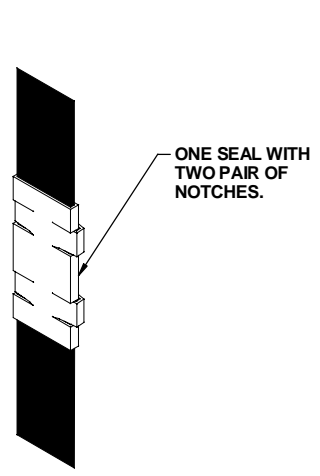
REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF THE LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOOR IS MORE THAN 9" AND THE UNITS ARE LOADED AS SHOWN ON PAGE 12. NOTE THAT THE ABOVE VIEW IS BACKWARDS FROM THE POSITION IN WHICH IT WILL BE INSTALLED.



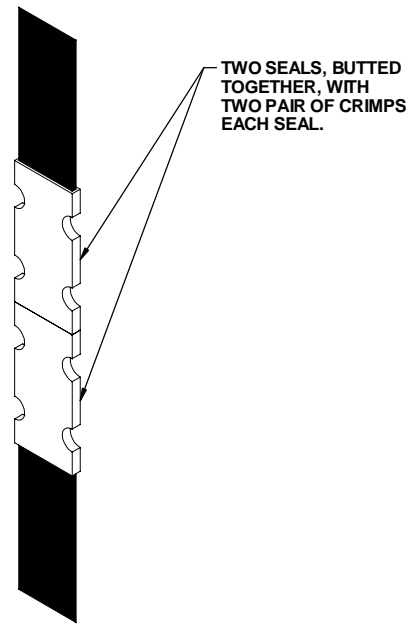


FILLER ASSEMBLY



STRAP JOINT A

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

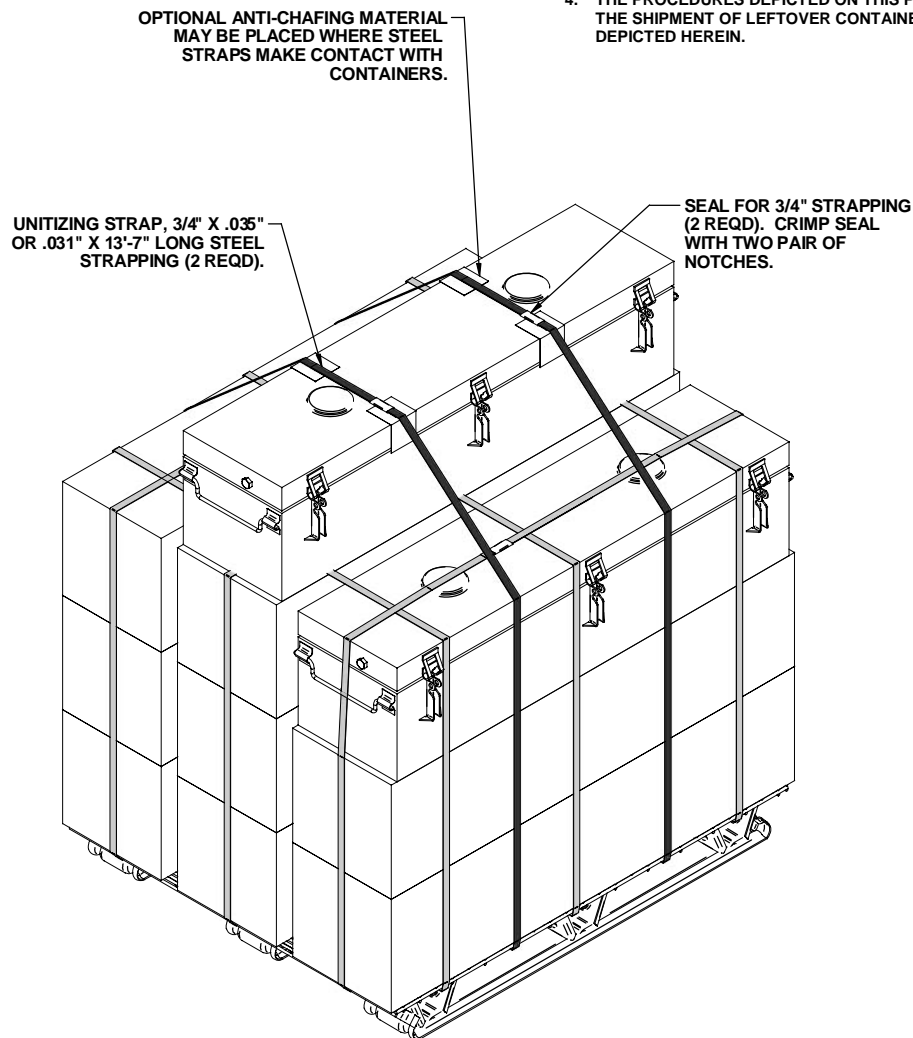


STRAP JOINT B

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

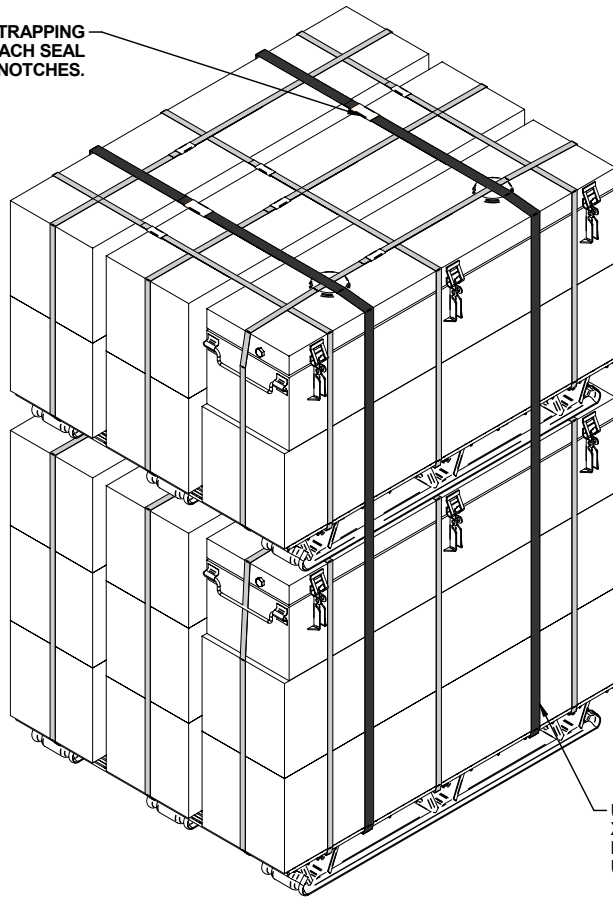
SPECIAL NOTES:

1. SHIPMENTS OF PALLET UNITS OF CNU-317 CONTAINERS 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 ANY QUANTITY OF CONTAINERS WHICH ARE INSUFFICIENT TO FORM A FULL LAYER OF A PARTIAL PALLET.
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 26 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.



SECUREMENT OF ONE ADDITIONAL CONTAINER

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

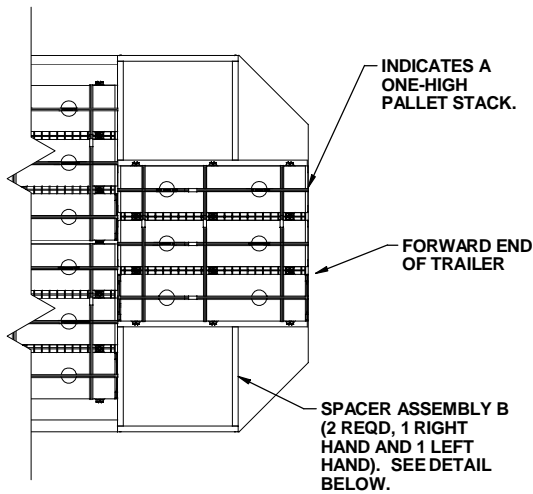


UNITIZING STRAP, 1-1/4" X .035" OR .031"
X 19'-2" LONG STEEL STRAPPING (2 REQD).
INSTALL SO AS TO ENCIRCLE BOTH PALLET
UNITS.

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

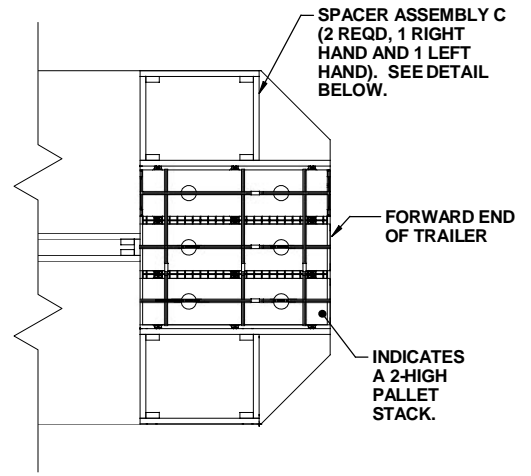
SPECIAL NOTES:

1. SHIPMENTS OF PALLET UNITS OF CNU-317 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 LESS-THAN-FULL PALLET UNITS WITHIN A LOAD. THE PROCEDURES ON THIS PAGE ARE PRESENTED AS GUIDANCE IN THE SHIPMENT OF THESE PARTIAL UNITS.
2. A PARTIAL PALLET UNIT MUST CONSIST OF EITHER ONE OR TWO FULL LAYERS. A LAYER MAY CONSIST OF EMPTY CONTAINERS.
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 LATERAL UNITIZING STRAPS. SEE THE "SECUREMENT 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.
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 25 FOR GUIDANCE IN STRAP APPLICATION.



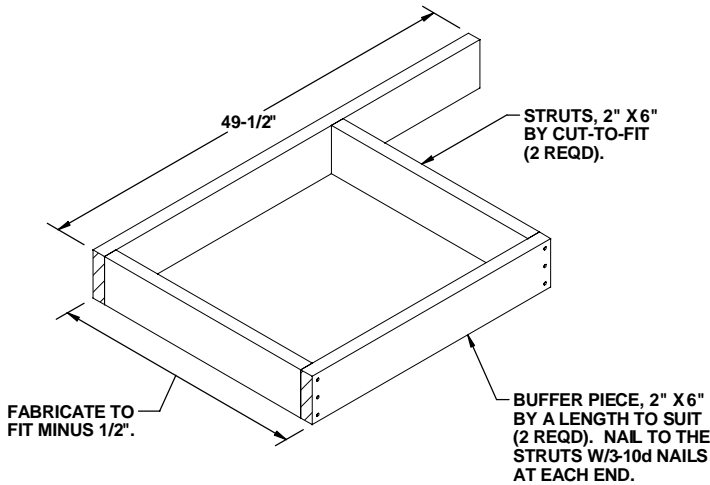
ALTERNATE FORWARD LOADING PATTERN A

THIS PROCEDURE IS APPLICABLE TO THE LOADING OF ONE PALLET UNIT (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 98" WDE TRAILER IS SHOWN, NARROW TRAILERS CAN BE USED.

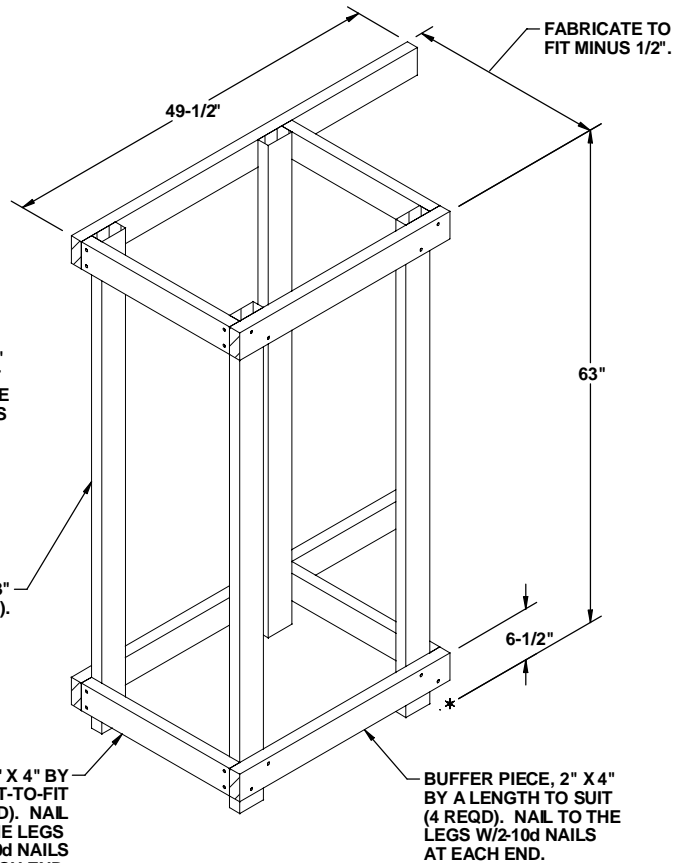


ALTERNATIVE FORWARD LOADING PATTERN B

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 B



SPACER ASSEMBLY C

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 AS IT WILL BE INSTALLED IN RIGHT SIDE OF THE LOAD. RIGHT HAND AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.

