

LOADING AND BRACING (TL & LTL) IN VAN TRAILERS[⊕] OF HAVNAP (AGM-142) MISSILES PACKED IN CNU-496 CONTAINERS

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

U.S. ARMY MATERIEL COMMAND DRAWING

<p>APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND</p> <p>RUS.ALLEN.J .1230354282</p> <small>Digitally signed by RUS.ALLEN.J.1230354282 DN: cn=US, ou=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=RUS.ALLEN.J.1230354282 Date: 2013.01.14 14:39:50 -0600</small>	<p>CAUTION: VERIFY PRIOR TO USE AT HTTPS://MHP.REDSTONE.ARMY.MIL THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 14.</p>																													
<p>APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND</p> <p>SHIMP.UPTON .R.1231257183</p> <small>Digitally signed by SHIMP.UPTON.R.1231257183 DN: cn=US, ou=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=SHIMP.UPTON.R.1231257183 Date: 2013.04.01 15:27:52 -0500</small>	<p>DO NOT SCALE</p>	<p>NOVEMBER 2012</p>																												
	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">DESIGN ENGINEER</td> <td style="width: 10%;">BASIC</td> <td colspan="2" style="text-align: center;">CANH TRAN</td> </tr> <tr> <td></td> <td>REV.</td> <td colspan="2"></td> </tr> </table>	DESIGN ENGINEER	BASIC	CANH TRAN			REV.			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">ENGINEERING DIVISON</td> <td style="width: 30%;">FIEFFER.LAUR A.A.1230375727</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td>TEST ENGINEER</td> <td></td> <td>TESTED</td> <td></td> </tr> <tr> <td>EXPLOSIVE SAFETY DIRECTORATE</td> <td>WILLIAMS.KENYO N.L.1231212392</td> <td></td> <td></td> </tr> </table> <small>Digitally signed by FIEFFER.LAURA.A.1230375727 DN: cn=US, ou=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=FIEFFER.LAURA.A.1230375727 Date: 2012.10.25 09:18:39 -0500</small>	ENGINEERING DIVISON	FIEFFER.LAUR A.A.1230375727			TEST ENGINEER		TESTED		EXPLOSIVE SAFETY DIRECTORATE	WILLIAMS.KENYO N.L.1231212392			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>CLASS</td> <td>DIVISION</td> <td>DRAWING</td> <td>FILE</td> </tr> <tr> <td style="text-align: center;">19</td> <td style="text-align: center;">48</td> <td style="text-align: center;">8783</td> <td style="text-align: center;">SP11J41</td> </tr> </table>	CLASS	DIVISION	DRAWING	FILE	19	48	8783
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GENERAL NOTES

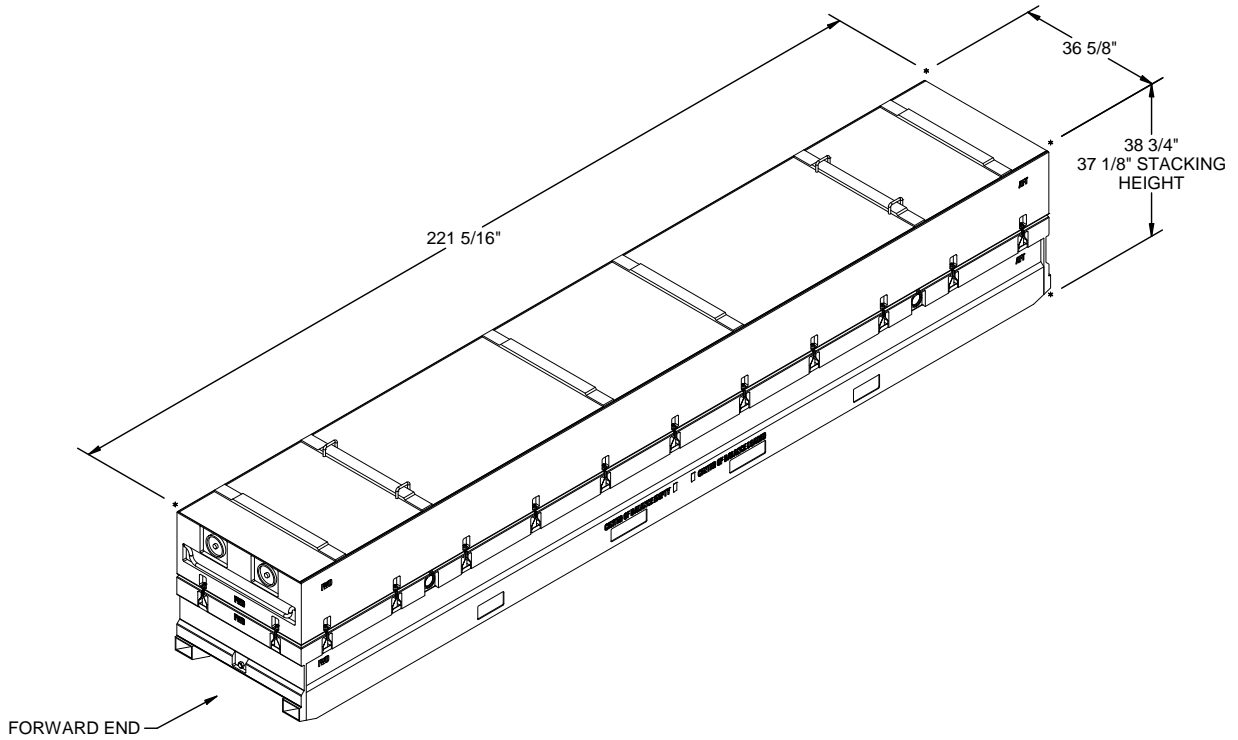
(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF HAVNAP (AGM-142) MISSILES PACKED IN CNU-496 CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH MISSILE ITEMS. SEE PAGE 3 AND U.S. AIR FORCE DRAWING 9018070 FOR DETAILS OF THE CONTAINER.
- 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. GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF 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 36,000 POUNDS. THE SPECIFIED BLOCKING AND BRACING FOR THE FULL LOADS IS ADEQUATE FOR THE RETENTION OF LOADS, UP TO 40,000 POUNDS, IF IT IS DESIRED TO INCREASE THE LADING WEIGHT.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED ON A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.
- J. 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 CONTAINERS 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 "END-OVER-END LAP JOINT DETAILS" ON PAGE 3 FOR GUIDANCE.
- L. 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 THAT 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 THAT 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. THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 6". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY INCREASING THE LENGTH OF THE "CUT-TO-FIT" PIECES IN THE LATERAL BRACING CLEATS OR THE ANTI-SWAY BRACES.
- O. **CAUTION:** WHEN POWER OR PNEUMATIC NAILERS ARE BEING USED IN THE APPLICATION OF NAILED FLOORLINE BLOCKING OR BRACING, CONTAINERS 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.
- P. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY B" AS DEPICTED ON PAGE 13. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", 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 REAR HEADER 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.
- Q. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- R. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF CNU-496 CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED MISSILES, OR WHEN THEY ARE EMPTY.
- S. 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.
- T. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- 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.

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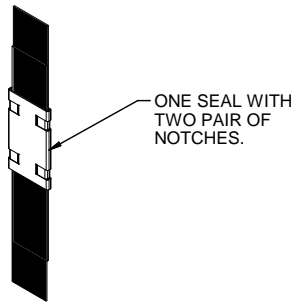
MATERIAL SPECIFICATIONS

<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>STRAPPING, STEEL</u>	--	ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.
<u>SEAL, STRAP</u>	--	ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.
<u>ANTI-CHAFING MATERIAL</u>	--	MIL-PRF-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.
<u>WIRE, CARBON STEEL</u>	--	ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, 0.0800" DIA, GRADE 1006 OR BETTER.



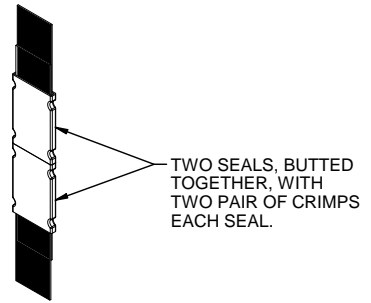
CNU-496 CONTAINER

GROSS WEIGHT - - - - - 4,400 LBS
 CUBE - - - - - 182.0 CU FT



STRAP JOINT A

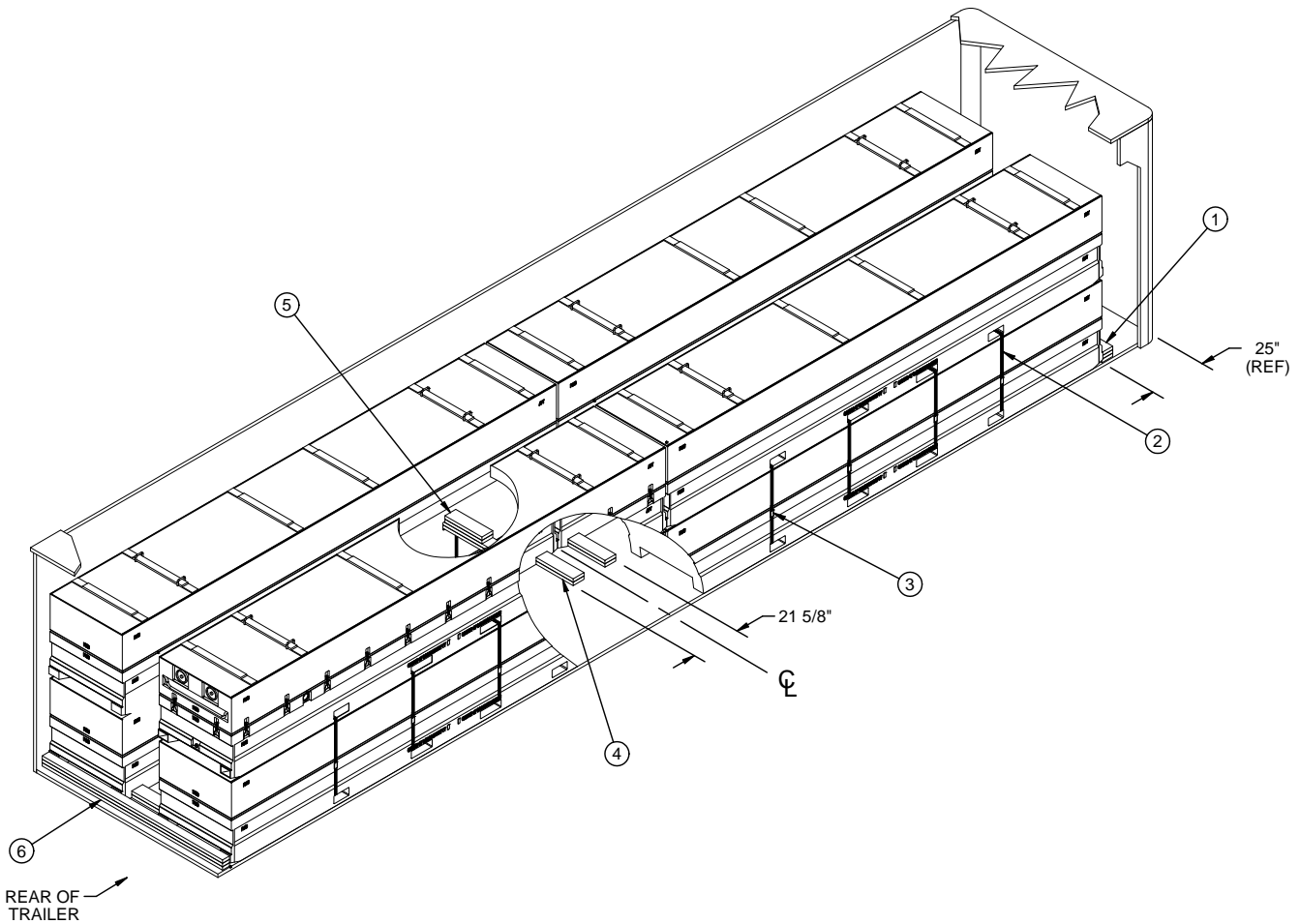
METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.



STRAP JOINT B

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

END-OVER-END LAP JOINT DETAILS



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST PIECE AND NAIL THE THIRD PIECE TO THE SECOND PIECE W/8-20d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 5.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 18'-10" LONG STEEL STRAPPING (16 REQD, 4 PER STACK). INSTALL THROUGH FORKLIFT POCKETS.
- ③ SEAL FOR 1-1/4" STRAPPING (16 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE THE STRAP DETAILS ON PAGE 3.
- ④ LATERAL BRACING CLEATS, 2" X 6" BY CUT TO FIT (REF: 18-3/4") (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A SIMILAR MANNER.
- ⑤ ANTI-SWAY BRACE (4 REQD). SEE THE DETAIL ON PAGE 7. INSTALL BETWEEN LATERALLY ADJACENT ROWS OF CONTAINERS IN THE SECOND LAYER.
- ⑥ REAR HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/15-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST PIECE AND NAIL THE THIRD PIECE TO THE SECOND PIECE W/15-10d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 5.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	23	16
2" X 6"	72	72
NAI LS	NO. REQD	POUNDS
10d (3")	125	1.92
20d (4")	16	0.57
STEEL STRAPPING, 1-1/4" - 302' REQD - - - 43 LBS		
SEAL FOR 1-1/4" STRAPPING - 16 REQD - - - 3/4 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-496 CONTAINER	8	35,200 LBS
DUNNAGE		221 LBS
TOTAL WEIGHT		35,421 LBS (APPROX)

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

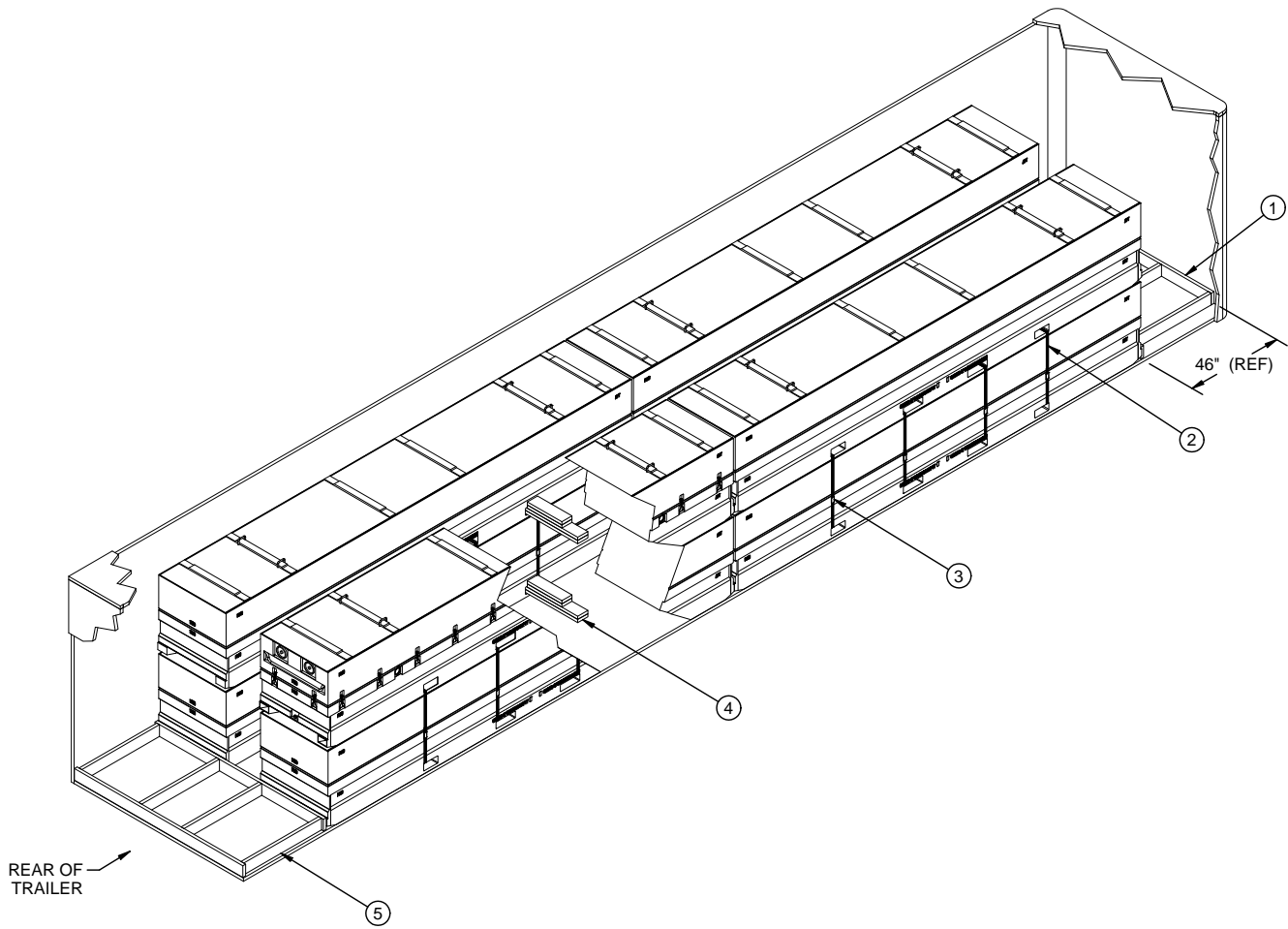
- HEADERS AT THE FRONT END OF A LOAD OR AT THE FRONT END OF A DIVIDED LOAD WILL BE DOUBLED 2" X 6" MATERIAL. THE NUMBER OF NAILS INDICATED ABOVE REFERS TO THE NUMBER OF NAILS USED IN EACH LAMINATION OF A HEADER, FOR EXAMPLE 8 NAILS MEANS THE FIRST BOARD IS NAILED TO THE TRAILER FLOOR W/8-10d NAILS, AND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

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. A MINIMUM OF 6 PAIRS OF NAILS WILL BE USED FOR TRAILER WIDTH HEADERS. **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. A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WITH A NAILABLE FLOOR AND ROUNDED FRONT CORNERS IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED.
2. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS 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 B" AS DETAILED ON PAGE 13 OR A NAILED HEADER, AS SHOWN. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A" AS DETAILED ON PAGE 13 OR A NAILED HEADER, AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING THE HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
3. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED.



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 12.
- ② UNITIZING STRAP, 1-1/4" X .035" OR .031" X 18'-10" LONG STEEL STRAPPING (16 REQD, 4 PER STACK). INSTALL THROUGH FORKLIFT POCKETS.
- ③ SEAL FOR 1-1/4" STRAPPING (16 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE THE STRAP DETAILS ON PAGE 3.
- ④ ANTI-SWAY BRACE (8 REQD). SEE THE DETAIL ON PAGE 7. INSTALL BETWEEN LATERALLY ADJACENT ROWS OF CONTAINERS.
- ⑤ REAR BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 13.

BILL OF MATERIAL

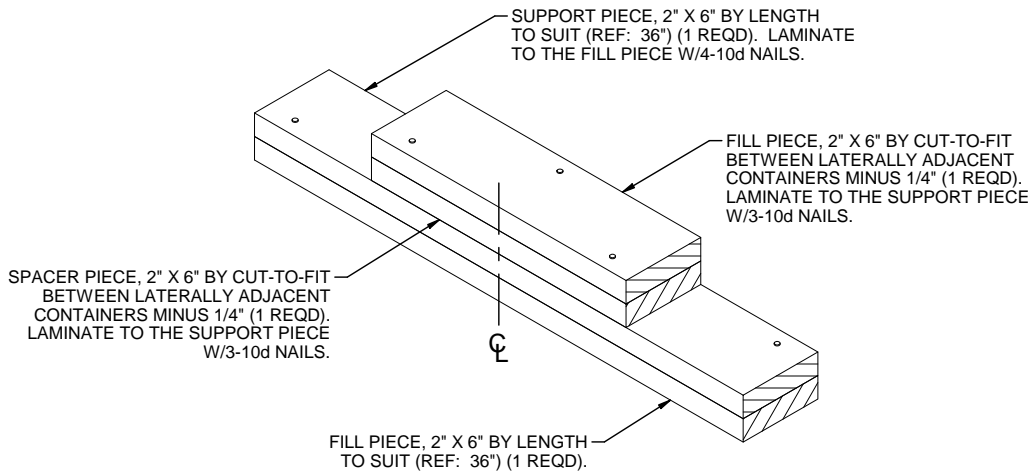
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	131	131
NAI LS	NO. REQD	POUNDS
10d (3")	128	1.97
STEEL STRAPPING, 1-1/4" - 302' REQD - - - 43 LBS		
SEAL FOR 1-1/4" STRAPPING - 16 REQD - - 3/4 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-496 CONTAINER	8	35,200 LBS
DUNNAGE		307 LBS
TOTAL WEIGHT		35,507 LBS (APPROX)

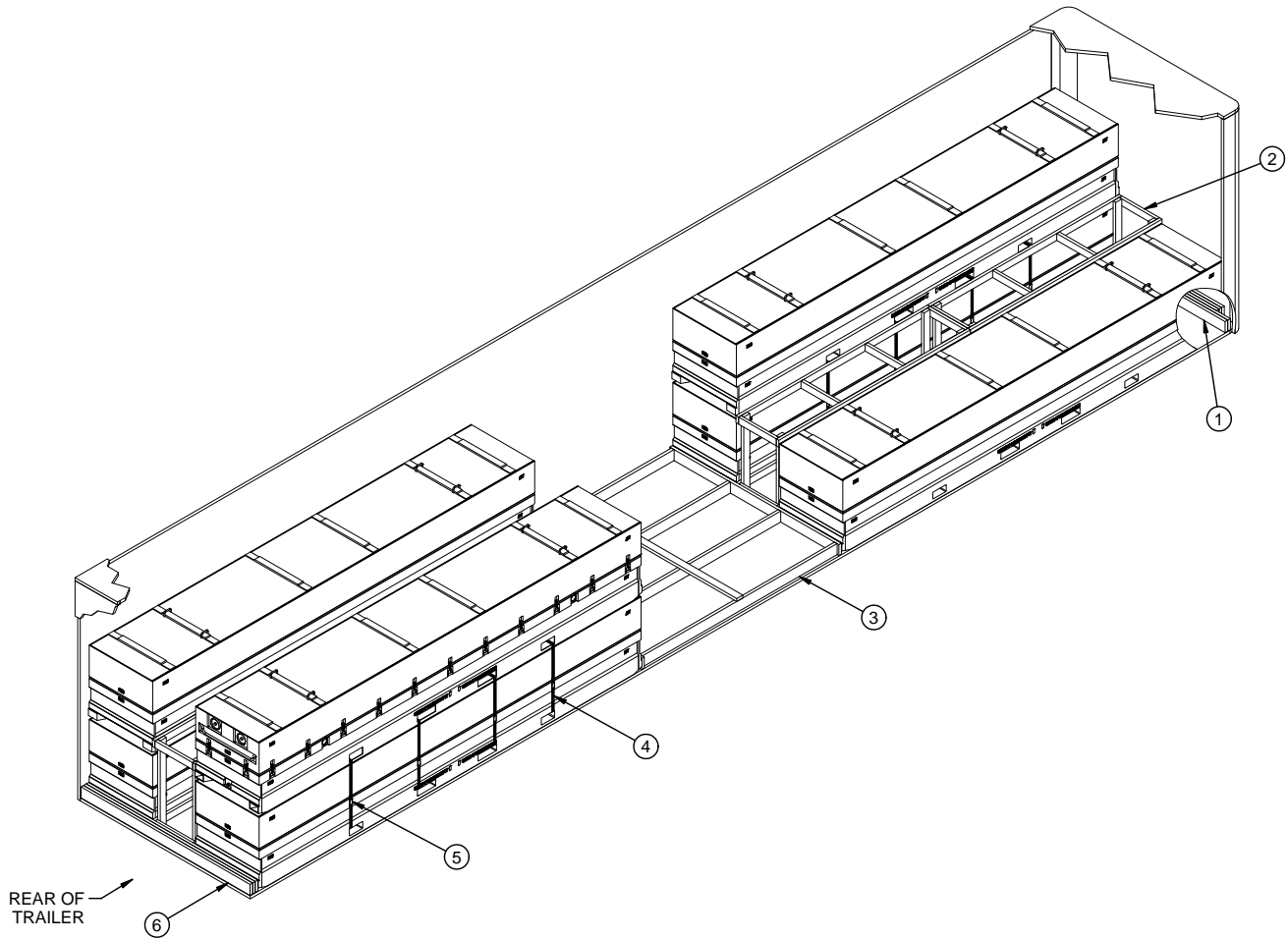
SPECIAL NOTES:

1. A 45'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED. IF THE TRAILER TO BE LOADED HAS A SQUARE FRONT, OMIT THE FORWARD BLOCKING ASSEMBLY AND POSITION THE CONTAINERS DIRECTLY AGAINST THE TRAILER FRONT WALL.
2. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS 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 B" AS DETAILED ON PAGE 13. IF THE SPACE AT THE REAR OF THE LOAD IS 9' OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A" AS SHOWN.
3. THE FORWARD BLOCKING ASSEMBLY AND REAR BLOCKING ASSEMBLY MAY BE REPLACED WITH NAILED HEADERS, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO THE LOAD ON PAGE 4 FOR GUIDANCE.
4. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED.



ANTI-SWAY BRACE

NOTE: DO NOT PREFABRICATE THE ANTI-SWAY BRACE. INSTALL THE SUPPORT AND FILL PIECES INTO THE FORKLIFT OPENINGS OF THE LOADED CONTAINERS PRIOR TO LOADING THE LATERALLY ADJACENT CONTAINERS. COMPLETE THE ASSEMBLY AFTER ALL THE CONTAINERS IN A LOAD BAY ARE POSITIONED. THE LENGTH OF THE 36" FILL PIECE AND THE SUPPORT PIECE ARE BASED ON LOADING A 7'-8" WIDE TRAILER. INCREASE THE LENGTH OF THE PIECES AS NEEDED WHEN LOADING WIDER TRAILERS.



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 12.
- ② CRIB FILL ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 14.
- ③ CENTER SPACER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 13.
- ④ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 18'-10" LONG STEEL STRAPPING (12 REQD, 4 PER STACK). INSTALL THROUGH FORKLIFT POCKETS.
- ⑤ SEAL FOR 1-1/4" STRAPPING (12 REQD). CRIMP SINGLE SEALS WITH TWO PAIR OF NOTCHES OR CRIMP DOUBLE SEALS WITH TWO PAIR OF CRIMPS EACH. SEE THE STRAP DETAILS ON PAGE 3.
- ⑥ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 13.

BILL OF MATERIAL

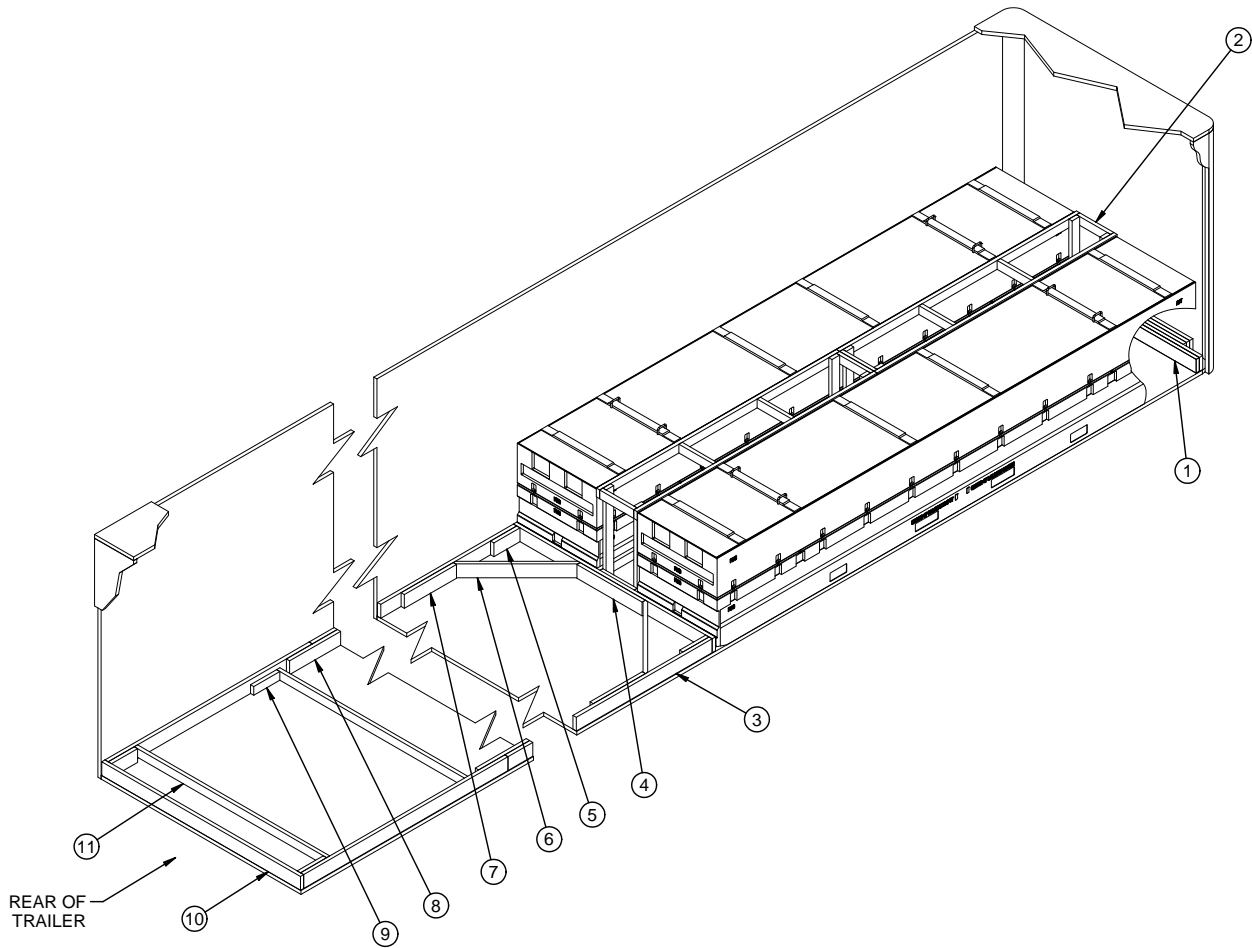
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	269	180
2" X 6"	115	115
NAI LS	NO. REQD	POUNDS
10d (3")	362	5.57
STEEL STRAPPING, 1-1/4" - 226' REQD - - - 33 LBS		
SEAL FOR 1-1/4" STRAPPING - 12 REQD - - 0.55 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-496 CONTAINER	7	30,800 LBS
DUNNAGE		626 LBS
TOTAL WEIGHT		31,426 LBS (APPROX)

SPECIAL NOTES:

1. A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER IS SHOWN. TRAILERS OF OTHER DIMENSIONS CAN BE USED. IF THE TRAILER TO BE LOADED HAS A SQUARE FRONT, OMIT THE FORWARD BLOCKING ASSEMBLY AND POSITION THE CONTAINERS DIRECTLY AGAINST THE TRAILER FRONT WALL.
2. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS 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 B" AS DETAILED ON PAGE 13. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A" AS SHOWN.
3. THE FORWARD BLOCKING ASSEMBLY, CENTER SPACER ASSEMBLY, AND REAR BLOCKING ASSEMBLY MAY BE REPLACED WITH NAILED HEADERS, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO THE LOAD ON PAGE 4 FOR GUIDANCE.
4. CENTER SPACER ASSEMBLY IS TO BE USED FOR THE PURPOSE OF PROVIDING FOR PROPER WEIGHT DISTRIBUTION, AND IS SHOWN AS TYPICAL ONLY. IF THE TRAILER TO BE LOADED IS LONGER THAN 48', 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 CENTER SPACER ASSEMBLY MUST NOT BE POSITIONED ADJACENT TO THE FORWARD BLOCKING ASSEMBLY.
5. THE DEPICTED LOAD CAN BE ADJUSTED TO SUIT THE QUANTITY TO BE SHIPPED, OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED.



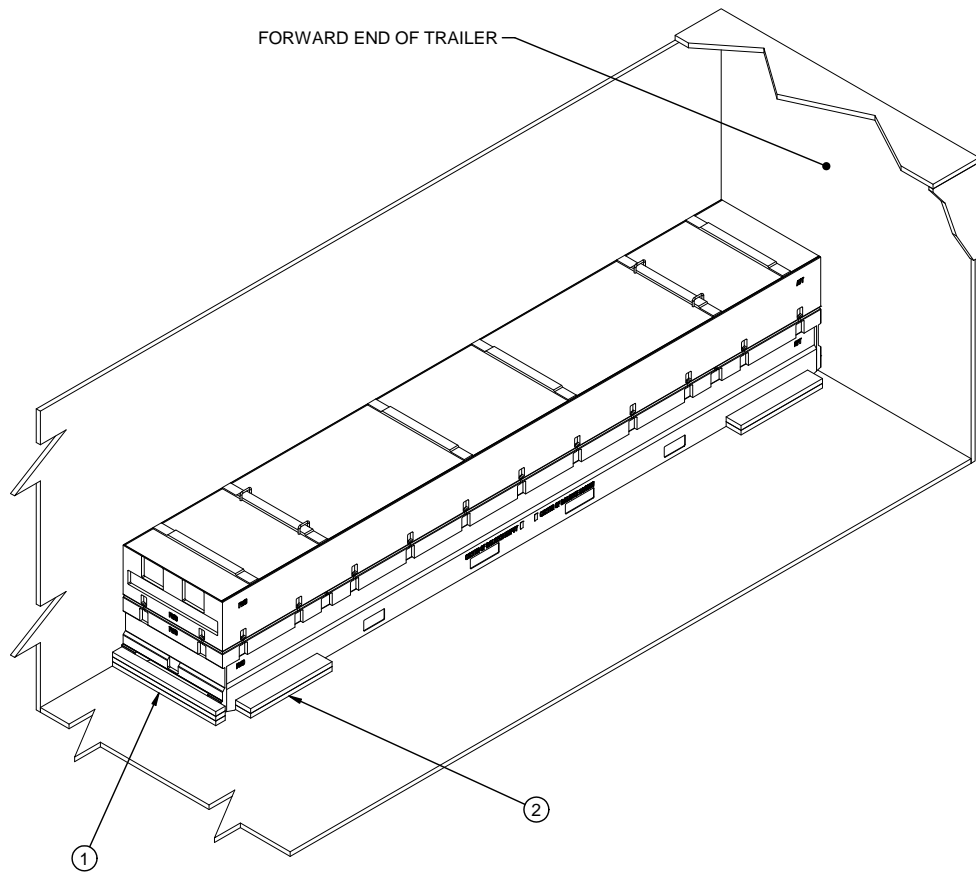
ISOMETRIC VIEW

SPECIAL NOTES:

1. A 7'-8" WIDE (INSIDE DIMENSION) VAN TRAILER IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. A TRAILER EQUIPPED WITH ROUNDED FRONT CORNERS IS SHOWN. IF THE TRAILER TO BE LOADED HAS A SQUARE FRONT, THE FORWARD BLOCKING ASSEMBLY MUST BE MODIFIED BY ELIMINATING THE BUFFER PIECES.
3. 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. IF DESIRED, THE STRUT BRACE PIECE(S) MAY BE NAILED TO THE SPLICE PIECES IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS.
4. ALL LTL LOADS, REGARDLESS OF THEIR SIZE, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO THE POCKET CLEATS. IF THE SIDE STRUTS ARE LONGER THAN 7'-0", AN ADDITIONAL STRUT BRACE AND TWO STRUT BRACE RETAINING CLEATS MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT LENGTH.
5. THE "K-BRACE" BLOCKING IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 20,000 POUNDS.
6. 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 LOAD ON PAGE 4 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 THE "K-BRACE" PIECES WHICH APPLY TO TRAILERS HAVING NON-NAILABLE FLOORS.

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 12.
- ② CRIB FILL ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 14.
- ③ SIDE STRUT, 2" X 6" BY CUT TO FIT BETWEEN THE FORWARD AND REAR HEADERS (2 REQD). SEE SPECIAL NOTE 4 AT LEFT.
- ④ CENTER CLEAT, 2" X 6" X 30" (1 REQD). NAIL TO THE FORWARD HEADER W/6-10d NAILS.
- ⑤ 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.
- ⑥ 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.
- ⑦ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT W/8-10d NAILS.
- ⑧ SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF THE SIDE STRUTS AND NAIL TO SIDE STRUTS W/4-10d NAILS AT EACH END. SEE SPECIAL NOTE 4 AT LEFT.
- ⑨ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO THE SIDE STRUT W/3-10d NAILS. SEE SPECIAL NOTE 4 AT LEFT.
- ⑩ HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (2 REQD).
- ⑪ STRUT BRACE, 2" X 4" BY CUT TO FIT (MINIMUM OF ONE REQUIRED). NAIL TO THE POCKET CLEATS AND/OR TO THE STRUT BRACE RETAINING CLEATS W/2-12d NAILS AT EACH END.



ISOMETRIC VIEW

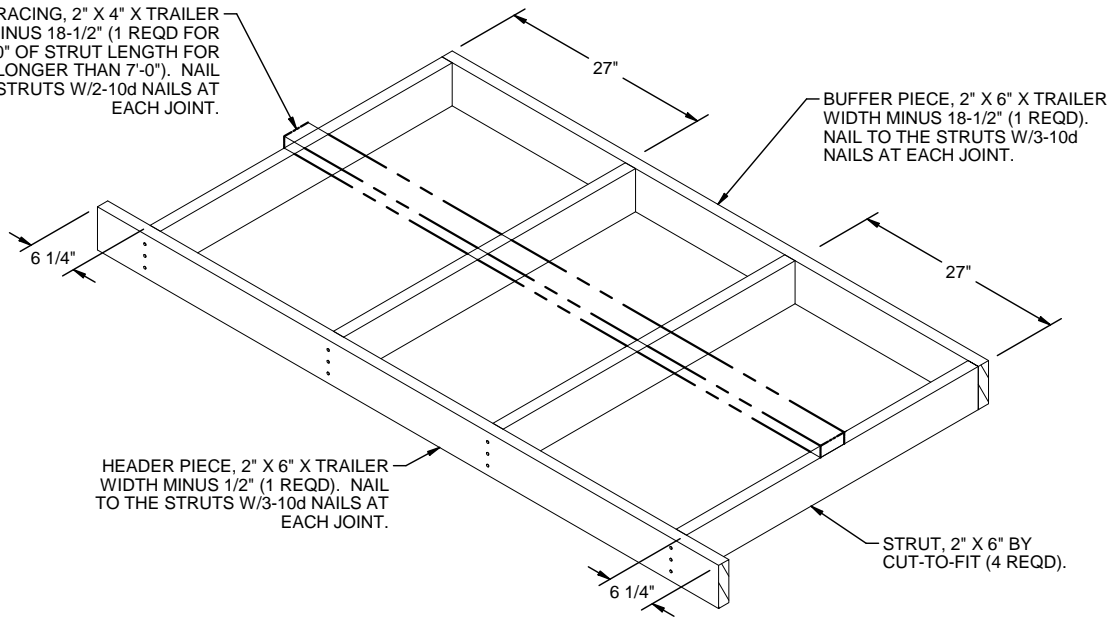
SPECIAL NOTES:

1. AN 7'-8" WIDE (INSIDE DIMENSION) VAN TRAILER WHICH HAS A NAILABLE FLOOR AND A SQUARE FRONT IS SHOWN. TRAILERS OF OTHER WIDTHS OR WITH ROUNDED FRONT CORNERS CAN BE USED.
2. MORE THAN ONE CONTAINER CAN BE SHIPPED. THE LOAD SHOULD BE FORMED IN ROWS, WITH THE CONTAINERS POSITIONED ADJACENT TO EACH OTHER AND ANTI-SWAY BRACES, CRIB FILL ASSEMBLES, OR LATERAL BRACING CLEATS INSTALLED AS NEEDED.
3. 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 CONTAINERS. SEE THE HEADER NAILING CHARTS ON PAGE 7.

KEY NUMBERS

- ① REAR HEADER, 2" X 4" X 38" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER. SEE THE HEADER NAILING CHARTS ON PAGE 5.
- ② SIDE BLOCKING, 2" X 6" X 30" (DOUBLED) (2 REQD). POSITION AGAINST THE CONTAINER AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. POSITION THE SECOND PIECE ON TOP OF THE FIRST PIECE AND LAMINATE TO THE FIRST PIECE W/4-10d NAILS.

STRUT BRACING, 2" X 4" X TRAILER WIDTH MINUS 18-1/2" (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.



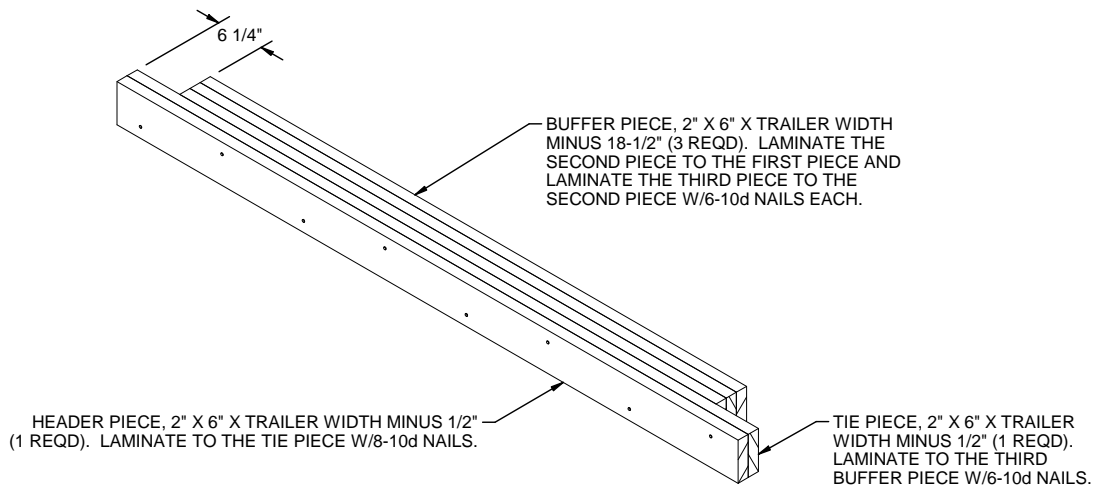
BUFFER PIECE, 2" X 6" X TRAILER WIDTH MINUS 18-1/2" (1 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

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

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

FORWARD BLOCKING ASSEMBLY A

NOTE: IF THE TRAILER TO BE LOADED HAS SQUARE INSIDE FRONT CORNERS, INCREASE THE BUFFER PIECE LENGTH TO "INSIDE TRAILER WIDTH MINUS 1/2 INCH". INSTALL THE OUTER STRUTS 1" FROM THE ENDS OF THE BUFFER AND TIE PIECES AND INCREASE THE DISTANCE BETWEEN INNER AND OUTER STRUTS FROM 27" TO 33 1/2".



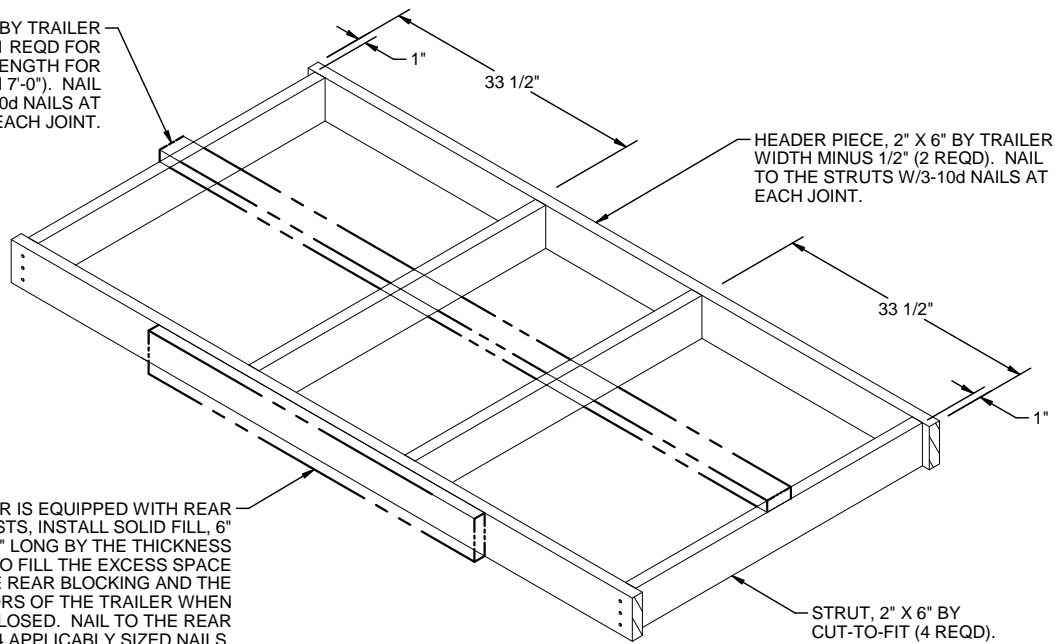
BUFFER PIECE, 2" X 6" X TRAILER WIDTH MINUS 18-1/2" (3 REQD). LAMINATE THE SECOND PIECE TO THE FIRST PIECE AND LAMINATE THE THIRD PIECE TO THE SECOND PIECE W/6-10d NAILS EACH.

HEADER PIECE, 2" X 6" X TRAILER WIDTH MINUS 1/2" (1 REQD). LAMINATE TO THE TIE PIECE W/8-10d NAILS.

TIE PIECE, 2" X 6" X TRAILER WIDTH MINUS 1/2" (1 REQD). LAMINATE TO THE THIRD BUFFER PIECE W/6-10d NAILS.

FORWARD BLOCKING ASSEMBLY B

STRUT BRACING, 2" X 4" BY TRAILER WIDTH MINUS 18-1/2" (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.

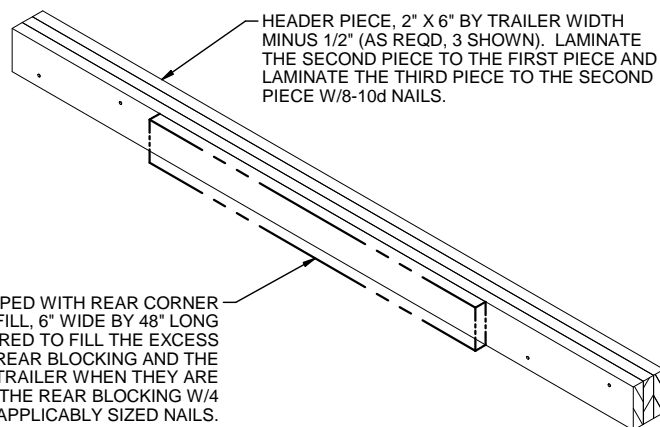


HEADER PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (2 REQD), NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

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 AND THE REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. NAIL TO THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

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

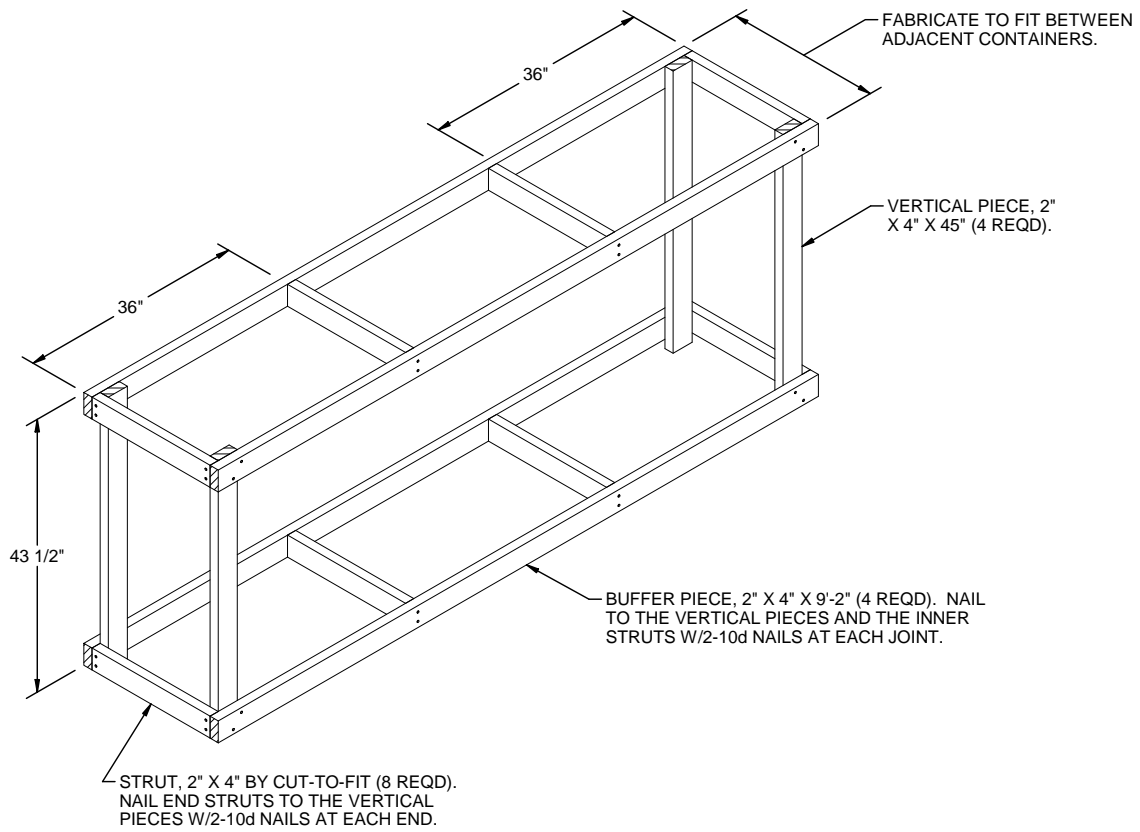
CENTER SPACER ASSEMBLY/REAR BLOCKING ASSEMBLY A



HEADER PIECE, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (AS REQD, 3 SHOWN). LAMINATE THE SECOND PIECE TO THE FIRST PIECE AND LAMINATE THE THIRD PIECE TO THE SECOND PIECE W/8-10d NAILS.

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 AND THE REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. NAIL TO THE REAR BLOCKING W/4 APPLICABLY SIZED NAILS.

REAR BLOCKING ASSEMBLY B



CRIB FILL ASSEMBLY

FOR A THREE CONTAINER LOAD BAY, SHORTEN THE VERTICAL PIECES TO 38'-1/2". FOR A ONE-HIGH LOAD, SHORTEN THE VERTICAL PIECES TO 37".