
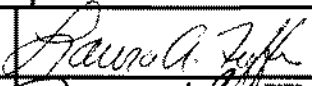


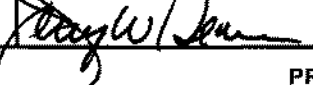


STRYKER BRIGADE COMBAT TEAM

LOADING AND BRACING (TL & LTL) IN VAN TRAILERS* OF SBCT BASIC LOAD ON THE 463L (HCU-6/E) PALLET

* **CAUTION: THESE PROCEDURES ARE INTENDED FOR HIGHWAY SHIPMENT ONLY, DO NOT SHIP BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE OR BY WATER CARRIER.**

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND	CAUTION: VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL/DET THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 8.		
	DO NOT SCALE		JANUARY 2007
	ENGINEER OR TECHNICIAN	BASIC REV. PATRICK DOUGHERTY	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND	TRANSPORTATION ENGINEERING DIVISION		
	VALIDATION ENGINEERING DIVISION	 TESTED	
	ENGINEERING DIRECTORATE		
U.S. ARMY DEFENSE AMMUNITION CENTER			DET 0206

PROJECT DET 0206

GENERAL NOTES

(GENERAL NOTES CONTINUED)

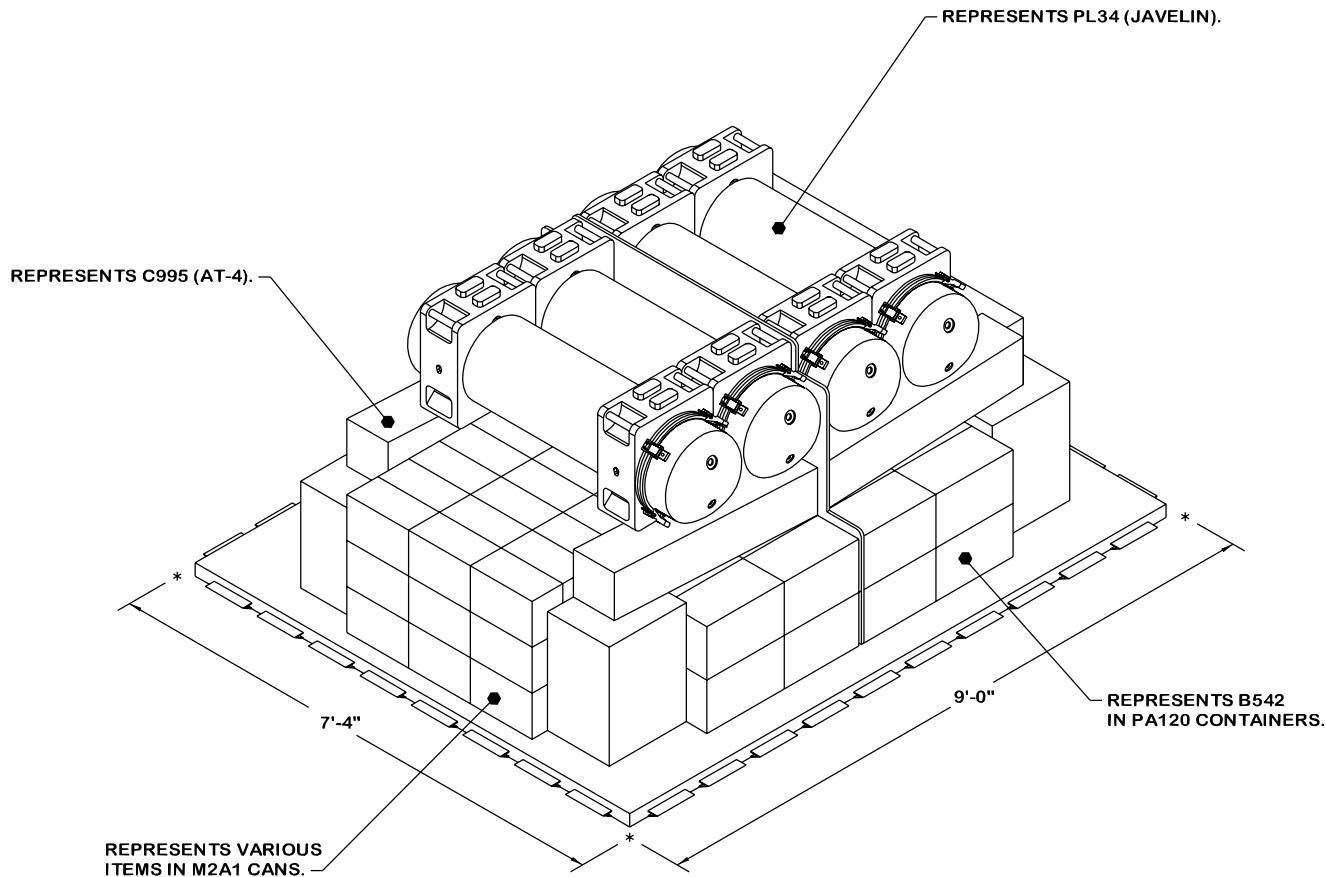
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO STRYKER BRIGADE COMBAT TEAM BASIC LOAD ON 463L TYPE 1 PALLETS. FOR DETAIL OF A TYPICAL PALLET UNIT, SEE PAGE 3.
- C. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN CONVENTIONAL TYPE VAN TRAILERS AND APPLY TO TRAILERS HAVING WOOD, OR WOOD AND METAL, OR ALL METAL FLOORS. REGARDLESS OF THE DIMENSIONS OF THE VAN TRAILERS SHOWN, THE PROCEDURES ARE ALSO APPLICABLE FOR TRAILERS WHICH ARE 89" THRU 99" IN WIDTH AND FOR TRAILERS OF OTHER LENGTHS FROM THE SHORTEST TO THE LONGEST AVAILABLE (REF: 24' TO 53'), AND FOR STRAIGHT TRUCK VANS. THE SPECIFIED BRACING IS ADEQUATE FOR LOADS WEIGHING UP TO AND INCLUDING THE MAXIMUM WEIGHTS PERMITTED BY LAW.
- D. SELECTION OF A VEHICLE FOR THE TRANSPORT OF THE DESIGNATED ITEM IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY VEHICLES IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS WILL BE SELECTED FOR USE.
- E. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRACTOR, AND OF THE SEMITRAILER CARRYING THE LADING MUST NOT EXCEED THE MAXIMUM GROSS WEIGHT ALLOWED FOR THE STATE OR STATES THRU WHICH THE LOAD IS TO BE TRANSPORTED BY MOTOR CARRIER. LIKEWISE, THE GROSS WEIGHT ON 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 31,000 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. 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.
- J. 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.
- K. 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.

- L. 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.
- M. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- 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 POSITIONING THE SIDE BLOCKING TIGHT AGAINST THE 463L PALLETS.
- O. 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 THAN 9", USE THE "REAR BLOCKING ASSEMBLY B" AS DEPICTED ON PAGE 6. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", AS SHOWN ON PAGE 6. NOTE: REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) 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 5 FOR GUIDANCE. CAUTION: THE NAILED HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
- P. 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.
- Q. 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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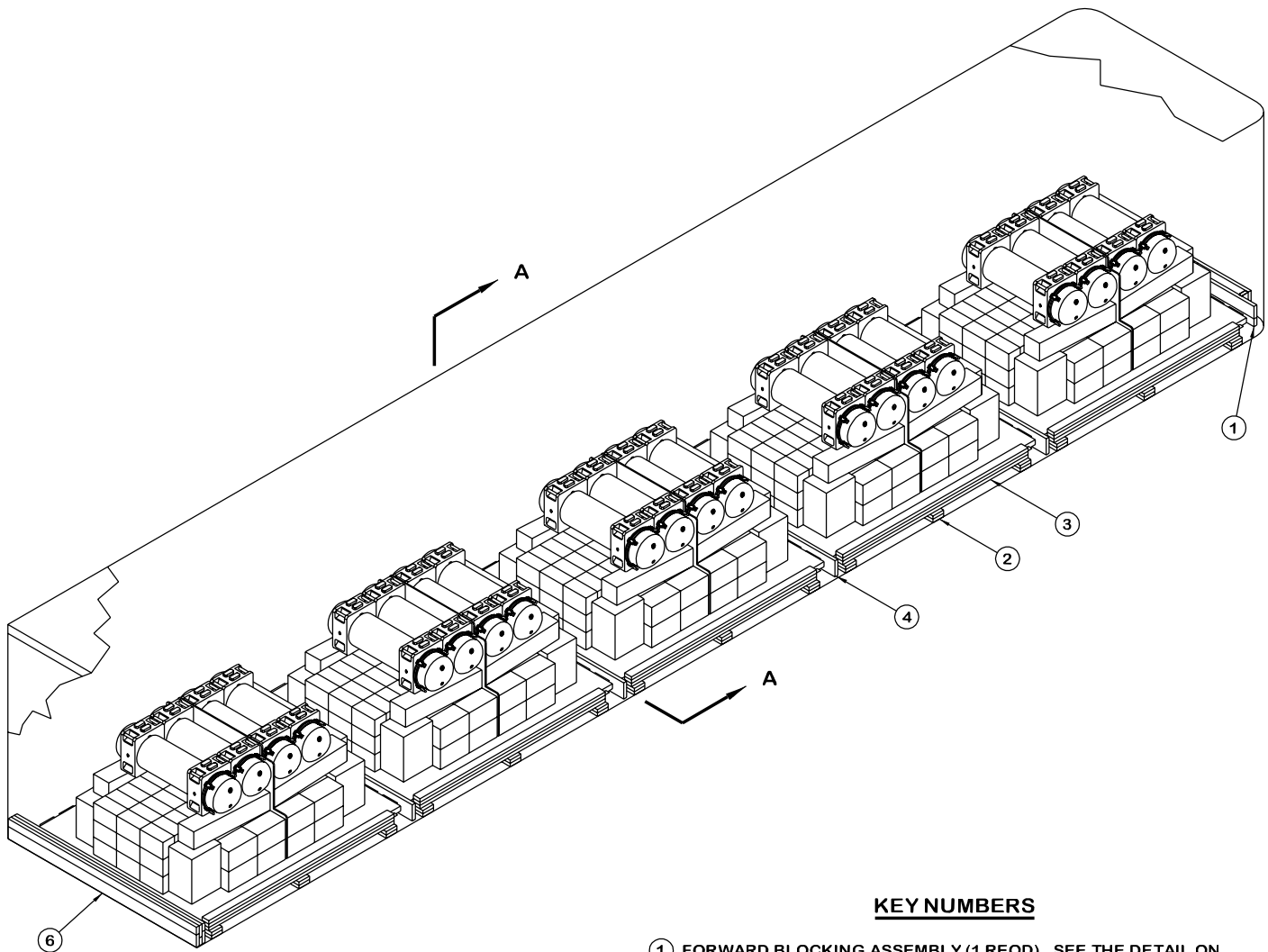
MATERIAL SPECIFICATIONS

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

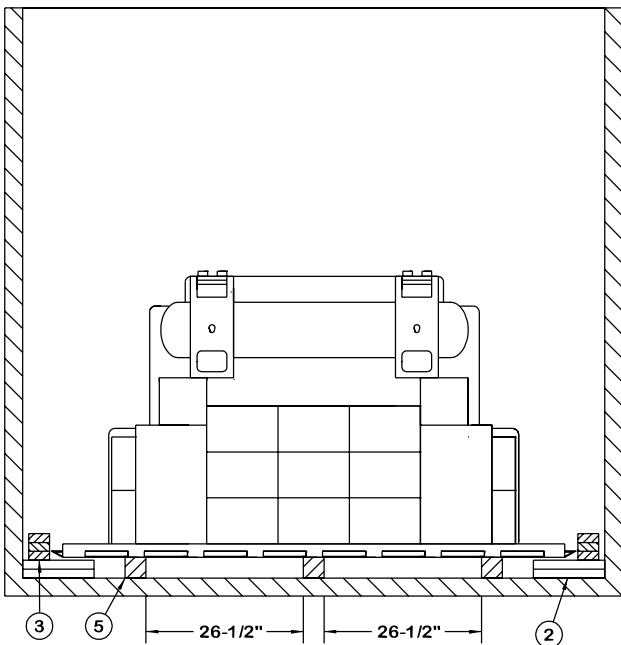


TYPICAL 463L PALLET UNIT

THIS VIEW OF A LOADED 463L (HCU-6/E) PALLET DEPICTS A TYPICAL PALLET UNIT ONLY AND IS NOT A REPRESENTATIVE OF THE ACTUAL PALLET LOAD. THE ACTUAL PALLET LOAD CONFIGURATION MAY VARY. THE PALLET LOAD MUST BE PROPERLY SECURED TO THE PALLET IN ACCORDANCE WITH THE APPLICABLE DRAWING OR GUIDANCE.



ISOMETRIC VIEW



SECTION A-A

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 7 AND GENERAL NOTE "H" ON PAGE 2.
- ② SIDE BLOCKING SUPPORT, 2" X 6" X 12" (DOUBLED) (30 REQD). POSITION THREE SIDE BLOCKING SUPPORTS 48" APART AS SHOWN. PLACE THE SIDE BLOCKING SUPPORTS ON BOTH SIDES OF THE TRAILER SO THAT THEY WILL BE CENTERED UNDER THE EDGE OF THE PALLET. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ SIDE BLOCKING, 2" X 4" X 8'-0" (TRIPLED) (10 REQD). POSITION THE FIRST PIECE ON TOP OF THE SIDE BLOCKING SUPPORTS AND NAIL TO THE SUPPORTS W/2-10d NAILS AT EACH LOCATION. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS. LAMINATE THE THIRD PIECE TO THE SECOND IN A LIKE MANNER.
- ④ SPACER ASSEMBLY (4 REQD). SEE THE DETAIL ON PAGE 7. POSITION BETWEEN PALLET UNITS WITH THE CLEATS UNDER THE FORWARD POSITIONED PALLET.
- ⑤ RISER PIECE, 4" X 4" X 7'-4" (15 REQD). LOCATE ACROSS THE WIDTH OF THE TRAILER AS SHOWN IN "SECTION A-A". POSITION THREE RISER PIECES LONGITUDINALLY UNDER EACH PALLET UNIT LOCATION. TOENAIL EACH PIECE TO THE TRAILER FLOOR W/6-12d NAILS STAGGERED (3 NAILS ON EACH SIDE). SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑥ REAR BLOCKING ASSEMBLY B (1 REQD). SEE DETAIL ON PAGE 6 AND SPECIAL NOTE 7 ON PAGE 5.

SPECIAL NOTES:

1. THE PALLET UNITS AS SHOWN ON PAGE 3 AND ON THE LOAD ON PAGE 4 ARE TYPICAL AND DEPICTED ONLY TO DEMONSTRATE A PROPER LOAD CONFIGURATION.
2. THE LOAD SHOWN ON PAGE 4 REPRESENTS A FIVE UNIT LOAD IN A 48'-0" LONG BY 8'-2" WIDE CONVENTIONAL VAN TRAILER. A MAXIMUM OF FIVE UNIT LOADS ARE POSSIBLE IN A 53'-0" TRAILER. THE MAXIMUM LOAD FOR A 42'-0" TRAILER IS FOUR LOAD UNITS. REDUCED LOAD UNITS ARE PERMITTED.
3. ALL PALLET LOADS MUST BE PROPERLY SECURED TO THE PALLET IN ACCORDANCE WITH THE APPLICABLE DRAWING OR GUIDANCE.
4. POSITION THREE RISER PIECES, SHOWN AS KEY NUMBER ⑤ ON PAGE 4, BENEATH EACH PALLET UNIT LOCATION. PLACE THE FIRST RISER PIECE ALONG THE LONGITUDINAL CENTERLINE AND SPACE THE REMAINING TWO PIECES APPROXIMATELY 26-1/2" ON EITHER SIDE OF THE CENTER RISER PIECE. RETAIN THE RISER PIECES FOR STORAGE AFTER UNLOADING AT DESTINATION.
5. THE PALLETS CAN BE MOVED WITH A FORKLIFT, BUT THE TINES MUST BE A MINIMUM OF 72" LONG. USE FORKLIFTS RATED AT A LIFTING CAPACITY EQUAL TO OR GREATER THAN THE LIFTING WEIGHT.
6. PALLET WEIGHT SHOWN IN THE LOAD AS SHOWN ON THIS PAGE ARE ESTIMATED ONLY. THE ACTUAL WEIGHT OF EACH PALLET UNIT WILL BE AS SHOWN ON THE SPECIFIC SBCT OUTLOADING PROCEDURE DRAWING.
7. 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 B" AS DEPICTED ON PAGE 6. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", AS SHOWN ON PAGE 6. NOTE: NAILED HEADERS, 2" X 4" BY INSIDE TRAILER WIDTH MINUS 1/2" (TRIPLED), MAY ALSO BE USED TO SECURE EITHER THE FORWARD OR REAR END OF THE LOAD. INSTALL NAILED HEADERS AS DESCRIBED IN THE HEADER NAILNG CHARTS AT RIGHT. WHEN USING NAILED HEADERS, A REAR BLOCKING ASSEMBLY "A", AS DEPICTED ON PAGE 6 MUST BE INSTALLED BETWEEN THE HEADER AND THE PALLET UNITS. CONSTRUCT THE REAR BLOCKING ASSEMBLY "A" WITH STRUTS BETWEEN 4" AND 8" LONG.

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. SEE SPECIAL NOTE 6.

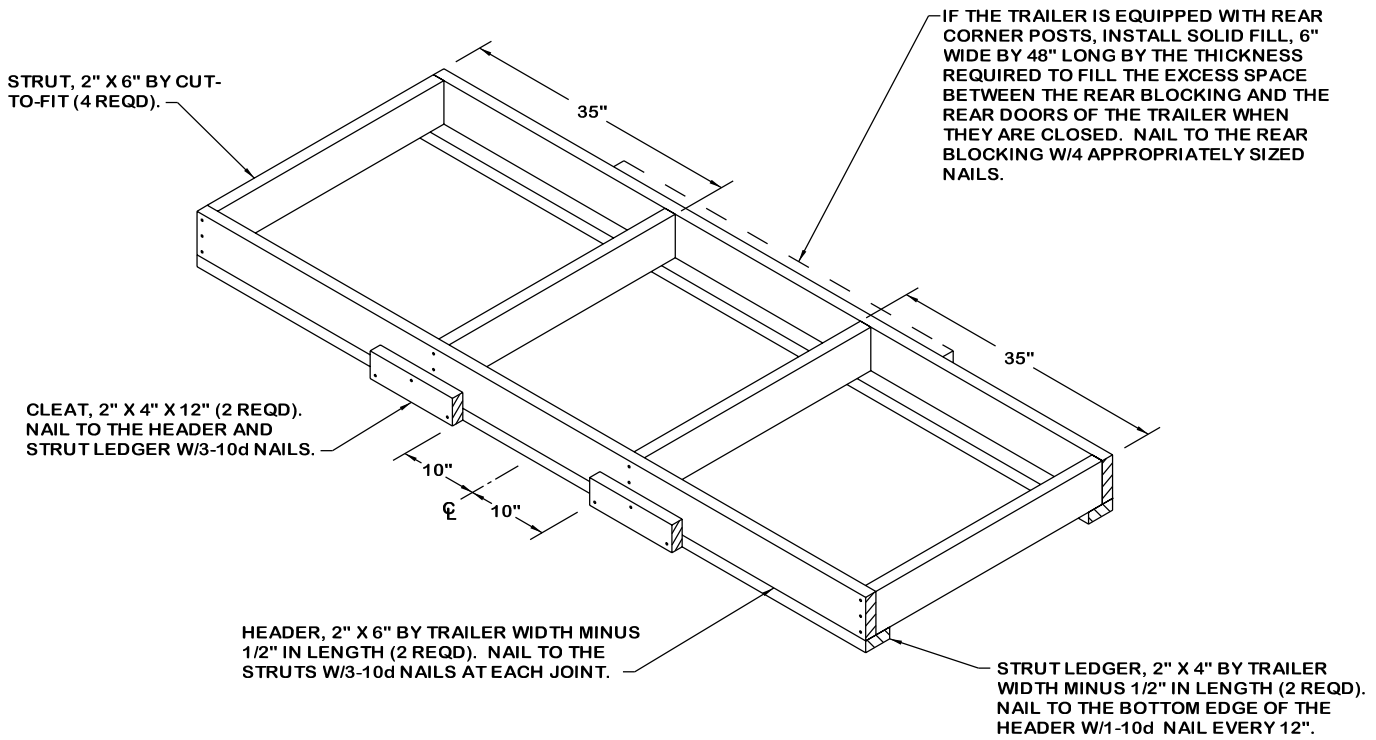
REAR HEADER NAILING CHART *	
# NAILS	MAX. LOAD WEIGHT (LBS)
6	15,000
7	17,500
8	20,000
9	22,500
10	25,000
11	27,500
12	30,000
13	32,500
14	35,000
15	37,500
16	40,000
17	42,500
18	45,000

* 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"	311	207
2" X 6"	75	75
2" X 8"	33	44
4" X 4"	110	147
NAILS	NO. REQD	POUNDS
10d (3")	458	7
12d (3-1/4")	90	1-1/2

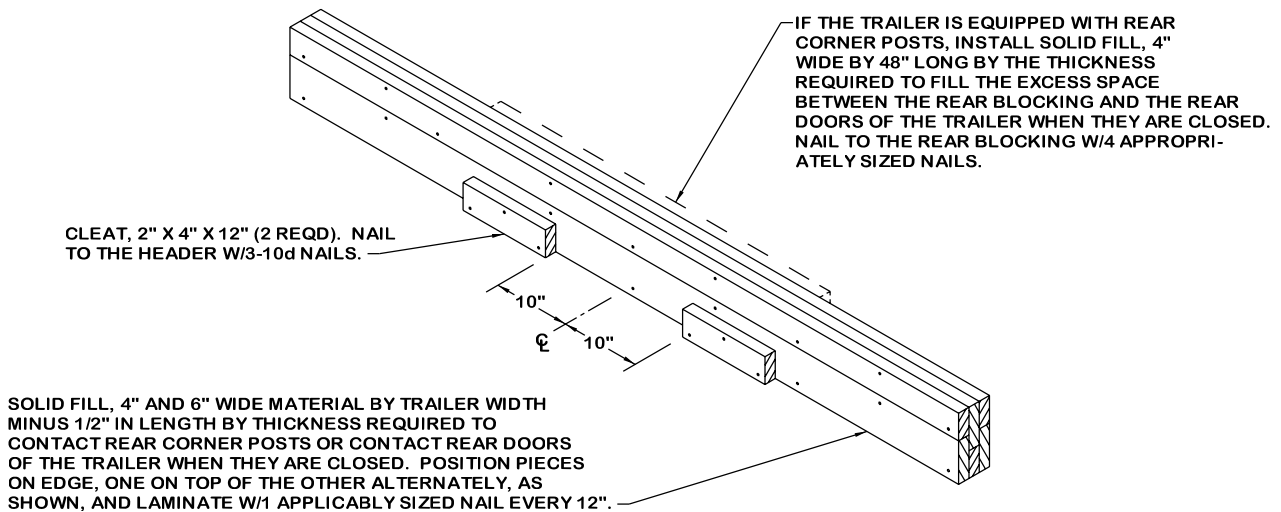
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	5	30,000 LBS
DUNNAGE		955 LBS
TOTAL WEIGHT		30,955 LBS (APPROX)



REAR BLOCKING ASSEMBLY A

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



REAR BLOCKING ASSEMBLY B

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF A LOAD WHEN THE SPACE BETWEEN THE LADING AND THE TRAILER DOORS IS GREATER THAN 1-1/2" BUT LESS THAN 9". NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

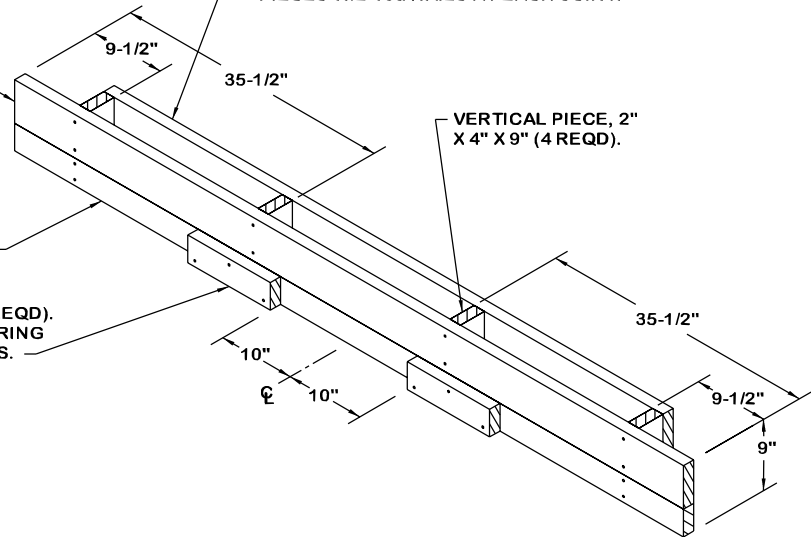
LOAD BEARING PIECE A, 2" X 6"
BY TRAILER WIDTH MINUS 1/2"
(1 REQD). NAIL TO THE VERTICAL
PIECES W/2-10d NAILS AT EACH JOINT.

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

CLEAT, 2" X 4" X 12" (2 REQD).
NAIL TO THE LOAD BEARING
PIECE "B" W/3-10d NAILS.

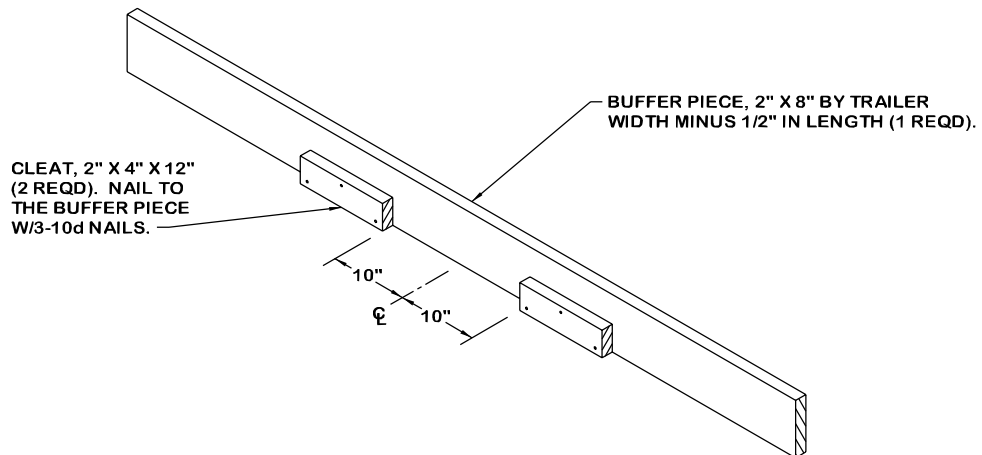
LATERAL PIECE, 2" X 6" BY
TRAILER WIDTH MINUS 16-1/2"
(1 REQD). NAIL TO THE VERTICAL
PIECES W/2-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2"
X 4" X 9" (4 REQD).



FORWARD BLOCKING ASSEMBLY

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" VERTICAL PIECES.



SPACER ASSEMBLY

THIS ASSEMBLY IS DESIGNED FOR USE BETWEEN PALLET UNITS. NOTE THAT THE ABOVE VIEW IS ROTATED 180° FROM THE POSITION IN WHICH IT WILL BE INSTALLED.

