

LOADING AND BRACING (TL & LTL) IN VAN TRAILERS* OF JOINT DIRECT ATTACK MUNITION (JDAM) PACKED IN CNU-589 SHIPPING AND STORAGE CONTAINERS USING VINYL DUNNAGE AIR BAGS

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***CAUTION:** THE OUTLOADING PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE TO HIGHWAY MOVEMENTS, NOT 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 12.						
	DO NOT SCALE				JULY 2005		
	ENGINEER OR TECHNICIAN	BASIC	PATRICK DOUGHERTY				
		REV.					
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	TRANSPORTATION ENGINEERING DIVISION						
	VALIDATION ENGINEERING DIVISION	TESTED	CLASS	DIVISION	DRAWING	FILE	
U.S. ARMY DEFENSE AMMUNITION CENTER 	ENGINEERING DIRECTORATE		19	48	8787	SP11K8	

GENERAL NOTES

GENERAL NOTES CONTINUED

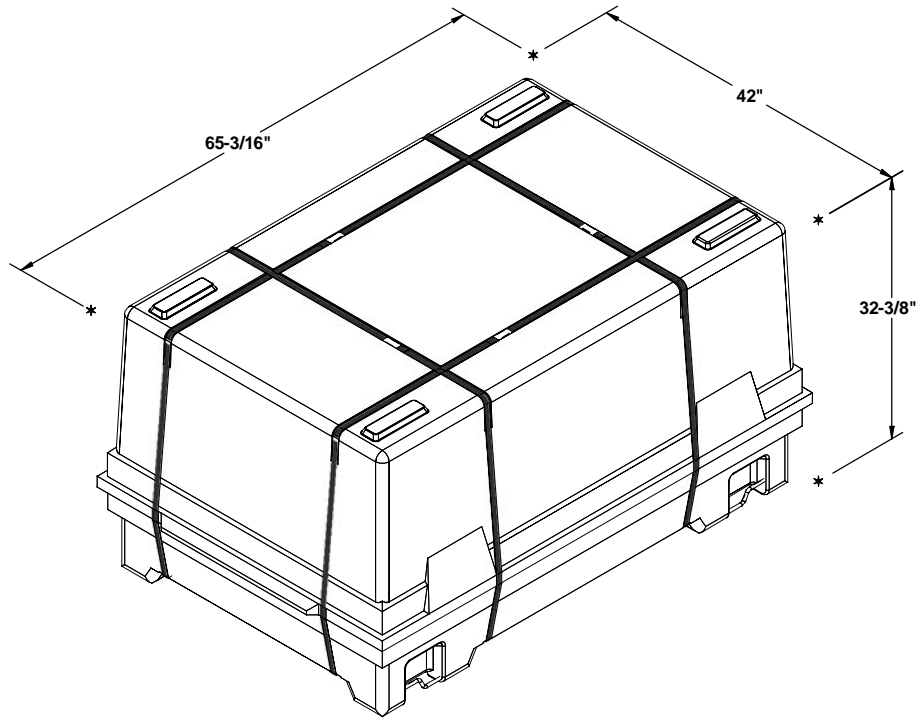
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF JOINT DIRECT ATTACK MUNITION (JDAM) IN CNU-589 SHIPPING AND STORAGE CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH JDAM ITEMS. SEE PAGE 3 AND PLASTICS RESEARCH CORPORATION DRAWING 103060-101 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. THE VINYL DUNNAGE AIR BAG PART NUMBER HO48X48 (SIZE 48" X 48") MANUFACTURED BY CENTERLOAD SHIPPING TECHNOLOGIES AND POLYESTER STRAPPING, PRODUCT CODE MPC5835 MANUFACTURED BY POLYCHEM CORPORATION, HAVE BEEN TESTED AND APPROVED FOR USE BY THE DEFENSE AMMUNITION CENTER. OTHER VENDORS' AIR BAGS AND STRAPPING MAY BE QUALIFIED FOR USE BY SUBMITTING SAMPLES FOR TEST AND EVALUATION TO THE DEFENSE AMMUNITION CENTER, 1C TREE ROAD, MCALESTER, OK 74501-9053. CONTACT THE DAC TRANSPORTATION ENGINEERING DIVISION, SJMAC-DET, E-MAIL SJMAC-DET@DAC.ARMY.MIL, TELEPHONE 918-420-8927.
- E. SELECTION OF A VEHICLE TO BE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. 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 APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRAILER, AND OF THE SEMI-TRAILER CARRYING THE LADING MUST NOT EXCEED THE MAXIMUM GROSS WEIGHT ALLOWED FOR THE STATE OR STATES THROUGH 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.
- G. **NOTICE:** A SHIPMENT WILL BE POSITIONED ON A 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.
- H. THE "LOAD AS SHOWN" FOR THE 51 UNIT LOAD SHOWN ON PAGE 8 IS BASED ON AN APPROXIMATE LADING WEIGHT OF 32,000 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.

(CONTINUED AT RIGHT)

- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING 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.
- K. 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. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- M. THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 6". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY USING LARGER SIZED AIRBAGS.
- N. 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 11. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A" AS SHOWN ON PAGE 11. **NOTE:** REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH A NAILED HEADER AT THE REAR OF THE LOAD AS SHOWN ON PAGE 6, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. **CAUTION:** THE REAR HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
- O. 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.

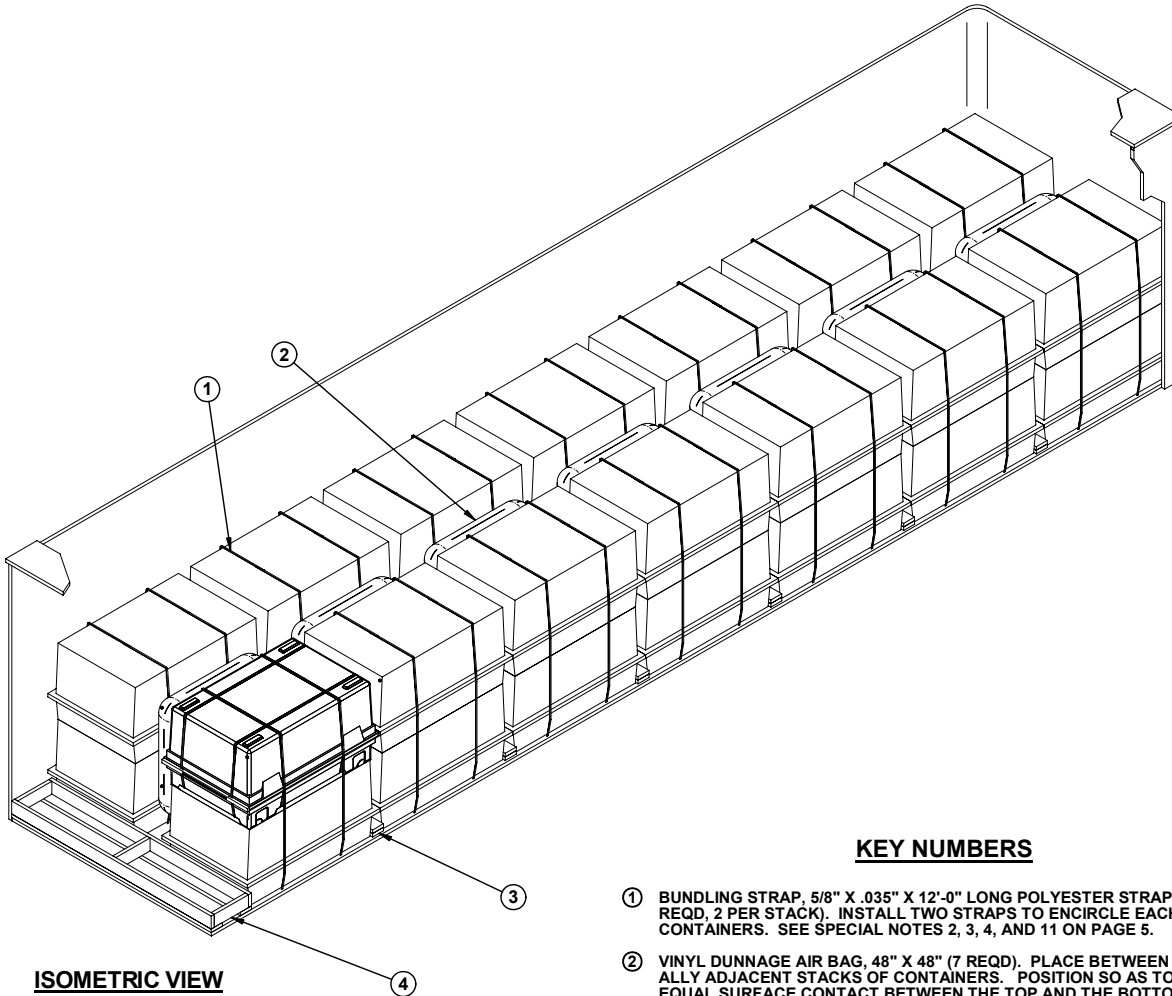
MATERIAL SPECIFICATIONS

- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
- NAILS - - - - - : ASTM F1667; COMMON STEEL NAIL NLCMS OR NLCMMS).
- STRAP, POLYESTER - - : 5/8" X .035" X 1,400 LB BREAKING STRENGTH, POLYCHEM CORPORATION PRODUCT CODE MPC5835.
- AIR BAG, VINYL DUNNAGE - - - - - : 48" X 48", CENTERLOAD SHIPPING TECHNOLOGIES PART NUMBER HO4848



CNU-589 CONTAINER

GROSS WEIGHT - - - - - 619 LBS (APPROX)
CUBE - - - - - 51.4 CU FT (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① BUNDLING STRAP, 5/8" X .035" X 12'-0" LONG POLYESTER STRAPPING (28 REQD, 2 PER STACK). INSTALL TWO STRAPS TO ENCIRCLE EACH STACK OF CONTAINERS. SEE SPECIAL NOTES 2, 3, 4, AND 11 ON PAGE 5.
- ② VINYL DUNNAGE AIR BAG, 48" X 48" (7 REQD). PLACE BETWEEN LATERALLY ADJACENT STACKS OF CONTAINERS. POSITION SO AS TO ACHIEVE EQUAL SURFACE CONTACT BETWEEN THE TOP AND THE BOTTOM CONTAINERS. INFLATE IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. NOTE: INSURE SMOOTH SURFACE ON TRAILER SIDEWALLS AND ENDWALLS WHERE DUNNAGE BAGS CONTACT WALL. COVER ROUGH SURFACE AREAS WITH TAPE OR SUITABLE ANTI-CHAFING MATERIAL TO PROTECT DUNNAGE BAGS FROM PUNCTURE. SEE SPECIAL NOTES 5, 6, 7, 8, AND 11 ON PAGE 5.
- ③ SEPARATOR BLOCKING, 2" X 6" X BY TRAILER WIDTH MINUS 2" (REF: 7'-10") (DOUBLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/8-10d NAILS.
- ④ REAR BLOCKING ASSEMBLY A (1 REQD). SEE DETAIL ON PAGE 11. POSITION AT THE REAR OF THE LOAD AS SHOWN. SEE SPECIAL NOTE 9 ON PAGE 5.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	125	125
NAILS	NO. REQD	POUNDS
10d (3")	132	2
PLASTIC STRAPPING, 5/8" - 336' REQD - - - - 4 LBS		
DUNNAGE BAG, 48" X 48" - 7 REQD - - - - 14 LBS		

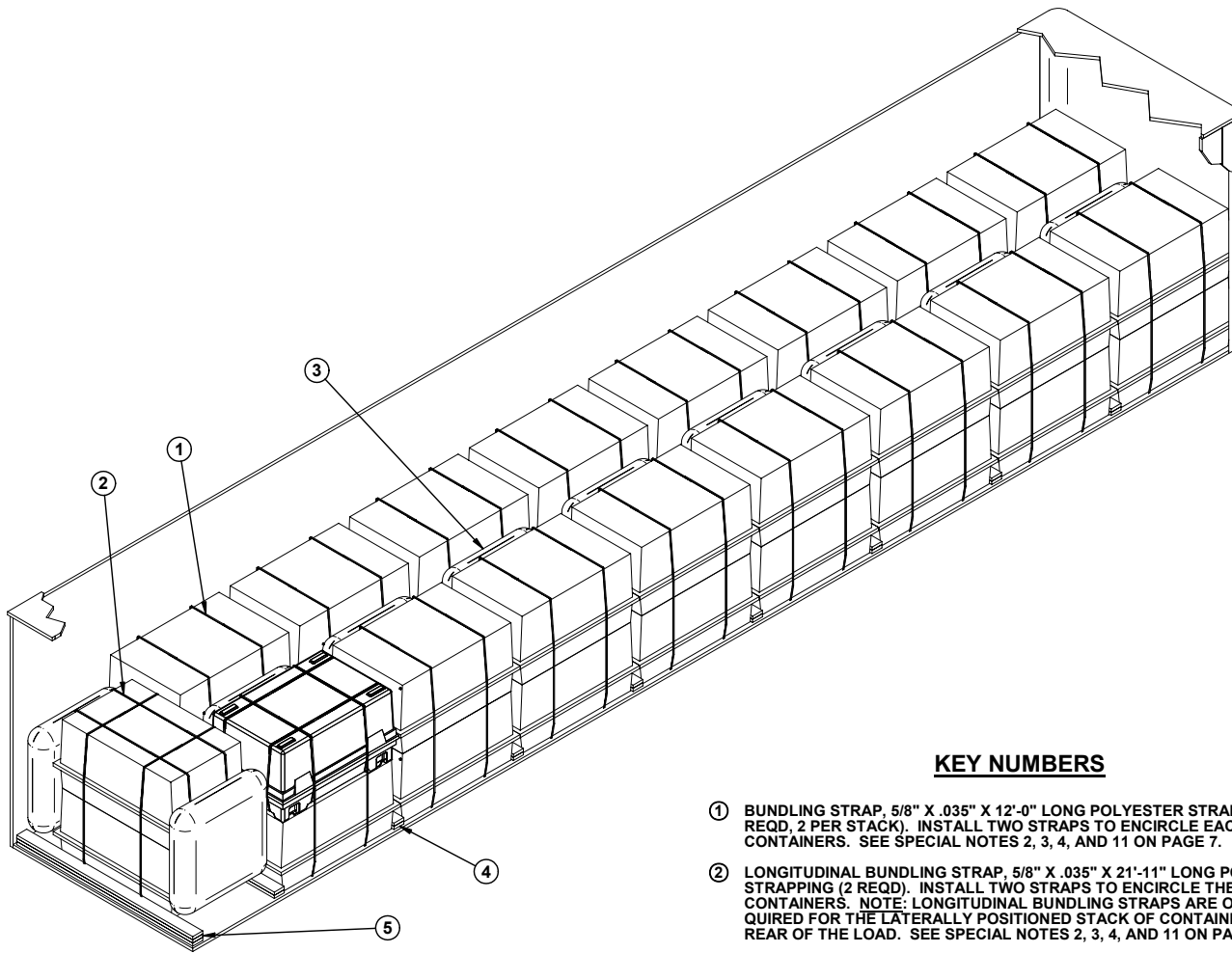
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-589 CONTAINER	28	17,332 LBS
DUNNAGE		270 LBS

TOTAL WEIGHT - - - - - 17,602 LBS (APPROX)

SPECIAL NOTES:

1. A 28 UNIT LOAD OF CNU-589 CONTAINERS IS SHOWN IN A 40'-0" LONG BY 8'-0" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. BUNDLING STRAPS SHALL BE TENSIONED AND SECURED BY A FRICTION WELD SEAL METHOD USING POLYCHEM CORPORATION, BET-700 TOOLING OR EQUIVALENT.
3. STEEL STRAPPING AND SEALS MAY BE SUBSTITUTED FOR THE POLYESTER STRAPPING. STEEL STRAPPING SHALL BE IN ACCORDANCE WITH NAVSEA DRAWING 6214068.
4. CNU-589 CONTAINERS THAT ARE BUNDLED WITH STEEL STRAPPING AND SEALS MUST HAVE ALL THE SEALS POSITIONED ON THE SAME SIDE OF THE STACK. THE STACK SHALL BE PLACED IN THE TRAILER WITH THE STRAP SEALS POSITIONED AGAINST THE TRAILER SIDE WALLS.
5. THE VINYL DUNNAGE AIR BAGS MAY BE SECURED TO THE TOP CNU-589 CONTAINER WITH THE ADHESIVE PATCH ON THE BAGS. THE BAGS WILL BE CENTERED LONGITUDINALLY BETWEEN STACKS OF CNU-589 CONTAINERS SO THAT THE BAG WILL CONTACT THE TOP AND BOTTOM CONTAINERS OF BOTH STACKS. USE OF THE ADHESIVE PATCH IS NOT MANDATORY AS A TENSION FIT WILL HOLD THE BAG IN PLACE ONCE IT IS INFLATED.
6. INFLATE BAGS WITH THE CENTERLOAD SHIPPING TECHNOLOGIES TURBO FILL INFLATION SYSTEM IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS.
7. DUNNAGE BAGS ARE 48" X 48", CENTERLOAD SHIPPING TECHNOLOGIES PART NUMBER HO4848. OTHER SIZED BAGS MAY BE USED AS LONG AS THE OTHER BAG PROVIDES EQUAL OR GREATER SURFACE CONTACT WITH THE CNU-589 CONTAINERS AS THE 48" X 48" BAG PROVIDES.
8. EACH GROUP OF LATERALLY ADJACENT STACKS OF CNU-589 CONTAINERS SHALL HAVE ONE BAG POSITIONED BETWEEN THE STACKS.
9. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOOR IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "A" 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 "B" AS DETAILED ON PAGE 11. 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 A NAILED HEADER AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. INSTALL NAILED HEADER AS DETAILED ON PAGE 6.
10. HANDLING FROM ENDS OF 3-HIGH STACK OF CONTAINERS REQUIRES THE USE OF FORKLIFT EQUIPPED WITH 60" MINIMUM TINE LENGTH OR FORKLIFT EXTENSIONS.
11. SOURCE OF SUPPLY: THE CENTERLOAD SHIPPING TECHNOLOGIES VINYL DUNNAGE AIR BAGS, PART NUMBER HO4048, AND THE APPLICABLE INFLATOR TOOL CONTACT [HTTP://WWW.CENTERLOAD.COM/INDEX.HTML](http://www.centerload.com/index.html) AND THE POLYCHEM CORPORATION POLYESTER STRAPPING, PRODUCT CODE MPC5835 AND THE POWER SEALESS WELDING TOOL, CONTACT [HTTP://WWW.POLYCHEM.COM/](http://www.polychem.com/).



ISOMETRIC VIEW

KEY NUMBERS

- ① BUNDLING STRAP, 5/8" X .035" X 12'-0" LONG POLYESTER STRAPPING (34 REQD, 2 PER STACK). INSTALL TWO STRAPS TO ENCIRCLE EACH STACK OF CONTAINERS. SEE SPECIAL NOTES 2, 3, 4, AND 11 ON PAGE 7.
- ② LONGITUDINAL BUNDLING STRAP, 5/8" X .035" X 21'-11" LONG POLYESTER STRAPPING (2 REQD). INSTALL TWO STRAPS TO ENCIRCLE THE STACK OF CONTAINERS. NOTE: LONGITUDINAL BUNDLING STRAPS ARE ONLY REQUIRED FOR THE LATERALLY POSITIONED STACK OF CONTAINERS AT THE REAR OF THE LOAD. SEE SPECIAL NOTES 2, 3, 4, AND 11 ON PAGE 7.
- ③ VINYL DUNNAGE AIR BAG, 48" X 48" (10 REQD). PLACE BETWEEN LATERALLY ADJACENT STACKS OF CONTAINERS AND ON BOTH ENDS OF LATERALLY POSITIONED STACK AT THE REAR OF THE TRAILER. POSITION SO AS TO ACHIEVE EQUAL SURFACE CONTACT BETWEEN THE TOP AND THE BOTTOM CONTAINERS. INFLATE IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. NOTE: INSURE SMOOTH SURFACE ON TRAILER SIDEWALLS AND ENDWALLS WHERE DUNNAGE BAGS CONTACT WALL. COVER ROUGH SURFACE AREAS WITH TAPE OR SUITABLE ANTI-CHAFING MATERIAL TO PROTECT DUNNAGE BAGS FROM PUNCTURE. SEE SPECIAL NOTES 5, 6, 7, 8, AND 11 ON PAGE 7.
- ④ SEPARATOR BLOCKING, 2" X 6" X BY TRAILER WIDTH MINUS 2" (REF: 8'-0") (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/8-10d NAILS.
- ⑤ HEADER, 2" X 6" X BY TRAILER WIDTH MINUS 2" (REF: 8'-0") (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/8-10d NAILS. LAMINATE THE THIRD PIECE IN A SIMILAR MANNER. SEE SPECIAL NOTE 9 ON PAGE 7.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" x 6"	152	152
NAILS	NO. REQD	POUNDS
10d (3")	152	2-1/2
DUNNAGE BAG, 48" X 48"	- 10 REQD	- - - 20 LBS
PLASTIC STRAPPING, 5/8"	- 452' REQD	- - - 6 LBS

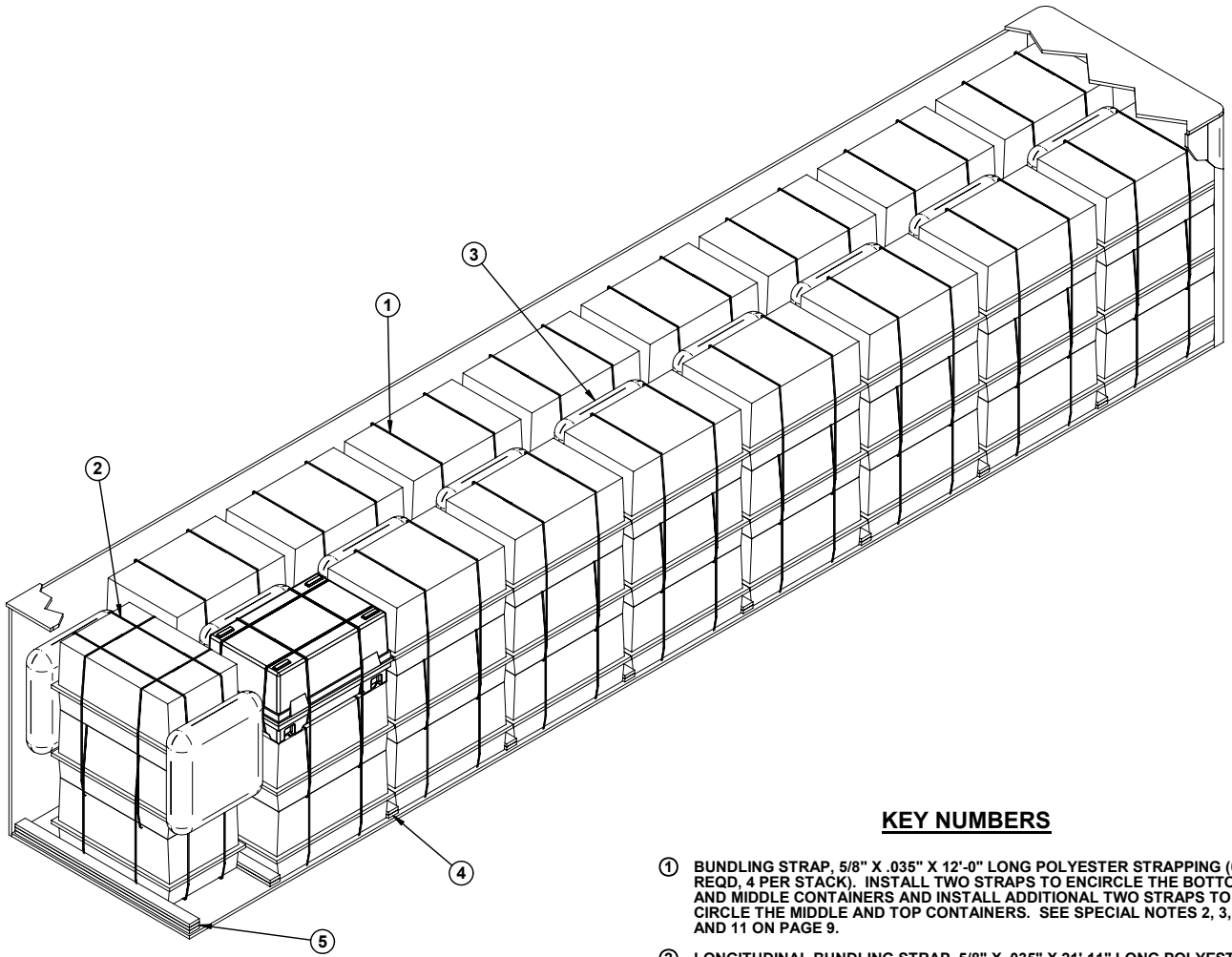
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-589 CONTAINER	- - 34	- - - - 21,046 LBS
DUNNAGE	- - - - -	- - - - 333 LBS

TOTAL WEIGHT - - - - - 21,379 LBS (APPROX)

SPECIAL NOTES:

1. A 34 UNIT LOAD OF CNU-589 CONTAINERS IS SHOWN IN A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. BUNDLING STRAPS SHALL BE TENSIONED AND SECURED BY A FRICTION WELD SEAL METHOD USING POLYCHEM CORPORATION, BET-700 TOOLING OR EQUIVALENT.
3. STEEL STRAPPING AND SEALS MAY BE SUBSTITUTED FOR THE POLYESTER STRAPPING. STEEL STRAPPING SHALL BE IN ACCORDANCE WITH NAVSEA DRAWING 6214068.
4. CNU-589 CONTAINERS THAT ARE BUNDLED WITH STEEL STRAPPING AND SEALS MUST HAVE ALL THE SEALS POSITIONED ON THE SAME SIDE OF THE STACK. THE STACK SHALL BE PLACED IN THE TRAILER WITH THE STRAP SEALS POSITIONED AGAINST THE TRAILER SIDE WALLS.
5. THE VINYL DUNNAGE AIR BAGS MAY BE SECURED TO THE TOP CNU-589 CONTAINER WITH THE ADHESIVE PATCH ON THE BAGS. THE BAGS WILL BE CENTERED LONGITUDINALLY BETWEEN STACKS OF CNU-589 CONTAINERS SO THAT THE BAG WILL CONTACT THE TOP AND BOTTOM CONTAINERS OF BOTH STACKS. USE OF THE ADHESIVE PATCH IS NOT MANDATORY AS A TENSION FIT WILL HOLD THE BAG IN PLACE ONCE IT IS INFLATED.
6. INFLATE BAGS WITH THE CENTERLOAD SHIPPING TECHNOLOGIES TURBO FILL INFLATION SYSTEM IN ACCORDANCE WITH THE MANUFACTURERS' INSTRUCTIONS.
7. DUNNAGE BAGS ARE 48" X 48", CENTERLOAD SHIPPING TECHNOLOGIES PART NUMBER HO4848. LARGER SIZED BAGS MAY BE USED AS LONG AS THE LARGER BAG PROVIDES EQUAL OR GREATER SURFACE CONTACT WITH THE CNU-589 CONTAINERS AS THE 48" X 48" BAG PROVIDES.
8. EACH GROUP OF LATERALLY ADJACENT STACKS OF CNU-589 CONTAINERS SHALL HAVE ONE BAG POSITIONED BETWEEN THE STACKS.
9. IF THE SPACE AT THE REAR OF THE LOAD 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 11. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOORS IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "A" AS DETAILED ON PAGE 11 OR THE NAILED HEADER AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE HEADER AS SHOWN ON PAGE 6, ONE OF THE REAR BLOCKING ASSEMBLIES SHOWN ON PAGE 11 MUST BE INSTALLED.
10. HANDLING FROM ENDS OF 3-HIGH STACK OF CONTAINERS REQUIRES THE USE OF FORKLIFT EQUIPPED WITH 60" MINIMUM TINE LENGTH OR FORKLIFT EXTENSIONS.
11. SOURCE OF SUPPLY: THE CENTERLOAD SHIPPING TECHNOLOGIES VINYL DUNNAGE AIR BAGS, PART NUMBER HO4048, AND THE APPLICABLE INFLATOR TOOL CONTACT [HTTP://WWW.CENTERLOAD.COM/INDEX.HTML](http://www.centerload.com/index.html) AND THE POLYCHEM CORPORATION POLYESTER STRAPPING, PRODUCT CODE MPC5835 AND THE POWER SEALESS WELDING TOOL, CONTACT [HTTP://WWW.POLYCHEM.COM/](http://www.polychem.com/).



ISOMETRIC VIEW

KEY NUMBERS

- ① BUNDLING STRAP, 5/8" X .035" X 12'-0" LONG POLYESTER STRAPPING (68 REQD, 4 PER STACK). INSTALL TWO STRAPS TO ENCIRCLE THE BOTTOM AND MIDDLE CONTAINERS AND INSTALL ADDITIONAL TWO STRAPS TO ENCIRCLE THE MIDDLE AND TOP CONTAINERS. SEE SPECIAL NOTES 2, 3, 4, AND 11 ON PAGE 9.
- ② LONGITUDINAL BUNDLING STRAP, 5/8" X .035" X 21'-11" LONG POLYESTER STRAPPING (4 REQD). INSTALL TWO STRAPS TO ENCIRCLE THE BOTTOM AND MIDDLE CONTAINERS AND INSTALL ADDITIONAL TWO STRAPS TO ENCIRCLE THE MIDDLE AND TOP CONTAINERS. NOTE: LONGITUDINAL BUNDLING STRAPS ARE ONLY REQUIRED FOR THE LATERALLY POSITIONED STACK OF CONTAINERS AT THE REAR OF THE LOAD. SEE SPECIAL NOTES 2, 3, 4, AND 11 ON PAGE 9.
- ③ VINYL DUNNAGE AIR BAG, 48" X 48" (10 REQD). PLACE BETWEEN LATERALLY ADJACENT STACKS OF CONTAINERS AND ON BOTH ENDS OF LATERALLY POSITIONED STACK AT THE REAR OF THE TRAILER. POSITION SO AS TO ACHIEVE EQUAL SURFACE CONTACT BETWEEN THE TOP AND THE MIDDLE CONTAINERS. INFLATE IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS. NOTE: INSURE SMOOTH SURFACE ON TRAILER SIDEWALLS AND ENDWALLS WHERE DUNNAGE BAGS CONTACT WALL. COVER ROUGH SURFACE AREAS WITH TAPE OR SUITABLE ANTI-CHAFING MATERIAL TO PROTECT DUNNAGE BAGS FROM PUNCTURE. SEE SPECIAL NOTES 5, 6, 7, 8, AND 11 ON PAGE 9.
- ④ SEPARATOR BLOCKING, 2" X 6" X BY TRAILER WIDTH MINUS 2" (REF: 8'-0") (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/8-10d NAILS.
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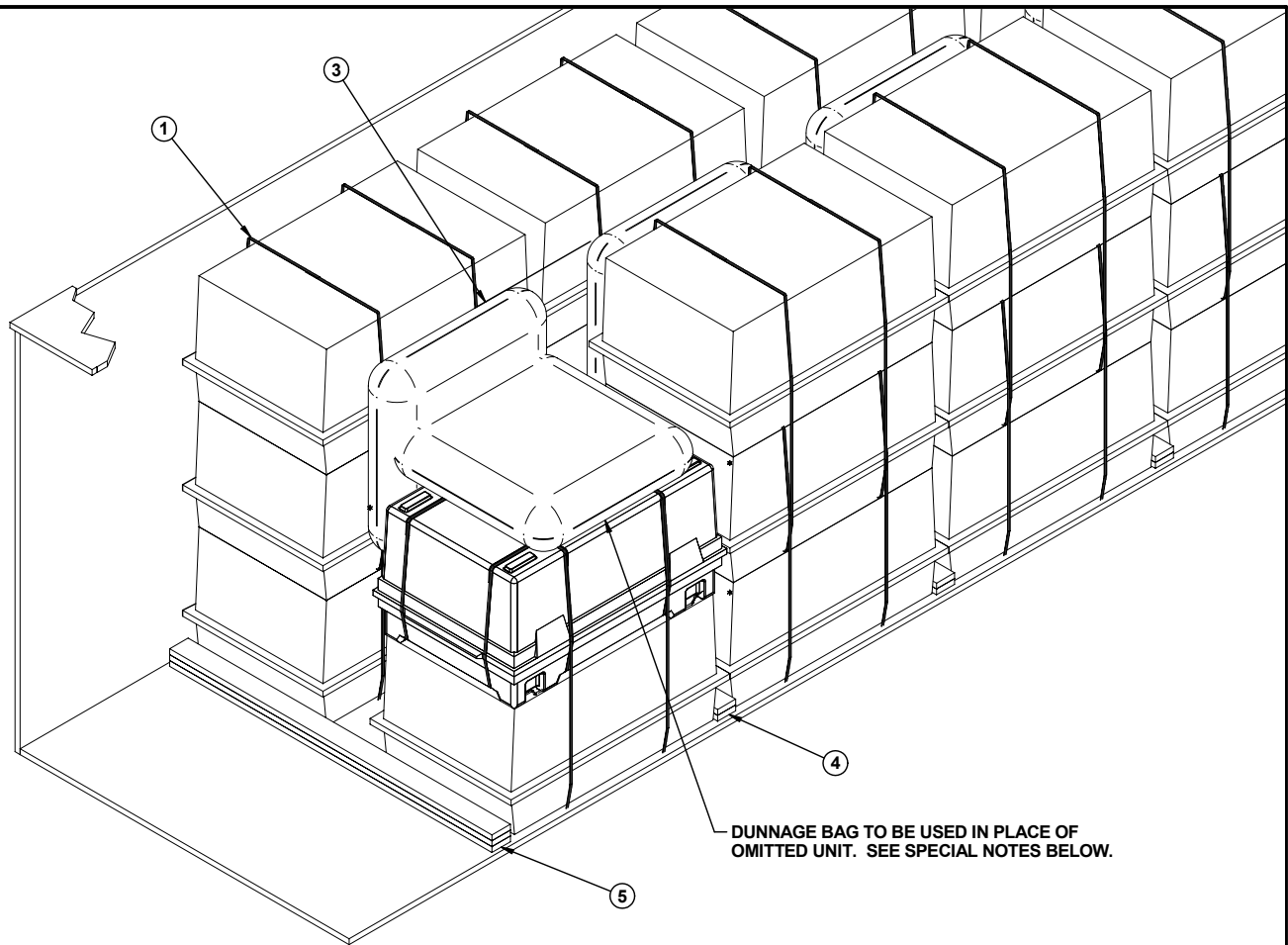
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2" X 6"	152	152
NAILS	NO. REQD	POUNDS
10d (3")	152	2-1/2
DUNNAGE BAG, 48" X 48"	- 10 REQD	- - - 20 LBS
PLASTIC STRAPPING, 5/8"	- 904' REQD	- - - 11 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-589 CONTAINER	- - 51 - - - - -	31,569 LBS
DUNNAGE	- - - - -	338 LBS
TOTAL WEIGHT - - - - -		31,907 LBS (APPROX)

SPECIAL NOTES:

1. A 51 UNIT LOAD OF CNU-589 CONTAINERS IS SHOWN IN A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED. A 57 UNIT LOAD OF CNU-589 CONTAINERS MAY BE LOADED IN A 53'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) CONVENTIONAL VAN TRAILER.
2. BUNDLING STRAPS SHALL BE TENSIONED AND SECURED BY A FRICTION WELD SEAL METHOD USING POLYCHEM CORPORATION, BET-700 TOOLING OR EQUIVALENT.
3. STEEL STRAPPING AND SEALS MAY BE SUBSTITUTED FOR THE POLYESTER STRAPPING. STEEL STRAPPING SHALL BE IN ACCORDANCE WITH NAVSEA DRAWING 6214068.
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7. DUNNAGE BAGS ARE 48" X 48", CENTERLOAD SHIPPING TECHNOLOGIES PART NUMBER HO4848. LARGER SIZED BAGS MAY BE USED AS LONG AS THE LARGER BAG PROVIDES EQUAL OR GREATER SURFACE CONTACT WITH THE CNU-589 CONTAINERS AS THE 48" X 48" BAG PROVIDES.
8. EACH GROUP OF LATERALLY ADJACENT STACKS OF CNU-589 CONTAINERS SHALL HAVE ONE BAG POSITIONED BETWEEN THE STACKS.
9. IF THE SPACE AT THE REAR OF THE LOAD 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 11. IF THE SPACE AT THE REAR OF THE LOAD IS BETWEEN THE CONTAINERS AND THE REAR DOORS IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "A" AS DETAILED ON PAGE 11 OR THE NAILED HEADER AS SHOWN. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE HEADER AS SHOWN ON PAGE 6, ONE OF THE REAR BLOCKING ASSEMBLIES SHOWN ON PAGE 11 MUST BE INSTALLED.
10. HANDLING FROM ENDS OF 3-HIGH STACK OF CONTAINERS REQUIRES THE USE OF FORKLIFT EQUIPPED WITH 60" MINIMUM TINE LENGTH OR FORKLIFT EXTENSIONS.
11. SOURCE OF SUPPLY: THE CENTERLOAD SHIPPING TECHNOLOGIES VINYL DUNNAGE AIR BAGS, PART NUMBER HO4048, AND THE APPLICABLE INFLATOR TOOL CONTACT [HTTP://WWW.CENTERLOAD.COM/INDEX.HTML](http://www.centerload.com/index.html) AND THE POLYCHEM CORPORATION POLYESTER STRAPPING, PRODUCT CODE MPC5835 AND THE POWER SEALESS WELDING TOOL, CONTACT [HTTP://WWW.POLYCHEM.COM/](http://www.polychem.com/).

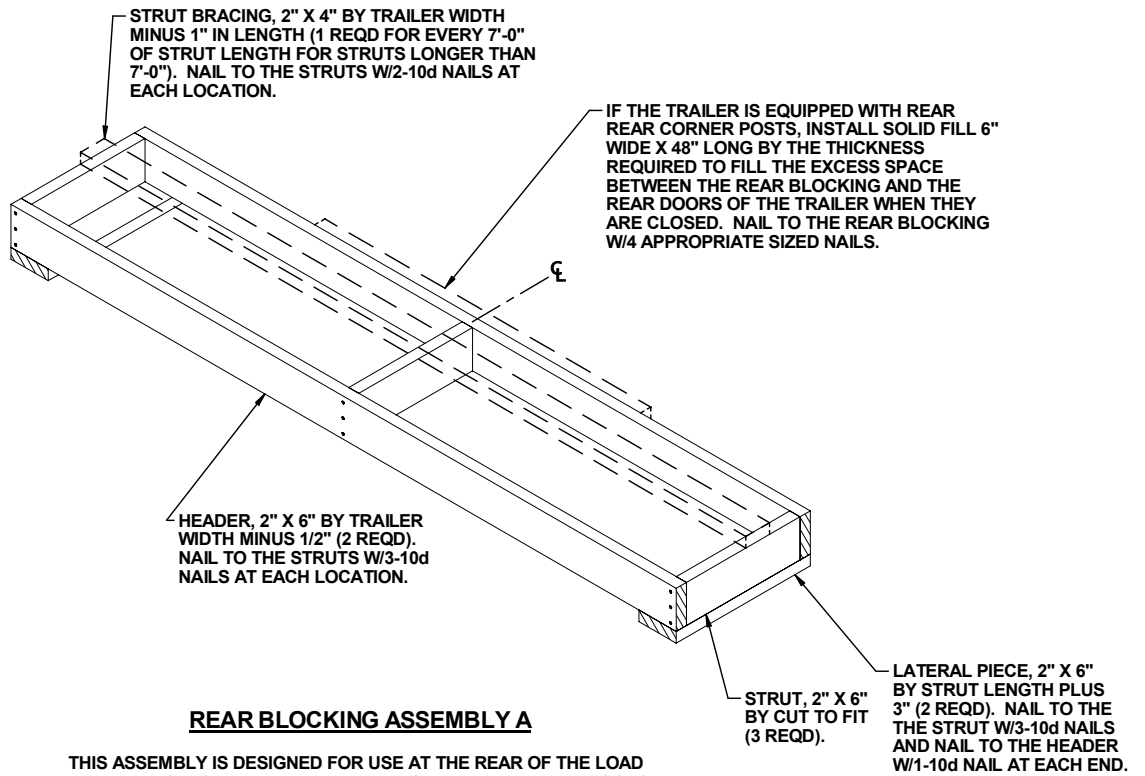


TYPICAL LTL

KEY NUMBERS REFER TO THE KEY NUMBERS ON PAGE 6.

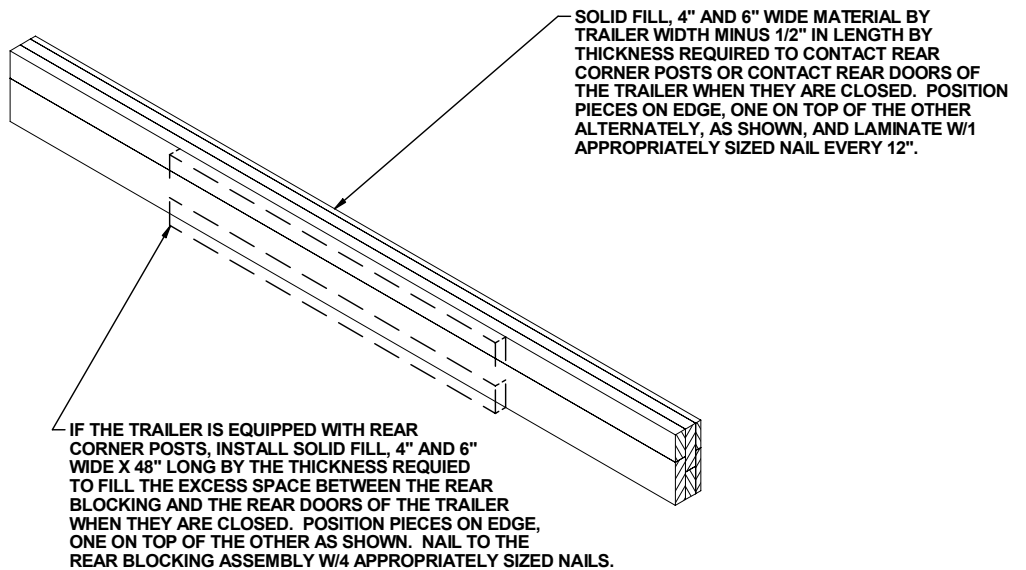
SPECIAL NOTES:

1. THE LOCATION OF AN OMITTED UNIT SHALL BE AT THE REAR OF THE LOAD.
2. IF TWO UNITS ARE OMITTED FROM A LOAD, A CNU-589 CONTAINER SHALL BE REMOVED FROM THE TOP LAYER ON EACH SIDE OF THE TRAILER AT THE REAR OF THE LOAD. A TRAILER HAVING A STACK OF LATERALLY POSITIONED CNU-589 CONTAINERS AT THE REAR OF THE LOAD SHALL HAVE THE OMITTED UNITS REMOVED FROM THE LATERALLY POSITIONED STACK OF CONTAINERS. ADDITIONAL CONTAINERS SHALL BE REMOVED FROM ALTERNATING SIDES OF THE TRAILER TO MAINTAIN A BALANCED LOAD.
3. A VINYL DUNNAGE BAG SHALL BE SUBSTITUTED FOR THE OMITTED UNIT THAT IS POSITIONED LONGITUDINALLY IN THE LOAD. THE DUNNAGE BAG IS NOT REQUIRED IF THE LATERALLY ADJACENT STACK OF CNU-589 CONTAINERS ALSO HAS AN OMITTED UNIT. EXAMPLE: IN A 3-HIGH VAN TRAILER LOAD, IF THE TWO STACKS OF CONTAINERS AT THE REAR OF THE LOAD IS TWO CONTAINERS HIGH, AN OMITTED UNIT DUNNAGE BAG IS NOT REQUIRED. HOWEVER, A DUNNAGE BAG IS STILL REQUIRED BETWEEN THE STACKS OF TWO-HIGH CONTAINERS.



REAR BLOCKING ASSEMBLY A

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



REAR BLOCKING ASSEMBLY B

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 MORE THAN 1-1/2" BUT LESS THAN 9".

