

LOADING AND BRACING (TL & LTL) ON FLATBED TRAILERS[⊕] OF CBU ITEMS PACKED IN CNU-80/E CONTAINERS AND/OR MAU ITEMS PACKED IN CNU-203/E CONTAINERS

INDEX

<u>ITEM</u>	<u>PAGE(S)</u>
GENERAL NOTES AND MATERIAL SPECIFICATIONS - - - - -	2
UNITIZATION AND HANDLING PROCEDURES - - - - -	3
32-UNIT LOAD ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER (STEEL STRAP TIEDOWN METHOD) - - - - -	4, 5
36-UNIT LOAD ON A 48'-0" LONG BY 8'-0" WIDE FLATBED TRAILER (STEEL STRAP TIEDOWN METHOD) - - - - -	6, 7
32-UNIT LOAD ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER (CHAIN TIEDOWN METHOD) - - - - -	8, 9
32-UNIT LOAD ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER (WEB STRAP TIEDOWN METHOD) - - - - -	10, 11
TYPICAL LTL (1-UNIT LOAD) - - - - -	12
DETAILS - - - - -	13
PROVISIONS FOR THE USE OF FIREHOSE - - - - -	14

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

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND 	ENGINEER	BASIC	MICHAEL SARDONE	DO NOT SCALE				
		REV.		WEBSITE: HTTP://WWW.DAC.ARMY.MIL				
	TECHNICIAN	BASIC		DECEMBER 1997				
	REV.							
	DRAFTSMAN	BASIC						
		REV.						
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	TRANSPORTATION ENGINEERING DIVISION		<i>W. R. Jurek</i>					
	VALIDATION ENGINEERING DIVISION		<i>J. H. Kelen</i>	TESTED	CLASS	DIVISION	DRAWING	FILE
	LOGISTICS ENGINEERING OFFICE		<i>William F Ernst</i>		19	48	8651	SP11J34
U.S. ARMY DEFENSE AMMUNITION CENTER								

GENERAL NOTES

(GENERAL NOTES CONTINUED)

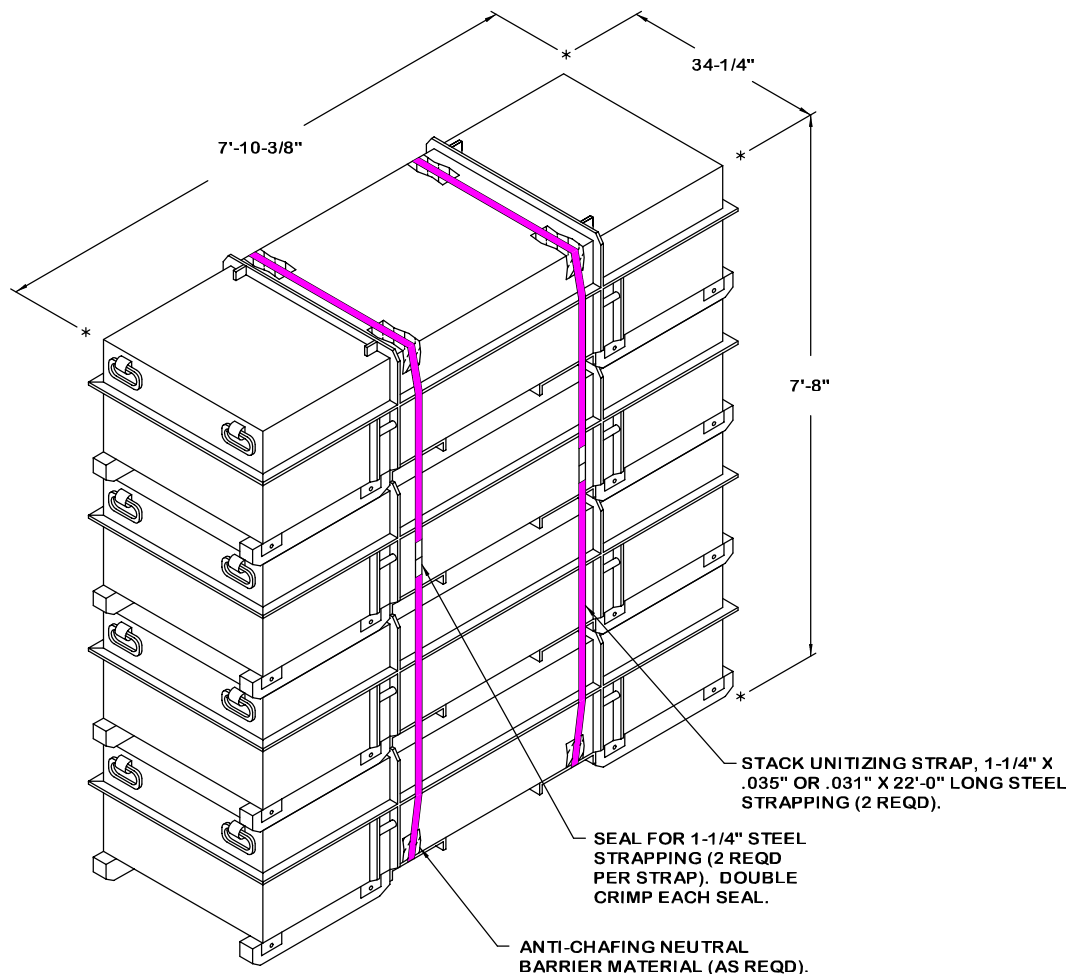
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO LOADS OF CBU ITEMS PACKED IN CNU-80/E CONTAINERS AND MAU ITEMS INCLUDING MAU-157/B, MAU-157A/B, AND MAU-169/B PACKED IN CNU-203/E CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH CBU OR MAU ITEMS. SEE PAGE 3 FOR DETAIL OF THE CONTAINERS.
- C. CONTAINER DIMENSIONS: 7'-10-3/8" LONG BY 34-1/4" WIDE BY 24-1/8" HIGH (22-5/8" STACKING HEIGHT)
GROSS WEIGHT:
CNU-80/E CONTAINER - 934 TO 1,134 POUNDS (APPROX)
CNU-203/E CONTAINER - 850 LBS (APPROX)
- D. THE LOADS AS SHOWN HEREIN ARE BASED ON 40'-0" LONG AND 48'-0" LONG BY 8'-0" WIDE FLATBED TRAILERS. TRAILERS OF OTHER LENGTH AND WIDTHS MAY BE USED. TRAILERS MUST HAVE WOOD OR WOOD AND METAL FLOORS. TRAILERS HAVING ALL-METAL FLOORS CANNOT BE USED. CAUTION: IF THE TRAILER FLOOR IS EQUIPPED WITH EXPOSED METAL DECKING ABOVE THE BOGIE ASSEMBLY, OR ELSEWHERE, FIELD MEASUREMENTS SHOULD BE MADE TO ENSURE THAT THE METAL DECKING DOES NOT INTERFERE WITH THE PROPER POSITIONING AND NAILING OF THE DUNNAGE AS SPECIFIED BY THE PROCEDURES SHOWN HEREIN.
- E. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. 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.
- G. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS.
- 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. IF THE CAPACITY OF THE MATERIALS HANDLING EQUIPMENT PERMITS, IT IS RECOMMENDED THAT CONTAINERS BE UNITIZED PRIOR TO PLACEMENT ABOARD THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

(CONTINUED AT RIGHT)

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).
- STRAP, WEB - - - - - : WEB SLING AND TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1971.
- 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.
- WIRE, CARBON STEEL - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
- STAKE POCKET PROTECTOR - - - - - : COMMERCIAL GRADE.
- ANTI-CHAFING MATERIAL - - - - - : MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.
- CHAIN - - - - - : NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
- LOAD BINDER - - - - - : FED SPEC GGG-B-325.

- K. CAUTION: REGARDLESS OF THE TYPE OF TRAILER INVOLVED, ONLY THOSE TRAILERS HAVING TIEDOWN ANCHORING FACILITIES WHICH PROVIDE HOLDING STRENGTH EQUAL TO OR GREATER THAN THE STRENGTH OF THE HOLD-DOWN STRAPS OR CHAINS AND WHICH ALIGN NEAR THE INDICATED LOCATIONS FOR THE HOLD-DOWN STRAPS OR CHAINS SHOULD BE USED. IF THE TRAILER ANCHOR DEVICES ARE NOT PROPERLY POSITIONED TO RECEIVE STRAPPING OR CHAINS, AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIEDOWN STRAPS OR CHAINS, STEEL STRAPS MAY BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED. CAUTION: AVOID TRAILER WHEELS, FIFTH WHEEL PLATE CONTROLS AND OTHER APPURTENANCES. USE EDGE PROTECTORS OR PADS ON ALL SHARP EDGES. NEITHER CHAINS NOR WEB STRAPS WILL BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.
- L. 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 13 FOR GUIDANCE.
- M. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH THE PIECE ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- N. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.
- O. 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.
- P. 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.
- Q. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.



TYPICAL STACK DETAIL

**UNITIZATION AND HANDLING
PROCEDURAL GUIDANCE**

1. STACKING CONTAINERS FOR UNITIZING

- A. THE UPPER CONTAINERS SHOULD BE PLACED AS CLOSELY AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER CONTAINERS.
- B. POSITION THE AFT END OF THE UPPER CONTAINERS ABOVE THE AFT END OF THE LOWER CONTAINERS.

2. INSTALLATION OF 1-1/4" X .035" OR .031" UNITIZING STRAPS.

- A. STRAPS WILL BE POSITIONED SO AS TO ENIRCLE THE CONTAINERS AS SHOWN AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACE OF THE CONTAINER; I.E., VERTICAL ALONG THE SIDES AND FLAT ACROSS THE TOP AND BOTTOM OF THE STACK.
- B. PLACE ANTI-CHAFING NEUTRAL BARRIER MATERIAL UNDER THE STRAPPING AT ALL POINTS OF CONTACT WITH CONTAINER AND SECURE TO PREVENT DISLODGMET DURING AND AFTER STRAP APPLICATION. STRIPS OF ANTI-CHAFING MATERIAL MAY BE TAPED OR STRING-TIED TO THE CONTAINER OR STRAPPING, OR IT CAN BE FORMED INTO STRAP ENCIRCLING TUBES BY WINDING THE MATERIAL AROUND THE STRAPPING TO FORM A SELF-HOLDING UNIT.
- C. STRAPPING WILL BE FIRMLY TENSIONED AND EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO DOUBLE CRIMPED STRAP SEALS AS SHOWN. SEE GENERAL NOTE "L" ON PAGE 2. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF THE STACK AS SHOWN. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO ENSURE THAT THE CONTAINERS ARE NOT DAMAGED. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.

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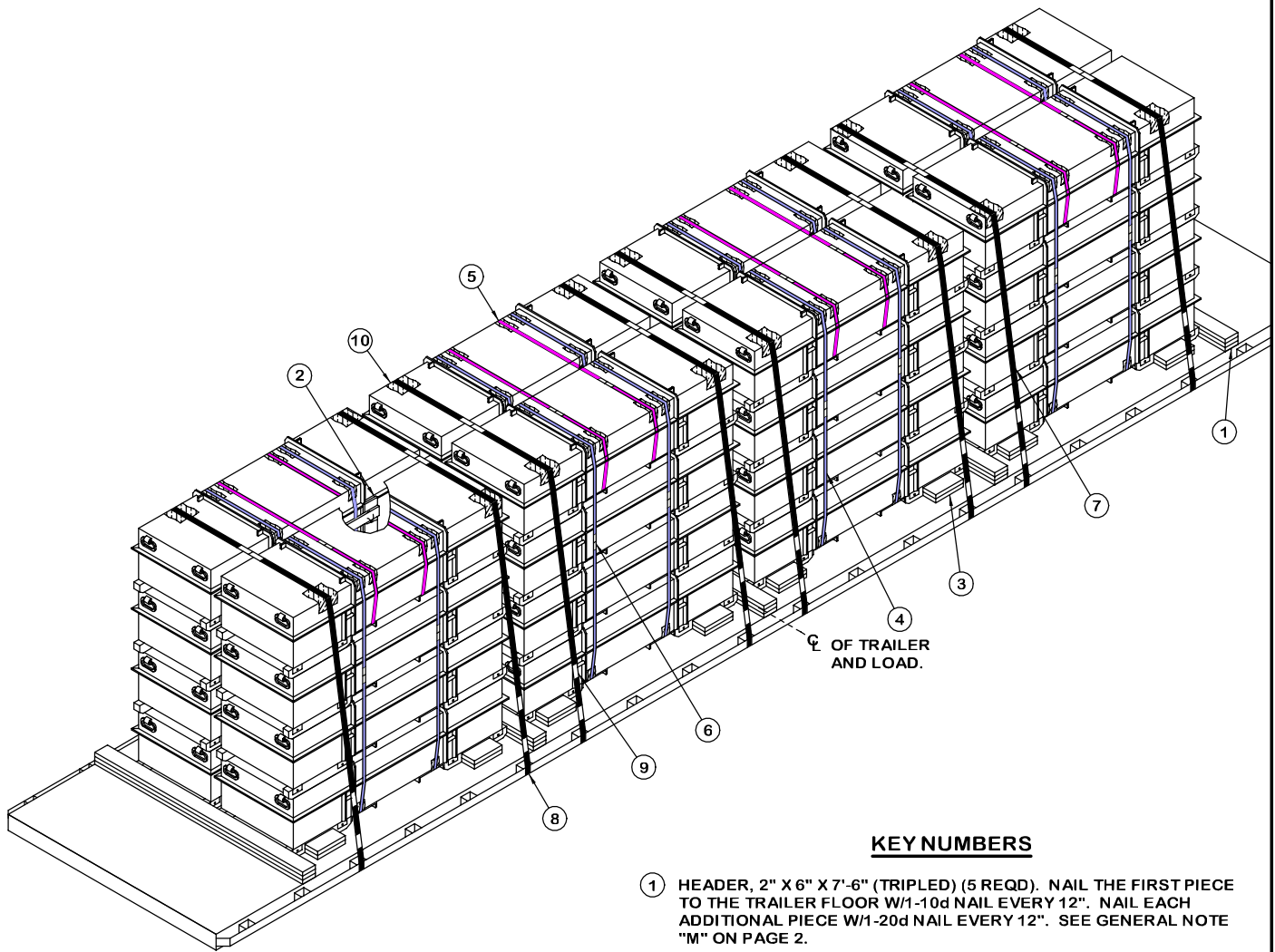
(UNITIZATION AND HANDLING GUIDANCE CONTINUED)

3. CONTAINER OR CONTAINER STACK HANDLING.

NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORK-LIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, AND SPREADER BARS.

(2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

- A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIAL HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.
- B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS MUST BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER, TO PREVENT DAMAGE TO A CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. FOR EVERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING TRAILER LOADING, A CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INTO THE FORK RECEPTACLES OF AN UPPER CONTAINER.
- C. IF A CONTAINER OR STACK OF CONTAINERS IS HANDLED BY SLINGING, THE SLING MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE FROM THE LIFTING POINTS ON THE BOTTOM CONTAINER OF A STACK.



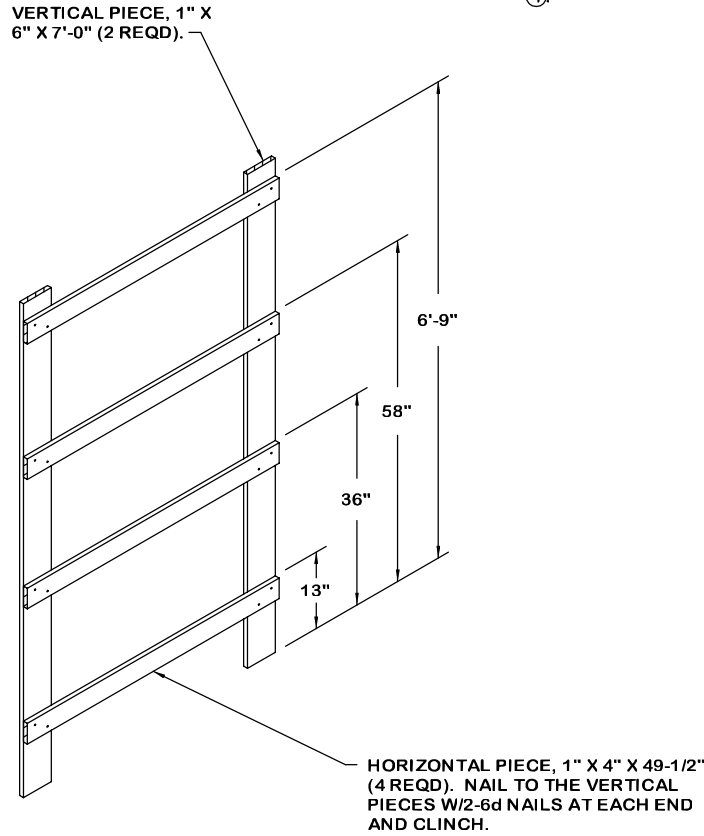
ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (TRIPLED) (5 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 12". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 12". SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (4 REQD). SEE THE DETAIL ON PAGE 5. WIRE TIE TO A LIFTING BAR ON THE CONTAINER.
- ③ SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (16 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (16 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑤ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 16'-0" LONG STEEL STRAPPING (8 REQD). INSTALL TO ENIRCLE THE TOP TWO LATERALLY ADJACENT CONTAINERS AS SHOWN.
- ⑥ SEAL FOR 1-1/4" STRAPPING (48 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2.
- ⑦ HOLD-DOWN STRAP, 2" X .050" OR .044" X 31'-0" LONG STEEL STRAPPING (8 REQD). INSTALL EACH STRAP FROM TWO 15'-6" LONG PIECES.
- ⑧ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (16 REQD). POSITION UNDER STAKE POCKET AND SEAL TO A HOLD-DOWN STRAP MARKED ⑦. SEE "DETAIL A" ON PAGE 13. ALT: STAKE POCKET PROTECTOR (32 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 13.
- ⑨ SEAL FOR 2" STRAPPING (48 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE TO SECURE THE PADS, PIECES MARKED ⑧.
- ⑩ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.

SPECIAL NOTES:

1. A 32-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. LONGER OR WIDER TRAILERS MAY BE USED.
2. THE DEPICTED LOAD MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED. A LOAD MAY BE REDUCED IN MULTIPLES OF TWO CONTAINERS OR ENTIRE LOAD UNITS OF EIGHT CONTAINERS.
3. THE HOLD-DOWN STRAPS, PIECES MARKED ⑥, SHOULD BE INSTALLED WITH CARE SO AS NOT TO HAVE AN EDGE-TO-EDGE CONTACT WITH THE STACK UNITIZING STRAPS, PIECES MARKED ④.



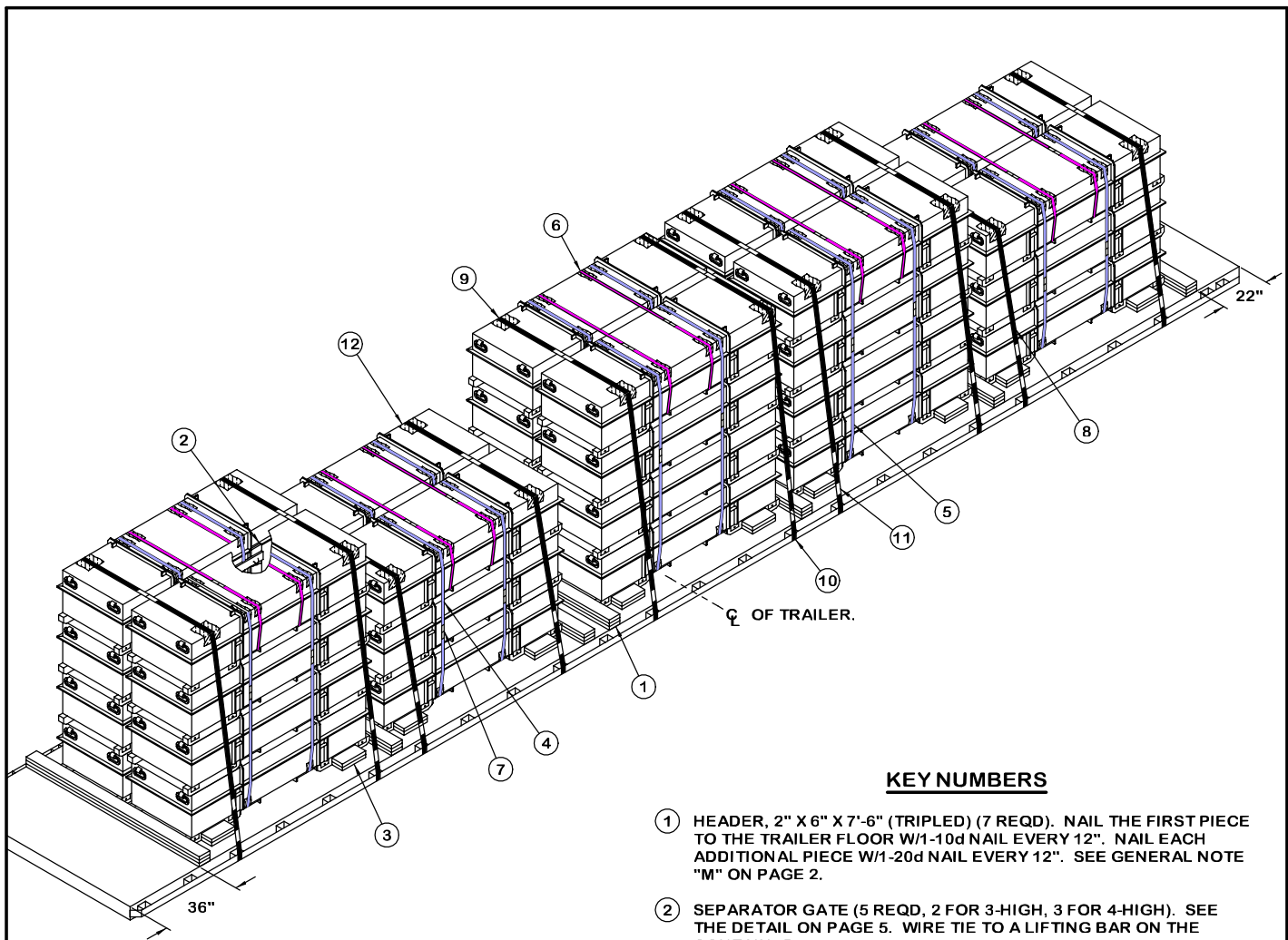
SEPARATOR GATE

NOTE: FOR A THREE-HIGH LOAD, ELIMINATE THE TOP HORIZONTAL PIECE, FOR A TWO-HIGH LOAD, ELIMINATE THE TOP TWO HORIZONTAL PIECES, AND FOR A ONE-HIGH LOAD, ELIMINATE THE TOP THREE HORIZONTAL PIECES. SHORTEN THE VERTICAL PIECES APPROPRIATELY.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	66	22
1" X 6"	56	28
2" X 6"	145	145
NAILS	NO. REQD	POUNDS
6d(2")	64	1/2
10d (3")	168	2-3/4
20d (4")	80	3
1-1/4" STEEL STRAPPING - - 480' REQD - - - 68-3/4 LBS		
SEAL FOR 1-1/4" STRAPPING - 48 REQD - - - 2-1/4 LBS		
2" STEEL STRAPPING - - - 272' REQD - - - 90-3/4 LBS		
SEAL FOR 2" STRAPPING - - - 48 REQD - - - 9-3/4 LBS		
WIRE, .0800" DIAMETER - - - 12' REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-80/E	32	37,568 LBS
DUNNAGE		568 LBS
TOTAL WEIGHT		38,136 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (TRIPLED) (7 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 12". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 12". SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (5 REQD, 2 FOR 3-HIGH, 3 FOR 4-HIGH). SEE THE DETAIL ON PAGE 5. WIRE TIE TO A LIFTING BAR ON THE CONTAINER.
- ③ SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (20 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 18'-0" LONG STEEL STRAPPING (8 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑤ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (12 REQD).
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 16'-0" LONG STEEL STRAPPING (10 REQD). INSTALL TO ENCIRCLE THE TOP TWO LATERALLY ADJACENT CONTAINERS AS SHOWN.
- ⑦ SEAL FOR 1-1/4" STRAPPING (60 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2.
- ⑧ HOLD-DOWN STRAP, 2" X .050" OR .044" X 27'-0" LONG STEEL STRAPPING (4 REQD). INSTALL EACH STRAP FROM TWO 13'-6" LONG PIECES.
- ⑨ HOLD-DOWN STRAP, 2" X .050" OR .044" X 31'-0" LONG STEEL STRAPPING (6 REQD). INSTALL EACH STRAP FROM TWO 15'-6" LONG PIECES.
- ⑩ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (20 REQD). POSITION UNDER STAKE POCKET AND SEAL TO A HOLD-DOWN STRAPS MARKED ⑧ AND ⑨. SEE "DETAIL A" ON PAGE 13. ALT: STAKE POCKET PROTECTOR (40 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 13.
- ⑪ SEAL FOR 2" STRAPPING (60 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE TO SECURE THE PADS, PIECES MARKED ⑩.
- ⑫ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.

SPECIAL NOTES:

1. A 36-CONTAINER LOAD IS SHOWN ON A 48'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. TRAILERS OF OTHER WIDTHS MAY BE USED. FOR SHORTER TRAILERS, REFER TO THE LOAD ON PAGE 4.
2. A 36-CONTAINER LOAD OF CBU ITEMS IN CNU-80/E CONTAINERS IS SHOWN. IF THE ITEMS TO BE LOADED ARE MAU ITEMS IN CNU-203/E CONTAINERS, THEN 40 CONTAINERS CAN BE LOADED.
3. THE DEPICTED LOAD MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED. A LOAD MAY BE REDUCED IN MULTIPLES OF TWO CONTAINERS OR ENTIRE LOAD UNITS OF EIGHT CONTAINERS.
4. THE HOLD-DOWN STRAPS, PIECES MARKED ⑦ AND ⑧, SHOULD BE INSTALLED WITH CARE SO AS NOT TO HAVE AN EDGE-TO-EDGE CONTACT WITH THE STACK UNITIZING STRAPS, PIECES MARKED ④ AND ⑤.

BILL OF MATERIAL - CNU-203/E CONTAINER		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	75	25
1" X 6"	70	35
2" X 6"	198	198
NAILS	NO. REQD	POUNDS
6d(2")	80	1/2
10d (3")	216	3-1/2
20d (4")	112	4
1-1/4" STEEL STRAPPING - - 600' REQD - - - 85-3/4 LBS		
SEAL FOR 1-1/4" STRAPPING - 60 REQD - - - 2-3/4 LBS		
2" STEEL STRAPPING - - - 340' REQD - - 113-1/2 LBS		
SEAL FOR 2" STRAPPING - - - 60 REQD - - - 12 LBS		
WIRE, .0800" DIAMETER - - - 12' REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

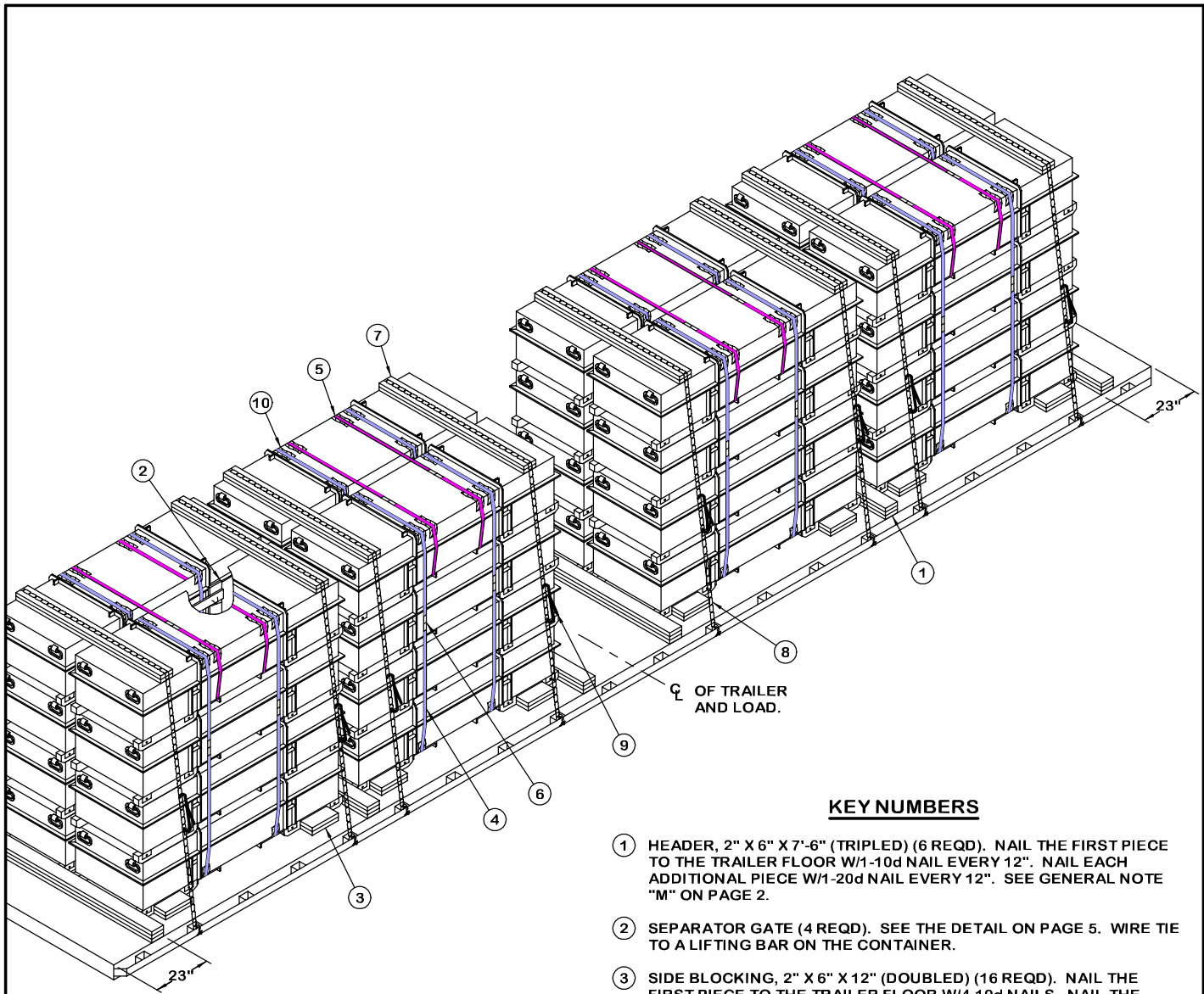
LOAD

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-203/E	40	33,200 LBS
DUNNAGE		738 LBS
TOTAL WEIGHT		33,938 LBS (APPROX)

BILL OF MATERIAL - CNU-80/E CONTAINER		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	75	25
1" X 6"	63	32
2" X 6"	198	198
NAILS	NO. REQD	POUNDS
6d(2")	72	1/2
10d (3")	216	3-1/2
20d (4")	112	4
1-1/4" STEEL STRAPPING - - 568' REQD - - - 81-1/4 LBS		
SEAL FOR 1-1/4" STRAPPING - 60 REQD - - - 2-3/4 LBS		
2" STEEL STRAPPING - - - 324' REQD - - - 108 LBS		
SEAL FOR 2" STRAPPING - - - 60 REQD - - - 12 LBS		
WIRE, .0800" DIAMETER - - - 12' REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-80/E	36	42,264 LBS
DUNNAGE		722 LBS
TOTAL WEIGHT		42,986 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (TRIPLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 12". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 12". SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (4 REQD). SEE THE DETAIL ON PAGE 5. WIRE TIE TO A LIFTING BAR ON THE CONTAINER.
- ③ SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (16 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (16 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑤ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 16'-0" LONG STEEL STRAPPING (8 REQD). INSTALL TO ENCIRCLE THE TOP TWO LATERALLY ADJACENT CONTAINERS AS SHOWN.
- ⑥ SEAL FOR 1-1/4" STRAPPING (48 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2.
- ⑦ CHAIN BOARD, 2" X 6" BY LOAD WIDTH (DOUBLED) (8 REQD). LAMINATE W/5-10d NAILS. SEE SPECIAL NOTE 4 ON PAGE 9.
- ⑧ CHAIN, BINDING, 5/16", GRADE 70 BY A LENGTH TO SUIT (8 REQD). POSITION AS SHOWN. ATTACH TO A TRAILER STAKE POCKET, NOT TO A RUB RAIL. SEE THE "SPECIAL PROVISIONS FOR CHAIN TIE-DOWN" ON PAGE 9 AND SPECIAL NOTE 3 ON PAGE 9.
- ⑨ LOAD BINDER, 5/16", OVER-CENTER TYPE (8 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED ⑧, TO THE CHAIN BOARD, PIECE MARKED ⑦, W/1-20d NAIL AT EACH END BY DRIVING EACH NAIL INTO THE CHAIN BOARD THROUGH AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.
- ⑩ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.

SPECIAL PROVISIONS FOR CHAIN TIEDOWN

LADING MAY BE SECURED TO THE FLATBED TRAILER BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED STRAPPING, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY WILL BE USED. ALL CHAINS AND LOAD BINDERS SHALL CONFORM TO THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
2. ALL CHAINS SHALL BE MARKED AS PRESCRIBED BY THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975. AT LEAST ONE LINK IN EVERY 36 LINKS SHALL CARRY THE MANUFACTURER'S PERMANENT AND DISTINCTIVE MARK IDENTIFYING THE GRADE OF CHAIN. CHAINS NOT MARKED IN THIS MANNER SHALL NOT BE USED. IN ADDITION TO THE GRADE MARKING, THE CHAIN MAY ALSO CARRY LETTER MARKINGS OR SYMBOLS IDENTIFYING THE CHAIN MANUFACTURER. THE PRESENCE OF THE MANUFACTURER'S IDENTIFICATION MARKING IS NOT MANDATORY.
3. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR, OR ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION. CAUTION: EXTREME CARE MUST BE EXERCISED WHEN TENSIONING CHAINS TO PREVENT DAMAGE OR PERMANENT DEFORMATION TO THE LADING.
4. CHAIN SIZES AND GRADES APPROVED FOR USE WITH FLATBED TRAILER LOADS ARE AS FOLLOWS:
 - A. 3/8", GRADE 43 HIGH TEST CHAIN
 - B. 5/16", GRADE 70 BINDING CHAIN
 - C. 3/8", GRADE 70 BINDING CHAIN
 - D. 5/16", GRADE 80 ALLOY STEEL CHAIN
 - E. 3/8", GRADE 80 ALLOY STEEL CHAIN
5. THE GRABHOOKS ON THE ENDS OF THE CHAIN MAY BE OF THE FOLLOWING TYPES WITH GRADE MARKINGS AS INDICATED.
 - A. CLEVIS GRABHOOKS, 3/8" SIZE, DO NOT REQUIRE GRADE MARKING. ALLOY GRABHOOKS, 5/16" SIZE, SHALL CARRY THE MANUFACTURER'S GRADE MARK OF 7, 70, OR 700. THE HOOKS SHALL BE USED ON THE APPROPRIATE SIZE CHAIN.
 - B. CLOSED EYE GRABHOOKS, 3/8" AND 5/16" SIZE, MAY BE USED ON THE APPROPRIATE SIZE CHAIN IF THEY ARE A PART OF A CHAIN ASSEMBLY WHICH WAS PROVIDED BY A CHAIN MANUFACTURER, AND THE CHAIN ASSEMBLY CARRIES THE CORRECT GRADE IDENTIFICATION MARKING AS PREVIOUSLY STATED. CLOSED EYE GRABHOOKS THAT FORM A PART OF THE CHAIN ASSEMBLY ARE EXEMPT FROM GRADE MARKINGS.

(CONTINUED AT RIGHT)

SPECIAL NOTES:

1. A 32-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. LONGER OR WIDER TRAILERS MAY BE USED.
2. THE DEPICTED LOAD MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED. A LOAD MAY BE REDUCED IN MULTIPLES OF TWO CONTAINERS OR ENTIRE LOAD UNITS OF EIGHT CONTAINERS.
3. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSPORT AND TIGHTEN IF NECESSARY.
4. CHAIN BOARDS, PIECES MARKED (6), MUST BE PLACED ON TOP OF THE CONTAINERS WHEREVER THE CHAIN PASSES OVER THE CONTAINER.

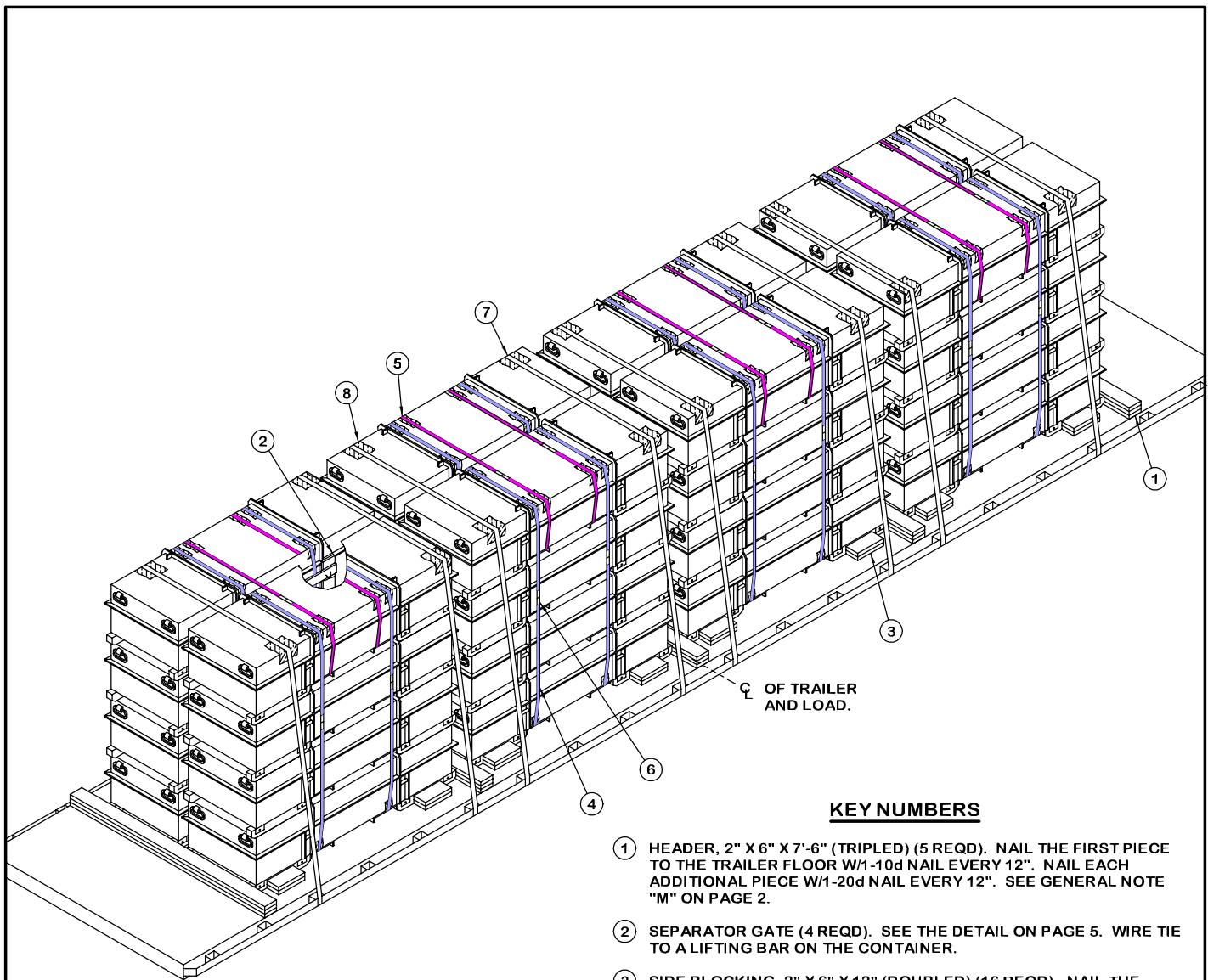
(SPECIAL PROVISIONS FOR CHAIN TIEDOWN CONTINUED)

6. CONNECTING LINKS USED FOR CHAIN REPAIR MUST BE CORRECTLY MARKED AND BE EQUAL TO OR GREATER IN STRENGTH THAN THE CHAIN THEY ARE REPAIRING. CHAINS WITH UNMARKED CONNECTING LINKS SHALL NOT BE USED.
7. CHAIN AND FITTING OF A HIGHER GRADE MAY BE SUBSTITUTED FOR THE GRADES SPECIFIED IN NOTE 4 ABOVE.
8. LOAD BINDERS SHALL BE 5/16" TO 3/8" SIZE AND HAVE A MINIMUM BREAKING STRENGTH OF 16,200 POUNDS (WORKING LOAD LIMIT OF 5,400 POUNDS). OVERCENTER TYPE LOAD BINDERS SHALL BE SAFETY WIRED TO PREVENT ACCIDENTAL OPENING DURING TRANSPORT. LOAD BINDER SIZE SHALL BE COMPATIBLE WITH THE SIZE OF THE CHAIN BEING USED.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	66	22
1" X 6"	56	28
2" X 6"	257	257
NAILS	NO. REQD	POUNDS
6d(2")	64	1/2
10d (3")	216	3-1/2
20d (4")	96	3-1/2
1-1/4" STEEL STRAPPING - - 480' REQD - - - 68-3/4 LBS		
SEAL FOR 1-1/4" STRAPPING - 48 REQD - - - 2-1/4 LBS		
CHAIN, BINDING, 5/16" - - 192' REQD - - - 230-1/2 LBS		
LOAD BINDER - - - - - 8 REQD - - - - 48 LBS		
WIRE, .0800" DIAMETER - - - 12' REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-80/E	32	37,568 LBS
DUNNAGE		971 LBS
TOTAL WEIGHT		38,539 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (TRIPLED) (5 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 12". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 12". SEE GENERAL NOTE "M" ON PAGE 2.
- ② SEPARATOR GATE (4 REQD). SEE THE DETAIL ON PAGE 5. WIRE TIE TO A LIFTING BAR ON THE CONTAINER.
- ③ SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (16 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 22'-0" LONG STEEL STRAPPING (16 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑤ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 16'-0" LONG STEEL STRAPPING (8 REQD). INSTALL TO ENIRCLE THE TOP TWO LATERALLY ADJACENT CONTAINERS AS SHOWN.
- ⑥ SEAL FOR 1-1/4" STRAPPING (48 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2.
- ⑦ WEB STRAP ASSEMBLY (8 REQD). POSITION TO EXTEND FROM A WINCH ON ONE SIDE OF THE TRAILER, OVER THE CONTAINERS, TO AN ATTACHMENT POINT ON THE OPPOSITE SIDE. SEE THE "SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN" ON PAGE 11.
- ⑧ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.

SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN

LADING MAY BE SECURED TO A FLATBED TRAILER BY WEB STRAP ASSEMBLIES IN LIEU OF STEEL STRAPPING OR CHAINS AND LOAD BINDERS, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. ONLY WEB STRAPS OF GOOD QUALITY WILL BE USED. ALL WEB STRAPS AND ASSOCIATED HARDWARE SHALL CONFORM TO THE WEB SLING & TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.
2. ALL WEB STRAP TIEDOWN ASSEMBLIES SHALL BE PERMANENTLY LABELED WITHIN 18" OF ONE END TO SHOW:
 - A. NAME OR TRADEMARK OF MANUFACTURER
 - B. WORKING LOAD LIMIT (WLL)
 - C. DATE OF MANUFACTURE (MONTH AND YEAR)
3. WEB STRAP ASSEMBLY MINIMUM BREAKING STRENGTH WILL BE AT LEAST THREE TIMES THE WLL MARKED ON THE STRAP.
4. THE TOTAL MINIMUM BREAKING STRENGTH (MBS) OF THE STRAPS USED TO RESTRAIN AMMUNITION ITEMS WILL BE AT LEAST 1-1/2 TIMES THE TOTAL WEIGHT OF THE ITEMS, WITH A MINIMUM OF TWO STRAPS POSITIONED OVER EACH LOAD UNIT ON A TRAILER. WRITTEN PROOF OF THE MBS OF THE STRAPS SHALL BE PROVIDED BY THE CARRIER TO THE SHIPPING ACTIVITY IF REQUESTED.
5. CARRIERS MUST COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS APPLICABLE TO CARGO RESTRAINT USING WEB STRAPS.
6. WHEN USING STRAPS AND WINCHES FOR CARGO RESTRAINT, THE STRAPS WILL BE TENSIONED UNTIL TIGHT WITHOUT CAUSING DAMAGE TO THE CARGO. ONLY WINCH BARS WILL BE USED FOR OPERATING THE STRAP WINCHES.
7. BEFORE AND DURING INSTALLATION, THE WEB STRAP ASSEMBLIES SHALL BE INSPECTED FOR DEFECTS. STRAPS HAVING ANY OF THE FOLLOWING DEFECTS WILL NOT BE USED FOR THE RESTRAINT OF ANY AMMUNITION LOAD, WITH THE EXCEPTION OF ONE WITH FRAYED ENDS. A STRAP HAVING FRAYED ENDS CAN BE USED IF THE FRAYED END IS TRIMMED AND MELTED WITH HEAT OR FLAME UNTIL ALL STRANDS ARE SEIZED.
 - A. STRAP ASSEMBLY HARDWARE: SHALL BE INSPECTED FOR BENT HOOKS, GOUGES, CORROSION, SIGNS OF REPAIR, BENT RATCHETS OR WINCHES, WEAR, OR ANY OTHER NOTICEABLE DEFECTS.
 - B. STRAP WEBBING: SHALL BE INSPECTED FOR KNOTS, EXCESSIVE ABRASIVE WEAR, TEARS, PUNCTURES, CUTS, ACID OR CAUSTIC BURNS, BROKEN STITCHES, FRAYED ENDS, OIL OR GREASE SPOTS EXCEEDING 6 SQUARE INCHES, BLEACHING OF COLOR, INCREASED STIFFNESS, SPLICES, VISIBLE WEAR INDICATOR THREADS, OR ANY OTHER NOTICEABLE DEFECTS.
8. RATCHET HANDLES MUST BE IN THE LOCKED POSITION AND/OR WINCH LOCKING DEVICES MUST BE FULLY SEATED IN THE TEETH OF THE WINCH.
9. IF THE WINCHES BEING USED ARE THE REMOVABLE TYPE HAVING BOLTS FOR ATTACHMENT TO THE TRAILER, CARE MUST BE EXERCISED WHEN ATTACHING THE WINCHES TO THE TRAILER. IF EXCESSIVE FORCE IS EXERTED ON THE BOLT DURING TENSIONING, DEFORMATION OF THE WINCH BRACKET MAY OCCUR, AND SUBSEQUENTLY CAUSE FAILURE OF THE WINCH BRACKET DURING TRANSPORT. WINCHES MUST BE FASTENED TO THE TRAILER WITH A MINIMUM OF TWO BOLTS.

SPECIAL NOTES:

1. A 32-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. LONGER OR WIDER TRAILERS MAY BE USED.
2. THE DEPICTED LOAD MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED. A LOAD MAY BE REDUCED IN MULTIPLES OF TWO CONTAINERS OF ENTIRE LOAD UNITS OF EIGHT CONTAINERS.

(SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN CONTINUED)

10. DRIVERS MUST BE INSTRUCTED TO PERIODICALLY CHECK THE TIGHTNESS OF THE WEB STRAP ASSEMBLIES AND RE-TIGHTEN, IF NECESSARY.
11. IF PROVIDED ON OR WITH THE WEB STRAP ASSEMBLIES, SCUFF SLEEVES/WEB PROTECTORS WILL BE USED WHEREVER THE STRAP PASSES OVER A SHARP CORNER OR IRREGULAR SURFACE. IF NOT PROVIDED, ANTI-CHAFING MATERIAL OF A SUITABLE THICKNESS WILL BE USED TO INSURE THAT THE STRAP WEBBING IS NOT DAMAGED DURING TRANSPORT OF THE LOAD.
12. THE HARDWARE FITTING OF THE TIEDOWN ASSEMBLIES MUST BE ATTACHED TO THE TRAILER IN SUCH A MANNER THAT THEY WILL REMAIN IN PLACE IF SLACK DEVELOPS IN THE STRAP DURING TRANSPORT.

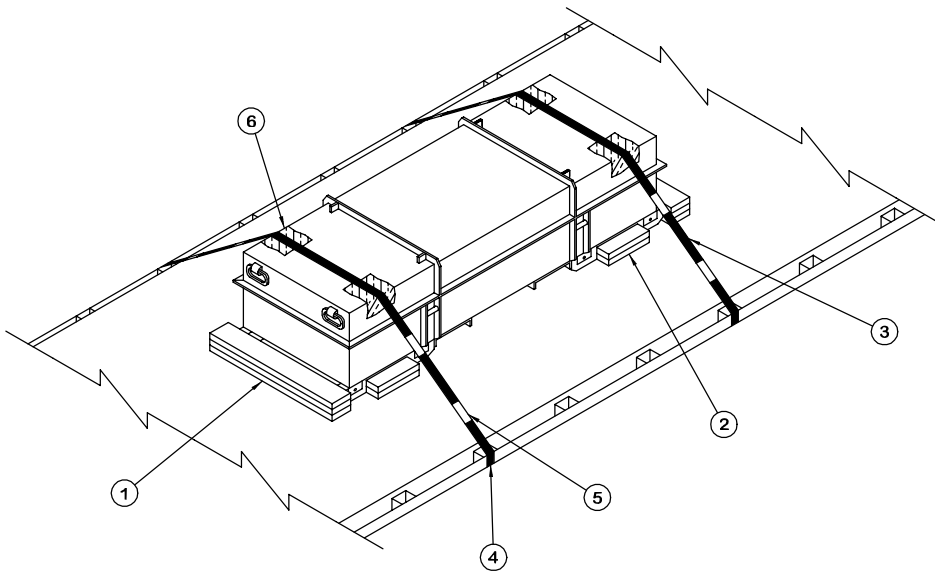
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BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	66	22
1" X 6"	56	28
2" X 6"	145	145
NAILS	NO. REQD	POUNDS
6d(2")	64	1/2
10d (3")	168	2-3/4
20d (4")	80	3
1-1/4" STEEL STRAPPING - - 480' REQD - - - 68-3/4 LBS		
SEAL FOR 1-1/4" STRAPPING - 48 REQD - - - 2-1/4 LBS		
WEB STRAP ASSEMBLIES - - - - - 8 REQD		
WIRE, .0800" DIAMETER - - - 12' REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CNU-80/E	32	37,568 LBS
DUNNAGE		468 LBS

TOTAL WEIGHT - - - - - 38,036 LBS (APPROX)



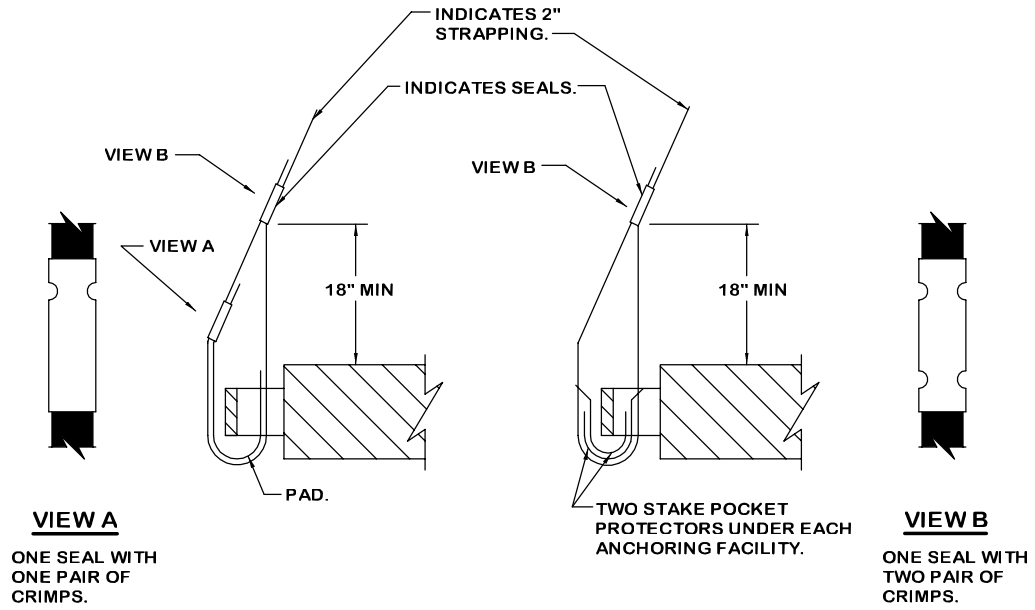
ISOMETRIC VIEW

SPECIAL NOTES:

1. A TYPICAL 1-CONTAINER LOAD IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER HAVING A NAILABLE FLOOR. OTHER WIDTH TRAILERS MAY BE USED.
2. A 2-CONTAINER LOAD MAY BE SHIPPED USING THE PROCEDURES DEPICTED ABOVE. HOWEVER, A SEPARATOR GATE, AS DETAILED ON PAGE 5, MUST BE PLACED BETWEEN LATERALLY ADJACENT CONTAINERS, AND THE LENGTH OF THE HEADER, PIECE MARKED ①, MUST BE INCREASED.
3. CARRIER OWNED CHAINS AND LOAD BINDERS OR WEB STRAPS MAY BE USED IN LIEU OF THE SPECIFIED STEEL STRAPPING FOR HOLD-DOWN OF LTL LOADS. REFER TO PAGES 8 THROUGH 11 FOR ADDITIONAL GUIDANCE.

KEY NUMBERS

- ① HEADER, 2" X 6" X 36" (TRIPLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL EACH ADDITIONAL PIECE W/3-20d NAILS EVERY 12". SEE GENERAL NOTE "M" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ HOLD-DOWN STRAP, 2" X .050" OR .044" X 19'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM ONE PIECE OF STRAPPING. ANCHOR TO A TIEDOWN FACILITY ON ONE SIDE OF THE TRAILER, RUN IT OVER THE LOAD, PASS IT THROUGH A TIE-DOWN FACILITY ON THE OPPOSITE SIDE OF THE TRAILER, AND BRING IT BACK UP ABOVE THE TRAILER FLOOR WHERE IT CAN BE TENSIONED AND SEALED. SEE SPECIAL NOTE 3 AT LEFT.
- ④ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (4 REQD). POSITION UNDER STAKE POCKET AND SEAL TO A HOLD-DOWN STRAP MARKED ③. SEE "DETAIL A" ON PAGE 13. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 13.
- ⑤ SEAL FOR 2" STRAPPING (8 REQD, 4 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE TO SECURE THE PADS, PIECES MARKED ④.
- ⑥ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINERS.



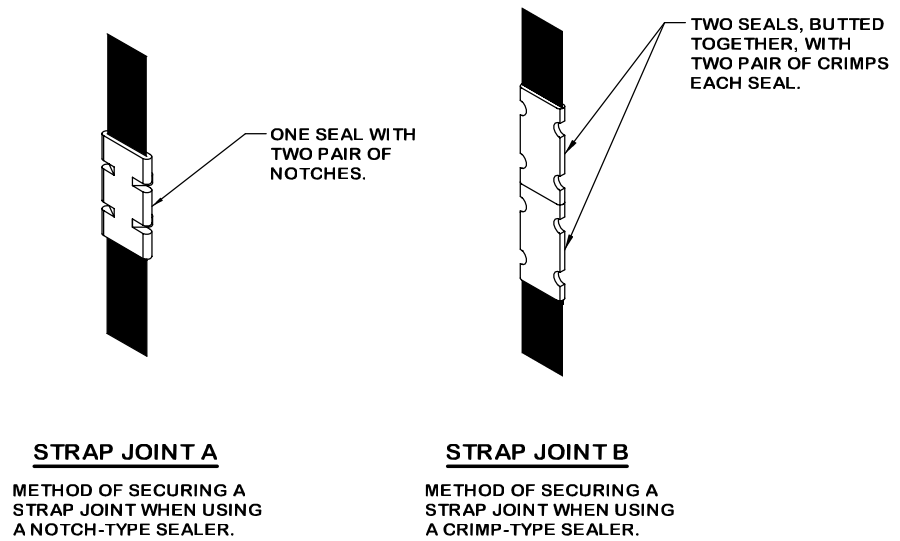
DETAIL A

METHOD OF INSTALLING 2" STRAPPING AND PAD AT ANCHORING FACILITY.

DETAIL B

METHOD OF INSTALLING 2" STRAPPING AND STAKE POCKET PROTECTORS (ALT PAD).

HOLD-DOWN STRAP ANCHORING DETAILS



END-OVER-END LAP JOINT DETAILS

**PROVISIONS FOR THE USE OF FIREHOSE IN LIEU
OF CHAIN BOARDS OR STRAPPING BOARDS**

FIRE HOSE THAT IS NO LONGER SUITABLE FOR USE IN FIRE FIGHTING APPLICATIONS CAN BE SUBSTITUTED FOR THE DOUBLED 2" BY 6" WOODEN CHAIN BOARDS OR SINGLE 2" BY 6" STRAPPING BOARDS, AS SPECIFIED HEREIN, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. SUBSTITUTION AND APPLICATION GUIDANCE

- A. FIRE HOSE MAY BE USED WHEREVER A CHAIN OR STRAPPING BOARD CONTACTS A RIGID SURFACE OF THE LOAD PROVIDED GOUGING, SCRATCHING, CRACKING, BENDING, CRUSHING, OR OTHER VISIBLE DAMAGE DOES NOT OCCUR TO THE LOAD.
- B. ONE OR MORE SEGMENTS OF FIRE HOSE MAY BE USED TO REPLACE EACH CHAIN OR STRAPPING BOARD PROVIDING LOAD PROTECTION DURING TENSIONING OF TIEDOWNS AND LOAD SHIPMENT; I.E., A CHAIN BOARD NEED NOT BE REPLACED BY A SINGLE SEGMENT OF HOSE, MULTIPLE SEGMENTS MAY BE USED INSTEAD, AS LONG AS THEY ARE SECURELY FASTENED TO THE TIEDOWN. REGARDLESS OF THE NUMBER OF SEGMENTS USED, THE HOSE LENGTH WILL BE SUCH THAT IT EXTENDS AT LEAST 6" BEYOND THE EDGE OF THE LOAD.
- C. FIRE HOSE CANNOT BE USED IN PLACE OF A PURCHASE BOARD ON A LOAD CONSISTING OF MORE THAN TWO PALLETS OR CONTAINERS ACROSS THE WIDTH OF THE TRAILER. THE FIRE HOSE CAN BE APPLIED TO THE OUTER STACKS, HOWEVER, A PURCHASE BOARD ASSEMBLY WILL STILL BE REQUIRED TO PROVIDE VERTICAL HOLD-DOWN ON THE CENTER STACK(S).

2. ACCEPTABLE FIRE HOSE

- A. FIRE HOSE TO BE USED WILL BE A RUBBER LINED SINGLE OR DOUBLE JACKETED TYPE; I.E., IT MUST HAVE A RUBBER LINING INSIDE A SINGLE OR DOUBLED FABRIC (COTTON, LINEN, ETC.) JACKET.
- B. THE COLLAPSED WIDTH OF THE HOSE MUST BE A MINIMUM OF 2-1/2".
- C. THE HOSE SEGMENTS USED MUST NOT CONTAIN DEFECTS THAT WILL ALLOW DIRECT CONTACT OF THE CHAIN OR LOAD BINDER WITH THE LOAD. THE HOSE THICKNESS MUST ALSO BE OF SUCH A THICKNESS THAT DENTING OR DAMAGE TO THE LOAD DOES NOT OCCUR DURING CHAIN OR STRAP TENSIONING.

3. SECUREMENT TO CHAINS OR STRAPS

- A. THE SEGMENTS OF HOSE USED UNDER EACH CHAIN OR STRAP WILL BE SECURED TO THE CHAIN OR STRAP WITH ONE FASTENER EVERY 12", WITH A MINIMUM OF TWO FASTENERS REQUIRED PER HOSE SEGMENT.
- B. FASTENERS CAN CONSIST OF PLASTIC ELECTRICAL TIES, NO. 14 GAGE WIRE, OR TAPE. REGARDLESS OF THE TYPE OF FASTENING USED, IT MUST PROVIDE A POSITIVE MEANS OF SECUREMENT OF THE HOSE TO THE CHAIN OR STRAP AND MUST NOT DAMAGE THE SURFACE OF THE CONTAINER, PALLET, OR ITEM IT CONTACTS.