



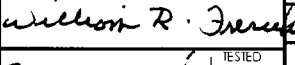

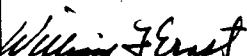
LOADING AND BRACING (TL & LTL) ON FLATBED TRAILERS[⊕] OF MAVERICK (AGM-65) MISSILES PACKED IN CNU-263/E SHIPPING AND STORAGE CONTAINERS

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

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND 	ENGINEER	BASIC		DO NOT SCALE			
		REV.	MICHAEL SARDONE	WEBSITE: HTTP://WWW.DAC.ARMY.MIL			
	TECHNICIAN	BASIC	RALPH ARNOLD	MAY 1995			
		REV.					
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND 	DRAFTSMAN	BASIC	SONJA WILSON	REVISION NO. 2	JULY 1997		
		REV.		SEE THE REVISION LISTING ON PAGE 2			
	TRANSPORTATION ENGINEERING DIVISION			CLASS	DIVISION	DRAWING	FILE
VALIDATION ENGINEERING DIVISION			19	48	8515	SP11K6	
LOGISTICS ENGINEERING OFFICE							

PROJECT SP 217-92

GENERAL NOTES

- 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 HEREIN ARE APPLICABLE TO THE MAVERICK MISSILE PACKED IN THE CNU-263/E CONTAINER. SEE THE CONTAINER STACK DETAIL ON PAGE 3. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE CNU-263/E CONTAINER WITH CONTENTS.
- C. THE LOADS AS SHOWN HEREIN ARE BASED ON 40'-0" LONG BY 8'-0" WIDE AND 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILERS. TRAILERS OF OTHER LENGTHS 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.
- D. 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.
- 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.
- F. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS.
- G. 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.
- H. CAUTION: REGARDLESS OF THE TYPE OF TRAILER INVOLVED, ONLY THOSE TRAILERS HAVING TIE-DOWN 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 TRAILER ANCHOR DEVICES ARE NOT PROPERLY POSITIONED TO RECEIVE TWO INCH STRAPPING OR CHAINS, AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIE-DOWN STRAPS OR CHAINS, THE 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 ON ALL SHARP EDGES. THE CHAINS AND/OR WEB STRAPS WILL NOT BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

- LUMBER -----: SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS -----: FED SPEC FF-N-105; COMMON.
- STRAP, WEB -----: WEB SLING AND TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.
- 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.
- STAPLE, STRAP -----: COMMERCIAL GRADE.
- STAKE
POCKET PROTECTOR --: COMMERCIAL GRADE.
- CHAIN -----: NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
- LOAD BINDER -----: FED SPEC GGG-B-325.

(GENERAL NOTES CONTINUED)

- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- K. 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 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 ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- 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 "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.
- M. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED. THE APPROVED METHODS SHOWN HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- N. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.
- O. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.

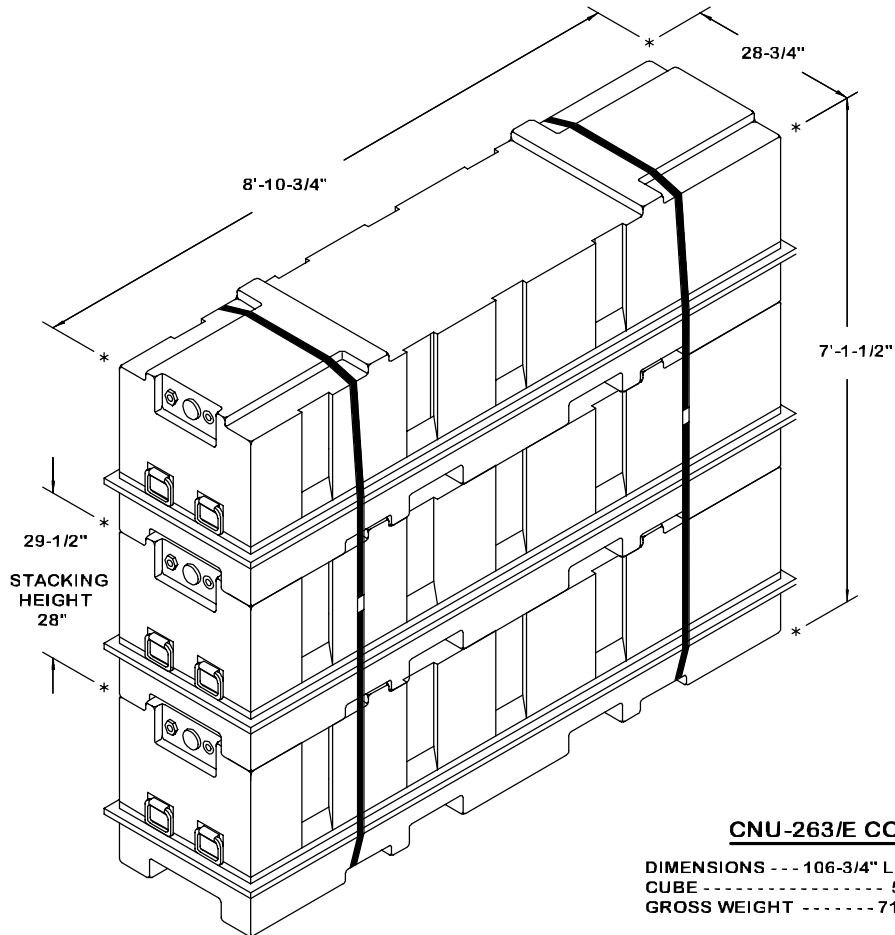
REVISIONS

REVISION NO. 1, DATED FEBRUARY 1997, CONSISTS OF:

1. ADDING WEB STRAP TIEDOWN METHOD.
2. INCLUDING PROVISIONS FOR THE USE OF FIRE HOSE.
3. UPDATING DRAWING FORMAT.

REVISION NO. 2, DATED JULY 1997, CONSISTS OF:

INCLUDING SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN.



CNU-263/E CONTAINER

DIMENSIONS --- 106-3/4" L X 28-3/4" W X 29-1/2" H
 CUBE ----- 52.4 CU FT (APPROX)
 GROSS WEIGHT ----- 710 POUNDS (APPROX)

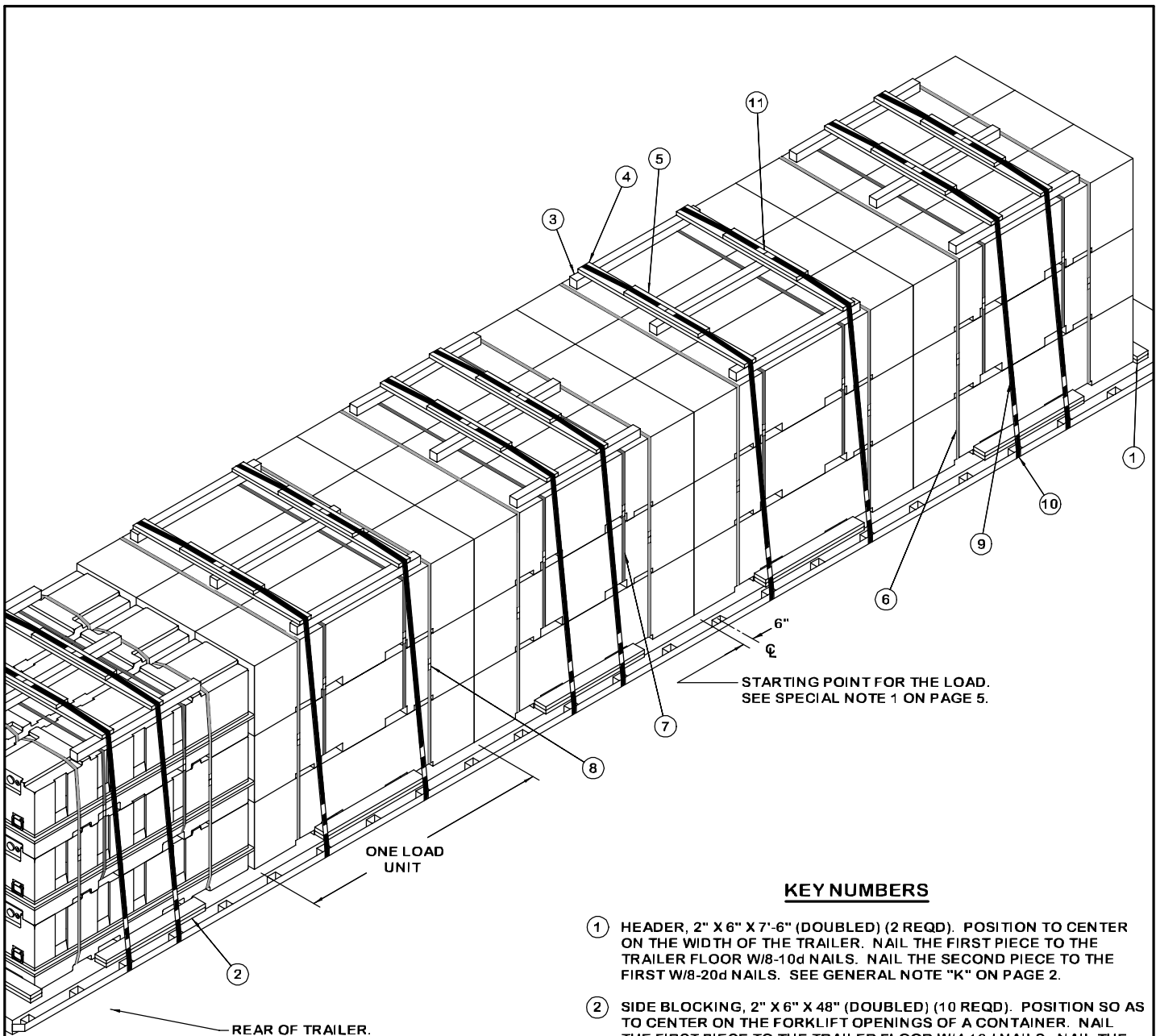
CONTAINER STACK DETAIL

UNITIZATION PROCEDURES:

1. WHEN STACKING CONTAINERS FOR UNITIZING, PLACE THE UPPER CONTAINER DIRECTLY ON TOP OF THE LOWER CONTAINER.
2. INSTALLATION OF 1-1/4" X .035" OR .031" UNITIZING STRAPS. SEE GENERAL NOTE "L" ON PAGE 2.
 - A. POSITION STRAPS TO ENCIRCLE THE CONTAINERS NEAR THE ENDS AS SHOWN IN THE ISOMETRIC VIEW AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS; I.E., VERTICAL ALONG THE SIDES AND FLAT ACROSS THE TOP AND BOTTOM OF THE STACK.
 - B. THE STRAPPING WILL BE FIRMLY TENSIONED BUT NOT SO MUCH AS TO DAMAGE THE CONTAINERS. EACH END-OVER-END LAP JOINT WILL BE SEALED WITH ONE SEAL WITH TWO PAIR OF NOTCHES PER SEAL, AS SHOWN IN THE "STRAP JOINT A" DETAIL ON PAGE 12. THE LAP JOINT WILL BE MADE ALONG THE SIDE OF THE STACK. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEAL. SEE GENERAL NOTE "L" ON PAGE 2.

CONTAINER OR CONTAINER STACK HANDLING:

1. APPROVED MATERIAL HANDLING EQUIPMENT (FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, SPREADER BARS, ETC.) IS SPECIFIED ELSEWHERE.
2. PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.
 - A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.
 - B. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION AS MUCH AS POSSIBLE. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A CONTAINER, TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD.
 - C. IF A CONTAINER OR A STACK OF CONTAINERS IS HANDLED BY SLINGING, THE SLING MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWER CONTAINER.



ISOMETRIC VIEW

REAR OF TRAILER.

ONE LOAD UNIT

6"
 STARTING POINT FOR THE LOAD.
 SEE SPECIAL NOTE 1 ON PAGE 5.

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (DOUBLED) (2 REQD). POSITION TO CENTER ON THE WIDTH OF THE TRAILER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS. SEE GENERAL NOTE "K" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 48" (DOUBLED) (10 REQD). POSITION SO AS TO CENTER ON THE FORKLIFT OPENINGS OF A CONTAINER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 4 ON PAGE 5.
- ③ SUPPORT PIECE, 4" X 4" X 60" (15 REQD). POSITION AT THE OUTER EDGES OF THE CONTAINER AND/OR ON THE CENTER OF THE MIDDLE ROW AND POSITION LONGITUDINALLY SO AS TO CENTER ON THE SKID STOP PIECES AS SHOWN.
- ④ STRAPPING BOARD, 2" X 6" X 6'-9" (10 REQD). POSITION TO ALIGN WITH STAKE POCKETS. NAIL TO THE SUPPORT PIECES, PIECES MARKED ③, W/3-10d NAILS AT EACH JOINT.
- ⑤ PURCHASE BOARD, 2" X 6" X 36" (10 REQD). CENTER ON THE STRAPPING BOARD, PIECE MARKED ④, AND NAIL W/3-10d NAILS.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (30 REQD). INSTALL TO UNITIZE A STACK OF THREE CONTAINERS. SEE SPECIAL NOTE 2 ON PAGE 5. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-0" LONG STEEL STRAPPING (10 REQD). INSTALL TO ENCIRCLE THE TOP TWO LAYERS OF CONTAINERS.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (80 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2 AND THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.
- ⑨ HOLD-DOWN STRAP, 2" X .050" OR .044" X 34'-0" LONG STEEL STRAPPING (10 REQD). INSTALL EACH STRAP FROM TWO 17'-0" LONG PIECES. STAPLE TO THE STRAPPING BOARD, PIECE MARKED ④, W/1 STAPLE AT EACH END AND TO THE PURCHASE BOARD, PIECE MARKED ⑤ W/2 STAPLES. SEE GENERAL NOTE "H" ON PAGE 2. CAUTION: DO NOT OVER-TENSION THE HOLD-DOWN STRAP.
- ⑩ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (20 REQD). POSITION BETWEEN THE HOLD-DOWN STRAP, PIECE MARKED ⑨, AND THE TRAILER STAKE POCKET AND SEAL TO THE HOLD-DOWN STRAP. SEE "DETAIL A" ON PAGE 10. ALT: STAKE POCKET PROTECTOR (40 REQD). USE TWO UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 12.
- ⑪ SEAL FOR 2" STEEL STRAPPING (60 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑩. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.

(KEY NUMBERS CONTINUED)

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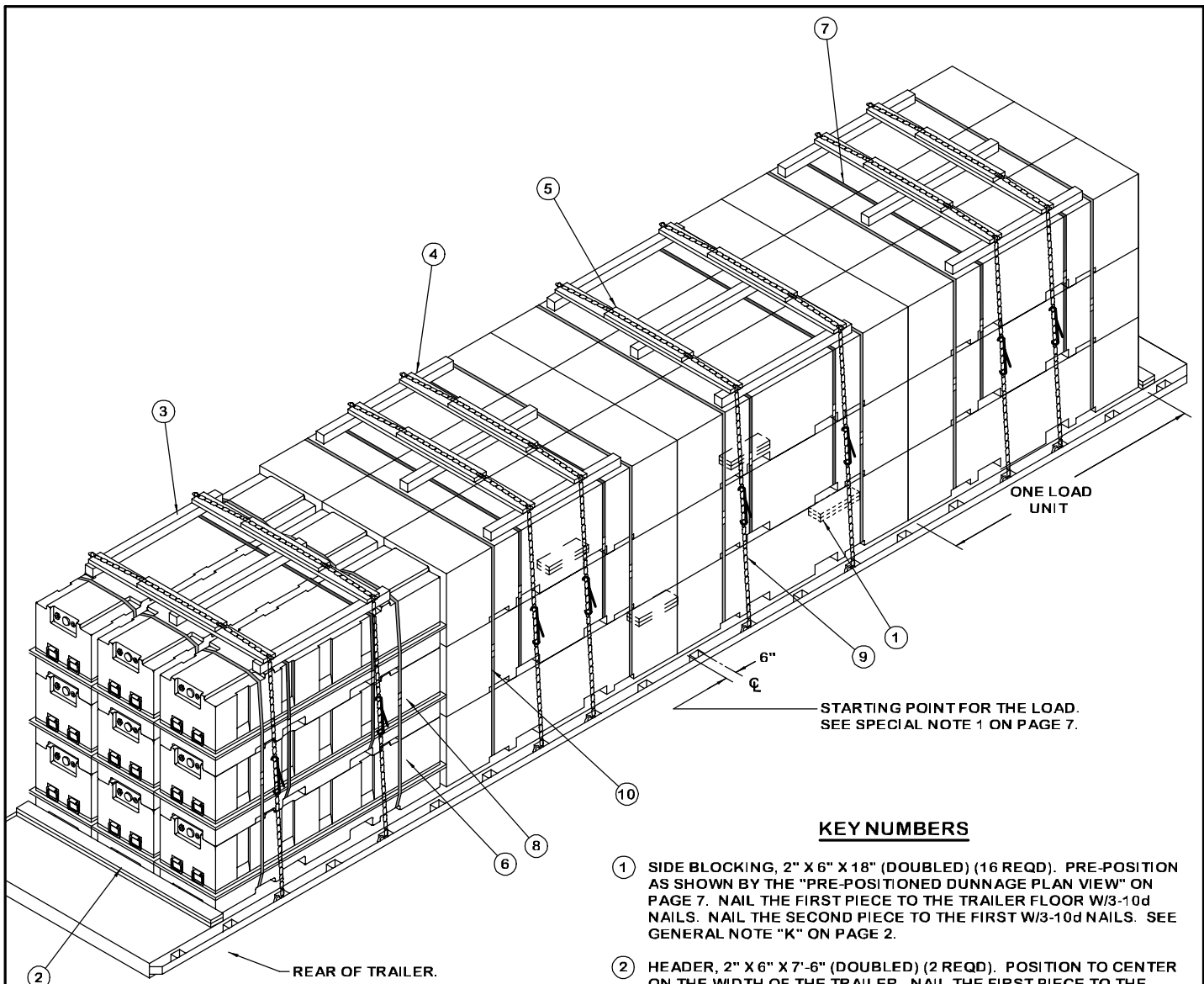
SPECIAL NOTES:

1. A 45-UNIT LOAD IS SHOWN ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. LONGER TRAILERS AND OTHER WIDTH TRAILERS MAY BE USED. BASED ON A 48-0" LONG TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 4, 7, 9, 12, 13, 16, 18, 21 AND 22, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE HOLD-DOWN STRAPS, PIECES MARKED ⑨. LOADING SHOULD BEGIN BY PLACING THE FIRST CONTAINER STACK WITH THE REAR END 6" REARWARD OF THE TENTH STAKE POCKET.
2. CONTAINERS SHOULD BE STACKED AND UNITIZED PRIOR TO BEING PLACED ON THE TRAILER. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3 FOR GUIDANCE.
3. ALL CONTAINER STACKS IN A LOAD UNIT SHOULD BE POSITIONED WITH THE "AFT" END IN THE SAME DIRECTION, EITHER ALL FORWARD OR ALL TO THE REAR, TO PROVIDE THE BEST CONTACT WITH THE SUPPORT PIECES, PIECES MARKED ③.
4. IF THE TRAILER BEING LOADED HAS A NAILABLE FLOOR WIDTH OF LESS THAN 7'-9", THE PRE-POSITIONED SIDE BLOCKING DEPICTED AS PIECE MARKED ① ON PAGE 6 MAY BE USED IN LIEU OF THE DEPICTED SIDE BLOCKING, PIECE MARKED ②.
5. IF A 45'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE REAR END OF THE STACK 6" REARWARD OF THE CENTER STAKE POCKET, POCKET NUMBER 12 ON THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 6" FROM THE FRONT, STAKE POCKETS NUMBER 5, 6, 9, 11, 14, 15, 18, AND 20, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF CHAINS, PIECES MARKED ⑨ ON PAGE 6. THE LOAD ON A 45'-0" LONG TRAILER MAY BE SHIFTED TO THE FRONT OR REAR, IF DESIRED. THE LOAD MAY BE MOVED FORWARD 24" OR 48", WITH A 1 OR 2 REDUCTION IN THE NUMBER OF THE STAKE POCKET TO USE. THE LOAD MAY BE MOVED TO THE REAR 24", WITH AN ADDITION OF 1 TO THE NUMBER OF THE STAKE POCKET TO USE.
6. IF A 48'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, 45 CONTAINERS CAN BE LOADED. LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE FORWARD END OF THE STACK 6" FORWARD OF THE TENTH STAKE POCKET FROM THE FRONT OF THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 4, 7, 9, 12, 13, 16, 18, 21 AND 22, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF CHAINS, PIECES MARKED ⑨ ON PAGE 6.
7. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT IN LIEU OF STEEL STRAPPING, REFER TO THE PROCEDURES ON PAGES 6 AND 7 FOR GUIDANCE. IF WEB STRAPS ARE TO BE USED FOR LOAD SECUREMENT, REFER TO THE PROCEDURES ON PAGES 8 AND 9.
8. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED. MULTIPLES OF THREE CONTAINERS CAN BE OMITTED FROM THE TOP LAYER OF ONE OR MORE LOAD UNITS, OR THE LOAD CAN BE REDUCED BY MULTIPLES OF NINE CONTAINERS BY OMITTING ONE OR MORE LOAD UNITS. THE LOAD CAN BE REDUCED BY ONE CONTAINER BY APPLYING THE "OMITTED-CONTAINER PROCEDURES" DEPICTED ON PAGE 14.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	198	198
4" X 4"	75	100
NAILS	NO. REQD	POUNDS
10d (3")	216	3-1/2
20d (4")	16	1/2
STEEL STRAPPING, 1-1/4" ----- 850' REQD ----- 122 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 80 REQD ----- 4 LBS		
STEEL STRAPPING, 2" ----- 236' REQD ----- 79 LBS		
SEAL FOR 2" STRAPPING ----- 60 REQD ----- 12 LBS		
STAPLE FOR 2" STRAPPING ----- 40 REQD ----- 3/4 LB		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	45	31,950 LBS
DUNNAGE		863 LBS
TOTAL WEIGHT		32,813 LBS (APPROX)



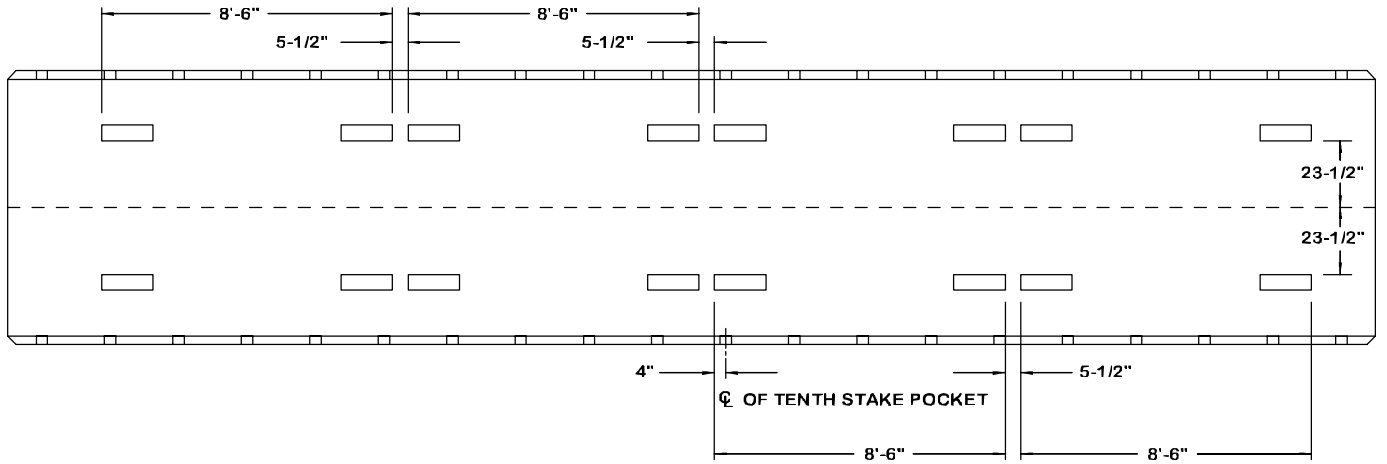
KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (16 REQD). PRE-POSITION AS SHOWN BY THE "PRE-POSITIONED DUNNAGE PLAN VIEW" ON PAGE 7. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-10d NAILS. SEE GENERAL NOTE "K" ON PAGE 2.
- ② HEADER, 2" X 6" X 7'-6" (DOUBLED) (2 REQD). POSITION TO CENTER ON THE WIDTH OF THE TRAILER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS.
- ③ SUPPORT PIECE, 4" X 4" X 60" (12 REQD). POSITION AT THE OUTER EDGES OF THE CONTAINER AND/OR ON THE CENTER OF THE MIDDLE ROW AND LONGITUDINALLY SO AS TO CENTER ON THE SKID STOP PIECES AS SHOWN.
- ④ CHAIN BOARD, 2" X 6" X 6'-9" (8 REQD). POSITION TO ALIGN WITH STAKE POCKETS. NAIL TO THE SUPPORT PIECES, PIECES MARKED ③, W/3-10d NAILS AT EACH JOINT.
- ⑤ PURCHASE BOARD, 2" X 6" X 36" (8 REQD). CENTER ON THE CHAIN BOARD, PIECE MARKED ④, AND NAIL W/3-10d NAILS.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (24 REQD). INSTALL TO UNITIZE A STACK OF THREE CONTAINERS. SEE SPECIAL NOTE 2 ON PAGE 7. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-0" LONG STEEL STRAPPING (8 REQD). INSTALL TO ENCIRCLE THE TOP TWO LAYERS OF CONTAINERS.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (64 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2 AND THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.
- ⑨ 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 TIEDOWN" ON PAGE 13.

(KEY NUMBERS CONTINUED)

- ⑩ 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 ⑨, TO THE CHAIN BOARD, PIECE MARKED ④, W/1-20d NAIL AT EACH END AND TO THE PURCHASE BOARD, PIECE MARKED ⑤, W/1-20d NAIL IN THE CENTER BY DRIVING EACH NAIL INTO THE PIECES THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.

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PRE-POSITIONED DUNNAGE PLAN VIEW

(SPECIAL NOTES CONTINUED)

- 6. IF A 48'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, 45 CONTAINERS CAN BE LOADED. LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE REAR END OF THE STACK 6" REARWARD OF THE TENTH STAKE POCKET FROM THE FRONT OF THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 4, 7, 9, 12, 13, 16, 18, 21 AND 22, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE CHAINS, PIECES MARKED ⑨.
- 7. IF STEEL STRAPPING IS TO BE USED FOR LOAD SECUREMENT IN LIEU OF THE CHAINS, REFER TO THE PROCEDURES ON PAGES 4 AND 5 FOR GUIDANCE. IF WEB STRAPS ARE TO BE USED FOR LOAD SECUREMENT, REFER TO THE PROCEDURES ON PAGES 8 AND 9.
- 8. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED. MULTIPLES OF THREE CONTAINERS CAN BE OMITTED FROM THE TOP LAYER OF ONE OR MORE LOAD UNITS, OR THE LOAD CAN BE REDUCED BY MULTIPLES OF NINE CONTAINERS BY OMITTING ONE OR MORE LOAD UNITS. THE LOAD CAN BE REDUCED BY ONE CONTAINER BY APPLYING THE "OMITTED-CONTAINER PROCEDURES" DEPICTED ON PAGE 14.

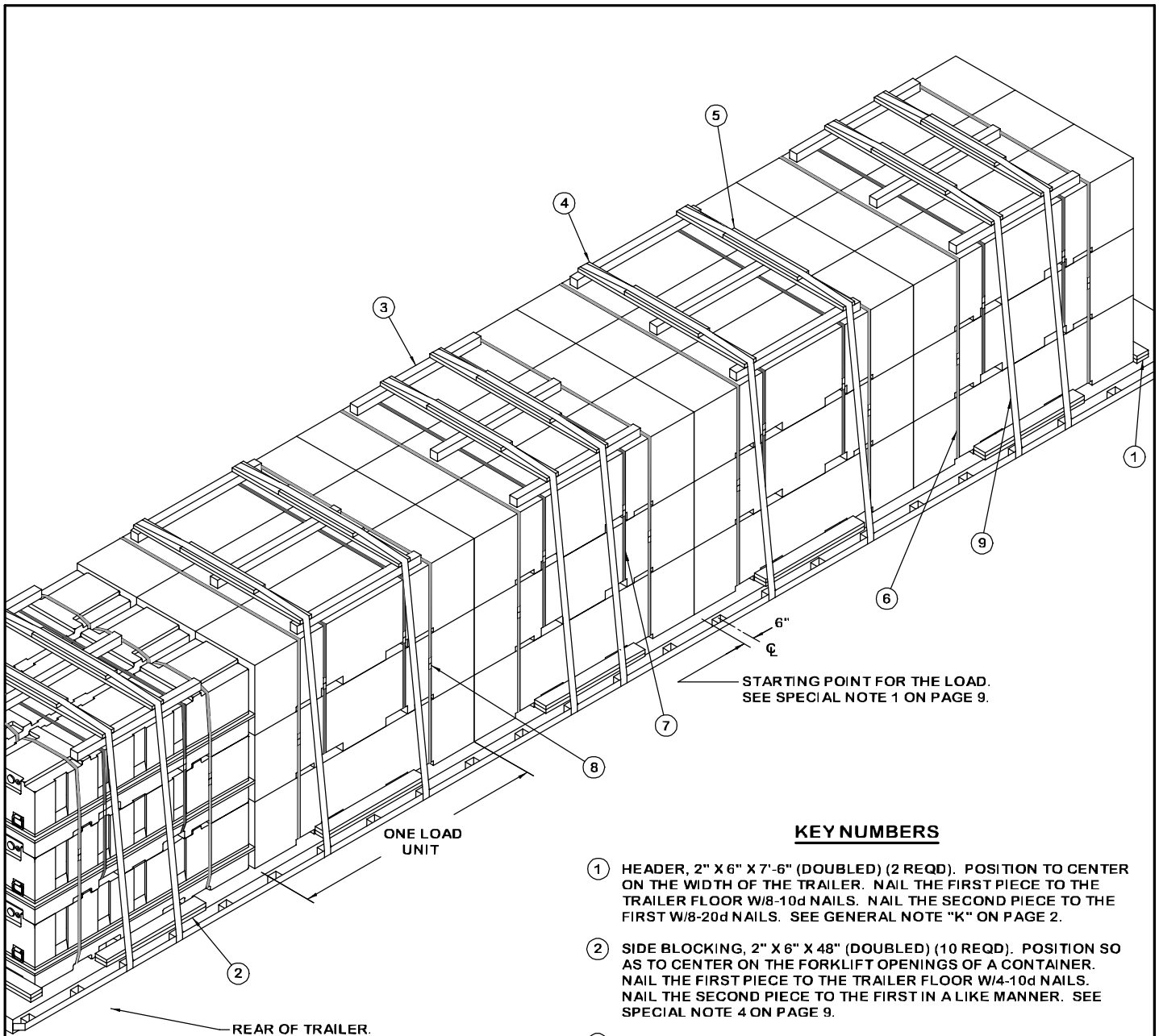
SPECIAL NOTES:

- 1. A 36-UNIT LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. LONGER TRAILERS AND OTHER WIDTH TRAILERS MAY BE USED. BASED ON A 40'-0" LONG TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 5, 8, 9, 12, 14, 17, AND 18, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE CHAINS, PIECES MARKED ⑨. LOADING SHOULD BEGIN BY PLACING THE FIRST CONTAINER STACK WITH THE REAR END OF THE STACK 6" REARWARD OF THE TENTH STAKE POCKET.
- 2. CONTAINERS SHOULD BE STACKED AND UNITIZED PRIOR TO BEING PLACED ON THE TRAILER. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3 FOR GUIDANCE.
- 3. ALL CONTAINER STACKS IN A LOAD UNIT SHOULD BE POSITIONED WITH THE "AFT" END IN THE SAME DIRECTION, EITHER ALL FORWARD OR ALL TO THE REAR, TO PROVIDE THE BEST CONTACT WITH THE SUPPORT PIECES, PIECES MARKED ③.
- 4. IF THE TRAILER BEING LOADED HAS A NAILABLE FLOOR WIDTH OF AT LEAST 7'-9", THE SIDE BLOCKING DEPICTED AS PIECE MARKED ② ON PAGE 4 MAY BE USED IN LIEU OF THE DEPICTED PRE-POSITIONED SIDE BLOCKING, PIECE MARKED ①. THIS WOULD BE 2" X 6" X 48" (DOUBLED). POSITION TO CENTER ON FORKLIFT OPENING AND NAIL W/4-10d NAILS EACH LAYER.
- 5. IF A 45'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE REAR END OF THE STACK 6" REARWARD OF THE CENTER STAKE POCKET, POCKET NUMBER 12 ON THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 6" FROM THE FRONT, STAKE POCKETS NUMBER 5, 6, 9, 11, 14, 15, 18, AND 20, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE CHAINS, PIECES MARKED ⑨. THE LOAD ON A 45'-0" LONG TRAILER MAY BE SHIFTED TO THE FRONT OR REAR, IF DESIRED. THE LOAD MAY BE MOVED FORWARD 24" OR 48", WITH A 1 OR 2 REDUCTION IN THE NUMBER OF THE STAKE POCKET TO USE. THE LOAD MAY BE MOVED TO THE REAR 24", WITH AN ADDITION OF 1 TO THE NUMBER OF THE STAKE POCKET TO USE.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	148	148
4" X 4"	60	80
NAILS	NO. REQD	POUNDS
10d (3")	208	3-1/4
20d (4")	40	1
STEEL STRAPPING, 1-1/4" ----- 680' REQD ----- 98 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 64 REQD ----- 3 LBS		
BINDING CHAIN, 5/16" ----- 220' REQD ----- 264 LBS		
LOAD BINDER, 5/16" ----- 8 REQD ----- 48 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	36	25,560 LBS
DUNNAGE		874 LBS
TOTAL WEIGHT		26,434 LBS (APPROX)



ISOMETRIC VIEW

REAR OF TRAILER.

ONE LOAD UNIT

STARTING POINT FOR THE LOAD.
SEE SPECIAL NOTE 1 ON PAGE 9.

KEY NUMBERS

- ① HEADER, 2" X 6" X 7'-6" (DOUBLED) (2 REQD). POSITION TO CENTER ON THE WIDTH OF THE TRAILER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/8-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/8-20d NAILS. SEE GENERAL NOTE "K" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 48" (DOUBLED) (10 REQD). POSITION SO AS TO CENTER ON THE FORKLIFT OPENINGS OF A CONTAINER. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 4 ON PAGE 9.
- ③ SUPPORT PIECE, 4" X 4" X 60" (15 REQD). POSITION AT THE OUTER EDGES OF THE CONTAINER AND/OR ON THE CENTER OF THE MIDDLE ROW AND POSITION LONGITUDINALLY SO AS TO CENTER ON THE SKID STOP PIECES AS SHOWN.
- ④ STRAPPING BOARD, 2" X 6" X 6'-9" (10 REQD). POSITION TO ALIGN WITH STAKE POCKETS. NAIL TO THE SUPPORT PIECES, PIECES MARKED ③, W/3-10d NAILS AT EACH JOINT.
- ⑤ PURCHASE BOARD, 2" X 6" X 36" (10 REQD). CENTER ON THE STRAPPING BOARD, PIECE MARKED ④, AND NAIL W/3-10d NAILS.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (30 REQD). INSTALL TO UNITIZE A STACK OF THREE CONTAINERS. SEE SPECIAL NOTE 2 ON PAGE 9. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-0" LONG STEEL STRAPPING (10 REQD). INSTALL TO ENIRCLE THE TOP TWO LAYERS OF CONTAINERS.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (80 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2 AND THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.
- ⑨ WEB STRAP ASSEMBLY (10 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 9.

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.

(CONTINUED AT RIGHT)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	95	95
4" X 4"	75	100
NAILS	NO. REQD	POUNDS
10d (3")	216	3-1/2
20d (4")	16	1/2
STEEL STRAPPING, 1-1/4" ----- 850' REQD ----- 122 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 80 REQD ----- 4 LBS		
WEB STRAP ASSEMBLIES ----- 10 REQD		

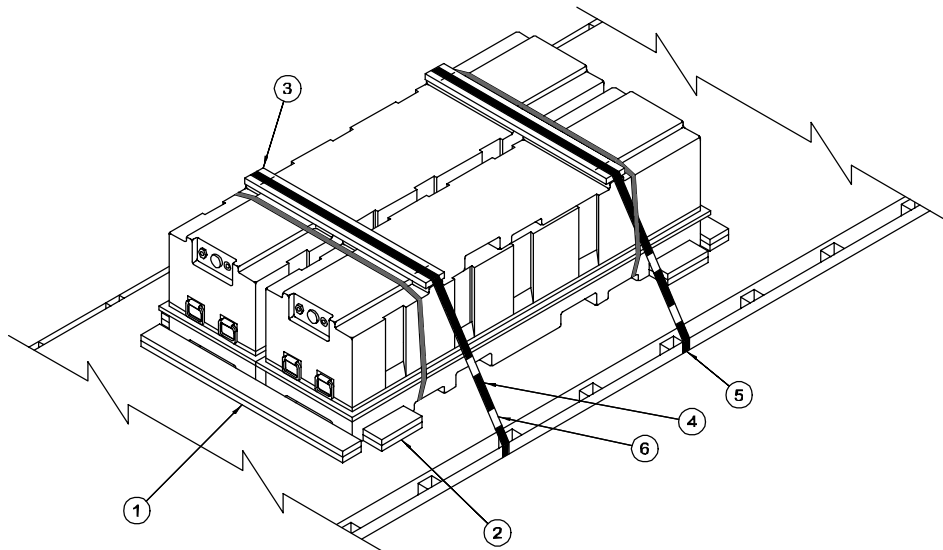
SPECIAL NOTES:

1. A 45-UNIT LOAD IS SHOWN ON A 48'-0" LONG BY 8'-6" WIDE FLATBED TRAILER. LONGER TRAILERS AND OTHER WIDTH TRAILERS MAY BE USED. BASED ON A 48-0" LONG TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 4, 7, 9, 12, 13, 16, 18, 21 AND 22, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE WEB STRAPS, PIECES MARKED ⑥. LOADING SHOULD BEGIN BY PLACING THE FIRST CONTAINER STACK WITH THE REAR END 6" REARWARD OF THE TENTH STAKE POCKET.
2. CONTAINERS SHOULD BE STACKED AND UNITIZED PRIOR TO BEING PLACED ON THE TRAILER. SEE THE "UNITIZATION PROCEDURES" ON PAGE 3 FOR GUIDANCE.
3. ALL CONTAINER STACKS IN A LOAD UNIT SHOULD BE POSITIONED WITH THE "AFT" END IN THE SAME DIRECTION, EITHER ALL FORWARD OR ALL TO THE REAR.
4. IF THE TRAILER BEING LOADED HAS A NAILABLE FLOOR WIDTH OF LESS THAN 7'-9", THE PRE-POSITIONED SIDE BLOCKING DEPICTED AS PIECE MARKED ① ON PAGE 6 MAY BE USED IN LIEU OF THE DEPICTED SIDE BLOCKING, PIECE MARKED ②.
5. IF A 45'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE REAR END OF THE STACK 6" REARWARD OF THE CENTER STAKE POCKET, POCKET NUMBER 12 ON THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 6" FROM THE FRONT, STAKE POCKETS NUMBER 5, 6, 9, 11, 14, 15, 18, AND 20, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE CHAINS, PIECES MARKED ⑨ ON PAGE 6. THE LOAD ON A 45'-0" LONG TRAILER MAY BE SHIFTED TO THE FRONT OR REAR, IF DESIRED. THE LOAD MAY BE MOVED FORWARD 24" OR 48", WITH A 1 OR 2 REDUCTION IN THE NUMBER OF THE STAKE POCKET TO USE. THE LOAD MAY BE MOVED TO THE REAR 24", WITH AN ADDITION OF 1 TO THE NUMBER OF THE STAKE POCKET TO USE.
6. IF A 48'-0" LONG TRAILER IS FURNISHED FOR A SHIPMENT, 45 CONTAINERS CAN BE LOADED. LOADING SHOULD BEGIN WITH THE FIRST CONTAINER STACK POSITIONED WITH THE FORWARD END OF THE STACK 6" FORWARD OF THE TENTH STAKE POCKET FROM THE FRONT OF THE TRAILER. BASED ON A TRAILER HAVING STAKE POCKETS SPACED 24" ON CENTER AND WITH THE FIRST STAKE POCKET AT 12" FROM THE FRONT, STAKE POCKETS NUMBER 3, 4, 7, 9, 12, 13, 16, 18, 21 AND 22, AS COUNTED FROM THE FRONT OF THE TRAILER, SHOULD BE USED FOR ATTACHMENT OF THE CHAINS, PIECES MARKED ⑨ ON PAGE 6.
7. IF STEEL STRAPPING IS TO BE USED FOR LOAD SECUREMENT IN LIEU OF THE WEB STRAPS, REFER TO THE PROCEDURES ON PAGES 4 AND 5 FOR GUIDANCE. IF CHAINS AND LOAD BINDERS ARE TO BE USED FOR LOAD SECUREMENT, REFER TO THE PROCEDURES ON PAGES 6 AND 7.
8. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED. MULTIPLES OF THREE CONTAINERS CAN BE OMITTED FROM THE TOP LAYER OF ONE OR MORE LOAD UNITS, OR THE LOAD CAN BE REDUCED BY MULTIPLES OF NINE CONTAINERS BY OMITTING ONE OR MORE LOAD UNITS. THE LOAD CAN BE REDUCED BY ONE CONTAINER BY APPLYING THE "OMITTED-CONTAINER PROCEDURES" DEPICTED ON PAGE 14.

(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.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER -----	45 -----	31,950 LBS
DUNNAGE -----		716 LBS
TOTAL WEIGHT -----		32,666 LBS (APPROX)



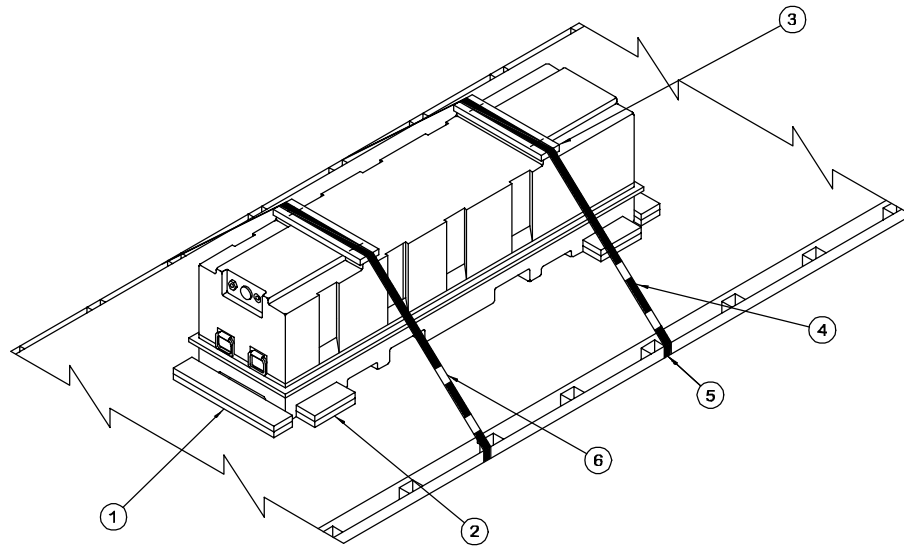
ISOMETRIC VIEW

SPECIAL NOTES:

1. A 2-UNIT LOAD IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER. OTHER WIDTH TRAILERS CAN BE USED.
2. THE CONTAINERS SHOULD BE LOCATED ON THE TRAILER SO THAT THE HOLD-DOWN STRAPS WILL PASS OVER THE CONTAINERS IN THE AREA OF THE CONTAINER SKID STOPS.
3. CHAINS AND LOAD BINDERS CAN BE USED FOR LOAD SECUREMENT IN LIEU OF THE STEEL STRAPPING, IF DESIRED. SEE THE PROCEDURES ON PAGES 6 AND 7 FOR GUIDANCE. NOTE THAT THE STRAPPING BOARDS, PIECES MARKED ③, MUST BE DOUBLED WHEN CHAINS ARE USED. LAMINATE THE BOARDS W/4-10d NAILS.
4. WEB STRAPS CAN ALSO BE USED FOR LOAD SECUREMENT IN LIEU OF STEEL STRAPPING, IF DESIRED. SEE THE PROCEDURES ON PAGES 8 AND 9 FOR GUIDANCE.

KEY NUMBERS

- ① HEADER, 2" X 6" X 60" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS. SEE GENERAL NOTE "K" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (4 REQD). POSITION AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/2-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ STRAPPING BOARD, 2" X 6" X 54" (2 REQD). SEE SPECIAL NOTE 3 AT LEFT.
- ④ 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 A STRAP TO A TIE-DOWN 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. STAPLE TO A STRAPPING BOARD, PIECE MARKED ③, W/1 STAPLE AT EACH END.
- ⑤ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (4 REQD). POSITION UNDER STAKE POCKET OR RUB RAIL AND SEAL TO HOLD-DOWN STRAP, PIECE MARKED ④. SEE "DETAIL A" ON PAGE 12. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 12.
- ⑥ SEAL FOR 2" STEEL STRAPPING (8 REQD, 4 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.



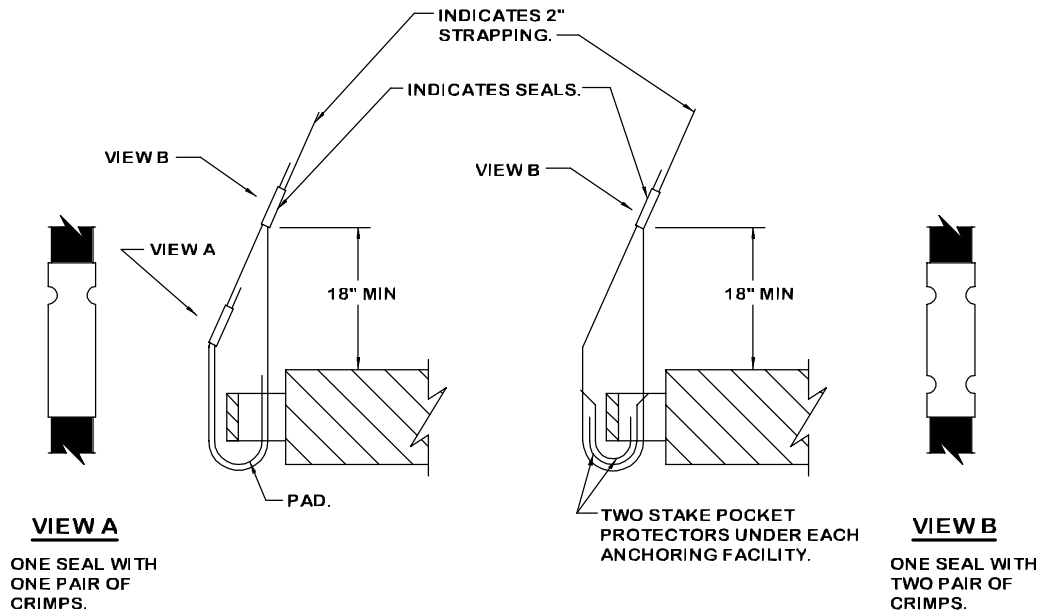
ISOMETRIC VIEW

SPECIAL NOTES:

1. A 1-UNIT LOAD IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER. OTHER WIDTH TRAILERS CAN BE USED.
2. THE CONTAINERS SHOULD BE LOCATED ON THE TRAILER SO THAT THE HOLD-DOWN STRAPS WILL PASS OVER THE CONTAINER IN THE AREA OF THE CONTAINER SKID STOPS.
3. CHAINS AND LOAD BINDERS CAN BE USED FOR LOAD SECUREMENT IN LIEU OF THE STEEL STRAPPING, IF DESIRED. SEE THE PROCEDURES ON PAGES 6 AND 7 FOR GUIDANCE. NOTE THAT THE STRAPPING BOARDS, PIECES MARKED ③, MUST BE DOUBLED WHEN CHAINS ARE USED. LAMINATE THE BOARDS W/3-10d NAILS.
4. WEB STRAPS CAN ALSO BE USED FOR LOAD SECUREMENT IN LIEU OF STEEL STRAPPING, IF DESIRED. SEE THE PROCEDURES ON PAGES 8 AND 9 FOR GUIDANCE.

KEY NUMBERS

- ① HEADER, 2" X 6" X 30" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS. SEE GENERAL NOTE "K" ON PAGE 2.
- ② SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (4 REQD). POSITION AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/2-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ③ STRAPPING BOARD, 2" X 6" X 26" (2 REQD). SEE SPECIAL NOTE 3 AT LEFT.
- ④ HOLD-DOWN STRAP, 2" X .050" OR .044" X 18'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM ONE PIECE OF STRAPPING. ANCHOR A STRAP TO A TIE-DOWN 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. STAPLE TO A STRAPPING BOARD, PIECE MARKED ③, W/1 STAPLE AT EACH END.
- ⑤ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (4 REQD). POSITION UNDER STAKE POCKET OR RUB RAIL AND SEAL TO HOLD-DOWN STRAP, PIECE MARKED ④. SEE "DETAIL A" ON PAGE 12. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 12.
- ⑥ SEAL FOR 2" STEEL STRAPPING (8 REQD, 4 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑤.



VIEW A

ONE SEAL WITH ONE PAIR OF CRIMPS.

DETAIL A

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

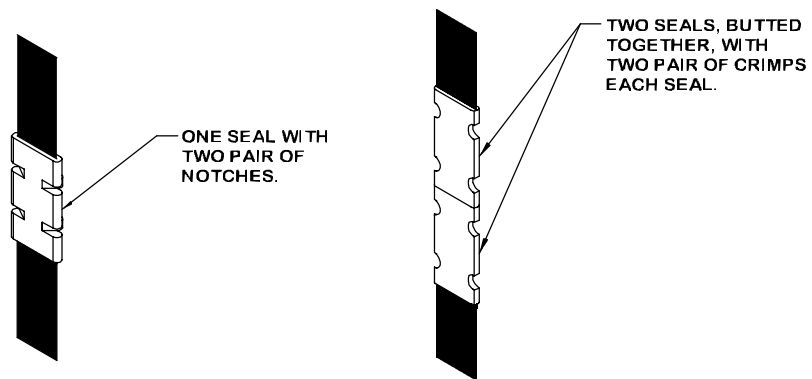
DETAIL B

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

VIEW B

ONE SEAL WITH TWO PAIR OF CRIMPS.

HOLD-DOWN STRAP ANCHORING DETAILS



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

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 2" BY 6" WOODEN CHAIN BOARDS OR 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.

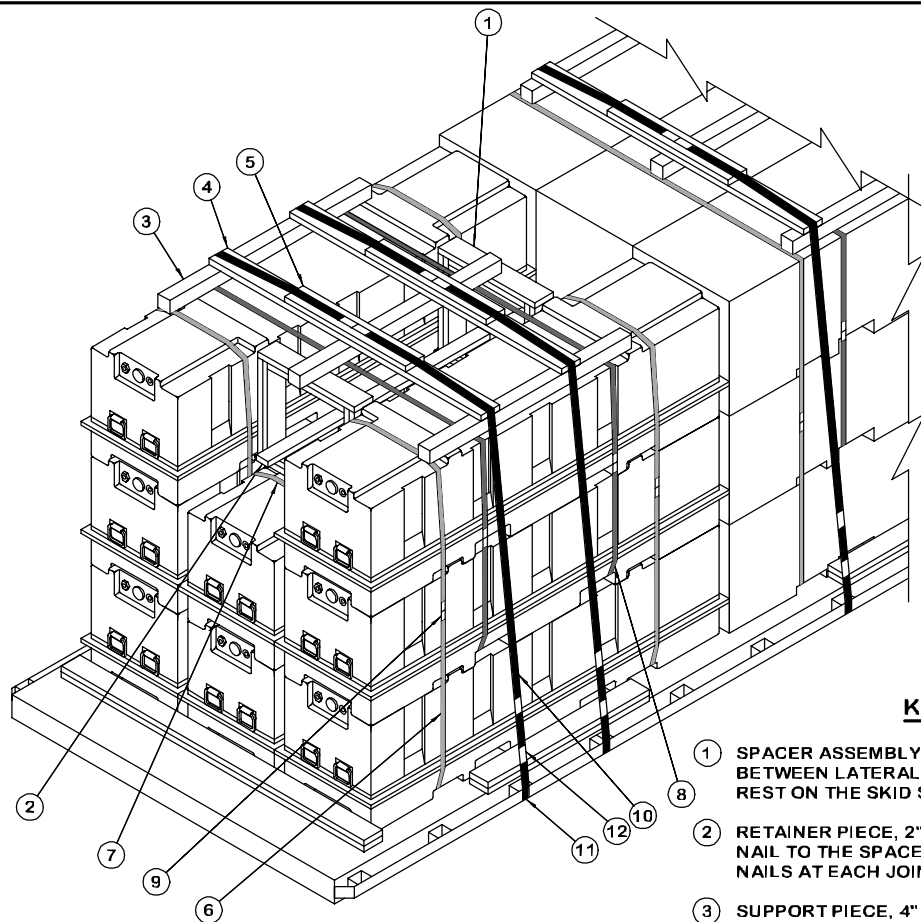
3. SECUREMENT TO CHAINS OR STRAPS

- 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.

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 AND THE PROCEDURES CONTAINED ON PAGES 6 AND 7 ARE FOLLOWED.

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.
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.



ISOMETRIC VIEW

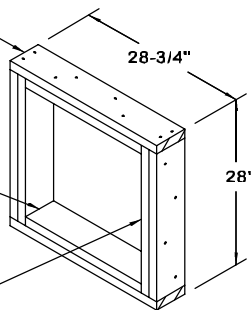
KEY NUMBERS

- ① SPACER ASSEMBLY (2 REQD). SEE THE DETAIL AT LEFT. POSITION BETWEEN LATERALLY ADJACENT CONTAINERS AND SO AS TO REST ON THE SKID STOP AREA OF A LOWER CONTAINER.
- ② RETAINER PIECE, 2" X 4" X 66" (2 REQD). POSITION AS SHOWN AND NAIL TO THE SPACER ASSEMBLIES, PIECES MARKED ①, W/3-10d NAILS AT EACH JOINT.
- ③ SUPPORT PIECE, 4" X 4" X 60" (3 REQD). POSITION AT THE OUTER EDGES OF THE CONTAINERS AND/OR ON THE CENTER OF THE SPACER ASSEMBLY AND, AS APPLICABLE, POSITION LONGITUDINALLY SO AS TO CENTER ON THE SKID STOP PIECES, AS SHOWN. TOENAIL THE CENTER SUPPORT PIECE TO EACH SPACER ASSEMBLY, PIECE MARKED ①, W/2-16d NAILS AT EACH SIDE.
- ④ STRAPPING BOARD, 2" X 6" X 6'-9" (2 REQD). POSITION TO ALIGN WITH STAKE POCKETS. NAIL TO THE SUPPORT PIECES, PIECES MARKED ③, W/3-10d NAILS AT EACH JOINT.
- ⑤ PURCHASE BOARD, 2" X 6" X 36" (2 REQD). CENTER ON THE STRAPPING BOARD, PIECE MARKED ④, AND NAIL W/3-10d NAILS.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 20'-0" LONG STEEL STRAPPING (4 REQD). INSTALL TO UNITIZE A STACK OF THREE CONTAINERS.
- ⑦ UNITIZING STRAP, 1-1/4" X .035" OR .031" X 15'-6" LONG STEEL STRAPPING (2 REQD). INSTALL TO UNITIZE THE STACK OF TWO CONTAINERS.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 25'-0" LONG STEEL STRAPPING (2 REQD). INSTALL TO ENIRCLE THE TOP TWO LAYERS OF CONTAINERS.
- ⑨ SEAL FOR 1-1/4" STEEL STRAPPING (16 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL.
- ⑩ HOLD-DOWN STRAP, 2" X .050" OR .044" X 34'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM TWO 17'-0" LONG PIECES. STAPLE TO THE STRAPPING BOARD, PIECE MARKED ④, W/1 STAPLE AT EACH END AND TO THE PURCHASE BOARD, PIECE MARKED ⑤, W/2 STAPLES. SEE GENERAL NOTE "H" ON PAGE 2. CAUTION: DO NOT OVER-TENSION THE HOLD-DOWN STRAP.
- ⑪ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (4 REQD). POSITION BETWEEN THE HOLD-DOWN STRAP, PIECE MARKED ⑩, AND THE TRAILER SIDE RAIL OR STAKE POCKET AND SEAL TO THE HOLD-DOWN STRAP. SEE "DETAIL A" ON PAGE 12. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 12.
- ⑫ SEAL FOR 2" STEEL STRAPPING (12 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑪. SEE THE "END-OVER-END LAP JOINT DETAILS" ON PAGE 12.

BEARING PIECE, 2" X 6" X 28-3/4" (2 REQD). NAIL TO THE SPACER PIECE W/4-10d NAILS. NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

SPACER PIECE, 2" X 6" X 22-3/4" (2 REQD).

VERTICAL PIECE, 2" X 6" X 25" (DOUBLED) (2 REQD). LAMINATE W/4-10d NAILS.



SPACER ASSEMBLY

SPECIAL NOTES:

- 1. ONE LOAD UNIT OF CONTAINERS WITH ONE CONTAINER OMITTED IS SHOWN ON AN 8'-0" WIDE FLATBED TRAILER. OTHER WIDTH TRAILERS MAY BE USED.
- 2. THE USE OF SPACER ASSEMBLIES WITHIN A LOAD UNIT IS SHOWN TO DEPICT A METHOD OF OMITTING ONE CONTAINER FROM A LOAD. THE PROCEDURES MAY BE USED IN THE TOP LAYER OF A THREE LAYER LOAD UNIT OR IN THE TOP LAYER OF A TWO LAYER LOAD UNIT FOR THE OMISSION OF A CONTAINER. TWO SPACER ASSEMBLIES WILL NOT BE USED SIDE-BY-SIDE. ONLY ONE CONTAINER CAN BE OMITTED FROM THE TOP LAYER OF A LOAD UNIT.
- 3. ONLY THE BLOCKING AND BRACING FOR RETAINING THE CONTAINERS IN THE ONE LOAD UNIT AND FOR THE OMISSION OF A CONTAINER ARE IDENTIFIED WITHIN THE KEY NUMBERS.