

APPROVED BY
 BUREAU OF EXPLOSIVES
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 SUPERVISOR, MILITARY & INTERMODAL SERVICES
 DATE 1/24/83

LOADING AND BRACING (TL & LTL) ON SEMITRAILER, 34-TON, M872, OF ONE-TON CONTAINERS (FILLED)

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● THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENTS ON COMMERCIAL FLAT BED TRAILERS.

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CLASS	DIVISION	DRAWING	FILE		
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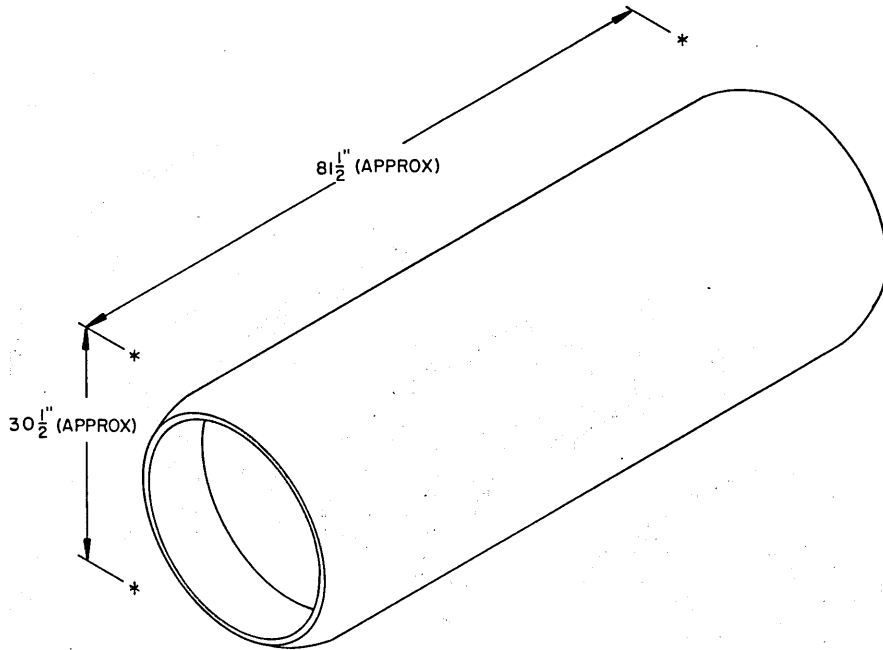
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GENERAL NOTES

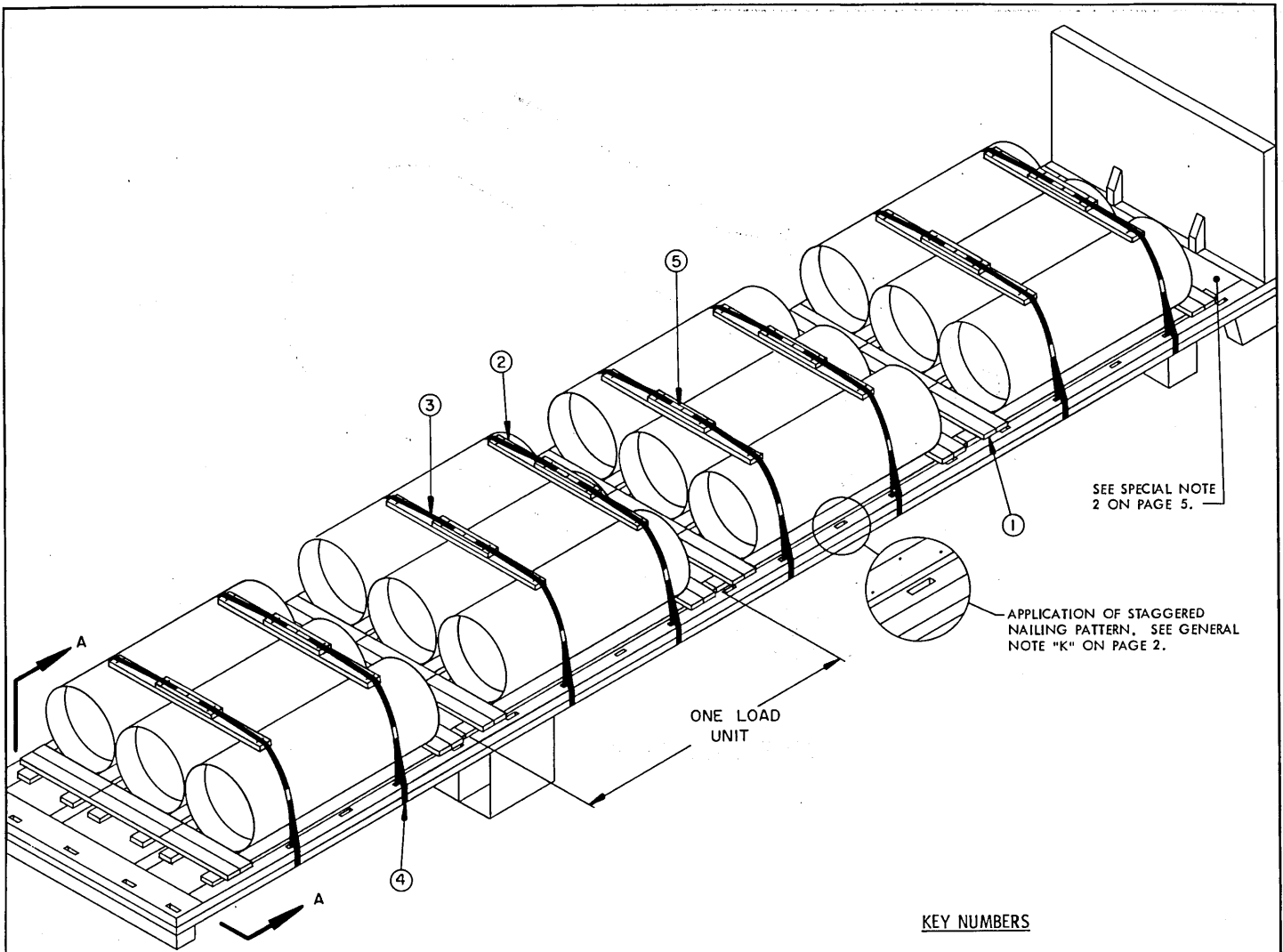
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE LOAD AS SHOWN IS BASED ON A SEMITRAILER, 34-TON, M872. HOWEVER, A COMMERCIAL FLAT BED TRAILER AT LEAST 40'-0" LONG COULD BE USED FOR SHIPMENT OF THE DEPICTED LOAD.
- C. FOR DETAIL OF THE ONE-TON CONTAINER, SEE TM 3-250 AND PAGE 3 OF THIS DRAWING.
- ITEM DIMENSIONS-----6'-9-1/2" LONG X 30-1/2" DIAMETER
GROSS WEIGHT-----3,200 LBS (APPROX)
- D. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEMS MUST COMPLY WITH AR 55-355, CHAPTER 213, 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 THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.
- F. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH THE STATE WEIGHT LAWS. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS CONTAINED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING AND STAYING OF THE DESIGNATED ITEMS.
- G. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED ONE-TON CONTAINERS WHEN THEY ARE EMPTY.
- H. WHEN A HOLD-DOWN STRAP IS SEALED AT AN END-OVER-END LAP JOINT, TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- 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. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- L. NOTICE: LADING IS NOT TO BE SECURED BY CHAINS AND/OR LOAD BINDERS IN LIEU OF THE SPECIFIED DUNNAGE.
- M. PLACARD BOARDS MUST BE PROVIDED FOR BOTH SIDES AND BOTH ENDS OF A LOAD AS REQUIRED BY LAW AND/OR REGULATION. CAUTION: PLACARD BOARDS AND BOARD MOUNTING BRACKETS MUST NOT BE NAILED TO THE LADING. LIKEWISE, IF LOAD COVERING TARPULINS ARE USED, THEY MUST NOT BE NAILED TO THE LADING.
- N. 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.
- O. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS.

MATERIAL SPECIFICATIONS

- LUMBER ----- : SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS ----- : COMMON, FED SPEC FF-N-105.
- STEEL STRAPPING ----- : CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C; FED SPEC QQ-5-781.
- SEAL, STRAP ----- : TYPE D, STYLE I, II OR IV, CLASS H; FED SPEC QQ-5-781.



ONE-TON CONTAINER DETAIL



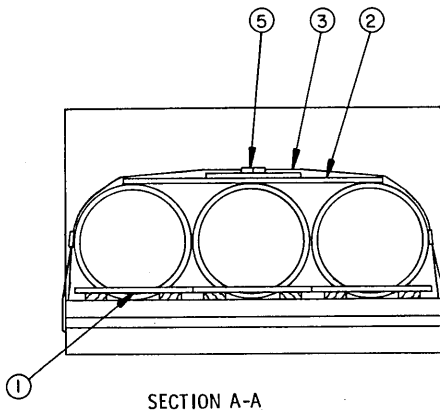
ISOMETRIC VIEW

SEE SPECIAL NOTE 2 ON PAGE 5.

APPLICATION OF STAGGERED NAILING PATTERN, SEE GENERAL NOTE "K" ON PAGE 2.

KEY NUMBERS

- ① CRADLE ASSEMBLY (12 REQD). SEE THE DETAIL ON PAGE 7. NAIL TO THE TRAILER FLOOR W/6-12d NAILS THRU EACH CHOCK PIECE OF THE ASSEMBLY. SEE GENERAL NOTE "K" ON PAGE 2 AND SPECIAL NOTE 2 ON PAGE 5.
- ② STRAPPING BOARD (8 REQD). SEE THE DETAIL ON PAGE 7. SEE SPECIAL NOTE 4 ON PAGE 5.
- ③ HOLD-DOWN STRAP, 2" X .050" X 21'-0" LONG STEEL STRAPPING (8 REQD). INSTALL EACH STRAP FROM TWO (2) 10'-6" LONG PIECES. STAPLE TO PIECE MARKED ② W/4 STAPLES. SEE GENERAL NOTE "H" ON PAGE 2 AND SPECIAL NOTE 6 ON PAGE 5.
- ④ PAD, 2" X .050" X 18" LONG STEEL STRAPPING (16 REQD). POSITION UNDER A STAKE POCKET AND SEAL TO HOLD-DOWN STRAP MARKED ③. SEE "DETAIL A" ON PAGE 7. ALT: STAKE POCKET PROTECTOR (32 REQD), USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP, SEE "DETAIL B" ON PAGE 7.
- ⑤ SEAL FOR 2" STEEL STRAPPING (48 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECE MARKED ④. SEE GENERAL NOTE "H" ON PAGE 2.



SECTION A-A

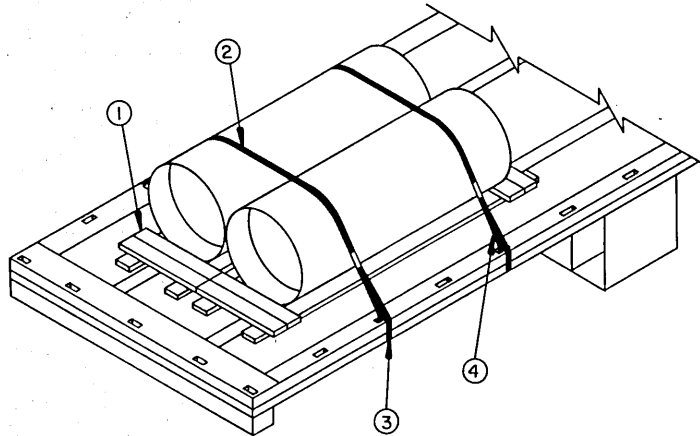
SPECIAL NOTES:

1. A 12-UNIT LOAD OF ONE-TON CONTAINERS IS SHOWN ON A 34-TON M872, SEMITRAILER. COMMERCIAL FLAT BED TRAILERS AT LEAST 40'-0" LONG CAN ALSO BE USED.
2. WHEN LOADING AN M872 TRAILER, THE FIRST CRADLE ASSEMBLY MUST BE LOCATED SO AS TO BE CENTERED ON THE WIDTH OF THE TRAILER BED AND WITH A SPACE OF SEVENTEEN INCHES (17") BETWEEN THE CRADLE AND THE FIXED BULKHEAD AT THE FRONT OF THE TRAILER TO PROPERLY ALIGN THE HOLD-DOWN STRAPS. NAILING WILL BE ACCOMPLISHED AS SPECIFIED IN KEY NUMBER ① ON PAGE 4. A CRADLE ASSEMBLY WILL BE PLACED AT EACH SIDE OF AND IN CONTACT WITH THE FIRST CRADLE AND SECURED IN A LIKE MANNER. LOAD THE REMAINING CRADLE ASSEMBLIES TOWARD THE REAR OF THE TRAILER, WITH CRADLES IN CONTACT BOTH Laterally AND LONGITUDINALLY.
3. WHEN LOADING A COMMERCIAL FLAT BED TRAILER, THE FIRST CRADLE ASSEMBLY MUST BE CENTERED ON THE WIDTH OF THE TRAILER BED AND SHOULD BE LOCATED LONGITUDINALLY SO AS TO BEST ALIGN WITH THE STAKE POCKETS (REF: 17" FROM FRONT OF A 40'-0" TRAILER). IT IS RECOMMENDED THAT STAKE POCKETS BE USED FOR ALL HOLD-DOWN STRAPS; RUB RAILS SHOULD NOT BE USED FOR ATTACHMENT OF A HOLD-DOWN STRAP. HOLD-DOWN STRAPS MUST PASS OVER THE ONE-TON CONTAINER NOT LESS THAN SEVEN INCHES (7") FROM THE END OF THE CONTAINER.
4. STRAPPING BOARDS, PIECES MARKED ②, MUST BE LOCATED SO AS TO ALIGN THE HOLD-DOWN STRAPS WITH STAKE POCKETS ON OPPOSITE SIDES OF THE TRAILER.
5. IF AN 11-UNIT LOAD IS TO BE SHIPPED, ONE CONTAINER CAN BE OMITTED FROM ONE OF THE CENTER LOAD UNITS. THE REMAINING TWO CONTAINERS IN THE LOAD UNIT MUST BE CENTERED ON THE WIDTH OF THE TRAILER. THE STRAPPING BOARDS, PIECES MARKED ②, ARE NOT REQUIRED FOR A 2-WIDE LOAD UNIT. FOR A TRAILER HAVING THE REAR TANDEM LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER), IT IS RECOMMENDED A CONTAINER BE OMITTED FROM THE SECOND LOAD UNIT FROM THE FRONT OF THE LOAD. FOR A TRAILER HAVING THE REAR TANDEM LOCATED IN OTHER THAN THE "WESTERN" POSITION, A CONTAINER MUST BE OMITTED FROM THE SECOND LOAD UNIT FROM THE REAR. ADDITIONAL CONTAINERS CAN BE OMITTED, AS DESIRED.
6. IF STRAP STAPLES ARE NOT AVAILABLE, OR IF DESIRED, TWO (2) EACH PARTIALLY-DRIVEN 16d NAILS, ONE PLACED ON EACH SIDE OF A STRAP AND BENT OVER THE STRAPPING, MAY BE SUBSTITUTED FOR EACH STRAP STAPLE. **CAUTION:** NAILS MUST NOT EXTEND THRU THE STRAPPING BOARD.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	405	405
NAILS	NO. REQD	POUNDS
10d (3")	168	2-3/4
16d (3-1/2")	288	6-1/4
STEEL STRAPPING, 2" X .050"-----192' REQD----- 64 LBS		
SEAL FOR 2" STRAPPING----- 48 REQD----- 10 LBS		
STAPLE FOR 2" STRAPPING----- 32 REQD----- NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
ONE-TON CONTAINER	12	38,400 LBS
DUNNAGE		893 LBS
TOTAL WEIGHT		39,293 LBS



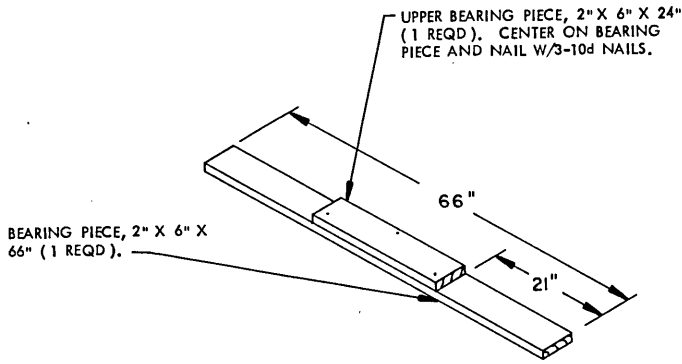
ISOMETRIC VIEW

SPECIAL NOTES:

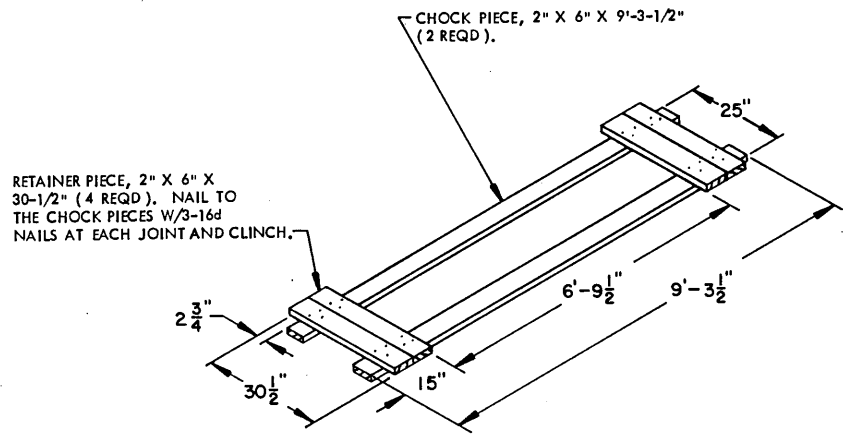
1. A 2-UNIT LOAD OF ONE-TON CONTAINERS IS SHOWN ON A 34-TON, M872, SEMITRAILER. COMMERCIAL FLAT BED TRAILERS CAN ALSO BE USED.
2. THE CRADLE ASSEMBLIES MUST BE CENTERED ON THE WIDTH OF THE TRAILER BED AND SHOULD BE LOCATED LONGITUDINALLY SO AS TO BEST ALIGN WITH THE STAKE POCKETS. IT IS RECOMMENDED THAT STAKE POCKETS BE USED FOR ALL HOLD-DOWN STRAPS; RUB RAILS SHOULD NOT BE USED FOR THE ATTACHMENT OF A HOLD-DOWN STRAP. HOLD-DOWN STRAPS MUST PASS OVER THE ONE-TON CONTAINER NOT LESS THAN SEVEN INCHES (7") FROM THE END OF THE CONTAINER.
3. SECURE A HOLD-DOWN STRAP, PIECE MARKED ②, TO A STAKE POCKET ON ONE SIDE OF THE TRAILER, PASS THE STRAP OVER THE TOP OF THE LOAD, THROUGH A STAKE POCKET ON THE OPPOSITE SIDE OF THE TRAILER, AND BACK UP ABOVE THE TRAILER FLOOR, WHERE IT CAN BE TENSIONED AND SEALED.
4. IF A 3-WIDE LOAD OF ONE-TON CONTAINERS IS TO BE SHIPPED, STRAPPING BOARDS MUST BE USED UNDER THE HOLD-DOWN STRAPS. SEE PIECE MARKED ② ON PAGE 4 FOR GUIDANCE. SECURE EACH HOLD-DOWN STRAP TO A STRAPPING BOARD WITH FOUR STAPLES.

KEY NUMBERS

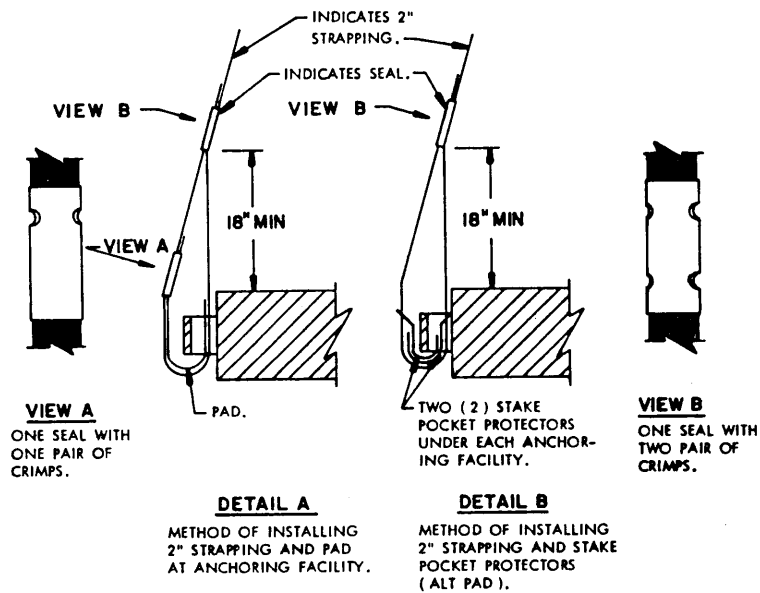
- ① CRADLE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 7. NAIL TO THE TRAILER FLOOR W/6-12d NAILS THRU EACH CHOCK PIECE OF THE ASSEMBLY. SEE GENERAL NOTE "K" ON PAGE 2 AND SPECIAL NOTE 2 AT LEFT.
- ② HOLD-DOWN STRAP, 2" X .050" X 18'-0" LONG STEEL STRAPPING (2 REQD). INSTALL FROM ONE PIECE. SEE GENERAL NOTE "H" ON PAGE 2 AND SPECIAL NOTE 3 AT LEFT.
- ③ PAD, 2" X .050" STEEL STRAP 18" LONG (4 REQD). POSITION UNDER A STAKE POCKET AND SEAL TO HOLD-DOWN STRAP MARKED ②. SEE "DETAIL A" ON PAGE 7. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO UNDER EACH STAKE POCKET WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 7.
- ④ SEAL FOR 2" STRAPPING (8 REQD, 4 PER STRAP). EXCEPT FOR THE SEALS USED TO SECURE THE PADS, PIECE MARKED ③, DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "H" ON PAGE 2.



STRAPPING BOARD
(8 REQD)



CRADLE ASSEMBLY
(12 REQD)



DETAILS

