

APPROVED BY

BUREAU OF EXPLOSIVES

*A. F. Grassmuck*  
MILITARY ASSISTANT

DATE *4/3/72*

# LANCE

## LOADING AND BRACING ON FLAT BED TRAILER FOR TRAILER-ON-FLAT-CAR (TOFC) SHIPMENT OF THE MAIN ASSEMBLAGE, XM5, PACKED IN THE XM599 CONTAINER

### INDEX

<u>ITEM</u>	<u>PAGE(S)</u>
GENERAL NOTES, AND MATERIAL SPECIFICATIONS-----	2
UNITIZATION AND HANDLING PROCEDURES-----	3
8-UNIT LOAD ON A 40'-0" LONG TRAILER-----	4, 5
PROCEDURES FOR OMITTED CONTAINER-----	6
DETAILS-----	7

REVISIONS				DRAFTSMAN <i>PB</i>	PROJECT <i>Doc Mwp/llw</i>	AMCPM-LCSM <i>6177</i>
				CHECKER <i>JDS</i>	LOS ENRG OFFICE <i>J. J. ...</i>	ABSMI-OP <i>M.S.</i>
				APPROVED <i>Morris E. Johnson</i> ARMY MISSILE COMMAND APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND <i>AS Ehringer</i> USAMC AMMO CENTER		
				U. S. ARMY MATERIEL COMMAND		
				MAY 1972		
				CLASS	DIVISION	DRAWING
				19	48	5925
						FILE
						GM 15J4

DO NOT SCALE

## GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 ( CHAPTER 5 ).
- B. THIS PROCEDURAL DRAWING IS APPLICABLE TO FLAT BED TRAILERS EQUIPPED WITH SPECIAL BULKHEAD BRACES AS PER ORDNANCE CORPS DRAWING 19-48-D-ORDJU-2440. FOR TOFC SHIPMENTS, ONLY RAILCARS WHICH ARE SPECIFIED THEREIN OR WHICH ARE SPECIFIED BY THE BUREAU OF EXPLOSIVES PAMPHLET NO. 6C AND APPENDICES THERETO WILL BE USED.
- C. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE BASED ON 40' L BY 8' W FLAT BED TRAILERS WITH WOOD OR WOOD AND METAL FLOORS AND HAVING A 34"-0" CLEARANCE BETWEEN INSTALLED BULKHEAD BRACES. A MINIMUM CLEARANCE OF 27"-4" BETWEEN BULKHEAD BRACES IS REQUIRED FOR SHIPMENT OF THE DEPICTED LOAD. TRAILERS WITH ALL METAL FLOORS CANNOT BE USED. **CAUTION:** LADING HEIGHT FOR THIS LOAD IS 7'-0" ( WITHOUT TRAILER HEIGHT ). LADING HEIGHT INFORMATION IS FURNISHED AS GUIDANCE TO BE USED BY CARRIERS IN ESTABLISHING SAFE ROUTING RELATIVE TO CLEARANCE LIMITS. SEE GENERAL NOTE "T".
- D. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE LANCE MAIN ASSEMBLAGE, XMS, WHEN PACKED IN THE XMS99 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE CONTAINER WITH MISSILE COMPONENTS.
- E. FOR DETAILS OF THE XMS99 CONTAINER, SEE DRAWING NO. E-10-161905.  
CONTAINER DIMENSIONS --- 161" LONG X 39" WIDE X 43" HIGH.  
GROSS WEIGHT ----- 3,993 POUNDS ( APPROX ).
- F. THIS ITEM IS A DOT CLASS "B" EXPLOSIVE, WITH OR WITHOUT LIQUID PROPELLANTS, AND WILL BE SHIPPED UNDER DOT SPECIAL PERMIT NO. 3600. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED MAIN ASSEMBLAGE, OR WHEN THEY ARE EMPTY. **NOTE:** 18" X 32" 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.
- G. **CAUTION:** LOADING OF THE DEPICTED ITEM IS RESTRICTED TO NOT MORE THAN TWO ( 2 ) LAYERS IN HEIGHT.
- H. SELECTION OF A VEHICLE TO BE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 213, FOR EXPLOSIVES OR OTHER DANGEROUS ARTICLES, IN FULL.
- J. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY. **NOTICE:** A SHIPMENT WILL BE POSITIONED IN A TRAILER CONSISTENT WITH THE WEIGHT LAWS OF THE STATES THROUGH WHICH THE TRAILER WILL BE TRANSPORTED BY HIGHWAY ( MOTOR CARRIER ).
- K. THE APPROVED BLOCKING, BRACING, AND STAYING METHODS FOR THE LOADS SPECIFIED HEREIN MUST BE FOLLOWED. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE SIZE OF VEHICLE TO BE LOADED OR THE QUANTITY TO BE SHIPPED. FOR A LOAD QUANTITY OTHER THAN SPECIFIED, THE APPROVED METHODS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- L. 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.
- M. IF THE CAPACITY OF THE MATERIALS HANDLING EQUIPMENT PERMITS, IT IS RECOMMENDED THAT CONTAINERS BE UNITIZED PRIOR TO PLACEMENT ABOARD THE TRAILER. SEE THE "UNITIZING AND HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.
- N. LADING WILL NOT BE SECURED BY CHAINS AND/OR LOAD BINDERS IN LIEU OF SPECIFIED DUNNAGE.
- O. **CAUTION:** REGARDLESS OF THE TYPE OF TRAILER INVOLVED, ONLY THOSE TRAILERS HAVING TIE-DOWN STRAP ANCHORING FACILITIES WHICH PROVIDE HOLDING STRENGTH EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIE-DOWN STRAPS SHOULD BE USED. IF THE STRAP ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIE-DOWN STRAPS, 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.

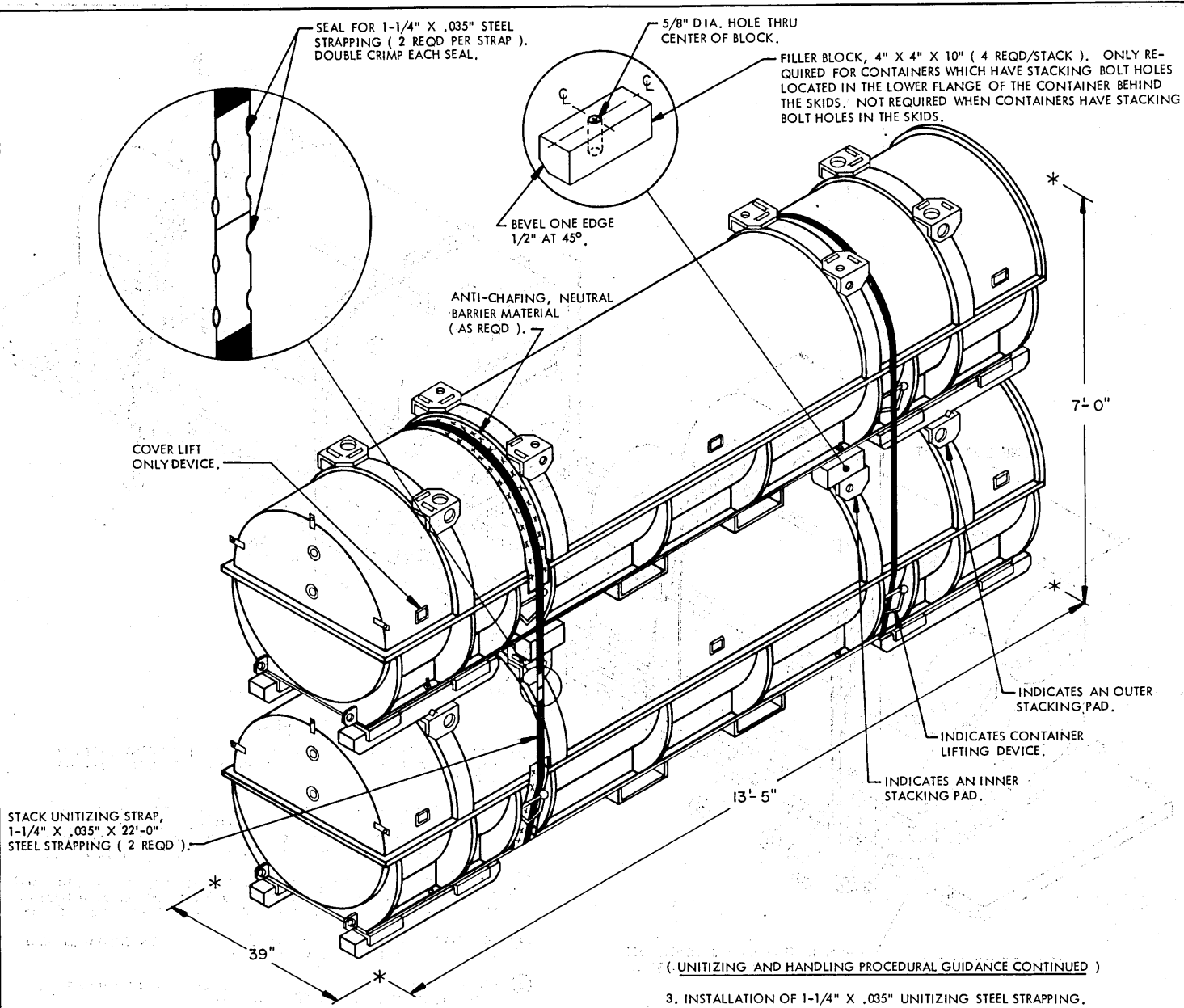
( CONTINUED AT RIGHT ABOVE )

## MATERIAL SPECIFICATIONS

- LUMBER** ----- SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS** ----- COMMON, CEMENT COATED OR CHEMICALLY ETCHED,  
FED SPEC FF-N-105.  
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.
- STRAPPING, STEEL** --- TYPE I OR IV, CLASS A OR B FOR 1-1/4" STRAPPING AND CLASS A, B, OR C FOR 2" STRAPPING. FED SPEC QQ-5-781.  
FOR FSN SEE 58-38-100.
- STRAP SEAL, STAKE  
POCKET PROTECTOR** -- COMMERCIAL GRADE.
- ANTI-CHAFING  
MATERIAL** ----- NEUTRAL BARRIER MATERIAL, MIL-B-121 ( OR EQUAL ).

( GENERAL NOTES CONTINUED )

- P. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO ( 2 ) SEALS, BUTTED TOGETHER, WITH TWO ( 2 ) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. **CAUTION:** EXERCISE CARE DURING TENSIONING TO PREVENT DAMAGE TO THE CONTAINERS.
- Q. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE.
- R. **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. 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.
- S. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.
- T. ALTHOUGH A 40-FOOT TRAILER WITH BRACES INSTALLED 34 FEET APART IS SHOWN HEREIN, SHORTER TRAILERS AND TRAILERS WITH BRACES SPACED FURTHER APART OR CLOSER TOGETHER CAN BE USED, PROVIDING THERE IS ENOUGH CARGO SPACE BETWEEN THE BRACES FOR THE NUMBER OF LOAD UNITS TO BE SHIPPED.  
( UNITIZING AND HANDLING PROCEDURAL GUIDANCE CONTINUED FROM PAGE 3 )
- 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. FOR VERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING TRAILER LOADING, A TWO-HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INTO THE FORK RECEPTACLES OF THE UPPER CONTAINER.
- C. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING DEVICES ON THE CONTAINER. HOWEVER, IF A TWO-HIGH STACK IS HANDLED BY SLINGING, DO NOT ATTACH THE SLING TO THE LIFTING DEVICES ON THE CONTAINER. THE SLING USED MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWER CONTAINER.



**STACK DETAIL**

**UNITIZING AND HANDLING PROCEDURAL GUIDANCE**

**1. STACKING CONTAINERS FOR UNITIZING.**

- A. THE UPPER CONTAINER SHOULD BE PLACED AS CLOSELY AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER CONTAINER.
- B. POSITION THE FORWARD END OF THE UPPER CONTAINER ABOVE THE FORWARD END OF THE LOWER CONTAINER.
- C. THE CONTAINER INDEXING NOTCHES WITHIN THE SKID OF THE UPPER CONTAINER SHOULD BE FULLY SEATED OVER THE LOCATORS ON THE STACKING PADS OF THE LOWER CONTAINER.

**2. APPLICATION OF CONTAINER STACKING BOLTS.**

- A. STACKING BOLTS ARE STORED ON THE SIDE OF EACH CONTAINER.
- B. SOME CONTAINERS ARE PROVIDED WITH A BOLT HOLE IN EACH SKID FOR SECURING AN UPPER CONTAINER OF A STACK TO THE FOUR (4) OUTER STACKING PADS OF A LOWER CONTAINER. HOWEVER, IF CONTAINERS HAVE BOLT HOLES LOCATED IN THE LOWER FLANGE OF THE CONTAINER BEHIND THE SKIDS, A NOMINAL 4" X 4" X 10" LONG "FILLER BLOCK" MUST BE USED IN CONJUNCTION WITH EACH STACKING BOLT AND THE UPPER CONTAINER SECURED TO THE FOUR (4) INNER STACKING PADS OF A LOWER CONTAINER.
- C. AFTER CONTAINERS ARE STACKED AND STACKING BOLTS, WITH "FILLER BLOCKS" IF APPLICABLE, ARE IN PLACE, INSTALL THE NUTS AND TIGHTEN WITH A RATCHET WRENCH AND AN APPROPRIATELY SIZED SOCKET UNTIL "SNUG".
- D. USING A TORQUE WRENCH, OR A WRENCH WITH A PROPER LENGTH HANDLE, TIGHTEN THE NUTS TO A TORQUE OF NOT LESS THAN 45 FOOT POUNDS.

(CONTINUED AT RIGHT)

( UNITIZING AND HANDLING PROCEDURAL GUIDANCE CONTINUED )

**3. INSTALLATION OF 1-1/4" X .035" UNITIZING STEEL STRAPPING.**

- A. POSITION EACH STRAP TO ENIRCLE THE CONTAINERS IMMEDIATELY BEHIND THE SKIDS AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS, I. E., VERTICAL ALONG SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK. TO PREVENT DAMAGING THE LIFTING DEVICES OF THE LOWER CONTAINER, EACH STRAP MUST PASS BETWEEN THE CONTAINER BODY AND THE LIFTING DEVICE ON EACH SIDE OF THE LOWER CONTAINER.
- B. PLACE ANTI-CHAFING NEUTRAL BARRIER MATERIAL UNDER STRAPPING AT ALL POINTS OF CONTACT WITH CONTAINERS.
- 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 "P" ON PAGE 2. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF THE STACK SO THAT THE SEALS WILL NOT BE IN CONTACT WITH THE CONTAINERS. EXCESS STRAPPING ( STRAP ENDS ) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.

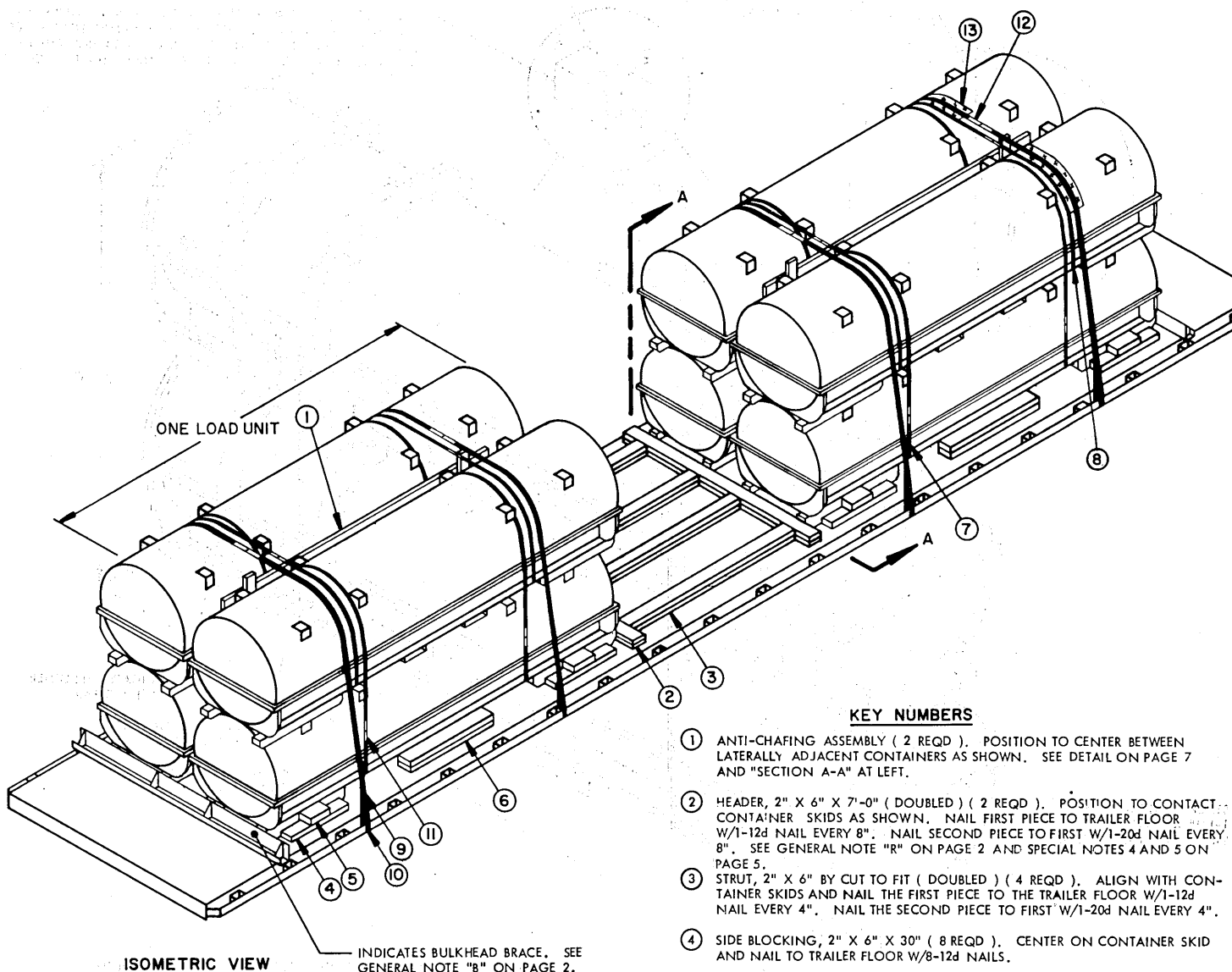
**4. CONTAINER OR CONTAINER STACK HANDLING.**

NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT 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.

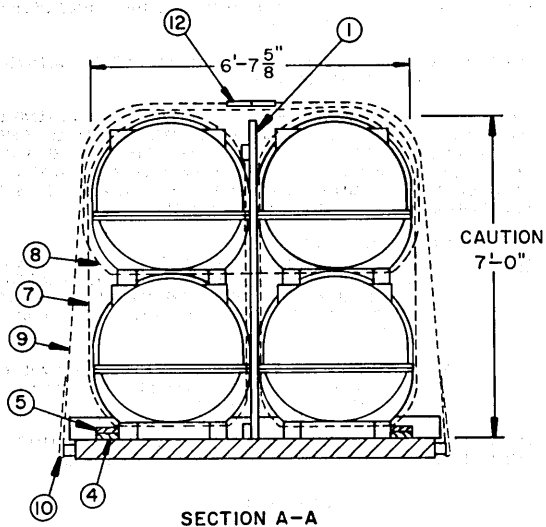
- A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.

(CONTINUED ON PAGE 2)



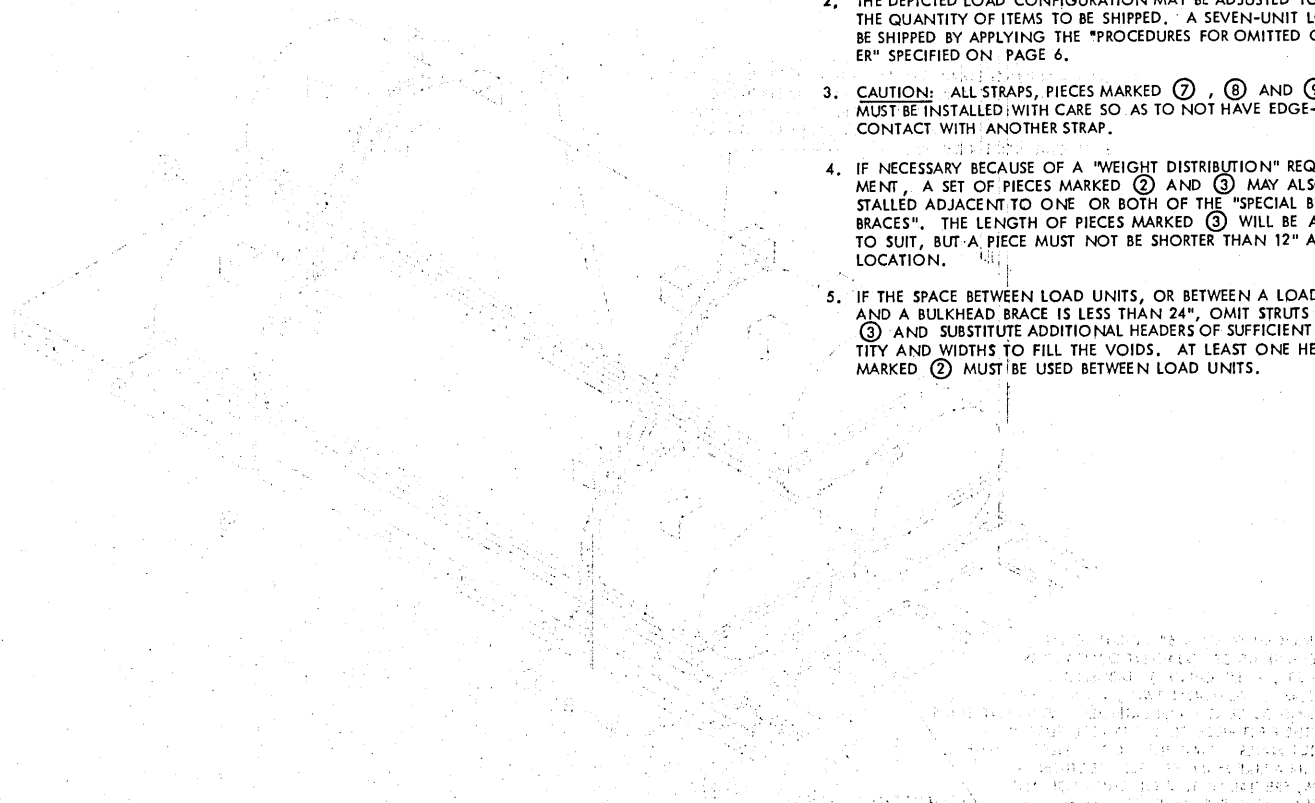
#### KEY NUMBERS

- ① ANTI-CHAFING ASSEMBLY ( 2 REQD ). POSITION TO CENTER BETWEEN LATERALLY ADJACENT CONTAINERS AS SHOWN. SEE DETAIL ON PAGE 7 AND "SECTION A-A" AT LEFT.
- ② HEADER, 2" X 6" X 7'-0" ( DOUBLED ) ( 2 REQD ). POSITION TO CONTACT CONTAINER SKIDS AS SHOWN. NAIL FIRST PIECE TO TRAILER FLOOR W/1-12d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST W/1-20d NAIL EVERY 8". SEE GENERAL NOTE "R" ON PAGE 2 AND SPECIAL NOTES 4 AND 5 ON PAGE 5.
- ③ STRUT, 2" X 6" BY CUT TO FIT ( DOUBLED ) ( 4 REQD ). ALIGN WITH CONTAINER SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-12d NAIL EVERY 4". NAIL THE SECOND PIECE TO FIRST W/1-20d NAIL EVERY 4".
- ④ SIDE BLOCKING, 2" X 6" X 30" ( 8 REQD ). CENTER ON CONTAINER SKID AND NAIL TO TRAILER FLOOR W/8-12d NAILS.
- ⑤ SIDE BLOCKING, 2" X 6" X 12" ( 8 REQD ). CENTER ON CONTAINER SKID AND NAIL TO PIECE MARKED ④ W/3-12d NAILS.
- ⑥ SIDE BLOCKING, 2" X 6" X 48" ( DOUBLED ) ( 4 REQD ). CENTER ON FORK LIFT OPENINGS AND NAIL FIRST PIECE TO TRAILER FLOOR W/10-12d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.
- ⑦ STACK UNITIZING STRAP, 1-1/4" X .035" X 22'-0" STEEL STRAPPING ( 8 REQD, 2 PER STACK ). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND SPECIAL NOTE 3 ON PAGE 5.
- ⑧ LOAD BUNDLING STRAP, 1-1/4" X .035" X 24'-0" STEEL STRAPPING ( 4 REQD, 2 PER LOAD UNIT ). INSTALL TO ENCIRCLE TOP LAYER OF CONTAINERS AND TO PASS BETWEEN CONTAINER BODY AND LIFTING DEVICE OF EACH CONTAINER. SEAL WITH TWO ( 2 ) SEALS. SEE GENERAL NOTE "P" ON PAGE 2 AND SPECIAL NOTE 3 ON PAGE 5.
- ⑨ HOLD-DOWN STRAP, 2" X .050" X 30'-0" STEEL STRAPPING ( 4 REQD, 2 PER LOAD UNIT ). INSTALL EACH STRAP FROM TWO ( 2 ) 15'-0" LONG PIECES. SEE GENERAL NOTE "C" ON PAGE 2.
- ⑩ PAD, 2" X .050" STEEL STRAP 18" LONG ( 8 REQD ). POSITION UNDER ANCHORING FACILITY AND SEAL TO A HOLD-DOWN STRAP. SEE "DETAIL A" ON PAGE 7. ALT: STAKE POCKET PROTECTOR ( 16 REQD ). USE TWO ( 2 ) UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 7.
- ⑪ SEAL FOR 1-1/4" STRAPPING ( 24 REQD, 2 PER STRAP ). DOUBLE CRIMP EACH SEAL.
- ⑫ SEAL FOR 2" STRAPPING ( 32 REQD, 8 PER STRAP ). EXCEPT FOR THE SEALS USED TO SECURE THE PADS, DOUBLE CRIMP EACH SEAL.
- ⑬ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL ( AS REQD ). PLACE UNDER STRAPS AT ALL POINTS OF CONTACT WITH CONTAINERS.



**SPECIAL NOTES:**

1. AN EIGHT-UNIT LOAD IS SHOWN ON A FLAT BED TRAILER HAVING 34'-0" CLEARANCE BETWEEN THE INSTALLED BULKHEAD BRACES. THE DISTANCE BETWEEN THE BRACES MUST BE AT LEAST 27'-4" FOR THE SHIPMENT OF THE DEPICTED LOAD. ATTENTION IS DIRECTED TO THE CRITERIA OF GENERAL NOTE "T" ON PAGE 2.
2. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE QUANTITY OF ITEMS TO BE SHIPPED. A SEVEN-UNIT LOAD MAY BE SHIPPED BY APPLYING THE "PROCEDURES FOR OMITTED CONTAINER" SPECIFIED ON PAGE 6.
3. CAUTION: ALL STRAPS, PIECES MARKED ⑦, ⑧ AND ⑨, MUST BE INSTALLED WITH CARE SO AS TO NOT HAVE EDGE-TO-EDGE CONTACT WITH ANOTHER STRAP.
4. IF NECESSARY BECAUSE OF A "WEIGHT DISTRIBUTION" REQUIREMENT, A SET OF PIECES MARKED ② AND ③ MAY ALSO BE INSTALLED ADJACENT TO ONE OR BOTH OF THE "SPECIAL BULKHEAD BRACES". THE LENGTH OF PIECES MARKED ③ WILL BE ADJUSTED TO SUIT, BUT A PIECE MUST NOT BE SHORTER THAN 12" AT ANY LOCATION.
5. IF THE SPACE BETWEEN LOAD UNITS, OR BETWEEN A LOAD UNIT AND A BULKHEAD BRACE IS LESS THAN 24", OMIT STRUTS MARKED ③ AND SUBSTITUTE ADDITIONAL HEADERS OF SUFFICIENT QUANTITY AND WIDTHS TO FILL THE VOIDS. AT LEAST ONE HEADER MARKED ② MUST BE USED BETWEEN LOAD UNITS.



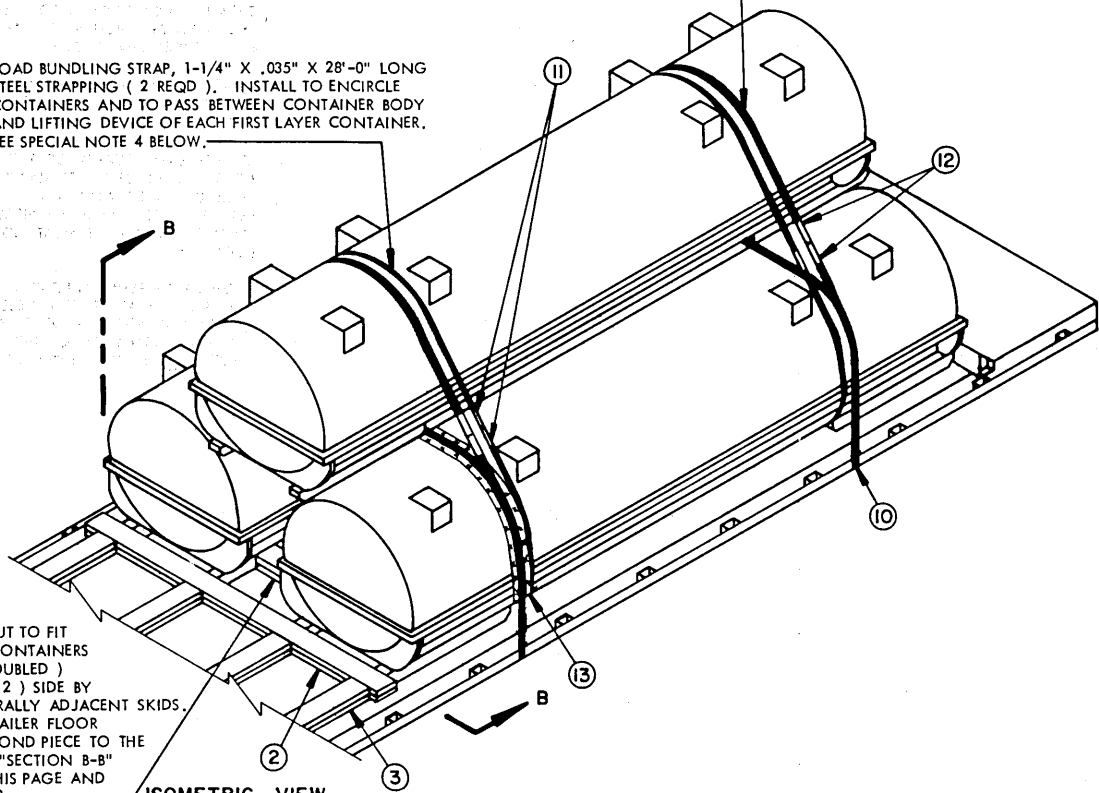
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT ( APPROX )
CONTAINER	8	31,944 LBS
DUNNAGE		558 LBS
<b>TOTAL WEIGHT</b>		<b>32,502 LBS</b>

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	68	46
2" X 6"	138	138
NAILS	NO. REQD	POUNDS
10d ( 3" )	24	1/2
12d ( 3-1/4" )	266	4-1/2
20d ( 4" )	98	3-1/2
STEEL STRAPPING, 1-1/4" X .035"	272' REQD	39 LBS
STEEL STRAPPING, 2" X .050"	132' REQD	44 LBS
SEAL FOR 1-1/4" STRAPPING	24 REQD	1-1/4 LBS
SEAL FOR 2" STRAPPING	32 REQD	6-1/2 LBS
ANTI-CHAFING MATERIAL	AS REQD	NIL

HOLD-DOWN STRAP, 2" X .050" X 40'-0" LONG STEEL STRAPPING ( 2 REQD ). INSTALL EACH STRAP FROM ONE PIECE OF STRAPPING. RUN STRAP FROM SIDE OF LOAD DOWN TO AND UP THROUGH AN ANCHORING FACILITY ON ONE SIDE OF THE TRAILER, BACK UP AND OVER THE TOP OF THE FIRST LAYER CONTAINERS, DOWN TO AND THROUGH AN ANCHORING FACILITY ON THE OPPOSITE SIDE OF THE TRAILER, BACK UP AND OVER THE TOP OF THE LOAD WHERE IT IS TENSIONED AND DOUBLE SEALED.

LOAD BUNDLING STRAP, 1-1/4" X .035" X 28'-0" LONG STEEL STRAPPING ( 2 REQD ). INSTALL TO ENIRCLE CONTAINERS AND TO PASS BETWEEN CONTAINER BODY AND LIFTING DEVICE OF EACH FIRST LAYER CONTAINER. SEE SPECIAL NOTE 4 BELOW.



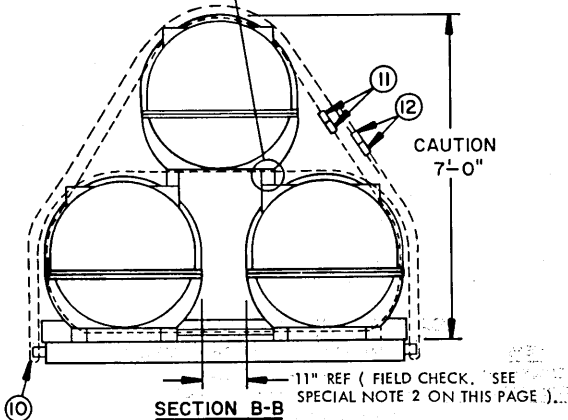
SIDE BLOCKING, 2" X 6" BY CUT TO FIT BETWEEN SKIDS OF ADJACENT CONTAINERS ( REF: 23", FIELD CHECK ) ( DOUBLED ) ( 4 REQD ). POSITION TWO ( 2 ) SIDE BY SIDE AND TO CENTER ON LATERALLY ADJACENT SKIDS. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "SECTION B-B" BELOW, SPECIAL NOTE 2 ON THIS PAGE AND GENERAL NOTE "R" ON PAGE 2.

**ISOMETRIC VIEW**  
FOR KEY NUMBERS,  
SEE PAGE 4.

**SPECIAL NOTES:**

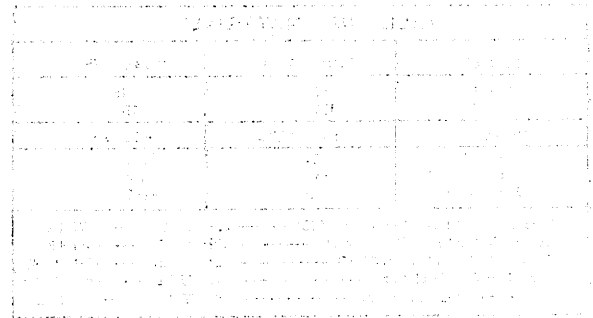
1. A 3-CONTAINER LOAD UNIT IS SHOWN ON AN 8'-0" WIDE TRAILER. THIS LOAD UNIT MAY BE SUBSTITUTED FOR A 4-CONTAINER LOAD UNIT AT THE FORWARD END OF THE LOAD DEPICTED ON PAGE 4, TO PROVIDE FOR THE SHIPMENT OF A 7-UNIT LOAD.
2. WHEN LOADING A 3-CONTAINER LOAD UNIT ON A TRAILER, POSITION THE TWO LOWER CONTAINERS TO CENTER LATERALLY ON THE TRAILER WITH A SPACE PROVIDED BETWEEN CONTAINERS ( REF: 11" ) OR BETWEEN ADJACENT SKIDS ( REF: 23" ). EXACT SPACING REQUIREMENTS FOR THE LOWER CONTAINERS SHOULD BE FIELD CHECKED TO ASSURE THAT THE STACKING BOLT HOLES IN THE STACKING PADS OF THE LOWER CONTAINERS WILL BE IN VERTICAL ALIGNMENT WITH THE BOLT HOLES OF THE UPPER CONTAINER. IF A FORK LIFT IS BEING USED TO LOAD CONTAINERS, FORK EXTENSIONS MAY BE REQUIRED FOR PLACEMENT OF THE UPPER CONTAINER IN THE LOAD UNIT. NOTE: SOME CONTAINERS WILL REQUIRE USE OF "FILLER BLOCKS" IN CONJUNCTION WITH STACKING BOLTS FOR STACKING OF CONTAINERS. FOR APPLICATION OF STACKING BOLTS AND OTHER GUIDANCE, SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
3. SIDE BLOCKING AND STRAPPING FOR THE 3-CONTAINER LOAD UNIT WILL BE AS SPECIFIED ON THIS PAGE. ALL LONGITUDINAL BLOCKING FOR THE TOTAL LOAD AND ALL SIDE BLOCKING AND STRAPPING FOR THE 4-CONTAINER LOAD UNIT WILL BE AS SPECIFIED ON PAGES 4 AND 5.
4. ALL STRAPS MUST BE INSTALLED WITH CARE SO AS TO NOT HAVE EDGE-TO-EDGE CONTACT WITH ANOTHER STRAP.

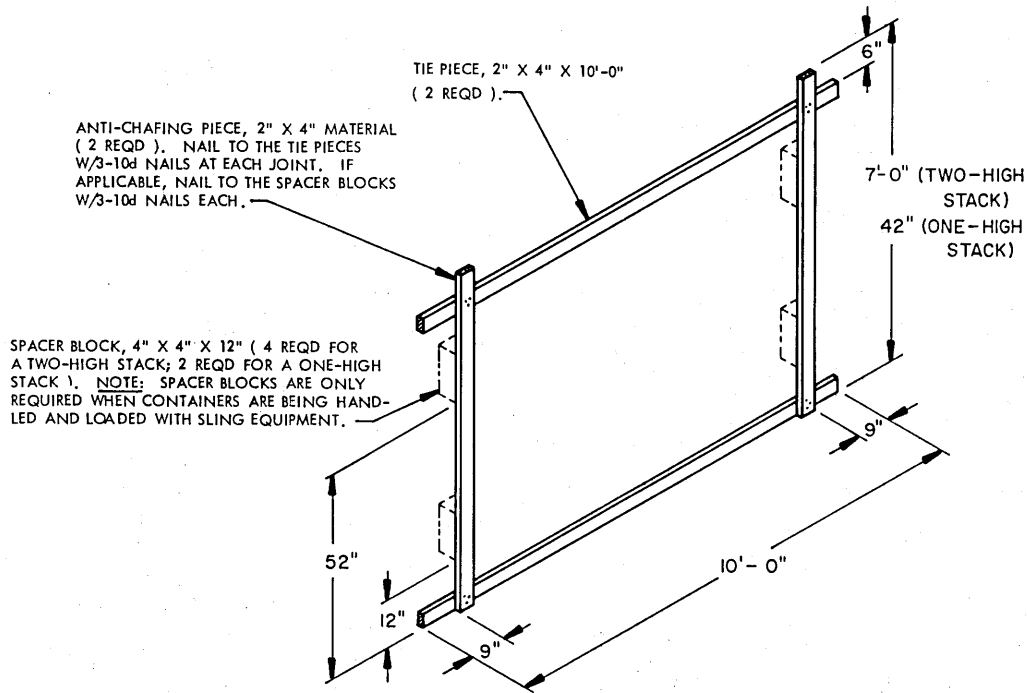
FOR APPLICATION OF "FILLER BLOCKS" AND "STACKING BOLTS" SEE THE "UNITIZATION AND HANDLING PROCEDURES" GUIDANCE ON PAGE 3.



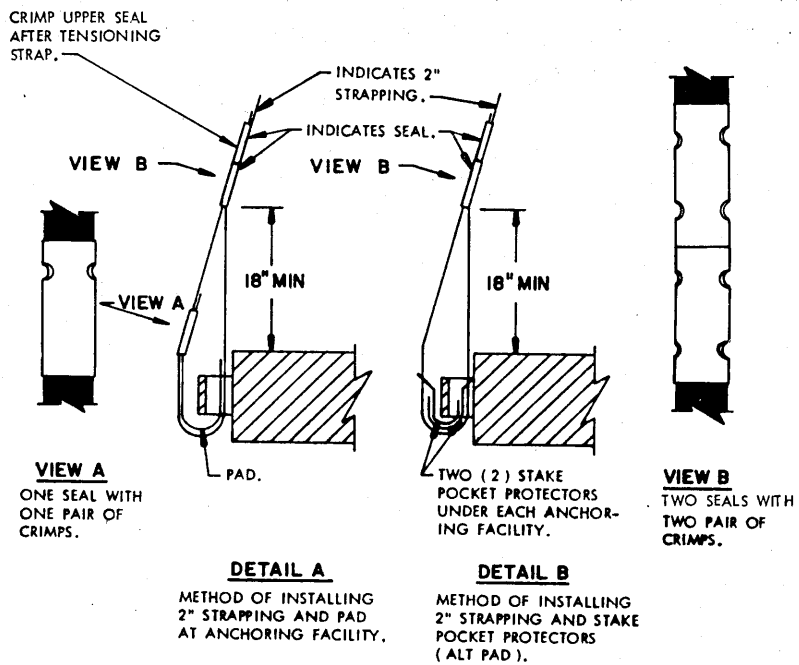
**SECTION B-B**

11" REF ( FIELD CHECK. SEE SPECIAL NOTE 2 ON THIS PAGE )





**ANTI-CHAFING ASSEMBLY**



**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).

