REV NO. 1 APPROVED BY
BUREAU OF EXPLOSIVES
A. F. Grassmuck
SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE 3/11/75

HAWK

LOADING AND BRACING IN VAN TYPE TRAILER FOR CONTAINER/TRAILER-ON-FLAT-CAR (C/TOFC) SHIPMENT OF COMPLETE ROUND IN M430 OR M611 CONTAINER

INDEX

THIS DRAWING, INCLUDING REVISION 1, SUPERSEDES DRAWING 19-48-5670-GM15A38 T. O. F. C., DATED 20 JULY 1962.

DO NOT SCALE

REVISIONS				DRAFTSMAN GRG / AH	PROJ ENG MWD / MWD	ASSIST SP
				CHECKER /	LOG BRANCH APPROVAL	
1	FEB 75	MWD	Wesley E. Gilleland / A H Ehringer	APPROVED Wesley E. Gilleland, U. S. ARMY MISSILE COMMAND		
				APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL COMMAND A H Ehringer		
				U.S. ARMY MATERIEL COMMAND		
				FEBRUARY 1975		
				CLASS 19	DIVISION 48	DRAWING 5670	FILE GM 15HA4

PROJECT GM 327-61

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 HAWK COMPLETE ROUND, WHEN PACKED IN THE M430 OR M611 CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH MISSILE COMPONENTS.

C. FOR DETAIL OF THE M430 CONTAINER, SEE DRAWING NO. 9073970.
CONTAINER DIMENSIONS --- 216" LONG X 28-3/4" WIDE X 41-1/2" HIGH.
GROSS WEIGHT ---------- 3,225 POUNDS (APPROX).

FOR DETAIL OF THE M611 CONTAINER, SEE DRAWING NO. 8035841.
CONTAINER DIMENSIONS --- 216" LONG X 30" WIDE X 41-1/2" HIGH.
GROSS WEIGHT ---------- 3,351 POUNDS (APPROX).

D. THIS PROCEDURAL DRAWING IS APPLICABLE TO VAN TYPE TRAILERS AND/OR CONTAINERS WHICH ARE EQUIPPED WITH SPECIAL BULKHEAD SYSTEMS AS SPECIFIED WITHIN THE BUREAU OF EXPLOSIVES, AAR, PAMPHLET NO. 6C AND APPENDICES THERETO. SUBSEQUENT REFERENCE TO A TRAILER THROUGHOUT THIS DOCUMENT MEANS A TRAILER OR CONTAINER FOR TOFC AND/OR COFC SHIPMENTS. ONLY RAILCARS WHICH ARE SPECIFIED BY THE BUREAU OF EXPLOSIVES PAMPHLET NO. 6C OR THE AFOREMENTIONED APPENDICES, WILL BE USED.

E. ALL THE LOADS SHOWN ARE BASED ON TRAILERS WHICH ARE 40'-0" LONG BY 7'-7" WIDE MINIMUM (INSIDE DIMENSION) WITH WOOD, WOOD AND METAL, OR METAL FLOORS. TRAILERS WIDER THAN 7'-7" (INSIDE DIMENSION) SHOULD BE USED, WHENEVER POSSIBLE, TO FACILITATE LOADING AND UNLOADING OPERATIONS. SEE GENERAL NOTE "T" AT RIGHT.

F. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE.

G. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEMS WILL BE IN ACCORDANCE WITH HAZARDOUS MATERIALS REGULATIONS OF DOT AND AR 55-355, CHAPTER 213, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.

H. THE LOAD SHOWN ON PAGES 4 AND 5 IS BASED ON A TRAILER EQUIPPED WITH SPECIAL BULKHEAD BRACES HAVING 35'-0" BETWEEN THE BULKHEAD BOARDS. THE LOAD REQUIRES THE USE OF STRAPPING TO SECURE THE UPRIGHT BRACES. SHORTER TRAILERS CAN BE USED. SEE GENERAL NOTE "O" AT RIGHT.

J. THE LOAD SHOWN ON PAGES 6 AND 7 IS BASED ON A TRAILER WHICH HAS A BULKHEAD BUILT INTO THE FRONT WALL AND IS EQUIPPED WITH A SPECIAL BULKHEAD BRACE AT THE REAR OF THE TRAILER. THE DISTANCE FROM THE FRONT WALL TO THE BULKHEAD BOARDS AT THE REAR IS 38'-6". STRAPPING IS NOT REQUIRED FOR SECURING THE BULKHEAD BRACES.

K. THE LOAD SHOWN ON PAGES 8 AND 9 IS BASED ON A TRAILER EQUIPPED WITH A CAMUS III RESTRAINING SYSTEM. THIS SYSTEM CONSISTS OF ADJUSTABLE BULKHEADS AT THE FRONT AND REAR OF THE TRAILER. THE DISTANCE BETWEEN THE BULKHEADS AT THE MAXIMUM OPEN POSITION IS 37'-8-1/2"; THE DISTANCE AT THE MINIMUM CLOSED POSITION IS 30'-4-1/2".

L. 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.

M. 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). 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.

N. 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.

(CONTINUED AT RIGHT)

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 THE SAME SIZE.
STRAPPING, STEEL	TYPE I OR IV, FINISH A OR B, FOR 1-1/4" STRAPPING AND FINISH A, B, OR C FOR 2" STRAPPING, FED SPEC QQ-S-781.
STRAP SEAL	COMMERCIAL GRADE.
ANTI-CHAFING MATERIAL	NEUTRAL BARRIER MATERIAL MIL-B-121 (OR EQUAL).
WIRE	ANNEALED, BLACK, FED SPEC QQ-W-461.

(GENERAL NOTES CONTINUED)

O. IF SPECIAL AUTHORITY IS GRANTED BY HIGHER HEADQUARTERS, AND PROVIDING THEY ARE FURNISHED BY THE CARRIER, REUSABLE WEB STRAP ASSEMBLIES IDENTIFIED AS AEROQUIP CORPORATION PART NO. FE2000079C MAY BE UTILIZED IN LIEU OF THE SPECIFIED 2" STEEL STRAPPING FOR THE SECUREMENT OF THE UPRIGHT BRACES IN THE LOAD DEPICTED ON PAGES 4 AND 5. THE SHIPPER IS RESPONSIBLE FOR CLOSE INSPECTION OF THE WEB STRAP ASSEMBLIES DURING INSTALLATION TO ENSURE THAT ASSEMBLIES WHICH HAVE BEEN DAMAGED SUFFICIENTLY TO IMPAIR THEIR STRENGTH WILL NOT BE USED. SCUFF SLEEVES WILL BE POSITIONED TO PROVIDE PADDING WHERE A WEB STRAP IS BEARING ON AN UPRIGHT BRACE. THE STRAPPING WILL BE DRAWN TAUT WHEN ASSEMBLIES ARE TENSIONED, AND MUST FORM AT LEAST ONE AND ONE-HALF COMPLETE WRAPS ON A TAKEUP SPOOL OF A TENSIONING DEVICE. A SOCKET WRENCH HAVING AN 18" HANDLE CAN BE USED TO ACHIEVE PROPER STRAP TAUTNESS. ONE MAN, UNASSISTED AND USING THE LEVER ADVANTAGE OF AN 18" LONG WRENCH HANDLE TO ITS FULLEST EXTENT, CAN ACHIEVE THE PROPER PRESTRESS IN A WEB STRAP ASSEMBLY.

P. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE OR 1-5/8" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE OR 1-5/8" THICK BY 5-5/8" WIDE. IF THOSE MEMBERS SPECIFICALLY IDENTIFIED AS "STRUTS" WITHIN THE KEY NUMBERS OF A DEPICTED LOAD ARE SPECIFIED TO BE DOUBLED 2" THICK MATERIAL AND LAMINATED, IT IS PERMISSIBLE TO USE 4" X 4" MATERIAL IN LIEU OF TWO LAMINATED PIECES OF 2" X 6" MATERIAL.

Q. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES, OR WHEN LAMINATING DUNNAGE. DO NOT NAIL BLOCKING TO THE TRAILER WALLS OR FLOOR OR BULKHEADS. ALL NAILING WILL BE WITHIN THE DUNNAGE.

R. PORTIONS OF THE TRAILER BODIES DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS ONE OF THE SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.

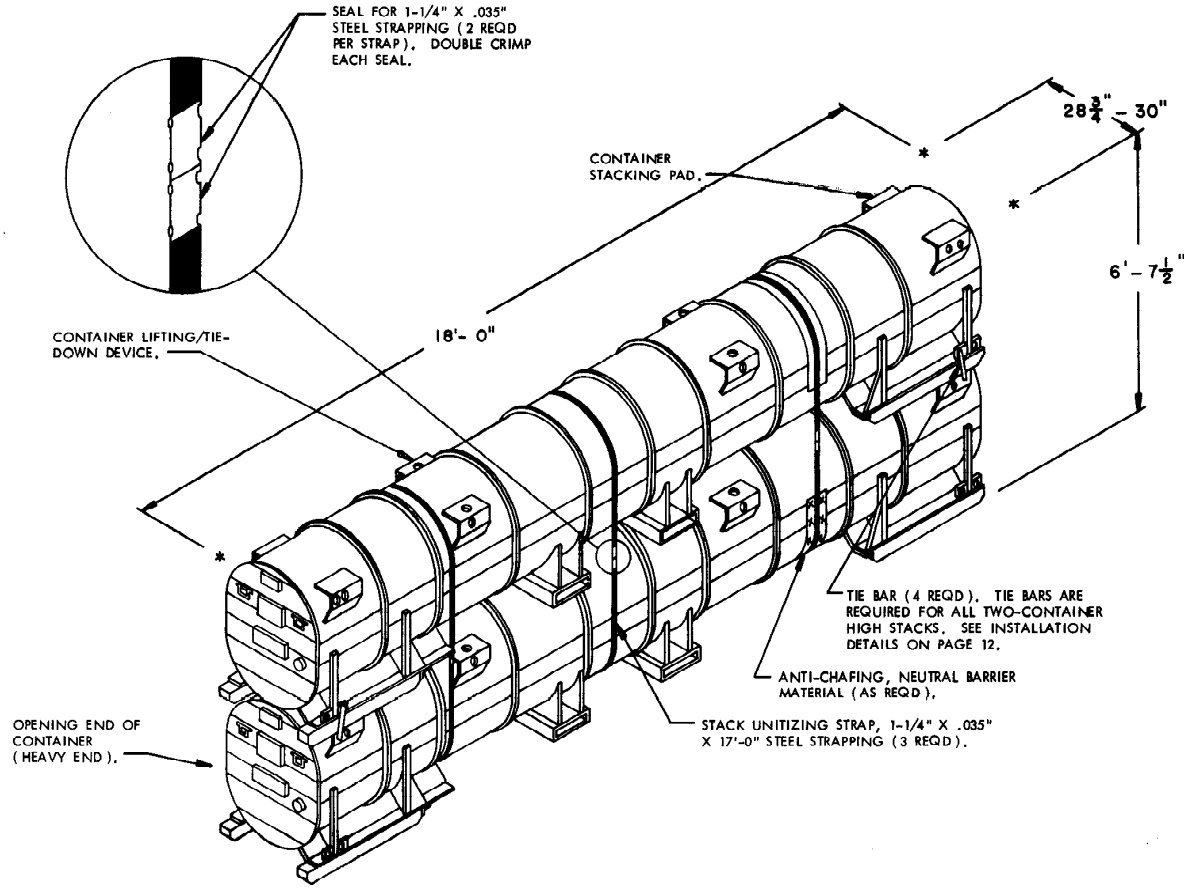
S. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.

T. TRAILERS LONGER THAN 40'-0" CAN BE USED FOR THE LOADS SHOWN ON PAGES 6 THROUGH 9 IF SUCH TRAILERS COMPLY WITH REQUIREMENTS OF GENERAL NOTE "D" AT THE LEFT. HOWEVER, IT SHOULD BE NOTED THAT TOFC CARS IN THE PRESENT DAY FLEET ARE DESIGNED TO HANDLE TWO (2) 40'-0" LONG TRAILERS AND THEREFORE SHIPMENT OF A LONGER TRAILER WOULD LIMIT THE USE OF A CAR TO A ONE-TRAILER LOAD SECURED TO THE "HITCH" ON THE "B-END" OF THE CAR.

REVISIONS

REVISION NO. 1, DATED FEBRUARY 1975, CONSISTS OF:

1. ADDING PROVISIONS FOR SHIPPING THE M611 CONTAINER.
2. ADDING "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
3. ADDING "TIE BAR INSTALLATION" DETAILS ON PAGE 12.
4. OMITTING PROCEDURES FOR TRAILERS HAVING 25'-0" BETWEEN INSTALLED BULKHEADS AND SUBSTITUTING, THEREFORE, PROCEDURES FOR TRAILERS HAVING 35'-0" AND/OR 38'-6" BETWEEN INSTALLED BULKHEADS.
5. ADDING PROCEDURES FOR TRAILERS EQUIPPED WITH A CAMUS III RESTRAINING SYSTEM.
6. UPDATING THE GENERAL NOTES AND DRAWING FORMAT.
7. CHANGING DRAWING FILE NO. FROM GM15A38 T.O.F.C. TO GM15HA4.



TYPICAL STACK DETAIL

(THE M430 CONTAINER IS SHOWN)

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 OPENING END OF THE UPPER CONTAINER ABOVE THE OPENING END OF THE LOWER CONTAINER.

   C. THE SKIDS OF THE UPPER CONTAINER SHOULD BE FULLY SEATED UPON THE STACKING PADS OF THE LOWER CONTAINER.

2. APPLICATION OF CONTAINER TIE BARS.

   A. TIE BARS ARE LOCATED ON THE SIDE OF THE CONTAINER.

   B. INSTALL FOUR TIE BARS, TWO ON EACH SIDE OF A TWO-CONTAINER HIGH STACK. FOR INSTALLATION DETAILS SEE PAGE 12.

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

   A. EACH OF THE THREE UNITIZING STRAPS SHOULD BE POSITIONED AROUND THE CONTAINERS AS SHOWN. PLACE STRAPPING SO THAT IT LAYS FLAT AND STRAIGHT WITH THE CONTOUR OF THE CONTAINERS; I.E., VERTICAL ALONG THE SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK.

   B. PLACE ANTI-CHAFING NEUTRAL BARRIER MATERIAL UNDER THE STRAPPING AT ALL POINTS OF CONTACT WITH CONTAINERS AND SECURE TO PREVENT DISLODGEMENT 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 "N" ON PAGE 2. THE LAP JOINTS WILL BE MADE ALONG THE SIDES OF THE STACK SO THAT THE SEALS WILL NOT BE IN CONTACT WITH THE CONTAINERS. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO ENSURE THAT THE CONTAINERS ARE NOT DAMAGED. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OR BROKEN OFF NEAR THE JOINT SEALS.

(CONTINUED AT RIGHT)

(UNITIZING AND HANDLING PROCEDURAL GUIDANCE CONTINUED)

4. CONTAINER OR CONTAINER STACK HANDLING.

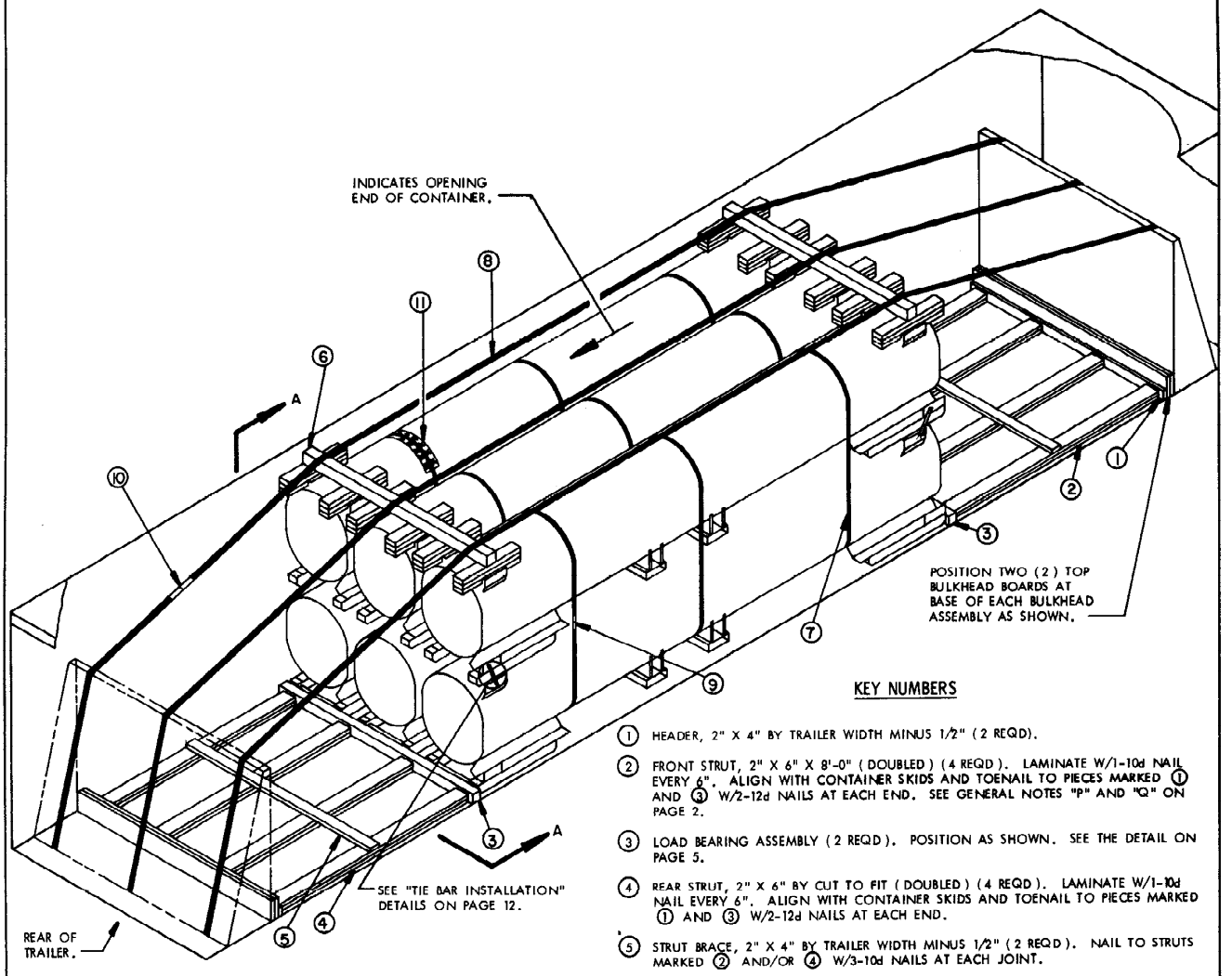
   NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS AND SPREADER BARS.

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

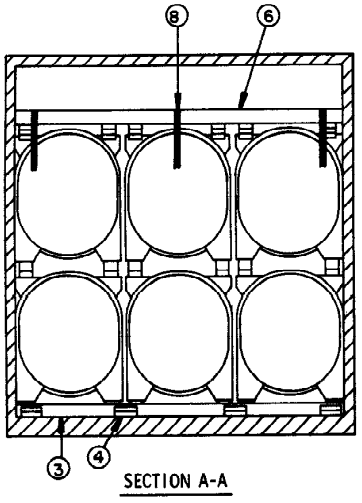
   A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.

   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. FOR END HANDLING OF A CONTAINER STACK, THE FORKS SHOULD BE INSERTED UNDER THE SKIDS OF THE CONTAINER. ALSO, IF A CONTAINER OR CONTAINER STACK IS HANDLED FROM AN END POSITION, LIFTING SHOULD BE DONE AT THE HEAVY END (OPENING END) OF THE CONTAINER.

   C. IF A ONE-OR TWO-HIGH CONTAINER STACK IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING DEVICES OF THE TOP CONTAINER.



ISOMETRIC VIEW



SECTION A-A

KEY NUMBERS

(1) HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (2 REQD).

(2) FRONT STRUT, 2" X 6" X 8'-0" (DOUBLED) (4 REQD). LAMINATE W/1-10d NAIL EVERY 6". ALIGN WITH CONTAINER SKIDS AND TOENAIL TO PIECES MARKED (1) AND (3) W/2-12d NAILS AT EACH END. SEE GENERAL NOTES "P" AND "Q" ON PAGE 2.

(3) LOAD BEARING ASSEMBLY (2 REQD). POSITION AS SHOWN. SEE THE DETAIL ON PAGE 5.

(4) REAR STRUT, 2" X 6" BY CUT TO FIT (DOUBLED) (4 REQD). LAMINATE W/1-10d NAIL EVERY 6". ALIGN WITH CONTAINER SKIDS AND TOENAIL TO PIECES MARKED (1) AND (3) W/2-12d NAILS AT EACH END.

(5) STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (2 REQD). NAIL TO STRUTS MARKED (2) AND/OR (4) W/3-10d NAILS AT EACH JOINT.

(6) HOLD-DOWN ASSEMBLY (2 REQD). POSITION AS SHOWN. SEE THE DETAIL ON PAGE 5.

(7) STACK UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (9 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTE "N" ON PAGE 2.

(8) BULKHEAD STRAP, 2" X .050" X 68'-0" LONG STEEL STRAPPING (3 REQD). INSTALL EACH STRAP FROM TWO (2) PIECES. SEE GENERAL NOTES "N" AND "O" ON PAGE 2.

(9) SEAL FOR 1-1/4" STEEL STRAPPING (18 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL.

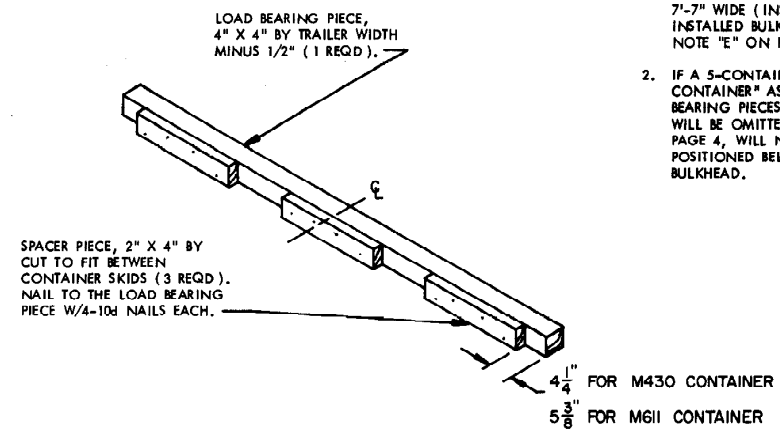
(10) SEAL FOR 2" STRAPPING (18 REQD, 6 PER STRAP). DOUBLE CRIMP EACH SEAL.

(11) ANTI-CHAFING, NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER STRAPPING AT ALL POINTS OF CONTACT WITH CONTAINER.

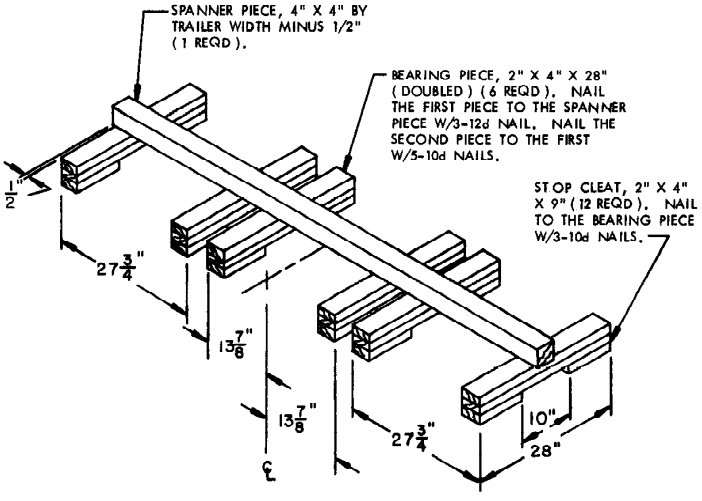
6-UNIT LOAD IN A TRAILER HAVING 35'-0" BETWEEN INSTALLED BULKHEADS

SPECIAL NOTES:

1. A 6-UNIT LOAD OF M430 OR M611 CONTAINERS IS SHOWN IN A 40'-0" LONG BY 7'-7" WIDE (INSIDE DIMENSION) VAN TRAILER HAVING 35'-0" CLEARANCE BETWEEN INSTALLED BULKHEAD BRACES. SHORTER TRAILERS CAN BE USED. SEE GENERAL NOTE "E" ON PAGE 2.
2. IF A 5-CONTAINER LOAD IS TO BE SHIPPED, THE "PROCEDURES FOR OMITTED CONTAINER" AS SPECIFIED ON PAGE 10 WILL APPLY. ALSO, THE TWO CENTER BEARING PIECES OF THE HOLD-DOWN ASSEMBLIES, PIECES MARKED ⑥ ON PAGE 4, WILL BE OMITTED AND THE CENTER BULKHEAD STRAP, PIECE MARKED ⑧ ON PAGE 4, WILL NOT BE RUN OVER THE HOLD-DOWN ASSEMBLIES BUT WILL BE POSITIONED BELOW THE SPANNER PIECES OF THE ASSEMBLIES FROM BULKHEAD TO BULKHEAD.



LOAD BEARING ASSEMBLY



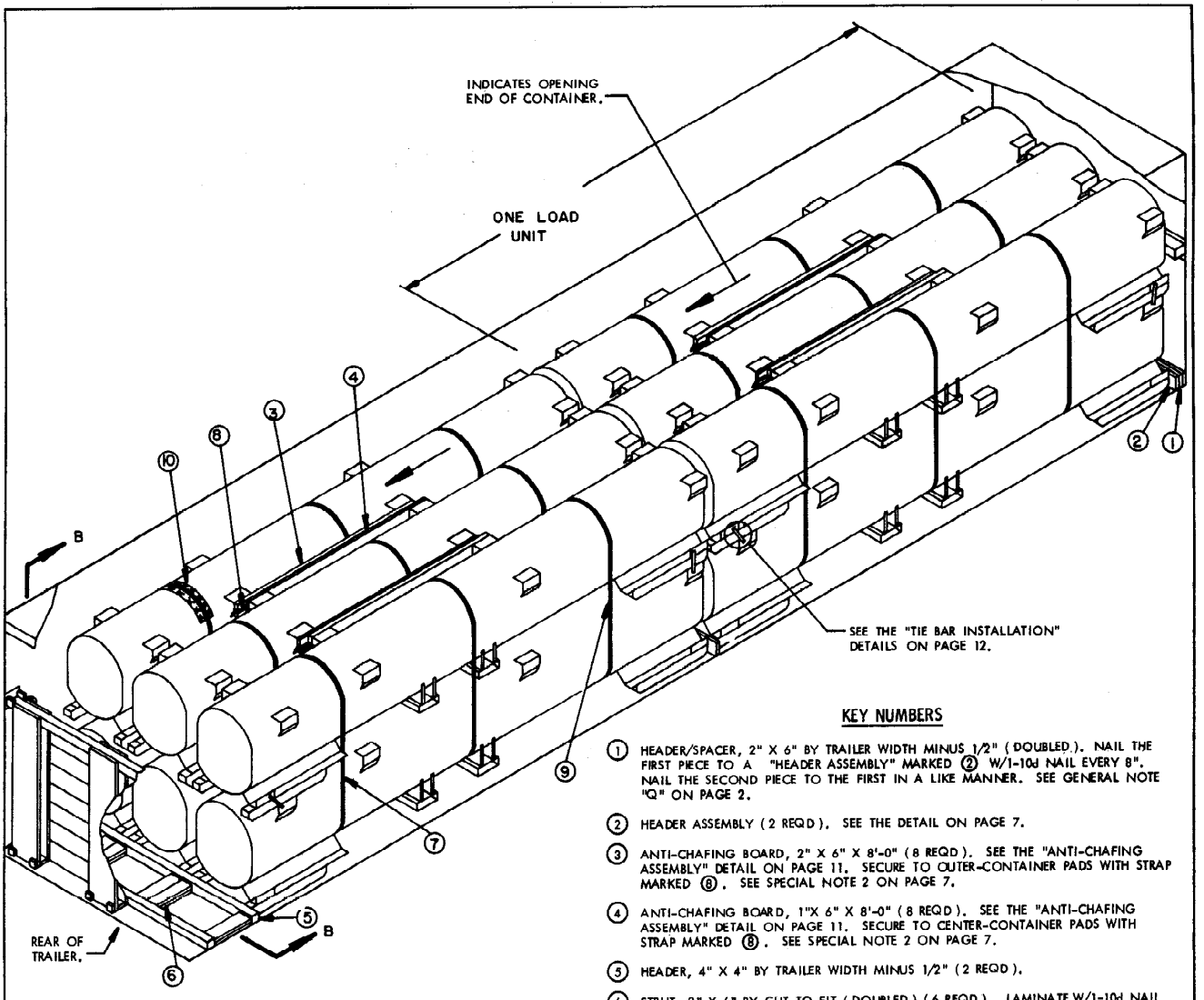
HOLD-DOWN ASSEMBLY

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 6" 4" X 4"	115 124 31	77 124 42
NAILS	NO. REQD	POUNDS
10d (3") 12d (3-1/4")	304 68	4-3/4 1-1/4
STEEL STRAPPING, 1-1/4" X .035" -------- 153' REQD ----- 22 LBS STEEL STRAPPING, 2" X .050" ---------- 204' REQD ----- 68 LBS SEAL FOR 1-1/4" STRAPPING ---------- 18 REQD ----- 1 LB SEAL FOR 2" STRAPPING ---------- 18 REQD ----- 4 LBS ANTI-CHAFING MATERIAL ---------- AS REQD ----- NIL		

LOAD AS SHOWN

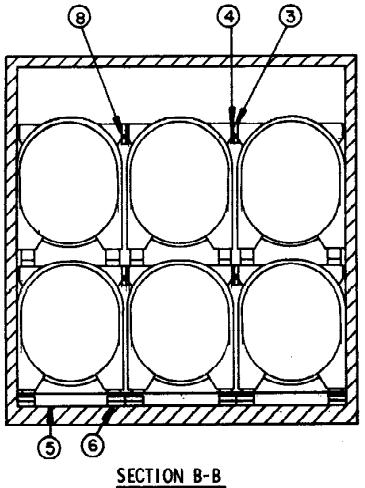
ITEM	QUANTITY	WEIGHT (APPROX)
M430 CONTAINER	6	19,350 LBS
DUNNAGE		710 LBS
TOTAL WEIGHT		20,060 LBS

ITEM	QUANTITY	WEIGHT (APPROX)
M611 CONTAINER	6	20,106 LBS
DUNNAGE		710 LBS
TOTAL WEIGHT		20,816 LBS



ISOMETRIC VIEW

A LOAD OF M430 CONTAINERS IS SHOWN.
SEE SPECIAL NOTE 2 ON PAGE 7.



SECTION B-B

KEY NUMBERS

(1) HEADER/SPACER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (DOUBLED). NAIL THE FIRST PIECE TO A "HEADER ASSEMBLY" MARKED (2) W/1-10d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "Q" ON PAGE 2.

(2) HEADER ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 7.

(3) ANTI-CHAFING BOARD, 2" X 6" X 8'-0" (8 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO OUTER-CONTAINER PADS WITH STRAP MARKED (8). SEE SPECIAL NOTE 2 ON PAGE 7.

(4) ANTI-CHAFING BOARD, 1"X 6" X 8'-0" (8 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO CENTER-CONTAINER PADS WITH STRAP MARKED (8). SEE SPECIAL NOTE 2 ON PAGE 7.

(5) HEADER, 4" X 4" BY TRAILER WIDTH MINUS 1/2" (2 REQD).

(6) STRUT, 2" X 6" BY CUT TO FIT (DOUBLED) (6 REQD). LAMINATE W/1-10d NAIL EVERY 6". ALIGN WITH CONTAINER SKID AND TOENAIL TO HEADERS MARKED (5) W/2-12d NAILS AT EACH END. SEE GENERAL NOTES "P" AND "Q" ON PAGE 2.

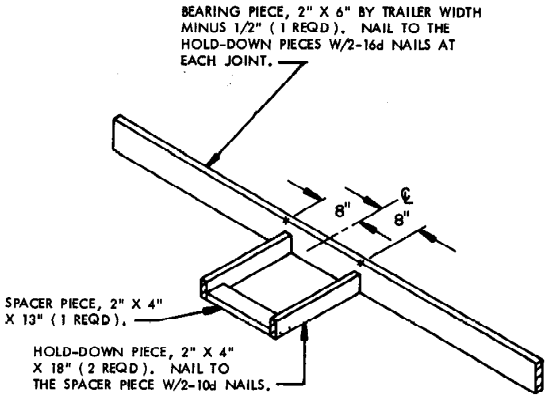
(7) STACK UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (18 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTE "N" ON PAGE 2.

(8) RETAINER STRAP, 1-1/4" X .035" X 17'-6" LONG STEEL STRAPPING (16 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SEE SPECIAL NOTE 2 ON PAGE 7.

(9) SEAL FOR 1-1/4" STEEL STRAPPING (52 REQD, 2 PER UNITIZING STRAP AND 1 PER RETAINER STRAP). DOUBLE CRIMP EACH SEAL.

(10) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINER.

12-UNIT LOAD IN A TRAILER HAVING 38'-6" BETWEEN INSTALLED BULKHEADS



HEADER ASSEMBLY

SPECIAL NOTES:

1. A 12-UNIT LOAD OF M430 CONTAINERS IS SHOWN IN A 40'-0" LONG BY 7'-7" WIDE (INSIDE DIMENSION) VAN TRAILER HAVING 38'-6" BETWEEN THE BULKHEAD AT THE FRONT (BUILT INTO THE FRONT WALL) AND THE INSTALLED BULKHEAD AT THE REAR. SEE GENERAL NOTES "E" AND "T" ON PAGE 2.
2. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE TO A 12-UNIT LOAD OF M611 CONTAINERS, EXCEPT THAT "ANTI-CHAFING ASSEMBLIES", PIECES MARKED ③, ④ AND ⑧, WILL NOT BE REQUIRED. SEE SPECIAL NOTE 3 BELOW.
3. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE SHIPMENT OF A LESS-THAN-FULL-LOAD QUANTITY BY APPLYING THE "PROCEDURES FOR OMITTED CONTAINER" AS SPECIFIED ON PAGE 10. NOTE THAT ANY 5-CONTAINER LOAD UNIT CONSISTING OF EITHER THE M430 OR THE M611 CONTAINERS MUST BE PROVIDED WITH "ANTI-CHAFING ASSEMBLIES" BETWEEN THE FIRST-LAYER CONTAINERS.

BILL OF MATERIAL *

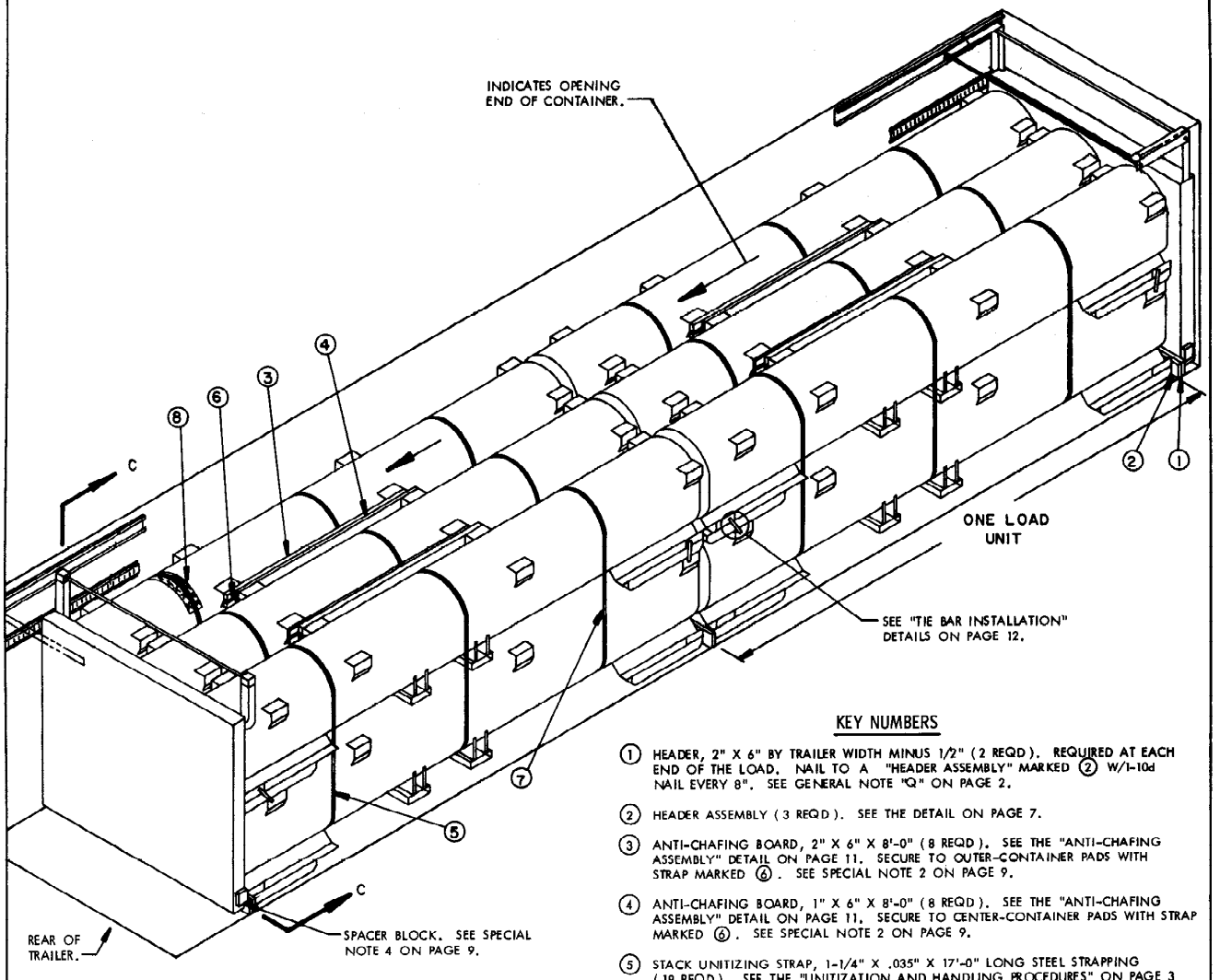
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	64	32
2" X 4"	9	6
2" X 6"	113	113
4" X 4"	16	22
NAILS	**NO. REQD**	**POUNDS**
10d (3")	50	1
12d (3-1/4")	24	1/2
16d (3-1/2")	8	1/4
STEEL STRAPPING, 1-1/4" X .035" ----- 586' REQD ------- 84 LBS		
SEAL FOR 1-1/4" STRAPPING ---------- 5* REQD ------- 3 LBS		
ANTI-CHAFING MATERIAL ---------- AS REQD ------- NIL		

*FOR A LOAD OF M430 CONTAINERS. SEE SPECIAL NOTE 2 ABOVE.

LOAD AS SHOWN

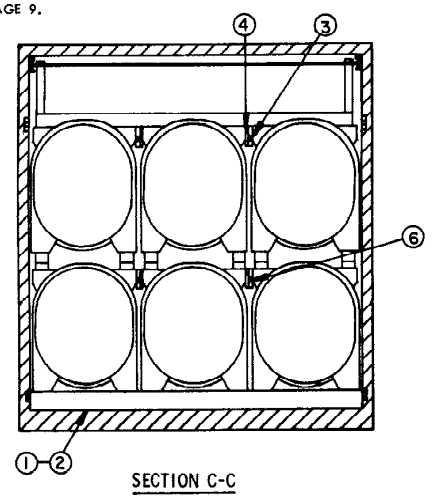
ITEM	QUANTITY	WEIGHT (APPROX)
M430 CONTAINER	12	38,700 LBS
DUNNAGE		521 LBS
TOTAL WEIGHT		39,221 LBS

ITEM	QUANTITY	WEIGHT (APPROX)
M611 CONTAINER	12	40,212 LBS
DUNNAGE		241 LBS
TOTAL WEIGHT		40,453 LBS



ISOMETRIC VIEW

A LOAD OF M430 CONTAINERS IS SHOWN. SEE SPECIAL NOTE 2 ON PAGE 9.



SECTION C-C

KEY NUMBERS

(1) HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (2 REQD). REQUIRED AT EACH END OF THE LOAD. NAIL TO A "HEADER ASSEMBLY" MARKED (2) W/I-10d NAIL EVERY 8". SEE GENERAL NOTE "Q" ON PAGE 2.

(2) HEADER ASSEMBLY (3 REQD). SEE THE DETAIL ON PAGE 7.

(3) ANTI-CHAFING BOARD, 2" X 6" X 8'-0" (8 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO OUTER-CONTAINER PADS WITH STRAP MARKED (6). SEE SPECIAL NOTE 2 ON PAGE 9.

(4) ANTI-CHAFING BOARD, 1" X 6" X 8'-0" (8 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO CENTER-CONTAINER PADS WITH STRAP MARKED (6). SEE SPECIAL NOTE 2 ON PAGE 9.

(5) STACK UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (18 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTE "N" ON PAGE 2.

(6) RETAINER STRAP, 1-1/4" X .035" X 17'-6" LONG STEEL STRAPPING (16 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SEE SPECIAL NOTE 2 ON PAGE 9.

(7) SEAL FOR 1-1/4" STEEL STRAPPING (52 REQD, 2 PER UNITIZING STRAP AND 1 PER RETAINER STRAP). DOUBLE CRIMP EACH SEAL.

(8) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH THE CONTAINER.

12-UNIT LOAD IN A TRAILER EQUIPPED WITH A CAMUS III RESTRAINING SYSTEM

SPECIAL NOTES:

1. A 12-UNIT LOAD OF M430 CONTAINERS IS SHOWN IN A 40'-0" LONG BY 7'-7" WIDE (INSIDE DIMENSION) TRAILER WHICH IS EQUIPPED WITH A CAMUS III RESTRAINING SYSTEM HAVING 30'-4-1/2" TO 37'-8-1/2" BETWEEN ADJUSTABLE BULKHEADS. SEE GENERAL NOTES "E" AND "T" ON PAGE 2.

2. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE TO A 12-UNIT LOAD OF M611 CONTAINERS, EXCEPT THAT "ANTI-CHAFING ASSEMBLIES", PIECES MARKED ③, ④ AND ⑥, WILL NOT BE REQUIRED. SEE SPECIAL NOTE 5 BELOW.

3. THE FORWARD BULKHEAD WILL BE LOCATED AT THE MOST FORWARD POSITION BEFORE LOADING BEGINS.

4. NOTICE: AFTER THE LATCH PINS OF THE BULKHEAD HAVE BEEN INSERTED INTO THE PIN LOCKING HOLES IN THE TRAILER BELT RAIL, THE SPACER BLOCKS, LOCATED NEAR THE LATCH PINS AT THE BOTTOM OF THE BULKHEAD, MUST BE LOCKED IN POSITION FOR SHIPMENT.

5. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE SHIPMENT OF A LESS-THAN-FULL-LOAD QUANTITY BY APPLYING THE "PROCEDURES FOR OMITTED CONTAINER" AS SPECIFIED ON PAGE 10. NOTE THAT ANY 5-CONTAINER LOAD UNIT CONSISTING OF EITHER THE M430 OR THE M611 CONTAINERS MUST BE PROVIDED WITH "ANTI-CHAFING ASSEMBLIES" BETWEEN THE FIRST-LAYER CONTAINERS.

BILL OF MATERIAL *

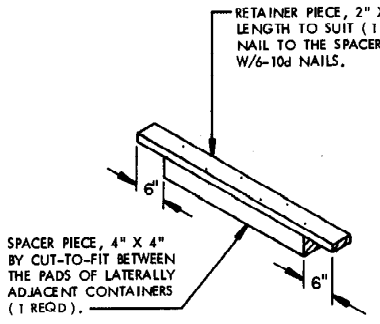
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	64	32
2" X 4"	13	9
2" X 6"	103	103
NAILS	**NO. REQD**	**POUNDS**
10d (3")	36	3/4
16d (3-1/2")	12	1/4
STEEL STRAPPING, 1-1/4" X .035" ---- 586' REQD ------- 84 LBS		
SEAL FOR 1-1/4" STRAPPING --------- 52 REQD ------- 3 LBS		
ANTI-CHAFING MATERIAL ---------- AS REQD ------- NIL		

* FOR A LOAD OF M430 CONTAINERS. SEE SPECIAL NOTE 2 ABOVE.

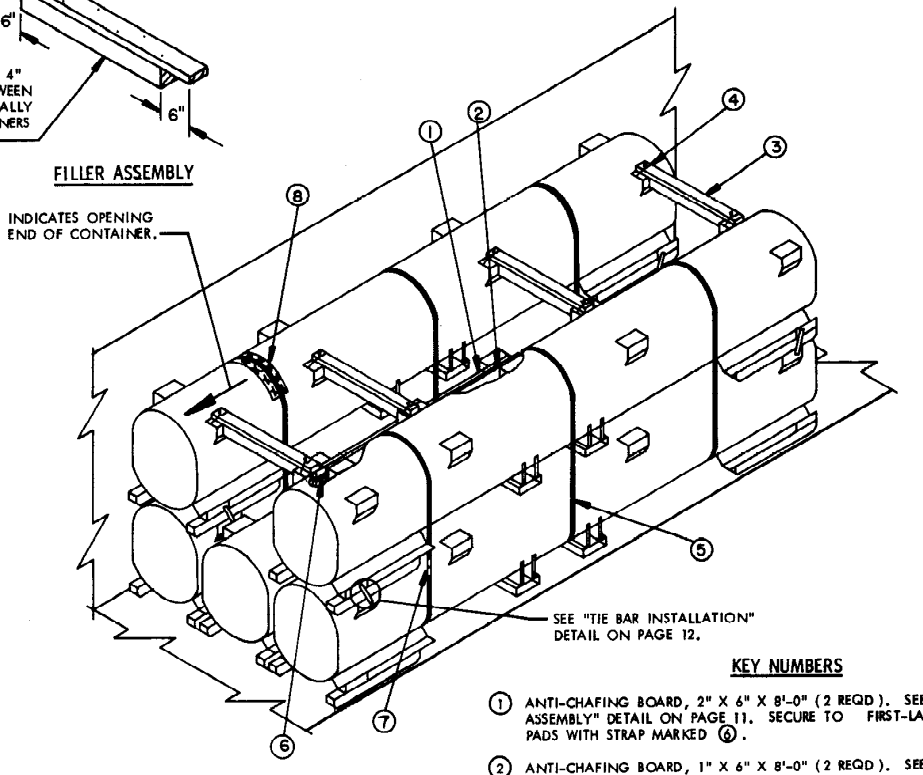
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
M430 CONTAINER -----	12 ----------	38,700 LBS
DUNNAGE ----------		448 LBS
TOTAL WEIGHT ----------		39,148 LBS

ITEM	QUANTITY	WEIGHT (APPROX)
M611 CONTAINER -----	12 ----------	40,212 LBS
DUNNAGE ----------		168 LBS
TOTAL WEIGHT ----------		40,380 LBS



FILLER ASSEMBLY



ISOMETRIC VIEW

SPECIAL NOTES:

1. A 5-CONTAINER LOAD UNIT OF M430 OR M611 CONTAINERS IS SHOWN IN A 7'-7" WIDE (INSIDE DIMENSION) TRAILER. THIS LOAD UNIT MAY BE SUBSTITUTED FOR ANY 6-CONTAINER LOAD UNIT DEPICTED ON PAGES 4 THRU 9 TO PROVIDE FOR THE SHIPMENT OF A LESS-THAN-FULL-LOAD QUANTITY. HOLD-DOWN ASSEMBLIES, HEADERS, STRUTS, SOLID FILL AND OTHER APPLICABLE DUNNAGE WILL BE INSTALLED AS SPECIFIED IN THE BASIC LOAD VIEW FOR THE TYPE OF TRAILER BEING USED. NOTE THAT PIECES MARKED (3) AND (4) IN THE ISOMETRIC VIEW ABOVE, WILL NOT BE REQUIRED FOR SHIPMENT OF A 5-CONTAINER LOAD UNIT IN THE TRAILER DEPICTED ON PAGE 4. HOWEVER, THE REQUIREMENTS OF SPECIAL NOTE 2 ON PAGE 5 WILL APPLY.

KEY NUMBERS

(1) ANTI-CHAFING BOARD, 2" X 6" X 8'-0" (2 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO FIRST-LAYER OUTER-CONTAINER PADS WITH STRAP MARKED (6).

(2) ANTI-CHAFING BOARD, 1" X 6" X 8'-0" (2 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11. SECURE TO FIRST-LAYER CENTER-CONTAINER PADS WITH STRAPS MARKED (6).

(3) FILLER ASSEMBLY (4 REQD). SEE THE DETAIL ABOVE AND SPECIAL NOTE 1 AT LEFT.

(4) TIE WIRE, NO. 14 GAGE 24" LONG (8 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND FILLER ASSEMBLY AND CONTAINER PAD, BRING ENDS TOGETHER AND TWIST TAUT. SECURE THE WIRE TO THE FILLER ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STRAP STAPLE.

(5) STACK UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (6 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTE "N" ON PAGE 2.

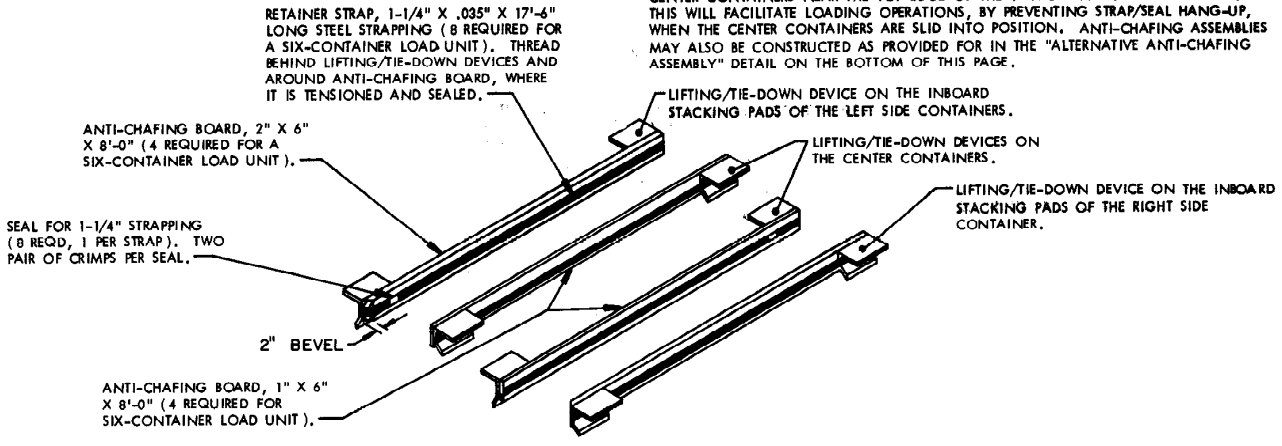
(6) RETAINER STRAP, 1-1/4" X .035" X 17'-6" LONG STEEL STRAPPING (4 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 11.

(7) SEAL FOR 1-1/4" STEEL STRAPPING (16 REQD, 2 PER UNITIZING STRAP AND 1 PER RETAINER STRAP). DOUBLE CRIMP EACH SEAL.

(8) ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINER.

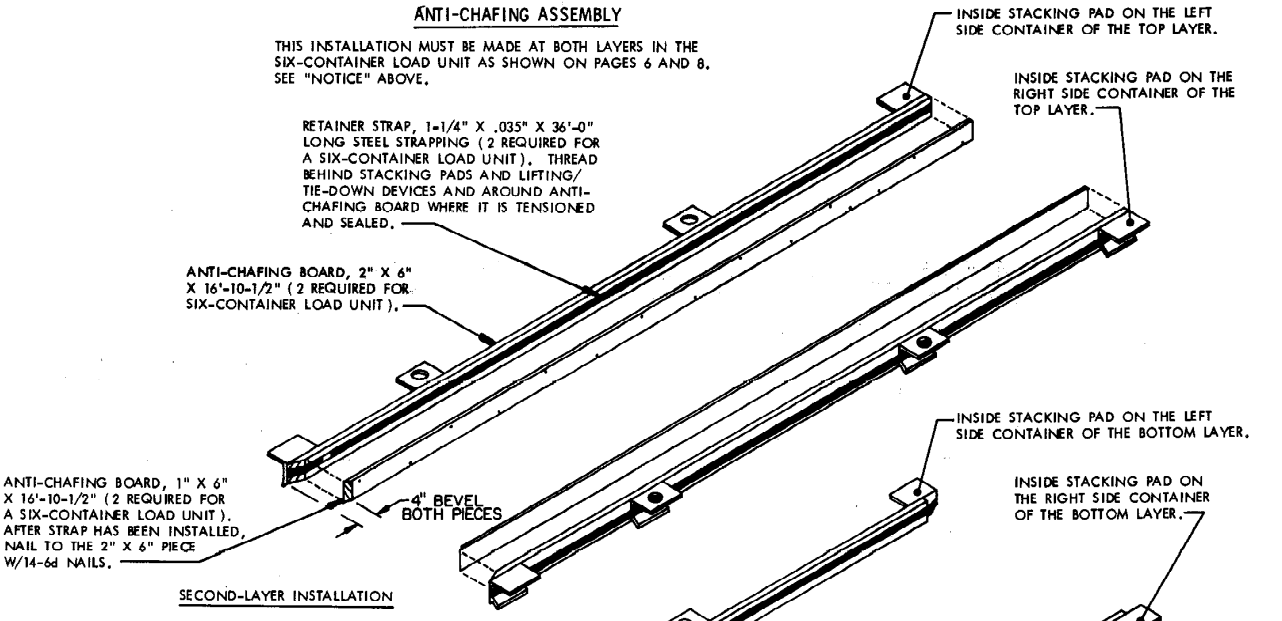
NOTICE:

WHEN ANTI-CHAFING ASSEMBLIES ARE INSTALLED ON LATERALLY ADJACENT CONTAINERS, THE RETAINER STRAPS MUST BE LOCATED SO THAT THE STRAPS ON THE OUTSIDE CONTAINERS DO NOT CONTACT THE STRAPS ON THE CENTER CONTAINERS. THIS CAN BE ACCOMPLISHED BY INSTALLING THE STRAPS ON THE OUTSIDE CONTAINERS NEAR THE BOTTOM EDGE OF THE 2" X 6" ANTI-CHAFING BOARDS, AND THE STRAPS ON THE CENTER CONTAINERS NEAR THE TOP EDGE OF THE 1" X 6" ANTI-CHAFING BOARDS. THIS WILL FACILITATE LOADING OPERATIONS, BY PREVENTING STRAP/SEAL HANG-UP, WHEN THE CENTER CONTAINERS ARE SLID INTO POSITION. ANTI-CHAFING ASSEMBLIES MAY ALSO BE CONSTRUCTED AS PROVIDED FOR IN THE "ALTERNATIVE ANTI-CHAFING ASSEMBLY" DETAIL ON THE BOTTOM OF THIS PAGE.



ANTI-CHAFING ASSEMBLY

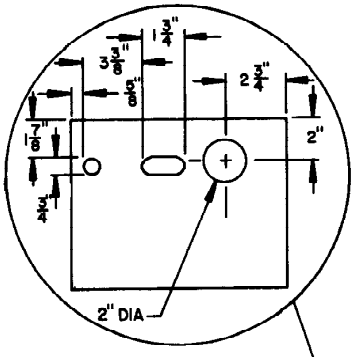
THIS INSTALLATION MUST BE MADE AT BOTH LAYERS IN THE SIX-CONTAINER LOAD UNIT AS SHOWN ON PAGES 6 AND 8. SEE "NOTICE" ABOVE.



ALTERNATIVE ANTI-CHAFING ASSEMBLY

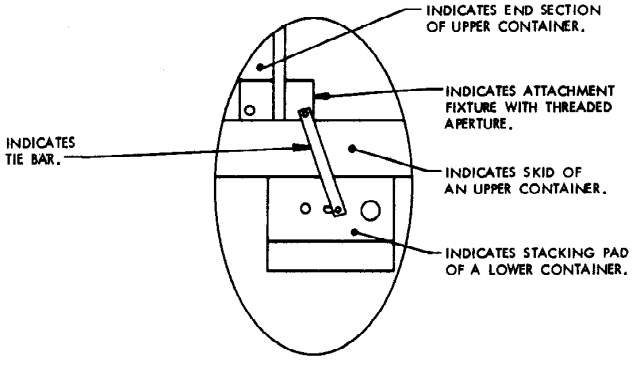
THIS INSTALLATION WILL BE MADE ON THE INBOARD STACKING PADS OF THE OUTSIDE CONTAINERS ONLY. THE CENTER CONTAINER WILL NOT HAVE DUNNAGE ATTACHED AS SHOWN IN THE SIX-CONTAINER LOAD UNITS ON PAGES 6 AND 8.

DETAILS

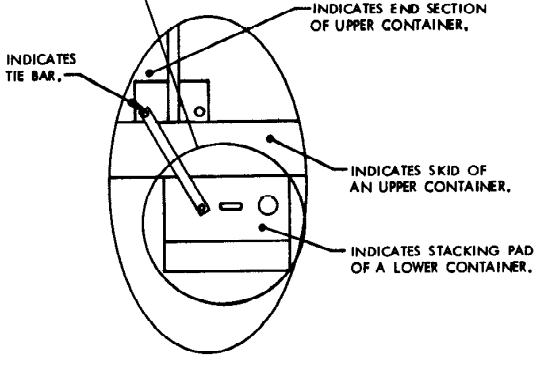


DETAIL A

BRACKET AT OTHER END OF CONTAINER IS OPPOSITE HAND.



PREFERRED METHOD



ALTERNATE METHOD

TIE BAR INSTALLATION

NOTE: AT THE OTHER END OF A STACK, THE TIE BAR WILL ANGLE UPWARD IN A DIRECTION OPPOSITE TO THAT SHOWN ABOVE AND TOWARD THE ADJACENT END SECTION OF THE UPPER CONTAINER.