

TOW

LOADING AND BRACING (TL & LTL) IN
CLOSED OR OPEN TOP VAN TRAILER
AND/OR ON FLAT BED OR "LOW-BOY"
TRAILER OF COMPONENTS FOR
LAUNCHER EQUIPMENT PACKED ONE
SET PER WOODEN BOX

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THIS DRAWING, INCLUDING REVISION I, SUPERSEDES
DRAWING 19-48-7557-GSE II TO 2, DATED NOVEMBER
1970.

REVISIONS				DRAFTSMAN A/B	PROJ. ENG. C. Hill	LOG ENGRG. JPP
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				U. S. ARMY MATERIEL COMMAND		
				MAY 1974		
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DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR #40-13.
- B. THE LOADS AS SHOWN ON PAGES 4 THROUGH 8 ARE BASED ON A CLOSED OR OPEN TOP HIGH CAPACITY VAN TRAILER WHICH IS 40'-0" LONG BY 7'-7-1/2" WIDE (INSIDE DIMENSION) AND HAS A WOOD, WOOD AND METAL, OR A METAL FLOOR. THE DELINEATED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO TRAILERS WHICH ARE FROM 86 INCHES THROUGH 93 INCHES WIDE. THE LOADS AS SHOWN ON PAGES 12 THROUGH 15 ARE BASED ON A FLAT BED OR "LOW-BOY" TRAILER 8'-8" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. THE NUMBER OF UNITS TO BE LOADED ON A TRAILER WILL BE DEPENDENT ON THE SIZE OF THE TRAILER USED OR THE QUANTITIES OF UNITS TO BE SHIPPED, WITH THE VIEW OF FULL UTILIZATION OF CARRIER EQUIPMENT.
- C. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE COMPONENTS FOR LAUNCHER EQUIPMENT PACKED ONE SET PER WOODEN BOX. SUBSEQUENT REFERENCE TO CONTAINER MEANS THE WOODEN BOX WITH CONTENTS.
- D. FOR DETAILS OF THE CONTAINER SEE DRAWING NO. 19-48-5211-GSE 20M2. ALSO, SEE GENERAL NOTE P.
 CONTAINER DIMENSIONS --- 75" LONG BY 40-1/2" WIDE BY 34-1" HIGH.
 GROSS WEIGHT----- 610 POUNDS (APPROX).
 TARE WEIGHT ----- 205.6 POUNDS (APPROX).
 CUBE----- 60 CUBIC FEET.

COMPONENTS PACKED IN THE CONTAINER:

ITEM	QUANTITY
SIGHT OPTICAL -----	1
MISSILE GUIDANCE SET -----	1
MOULT. TRIPOD, GM LAUNCHER XM154-----	1
TUBE, GM LAUNCHER -----	1
TRAVERSING UNIT, GM LAUNCHER -----	1
BATTERY ASSEMBLY, STORAGE -----	2
BAG CONTAINER -----	1
STRAP ASSEMBLY -----	1

- 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. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED. HOWEVER, THE APPROVED METHODS SHOWN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- G. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINER WHEN IT IS EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE DRAWING TITLE.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN ON TRAILERS WHICH ARE 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 IN THIS DRAWING.
- J. ONLY TRAILERS CAPABLE OF SAFELY TRANSPORTING THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED. TRAILERS SELECTED MUST HAVE "SOUND" FLOORS WHICH PROVIDE NAIL RETENTION PROPERTIES EQUAL TO OR BETTER THAN SPECIFIED DUNNAGE LUMBER.
- K. 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. CAUTION: EXERCISE CARE DURING TENSIONING TO PREVENT DAMAGE TO THE CONTAINER.
- L. 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 OR 1-5/8" THICK BY 5-5/8" WIDE AND 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.

(GENERAL NOTES CONTINUED AT RIGHT)

- M. 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.
- N. PORTIONS OF TRAILER BODIES DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- O. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "CONTAINER DETAIL" ON PAGE 3 AND TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.
- P. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE BASED ON THE CONTAINER DIMENSIONS AND WEIGHT AS SPECIFIED IN GENERAL NOTE D AND AS SHOWN IN THE DETAIL ON PAGE 3. HOWEVER, THESE PROCEDURES MAY ALSO BE USED TO LOAD AND BRACE CONTAINERS WHICH MAY VARY SLIGHTLY FROM THE CONTAINER SHOWN, PROVIDED APPROPRIATE ADJUSTMENTS ARE MADE AS REQUIRED.

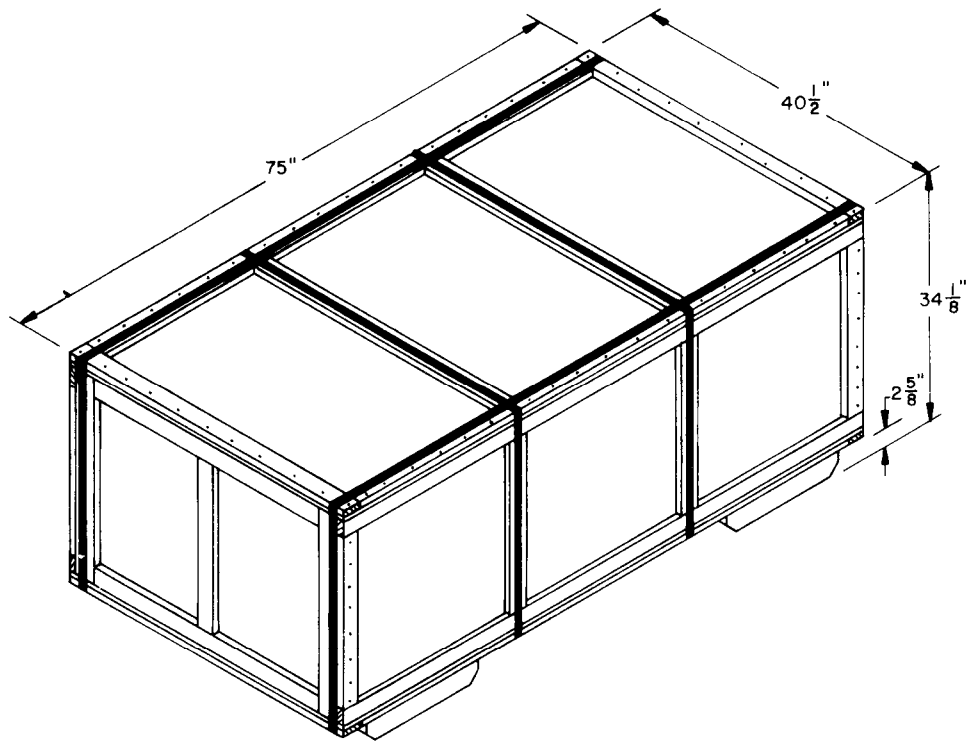
REVISIONS

REVISION NO. 1, DATED MAY 1974, CONSISTS OF:

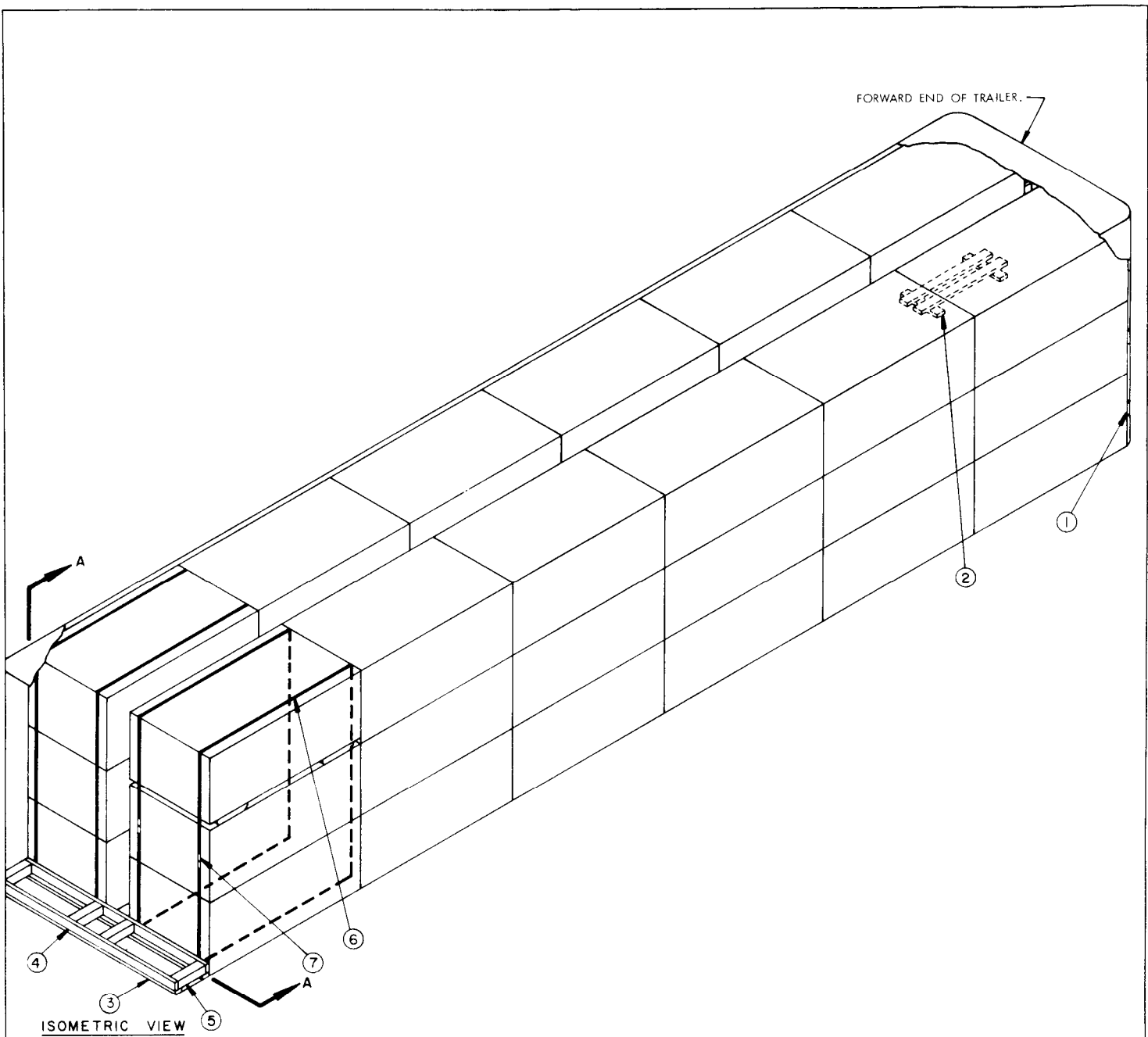
- 1. ADDITION OF LOADING AND BRACING PROCEDURES FOR FLAT BED OR LOW-BOY TRAILER.
- 2. CHANGE CONTAINER DIMENSIONS FROM 75" LONG BY 39-1/2" WIDE BY 31" HIGH TO 75" LONG BY 40-1/2" WIDE BY 34-1/8" HIGH.
- 3. CHANGE CONTAINER WEIGHT FROM 510 POUNDS TO 610 POUNDS.
- 4. CHANGES NECESSARY TO UPDATE THE DRAWING FORMAT.

MATERIAL SPECIFICATIONS

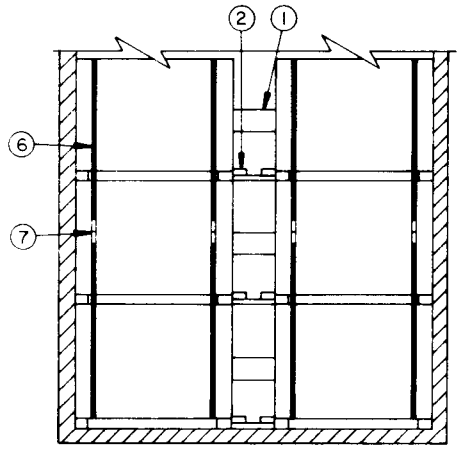
<u>LUMBER</u> -----	DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE OF MATERIAL DEFECTS. REF: FED SPEC MM-L-75I.
<u>NAILS</u> -----	COMMON, CEMENT COATED OR CHEMICALLY ETCHED. REF: FED SPEC FF-N-105. ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.
<u>STRAPPING, STEEL</u> -----	TYPE I OR IV, CLASS A OR B. REF: FED SPEC GQ-S-78I. (FOR FSN SEE 58-38-100).
<u>STRAP SEAL</u> -----	COMMERCIAL GRADE.



WOODEN BOX FOR LAUNCHER
EQUIPMENT COMPONENTS



ISOMETRIC VIEW



SECTION A-A

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 10. SEE SPECIAL NOTES 2 AND 3 ON PAGE 5.
- ② ANTI-SWAY BRACE (18 REQD). SEE DETAIL ON PAGE 10. POSITION BETWEEN LATERALLY ADJACENT CONTAINERS.
- ③ RISER, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (2 REQD). NAIL TO A PIECE MARKED ④ W/8-10d NAILS. SEE SPECIAL NOTE 5 ON PAGE 5.
- ④ HEADER, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (2 REQD). SEE SPECIAL NOTE 5 ON PAGE 5.
- ⑤ STRUT, 4" X 4" BY CUT TO FIT (9" MIN) (4 REQD). ALIGN WITH A CONTAINER SKID AND TOENAIL TO PIECES MARKED ④ W/2-12d NAILS AT EACH END. SEE SPECIAL NOTE 7 ON PAGE 5. SEE STRUT BRACE DETAIL ON PAGE 11.
- ⑥ UNITIZING STRAP, 1-1/4" X .035" X 31'-0" STEEL STRAPPING (4 REQD). POSITION AROUND A 3-CONTAINER STACK AT THE REAR OF THE LOAD. SEE SPECIAL NOTE 4 ON PAGE 5.
- ⑦ SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD). SEE GENERAL NOTE "K" ON PAGE 2.

SPECIAL NOTES:

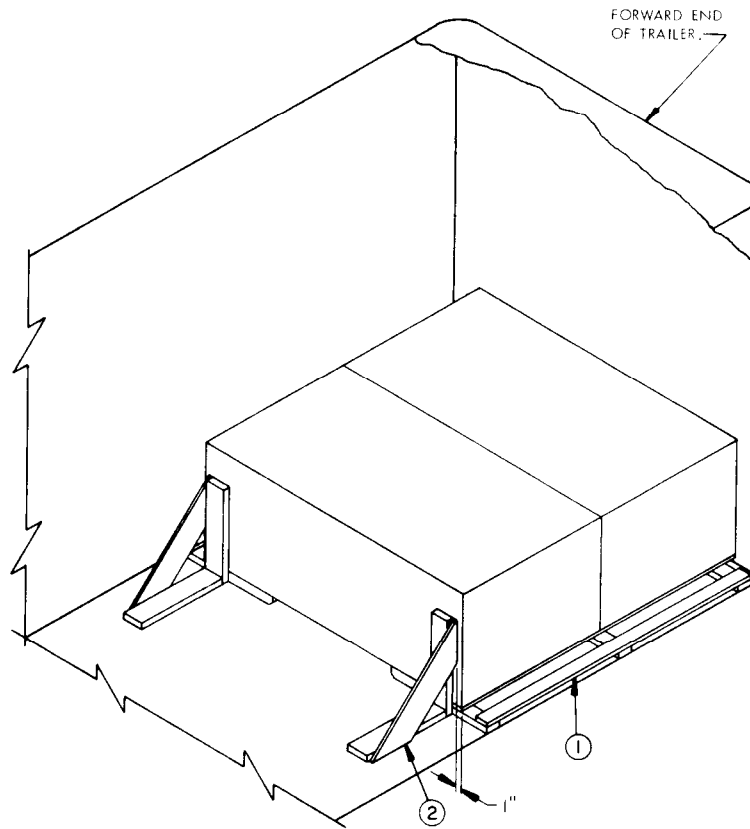
1. A 36-UNIT LOAD IS SHOWN IN A 40'-0" LONG HIGH-VOLUME VAN TRAILER WHICH IS 7'-7-1/2" WIDE BY 8'-7" HIGH INSIDE. ALSO, THE DEPICTED TRAILER HAS ROUNDED CORNERS AT THE FORWARD END, BUT IT DOES NOT HAVE REAR CORNER POSTS; HOWEVER, THE DELINEATED LOADING AND BLOCKING SPECIFICATIONS ARE ALSO APPLICABLE TO TRAILERS THAT HAVE SQUARE FRONT WALLS AND ARE EQUIPPED WITH OR WITHOUT REAR CORNER POSTS. NOTE THAT IF A 3-LAYER LOAD AS SHOWN IS TO BE SHIPPED, THE TRAILER BEING USED MUST ALSO HAVE A DOOR OPENING WITH A HEIGHT OF AT LEAST 8'-7". IF THE TRAILER BEING USED HAS AN ADEQUATE INSIDE HEIGHT TO CARRY A 3-LAYER LOAD BUT THE DOOR OPENING IS LESS THAN 8'-7" IN HEIGHT, IT WILL ONLY BE POSSIBLE TO LOAD THE FORWARD FIVE STACKS 3-HIGH. THE REAR STACK CAN ONLY BE LOADED 2-HIGH. AS REQUIRED, PORTIONS OF THE LOAD-BLOCKING SPECIFICATIONS DELINEATED ON PAGE 8 WILL BE APPLIED TO SECURE A 2-HIGH REAR STACK AND THE NEXT STACK FORWARD OF THE REAR STACK IN A LOAD WHERE A 3-HIGH LOAD IS "STEPPED DOWN" TO A 2-HIGH STACK AT THE REAR. NOTICE: OPEN TOP (BAG TOP) TRAILERS WITH OR WITHOUT REMOVABLE DOOR HEADERS CAN BE USED ADVANTAGEOUSLY TO SHIP 36-UNIT LOADS.
2. FOR ROUNDED-CORNER TRAILERS WHERE THE RADIUS OF THE CORNER IS GREATER THAN 6", ADDITIONAL DUNNAGE OF A THICKNESS TO SUIT MUST BE LAMINATED TO THE FRONT HORIZONTAL PIECES OF THE FORWARD BLOCKING ASSEMBLY SO AS TO PROVIDE A "SQUARE" FRONT FOR THE LOAD. ALSO, 2" X 6" UPRIGHTS MAY BE USED IN LIEU OF 2" X 4" UPRIGHTS.
3. IF THE TRAILER BEING OUTLOADED HAS A SQUARE FRONT, THE FORWARD BLOCKING ASSEMBLY SHOWN AS PIECE MARKED ① IS NOT REQUIRED. THE CONTAINERS CAN BE POSITIONED DIRECTLY AGAINST THE TRAILER FRONT WALL.
4. UNITIZING STRAPS, SHOWN AS PIECES MARKED ⑥, ARE REQUIRED AT THE REAR OF THE LOAD TO RETAIN THE SECOND AND THIRD LAYER CONTAINERS.
5. IF THE TRAILER BEING OUTLOADED HAS REAR CORNER POSTS, POSITION THE REAR PIECES MARKED ③ AND ④ AGAINST THE CORNER POSTS AND LAMINATE 6" WIDE BY 24" LONG MATERIAL TO THE REAR SURFACE OF PIECE MARKED ④, AS REQUIRED TO FILL THE VOID BETWEEN THE HEADER AND THE REAR DOORS WHEN THEY ARE CLOSED. ALIGN WITH THE CENTER PIECES MARKED ⑤.
6. IF A LESSER QUANTITY OF CONTAINERS ARE TO BE SHIPPED, SEE PAGES 6, 7, AND 8 FOR GUIDANCE.
7. IF THE EXCESS SPACE BETWEEN THE LADING AND THE TRAILER REAR DOORS WHEN CLOSED IS 12" OR LESS, OMIT PIECES MARKED ③ THROUGH ⑤ AND USE SOLID FILL, 6" WIDE MATERIAL BY TRAILER WIDTH AS REQUIRED TO FILL THE VOID FROM THE REAR OF THE LADING TO THE REAR DOORS WHEN CLOSED. POSITION ON EDGE AND LAMINATE WITH 10d NAIL EVERY 12".

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	23	12
2" X 4"	238	159
2" X 6"	19	19
4" X 4"	5	7
NAILS	NO. REQD	POUNDS
6d (2")	36	1/4
10d (3")	268	4-1/4
12d (3-1/4")	16	1/2
STEEL STRAPPING, 1-1/4" X .035" ----- 124' REQD ----- 18 LBS		
SEAL FOR 1-1/4" STRAPPING ----- 8 REQD ----- NIL		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER -----	36 -----	21,960 LBS
DUNNAGE -----	-----	516 LBS
TOTAL WEIGHT -----		22,476 LBS



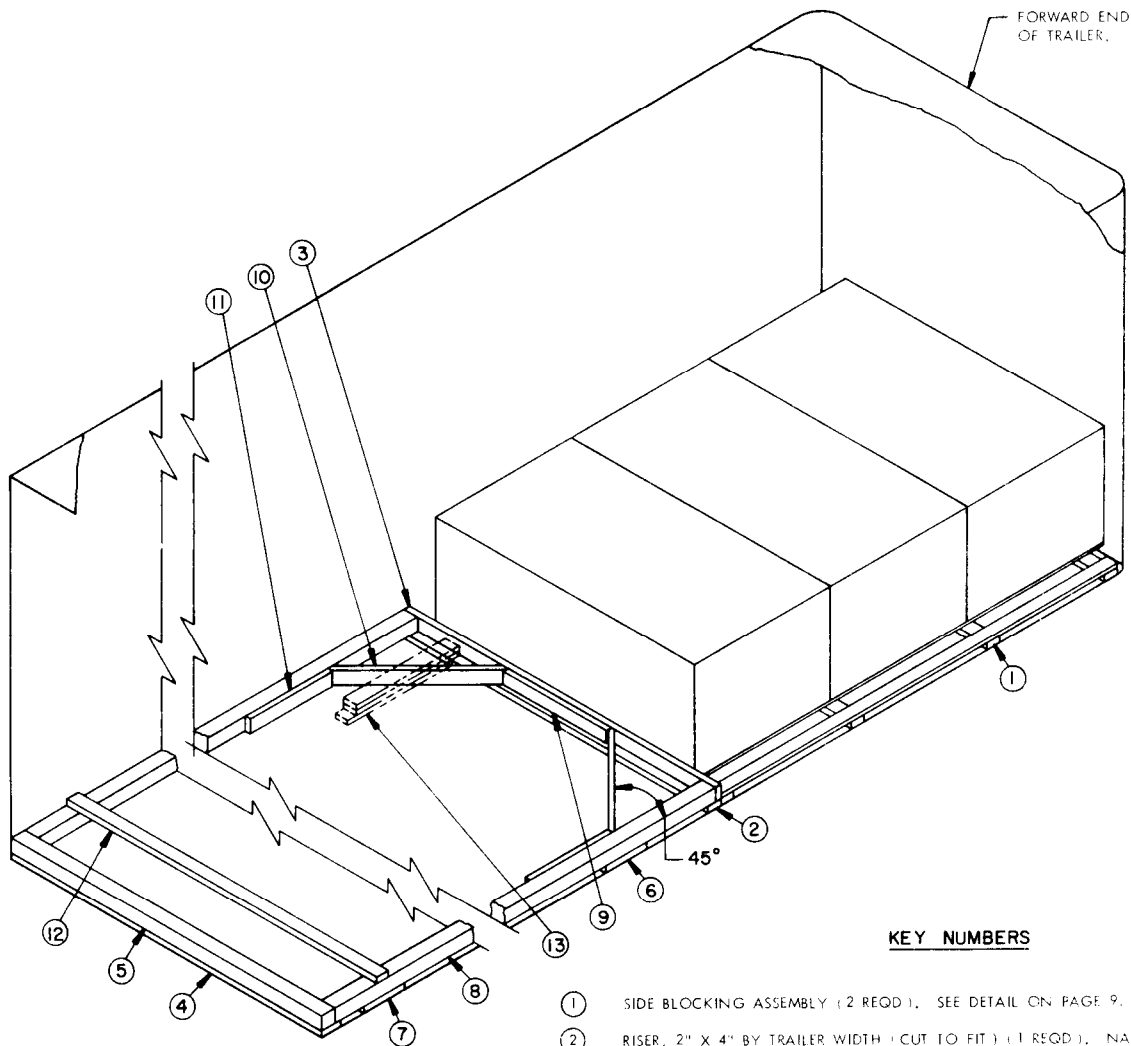
ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE LTL OUTLOADING PROCEDURES DEPICT THE USE OF BLOCKING THAT IS ONLY APPLICABLE TO TRAILERS THAT HAVE A NAILABLE FLOOR.
2. EACH LTL BRACE AS SPECIFIED WILL RETAIN 2,000 POUNDS OF LADING; HOWEVER, A MINIMUM OF TWO (2) BRACES MUST BE USED TO BLOCK THE LOAD.
3. POSITION THE LTL BRACE SO THAT THE ANGLE BRACE IS LOCATED 1" IN FROM THE EDGE OF THE CONTAINER, AS SHOWN.
4. THE SIDE BLOCKING DEPICTED ON THIS PAGE IS APPLICABLE FOR A ONE LAYER LOAD ONLY.

KEY NUMBERS

- ① SIDE BLOCKING ASSEMBLY (2 REQD.). SEE DETAIL ON PAGE 9.
- ② LTL BRACE (2 REQD.). SEE DETAIL ON PAGE 9. NAIL TO THE TRAILER FLOOR W/ 10-10d NAILS. SEE SPECIAL NOTES 1, 2, AND 3 ON THIS PAGE.



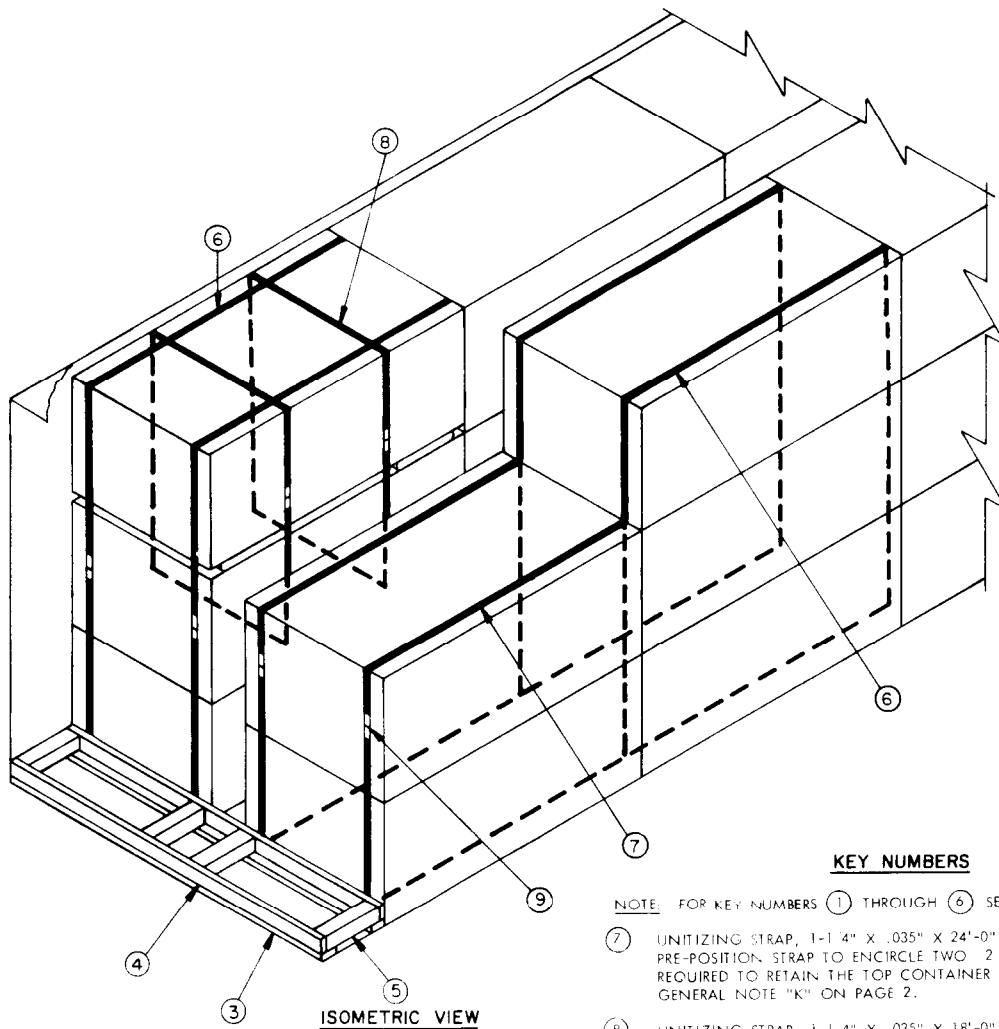
ISOMETRIC VIEW

SPECIAL NOTES:

1. THESE LTL OUTLOADING PROCEDURES DEPICT THE USE OF "K-BRACE" BLOCKING FOR USE IN A TRAILER HAVING WOOD, WOOD AND METAL, OR A METAL FLOOR. IT ALSO DEPICTS THE USE OF BACK-UP CLEATS FOR A NAILABLE FLOOR ONLY (ONE OMITTED FOR CLARITY).
2. THE "K-BRACE" BLOCKING, SHOWN AS PIECES MARKED ② THROUGH ⑫, IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 24 CONTAINERS.
3. TWO (2) BACK-UP CLEATS, SHOWN AS PIECE MARKED ⑬, ARE ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD OF 8,000 LBS AND SHOULD BE USED, IF POSSIBLE, IN LIEU OF THE "K-BRACE", SHOWN AS PIECES MARKED ② THROUGH ⑫, WHICH APPLIES TO TRAILERS HAVING NON-NAILABLE FLOORS.
4. THE SIDE BLOCKING DEPICTED ON THIS PAGE IS APPLICABLE FOR A ONE LAYER LOAD ONLY.
5. THE "K-BRACE" BLOCKING SHOWN ABOVE MAY BE USED TO RETAIN LTL LOADS TWO AND/OR THREE LAYERS HIGH, PROVIDED THE CONTAINERS ARE POSITIONED IN THE TRAILER AS SHOWN ON PAGE 4. ALSO, ANTI-SWAY BRACES AND UNITIZING STRAPS MUST BE INSTALLED AS DEPICTED IN THE LOAD VIEWS ON PAGES 4 AND/OR 8.
6. FOR LTL LOADS GREATER THAN 24 CONTAINERS, USE END BLOCKING AS TYPICALLY SHOWN IN THE LOAD VIEW ON PAGE 4.

KEY NUMBERS

- ① SIDE BLOCKING ASSEMBLY (2 REQD.). SEE DETAIL ON PAGE 9.
- ② RISER, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (1 REQD.). NAIL TO PIECE MARKED ③ W 8-10d NAILS.
- ③ HEADER, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (1 REQD.).
- ④ RISER, 2" X 6" BY TRAILER WIDTH (CUT TO FIT) (1 REQD.). NAIL TO PIECE MARKED ⑤ W 8-10d NAILS.
- ⑤ CROSS BRACE, 4" X 4" BY TRAILER WIDTH (CUT TO FIT) (1 REQD.).
- ⑥ DIAGONAL BRACE SUPPORT, 2" X 6" X 12" (2 REQD.). CENTER UNDER JOINT OF PIECES MARKED ⑩ AND ⑪ AND NAIL TO A PIECE MARKED ⑧ W 2-10d NAILS.
- ⑦ SIDE STRUT SUPPORT, 2" X 4" X 12" (AS REQD.). POSITION UNDER EVERY PIECE MARKED ⑫ AND NAIL TO A PIECE MARKED ⑧ W 2-10d NAILS.
- ⑧ SIDE STRUT, 4" X 4" BY CUT TO FIT (2 REQD.). TOENAIL TO PIECES MARKED ③ AND ⑤ W 2-16d NAILS AT EACH END.
- ⑨ SPACER CLEAT, 2" X 4" X 30" (1 REQD.). NAIL TO PIECE MARKED ① W 7-10d NAILS.
- ⑩ DIAGONAL BRACE, 2" X 4" BY CUT TO FIT (2 REQD.). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT A 45° ANGLE AS SHOWN AND NAIL TO PIECES MARKED ① AND ③ W 2-16d NAILS AT EACH END.
- ⑪ SIDE CLEAT, 2" X 4" X 24" (2 REQD.). NAIL TO PIECE MARKED ③ W 8-12d NAILS.
- ⑫ STRUT BRACE, 2" X 4" BY TRAILER WIDTH (CUT TO FIT) (MINIMUM OF 1 REQD.). POSITION EVERY 7'-0". NAIL TO PIECES MARKED ③ W 3-10d NAILS AT EACH END.
- ⑬ BACK-UP CLEAT, 2" X 4" X 30" (TRIPLED) (MINIMUM OF 2 REQD.). ALIGN WITH CONTAINER SKIDS. POSITION THE FIRST PIECE AGAINST PIECE MARKED ② AND NAIL TO THE TRAILER FLOOR W 7-12d NAILS. POSITION SECOND AND THIRD PIECES AGAINST PIECE MARKED ③ AND NAIL TO FIRST PIECE IN A LIKE MANNER. SEE SPECIAL NOTE 3 ON THIS PAGE.



ISOMETRIC VIEW

KEY NUMBERS

NOTE: FOR KEY NUMBERS ① THROUGH ⑥ SEE PAGE 4.

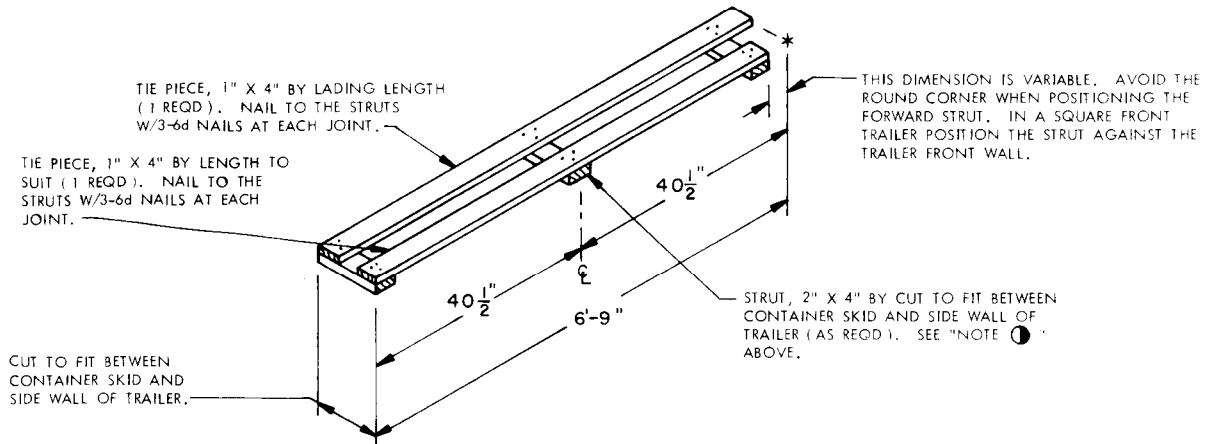
- ⑦ UNITIZING STRAP, 1-1/4" X .035" X 24'-0" STEEL STRAPPING (2 REQ'D). PRE-POSITION STRAP TO ENCIRCLE TWO (2) CONTAINERS AS SHOWN. REQUIRED TO RETAIN THE TOP CONTAINER LONGITUDINALLY. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑧ UNITIZING STRAP, 1-1/4" X .035" X 18'-0" STEEL STRAPPING (2 REQ'D). PRE-POSITION STRAP TO ENCIRCLE TWO (2) CONTAINERS AS SHOWN. REQUIRED TO RETAIN THE TOP CONTAINER Laterally. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑨ SEAL FOR 1-1/4" STEEL STRAPPING (16 REQ'D).

SPECIAL NOTES

1. THE PARTIAL VIEW SHOWN ABOVE DEPICTS THE LOAD AS SHOWN ON PAGE 4 WITH ONE CONTAINER OMITTED. MORE CONTAINERS MAY BE OMITTED BY USING SIMILAR STRAPPING METHODS AS SHOWN ABOVE TO RETAIN THE LOAD. NOTE THAT THE UNITIZING STRAPS SHOWN AS PIECES MARKED ⑧ ARE ONLY REQUIRED WHEN THE LOAD CONSISTS OF AN UNEVEN NUMBER OF CONTAINERS.
2. SEE SPECIAL NOTE 1 ON PAGE 5.
3. ANTI-SWAY BRACE ASSEMBLIES WILL BE INSTALLED AS TYPICALLY SHOWN IN THE LOAD ON PAGE 4.

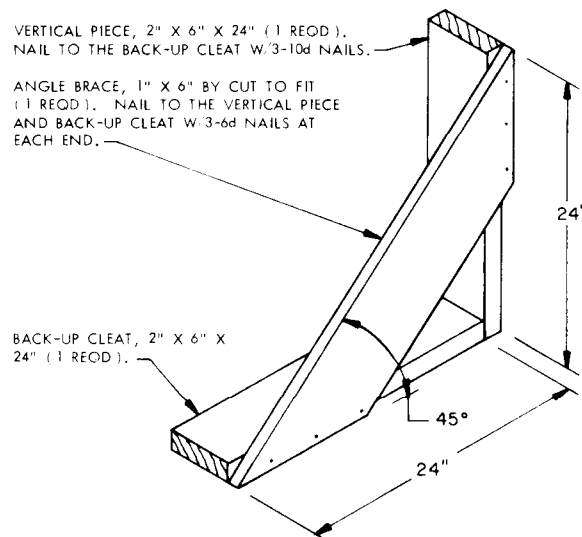
NOTE

POSITION THE END STRUTS FLUSH WITH THE ENDS OF THE ASSEMBLY (OR SET BACK FROM THE END TO CLEAR A ROUNDED CORNER, IF APPLICABLE) AND CENTER INTERMEDIATE STRUTS ON THE JOINTS BETWEEN CONTAINERS, AS SHOWN ON PAGE 7.



SIDE BLOCKING ASSEMBLY

THE SIDE BLOCKING ASSEMBLY SHOWN ABOVE IS FOR THE LOAD SHOWN ON PAGE 6. FOR OTHER LOADS THE DIMENSIONS MAY BE CHANGED TO SUIT THE LADING LENGTH. THIS SIDE BLOCKING ASSEMBLY MAY BE USED FOR A ONE CONTAINER HIGH LOAD ONLY.



LTL BRACE

NOTE THAT ONE RIGHT HAND AS SHOWN AND ONE LEFT HAND ARE REQUIRED FOR THE BRACING OF AN LTL LOAD.

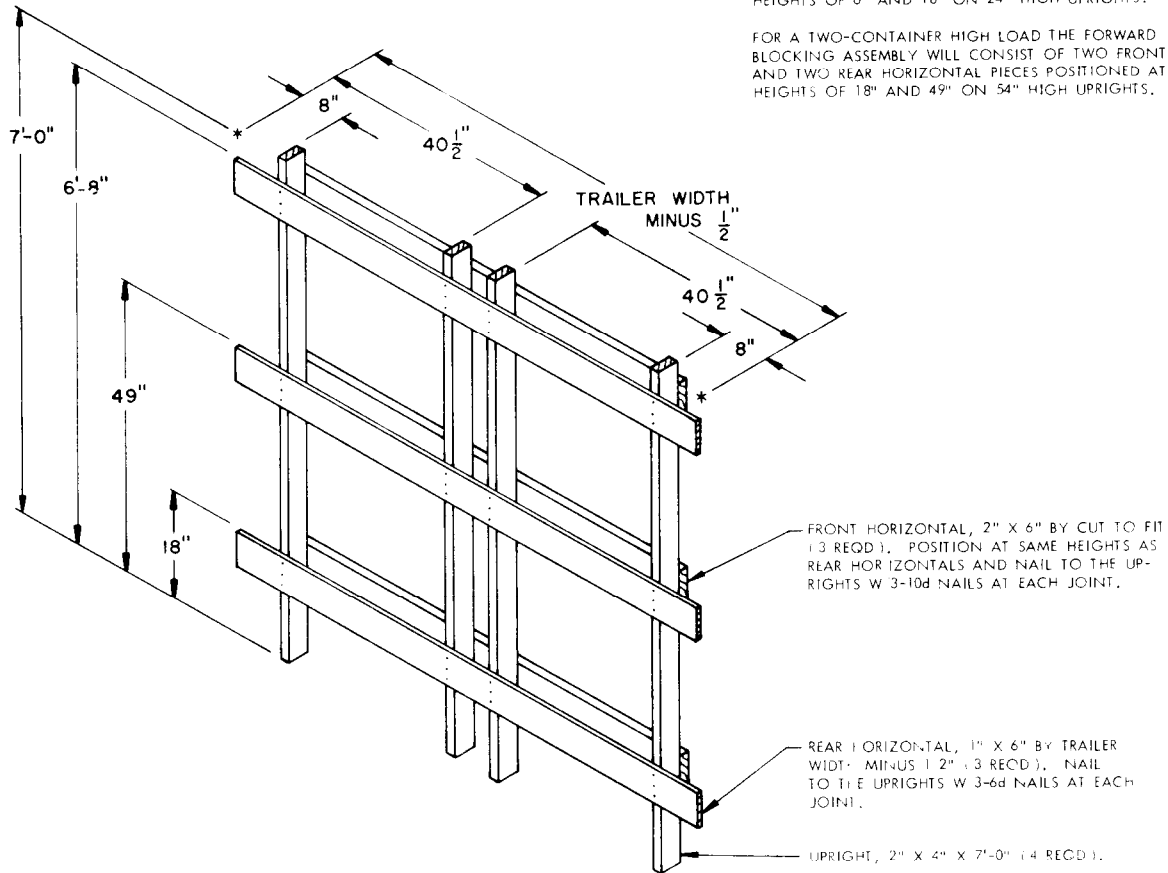
DETAILS

PAGE 9

NOTE ⊕ :

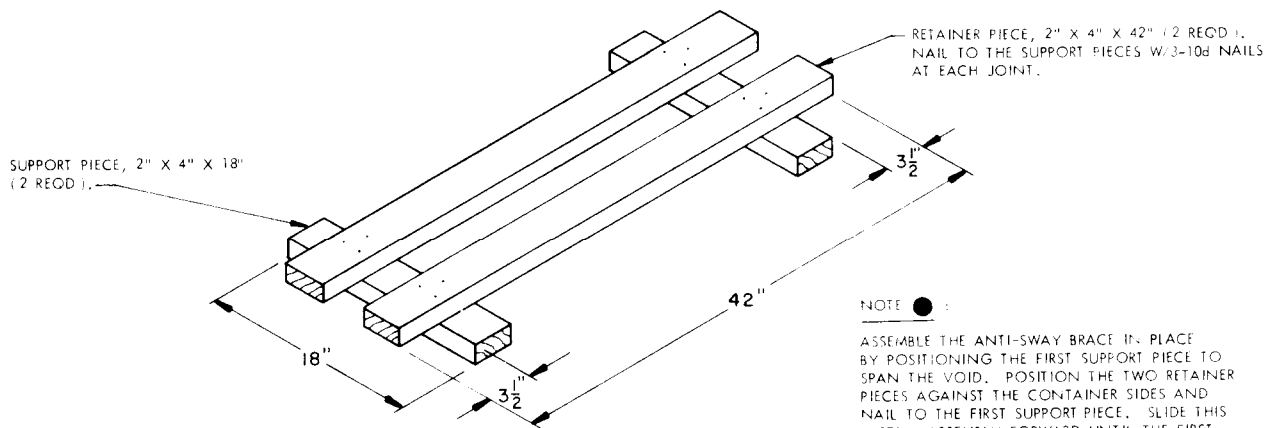
FOR A ONE-CONTAINER HIGH LOAD THE FORWARD BLOCKING ASSEMBLY WILL CONSIST OF TWO FRONT AND TWO REAR HORIZONTAL PIECES POSITIONED AT HEIGHTS OF 6" AND 18" ON 24" HIGH UPRIGHTS.

FOR A TWO-CONTAINER HIGH LOAD THE FORWARD BLOCKING ASSEMBLY WILL CONSIST OF TWO FRONT AND TWO REAR HORIZONTAL PIECES POSITIONED AT HEIGHTS OF 18" AND 49" ON 54" HIGH UPRIGHTS.



FORWARD BLOCKING ASSEMBLY

SEE SPECIAL NOTES 2 AND 3 ON PAGE 5 AND "NOTE ⊕" ABOVE.

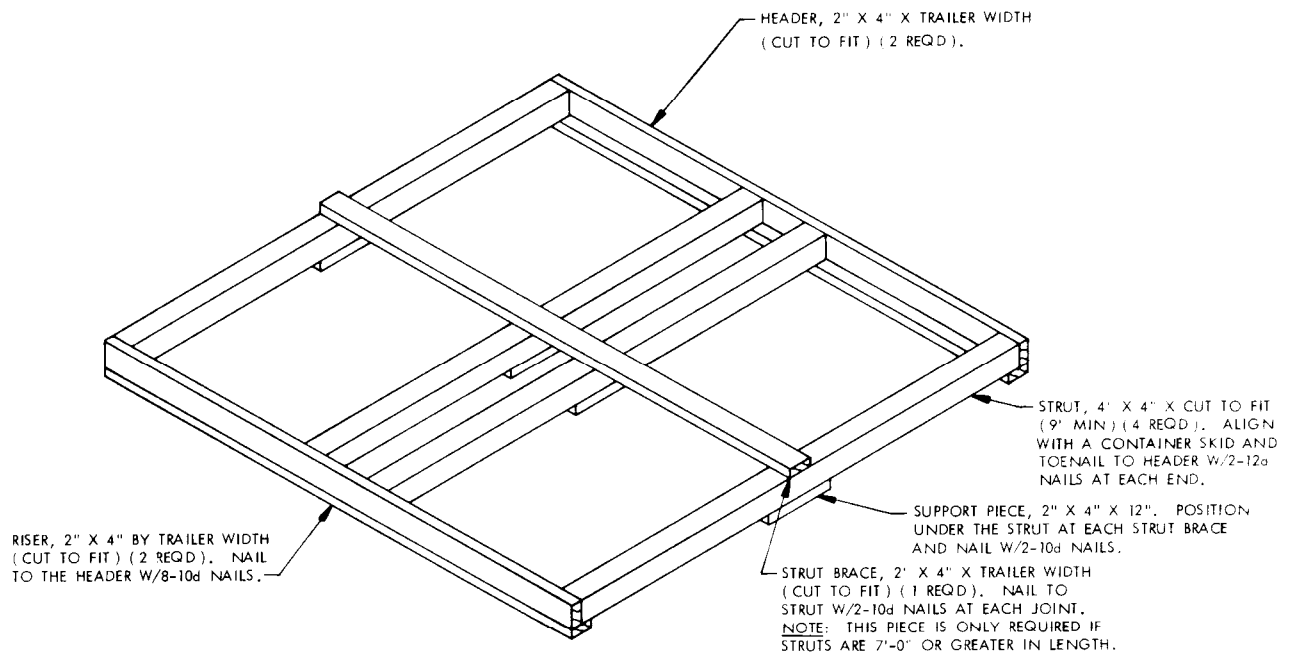


ANTI-SWAY BRACE

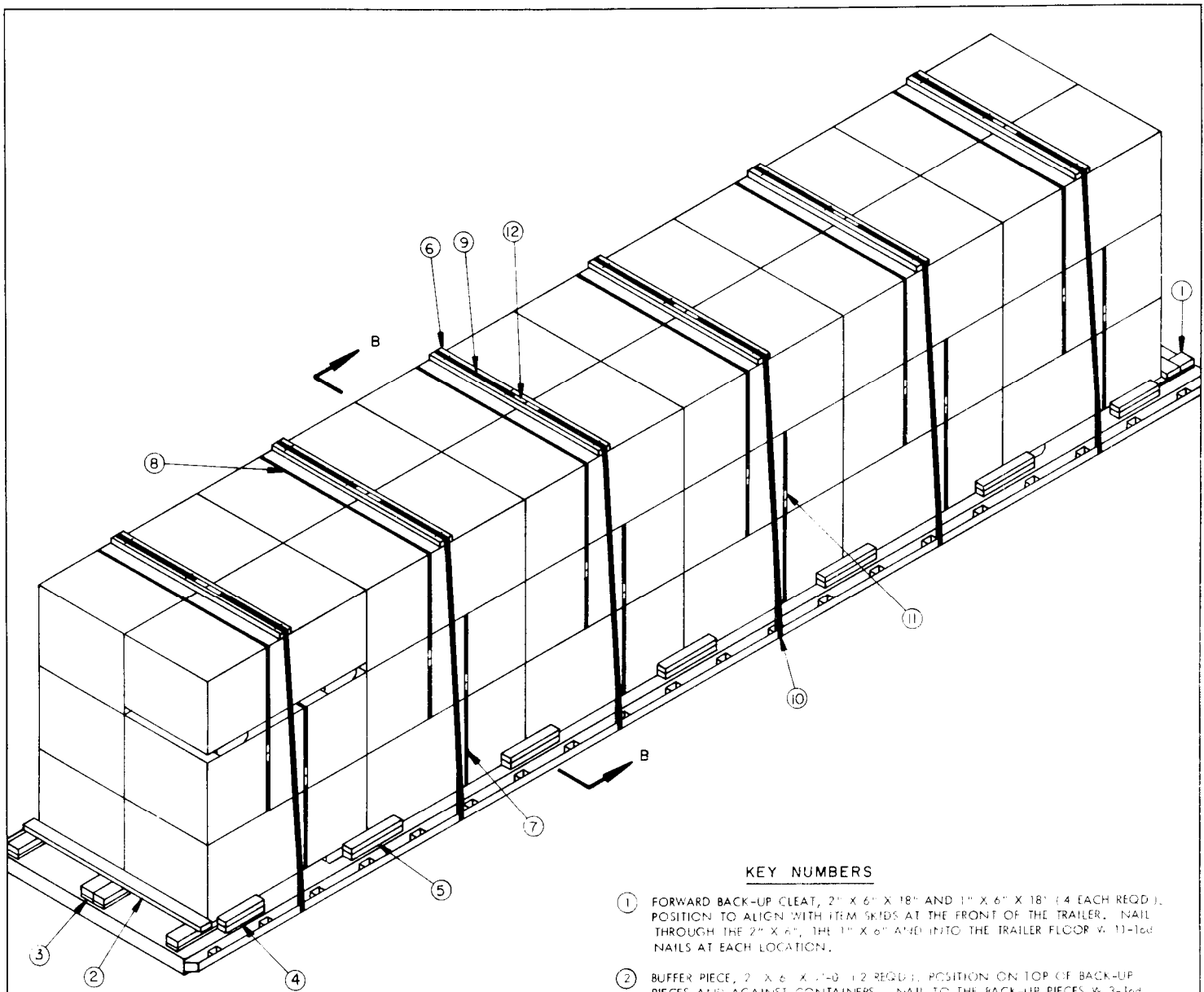
SEE "NOTE ●"

NOTE ● :

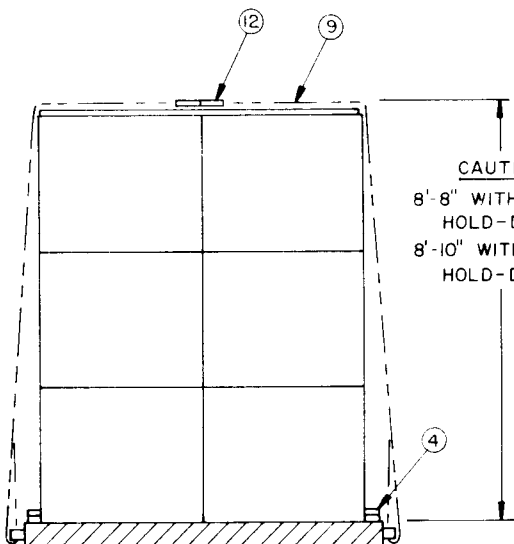
ASSEMBLE THE ANTI-SWAY BRACE IN PLACE BY POSITIONING THE FIRST SUPPORT PIECE TO SPAN THE VOID. POSITION THE TWO RETAINER PIECES AGAINST THE CONTAINER SIDES AND NAIL TO THE FIRST SUPPORT PIECE. SLIDE THIS PARTIAL ASSEMBLY FORWARD UNTIL THE FIRST SUPPORT PIECE CONTACTS THE CONTAINER SKID. POSITION THE SECOND SUPPORT PIECE TO SPAN THE VOID AND NAIL THE RETAINER PIECES TO IT.



STRUT BRACE



ISOMETRIC VIEW



SECTION B-B

THE BUNDLING STRAPS SHOWN AS PIECES MARKED ⑦ AND ⑧ HAVE BEEN OMITTED FOR CLARITY.

KEY NUMBERS

- ① FORWARD BACK-UP CLEAT, 2" X 6" X 18" AND 1" X 6" X 18" (4 EACH REQ.). POSITION TO ALIGN WITH ITEM SKIDS AT THE FRONT OF THE TRAILER. NAIL THROUGH THE 2" X 6", THE 1" X 6" AND INTO THE TRAILER FLOOR W/ 11-16d NAILS AT EACH LOCATION.
- ② BUFFER PIECE, 2" X 6" X 1'-0" (2 REQ.). POSITION ON TOP OF BACK-UP PIECES AND AGAINST CONTAINERS. NAIL TO THE BACK-UP PIECES W/ 3-16d NAILS AT EACH JOINT.
- ③ REAR BACK-UP CLEAT, 2" X 6" X 18" AND 1" X 6" X 18" (4 EACH REQ.). POSITION AGAINST SKIDS OF THE UNITS AT THE REAR OF THE TRAILER. NAIL THROUGH THE 2" X 6", THE 1" X 6" AND INTO THE TRAILER FLOOR W/ 5-16d NAILS AT EACH LOCATION.
- ④ SIDE BLOCKING, 2" X 4" X 18" (DOUBLED) (4 REQ.). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/ 5-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE SPECIAL NOTE 3 ON PAGE 13.
- ⑤ SIDE BLOCKING, 2" X 4" X 24" (DOUBLED) (10 REQ.). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/ 6-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ⑥ STRAPPING BOARD, 2" X 6" BY LADING WIDTH MINUS 1" (6 REQ.).
- ⑦ LOWER BUNDLING STRAP, 1-1/4" X .035" X 27'-0" LONG STEEL STRAPPING (6 REQ.). INSTALL TO ENCIRCLE THE BOTTOM FOUR CONTAINERS IN EACH STACK AS SHOWN.
- ⑧ UPPER BUNDLING STRAP, 1-1/4" X .035" X 27'-0" LONG STEEL STRAPPING (6 REQ.). INSTALL TO ENCIRCLE THE TOP FOUR CONTAINERS IN EACH STACK, AS SHOWN.
- ⑨ HOLD-DOWN STRAP, 2" X .050" X 34'-0" LONG STEEL STRAPPING (6 REQ.). INSTALL EACH STRAP FROM TWO 17'-0" LONG PIECES. STAPLE TO THE STRAPPING BOARD W/ 3-2" STAPLES. SEE SPECIAL PROVISIONS ON PAGE 13.
- ⑩ PAD, 2" X .050" STEEL STRAP 18" LONG (12 REQ.). POSITION UNDER ANCHORING FACILITY AND SEAL TO A HOLD-DOWN STRAP. SEE DETAIL A' ON PAGE 16. ALT. STAKE POCKET PROTECTOR (24 REQ.). USE TWO (2) UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE DETAIL B' ON PAGE 16.
- ⑪ SEAL FOR 1-1/4" STRAPPING (24 REQ., 2 PER STRAP). DOUBLE CRIMP EACH SEAL.
- ⑫ SEAL FOR 2" STRAPPING (36 REQ., 6 PER STRAP).

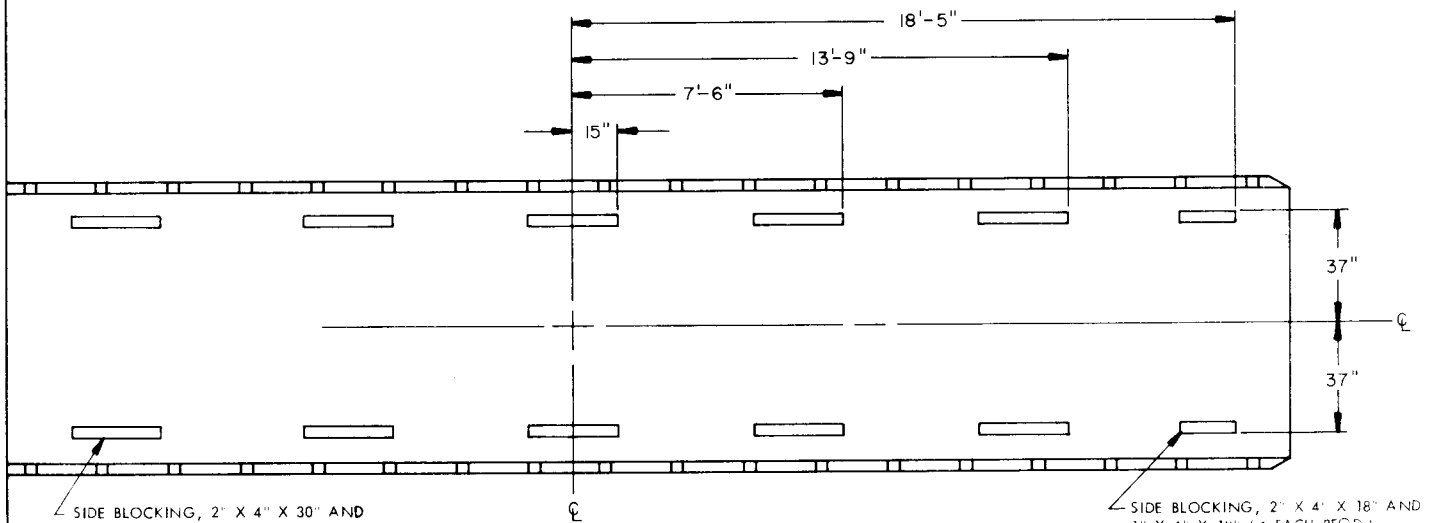
SPECIAL PROVISIONS:

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED HOLD-DOWN STRAPPING DUNNAGE MATERIALS, PROVIDING THE FOLLOWING CONDITIONS ARE MET:

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING.
2. IN LIEU OF EACH HOLD-DOWN STRAP MARKED (9), ONE (1) LINE OF 1/4" CHAIN MAY BE USED. THE STRAPPING BOARD MARKED (8) MUST BE DOUBLED AND LAMINATED W/1-10d NAIL EVERY 12". EACH CHAIN SHALL BE SECURED TO LAMINATED BOARDS W/4-20d NAILS BY DRIVING EACH NAIL INTO THE BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.
3. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE USED.
4. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR AND ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER.
5. CHAINS MUST NOT BE TWISTED DURING INSTALLATION.
6. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY WIRE TIED TO PREVENT ACCIDENTAL OPENING OR LOOSENING IN TRANSIT.

SPECIAL NOTES:

1. A 36-UNIT LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLAT BED TRAILER HAVING A WOOD OR A WOOD AND METAL FLOOR.
2. IF A LESSER QUANTITY OF CONTAINERS ARE TO BE SHIPPED, SEE PAGES 14 AND 15 FOR GUIDANCE.
3. IF THE TWO (2) WIDE LOAD SHOWN ON PAGE 12 DOES NOT PERMIT THE USE OF SIDE BLOCKING ON THE SIDE OF THE LADING, SIDE BLOCKING SHALL BE ACCOMPLISHED BY USING THE PRE-POSITIONED DUNNAGE PLAN SHOWN BELOW.



SIDE BLOCKING, 2" X 4" X 30" AND 1" X 4" X 30" (10 EACH REQD). PRE-POSITION AND NAIL THROUGH THE 2" X 4", THE 1" X 4" AND INTO THE TRAILER FLOOR W/10-16d NAILS AT EACH LOCATION.

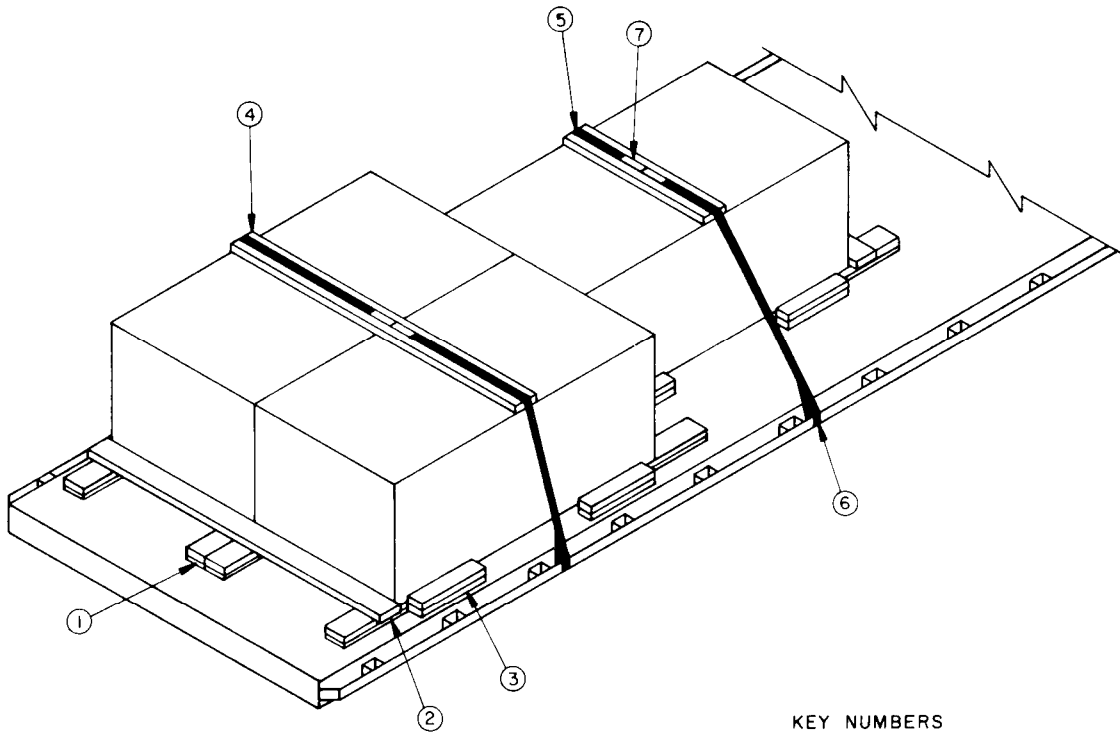
PRE-POSITIONED DUNNAGE PLAN VIEW

SIDE BLOCKING, 2" X 4" X 18" AND 1" X 4" X 18" (4 EACH REQD). PRE-POSITION AND NAIL THROUGH THE 2" X 4", THE 1" X 4" AND INTO THE TRAILER FLOOR W/8-16d NAILS AT EACH LOCATION.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	52	35
1" X 6"	12	6
2" X 6"	66	66
NAILS	NO. REQD	POUNDS
12d (3")	160	2-3/4
16d (3-1/2")	100	2-1/4
STEEL STRAPPING, 1-1/4" X .035"	324' REQD	4/ LBS
STEEL STRAPPING, 2" X .050"	222' REQD	4 LBS
SEAL FOR 1-1/4" STRAPPING	24 REQD	1 LB
SEAL FOR 2" STRAPPING	36 REQD	7 LBS
STAPLE FOR 2" STRAPPING	18 REQD	NIL

LOAD AS SHOWN

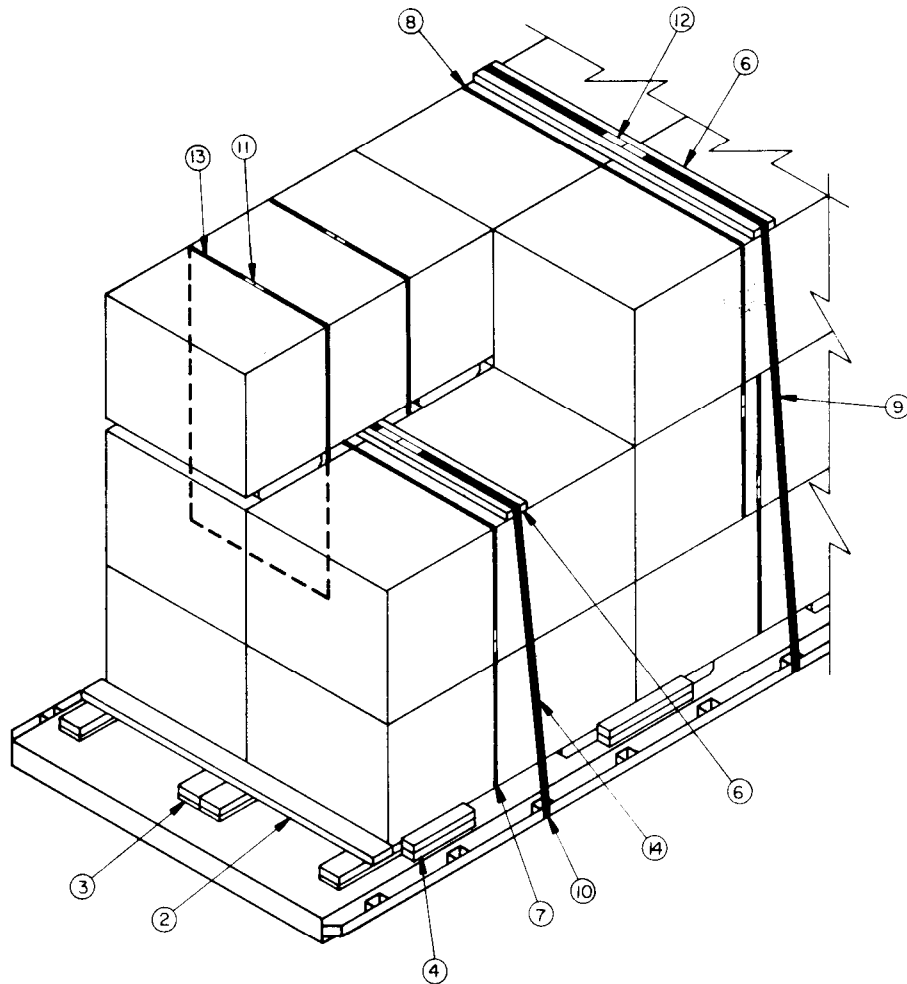
ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	36	21,960 LBS
DUNNAGE		402 LBS
TOTAL WEIGHT		22,362 LBS



ISOMETRIC VIEW

KEY NUMBERS

- ① BACK-UP CLEAT, 2" X 6" X 18" AND 1" X 6" X 18" (8 EACH REQD). POSITION IN LINE WITH ITEM SKIDS. NAIL THROUGH THE 2" X 6", THE 1" X 6" AND INTO THE TRAILER FLOOR W/11-16d NAILS AT EACH LOCATION.
- ② BUFFER PIECE, 2" X 6" BY LADING WIDTH PLUS 3" (2 REQD). POSITION ON TOP OF BACK-UP PIECES AND AGAINST CONTAINERS. NAIL TO THE BACK-UP PIECES W/3-16d NAILS AT EACH JOINT.
- ③ SIDE BLOCKING, 2" X 4" X 18" (DOUBLED) (8 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ STRAPPING BOARD, 2" X 6" BY LADING WIDTH MINUS 1" (2 REQD).
- ⑤ HOLD-DOWN STRAP, 2" X .050" X 22'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM TWO 11'-0" LONG PIECES. STAPLE TO THE STRAPPING BOARD W/3-2" STAPLES. SEE "SPECIAL PROVISIONS" ON PAGE 13.
- ⑥ PAD, 2" X .050" STEEL STRAP 18" LONG (4 REQD). POSITION UNDER ANCHORING FACILITY AND SEAL TO A HOLD-DOWN STRAP. SEE "DETAIL A" ON PAGE 16. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO (2) UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "DETAIL B" ON PAGE 16.
- ⑦ SEAL FOR 2" STRAPPING (12 REQD, 6 PER STRAP).



ISOMETRIC VIEW

KEY NUMBERS

NOTE: FOR KEY NUMBERS ① THROUGH ⑫ SEE PAGE 12.

SPECIAL NOTE:

1. THE PARTIAL VIEW SHOWN ABOVE DEPICTS THE LOAD AS SHOWN ON PAGE 12 WITH ONE CONTAINER OMITTED. MORE CONTAINERS MAY BE OMITTED BY USING SIMILAR STRAPPING METHODS AS SHOWN ABOVE TO RETAIN THE LOAD.

- ⑬ UNITIZING STRAP, 1-1/4" X .035" X 18'-0" STEEL STRAPPING (2 REQD). PRE-POSITION STRAP TO ENCIRCLE TWO (2) CONTAINERS AS SHOWN. REQUIRED TO RETAIN THE TOP CONTAINER Laterally. SEE GENERAL NOTE "K" ON PAGE 2.
- ⑭ HOLD-DOWN STRAP, 2" X .050" X 28'-0" LONG STEEL STRAPPING (1 REQD). INSTALL FROM TWO 14'-0" LONG PIECES. STAPLE TO THE STRAPPING BOARD W/3-2" STAPLES. SEE "SPECIAL PROVISIONS" ON PAGE 13. NOTE: A CHAIN TIEDOWN CANNOT BE USED WHERE ONLY ONE CONTAINER IS OMITTED FROM A STACK BECAUSE THE CHAIN AND BOARD WILL NOT FIT WITHIN THE AVAILABLE SPACE. TWO CONTAINERS MUST BE OMITTED FROM A STACK TO UTILIZE CHAIN TIE-DOWNS.

