

LOADING AND BRACING IN A CONTAINER/ TRAILER OF UNPALLETIZED BOX- PACKED AMMUNITION (OTHER THAN WP OR PWP) FOR CONTAINER/TRAILER- ON-FLAT-CAR (C/TOFC) SHIPMENT

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THIS DRAWING, INCLUDING REVISION NO. 1, SUPERSEDES
DRAWING 19-48-4037-15A1000, DATED MAY 1961.

REVISIONS		DATE	BY	APP'D	REVISED
1	MAY 74	5/23/74	<i>A. J. Grason</i>	<i>A. J. Grason</i>	
			<i>W. H. Benton</i>	<i>W. H. Benton</i>	
			<i>A. J. Grason</i>	<i>A. J. Grason</i>	
U.S. ARMY MATERIEL COMMAND U.S. ARMY MATERIEL COMMAND <i>A. J. Grason</i> U.S. ARMY MATERIEL COMMAND MAY 1974					
CLASS	DIVISION	DRAWING	FILE		
19	48	4037	15A		1000

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 TRAILERS AND/OR CONTAINERS WHICH ARE EQUIPPED WITH SPECIAL BULKHEAD SYSTEMS AS SPECIFIED WITHIN THE BUREAU OF EXPLOSIVES 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.
- C. TYPICAL LOADS SHOWN ARE BASED ON THE FOLLOWING TRAILERS.
1. TRAILERS WHICH ARE EQUIPPED WITH SPECIAL BULKHEAD BRACES HAVING 35'-0" BETWEEN THE BULKHEAD BOARDS. THESE LOADS REQUIRE THE USE OF STRAPPING TO SECURE THE UPRIGHT BRACES. SEE PAGES 4 THRU 9.
 2. TRAILERS WHICH HAVE A BULKHEAD BUILT INTO THE FRONT WALL AND ARE 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 THESE LOADS. SEE PAGES 10 AND 11.
 3. TRAILERS WHICH ARE 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". SEE PAGES 12 AND 13.
- D. ALL LOADS SHOWN ARE BASED ON TRAILERS WHICH ARE 40'-0" LONG BY 7'-7-1/2" WIDE (INSIDE DIMENSION) WITH WOOD, WOOD AND METAL, OR METAL FLOORS. THE DELINEATED OUTLOADING PROCEDURES ARE ALSO APPLICABLE TO TRAILERS OF OTHER WIDTHS.
- E. 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 THRU WHICH THE TRAILER WILL BE TRANSPORTED BY HIGHWAY (MOTOR CARRIER).
- 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 HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- G. WHEN STEEL STRAPPING IS SEALED, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- H. 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 LOADS DEPICTED ON PAGES 4 THRU 9. 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.
- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-5/8" WIDE OR 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-5/8" THICK BY 5-5/8" WIDE OR 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, OR WHEN LAMINATING DUNNAGE.
- L. DO NOT NAIL BLOCKING TO THE TRAILER WALLS OR FLOOR OR BULKHEADS. ALL NAILING WILL BE WITHIN THE DUNNAGE.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER -----:	SEE TM 743-200-1, DUNNAGE LUMBER: FED SPEC MM-1-751
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, B, OR C FOR 2" STRAPPING, FED SPEC QQ-5-781.
STRAP SEAL STRAP STAPLE -----:	COMMERCIAL GRADE

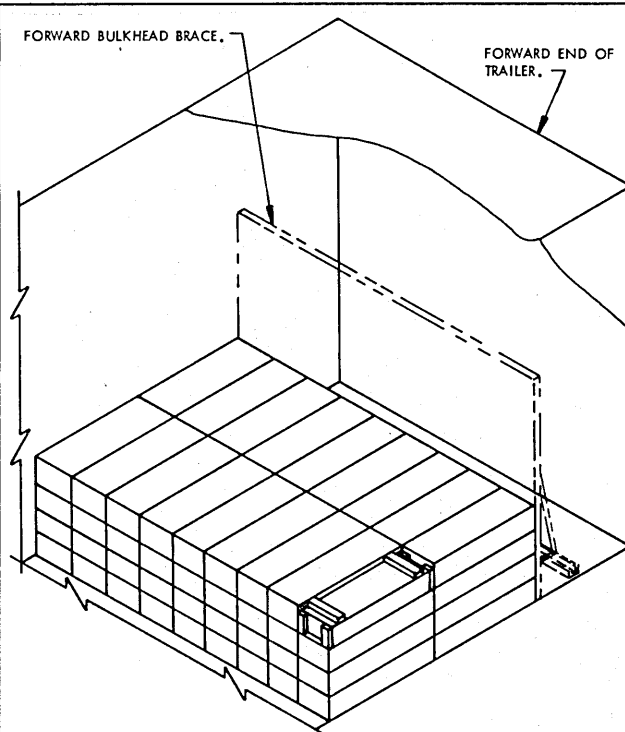
(GENERAL NOTES CONTINUED)

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

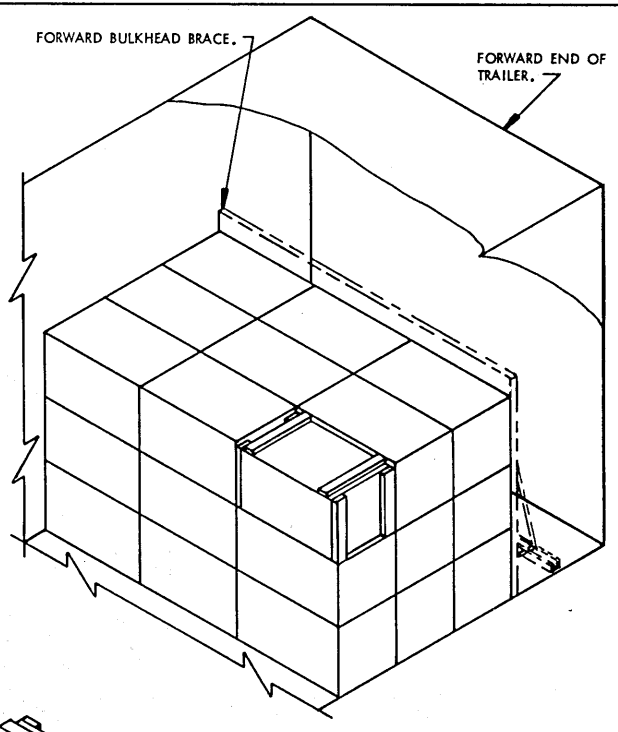
REVISIONS

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

1. DELETING PROCEDURES FOR TRAILERS HAVING 25'-0" BETWEEN BULKHEADS.
2. ADDING PROCEDURES FOR TRAILERS HAVING 35'-0" BETWEEN BULKHEADS.
3. ADDING PROCEDURES FOR TRAILERS HAVING 38'-6" BETWEEN BULKHEADS.
4. ADDING PROCEDURES FOR TRAILERS EQUIPPED WITH CAMUS III RESTRAINING SYSTEMS HAVING 30'-4-1/2" TO 37'-8-1/2" BETWEEN ADJUSTABLE BULKHEADS.
5. CHANGES NECESSARY TO UPDATE THE DRAWING FORMAT.

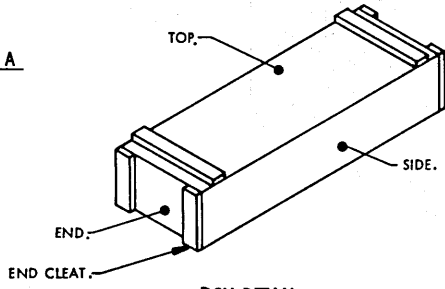


BOX POSITION A
SEE "NOTE ●".

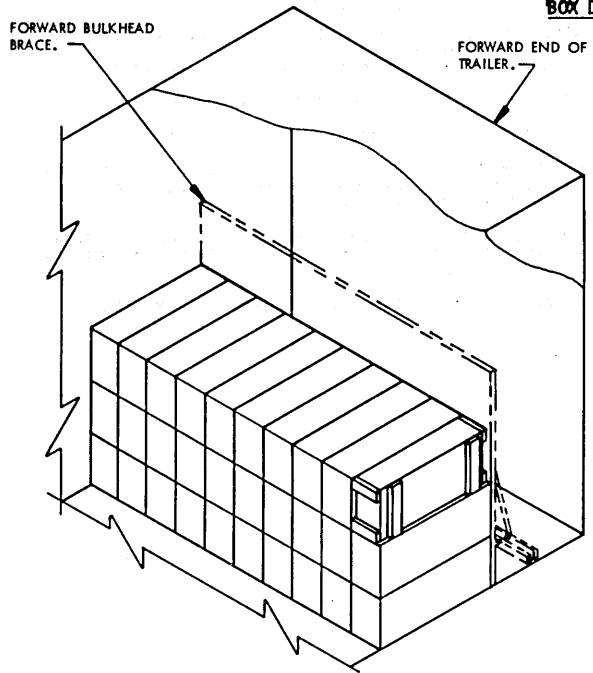


BOX POSITION B

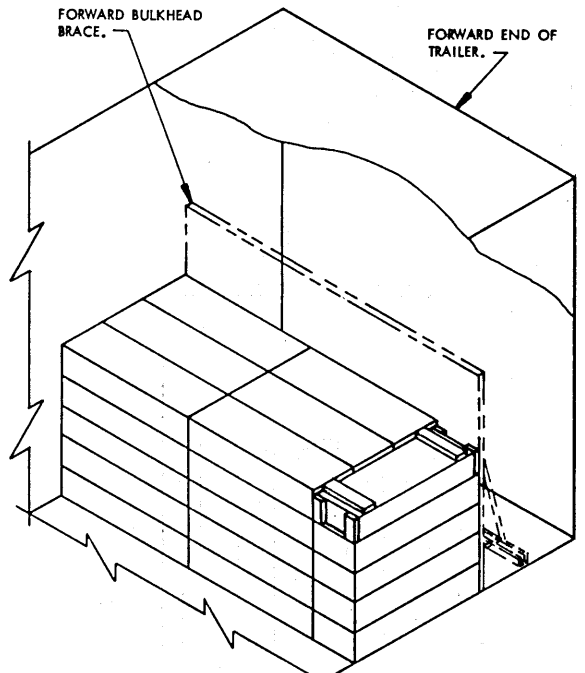
NOTE ●: EXCESS SPACE ACROSS THE TRAILER WIDTH MUST NOT EXCEED 1/3 OF THE BOX WIDTH. WHEN SHIPPING BOXES WITH VERTICAL END CLEATS, AS TYPICALLY SHOWN IN BOX POSITION A AND D, ON THIS PAGE, THE EXCESS SPACE ACROSS THE TRAILER WIDTH MUST NOT EXCEED THE WIDTH OF ONE CLEAT. IF EXCESS SPACE ACROSS THE TRAILER WIDTH IS IN EXCESS OF EITHER RESTRICTION, A SPACER ASSEMBLY, AS TYPICALLY SHOWN IN THE LOAD ON PAGE 8, MUST BE USED.



BOX DETAIL



BOX POSITION C
SEE "NOTE ●".

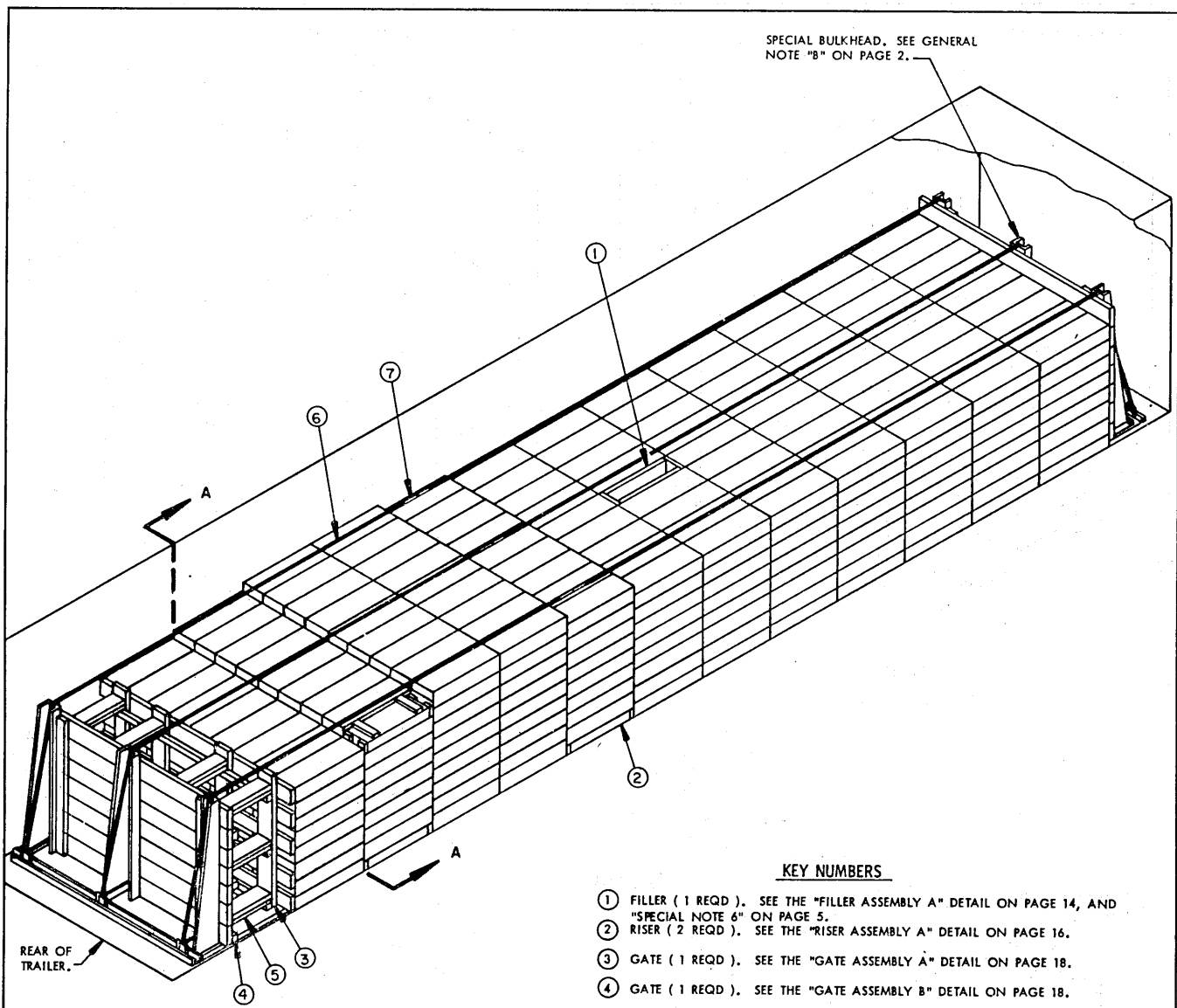


BOX POSITION D

A COMBINATION OF BOX POSITIONS MAY BE USED TO UTILIZE THE MAXIMUM SPACE ACROSS THE TRAILER WIDTH. SEE "NOTE ●".

TYPICAL BOX POSITIONS

SPECIAL BULKHEAD. SEE GENERAL NOTE "B" ON PAGE 2.

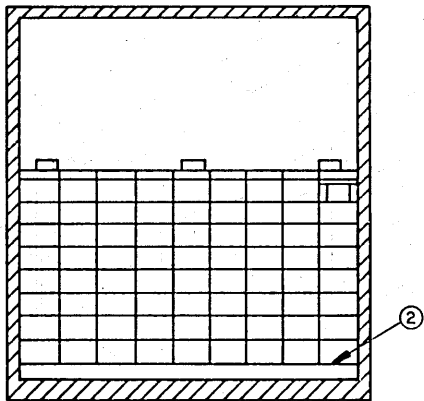


REAR OF TRAILER.

ISOMETRIC VIEW

KEY NUMBERS

- ① FILLER (1 REQD). SEE THE "FILLER ASSEMBLY A" DETAIL ON PAGE 14, AND "SPECIAL NOTE 6" ON PAGE 5.
- ② RISER (2 REQD). SEE THE "RISER ASSEMBLY A" DETAIL ON PAGE 16.
- ③ GATE (1 REQD). SEE THE "GATE ASSEMBLY A" DETAIL ON PAGE 18.
- ④ GATE (1 REQD). SEE THE "GATE ASSEMBLY B" DETAIL ON PAGE 18.
- ⑤ STRUT, 2" X 6" BY CUT TO FIT (DOUBLED) (12 REQD). LAMINATE W/1-10d NAIL EVERY 6". TOENAIL TO THE VERTICAL PIECES OF PIECES MARKED ③ AND ④ W/2-12d NAILS AT EACH END.
- ⑥ BULKHEAD STRAP, 2" X .050" X 60'-0" STEEL STRAPPING (3 REQD). INSTALL EACH STRAP FROM TWO (2) 30'-0" LONG PIECES. SEE GENERAL NOTES "G" AND "H" ON PAGE 2.
- ⑦ SEAL FOR 2" STRAPPING (18 REQD, 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.



SECTION A-A

SPECIAL NOTES:

1. A TYPICAL LOAD OF BOX PACKED AMMUNITION IS SHOWN IN A 7'-7-1/2" WIDE (INSIDE DIMENSION) TRAILER HAVING 35'-0" BETWEEN THE INSTALLED BULKHEADS. THE PROCEDURES SHOWN WILL APPLY TO ALL BOX PACKED AMMUNITION LOADED IN TRAILERS OF VARIOUS INSIDE WIDTH AND LENGTH.
2. BOX DETAIL: BOXED 90MM CARTRIDGE IS SHOWN AS TYPICAL. DIMENSIONS---- 32-5/8" LONG X 10-1/8" WIDE X 6-3/8" HIGH. GROSS WEIGHT-- 47 POUNDS (APPROX).
3. IF THE EXCESS SPACE BETWEEN THE REAR OF THE LADING AND THE INSTALLED BULKHEAD IS 18" OR LESS USE SOLID FILL, AS SHOWN IN THE LOAD ON PAGE 8, IN LIEU OF GATES AND STRUTS.
4. A COMBINATION OF LOADING PATTERNS, AS SHOWN IN THE LOAD ON PAGE 6, MAY BE USED TO ATTAIN A MAXIMUM QUANTITY AND/OR ACHIEVE BEST UTILIZATION OF TRAILER SPACE.
5. IF THE EXCESS SPACE ACROSS THE WIDTH OF THE TRAILER EXCEEDS THE WIDTH OF A CLEAT, LATERAL BRACING, SUCH AS SHOWN IN THE LOAD ON PAGE 8, WILL BE REQUIRED.
6. FILLER ASSEMBLY A MUST ONLY BE USED IN THE TOP LAYER OF A LOAD.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	42	14
2" X 4"	23	16
2" X 6"	129	129
NAILS	NO. REQD	POUNDS
10d (3")	96	1-1/2
12d (3-1/4")	80	1-1/2
STEEL STRAPPING, 2" X .050"-----	180' REQD -----	60 LBS
SEAL FOR 2" STRAPPING -----	18 REQD -----	3-1/2 LBS

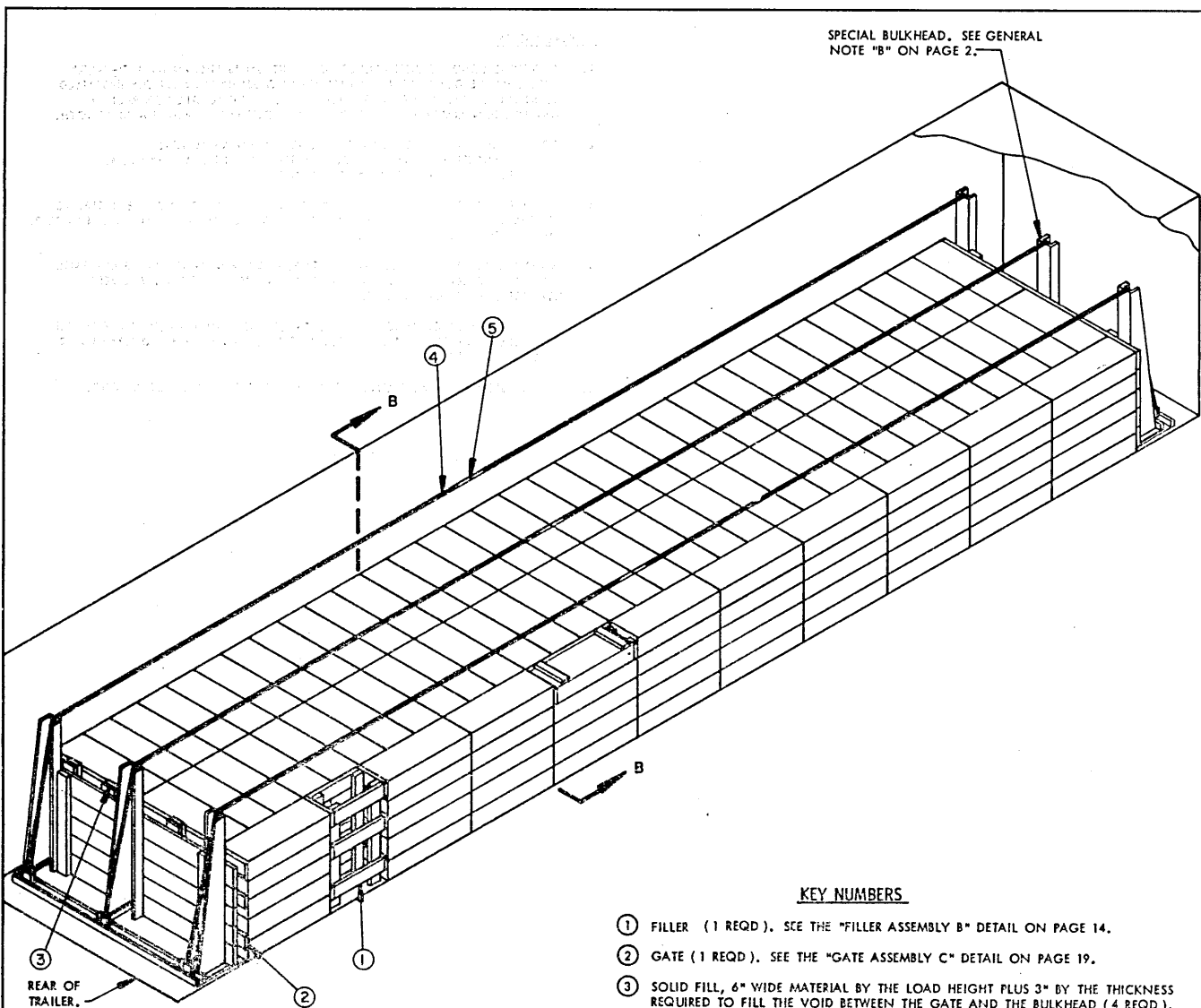
LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
BOX, AMMUNITION -----	881 -----	41,407 LBS
DUNNAGE -----		464 LBS
TOTAL WEIGHT -----		41,871 LBS

TYPICAL LOAD IN A TRAILER HAVING 35'-0' BETWEEN FIXED BULKHEADS.

PAGE 5

SPECIAL BULKHEAD. SEE GENERAL NOTE "B" ON PAGE 2.

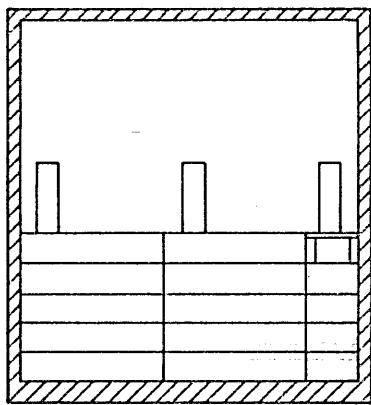


REAR OF TRAILER.

ISOMETRIC VIEW

KEY NUMBERS

- ① FILLER (1 REQD). SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 14.
- ② GATE (1 REQD). SEE THE "GATE ASSEMBLY C" DETAIL ON PAGE 19.
- ③ SOLID FILL, 6" WIDE MATERIAL BY THE LOAD HEIGHT PLUS 3" BY THE THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE GATE AND THE BULKHEAD (4 REQD). LAMINATE W/4 APPLICABLY SIZED NAILS. POSITION EACH PIECE FLUSH WITH EACH VERTICAL PIECE ON PIECE MARKED ②.
- ④ BULKHEAD STRAP, 2" X .050" X 60'-0" STEEL STRAPPING (3 REQD). INSTALL EACH STRAP FROM TWO (2) 30'-0" LONG PIECES. SEE GENERAL NOTES "G" AND "H" ON PAGE 2.
- ⑤ SEAL FOR 2" STRAPPING (18 REQD, 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.



SECTION B-B

NO.	DESCRIPTION	QTY	UNIT
1	FILLER	1	PC
2	GATE	1	PC
3	SOLID FILL	4	PC
4	BULKHEAD STRAP	3	PC
5	SEAL FOR 2" STRAPPING	18	PC

SPECIAL NOTES:

1. A TYPICAL LOAD OF BOX PACKED AMMUNITION IS SHOWN IN A 7'-7-1/2" WIDE (INSIDE DIMENSION) TRAILER HAVING 35'-0" BETWEEN THE INSTALLED BULKHEADS. THE PROCEDURES SHOWN WILL APPLY TO ALL BOX PACKED AMMUNITION LOADED IN TRAILERS OF VARIOUS INSIDE WIDTH AND LENGTH.
2. BOX DETAIL: BOXED 90MM CARTRIDGE IS SHOWN AS TYPICAL. DIMENSION ----- 39" LONG X 13" WIDE X 8-1/8" HIGH. GROSS WEIGHT ---- 111 POUNDS (APPROX).
3. IF THE EXCESS SPACE BETWEEN THE REAR OF THE LADING AND THE INSTALLED BULKHEAD IS GREATER THAN 18" USE GATES AND STRUTS, AS SHOWN IN THE LOAD ON PAGE 4, IN LIEU OF SOLID FILL.
4. A COMBINATION OF LOADING PATTERNS, AS SHOWN, MAY BE ADJUSTED TO ATTAIN A MAXIMUM QUANTITY AND/OR ACHIEVE BEST UTILIZATION OF TRAILER SPACE.
5. IF THE EXCESS SPACE ACROSS THE WIDTH OF THE TRAILER EXCEEDS THE WIDTH OF A CLEAT, LATERAL BRACING, SUCH AS SHOWN IN THE LOAD ON PAGE 8, WILL BE REQUIRED.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	14	10
2" X 6"	75	75
NAILS	NO. REQD	POUNDS
10d (3")	88	1-1/2
12d (3-1/4")	24	1/2
STEEL STRAPPING, 2" X .050" -----	180' REQD -----	60 LBS
SEAL FOR 2" STRAPPING -----	18 REQD -----	3-1/2 LBS

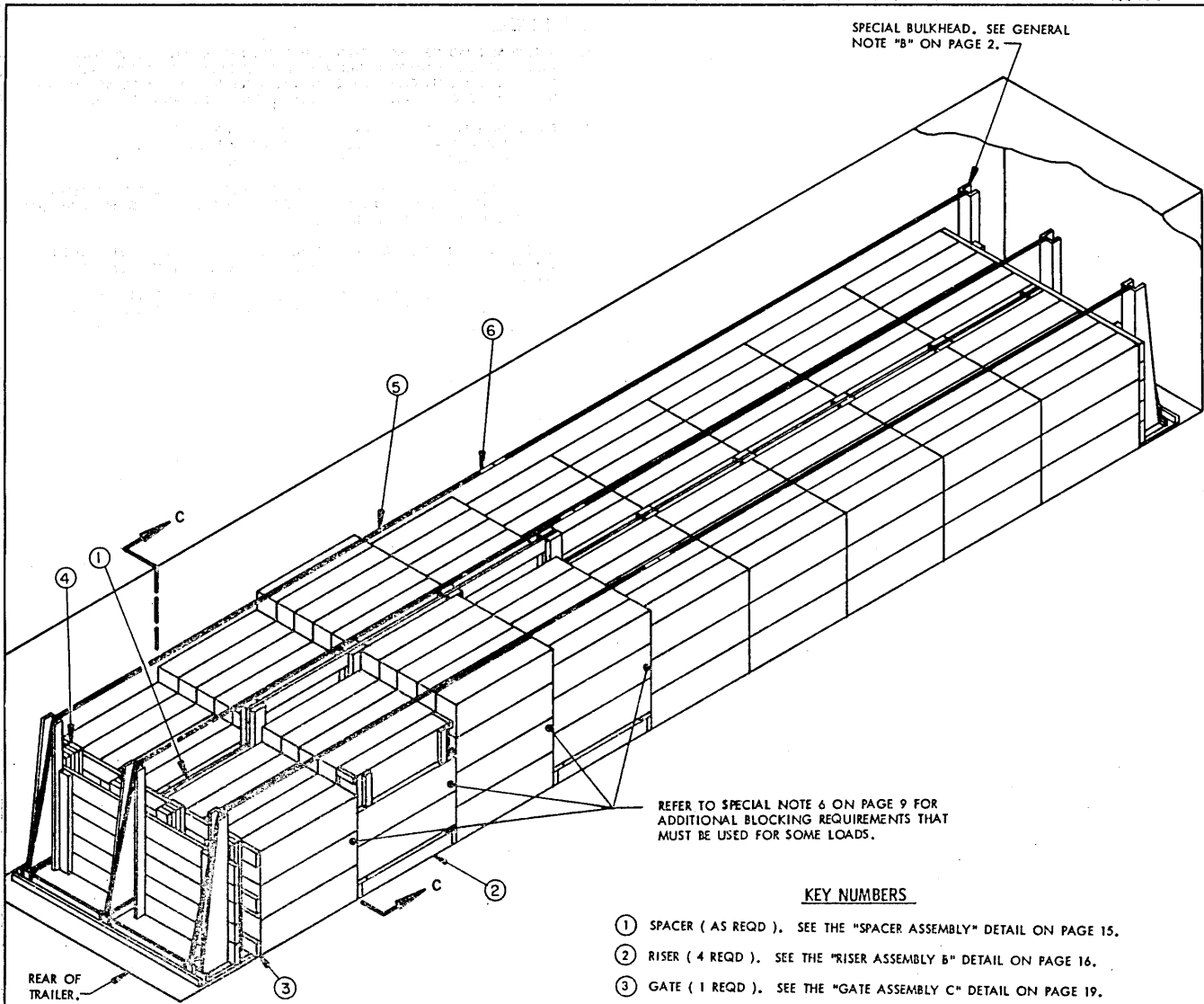
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<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
BOX, AMMUNITION-----	370 -----	41,070 LBS
DUNNAGE-----	-----	278 LBS
TOTAL WEIGHT-----	-----	41,348 LBS

TYPICAL LOAD IN A TRAILER HAVING 35'-0" BETWEEN FIXED BULKHEADS.

PAGE 7

SPECIAL BULKHEAD. SEE GENERAL NOTE "B" ON PAGE 2.



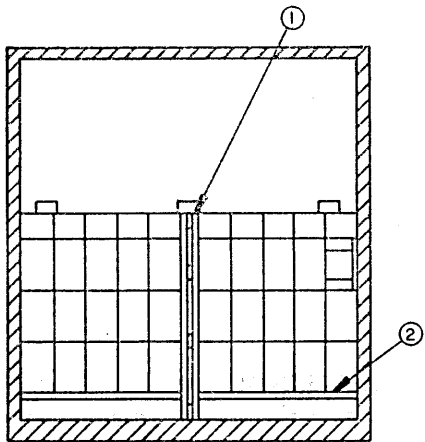
REFER TO SPECIAL NOTE 6 ON PAGE 9 FOR ADDITIONAL BLOCKING REQUIREMENTS THAT MUST BE USED FOR SOME LOADS.

KEY NUMBERS

- ① SPACER (AS REQD). SEE THE "SPACER ASSEMBLY" DETAIL ON PAGE 15.
- ② RISER (4 REQD). SEE THE "RISER ASSEMBLY B" DETAIL ON PAGE 16.
- ③ GATE (1 REQD). SEE THE "GATE ASSEMBLY C" DETAIL ON PAGE 19.
- ④ SOLID FILL, 6" WIDE MATERIAL BY THE LOAD HEIGHT PLUS 3" BY THE THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE GATE AND THE BULKHEAD (4 REQD). LAMINATE W/4 APPLICABLY SIZED NAILS. POSITION EACH PIECE FLUSH WITH EACH VERTICAL PIECE ON PIECE MARKED ③ .
- ⑤ BULKHEAD STRAP, 2" X .050" X 60'-0" STEEL STRAPPING (3 REQD). INSTALL EACH STRAP FROM TWO (2) 30'-0" LONG PIECES. SEE GENERAL NOTES "G" AND "H" ON PAGE 2.
- ⑥ SEAL FOR 2" STRAPPING (18 REQD, 2 PER STRAP JOINT). DOUBLE CRIMP EACH SEAL.

REAR OF TRAILER.

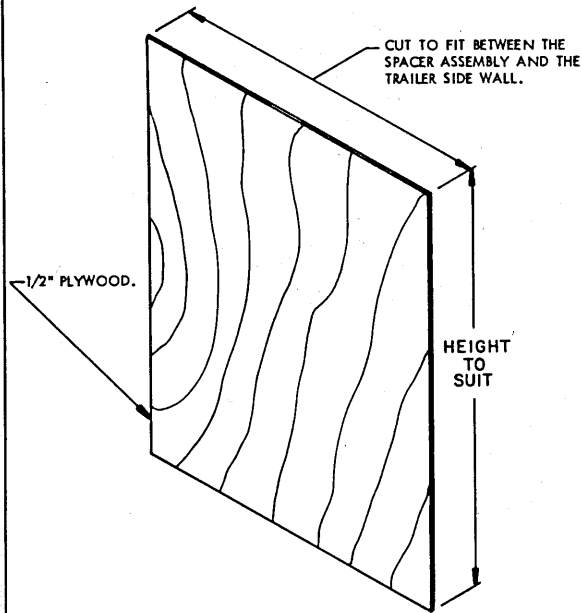
ISOMETRIC VIEW



SECTION C-C

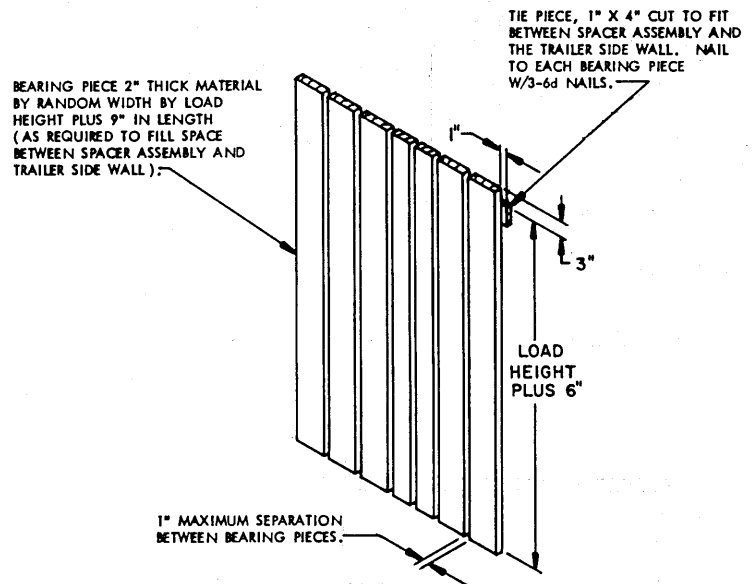
SPECIAL NOTES:

1. A TYPICAL LOAD OF BOXED PACKED AMMUNITION IS SHOWN IN A 7'-7-1/2" WIDE (INSIDE DIMENSION) TRAILER HAVING 35'-0" BETWEEN THE INSTALLED BULKHEADS. THE PROCEDURES SHOWN WILL APPLY TO ALL BOX PACKED AMMUNITION LOADED IN TRAILERS OF VARIOUS INSIDE WIDTH AND LENGTH.
2. BOX DETAIL: BOXED 105MM CARTRIDGE IS SHOWN AS TYPICAL. DIMENSIONS ----- 45-13/16" LONG X 14-3/16" WIDE X 8-25/32" HIGH. GROSS WEIGHT ----- 148 POUNDS (APPROX).
3. IF THE EXCESS SPACE BETWEEN THE REAR OF THE LADING AND THE INSTALLED BULKHEAD IS GREATER THAN 18" USE GATES AND STRUTS, AS SHOWN IN THE LOAD ON PAGE 4, IN LIEU OF SOLID FILL.
4. A COMBINATION OF LOADING PATTERNS , AS SHOWN IN THE LOAD ON PAGE 6, MAY BE USED TO ATTAIN A MAXIMUM QUANTITY AND/OR ACHIEVE BEST UTILIZATION OF TRAILER SPACE.
5. IF THE EXCESS SPACE ACROSS THE WIDTH OF THE TRAILER EXCEEDS ONE THIRD OF THE BOX DIMENSION LATERAL BRACING, AS SHOWN, WILL BE REQUIRED.
6. PLYWOOD OR DIMENSIONAL LUMBER GATES MUST BE USED IN CONJUNCTION WITH EACH RISER ASSEMBLY, IF THE BOXES BEING SHIPPED HAVE ROPE HANDLES OR OTHER TYPES OF APPURTENANCES ON THEIR ENDS. SEE THE DETAILS ON THIS PAGE FOR SPECIFIC GUIDANCE. CONCERNING SEPARATOR GATES WHICH WILL BE INSTALLED AT DESIGNATED LOCATIONS WHEN REQUIRED.



SEPARATOR GATE

(EIGHT (8) GATES REQUIRED IN THE LOAD SHOWN, ONE ON EACH SIDE OF EACH RISER ASSEMBLY).



BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	49	33
2" X 6"	272	272
NAILS	NO. REQD	POUNDS
10d (3")	296	4-1/2
12d (3-1/2")	32	1/2
STEEL STRAPPING, 2" X .050	180' REQD	60 LBS
SEAL FOR 2" STRAPPING	18. REQD	3-1/2 LBS

ALTERNATIVE SEPARATOR GATE

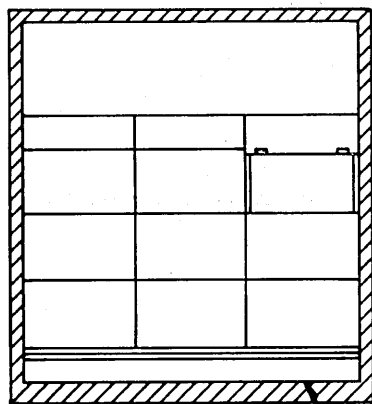
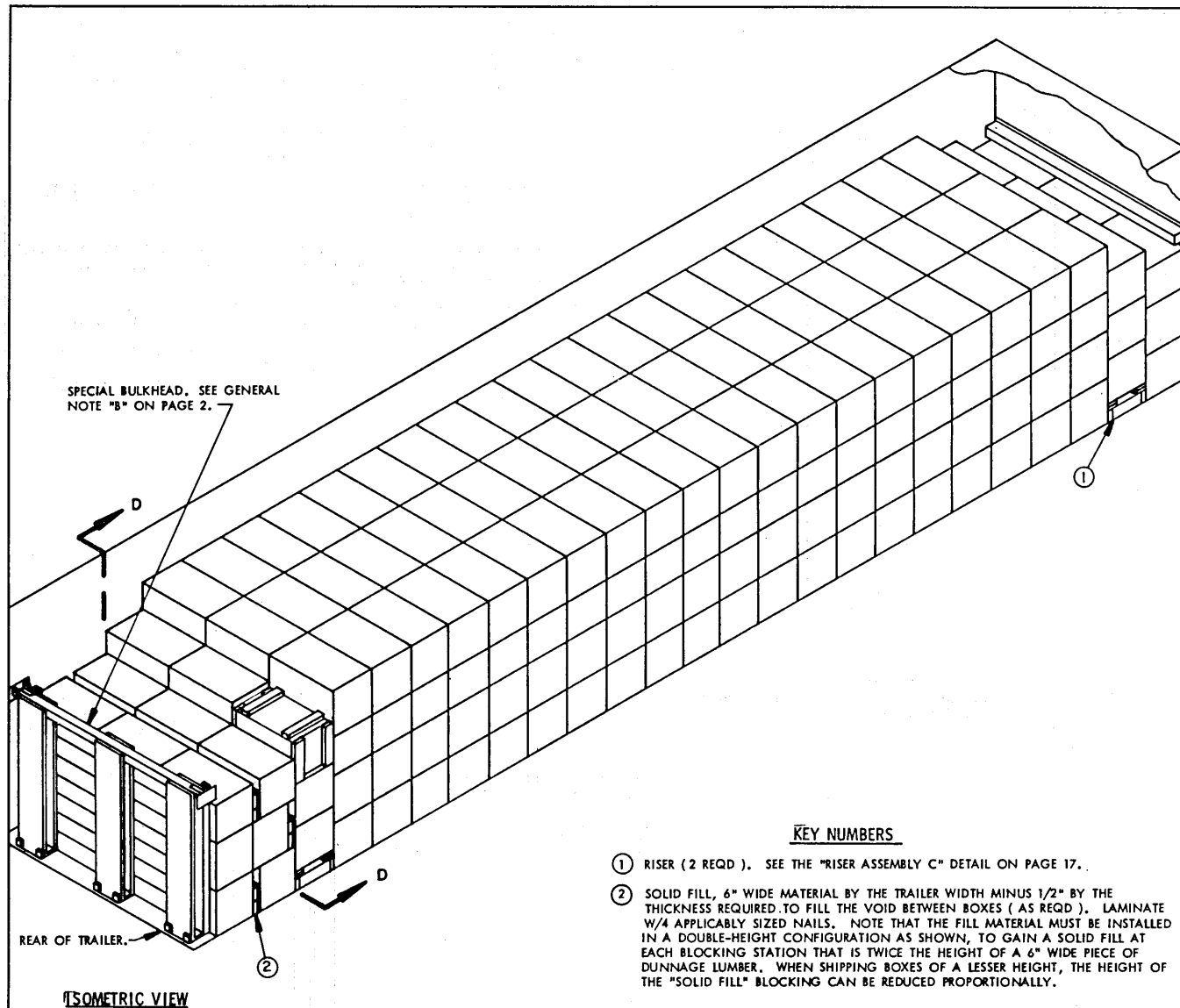
(EIGHT (8) GATES REQUIRED IN THE LOAD SHOWN, ONE ON EACH SIDE OF EACH RISER ASSEMBLY).

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
BOX, AMMUNITION	— 280	41,440 LBS
DUNNAGE	-----	831 LBS
TOTAL WEIGHT	-----	42,271 LBS

TYPICAL LOAD IN A TRAILER HAVING 35'-0" BETWEEN FIXED BULKHEADS

PAGE 9



SPECIAL NOTES:

1. A TYPICAL LOAD OF BOX PACKED AMMUNITION IS SHOWN IN A 7'-7-1/2" WIDE (INSIDE DIMENSION) TRAILER HAVING 38'-6" BETWEEN THE BULKHEAD AT THE FRONT (BUILT INTO THE FRONT WALL) AND THE INSTALLED BULKHEAD AT THE REAR. THE PROCEDURES SHOWN WILL APPLY TO ALL BOX PACKED AMMUNITION LOADED IN TRAILERS OF VARIOUS INSIDE WIDTH AND LENGTH.
2. BOX DETAIL: BOXED BOMB FIN ASSEMBLY IS SHOWN AS TYPICAL.
DIMENSIONS ----- 30-1/4" LONG X 18-3/4" WIDE X 18-3/4" HIGH.
GROSS WEIGHT---- 105 POUNDS (APPROX).
3. IF THE EXCESS SPACE ACROSS THE WIDTH OF THE TRAILER EXCEEDS ONE THIRD OF THE BOX DIMENSION LATERAL BRACING, SUCH AS SHOWN IN THE LOAD ON PAGE 8, WILL BE REQUIRED.
4. A COMBINATION OF LOADING PATTERNS, AS SHOWN IN THE LOAD ON PAGE 6, MAY BE USED TO ATTAIN A MAXIMUM QUANTITY AND/OR ACHIEVE BEST UTILIZATION OF TRAILER SPACE.

BILL OF MATERIAL

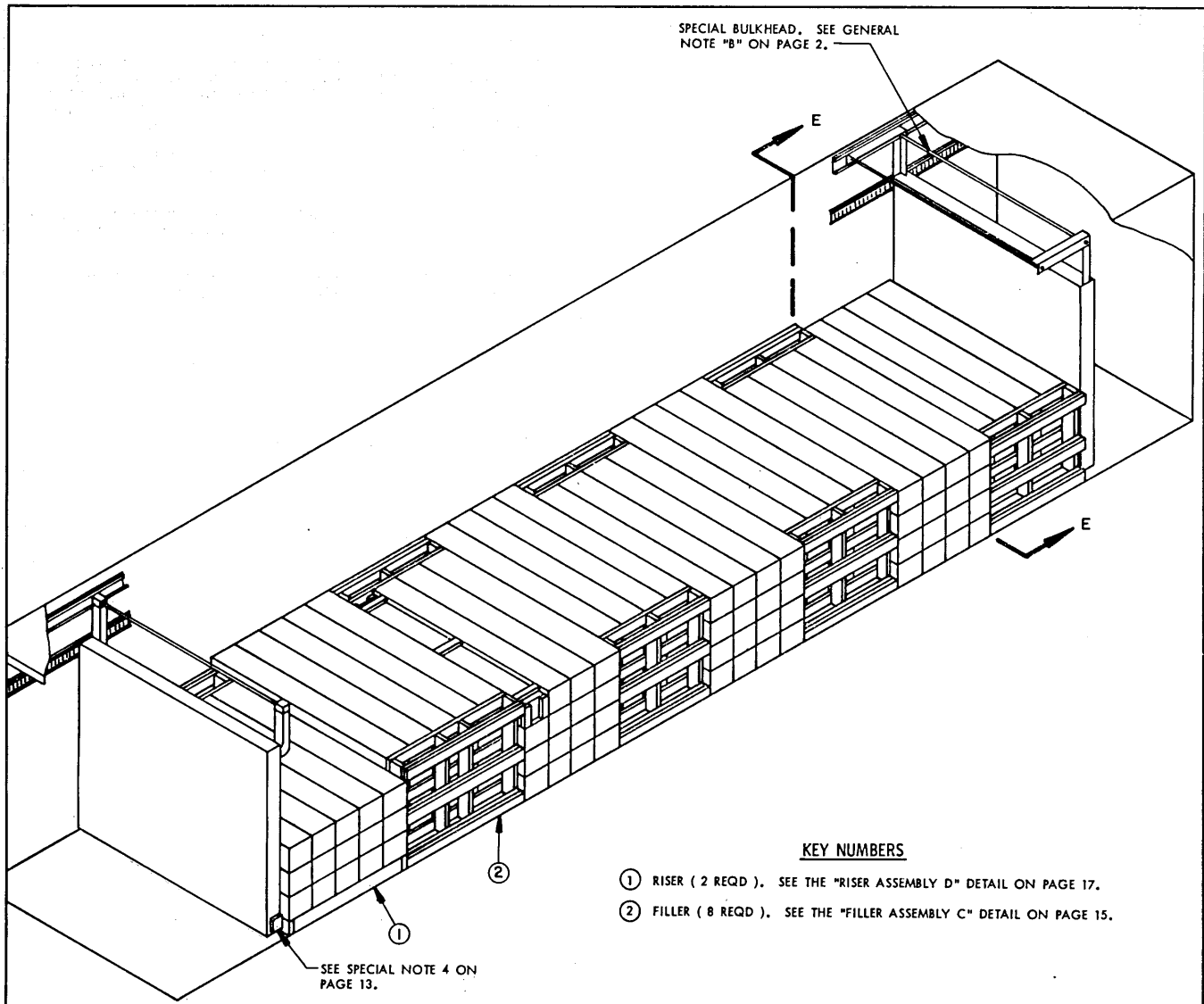
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	47	24
2" X 4"	62	42
2" X 6"	85	85
NAILS	NO. REQD	POUNDS
6d (2")	48	NIL
10d (3")	32	1/2
12d (3-1/2")	56	1

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
BOX, AMMUNITION --	285 -----	29,925 LBS
DUNNAGE -----		379 LBS
TOTAL WEIGHT -----		30,304 LBS

TYPICAL LOAD IN A TRAILER HAVING 38'-6" BETWEEN FIXED BULKHEADS

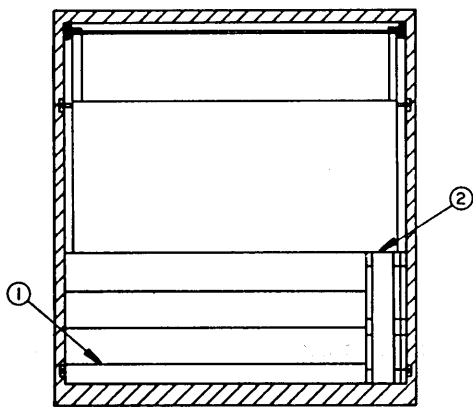
PAGE 11



KEY NUMBERS

- ① RISER (2 REQD). SEE THE "RISER ASSEMBLY D" DETAIL ON PAGE 17.
- ② FILLER (8 REQD). SEE THE "FILLER ASSEMBLY C" DETAIL ON PAGE 15.

ISOMETRIC VIEW



SECTION E-E

SPECIAL NOTES:

1. A TYPICAL LOAD OF BOX PACKED AMMUNITION IS SHOWN IN A 40'-0" LONG BY 7'-7-1/2" WIDE (INSIDE DIMENSION) TRAILER WHICH IS EQUIPPED WITH A CAMUS III RESTRAINING SYSTEM. THE PROCEDURES SHOWN WILL APPLY TO ALL BOX PACKED AMMUNITION LOADED IN TRAILERS OF VARIOUS INSIDE WIDTH AND LENGTH.
2. BOX DETAIL: BOXED DEMOLITION KIT IS SHOWN AS TYPICAL. DIMENSIONS ----- 82" LONG X 11" WIDE X 10" HIGH. GROSS WEIGHT ----- 325 POUNDS (APPROX).
3. A COMBINATION OF LOADING PATTERNS, AS SHOWN ON PAGE #, MAY BE USED TO ATTAIN A MAXIMUM QUANTITY AND/OR ACHIEVE BEST UTILIZATION OF TRAILER SPACE.
4. FILLER BLOCKS AS SHOWN IN "FILLER BLOCK DETAIL" ON PAGE 19 MUST BE USED TO REDUCE LATERAL MOVEMENT OF THE REAR BULKHEAD IN A CAMUS TRAILER.

BILL OF MATERIAL

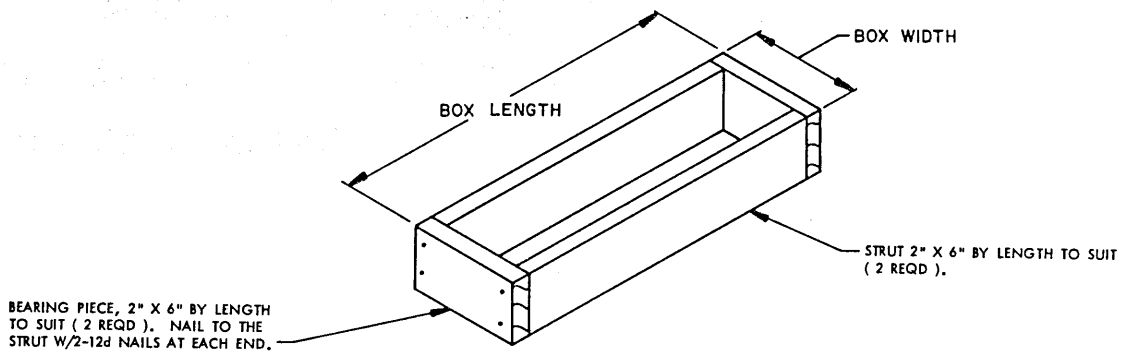
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	281	188
2" X 6"	147	147
NAILS	NO. REQD	POUNDS
10d (3")	126	2
12d (3-1/2")	332	5-1/2

LOAD AS SHOWN

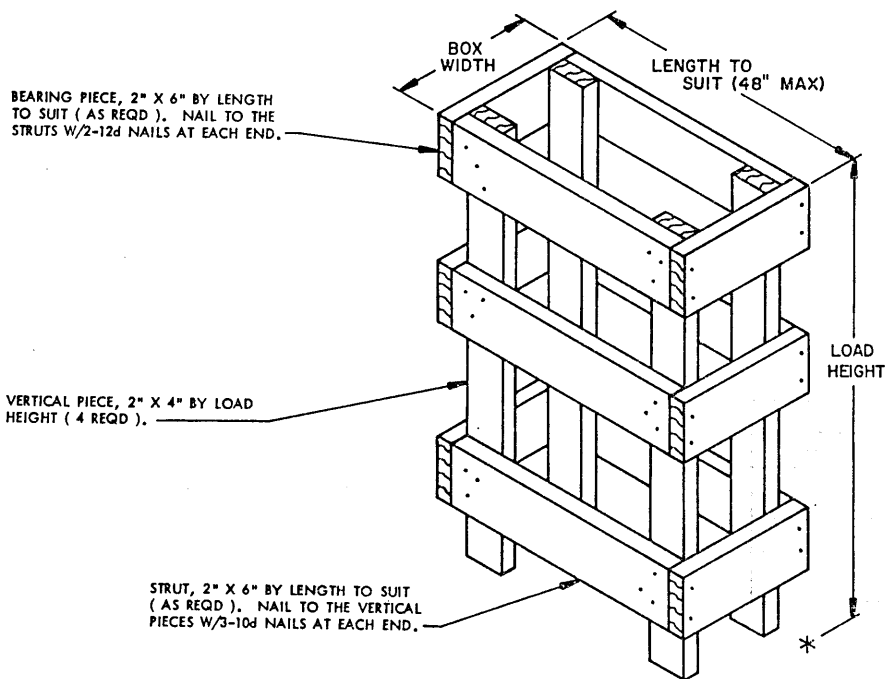
ITEM	QUANTITY	WEIGHT (APPROX)
BOX, AMMUNITION	127	41,275 LBS
DUNNAGE		845 LBS
TOTAL WEIGHT		42,120 LBS

TYPICAL LOAD IN A TRAILER HAVING 30'-4-1/2' TO 37'-8" BETWEEN ADJUSTABLE BULKHEADS

PAGE 13

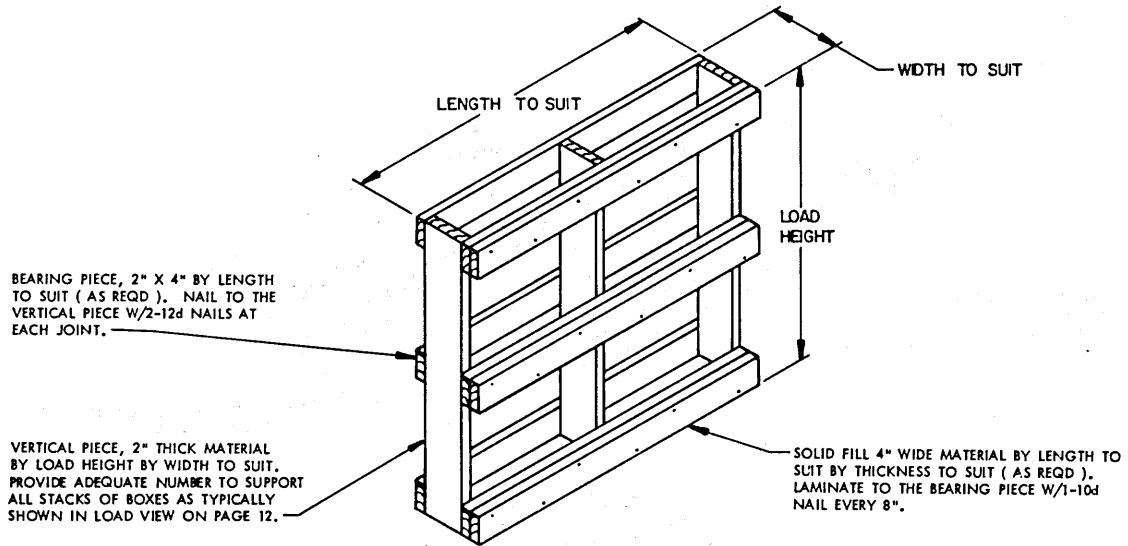


FILLER ASSEMBLY A



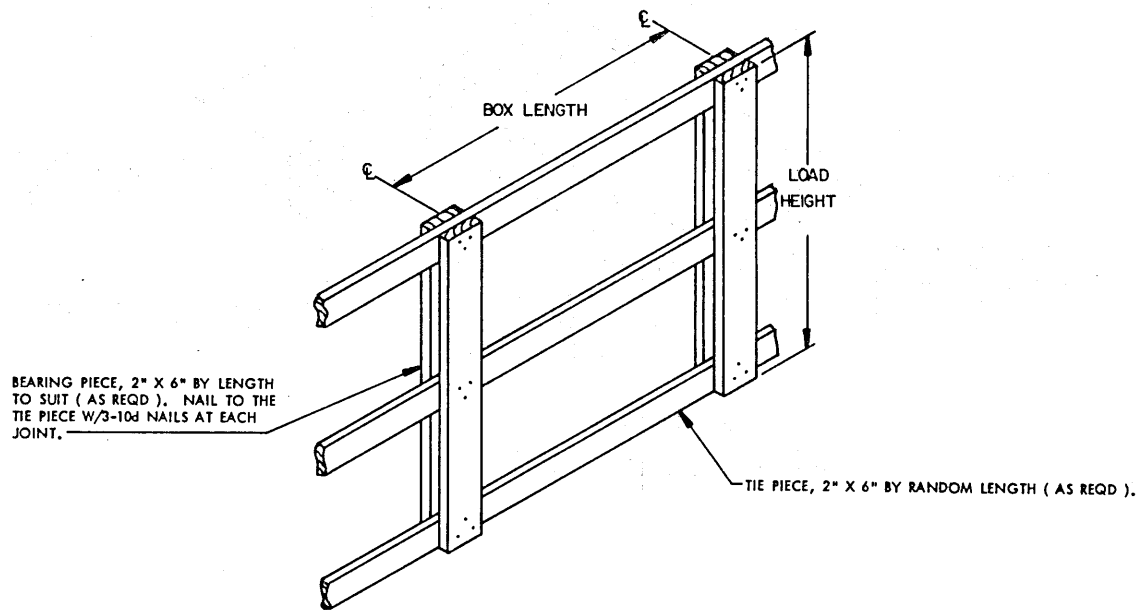
FILLER ASSEMBLY B

POSITION STRUTS AND BEARING PIECES IN SUCH A MANNER THAT ALL LAYERS OF BOXES ARE CAPTURED. REGARDING THE "LENGTH TO SUIT (48" MAXIMUM)" DIMENSION SPECIFIED ABOVE, TWO OR MORE ASSEMBLIES WILL BE REQUIRED TO BLOCK A LENGTHWISE VOID WITHIN A LOAD IF THAT VOID EXCEEDS 48" IN LENGTH. WHEN MORE THAN ONE ASSEMBLY IS USED, THEY ARE NOT TO BE INSTALLED AT THE SAME LOCATION. THEY WILL BE LOCATED SO THAT THERE WILL BE AT LEAST ONE STACK OF BOXES BETWEEN THEM LONGITUDINALLY.



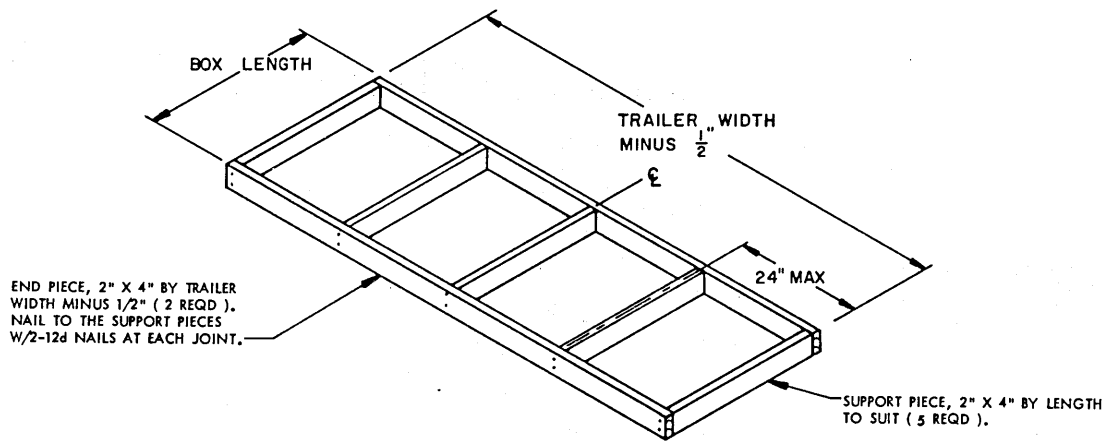
FILLER ASSEMBLY C

ADDITIONAL BEARING PIECES WILL BE ADDED, IF REQUIRED, AND THE SPACING ADJUSTED AS NECESSARY, TO PROVIDE SUPPORT FOR ALL LAYERS OF BOXES.



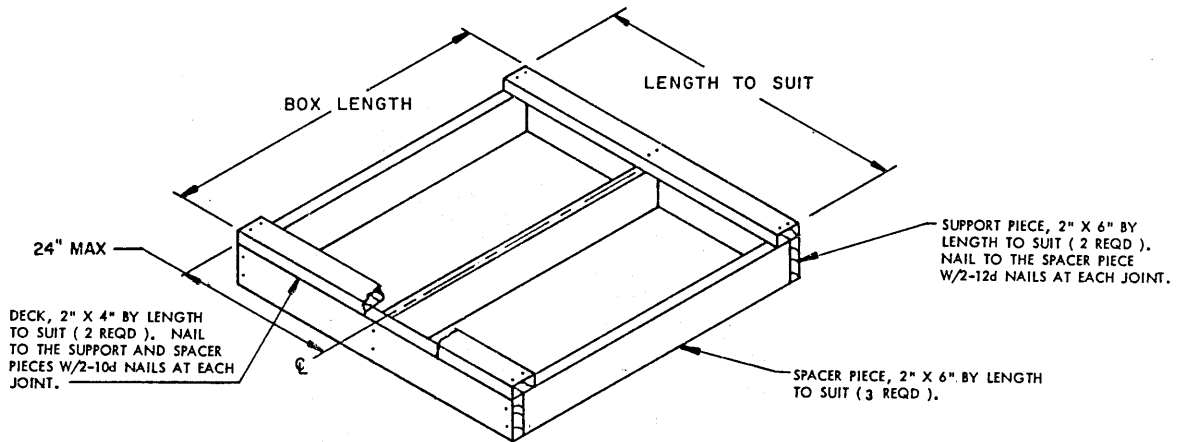
SPACER ASSEMBLY

POSITION TIE PIECES IN SUCH A MANNER THAT ALL LAYERS ARE CAPTURED. MATERIAL OF DIFFERENT THICKNESS MAY BE USED OR MORE PIECES MAY BE LAMINATED TO THE FIRST.



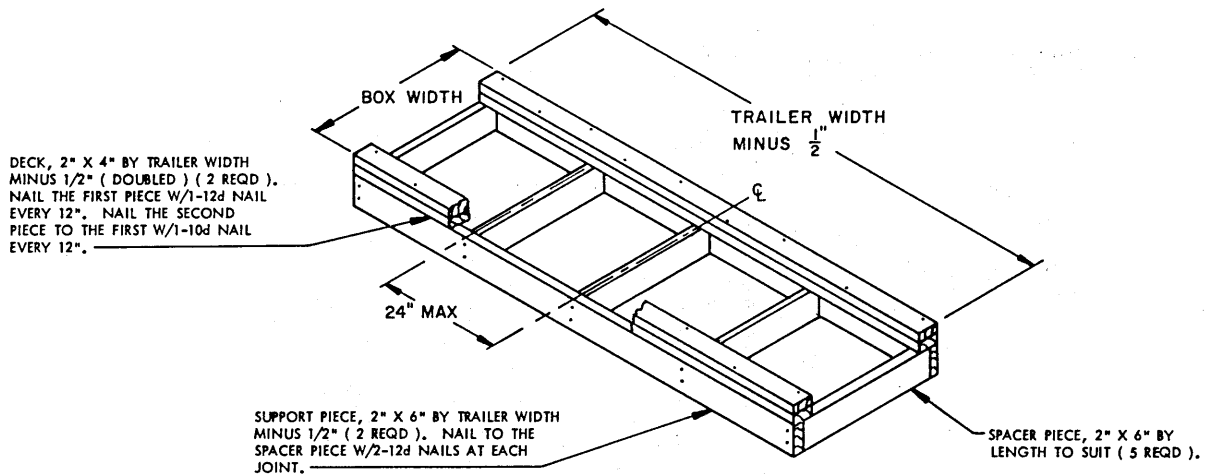
RISER ASSEMBLY A

THE RISER ASSEMBLY MUST BE $\frac{1}{2}$ OF THE BOX HEIGHT. DIFFERENT WIDTH MATERIAL MAY BE USED.



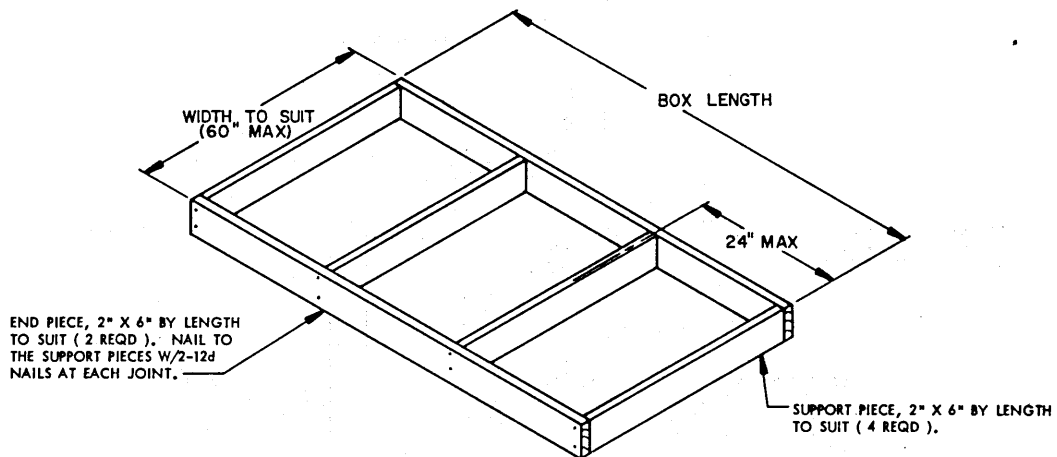
RISER ASSEMBLY B

THE RISER ASSEMBLY MUST BE $\frac{1}{2}$ OF THE BOX HEIGHT. DIFFERENT WIDTH AND/OR THICKNESS OF MATERIAL MAY BE USED.



RISER ASSEMBLY C

THE RISER ASSEMBLY MUST BE 1/2 OF THE BOX HEIGHT. DIFFERENT WIDTH AND/OR THICKNESS OF MATERIAL MAY BE USED.



RISER ASSEMBLY D

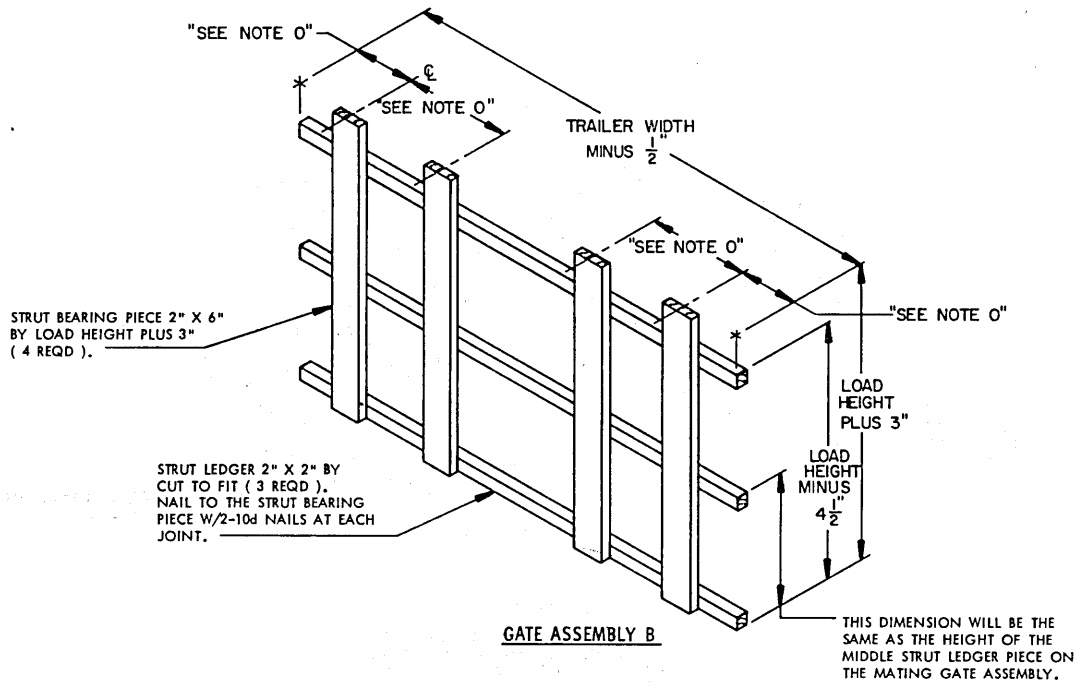
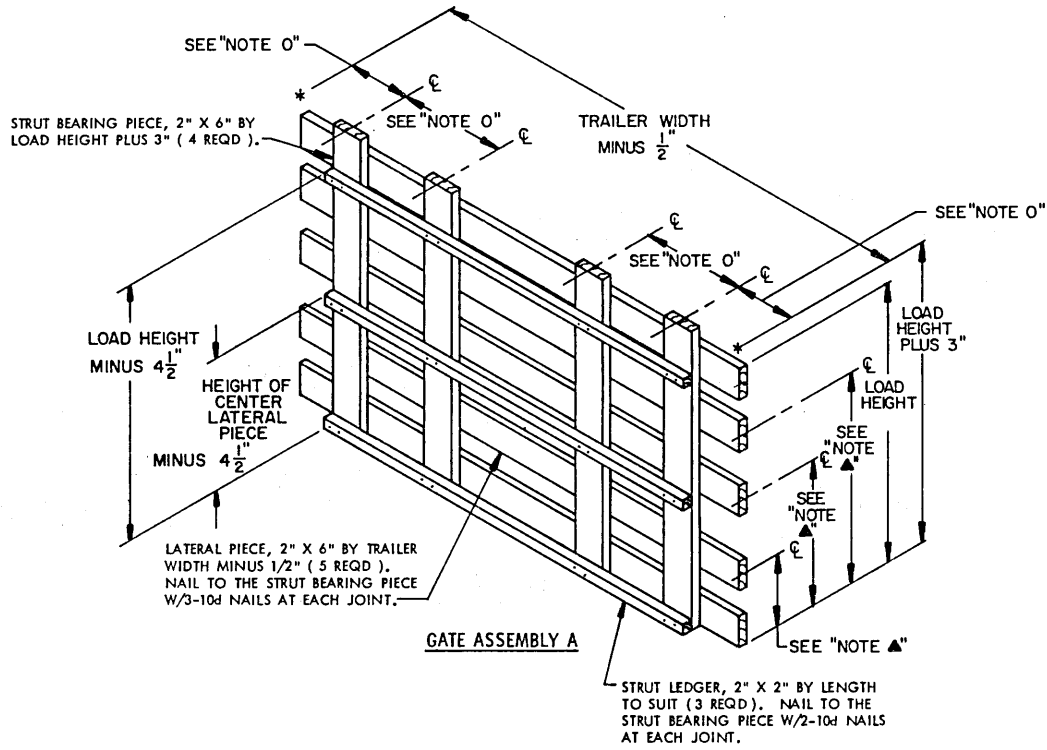
THE RISER ASSEMBLY MUST BE 1/2 OF THE BOX HEIGHT. DIFFERENT WIDTH MATERIAL MAY BE USED. THE "WIDTH TO SUIT (60" MAXIMUM)" DIMENSION WILL DEPEND ON THE NUMBER OF BOXES THAT ARE TO BE LOADED CROSSWISE IN A TRAILER ON TOP OF THE RISER. FOR EXAMPLE, IF FOUR (4) TWELVE-INCH (12") WIDE BOXES ARE INVOLVED, THEN THE DIMENSION WOULD BE 48".

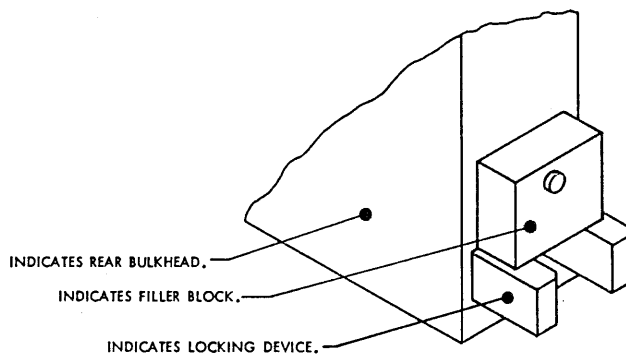
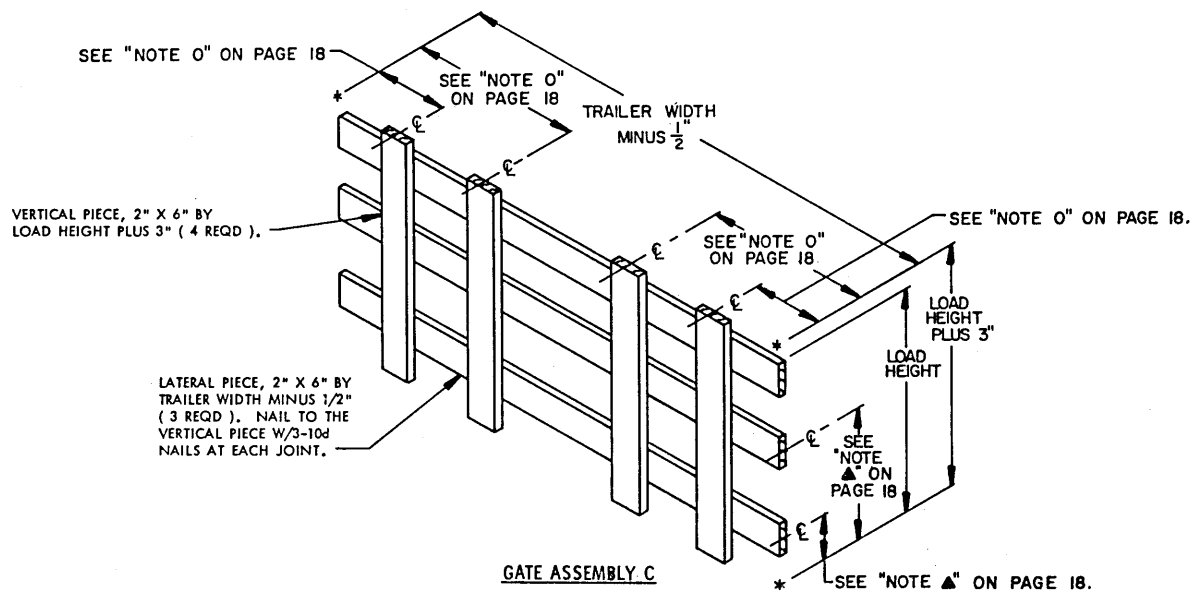
NOTE 0:

POSITION THE STRUT BEARING PIECES
IN SUCH A MANNER AS TO CAPTURE
A MAXIMUM NUMBER OF BOXES.

NOTE 1:

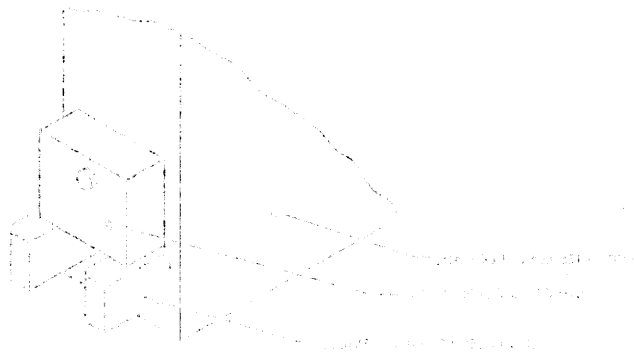
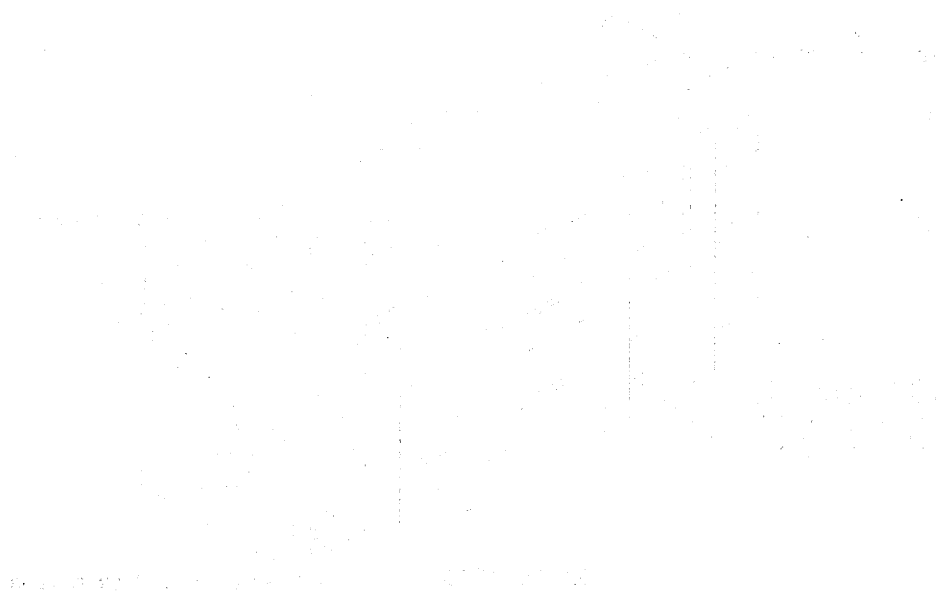
POSITION THE LATERAL PIECES IN
SUCH A MANNER THAT ALL LAYERS
OF BOXES ARE CAPTURED.





FILLER BLOCK DETAIL

INSTALLED BY THE CARRIER TO PREVENT SIDESWAY OF THE CAMUS III REAR BULKHEAD AND RESULTANT DISENGAGEMENT OF THE LOCKING PINS.



VALVE COMPONENT

Technical drawing of a valve component, showing a perspective view of the assembly. The drawing includes a cylindrical body with a handle-like structure on top and a flange at the bottom. The drawing is a perspective view.