



## GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED HEREIN ARE APPLICABLE TO THE ROCKET MOTOR, XM22E8 OR XM112, WHEN IT IS PACKED IN A WOODEN CRATE. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE WOODEN SHIPPING CRATE WITH CONTENTS.
- C. FOR DETAILS OF THE CONTAINER FOR THE XM22E8 MOTOR, SEE DRAWING NO. 9070094 AND DRAWING NO. 19-48-AMXAC-4103 (Rev 1).
- CONTAINER DIMENSIONS ----- 113-1/2" LONG X 20-3/4" WIDE X 23-1/2" HIGH.  
GROSS WEIGHT ----- 1,095 POUNDS (APPROX).
- FOR DETAILS OF THE CONTAINER FOR THE XM112 MOTOR, SEE DRAWING NO. 10242897 AND DRAWING NO. 19-48-AMXAC-4321.
- CONTAINER DIMENSIONS ----- 118" LONG X 20-1/4" WIDE X 22-7/8" HIGH.  
GROSS WEIGHT ----- 1,128 POUNDS (APPROX).
- D. THESE ITEMS ARE DOT CLASS "B" EXPLOSIVES. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEMS DESIGNATED WITHIN THE DRAWING TITLE.
- E. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEMS MUST COMPLY WITH AR 55-355, CHAPTER 213, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.
- F. THE LOADS AS SHOWN ARE BASED ON 40'-0" LONG VAN TRAILERS OF ANY WIDTH, HAVING WOOD, WOOD AND METAL, OR METAL FLOORS, AND ARE LIMITED TO HIGHWAY MOVEMENTS ONLY. THE DEPICTED LOADS ARE BASED ON TRAILERS OF THE CONVENTIONAL TYPE OR ARE BASED ON TRAILERS WHICH ARE EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES (CROSS MEMBERS AND WALL MEMBERS).
- G. IF A TRAILER BEING USED CONTAINS A MECHANICAL LOAD-BLOCKING SYSTEM, THE MECHANICAL SYSTEM MAY BE USED IN ACCORDANCE WITH PROCEDURES DELINEATED ON PAGE 5, IN LIEU OF REAR-OF-LOAD BLOCKING SPECIFIED FOR THE DEPICTED LOADS. HOWEVER, CROSS MEMBER ATTACHMENT FACILITIES WITHIN THESE TRAILERS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED. CAUTION: TRAILERS EQUIPPED WITH FACILITIES WHICH DO NOT MEET THE LOCATION REQUIREMENT MUST NOT BE USED. THE HEIGHT LOCATIONS SPECIFIED WITHIN THIS DRAWING FOR INSTALLATION OF CROSS MEMBERS ARE IDENTICAL WITH THOSE RECOMMENDED BY THE BUREAU OF EXPLOSIVES PAMPHLET NO. 6C, AND APPENDICES THERETO.
- H. VOIDS LENGTHWISE WITHIN A LOAD MUST BE HELD TO A MINIMUM. FOR CONVENTIONAL TRAILERS, REAR BLOCKING MUST CONTACT REAR DOORS OF THE TRAILER WHEN THEY ARE CLOSED. FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES, THE CROSS MEMBERS MUST BE PLACED AGAINST THE LOAD AS TIGHTLY AS THE WALL MEMBER LOCKING HOLE SPACING PERMITS. CROSS MEMBERS WILL BE INSTALLED WITH EACH END ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM THE END OF THE TRAILER).
- J. MECHANICAL CROSS MEMBERS IN EMPTY TRAILERS AND THOSE UNUSED IN LOADED TRAILERS MUST BE "SECURED" FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH TRAILER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS.
- K. 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).
- L. 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 THE 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.
- M. OTHER TYPES OF LADING ITEMS MAY BE LOADED IN A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEMS, 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.
- N. 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 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.
- O. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- P. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. CAUTION: EXERCISE CARE DURING STRAP TENSIONING TO PREVENT DAMAGE TO CONTAINERS.
- Q. IF THE CAPACITY OF THE AVAILABLE MATERIALS HANDLING EQUIPMENT (MHE) PERMITS, IT IS RECOMMENDED THAT CONTAINERS BE UNITIZED PRIOR TO PLACEMENT IN THE TRAILER. IN SOME INSTANCES, CONTAINERS WILL ALREADY BE UNITIZED WHEN OFFERED FOR LOADING. THESE UNITIZED STACKS SHOULD BE INSPECTED AND AS REQUIRED, LOOSE UNITING STEEL STRAPPING MUST BE REPLACED.
- R. PORTIONS OF THE 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.
- S. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTIONS WHICH ARE IMMEDIATELY ADJACENT TO THE DEPICTED OUTLOADING METHODS AND TO THE "UNITIZING AND HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.

(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.

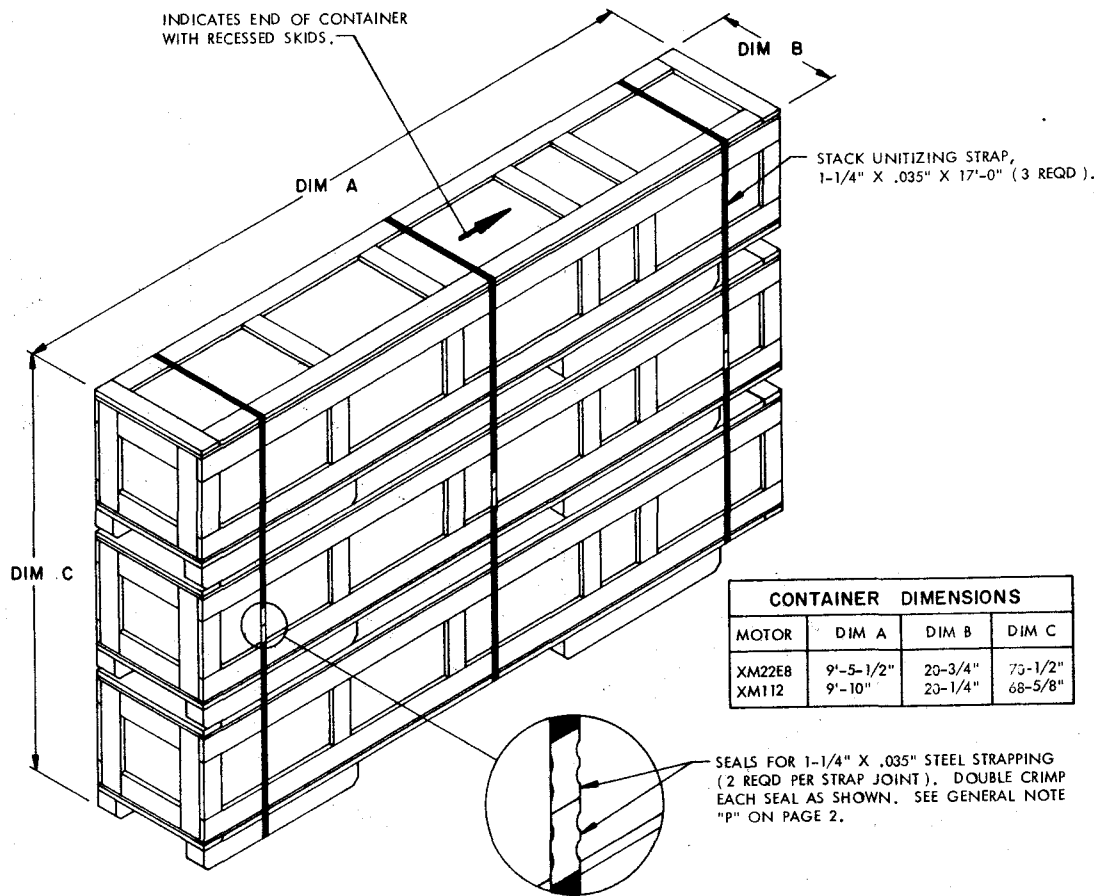
STRAPPING, STEEL ---- : TYPE I OR IV, CLASS A OR B, FED SPEC QQ-5-781.

STRAP SEAL ----- : COMMERCIAL GRADE.

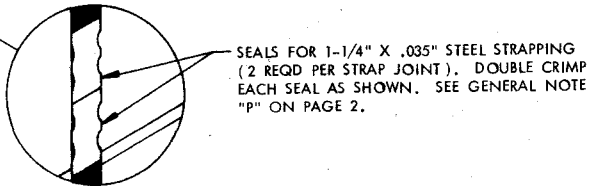
## REVISIONS

REVISION NO. 2, DATED FEB 1973, CONSISTS OF:

1. ADDING PROCEDURES FOR SHIPPING THE XM112 MOTOR.
2. DELETING PROCEDURES FOR SHIPPING A 36-UNIT LOAD OF XM22E8 MOTORS ON A 30'-0" LONG TRAILER.
3. DELETING PROCEDURES FOR SHIPPING A 36-UNIT LOAD OF XM22E8 MOTORS ON A 39'-0" LONG TRAILER.
4. ADDING PROCEDURES FOR SHIPPING A 38-UNIT LOAD OF XM22E8 MOTORS ON A 40'-0" LONG TRAILER.
5. ADDING PROCEDURES FOR SHIPPING A 37-UNIT LOAD OF XM112 MOTORS ON A 40'-0" LONG TRAILER.
6. ADDING PROCEDURES FOR TRAILERS EQUIPPED WITH MECHANICAL BRACING DEVICES.
7. ADDING "UNITIZING AND HANDLING PROCEDURAL GUIDANCE".
8. CHANGES AS NECESSARY TO UPDATE DRAWING FORMAT.
9. CHANGING DRAWING FILE NO. FROM GM11A118 to GM11A1.



CONTAINER DIMENSIONS			
MOTOR	DIM A	DIM B	DIM C
XM22E8	9'-5-1/2"	20-3/4"	73-1/2"
XM112	9'-10"	20-1/4"	68-5/8"



TYPICAL STACK

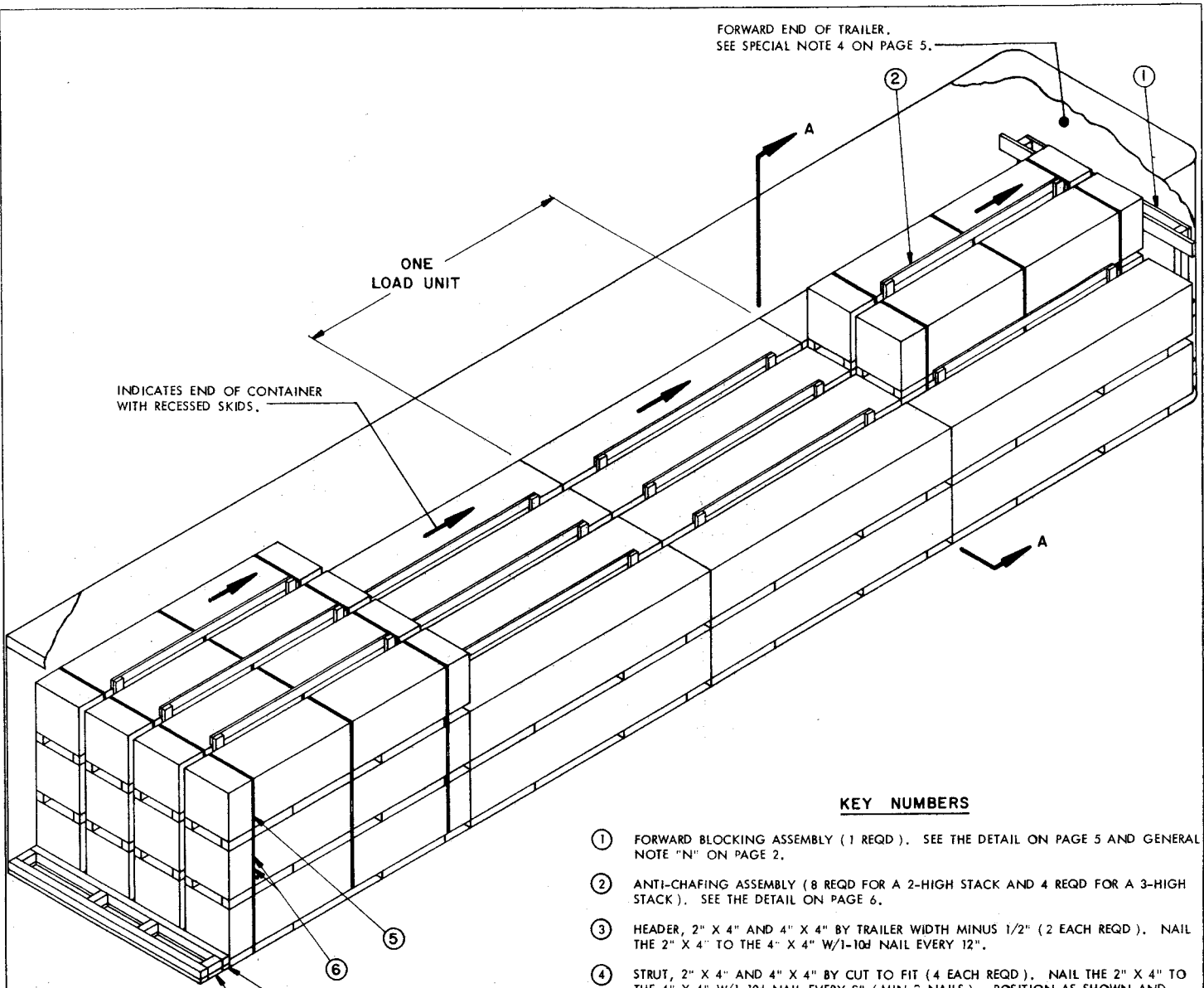
**UNITIZING AND HANDLING  
PROCEDURAL GUIDANCE**

(PROCEDURAL GUIDANCE CONTINUED)

1. STACKING CONTAINERS FOR UNITIZING.
    - A. PLACE AN UPPER CONTAINER AS CLOSELY AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE NEXT LOWER CONTAINER.
    - B. POSITION THE FORWARD END OF AN UPPER CONTAINER ABOVE THE FORWARD END OF THE NEXT LOWER CONTAINER.
  2. INSTALLATION OF 1-1/4" X .035" UNITIZING STEEL STRAPPING. SEE GENERAL NOTE "P" ON PAGE 2.
    - A. POSITION EACH STRAP TO ENCIRCLE THE CONTAINERS NEAR THE AFT END OF THE SKIDS AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS; I.E., VERTICAL ALONG THE SIDES AND FLAT ACROSS THE TOP AND BOTTOM OF THE STACK.
    - B. THE STRAPPING WILL BE FIRMLY TENSIONED SO THAT EACH STRAP CRUSHES SLIGHTLY INTO THE UPPER AND LOWER EDGES OF THE STACK. EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO SEALS (BUTTED TOGETHER) WITH TWO PAIR OF CRIMPS PER SEAL AS SHOWN. THE LAP JOINT WILL BE MADE ALONG THE SIDE OF THE STACK. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.
  3. CONTAINER OR CONTAINER STACK HANDLING.
    - 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 A CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. FOR VERY SHORT "INCHING" MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING TRAILER LOADING, A TWO (2) OR THREE (3) HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INSIDE THE SKIDS OF AN UPPER CONTAINER.
    - C. IF A CONTAINER OR STACK OF CONTAINERS IS HANDLED BY SLINGING, THE SLING MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWEST CRATE.
- 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 AT RIGHT)

FORWARD END OF TRAILER.  
SEE SPECIAL NOTE 4 ON PAGE 5.



INDICATES END OF CONTAINER  
WITH RECESSED SKIDS.

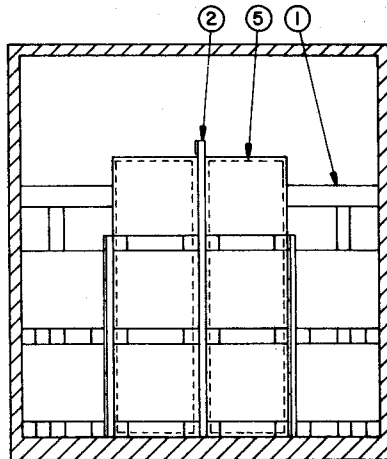
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**KEY NUMBERS**

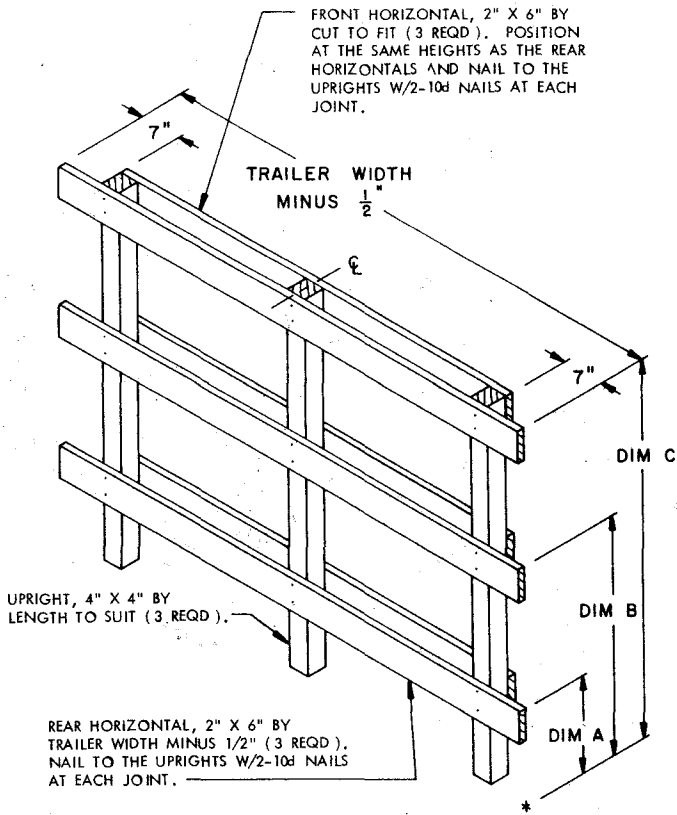
- ① FORWARD BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 5 AND GENERAL NOTE "N" ON PAGE 2.
- ② ANTI-CHAFING ASSEMBLY (8 REQD FOR A 2-HIGH STACK AND 4 REQD FOR A 3-HIGH STACK). SEE THE DETAIL ON PAGE 6.
- ③ HEADER, 2" X 4" AND 4" X 4" BY TRAILER WIDTH MINUS 1/2" (2 EACH REQD). NAIL THE 2" X 4" TO THE 4" X 4" W/1-10d NAIL EVERY 12".
- ④ STRUT, 2" X 4" AND 4" X 4" BY CUT TO FIT (4 EACH REQD). NAIL THE 2" X 4" TO THE 4" X 4" W/1-10d NAIL EVERY 6" (MIN 2 NAILS). POSITION AS SHOWN AND TOENAIL TO PIECES MARKED ③ W/2-16d NAILS AT EACH END.
- ⑤ UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (18 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑥ SEAL FOR 1-1/4" STRAPPING (36 REQD, 2 PER STRAP). SEE GENERAL NOTE "P" ON PAGE 2.

**ISOMETRIC VIEW**

XM22E8 MOTOR DEPICTED. SEE  
SPECIAL NOTE 3 ON PAGE 5.



**SECTION A-A**



**FORWARD BLOCKING ASSEMBLY**

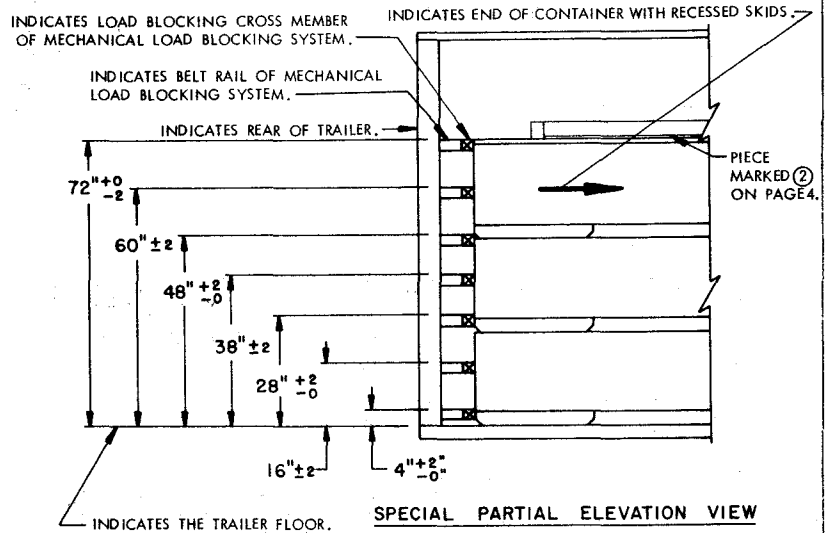
IF THE TRAILER BEING USED HAS ROUNDED CORNERS AT THE FORWARD END WITH A RADIUS GREATER THAN 6", ADDITIONAL PIECES MAY BE LAMINATED TO THE FRONT HORIZONTALS TO PROVIDE FOR THE GREATER RADIUS.

MOTOR	DIM A	DIM B	DIM C
XM22E8	16-1/4"	39-3/4"	63-1/4"
XM112	16"	38-3/4"	61-3/4"

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	84	28
2" X 4"	135	90
2" X 6"	42	42
4" X 4"	33	22
NAILS	NO. REQD	POUNDS
6d (2")	54	1/2
10d (3")	84	1-1/2
16d (3-1/2")	16	1/2
STEEL STRAPPING, 1-1/4" X .035" ----- 306' REQD		44 LBS
SEALS FOR 1-1/4" STRAPPING ----- 36 REQD		2 LBS

**SPECIAL NOTES:**

1. A 38-UNIT LOAD OF XM22E8 MOTORS IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE VAN TRAILER WHICH HAS ROUNDED CORNERS AT THE FORWARD END, BUT NO REAR CORNER POSTS. A 38'-8" LONG TRAILER IS THE SHORTEST TRAILER WHICH CAN BE USED TO SHIP FOUR LOAD UNITS LONG OF A XM22E8 MOTOR.
2. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE THICKNESS OF THE ANTI-CHAFING ASSEMBLIES, PIECES MARKED ②.
3. A FOUR LOAD-UNIT LONG LOAD OF XM112 MOTORS CANNOT BE SHIPPED IN A 40'-0" LONG TRAILER USING THE PROCEDURES DEPICTED ON PAGE 4. REFER TO PAGE 6 FOR PROCEDURES WHICH MUST BE USED WHEN SHIPPING A SIMILAR QUANTITY OF XM112 MOTORS.
4. IF THE TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR AN INSTALLED BULKHEAD, DELETE THE "FORWARD BLOCKING ASSEMBLY" AND POSITION THE UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER.
5. IF THE TRAILER BEING UNLOADED HAS REAR CORNER POSTS, POSITION THE REAR HEADER, PIECE MARKED ③, AGAINST THE CORNER POSTS AND LAMINATE 6" WIDE BY 48" LONG MATERIAL OF SUFFICIENT THICKNESS TO FILL THE VOID BETWEEN THE HEADER AND THE CLOSED DOORS.
6. IF THE SPACE BETWEEN THE REAR OF THE LOAD AND THE REAR DOORS WHEN THEY ARE CLOSED MEASURES 12" OR LESS, A SOLID FILL TYPE OF REAR BLOCKING, AS DEPICTED ON PAGE 6, MUST BE USED.
7. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE QUANTITY OF UNITS TO BE SHIPPED BY OMITTING AN ENTIRE LOAD UNIT OF EIGHT (8), TEN (10), OR TWELVE (12) CONTAINERS BY OMITTING AN ENTIRE TOP LAYER OF TWO (2) OR FOUR (4) CONTAINERS, OR BY OMITTING A SINGLE CONTAINER FROM ANY STACK. IF A SINGLE CONTAINER IS OMITTED FROM A STACK, ALL STACKS LATERALLY AND LONGITUDINALLY ADJACENT TO THAT STACK MUST BE UNITIZED AS DEPICTED BY THE "UNITIZING AND HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.
8. IF THE TRAILER BEING UNLOADED CONTAINS MECHANICAL BRACING DEVICES, SUCH AS WALL BELT RAILS AND LOAD BLOCKING CROSS MEMBERS, WHICH CONFORM TO SPECIFICATIONS SET FORTH WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C AND APPENDICES THERETO, THEY MAY BE USED AT THE REAR OF THE LOAD IN LIEU OF PIECES MARKED ③ AND ④. THE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES MUST HAVE A SYSTEM LENGTH OF NOT LESS THAN 38'-8", WHEN SHIPPING THE XM22E8 MOTOR, AS MEASURED FROM THE FRONT WALL OF THE TRAILER TO THE REAR FACE OF THE REARWARD CROSS MEMBERS. IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END, THE FORWARD BLOCKING ASSEMBLY MARKED ① MAY BE OMITTED BY INSTALLING CROSS MEMBERS AT THE FRONT OF THE LOAD. THESE CROSS MEMBERS MUST BE POSITIONED AT THE SAME HEIGHT LOCATIONS AS THOSE AT THE REAR OF THE LOAD. THE CONTAINERS IN THE FRONT LOAD UNIT MUST THEN BE POSITIONED SO THE END OF THE CONTAINER WITH RECESSED SKIDS FACES THE REAR OF THE TRAILER. THIS METHOD, HOWEVER, WILL REQUIRE A SYSTEM LENGTH OF NOT LESS THAN 38'-4", WHEN SHIPPING THE XM22E8 MOTOR, AS MEASURED FROM THE FRONT FACE OF THE FORWARD CROSS MEMBERS TO THE REAR FACE OF THE REARWARD MEMBERS. CROSS MEMBERS MUST BE POSITIONED AT THE HEIGHTS SPECIFIED IN THE "SPECIAL PARTIAL ELEVATION VIEW" BELOW. WHEN SHIPPING THE XM112 MOTOR, REFER TO SPECIFICATIONS SET FORTH IN SPECIAL NOTE 8 ON PAGE 7. ALSO, SEE GENERAL NOTES "G", "H", AND "J" ON PAGE 2.

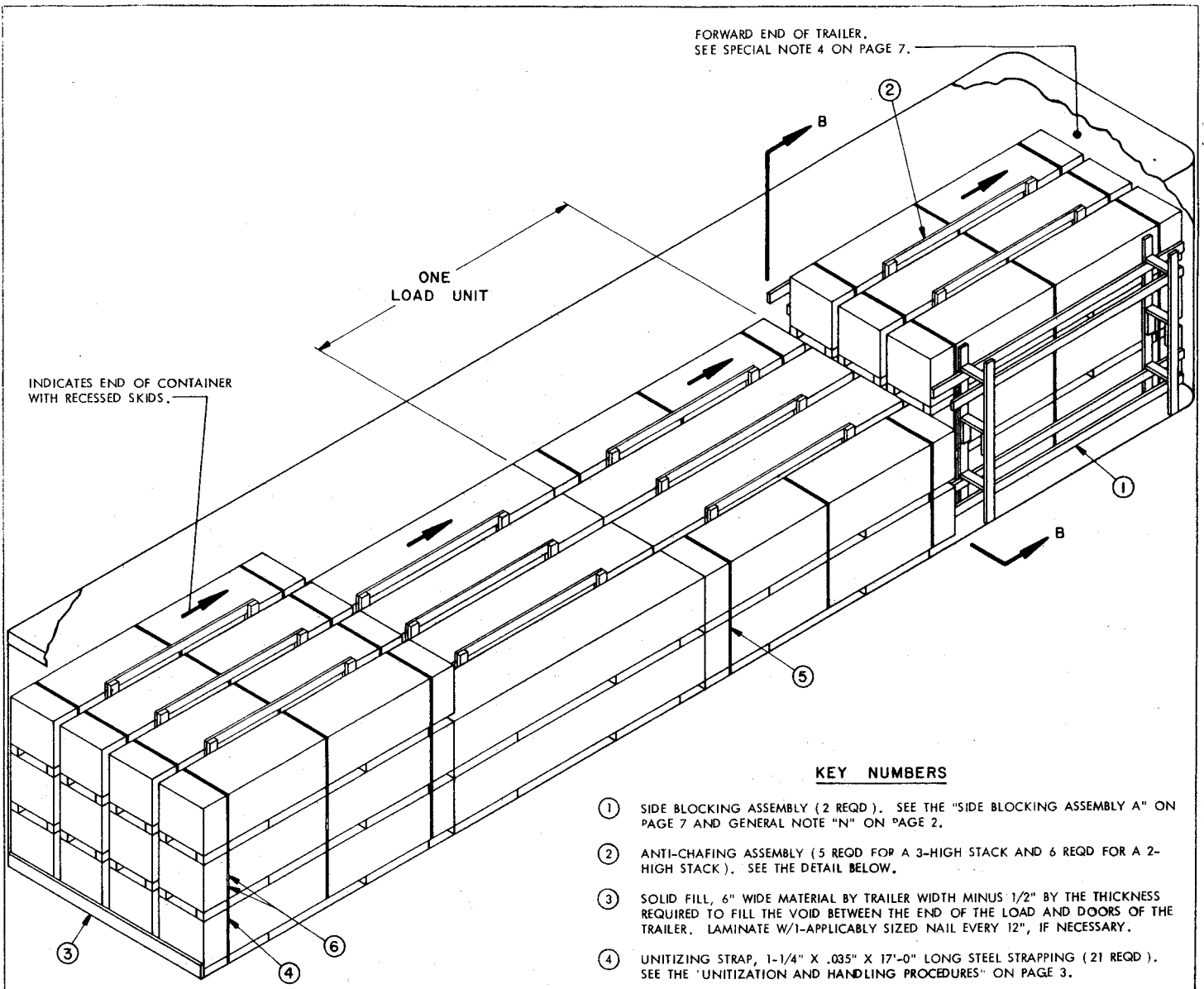


WHEN SHIPPING THE XM112 MOTOR, THE CROSS MEMBER AT THE 72" HEIGHT LOCATION MUST BE OMITTED.

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
XM22E8 MOTOR	38	41,610 LBS *
DUNNAGE		504 LBS
<b>TOTAL WEIGHT</b>		<b>42,114 LBS</b>

\* LADING WEIGHT FOR XM112 MOTOR IS 42,864 POUNDS.

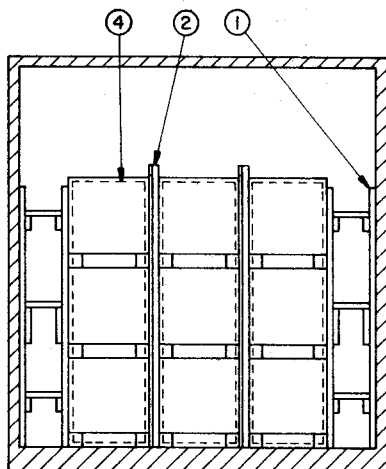


**KEY NUMBERS**

- ① SIDE BLOCKING ASSEMBLY (2 REQD). SEE THE "SIDE BLOCKING ASSEMBLY A" ON PAGE 7 AND GENERAL NOTE "N" ON PAGE 2.
- ② ANTI-CHAFING ASSEMBLY (5 REQD FOR A 3-HIGH STACK AND 6 REQD FOR A 2-HIGH STACK). SEE THE DETAIL BELOW.
- ③ SOLID FILL, 6" WIDE MATERIAL BY TRAILER WIDTH MINUS 1/2" BY THE THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE END OF THE LOAD AND DOORS OF THE TRAILER. LAMINATE W/1-APPLICABLY SIZED NAIL EVERY 12", IF NECESSARY.
- ④ UNITIZING STRAP, 1-1/4" X .035" X 17'-0" LONG STEEL STRAPPING (21 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑤ UNITIZING STRAP, 1-1/4" X .035" X 13'-0" LONG STEEL STRAPPING (6 REQD).
- ⑥ SEAL FOR 1-1/4" STRAPPING (54 REQD, 2 PER STRAP). SEE GENERAL NOTE "P" ON PAGE 2.

**ISOMETRIC VIEW**

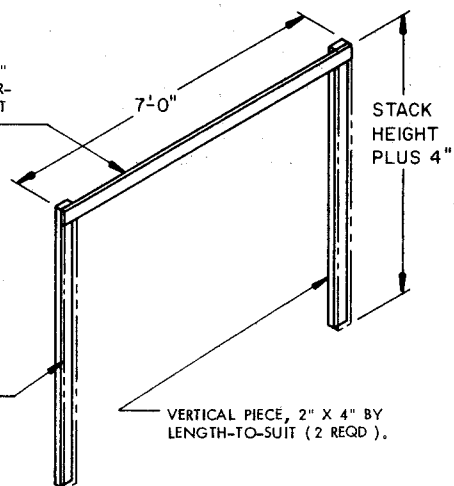
XM112 MOTOR DEPICTED.  
SEE SPECIAL NOTE 3 ON  
PAGE 7.



**SECTION B-B**

SPACER PIECE, 1" X 4" X 7'-0"  
(1 REQD). NAIL TO THE VERTICAL  
PIECES W/3-6d NAILS AT  
EACH END.

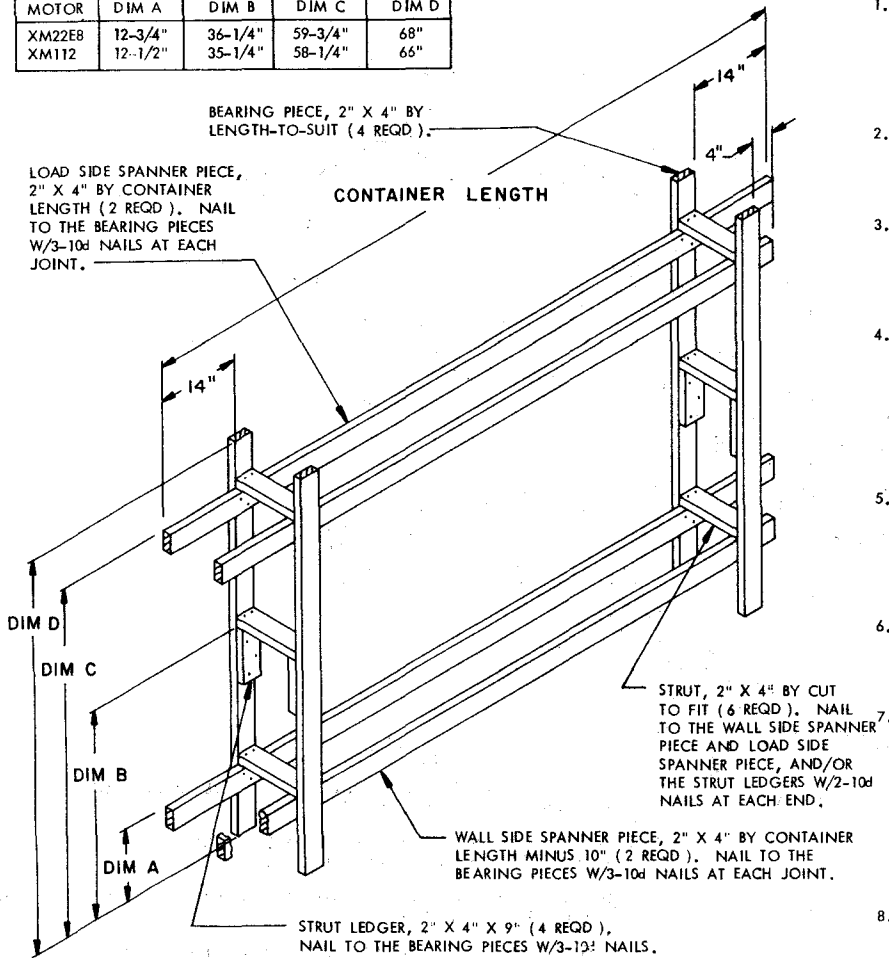
FILLER PIECE, 1" X 4" BY LENGTH-  
TO-SUIT (AS REQD). NAIL TO THE  
VERTICAL PIECE W/1-6d NAIL EVERY  
12". REQUIRED TO FILL THE VOID  
BETWEEN LATERALLY ADJACENT  
STACKS, AS SHOWN IN THE LOAD  
ON PAGE 6.



**ANTI-CHAFING ASSEMBLY**

**DIMENSION CHART B**

MOTOR	DIM A	DIM B	DIM C	DIM D
XM22EB	12-3/4"	36-1/4"	59-3/4"	68"
XM112	12-1/2"	35-1/4"	58-1/4"	66"



**SIDE BLOCKING ASSEMBLY A**

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	181	60
2" X 4"	183	122
2" X 6"	8	8
NAILS	NO. REQD	POUNDS
6d (2")	164	1
10d (3")	120	2
STEEL STRAPPING, 1-1/4" X .035"	384' REQD	55 LBS
SEALS FOR 1-1/4" STRAPPING	54 .REQD	3 LBS

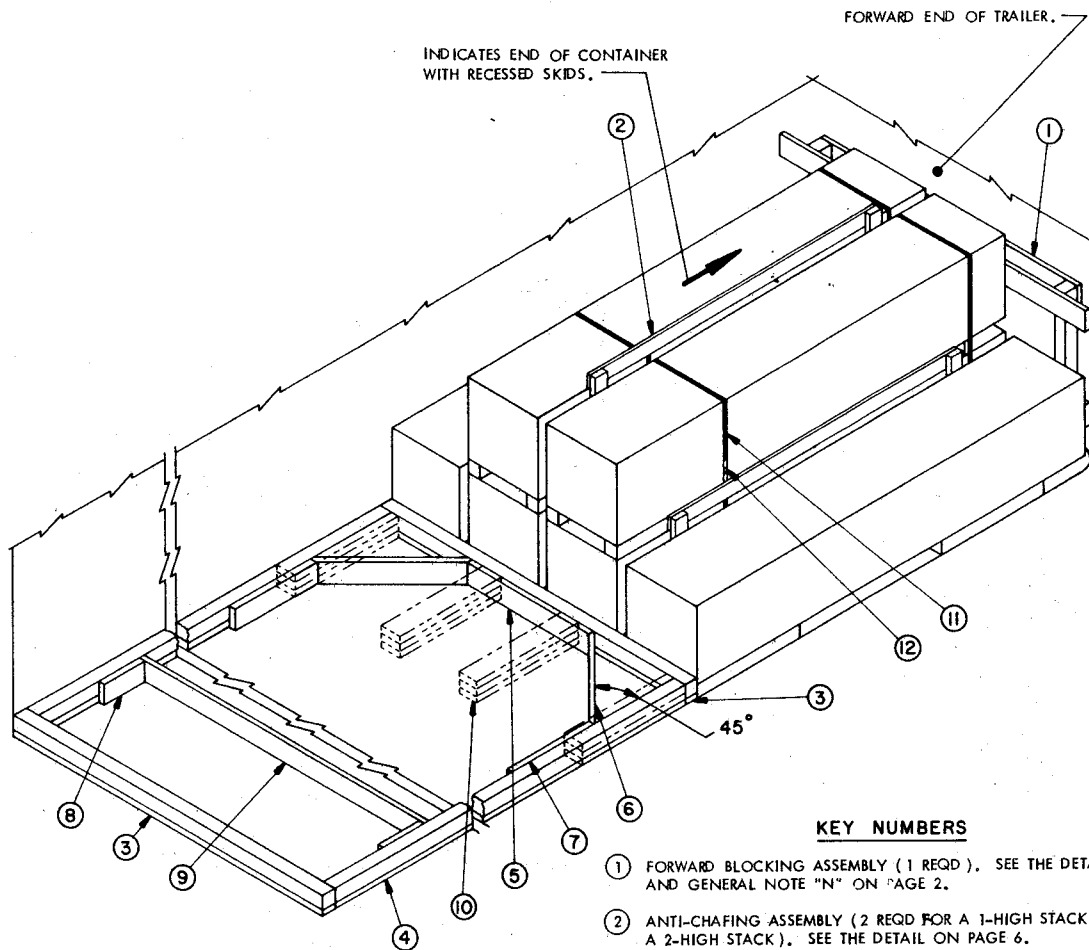
**SPECIAL NOTES:**

1. A 37-UNIT LOAD OF XM112 MOTORS IS SHOWN IN A 40'-0" LONG BY 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE TRAILER WHICH HAS ROUNDED CORNERS AT THE FORWARD END, BUT NO REAR CORNER POSTS. A 39'-6" LONG TRAILER IS THE SHORTEST TRAILER WHICH CAN BE USED TO SHIP FOUR LOAD UNITS LONG OF XM112 MOTORS.
2. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE THICKNESS OF THE "ANTI-CHAFING ASSEMBLIES", PIECES MARKED ②, AND OR WIDTH OF "SIDE BLOCKING ASSEMBLY A".
3. A FOUR LOAD-UNIT LONG LOAD OF XM112 MOTORS CAN BE SHIPPED IN A 40'-0" LONG TRAILER USING THE PROCEDURES DEPICTED ON PAGE 6. REFER TO PAGE 4 FOR PROCEDURES WHICH MUST BE USED WHEN SHIPPING A SIMILAR QUANTITY OF XM22EB MOTORS.
4. IF THE TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR AN INSTALLED BULKHEAD, THE FORWARD LOAD UNIT MAY BE LOADED FOUR (4) WIDE AND TWO (2) HIGH, AND POSITIONED DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER; THUS, ELIMINATING THE NEED FOR THE "SIDE BLOCKING ASSEMBLIES" MARKED ①, THE "UNITIZING STRAPS" BUNDLING THE CONTAINERS IN THE FRONT TWO (2) LOAD UNITS, AND THIRTY (30) SEALS.
5. IF THE TRAILER BEING OUTLOADED HAS REAR CORNER POSTS, POSITION THE SOLID FILL, PIECE MARKED ③, AGAINST THE CORNER POSTS AND LAMINATE 6" WIDE BY 48" LONG MATERIAL TO THE REAR SURFACE OF THE SOLID FILL, AS REQUIRED TO FILL THE VOID BETWEEN IT AND THE REAR DOORS WHEN THEY ARE CLOSED.
6. IF THE SPACE BETWEEN THE REAR OF THE LOAD AND THE REAR DOORS WHEN THEY ARE CLOSED MEASURES MORE THAN 12", A STRUT TYPE OF REAR BLOCKING, AS DEPICTED ON PAGE 4, MUST BE USED.
7. THE DEPICTED LOAD CONFIGURATION MAY BE ADJUSTED TO SATISFY THE QUANTITY OF UNITS TO BE SHIPPED BY OMITTING AN ENTIRE LOAD UNIT OF EIGHT (8) OR TWELVE (12) CONTAINERS, BY OMITTING AN ENTIRE TOP LAYER OF THREE (3) OR FOUR (4) CONTAINERS, OR BY OMITTING A SINGLE CONTAINER FROM ANY STACK. IF A SINGLE CONTAINER IS OMITTED FROM A STACK, ALL STACKS Laterally AND LONGITUDINALLY ADJACENT TO THAT STACK MUST BE UNITIZED AS DEPICTED BY THE "UNITIZING AND HANDLING PROCEDURAL GUIDANCE" ON PAGE 3.
8. IF THE TRAILER BEING OUTLOADED CONTAINS MECHANICAL BRACING DEVICES, SUCH AS WALL BELT RAILS AND LOAD BLOCKING CROSS MEMBERS, WHICH CONFORM TO SPECIFICATIONS SET FORTH WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C AND APPENDICES THERETO, THEY MAY BE USED AT THE REAR OF THE LOAD IN LIEU OF PIECE MARKED ③. THE TRAILER EQUIPPED WITH MECHANICAL BRACING DEVICES MUST HAVE A SYSTEM LENGTH OF NOT LESS THAN 39'-7", WHEN SHIPPING THE XM112 MOTOR, AS MEASURED FROM THE FRONT WALL OF THE TRAILER TO THE REAR FACE OF THE REARWARD CROSS MEMBER. IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END, THE FORWARD LOAD UNIT MAY BE LOADED AS DESCRIBED IN SPECIAL NOTE 4 AND CROSS MEMBERS MAY BE POSITIONED AT THE FRONT OF THE LOAD. THESE CROSS MEMBERS MUST BE POSITIONED AT THE SAME HEIGHT LOCATIONS AS THOSE AT THE REAR OF THE LOAD. THE CONTAINERS IN THE FRONT LOAD UNIT MUST THEN BE POSITIONED SO THE END OF THE CONTAINER WITH RECESSED SKIDS FACES THE REAR OF THE TRAILER. THIS METHOD, HOWEVER, WILL REQUIRE A SYSTEM LENGTH OF NOT LESS THAN 39'-10", WHEN SHIPPING THE XM112 MOTOR, AS MEASURED FROM THE FRONT FACE OF THE FORWARD CROSS MEMBERS TO THE REAR FACE OF THE REAR MEMBERS. CROSS MEMBERS MUST BE POSITIONED AT THE HEIGHTS SPECIFIED IN THE "SPECIAL PARTIAL ELEVATION VIEW" ON PAGE 5. WHEN SHIPPING THE XM22EB MOTOR, REFER TO SPECIFICATIONS SET FORTH IN SPECIAL NOTE 8 ON PAGE 5. ALSO, SEE GENERAL NOTES "G", "H", AND "J" ON PAGE 2.

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
XM112 MOTOR	37	41,736 LBS *
DUNNAGE		536 LBS
<b>TOTAL WEIGHT</b>		<b>42,272 LBS</b>

\* LADING WEIGHT FOR XM22EB MOTOR IS 40,515 POUNDS.



**ISOMETRIC VIEW**

XM22E8 MOTOR DEPICTED.  
SEE SPECIAL NOTE 3 BELOW.

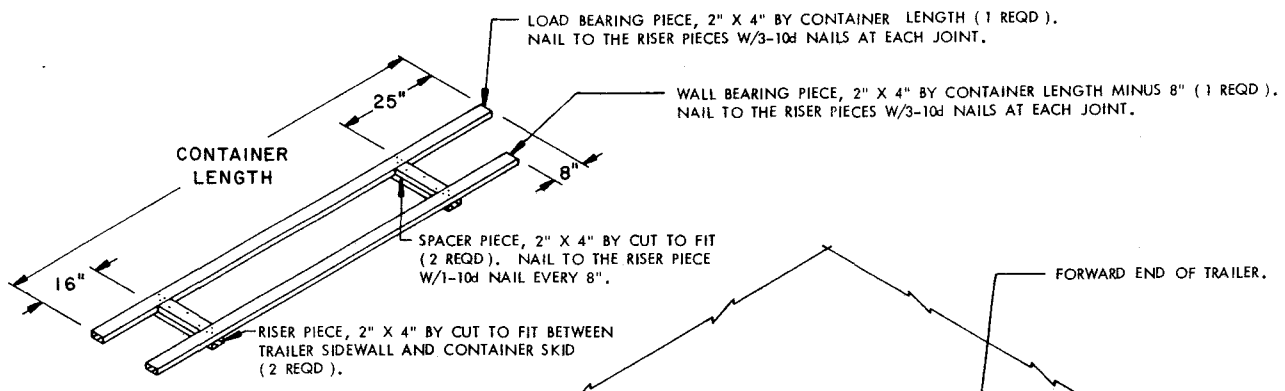
**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY (1 REQD.). SEE THE DETAIL ON PAGE 5 AND GENERAL NOTE "N" ON PAGE 2.
- ② ANTI-CHAFING ASSEMBLY (2 REQD FOR A 1-HIGH STACK AND 1 REQD FOR A 2-HIGH STACK). SEE THE DETAIL ON PAGE 6.
- ③ HEADER, 2" X 4" AND 4" X 4" BY TRAILER WIDTH MINUS 1/2" (2 REQD.). LAMINATE W/1-10d NAIL EVERY 12".
- ④ SIDE STRUT, 2" X 4" AND 4" X 4" BY CUT TO FIT BETWEEN THE HEADERS MARKED ③ (2 REQD.). LAMINATE W/1-12d NAILS AT EACH END.
- ⑤ CENTER CLEAT, 2" X 6" X 36" (1 REQD.). NAIL TO PIECE MARKED ③ W/7-12d NAILS.
- ⑥ DIAGONAL BRACE, 2" X 6" BY CUT-TO-FIT (2 REQD.). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AT 45° ANGLE AS SHOWN AND NAIL TO PIECES MARKED ③ AND ④ W/2-16d NAILS AT EACH END.
- ⑦ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD.). NAIL TO PIECE MARKED ③ W/6-12d NAILS.
- ⑧ NAILING BLOCK, 2" X 6" X 12" (2 REQD.). NAIL TO PIECE MARKED ④ W/3-12d NAILS.
- ⑨ STRUT BRACING, 2" X 6" BY CUT-TO-FIT (MINIMUM OF 1 REQD.). INSTALL ONE (1) NEAR THE END OF THE SIDE STRUTS MARKED ④ AS SHOWN. ONE (1) ADDITIONAL BRACE IS REQUIRED FOR EVERY 7'-0" OF STRUT LENGTH. NAIL TO PIECES MARKED ③ W/2-12d NAILS AT EACH END.
- ⑩ BACK-UP CLEAT, 2" X 6" X 30" (TRIPLED) (4 REQD.). POSITION AS SHOWN AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER. SEE SPECIAL NOTE 6 AT LEFT.
- ⑪ UNITIZING STRAP, 1-1/4" X .035" X 13'-0" LONG STEEL STRAPPING (2 REQD.). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.
- ⑫ SEAL FOR 1-1/4" STRAPPING (4 REQD, 2 PER STRAP). SEE GENERAL NOTE "P" ON PAGE 2.

**SPECIAL NOTES:**

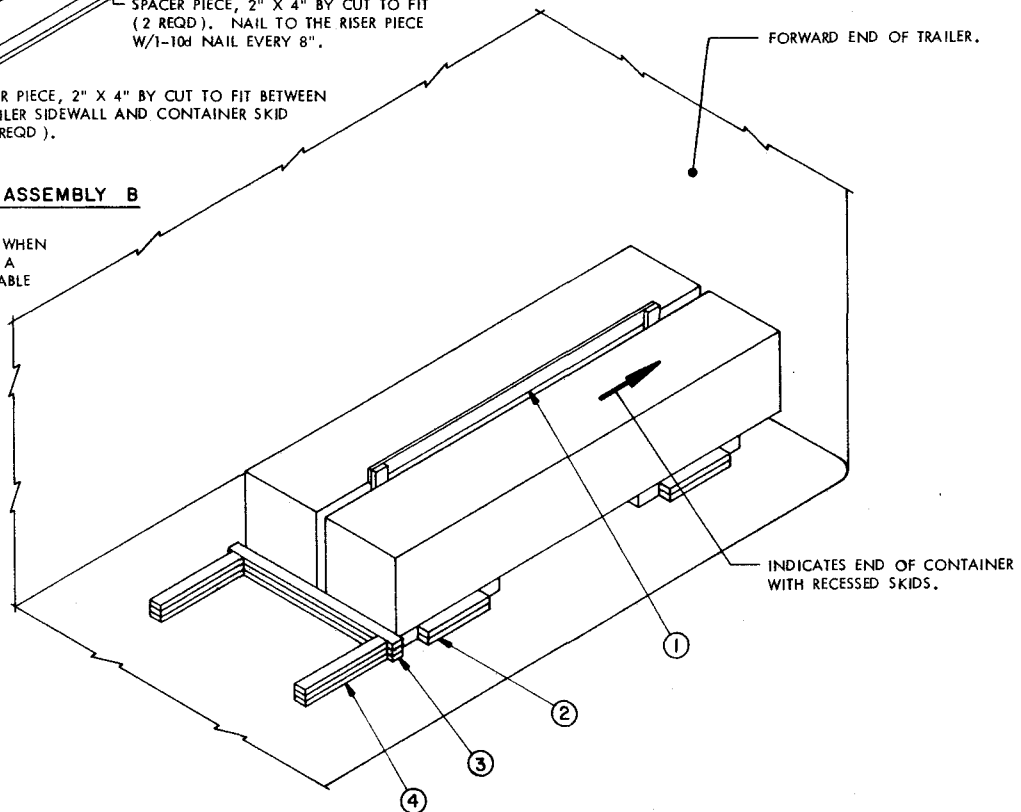
- 1. A 6-UNIT LOAD OF XM22E8 MOTORS IS SHOWN IN A 7'-6" WIDE (INSIDE DIMENSION) CONVENTIONAL TYPE VAN TRAILER THAT HAS ROUNDED CORNERS AT THE FORWARD END BUT NO REAR CORNER POSTS, AND IS EQUIPPED WITH EITHER A NAILABLE OR NON-NAILABLE FLOOR.
- 2. WIDER OR NARROWER TRAILERS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD BY ADJUSTING THE THICKNESS OF THE ANTI-CHAFING ASSEMBLIES, PIECES MARKED ②.
- 3. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR THE SHIPMENT OF XM112 MOTORS.
- 4. THIS LTL OUTLOADING PROCEDURE DEPICTS THE USE OF BOTH "K-BRACE" BLOCKING AND "NAILED FLOOR LINE" BLOCKING, FOR THE BLOCKING OF A PARTIAL LOAD SHIPMENT.
- 5. THE K-BRACE BLOCKING, SHOWN AS PIECES ③ THROUGH ⑨ IS ADEQUATE FOR RETAINING A MAXIMUM LTL LOAD.
- 6. FOUR (4) BACK-UP CLEATS, SHOWN AS PIECES MARKED ⑩, ARE ADEQUATE FOR RETAINING NOT MORE THAN 32,000 POUNDS OF LADING. BACK-UP CLEATS ARE FOR USE IN A TRAILER WHICH HAS A NAILABLE FLOOR AND SHOULD BE USED, IF POSSIBLE, IN LIEU OF THE REAR HEADER MARKED ③ AND PIECES MARKED ④ THRU ⑨. ONE HEADER MARKED ③ MUST BE POSITIONED AGAINST THE CONTAINER.
- 7. IF THE TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT OR AN INSTALLED BULKHEAD, DELETE THE "FORWARD BLOCKING ASSEMBLY" AND POSITION THE UNITS DIRECTLY AGAINST THE FORWARD PORTION OF THE TRAILER.
- 8. IF THE TRAILER BEING OUTLOADED HAS REAR CORNER POSTS, POSITION THE REAR HEADER, PIECE MARKED ③, AGAINST THE POSTS.
- 9. DEPENDING ON THE NUMBER OF UNITS BEING LOADED, EACH OF THE SIDE STRUTS, PIECES MARKED ④ MAY NEED TO BE FORMED FROM MORE THAN ONE PIECE OF MATERIAL. IF SUCH IS THE CASE, THE SIDE STRUTS MUST BE SPLICED. SPLICING CAN BE ACCOMPLISHED BY CENTERING A 2" X 4" X 24" PIECE ON THE JOINT OF THE SIDE STRUTS AND NAILING IT TO THE SIDE STRUTS W/4-12d NAILS AT EACH END.
- 10. FOR SHIPMENT OF A ONE-LAYER LOAD OF UP TO THREE (3) CONTAINERS WIDE, IN A TRAILER WITH A NON-NAILABLE FLOOR, A "SIDE BLOCKING ASSEMBLY B", AS DETAILED ON PAGE 9, MUST BE USED ON EACH SIDE OF A LOAD UNIT.





**SIDE BLOCKING ASSEMBLY B**

THIS ASSEMBLY IS ONLY FOR USE WHEN SHIPPING A ONE-LAYER LOAD IN A TRAILER WHICH HAS A NON-NAILABLE FLOOR.



**ISOMETRIC VIEW**

XM22E8 MOTOR DEPICTED.  
SEE SPECIAL NOTE 2 BELOW.

**KEY NUMBERS**

- ① ANTI-CHAFING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 6.
- ② SIDE BLOCKING, 2" X 4" X 18" (DOUBLED) (4 REQD). POSITION AGAINST CONTAINER SKIDS AND 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 4 AT LEFT.
- ③ HEADER, 2" X 4" X 48" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER. SEE GENERAL NOTE "N" ON PAGE 2.
- ④ BACK-UP CLEAT, 2" X 4" X 24" (TRIPLED) (2 REQD). ALIGN WITH OUTSIDE SKIDS OF CONTAINERS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.

**SPECIAL NOTES:**

- 1. A 2-UNIT LOAD OF XM22E8 MOTORS IS SHOWN IN A CONVENTIONAL TYPE VAN TRAILER EQUIPPED WITH A NAILABLE FLOOR.
- 2. THE DEPICTED PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENT OF XM112 MOTORS.
- 3. TWO (2) BACK-UP CLEATS, SHOWN AS PIECES MARKED ③, ARE ADEQUATE FOR RETAINING NOT MORE THAN 7,000 POUNDS OF LADING.
- 4. IF THE TRAILER HAS A NON-NAILABLE FLOOR, IT WILL BE NECESSARY TO USE "K-BRACE" TYPE BLOCKING AS DEPICTED ON PAGE 8, IN LIEU OF PIECES MARKED ③ AND ④. ALSO, IN LIEU OF PIECES MARKED ②, A "SIDE BLOCKING ASSEMBLY B" AS DETAILED ON THIS PAGE WILL BE REQUIRED ON EACH SIDE OF THE LOAD.

