LOADING AND BRACING (CL & LCL) ON EUROPEAN RAILCAR OF THE WARHEAD SECTION, PACKED IN THE M544 STORAGE AND SHIPPING CONTAINER

INDEX

DELINEATED LOADING AND BRACING PROCEDURES COMPLY WITH THE REGOLAMENTO INTERNAZIONALE VEICOLI (RIV): REGULATIONS GOVERNING THE RECIPROCAL USE OF WAGONS IN INTERNATIONAL TRAFFIC.

NOTICE: DEPICTED LOADS ARE NOT OVERSIZE.

DO NOT SCALE

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PROJECT CA 163-77

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 SHOWN HEREIN ARE APPLICABLE TO EUROPEAN RAILCARS WHICH CONFORM TO THE RIV REQUIREMENTS.

C. THE LOAD AS SHOWN ON PAGES 4 AND 5 IS BASED ON RIV RAILCARS (KBS 442/443 AND KLS 442/443) 41'-0-1/8" (12,500 MM) LONG BY 9'-1-3/64" (2,770 MM) WIDE WITH 18" (457 MM) HIGH CAR SIDES.

D. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO THE WARHEAD SECTION IN THE M544 STORAGE AND SHIPPING CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH WARHEAD SECTION.

E. THE WARHEAD SECTION IS AN EXPLOSIVE ITEM. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED WARHEAD SECTION OR WHEN THEY ARE EMPTY. FOR REFERENCE PURPOSES, THIS ITEM IS A DOT CLASS "A" EXPLOSIVE WITHIN CONUS, DEPENDING UPON THE SPECIFIC ITEM WITHIN THE CONTAINER.

F. FOR DETAILS OF THE M544 CONTAINER, SEE DRAWING NO. 9211120.

CONTAINER DIMENSIONS ------115-5/8" (2,937 MM) LONG BY 34-15/16" (887 MM) WIDE BY 36-9/16" (929 MM) HIGH.

GROSS WEIGHT ----------1,900 POUNDS (862 KG) (APPROX).

G. A LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS OF THE DEPICTED LOADS IS SHOWN IN A CHART ON THIS PAGE. OTHER TYPES OF RAILCARS CAN BE USED PROVIDING THESE OTHER CARS ARE PROPERLY EQUIPPED FOR THE APPLICATION OF THE PRESCRIBED LOAD-SECURING BLOCKING IN ACCORDANCE WITH THE SPECIFIED PROCEDURES. MINOR DEVIATIONS FROM THE LOCATIONS SHOWN IN THE LOAD VIEWS FOR INSTALLING BLOCKING AND TIE DOWN COMPONENTS ON A CAR ARE PERMITTED. HOWEVER, THE INTENT OF THE SPECIFIED BLOCKING PROCEDURES MUST BE ACHIEVED.

H. REMOVE ALL POSTS FROM SIDE OF CAR AND PLACE IN RACKS UNDER CAR, IF APPLICABLE.

J. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE RAILCAR CONCERNED, OR THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS CONTAINED HEREIN, FOR FULL OR PARTIAL CARLOAD, MUST BE FOLLOWED FOR BLOCKING, BRACING, AND STAYING OF THIS ITEM.

K. OTHER TYPES OF LADING ITEMS MAY BE LOADED ON A CAR WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

L. WHEN STEEL STRAPPING 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.

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 RAILCAR, 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. NAILS USED FOR FLOOR LINE BLOCKING WILL HAVE A MINIMUM DIAMETER OF 5 MM. NAIL SIZES WILL BE SELECTED TO PROVIDE A MINIMUM OF 40 MM PENETRATION INTO THE CAR FLOOR. HOWEVER, THE LENGTH OF THE NAIL WILL BE SUCH THAT THE NAIL DOES NOT COMPLETELY PENETRATE THE CAR FLOOR. SEE THE "NAIL CHART" AT THE RIGHT AND THE "SPECIAL NAILING GUIDANCE" ON PAGE 8. NAILS WHICH ARE OF OTHER SIZES, OR WHICH HAVE A NOMENCLATURE DIFFERENT THAN THAT USED HEREIN, MAY ALSO BE USED PROVIDED THEY MEET THE MINIMUM REQUIREMENTS STIPULATED WITHIN THIS DOCUMENT.

O. NAILS USED FOR FABRICATING DUNNAGE ASSEMBLIES SHALL BE OF THE MAXIMUM PRACTICAL LENGTH WHICH WILL PREVENT THE NAIL POINT FROM COMPLETELY PENETRATING THE DUNNAGE ASSEMBLY. THE NAIL POINT IS TO BE CONCEALED WITHIN THE DUNNAGE ASSEMBLY TO PREVENT POSSIBLE DAMAGE TO THE LADING.

P. THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE BASED ON THE USE OF DIMENSIONAL SIZED LUMBER. IN MOST CASES THE METRIC EQUIVALENT IS GIVEN IN PARENTHESIS FOLLOWING THE DIMENSION. HOWEVER, WHERE THE METRIC EQUIVALENT IS NOT SHOWN, IT MAY BE COMPUTED BY USING 1" EQUALS 25.4 MM. METRIC EQUIVALENTS FOR WEIGHTS ARE BASED ON 1 POUND EQUALS 0.454 KG.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

LUMBER ----------: DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS. REF: FED SPEC MM-L-751.

NAILS ----------: COMMON. REF: FED SPEC FF-N-105.

STRAPPING, STEEL ----: TYPE I OR IV, FINISH A, B, OR C. REF: FED SPEC QQ-S-781.

STRAP SEAL ----------: COMMERCIAL GRADE.

(GENERAL NOTES CONTINUED)

Q. STEEL STRAPPING DEPICTED IN THIS DRAWING HAS BEEN SPECIFIED AS 1-1/4" (32 MM) X .035" (.889 MM). HOWEVER, .031 (.787 MM) THICK STRAP MAY BE USED IN LIEU OF .035" THICK STRAP.

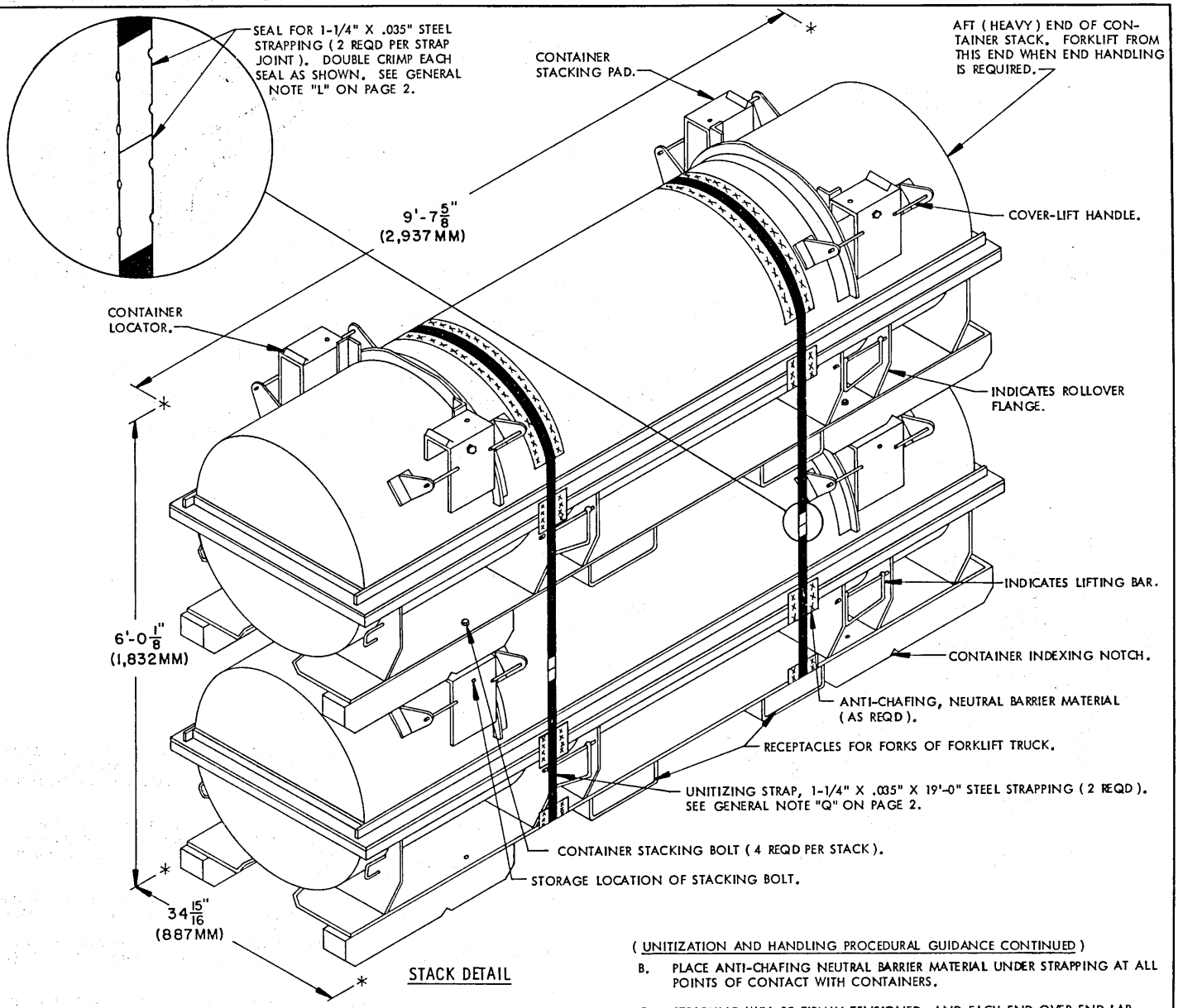
NAIL CHART

SIZE	LENGTH	DIAMETER
10d	3" (76 MM)	0.1483" (3.77 MM)
12d	3-1/4" (83 MM)	0.1483" (3.77 MM)
16d	3-1/2" (89 MM)	0.1620" (4.11 MM)
20d	4" (102 MM)	0.1920" (4.88 MM)
30d *	4-1/2" (114 MM)	0.2070" (5.26 MM)
40d *	5" (127 MM)	0.2253" (5.72 MM)
50d *	5-1/2" (140 MM)	0.2437" (6.19 MM)
60d *	6" (152 MM)	0.2625" (6.67 MM)

* NAILS WHICH HAVE ADEQUATE DIAMETER FOR NAILING FLOOR LINE BLOCKING. THE LENGTH OF THE NAIL MUST MEET THE REQUIREMENTS OF GENERAL NOTE "N".

LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS

TYPE OF RAILCAR	LENGTH OF RAILCAR	NO. OF ITEMS	MAXIMUM TOTAL WEIGHT (APPROX) OF ITEMS
KLMS-- 440	34'-11-11/16" (10,660 MM)	8	15,200 LBS (6,895 KG)
KLM -- 505	30'-4-9/16" (9,260 MM)	8	15,200 LBS (6,895 KG)
KLM -- 506	34'-8-1/2" (10,580 MM)	8	15,200 LBS (6,895 KG)
KBS -- 442/443	41'-0-1/8" (12,500 MM)	12	22,800 LBS (10,341 KG)
KLS -- 442/443	41'-0-1/8" (12,500 MM)	12	22,800 LBS (10,341 KG)
RMMS --663/664	41'-5-51/64" (12,644 MM)	12	22,800 LBS (10,341 KG)
RS------680/681	60'-8-23/64" (18,500 MM)	16	30,400 LBS (13,789 KG)
RS------683/684	60'-8-23/64" (18,500 MM)	16	30,400 LBS (13,789 KG)
SAS ----710	49'-2-9/16" (15,000 MM)	12	22,800 LBS (10,341 KG)



STACK DETAIL

UNITIZING AND HANDLING PROCEDURAL GUIDANCE

1. STACKING CONTAINERS FOR UNITIZING.

   A. THE UPPER CONTAINER SHOULD BE PLACED AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER CONTAINER.

   B. POSITION THE AFT (HEAVY) END OF THE UPPER CONTAINER ABOVE THE AFT (HEAVY) END OF THE LOWER CONTAINER.

   C. THE CONTAINER INDEXING NOTCHES WITHIN THE SKIDS OF THE UPPER CONTAINER SHOULD BE FULLY SEATED DOWN OVER THE LOCATORS ON THE STACKING PADS OF THE LOWER CONTAINER.

2. APPLICATION OF CONTAINER STACKING BOLTS.

   A. REMOVE THE STACKING BOLT FROM ITS STORAGE LOCATION ON THE STACKING PAD OF THE CONTAINER.

   B. POSITION ONE WASHER ON THE STACKING BOLT AND INSERT THE BOLT DOWN THROUGH THE HOLE IN THE TOP CONTAINER SKID AND THROUGH THE HOLE IN THE BOTTOM CONTAINER STACKING PAD. POSITION THE SECOND WASHER AND THE NUT OVER THE THREADED END OF THE BOLT.

   C. TIGHTEN THE NUT AS SECURELY AS POSSIBLE WITH A NORMAL SIZE HAND TOOL WRENCH.

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

   A. POSITION EACH STRAP TO ENCIRCLE THE CONTAINERS IMMEDIATELY BEHIND THE COVER-LIFT HANDLES AND SO THAT THE STRAPPING LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS, I.E., VERTICAL ALONG SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK.

(CONTINUED AT RIGHT)

(UNITIZATION AND HANDLING PROCEDURAL GUIDANCE CONTINUED)

   B. PLACE ANTI-CHAFING NEUTRAL BARRIER MATERIAL UNDER STRAPPING AT ALL POINTS OF CONTACT WITH CONTAINERS.

   C. STRAPPING WILL BE FIRMLY TENSIONED, AND EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO DOUBLE CRIMPED STRAP SEALS AS SHOWN. SEE GENERAL NOTE "L" ON PAGE 2. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF THE STACK SO THAT THE SEALS WILL NOT BE IN CONTACT WITH THE CONTAINERS. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OR BROKEN OFF NEAR THE JOINT SEALS.

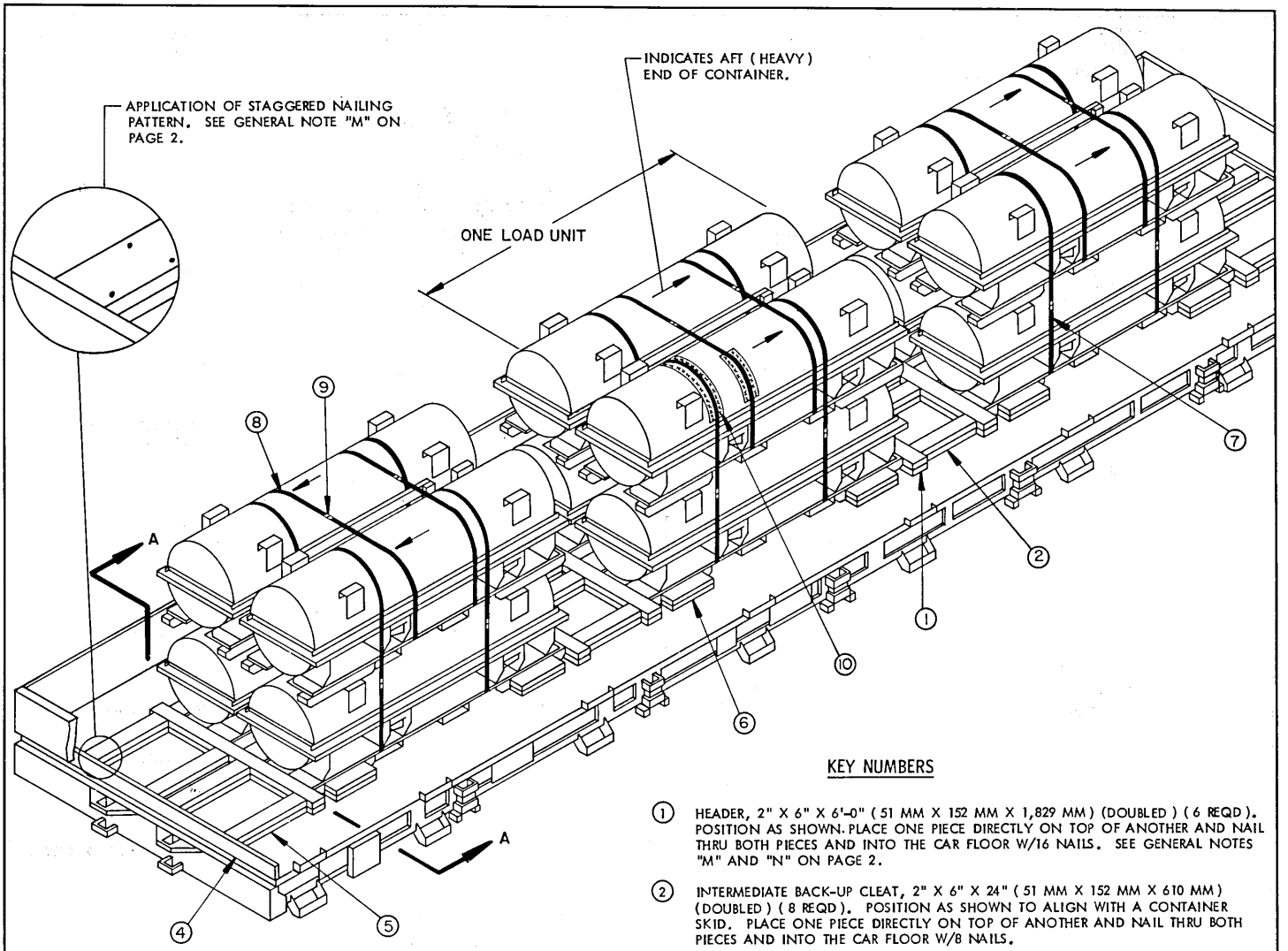
4. CONTAINER OR CONTAINER STACK HANDLING.

   NOTES: (1) APPROVED MATERIALS HANDLING EQUIPMENT (MHE) IS SPECIFIED IN OTHER DOCUMENTS. MHE IS INTENDED TO MEAN EQUIPMENT SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS AND SPREADER BARS.
   (2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

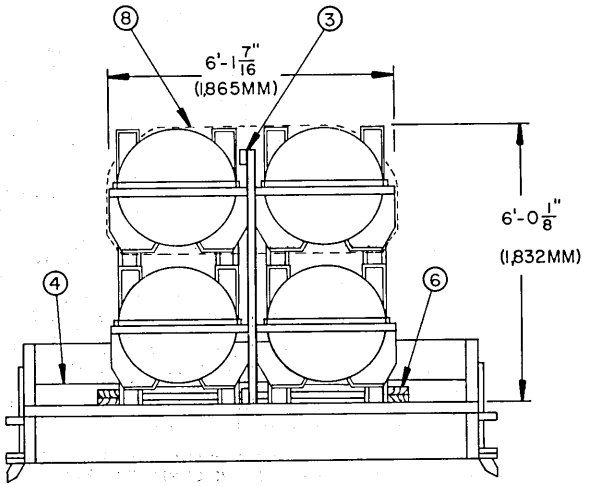
   A. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.

   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 CAR LOADING, A TWO-HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INTO THE END FORK RECEPTACLES OF THE UPPER CONTAINER. ALSO, IF A CONTAINER OR A CONTAINER STACK IS HANDLED FROM AN END POSITION, LIFTING SHOULD BE DONE AT THE AFT (HEAVY) END OF THE CONTAINER OR CONTAINER STACK AS MUCH AS POSSIBLE.

   C. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING POINTS OF THE CONTAINER. HOWEVER, IF A TWO-HIGH STACK IS HANDLED BY SLINGING, DO NOT ATTACH THE SLING TO THE LIFTING POINTS OF THE CONTAINERS. THE SLING USED MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWER CONTAINER.



ISOMETRIC VIEW



SECTION A-A

UNITIZING STRAPS NOT SHOWN FOR CLARITY PURPOSES.

KEY NUMBERS

(1) HEADER, 2" X 6" X 6'-0" (51 MM X 152 MM X 1,829 MM) (DOUBLED) (6 REQD). POSITION AS SHOWN. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/16 NAILS. SEE GENERAL NOTES "M" AND "N" ON PAGE 2.

(2) INTERMEDIATE BACK-UP CLEAT, 2" X 6" X 24" (51 MM X 152 MM X 610 MM) (DOUBLED) (8 REQD). POSITION AS SHOWN TO ALIGN WITH A CONTAINER SKID. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/8 NAILS.

(3) ANTI-CHAFING ASSEMBLY (3 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 8. POSITION BETWEEN LATERALLY ADJACENT CONTAINERS, AS SHOWN.

(4) END WALL HEADER, 2" X 6" (51 MM X 152 MM) BY CAR WIDTH MINUS 1/2" (13 MM) (2 REQD). POSITION ON THE 2" (51 MM) EDGE AGAINST EACH END WALL OF THE CAR.

(5) END WALL BACK-UP CLEAT, 2" X 6" (51 MM X 152 MM) BY CUT TO FIT (DOUBLED) (8 REQD). POSITION AS SHOWN TO ALIGN WITH A CONTAINER SKID. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/8 NAILS. TOE-NAIL TO PIECE MARKED (4) W/2 NAILS PER CLEAT.

(6) SIDE BLOCKING, 2" X 6" X 18" (51 MM X 152 MM X 457 MM) (DOUBLED) (12 REQD). POSITION AGAINST A CONTAINER SKID AS SHOWN. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/3 NAILS.

(7) UNITIZING STRAP, 1-1/4" X .035" X 19'-0" LONG STEEL STRAPPING (12 REQD). SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3 AND GENERAL NOTES "L" AND "Q" ON PAGE 2.

(8) BUNDLING STRAP, 1-1/4" X .035" X 19'-0" LONG STEEL STRAPPING (6 REQD.). INSTALL TWO STRAPS AROUND THE TWO LATERALLY ADJACENT CONTAINERS IN THE SECOND LAYER OF EACH LOAD UNIT, AS SHOWN. SEE GENERAL NOTE "Q" ON PAGE 2.

(9) SEAL FOR 1-1/4" STRAPPING (36 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "L" ON PAGE 2.

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

12-UNIT LOAD

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SPECIAL NOTES:

1. A TWELVE UNIT LOAD IS SHOWN ON A 41'-0-1/8" (12,500 MM) LONG BY 9'-1-3/64" (2,770 MM) WIDE EUROPEAN RAILCAR. LARGER CARS MAY BE USED FOR SHIPMENT OF THE DEPICTED LOAD. SEE GENERAL NOTE "G" ON PAGE 2.

2. TO SATISFY THE SHIPMENT OF A 11-UNIT LOAD, THE CENTER LOAD UNIT MAY BE OMITTED AND REPLACED WITH A THREE-WIDE SINGLE LAYER LOAD UNIT, SUCH AS IS DEPICTED ON PAGE 6. THE HEADERS THAT ARE AGAINST THE CENTER LOAD UNIT WILL HAVE TO BE REPLACED WITH HEADERS THAT ARE 2" X 6" X 9'-0" (51 MM X 152 MM X 2,743 MM). THESE HEADERS WILL BE PLACED ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAILED THRU BOTH PIECES AND INTO THE CAR FLOOR W/20 NAILS. ALSO ADD FOUR (4) BACK-UP CLEATS TO BE ALIGNED WITH THE OUTSIDE SKIDS OF THE OUTER CONTAINERS. THESE ADDED BACK-UP CLEATS WILL BE 2" X 6" X 18" (51 MM X 152 MM X 457 MM) (DOUBLED). PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/4 NAILS. POSITION ANTI-CHAFING BETWEEN ADJACENT CONTAINERS IN THE SINGLE LAYER AND BUNDLE WITH TWO (2) STRAPS AS SHOWN BY PIECES MARKED ③ AND ⑤ ON PAGE 6. REPLACE THE SIDE BLOCKING, SHOWN AS PIECE MARKED ⑥ , WITH 2" X 4" PIECES AS SHOWN BY PIECE MARKED ④ ON PAGE 6.

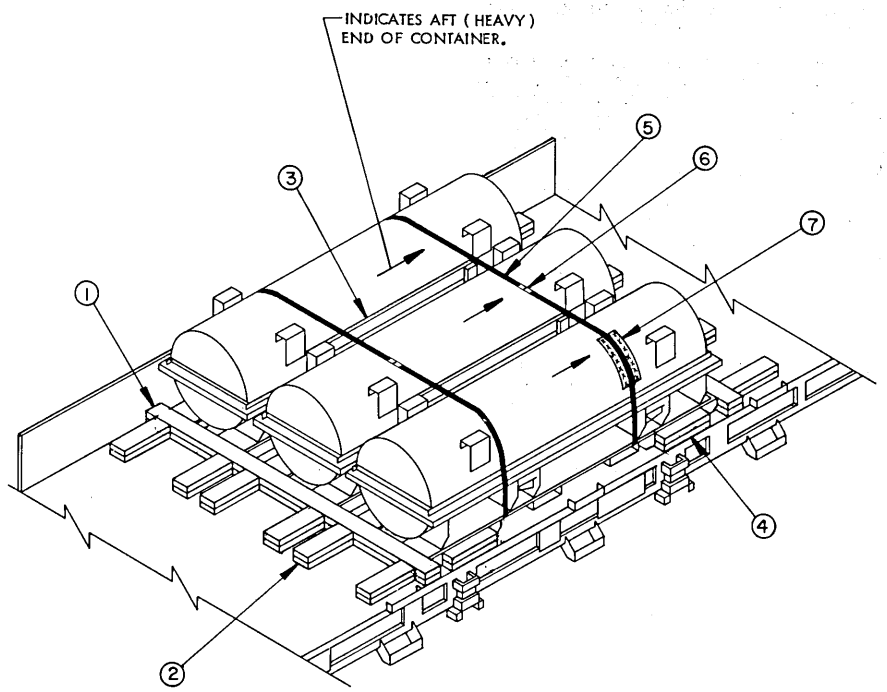
3. A 10-UNIT LOAD CAN BE ACCOMPLISHED BY OMITTING THE TOP LAYER OF CONTAINERS FROM THE CENTER LOAD UNIT. REPLACE THE DEPICTED ANTI-CHAFING ASSEMBLY WITH ONE FOR A 1-HIGH LOAD AND APPLY THE BUNDLING STRAPS, PIECES MARKED ⑧ , AROUND THE REMAINING CONTAINERS. A 9-UNIT LOAD CAN BE ATTAINED BY FORMING THREE GROUPS OF THE 3-UNIT LOAD SHOWN ON PAGE 6. HEADERS AND INTERMEDIATE BACK-UP CLEATS 18" (457 MM) LONG WILL BE POSITIONED BETWEEN LOAD GROUPS AT ONE LOCATION, SIMILAR TO THE POSITIONING OF PIECES MARKED ① AND ② IN THE LOAD SHOWN ON PAGE 4. AT THE OTHER LOCATION JUST ONE (1) DOUBLED HEADER IS REQUIRED. FURTHER REDUCTION OF THE DEPICTED LOAD CAN BE ACCOMPLISHED BY OBVIOUS MEANS.

BILL OF MATERIAL		
LUMBER	LENGTH	BOARD FEET
2" X 4" (51 MM X 102 MM)	62' (18,898 MM)	41
2" X 6" (51 MM X 152 MM)	162' (49,378 MM)	162
NAILS	NO. REQD	WEIGHT
SIZE AS REQD	312	21 LBS
STEEL STRAPPING, 1-1/4" X .035"	342' REQD	49 LBS
SEAL FOR 1-1/4" STRAPPING	36 REQD	2 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	12	22,800 LBS (10,341 KG)
DUNNAGE		580 LBS (264 KG)
TOTAL WEIGHT		23,380 LBS (10,605 KG)

12-UNIT LOAD



ISOMETRIC VIEW

SPECIAL NOTES:

1. A THREE-UNIT LOAD IS SHOWN. ANY CAR WITH A NAILABLE FLOOR 9'-1" (2,770 MM) WIDE (MINIMUM) MAY BE USED FOR SHIPMENT OF A THREE-UNIT WIDE LOAD.
2. THE BACK-UP CLEATS AS SHOWN ABOVE WILL SUPPORT A MAXIMUM OF 6 CONTAINERS.

KEY NUMBERS

(1) HEADER, 2" X 6" X 9'-0" (51 MM X 152 MM X 2,743 MM) (DOUBLED) (2 REQD). POSITION AS SHOWN. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/20 NAILS. SEE GENERAL NOTES "M" AND "N" ON PAGE 2.

(2) BACK-UP CLEAT, 2" X 6" X 18" (51 MM X 152 MM X 457 MM) (DOUBLED) (12 REQD). POSITION AS SHOWN SO THAT A BACK-UP CLEAT IS CENTERED ON A CONTAINER SKID. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/4 NAILS.

(3) ANTI-CHAFING ASSEMBLY (2 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 8. POSITION BETWEEN THE LATERALLY ADJACENT CONTAINERS, AS SHOWN.

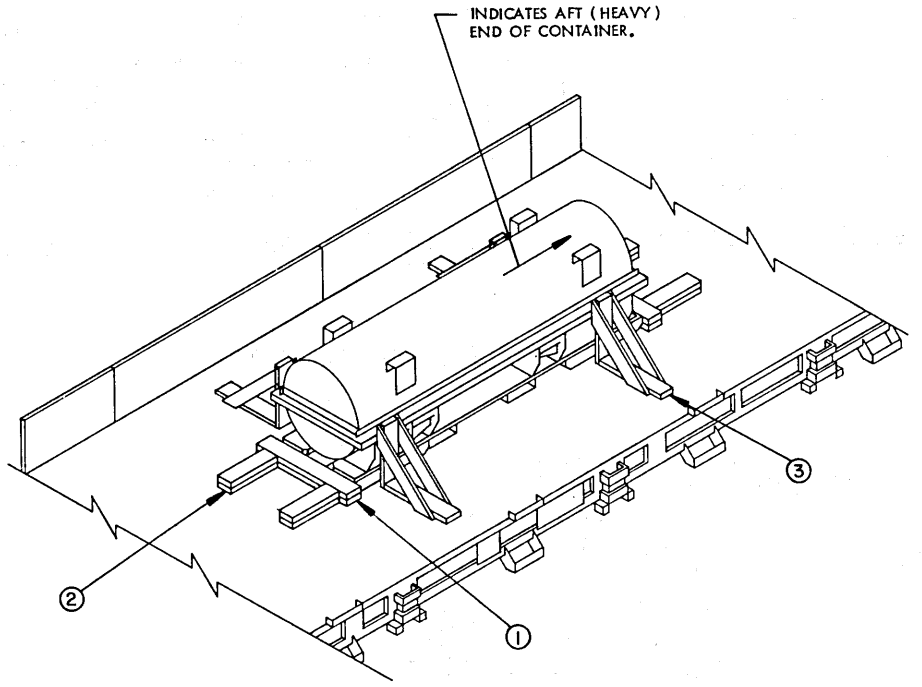
(4) SIDE BLOCKING, 2" X 4" X 18" (51 MM X 102 MM X 457 MM) (DOUBLED) (4 REQD). POSITION AGAINST THE CONTAINER SKIDS AS SHOWN. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/3 NAILS.

(5) BUNDLING STRAP, 1-1/4" X .035" X 24'-6" LONG STEEL STRAPPING (2 REQD). INSTALL AROUND THE THREE CONTAINERS, AS SHOWN. SEE GENERAL NOTE "L" ON PAGE 2.

(6) SEAL FOR 1-1/4" STRAPPING (4 REQD). DOUBLE CRIMP EACH SEAL.

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

TYPICAL LCL (3-UNIT LOAD)



ISOMETRIC VIEW

SPECIAL NOTE:

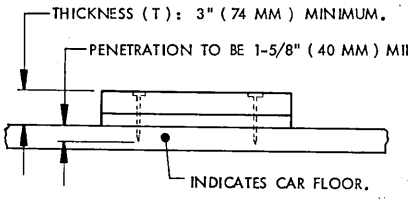
1. A ONE-UNIT LOAD IS SHOWN. ANY CAR WITH A NAILABLE FLOOR 6'-6" (1,981 MM) WIDE (MINIMUM) MAY BE USED FOR SHIPMENT OF A ONE-UNIT LOAD.

KEY NUMBERS

(1) HEADER, 2" X 6" X 36" (51 MM X 152 MM X 915 MM) (DOUBLED) (2 REQD). POSITION AS SHOWN. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/9 NAILS. SEE GENERAL NOTES "M" AND "N" ON PAGE 2.

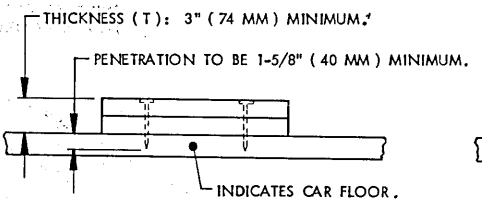
(2) BACK-UP CLEAT, 2" X 6" X 18" (51 MM X 152 MM X 457 MM) (DOUBLED) (4 REQD). POSITION AS SHOWN SO THAT A BACK-UP CLEAT IS ALIGNED WITH A CONTAINER SKID. PLACE ONE PIECE DIRECTLY ON TOP OF ANOTHER AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/4 NAILS.

(3) ANTI-SWAY BRACE (4 REQD). SEE THE "ANTI-SWAY BRACE" DETAIL ON PAGE 8. POSITION AGAINST THE CONTAINER AS SHOWN AND NAIL TO THE CAR FLOOR. W/5 NAILS.



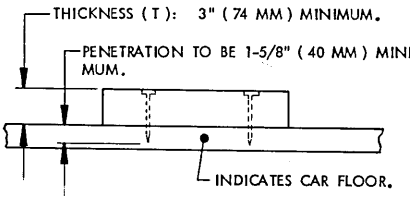
MIXED THICKNESSES OF LUMBER SHOWN

DETAIL A



DOUBLED 2" X 6" LUMBER SHOWN

DETAIL B



4" X 6" LUMBER SHOWN

DETAIL C

TYPICAL NAILING OF FLOOR LINE BLOCKING TO CAR FLOOR

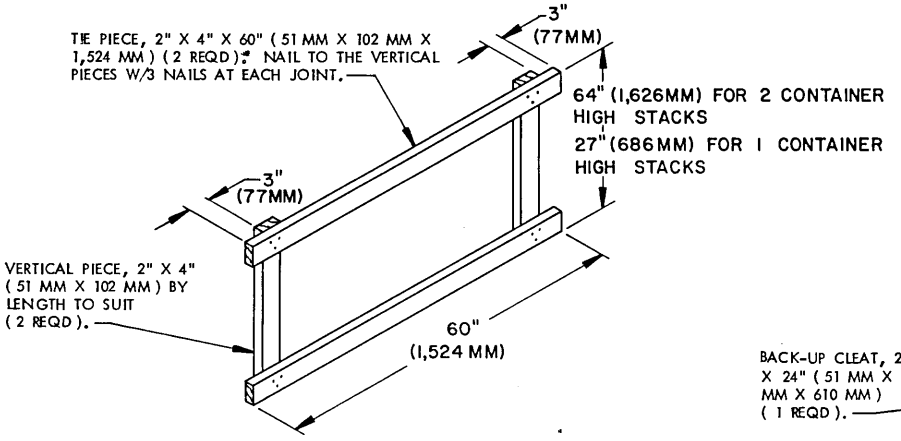
SPECIAL NOTES:

1. THE DETAILS ON THIS PAGE DEPICT POSSIBLE VARIATIONS THAT MAY RESULT FROM USING AVAILABLE LUMBER FOR FLOOR LINE BLOCKING. KEY NUMBERS THROUGHOUT THIS DOCUMENT SPECIFY VARIOUS NOMINAL SIZED LUMBER FOR HEADERS, BACK-UP CLEATS, AND SIDE BLOCKING, AS TYPICALLY SHOWN ABOVE. IT IS PERMISSIBLE TO USE MIXED THICKNESSES OF LUMBER, SUCH AS 1" X 6" AND 2" X 6" LUMBER, DOUBLED 2" X 6" LUMBER, OR 4" X 6" LUMBER, AS TYPICALLY SHOWN IN DETAILS A, B, AND C IN LIEU OF THE SPECIFIED NOMINAL SIZED LUMBER. THE INTENT OF THE SPECIFIED BLOCKING PROCEDURE MUST BE OBTAINED.

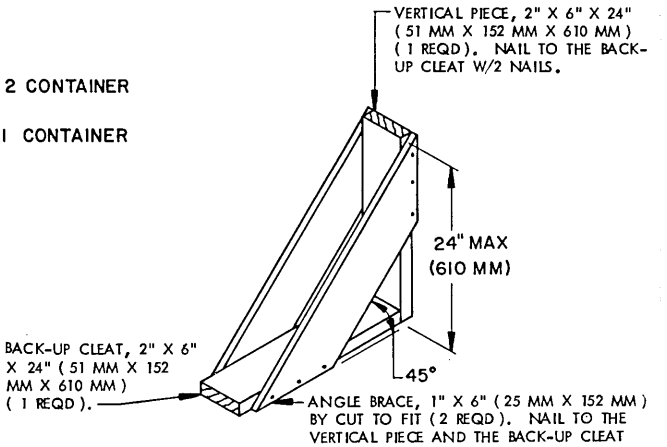
2. THE NUMBER OF NAILS USED TO SECURE EACH PIECE OF BLOCKING WILL BE AS SPECIFIED IN THE KEY NUMBERS FOR EACH SPECIFIC PROCEDURE. THE LENGTH OF THE NAILS SELECTED WILL BE ADEQUATE TO NAIL THROUGH THE BLOCKING AND ACHIEVE THE PENETRATION OF THE CAR FLOOR AS SPECIFIED. WHEN NAILING FLOOR LINE BLOCKING TO THE CAR FLOOR; AS DEPICTED IN DETAILS A, B, AND C, THE FOLLOWING APPLIES:

THICKNESS (T) OF BLOCKING		SIZE OF NAIL
MINIMUM	MAXIMUM	
3" (74 MM)	3" (74 MM)	30d (4-1/2") (114 MM)
3" (74 MM)	3-3/8" (87 MM)	40d (5") (127 MM)
3-3/8" (87 MM)	4" (100 MM)	50d (5-1/2") (140 MM)
4" (100 MM)	4-3/8" (112 MM)	60d (6") (152 MM)

SPECIAL NAILING GUIDANCE



ANTI-CHAFING ASSEMBLY



ANTI-SWAY BRACE