

METHOD FOR 50-FOOT CARS

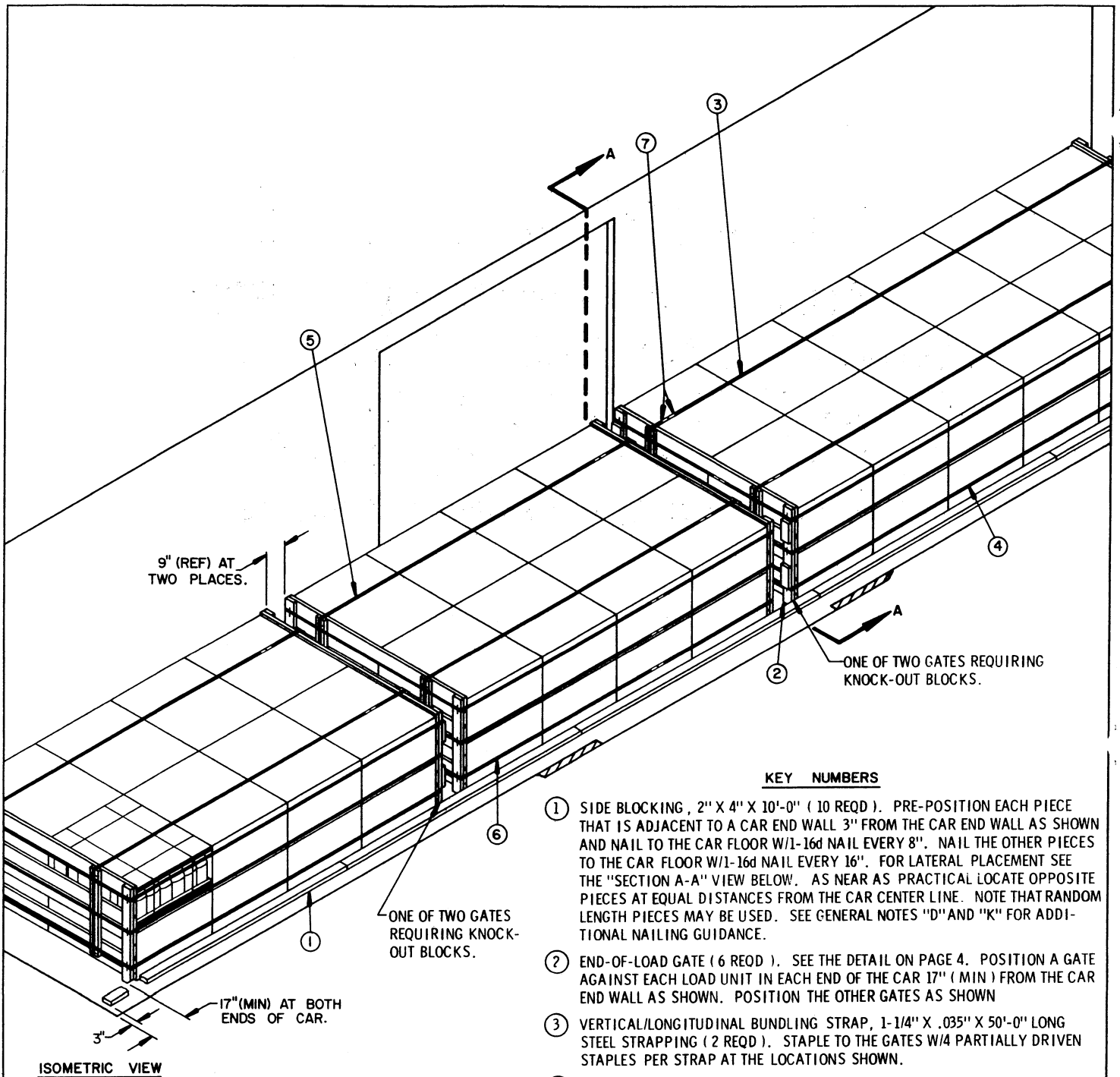
FLOATING-LOAD PROCEDURES FOR LOADING AND BRACING (CL) IN BOXCAR[⊕] OF PALLETIZED EMPTY 105MM PROJECTILES[●] (M1 HE PROJ PACKED IAW PA PLT DWG 8837835)

⊕ WHEN THE SPECIFICATIONS OF THIS DRAWING ARE USED, ONLY "HIGH CAPACITY" CUSHIONED BOXCARS CAN BE USED FOR SHIPPING THE SPECIFIED ITEM. NON-CUSHIONED CARS MUST NOT BE USED. CARS HAVING SLIDING CENTER SILL TYPE CUSHIONING DEVICES OR END-OF-CAR TYPE DEVICES WHICH HAVE AT LEAST 15" OF TRAVEL ARE ACCEPTABLE.

● THE OUTLOADING PROCEDURES SPECIFIED WITHIN THIS DRAWING ARE ONLY APPLICABLE TO ITEMS WHICH ARE EMPTY. NOTICE: THE SPECIFIED LOADING AND BRACING PROCEDURES WILL NOT BE USED FOR SHIPPING ITEMS CONTAINING EXPLOSIVES.

DO NOT SCALE

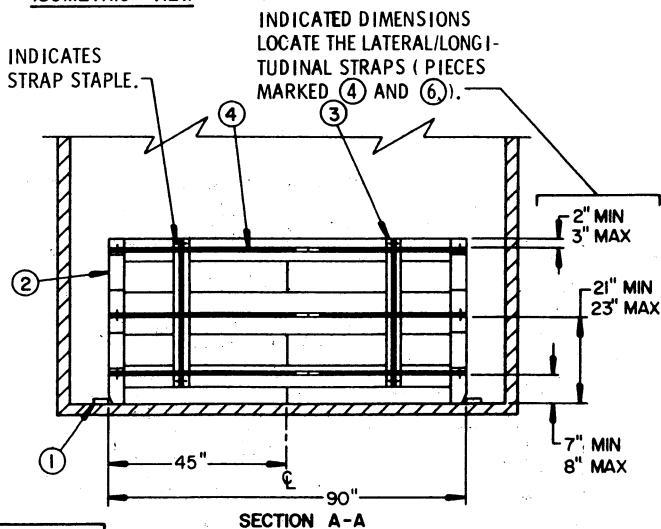
REVISIONS			DRAFTSMAN JPL	PROJ ENG DIW
			CHECKER R. S. S. S. S.	LOG ENGINE OFFICE John Boyd
			APPROVED <i>Paul Kernald</i>	
			APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL COMMAND <i>A. H. Hines</i> USAMC AMMO CENTER	
			U.S. ARMY MATERIEL COMMAND	
			DATE: MARCH 1973	
			AMC AMMO CEN DWG NO	
			D-AMXAC-4332	



KEY NUMBERS

- ① SIDE BLOCKING, 2" X 4" X 10'-0" (10 REQD). PRE-POSITION EACH PIECE THAT IS ADJACENT TO A CAR END WALL 3" FROM THE CAR END WALL AS SHOWN AND NAIL TO THE CAR FLOOR W/1-16d NAIL EVERY 8". NAIL THE OTHER PIECES TO THE CAR FLOOR W/1-16d NAIL EVERY 16". FOR LATERAL PLACEMENT SEE THE "SECTION A-A" VIEW BELOW. AS NEAR AS PRACTICAL LOCATE OPPOSITE PIECES AT EQUAL DISTANCES FROM THE CAR CENTER LINE. NOTE THAT RANDOM LENGTH PIECES MAY BE USED. SEE GENERAL NOTES "D" AND "K" FOR ADDITIONAL NAILING GUIDANCE.
- ② END-OF-LOAD GATE (6 REQD). SEE THE DETAIL ON PAGE 4. POSITION A GATE AGAINST EACH LOAD UNIT IN EACH END OF THE CAR 17" (MIN) FROM THE CAR END WALL AS SHOWN. POSITION THE OTHER GATES AS SHOWN
- ③ VERTICAL/LONGITUDINAL BUNDLING STRAP, 1-1/4" X .035" X 50'-0" LONG STEEL STRAPPING (2 REQD). STAPLE TO THE GATES W/4 PARTIALLY DRIVEN STAPLES PER STRAP AT THE LOCATIONS SHOWN.
- ④ LATERAL/LONGITUDINAL BUNDLING STRAP, 1-1/4" X .035" X 58'-0" LONG STEEL STRAPPING (3 REQD). STAPLE TO THE GATES W/4 PARTIALLY DRIVEN STAPLES PER STRAP AT THE LOCATIONS SHOWN. POSITION STRAPPING AT LOCATIONS SHOWN IN THE "SECTION A-A" VIEW TO THE LEFT.
- ⑤ VERTICAL/LONGITUDINAL BUNDLING STRAP, 1-1/4" X .035" X 36'-0" LONG STEEL STRAPPING (4 REQD). STAPLE TO THE GATES W/4 PARTIALLY DRIVEN STAPLES PER STRAP AT THE LOCATIONS SHOWN.
- ⑥ LATERAL/LONGITUDINAL BUNDLING STRAP, 1-1/4" X .035" X 45'-0" LONG STEEL STRAPPING (6 REQD). STAPLE TO THE GATES W/4 PARTIALLY DRIVEN STAPLES PER STRAP AT THE LOCATIONS SHOWN. POSITION STRAPPING AT LOCATIONS SHOWN IN THE "SECTION A-A" VIEW TO THE LEFT. NOTE LOCATION OF JOINT SEALS ON STRAPS AROUND THE MIDDLE LOAD UNIT.
- ⑦ SEAL FOR 1-1/4" STEEL STRAPPING (30 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "H".

ISOMETRIC VIEW



(GENERAL NOTES CONTINUED)

GENERAL NOTES

- L. PORTIONS OF THE DEPICTED CAR, SUCH AS A CAR SIDEWALL, HAVE BEEN OMITTED FROM THE LOAD VIEWS FOR CLARITY PURPOSES.
- M. NOTICE: IF AUTHORIZED BY THE U. S. ARMY MUNITIONS COMMAND JOLIET, ILLINOIS, ON A CASE BY CASE BASIS, THE LOADING AND BRACING SPECIFICATIONS OF THIS DRAWING CAN ALSO BE USED FOR SHIPPING SOME OF THE OTHER PROJECTILES IDENTIFIED WITHIN PA DRAWING 8837835. HOWEVER, THE FOLLOWING CRITERIA WILL APPLY.
 1. ONLY EMPTY PROJECTILES ARE ACCEPTABLE. PROJECTILES CONTAINING EXPLOSIVE FILLER OR OTHER TYPES OF FILLER ARE NOT TO BE SHIPPED BY THE DELINEATED PROCEDURES.
 2. A PALLET UNIT OF PROJECTILES THAT WEIGHS MORE THAN 2,335 POUNDS IS NOT ACCEPTABLE. ALSO, A PALLET UNIT THAT HAS A DIFFERENT BASIC WIDTH AND/OR LENGTH FROM THE UNIT SHOWN HEREIN IS NOT ACCEPTABLE.
 3. FOR PALLET UNITS THAT ARE HIGHER THAN 21" OR LOWER THAN 20-1/2" IN HEIGHT, THE DUNNAGE GATES SPECIFIED IN THIS DRAWING MUST BE CHANGED TO SUIT. BASICALLY, THE LOCATIONS FOR THE HORIZONTAL MEMBERS ON THE GATES MUST BE ADJUSTED TO COMPENSATE FOR THE DIFFERENT LOAD HEIGHT, AND THE LENGTH OF THE VERTICAL MEMBERS ADJUSTED ACCORDINGLY. MODIFIED GATES MUST PROVIDE FOR THE SAME BLOCKING PRINCIPLES AS ARE PROVIDED BY THE DELINEATED GATES. ALSO, THE HEIGHT LOCATION FOR THE CENTER LATERAL/LONGITUDINAL STRAPS MUST BE ADJUSTED TO SUIT.

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE "INTERIM PROCEDURES" APPLICABLE TO THE OUTLOADING OF PALLETIZED EMPTY 105MM PROJECTILES. THIS DRAWING WILL BE USED UNTIL CANCELLED AND/OR SUPERSEDED BY A USAMC 19-48 SERIES DRAWING.
- C. PALLET UNIT DATA:
DIMENSIONS (APPROX) ---- 38" LONG X 45" WIDE X 20-1/2" HIGH,
GROSS WEIGHT (APPROX) -- 2,323 POUNDS.
- D. THE 56-UNIT LOAD DEPICTED HEREIN IS BASED ON A 50'-6" LONG BY 9'-2" WIDE CUSHIONED BOXCAR THAT HAS 10'-0" WIDE THROUGH DOORS OF THE CONVENTIONAL SLIDING TYPE AND HAS A LOAD LIMIT OF NOT LESS THAN 144,500 POUNDS. WHEN SHIPPING A 56-UNIT LOAD, A CAR THAT HAS A LOAD LIMIT LESS THAN 144,500 POUNDS MUST NOT BE USED. HOWEVER, ANY WIDTH CAR MAY BE USED, AND CARS WITH ANY TYPE OR WIDTH DOOR CAN BE USED, BUT TO FACILITATE LOADING OPERATIONS CARS THAT HAVE DOOR OPENINGS LESS THAN 10'-0" WIDE SHOULD NOT BE USED. IF A CAR WITH PLUG DOORS IS USED, AFTER THE PLUG DOORS ON A CAR ARE CLOSED AND READY FOR THE INSTALLATION OF "CAR SEALS", A PIECE OF WIRE OF SUITABLE SIZE WILL BE USED IN ADDITION TO, AND IN CONJUNCTION WITH EACH CAR SEAL USED TO "SEAL" THE CAR. THE WIRE WILL BE THREADED THROUGH THE HOLES IN THE DOOR LATCH ASSEMBLY ONE OR MORE TIMES, AND THE WIRE ENDS WILL BE TWISTED TOGETHER. ALSO, ALL-METAL CARS CAN BE USED. IF THE CAR BEING USED FOR THE SHIPMENT OF THE DEPICTED LOAD IS EQUIPPED WITH A NAILABLE METAL FLOOR AND A NAIL SIZE FOR FLOOR NAILING IS MARKED ON THE SIDEWALL OF THE CAR, THAT GUIDANCE SHOULD BE APPLIED TO THE NAILING OF THE APPLICABLE DUNNAGE PIECES. IF A NAIL SIZE IS NOT SPECIFIED IN THE CAR, 30d NAILS SHOULD BE USED. IF 30d NAILS CANNOT BE DRIVEN PROPERLY, THEN 20d NAILS SHOULD BE USED. NAILS OF A LESSER SIZE ARE NOT ACCEPTABLE.
- E. THE SELECTION OF RAILCARS FOR THE TRANSPORT OF THE DESIGNATED ITEM IS THE RESPONSIBILITY OF THE SHIPPER. ONLY CARS WHICH HAVE "SOUND" FLOORS AND ARE IN OTHERWISE PROPER CONDITION TO SAFELY TRANSPORT THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED.
- F. PALLET UNITS ARE TO BE PLACED INTO A LOAD AS CLOSE TOGETHER AS POSSIBLE THROUGHOUT THE LENGTH OF THE LOAD BAYS TO ACHIEVE A "TIGHT" LOAD.
- G. TO LOAD THE PALLET UNITS THAT EXTEND INTO THE DOORWAY AREA OF THE CAR, IT WILL BE NECESSARY TO HANDLE THE UNITS FROM A SIDE POSITION WITH THE TINES OF A FORKLIFT TRUCK UNDER THE 4 BY 4 SKIDS OF THE PALLET. AFTER A PALLET HAS BEEN LOCATED IN ITS APPROXIMATE SHIPPING POSITION IT WILL BE LOWERED TO REST ON THE FLOOR OF THE CAR OR A FIRST LAYER UNIT ON THE FAR SIDE OF THE CAR AND ON A SHORT 4 BY 4 BLOCK ON THE NEAR SIDE. THE BLOCK WILL FACILITATE WITHDRAWAL OF THE FORKLIFT TINES. THE FORKLIFT TINES WILL THEN BE PLACED UNDER THE EDGE OF THE PALLET COVER ASSEMBLY AND USED TO RAISE THE PALLET UNIT JUST ENOUGH TO ALLOW FOR THE REMOVAL OF THE 4 BY 4 BLOCK. AFTER THE PALLET UNIT HAS BEEN LOWERED, IT WILL BE INCHED INTO ITS SHIPPING POSITION.
- H. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. CAUTION: DURING STRAP TENSIONING, ENSURE THAT THE STRAPPING IS DRAWN AS TAUT AS PRACTICAL.
- J. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE OR 1-5/8" THICK BY 3-5/8" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE OR 1-5/8" THICK BY 5-5/8" WIDE. ALTHOUGH NOMINAL SIZE LUMBER IS SPECIFIED HEREIN, "ROUGH CUT" LUMBER OF EQUAL OR GREATER STRENGTH CAN BE SUBSTITUTED, PROVIDING NAIL SIZED ARE ADJUSTED ACCORDINGLY.
- K. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES OR WHEN LAMINATING DUNNAGE.

(CONTINUED AT UPPER LEFT)

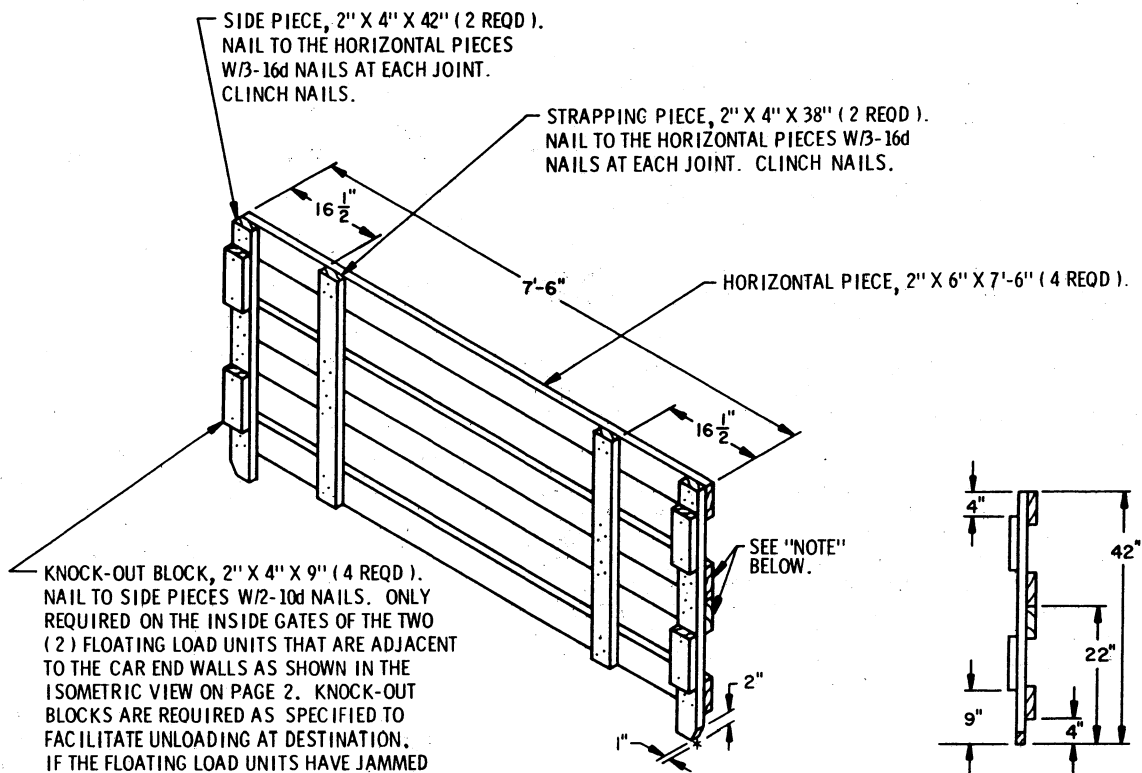
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT-----	56	130,088 LBS
DUNNAGE-----		867 LBS
TOTAL WEIGHT-----		130,955 LBS

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	186	123
2" X 6"	180	180
NAILS	NO. REQD	POUNDS
10d (3")	16	1/4
16d (3-1/2")	396	8-3/4
STEEL STRAPPING 1-1/4" X .035"-----	688' REQD ---	98 LBS
SEAL FOR 1-1/4" STRAPPING-----	30 REQD ---	1-1/2 LBS
STAPLE, 1-3/8" X 3/4"-----	60 REQD ---	1/2 LB

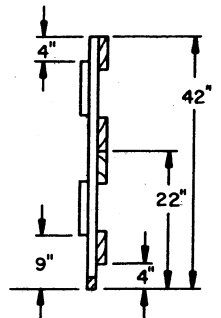
MATERIAL SPECIFICATIONS

- 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, B, OR C;
FED SPEC QQ-S-781.
- STAPLE, STRAP;
SEAL, STRAP-----: COMMERCIAL GRADE.



KNOCK-OUT BLOCK, 2" X 4" X 9" (4 REQD).
 NAIL TO SIDE PIECES W/2-10d NAILS. ONLY
 REQUIRED ON THE INSIDE GATES OF THE TWO
 (2) FLOATING LOAD UNITS THAT ARE ADJACENT
 TO THE CAR END WALLS AS SHOWN IN THE
 ISOMETRIC VIEW ON PAGE 2. KNOCK-OUT
 BLOCKS ARE REQUIRED AS SPECIFIED TO
 FACILITATE UNLOADING AT DESTINATION.
 IF THE FLOATING LOAD UNITS HAVE JAMMED
 TIGHTLY TOGETHER DURING TRANSIT, THE
 FIRST PALLET UNITS CANNOT BE REMOVED
 WITHOUT DAMAGE, UNLESS SPACE IS
 PROVIDED WITHIN THE LOAD. THIS SPACE
 CAN BE GAINED BY HAMMERING OR PRYING
 THE KNOCK-OUT BLOCKS FROM ONE OF THE GATES.

END-OF-LOAD GATE



END VIEW

NOTE: IF DESIRED, ONE FULL-WIDTH 2" X 8" PIECE
 MAY BE USED AT THE INDICATED LOCATION IN LIEU
 OF THE TWO 2" X 6" PIECES WHICH ARE SHOWN. IF
 ONE 2" X 8" PIECE IS USED, IT WILL BE CENTERED
 ON THE SPECIFIED 22" HEIGHT DIMENSION.