BURE ALT OF EXPLOSIVES

A. J. Grasmuck

DATE 2/14/67

LOADING & BRACING (TL & LTL) IN CLOSED OR OPEN TOP VAN TRAILERS OF DEMOLITION KIT, PROJECTED CHARGE, MI73, AND PROJECTED CHARGE, PRACTICE, MI74 (PALLETIZED)

### INDEX

ITEM	PAGE(S)
GENERAL NOTES, AND MATERIAL SPECIFICATIONS	2
UNITIZING AND HANDLING PROCEDURES	3
TL (6-UNIT LOAD)	4,5
DETAILS (TL)	6,7,J2
TYPICAL LTL (2-HIGH LOAD)	
TYPICAL LTL (I-HIGH LOAD)	10
DETAILS (LTL)	8,11

RJK	DIW	PJS	SUBMITTES.	A a	class	0.1	
BYRHA	7000			COMBI		CARE, CARE - AVANNA ABOUT DEPOT	
	REVISIO	ONS	EXAMINED.	AND APPROVED	. salut 20	c	
				AMMU	ALDU FAL		
			U. S. AMIT	BATEMEL COM	IN MANAGEMENT OF MANAGEMENT OF THE PARTY OF	<b>44</b> .	
			_ <	Pans	pai	~	
			U. S.	ARMY M	IATERIEL (	COMMAND	
				5 APRIL 1967			
			CLASS	DIVISION	DRAWWR	FILE	
			10	9 48	49 40	4063	IIBHIOOO
			19		4003	прнюоо	

DO NOT SCALE

#### GENERAL NOTES

- A. THE LOAD AS SHOWN ON PAGES 4 AND 5 IS BASED ON A CLOSED OR OPEN TOP VAN TRAILER 38"-0" LONG X ""-0" WIDE (INSIDE DIMENSION) WITH A WOOD OR A WOOD AND METAL OR A METAL FLOOR. A WIDER OR NARROWER TRAILER AND/OR A LONGER TRAILER THAN SHOWN CAN BE USED FOR SHIPPING THE DEPICTED LOAD. FOUR (4) DEMOLITION KITS CAN BE OUTLOADED IN A TRAILER WHICH IS 26"-0" LONG OR GREATER.
- B. DETAILS OF DEMOLITION KIT PALLET UNIT:

PALLET UNIT DIMENSIONS ---- 145-1/4" LONG X 57-3/8" WIDE X 35-3/4" HIGH, PALLET UNIT GROSS WEIGHT -- 3,400 POUNDS (APPROX).
PALLET UNIT CUBE -------172.1 CUBIC FEET.

- C. THE PROJECTED CHARGE, M173, IS CLASSIFIED AS ICC NOMENCLATURE "EXPLOSIVE MINE"; ICC CLASS A EXPLOSIVE. THE PROJECTED CHARGE, PRACTICE, M174, IS CLASSIFIED AS ICC NOMENCLATURE "JET THRUST UNIT, CLASS B EXPLOSIVE".
- D. GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS AND THE SHIPPER WILL LOAD ACCORDINGLY.
- E. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER BEING LOADED OR THE QUANTITY TO BE SHIPPED. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN FOR BLOCKING AND BRACING FULL OR PARTIAL LOADS OF THE DESIGNATED ITEM MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- F. EXCEPT FOR THE STEEL STRAPPING USED FOR SECURING THE DEMOLITION KIT TO THE PALLET, A MINIMUM OF TWO (2) SEALS WITH TWO (2) CRIMPS PER SEAL MUST BE USED TO SEAL AN END-OVER-END LAP JOINT MADE WITH 1-1/4" X .035" STRAPPING.
- G. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-5/8" THICK BY 3-5/9" WIDE.
- H. PORTIONS OF THE SEMITRAILER BODY DEPICTED WITHIN THIS PROCEDURAL DRAWING, SUCH AS SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PLIPPOSES.

## UNITIZING AND HANDLING PROCEDURAL GUIDANCE (CONTINUED FROM BOTTOM OF PAGE 3)

SUFFICIENT SIX (4) INCH WIDE MATERIAL SHOULD BE POSITIONED ON EDGE ON TOP OF THE BASE END OF THE FORK TINES TO PROVIDE CLEARANCE BETWEEN THE FORKLIFT PACKAGE GUARD AND THE DEMOLITION KIT. THE REAR END OF THE KIT(S) CAN THEN BE RAISED SLIGHTLY AND PUSHED INTO THE TRAILER INTO THE PINAL POSITION.

C. POSITIONING OF KITS AT THE REAR OF THE TRAILER CAN BE ACCOMPLISHED WITH A CRANE IN LIEU OF A FORKLIFT TRUCK. THE WIRE ROPE SLING USED FOR LIFTING SHOULD PASS UNDER THE PALLET SKID AT SUCH A LOCATION THAT IT WILL BE IN CONTACT WITH THE EXTERIOR END OF THE FOUR ENDWARD RUBBING STRIPS IN ORDER TO PROVIDE FOR A STABLE LIFTING OPERATION. IF LIFTING A TWO-HIGH STACK THE WIRE ROPE SLING MUST BE POSITIONED UNDER THE PALLET SKID OF THE LOWER DEMOLITION KIT. BURLAP OR COMPARABLE CUSHIONING MATERIAL MUST BE POSITIONED BETWEEN THE CONTACTING LIFTING SLING LEG AND BHE SIDE OF THE DEMOLITION KIT TO PREVENT CHAFING. FINAL POSITIONING OF THE KITS WILL BE ACCOMPLISHED AS DELINEATED ABOVE. IF ALL THE HANDLING IS ACCOMPLISHED WITH A CRANE THE SHIPMEINT MUST BE MADE IN AN OPEN TOP VAN TRAILER.

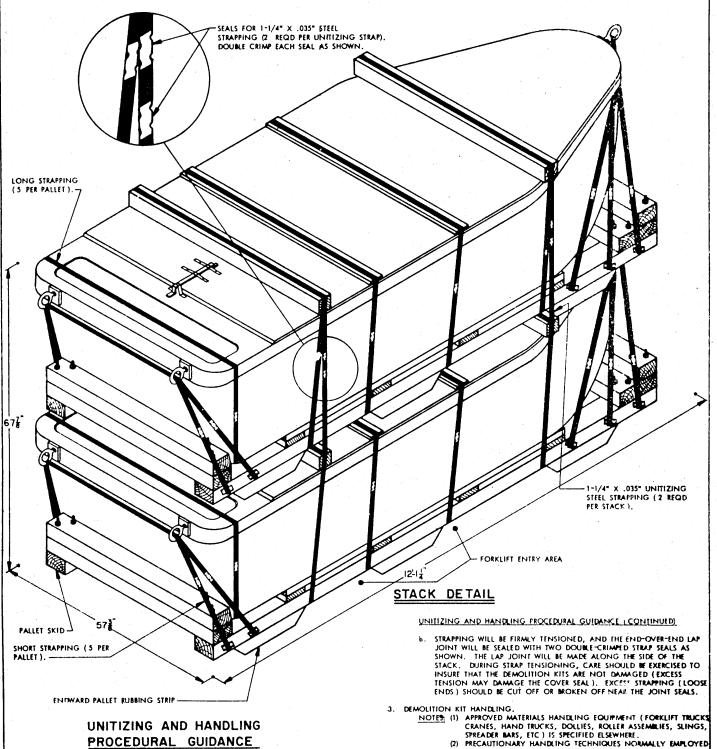
### MATERIAL SPECIFICATIONS

LUMBER----: SEE TM 715-5500-1; DUNNAGE LUMBER, FED SPEC MM-L-751 AND MIL-STD-731.

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 B FOR PALLETIZING AND CLASS A, B, OR C FOR OUTLOADING, FED SPEC QQ-5-781.



# PROCEDURAL GUIDANCE

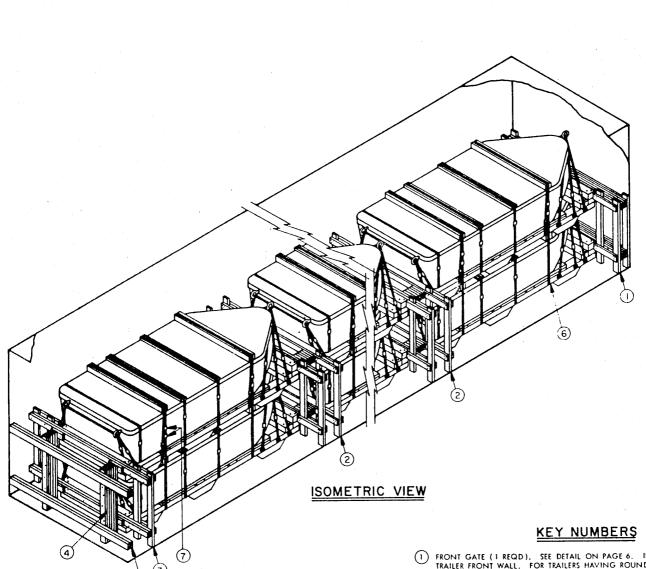
- 1. STACKING DEMOLITION KITS FOR UNITIZING.
  - a. A DEMOLITION KIT MUST BE LIFTED FROM THE SIDE AND POSITIONED WITH THE A DEMOLITION KIT MUST BE LIFTED FROM THE SIDE AND POSITIONED WITH THE FORWARD END EXTENDING AS FAR AS POSSIBLE INTO THE REAR OF THE TRAILER. THE DEMOLITION KIT MAY THEN BE SET DOWN WITH THE FORWARD END RESTING ON THE TRAILER ELOOR AND THE REAR END RESTING ON A TRAILER BED HEIGHT LOADING DOCK. DUNNAGE MATERIAL MAY BE PLACED UNDER THE REAR RUBBING STRIP TO OBTAIN A LEVEL STACK. IF THE OUTLOADING OPERATION DOES NOT TAKE PLACE WHERE THERE IS A LOADING DOCK, THE REAR END OF THE DEMOLITION KIT MUST BE SUPPORTED WITH ANOTHER FORK LIFT.

    THE UPPER LAYER DEMOLITION KIT MUST BE PLACED AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER DEMOLITION KIT, WITH FORWARD END ABOVE FORWARD END.
- INSTALLATION OF 1-1./4" X .035" UNITIZING STEEL STRAPPING,

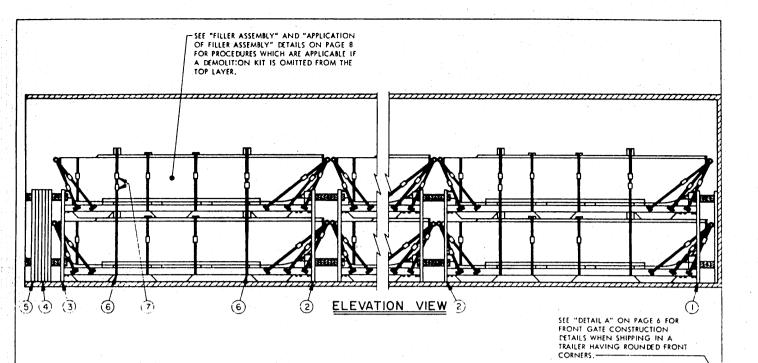
  a. THE UNITIZING STRAPS SHOULD BE POSITIONED AROUND THE DEMOLITION KITS
  AS SHOWN, FACH CENTERED ON TOP OF A 4" X 4" STRAPPING BATTEN ON THE
  UPPER LAYER DEMOLITION KIT AND EXTENDING UNDER THE SKID OF THE LOWER PALLET. THE STRAPPING SHOULD LAY VERTICAL ALONG THE SIDES AND STRAIGHT ACROSS THE TOP AND BOTTOM OF THE STACK.

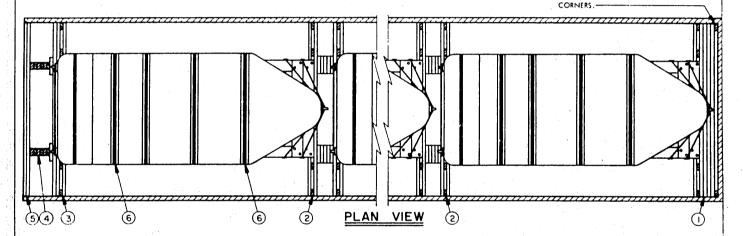
- OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.
- ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED DEMOLITION
- IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE TRUCK IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE TRUCK WAS THAVE A CAPACITY OF AT LEAST 4,000 POUNDS AND MUST BE EQUIPPED WITH FORKS AT LEAST 54" IN LENGTH FORK EXTENSIONS MAY BE USED TO OBTAIN THIS 54" MINIMUM LENGTH. THE DEMOCLITION KITS MUST BE HANDLED FROM A SIDE POSITION WITH THE FORKS SPANNING THE CENTER RUBBING STRIP. CARE MUST BE EXERCISED WHEN INSERTING FORKS UNDER A DEMOLITION KIT, TO PREVENT DAMAGE TO THE KIT BY THE FORK TIMES OR THE FORKLIFT PACKAGE GUARD. NOTE: THE DEMOLITION KITS MUST NOT BE LIFTED BY INSERTING THE FORKS IN THE VOID BETWEEN A PALLET SKID AND THE 2" X 4" X 8" X 8" X 8" Z 10" SID BIO OF KING PIECE FOR THE KIT. ONE DEMOLITION 2" X 4" X 83-1/2" SIDE BLOCKING PIECE FOR THE KIT. ONE DEMOLI-TION KIT OR A TWO-HIGH STACK WILL BE HANDLED IN LOADING THE VAN BY INSERTING THE FORKS OF THE FORKLIFT TRUCK BETWEEN THE RUBBING STRIPS AT THE END OF THE PALLET.

(CONTINUED ON PAGE 2)



- (1) FRONT GATE (1 REQD), SEE DETAIL ON PAGE 6. INSTALL AGAINST THE TRAILER FRONT WALL. FOR TRAILERS HAVING ROUNDED FRONT CORNERS SEE "DETAIL A" ON PAGE 6.
- (2) INTERMEDIATE GATE (2 REQD). SEE DETAIL ON PAGE 6. INSTALL BETWEEN LONGITUDINALLY ADJACENT STACKS.
- 3 REAR-OF-LOAD GATE (1 REQD). SEE DETAIL ON PAGE 7. INSTALL AGAINST REAR STACK.
- 4 SOLID FILL, 4" WIDE X 48" LONG X THICKNESS REQUIRED TO FILL THE VOID BETWEEN THE VERTICAL PIECES OF REAR-OF-LOAD GATE AND REAR GATE (9" MAX). LAMINATE FIRST PIECE TO VERTICAL PIECE OF REAR-OF-LOAD GATE W/4-10d NAILS. LAMINATE EACH ADDITIONAL PIECE IN A LIKE MANNER. FOR AN EXCESS SPACE OF MORE THAN 9" BETWEEN GATES, REFER TO "REAR STRUT BLOCKING" DETAIL ON PAGE 12.
- (5) REAR GATE (1 REQD). SEE DETAIL ON PAGE 7. NAIL TO PIECES MARKED (4) W/4-10d NAILS AT EACH JOINT.
- 6 STEEL STRAPPING, 1-1/4" X .035" X 22'-0" (6 REQD). SEE "UNITIZING AND HANDLING PROCETURAL GUIDANCE" ON PAGE 3.
- 7) SEAL FOR 1-1/4" STRAP (12 REQD). DOUBLE CRIMP.



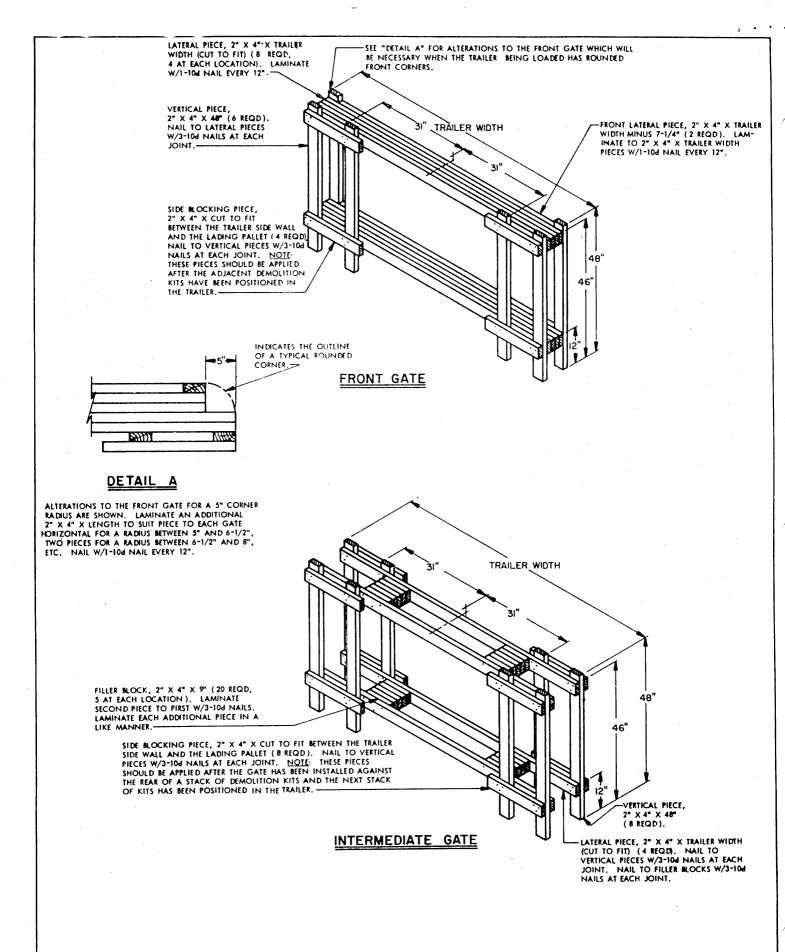


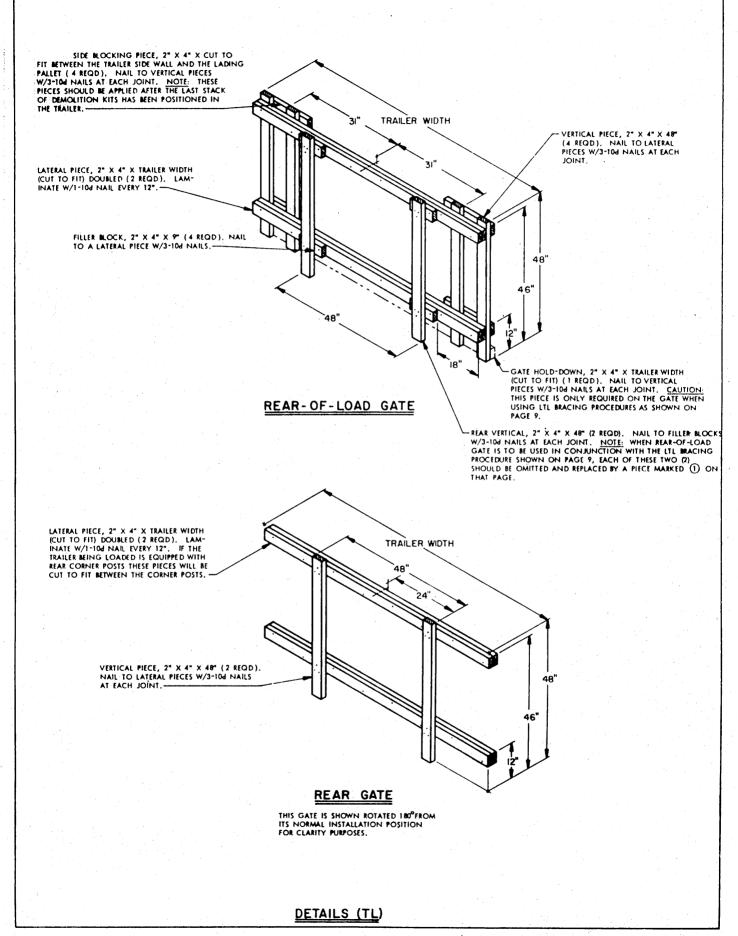
RIF	L OF MATERIA	<u>L</u>
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	419	280
NAIL	NO. REQD	POUNDS
104 (3")	606	9-1/2

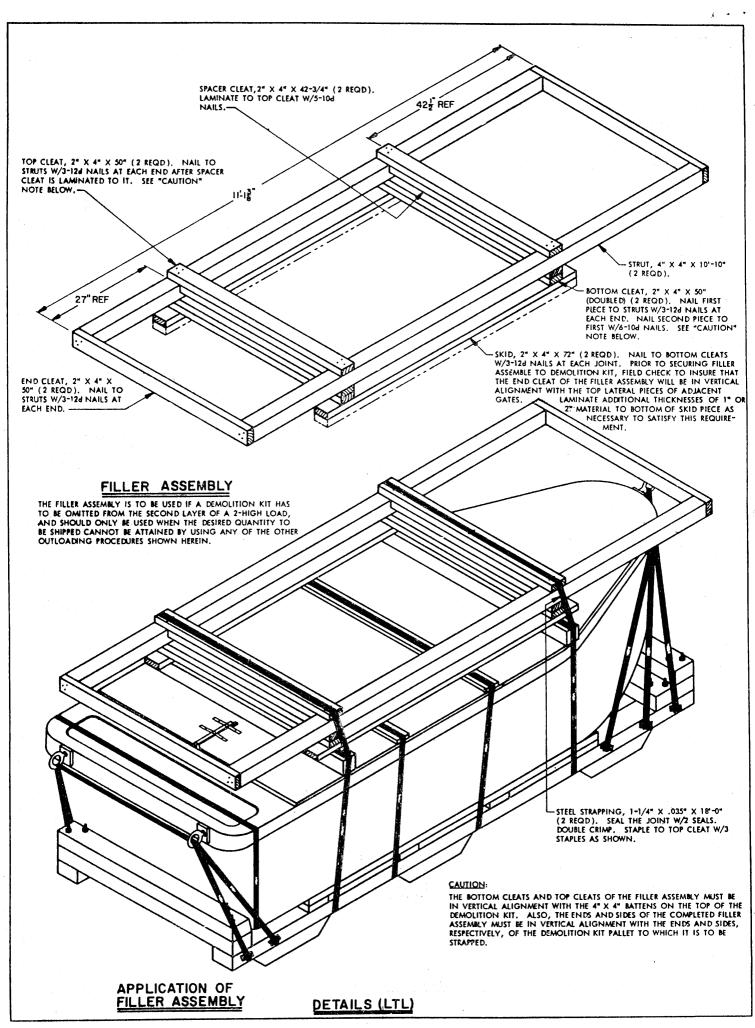
### LOAD AS SHOWN

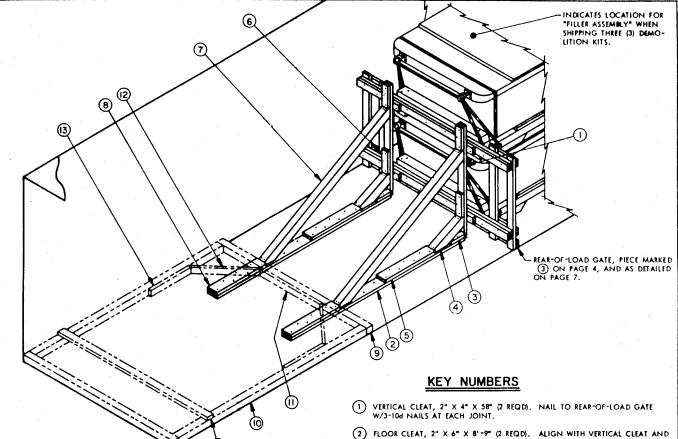
ITEM	QUANTITY	WEIGHT (APPROX)
DEMOLITION KIT		20,400 LBS 730 LBS
TOTAL V	VEIGHT	21,130 LBS

TL (6-UNIT LOAD)



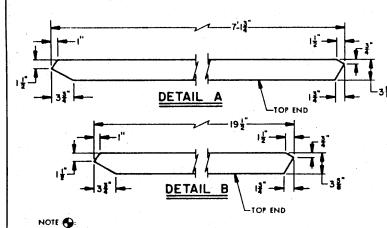






### LTL BRACING

THIS PROCEDURE IS APPLICABLE TO THE BLOCKING OF THREE (3) OR FOUR (4) DEMOLITION KITS IN A VAN TRAILER WHICH HAS A WOOD, OR A WOOD AND METAL, OR AN ALL METAL FLOOR. FOUR (4) KITS WILL REQUIRE A TRAILER AT LEAST 34'-0' LONG IF THE PROCEDURE APPLICABLE TO A WOOD OR WOOD AND METAL FLOOR IS USED. REFER TO PAGE 12 FOR AN ALTERNATIVE PROCE-DURE WHICH WILL PERMIT THE USE OF A TRAILER 27"-0" OR GREATER FOR THE SHIPMENT OF FOUR (4) KITS.



WHEN LOADING A TRAILER HAVING AN ALL METAL FLOOR OR IF THE PROCEDURE IS PREFERRED IN A TRAILER HAVING A WOOD OR A WOOD AND METAL FLOOR, SHORTEN FLOOR CLEAT, PIECE MARKED ② , TO 6"-2" AND OMIT THE NAILING, OMIT PIECE MARKED ① THRU ① .

2) FLOOR CLEAT, 2" X 6" X 8"-9" (2 REQD). ALIGN WITH VERTICAL CLEAT AND NAIL TO THE TRAILER FLOOR W/1-12d NAIL EVERY 8". SEE NOTE "6".

(3) POCKET CLEAT, 2" X 6" X 8" (2 REQD). NAIL TO FLOOR CLEAT W/2-12d NAILS. TOENAIL TO VERTICAL CLEAT W/2-12d NAILS.

LOWER KNEE BRACE, 4"  $\times$  4"  $\times$  19-1/2" (2 REQD). SEE "BETAIL B" FOR BEYEL CUTS REQUIRED. TOENAIL TO VERTICAL CLEAT AND FLOOR CLEAT W/2-16d NAILS AT EACH END.

5 BACK-UP CLEAT FOR LOWER KNEE BRACE, 2" X 6" X 30" (2 REQ.D). NAIL TO FLOOR CLEAT W/7-12d NAILS.

6 HOLD-DOWN CLEAT, 2" X 4" X 12" (4 REQD). NAIL TO VERTICAL CLEAT W/3-10d NAILS.

(7) UPPER KNEE BRACE, 4" X 4" X 7"-1-3/4" (2 REQ.)). SEE "DETAIL A" FOR BEVEL CUTS REQUIRED. TOENAIL TO VERTICAL CLEAT AND FLOOR CLEAT W/2-164 NAILS AT EACH END.

B BACK-UP CLEAT FOR UPPER KNEE BRACE, 2" X 6" X 30" (2 REQD). NAIL TO FLOOR CLEAT W/7-12d NAILS.

(9) HEADER, 4" X 4" X TRAILER WIDTH (CUT TO FIT) (2 REQD).

(1) STRUT, 4" X 4" X CUT TO FIT (2 REQD). TOENAIL TO HEADERS W/2-164 NAILS AT EACH END.

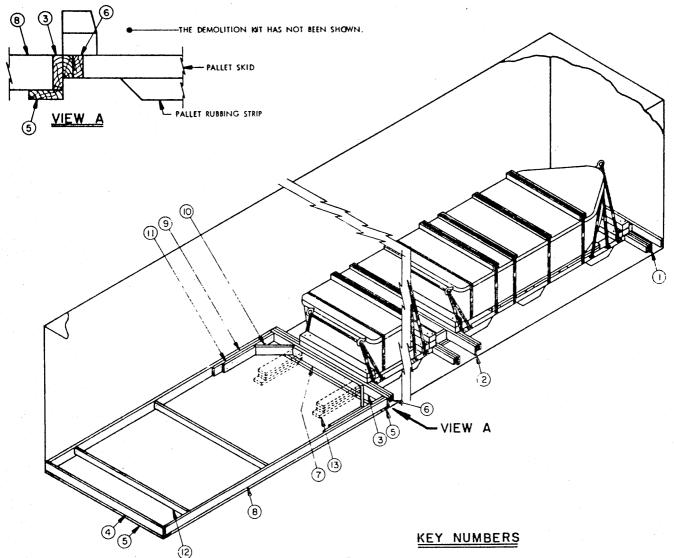
(II) CENTER CLEAT, 2" X 4" X 36" (1 REQD). NAIL TO HEADER W/7-124 NAILS.

diagonal brace, 2" x 4" x cut to fit (2 rege). Double bevel each end 45°. Toenail to header and strut w/2-16d nars at each end.

(13) BACK-UP CLEAT FOR DIAGONAL BRACE, 2" X 4" X 24" (7 REQD). NAIL TO STRUT W/6-12d NAILS.

(4) STRUT MACING, 2" X 4" X TRAILER WIDTH (CUT TO FIT) (MIN 1 REQD), POSITION ONE (1) NEAR THE REAR OF THE TRAILER AND ONE (1) EVERY 7"-0" OF STRUT LENGTH. NAIL TO STRUTS W/3-12d NAILS AT EACH END.

TYPICAL LTL (2-HIGH LOAD)



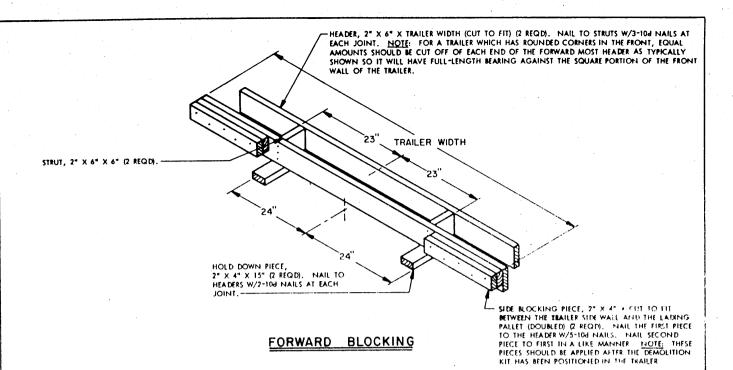
TYPICAL LTL

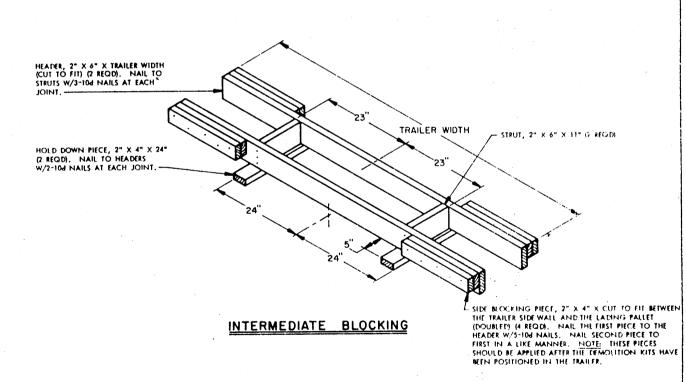
THIS PROCEDURE IS APPLICABLE TO THE BLOCKING OF ONE (1), TWO (2) OR THREE (3) DEMOLITION KIT(5) LOADED ONE-HIGH IN A VAN TRAILER WHICH HAS A WOOD OR A WOOD AND METAL OR A METAL FLOOR.

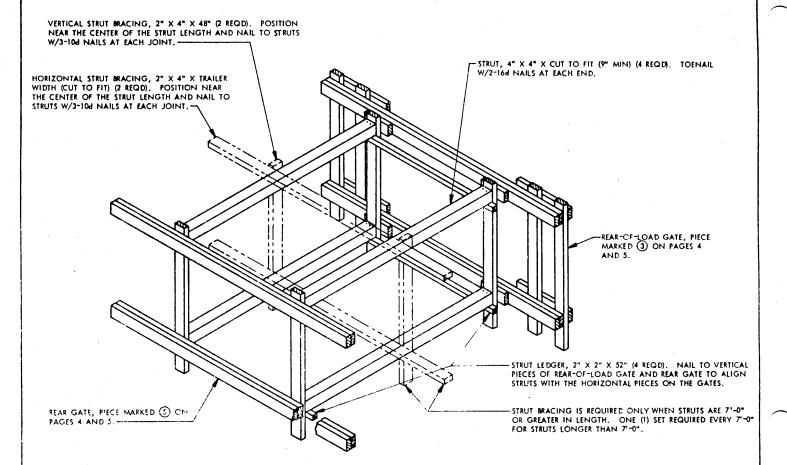
- (1) FORWARD BLOCKING (1 REQD). SEE DETAIL ON PAGE 11. INSTALL AGAINST THE
- (2) INTERMEDIATE BLOCKING (1 REQD). SEE DETAIL ON PAGE 11. INSTALL BETWEEN LONGITUDINALLY ADJACENT PALLET UNITS.
- (3) REAR-OF-LOAD HEADER, 2" X 6" X TRAILER WIDTH (CUT TO FIT) (1 REQD). SEE "VIEW A" DETAIL ABOVE.
- (4) REAR HEADER, 2" X 6" X TRAILER WIDTH (CUT TO FIT) (1 REQD).
- (5) STRUT LEDGER, 2" X 6" X TRAILER WIDTH (CUT TO FIT) (2 REQD). NAIL TO REAR-OF-LOAD HEADER AND/OR REAR HEADER W/1-10d NAIL EVERY 12".
- 6 SIDE BLOCKING PIECE, 2" X 4" X CUT TO FIT BETWEEN THE TRAILER SIDE WALL AND THE LADING PALLET (DOUBLED) (2 REQD). NAIL FIRST PIECE TO THE REAR-OF-LOAD HEADER W/5-10d NAILS. NAIL SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- (7) CENTER CLEAT, 2" X 6" X 45" (1 REQD). NAIL TO REAR-OF-LOAD HEADER W/7-12d NAILS.
- (B) STRUT, 2" X 6" X CUT FIT BETWEEN REAR-OF-LOAD HEADER AND REAR HEADER (2 REQD). TOENAIL W/2-12d NAILS AT EACH END.
- (9) POCKET CLEAT, 2" X 6" X 48" (2 REQD). NAIL TO STRUT W/8-10d NAILS.
- (1) DIAGONAL BRACE, 2" X 6" X CUT TO FIT (2 REQD). DOUBLE BEVEL EACH END WITH 45 CUTS. TOENAIL TO REAR-OF-LOAD HEAVER AND TO POCKET CLEAT W/2-16d NAILS AT EACH END.
- (1) BACK-UP CLEAT, 2" X 6" X 24" (2 REQT). NAIL TO POCKET CLEAT W/6-12d NAILS.
- (2) STRUT BRACING, 2" X 4" X TRAILER WIDTH MINUS 3-1/4" (CUT TO FIT) (MIN 1 REQD). POSITION ONE (1) NEAR THE REAR OF THE TRAILER AND ONE (1) EVERY 7"-0" OF STRUT LENGTH. TOENAIL TO STRUTS W/2-12d NAILS AT EACH END.
- (3) FLOOR LINE BACK-UP CLEAT, 2" X 6" X 30" (QUADRUPLED) (2 REQD). ALIGN WITH EDGE OF LADING PALLET. NAIL FIRST PIECE TO THE TRAILER FLOOR W/8-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER. TOENAIL TOP PIECE TO REAR-OF-LOAD HEADER W/2-12d NAILS. SEE NOTE " ".

WHEN LOADING A TRAILER HAVING A WOOD OR WOOD AND METAL FLOOR. PIECE (3) MAY BE USED IN LIEU OF PIECE (4), REAR PIECE (5), AND PIECES (7) THRU (72) WHICH APPLY TO A TRAILER HAVING AN ALL METAL FLOOR. TWO (7) FLOOR LINE BACK-UP CLEATS, SHOWN AS PIECE (13), ARE ADEQUATE FOR RETAINING THREE (3) PALLETIZED DEMOLITION KITS.

TYPICAL LTL (I-HIGH LOAD)







### REAR STRUT BLOCKING

THIS BLOCKING IS TO BE USED AT THE REAR OF THE TRAILER WHEN THE EXCESS SPACE BETWEEN REAR-OF-LOAD GATE AND REAR GATE IS GREATER THAN NINE (9) INCHES. IF THE EXCESS SPACE BETWEEN REAR-OF-LOAD GATE AND REAR OF THE TRAILER IS AT LEAST 10'-10" (FOR AN ALL METAL FLOOR) OR 9'-3" (FOR A WOOD OR WOOD AND METAL FLOOR) THE LTL BRACING METHOD OF BLOCKING AS SHOWN ON PAGE 9 MAY BE USED IN LIEU OF THE BLOCKING PROCEDURE SHOWN ABOVE.