APPROVED BY
BUREAU OF EXPLOSIVES
M. R. Miller
SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE 5/6/80

REVISION NO. 1
SIGNED E. P. Ballew
DATE 7/14/83

ACCEPTABLE CARRYING EQUIPMENT FOR MOTOR CARRIER MOVEMENT OF MILVAN CONTAINERS● WITH AMMUNITION, AND CONTAINER SECURING OR CONVENTIONAL BLOCKING AND TIEDOWN PROCEDURES

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NOTICE: ALTHOUGH THIS DRAWING IS SPECIFICALLY APPLICABLE TO THE TRANSPORT OF MISSILE COMMODITIES, THE DEPICTED PROCEDURES CAN ALSO BE USED TO TRANSPORT MILVAN CONTAINERS WHICH ARE LOADED WITH OTHER TYPES OF AMMUNITION. THE BLOCKING AND BRACING OF THE LADING WITHIN A MILVAN CONTAINER IS TO BE IN ACCORDANCE WITH THE APPLICABLE APPROVED PROCEDURAL DRAWING.

CAUTION: THE PROCEDURES SHOWN HEREIN FOR COMMERCIAL EQUIPMENT ARE ONLY APPLICABLE FOR HIGHWAY MOVEMENTS, NOT TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) MOVEMENTS.

● SEE GENERAL NOTE "B" ON PAGE 3.

REVISION

REVISION NO. 1, DATED APRIL 1983, CONSISTS OF: ADDING ADDITIONAL APPROVED COMMERCIAL CARRYING EQUIPMENT TO GENERAL NOTE "L" ON PAGE 3.

DO NOT SCALE

REVISIONS			
1	APR 83	WRF/WLC	

DRAFTSMAN: MPE/DAK | PROJ ENG: WRF/JFS | DRGNR-SP: D.G. EGB
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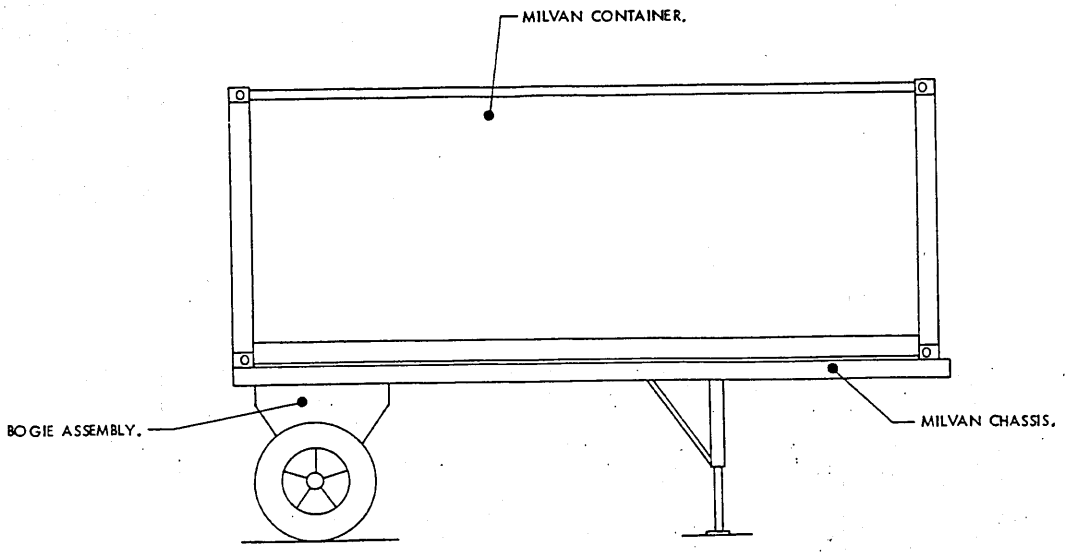
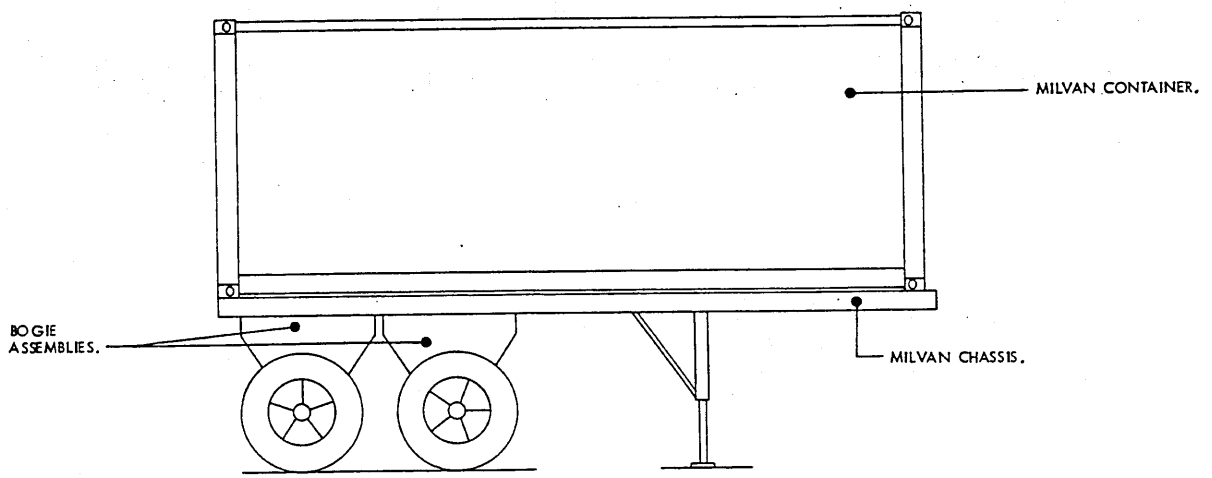
APPROVED: William J. Hoguen
U.S. ARMY MISSILE COMMAND
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM)
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL
U.S. ARMY DARCOM DRAWING
JUNE 1980

CLASS	DIVISION	DRAWING	FILE
19	48	5962	GM II MS I

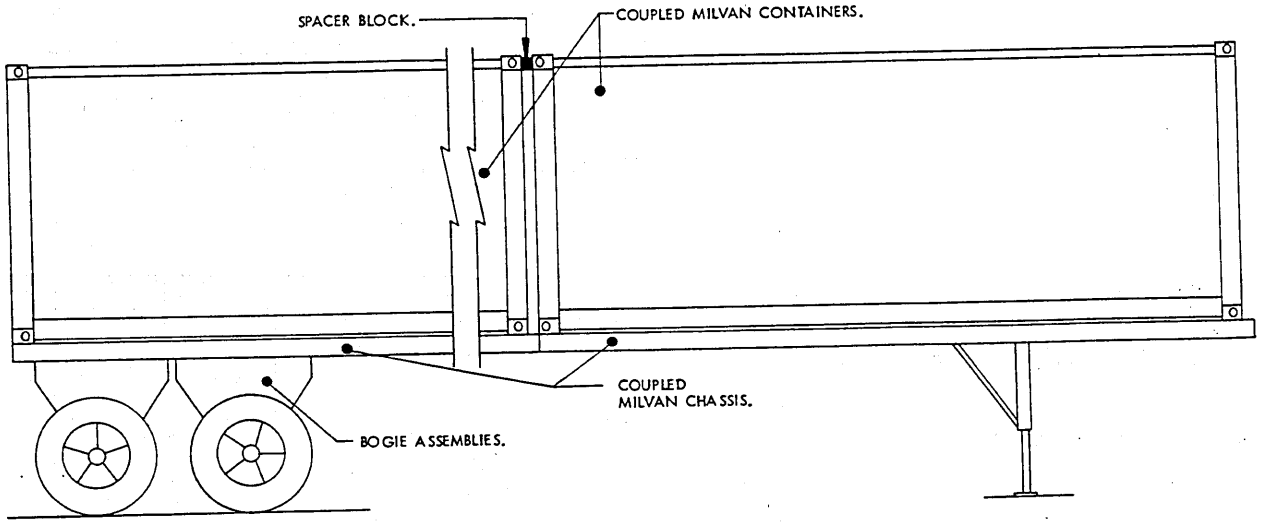
PROJECT GM 696-76



MILVAN CONTAINER ON MILVAN
CHASSIS W/ONE BOGIE ASSEMBLY



MILVAN CONTAINER ON MILVAN
CHASSIS W/TWO BOGIE ASSEMBLIES



TWO MILVAN CONTAINERS ON TWO MILVAN
CHASSIS COUPLED TOGETHER W/TWO BOGIE ASSEMBLIES

(CONTINUED FROM RIGHT)

K. WHEN USING COMMERCIAL TRAILERS, IT IS THE RESPONSIBILITY OF THE CARRIER TO PROVIDE THE SHIPPER WITH ALL SPECIAL OPERATIONAL GUIDANCE REQUIRED FOR THE COMMERCIAL EQUIPMENT BEING USED.

* L. COMMERCIAL CARRIERS AND CARRIER EQUIPMENT APPROVED FOR THE MOVEMENT OF CONTAINERIZED AMMUNITION ARE AS FOLLOWS.

1. TRI-STATE MOTOR TRANSPORTATION COMPANY TRAILER NO. 340596 EQUIPPED WITH BLAIR LIMITED TWIST LOCKS AND ALL OTHER TRI-STATE TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL BLAIR LIMITED TWIST LOCKS.

2. BAGGETT TRANSPORTATION COMPANY TRAILER NO. 1037 EQUIPPED WITH FRUEHAUF TWIST LOCKS AND ALL OTHER BAGGETT TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL FRUEHAUF TWIST LOCKS.

3. AMERICAN FARM LINES COMPANY TRAILER NO. F7524 EQUIPPED WITH PORTEC TWIST LOCKS AND ALL OTHER AMERICAN FARM LINES TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL PORTEC TWIST LOCKS.

4. C. I. WHITTEN COMPANY TRAILER NO. W3630 EQUIPPED WITH FRUEHAUF TWIST LOCKS AND ALL OTHER C. I. WHITTEN TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL FRUEHAUF TWIST LOCKS.

5. AMERICAN FARM LINES COMPANY TRAILER NO. 7608 EQUIPPED WITH PORTEC TWIST LOCKS AND ALL OTHER AMERICAN FARM LINES TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL PORTEC TWIST LOCKS.

6. HOME TRANSPORTATION COMPANY TRAILER NO. 4LL312 EQUIPPED WITH PORTEC TWIST LOCKS AND ALL OTHER HOME TRANSPORTATION TRAILERS THAT ARE SIMILARLY EQUIPPED WITH THE SAME MODEL PORTEC TWIST LOCKS.

*ALL OF THE COMMERCIAL TRAILERS CONTAINED WITHIN GENERAL NOTE "L" ARE CAPABLE OF CARRYING EITHER ONE FULLY LOADED MILVAN CONTAINER OR TWO LIGHT LOADED MILVAN CONTAINERS WITH THE EXCEPTION OF NO. 3 AND NO. 6. AMERICAN FARM LINES COMPANY TRAILER NO. F7524 AND ALL OTHER SIMILAR AMERICAN FARM LINES TRAILERS AND HOME TRANSPORTATION COMPANY TRAILER NO. 4LL312 AND ALL OTHER SIMILAR HOME TRANSPORTATION TRAILERS ARE ONLY CAPABLE OF CARRYING ONE LOADED MILVAN CONTAINER. CAUTION: REGARDLESS OF THE NUMBER OF MILVAN CONTAINERS ON A TRAILER, THE ALLOWABLE LOAD CARRYING CAPACITY FOR A SPECIFIC TRAILER WILL NOT BE EXCEEDED.

MATERIAL SPECIFICATIONS

LUMBER ———— : TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.

NAILS ———— : FED SPEC FF-N-105; COMMON.

STRAPPING, STEEL — : FED SPEC QQ-S-781; CLASS 1, TYPE I (HEAVY DUTY), FINISH A, B (GRADE 2), OR C.

SEAL, STRAP ——— : FED SPEC QQ-S-781, TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B (GRADE 2), OR C.

STEEL ———— : FED SPEC QQ-S-741; ROLLED SHAPES, PLATE, AND BAR.

SCREW, MACHINE — : FSC 5305; FLAT COUNTERSUNK HEAD, 82 DEGREE, SLOT DRIVE, STEEL, CADMIUM PLATED, 1/2" - 13UNC-2A X 2 INCH.

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. ALTHOUGH ONLY US ARMY MILVANS ARE DEPICTED IN THE DETAILS CONTAINED HEREIN, THE PROCEDURES DELINEATED IN THESE DETAILS ARE ALSO APPLICABLE TO ALL 20' LONG BY 8' WIDE BY 8' OR 8'-6" HIGH COMMERCIAL INTERMODAL FREIGHT CONTAINERS.

C. THIS DRAWING DEPICTS THREE PROCEDURES FOR TRANSPORTING LOADED AND/OR EMPTY MILVAN CONTAINERS.

1. THE FIRST PROCEDURE USES THE US ARMY MILVAN CHASSIS AND DEPICTS THREE METHODS; MILVAN CONTAINER ON A MILVAN CHASSIS EQUIPPED WITH A SINGLE BOGIE ASSEMBLY, MILVAN CONTAINER ON A MILVAN CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES, AND TWO MILVAN CONTAINERS ON TWO MILVAN CHASSIS, COUPLED TOGETHER, EQUIPPED WITH TWO BOGIE ASSEMBLIES. THESE THREE METHODS ARE PREFERRED FOR TRANSPORTING MILVAN CONTAINERS. SEE PAGE 2 OF THIS DRAWING AND TM 9-2330-297-14 FOR ADDITIONAL GUIDANCE.

2. THE SECOND PROCEDURE USES COMMERCIAL FLAT BED TRAILERS EQUIPPED WITH TESTED AND APPROVED FLUSH MOUNTED TWIST LOCK DEVICES FOR SECURING THE MILVAN CONTAINERS TO THE TRAILER. NOTE: WHEN MILVAN CONTAINERS ARE SECURED TO THE FLAT BED TRAILERS IN THIS MANNER, THE CONTAINERS ARE ACTUALLY SUPPORTED BY THE FOUR TWIST LOCKS AND DO NOT SIT DIRECTLY ON THE BED OF THE TRAILER. SEE PAGE 4 OF THIS DRAWING AND TM 9-2330-297-14 FOR ADDITIONAL GUIDANCE. COMMERCIAL CHASSIS WHICH ARE EQUIPPED WITH TWIST LOCK DEVICES MAY ALSO BE UTILIZED. THIS METHOD IS APPROVED FOR HIGHWAY MOVEMENT ONLY, NOT FOR TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) MOVEMENT.

3. THE THIRD PROCEDURE USES COMMERCIAL FLAT BED TRAILERS EQUIPPED WITH "SIDE BLOCKING ASSEMBLIES" WHICH ARE USED IN CONJUNCTION WITH STEEL STRAPPING AND WOOD DUNNAGE FOR SECURING THE MILVAN CONTAINERS TO THE TRAILER. SEE PAGES 5 THRU 7 OF THIS DRAWING FOR THE BLOCKING PROCEDURES. THIS METHOD IS APPROVED FOR HIGHWAY MOVEMENT ONLY, NOT FOR TRAILER/CONTAINER-ON-FLAT-CAR MOVEMENT, AND SHOULD ONLY BE USED IN EMERGENCY SITUATIONS WHEN OTHER CARRIER EQUIPMENT IS UNAVAILABLE. THE REASON FOR THIS IS THE EXPENSIVENESS OF THE DUNNAGE. FOR ADDITIONAL GUIDANCE, SEE GENERAL NOTE "D" BELOW.

D. WHEN LOADING A MILVAN CONTAINER ON A CONVENTIONAL COMMERCIAL TRAILER THAT IS NOT EQUIPPED WITH TWIST LOCK DEVICES, THE FOLLOWING PROCEDURES MUST BE USED.

1. INSTALL FOUR SIDE BLOCKING ASSEMBLIES ON THE EDGE OF THE TRAILER DECK, TWO ON EACH SIDE OF THE TRAILER, BETWEEN THE RUB RAIL AND TRAILER DECK. THE FRONT TWO ASSEMBLIES SHOULD BE POSITIONED APPROXIMATELY 9'-0" FROM THE FRONT OF THE TRAILER, AND THE REAR TWO ASSEMBLIES SHOULD BE POSITIONED APPROXIMATELY 19'-3" (CENTER TO CENTER) FROM THE FRONT ASSEMBLIES ON THE LENGTH OF THE TRAILER.

2. THE CONTAINER WILL BE LOWERED ONTO THE TRAILER DECK SO THAT THE POSTS OF THE SIDE BLOCKING ASSEMBLIES RECESS INTO THE HOLES OF EACH BOTTOM CORNER FITTING OF THE CONTAINER. THE CONTAINER MUST BE SEATED ON THE SIDE BLOCKING ASSEMBLY POSTS WITH THE SHIM OF THE SIDE BLOCKING ASSEMBLIES AS CLOSE TO THE EDGE OF THE TRAILER DECK AS POSSIBLE. THE 1/2" SPACER PIECE OF THE SIDE BLOCKING ASSEMBLIES CAN BE REMOVED AND INSTALLED ON THE OPPOSITE SIDE OF THE POSTS TO ADJUST FOR EXCESS SPACE, ON ONE OR BOTH SIDES OF THE TRAILER.

3. INSTALL NAILED FLOOR LINE BLOCKING AT EACH END OF THE CONTAINER. SEE PAGES 5 THRU 7 OF THIS DRAWING FOR DUNNAGE AND NAILING GUIDANCE.

4. INSTALL STEEL TIEDOWN STRAPPING AT EACH CORNER OF THE CONTAINER. SEE PAGE 6 OF THIS DRAWING FOR STRAPPING GUIDANCE.

E. A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, 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.

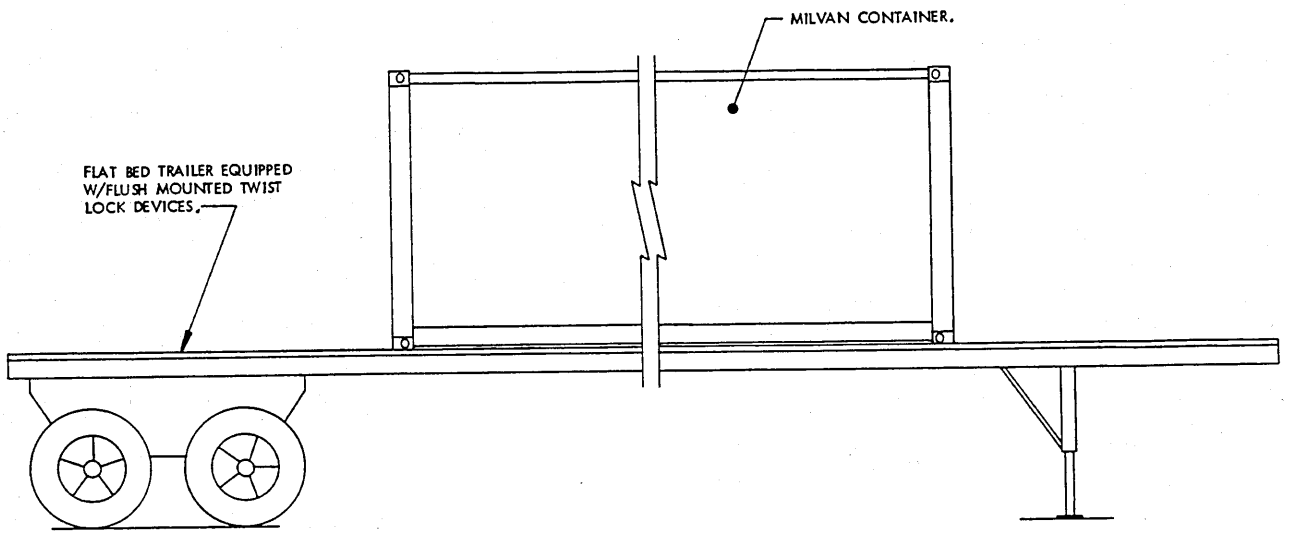
F. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT. ALL STRAP PAD SECUREMENTS WILL BE MADE WITH ONE SEAL WITH ONE PAIR OF CRIMPS PER SEAL.

G. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE, AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.

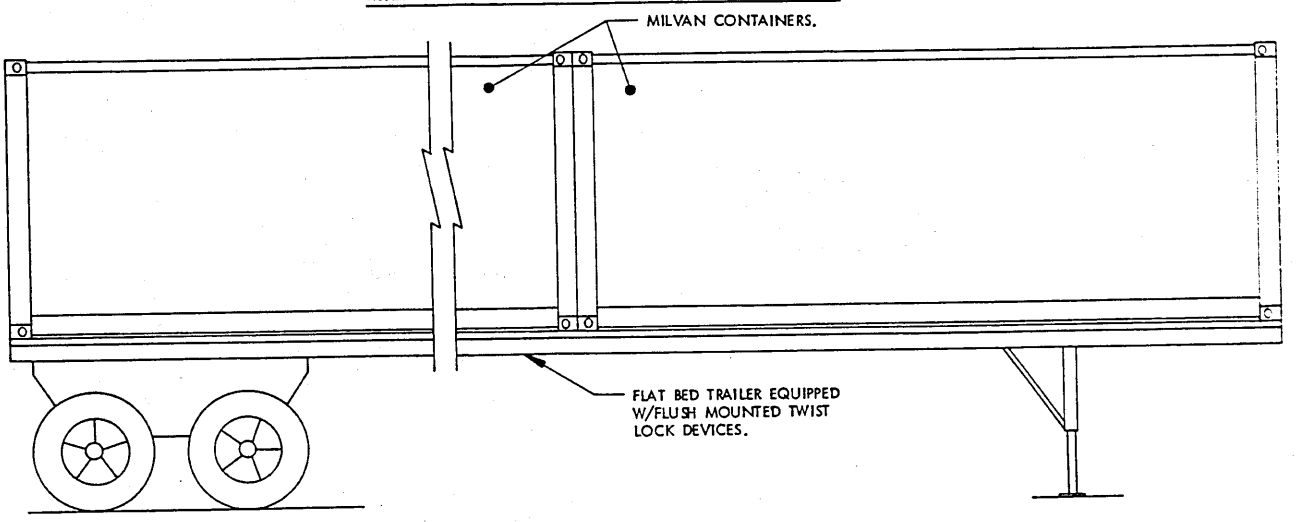
H. THE ALLOWABLE LOAD CARRYING CAPACITY FOR A SPECIFIC TYPE OF TRANSPORTING EQUIPMENT WILL NOT BE EXCEEDED. WHEN TRANSPORTING CONTAINERS ON COMMERCIAL EQUIPMENT, THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.

J. WHEN USING COMMERCIAL TRAILERS WHICH REQUIRE STEEL STRAPPING TIEDOWNS TO SECURE THE CONTAINER, THE SIDE RAILS OF THE TRAILER SHALL BE OF ADEQUATE STRENGTH TO RESTRAIN THE LOAD.

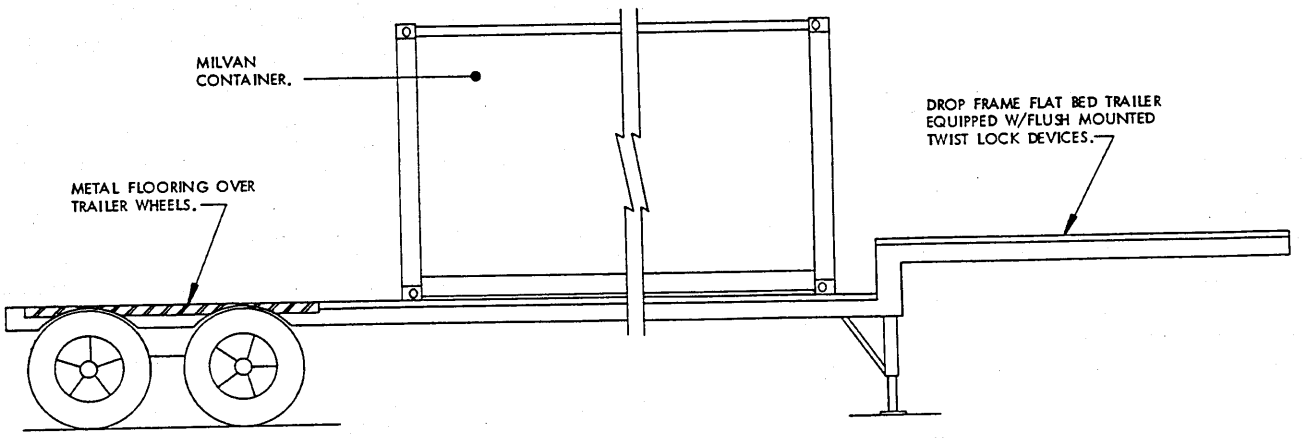
(CONTINUED AT LEFT)



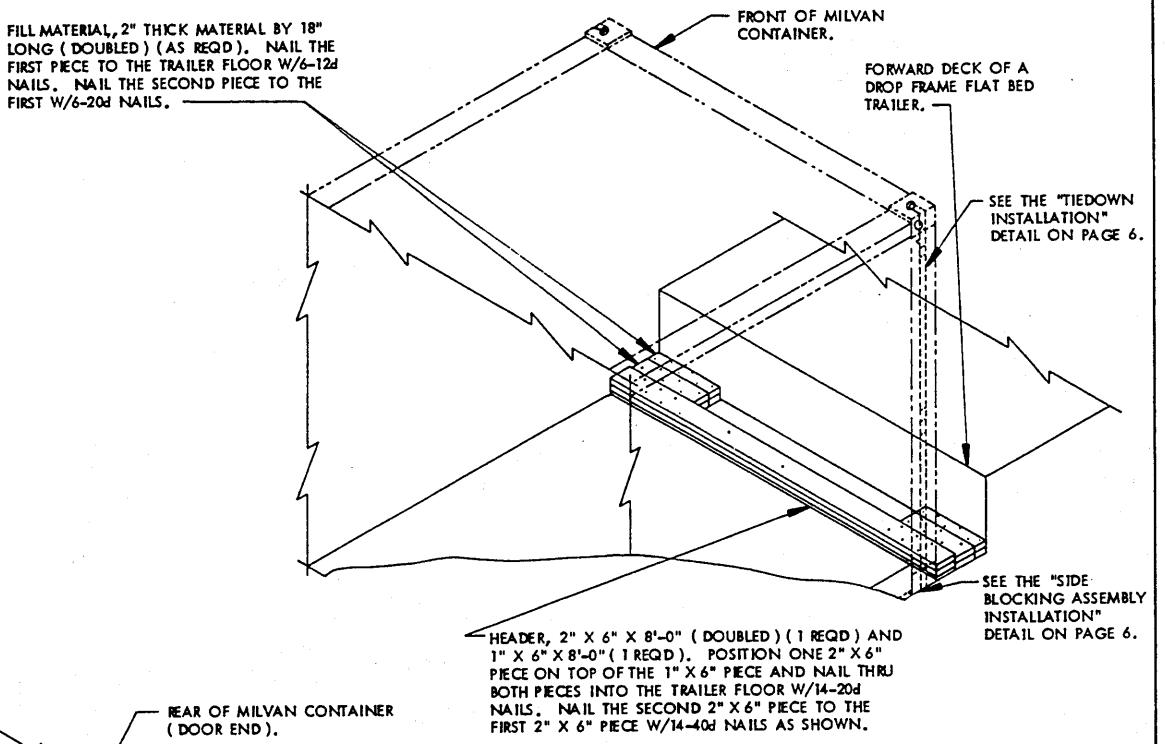
MILVAN CONTAINER SECURED TO A FLAT BED TRAILER



TWO MILVAN CONTAINERS SECURED TO A FLAT BED TRAILER

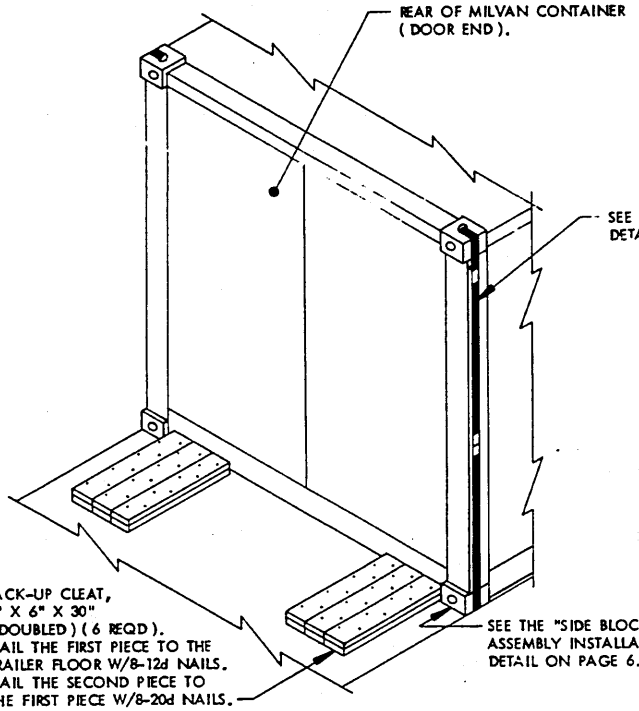


MILVAN CONTAINER SECURED TO A DROP FRAME FLAT BED TRAILER



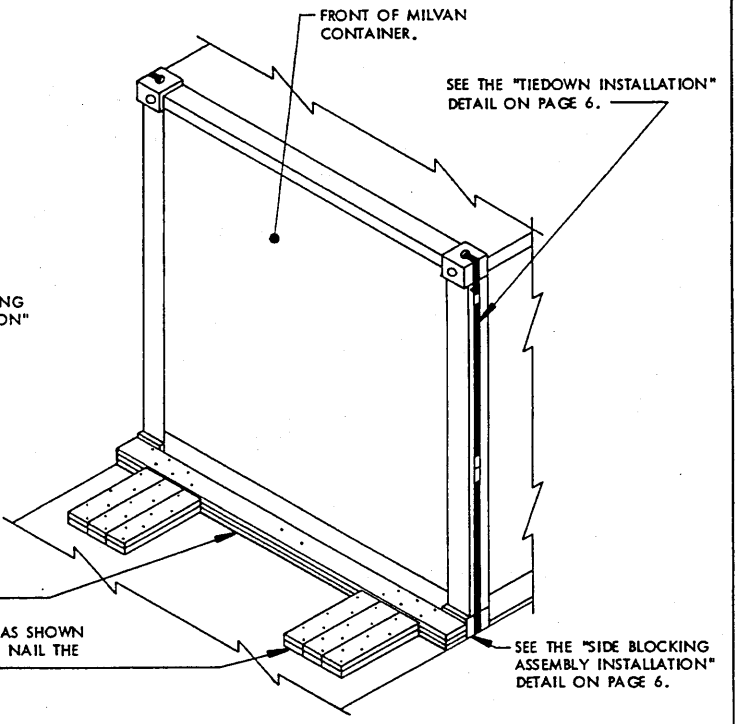
FORWARD BLOCKING - METHOD A

THIS METHOD OF BLOCKING CAN ONLY BE USED ON A DROP FRAME TYPE TRAILER. ALSO, THE FORWARD DECK OF THE TRAILER MUST BE HIGH ENOUGH TO SUPPORT THE FILL MATERIAL.



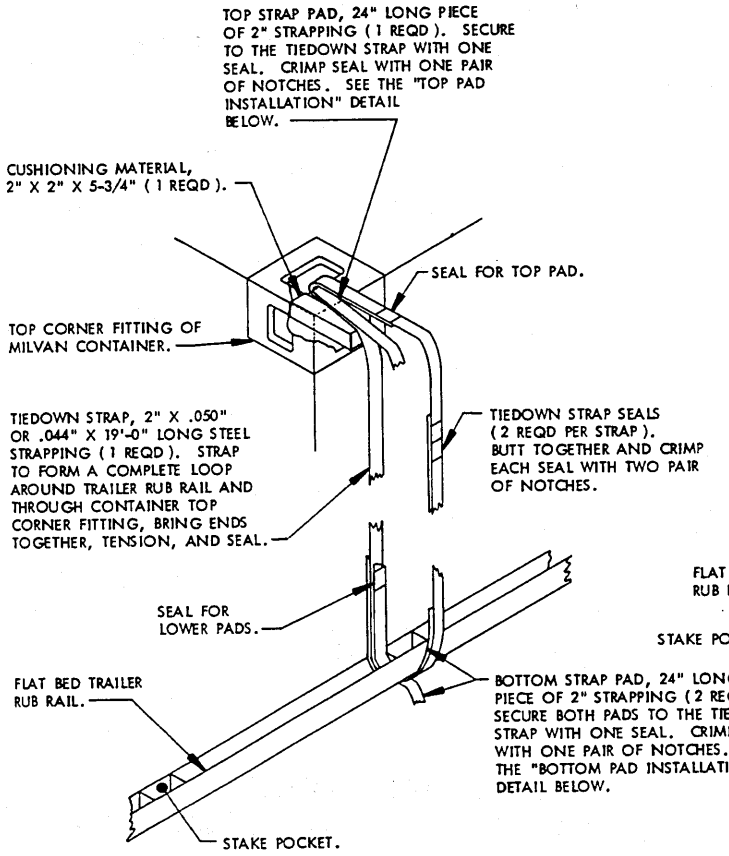
REAR BLOCKING

THIS METHOD IS TO BE USED WHEN METAL FLOORING DOES NOT PROHIBIT NAILING TO THE TRAILER FLOOR. SEE THE "ALTERNATIVE REAR BLOCKING" DETAIL ON PAGE 7.



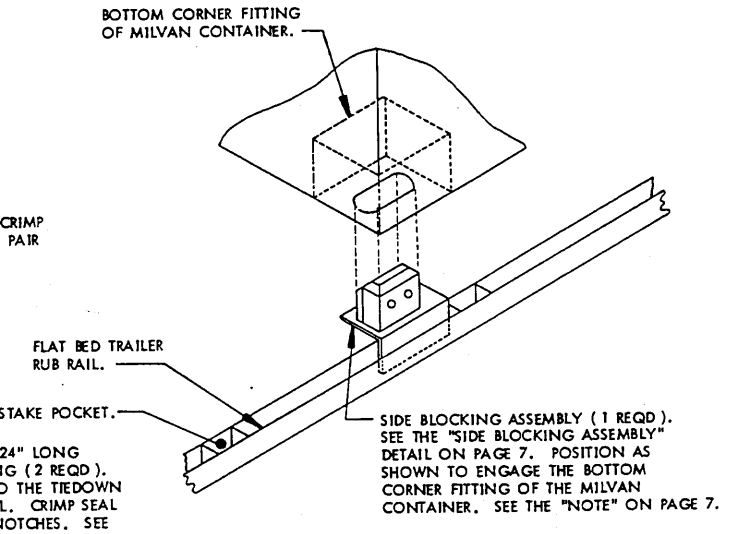
FORWARD BLOCKING - METHOD B

THIS METHOD OF BLOCKING CAN BE USED ON ALL CONVENTIONAL FLAT BED TRAILERS WHICH HAVE A SUITABLE SURFACE FOR NAILING.



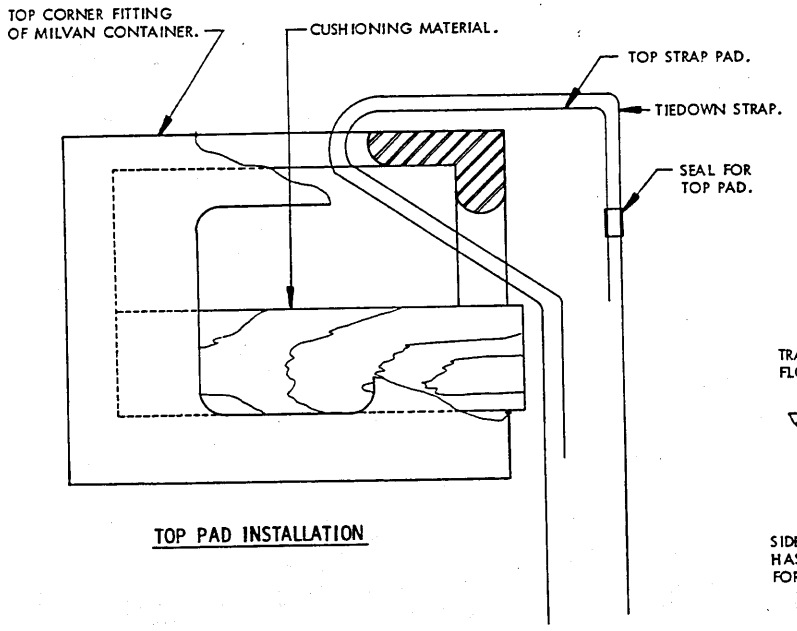
TIEDOWN INSTALLATION

(FOUR REQUIRED PER MILVAN CONTAINER.)

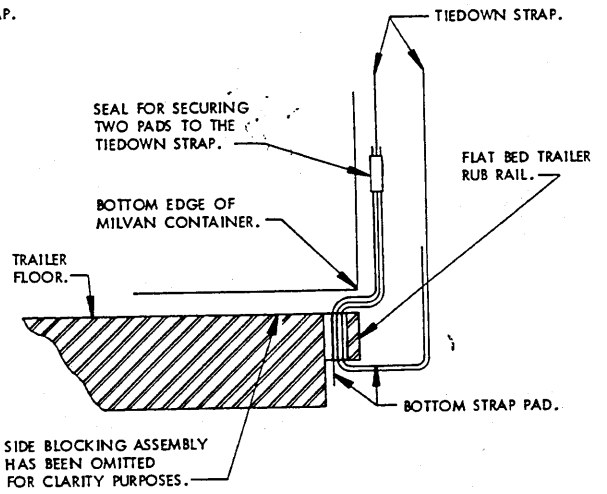


SIDE BLOCKING ASSEMBLY INSTALLATION

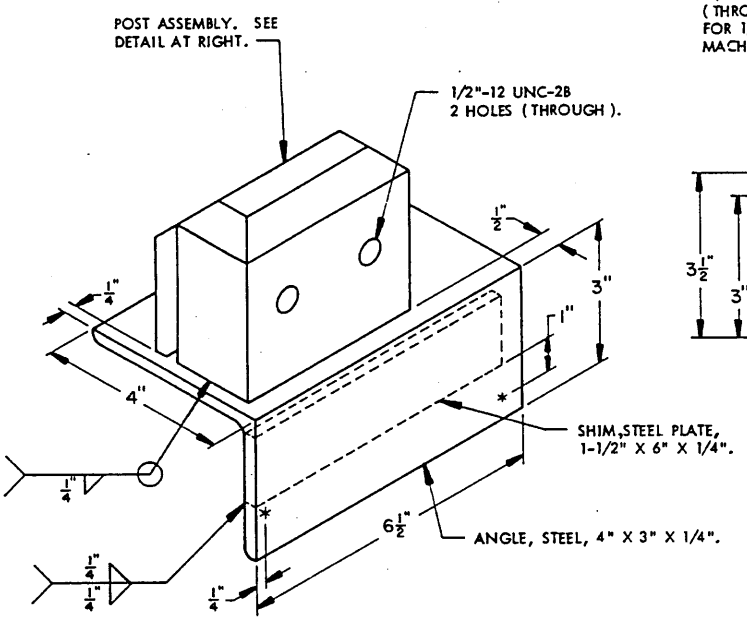
(FOUR REQUIRED PER MILVAN CONTAINER.)



TOP PAD INSTALLATION

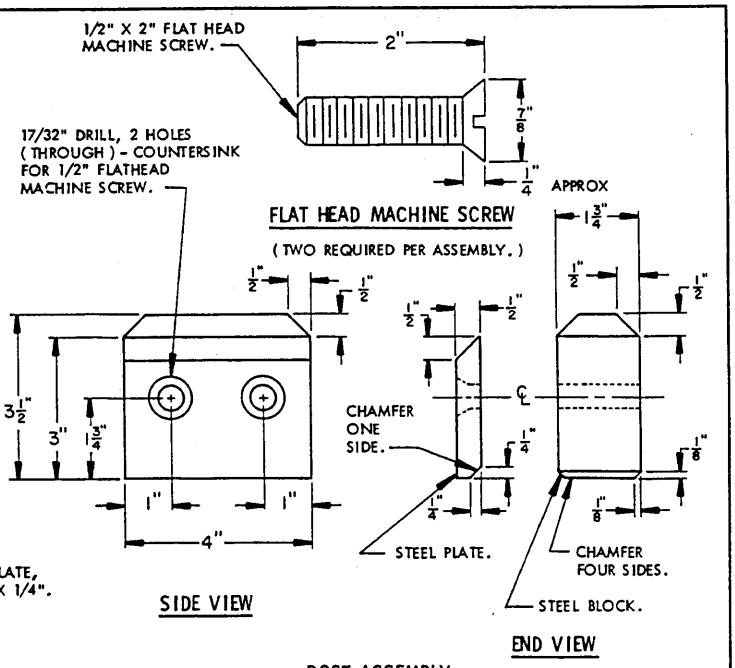


BOTTOM PAD INSTALLATION



SIDE BLOCKING ASSEMBLY

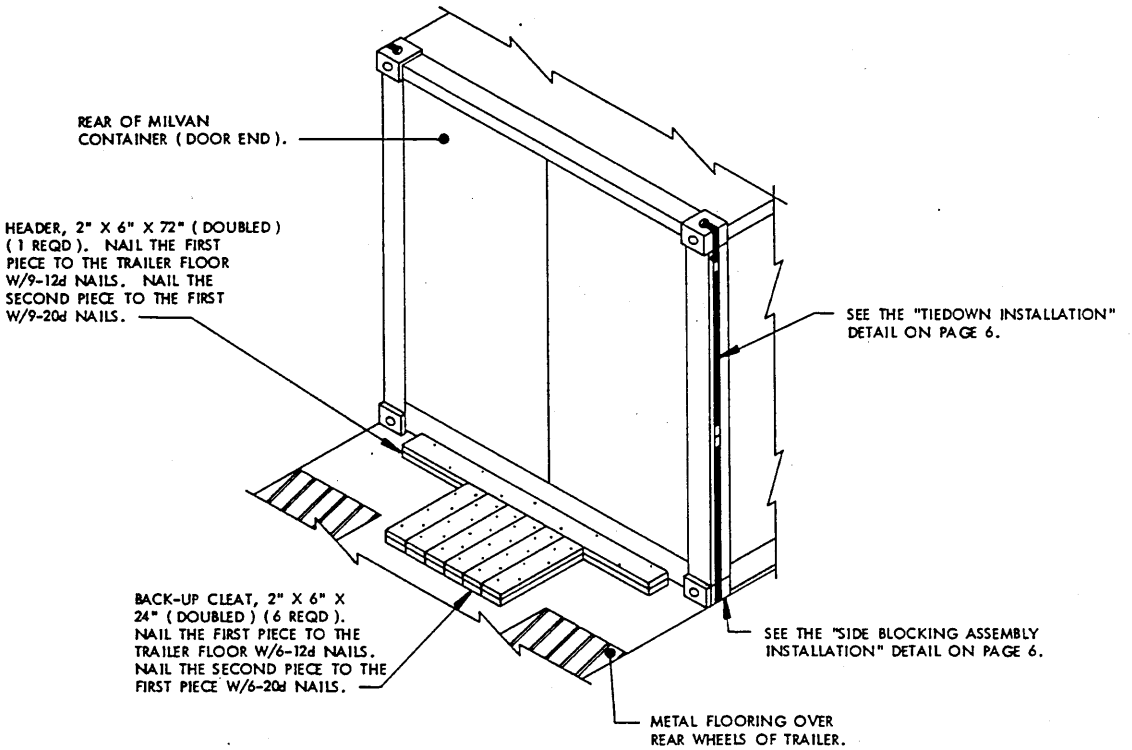
(FOUR REQUIRED PER MILVAN CONTAINER.)



POST ASSEMBLY

NOTE:

THE POST ASSEMBLY IS MADE UP OF TWO PIECES. ONE PIECE IS 1-3/4" WIDE AND THE OTHER PIECE IS 1/2" WIDE. THE 1-3/4" WIDE PIECE IS WELDED TO THE 4" X 3" ANGLE. THE 1/2" WIDE PIECE IS THEN SCREWED TO THE 1-3/4" PIECE. THE 1/2" PIECE PROVIDES ADJUSTMENT FOR VARIOUS TRAILER WIDTHS AND CAN BE FASTENED TO THE LARGER BLOCK FROM EITHER SIDE. THE SIDE BLOCKING ASSEMBLY SHOULD BE POSITIONED AS SHOWN IN THE "SIDE BLOCKING ASSEMBLY INSTALLATION" DETAIL AS DEPICTED ON PAGE 6, WITH THE 3" LEG OF THE ANGLE AS CLOSE AS POSSIBLE TO THE EDGE OF THE TRAILER DECK.



ALTERNATIVE REAR BLOCKING

THIS METHOD IS TO BE USED WHEN METAL FLOORING OVER THE TRAILER WHEELS PROHIBITS THE NAILING OF BACK-UP CLEATS TO THE TRAILER FLOOR AS SHOWN IN THE "REAR BLOCKING" DETAIL ON PAGE 5.