

LOADING, TIEDOWN AND UNLOADING PROCEDURES FOR CONVENTIONAL AMMUNITION ITEMS, IN/ON TACTICAL VEHICLES, FOR RAPID DEPLOYMENT BY RAIL AND SHIP

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● THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE FOR TRANSPORTING CONVENTIONAL AMMUNITION LOADED IN/ON TACTICAL VEHICLES, BY RAIL AND/OR SHIP. HOWEVER, THEY MAY ALSO BE USED FOR ON AND/OR OFF HIGHWAY MOVEMENT, IF DESIRED.

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DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- B. THIS DRAWING COVERS PROCEDURES APPLICABLE TO THE TRANSPORT OF LOOSE AND/OR PALLETIZED UNIT BASIC LOAD CONVENTIONAL AMMUNITION ITEMS, SECURED ON TACTICAL VEHICLES, FOR RAPID DEPLOYMENT BY RAIL AND SHIP. FOR SECUREMENT OF THE LOADED TACTICAL VEHICLES ON FLAT CARS SEE AMC DRAWING 19-48-DA108 (PROJECT DA 9-90) TITLED: LOADING AND BRACING ON FLAT CARS OF TACTICAL VEHICLES, LOADED WITH CONVENTIONAL AMMUNITION ITEMS, FOR RAPID DEPLOYMENT.
- C. DEPICTED PROCEDURES APPLY TO TACTICAL VEHICLES WITH OR WITHOUT FACTORY INSTALLED TIEDOWN ANCHORS AND/OR TACTICAL VEHICLES WHICH HAVE BEEN MODIFIED TO INCLUDE THE UNIVERSALLY APPLICABLE "TIEDOWN KIT" WHICH CONSISTS OF THE TIEDOWN FITTINGS OR ANCHOR DEVICES FOR INSTALLATION IN ON CARGO BEDS, SIDE WALLS AND/OR END WALLS, FOR USE WITH WEB STRAP TIEDOWN ASSEMBLIES. SEE PAGE 44 FOR GUIDANCE.
- D. ALL LOADS SHOWN HEREIN ARE TYPICAL AND ARE BASED ON TESTED PROCEDURES FOR LOADED TACTICAL VEHICLES SECURED TO FLAT CARS. COMBINATIONS OF PROCEDURES MAY BE USED IN/ON ANY TACTICAL VEHICLE. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- E. BECAUSE OF THE FACT THAT ALL LOADS SHOWN HEREIN ARE TYPICAL IT IS MOST LIKELY THAT THE ACTUAL QUANTITY TO BE TRANSPORTED WILL NOT BE DEPICTED. IN ORDER TO MAINTAIN SIMILARITY FROM ONE LOAD TO ANOTHER, INSTALLATIONS WHICH MAKE MULTIPLE SHIPMENTS OF THE SAME ITEM IN THE SAME TYPE OF VEHICLE, SHOULD MAKE AN ACTUAL PENCILED SKETCH OF THE LOAD, USING THE VARIOUS TYPICAL LOADS AND PROCEDURES SHOWN HEREIN FOR GUIDANCE. THIS SKETCH WOULD BE ADVANTAGEOUS FOR MAXIMUM LOADS USING A MINIMUM QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES; AND/OR STEEL STRAPPING. SEE THE TYPICAL PALLETIZED UNIT DETAILS ON PAGE 5.
- F. WEB STRAP TIEDOWN ASSEMBLIES MUST BE SECURELY HOOKED INTO ANCHORING DEVICES ON THE TRANSPORTING VEHICLE AND FIRMLY TENSIONED. FIRMLY TENSIONED MEANS, WHEN THE OPERATOR PULLS ON THE RATCHET HANDLE BE HAND, THE RATCHET WILL NOT ADVANCE ANOTHER NOTCH. NO TYPE OF MECHANICAL EXTENSION OR LEVER WILL BE USED. EXERCISE CARE DURING STRAP APPLICATION. AVOID TWISTS IN THE STRAP TO THE EXTENT POSSIBLE (IF TIME PERMITS) BUT ENSURE THERE ARE NO KNOTS IN THE STRAP. ON THE TAKE-UP SPOOL OF THE RATCHET, ENSURE STRAIGHT LAY OF THE STRAP WHEN TENSIONING. AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE BY ROTATING THE TAKE-UP SPOOL UNTIL NO METAL ON THE SPOOL IS SHOWING AND THE STRAP HAS MADE CONTACT WITH ITSELF, THE TENSIONED STRAP MUST FORM AT LEAST 1/2" BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET. AFTER TENSIONING IS COMPLETED ENSURE THAT THE SPOOL LOCKING-LATCH IS FULLY SEATED AT BOTH ENDS OF THE SPOOL IN MATCHING LOCKING NOTCHES. TIE BACK THE LOOSE END OF THE STRAP AFTER TENSIONING IS COMPLETED (LOOSE END MAY BE FOLDED AND TAPED OR TIED TO THE TENSION STRAP IF TIME PERMITS). FOR ADDITIONAL GUIDANCE, SEE "RATCHET/RATCHETING DETAILS" ON PAGES 42 AND 43.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

- LUMBER - - - - - : SEE 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 OR IV, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.
- STRAP - - - - - : WEBBING, UNIVERSAL TIEDOWN, NSN 5340-00-980-9277, PN 10900880; OR NSN 1670-00-725-1437, PN 1376-013. ALTERNATIVE: NSN 5340-01-089-4997, PN 11669588, OR NSN 5340-01-204-3009, PN 9392419
- SEAL, STRAP - - - - - : FED SPEC QQ-S-781; TYPE D, STYLE I, II, OR IV, CLASS H, FINISH A, B (GRADE 2) OR C.
- ANTI-CHAFING MATERIAL - - - - - : CANVAS, BURLAP, TAPE OR ANY OTHER SUITABLE MATERIAL
- EDGE PROTECTORS - - : STEEL FOR 1-1/4" AND 2" STEEL STRAPPING.
- ANGLE - - - - - : 4" X 4" X 1/4", STEEL, PER ASTM A36, FSC 9520.
- BOLT - - - - - : SQUARE NECK, ROUND HEAD (CARRIAGE), STEEL, CADMIUM PLATED, 3/4-10 UNC-2A FSC 5306.
- NUT - - - - - : SELF-LOCKING, HEXAGON-PREVAILING TORQUE, GENERAL PURPOSE, CADMIUM PLATED, 3/4-10 UNC-2B, FSC 5310.

(GENERAL NOTES CONTINUED)

- G. ADJUSTABLE SCUFF SLEEVES PROVIDED ON WEB STRAP ASSEMBLIES WILL BE LOCATED TO PROVIDE A PAD WHERE STRAPS PASS OVER SHARP EDGES, OR RATCHETS AND HOOKS ON PREVIOUSLY INSTALLED WEB STRAP TIEDOWN ASSEMBLIES. METAL PARTS OF A STRAP ASSEMBLY SHOULD BE LOCATED SO AS TO AVOID CONTACT WITH METAL ON UNIT BASIC LOAD ITEMS. IF CONTACT CANNOT BE AVOIDED, A SUITABLE ANTI-CHAFING MATERIAL AS LISTED UNDER THE MATERIAL SPECIFICATIONS BELOW, MUST BE POSITIONED BETWEEN THE METAL PARTS OF A STRAP ASSEMBLY AND THE METAL ON UNIT BASIC LOAD ITEMS. AND IF NECESSARY, TAPED OR TIED IN POSITION.
- H. WHEN ONE WEB STRAP TIEDOWN ASSEMBLY IS NOT LONG ENOUGH TO SPAN THE DISTANCE DEPICTED, TWO ASSEMBLIES MAY BE HOOKED TOGETHER TO GAIN THE NECESSARY LENGTH.
- J. THE TIEDOWN METHODS WITHIN THIS DRAWING SHOW TWO HOOKS TO BE CONNECTED TO ONE TIEDOWN EYE THIS IS AUTHORIZED AS SPECIFIED HEREIN AND MEETS THE INTENT OF THE REQUIREMENTS CITED IN TB 9-2300-280-30.
- K. PROCEDURES DEPICTED HEREIN ARE TYPICAL IN NATURE. RELATIVE TO ITEM LOCATION AND QUANTITIES OF THE DESIGNATED ITEM MAY BE VARIED TO SATISFY OPERATIONAL REQUIREMENTS, PROVIDED LOADING AND TIEDOWN PRINCIPLES SPECIFIED HEREIN ARE RETAINED.
- L. IF THE SIDE RACKS FOR THE SEMITRAILER ARE TO BE TRANSPORTED ON THE LOADED TRAILER, THEY WILL BE STACKED ON THE TRAILER AND SECURED WITH A SUFFICIENT QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES AND/OR STEEL STRAPPING TO PREVENT LOSS DURING TRANSPORT.
- M. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454KG.
- N. THE TIEDOWN PROCEDURES SHOWN WITHIN THIS DRAWING ALSO APPLY TO DROP SIDE VEHICLES HAVING TIEDOWN ANCHORS INSTALLED ON THE DROP SIDES. THE TAILGATE MUST ALWAYS BE IN THE CLOSED POSITION TO HELP STRENGTHEN THE DROP SIDES, WHEN THIS TYPE OF VEHICLE IS BEING USED TO TRANSPORT UNIT BASIC LOAD ITEMS.
- O. DURING LONG HAULS, WHEN POSSIBLE, WEB STRAPS SHOULD BE CHECKED DURING STOPS AND TIGHTENED, IF NECESSARY.
- P. DUE TO VARIOUS REASONS, SUCH AS PANIC STOPS, METAL FLOORS ON VEHICLES AND NORMAL STRETCH OF WEB STRAPS, LOADED ITEMS MAY SLIDE SLIGHTLY LATERALLY AND/OR LONGITUDINALLY DURING TRANSPORT. THIS IS AN ACCEPTABLE CHARACTERISTIC AND IS NOT DETRIMENTAL TO LOAD SECUREMENT.
- Q. ONLY THE CARGO BODIES OR BEDS OF THE TACTICAL VEHICLES HAVE BEEN SHOWN HEREIN TO PREVENT DISTRACTION FROM THE DELINEATED LOADING AND TIEDOWN PROCEDURES, AND ARE SHOWN IN OUTLINE FORM WITH THE STRUCTURAL PORTIONS OMITTED AS NECESSARY TO IMPROVE THE CLARITY OF THE DEPICTED PROCEDURES.
- R. 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 AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- S. 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 WILL NOT BE DRIVEN THROUGH, ONTO, OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- T. CAUTION: NAILING THROUGH ANY PORTION OF AMMUNITION PACKAGES AS A MEANS TO SUPPORT THE BRACING OR ANY TYPE OF DUNNAGE IS PROHIBITED. ALL NAILING WILL BE WITHIN THE DUNNAGE OR INTO THE FLOOR OF A TRAILER, AS SPECIFIED HEREIN.
- U. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIRS OF CRIMPS PER SEAL, MUST BE USED.
- V. FOR ADDITIONAL GUIDANCE ATTENTION IS DIRECTED TO THE LOAD GUIDANCE FOR USE OF WEB STRAP TIEDOWN ASSEMBLIES, AND LOAD GUIDANCE FOR USE OF HOLD DOWN STEEL STRAPPING ON PAGE 4, AND THE SPECIAL NOTES ON THE LOAD PAGE.

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LOAD PLANNING GUIDANCE CHART

WHEN TRANSPORTING UNIT BASIC LOAD ITEMS USE THE FOLLOWING CHART FOR LOAD PLANNING GUIDANCE. ALL OF THE VEHICLES LISTED IN THE CHART ARE NOT SHOWN IN THIS DOCUMENT. OTHER TYPES OF VEHICLES NOT LISTED IN THIS CHART MAY BE USED AS LONG AS THEY COMPLY WITH GENERAL NOTE "C" ON PAGE 2. SEE "LOADING PLANNING NOTES" BELOW.

TACTICAL VEHICLE			UNIT BASIC LOAD ITEMS
			SEE PAGES
1/4-TON	M100	CARGO TRAILER	6
3/4-TON	M101	CARGO TRAILER	6 AND 10
1-1/2-TON	M105	CARGO TRAILER	6 AND 10
1-1/2-TON	M332	AMMO TRAILER	6
11-TON	M989A1	CARGO TRAILER	6,20,21,28 AND 29
12-TON	M127	SEMITRAILER	24 THRU 27
22-1/2-TON	M871	SEMITRAILER	24 THRU 27
34-TON	M872	SEMITRAILER	24 THRU 27
3/4-TON	M37	CARGO TRUCK	6
1-1/4-TON	M561	CARGO TRUCK	6
1-1/4-TON	M715	CARGO TRUCK	6
1-1/4-TON	M998	CARGO TRUCK	8 AND 30 THRU 37
1-1/4-TON	M1008	CARGO TRUCK	6 AND 10
2-1/2-TON	M34	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M35	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M36/M36C	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M135	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M211	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M602	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M621	CARGO TRUCK	6 AND 10 THRU 19
2-1/2-TON	M47	DUMP TRUCK	6 AND 10 THRU 19
2-1/2-TON	M59	DUMP TRUCK	6 AND 10 THRU 19
2-1/2-TON	M215	DUMP TRUCK	6 AND 10 THRU 19
2-1/2-TON	M342	DUMP TRUCK	6 AND 10 THRU 19
2-1/2-TON	M614	DUMP TRUCK	6 AND 10 THRU 19
2-1/2-TON	M624	DUMP TRUCK	6 AND 10 THRU 19
5-TON	M54	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M55	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M656	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M813	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M814	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M939	CARGO TRUCK	6 AND 10 THRU 19
5-TON	M51	DUMP TRUCK	6 AND 10 THRU 19
5-TON	M817	DUMP TRUCK	6 AND 10 THRU 19
6-TON	M548	CARGO CARRIER	6 AND 10 THRU 19
8-TON	M520	CARGO TRUCK	6 AND 10 THRU 19
10-TON	M125	CARGO TRUCK	6 AND 20 THRU 23
10-TON	M977/M985	CARGO TRUCK	6 AND 20 THRU 23

LOAD PLANNING NOTES:

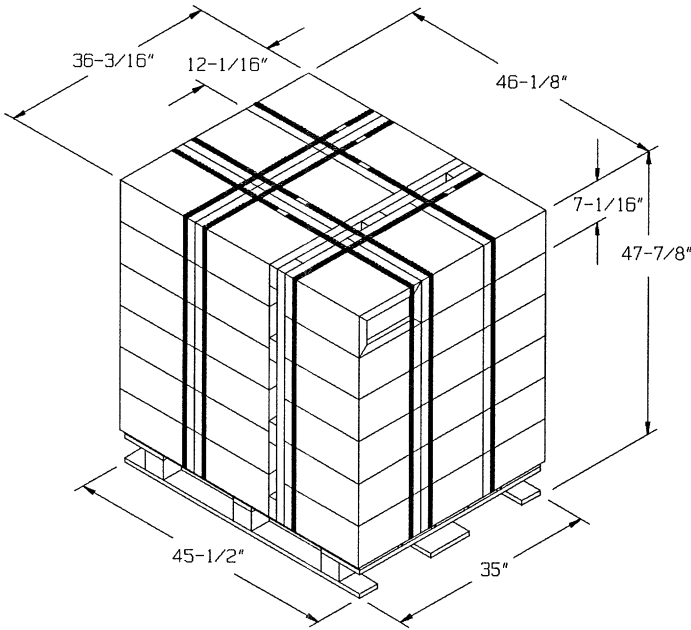
1. LOCATE THE VEHICLE BEING USED IN THE CHART ABOVE AND NOTE THE LOAD GUIDANCE PAGES LISTED IN THE RIGHT SIDE COLUMN.
2. DETERMINE THE QUANTITY OF UNIT BASIC LOAD ITEMS TO BE LOADED IN/ON THE TACTICAL VEHICLE. THE QUANTITY OF ITEMS TO BE LOADED WILL DEPEND ON THE VEHICLE WEIGHT LIMIT, SIZE OF CARGO AREA, AND QUANTITY AND LOCATION OF TIEDOWN ANCHORS.
3. SELECT THE BEST METHOD OF SECURING THE UNIT BASIC LOAD ITEMS FROM THE METHODS SHOWN ON THE REFERENCED PAGES. NOTE: A COMBINATION OF METHODS MAY BE USED IN/ON THE SAME TACTICAL VEHICLE.

LOAD GUIDANCE NOTES

(LOAD GUIDANCE NOTES CONTINUED)

1. PRIOR TO LOADING AND/OR UNLOADING, SET BRAKES ON TACTICAL VEHICLE AND DROP TAILGATE. IF LOADING AND/OR UNLOADING TRUCK OR TRAILER, REMOVE SIDE RACKS FROM SEMITRAILERS, AND CANVAS COVER AND BOWS FROM TRUCK OR TRAILER.
2. PRIOR TO LOADING A TACTICAL VEHICLE, SELECT THE QUANTITY AND TYPES OF ITEMS TO BE LOADED. CAUTION: DO NOT EXCEED THE OFF-HIGHWAY WEIGHT LIMIT OF THE VEHICLE. SELECT A LOCATION AGAINST AN END WALL OR ANYWHERE WITHIN THE LENGTH OF THE CARGO BED THAT WILL PROVIDE AN ADEQUATE QUANTITY OF TIEDOWN ANCHORS TO SECURE THE LOAD USING THE TIEDOWN PROCEDURES SHOWN WITHIN THIS DOCUMENT.
3. AFTER ALL LOADING PROCEDURES ARE COMPLETE, CHECK ALL WEB STRAP TIEDOWN ASSEMBLIES FOR MAXIMUM TIGHTNESS AND RATCHET TIGHTER, IF REQUIRED, PRIOR TO FOLDING UP AND SECURING THE LOOSE ENDS OF STRAP. SEE GENERAL NOTE "G" ON PAGE 2.
4. WHEN TWO STRAPS ARE TO BE ATTACHED TO THE SAME TIEDOWN ANCHOR, ATTACH THE RATCHET END OF ONE STRAP AND THE NON-RATCHET END OF THE SECOND STRAP TO THE TIEDOWN ANCHOR, PRIOR TO RATCHETING STRAPS TIGHT.
5. IF THE WEB STRAP TIEDOWN ASSEMBLIES BEING USED DO NOT HAVE SWIVEL HOOKS ON EACH END, ASSURE THAT ALL TWISTS ARE OUT OF STRAP PRIOR TO ATTACHING HOOKS TO TIEDOWN ANCHORS.
6. WHEN TRANSPORTING LESS THAN FULL LOADS ON TRUCKS AND/OR SEMITRAILERS, DO NOT POSITION PALLETS OR OTHER ITEMS OF LADING, WITHIN FIVE FEET OF AFT END, IF POSSIBLE, AS THIS IS THE ROUGHEST RIDING AREA IN/ON THE VEHICLE.
7. WHEN USING WEB STRAP TIEDOWN ASSEMBLIES THAT HAVE THE RATCHET AND NON-SWIVEL HOOK ON THE END OF THE STRAP, IT MAY NOT BE POSSIBLE TO PROPERLY OPERATE THE RATCHET IF THE SPACE BETWEEN THE LOAD AND THE VEHICLE SIDE WALL IS LESS THAN 12" AND THE STRAP IS POSITIONED AT A STEEP, NEAR VERTICAL ANGLE. IF THE RATCHET CANNOT BE PROPERLY OPERATED TO ATTAIN A TIGHT STRAP, USE ONE OR MORE OF THE FOLLOWING METHODS.
 - A. HOOK THE RATCHET ENDS OF TWO WEB STRAP TIEDOWN ASSEMBLIES TOGETHER. POSITION THE RATCHETS ON TOP OF THE PALLETIZED UNITS, AND ATTACH THE NON-RATCHET HOOK END OF EACH STRAP TO A TIEDOWN ANCHOR ON EACH SIDE OF THE VEHICLE. MAKE SURE THERE IS A MINIMUM OF ONE-AND-ONE-HALF WRAPS OF STRAP ON ONE RATCHET. THEN TAKE UP EXCESS SLACK IN REMAINING RATCHET AND RATCHET TIGHT. THIS METHOD REQUIRES TWO WEB STRAP TIEDOWN ASSEMBLIES IN LIEU OF ONE STRAP AT EACH LOCATION A STRAP IS POSITIONED OVER THE TOP OF A LOAD.
 - B. IF A MAXIMUM LOAD IS NOT REQUIRED, THE PALLETIZED UNITS CAN BE POSITIONED ONE WIDE, DOWN THE CENTER OF THE VEHICLE LENGTH, IN LIEU OF TWO WIDE, OR QUANTITY OF ITEMS CAN BE REDUCED TO PROVIDE MORE ROOM BETWEEN LADING AND SIDE WALL OF VEHICLE.
 - C. ONE PALLETIZED UNIT HAVING A LENGTH OF 40" OR LESS CAN BE POSITIONED Laterally ADJACENT TO THE PALLETIZED UNIT HAVING A LENGTH OF 43" OR MORE, TO REDUCE THE TOTAL LOAD WIDTH.
 - D. WHEN LOADING Laterally ADJACENT PALLETIZED UNITS ACROSS THE WIDTH OF A VEHICLE HAVING SIDE WALLS, RATCHET OPERATING SPACE CAN BE GAINED BY ATTACHING NON-RATCHET ENDS OF STRAP TO TIEDOWN ANCHORS IN SIDE WALL AND THEN POSITIONING THE PALLETIZED UNITS AS CLOSE TO THAT SIDE WALL AS POSSIBLE, LEAVING EXCESS SPACE BETWEEN THE LOAD AND THE SIDE WALL ON THE OPPOSITE SIDE OF THE VEHICLE WHERE THE RATCHET WILL BE LOCATED. THIS METHOD MAY ALSO BE USED IN VEHICLES HAVING TIEDOWN ANCHORS LOCATED ON THE FLOOR ALONG EACH SIDE OF THE VEHICLE. AFTER ATTACHING NON-RATCHET ENDS OF STRAP TO TIEDOWN ANCHORS IN FLOOR, POSITION THE PALLETIZED UNITS AS CLOSE TO THE TIEDOWN ANCHORS ON THAT SIDE AS POSSIBLE.
 - E. A WEB STRAP ASSEMBLY, SUCH AS NSN 5340-01-089-4997, HAVING A SHORT LENGTH OF STRAP (AT LEAST 15") BETWEEN THE RATCHET AND THE HOOK END MAY BE USED. THIS TYPE OF WEB STRAP POSITIONS THE RATCHET ABOVE THE SIDE WALLS IN CARGO TRUCKS, AND ALLOWS FOR EASY OPERATION OF THE RATCHET HANDLE.
8. THE M871 SEMITRAILER IS EQUIPPED WITH THREE DIFFERENT TYPES OF TIEDOWN FITTINGS. TYPE I IS A REMOVABLE TIEDOWN FITTING THAT HAS ONE RING AND IS POSITIONED BY REACHING UNDER THE FLOOR OF THE TRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT INTO POSITION (NOTE THAT THIS REMOVABLE TIEDOWN FITTING IS ALSO USED ON THE M872 SEMITRAILER). THERE ARE TEN LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE II IS A REMOVABLE TIEDOWN FITTING THAT HAS TWO RINGS AND IS POSITIONED BY DEPRESSING A SPRING LOCK LEVER AND INSERTING IT INTO A 1-3/4" DIAMETER HOLE FROM THE TOP. ASSURE THAT THE TIEDOWN FITTING IS FIRMLY SEATED AND ROTATED SO THE SPRING LOCK LEVER IS POINTING AWAY FROM THE DIRECTION OF PULL ON THE ATTACHED WEB STRAP TIEDOWN ASSEMBLY. THERE ARE TEN LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE III IS A FIXED TIEDOWN FITTING THAT HAS ONE RING AND IS RECESSED INTO THE FLOOR. THERE ARE FIVE OF THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE I TIEDOWN FITTINGS MAY BE USED, IF AVAILABLE, WHEN THERE IS AN INSUFFICIENT QUANTITY OF TYPE II TIEDOWN FITTINGS TO SECURE THE LOAD. SEE "TIEDOWN ANCHOR DETAILS" ON PAGE 44.
9. THE M872 SEMITRAILER IS EQUIPPED WITH TWO DIFFERENT TYPES OF TIEDOWN FITTINGS. TYPE I IS A REMOVABLE TIEDOWN FITTING THAT HAS ONE RING AND IS POSITIONED BY REACHING UNDER THE FLOOR OF THE TRAILER, INSERTING THE TIEDOWN FITTING UP THROUGH THE HOLE AND ROTATING IT INTO POSITION (NOTE THAT THIS REMOVABLE TIEDOWN FITTING MAY ALSO BE USED ON THE M871 SEMITRAILER). THERE ARE TWENTY-EIGHT LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M872 SEMITRAILER. HOWEVER, THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. THE SECOND TYPE OF TIEDOWN FITTING IS THE "TEE-HOOK". THIS IS A REMOVABLE TIEDOWN FITTING EQUIPPED WITH ONE ELONGATED RING AND IS POSITIONED BY INSERTING IT INTO ONE OF THE ELONGATED SLOTTED HOLES WHICH ARE AT A 45° ANGLE TO THE SIDE OF THE TRAILER. THERE ARE FIVE LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M872 SEMITRAILER. HOWEVER, THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. ASSURE THAT THE TIEDOWN FITTING IS FIRMLY SEATED AND ROTATED APPROXIMATELY 45° TO ENGAGED POSITION BEFORE ATTACHING THE WEB STRAP TIEDOWN ASSEMBLY. SEE "TIEDOWN ANCHOR DETAILS" ON PAGE 44.
10. WHEN REFERRING TO THE PALLET UNIT LENGTH OR UNIT WIDTH, THE 40" OR 35" DIMENSION OF THE PALLET BASE CONSTITUTES THE PALLET UNIT LENGTH AND THE 48" OR 45-1/2" DIMENSION CONSTITUTES THE PALLET UNIT WIDTH. WHEN REFERRING TO THE SKIDDED UNIT LENGTH OR UNIT WIDTH, THE LENGTH OF THE BOXES CONSTITUTES THE WIDTH OF THE SKIDDED UNIT. SEE THE TYPICAL UNIT DETAILS ON PAGE 5.
11. SMALL QUANTITIES OF LOOSE BOXES, PROPELLING CHARGE CONTAINERS, AND COMPLETE ROUND CONTAINERS MAY BE SECURED AND TRANSPORTED AS SHOWN IN THE LOADS ON PAGES 38 THRU 41.
12. LARGE QUANTITIES OF LOOSE BOXES, PROPELLING CHARGE CONTAINERS, AND COMPLETED ROUND CONTAINERS MUST BE PALLETIZED AS INSTRUCTED IN THE FOLLOWING DRAWINGS.
 - AMC DRAWING 19-48-4116-20PA1002
 - AMC DRAWING 19-48-4138-20PA1000
 - AMC DRAWING 19-48-4042-20PM1001
 - AMC DRAWING 19-48-4079-20PM1002
13. WHEN SECURING ITEMS IN THE 1-1/4-TON M998 HMMWV, SEE "NOTE ●" ON PAGE 9.
14. WHEN POSSIBLE POSITION ALL HOLD DOWN STRAP RATCHETS ON SAME SIDE OF LOAD TO AVOID SLIDING AND/OR TWISTING THE LOAD OFF CENTER WHEN STRAPS ARE BEING RATCHETED TIGHT.
15. ASSURE THAT ALL UNITIZING STRAPS ARE IN VERTICAL ALIGNMENT.
16. PRIOR TO LOADING THE VEHICLE, DETERMINE THE QUANTITY OF PALLETIZED/SKIDDED UNIT(S) TO BE LOADED IN/ON THE VEHICLE. SELECT THE BEST METHOD OF SECURING THE UNIT(S) FROM THE METHOD SHOWN WITHIN THIS DRAWING. NOTE: A COMBINATION OF THE METHODS SHOWN WITHIN THIS DRAWING MAY BE USED ON/IN THE SAME TACTICAL VEHICLE.
17. THROUGHOUT THIS PROCEDURAL DRAWING WHICH INCLUDES PROCEDURES FOR BOTH PALLETIZED UNITS AND SKIDDED UNITS, THE GUIDANCE SHOWN FOR ONE TYPE OF UNIT MAY ALSO BE USED FOR THE OTHER TYPE UNIT.

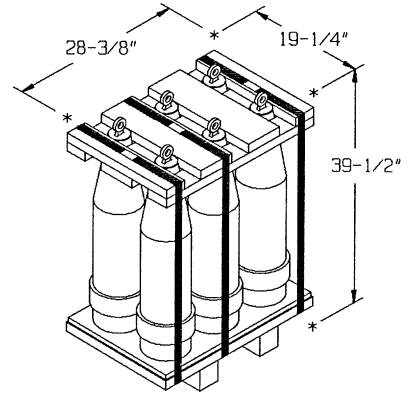
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**CARTRIDGE, 40MM, 54 BOXES
PALLETIZED UNIT**

(1,506 POUNDS)

SEE LOAD ON PAGE 14.

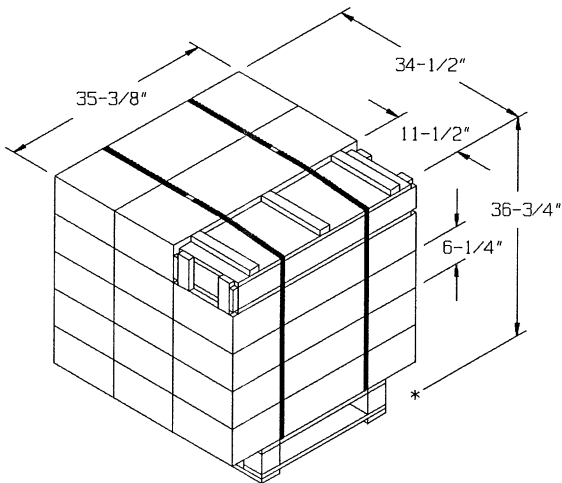


**8-INCH SEPARATE LOADING
PROJECTILES, SIX PER PALLET**

(1,253 POUNDS)

SEE LOAD ON PAGES 16, 18, 20, 24 AND 26.

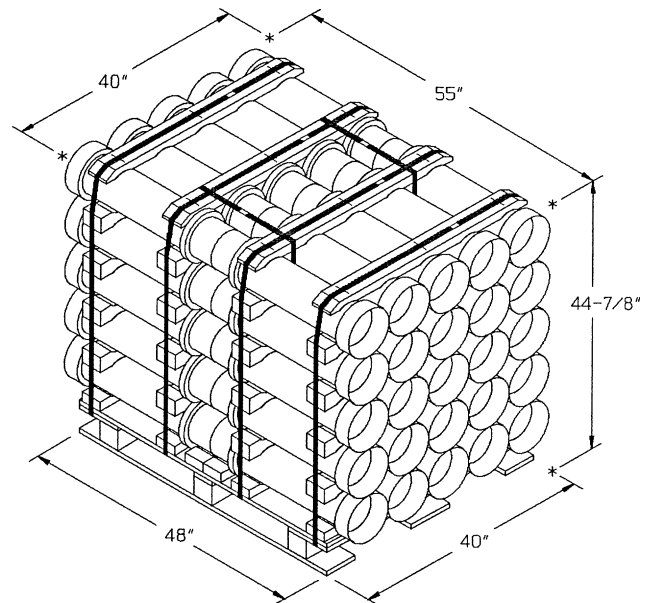
NOTE:
THE ITEMS SHOWN ON THIS PAGE WERE SELECTED
AS TYPICAL AND ARE REPRESENTATIVE OF UNIT
BASIC LOAD ITEMS SHOWN WITHIN THIS DOCUMENT.



**CARTRIDGE, 105MM, 15 BOXES
SKIDDED UNIT**

(1,955 POUNDS)

SEE LOAD ON PAGES 20, 22, 24 AND 26.

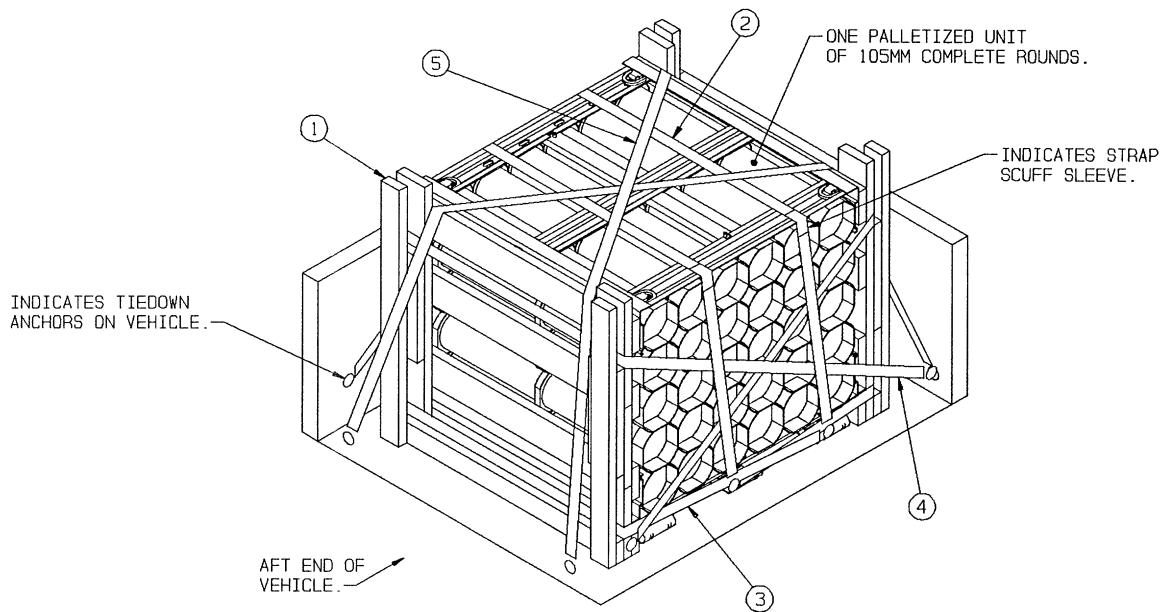


**PROP CHARGE, 155MM, 50 PER
PALLETIZED UNIT**

(1,766 POUNDS)

SEE LOAD ON PAGE 20.

TYPICAL LADING ITEMS



ISOMETRIC VIEW

KEY NUMBERS

- ① END GATE ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 45.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, OVER TOP OF PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "J" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE BOTTOM END OF PALLET UNIT BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY A, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "J" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF PALLET UNIT BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY A, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON END OF VEHICLE, DIAGONALLY OVER TOP OF PALLET UNIT, TO A TIEDOWN ANCHOR ON OPPOSITE ENDWALL OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

SPECIAL NOTES:

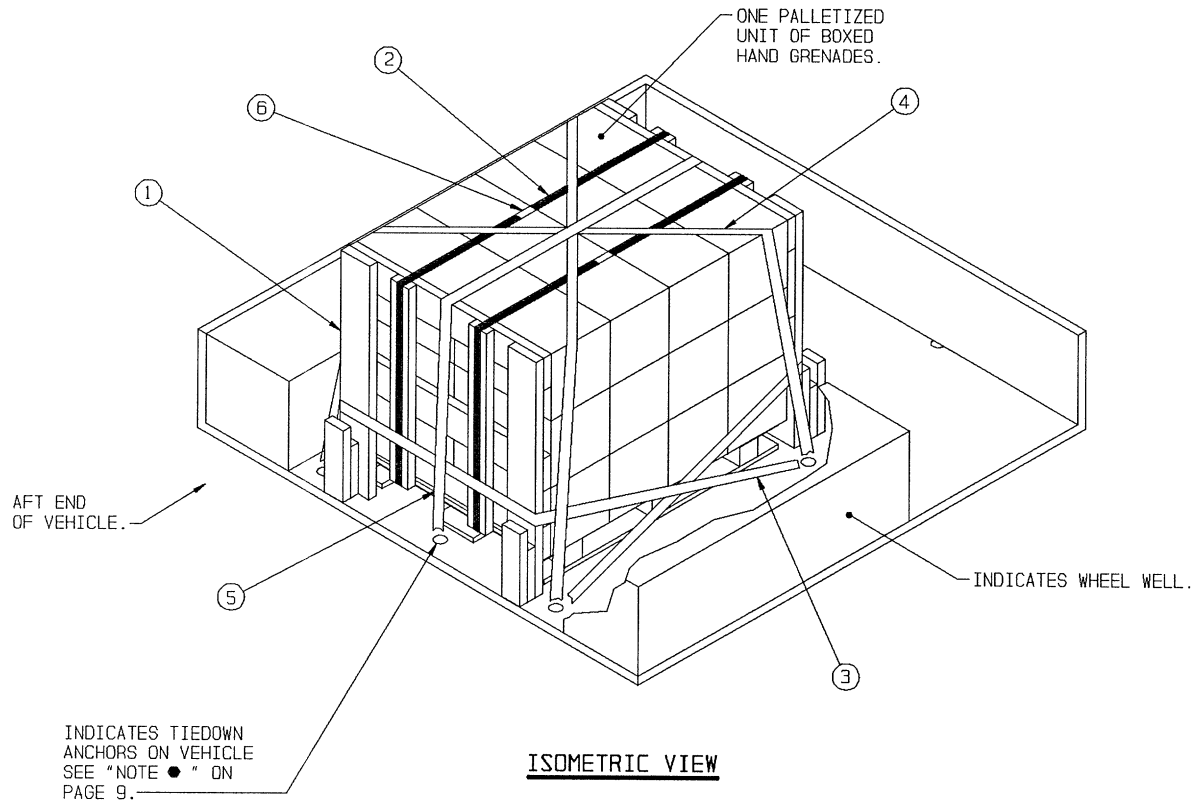
1. A TYPICAL LOAD OF ONE PALLETIZED UNIT IS SHOWN LOADED IN A 1-1/2-TON M332 AMMUNITION TRAILER HAVING INSIDE DIMENSIONS OF 55-3/8" WIDE BY 68-1/2" LONG, AND EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS ON SIDEWALLS, ENDWALLS OR FLOOR MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A MAXIMUM LOAD OF ONE PALLETIZED UNIT OF 105MM COMPLETE ROUNDS HAVING DIMENSIONS OF 45-5/8" WIDE BY 43-1/2" LONG BY 40-5/8" HIGH AND WEIGHING 2,733 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED OR SKIDDED UNIT OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHT FOLLOW THESE SAME PROCEDURES.
4. IF THE VEHICLE BEING LOADED IS NOT EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS HAVING A STRENGTH OF 5,000 POUNDS, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGE 10. OMIT END GATE ASSEMBLIES A AND WEB STRAP TIEDOWN ASSEMBLIES. POSITION THE PALLETIZED UNIT TIGHT AGAINST THE FORWARD ENDWALL. FABRICATE FLOOR LINE REAR BLOCKING AND SIDE BLOCKING ASSEMBLIES. ENCIRCLE THE BED OF THE VEHICLE AND PALLETIZED UNIT WITH 1-1/4" STEEL STRAPPING AT TWO LOCATIONS. POSITION STEEL EDGE PROTECTORS UNDER 1-1/4" STEEL STRAPPING AT SHARP EDGES OF PALLET AND BED OF VEHICLE.
5. A TOTAL OF EIGHT WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	28	19
2" X 6"	44	44
NAILS	NO. REQD	POUNDS
10d (3")	100	1-3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	1	2,733 LBS
DUNNAGE		128 LBS
<u>TOTAL WEIGHT</u>		<u>2,861 LBS (APPROX)</u>



KEY NUMBERS

- ① END GATE ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 45.
- ② BUNDLING STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (2 REQD). INSTALL TO ENCIRCLE THE PALLETIZED UNIT UNDER THE TOP DECK OF PALLET AND END GATE ASSEMBLIES B AS SHOWN. SEE SPECIAL NOTE 5 ON PAGE 9.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON FLOOR OF VEHICLE, AROUND BOTTOM OF END GATE ASSEMBLY B, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET TIGHT BOTH STRAPS MARKED ④ AT THE SAME TIME. SEE GENERAL NOTES "F", "G" AND "J" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY 2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON FLOOR OF VEHICLE, DIAGONALLY OVER TOP OF PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "J" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON FLOOR OF VEHICLE, OVER TOP OF PALLETIZED UNIT AND END GATE ASSEMBLY B, TO A TIEDOWN ANCHOR ON OPPOSITE END OF VEHICLE, TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑥ SEAL FOR 1-1/4" STRAPPING (2 REQD). DOUBLE CRIMP EACH SEAL. SEE SPECIAL NOTE 5 ON PAGE 9.

NOTE ● :

APPROVED METHODS OF SECURING AMMUNITION AND OTHER ITEMS IN THE HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV).

- A. THE CARGO AREA OF THE HMMWV IS EQUIPPED WITH EITHER EIGHT ORIGINAL OR MODIFIED TIEDOWN ANCHORS. ONLY THE SIX TIEDOWN ANCHORS LOCATED BETWEEN THE WHEEL WELLS MAY BE USED. HOWEVER, THESE ARE FIXED TIEDOWN ANCHORS DESIGNED FOR LONGITUDINAL FRONT-TO-REAR PULL AND ARE LIMITED TO THAT DIRECTION ONLY. NOTE THAT SIDE LOADING ON THE ORIGINAL OR MODIFIED TIEDOWN ANCHOR WILL CAUSE DAMAGE TO THE TIEDOWN ANCHOR AND/OR CAUSE THE TIEDOWN ANCHOR BOLT TO BECOME LOOSE. THE TWO TIEDOWN ANCHORS AT THE FORWARD END OF THE CARGO AREA ARE LOCATED UNDER THE FORWARD BULKHEAD AND CANNOT BE USED FOR TIEDOWN OF AMMUNITION AS THEY ARE NOT IN LONGITUDINAL ALIGNMENT WITH ANY OTHER TIEDOWN ANCHORS.
- B. CAUTION: THE HMMWVS EQUIPPED WITH ORIGINAL TIEDOWN ANCHORS MUST NOT BE USED FOR RAIL TRANSPORT OF AMMUNITION. THE ORIGINAL TIEDOWN ANCHORS CAN BE IDENTIFIED BY THE HEX HEAD BOLT SECURING THE TIEDOWN ANCHOR TO THE FLOOR OF THE VEHICLE. THE ORIGINAL TIEDOWN ANCHORS SHOULD BE REPLACED WITH THE MODIFIED TIEDOWN ANCHORS AS INSTRUCTED IN PARAGRAPH C OR MODIFIED BY USING EYE BOLTS AS INSTRUCTED IN PARAGRAPH D.
- C. THE HMMWVS EQUIPPED WITH MODIFIED TIEDOWN ANCHORS CAN BE IDENTIFIED BY THE PHILLIPS HEAD SCREW SECURING THE TIEDOWN ANCHOR TO THE FLOOR OF THE VEHICLE, IN LIEU OF A HEX HEAD BOLT. THE STATIC RATED WORKING LOAD OF THE MODIFIED TIEDOWN ANCHORING ASSEMBLY IS 2,500 POUNDS APPLIED LONGITUDINALLY ONLY. SIDE LOADING WILL AGAIN CAUSE DAMAGE TO THE ANCHOR AND/OR CAUSE THE ANCHOR SCREW TO BECOME LOOSE. THESE TIEDOWN ANCHORS MAY BE USED TO SECURE LOOSE AND/OR PALLETIZED AMMUNITION AND/OR OTHER ITEMS FOR TRANSPORT BY RAIL AND/OR SHIP. THE HOLD-DOWN WEB STRAPS MAY BE POSITIONED AT AN ANGLE OF 0 DEGREES TO 90 DEGREES. SINCE JANUARY 1990 ALL NEW PRODUCTION HMMWVS HAVE THE MODIFIED TIEDOWN ANCHOR FACTORY INSTALLED (ALL VEHICLES WITH SERIAL NO. 100,000 AND ABOVE). IF THE VEHICLE BEING USED IS NOT EQUIPPED WITH THE MODIFIED TIEDOWN ANCHOR IT IS THE RESPONSIBILITY OF THE USING UNIT TO ORDER THEM FROM GOVERNMENT SUPPLY (NSN 3990-01-314-8393, P/N 12342077). TECHNICAL MANUAL 9-2320-280-20P DELINEATES THIS NEWER MODIFIED TIEDOWN ANCHOR.
- D. THE HMMWVS EQUIPPED WITH ORIGINAL TIEDOWN ANCHORS MAY ALSO BE MODIFIED BY USING EYE BOLTS IN LIEU OF THE ORIGINAL TIEDOWN ANCHORS. THESE INTERIM PROCEDURES MAY BE USED TEMPORARILY UNTIL THE MODIFIED TIEDOWN ANCHORS ARE ORDERED AND INSTALLED. REMOVE THE ORIGINAL TIEDOWN ANCHORS AND REPLACE WITH 1/2" SHOULDER EYE BOLTS, MSS1937, SIZE 1/2", 13 UNC-2A, NSN 5306-00-050-0347. THE EYE BOLTS ARE TO BE TIGHTENED TO 75 FOOT-POUNDS. THE FINAL ORIENTATION OF THE EYE BLOT SHOULD HAVE THE DIAMETER OF THE EYE POSITIONED PARALLEL TO THE VEHICLE SIDEWALL. THESE TIEDOWN ANCHORS MAY BE USED TO SECURE LOOSE AND/OR PALLETIZED AMMUNITION AND/OR OTHER ITEMS FOR TRANSPORT BY RAIL AND/OR SHIP. THE HOLD-DOWN WEB STRAPS MAY BE POSITIONED AT AN ANGLE OF 0 DEGREES TO 90 DEGREES.

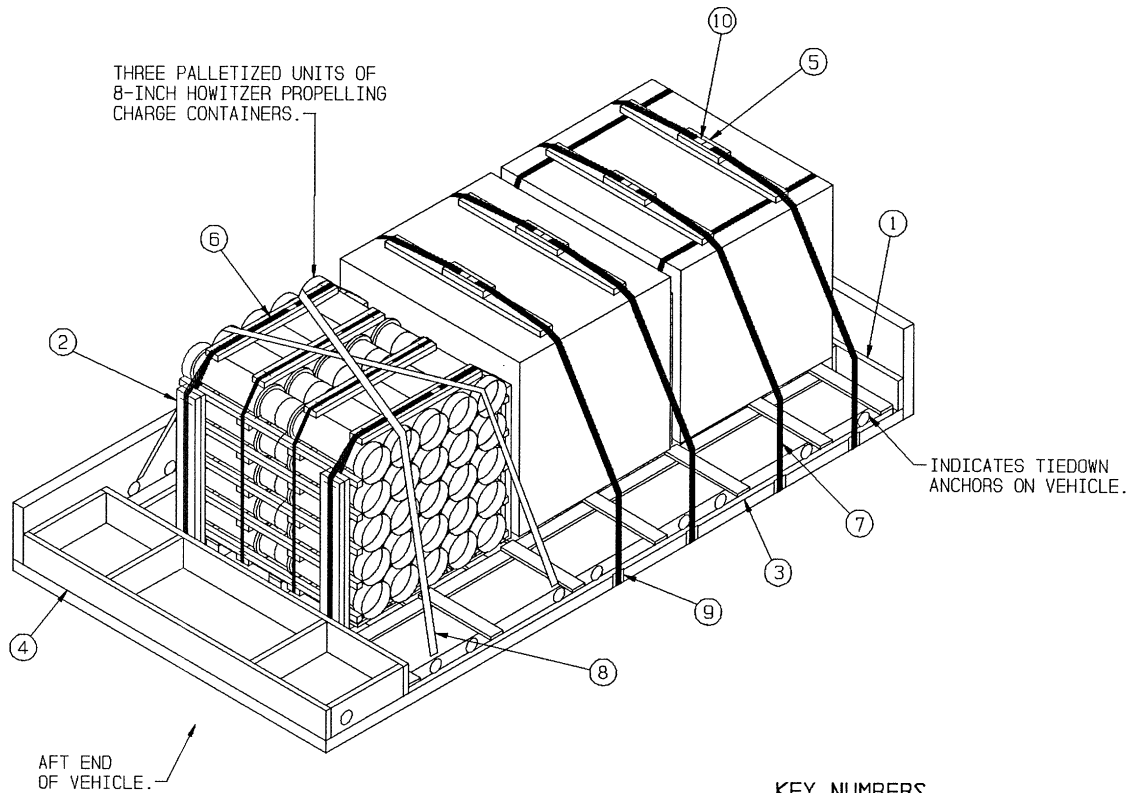
SPECIAL NOTES:

1. A TYPICAL LOAD OF ONE PALLETIZED UNIT IS SHOWN LOADED IN A 1-1/4-TON M998 HMMWV HAVING INSIDE DIMENSIONS OF 84" WIDE BY 83-1/4" LONG. CAUTION: SEE "NOTE ●" ON THIS PAGE.
2. THE PROCEDURES SHOWN ON PAGE 8 ARE FOR THE HMMWV ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A MAXIMUM LOAD OF ONE PALLETIZED UNIT OF BOXED AMMUNITION HAVING DIMENSIONS OF 45-3/4" WIDE BY 45" LONG BY 39-1/4" HIGH AND WEIGHING 1,309 POUNDS IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES. NOTE THAT THE PALLETIZED UNIT SHOWN IS POSITIONED WITH THE 45" LENGTH DIMENSION ACROSS THE VEHICLE WIDTH AND THEREFORE STRAPS MARKED ③ AND ④ MEET THE LONGITUDINAL FRONT-TO-REAR PULL CRITERIA IN "NOTE ●" ON THIS PAGE.
4. WHEN LOADING THE PALLETIZED UNIT IN THE VEHICLE, CENTER IT LONGITUDINALLY AND LATERALLY BETWEEN THE SIX TIEDOWN ANCHORS LOCATED BETWEEN THE VEHICLE WHEEL WELLS.
5. WEB STRAP TIEDOWN ASSEMBLIES MAY BE USED, IN LIEU OF THE 1-1/4" STEEL STRAPPING, TO SECURE THE END GATE ASSEMBLIES TO THE PALLETIZED UNIT, IF DESIRED.
6. A TOTAL OF FIVE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	18	12
2" X 6"	32	32
NAILS	NO. REQD	POUNDS
10d (3")	96	1-1/2
STEEL STRAPPING, 1-1/4"	61.00' REQD	9.00 LBS
SEAL FOR 3/4" STRAPPING	2 REQD	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	1	1,309 LBS
DUNNAGE		99 LBS
TOTAL WEIGHT		1,408 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① BEARING PIECE A (1 REQD). SEE THE DETAIL ON PAGE 50. POSITION ON EDGE AGAINST THE FORWARD END WALL AS SHOWN.
- ② PROPELLING CHARGE RETAINER. 2" X 6" BY LENGTH-TO-SUIT (DOUBLED) (8 REQD). LAMINATE TOGETHER W/5-10d NAILS. SEE SPECIAL NOTE 4 ON PAGE 11.
- ③ SIDE BLOCKING ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 51. SEE SPECIAL NOTE 5 ON PAGE 11.
- ④ REAR BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 51.
- ⑤ STRAPPING BOARD ASSEMBLY A (4 REQD). SEE THE DETAIL ON PAGE 49. POSITION TO CENTER UNDER THE HOLD-DOWN STEEL STRAPPING MARKED ⑦.
- ⑥ BUNDLING STRAP. 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (2 REQD). INSTALL EACH STRAP TO ENCIRCLE THE PALLETIZED UNIT UNDER THE TOP DECK OF PALLET AND THE PROPELLING CHARGE RETAINER PIECES. SECURE IN PLACE BY DRIVING 10d NAILS INTO THE PROPELLING CHARGE RETAINER PIECES ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE.
- ⑦ HOLD-DOWN STRAP. 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL EACH STRAP TO ENCIRCLE VEHICLE, PALLETIZED UNIT AND STRAPPING BOARD ASSEMBLY A, AS SHOWN. SECURE IN PLACE BY DRIVING 10d NAILS INTO STRAPPING BOARD ASSEMBLY A ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTES 6 AND 7 ON PAGE 11 AND GENERAL NOTE "U" ON PAGE 2.
- ⑧ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 7 ON PAGE 11 AND GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑨ EDGE PROTECTOR. STEEL. FOR 1-1/4" STRAPPING (8 REQD). POSITION UNDER STEEL STRAPPING PIECE MARKED ⑦ AT SHARP CORNERS WHERE STRAP PASSES UNDER CARGO BED OF VEHICLE.
- ⑩ SEAL FOR 1-1/4" STRAPPING (10 REQD. ONE PER STRAP MARKED ⑥ AND TWO PER STRAP MARKED ⑦). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

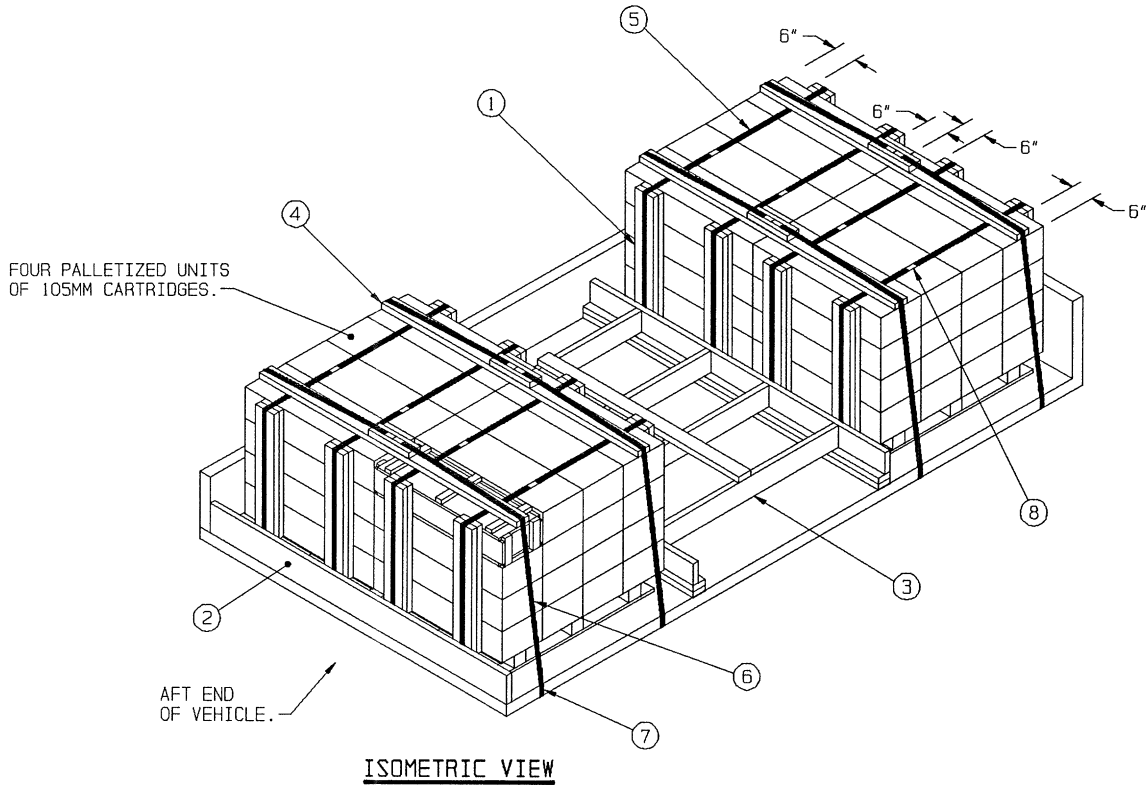
SPECIAL NOTES:

1. A TYPICAL LOAD OF THREE PALLETIZED UNITS IS SHOWN LOADED IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 88" WIDE BY 168" LONG, AND EQUIPPED WITH OR WITHOUT WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A LOAD OF THREE PALLETIZED UNITS OF 8-INCH HOWITZER PROPELLING CHARGE CONTAINERS HAVING DIMENSIONS OF 52-9/16" WIDE BY 44" LONG BY 49" HIGH AND WEIGHING 1,779 POUNDS EACH IS SHOWN AS A TYPICAL ONE WIDE LOAD. IF LOADING PALLETIZED AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES IF A ONE WIDE LOAD IS DESIRED.
4. THE PROPELLING CHARGE RETAINER PIECES MARKED ② MUST BE LONG ENOUGH TO CONTACT THE BETWEEN LAYER DUNNAGE IN EACH LAYER AND THE TOP DECK BOARDS OF THE PALLET. POSITION EACH TO CENTER ON THE OUTSIDE CROSS PIECES OF THE PALLETIZED UNIT DUNNAGE ASSEMBLIES AS SHOWN. PROPELLING CHARGE RETAINER PIECES ARE ONLY REQUIRED ON EACH SIDE OF THE END PALLETIZED UNITS WITHIN THE LOAD. THE PROPELLING CHARGE RETAINER PIECES MUST BEAR AGAINST PIECES MARKED ① AND ④.
5. POSITION THE SIDE BLOCKING ASSEMBLY A WITH THE 2" X 4" BEARING PIECE AGAINST THE SIDEWALL OF THE VEHICLE AND THE 1" X 4" BEARING PIECE ON TOP OF THE BOTTOM DECK BOARDS OF THE PALLET, AND AGAINST THE PALLET POST. IF THE PALLETIZED UNIT IS TURNED 90° FABRICATE THE SIDE BLOCKING ASSEMBLY A USING A 2" X 4" BEARING PIECE ON EACH SIDE, IN LIEU OF THE 1" X 4" BEARING PIECE ON ONE SIDE AND 2" X 4" BEARING PIECE ON THE OPPOSITE SIDE. FABRICATE TO FIT BETWEEN THE SIDEWALL OF THE VEHICLE AND PALLET.
6. WHEN THREADING THE STEEL STRAPPING UNDER THE BED OF THE VEHICLE SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES, AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH PALLETIZED UNIT.
7. THE LOAD SHOWN DEPICTS TWO METHODS OF SECURING THE PALLETIZED UNIT TO THE VEHICLE. IF THE VEHICLE BEING LOADED IS EQUIPPED WITH TIEDOWN ANCHORS THE LOAD MAY BE SECURED BY POSITIONING TWO WEB STRAP TIEDOWN ASSEMBLIES MARKED ⑧ OVER THE TOP OF EACH PALLETIZED UNIT, AS SHOWN ON THE REAR MOST UNIT IN THE LOAD ON PAGE 10, IN LIEU OF STEEL STRAPPING MARKED ⑦. IF THE VEHICLE BEING LOADED IS NOT EQUIPPED WITH TIEDOWN ANCHORS THE LOAD MAY BE SECURED BY POSITIONING TWO STEEL STRAPS MARKED ⑦ OVER THE TOP OF EACH PALLETIZED UNIT, AS SHOWN ON THE TWO FORWARD UNITS IN THE LOAD ON PAGE 10, IN LIEU OF WEB STRAP TIEDOWN ASSEMBLIES MARKED ⑧.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	48	16
2" X 4"	51	34
2" X 6"	51	51
2" X 8"	29	39
NAILS	NO. REQD	POUNDS
6d (2")	84	1/2
10d (3")	86	1-1/2
STEEL STRAPPING, 1-1/4" - 122.00' REQD - - 17.42 LBS		
SEAL FOR 1-1/4" STRAPPING - - 10 REQD - - - 1/2 LB		
STAPLE, 15/16" X 1-1/4" - - - 16 REQD - - - - NIL		
EDGE PROTECTOR, 2" - - - - - 8 REQD - - - - 3 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	3	5,337 LBS
DUNNAGE		303 LBS
TOTAL WEIGHT		5,640 LBS (APPROX)



KEY NUMBERS

- ① BOX RETAINER, 2" X 6" BY PALLET UNIT HEIGHT MINUS 6" (DOUBLED) (16 REQD). LAMINATE TOGETHER W/5-10d NAILS. POSITION AS SHOWN. SEE SPECIAL NOTE 4 ON PAGE 13.
- ② BEARING PIECE B (1 REQD). SEE THE DETAIL ON PAGE 51. POSITION ON EDGE BETWEEN PALLET UNITS AND TAIL GATE OF VEHICLE AS SHOWN.
- ③ SPACER ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 52.
- ④ STRAPPING BOARD ASSEMBLY B (4 REQD). SEE THE DETAIL ON PAGE 49. POSITION ON TOP OF THE LOAD AS SHOWN ABOVE. SEE SPECIAL NOTE 6 ON PAGE 13.
- ⑤ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (8 REQD). INSTALL EACH STRAP TO ENCIRCLE THE PALLETIZED UNIT AND TWO BOX RETAINER PIECES. THREAD STRAPPING UNDER TOP DECK OF PALLET. SECURE IN PLACE BY DRIVING 10d NAILS INTO THE BOX RETAINER PIECES ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 4 ON PAGE 13.
- ⑥ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL EACH STRAP TO ENCIRCLE VEHICLE, PALLETIZED UNIT AND STRAPPING BOARD ASSEMBLY B, AS SHOWN. SECURE IN PLACE BY DRIVING 10d NAILS INTO STRAPPING BOARD ASSEMBLY B ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 5 ON PAGE 13 AND GENERAL NOTE "U" ON PAGE 2.
- ⑦ EDGE PROTECTOR, STEEL, FOR 1-1/4" STEEL STRAPPING (8 REQD). POSITION UNDER STEEL STRAPPING PIECE MARKED ⑤ AT SHARP CORNERS WHERE STRAP PASSES UNDER CARGO BED OF VEHICLE.
- ⑧ SEAL FOR 1-1/4" STRAPPING (16 REQD, ONE PER STRAP MARKED ⑤ AND TWO PER STRAP MARKED ⑥). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

SPECIAL NOTES:

1. A TYPICAL LOAD OF FOUR PALLETIZED UNITS IS SHOWN LOADED IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 88" WIDE BY 168" LONG, AND NOT EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A MAXIMUM LOAD OF FOUR PALLETIZED UNITS OF 105MM CARTRIDGES HAVING DIMENSIONS OF 57" WIDE BY 44" LONG BY 40-1/2" HIGH AND WEIGHING 2,385 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. THE BOX RETAINER, PIECES MARKED ① MUST NOT BE SECURED TO THE PALLETIZED UNITS UNTIL AFTER THE PALLET UNITS ARE POSITIONED IN THE VEHICLE TO PREVENT THE FORKLIFT TINES FROM BREAKING THE STEEL STRAPPING. THE BOX RETAINER PIECES ARE REQUIRED TO PREVENT LAYERS OF BOXES FROM MOVING FORWARD AND/OR OUT OF ALIGNMENT DURING RAIL TRANSPORT.
5. WHEN THREADING THE HOLD DOWN STRAPPING UNDER THE BED OF THE VEHICLE, SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES, AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH TWO LATERALLY ADJACENT PALLETIZED UNITS.
6. THE STRAPPING BOARD ASSEMBLY B, MUST BE POSITIONED SO THE HOLD DOWN STRAPPING IS CENTERED ON ITS WIDTH. THE STRAPPING BOARD ASSEMBLY MUST NOT EXTEND PASS THE OUTER-MOST CLEATS ON THE PALLET UNIT.

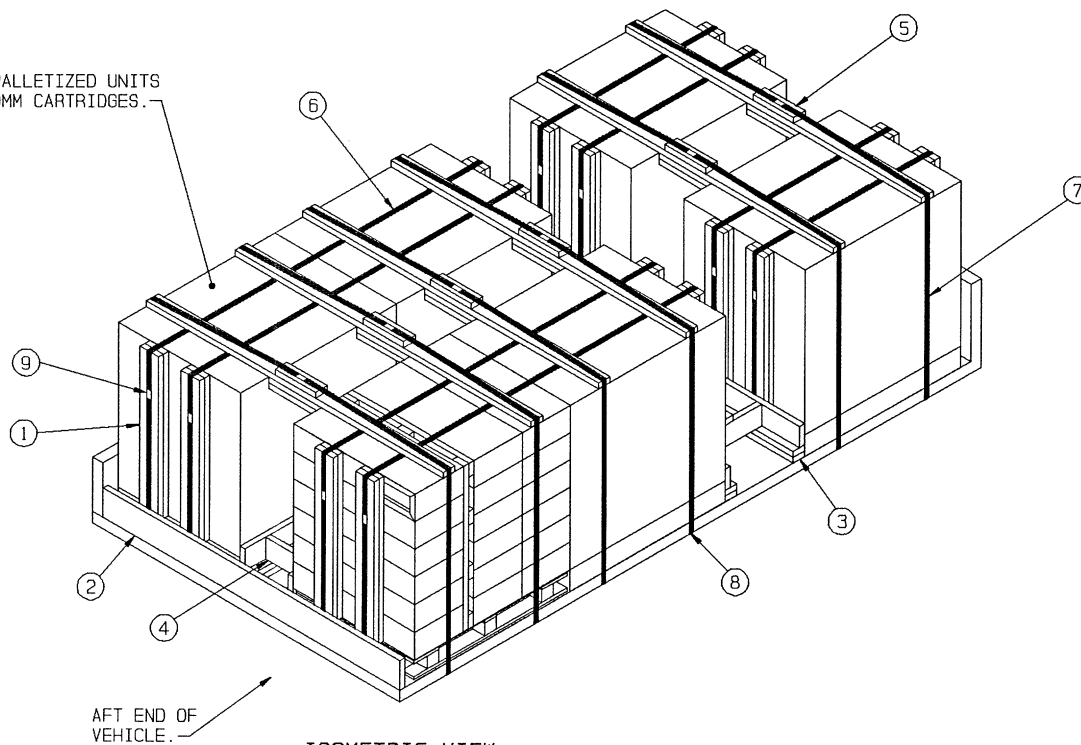
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	70	47
2" X 6"	125	125
2" X 8"	7	9
NAILS	NO. REQD	POUNDS
10d (3")	200	3-1/4
STEEL STRAPPING, 1-1/4" - 213.00' REQD - - 30.00 LBS		
SEAL FOR 1-1/4" STRAPPING - - 16 REQD - - - 3/4 LB		
EDGE PROTECTOR, 1-1/4" - - - - 8 REQD - - 1-1/2 LBS		

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT - - - - -	4 - - - - -	9,540 LBS
DUNNAGE - - - - -	- - - - -	398 LBS
TOTAL WEIGHT - - - - -		9,938 LBS (APPROX)

SIX PALLETIZED UNITS
OF 40MM CARTRIDGES.



ISOMETRIC VIEW

KEY NUMBERS

- ① BOX RETAINER, 2" X 6" BY PALLET UNIT HEIGHT MINUS 6" (DOUBLED) (16 REQD). LAMINATE TOGETHER W/5-10d NAILS. POSITION AT LOCATIONS SHOWN. SEE SPECIAL NOTE 4 ON PAGE 15.
- ② BEARING PIECE B (1 REQD). SEE THE DETAIL ON PAGE 51. POSITION ON EDGE AGAINST THE TAIL GATE AS SHOWN.
- ③ SPACER ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 52.
- ④ SPACER ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 52.
- ⑤ STRAPPING BOARD ASSEMBLY C (6 REQD). SEE THE DETAIL ON PAGE 49. POSITION TO CENTER UNDER THE HOLD-DOWN STEEL STRAPPING MARKED ⑦. SEE SPECIAL NOTE 6 ON PAGE 15.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (8 REQD). INSTALL EACH STRAP TO ENCIRCLE THE PALLETIZED UNIT(S) UNDER THE TOP DECK OF PALLET AND THE BOX RETAINER PIECES. SECURE IN PLACE BY DRIVING 10d NAILS INTO THE BOX RETAINER PIECES ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE.
- ⑦ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (6 REQD). INSTALL EACH STRAP TO ENCIRCLE VEHICLE, PALLETIZED UNIT AND STRAPPING BOARD ASSEMBLY B, AS SHOWN. SECURE IN PLACE BY DRIVING 10d NAILS INTO STRAPPING BOARD ASSEMBLY B ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 5 ON PAGE 15 AND GENERAL NOTE "U" ON PAGE 2.
- ⑧ EDGE PROTECTOR. STEEL. FOR 1-1/4" STEEL STRAPPING (12 REQD). POSITION UNDER STEEL STRAPPING PIECE MARKED ⑦ AT SHARP CORNERS WHERE STRAP PASSES UNDER CARGO BED OF VEHICLE.
- ⑨ SEAL FOR 1-1/4" STRAPPING (20 REQD. ONE PER STRAP MARKED ⑥ AND TWO PER STRAP MARKED ⑦). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

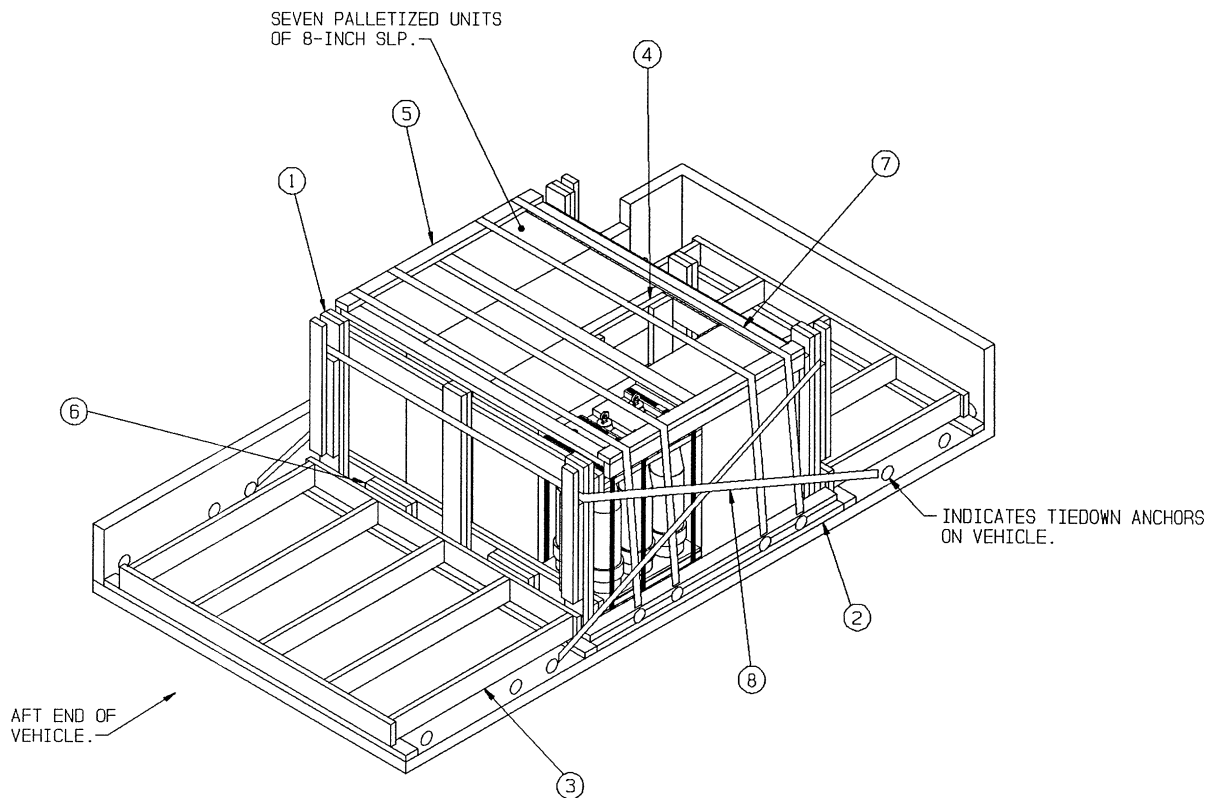
SPECIAL NOTES:

1. A TYPICAL LOAD OF SIX PALLETIZED UNITS IS SHOWN LOADED IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 88" WIDE BY 168" LONG, AND NOT EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A MAXIMUM LOAD OF SIX PALLETIZED UNITS OF 40MM CARTRIDGES HAVING DIMENSIONS OF 46-1/8" WIDE BY 36-3/16" LONG BY 47-7/8" HIGH AND WEIGHING 1,506 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. THE BOX RETAINER, PIECES MARKED ① MUST NOT BE SECURED TO THE PALLETIZED UNITS UNTIL AFTER THE PALLET UNITS ARE POSITIONED IN THE VEHICLE TO PREVENT THE FORKLIFT TINES FROM BREAKING THE STEEL STRAPPING. THE BOX RETAINER PIECES ARE REQUIRED TO PREVENT LAYERS OF BOXES FROM MOVING FORWARD AND/OR OUT OF ALIGNMENT DURING RAIL TRANSPORT.
5. WHEN THREADING THE HOLD-DOWN STRAPPING UNDER THE BED OF THE VEHICLE, SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH TWO LATERALLY ADJACENT PALLETIZED UNITS.
6. THE STRAPPING BOARD ASSEMBLY B. MUST BE POSITIONED SO THE HOLD-DOWN STRAPPING IS CENTERED ON ITS WIDTH.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	137	91
2" X 6"	98	98
2" X 8"	7	9
NAILS	NO. REQD	POUNDS
10d (3")	304	4-3/4
12d (3-1/4")	32	1-3/4
STEEL STRAPPING, 1-1/4" -	351.00'	REQD - - 50.00 LBS
SEAL FOR 1-1/4" STRAPPING - -	20	REQD - - - 1 LB
EDGE PROTECTOR, 1-1/4" - - -	12	REQD - - 1-3/4 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	6 - - - - -	9,036 LBS
DUNNAGE - - - - -	- - - - -	454 LBS
TOTAL WEIGHT - - - - -		9,490 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① END GATE ASSEMBLY C (2 REQD). SEE THE DETAIL ON PAGE 46.
- ② SIDE BLOCKING ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 52.
- ③ FORWARD/REAR BLOCKING ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 54.
- ④ OMITTED SLP PALLETIZED UNIT ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 53.
- ⑤ HOLD-DOWN ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 55.
- ⑥ FILL MATERIAL 2" X 6" X 12" (DOUBLED) (4 REQD). POSITION BETWEEN BOTTOM BEARING PIECES AND HORIZONTAL PIECE ON END GATE. CENTER ON JOINT BETWEEN PALLET UNITS. TOENAIL W/3-10d NAILS.
- ⑦ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON THE SIDE OF THE VEHICLE, OVER TOP OF SLP PALLETIZED UNITS AND THE HOLD-DOWN ASSEMBLY A, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE SPECIAL NOTE 4 ON PAGE 17 AND GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑧ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE AROUND THE FAR END OF THE PALLETIZED UNITS. BETWEEN VERTICAL PIECES AND STRAP RETAINER PIECES AT TOP OF END GATE ASSEMBLY C, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE SAME SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT BOTH STRAPS MARKED ⑧ AT THE SAME TIME. SEE SPECIAL NOTE 6 ON PAGE 17, AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

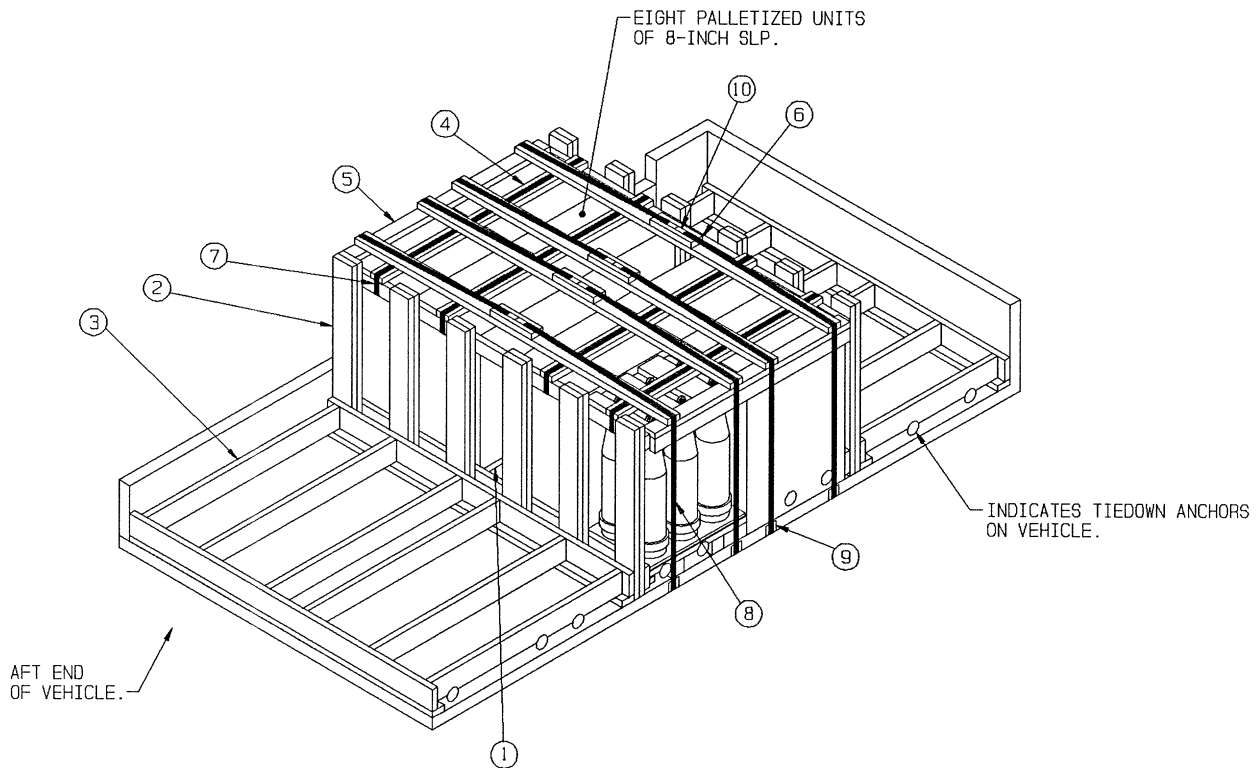
SPECIAL NOTES:

1. A TYPICAL LOAD OF SEVEN PALLETIZED UNITS IS SHOWN LOADED IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 88" WIDE BY 168" LONG, AND EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A MAXIMUM LOAD OF SEVEN PALLETIZED UNITS OF 8-INCH SEPARATE LOADING PROJECTILES HAVING DIMENSIONS OF 28-3/8" WIDE BY 19-1/4" LONG BY 39-1/2" HIGH AND WEIGHING 1,253 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED UNITS OF OTHER QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. PRIOR TO LOADING VEHICLE DETERMINE THE TOTAL QUANTITY OF PALLETIZED UNITS TO BE LOADED, HOW MANY IN EACH ROW ACROSS VEHICLE WIDTH AND HOW MANY LONG. FOR EASE OF LOADING AND SECUREMENT OF LOAD EACH ROW MUST CONTAIN THE SAME QUANTITY OF PALLETIZED UNITS. USE AN "OMITTED SLP PALLETIZED UNIT ASSEMBLY A", AS SHOWN IN THE LOAD ON PAGE 16. FOR EACH OMITTED SLP PALLETIZED UNIT AS NECESSARY TO MAINTAIN EVEN ROWS. SELECT A LOCATION WITHIN THE VEHICLE LENGTH WHICH WILL ALLOW TWO STRAPS MARKED ⑦ TO BE POSITIONED OVER THE TOP OF EACH ROW. IF VEHICLE TIEDOWN ANCHORS ARE TOO FAR APART STRAPS MARKED ⑦ MAY BE CROSSED OVER TOP OF LOAD, AS SHOWN IN THE LOAD ON PAGE 20.
5. IF THE VEHICLE BEING LOADED IS NOT EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS, OR FOR AN ALTERNATIVE METHOD OF SECURING THE LOAD, USING STEEL STRAPPING IN LIEU OF WEB STRAPS, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGES 18 AND 19.
6. POSITION WEB STRAPS MARKED ⑧ AT AN APPROXIMATE ANGLE OF 30° WITH THE FLOOR.
7. A TOTAL OF EIGHT WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN. NOTE: EACH WEB STRAP MARKED ⑧ REQUIRES TWO WEB STRAP TIEDOWN ASSEMBLIES HOOKED TOGETHER.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	15	5
2" X 4"	90	60
2" X 6"	225	225
NAILS	NO. REQD	POUNDS
10d (3")	366	5-3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	7	8,771 LBS
DUNNAGE		586 LBS
TOTAL WEIGHT		9,357 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY C, (1 REQD). SEE THE DETAIL ON PAGE 53.
- ② END GATE ASSEMBLY D (2 REQD). SEE THE DETAIL ON PAGE 46.
- ③ FORWARD/REAR BLOCKING ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 54.
- ④ UNITIZING BOARD, 2" X 4" BY LOAD LENGTH PLUS 3" (4 REQD). CENTER ACROSS THE TOP OF TWO PALLETS WITH THE ENDS RESTING ON THE HORIZONTAL PIECE OF THE END GATES MARKED ②.
- ⑤ HOLD DOWN ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 55. POSITION ONE ASSEMBLY ON EACH SIDE OF LOAD.
- ⑥ STRAPPING BOARD ASSEMBLY D (4 REQD). SEE THE DETAIL ON PAGE 49. POSITION AT LOCATIONS THAT WILL ALLOW THE HOLD-DOWN STRAPS, PIECE MARKED ⑧ TO ENCIRCLE THE LOAD AND THE BED OF VEHICLE. AS TYPICAL SHOWN.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" X .031" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL TO ENCIRCLE THE TOP COVER OF THE PALLET UNIT, THE UNITIZING BOARD AND THE TOP HORIZONTAL PIECE ON THE END GATE ASSEMBLIES D. SECURE IN PLACE BY DRIVING 10d NAILS IN THE UNITIZING BOARD ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 6 ON PAGE 19.
- ⑧ HOLD-DOWN STRAP, 1-1/4" X .035" X .031" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL EACH STRAP TO ENCIRCLE THE PALLET UNITS, THE VEHICLE AND STRAPPING BOARD ASSEMBLY D. SECURE IN PLACE BY DRIVING 10d NAILS ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 6 ON PAGE 19 AND GENERAL NOTE "U" ON PAGE 2.
- ⑨ EDGE PROTECTOR, STEEL, FOR 1-1/4" STEEL STRAPPING (8 REQD). POSITION UNDER STEEL STRAPPING PIECE MARKED ⑧ AT SHARP CORNERS WHERE THE STRAP PASSES UNDER BED OF VEHICLE.
- ⑩ SEAL FOR 1-1/4" STRAPPING (12 REQD). ONE PER STRAP MARKED ⑦ AND TWO PER STRAP MARKED ⑧. DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

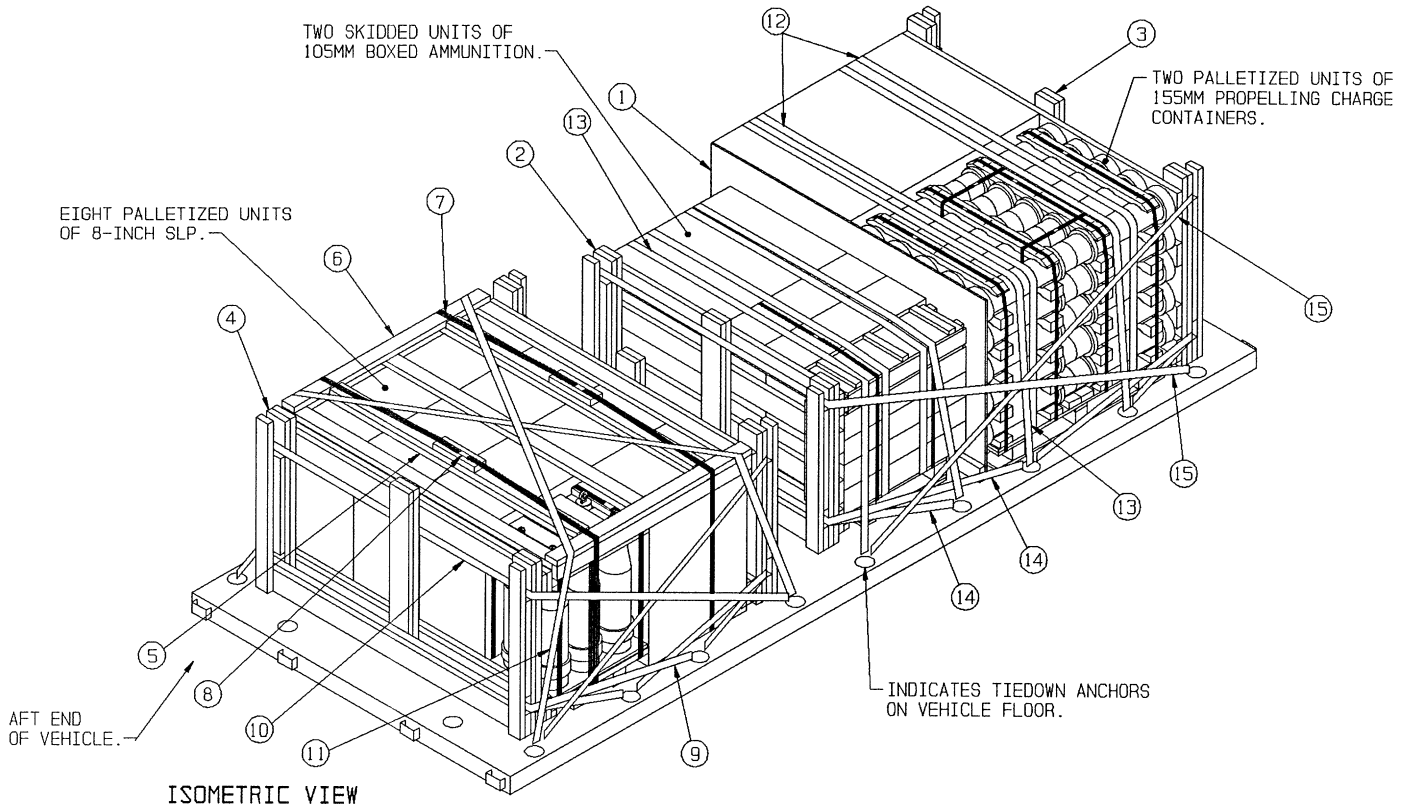
SPECIAL NOTES:

1. A TYPICAL LOAD OF EIGHT PALLETIZED UNITS IS SHOWN LOADED IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 88" WIDE BY 168" LONG, AND NOT EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. A MAXIMUM LOAD OF EIGHT PALLETIZED UNITS OF 8-INCH SEPARATE LOADING PROJECTILES HAVING DIMENSIONS OF 28-3/8" WIDE BY 19-1/4" LONG BY 39-1/2" HIGH AND WEIGHING 1,253 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED UNITS OF OTHER QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. PRIOR TO LOADING VEHICLE DETERMINE THE TOTAL QUANTITY OF PALLETIZED UNITS TO BE LOADED, HOW MANY IN EACH ROW ACROSS VEHICLE WIDTH AND HOW MANY LONG. FOR EASE OF LOADING AND SECUREMENT OF LOAD EACH ROW MUST CONTAIN THE SAME QUANTITY OF PALLETIZED UNITS. USE AN "OMITTED SLP PALLETIZED UNIT ASSEMBLY A". AS SHOWN IN THE LOAD ON PAGE 16. FOR EACH OMITTED SLP PALLETIZED UNIT AS NECESSARY TO MAINTAIN EVEN ROWS. SELECT A LOCATION WITHIN THE VEHICLE LENGTH WHICH WILL ALLOW TWO STRAPS MARKED ⑥ TO BE POSITIONED OVER THE TOP OF EACH ROW.
5. IF THE VEHICLE BEING LOADED IS EQUIPPED WITH WEB STRAP TIEDOWN ANCHORS, OR FOR AN ALTERNATIVE METHOD OF SECURING THE LOAD, USING WEB STRAPS IN LIEU OF STEEL STRAPPING, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGES 16 AND 17.
6. INSTALL BUNDLING STRAPS MARKED ⑦ PRIOR TO POSITIONING STRAPPING BOARD ASSEMBLIES MARKED ⑤ AND STEEL HOLD-DOWN STRAPPING MARKED ⑧.
7. WHEN THREADING THE HOLD-DOWN STRAPPING UNDER THE BED OF THE VEHICLE. SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH ROW.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	8	3
2" X 4"	118	79
2" X 6"	189	189
NAILS	NO. REQD	POUNDS
10d (3")	288	4-1/2
STEEL STRAPPING, 1-1/4" - 150.17' REQD - - 21.45 LBS		
SEAL FOR 1-1/4" STRAPPING - - 12 REQD - - - 1/2 LB		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT - - - - -	6 - - - - -	10,024 LBS
DUNNAGE - - - - -	- - - - -	569 LBS
TOTAL WEIGHT - - - - -		10,593 LBS (APPROX)



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

KEY NUMBERS

SAME OF SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE SPECIAL NOTE 8 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

- ⑪ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, DIAGONALLY OVER TOP OF PALLET UNITS AND THE HOLD-DOWN ASSEMBLY A, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE SAME OF SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE SPECIAL NOTE 9 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑫ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL TWO STRAPS TO ENCIRCLE TWO PALLET UNITS OF PROPELLING CHARGE CONTAINERS AND TWO STRAPS TO ENCIRCLE THE TWO SKIDDED UNITS OF BOXED AMMUNITION. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. HOOK ENDS OF STRAP TOGETHER. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑬ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL TWO STRAPS FROM A TIEDOWN ANCHOR ON VEHICLE, OVER TOP OF TWO PALLET UNITS OF PROPELLING CHARGE CONTAINERS AND TWO STRAPS OVER TOP OF TWO SKIDDED UNITS OF BOXED AMMUNITION. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET. SEE SPECIAL NOTE 10 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑭ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE BOTTOM OF PALLET UNITS AND SKIDDED UNITS, BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY F AND E, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE SAME OF SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE SPECIAL NOTE 7 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑮ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE TOP OF PALLET UNITS AND SKIDDED UNITS, BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY F AND E, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE SAME OF SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE SPECIAL NOTE 8 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

- ① SEPARATOR GATE ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 57. POSITION BETWEEN THE PALLET UNITS OF PROPELLING CHARGE CONTAINERS AND THE SKIDDED UNITS OF BOXED AMMUNITION. WITH THE HOLD-DOWN PIECE UNDER THE SKIDDED UNIT.
- ② END GATE ASSEMBLY F (1 REQD). SEE THE DETAIL ON PAGE 47. POSITION AS SHOWN.
- ③ END GATE ASSEMBLY E (1 REQD). SEE THE DETAIL ON PAGE 47. POSITION AS SHOWN.
- ④ END GATE ASSEMBLY C (2 REQD). SEE THE DETAIL ON PAGE 46. POSITION AS SHOWN.
- ⑤ STRAPPING BOARD ASSEMBLY E (2 REQD). SEE THE DETAIL ON PAGE 50. CENTER ON TOP OF PALLET UNITS WITH THE ENDS OF THE STRAPPING BOARD EXTENDING UNDER THE HOLD-DOWN ASSEMBLY A.
- ⑥ HOLD-DOWN ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 55. POSITION ON TOP OF THE PALLET UNITS AND THE STRAPPING BOARD ASSEMBLY E AS SHOWN.
- ⑦ BUNDLING STRAP, 1-1/4" X .035" X .031" BY LENGTH-TO-SUIT STEEL STRAPPING (2 REQD). INSTALL TO ENCIRCLE THE PALLETIZED UNITS, THE HOLD-DOWN ASSEMBLY A AND THE STRAPPING BOARD ASSEMBLY E. SECURE IN PLACE BY DRIVING 10d NAILS ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 11 ON PAGE 21.
- ⑧ SEAL FOR 1-1/4" STRAPPING (2 REQD). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.
- ⑨ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE BOTTOM OF PALLET UNITS BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY C, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE SAME OF SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE SPECIAL NOTE 7 ON PAGE 21 AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑩ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE TOP OF PALLET UNITS BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY C, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP RATCHETS ON THE

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TWO PALLET UNITS OF PROPELLING CHARGE CONTAINERS, TWO SKIDDED UNITS OF BOXED AMMUNITION, AND EIGHT PALLET UNITS OF SEPARATE LOADING PROJECTILES IN A 10-TON M977 AND/OR M985 HEMTT

(SPECIAL NOTES CONTINUED)

- 11. IF DESIRED, ONE WEB STRAP TIEDOWN ASSEMBLY MAY BE USED IN LIEU OF EACH STEEL STRAP MARKED ⑦.
- 12. A TOTAL OF TWENTY-SIX WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN. NOTE: EACH WEB STRAP MARKED ⑩ AND ⑮ REQUIRES TWO WEB STRAP TIEDOWN ASSEMBLIES HOOKED TOGETHER.

SPECIAL NOTES:

- 1. TYPICAL LOAD OF TWO SKIDDED UNITS AND TEN PALLETIZED UNITS IS SHOWN LOADED ON A 10-TON M977 AND/OR M985 HEMTT HAVING DIMENSIONS OF 92-1/2" WIDE BY 216-3/8" LONG. CAUTION: DO NOT POSITION LADING AGAINST THE SIDEWALLS AND/OR ENDWALLS IN THE HEMTT.
- 2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, INCLUDING TRAILERS WITH OR WITHOUT SIDEWALLS AND ENDWALLS MAY BE USED TO TRANSPORT THE LOAD SHOWN, A PARTIAL LOAD OR A SIMILAR TYPE LOAD.
- 3. A MAXIMUM LOAD OF TWO PALLETIZED UNITS OF 155MM PROPELLING CHARGE CONTAINERS HAVING DIMENSIONS OF 55" WIDE BY 40" LONG BY 44-7/8" HIGH AND WEIGHING 1,766 POUNDS EACH, TWO SKIDDED UNITS OF 105MM BOXED AMMUNITION HAVING DIMENSIONS OF 35-3/8" WIDE BY 34-1/2" LONG BY 36-3/4" HIGH AND WEIGHING 1,955 POUNDS EACH AND EIGHT PALLETIZED UNITS OF 8-INCH SEPARATE LOADING PROJECTILES HAVING DIMENSIONS OF 28-3/8" WIDE BY 19-1/4" LONG BY 39-1/2" HIGH AND WEIGHING 1,253 POUNDS EACH ARE SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED UNITS AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
- 4. CAUTION: THE MAXIMUM WEIGHT THAT CAN BE SECURED USING THE PROCEDURES SHOWN ON PAGE 20 IS 11,000 POUNDS. THEREFORE A LOAD WEIGHING MORE THAN 11,000 POUNDS, UP TO A MAXIMUM LOAD WEIGHING 22,000 POUNDS, MUST BE DIVIDED INTO TWO SEPARATE LOAD UNITS WITH EACH LOAD UNIT SECURED AS SHOWN IN THE LOAD ON PAGE 20. THE LOAD UNITS MUST NOT CONTACT EACH OTHER AND THEY MUST NOT BE POSITIONED AGAINST THE SIDEWALLS AND/OR ENDWALLS IN THE HEMTT.
- 5. PRIOR TO LOADING VEHICLE DETERMINE THE TOTAL QUANTITY OF PALLETIZED AND/OR SKIDDED UNITS TO BE LOADED. IF THE TOTAL LOAD WEIGHT IS GREATER THAN 11,000 POUNDS, THE LOAD MUST BE DIVIDED INTO TWO LOAD UNITS AS INSTRUCTED IN SPECIAL NOTE 4 ABOVE. DETERMINE WHAT ITEMS ARE TO BE GROUPED TOGETHER, HOW MANY ACROSS VEHICLE WIDTH, HOW MANY LONG AND THE TOTAL WEIGHT OF EACH LOAD UNIT. FOR EASE OF LOADING AND SECUREMENT OF LOAD EACH ROW OF PALLETIZED SEPARATE LOADING PROJECTILES POSITIONED ACROSS THE VEHICLE WIDTH MUST CONTAIN THE SAME QUANTITY. USE AN "OMITTED SLP PALLETIZED UNIT ASSEMBLY A", AS SHOWN IN THE LOAD ON PAGE 16. FOR EACH OMITTED SLP PALLETIZED UNIT AS NECESSARY TO MAINTAIN EVEN ROWS. SELECT A LOCATION WITHIN THE VEHICLE LENGTH WHICH WILL ALLOW STRAPPING PROCEDURES, AS SHOWN IN THE LOAD ON PAGE 20, TO BE APPLIED TO EACH LOAD UNIT.
- 6. IF THE VEHICLE BEING LOADED IS NOT EQUIPPED WITH TIEDOWN ANCHORS, OR FOR AN ALTERNATIVE METHOD OF SECURING THE LOAD USING STEEL STRAPPING IN LIEU OF WEB STRAPS, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGES 22 AND 23.
- 7. THERE WILL BE TWO WEB STRAPS MARKED ③ AT THE BOTTOM OF EACH END GATE ASSEMBLY C. INSTALL THE LONGER STRAPS FIRST AT EACH END OF THE LOAD UNIT AND RATCHET TIGHT BOTH STRAPS AT THE SAME TIME. INSTALL THE SHORTER STRAPS OVER TOP OF THE LONG STRAP AT EACH END OF THE LOAD UNIT AND RATCHET TIGHT BOTH STRAPS AT THE SAME TIME. FOLLOW THESE SAME PROCEDURES FOR WEB STRAPS MARKED ④.
- 8. POSITION WEB STRAPS MARKED ⑩ AND ⑮ AT AN APPROXIMATE ANGLE OF 30° WITH THE FLOOR.
- 9. DUE TO LOCATION AND THE QUANTITY OF THE TIEDOWN ANCHORS ON THE FLOOR OF THE VEHICLE, STRAPS MARKED ① ARE CROSSED OVER TOP OF LOAD. IF THE VEHICLE BEING LOADED HAS A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, STRAPS MARKED ① MAY BE POSITIONED STRAIGHT OVER TOP OF LOAD.
- 10. IF THE VEHICLE BEING LOADED DOES NOT HAVE TIEDOWN ANCHORS AT LOCATIONS WHICH WILL ALLOW STRAPS MARKED ③ TO BE POSITIONED STRAIGHT OVER TOP OF LOAD, STRAPS MARKED ③ MAY BE CROSSED OVER TOP OF LOAD.

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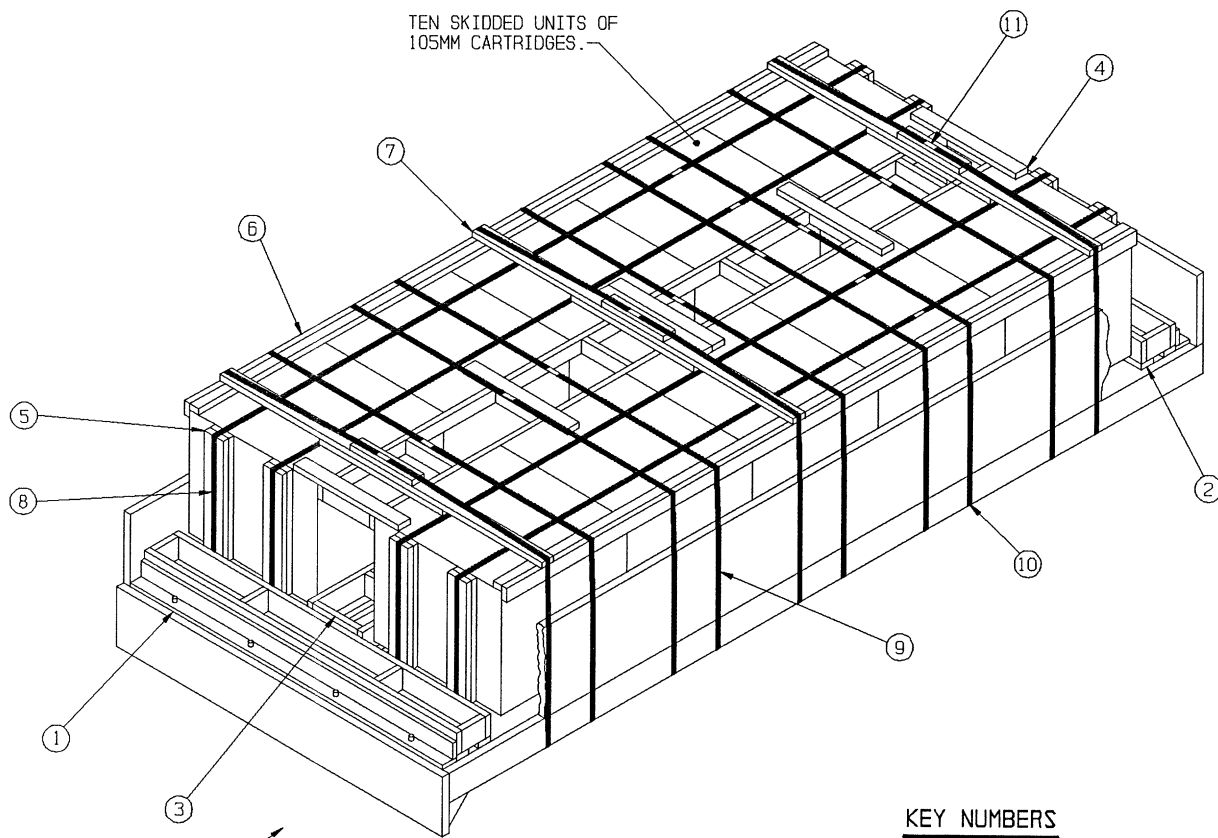
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
8-INCH SLP	8	10,024 LBS
155MM PROP CHARGES	2	3,532 LBS
105MM CARTRIDGES	2	3,910 LBS
DUNNAGE		651 LBS

TOTAL WEIGHT - - - - - 18,117 LBS (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	25	9
2" X 4"	97	65
2" X 6"	229	229
NAILS	NO. REQD	POUNDS
6d (2")	6	NIL
10d (3")	417	6-1/2
STEEL STRAPPING, 1-1/4"	28.66' REQD	4.00 LBS
SEAL FOR 1-1/4" STRAPPING	2 REQD	NIL
PLYWOOD, 1/2"	25 SQ FT REQD	34.38 LBS

TWO PALLET UNITS OF PROPELLING CHARGE CONTAINERS, TWO SKIDDED UNITS OF BOXED AMMUNITION, AND EIGHT PALLET UNITS OF SEPARATE LOADING PROJECTILES IN A 10-TON M977 AND/OR M985 HEMTT



ISOMETRIC VIEW

KEY NUMBERS

- ① LOAD RETAINER, STEEL ANGLE, STRUCTURAL SIZE, 4" X 4" X 1/4", BY VEHICLE WIDTH MINUS 1/2", PER ASTM A36, FSC 9520 (2 REQD). SEE THE DETAIL ON PAGE 58.
- ② FORWARD/REAR BLOCKING ASSEMBLY C (2 REQD). SEE THE DETAIL ON PAGE 55.
- ③ SPACER ASSEMBLY D (2 REQD). SEE THE DETAIL ON PAGE 53.
- ④ TOP-OF-LOAD ANTI-SWAY BRACE ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 57.
- ⑤ BOX RETAINER, 2" X 6" BY SKIDDED UNIT HEIGHT MINUS 6" (DOUBLED) (8 REQD). LAMINATE TOGETHER W/5-10d NAILS. POSITION AS SHOWN. SEE SPECIAL NOTE 5 ON PAGE 23.
- ⑥ HOLD-DOWN ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 55. POSITION AS SHOWN.
- ⑦ STRAPPING BOARD ASSEMBLY F (3 REQD). SEE THE DETAIL ON PAGE 50. POSITION ON TOP OF THE HOLD-DOWN ASSEMBLIES B AT APPROXIMATE LOCATIONS SHOWN.
- ⑧ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL EACH STRAP TO ENCIRCLE THE FIVE SKIDDED UNITS UNDER THE TOP DECK OF SKIDDED UNIT AND THE BOX RETAINER PIECES. SECURE IN PLACE BY DRIVING 10d NAILS INTO THE BOX RETAINER PIECES ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 6 ON PAGE 23.
- ⑨ HOLD-DOWN STRAP, 1-1/4" X .035" OR .031" BY LENGTH-TO-SUIT STEEL STRAPPING (10 REQD). INSTALL EACH STRAP TO ENCIRCLE THE VEHICLE, SKIDDED UNITS AND STRAPPING BOARD ASSEMBLY F, AS SHOWN. SECURE IN PLACE BY DRIVING 10d NAILS INTO STRAPPING BOARD ASSEMBLY F ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 7 ON PAGE 23 AND GENERAL NOTE "U" ON PAGE 2.
- ⑩ EDGE PROTECTOR, STEEL, FOR 1-1/4" STEEL STRAPPING (20 REQD). POSITION UNDER STEEL STRAPPING PIECE MARKED ⑨ AT SHARP CORNERS WHERE STRAP PASSES UNDER CARGO BED OF VEHICLE.
- ⑪ SEAL FOR 1-1/4" STRAPPING (24 REQD. ONE PER STRAP MARKED ⑧ AND TWO PER STRAP MARKED ⑨). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

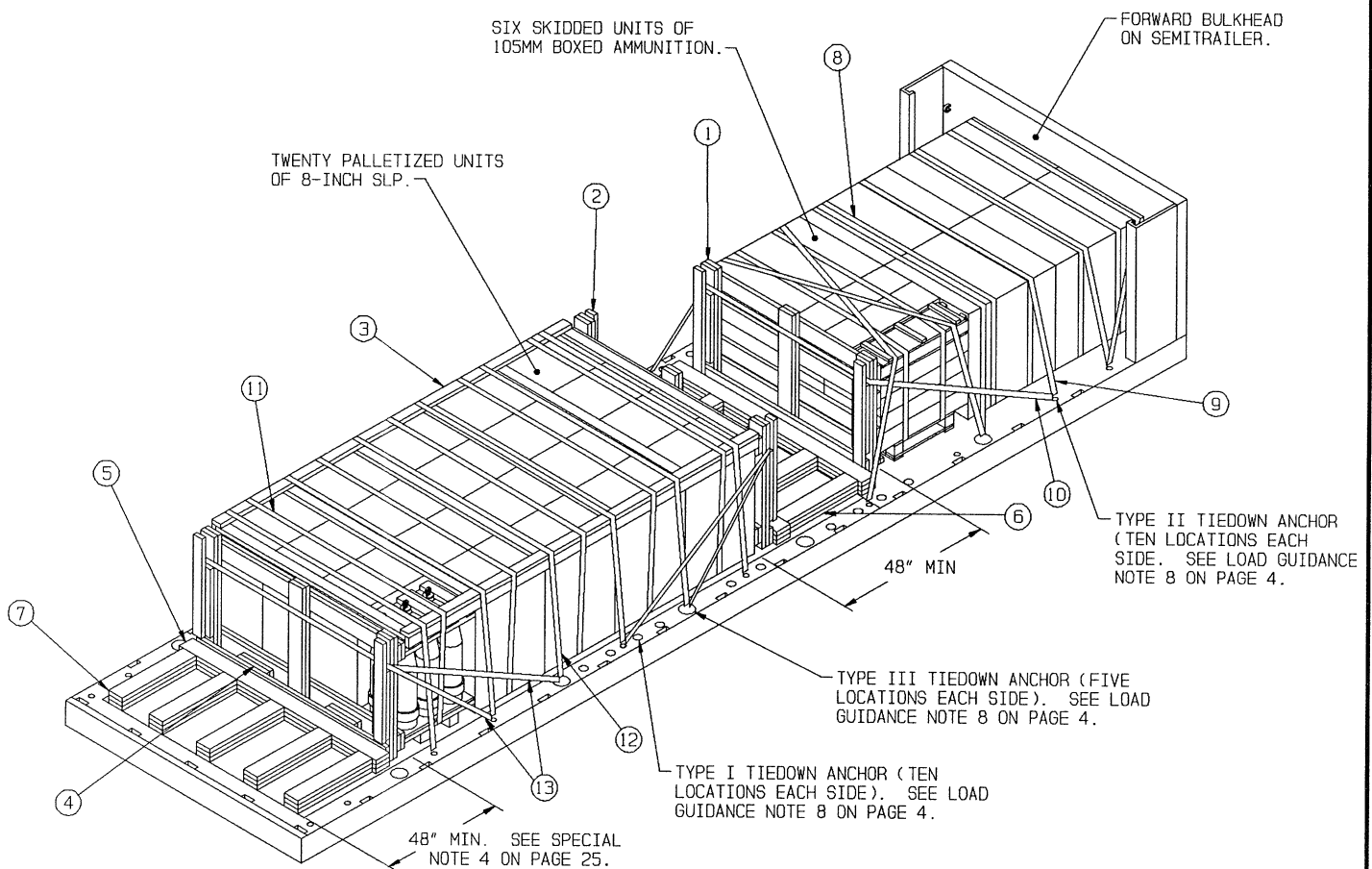
SPECIAL NOTES:

1. A TYPICAL LOAD OF TEN SKIDDED UNITS IS SHOWN LOADED IN A 10-TON M977 AND/OR M985 HEMTT HAVING INSIDE DIMENSIONS OF 90-3/4" WIDE BY 216-3/8" LONG.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, ALSO HAVING SIDEWALLS AND ENDWALLS WHICH ARE NOT STRONG ENOUGH TO SUPPORT A LOAD OR A PARTIAL LOAD MAY BE USED. IF DESIRED THESE PROCEDURES MAY ALSO BE USED IN VEHICLES HAVING STRONG SIDEWALLS AND ENDWALLS TO SUPPORT THE LOAD OR A PARTIAL LOAD BY OMITTING THE LOAD RETAINER PIECE MARKED ①, AND FABRICATING THE FORWARD/REAR BLOCKING ASSEMBLY C TO FIT BETWEEN THE LOAD AND THE ENDWALL OF THE VEHICLE.
3. A MAXIMUM OFF-HIGHWAY LOAD OF TEN SKIDDED UNITS OF 105MM CARTRIDGES HAVING DIMENSIONS OF 35-3/8" WIDE BY 34-1/2" LONG BY 36" HIGH AND WEIGHING 1,955 POUNDS EACH IS SHOWN AS A TYPICAL LOAD. IF LOADING SKIDDED AND/OR PALLETIZED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. CAUTION: DO NOT POSITION LADING AND/OR DUNNAGE ASSEMBLIES AGAINST THE VEHICLE ENDWALLS. PRIOR TO LOADING VEHICLE, POSITION A LOAD RETAINER PIECE MARKED ① AT EACH END OF THE CARGO BED. DRILL HOLES THROUGH LOAD RETAINER, THE BED OF VEHICLE AND VEHICLE FRAME MEMBER, SECURE WITH NUTS AND BOLTS AS SHOWN IN THE LOAD ON PAGE 22 AND THE DETAIL ON PAGE 58.
5. THE BOX RETAINER PIECES MARKED ⑤ MUST BE POSITIONED AGAINST EACH END OF LOAD AND SECURED WITH STEEL STRAPPING MARKED ⑧ PRIOR TO POSITIONING THE FORWARD/REAR BLOCKING ASSEMBLIES C BETWEEN THE LOAD AND THE LOAD RETAINER STEEL ANGLE PIECES.
6. THE BUNDLING STRAP PIECE MARKED ⑧ IN THE LOAD ON PAGE 22, MUST BE INSTALLED AS INSTRUCTED IN SPECIAL NOTE 5 ABOVE. PRIOR TO POSITIONING THE FORWARD/REAR BLOCKING ASSEMBLIES C.
6. WHEN THREADING THE HOLD DOWN STRAPPING UNDER THE BED OF THE VEHICLE, SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES, AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH TWO LATERALLY ADJACENT SKIDDED UNITS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	252	168
2" X 6"	112	112
NAILS	NO. REQD	POUNDS
10d (3")	420	6-1/2
STEEL STRAPPING, 1-1/4" - 203.00' REQD - - 29.00 LBS		
SEAL FOR 3/4" STRAPPING - - - 24 REQD - - - 1 LB		

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT - - - - -	10 - - - - -	19,550 LBS
DUNNAGE - - - - -	- - - - -	597 LBS
TOTAL WEIGHT - - - - -		20,147 LBS (APPROX)



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

- ⑨ WEB STRAP TIEDOWN ASSEMBLY (6 REQ'D). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, OVER TOP OF SKIDDED UNITS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 9 ON PAGE 25, AND GENERAL NOTES "F", "G" AND "J" ON PAGE 2.
- ⑩ WEB STRAP TIEDOWN ASSEMBLY (2 REQ'D). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF SKIDDED UNITS BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY F, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 8 ON PAGE 25, AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑪ WEB STRAP TIEDOWN ASSEMBLY (5 REQ'D). INSTALL EACH STRAP TO ENCIRCLE FOUR LATERALLY ADJACENT SLP PALLETS AND THE HOLD-DOWN ASSEMBLY C. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. HOOK ENDS OF STRAP TOGETHER, TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑫ WEB STRAP TIEDOWN ASSEMBLY (6 REQ'D). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, OVER TOP OF SLP PALLETS AND HOLD-DOWN ASSEMBLY C, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑬ WEB STRAP TIEDOWN ASSEMBLY (4 REQ'D). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF SLP PALLETS BETWEEN THE VERTICAL PIECES AND STRAP RETAINER PIECES OF THE END GATE ASSEMBLY C, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE SPECIAL NOTE 8 ON PAGE 25, AND GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

KEY NUMBERS

- ① END GATE ASSEMBLY F (1 REQ'D). SEE THE DETAIL ON PAGE 47 AND SPECIAL NOTES 10 AND 11 ON PAGE 25.
- ② END GATE ASSEMBLY C (2 REQ'D). SEE THE DETAIL ON PAGE 46 AND SPECIAL NOTE 11 ON PAGE 25.
- ③ HOLD-DOWN ASSEMBLY C (1 REQ'D). POSITION AS SHOWN. SEE THE DETAIL ON PAGE 56.
- ④ FILL MATERIAL, 2" X 6" X 12" (DOUBLED) (4 REQ'D). POSITION BETWEEN THE BOTTOM BEARING PIECE AND THE HORIZONTAL PIECE ON EACH END GATE ASSEMBLY C AND CENTERED ON THE JOINT BETWEEN THE SLP PALLETS. TOENAIL TO THE BEARING PIECE W/2-10d NAILS.
- ⑤ HEADER, 2" X 6" X 80" (TRIPLED) (3 REQ'D). POSITION THE FIRST PIECE AGAINST THE END GATE ASSEMBLIES AND NAIL TO THE TRAILER FLOOR W/11-12d NAILS. NAIL EACH ADDITIONAL PIECE W/11-20d NAILS.
- ⑥ STRUT, 2" X 6" BY CUT-TO-WEDGE-FIT (TRIPLED) (5 REQ'D). POSITION ONE STRUT IN LINE WITH THE SLP PALLET EDGE AND ONE CENTERED BETWEEN THE SLP PALLETS. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE W/7-20d NAILS. SEE SPECIAL NOTE 12 ON PAGE 25.
- ⑦ BACK-UP CLEAT, 2" X 6" BY CUT-TO-FIT BETWEEN THE HEADER AND THE REAR OF THE TRAILER (TRIPLED) (5 REQ'D). POSITION ONE CLEAT IN LINE WITH THE SLP PALLET EDGE AND ONE CENTERED BETWEEN THE SLP PALLETS. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE W/7-20d NAILS. SEE SPECIAL NOTE 12 ON PAGE 25.
- ⑧ WEB STRAP TIEDOWN ASSEMBLY (6 REQ'D). INSTALL EACH STRAP TO ENCIRCLE TWO LATERALLY ADJACENT SKIDDED UNITS. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. HOOK ENDS OF STRAP TOGETHER, TAKE UP EXCESS SLACK IN STRAPS AND RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

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SIX SKIDDED UNITS OF BOXED AMMUNITION, AND TWENTY PALLET UNITS OF SEPARATE LOADING PROJECTILES ON A 22-1/2-TON M871 SEMITRAILER

(SPECIAL NOTES CONTINUED)

10. IF THE FORWARD LOAD UNIT IS NOT POSITIONED AGAINST THE FORWARD BULKHEAD, ONE ADDITIONAL END GATE ASSEMBLY MARKED ①, AND ONE ADDITIONAL STRAP MARKED ⑩ WILL BE REQUIRED AT THE FORWARD END. ALSO, A FORWARD BLOCKING ASSEMBLY SIMILAR TO FORWARD BLOCKING ASSEMBLY B ON PAGE 54 MUST BE FABRICATED AND INSTALLED BETWEEN THE FORWARD BULKHEAD ON THE TRAILER AND THE END GATE ASSEMBLY MARKED ①. IF THE SPACE IS 12" OR LESS, SOLID FILL MATERIAL OF 2" X 8" BY INSIDE TRAILER WIDTH, POSITIONED ON EDGE AND LAMINATED TO EACH OTHER, MAY BE USED.
11. WHEN FABRICATING END GATE ASSEMBLIES MARKED ① AND/OR ② THE BOTTOM OF THE STRAP RETAINER PIECES MUST BE 6" ABOVE THE FLOOR TO ALLOW THE HEADER PIECES MARKED ⑤, TO BE POSITIONED TIGHT AGAINST THE HORIZONTAL PIECE ON THE END GATE.
12. WHEN POSITIONING AND NAILING STRUTS MARKED ⑥, AND/OR BACK-UP'S MARKED ⑦, IN TRAILERS HAVING STEEL BOLSTERS IN THE FLOOR, POSITION AS NEAR TO DESIRED LOCATION AS POSSIBLE BUT NOT ON TOP OF STEEL BOLSTERS.
13. A TOTAL OF THIRTY-ONE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN. NOTE: EACH WEB STRAP MARKED ⑩ AND ⑬ REQUIRES TWO WEB STRAP TIEDOWN ASSEMBLIES HOOKED TOGETHER.

SPECIAL NOTES:

1. TYPICAL LOAD OF SIX SKIDDED UNITS AND TWENTY PALLETIZED UNITS IS SHOWN LOADED ON A 22-1/2-TON M871 SEMITRAILER HAVING DIMENSIONS OF 96" WIDE BY 354" LONG.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS LOCATED ON THE SIDEWALL, ENDWALL AND FLOOR MAY BE USED TO TRANSPORT THE LOAD SHOWN, OR A PARTIAL LOAD.
3. A LOAD OF SIX SKIDDED UNITS OF 105MM BOXED AMMUNITION HAVING DIMENSIONS OF 35-3/8" WIDE BY 34-1/2" LONG BY 36-3/4" HIGH AND WEIGHING 1,955 POUNDS EACH, AND TWENTY PALLETIZED UNITS OF 8-INCH SEPARATE LOADING PROJECTILES HAVING DIMENSIONS OF 28-3/8" WIDE BY 19-1/4" LONG BY 39-1/2" HIGH AND WEIGHING 1,253 POUNDS EACH ARE SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED UNITS AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. CAUTION: THE MAXIMUM WEIGHT THAT CAN BE SECURED USING THE PROCEDURES SHOWN ON PAGE 24 IS 25,500 POUNDS. THEREFORE A LOAD WEIGHING MORE THAN 25,500 POUNDS, UP TO A MAXIMUM LOAD WEIGHING 45,000 POUNDS, MUST BE DIVIDED INTO TWO SEPARATE LOAD UNITS. A LOAD UNIT WEIGHING 12,000 POUNDS OR LESS ONLY REQUIRES ONE STRAP MARKED ⑩ FOR LONGITUDINAL RESTRAINT AT THE TOP. A LOAD UNIT WEIGHING OVER 12,000 POUNDS UP TO 25,100 POUNDS, REQUIRES TWO STRAPS MARKED ⑬ AT EACH END OF THE LOAD FOR LONGITUDINAL RESTRAINT AT THE TOP. A MINIMUM SPACE OF 48" MUST BE MAINTAINED BETWEEN LOAD UNITS, AND BETWEEN THE REAR OF THE LOAD AND THE AFT END OF THE VEHICLE. NOTE THAT THE TOTAL WEIGHT OF THE LOAD SHOWN ON PAGE 24 IS 37,563 AND THEREFOR THE LOAD WAS DIVIDED INTO TWO LOAD UNITS.
5. PRIOR TO LOADING VEHICLE DETERMINE THE TOTAL QUANTITY OF PALLETIZED AND/OR SKIDDED UNITS TO BE LOADED. IF THE TOTAL LOAD WEIGHT IS GREATER THAN 25,500 POUNDS, THE LOAD MUST BE DIVIDED INTO TWO LOAD UNITS AS INSTRUCTED IN SPECIAL NOTE 4 ABOVE. DETERMINE WHAT ITEMS ARE TO BE GROUPED TOGETHER, HOW MANY ACROSS VEHICLE WIDTH, HOW MANY LONG AND THE TOTAL WEIGHT OF EACH LOAD UNIT. FOR EASE OF LOADING AND SECUREMENT OF LOAD EACH ROW OF PALLETIZED SEPARATE LOADING PROJECTILES POSITIONED ACROSS THE VEHICLE WIDTH MUST CONTAIN THE SAME QUANTITY. USE AN "OMITTED SLP PALLETIZED UNIT ASSEMBLY A", AS SHOWN IN THE LOAD ON PAGE 16. FOR EACH OMITTED SLP PALLETIZED UNIT AS NECESSARY TO MAINTAIN EVEN ROWS. SELECT A LOCATION WITHIN THE VEHICLE LENGTH WHICH WILL ALLOW STRAPPING PROCEDURES, AS SHOWN IN THE LOAD ON PAGE 24, TO BE APPLIED TO EACH LOAD UNIT.
6. IF THE VEHICLE BEING LOADED IS NOT EQUIPPED WITH TIEDOWN ANCHORS, OR FOR AN ALTERNATIVE METHOD OF SECURING THE LOAD USING STEEL STRAPPING IN LIEU OF WEB STRAPS, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGES 26 AND 27.
7. LOAD UNITS WEIGHING OVER 12,000 POUNDS WILL REQUIRE TWO STRAPS MARKED ⑬ AT EACH END OF THE LOAD. INSTALL THE LONGER STRAPS FIRST AT EACH END OF THE LOAD UNIT AND RATCHET TIGHT BOTH STRAPS AT THE SAME TIME. INSTALL THE SHORTER STRAPS OVER TOP OF THE LONG STRAP AT EACH END OF THE LOAD UNIT AND RATCHET TIGHT BOTH STRAPS AT THE SAME TIME.
8. POSITION THE LONGER STRAPS MARKED ⑩ AND ⑬ AT AN APPROXIMATE ANGLE OF 30° WITH THE FLOOR. POSITION THE SHORTER STRAPS MARKED ⑬ AT AN APPROXIMATE ANGLE OF 45° WITH THE FLOOR.
9. IF THE LOCATION OF THE TIEDOWN ANCHORS ON THE FLOOR OF THE VEHICLE DOES NOT ALLOW STRAPS MARKED ⑨ OR ⑫ TO BE POSITIONED STRAIGHT OVER TOP OF LOAD, THEY MAY BE CROSSED AS SHOWN OVER TOP OF THE REARMOST SKIDDED UNITS IN THE LOAD ON PAGE 24.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	19	6
2" X 4"	101	67
2" X 6"	310	310
NAILS	NO. REQD	POUNDS
10d (3")	338	5-1/4
12d (3-1/4")	25	1/2
20d (4")	50	1/2

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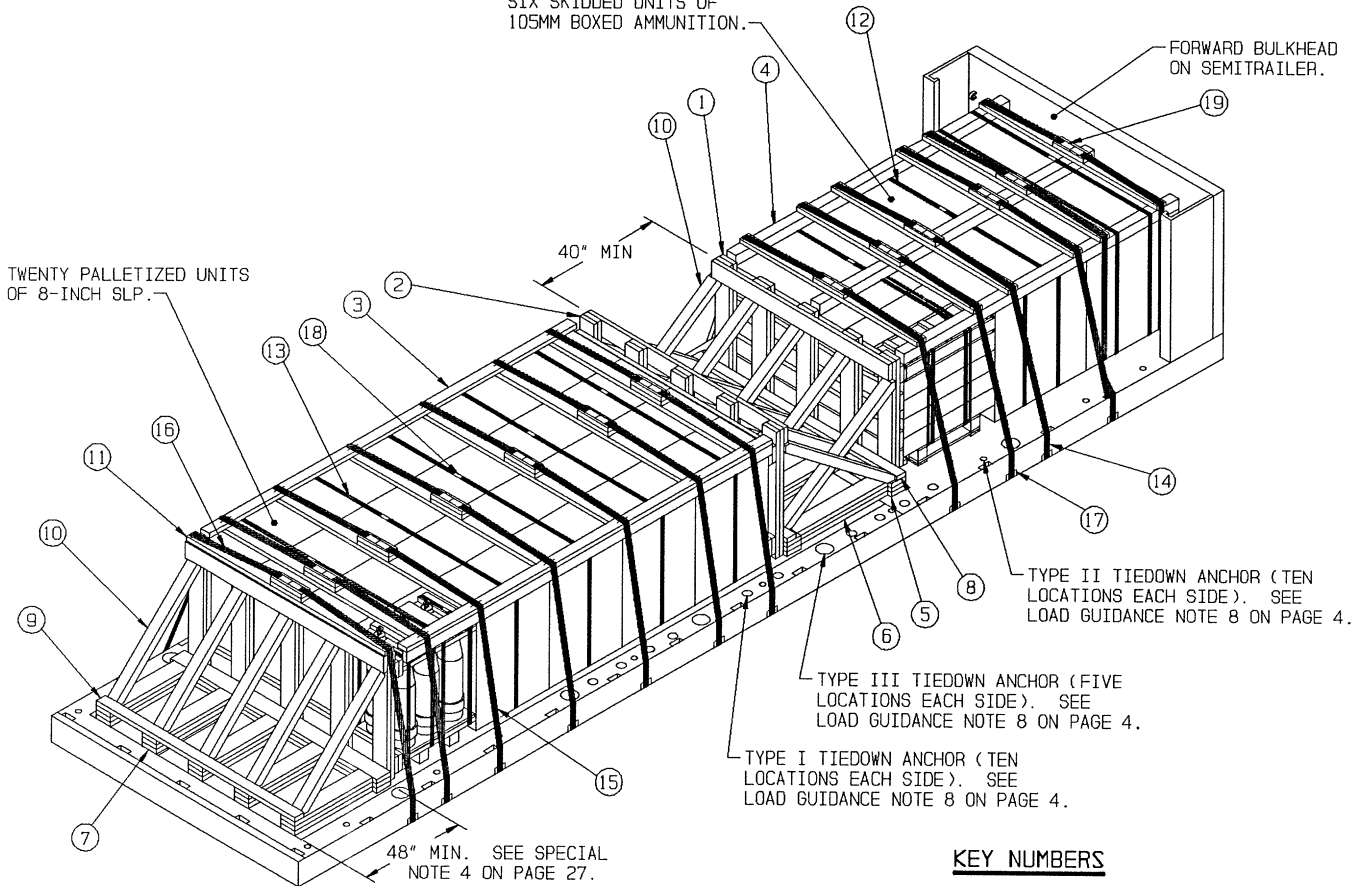
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
8-INCH SLP	20	25,060 LBS
105MM CARTRIDGES	6	11,730 LBS
DUNNAGE		773 LBS

TOTAL WEIGHT - - - - - 37,563 LBS (APPROX)

SIX SKIDDED UNITS OF BOXED AMMUNITION, AND TWENTY PALLET UNITS OF SEPARATE LOADING PROJECTILES ON A 22-1/2-TON M871 SEMITRAILER

SIX SKIDDED UNITS OF
105MM BOXED AMMUNITION.



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

- ⑪ STRAPPING BOARD ASSEMBLY G (1 REQD). SEE THE DETAIL ON PAGE 50. POSITION ACROSS THE TOP OF END GATE ASSEMBLY H AT THE AFT END OF LOAD. NAIL TO END GATE W/6-10d NAILS. SEE SPECIAL NOTE 11 ON PAGE 27.
- ⑫ BUNDLING STRAP, 1-1/4" X .035" X .031" BY LENGTH-TO-SUIT STEEL STRAPPING (6 REQD). INSTALL EACH STRAP TO ENCIRCLE TWO LATERALLY ADJACENT SKIDDED UNITS UNDER THE TOP DECK OF SKIDDED UNIT, AS SHOWN. NOTE: THE FORWARD TWO SKIDDED UNITS MUST HAVE THE TWO STRAPS ENCIRCLE THE HOLD-DOWN ASSEMBLY D ALSO. SECURE IN PLACE BY DRIVING 10d NAILS INTO THE HOLD-DOWN ASSEMBLY D ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 7 ON PAGE 27 AND GENERAL NOTE "U" ON PAGE 2.
- ⑬ BUNDLING STRAP, 1-1/4" X .035" X .031" BY LENGTH-TO-SUIT STEEL STRAPPING (5 REQD). INSTALL EACH STRAP TO ENCIRCLE FOUR LATERALLY ADJACENT SLP PALLETS. SEE GENERAL NOTE "U" ON PAGE 2.
- ⑭ HOLD-DOWN STRAP, 2" X .044" OR .050" BY LENGTH-TO-SUIT STEEL STRAPPING (4 REQD). INSTALL STRAPS TO ENCIRCLE THE VEHICLE, SKIDDED UNITS AND THE HOLD-DOWN ASSEMBLY D, AS SHOWN. DUE TO APPURTENANCES UNDER THE BED OF THE VEHICLE THE STRAP CLOSEST TO THE FORWARD END OF THE VEHICLE IS THREADED DOWN THROUGH A STAKE POCKET AND BACK UP OVER TOP OF THE SKIDDED UNITS AND THE HOLD-DOWN ASSEMBLY D TO A STAKE POCKET ON THE OPPOSITE SIDE OF VEHICLE. SECURE IN PLACE BY DRIVING 10d NAILS IN THE HOLD-DOWN ASSEMBLY ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 12 ON PAGE 27 AND GENERAL NOTE "U" ON PAGE 2.
- ⑮ HOLD-DOWN STRAP, 2" X .044" OR .050" BY LENGTH-TO-SUIT STEEL STRAPPING (6 REQD). INSTALL STRAPS TO ENCIRCLE THE VEHICLE, SLP PALLET UNITS AND THE HOLD-DOWN ASSEMBLY E, AS SHOWN. SECURE IN PLACE BY DRIVING 10d NAILS IN THE HOLD-DOWN ASSEMBLY ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 12 ON PAGE 27 AND GENERAL NOTE "U" ON PAGE 2.

(CONTINUED ON PAGE 27)

KEY NUMBERS

- ① END GATE ASSEMBLY G (1 REQD). SEE THE DETAIL ON PAGE 48.
- ② END GATE ASSEMBLY H (2 REQD). SEE THE DETAIL ON PAGE 48 AND SPECIAL NOTE 11 ON PAGE 27.
- ③ HOLD-DOWN ASSEMBLY E (1 REQD). POSITION ON TOP OF THE SLP PALLET UNITS AS SHOWN. SEE THE DETAIL ON PAGE 56.
- ④ HOLD-DOWN ASSEMBLY D (1 REQD). POSITION ON TOP OF THE SKIDDED PALLET UNITS AS SHOWN. SEE THE DETAIL ON PAGE 56 AND SPECIAL NOTE 7 ON PAGE 27.
- ⑤ HEADER, 2" X 6" X 80" (TRIPLED) (3 REQD). POSITION THE FIRST PIECE AGAINST THE END GATE ASSEMBLIES AND NAIL TO THE TRAILER FLOOR W/11-12d NAILS. NAIL EACH ADDITIONAL PIECE W/11-20d NAILS. TOENAIL TO THE VERTICAL PIECES ON THE END GATES W/2-16d NAILS AT EACH JOINT.
- ⑥ STRUT, 2" X 6" BY CUT-TO-WEDGE-FIT (TRIPLED) (5 REQD). POSITION ONE STRUT IN LINE WITH THE SLP PALLET EDGE AND ONE CENTERED BETWEEN THE SLP PALLETS. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE W/7-20d NAILS. SEE SPECIAL NOTE 10 ON PAGE 27.
- ⑦ BACK-UP CLEAT, 2" X 6" BY CUT-TO-FIT BETWEEN THE HEADER AND THE REAR OF THE TRAILER (TRIPLED) (5 REQD). POSITION ONE STRUT IN LINE WITH THE SLP PALLET EDGE AND ONE CENTERED BETWEEN THE SLP PALLETS. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL EACH ADDITIONAL PIECE W/7-20d NAILS. SEE SPECIAL NOTE 10 ON PAGE 27.
- ⑧ KICKER PIECE, 2" X 4" X 80" (2 REQD). POSITION ON TOP OF THE HEADER AND AGAINST THE END GATES G AND H AS SHOWN. NAIL TO THE HEADER W/9-10d NAILS.
- ⑨ KICKER PIECE, 2" X 4" X 80" (1 REQD). POSITION ON TOP OF THE BACK-UP CLEATS AT THE LOCATION SHOWN. NAIL TO THE BACK-UP CLEATS W/3-10d NAILS AT EACH JOINT.
- ⑩ DIAGONAL BRACE, 4" X 4" BY LENGTH-TO-WEDGE-FIT (DOUBLE BEVEL EACH END) (15 REQD). TOENAIL TO THE VERTICAL PIECE ON THE END GATES AND TO THE HEADER OR BACK-UP CLEATS W/2-40d NAILS AT EACH END. TOENAIL EACH END W/1-16d NAIL ON EACH SIDE. SEE THE DETAIL ON PAGE 59 AND SPECIAL NOTE 8 ON PAGE 27.

(CONTINUED AT LEFT)

SIX SKIDDED UNITS OF BOXED AMMUNITION, AND TWENTY PALLET UNITS OF SEPARATE
LOADING PROJECTILES ON A 22-1/2-TON M871 SEMITRAILER

(SPECIAL NOTES CONTINUED)

11. THE END GATE ASSEMBLY H POSITION AT THE AFT END OF THE LOAD MUST BE HELD DOWN WITH A HOLD-DOWN STRAP PIECE MARKED ⑯.
12. IF THE VEHICLE BEING LOADED IS EQUIPPED WITH STAKE POCKETS, THE STEEL STRAPPING PIECES MARKED ⑭, ⑮ AND ⑯ MAY BE ATTACHED THROUGH THE STAKE POCKETS IN LIEU OF ENCIRCLING THE BED OF THE VEHICLE, IF THE STAKE POCKETS IS AT A DESIRABLE LOCATION FOR THE HOLD-DOWN STRAPS.

(KEY NUMBERS CONTINUED FROM PAGE 26)

- ⑯ HOLD-DOWN STRAP, 2" X .044" X .050" BY LENGTH-TO-SUIT STEEL STRAPPING (1 REQD). DUE TO APPURTENANCES UNDER THE BED OF THE VEHICLE THIS STRAP IS THREADED DOWN AROUND THE RUB RAIL, OVER TOP OF THE STRAPPING BOARD ASSEMBLY G TO THE RUB RAIL ON THE OPPOSITE SIDE OF THE VEHICLE. SECURE IN PLACE BY DRIVING 10d NAILS IN THE STRAPPING BOARD ASSEMBLY ON EACH SIDE OF STRAP AND BENDING OVER STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 11 ON THIS PAGE AND GENERAL NOTE "U" ON PAGE 2.
- ⑰ EDGE PROTECTOR, STEEL, FOR 2" STEEL STRAPPING (22 REQD). POSITION UNDER STEEL STRAPPING PIECES MARKED ⑭, ⑮ AND ⑯ AT SHARP CORNERS WHERE THE STRAP PASSES UNDER BED OF VEHICLE AND AROUND THE RUB RAIL.
- ⑱ SEAL FOR 1-1/4" STRAPPING (11 REQD, ONE PER STRAP MARKED ⑫ AND ⑬). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.
- ⑲ SEAL FOR 2" STRAPPING (26 REQD, TWO PER STRAP MARKED ⑭ EXCEPT THE FORWARD STRAP WHICH REQUIRES FOUR SEALS, TWO PER STRAP MARKED ⑮ AND FOUR PER STRAP MARKED ⑯). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "U" ON PAGE 2.

SPECIAL NOTES:

1. A TYPICAL LOAD OF SIX SKIDDED UNITS AND TWENTY PALLETIZED UNITS IS SHOWN LOADED ON A 22-1/2-TON M871 SEMITRAILER HAVING DIMENSIONS OF 96" WIDE BY 354" LONG.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS HAVING A NAILABLE WOODEN FLOOR MAY BE USED TO TRANSPORT THE LOAD SHOWN, OR A PARTIAL LOAD.
3. A LOAD OF SIX SKIDDED UNITS OF 105MM BOXED AMMUNITION HAVING DIMENSIONS OF 35-3/8" WIDE BY 34-1/2" LONG BY 36-3/4" HIGH AND WEIGHING 1,955 POUNDS EACH, AND TWENTY PALLETIZED UNITS OF 8-INCH SEPARATE LOADING PROJECTILES HAVING DIMENSIONS OF 28-3/8" WIDE BY 19-1/4" LONG BY 39-1/2" HIGH AND WEIGHING 1,253 POUNDS EACH ARE SHOWN AS A TYPICAL LOAD. IF LOADING PALLETIZED UNITS AND/OR SKIDDED UNITS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
4. CAUTION: THE MAXIMUM WEIGHT THAT CAN BE SECURED USING THE PROCEDURES SHOWN ON PAGE 26 IS 25,500 POUNDS. THEREFORE A LOAD WEIGHING MORE THAN 25,500 POUNDS, UP TO A MAXIMUM LOAD WEIGHING 45,000 POUNDS, MUST BE DIVIDED INTO TWO SEPARATE LOAD UNITS. A MINIMUM SPACE OF 48" MUST BE MAINTAINED BETWEEN LOAD UNITS, AND BETWEEN THE REAR OF THE LOAD AND THE AFT END OF THE VEHICLE. NOTE THAT THE TOTAL WEIGHT OF THE LOAD SHOWN ON PAGE 26 IS 38,062 AND THEREFOR THE LOAD WAS DIVIDED INTO TWO LOAD UNITS.
5. PRIOR TO LOADING VEHICLE DETERMINE THE TOTAL QUANTITY OF PALLETIZED AND/OR SKIDDED UNITS TO BE LOADED. IF THE TOTAL LOAD WEIGHT IS GREATER THAN 25,500 POUNDS, THE LOAD MUST BE DIVIDED INTO TWO LOAD UNITS AS INSTRUCTED IN SPECIAL NOTE 4 ABOVE. DETERMINE WHAT ITEMS ARE TO BE GROUPED TOGETHER, HOW MANY ACROSS VEHICLE WIDTH, HOW MANY LONG AND THE TOTAL WEIGHT OF EACH LOAD UNIT. FOR EASE OF LOADING AND SECUREMENT OF LOAD EACH ROW OF PALLETIZED SEPARATE LOADING PROJECTILES POSITIONED ACROSS THE VEHICLE WIDTH MUST CONTAIN THE SAME QUANTITY. USE AN "OMITTED SLP PALLETIZED UNIT ASSEMBLY A", AS SHOWN IN THE LOAD ON PAGE 16. FOR EACH OMITTED SLP PALLETIZED UNIT AS NECESSARY TO MAINTAIN EVEN ROWS. SELECT A LOCATION WITHIN THE VEHICLE LENGTH WHICH WILL ALLOW NAILED DOWN DUNNAGE, AS SHOWN IN THE LOAD ON PAGE 26, TO BE APPLIED TO EACH LOAD UNIT.
6. FOR AN ALTERNATIVE METHOD OF SECURING THE LOAD USING WEB STRAPPING IN LIEU OF STEEL STRAPPING, USE THE PROCEDURES SHOWN IN THE LOAD ON PAGES 24 AND 25.
7. WHEN ASSEMBLING THE HOLD-DOWN ASSEMBLY D, NOTE THAT THERE IS NO LOCATION AT THE FORWARD END OF THE TRAILER WHERE THE HOLD-DOWN STRAP PIECE MARKED ⑭ CAN ENCIRCLE THE TWO FORWARD SKIDDED UNITS AND THE BED OF THE TRAILER, THEREFORE, WHEN UNITIZING THESE TWO SKIDDED UNITS INSTALL THE TWO UNITIZING STRAPS MARKED ⑫ TO ENCIRCLE THE SKIDDED UNITS AND THE HOLD-DOWN ASSEMBLY D.
8. WHEN INSTALLING THE DIAGONAL BRACES PIECES MARKED ⑩, HOLD A LENGTH OF 4" X 4" MATERIAL, ONE END AGAINST THE END GATE AND THE OTHER END AGAINST THE KICKER PIECE OR THE HEADER AT THE ANGLE SHOWN. MARK THE ANGLES FOR THE DOUBLE BEVEL CUTS AT EACH END AND FIELD CHECK PRIOR TO CUTTING THE REQUIRED NUMBER OF BRACES. NOTE THAT EACH SET OF DIAGONAL BRACES MAY HAVE A DIFFERENT LENGTH AND ANGLES FOR THE BEVEL CUTS.
9. WHEN THREADING THE STEEL STRAPPING UNDER THE BED OF THE VEHICLE SELECT AN AREA THAT IS FREE OF SHARP EDGES AND VEHICLE APPURTENANCES, AND WILL ALLOW A STRAIGHT LAY OF STRAP FROM ONE SIDE OF THE CARGO BED TO THE OPPOSITE SIDE. THREAD THE STRAP OVER THE VEHICLE FRAME MEMBERS AND UNDER THE CARGO BED AT AVAILABLE OPENINGS WHICH WILL ALLOW TWO STRAPS OVER THE TOP OF EACH TWO LATERALLY ADJACENT SKIDDED UNITS.
10. WHEN POSITIONING AND NAILING STRUTS PIECE MARKED ⑥ OR THE BACK-UP CLEATS PIECE MARKED ⑦, ON TRAILERS HAVING STEEL BOLSTERS IN THE FLOOR, POSITION AS NEAR TO DESIRED LOCATION AS POSSIBLE BUT NOT ON TOP OF STEEL BOLSTERS.

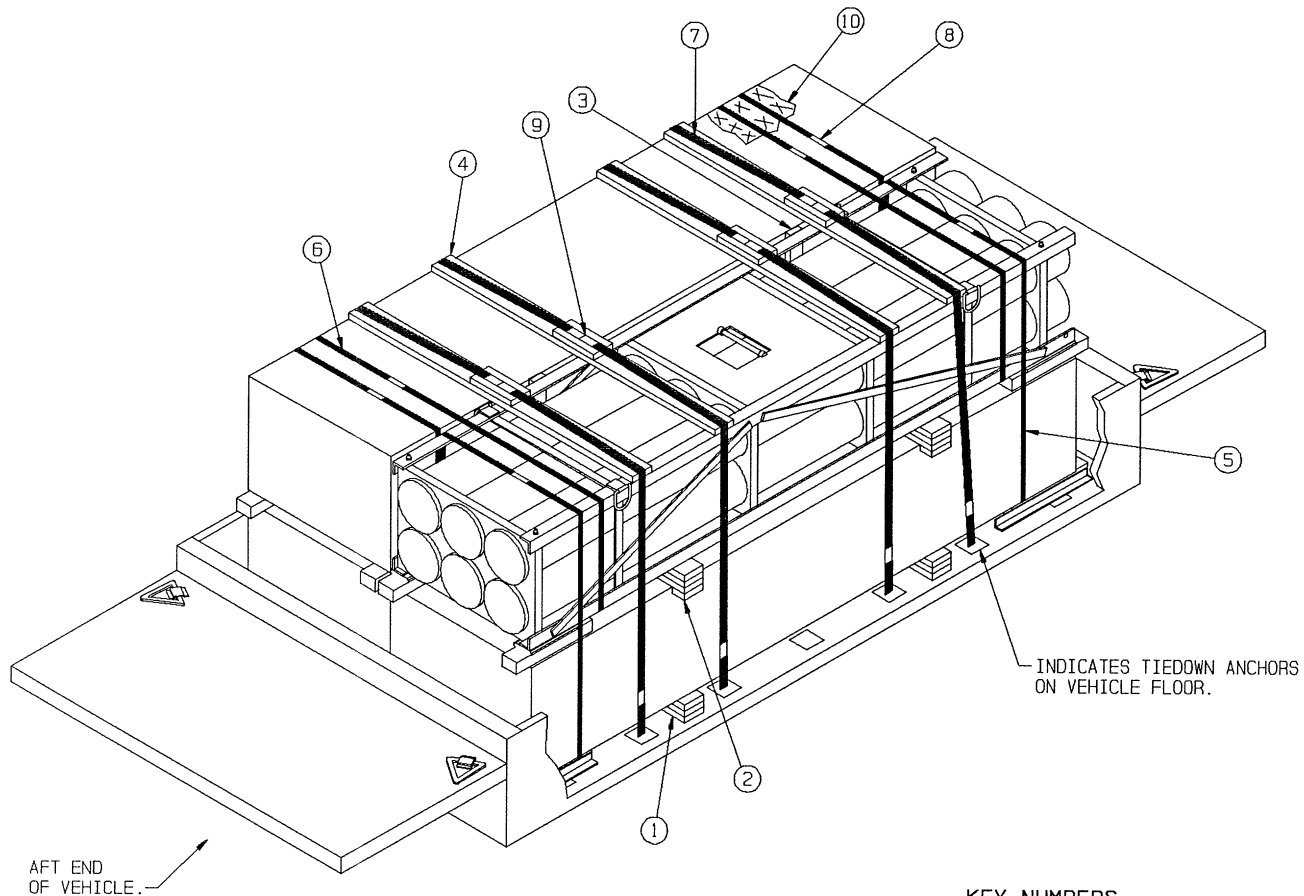
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LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
8-INCH SLP	20	25,060 LBS
105MM CARTRIDGES	6	11,730 LBS
DUNNAGE		1,272 LBS
TOTAL WEIGHT		38,062 LBS (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	12	4
2" X 4"	167	111
2" X 6"	336	336
4" X 4"	84	111
NAILS	NO. REQD	POUNDS
10d (3")	511	8
12d (3-1/4")	103	1-3/4
16d (3-1/2")	90	2
20d (4")	206	7-1/2
40d (5")	60	3-3/4
STEEL STRAPPING, 1-1/4"	-192.00' REQD	-- 27.00 LBS
SEAL FOR 1-1/4" STRAPPING	-- 11 REQD	-- 1/2 LB
STEEL STRAPPING, 2"	-- 275.00' REQD	-- 92.00 LBS
SEAL FOR 2" STRAPPING	-- 26 REQD	-- 5 LBS

SIX SKIDDED UNITS OF BOXED AMMUNITION, AND TWENTY PALLET UNITS OF SEPARATE LOADING PROJECTILES ON A 22-1/2-TON M871 SEMITRAILER



ISOMETRIC VIEW

KEY NUMBERS

- ① BOTTOM CONTAINER SUPPORT ASSEMBLY, 2" X 6" X 7'-6" (TRIPLED) (2 REQD). PRE-POSITION AT APPROXIMATE LOCATIONS SHOWN PRIOR TO LOADING BOTTOM CONTAINERS ON VEHICLE. NAIL FIRST PIECE TO VEHICLE FLOOR W/9-12d NAILS. NAIL EACH ADDITIONAL PIECE W/9-20d NAILS. SEE SPECIAL NOTE 4 ON PAGE 29.
- ② TOP CONTAINER SUPPORT ASSEMBLY (2 REQD). PRE-POSITION AT APPROXIMATE LOCATIONS SHOWN PRIOR TO LOADING TOP CONTAINERS ON VEHICLE. SEE DETAIL ON PAGE 58 AND SPECIAL NOTE 4 ON PAGE 29.
- ③ SPACER PIECE, 2" X 4" BY LOAD HEIGHT (2 REQD). PRE-POSITION ON END, BETWEEN CONTAINERS, AT APPROXIMATE LOCATIONS SHOWN AS LOADING PROGRESSES. SEE SPECIAL NOTE 7 ON PAGE 29.
- ④ STRAPPING BOARD ASSEMBLY J (4 REQD). POSITION ACROSS TOP OF THE CONTAINERS AS SHOWN ABOVE. SEE THE DETAIL ON PAGE 59.
- ⑤ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (4 REQD, 2 PER STACK). INSTALL EACH STRAP TO ENCIRCLE A TWO HIGH STACK OF CONTAINERS AS TYPICALLY SHOWN. PRE-POSITION AS LOADING PROGRESSES.
- ⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" BY A LENGTH TO SUIT (2 REQD). INSTALL EACH STRAP TO ENCIRCLE THE TWO TOP LATERALLY ADJACENT CONTAINERS. POSITION AS SHOWN.
- ⑦ HOLD-DOWN STRAP, 2" X .044" OR .050" X 24'-0" (4 REQD). INSTALL EACH STRAP FROM TWO 12'-0" LONG PIECES. SECURE TO STRAPPING BOARD ASSEMBLY J BY DRIVING A 10d NAIL ON EACH SIDE OF THE STRAP AND BENDING IT OVER THE STRAP. STAPLES MAY BE USED IF AVAILABLE. SEE SPECIAL NOTE 6 ON PAGE 29 AND GENERAL NOTE "U" ON PAGE 2.
- ⑧ SEAL FOR 1-1/4" STEEL STRAPPING (6 REQD, ONE PER STRAP). DOUBLE CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.
- ⑨ SEAL FOR 2" STEEL STRAPPING (16 REQD, FOUR PER STRAP). DOUBLE CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES. SEE SPECIAL NOTE 6 ON PAGE 29 AND GENERAL NOTE "U" ON PAGE 2.
- ⑩ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). POSITION UNDER ALL STRAPS AT POINT OF CONTACT WITH THE CONTAINER.

SPECIAL NOTES:

1. A TYPICAL LOAD OF FOUR MLRS CONTAINERS IS SHOWN LOADED ON A 11-TON M989A1 HEMAT. HAVING INSIDE DIMENSIONS OF 175" LONG BY 92" WIDE.
2. THE PROCEDURES SHOWN ON PAGE 28 ARE FOR THE HEMAT TRAILER ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A LOAD OF FOUR MLRS CONTAINERS HAVING DIMENSIONS OF 41-1/2" WIDE X 13'-10" LONG BY 33" HIGH AND WEIGHING 5,078 POUNDS EACH, IS SHOWN.
4. THE BOTTOM CONTAINER SUPPORT ASSEMBLIES MARKED ①, AND THE TOP CONTAINER SUPPORT ASSEMBLIES MARKED ②, ARE REQUIRED TO STABILIZE THE LOAD AND PREVENT CRUSHING OF THE HARD RUBBER SKIDS.
5. PRE-POSITION STRAPS MARKED ⑤ AS THE CONTAINERS ARE BEING LOADED. AFTER ALL FOUR CONTAINERS ARE LOADED AND PIECES MARKED ①, ② AND ③ ARE IN POSITION, TIGHTEN AND SEAL STRAPS MARKED ⑤.
6. WHEN INSTALLING HOLD-DOWN STRAP, PIECE MARKED ⑦, THREAD ONE END OF A STRAP THROUGH AND AROUND THE STRAPPING BAR ON THE TIEDOWN ANCHOR. BRING END BACK UP APPROXIMATELY 18" AND SEAL WITH ONE SEAL MARKED ⑨. BRING ENDS OF STRAP OVER THE STRAPPING BOARD ASSEMBLY PIECE MARKED ④ AND SEAL THE END-OVER-END LAP JOINT WITH TWO SEALS MARKED ⑨.
7. THE SPACER PIECES MARKED ③ ARE REQUIRED AS THE APPURTENANCES ON THE CONTAINERS DO NOT ALLOW THEM TO COME TIGHTLY TOGETHER LATERALLY WHEN STRAPS MARKED ⑥ AND ⑦ ARE TIGHTENED.
8. SPECIAL HANDLING GUIDANCE:

1. CONTAINER STACKING FOR OUTLOADING PURPOSES.
 - A. THE UPPER CONTAINER SHOULD BE PLACED AS CLOSELY AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE LOWER CONTAINER.
 - B. WHEN STACKING THESE CONTAINERS, CARE MUST BE EXERCISED TO ENSURE THAT THE INTERLOCKING HOLES IN THE BOTTOM OF THE CONTAINER SKIDS ALIGN CORRECTLY WITH THE INTERLOCKING PINS ON THE TOP OF THE CONTAINER FRAME. THIS WILL PRECLUDE DAMAGE TO THE SKIDS AND ENSURE PROPER FUNCTIONING OF THE CONTAINER INTERLOCKS.
 - C. NOTE: CONTAINERS MAY NOT BE STACKED PRIOR TO LOADING.
2. CONTAINER HANDLING.

NOTES: (1) MATERIALS HANDLING EQUIPMENT (MHE) IS INTENDED TO MEAN EQUIPMENT, SUCH AS FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS AND SPREADER BARS THAT CAN BE USED TO HANDLE THE DEPICTED CONTAINERS.

(2) PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

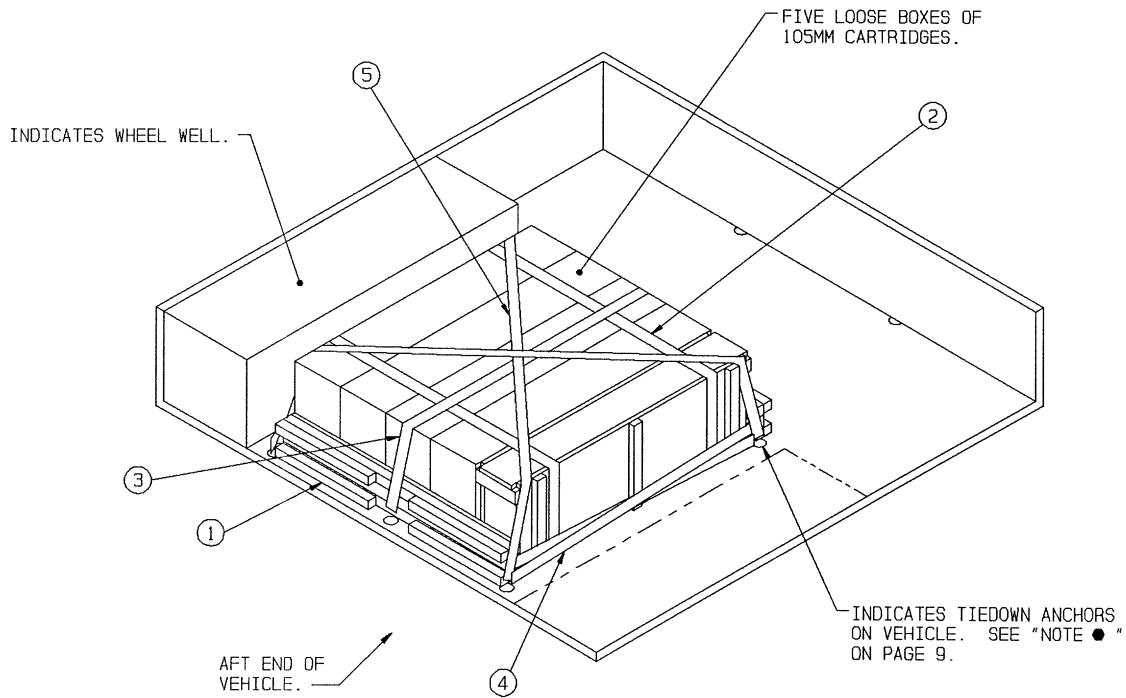
- A. ONLY APPROVED AND APPROPRIATELY SIZED MHE WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.
- B. IF HANDLING IS ACCOMPLISHED WITH FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION ONLY. CARE MUST BE EXERCISED WHEN INSERTING THE FORKS UNDER THE CONTAINER TO PREVENT DAMAGE TO THE CONTAINER BY THE FORK TINES OR THE FORKLIFT PACKAGE GUARD. ADDITIONALLY THE FORK TINES SHOULD BE PLACED UNDER THE CONTAINERS STRONGEST AREAS, THAT IS, THE LATERAL FRAME MEMBERS/BULKHEADS LOCATED NEAR THE LONGITUDINAL CENTER OF THE CONTAINER.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	13	9
2" X 6"	122	122
NAILS	NO. REQD	POUNDS
10d (3")	68	1-1/4
12d (3-1/4")	18	1/2
20d (4")	36	1-1/4
STEEL STRAPPING, 1-1/4" - 38.12' REQD		5.44 LBS
SEAL FOR 3/4" STRAPPING - - - 6 REQD		1/4 LB
STEEL STRAPPING, 2" - - - 96.00' REQD		32.00 LBS
SEAL FOR 2" STRAPPING - - - 16 REQD		3 LBS
ANTI-CHAFING MATERIAL - - - AS REQD		NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	4	20,312 LBS
DUNNAGE		306 LBS

TOTAL WEIGHT - - - - - 20,618 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① STRAP RETAINER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 58. POSITION ON EDGE AS SHOWN. SEE SPECIAL NOTE 5 ON PAGE 31.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL FIVE BOXES AT LOCATION SHOWN. PRE-POSITION THESE STRAPS ACROSS FLOOR OF VEHICLE PRIOR TO LOADING BOXES. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. BRING ENDS OF STRAP UP OVER BOXES AND HOOK ENDS OF STRAP TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM THE CENTER TIEDOWN ANCHOR AT REAR OF VEHICLE, OVER TOP OF LOAD, TO THE CENTER TIEDOWN ANCHOR ON THE CARGO DECK. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF THE BOXES AND THE RETAINER ASSEMBLY, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, DIAGONALLY OVER TOP OF BOXES, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

SPECIAL NOTES:

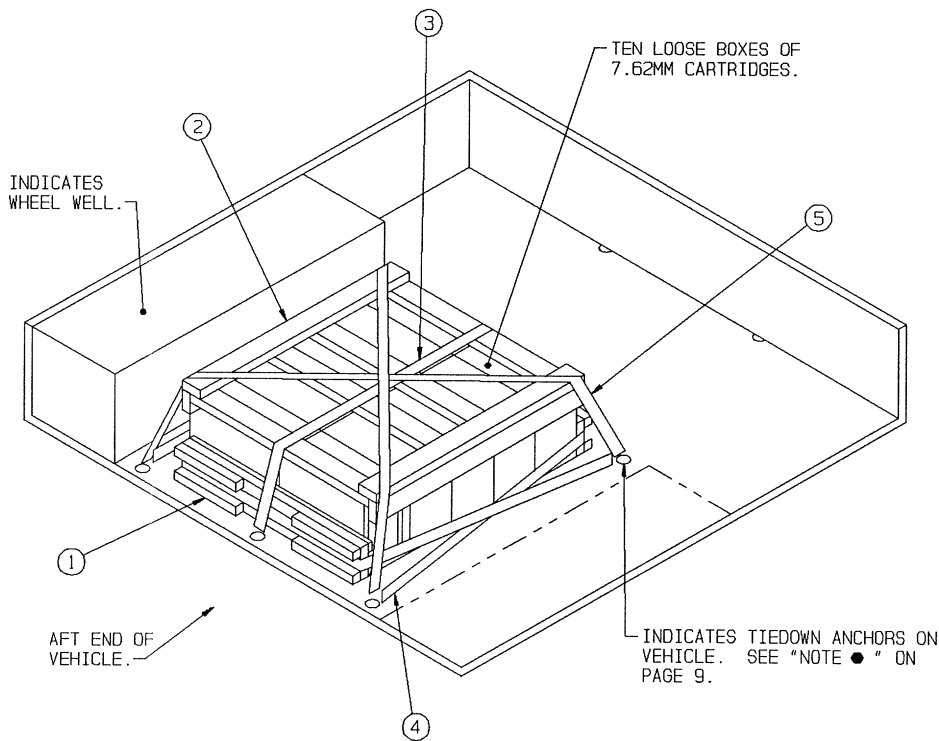
1. TYPICAL LOAD OF FIVE LOOSE BOXES IS SHOWN LOADED IN A 1-1/4-TON M998 HMMWV HAVING INSIDE DIMENSIONS OF 84" WIDE BY 83-1/4" LONG. CAUTION: SEE "NOTE ●" ON PAGE 9.
2. THE PROCEDURES SHOWN ON PAGE 30 ARE FOR THE HMMWV ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A LOAD OF FIVE LOOSE BOXES OF 105MM CARTRIDGES HAVING DIMENSIONS OF 14-1/4" WIDE BY 45-3/4" LONG BY 8-3/4" HIGH AND WEIGHING 141 POUNDS IS SHOWN AS A TYPICAL LOAD. IF LOADING LOOSE BOXES OF OTHER OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES. CAUTION: DO NOT STACK BOXES MORE THAN ONE LAYER HIGH.
4. IN THE LOAD SHOWN ON PAGE 30. THE FIVE LOOSE BOXES ARE POSITIONED ON THEIR SIDE WITH THE 8-3/4" DIMENSION ACROSS THE VEHICLE WIDTH. THIS KEEPS THE LOAD WIDTH WITHIN THE PARAMETER OF THE TIEDOWN ANCHORS.
5. IF THE BOXES BEING LOADED ARE POSITIONED WITH THE END CLEATS IN A VERTICAL POSITION, AND/OR THE BOXES DO NOT HAVE END CLEATS OMIT THE SPACER PIECE FROM THE STRAP RETAINER ASSEMBLY A.
6. WHEN LOADING LOOSE BOXES IN THE VEHICLE THE LOAD MUST BE CENTERED LONGITUDINALLY AND LATERALLY BETWEEN THE SIX TIEDOWN ANCHORS LOCATED BETWEEN THE VEHICLE WHEEL WELLS.
7. A TOTAL OF SEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 2"	8	2
2" X 2"	12	4
2" X 6"	8	8
NAILS	NO. REQD	POUNDS
6d (2")	10	NIL
10d (3")	32	1/2

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
BOXES - - - - -	5 - - - - -	705 LBS
DUNNAGE - - - - -	- - - - -	29 LBS
TOTAL WEIGHT - - - - -		734 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① STRAP RETAINER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 58. POSITION ON EDGE AS SHOWN.
- ② HOLD-DOWN ASSEMBLY F (1 REQD). SEE THE DETAIL ON PAGE 57. POSITION ON TOP OF THE LOOSE BOXES AS SHOWN.
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL EACH STRAP TO EXTEND FROM THE CENTER TIEDOWN ANCHOR AT REAR OF VEHICLE, OVER TOP OF LOAD, TO THE CENTER TIEDOWN ANCHOR ON THE CARGO DECK. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF THE BOXES AND THE RETAINER ASSEMBLY, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, DIAGONALLY OVER TOP OF BOXES AND THE HOLD-DOWN ASSEMBLY A, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

SPECIAL NOTES:

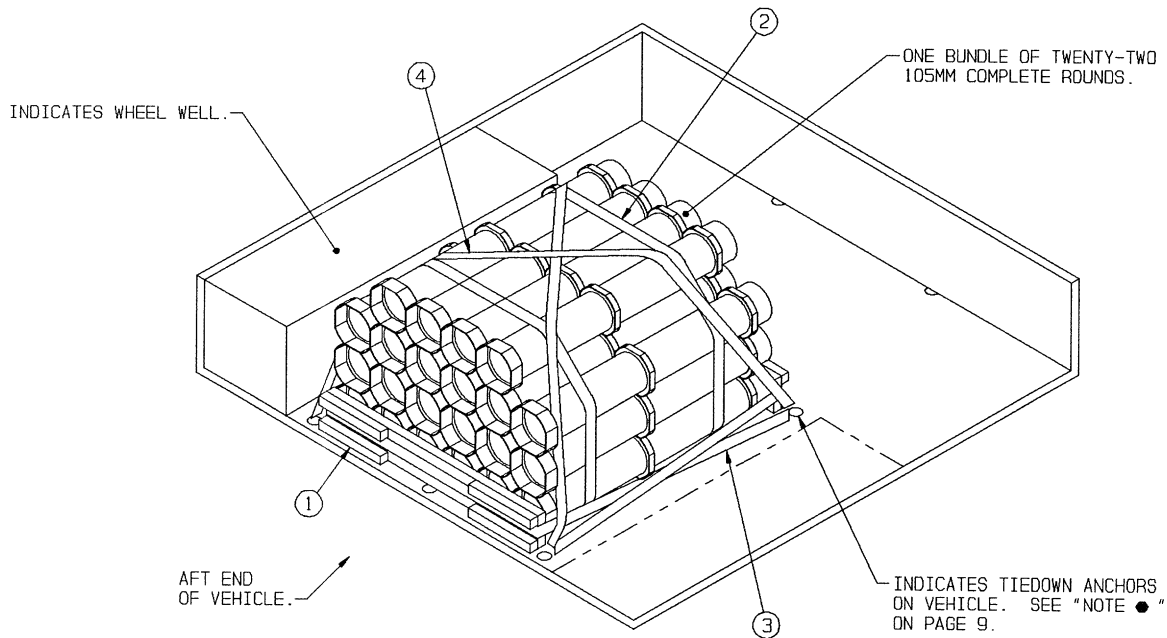
1. A TYPICAL LOAD OF TEN LOOSE BOXES IS SHOWN LOADED IN A 1-1/4-TON M998 HMMWV HAVING INSIDE DIMENSIONS OF 84" WIDE BY 83-1/4" LONG. CAUTION: SEE "NOTE ●" ON PAGE 9.
2. THE PROCEDURES SHOWN ON PAGE 32 ARE FOR THE HMMWV ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A LOAD OF FIVE LOOSE BOXES OF 7.62MM CARTRIDGES HAVING DIMENSIONS OF 11-1/2" WIDE BY 17-1/2" LONG BY 8-1/8" HIGH AND WEIGHING 81 POUNDS IS SHOWN AS A TYPICAL LOAD. IF LOADING LOOSE BOXES OF OTHER OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES. CAUTION: DO NOT STACK BOXES MORE THAN ONE LAYER HIGH.
4. IN THE LOAD SHOWN ON PAGE 32. THE TEN LOOSE BOXES ARE POSITIONED ON THEIR SIDE, TWO WIDE AND FIVE LONG WITH THE 17-1/2" DIMENSION ACROSS THE VEHICLE WIDTH. THIS KEEPS THE LOAD WIDTH WITHIN THE PARAMETER OF THE TIEDOWN ANCHORS.
5. WHEN LOADING LOOSE BOXES IN THE VEHICLE THE LOAD MUST BE CENTERED LONGITUDINALLY AND LATERALLY BETWEEN THE SIX TIEDOWN ANCHORS LOCATED BETWEEN THE VEHICLE WHEEL WELLS.
6. A TOTAL OF FIVE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	8	3
2" X 4"	25	17
2" X 6"	6	6
NAILS	NO. REQD	POUNDS
10d (3")	62	1

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
BOXES - - - - -	10 - - - - -	810 LBS
DUNNAGE - - - - -	- - - - -	53 LBS
TOTAL WEIGHT - - - - -		863 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① STRAP RETAINER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 58. POSITION ON EDGE AS SHOWN.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL TWENTY-TWO CONTAINERS AS CLOSE TO EACH END AS POSSIBLE. PREPOSITION THE STRAPS ACROSS FLOOR OF VEHICLE PRIOR TO LOADING CONTAINERS. ASSURE THAT STRAPS LAY FLAT WITH THE RATCHET HANDLE ON THE BOTTOM SIDE. HOOK ENDS OF STRAPS TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, AROUND THE END OF THE CONTAINERS AND THE STRAP RETAINER ASSEMBLY A, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON VEHICLE, DIAGONALLY OVER TOP OF CONTAINERS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "H" ON PAGE 2.

SPECIAL NOTES:

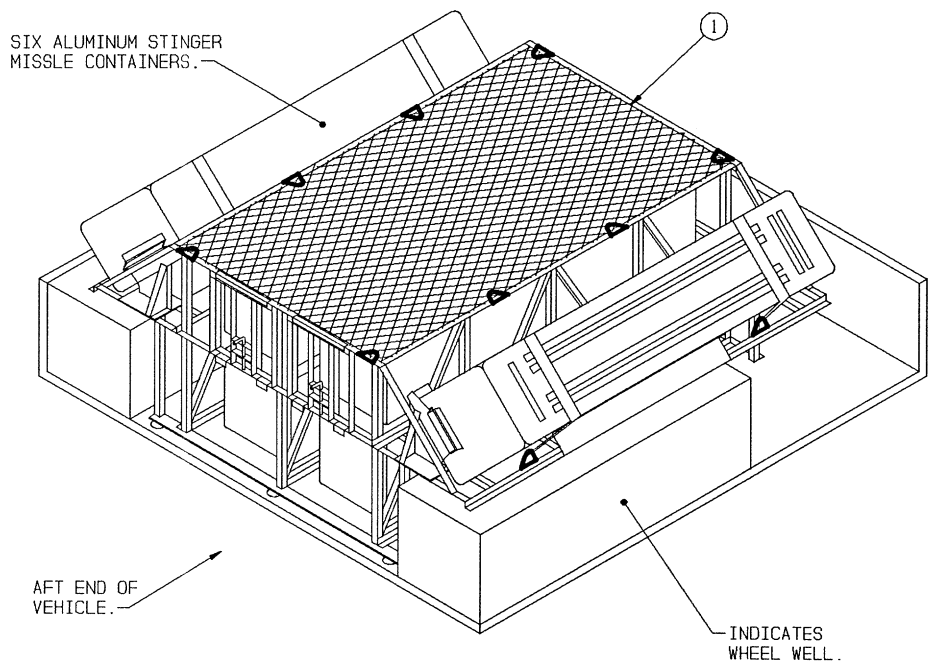
1. TYPICAL LOAD OF TWENTY-TWO LOOSE COMPLETE ROUNDS IS SHOWN LOADED IN A 1-1/4-TON M998 HMMWV HAVING INSIDE DIMENSIONS OF 84" WIDE BY 83-1/4" LONG. CAUTION: SEE "NOTE ●" ON PAGE 9.
2. THE PROCEDURES SHOWN ON PAGE 34 ARE FOR THE HMMWV ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A LOAD OF TWENTY-TWO LOOSE COMPLETE ROUNDS OF 105MM CARTRIDGES HAVING DIMENSIONS OF 7-1/8" WIDE BY 45-5/8" LONG BY 7-1/8" HIGH AND WEIGHING 75 POUNDS IS SHOWN AS A TYPICAL LOAD. NOTE: THE PA104 CONTAINERS SHOWN IN THE LOAD ON PAGE 34 HAVE INTERLOCKING DEVICES. THE INTERLOCKS WILL ONLY FUNCTION PROPERLY IF THE "PINS" ARE IN AN UP-RIGHT POSITION. THE INTERLOCKS WILL AID IN THE PREVENTION OF LATERAL AND LONGITUDINAL MOVEMENT OF CONTAINER. IF LOADING LOOSE COMPLETE ROUNDS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS HAVING INTERLOCKING DEVICES FOLLOW THESE SAME PROCEDURES. A MINIMUM OF THREE TO A MAXIMUM OF TWENTY-FOUR CONTAINERS CAN BE SECURED USING THESE PROCEDURES.
4. WHEN LOADING LOOSE BOXES IN THE VEHICLE THE LOAD MUST BE CENTERED LONGITUDINALLY AND Laterally BETWEEN THE SIX TIEDOWN ANCHORS LOCATED BETWEEN THE VEHICLE WHEEL.
5. A TOTAL OF SIX WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	8	3
2" X 6"	7	7
NAILS	NO. REQD	POUNDS
10d (3")	32	1/2

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
COMPLETE ROUNDS	22	1,650 LBS
DUNNAGE		21 LBS
<u>TOTAL WEIGHT</u>		<u>1,671 LBS (APPROX)</u>



ISOMETRIC VIEW

KEY NUMBER

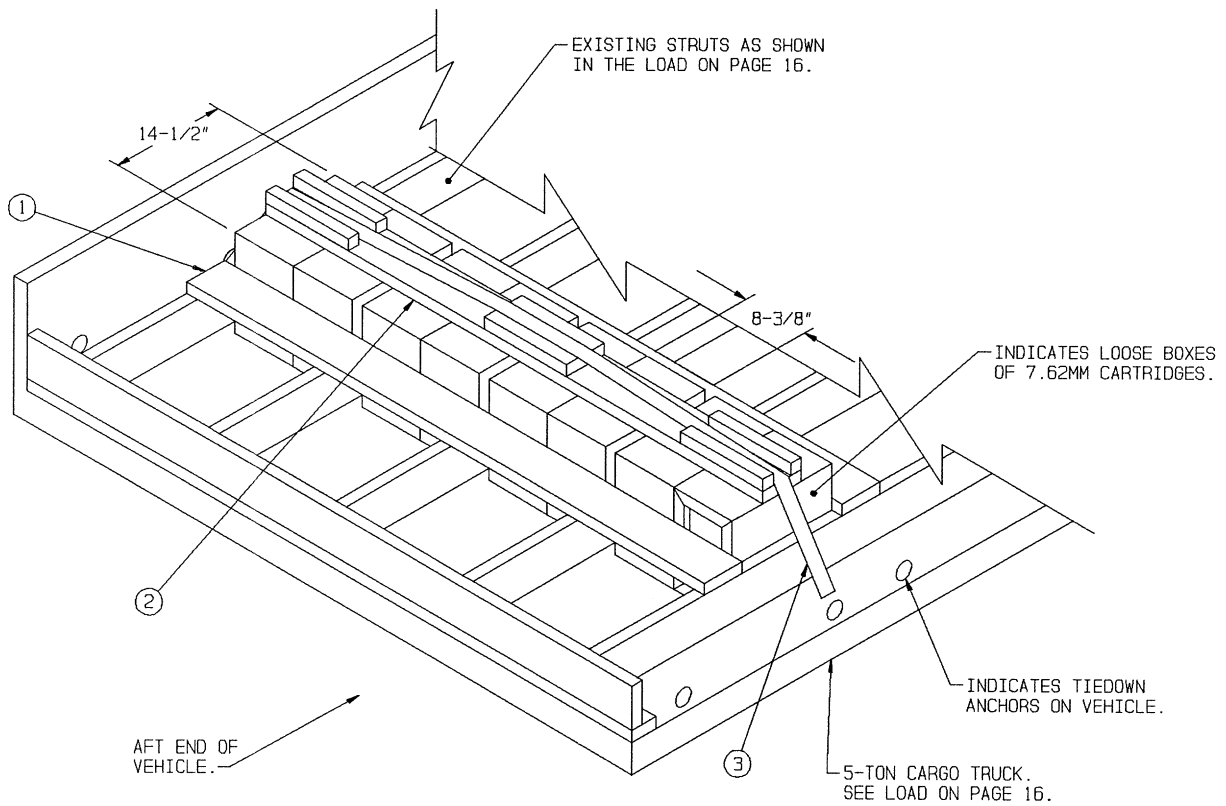
- ① ONE MANPADS STINGER/REDEYE READY RACK LOADED WITH SIX ALUMINUM STINGER MISSILE CONTAINERS. THE READY RACK IS BOLTED TO THE VEHICLE FLOOR.

SPECIAL NOTES:

1. ONE MANPADS STINGER/REDEYE READY RACK, WITH SIX ALUMINUM STINGER MISSILE CONTAINERS IS SHOWN LOADED IN A 1-1/4-TON M998 HMMWV HAVING INSIDE DIMENSIONS OF 84" WIDE BY 83-1/4" LONG.
2. THE PROCEDURES SHOWN ON PAGE 36 ARE FOR THE HMMWV ONLY AND MUST NOT BE USED FOR OTHER VEHICLES.
3. A LOAD OF SIX ALUMINUM STINGER MISSILE CONTAINERS HAVING DIMENSIONS OF 13" WIDE BY 65-9/16" LONG BY 13-3/8" HIGH AND WEIGHING 86 POUNDS IS SHOWN IN POSITION ON THE READY RACK. THE MANPADS READY RACK IS BOLTED TO THE FLOOR OF THE VEHICLE. IF DESIRED, SIX REDEYE MISSILE CONTAINERS MAY BE POSITIONED ON THE READY RACK.

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
STINGER - - - - -	6 - - - - -	516 LBS
READY RACK - - - - -	- - - - -	359 LBS
TOTAL WEIGHT - - - - -		875 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" BY LENGTH-TO-SUIT (2 REQD). POSITION AGAINST THE BOXES AS SHOWN. NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.
- ② STRAPPING BOARD ASSEMBLY H (1 REQD). SEE THE DETAIL ON PAGE 59. CENTER ON TOP OF THE LOAD AS SHOWN.
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL THE STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON THE SIDE OF THE VEHICLE, OVER TOP OF THE LOOSE BOXES AND THE STRAPPING BOARD ASSEMBLY H, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

SPECIAL NOTES:

1. IF IT IS NECESSARY TO TRANSPORT LOOSE BOXES OF AMMUNITION IN/ON A VEHICLE WHICH IS LOADED WITH PALLETIZED AND/OR SKIDDED UNITS, SUCH AS THE LOAD OF 8-INCH SEPARATE LOADING PROJECTILES SHOWN ON PAGE 16. USE THE PROCEDURES SHOWN ON PAGE 38.
2. A LOAD OF EIGHT LOOSE BOXES OF 7.62MM CARTRIDGES HAVING DIMENSIONS OF 12-3/4" WIDE BY 14-1/2" LONG BY 8-3/8" HIGH AND WEIGHING 58 POUNDS IS SHOWN AS A TYPICAL LOAD. IF LOADING LOOSE BOXES OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
3. PRIOR TO LOADING THE LOOSE BOXES DETERMINE THE TOTAL QUANTITY AND WEIGHT. POSITION ONE OR MORE BOXES ON THE FLOOR BETWEEN TWO EXISTING STRUTS AT A LOCATION THAT WILL ALLOW ONE STRAP TO BE POSITIONED OVER TOP OF THE ROW. EITHER THE LENGTH, HEIGHT OR WIDTH OF THE BOXES MAY BE POSITIONED ACROSS THE VEHICLE WIDTH. IF THE QUANTITY OF LOOSE BOXES REQUIRES MORE THAN ONE ROW ACROSS THE VEHICLE WIDTH, EACH ROW AND/OR PARTIAL ROW MUST BE AT A LOCATION THAT WILL ALLOW ONE STRAP TO BE POSITIONED OVER TOP OF THE ROW.
4. THE LOOSE BOXES MAY BE POSITIONED BETWEEN THE STRUTS AT THE FORWARD, CENTER OR THE REAR OF THE VEHICLE.
5. THE TOTAL LOAD MUST NOT EXCEED THE OFF HIGHWAY WEIGHT LIMIT OF THE VEHICLE.
6. LOOSE BOXES MAY ALSO BE POSITIONED BETWEEN THE BACK-UP CLEATS AND/OR CENTER STRUTS ON THE SEMITRAILER LOADS, AS SHOWN ON PAGE 24. SECURE IN THE SAME MANNER AS SHOWN ON PAGE 38.
7. BOXES LONGER THAN 24" WILL REQUIRE TWO STRAPPING BOARD ASSEMBLIES H AND TWO STRAPS ACROSS EACH ROW OF BOXES, AS SHOWN IN THE LOAD ON PAGE 40.
8. DO NOT STACK OR MIX BOX SIZES IN A ROW. ALL BOXES IN A SINGLE ROW MUST BE IN CONTACT WITH THE STRAPPING BOARD ASSEMBLY H AND HEADER PIECES MARKED ①.
9. UNITIZATION OF UNIT BASIC LOAD ITEMS:

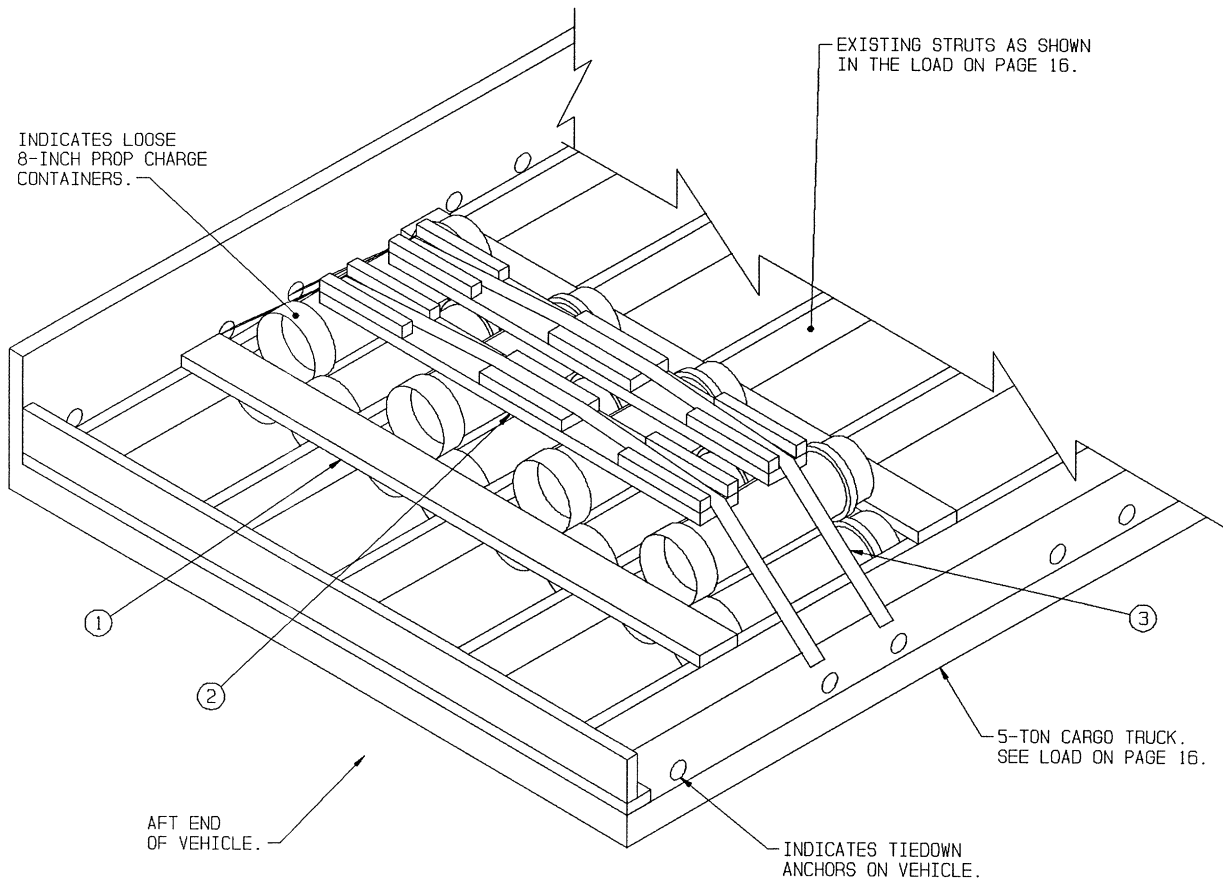
IT MAY BE ADVANTAGEOUS FOR INSTALLATIONS HAVING UNIT BASIC LOADS CONSISTING OF LARGE QUANTITIES OF "LOOSE" COMPLETE ROUND CONTAINERS, TO UNITIZE THESE ITEMS ON PALLETS AND/OR SKIDDED UNIT BASES AS INSTRUCTED IN THE FOLLOWING AMC DRAWINGS:

- A. UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4116-20PA1002.
- B. UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON SKIDDED UNITS:
AMC DRAWING 19-48-4138-20PA1000.
- C. UNITIZATION PROCEDURES FOR PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4042-20PM1001.
- D. UNITIZATION PROCEDURES FOR COMPLETE ROUNDS PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4079-20PM1002.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	4	1
2" X 6"	20	20
NAILS	NO. REQD	POUNDS
10d (3")	45	3/4

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
BOXES - - - - -	8 - - - - -	464 LBS
DUNNAGE - - - - -	- - - - -	43 LBS
TOTAL WEIGHT - - - - -		507 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" BY LENGTH-TO-SUIT (2 REQD). POSITION AGAINST THE CONTAINERS AS SHOWN. NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.
- ② STRAPPING BOARD ASSEMBLY H (2 REQD). SEE THE DETAIL ON PAGE 59. POSITION ACROSS THE TOP OF THE LOAD, AS SHOWN.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON THE SIDE OF THE VEHICLE, OVER TOP OF THE LOOSE CONTAINERS AND THE STRAPPING BOARD ASSEMBLY H, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

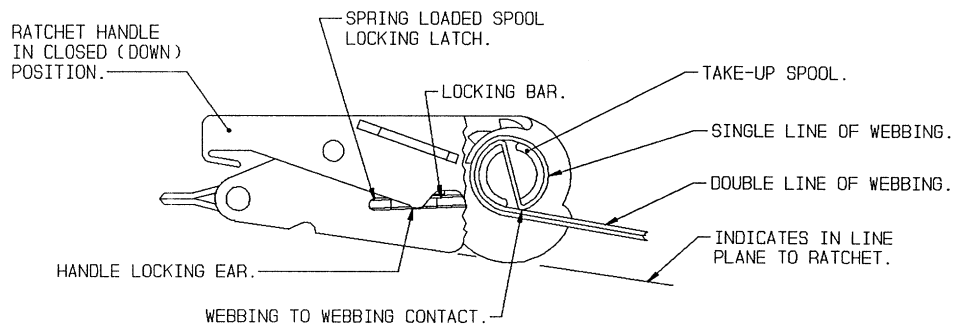
SPECIAL NOTES:

1. IF IT IS NECESSARY TO TRANSPORT LOOSE PROPELLING CHARGE CONTAINERS IN/ON A VEHICLE WHICH IS LOADED WITH PALLETIZED AND/OR SKIDDED UNITS, SUCH AS THE LOAD OF 8-INCH SEPARATE LOADING PROJECTILES SHOWN ON PAGE 16. USE THE PROCEDURES SHOWN ON THIS PAGE.
2. A LOAD OF TWELVE LOOSE PROPELLING CHARGE CONTAINERS FOR 8-INCH HOWITZER HAVING DIMENSIONS OF 8-13/32" DIAMETER BY 26-9/32 LONG AND WEIGHING 31 POUNDS IS SHOWN AS A TYPICAL LOAD. IF LOADING LOOSE PROPELLING CHARGE CONTAINERS OF OTHER ITEMS, QUANTITIES, DIMENSIONS AND WEIGHTS FOLLOW THESE SAME PROCEDURES.
3. PRIOR TO LOADING THE LOOSE PROPELLING CHARGE CONTAINERS DETERMINE THE TOTAL QUANTITY AND WEIGHT. POSITION TWO CONTAINERS WITH END REVERSED ON THE FLOOR BETWEEN TWO EXISTING STRUTS AT A LOCATION THAT WILL ALLOW TWO STRAPS TO BE POSITIONED OVER TOP OF THE ROW. POSITION A THIRD CONTAINER TO CENTER ON TOP OF THE BOTTOM TWO CONTAINERS. IF THE QUANTITY OF LOOSE CONTAINERS REQUIRES MORE THAN ONE ROW ACROSS THE VEHICLE WIDTH, EACH ROW AND/OR PARTIAL ROW MUST BE AT A LOCATION THAT WILL ALLOW TWO STRAPS TO BE POSITIONED OVER TOP OF THE ROW. THE HEADER PIECE MARKED ① MUST CONTACT THE BELL END OF A BOTTOM AND TOP CONTAINER. TO PROVIDE FOR THIS, ADDITIONAL 2" X 6" MATERIAL MAY BE LAMINATED TO THE HEADER.
4. THE LOOSE CONTAINERS MAY BE POSITIONED BETWEEN THE STRUTS AT THE FORWARD, CENTER OR THE REAR OF THE VEHICLE.
5. THE TOTAL LOAD MUST NOT EXCEED THE OFF HIGHWAY WEIGHT LIMIT OF THE VEHICLE.
6. LOOSE CONTAINERS MAY ALSO BE POSITIONED BETWEEN THE BACK-UP CLEATS AND/OR CENTER STRUTS ON THE SEMITRAILER LOADS, AS SHOWN ON PAGE 24. SECURE IN THE SAME MANNER AS SHOWN ON PAGE 40 .
7. LOOSE COMPLETE ROUNDS MAY ALSO BE SECURED BY USING THE SAME PROCEDURES SHOWN ON PAGE 40.
8. DO NOT MIX DIFFERENT SIZE CONTAINERS IN THE SAME ROW. ALL CONTAINERS IN A SINGLE ROW MUST BE IN CONTACT WITH THE STRAPPING BOARD ASSEMBLY H AND SECURED LONGITUDINALLY WITH THE HEADER PIECES MARKED ① .
9. UNITIZATION OF UNIT BASIC LOAD ITEMS:
 IT MAY BE ADVANTAGEOUS FOR INSTALLATIONS HAVING UNIT BASIC LOADS CONSISTING OF LARGE QUANTITIES OF "LOOSE" WOODEN BOXES, "LOOSE" PROPELLING CHARGE CONTAINERS, AND "LOOSE" COMPLETE ROUND CONTAINERS. TO UNITIZE THESE ITEMS ON PALLETS AND/OR SKIDDED UNIT BASES AS INSTRUCTED IN THE FOLLOWING AMC DRAWINGS:
 - A. UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4116-20PA1002.
 - B. UNITIZATION PROCEDURES FOR BOXED AMMUNITION AND COMPONENTS ON SKIDDED UNITS:
AMC DRAWING 19-48-4138-20PA1000.
 - C. UNITIZATION PROCEDURES FOR PROPELLING CHARGES PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4042-20PM1001.
 - D. UNITIZATION PROCEDURES FOR COMPLETE ROUNDS PACKED IN CYLINDRICAL METAL CONTAINERS ON 4-WAY ENTRY PALLETS:
AMC DRAWING 19-48-4079-20PM1002.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2" 2" X 6"	8 24	3 24
NAILS	NO. REQD	POUNDS
10d (3")	60	1

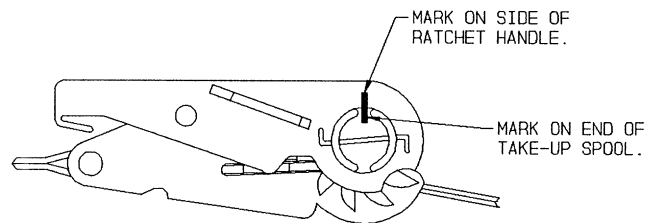
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS - - - - -	12 - - - - -	372 LBS
DUNNAGE - - - - -	- - - - -	55 LBS
TOTAL WEIGHT - - - - -		427 LBS (APPROX)



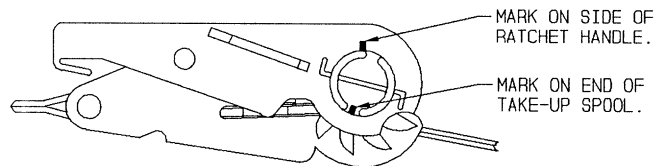
STEP 1

IN THIS VIEW PART OF THE RATCHET HOUSING IS SHOWN BROKEN AWAY TO DEPICT WEBBING-TO-WEBBING CONTACT ON THE TAKE-UP SPOOL OF THE RATCHET. WEBBING-TO-WEBBING CONTACT IS ACHIEVED WHEN THE OPERATOR HOLDS THE DOUBLE LINE OF WEBBING IN AN "IN LINE PLANE TO THE RATCHET" AND IT MAKES CONTACT WITH THE SINGLE LINE OF WEBBING.



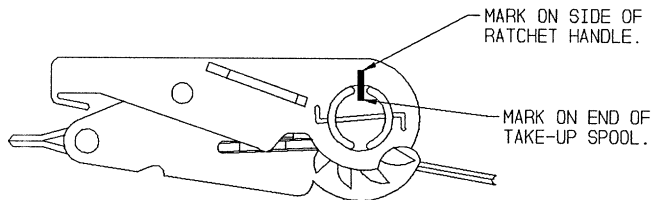
STEP 2

THIS VIEW DEPICTS THE LOCATION OF THE FIXED MARK ON THE RATCHETING HANDLE, WITH ANOTHER MATCHING MARK ON THE TAKE-UP SPOOL, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



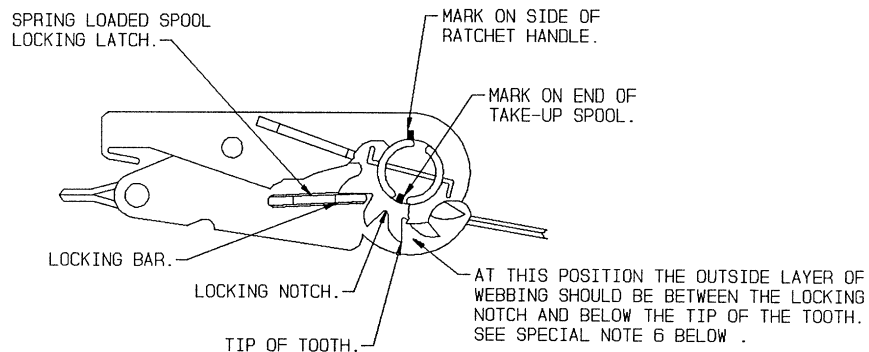
STEP 3

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE-HALF TURN, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



STEP 4

THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE FULL TURN, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE.



STEP 5

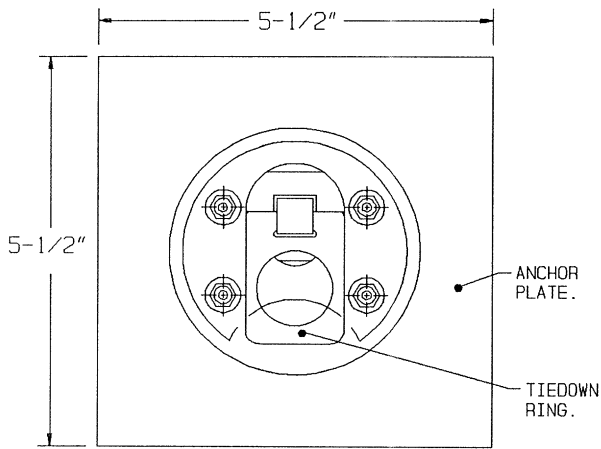
THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE AND ONE-HALF TURNS, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE. ALSO IN THIS VIEW, PART OF THE RATCHET HANDLE IS BROKEN AWAY TO SHOW THE LOCKING BAR FULLY SEATED IN THE MATCHING LOCKING NOTCH (SPROCKET GEAR TEETH).

SPECIAL NOTES:

(SPECIAL NOTES CONTINUED)

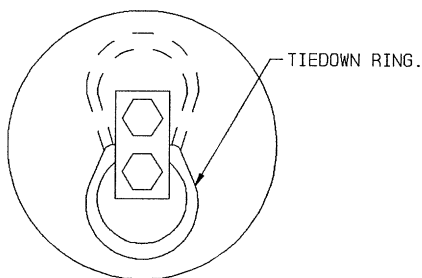
1. THE PURPOSE OF THE RATCHET DETAILS ON PAGE 42 AND THE DETAIL AND NOTES ON THIS PAGE ARE TO AUGMENT THE GUIDANCE SET FORTH WITHIN GENERAL NOTE "F" ON PAGE 2.
2. THE REQUIREMENTS FOR 1/2 BUT NOT MORE THAN 1-1/2 WRAPS OF STRAP ON THE TAKE-UP SPOOL OF THE TENSIONING RATCHET, AS SPECIFIED WITHIN GENERAL NOTE "F" ON PAGE 2, ACTUALLY MEANS 1/2 TO 1-1/2 WRAPS OF DOUBLE WEBBING. ALSO, THE 1/2 TO 1-1/2 WRAPS (TURNS) ARE TO BE ACCOMPLISHED ONLY AFTER ENOUGH WEBBING HAS BEEN WOUND ONTO THE SPOOL TO ACHIEVE A WEBBING-TO-WEBBING CONFIGURATION, AS SHOWN IN THE "STEP 1" DETAIL ON PAGE 42.
3. ONE METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE WOUND ONTO THE TAKE-UP SPOOL, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO PLACE A FIXED MARK (PAINT OR SIMILAR MATERIAL) ON THE SIDE OF THE RATCHETING HANDLE, WITH THE HANDLE IN ITS CLOSED (DOWN) POSITION, AND ANOTHER SHORT MATCHING MARK ON THE END OF THE SPOOL, AS SHOWN IN THE "STEP 2" DETAIL ON PAGE 42. AS THE SPOOL IS ROTATED TO TENSION A TIEDOWN STRAP ASSEMBLY, THE NUMBER OF WRAPS (TURNS) CAN BE DETERMINED VISUALLY BY COMPARING THE "MARK" LOCATION ON THE SPOOL TO THE "MARK" LOCATION ON THE RATCHETING HANDLE WITH THE HANDLE IN CLOSED POSITION. SEE THE "STEP 3" AND "STEP 4" DETAILS ON PAGE 42, AND "STEP 5" ABOVE.
4. ANOTHER METHOD THAT CAN BE USED TO ENSURE THAT THE 1/2 TO 1-1/2 WRAPS ARE ACHIEVED, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO COUNT THE AUDIBLE CLICKS MADE BY THE RATCHET ASSEMBLY AS A WEB STRAP ASSEMBLY IS BEING TENSIONED. THE RATCHET ASSEMBLY ON MOST WEB STRAP ASSEMBLIES HAVE 11 TEETH ON THE GEARLIKE DEVICE ON EACH END OF THE TAKE-UP SPOOL; SOME OTHER STRAP ASSEMBLIES HAVE ONLY 9 TEETH. THEREFORE, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 6 TO A MAXIMUM OF 16 CLICKS (1/2 TO 1-1/2 WRAPS) WHEN THE GEAR HAS 11 TEETH, AND ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 5 TO A MAXIMUM OF 13 CLICKS (1/2 TO 1-1/2 WRAPS) IF THE GEAR HAS 9 TEETH.
5. AFTER A STRAP ASSEMBLY HAS BEEN PROPERLY TENSIONED, CARE MUST BE EXERCISED TO ASSURE THAT THE TAKE-UP SPOOL LOCKING LATCH (SPRING LOADED DEVICE WITH A LOCKING BAR ON EACH SIDE IN MATCHING LOCKING NOTCHES, WHICH ARE SIMILAR TO SPROCKET GEAR TEETH, THAT ARE LOCATED ON EACH END OF THE TAKE-UP SPOOL. SEE "STEP 5" DETAIL ABOVE. THE LOCKING LATCH IS "FULLY SEATED" WHEN THE HANDLE WILL CLOSE AND THE LOCKING EAR, OR SIMILAR DEVICE ON THE HANDLE, PREVENTS THE ACCIDENTAL WITHDRAWAL OF THE LOCKING LATCH. SEE "STEP 1" DETAIL ON PAGE 42. IF THE FULLY SEATED CONDITION CANNOT BE ACHIEVED, THE STRAP MUST BE RELEASED AND HAND RETENSIONED AS TIGHT AS POSSIBLE TO ACHIEVE THE FULLY SEATED CONDITION.
6. ANOTHER VISUAL METHOD OF DETERMINING WHEN THERE IS 1/2 TO 1-1/2 WRAPS OF WEBBING ON THE TAKE-UP SPOOL, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, IS TO LOOK AT THE SPOOL. WHEN A TIEDOWN IS COMPLETE, THE STRAP WEBBING ON THE SPOOL OF THE RATCHET SHOULD BE ABOVE THE LOWER CURVE OF THE LOCKING NOTCH, AND SHOULD BE BELOW THE TIPS OF THE TEETH OF THE RATCHET AS IDENTIFIED IN "STEP 5" ABOVE. IT SHOULD BE NOTED THAT ANY PROCEDURES THAT ENSURE PROPER TENSIONING ARE ACCEPTABLE AND METHODS ON THE DRAWING ONLY PROVIDE SOME METHODS.

(CONTINUED AT RIGHT)



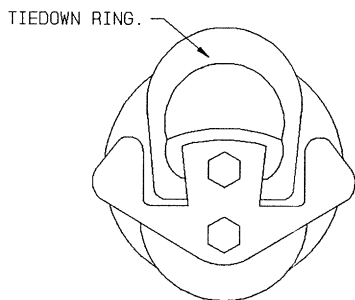
UNIVERSAL TIEDOWN ANCHOR (FRONT VIEW)

SEE SPECIAL NOTE 1.



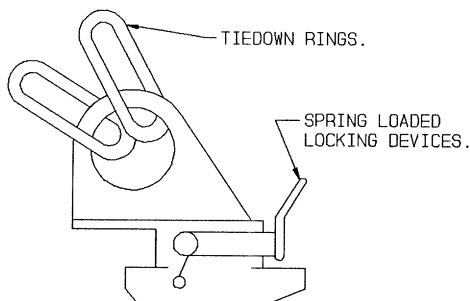
TYPE III, FIXED TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 5.



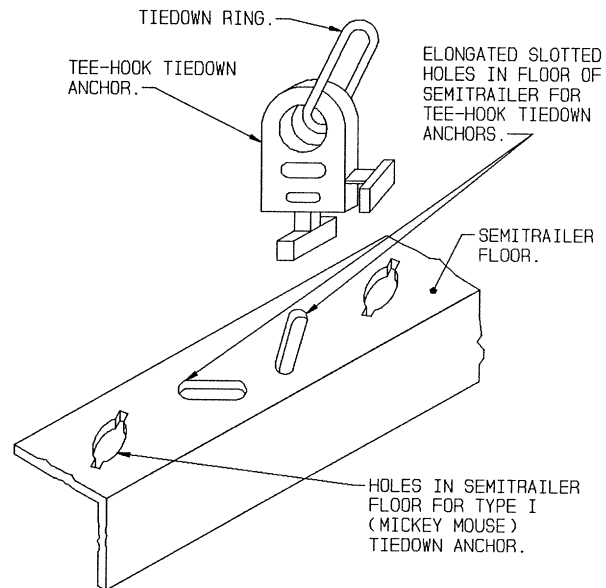
TYPE I, REMOVABLE TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 2.



TYPE II, REMOVABLE TIEDOWN ANCHOR (SIDE VIEW)

SEE SPECIAL NOTE 4.

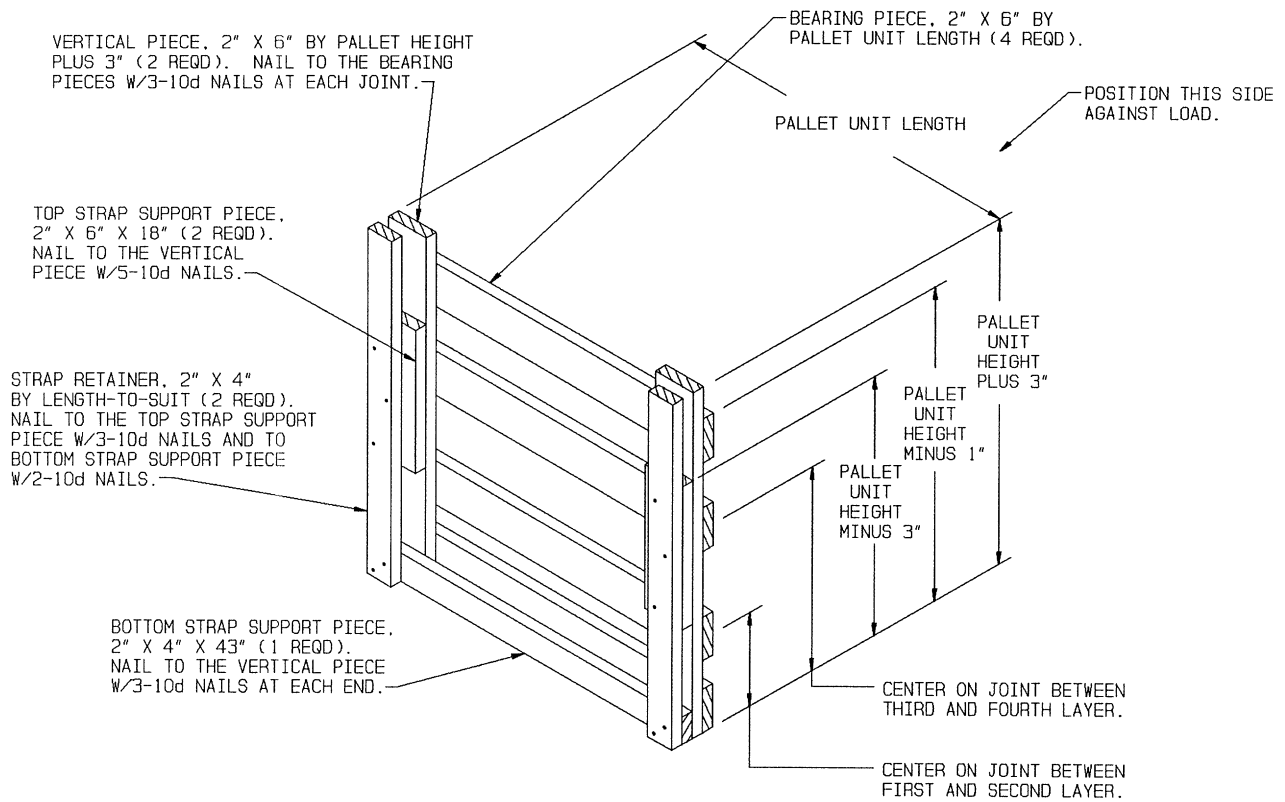


REMOVABLE TEE-HOOK TIEDOWN ANCHOR (ISOMETRIC VIEW)

SEE SPECIAL NOTE 3.

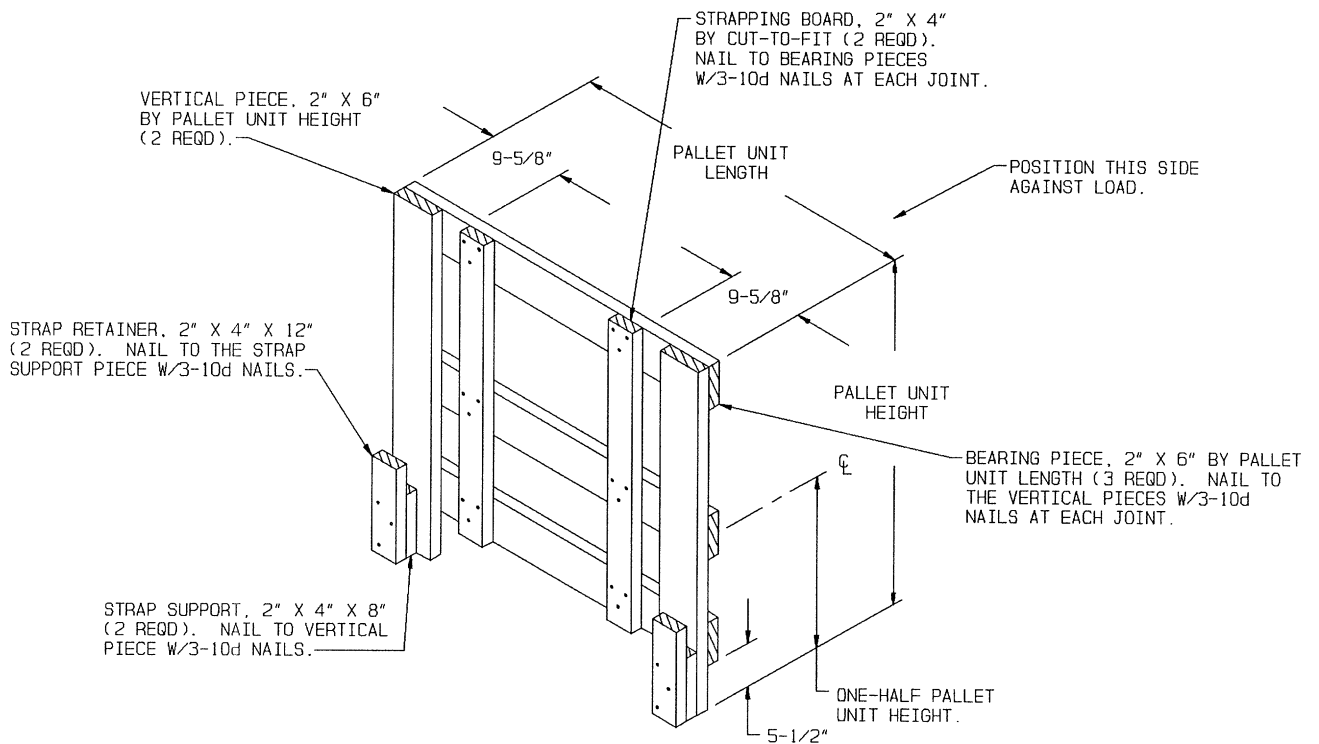
SPECIAL NOTES:

1. UNIVERSAL TIEDOWN ANCHOR: IF THE TACTICAL VEHICLES BEING USED ARE NOT EQUIPPED WITH THE 5,000 POUND UNIVERSAL TIEDOWN ANCHOR SHOWN AT LEFT, SEE TB 9-2300-280-30 FOR VEHICLE MODIFICATION PROCEDURES AND INSTALLATION OF THE TIEDOWN ANCHOR. WITH THE EXCEPTION OF THE HEAVY EXPANDED MOBILITY TACTICAL TRUCK (HEMITT), M977 AND/OR M985, WHICH HAS THE TIEDOWN ANCHORS INSTALLED IN THE FLOOR, THESE TIEDOWN ANCHORS ARE TO BE INSTALLED IN THE SIDE WALLS AND END WALLS OF CARGO TRUCKS AND CARGO TRAILERS. IF AN M127, 12-TON SEMITRAILER IS BEING USED, SEE INFORMATION IN TB 9-2300-280-30. THE M127 SEMITRAILER REQUIRES A DIFFERENT TYPE OF TIEDOWN ANCHOR.
2. TYPE I, REMOVABLE TIEDOWN ANCHOR: THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS AND IS INSTALLED ON THE M871 AND M872 SEMITRAILERS. IT IS COMMONLY REFERRED TO AS "MICKEY MOUSE". THERE ARE TEN TIEDOWN ANCHOR LOCATIONS ON EACH SIDE OF THE M871 SEMITRAILER AND APPROXIMATELY TWENTY-EIGHT ON EACH SIDE OF THE M872 SEMITRAILER. THIS TIEDOWN ANCHOR IS POSITIONED BY REACHING UNDER THE FLOOR OF THE SEMITRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT INTO POSITION. SEE LOAD GUIDANCE NOTES 8 AND 9 ON PAGE 4. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-112-1732.
3. REMOVABLE TEE-HOOK TIEDOWN ANCHOR: THIS TIEDOWN ANCHOR IS RATED AT 5,000 POUNDS AND IS ONLY INSTALLED ON THE M872 SEMITRAILER. THERE ARE FIVE TIEDOWN ANCHOR LOCATIONS ON EACH SIDE OF THE M872 SEMITRAILER. THIS TIEDOWN ANCHOR IS POSITIONED BY INSERTING IT FROM THE TOP INTO ONE OF THE ELONGATED SLOTTED HOLES LOCATED ON THE SIDE OF THE SEMITRAILER FLOOR. SEE LOAD GUIDANCE NOTE 9 ON PAGE 4. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-113-9285.
4. TYPE II, REMOVABLE TIEDOWN ANCHOR: THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS AND IS ONLY FOR USE ON THE M871 SEMITRAILER. IT IS COMMONLY REFERRED TO AS "BIG FOOT". THERE ARE TEN TIEDOWN ANCHOR LOCATIONS ON EACH SIDE OF THE SEMITRAILER. IT HAS A SPRING-LOADED LOCKING DEVICE TO HOLD IT IN PLACE, IS INSERTED FROM THE TOP INTO A 1-3/4" DIAMETER HOLE LOCATED ON THE SIDE OF THE SEMITRAILER FLOOR, AND IT SWIVELS. SEE LOAD GUIDANCE NOTE 8 ON PAGE 4. THIS TIEDOWN IS FURTHER IDENTIFIED AS NSN 2540-01-117-3043.
5. TYPE III, FIXED TIEDOWN ANCHOR: THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS, IS NOT REMOVABLE AND IS ONLY INSTALLED ON THE M871 SEMITRAILER. THERE ARE FIVE ON EACH SIDE OF THE M871 SEMITRAILER AND THEY DO NOT SWIVEL. SEE LOAD GUIDANCE NOTE 8 ON PAGE 4.



END GATE ASSEMBLY A

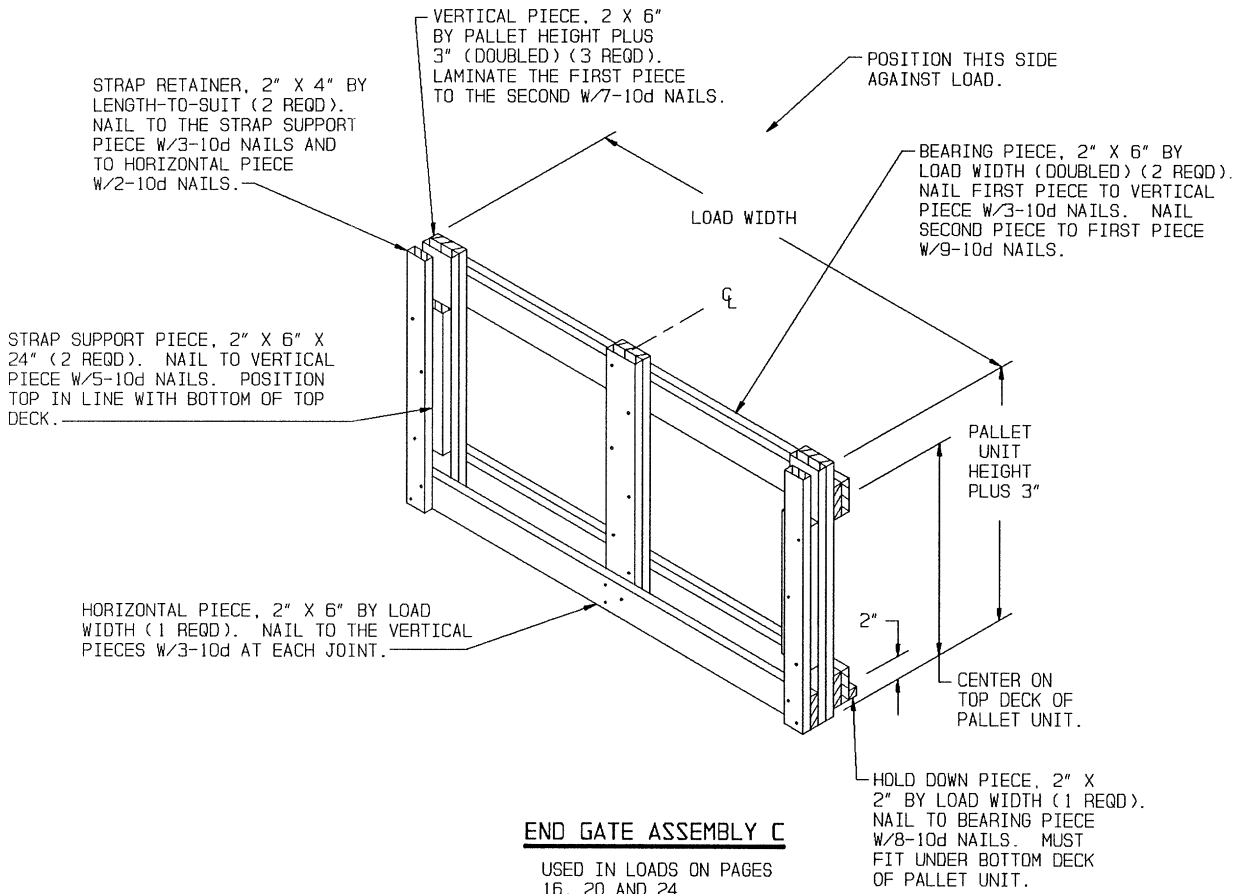
USED IN LOAD ON PAGE 6. REQUIRED TO PROVIDE SUPPORT FOR WEB STRAPS, AND RETAIN CONTAINERS.



END GATE ASSEMBLY B

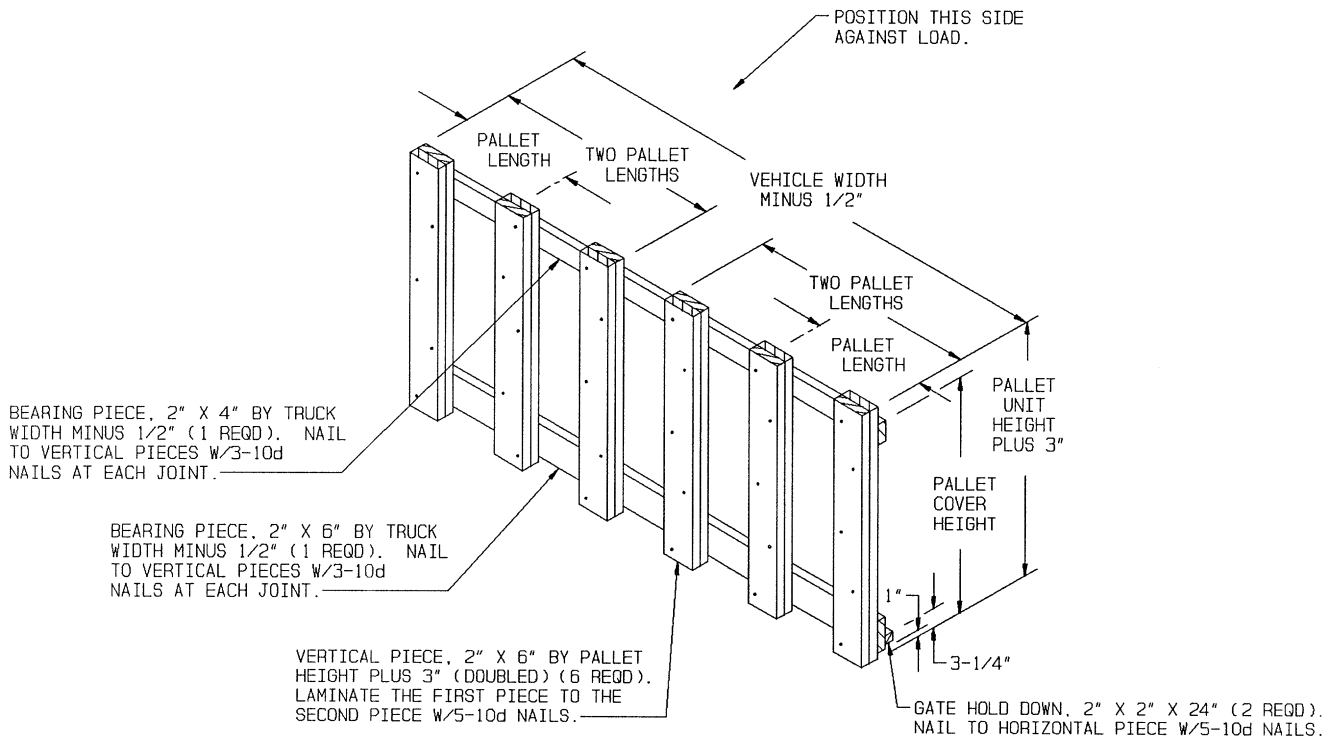
USED IN THE LOAD ON PAGE 8. REQUIRED TO PROVIDE SUPPORT FOR WEB STRAPS AND RETAIN BOXES.

DETAILS



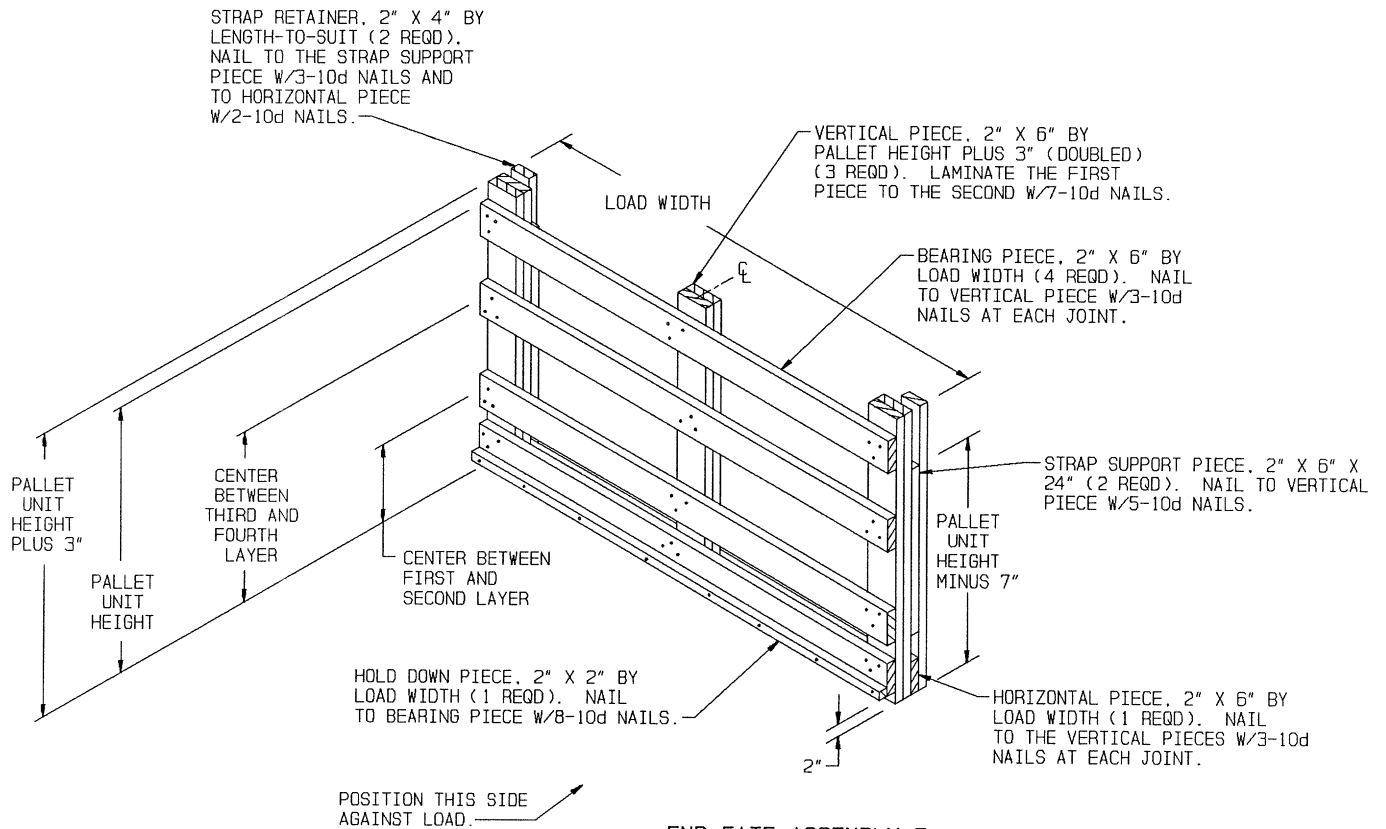
END GATE ASSEMBLY C

USED IN LOADS ON PAGES 16, 20 AND 24.



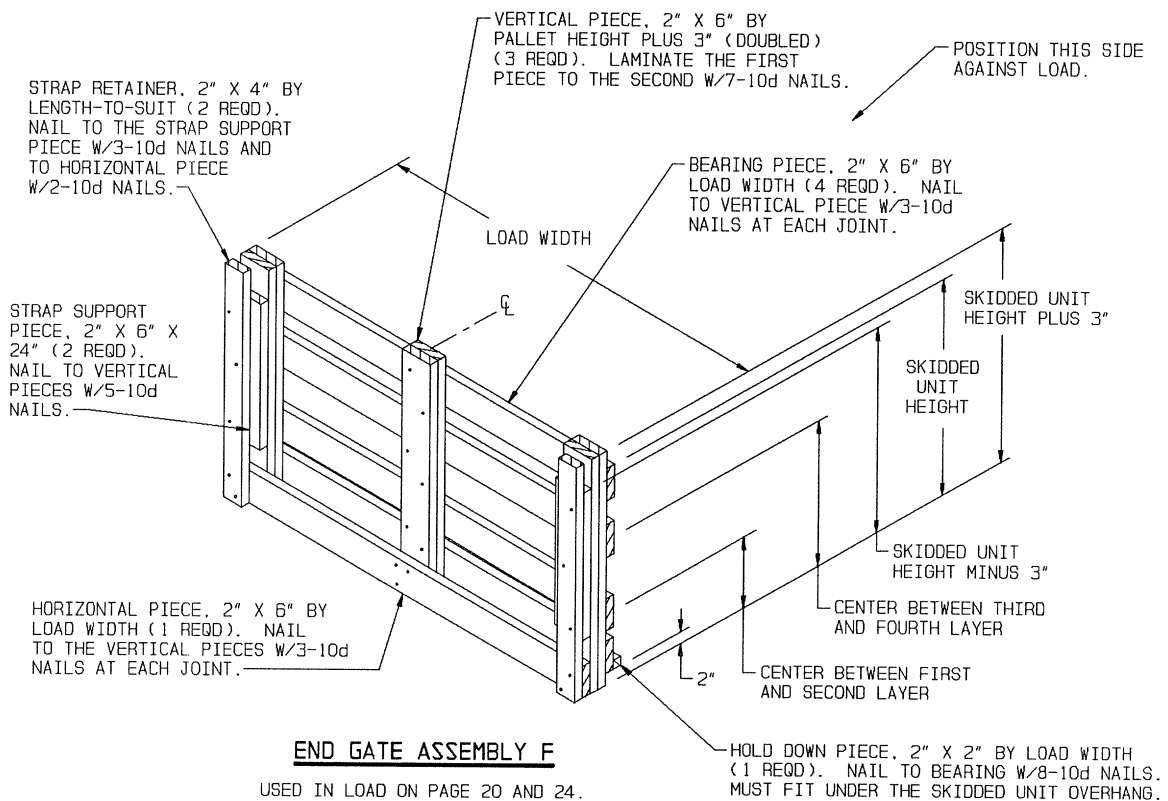
END GATE ASSEMBLY D

USED IN LOAD ON PAGE 18. REQUIRED FOR LONGITUDINAL SUPPORT OF UNITIZED LOAD.



END GATE ASSEMBLY E

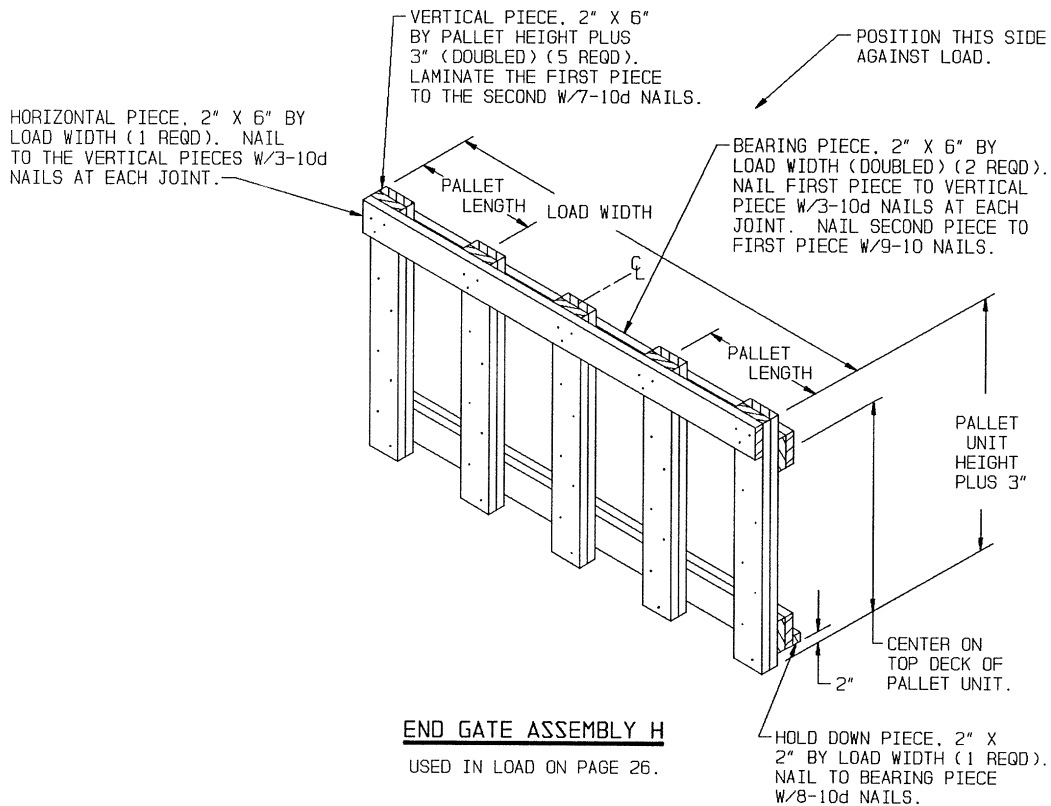
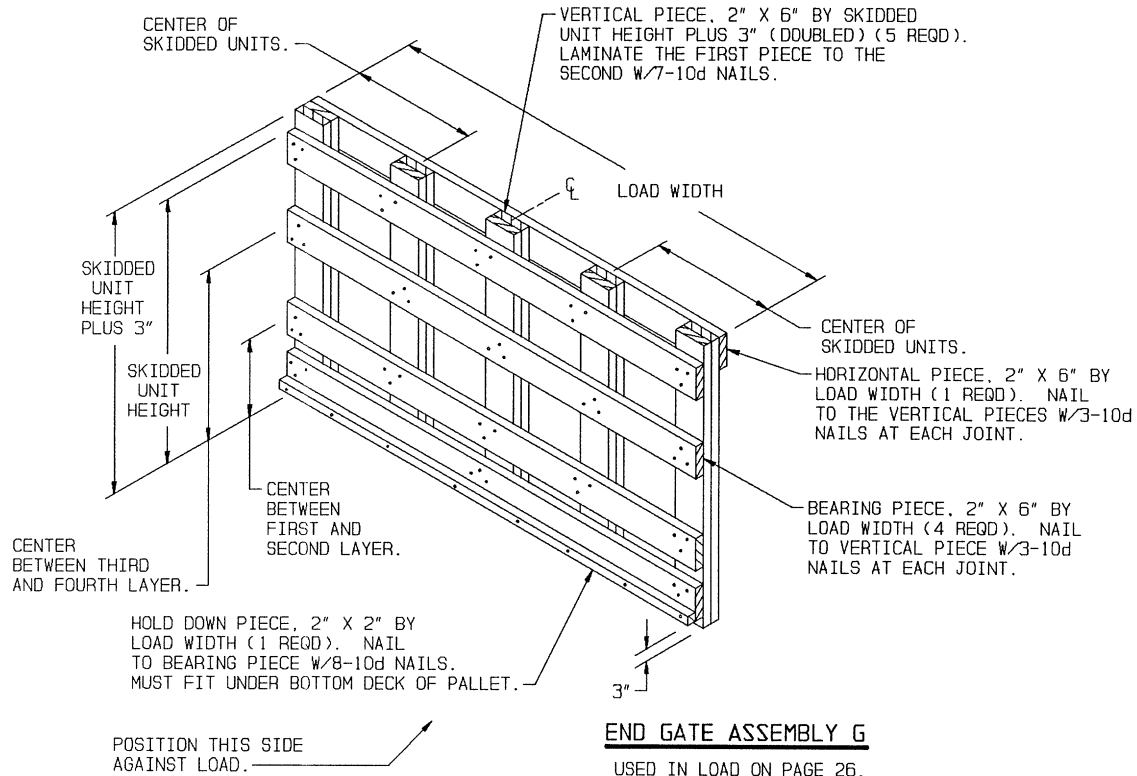
USED IN LOAD ON PAGE 20.

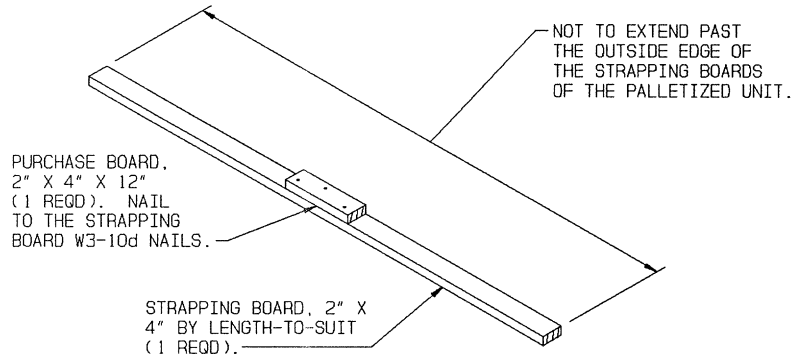


END GATE ASSEMBLY F

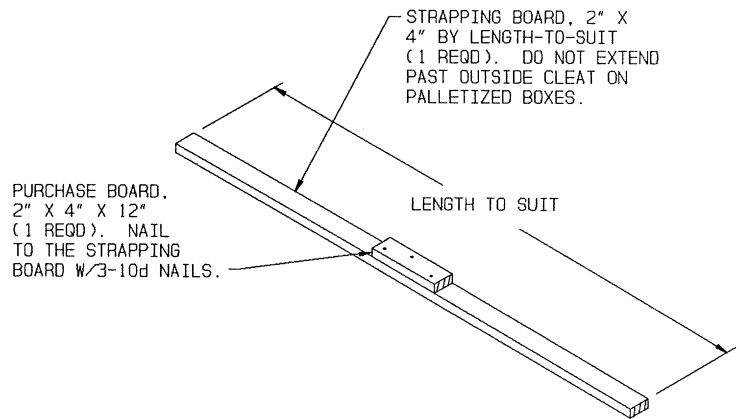
USED IN LOAD ON PAGE 20 AND 24.

DETAILS

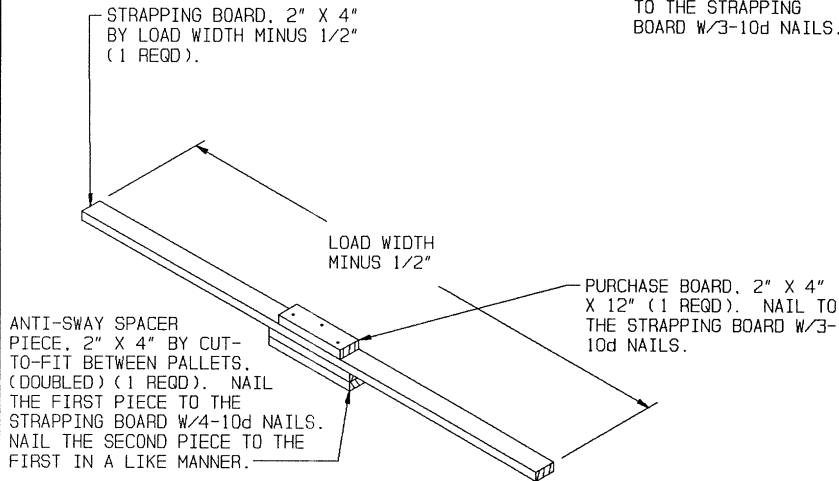




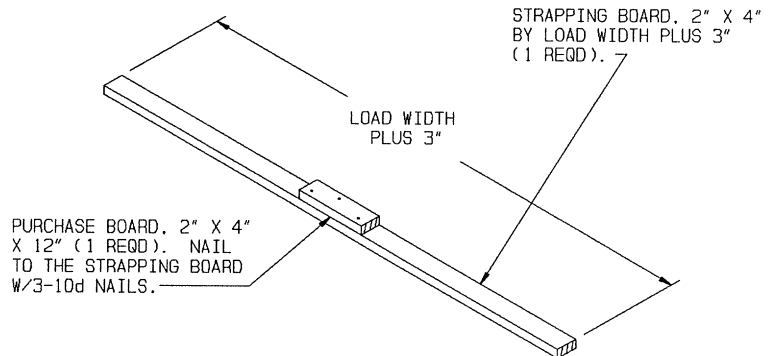
STRAPPING BOARD ASSEMBLY A
USED IN LOAD ON PAGE 10.



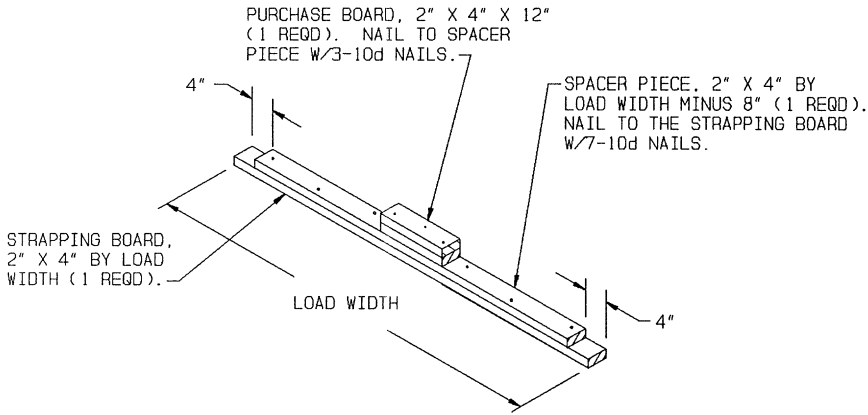
STRAPPING BOARD ASSEMBLY B
USED IN LOAD ON PAGE 12.



STRAPPING BOARD ASSEMBLY C
USED IN LOAD ON PAGE 14.

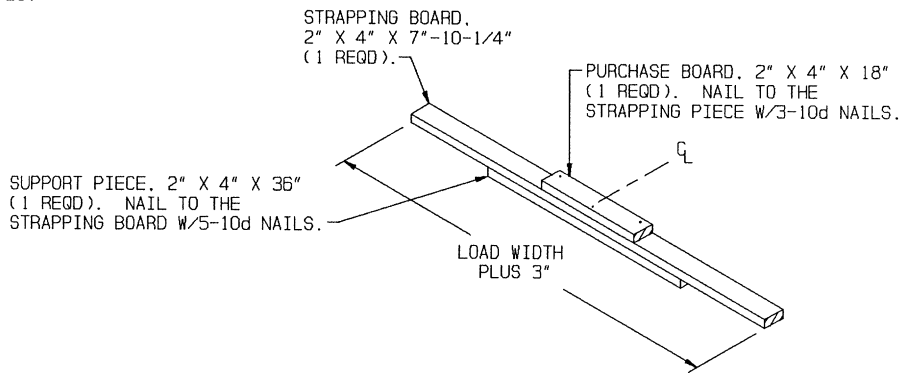


STRAPPING BOARD ASSEMBLY D
USED IN LOAD ON PAGE 18.



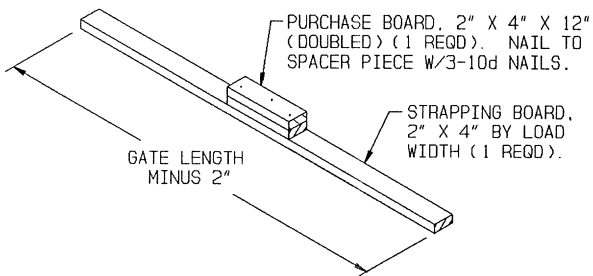
STRAPPING BOARD ASSEMBLY E

USED IN LOAD ON PAGE 20.



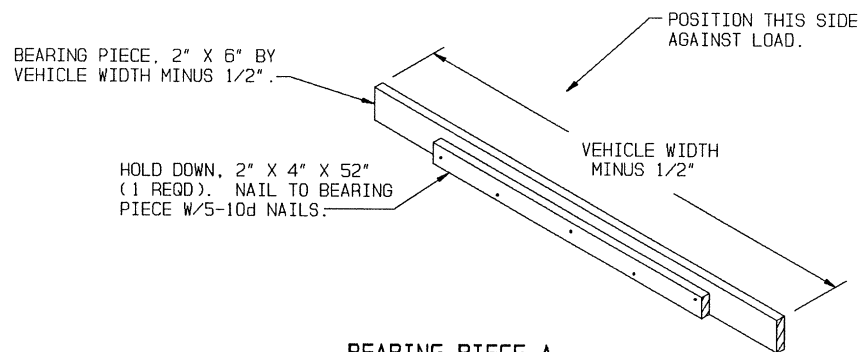
STRAPPING BOARD ASSEMBLY F

USED IN LOAD ON PAGE 22.



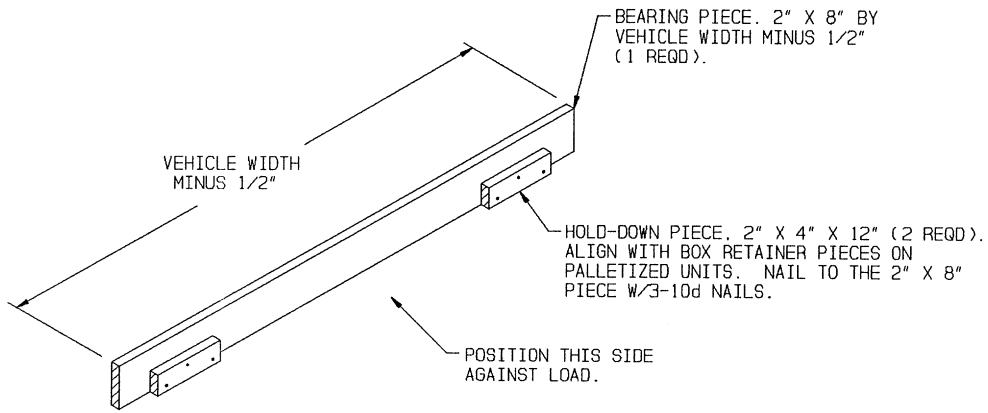
STRAPPING BOARD ASSEMBLY G

USED IN LOAD ON PAGE 26.



BEARING PIECE A

USED IN LOAD ON PAGE 10.

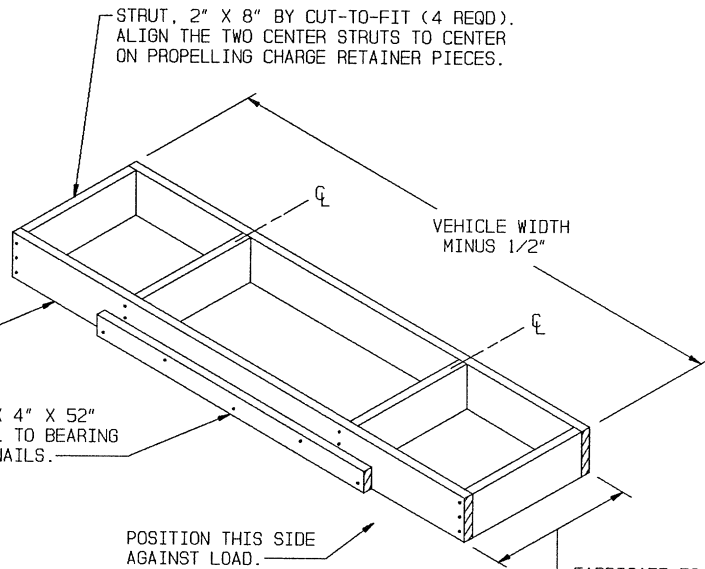


BEARING PIECE B

REQUIRED TO KEEP FORCE ON TAILGATE AT HINGE LEVEL. USED IN LOADS ON PAGES 12 AND 14.

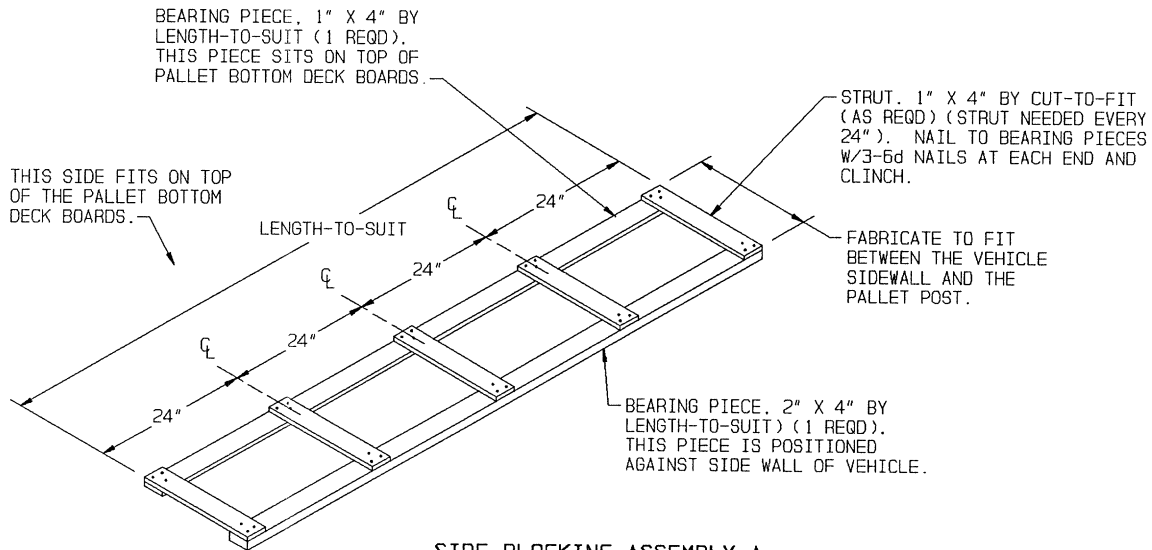
BEARING PIECE, 2" X 8" BY VEHICLE WIDTH MINUS 1/2" (2 REQD). NAIL TO THE STRUTS W/3-10d NAILS AT EACH JOINT.

HOLD-DOWN, 2" X 4" X 52" (1 REQD). NAIL TO BEARING PIECE W/5-10d NAILS.



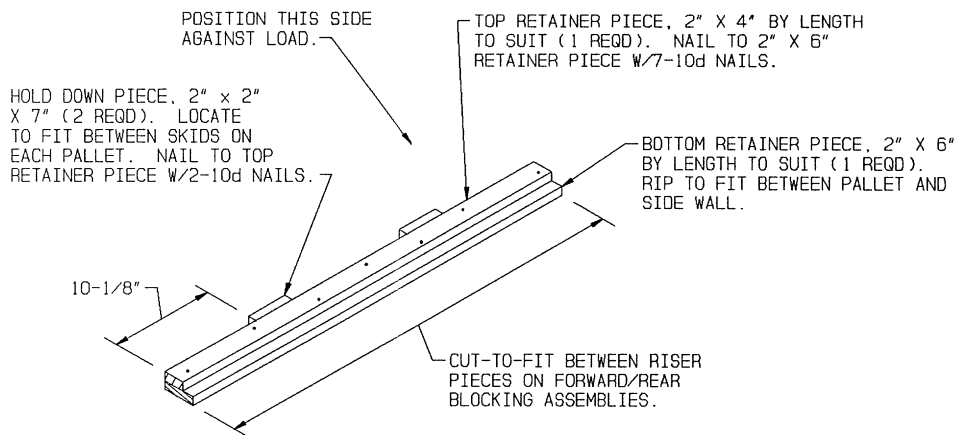
REAR BLOCKING ASSEMBLY A

USED IN LOAD ON PAGE 10.



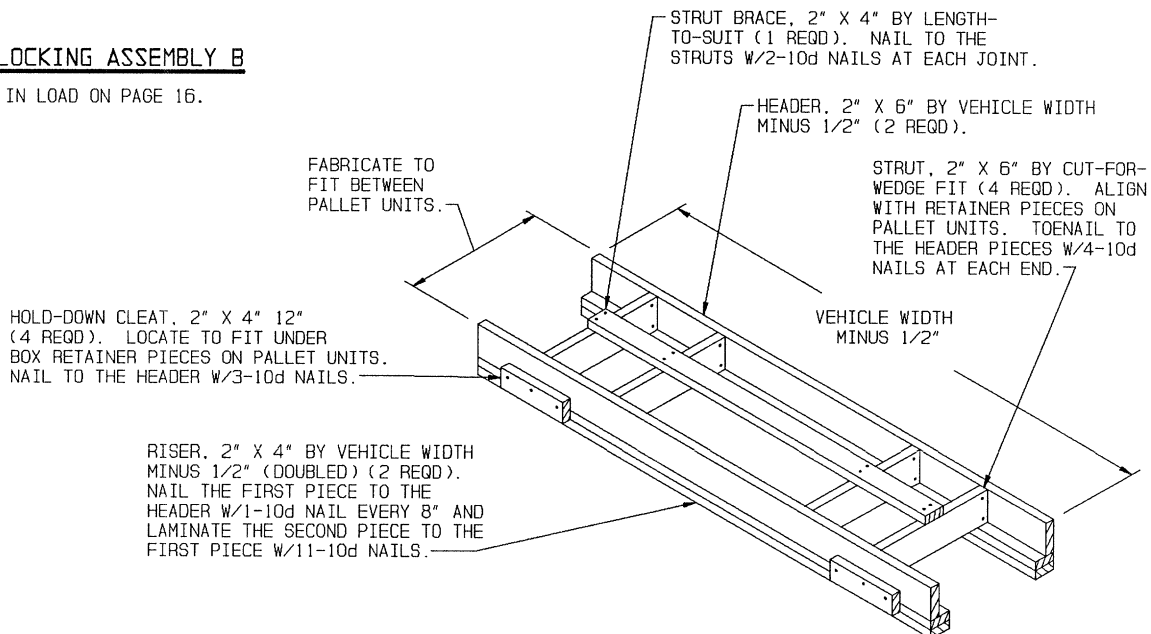
SIDE BLOCKING ASSEMBLY A

USED IN LOAD ON PAGE 10.



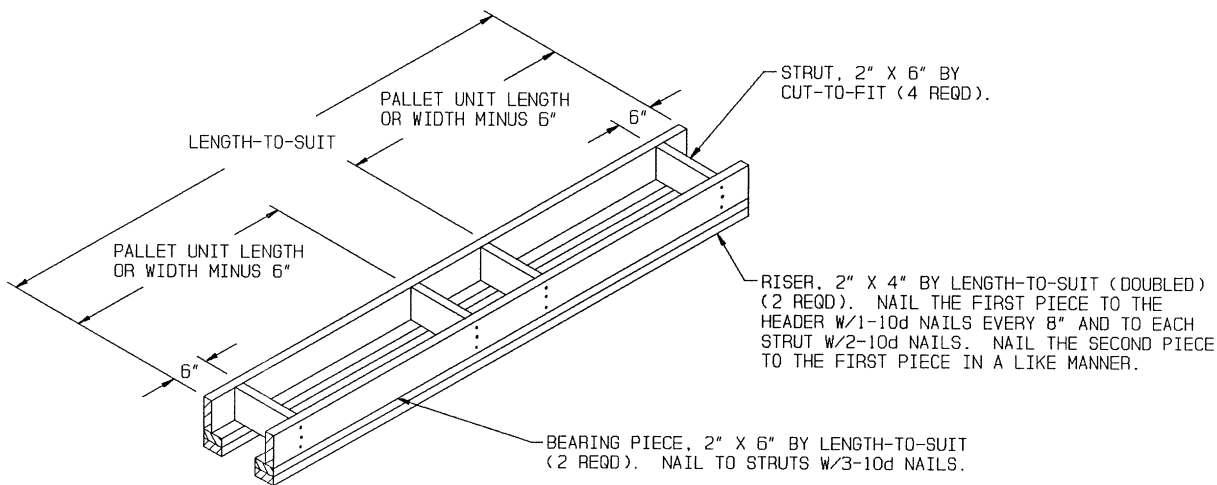
SIDE BLOCKING ASSEMBLY B

USED IN LOAD ON PAGE 16.



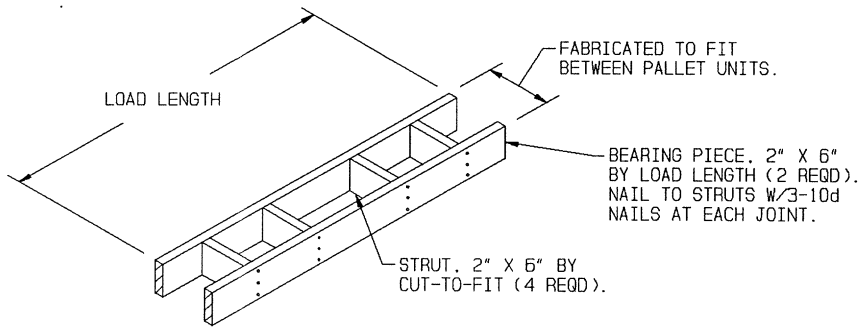
SPACER ASSEMBLY A

FABRICATE THE HEADER, RISER, AND HOLD-DOWN CLEATS. POSITION TIGHT AGAINST THE PALLETIZED UNITS THEN WEDGE FIT THE STRUTS INTO PLACE. USED IN LOADS ON PAGES 12 AND 14.



SPACER ASSEMBLY B

USED IN LOAD ON PAGE 14.



SPACER ASSEMBLY C

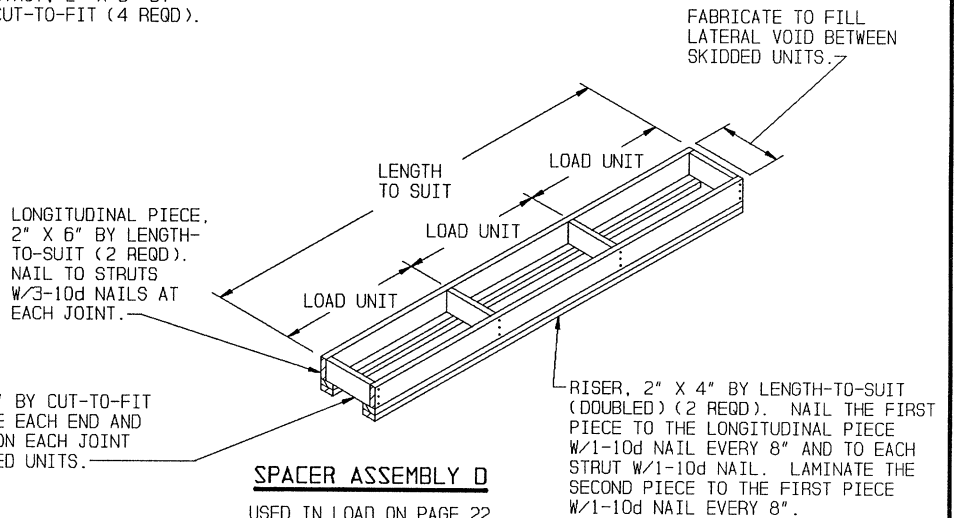
CENTER STRUTS ON PALLET SKIDS.
USED IN LOAD ON PAGE 18.

LONGITUDINAL PIECE,
2" X 6" BY LENGTH-
TO-SUIT (2 REQD).
NAIL TO STRUTS
W/3-10d NAILS AT
EACH JOINT.

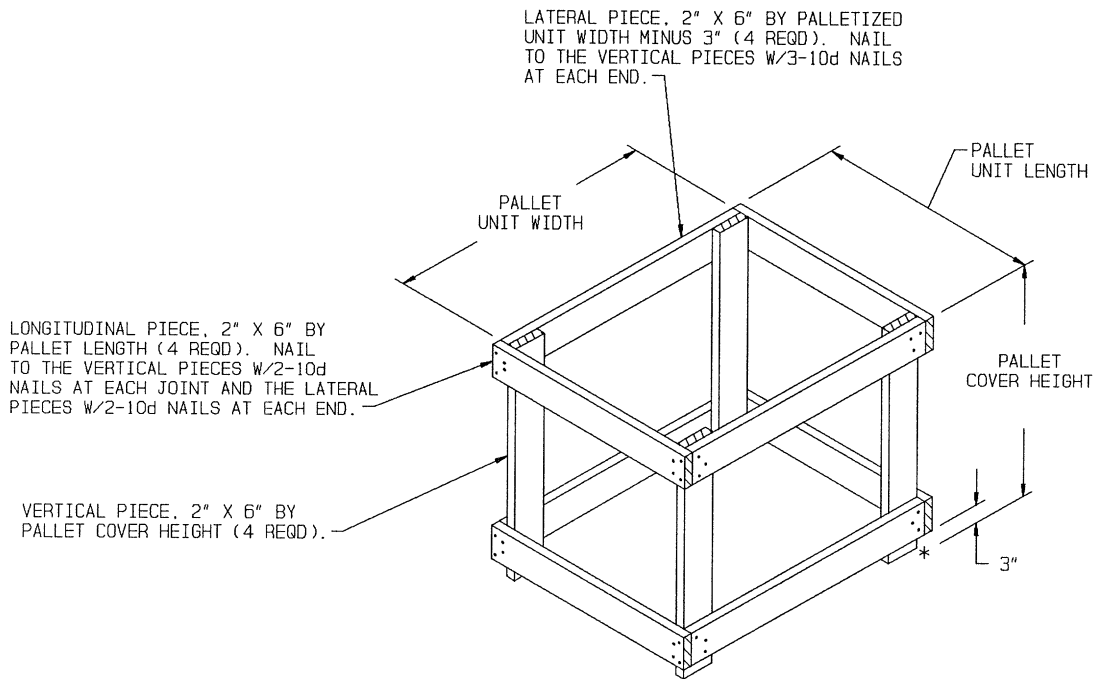
STRUT, 2" X 6" BY CUT-TO-FIT
(4 REQD). ONE EACH END AND
ONE CENTERED ON EACH JOINT
BETWEEN SKIDDED UNITS.

SPACER ASSEMBLY D

USED IN LOAD ON PAGE 22.



RISER, 2" X 4" BY LENGTH-TO-SUIT
(DOUBLED) (2 REQD). NAIL THE FIRST
PIECE TO THE LONGITUDINAL PIECE
W/1-10d NAIL EVERY 8" AND TO EACH
STRUT W/1-10d NAIL. LAMINATE THE
SECOND PIECE TO THE FIRST PIECE
W/1-10d NAIL EVERY 8".

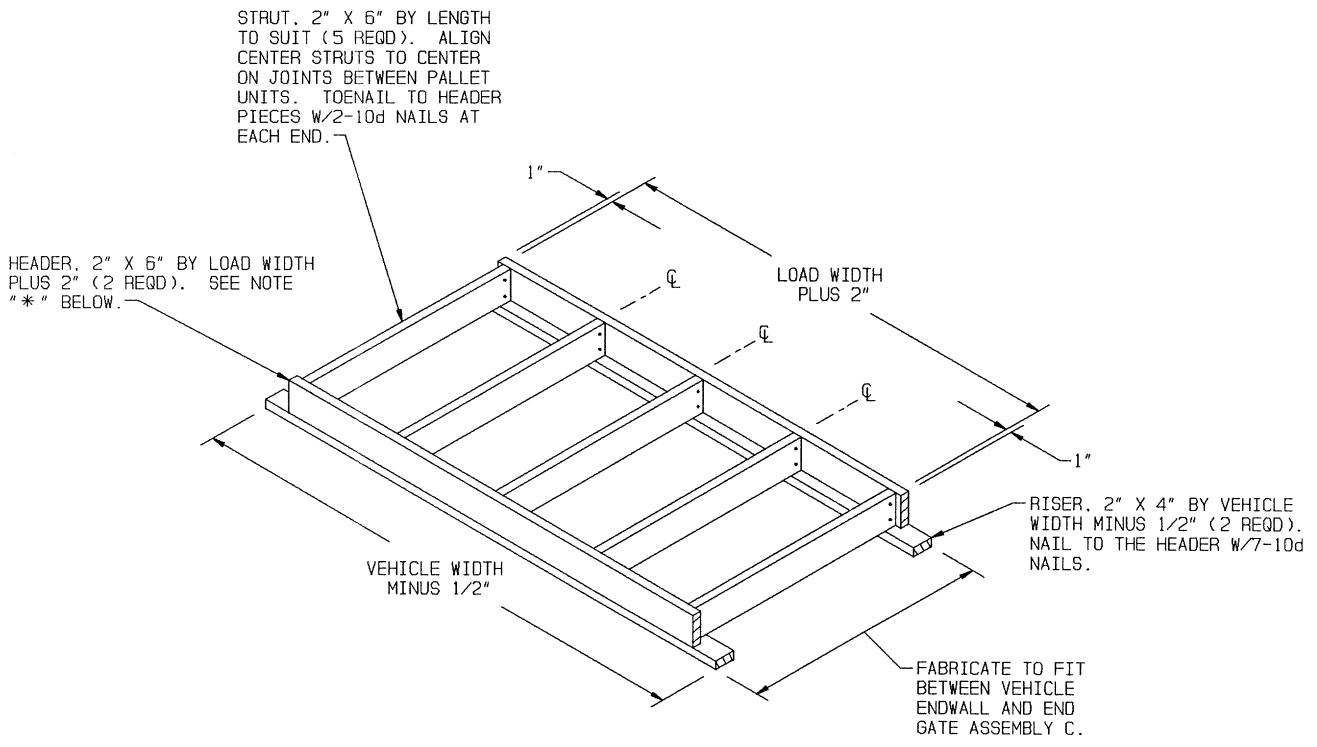


LONGITUDINAL PIECE, 2" X 6" BY
PALLET LENGTH (4 REQD). NAIL
TO THE VERTICAL PIECES W/2-10d
NAILS AT EACH JOINT AND THE LATERAL
PIECES W/2-10d NAILS AT EACH END.

VERTICAL PIECE, 2" X 6" BY
PALLET COVER HEIGHT (4 REQD).

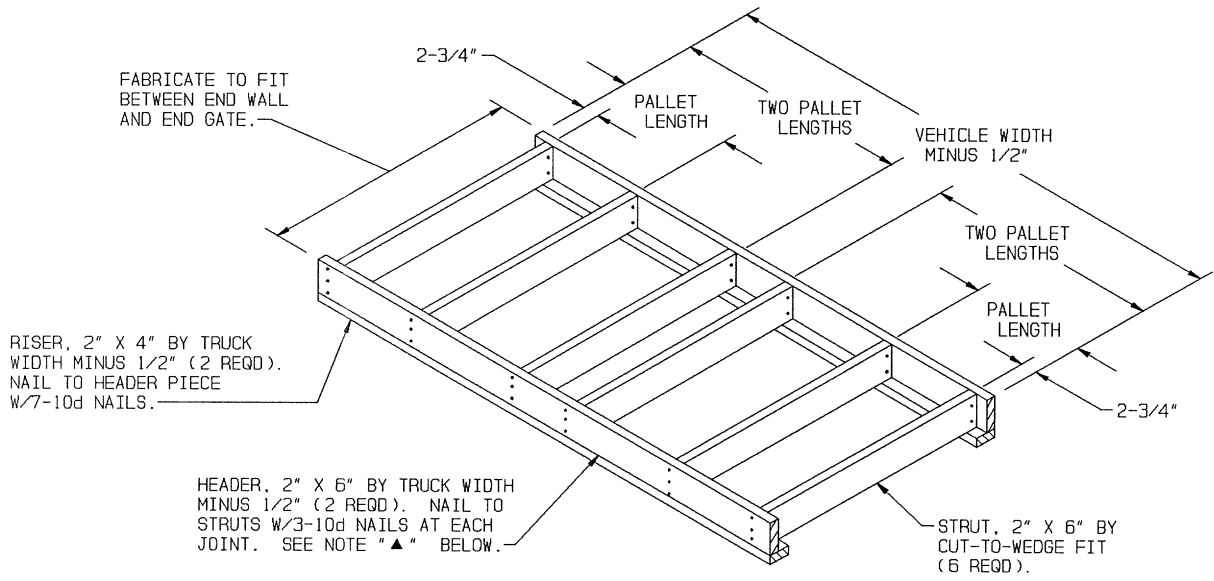
OMITTED SLP PALLETIZED UNIT ASSEMBLY A

ONE OMITTED PALLETIZED UNIT ASSEMBLY IS REQUIRED FOR
EACH OMITTED PALLET UNIT OF SEPARATE LOADING PROJECTILES
WITHIN THE LOAD. USED IN LOAD ON PAGE 16.



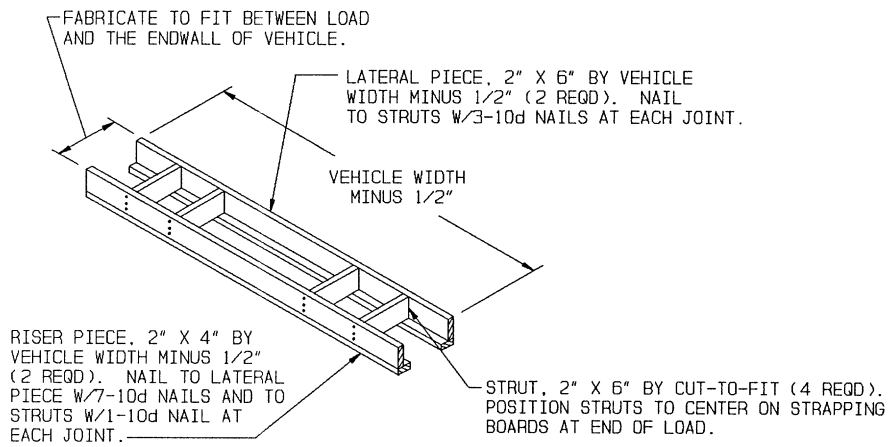
FORWARD/REAR BLOCKING ASSEMBLY A

NOTE *: FABRICATE THE FORWARD BLOCKING ASSEMBLY AND POSITION IN PLACE. LOAD PALLET UNITS TIGHT AGAINST FORWARD BLOCKING ASSEMBLY. FABRICATE REAR BLOCKING ASSEMBLY IN PLACE FOR A TIGHT FIT. USED IN LOAD ON PAGE 16.



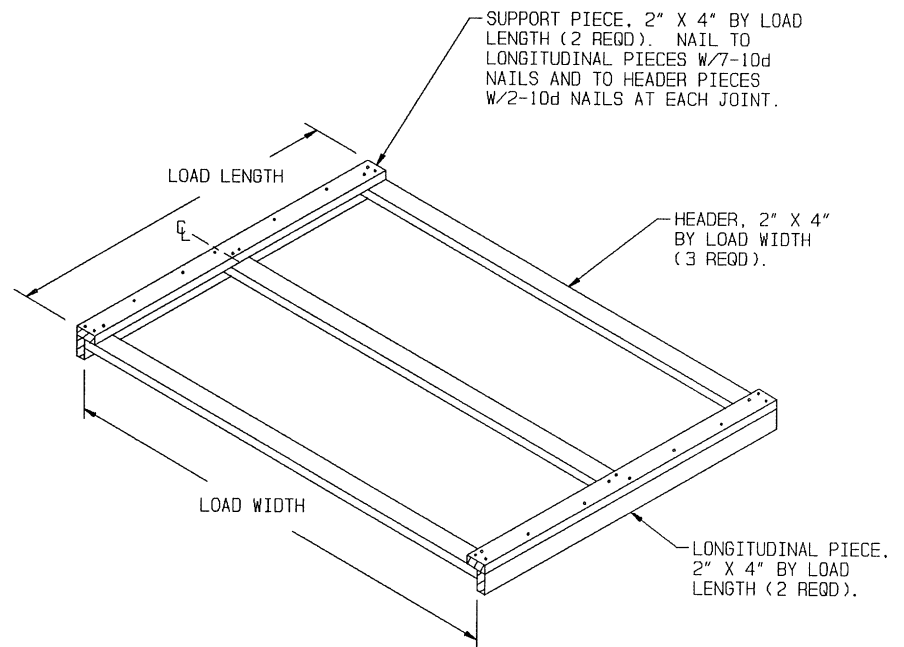
FORWARD/REAR BLOCKING ASSEMBLY B

NOTE ▲: FABRICATE THE FORWARD BLOCKING ASSEMBLY AND POSITION IN PLACE. LOAD PALLET UNITS TIGHT AGAINST FORWARD BLOCKING ASSEMBLY. FABRICATE REAR BLOCKING ASSEMBLY IN PLACE FOR A TIGHT FIT. WEDGE FIT STRUTS AND TOENAIL TO HEADERS. USED IN LOAD ON PAGE 18.



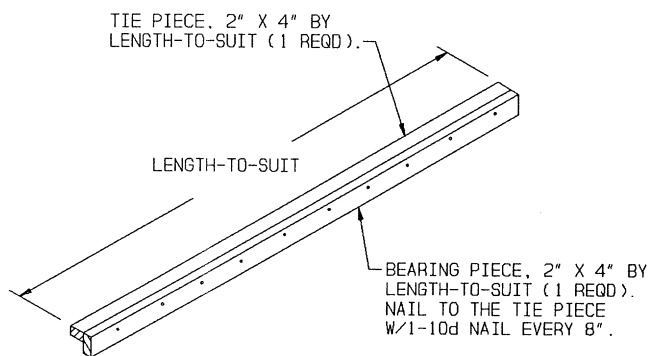
FORWARD/REAR BLOCKING ASSEMBLY C

USED IN LOAD ON PAGE 22.



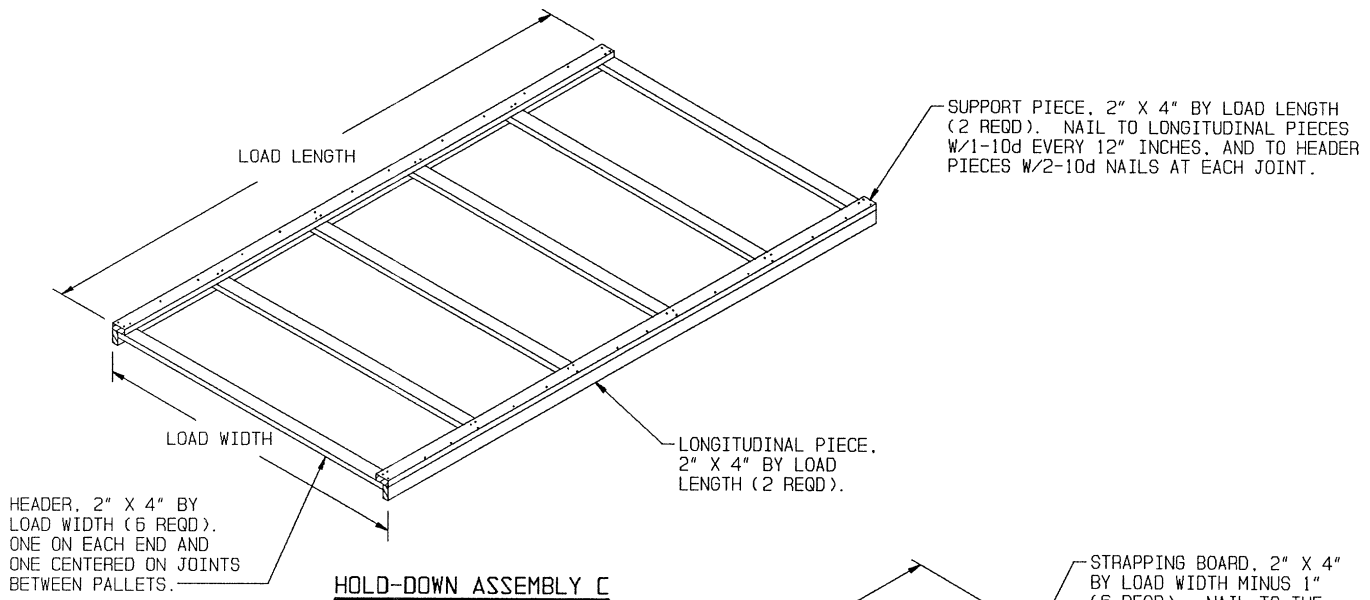
HOLD-DOWN ASSEMBLY A

USED IN LOAD ON PAGE 20.

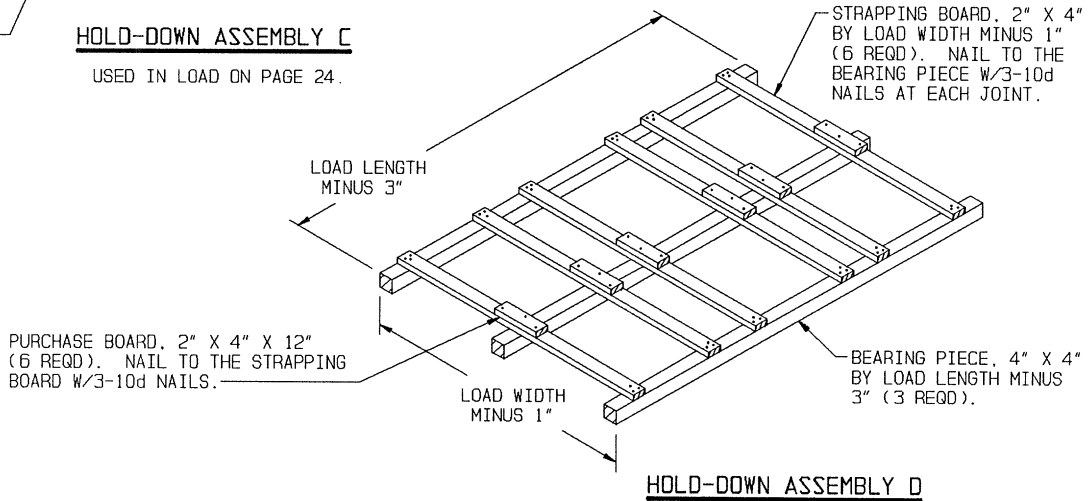


HOLD-DOWN ASSEMBLY B

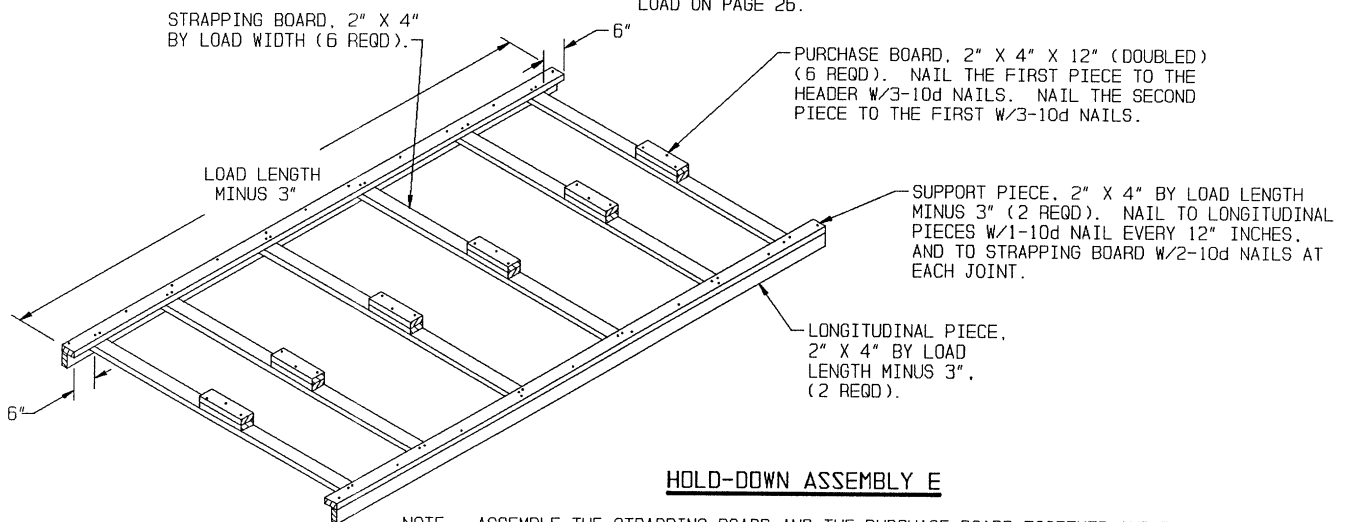
USED IN LOAD ON PAGES 18 AND 22.



USED IN LOAD ON PAGE 24.

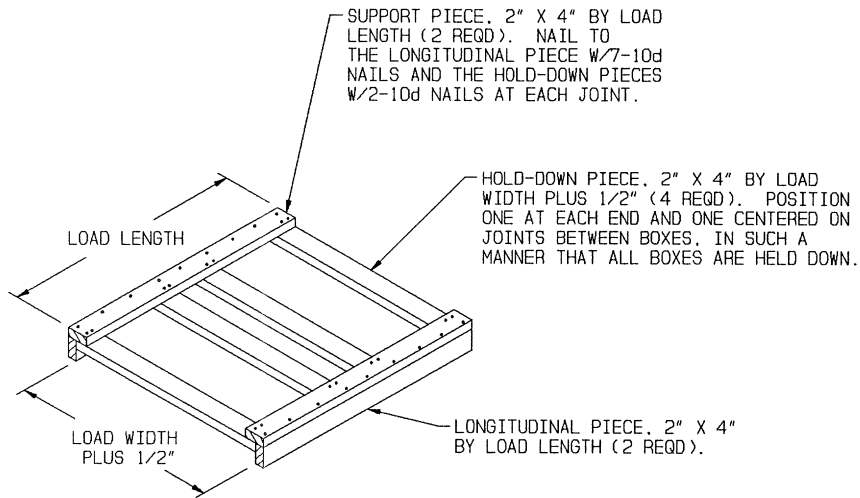


NOTE: POSITION THE THREE BEARING PIECES ON TOP OF THE SKIDDED UNITS, ONE ON EACH SIDE AND ONE CENTERED ON THE LOAD. POSITION THE SIX STRAPPING BOARDS ON TOP OF THE BEARING PIECES. LOCATE SO THERE IS TWO STRAPPING BOARDS OVER TOP OF EACH TWO LATERALLY ADJACENT SKIDDED UNITS AT LOCATIONS WHERE STEEL STRAPPING ENCIRCLES THE LOAD AND BED OF TRAILER. NAIL THE SIX STRAPPING BOARDS TO THE BEARING PIECES PRIOR TO NAILING THE PURCHASE BOARD TO THE STRAPPING BOARD. USED IN LOAD ON PAGE 26.



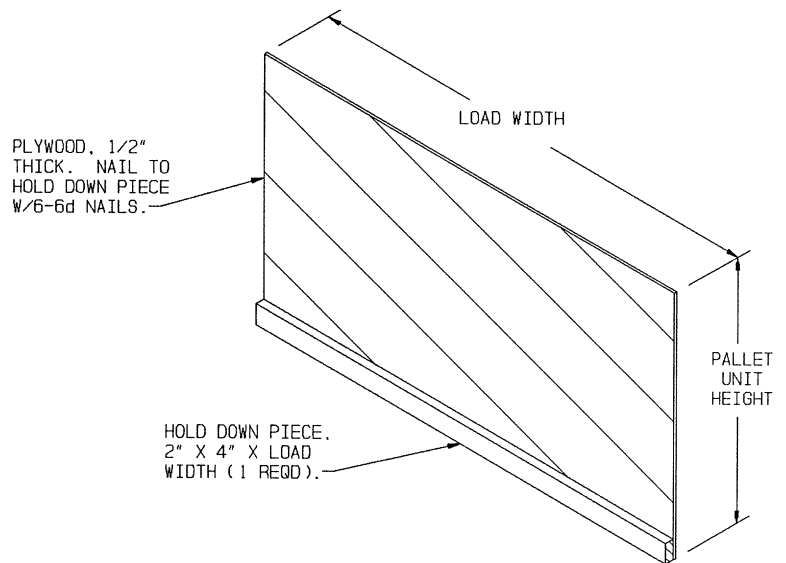
NOTE: ASSEMBLE THE STRAPPING BOARD AND THE PURCHASE BOARD TOGETHER AND POSITION THE FOUR MIDDLE STRAPPING BOARDS TO CENTER ON A JOINT BETWEEN PALLET UNITS, EXCEPT WHEN THE STRAP IS NOT ABLE TO GO UNDER THE BED OF THE TRAILER. POSITION THE TWO END STRAPPING BOARD PIECES AT DIMENSIONS SHOWN. IF UNABLE TO POSITION A STRAPPING BOARD ON A JOINT OF TWO PALLET UNITS AN ADDITIONAL PIECE OF 2" X 4" BY LOAD WIDTH MATERIAL MUST BE CENTERED ON THE JOINT. ASSEMBLE SUPPORT PIECES AND LONGITUDINAL PIECES AND POSITION ON TOP OF THE STRAPPING BOARDS AND/OR OTHER 2" X 4" MATERIAL, NAIL W/2-10d NAILS AT EACH JOINT. USED IN LOAD ON PAGE 26.

DETAILS



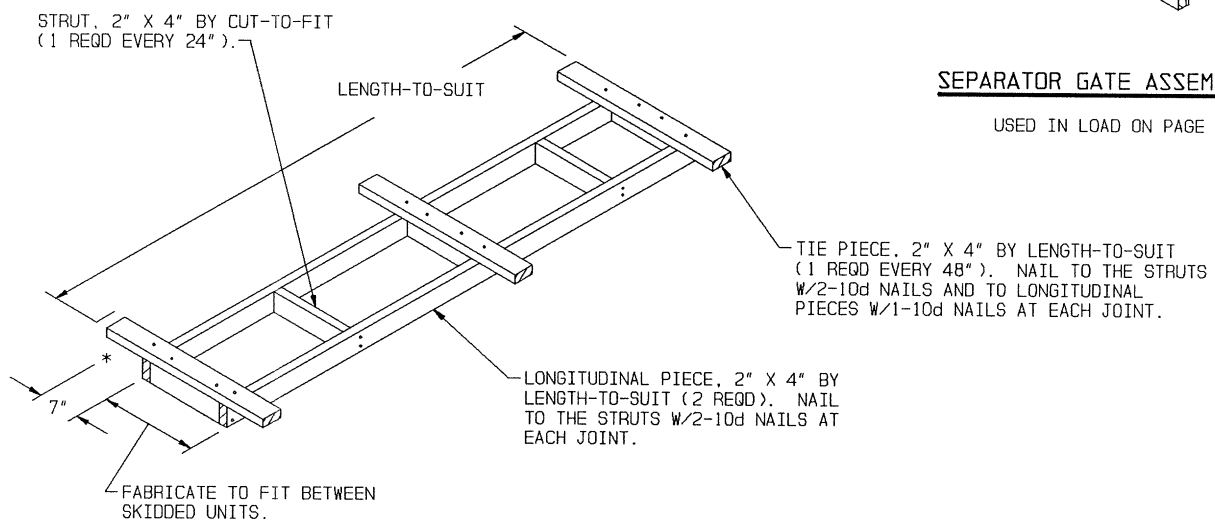
HOLD-DOWN ASSEMBLY F

USED IN LOAD ON PAGE 32.



SEPARATOR GATE ASSEMBLY A

USED IN LOAD ON PAGE 20.



TOP-OF-LOAD ANTI-SWAY BRACE ASSEMBLY A

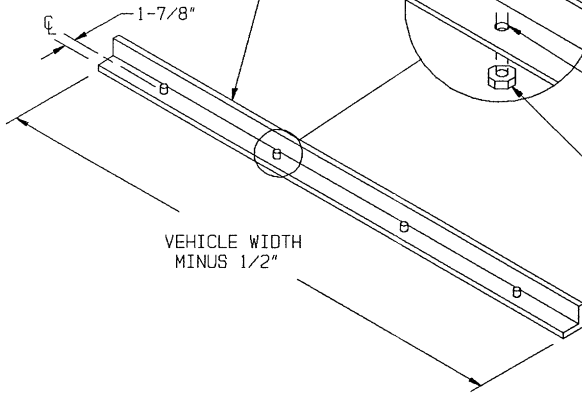
USED IN LOAD ON PAGE 22.

STEEL ANGLE, STRUCTURAL SIZE, 4" X 4" X 1/4"
BY VEHICLE WIDTH MINUS 1/2". PER ASTM A36,
FSC 9520 (1 REQD).

BOLT, SQUARE NECK, ROUND HEAD (CARRIAGE) STEEL, CADMIUM PLATED
3/4-10 UNC-2A FSC 5306. BY LENGTH REQUIRED TO EXTEND THRU THE
THICKNESS OF LOAD RETAINER, THE VEHICLE FLOOR AND THE VEHICLE
FRAME MEMBER (4 REQD).

13/16" DRILL (4 PLACES).
SEE "NOTE ▲" BELOW.

NUT, SELF-LOCKING, HEXAGON-PREVAILING
TORQUE, GENERAL PURPOSE, CADMIUM PLATED,
3/4-10 UNC-2B, FSC 5310 (8 REQD).

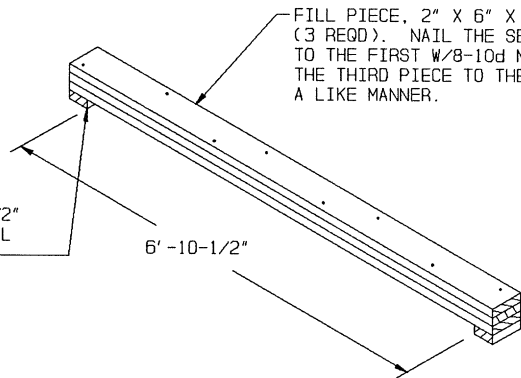


LOAD RETAINER

NOTE ▲: POSITION A LOAD RETAINER AS NEAR TO THE END OF THE VEHICLE
CARGO BED AS POSSIBLE. LOCATE AND DRILL FOUR HOLES THROUGH LOAD
RETAINER, BED OF VEHICLE AND VEHICLE FRAME MEMBERS. SECURE WITH FOUR
BOLTS AS SHOWN ABOVE. USED IN LOAD ON PAGE 22.

STOP PIECE, 2" X 4" X 5-1/2"
(2 REQD). NAIL TO THE FILL
PIECE W/2-10d NAILS.

FILL PIECE, 2" X 6" X 7'-5-1/2"
(3 REQD). NAIL THE SECOND
PIECE TO THE FIRST W/8-10d NAILS. NAIL
THE THIRD PIECE TO THE SECOND IN
A LIKE MANNER.



TOP CONTAINER SUPPORT ASSEMBLY

REQUIRED TO STABILIZE THE LOAD AND PREVENT
CRUSHING OF THE HARD RUBBER CONTAINER SKIDS.
USED IN THE LOAD ON PAGE 28.

STRAP RETAINER PIECE, 2" X 2" X 18"
(4 REQD). NAIL TO LONGITUDINAL
PIECE W/4-10d NAILS.

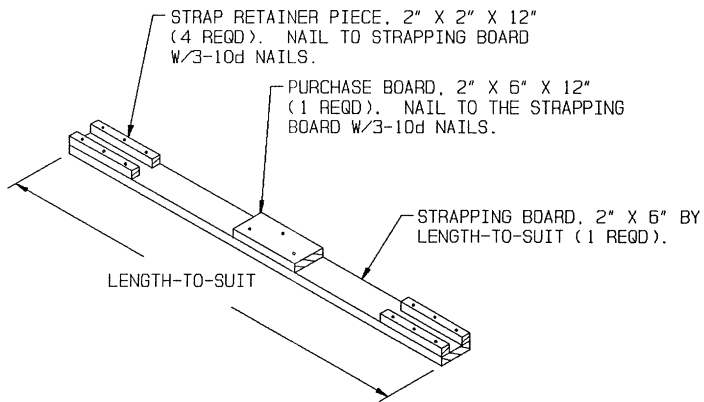
SPACER PIECE, 1" X 2" BY LOAD WIDTH
(1 REQD). NAIL TO LONGITUDINAL PIECE
W/5-6d NAILS (THIS IS REQUIRED TO KEEP
STRAPPING BOARD ASSEMBLY IN VERTICAL
POSITION AGAINST BOX WHEN END CLEATS
ARE POSITIONED HORIZONTALLY).

POSITION THIS SIDE
AGAINST LOAD.

STRAPPING BOARD, 2" X 6" BY
LOAD WIDTH (1 REQD). POSITION
ON EDGE.

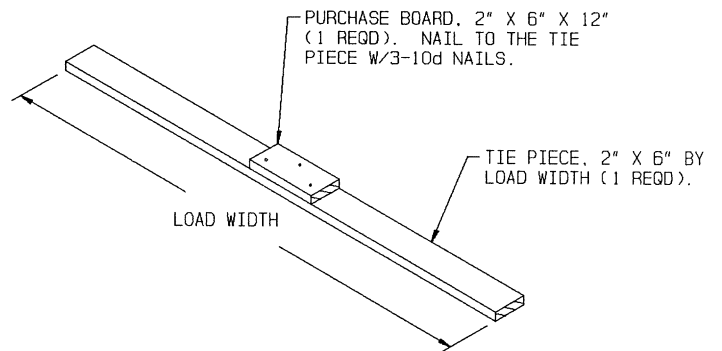
STRAP RETAINER ASSEMBLY A

IF THE BOXES BEING LOADED ARE POSITIONED WITH THE END CLEATS
IN A VERTICAL POSITION, AND/OR THE BOXES DO NOT HAVE END CLEATS,
OMIT THE SPACER PIECE AND POSITION THE STRAPPING BOARD DIRECTLY
AGAINST THE BOXES. USED IN THE LOAD ON PAGES 30 AND 32.



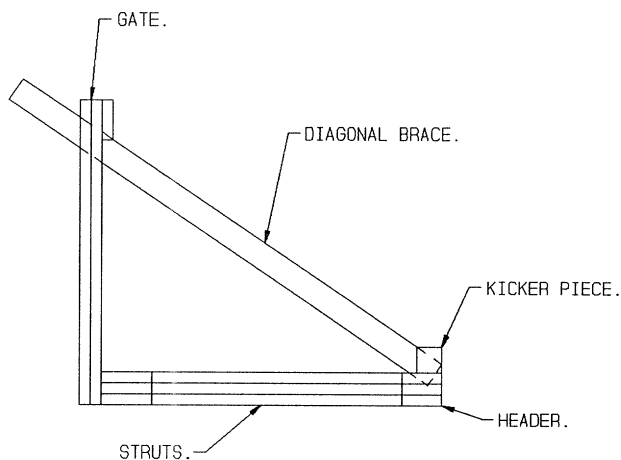
STRAPPING BOARD ASSEMBLY H

USED IN LOAD ON PAGE 38 AND 40.



STRAPPING BOARD ASSEMBLY J

USED IN LOAD ON PAGE 28.



DIAGONAL BRACE

HOLD A LENGTH OR 4" X 4" MATERIAL AGAINST THE GATE WITH BOTTOM END AGAINST THE END OF THE HEADER AND KICKER PIECES AS SHOWN. MARK ANGLES FOR BEVEL CUTS AT EACH END AND THEN CUT THE DOUBLE BEVEL AT EACH END OF ONE PIECE. ASSURE THAT LENGTH OF BRACE AND DOUBLE BEVEL CUTS ARE CORRECT PRIOR TO CUTTING THE REQUIRED NUMBER OF BRACES.

