

TOW

LOADING, TIEDOWN, AND UNLOADING PROCEDURES FOR SHIPMENT OF THE GUIDED MISSILE PACKED ONE PER WIREBOUND WOODEN BOX, PALLETIZED AND/OR UNPALLETIZED, IN/ON TACTICAL VEHICLES

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U.S. ARMY MATERIEL COMMAND DRAWING			
APPROVED, U.S. ARMY MISSILE COMMAND <div style="text-align: right; margin-right: 20px;"><i>gw</i></div> <div style="font-family: cursive; font-size: 1.2em; margin-top: 10px;"><i>Carl Houma</i></div>	DRAFTSMAN B. LEONARD	TECHNICIAN	ENGINEER J. SIMONS
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND <div style="font-family: cursive; font-size: 1.2em; margin-top: 10px;"><i>William F Ernst</i></div>	VALIDATION ENGINEERING DIVISION <div style="font-family: cursive; font-size: 1.2em; margin-top: 10px;"><i>JMK</i></div>	TRANSPORTATION ENGINEERING DIVISION <div style="font-family: cursive; font-size: 1.2em; margin-top: 10px;"><i>w. Zwick</i></div>	LOGISTICS ENGINEERING OFFICE <div style="font-family: cursive; font-size: 1.2em; margin-top: 10px;"><i>W F Ernst</i></div>
JULY 1993			
CLASS	DIVISION	DRAWING	FILE
19	48	8186	GM17T01

DO NOT SCALE

GENERAL NOTES

(GENERAL NOTES CONTINUED FROM LEFT)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- B. THIS DRAWING COVERS PROCEDURES APPLICABLE TO THE TRANSPORT OF THE TOW GUIDED MISSILE PACKED ONE PER WIREBOUND CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS WIREBOUND CONTAINER WITH CONTENTS. ALSO, SUBSEQUENT REFERENCE TO PALLETIZED UNIT MEANS THE PALLETIZED UNIT OF TWELVE (12) CONTAINERS WITH CONTENTS.
- C. FOR CONTAINER DETAIL SEE PAGE 5 OF THIS DRAWING.
 DIMENSIONS - - - - - 58-1/4" LONG BY 11-5/8" WIDE BY 11-5/8" HIGH (APPROX).
 GROSS WEIGHT - - - - - 87 POUNDS (APPROX).
 CUBE - - - - - 4.9 CUBIC FEET.
- D. FOR PALLET UNIT (4-W BY 3-H) SEE PAGE 5 OF THIS DRAWING.
 DIMENSIONS - - - - - 58-1/4" LONG BY 48" WIDE BY 39-3/4" HIGH (APPROX).
 GROSS WEIGHT - - - - - 1,127 POUNDS (APPROX).
 CUBE - - - - - 64.0 CUBIC FEET
- E. FOR PALLET UNIT (3-W BY 4-H) SEE PAGE 5 OF THIS DRAWING.
 DIMENSIONS - - - - - 58-1/4" LONG BY 35-1/4" WIDE BY 51-1/4" HIGH. GROSS WEIGHT - - - - - 1,112 POUNDS (APPROX).
 CUBE - - - - - 60.9 CUBIC FEET.
- F. DEPICTED PROCEDURES APPLY TO TACTICAL VEHICLES HAVING 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 19 FOR GUIDANCE.
- G. ALL LOADS SHOWN HEREIN ARE TYPICAL AND ARE BASED ON TESTED PROCEDURES FOR OFF HIGHWAY TRANSPORT OF LOOSE AND/OR PALLETIZED ITEMS. COMBINATIONS OF PROCEDURES MAY BE USED IN/ON ANY TACTICAL VEHICLE. HOWEVER, THE APPROVED METHODS SPECIFIED HEREIN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE.
- H. 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 BY 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 ENDS OF THE STRAP AFTER TENSIONING IS COMPLETED (LOOSE ENDS MAY BE FOLDED AND TAPED OR TIED TO THE TENSIONING STRAP IF TIME PERMITS). FOR ADDITIONAL GUIDANCE, SEE "RATCHET/RATCHETING DETAILS" ON PAGES 20 AND 21.

(GENERAL NOTES CONTINUED AT RIGHT)

- J. 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 THE CARGO. 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 CARGO AND IF NECESSARY, TAPED OR TIED IN POSITION.
- K. IF THE SIDE RACKS FOR A SEMITRAILER ARE TO TRANSPORTED ON THE LOADED TRAILER, THEY WILL BE STACKED ON THE TRAILER AND SECURED WITH A SUFFICIENT QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES TO PREVENT LOSS DURING TRANSPORT. NOTE: IF DESIRED, THE SIDE RACKS FOR THE MB71 AND MB72 SEMITRAILERS MAY BE POSITIONED IN PLACE AFTER THE LOAD HAS BEEN SECURED. AFTER ALL SIDE PANELS AND REAR PANELS ARE IN POSITION, THE STAKES MUST BE SECURELY "PINNED" OR "WIRE-TIED" TO THE STAKE POCKETS TO PREVENT VERTICAL DISPLACEMENT DURING TRANSPORT. ALSO, THE SIDE PANELS MUST BE SECURED AT THE TOP WITH THE CROSS-CHAINS WHICH ARE PROVIDED WITH THE VEHICLE.
- L. PROCEDURES DEPICTED HEREIN ARE TYPICAL IN NATURE. ITEM LOCATION AND QUANTITIES OF THE DESIGNATED ITEM MAY BE VARIED TO SATISFY OPERATIONAL REQUIREMENTS, PROVIDING LOADING AND TIEDOWN PRINCIPLES SPECIFIED HEREIN ARE RETAINED.
- M. WHEN ONE WEB TIEDOWN STRAP ASSEMBLY IS NOT LONG ENOUGH TO SPAN THE DISTANCE DEPICTED, TWO ASSEMBLIES MAY BE HOOKED TOGETHER TO GAIN THE NECESSARY LENGTH.
- N. SOME TIEDOWN METHODS WITHIN THIS DRAWING SHOW TWO HOOKS TO BE CONNECTED TO ONE TIEDOWN EYE. THIS IS AUTHORIZED AS SPECIFIED HEREIN.
- O. 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.
- P. DURING LONG HAULS, WHEN POSSIBLE, STRAPS SHOULD BE CHECKED DURING VEHICLE STOPS AND TIGHTENED, IF NECESSARY.
- Q. 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 0.454 KG.
- R. 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.
- S. DUE TO VARIOUS REASONS, SUCH AS ROUGH TERRAIN DURING OFF HIGHWAY TRANSPORT, 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.
- T. IF THE TIEDOWN ANCHORS ON THE SIDE OF THE VEHICLE ARE TOO CLOSE TOGETHER, TOO FAR APART, OR ARE NOT IN A LOCATION THAT WILL ALLOW ADEQUATE HOLD DOWN OF LOAD WHEN WEB STRAPS ARE POSITIONED STRAIGHT OVER TOP, THE LOAD HOLD DOWN STRAPS MAY BE CROSSED OVER THE TOP OF THE LOAD AS SHOWN IN THE LOAD ON PAGE 7.
- U. FOR ADDITIONAL GUIDANCE SEE THE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" ON PAGES 3 AND 4, THE "SPECIAL NOTES" ON LOAD PAGES, AND THE "LOAD PLANNING GUIDANCE CHART" ON PAGE 23.

MATERIAL SPECIFICATIONS

- STRAP - - - - - WEBBING, UNIVERSAL TIEDOWN, NSN 5340-01-204-3009, PN 9392419; NSN 5340-01-089-4997, PN 11669588; NSN 1670-00-725-1437, PN 1376-013; OR NSN 5340-00-980-9277, PN 10900880.
- ANTI-CHAFING MATERIAL - - - - - CANVAS, BURLAP, TAPE OR ANY OTHER SUITABLE MATERIAL.

LOADING, TIEDOWN, AND UNLOADING PROCEDURES

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 COVERS AND BOWS FROM TRUCK OR TRAILER.
2. 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 "H" ON PAGE 2.
3. 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.
4. 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.
5. 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.
6. WHEN SECURING ITEMS IN THE 1-1/4-TON M998 HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMV), USE THE FOLLOWING GUIDANCE.
 - A. THE CARGO AREA OF THE HMMV 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 HMMVS 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 ANCHOR 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 HMMVS 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 HMMVS 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 HMMVS 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 BOLT SHOULD HAVE THE DIAMETER OF THE EYE POSITIONED PARALLEL TO THE VEHICLE SIDE WALL. 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.

(CONTINUED AT RIGHT)

(LOADING, TIEDOWN, AND UNLOADING PROCEDURES CONTINUED)

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 ONE-HALF TO 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. SEE THE LOAD ON PAGE B FOR GUIDANCE.
 - C. 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 THE STRAP TO TIEDOWN ANCHORS IN THE FLOOR, POSITION THE PALLETIZED UNITS AS CLOSE TO THE TIEDOWN ANCHORS ON THAT SIDE AS POSSIBLE.
 - D. A WEB STRAP ASSEMBLY, SUCH AS NSN 5340-01-204-3009, 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. PALLETIZED UNITS MUST NOT BE STACKED MORE THAN ONE HIGH. "LOOSE" CONTAINERS MAY BE POSITIONED ON TOP OF A PALLETIZED UNIT AND SECURED WITH WEB STRAP TIEDOWN ASSEMBLIES, AS SHOWN ON PAGES 16 AND 18. "LOOSE" CONTAINERS MAY BE STACKED AND/OR BUNDLED ON TOP OF EACH OTHER AS SHOWN ON PAGES 14 THROUGH 17. STACKS MUST BE STABLE, SECURED TIGHTLY TO VEHICLE FLOOR, AND MUST NOT EXCEED THE LOAD HEIGHT OF THE VEHICLE BEING LOADED.
9. THE M871 SEMITRAILER IS EQUIPPED WITH THREE DIFFERENT TYPES OF TIEDOWN ANCHORS. TYPE I IS A REMOVABLE TIEDOWN ANCHOR THAT HAS ONE RING AND IS POSITIONED BY REACHING UNDER THE FLOOR OF THE TRAILER, INSERTING IT UP THRU THE HOLE AND ROTATING IT INTO POSITION (NOTE THAT THIS REMOVABLE TIEDOWN ANCHOR IS ALSO USED ON THE M872 SEMITRAILER). THERE ARE LOCATIONS FOR TEN OF THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE II IS A REMOVABLE TIEDOWN ANCHOR 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 ANCHOR IS FIRMLY SEATED AND ROTATED SO THE SPRING LOCK LEVER IS POINTING AWAY FROM THE DIRECTION OF THE PULL ON THE ATTACHED WEB STRAP ASSEMBLY. THERE ARE LOCATIONS FOR TEN OF THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE III IS A FIXED TIEDOWN ANCHOR THAT HAS ONE RING AND IS RECESSED INTO THE FLOOR. THERE ARE FIVE OF THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M871 SEMITRAILER. NORMALLY TYPE II AND TYPE III TIEDOWN ANCHORS ARE USED TO SECURE THE LOAD. HOWEVER, TYPE I TIEDOWN ANCHORS MAY BE USED, IF AVAILABLE WHEN THERE IS AN INSUFFICIENT QUANTITY OF TYPE II TIEDOWN ANCHORS. SEE TIEDOWN ANCHOR DETAILS ON PAGE 19.

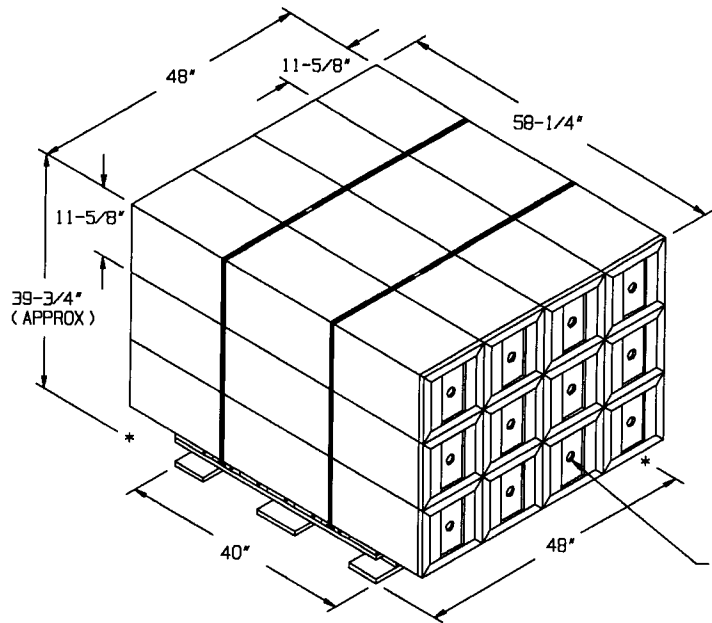
(CONTINUED ON PAGE 4)

10. THE M872 SEMITRAILER IS EQUIPPED WITH TWO DIFFERENT TYPES OF TIEDOWN ANCHORS AS INDICATED IN THE LOAD ON PAGES 12 AND 13. TYPE I IS A REMOVABLE TIEDOWN ANCHOR 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 ANCHOR MAY ALSO BE USED ON THE M871 SEMITRAILER). THERE ARE TWENTY-EIGHT LOCATIONS FOR THESE TIEDOWN ANCHORS ON EACH SIDE OF THE M872 SEMITRAILERS, THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. THE SECOND TYPE OF TIEDOWN ANCHOR IS THE "TEE-HOOK". THIS IS A REMOVABLE TIEDOWN ANCHOR 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 ANCHORS ON EACH SIDE OF THE M872 SEMITRAILERS. THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. ASSURE THAT THE TIEDOWN ANCHOR IS FIRMLY SEATED AND ROTATED APPROXIMATELY 45° TO ENGAGED POSITION BEFORE ATTACHING THE WEB STRAP TIEDOWN ASSEMBLY. THE LOAD ON PAGE 12 REQUIRES THE USE OF 30 TYPE I TIEDOWN ANCHORS (15 ON EACH SIDE OF THE TRAILER). NO TEE-HOOK TIEDOWN ANCHORS ARE REQUIRED. HOWEVER, THEY MAY BE USED IF DESIRED. SEE "TIEDOWN ANCHOR DETAILS" ON PAGE 19.

11. WHEN A LOAD RESTRAINING WEB STRAP IS ATTACHED TO A VEHICLE TIEDOWN ANCHOR, THE WEB STRAP, THE STRAP HOOK, AND/OR RATCHET IF USING A STRAP HAVING THE RATCHETS AT THE VERY END OF THE STRAP, MUST FORM A STRAIGHT LINE IN THE DIRECTION OF PULL FROM THE VEHICLE TIEDOWN ANCHOR. THE STRAP HOOK, AND/OR END-OF-STRAP RATCHET MUST NOT BIND AGAINST THE VEHICLE FLOOR, AND/OR EDGE OF VEHICLE FLOOR IF VEHICLE TIEDOWN ANCHORS ARE LOCATED ALONG THE SIDE, SUCH AS ON THE M127 SEMITRAILER. IF THE STRAP HOOK, AND/OR END-OF-STRAP RATCHET, CONTACT THE FLOOR IN SUCH MANNER THAT THE DIRECTION OF THE PULL IS NOT A STRAIGHT LINE, AN INTERFACE, SUCH AS A CLEVIS, HAVING THE SAME STRENGTH AS THE VEHICLE TIEDOWN ANCHOR, MUST BE ATTACHED TO THE VEHICLE TIEDOWN ANCHOR. THE WEB STRAP WILL THEN BE ATTACHED TO THE INTERFACE. NOTE THAT CONTACT OF THE STRAP HOOK AND/OR END-OF-STRAP RATCHET WITH THE FLOOR OF THE VEHICLE IS PERMITTED AS LONG AS THE LOAD RESTRAINING STRAP, STRAP HOOK, AND/OR END-OF-STRAP RATCHET FORMS A STRAIGHT LINE IN THE DIRECTION OF PULL FROM THE VEHICLE TIEDOWN ANCHOR.

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NOTE: THE TACTICAL VEHICLES LISTED IN THE INDEX ABOVE AND SHOWN WITHIN THIS DRAWING WERE SELECTED AS TYPICAL ONLY. OTHER TYPES OF VEHICLES MAY BE USED IN LIEU OF THOSE SHOWN AS LONG AS THEY COMPLY WITH GENERAL NOTE "F" ON PAGE 2.



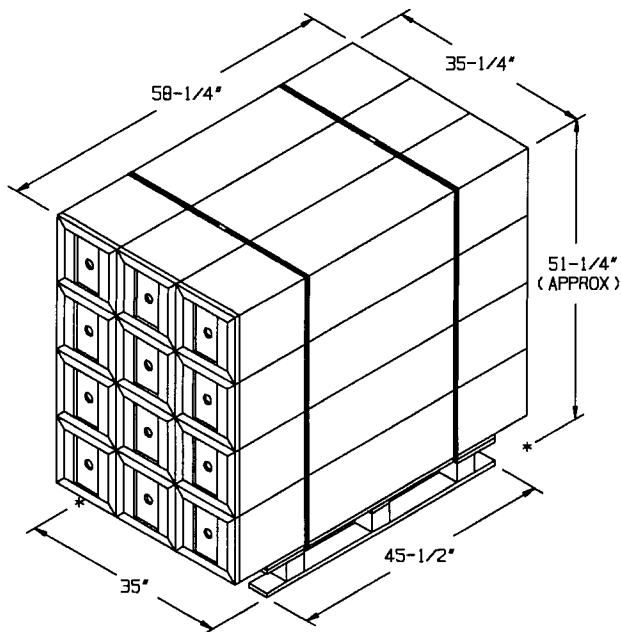
PALLET UNIT DATA (4-W BY 3-H)

NUMBER OF CONTAINERS -- TWELVE (12)
 GROSS WEIGHT ----- 1,127 LBS (APPROX)
 CUBE ----- 64.0 CU FT (APPROX)

INSPECTION PORT AT
 AFT END OF CONTAINER.

PALLET UNIT (4-WIDE BY 3-HIGH)

FOR FABRICATION OF THIS UNIT SEE U.S. ARMY
 MATERIEL COMMAND DRAWING NO. 19-48-5229-GM20T01.

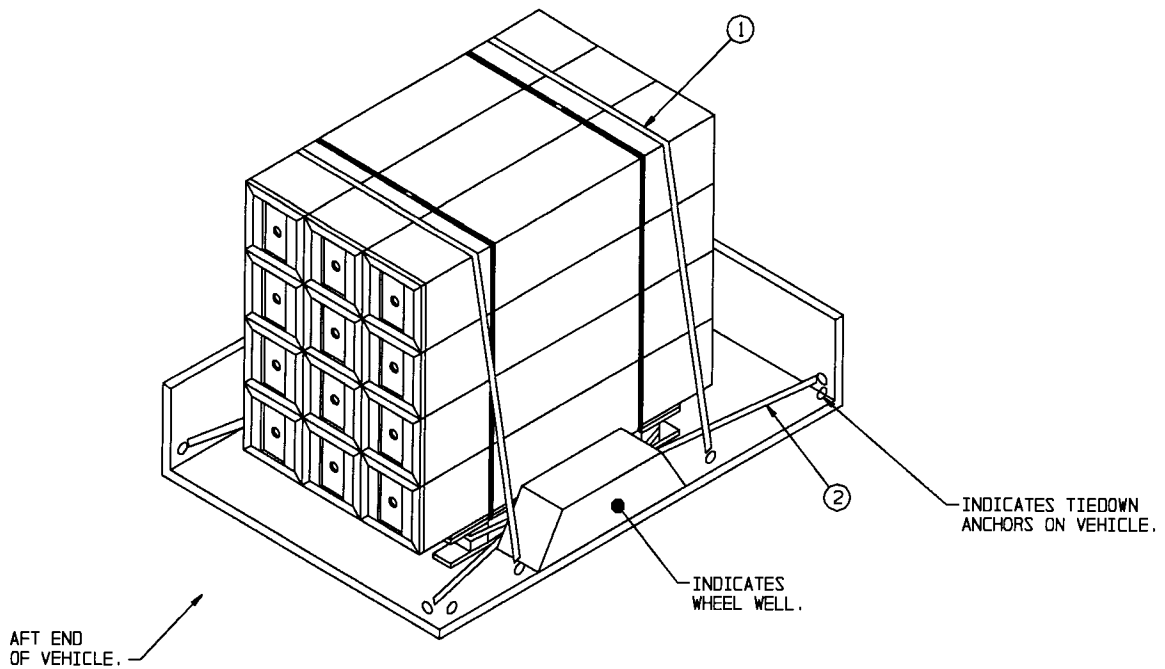


PALLET UNIT DATA (3-W BY 4-H)

NUMBER OF CONTAINERS -- TWELVE (12)
 GROSS WEIGHT ----- 1,112 LBS (APPROX)
 CUBE ----- 60.9 CU FT (APPROX)

PALLET UNIT (3-WIDE BY 4-HIGH)

FOR FABRICATION OF THIS UNIT SEE U.S. ARMY
 MATERIEL COMMAND DRAWING NO. 19-48-5229-GM20T01.



ISOMETRIC VIEW

SPECIAL NOTES:

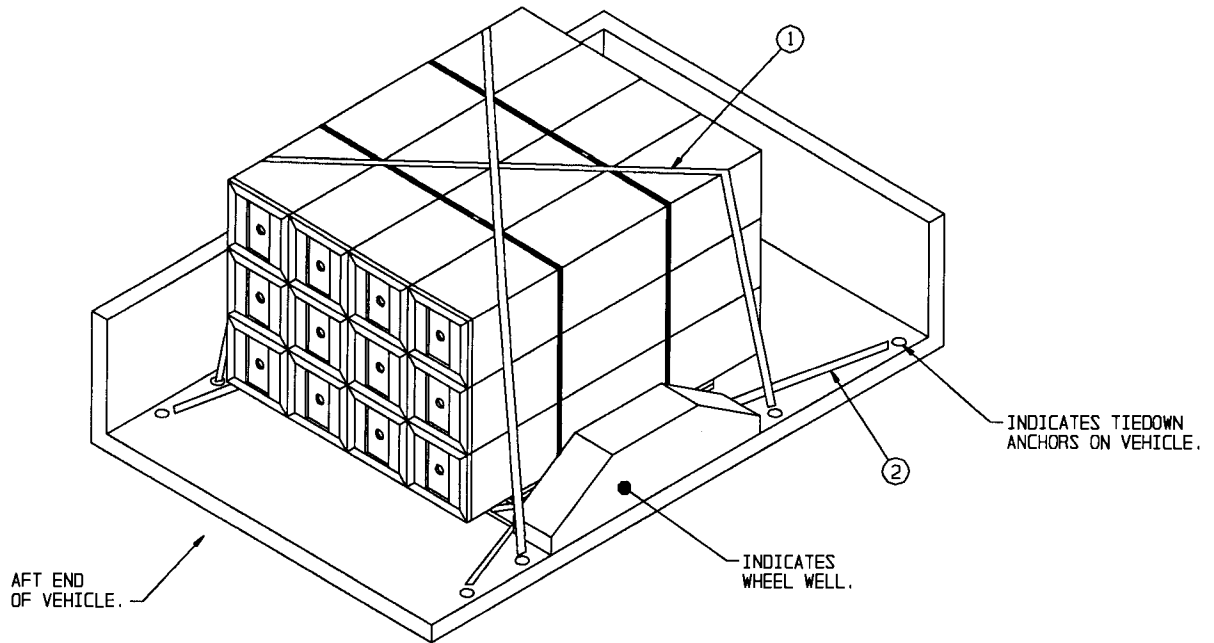
1. A TYPICAL LOAD OF ONE (THREE WIDE BY FOUR HIGH) PALLETIZED UNIT OF TOW CONTAINERS IS SHOWN IN A 3/4-TON M101 CARGO TRAILER, HAVING INSIDE DIMENSIONS OF 96" LONG BY 66" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. CENTER THE PALLETIZED UNIT LONGITUDINALLY BETWEEN THE TWO TIEDOWN ANCHORS LOCATED ALONG ONE SIDE OF THE VEHICLE TO WHICH WEB STRAPS MARKED ① WILL BE ATTACHED. ALSO CENTER THE UNIT LATERALLY ACROSS THE VEHICLE WIDTH.
4. IF TRANSPORTING THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNIT OF TOW CONTAINERS, THE PROCEDURES SHOWN ON PAGE 7 MUST BE USED, SINCE THIS PALLETIZED UNIT WILL NOT FIT INTO THE M101 CARGO TRAILER.
5. A TOTAL OF FOUR WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

KEY NUMBERS

- ① 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 THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H", AND "J" ON PAGE 2.

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT	1	1,112 LBS



ISOMETRIC VIEW

SPECIAL NOTES:

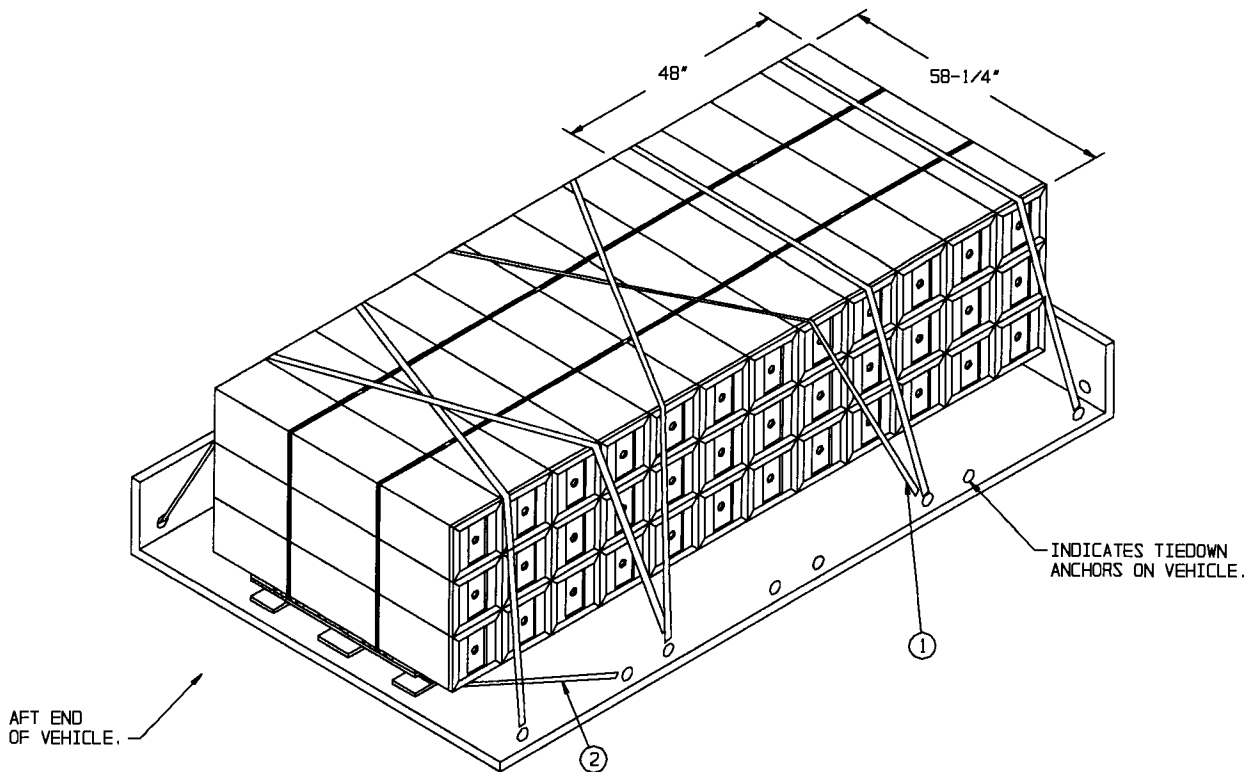
1. A TYPICAL LOAD OF ONE (FOUR WIDE BY THREE HIGH) PALLETIZED UNIT OF TOW CONTAINERS IS SHOWN IN A 1-1/4-TON M1008 COMMERCIAL UTILITY CARGO VEHICLE (CUCV), HAVING INSIDE DIMENSIONS OF 98" LONG BY 65" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. THE PROCEDURES SHOWN ABOVE MAY ALSO BE USED FOR THE THREE WIDE BY FOUR HIGH, PALLETIZED UNITS.
4. CENTER THE PALLETIZED UNIT LONGITUDINALLY BETWEEN THE TWO TIEDOWN ANCHORS LOCATED ALONG ONE SIDE OF THE VEHICLE TO WHICH WEB STRAPS MARKED ① WILL BE ATTACHED. ALSO CENTER THE UNIT LATERALLY ACROSS THE VEHICLE WIDTH.
5. A TOTAL OF FOUR WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

KEY NUMBERS

- ① 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 THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H", AND "J" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	1	1,127LBS



ISOMETRIC VIEW

SPECIAL NOTES:

1. A TYPICAL LOAD OF THREE (FOUR WIDE BY THREE HIGH) PALLETIZED UNITS OF TOW CONTAINERS IS SHOWN IN A 2-1/2-TON M35, CARGO TRUCK, HAVING INSIDE DIMENSIONS OF 147" LONG BY 88" WIDE.
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 SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. THE PROCEDURES SHOWN ABOVE MAY ALSO BE USED FOR THE THREE WIDE BY FOUR HIGH, PALLETIZED UNITS.
4. DUE TO THE LENGTH AND WIDTH, THE FOUR WIDE BY THREE HIGH PALLETIZED UNIT CAN ONLY BE LOADED ONE UNIT WIDE ACROSS A TACTICAL VEHICLE. WHEN POSSIBLE, POSITION THE 58-1/4" DIMENSION ACROSS THE VEHICLE WIDTH. FOR AN ALTERNATIVE METHOD OF TRANSPORTING THIS PALLETIZED UNIT SEE THE PROCEDURES SHOWN ON PAGE 9.
5. POSITION THE LOAD AGAINST THE FORWARD END WALL AND CENTER THE PALLETIZED UNITS Laterally ACROSS THE VEHICLE WIDTH.
6. A TOTAL OF SEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

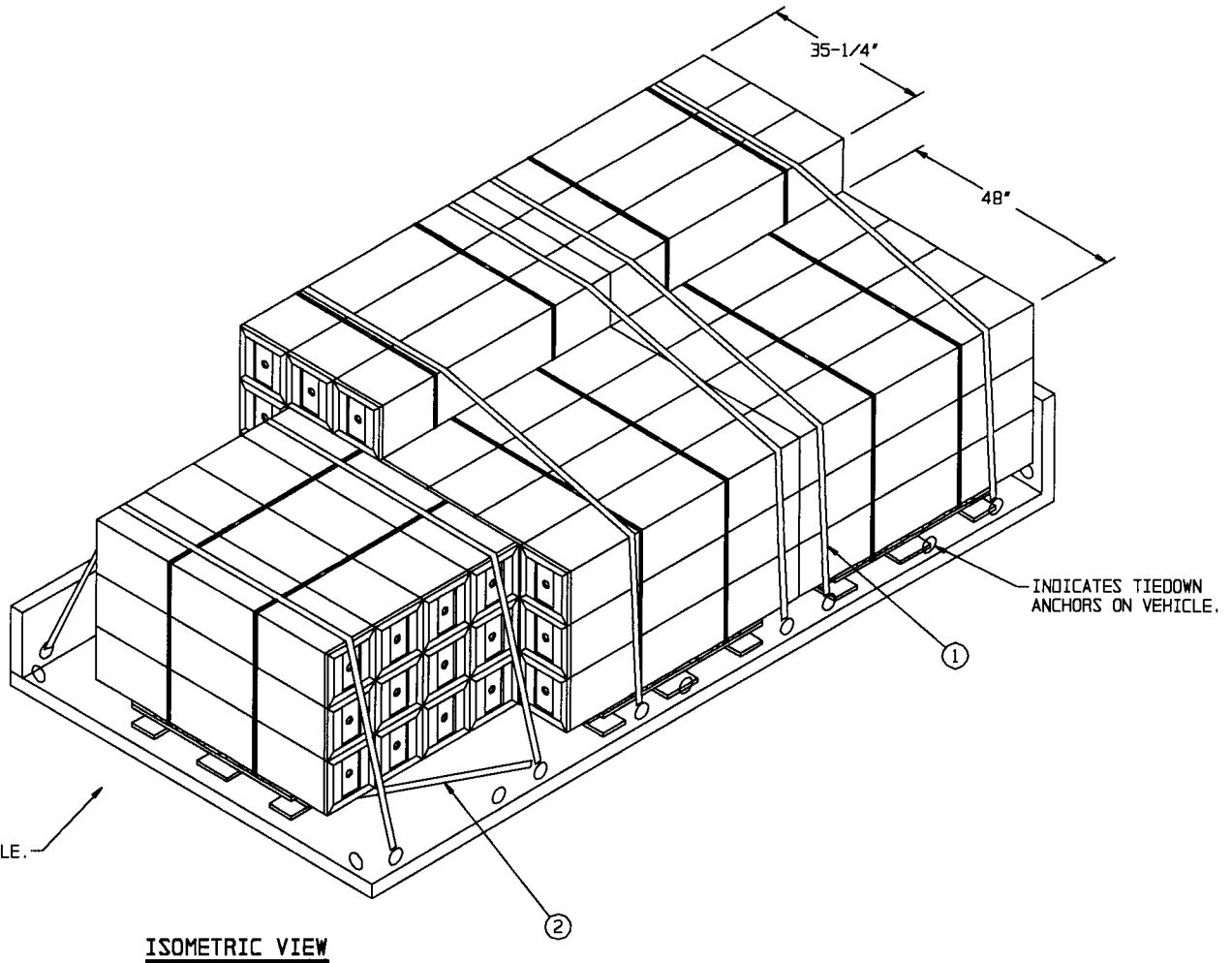
KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (6 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	3	3,381 LBS

THREE PALLET UNITS IN A 2-1/2-TON M35 CARGO TRUCK



SPECIAL NOTES:

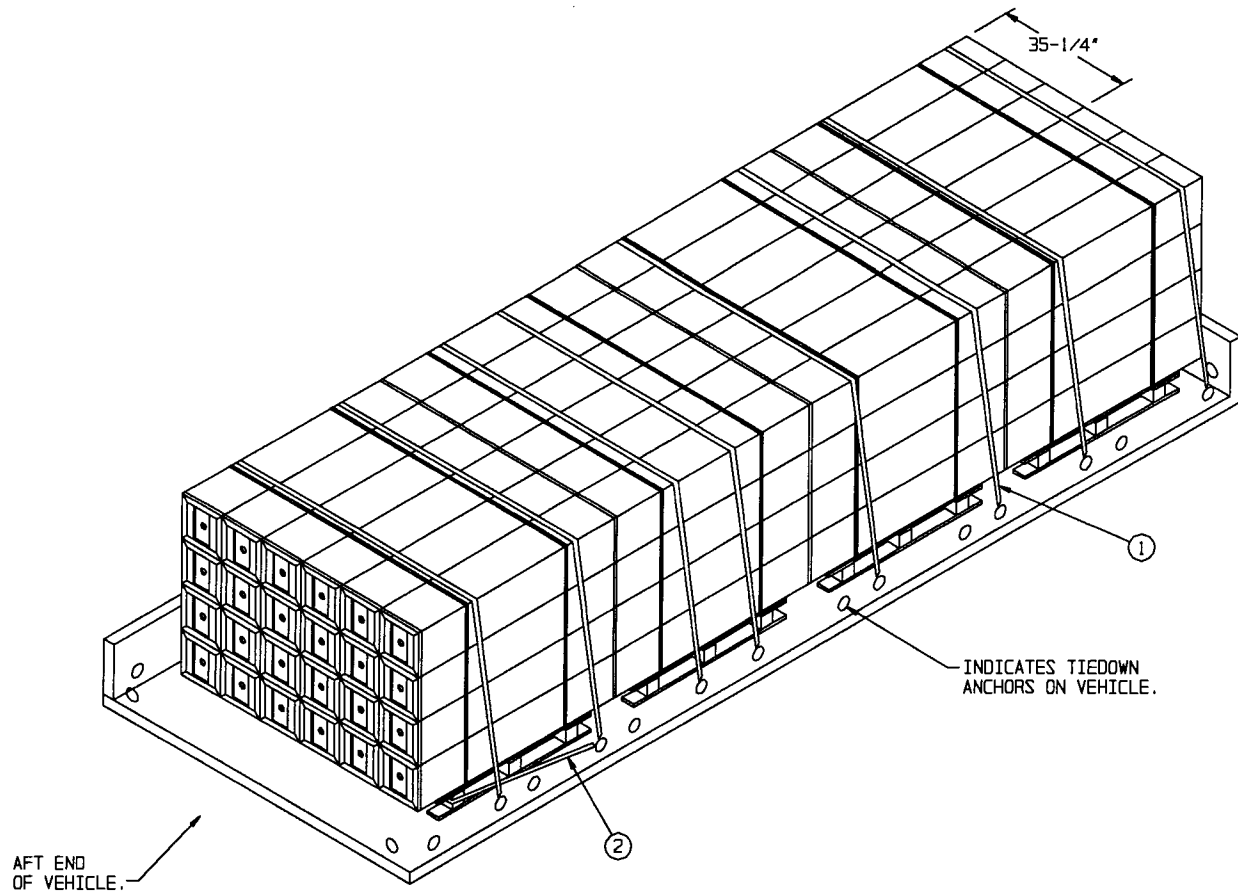
1. A TYPICAL LOAD OF THREE (FOUR WIDE BY THREE HIGH) AND TWO (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS OF TOW CONTAINERS ARE SHOWN IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 168" LONG BY 88" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNIT CAN ONLY BE POSITIONED ONE WIDE IN/ON ANY TACTICAL VEHICLE. HOWEVER A MAXIMUM LOAD CAN BE ACHIEVED BY POSITIONING (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS ADJACENT TO THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNITS AS SHOWN ABOVE.
4. POSITION THE LOAD AGAINST THE FORWARD END WALL AND CENTER THE PALLETIZED UNITS LATERALLY ACROSS THE VEHICLE WIDTH. SEE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES", NOTE 7, ON PAGE 3 PRIOR TO LOADING THE VEHICLE.
5. A TOTAL OF SEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (6 REED). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (1 REED). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	5	5,605 LBS



ISOMETRIC VIEW

SPECIAL NOTES:

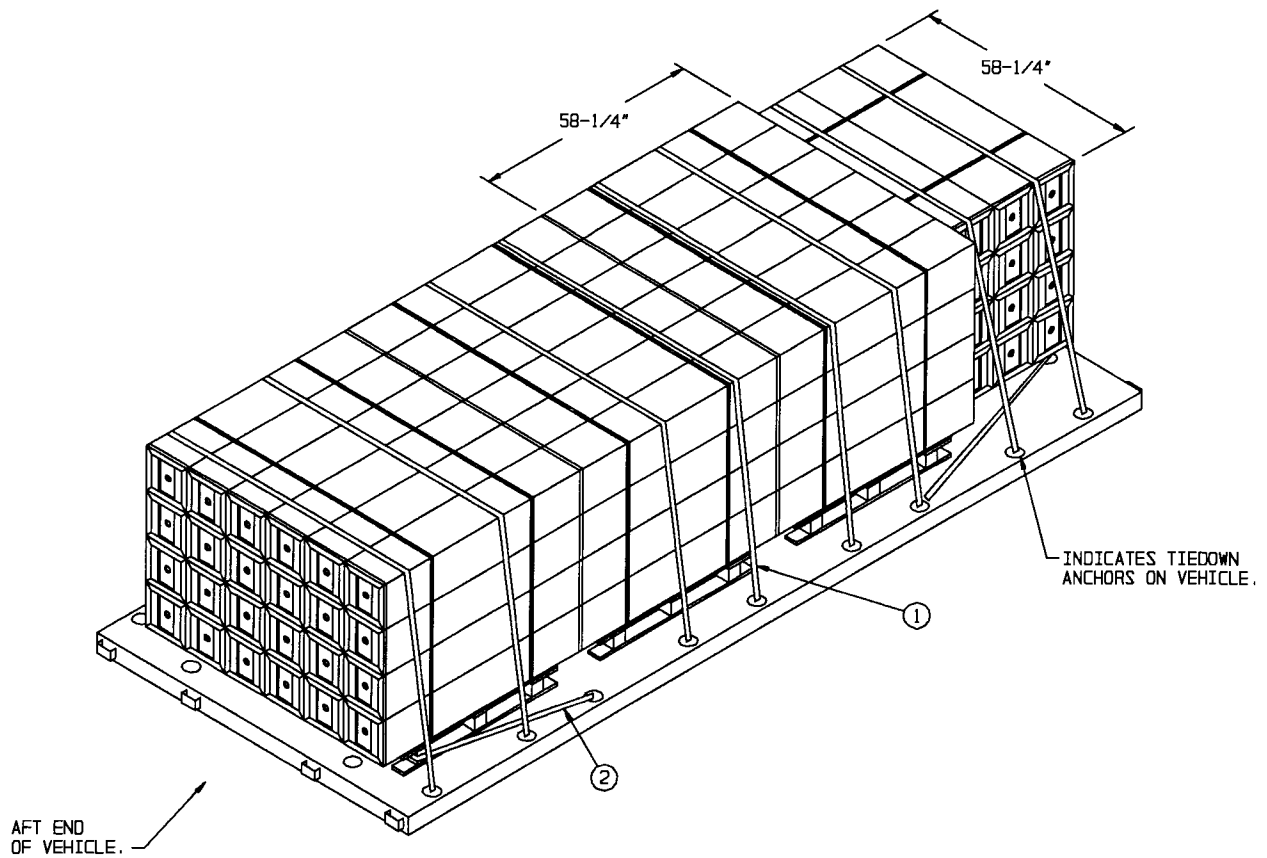
1. A TYPICAL LOAD OF EIGHT (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS OF TDW CONTAINERS ARE SHOWN IN A 5-TON M927A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 244" LONG BY 88" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. POSITION THE LOAD AGAINST THE FORWARD END WALL AND CENTER THE PALLETIZED UNITS Laterally ACROSS THE VEHICLE WIDTH.
4. IF TRANSPORTING THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNITS USE THE PROCEDURES SHOWN ON PAGES 8 AND 9.
5. A TOTAL OF NINE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (8 REQ'D). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (1 REQ'D). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	8	8,896 LBS



ISOMETRIC VIEW

SPECIAL NOTES:

1. A TYPICAL LOAD OF SEVEN (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS OF TOW CONTAINERS ARE SHOWN ON A 10-TON M977 AND OR M985 HEAVY EXPANDED MOBILITY TACTICAL TRUCK (HEMTT) HAVING INSIDE DIMENSIONS OF 216-3/8" LONG BY 90-3/4" WIDE.
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 SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. DO NOT POSITION THE LOAD AGAINST THE END WALLS. CENTER THE LOAD LONGITUDINALLY AND Laterally WITHIN THE VEHICLE CARGO AREA.
4. IF TRANSPORTING THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNITS USE THE PROCEDURES SHOWN ON PAGES 8 AND 9.
5. A TOTAL OF TEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

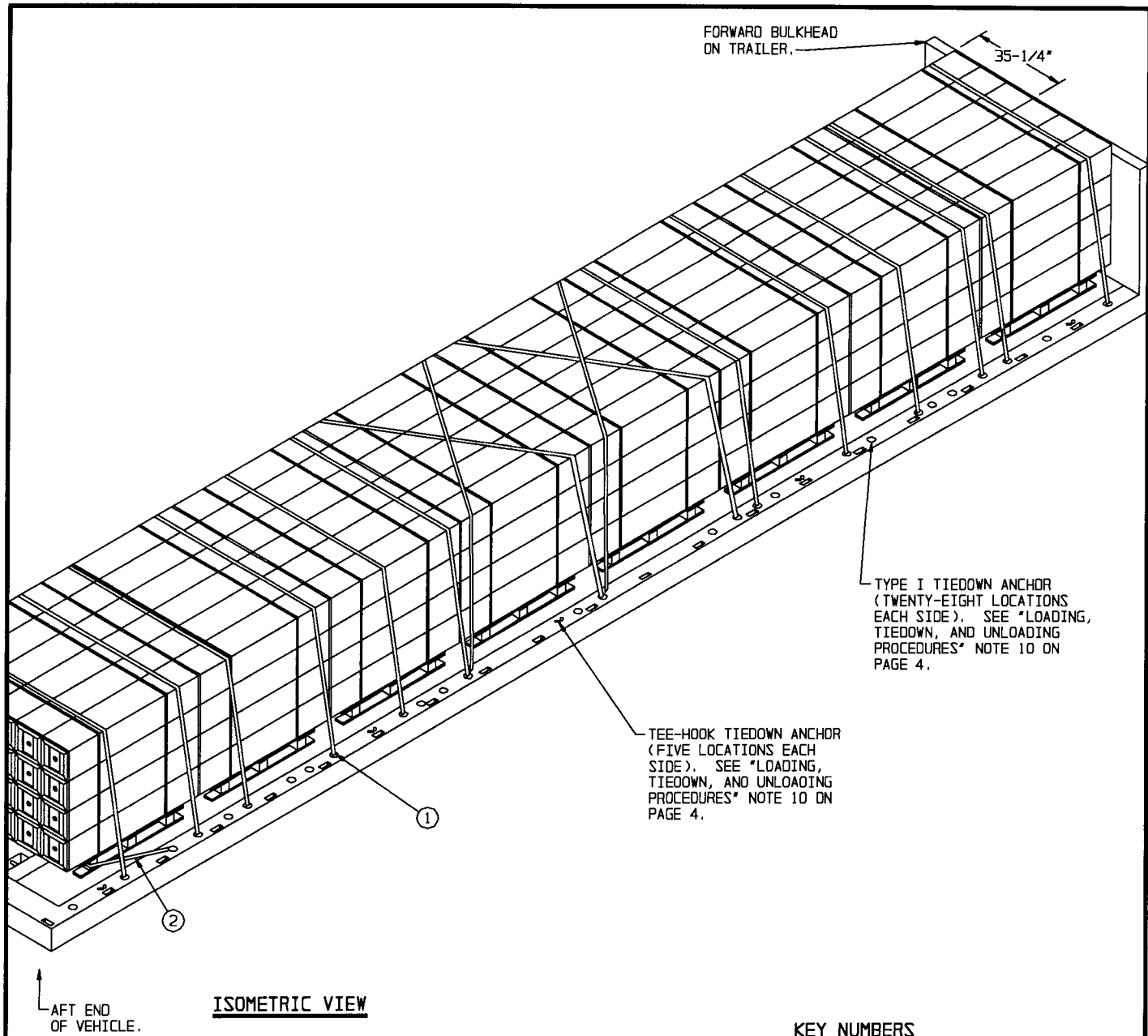
KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (8 REED). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REED). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	7	7,784 LBS

SEVEN PALLET UNITS ON A 10-TON M977 AND/OR M985 HEMTT



ISOMETRIC VIEW

KEY NUMBERS

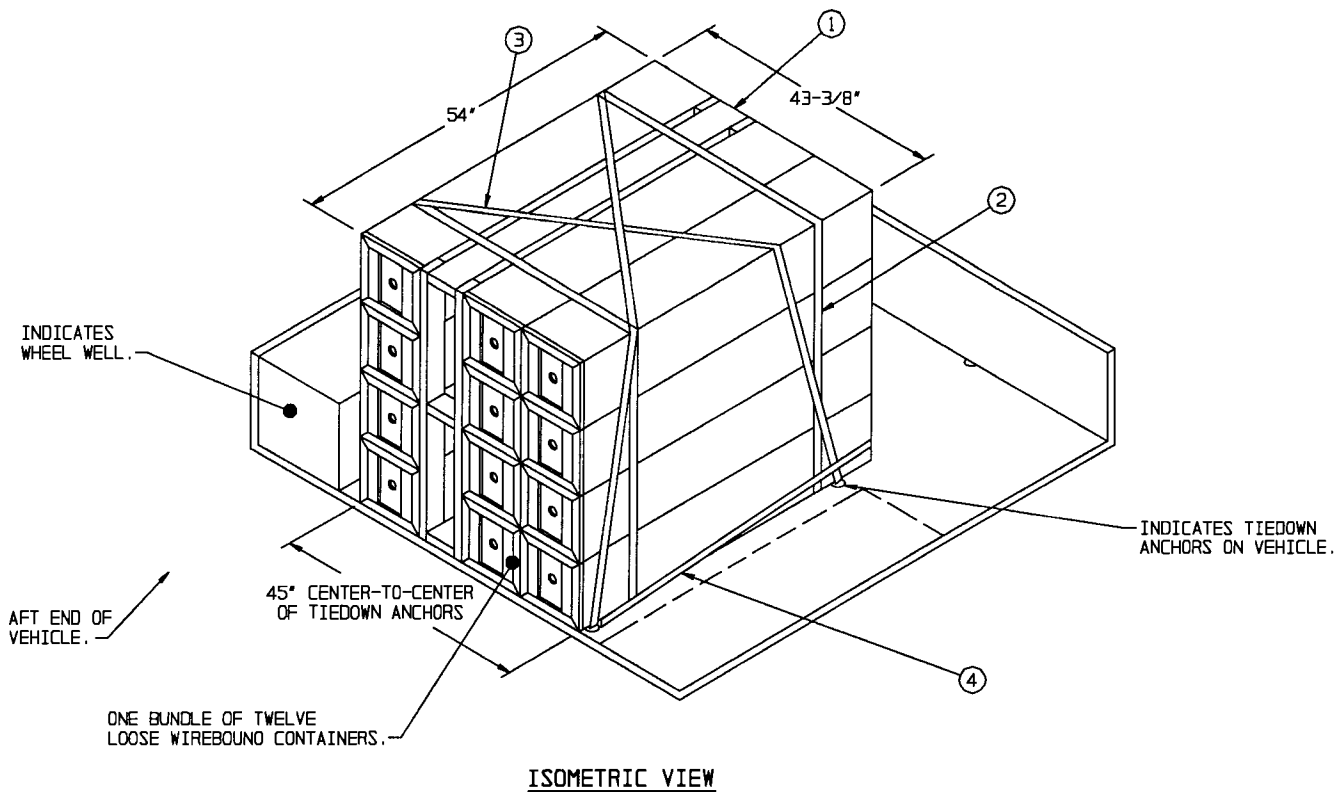
- ① WEB STRAP TIEDOWN ASSEMBLY (16 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNITS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (1 REOD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND PALLET BASE AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

SPECIAL NOTES:

1. A TYPICAL LOAD OF 16 (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS OF TOW CONTAINERS ARE SHOWN ON A 34-TON MB72 SEMITRAILER HAVING INSIDE DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
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 SIDE WALL, END WALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. POSITION THE LOAD AGAINST THE FORWARD BULKHEAD AND CENTER THE PALLETIZED UNITS Laterally ACROSS THE VEHICLE WIDTH.
4. IF THE FORWARD BULKHEAD HAS GUSSET SUPPORT PIECES THAT PREVENT THE LOAD FROM BEING POSITIONED AGAINST IT ONE MORE STRAP MARKED ② WILL BE REQUIRED AT THE FORWARD END OF THE LOAD.
5. IF TRANSPORTING THE (FOUR WIDE BY THREE HIGH) PALLETIZED UNIT USE THE PROCEDURES SHOWN ON PAGES 8 AND 9.
6. IF THE LOAD IS TO BE TRANSPORTED ON AN MB71 SEMI-TRAILER USE THE PROCEDURES SHOWN AND SEE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" NOTE 9, ON PAGE 3.
7. SEE GENERAL NOTE "K" ON PAGE 2 FOR GUIDANCE ON SECUREMENT AND/OR USE OF THE SIDE RACKS.
8. A TOTAL OF 17 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT	16	17,792 LBS



SPECIAL NOTES:

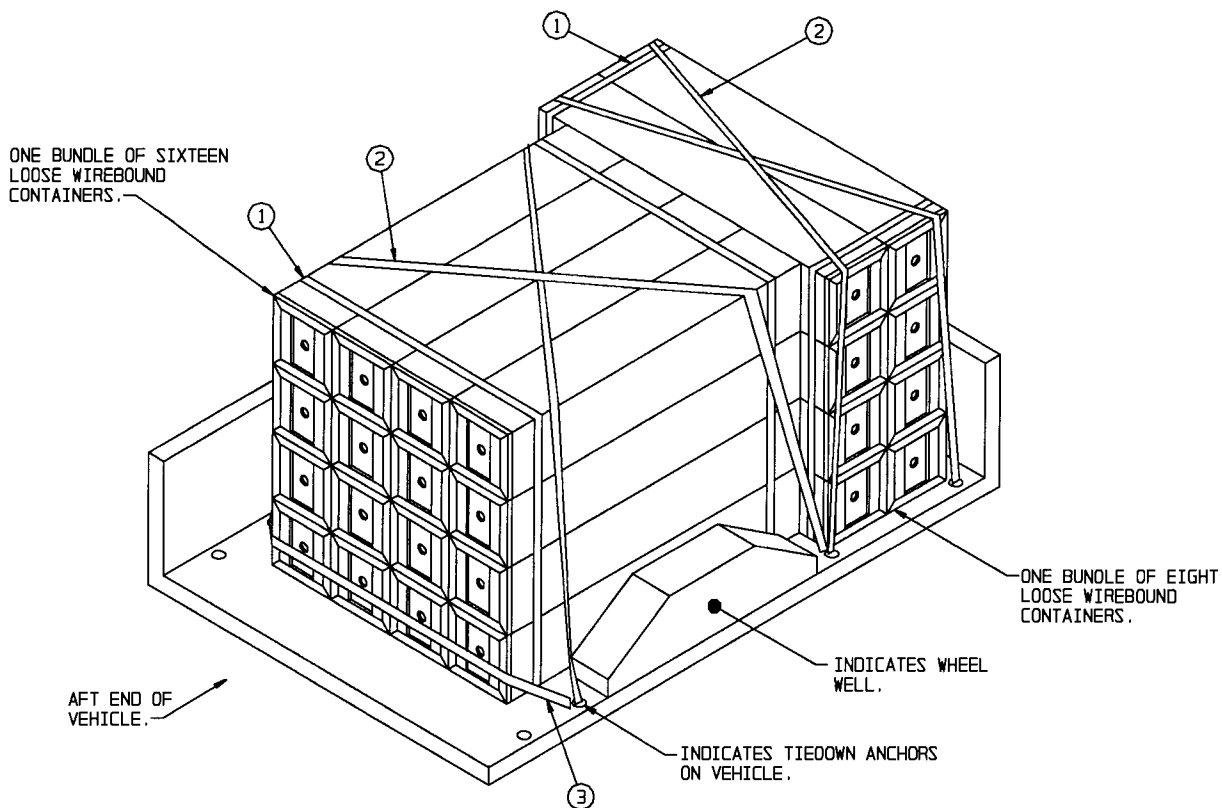
1. A TYPICAL LOAD OF 12 LOOSE TOW CONTAINERS IS SHOWN IN A 1-1/4-TON M998 HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLE (HMMWV) HAVING INSIDE DIMENSIONS OF 83-1/4" LONG BY 84" WIDE (52" BETWEEN WHEEL WELLS).
2. THE PROCEDURES SHOWN ON THIS PAGE ARE FOR THE HMMWV ONLY. THE SPACER ASSEMBLY MARKED ① IS REQUIRED TO WIDEN THE LOAD IN ORDER TO COMPLY WITH THE FRONT-TO-REAR LONGITUDINAL PULL ON THE VEHICLE TIEDOWN ANCHORS. SEE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" NOTE 6, ON PAGE 3. ALSO, IF OTHER CARGO IS TO BE TRANSPORTED WITH THE TOW BOXES, THE SPACER ASSEMBLY CAN BE ELIMINATED AND THE OTHER CARGO INSTALLED IN ITS PLACE, PROVIDED THE DIRECTION OF PULL ON THE TIEDOWN ANCHORS IS PROPER.
3. POSITION THE CONTAINERS AGAINST THE TAILGATE. THREE CONTAINERS WIDE AND FOUR CONTAINERS HIGH AND CENTERED BETWEEN THE WHEEL WELLS, AS SHOWN. DO NOT COVER CARGO TIEDOWN ANCHORS. CAUTION: NEVER POSITION THE LOAD AGAINST THE FORWARD BULKHEAD. LOAD SECURING WEB STRAP MAY ONLY BE ATTACHED TO THE TIEDOWN ANCHORS LOCATED BETWEEN THE WHEEL WELLS. DUE TO THE LOCATION OF THE REAR MOST TIEDOWN ANCHORS THE HOLD DOWN STRAPS MARKED ③ MUST BE CROSSED OVER TOP OF LOAD.
4. THE PROCEDURES SHOWN ABOVE MAY BE USED FOR SECURING THREE THROUGH TWELVE LOOSE CONTAINERS.
5. A TOTAL OF FIVE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

KEY NUMBERS

- ① SPACER ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 22 AND SPECIAL NOTE 2 ON THIS PAGE.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE ALL CONTAINERS IN THE BUNDLE. PRE-POSITION THESE TWO STRAPS ON THE FLOOR OF THE VEHICLE, AT THE PROPER LOCATION, PRIOR TO LOADING CONTAINERS. MAKE SURE STRAPS LAY FLAT ACROSS THE FLOOR AND POSITION BOTH STRAP RATCHETS ON THE SAME SIDE OF THE VEHICLE. AFTER ALL CONTAINERS ARE STACKED BRING ENDS OF STRAPS OVER TOP OF LOAD AND HOOK ENDS TOGETHER. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF CONTAINERS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. CROSS THE STRAPS OVER THE TOP OF THE LOAD AS SHOWN. POSITION STRAP RATCHETS ON SAME SIDE OF THE LOAD. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J", "N" AND "T" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND END OF BOTTOM LAYER OF CONTAINERS AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "N" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	12	1,044 LBS



ISOMETRIC VIEW

KEY NUMBERS

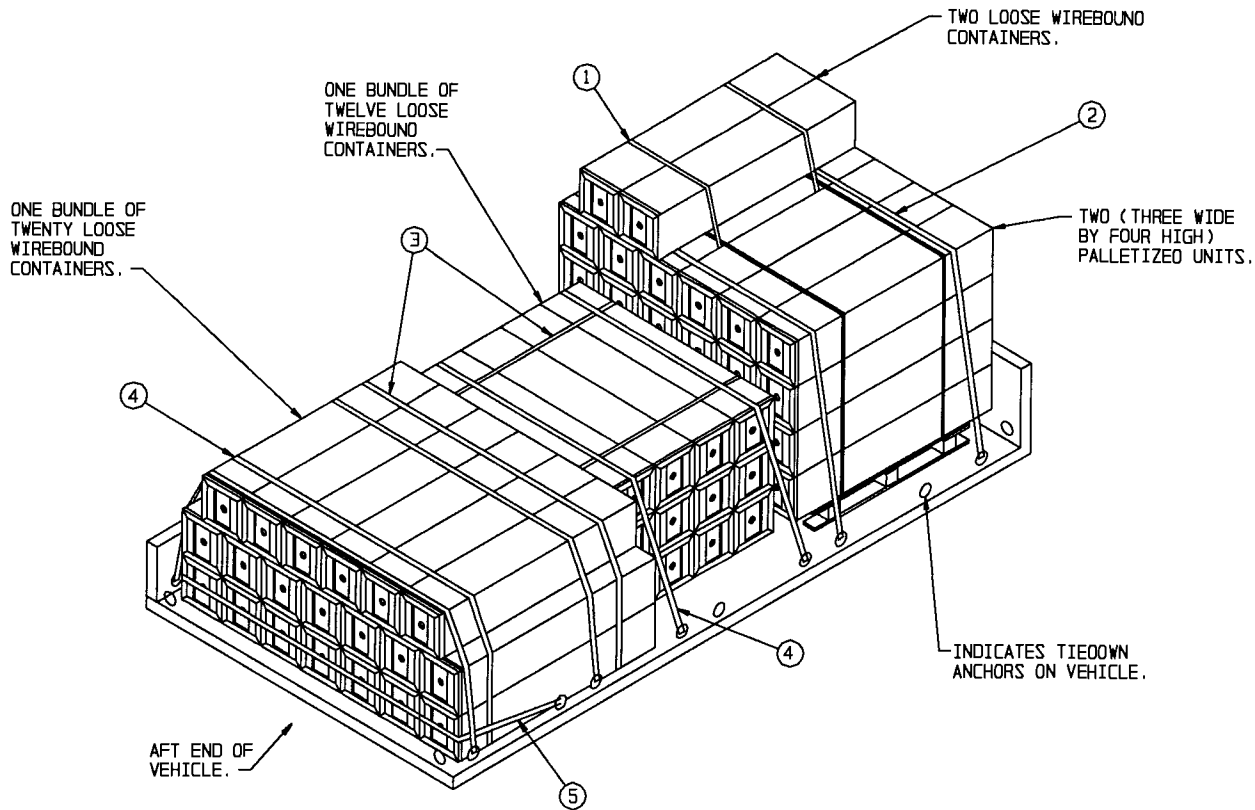
SPECIAL NOTES:

1. A TYPICAL LOAD OF 24 LOOSE TOW CONTAINERS IS SHOWN IN A 1-1/4-TON M1008 COMMERCIAL UTILITY CARGO VEHICLE (CUCV) HAVING INSIDE DIMENSIONS OF 98" LONG BY 65" WIDE.
2. THE VEHICLE SHOWN WAS CHOSEN AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDEWALL, ENDWALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. POSITION THE LOAD AGAINST THE FORWARD END WALL AND CENTER THE CONTAINERS LATERALLY ACROSS THE VEHICLE WIDTH.
4. IF LOADING A DIFFERENT QUANTITY OF CONTAINERS USE THESE SAME PROCEDURES, HOWEVER, IF LOADING THESE CONTAINERS IN A LARGER VEHICLE POSITION ALL CONTAINERS LENGTHWISE.
5. SEE THE LOAD ON PAGE 16 FOR AN ALTERNATIVE METHOD OF TRANSPORTING LOOSE CONTAINERS.
6. A TOTAL OF EIGHT WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

- ① WEB STRAP TIEDOWN ASSEMBLY (4 REOD, TWO FOR EACH BUNDLE). INSTALL EACH STRAP TO ENCIRCLE ALL CONTAINERS IN THE BUNDLE, AT THE APPROXIMATE LOCATION SHOWN. PRE-POSITION THIS STRAP ON THE FLOOR OF THE VEHICLE AT THE LOCATION SELECTED PRIOR TO LOADING CONTAINERS. MAKE SURE STRAPS LAY FLAT ACROSS THE FLOOR AND DRAPE THE ENDS OVER THE SIDE SIDE OF THE VEHICLE. POSITION THE FIRST LAYER OF CONTAINERS ON THE VEHICLE FLOOR AND ON TOP OF THE STRAPS. KEEP THE BOTTOM LAYER OF CONTAINERS TIGHT AGAINST EACH OTHER AND STACK THE REMAINING CONTAINERS IN LAYERS ON TOP OF THE BOTTOM LAYER. AFTER ALL CONTAINERS ARE STACKED BRING ENDS OF STRAPS UP OVER TOP OF STACK, HOOK ENDS OF STRAP TOGETHER. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET TIGHT. THE RATCHET MAY BE POSITIONED ANYWHERE ACROSS THE TOP OF THE STACK OR SINGLE LAYER ROW. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (4 REOD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BUNDLE, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION THE STRAP STRAIGHT ACROSS THE BUNDLE IF POSSIBLE, HOWEVER, DUE TO THE LOCATION AND QUANTITY OF TIEDOWN ANCHORS, IT MAY BE NECESSARY TO POSITION THIS STRAP DIAGONALLY ACROSS THE BUNDLE. IF ANOTHER STRAP IS TO BE ATTACHED TO THE SAME TIEDOWN ANCHORS, HOOK THE STRAP ENDS TO THE TIEDOWN ANCHORS PRIOR TO RATCHETING STRAPS TIGHT. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "T" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (1 REOD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF VEHICLE, AROUND END OF BOTTOM LAYER OF CONTAINERS AS SHOWN, 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 THEN RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "N" ON PAGE 2.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS - - - - -	24 - - - - -	2,088 LBS



ISOMETRIC VIEW

KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (2 REED). PRE-POSITION EACH STRAP UNDER TOP DECK OF PALLETIZED UNIT PRIOR TO POSITIONING PALLETIZED UNITS ADJACENT TO EACH OTHER. POSITION LOOSE CONTAINERS ON TOP OF PALLETIZED UNIT. BRING ENDS OF STRAP MARKED ① UP OVER TOP OF CONTAINERS AND HOOK ENDS TOGETHER. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT AFTER STRAP MARKED ② IS IN POSITION. SEE GENERAL NOTES "J" AND "M" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REED). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF PALLETIZED UNITS, UNDER ALL LOOSE UNITS WHICH ARE POSITIONED ON TOP OF A PALLETIZED UNIT, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. ASSURE THAT STRAP MARKED ① IS PRE-POSITIONED. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. NOTE: STRAPS MARKED ② MUST BE INSTALLED OVER TOP OF THE PALLETIZED UNIT(S), PRIOR TO POSITIONING THE LOOSE CONTAINERS ON TOP. SEE GENERAL NOTES "H", "J" AND "T" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (4 REED, TWO FOR EACH BUNDLE). INSTALL EACH STRAP TO ENIRCLE ALL CONTAINERS IN THE BUNDLE, AT THE APPROXIMATE LOCATION SHOWN. PRE-POSITION THIS STRAP ON THE FLOOR OF THE VEHICLE AT THE LOCATION SELECTED PRIOR TO LOADING THE CONTAINERS. MAKE SURE STRAPS LAY FLAT ACROSS THE FLOOR AND DRAPE THE ENDS OVER THE SIDE OF THE VEHICLE. POSITION THE FIRST LAYER OF CONTAINERS ON THE VEHICLE FLOOR AND ON TOP OF THE STRAPS. KEEP THE BOTTOM LAYER OF CONTAINERS TIGHT AGAINST EACH OTHER AND STACK THE REMAINING CONTAINERS IN LAYERS ON TOP OF THE BOTTOM LAYER. AFTER ALL CONTAINERS ARE STACKED, BRING ENDS OF STRAP UP OVER TOP OF STACK, HOOK ENDS OF STRAP TOGETHER. TAKE UP EXCESS SLACK IN STRAPS AND THEN RATCHET TIGHT. THE RATCHET MAY BE POSITIONED ANYWHERE ACROSS THE TOP OF THE STACK OR SINGLE LAYER ROW. SEE GENERAL NOTES "J" AND "M" ON PAGE 2. (KEY NUMBERS CONTINUED AT RIGHT)

(KEY NUMBERS CONTINUED)

- ④ WEB STRAP TIEDOWN ASSEMBLY (4 REED). INSTALL EACH STRAP FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF A BUNDLE, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION THE STRAP STRAIGHT ACROSS THE BUNDLE IF POSSIBLE, HOWEVER, DUE TO THE LOCATION AND QUANTITY OF TIEDOWN ANCHORS, IT MAY BE NECESSARY TO POSITION THIS STRAP DIAGONALLY ACROSS THE BUNDLE. IF ANOTHER STRAP IS TO BE ATTACHED TO THE SAME TIEDOWN ANCHORS, HOOK THE STRAP ENDS TO THE TIEDOWN ANCHORS PRIOR TO RATCHETING STRAP TIGHT. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "T" ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REED). INSTALL STRAP FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, AROUND ENDS OF CONTAINERS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. IF THIS STRAP IS BEING ATTACHED TO THE SAME TIEDOWN ANCHOR AS A STRAP MARKED ④, ATTACH RATCHET END TO THE SAME TIEDOWN ANCHOR THAT THE NON-RATCHET END OF STRAP MARKED ② IS ATTACHED TO. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "H", "J" AND "T" ON PAGE 2.

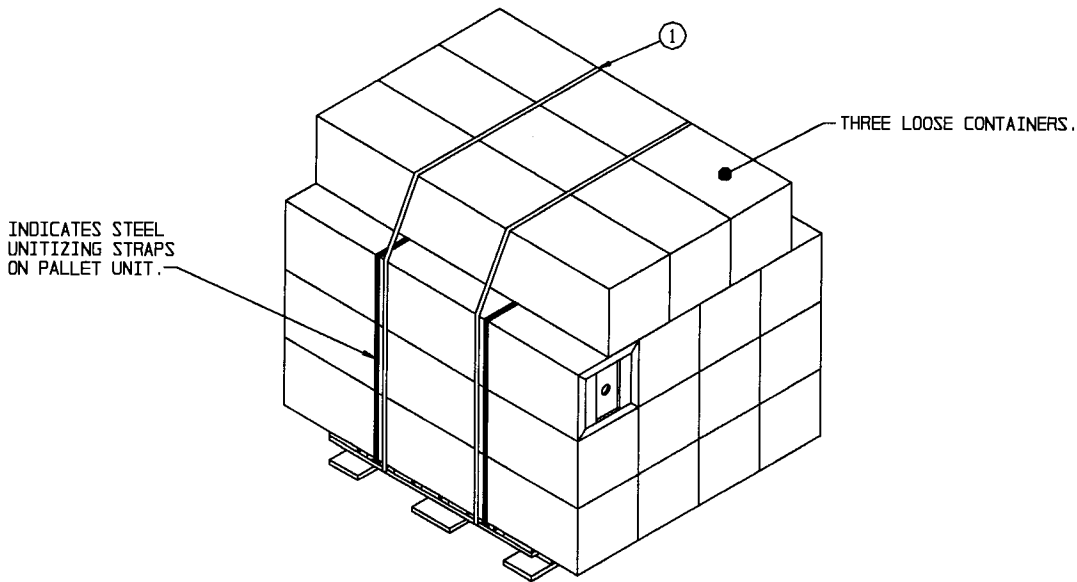
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINERS - - - - -	34 - - - - -	2,958 LBS
PALLETIZED UNIT - - - - -	2 - - - - -	2,224 LBS
TOTAL WEIGHT - - - - -		5,182 LBS

**THIRTY-FOUR LOOSE AND TWO PALLETIZED UNITS
OF TOW CONTAINERS IN A 5-TON M925A1 CARGO TRUCK**

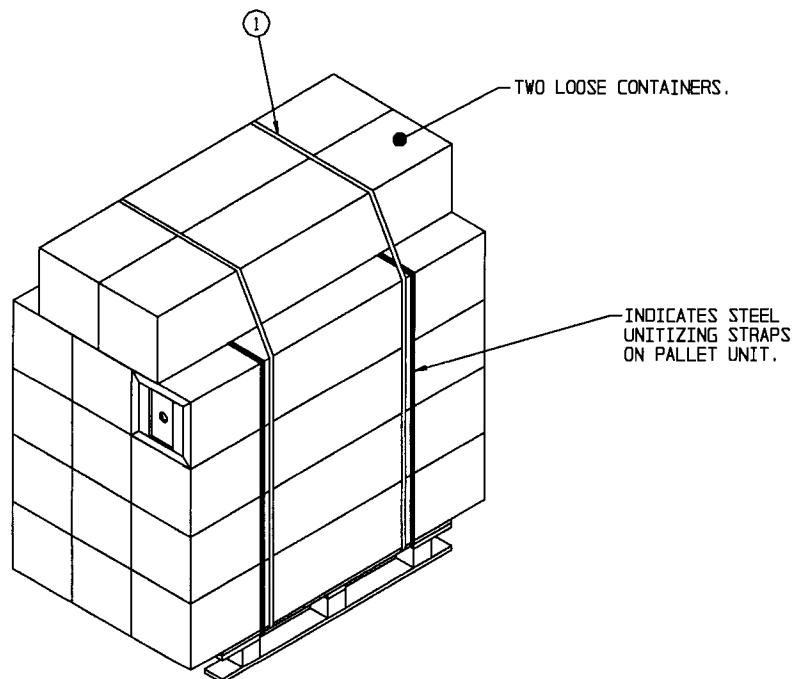
SPECIAL NOTES:

1. A TYPICAL LOAD OF 34 LOOSE TOW CONTAINERS AND TWO (THREE WIDE BY FOUR HIGH) PALLET UNITS ARE SHOWN IN A 5-TON M925A1 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 168" LONG BY 88" WIDE.
2. THE VEHICLE SHOWN WAS CHOSEN AS TYPICAL ONLY, AND VEHICLES OF OTHER DIMENSIONS, WHICH HAVE A SUFFICIENT QUANTITY OF TIEDOWN ANCHORS, LOCATED ON THE SIDEWALL, ENDWALL, OR FLOOR, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. THE PROCEDURES SHOWN ABOVE DEPICT METHODS OF SECURING PALLETIZED UNITS OF TOW CONTAINERS AND/OR LOOSE TOW CONTAINERS ON THE VEHICLE FLOOR AND/OR ON TOP OF A PALLETIZED UNIT WHICH IS SECURED TO THE VEHICLE. HOLD DOWN STRAPS MARKED ② ARE POSITIONED OVER TOP OF THE TWO ADJACENT PALLETIZED UNITS AND MUST NOT BE POSITIONED OVER TOP OF LOOSE CONTAINERS ON TOP OF A PALLETIZED UNIT. SEE KEY NUMBERS ① AND ② ON THIS PAGE FOR GUIDANCE WHEN LOADING LOOSE CONTAINERS ON TOP OF PALLETIZED UNITS.
4. TWO (THREE WIDE BY FOUR HIGH) PALLETIZED UNITS OF TOW CONTAINERS ARE POSITIONED AGAINST THE FORWARD END WALL AND TWO LOOSE CONTAINERS ARE POSITIONED ON TOP OF ONE PALLETIZED UNIT. ONE BUNDLE OF 12 LOOSE CONTAINERS AND ONE BUNDLE OF 20 LOOSE CONTAINERS ARE POSITIONED ON THE VEHICLE FLOOR, TIGHT AGAINST THE PALLETIZED UNITS AND EACH OTHER. IF THE LOAD IS NOT POSITIONED AGAINST A FORWARD END WALL, ONE ADDITIONAL STRAP MARKED ⑤ IS REQUIRED AT THE FORWARD END.
5. THE QUANTITY OF LOOSE CONTAINERS THAT CAN BE SECURED ON TOP OF A PALLETIZED UNIT MAY BE ONE CONTAINER UP TO ONE FULL LAYER. ALL LOOSE CONTAINERS POSITIONED ON TOP OF A PALLETIZED UNIT MUST BE SECURED TO THE PALLETIZED UNIT WITH TWO UNITIZING STRAPS AS SHOWN. SEE KEY NUMBER ① ON PAGE 16. FOR ADDITIONAL GUIDANCE SEE "ALTERNATIVE PROCEDURES FOR SHIPMENT OF LOOSE CONTAINERS, ON PAGE 18.
6. A TOTAL OF 13 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

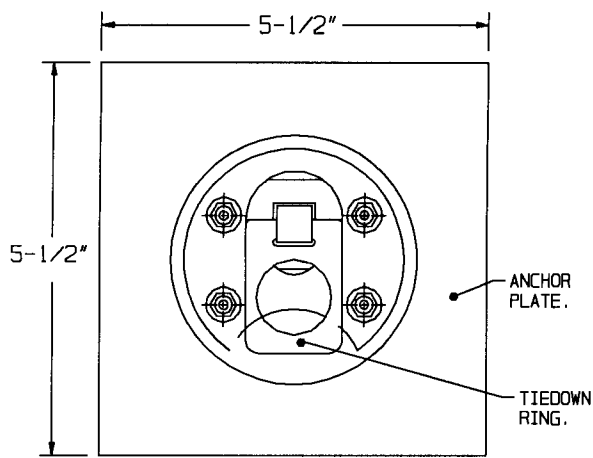


SECUREMENT OF LOOSE CONTAINERS ON TOP OF A FULL (4W BY 3H) PALLET UNIT
 ONE THROUGH FOUR LOOSE CONTAINERS MAY BE SECURED ON TOP OF A PALLET UNIT.

- ① WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE THE PALLET UNIT AND LOOSE CONTAINERS. THREAD A STRAP UNDER THE TOP DECK BOARDS OF THE PALLET UNIT BASE AT LOCATIONS SHOWN ABOVE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. POSITION STRAP RATCHETS ON SAME SIDE OF THE PALLET. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTE "J" ON PAGE 2, AND "RATCHET/RATCHETING DETAILS" ON PAGES 20 AND 21.

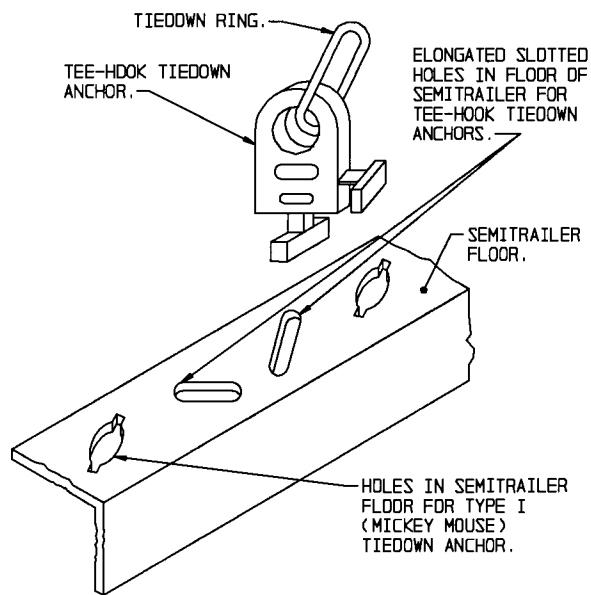


SECUREMENT OF LOOSE CONTAINERS ON TOP OF A FULL (3W BY 4H) PALLET UNIT
 ONE THROUGH THREE LOOSE CONTAINERS MAY BE SECURED ON TOP OF A PALLET UNIT.



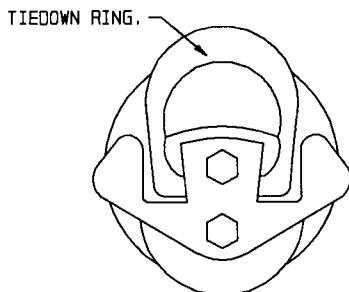
UNIVERSAL TIEDOWN ANCHOR (FRONT VIEW)

SEE SPECIAL NOTE 1.



TEE-HOOK TIEDOWN ANCHOR (ISOMETRIC VIEW)

SEE SPECIAL NOTE 2.

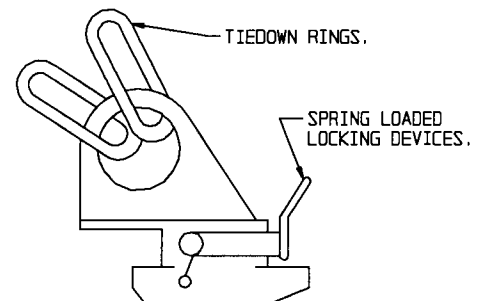


REMOVABLE TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 3.

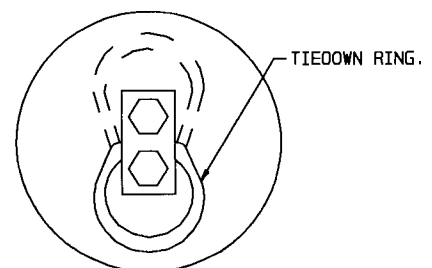
SPECIAL NOTES:

1. 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 (HEMTT), M977 AND/OR M985, WHICH HAS THE TIEDOWN ANCHORS INSTALLED IN THE FLOOR, THESE TIEDOWN ANCHORS ARE TO BE INSTALLED IN THE SIDEWALLS AND ENDWALLS 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. 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 IN THE SIDE RAILS OF THE SEMITRAILER. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-113-9285.
3. THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS AND IS INSTALLED ON THE M871 AND M872 SEMITRAILERS. IT IS COMMONLY REFERRED TO AS THE "MICKEY MOUSE" TIEDOWN ANCHOR. THERE ARE TEN LOCATIONS IN EACH SIDE RAIL OF THE M871 SEMITRAILER AND APPROXIMATELY TWENTY-EIGHT IN EACH SIDE RAIL OF THE M872 SEMITRAILER. FOR INSTALLATION OF THIS TIEDOWN ANCHOR IT IS POSITIONED BY REACHING UNDER THE FLOOR OF THE SEMITRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT INTO POSITION. THIS TIEDOWN ANCHOR IS FURTHER IDENTIFIED AS NSN 2540-01-112-1732.
4. THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS AND IS ONLY FOR USE ON THE M871 SEMITRAILER. IT IS COMMONLY REFERRED TO AS THE "BIG FOOT" TIEDOWN ANCHOR. THERE ARE TEN LOCATIONS IN EACH SIDE RAIL OF THE SEMITRAILER FOR INSTALLATION OF THIS TIEDOWN ANCHOR. IT HAS A SPRING/LOADED LOCKING DEVICE TO HOLD IT IN PLACE, IS INSERTED FROM THE TOP INTO A 1-3/4" DIAMETER HOLE, AND IT SWIVELS. THIS TIEDOWN IS FURTHER IDENTIFIED AS NSN 2540-01-117-3043.
5. THIS TIEDOWN ANCHOR IS RATED AT 10,000 POUNDS, IS NOT REMOVABLE AND IS ONLY INSTALLED ON THE M871 SEMITRAILER. THERE ARE FIVE IN EACH SIDE RAIL OF THE M871 SEMITRAILER AND THEY DO NOT SWIVEL.



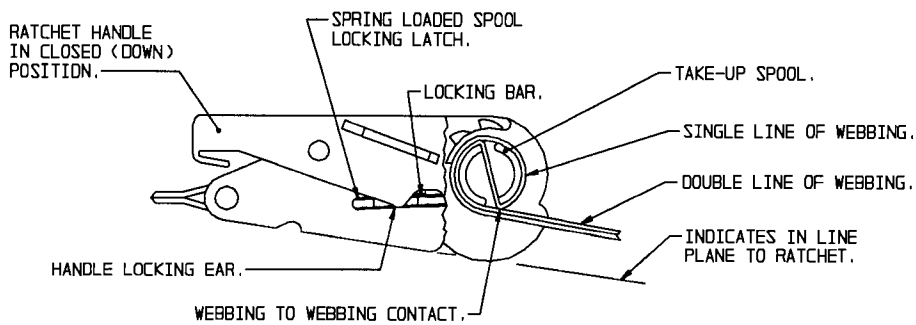
REMOVABLE TIEDOWN ANCHOR (SIDE VIEW)

SEE SPECIAL NOTE 4.



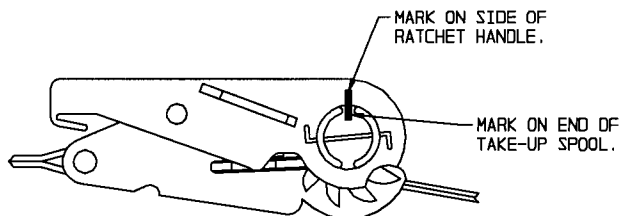
FIXED TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 5.



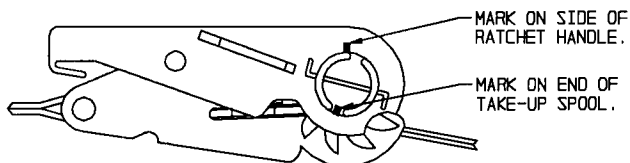
STEP 1

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.



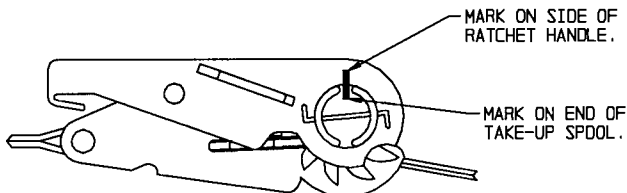
STEP 2

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.



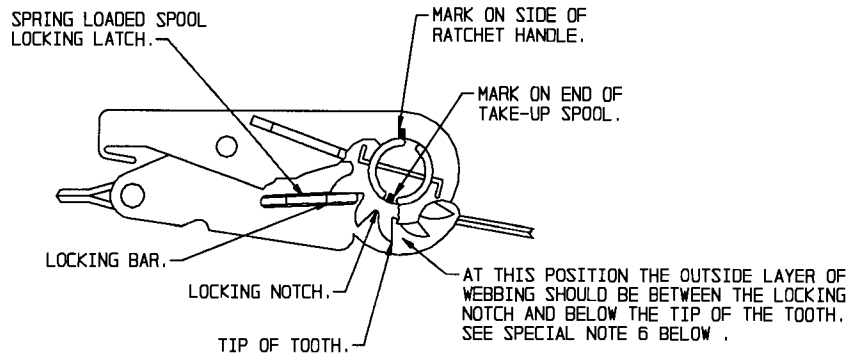
STEP 3

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

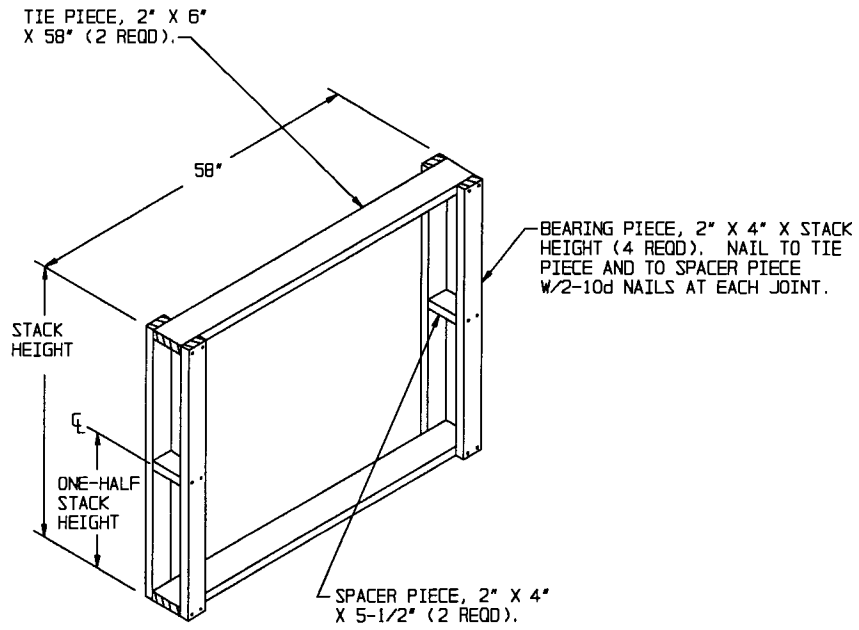
THIS VIEW DEPICTS THE LOCATION OF THE MARK ON THE END OF THE TAKE-UP SPOOL AFTER THE SPOOL HAS BEEN ROTATED ONE AND ONE-HALF TURNS, AFTER WEBBING-TO-WEBBING CONTACT HAS BEEN MADE. ALSO IN THIS VIEW, PART OF THE RATCHET HANDLE IS BROKEN AWAY TO SHOW THE LOCKING BAR FULLY SEATED IN THE MATCHING LOCKING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

SPECIAL NOTES:

1. THE PURPOSE OF THE RATCHET DETAILS ON PAGE 20 AND THE DETAIL AND NOTES ON THIS PAGE ARE TO AUGMENT THE GUIDANCE SET FORTH WITHIN GENERAL NOTE "H" ON PAGE 2.
2. THE REQUIREMENT 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 "H" 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 20.
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 20. 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 20, 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 HAS 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 THROUGHOUT A MINIMUM OF 5 TO A MAXIMUM OF 13 (1/2 TO 1-1/2 WRAPS) IF THE GEAR HAS 9 TEETH.

(SPECIAL NOTES CONTINUED)

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 OF THE RATCHET ASSEMBLY) IS FULLY SEATED ON BOTH SIDES 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 20. 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.



SPACER ASSEMBLY

USED FOR LOOSE CONTAINERS IN THE HMMV ONLY.
SEE THE LOAD AND SPECIAL NOTE 2 ON PAGE 14.

LOAD PLANNING GUIDANCE CHART

WHEN TRANSPORTING PALLETIZED UNITS AND/OR LOOSE CONTAINERS ON TACTICAL VEHICLES, USE THE FOLLOWING CHART FOR LOAD PLANNING GUIDANCE. ALL 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 "F" ON PAGE 2.

LOAD PLANNING NOTES:

1. DETERMINE THE QUANTITY OF PALLETIZED UNIT(S) AND/OR LOOSE CONTAINERS TO BE LOADED IN/ON THE TACTICAL VEHICLE.
2. SELECT THE BEST METHOD OF SECURING THE UNIT(S) AND/OR LOOSE CONTAINERS FROM THE METHOD SHOWN ON THE REFERENCED PAGES. NOTE: A COMBINATION OF METHODS MAY BE USED ON/WITHIN THE SAME TACTICAL VEHICLE.

TACTICAL VEHICLE			TOW MISSILE	
			PALLETIZED SEE PAGE (S)	LOOSE SEE PAGE (S)
M100	CARGO TRAILER	1/4-TON	NONE	15
M101	CARGO TRAILER	3/4-TON	6	15 THRU 17
M105	CARGO TRAILER	1-1/2-TON	6, 7	15 THRU 17
M332	AMMO TRAILER	1-1/2-TON	6, 7	15 THRU 17
M127	SEMITRAILER	12-TON	12, 13	16, 17
M871	SEMITRAILER	22-1/2-TON	12, 13	16, 17
M872	SEMITRAILER	34-TON	12, 13	15 THRU 17
M37	CARGO TRUCK	3/4-TON	6, 7	15 THRU 17
M561	CARGO TRUCK	1-1/4-TON	6, 7	15 THRU 17
M751	CARGO TRUCK	1-1/4-TON	6, 7	15 THRU 17
M1008	CUCV	1-1/4-TON	7	15 THRU 17
M998	HMMWV	1-1/4-TON	NONE	14
M34	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M35	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M36/M36C	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M135	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M211	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M602	CARGO TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M47	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M59	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M215	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M342	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M614	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M624	DUMP TRUCK	2-1/2-TON	6 THRU 10	15 THRU 17
M41	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M54	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M55	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M656	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M813	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M814	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M939	CARGO TRUCK	5-TON	6 THRU 10	15 THRU 17
M51	DUMP TRUCK	5-TON	6 THRU 10	15 THRU 17
M817	DUMP TRUCK	5-TON	6 THRU 10	15 THRU 17
M548	CARGO CARRIER	6-TON	6 THRU 10	15 THRU 17
M520	CARGO TRUCK	8-TON	6 THRU 10	15 THRU 17
M125	CARGO TRUCK	10-TON	6 THRU 10	15 THRU 17
M977/M985	CARGO TRUCK	10-TON	11	16, 17

