

LOADING, TIEDOWN, AND UNLOADING PROCEDURES FOR THE INJECTOR ASSEMBLY CONTAINER (IAC) FOR THE MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) BINARY CHEMICAL WARHEAD IN/ON TACTICAL VEHICLES

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U.S. ARMY MATERIEL COMMAND DRAWING			
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U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL	CLASS	DIVISION	DRAWING
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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 INJECTOR ASSEMBLY CONTAINER (IAC) FOR THE MULTIPLE LAUNCH ROCKET SYSTEM (MLRS) BINARY CHEMICAL WARHEAD. IF OTHER TYPES OF CARGO ITEMS ARE TRANSPORTED WITH THOSE SHOWN, THE TOTAL LOAD MUST BE COMPATIBLE AND THE ADDED ITEMS MUST BE SECURED WITH WEB STRAP ASSEMBLIES, AS REQUIRED TO PREVENT DISPLACEMENT DURING TRANSPORTATION.
- C. LADING DATA: FOR DETAIL OF THE CONTAINER, SEE PAGE 3.
DIMENSIONS - - - 91" LONG BY 34" WIDE BY 37" HIGH.
GROSS WEIGHT:- - 1,053 POUNDS (APPROX).
- D. 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.
- E. WHENEVER POSSIBLE, LADING SHOULD BE CENTERED LATERALLY IN/ON CARRYING VEHICLE TO PROVIDE FOR EQUAL ANGLE HOLD DOWN BY THE SECURING WEB STRAP ASSEMBLIES. WHENEVER POSSIBLE LADING SHOULD BE CENTERED LONGITUDINALLY (IN/ON THE CARRYING VEHICLE) BETWEEN THE SELECTED TIEDOWN FITTINGS TO BE USED. HOWEVER, DUE TO LADING WEIGHT, SIZE, CONFIGURATION, AND/OR LOCATION AND QUANTITY OF TIEDOWN ANCHORS WITHIN THE CARRYING VEHICLE, IT MAY BE NECESSARY TO LOCATE THE LADING IN/ON A VEHICLE AS SHOWN WITHIN THIS DRAWING TO PROVIDE FOR PROPER TIEDOWN AND TO ACHIEVE A MAXIMUM LOAD.
- F. WEB STRAP TIEDOWN ASSEMBLIES MUST BE SECURELY HOOKED INTO ANCHORING DEVICES ON THE TRANSPORTING VEHICLE AND FIRMLY TENSIONED. FIRMLY TENSION 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 STRAP TO EXTENT POSSIBLE (IF TIME PERMITS) BUT ENSURE THERE ARE NO KNOTS IN STRAP. ON THE TAKE-UP SPOOL OF THE RATCHET, ENSURE STRAIGHT LAY OF 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 IS IN CONTACT WITH ITSELF, THE TENSIONED STRAP MUST FORM AT LEAST ONE-HALF BUT NOT MORE THAN ONE AND ONE-HALF 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 STRAP AFTER TENSIONING IS COMPLETED. (LOOSE END MAY BE FOLDED AND TAPED OR TIED TO THE TENSIONED STRAP IF TIME PERMITS). FOR ADDITIONAL GUIDANCE, SEE DETAILS ON PAGES 20 AND 21.
- G. ADJUSTABLE SCUFF SLEEVES PROVIDED ON WEB STRAP ASSEMBLIES WILL BE LOCATED TO PROVIDE A PAD WHERE STRAP PASSES 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 CONTAINERS. 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 CONTAINERS AND IF NECESSARY, TAPED OR TIED IN POSITION.
- H. IF THE SIDE RACKS FOR A SEMITRAILER ARE TO BE TRANSPORTED ON THE LOADED TRAILER, THEY WILL BE STACKED ON THE TRAILER AND SECURED WITH SUFFICIENT QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES TO PREVENT LOSS DURING TRANSPORT. NOTE: IF DESIRED, THE SIDE RACKS FOR THE M871 AND M872 SEMITRAILERS MAY BE POSITIONED IN PLACE AFTER THE LOAD HAS BEEN SECURED.
- J. PROCEDURES DEPICTED HEREIN ARE TYPICAL IN NATURE RELATIVE TO ITEM LOCATION IN/ON THE VEHICLE AND THE QUANTITY SHOWN. ITEM LOCATIONS AND QUANTITIES OF THE DESIGNATED ITEM MAY BE VARIED TO SATISFY OPERATIONAL REQUIREMENTS, PROVIDED LOADING TIEDOWN AND PRINCIPLES SPECIFIED HEREIN ARE RETAINED.
- K. 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.
- L. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT 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.
- M. 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.
- N. PRIOR TO LOADING THE TACTICAL VEHICLE, READ THE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" ON PAGE 3. USE THE "ISOMETRIC VIEWS" ON PAGES 4 THRU 17 WHICH ARE PICTORIAL VIEWS OF TYPICAL LOADS IN/ON TACTICAL VEHICLES.
- O. 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.
- P. THE TACTICAL VEHICLES 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 "D" ON THIS PAGE.
- Q. 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.
- R. DURING LONG HAULS, WHEN POSSIBLE, STRAPS SHOULD BE CHECKED DURING VEHICLE STOPS AND TIGHTENED, IF NECESSARY.
- 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. FOR ADDITIONAL GUIDANCE ATTENTION IS DIRECTED TO THE "LOADING, TIEDOWN, AND UNLOADING PROCEDURES" ON PAGE 3 AND THE "SPECIAL NOTES" SECTION ON EACH PAGE DEPICTING LOADING AND TIEDOWN PROCEDURES.

(GENERAL NOTES CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

STRAP - - - - - : WEBBING, UNIVERSAL TIEDOWN,
NSN 5340-01-204-3009, PN9392419;
NSN 5340-01-089-4997, PN11669588;
NSN 1670-00-725-1437, PN1376-013,
OR NSN 5340-00-980-9277, PN10900880.

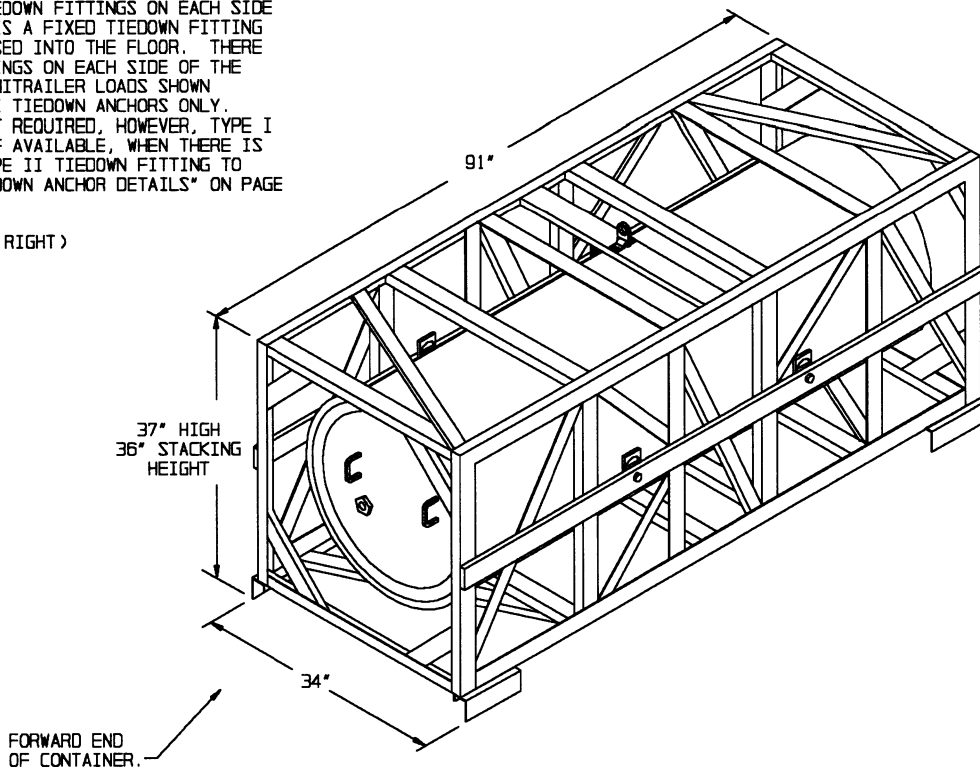
ANTI-CHAFING MATERIAL - - - - - : CANVAS, BURLAP, TAPE OR ANY OTHER SUITABLE MATERIAL.

LOADING, TIEDOWN, AND UNLOADING PROCEDURES

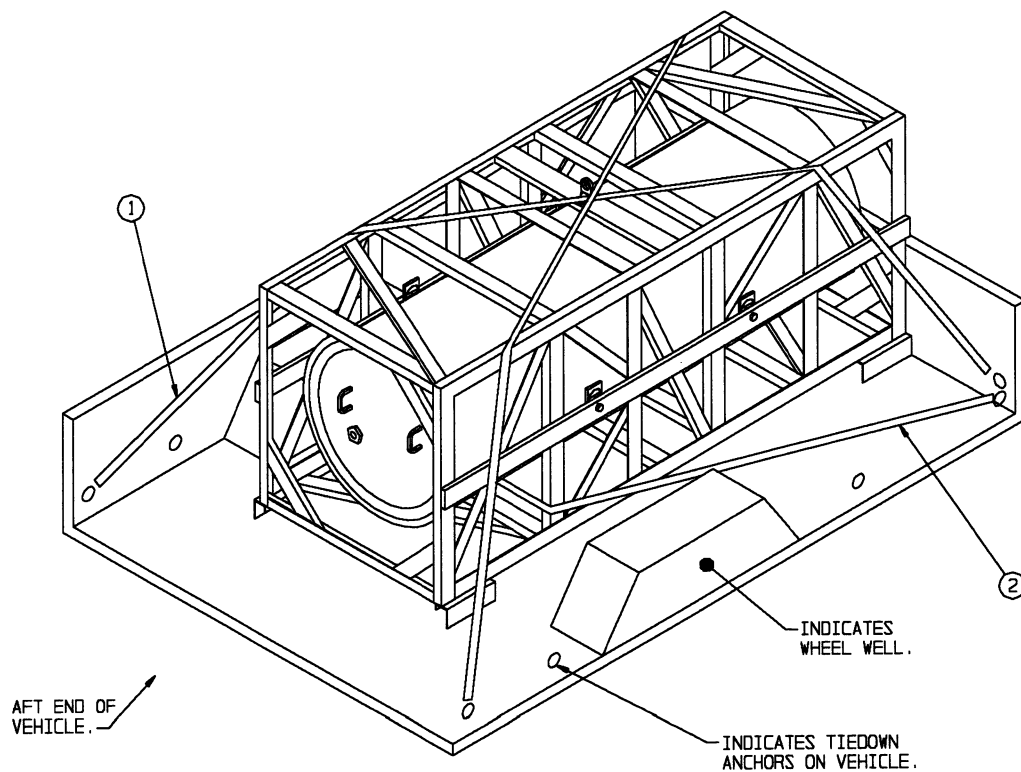
(LOADING, TIEDOWN, AND UNLOADING PROCEDURES CONTINUED)

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 COVERS AND BOWS FROM TRUCK OR TRAILER.
2. AFTER ALL LOADING PROCEDURES ARE COMPLETE, CHECK TENSION OF ALL WEB STRAP TIEDOWN ASSEMBLIES AND RATCHET TIGHTER, IF NECESSARY, PRIOR TO FOLDING UP AND SECURING THE LOOSE ENDS OF STRAP. SEE GENERAL NOTE "F" 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 POSSIBLE POSITION THE CONTAINERS AGAINST THE FORWARD END WALL. HOWEVER, THE CONTAINERS MAY BE POSITIONED AGAINST THE AFT END WALL, AND/OR ANYWHERE WITHIN THE LENGTH OF THE CARGO BED.
6. WHEN POSSIBLE POSITION ALL HOLD DOWN STRAP RATCHETS ON THE SAME SIDE OF THE LOAD TO AVOID SLIDING AND/OR TWISTING THE LOAD OFF CENTER WHEN STRAPS ARE BEING RATCHETED TIGHT.
7. ASSURE THAT ALL UNITIZING STRAPS ARE IN VERTICAL ALIGNMENT.
8. DO NOT STACK CONTAINERS MORE THAN TWO HIGH.
9. THE M871 SEMITRAILER CAN BE 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 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. THE M871 SEMITRAILER LOADS SHOWN HEREIN USE TYPE II AND TYPE III TIEDOWN ANCHORS ONLY. TYPE I TIEDOWN FITTINGS ARE NOT REQUIRED, HOWEVER, TYPE I TIEDOWN FITTINGS MAY BE USED IF AVAILABLE, WHEN THERE IS AN INSUFFICIENT QUANTITY OF TYPE II TIEDOWN FITTING TO SECURE THE LOAD. SEE THE "TIEDOWN ANCHOR DETAILS" ON PAGE 19.
10. 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 IT UP THRU 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. 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 45° ANGLES 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 THE "TIEDOWN ANCHOR DETAILS" ON PAGE 19.
11. PRIOR TO LOADING THE VEHICLE, DETERMINE THE QUANTITY OF CONTAINERS TO BE LOADED IN/ON THE VEHICLE. SELECT THE BEST METHOD TO SECURE THE CONTAINERS FROM THE METHODS SHOWN WITHIN THIS DRAWING. NOTE: A COMBINATION OF THE METHODS SHOWN WITHIN THIS DRAWING MAY BE USED ON/IN THE SAME TACTICAL VEHICLE.

(CONTINUED AT RIGHT)



DETAIL OF INJECTOR ASSEMBLY CONTAINER (IAC)



ISOMETRIC VIEW

KEY NUMBERS

- ① WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, DIAGONALLY OVER TOP OF CONTAINER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ② WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON CONTAINER, UNDER METAL DRUM, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

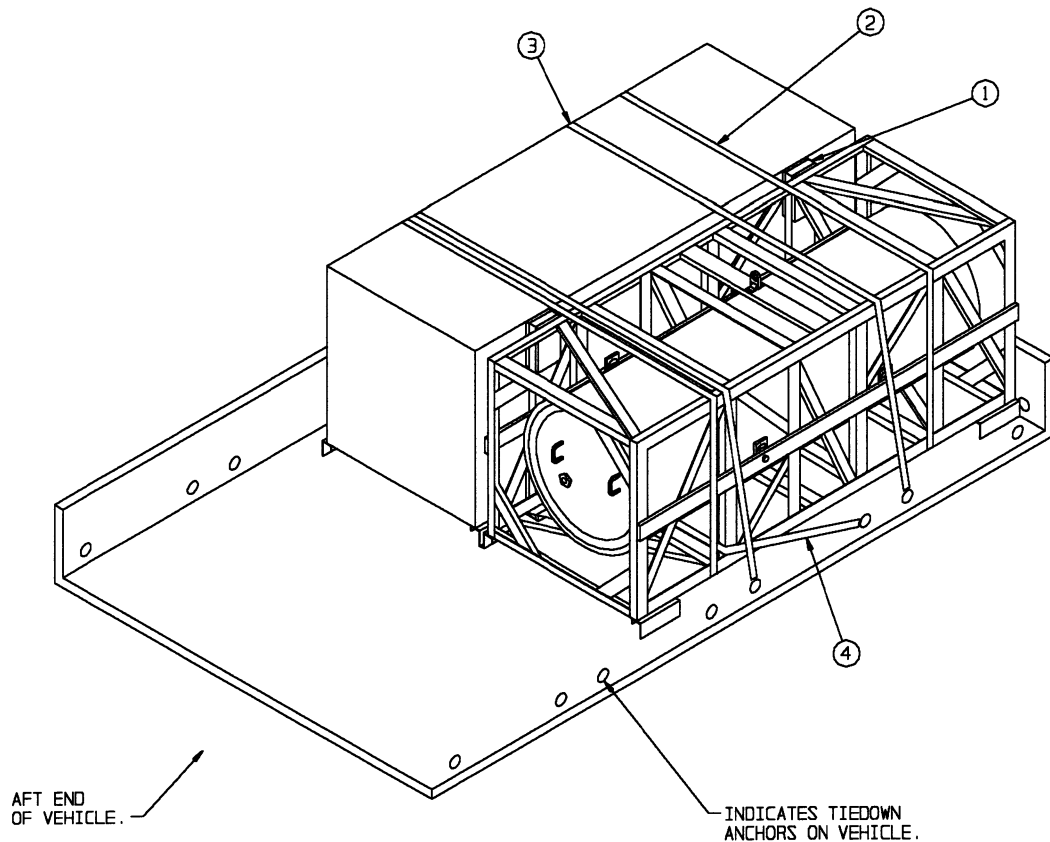
SPECIAL NOTES:

1. A TYPICAL LOAD OF ONE CONTAINER IS SHOWN POSITIONED AGAINST THE FORWARD END WALL IN A 1-1/2-TON M105 CARGO TRAILER HAVING INSIDE DIMENSIONS OF 110" LONG BY 74" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF DESIRED, THE CONTAINER MAY BE POSITIONED AGAINST THE TAILGATE. IF THE CONTAINER IS NOT POSITIONED AGAINST AN ENDWALL ONE STRAP MARKED ② IS REQUIRED AT EACH END.
4. A TOTAL OF THREE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
WEB STRAP	----- 3 REQD -----	15 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER -----	1 -----	1,053 LBS
DUNNAGE -----		15 LBS
TOTAL WEIGHT -----		1,068 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE BOTH CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. 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 SIDE OF VEHICLE, OVER TOP OF CONTAINERS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON BOTH CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

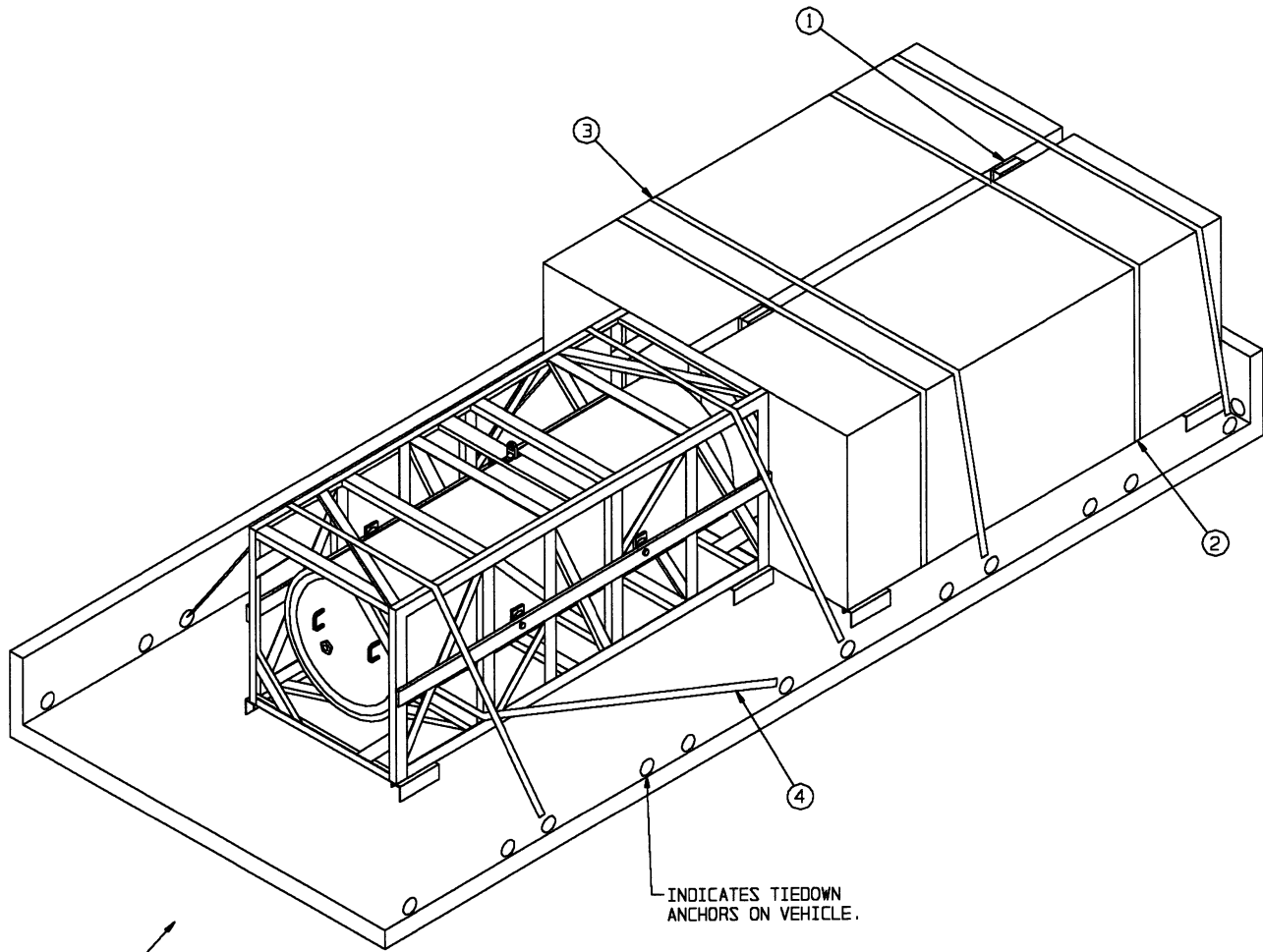
SPECIAL NOTES:

1. A TYPICAL LOAD OF TWO CONTAINERS IS SHOWN POSITIONED AGAINST THE FORWARD END WALL 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 HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF DESIRED, THE LOAD MAY BE POSITIONED AGAINST THE TAILGATE. IF THE CONTAINERS ARE NOT POSITIONED AGAINST AN ENDWALL ONE STRAP MARKED ④ IS REQUIRED AT EACH END.
4. A TOTAL OF FIVE WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 6"	6	6
NAILS	NO. REQD	POUNDS
6d (2")	32	1/4
WEB STRAP - - - - -	5 REQD - - - - -	25 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER - - - - -	2 - - - - -	2,106 LBS
DUNNAGE - - - - -	- - - - -	44 LBS
TOTAL WEIGHT - - - - -		2,150 LBS (APPROX)



AFT END OF VEHICLE.

ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE BOTH CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF CONTAINER(S), TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON AFT CONTAINER, UNDER METAL DRUM, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

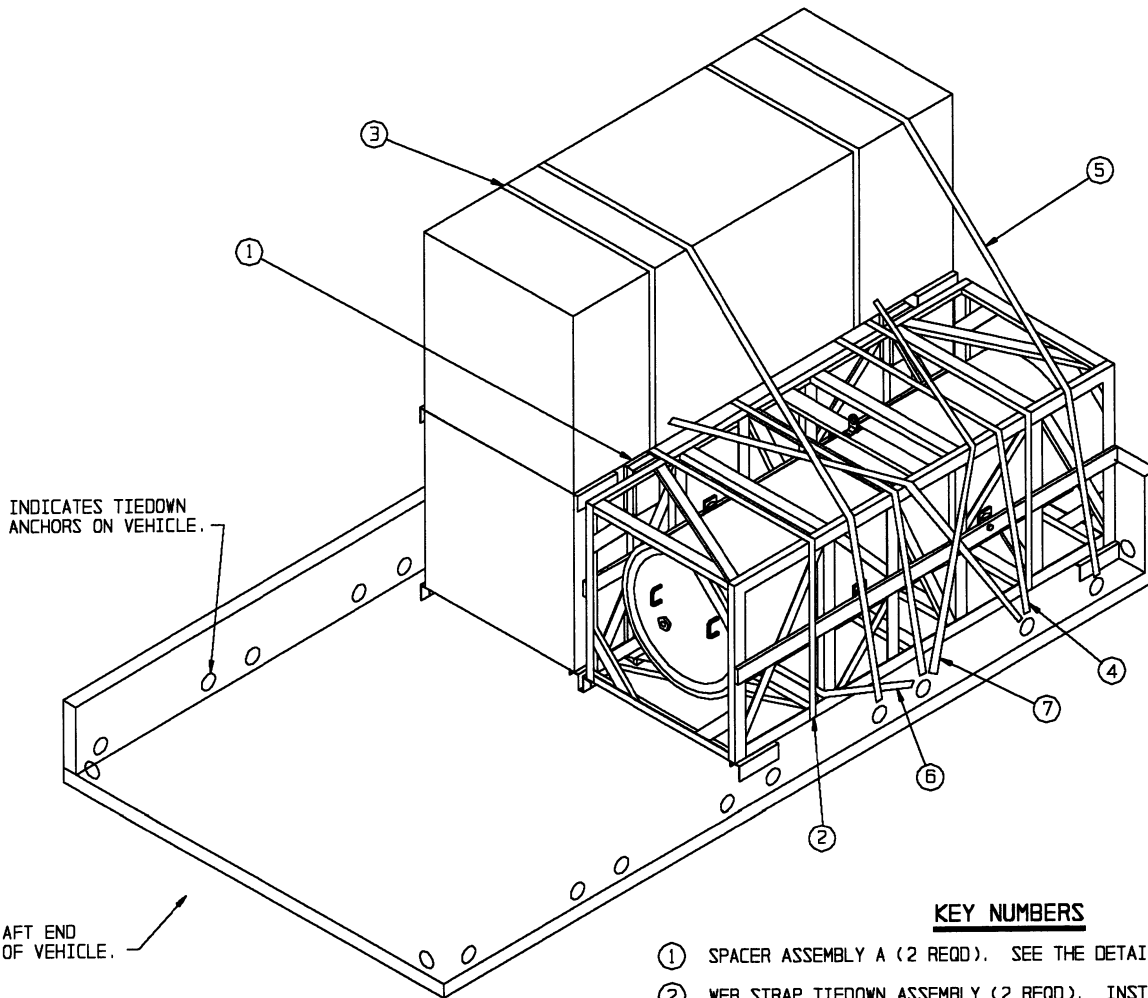
SPECIAL NOTES:

1. A TYPICAL LOAD OF THREE CONTAINERS IS SHOWN POSITIONED AGAINST THE FORWARD END WALL IN A 2-1/2-TON M36 CARGO TRUCK HAVING INSIDE DIMENSIONS OF 211" LONG BY 88" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF DESIRED, THE LOAD MAY BE POSITIONED AGAINST THE TAILGATE. IF THE CONTAINERS ARE NOT POSITIONED AGAINST AN ENDWALL ONE STRAP MARKED ④ IS REQUIRED AT EACH END.
4. FOR AN ALTERNATIVE METHOD OF TRANSPORTING THREE CONTAINERS IN A SHORT BED CARGO TRUCK USE THE PROCEDURES SHOWN ON PAGES 10 AND 11.
5. A TOTAL OF SEVEN WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 6"	6	6
NAILS	NO. REQD	POUNDS
6d (2")	32	1/4
WEB STRAP	7 REQD	35 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER	3	3,159 LBS
DUNNAGE		54 LBS
TOTAL WEIGHT		3,213 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO ENCIRCLE BOTH BOTTOM CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. 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 ENCIRCLE A TOP AND BOTTOM CONTAINER AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. 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 SIDE OF VEHICLE, OVER TOP OF BOTTOM ONE HIGH CONTAINER, OVER TOP OF BOTTOM FRAME MEMBER ON TOP CONTAINER, UNDER METAL DRUM, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. 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 SIDE OF VEHICLE, OVER TOP OF TOP CONTAINER AND BOTTOM TWO CONTAINERS, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON BOTH BOTTOM CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "K", ON PAGE 2.
- ⑦ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON TOP CONTAINER, UNDER METAL DRUM, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "K", ON PAGE 2.

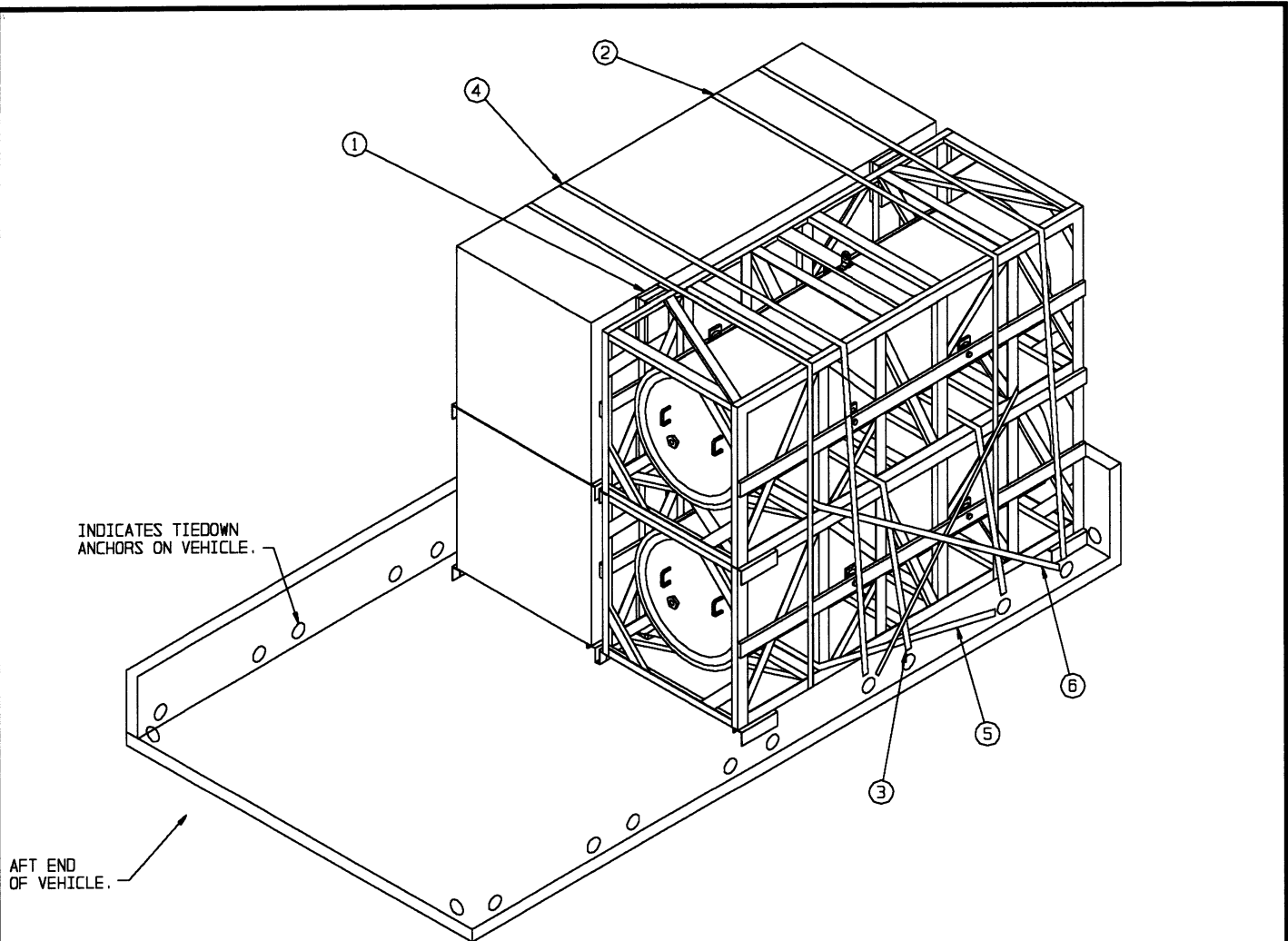
SPECIAL NOTES:

1. A TYPICAL LOAD OF THREE CONTAINERS IS SHOWN POSITIONED AGAINST THE FORWARD END WALL 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 HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF DESIRED, THE LOAD MAY BE POSITIONED AGAINST THE TAILGATE. IF THE CONTAINERS ARE NOT POSITIONED AGAINST AN ENDWALL ONE STRAP MARKED ⑥ IS REQUIRED AT EACH END.
4. STRAPS MARKED ⑦ ARE REQUIRED TO PREVENT THE TOP CONTAINER FROM SLIDING LONGITUDINALLY DURING PANIC STOPS.
5. FOR AN ALTERNATIVE METHOD OF TRANSPORTING THREE CONTAINERS USE THE PROCEDURES SHOWN ON PAGES 8 AND 9 IF THE LENGTH OF THE CARGO BED IS 182" OR LONGER.
6. A TOTAL OF 11 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 6"	6	6
NAILS	NO. REQD	POUNDS
6d (2")	32	1/4
WEB STRAP - - - - -	11 REQD - - - - -	55 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER - - - - -	3 - - - - -	3,159 LBS
DUNNAGE - - - - -	- - - - -	74 LBS
TOTAL WEIGHT - - - - -		3,233 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (2 REQD). HOOK TWO STRAPS TOGETHER TO FORM ONE. INSTALL EACH STRAP TO ENCIRCLE ALL FOUR CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "O" 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 BOTTOM FRAME MEMBERS ON TOP CONTAINERS, UNDER METAL DRUMS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. 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 SIDE OF VEHICLE, OVER TOP OF TOP CONTAINERS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", AND "G", ON PAGE 2.
- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON BOTH BOTTOM CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "K" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON TOP CONTAINER, UNDER METAL DRUM, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "K", ON PAGE 2.

SPECIAL NOTES:

1. A TYPICAL LOAD OF FOUR CONTAINERS IS SHOWN POSITIONED AGAINST THE FORWARD END WALL 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, HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF DESIRED, THE LOAD MAY BE POSITIONED AGAINST THE TAILGATE. IF THE CONTAINERS ARE NOT POSITIONED AGAINST AN ENDWALL ONE STRAP MARKED ⑤ IS REQUIRED AT EACH END OF BOTTOM CONTAINERS. SEE THE LOAD ON PAGE 14 FOR GUIDANCE.
4. STRAPS MARKED ⑤ AND ⑥ ARE REQUIRED TO PREVENT THE CONTAINERS FROM SLIDING LONGITUDINALLY DURING PANIC STOPS.
5. A TOTAL OF 11 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	10	5
2" X 6"	12	12
NAILS	NO. REQD	POUNDS
6d (2")	60	1/2
WEB STRAP - - - - -	11 REQD - - - - -	55 LBS

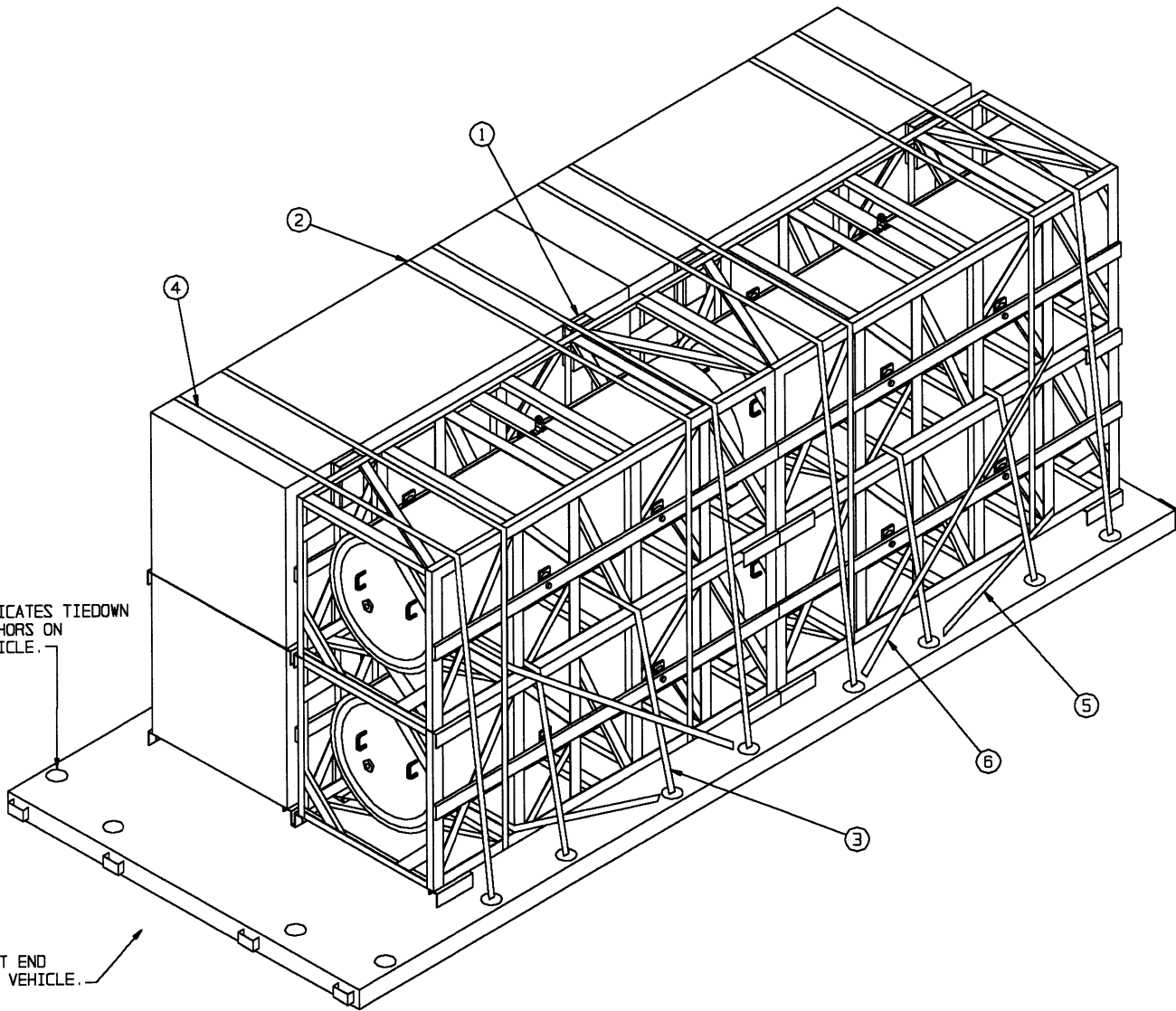
LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER - - - - -	4 - - - - -	4,212 LBS
DUNNAGE - - - - -	- - - - -	90 LBS
TOTAL WEIGHT - - - - -		4,302 LBS (APPROX)

INDICATES TIEDOWN ANCHORS ON VEHICLE.

AFT END OF VEHICLE.

ISOMETRIC VIEW



KEY NUMBERS

(KEY NUMBERS CONTINUED)

- ① SPACER ASSEMBLY B (4 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (4 REQD). HOOK TWO STRAPS TOGETHER TO FORM ONE, INSTALL EACH STRAP TO ENCIRCLE ALL FOUR CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "D" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBERS ON TOP TWO CONTAINERS, UNDER METAL DRUMS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF TOP CONTAINERS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", AND "G", ON PAGE 2.

(CONTINUED AT RIGHT)

- ⑤ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON BOTH BOTTOM CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON TOP TWO CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

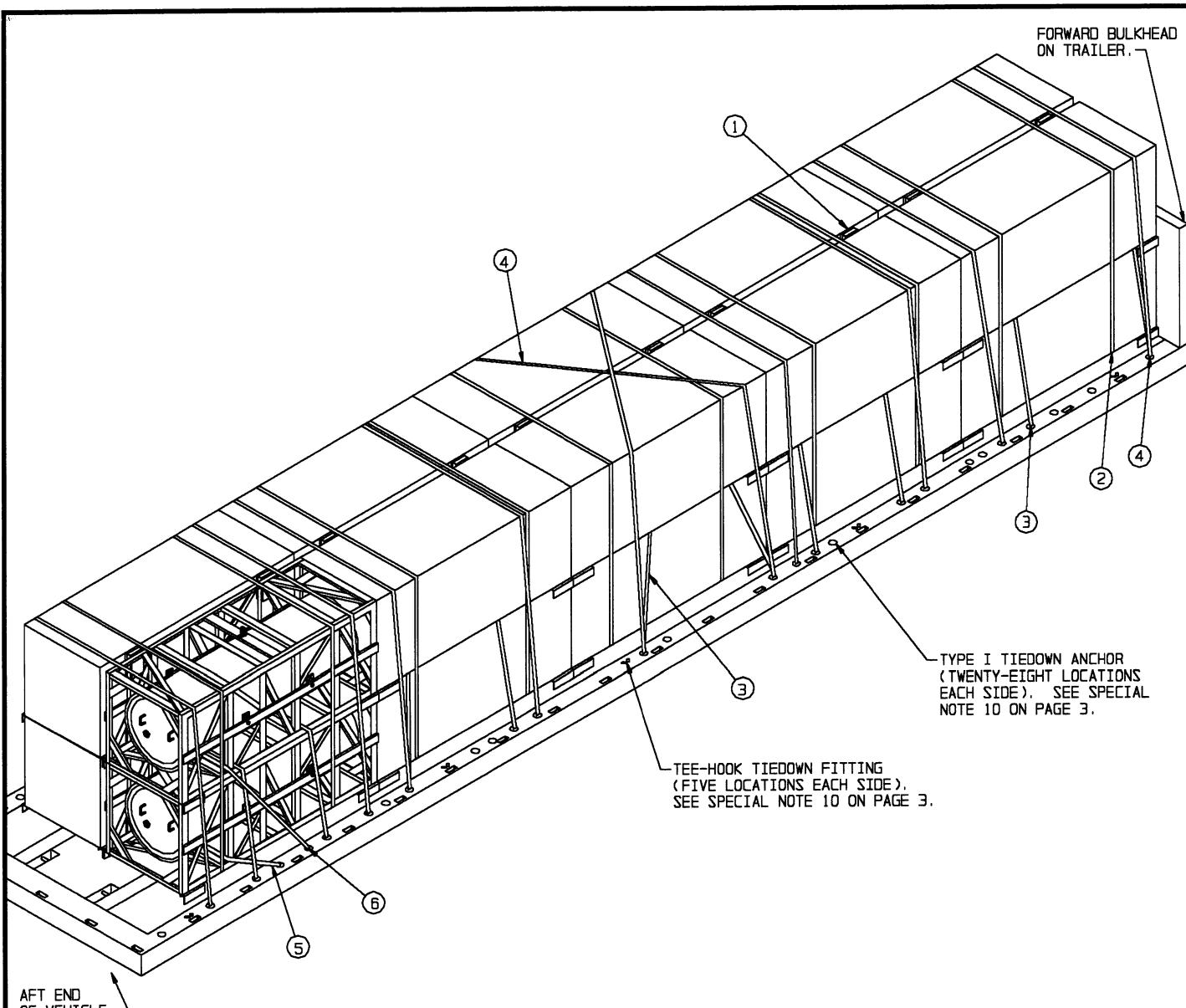
SPECIAL NOTES:

1. A TYPICAL LOAD OF EIGHT CONTAINERS IS 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, HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. DO NOT POSITION THE LOAD AGAINST THE ENDWALLS IN/ON THIS VEHICLE.
4. STRAPS MARKED ⑤ AND ⑥ ARE REQUIRED TO PREVENT THE CONTAINERS FROM SLIDING LONGITUDINALLY DURING PANIC STOPS.
5. A TOTAL OF 20 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	20	10
2" X 6"	24	24
NAILS	NO. REQD	POUNDS
6d (2")	120	3/4
WEB STRAP - - - - -	20 REQD - - - - -	100 LBS

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER - - - - -	8 - - - - -	8,424 LBS
DUNNAGE - - - - -	- - - - -	169 LBS
TOTAL WEIGHT - - - - -		8,593 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① SPACER ASSEMBLY B (10 REQD). SEE THE DETAIL ON PAGE 18.
- ② WEB STRAP TIEDOWN ASSEMBLY (10 REQD). HOOK TWO STRAPS TOGETHER TO FORM ONE, INSTALL EACH STRAP TO ENCIRCLE ALL FOUR CONTAINERS AT A LOCATION NEAR END OF CONTAINERS AS SHOWN. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "O" ON PAGE 2.
- ③ WEB STRAP TIEDOWN ASSEMBLY (10 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBERS ON TOP TWO CONTAINERS, AND UNDER METAL DRUM, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINER. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", "G" AND "K" ON PAGE 2.
- ④ WEB STRAP TIEDOWN ASSEMBLY (10 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF TOP CONTAINERS, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F", AND "G", ON PAGE 2.

(KEY NUMBERS CONTINUED)

- ⑤ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON BOTH BOTTOM CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.
- ⑥ WEB STRAP TIEDOWN ASSEMBLY (1 REQD). INSTALL STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF VEHICLE, OVER TOP OF BOTTOM FRAME MEMBER ON TOP TWO CONTAINERS, UNDER METAL DRUMS, OVER BOTTOM FRAME MEMBER, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF VEHICLE. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES ON CONTAINERS. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTES "F" AND "G" ON PAGE 2.

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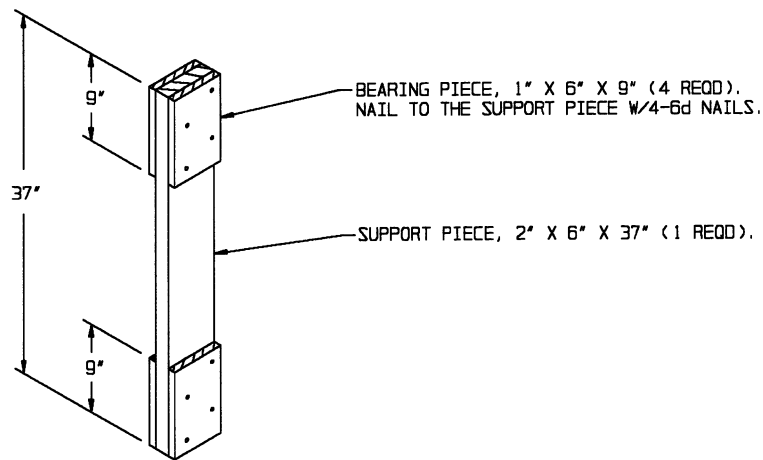
SPECIAL NOTES:

1. A TYPICAL LOAD OF 20 CONTAINERS IS SHOWN POSITIONED AGAINST THE FORWARD BULKHEAD ON A 34-TON M872 SEMI-TRAILER HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.
2. THE VEHICLE SHOWN WAS SELECTED AS TYPICAL ONLY AND VEHICLES OF OTHER DIMENSIONS, HAVING STRONG SIDEWALLS AND ENDWALLS, MAY BE USED TO TRANSPORT THE LOAD SHOWN.
3. IF THE CONTAINERS ARE NOT POSITIONED AGAINST THE FORWARD BULKHEAD ONE MORE STRAP MARKED ⑤ AND ⑥ , ARE REQUIRED AT THE FORWARD END.
4. A TOTAL OF 42 WEB STRAP TIEDOWN ASSEMBLIES ARE REQUIRED FOR THE LOAD SHOWN.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	50	25
2" X 6"	60	60
NAILS	NO. REQD	POUNDS
6d (2")	300	2
WEB STRAP - - - - -	42 REQD - - - - -	210 LBS

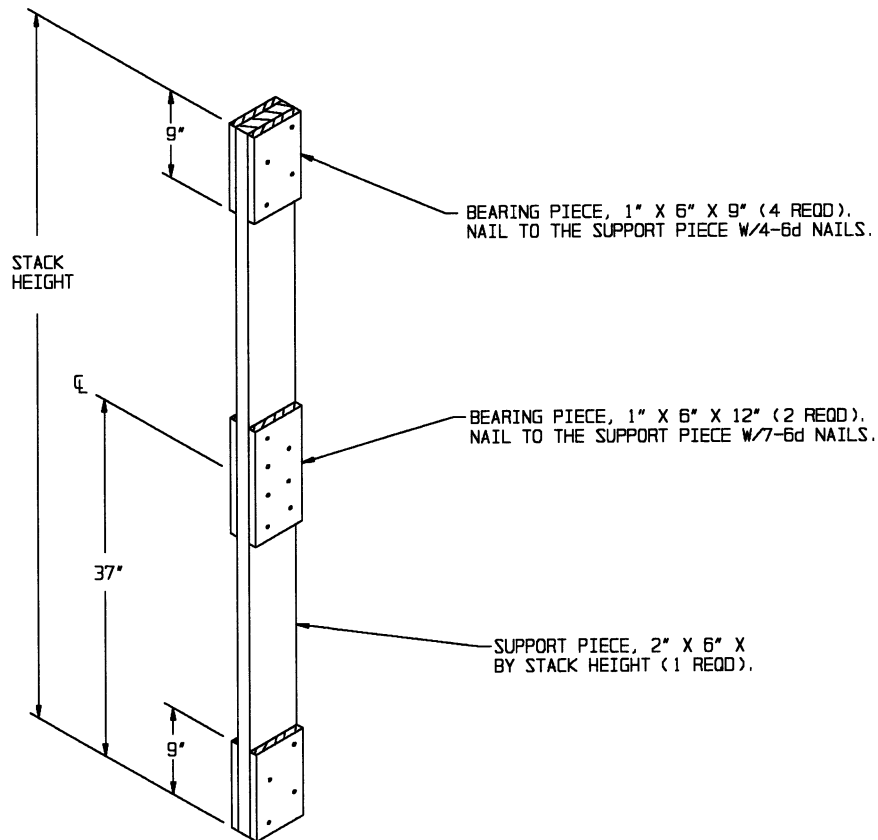
LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER - - - - -	20 - - - - -	21,060 LBS
DUNNAGE - - - - -	- - - - -	382 LBS
TOTAL WEIGHT - - - - -		21,442 LBS (APPROX)



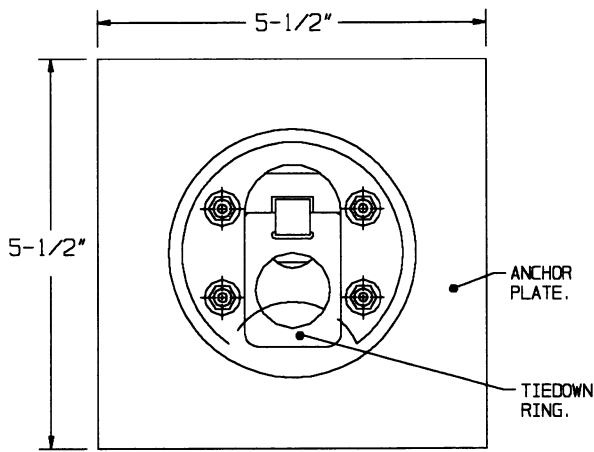
SPACER ASSEMBLY A

POSITION BETWEEN LATERALLY ADJACENT
CONTAINERS ON ONE-HIGH LOADS.



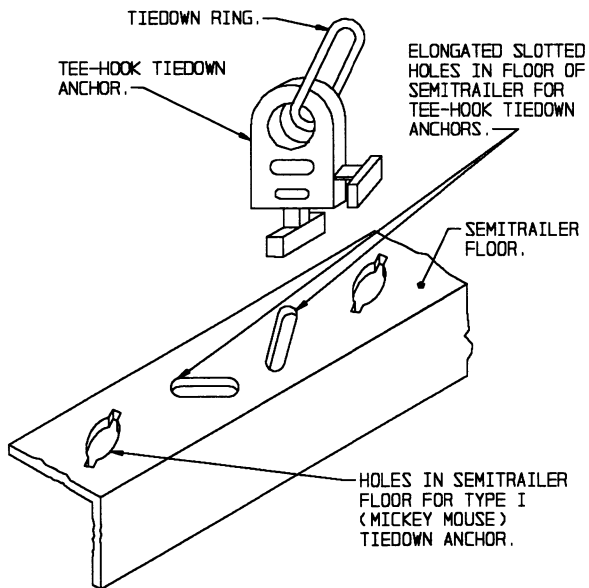
SPACER ASSEMBLY B

POSITION BETWEEN LATERALLY ADJACENT
CONTAINERS ON TWO-HIGH LOADS.



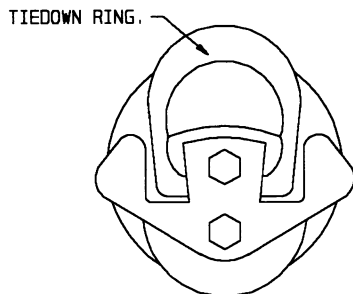
UNIVERSAL TIEDOWN ANCHOR (FRONT VIEW)

SEE SPECIAL NOTE 1.



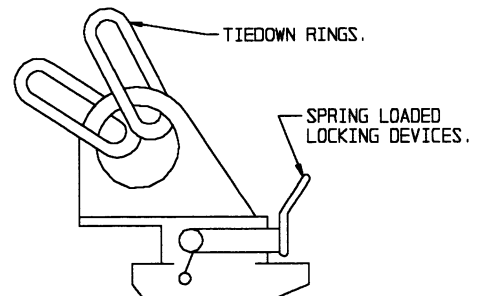
TEE-HOOK TIEDOWN ANCHOR (ISOMETRIC VIEW)

SEE SPECIAL NOTE 2.



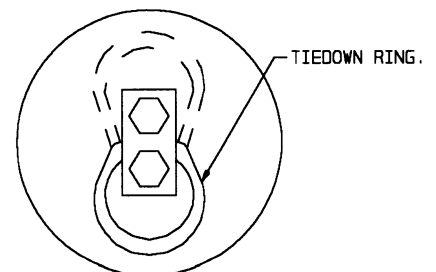
REMOVABLE TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 3.



REMOVABLE TIEDOWN ANCHOR (SIDE VIEW)

SEE SPECIAL NOTE 4.

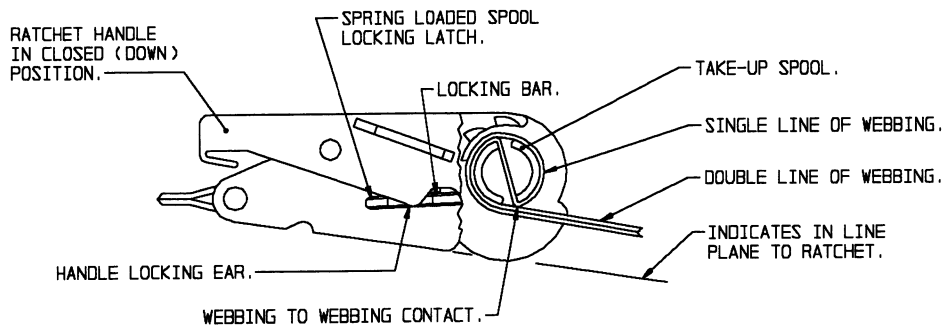


FIXED TIEDOWN ANCHOR (TOP VIEW)

SEE SPECIAL NOTE 5.

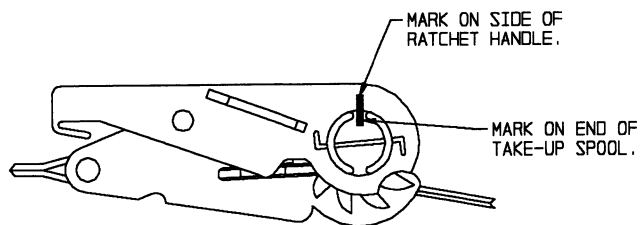
SPECIAL NOTES:

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.



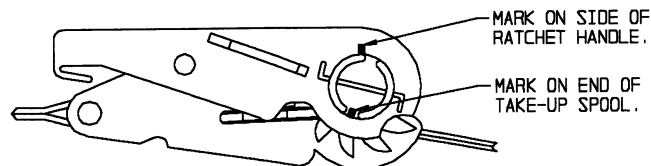
STEP 1

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.



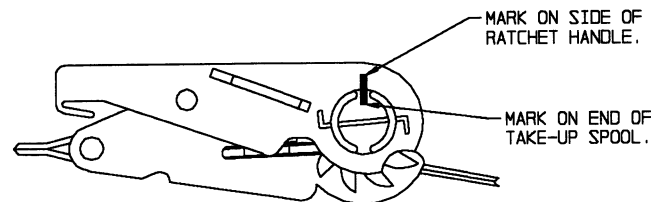
STEP 2

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.



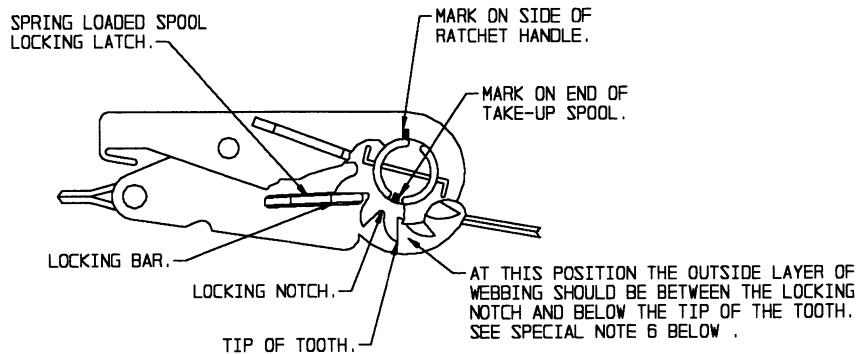
STEP 3

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 "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, THE 1/2 TO 1-1/2" TURNS. 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" DETAILS 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.

(CONTINUED AT RIGHT)

(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 THIS DRAWING ONLY PROVIDES SOME ACCEPTABLE METHODS.

