THAAD

LOADING AND BRACING (TL & LTL) ON M871 AND M872 SEMITRAILER* OF TERMINAL HIGH ALTITUDE AREA DEFENSE (THAAD) MISSILES PACKED IN SINGLE MISSILE ROUND TRANSPORT CONTAINER (SMRTC)

INDEX

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U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY AVIATION AND MISSILE COMMAND

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FEBRUARY 2022

DESIGN ENGINEER	BASIC	RICHARD GARSIDE
	REV.	

APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND

BRAILSFORD.KEITH.ANTHONY.1028655661 Digitally signed by BRAILSFORD.KEITH.ANTHONY.1028655661 Date: 2022.03.15 15:03:29 -05'00'

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ENGINEERING DIVISON	FIEFFER.LAURA.A.1230375727	Digitally signed by FIEFFER.LAURA.A.1230375727 Date: 2022.02.15 15:14:15 -06'00'
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EXPLOSIVE SAFETY DIRECTORATE	BRAILSFORD.KEITH.ANTHONY.1028655661	Digitally signed by BRAILSFORD.KEITH.ANTHONY.1028655661 Date: 2022.03.04 09:58:49 -06'00'

CLASS	DIVISION	DRAWING	FILE
19	48	8235	GM17TH1

PROJECT GM 923-12

GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).

B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO LOADS OF TERMINAL HIGH ALTITUDE AREA DEFENSE (THAAD) MISSILE PACKED IN THE SINGLE MISSILE ROUND TRANSPORT CONTAINER (SMRTC). SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE SMRTC WITH THAAD MISSILE. SEE PAGE 3 AND LOCKHEED MARTIN DRAWING 13640484 FOR DETAILS OF THE SMRTC.

C. THE LOADS AS SHOWN HEREIN ARE BASED ON 22-1/2 TON M871 SEMITRAILERS, HAVING DIMENSIONS OF BY 354" LONG BY 96" WIDE, AND 34 TON M872 SEMI-TRAILERS, HAVING DIMENSIONS OF 489-1/2" LONG BY 96" WIDE.

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, SIDEWALLS, AND/OR ENDWALLS, FOR USE WITH WEB STRAP TIEDOWN ASSEMBLIES. SEE PAGE 8 FOR GUIDANCE.

E. 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 RACHET HANDLE BY HAND, THE RACHET 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 RACHET, 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 RACHET. 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). SEE PAGE 7 FOR GUIDANCE.

F. ADJUSTABLE SCUFF SLEEVES PROVIDED ON WEB STRAP ASSEMBLIES WILL BE LOCATED TO PROVIDE A PAD WHERE STRAPS PASS OVER SHARP EDGES, OR RACHETS 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.

G. ONLY THE CARGO 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.

H. WHENEVER POSSIBLE, A LOAD 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, LADING LENGTH, LADING CONFIGURATION, AND/OR LOCATION AND QUANTITY OF TIEDOWN ANCHORS WITHIN THE CARRYING VEHICLE, IT MAY BE NECESSARY TO LOCATE THE LADING LONGITUDINALLY IN/ON A VEHICLE AS SHOWN WITHIN THIS DRAWING TO PROVIDE FOR PROPER TIEDOWN AND TO ACHIEVE A MAXIMUM LOAD.

(CONTINUED AT RIGHT)

(GENERAL NOTES CONTINUED)

J. OTHER ASSOCIATED CARGO MAY BE LOADED WITHIN THE AVAILABLE SPACE REMAINING IN/ON A LOADED VEHICLE, PROVIDING IT IS SECURED WITH WEB STRAP ASSEMBLIES SUFFICIENTLY TO PREVENT SIGNIFICANT MOVEMENT AND/OR LOSS DURING TRANSPORT.

K. WHEN ONE WEB STRAP ASSEMBLY IS NOT LONG ENOUGH TO SPAN THE DISTANCE DEPICTED, TWO ASSEMBLIES MAY BE HOOKED TOGETHER TO GAIN THE NECESSARY LENGTH.

L. THE SIDE RACKS FOR A SEMITRAILER ARE TO BE TRANSPORTED ON THE LOADED TRAILER. THEY WILL BE STACKED ON THE TRAILER AND SECURED WITH A SUFFICIENT QUANTITY OF WEB STRAP TIEDOWN ASSEMBLIES 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. 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.

M. LOCATION OF THE DESIGNATED ITEM ON THE TRAILER MAY BE VARIED TO SATISFY OPERATIONAL REQUIREMENTS, PROVIDED LOADING AND TIEDOWN PRINCIPLES SPECIFIED HEREIN ARE RETAINED AND VEHICLE IS NOT OVERLOADED.

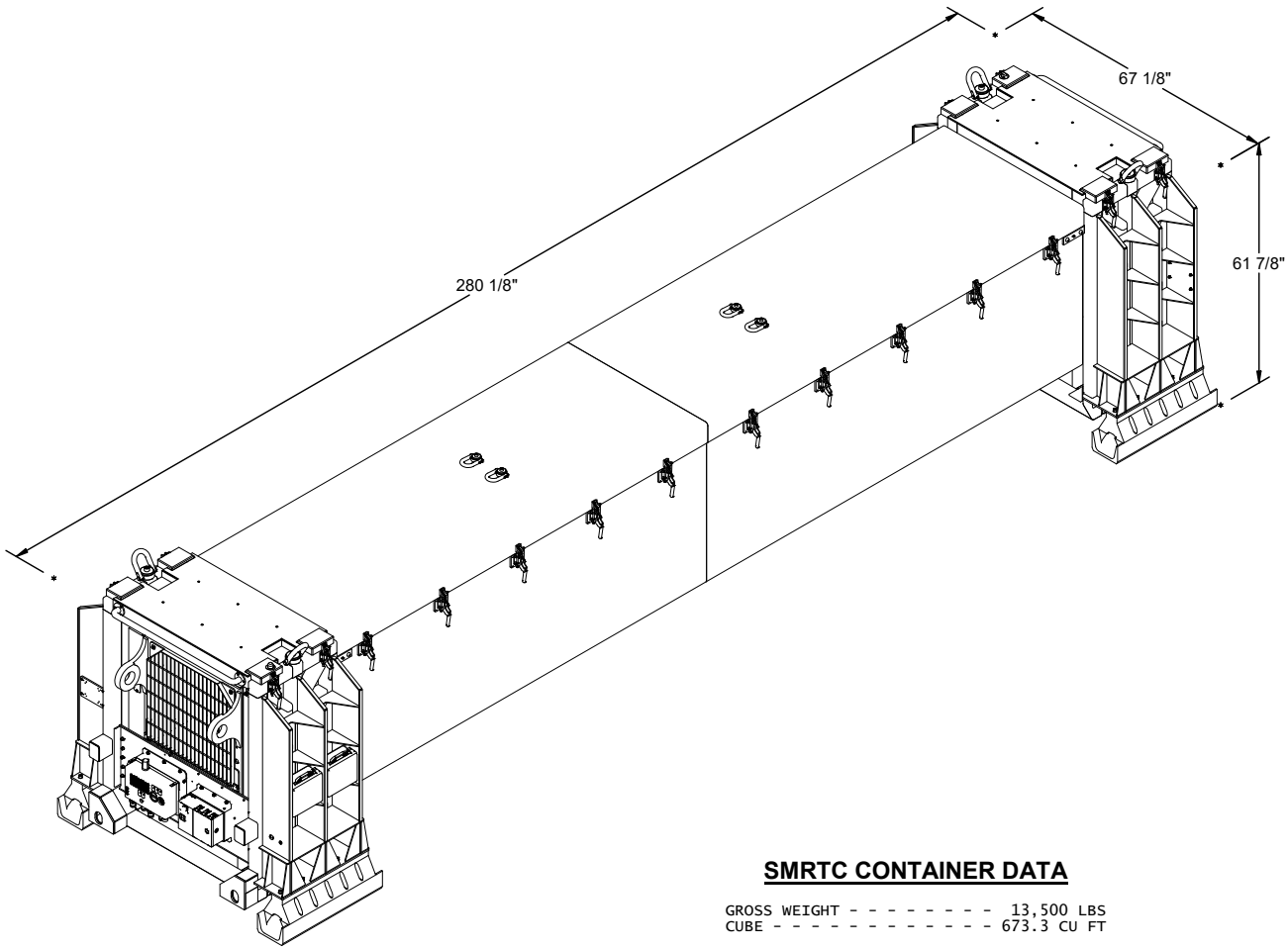
N. WHEN POSSIBLE, ALL OF THE HOLD-DOWN WEB STRAP ASSEMBLIES SHOULD BE POSITIONED WITH THE STRAP RATCHETS ON THE SAME SIDE OF THE LOAD. THIS METHOD WILL AID IN REDUCING THE TIME REQUIRED TO LOAD AND UNLOAD A VEHICLE, AND ALSO HELP REDUCE SLIDING AND/OR TWISTING THE SMRTC OFF CENTER WHEN STRAPS ARE BEING RATCHETED TIGHT.

O. TIEDOWN METHODS WITHIN THIS DRAWING MAY REQUIRE TWO HOOKS TO BE CONNECTED TO ONE TIEDOWN ANCHOR. THIS IS AUTHORIZED AS SPECIFIED HEREIN AND MEETS THE INTENT OF THE REQUIREMENTS CITED IN TB 9-230-280-30.

P. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAT BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454KG.

MATERIAL SPECIFICATIONS

STRAP - - - - - - - - :	WEBBING, UNIVERSAL TIEDOWN, NSN 5340-00-980-9277, PN10900880, OR NSN 1670-00-725-1437, PN1376-013, OR NSN 5340-01-089-4997, PN11669588, OR NSN 5340-01-204-3009, PN9392419.
ANTI-CHAFING MATERIAL - - - - - - :	CANVAS, BURLAP, TAPE OR ANY OTHER SUITABLE MATERIAL.
LUMBER - - - - - - - - :	SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.
NAILS - - - - - - - - :	ASTM F1667; COMMON STEEL NAIL (NLCMS OR NLCMMS).



SMRTC CONTAINER DATA

GROSS WEIGHT - - - - - - - - 13,500 LBS
CUBE - - - - - - - - - - - - - 673.3 CU FT

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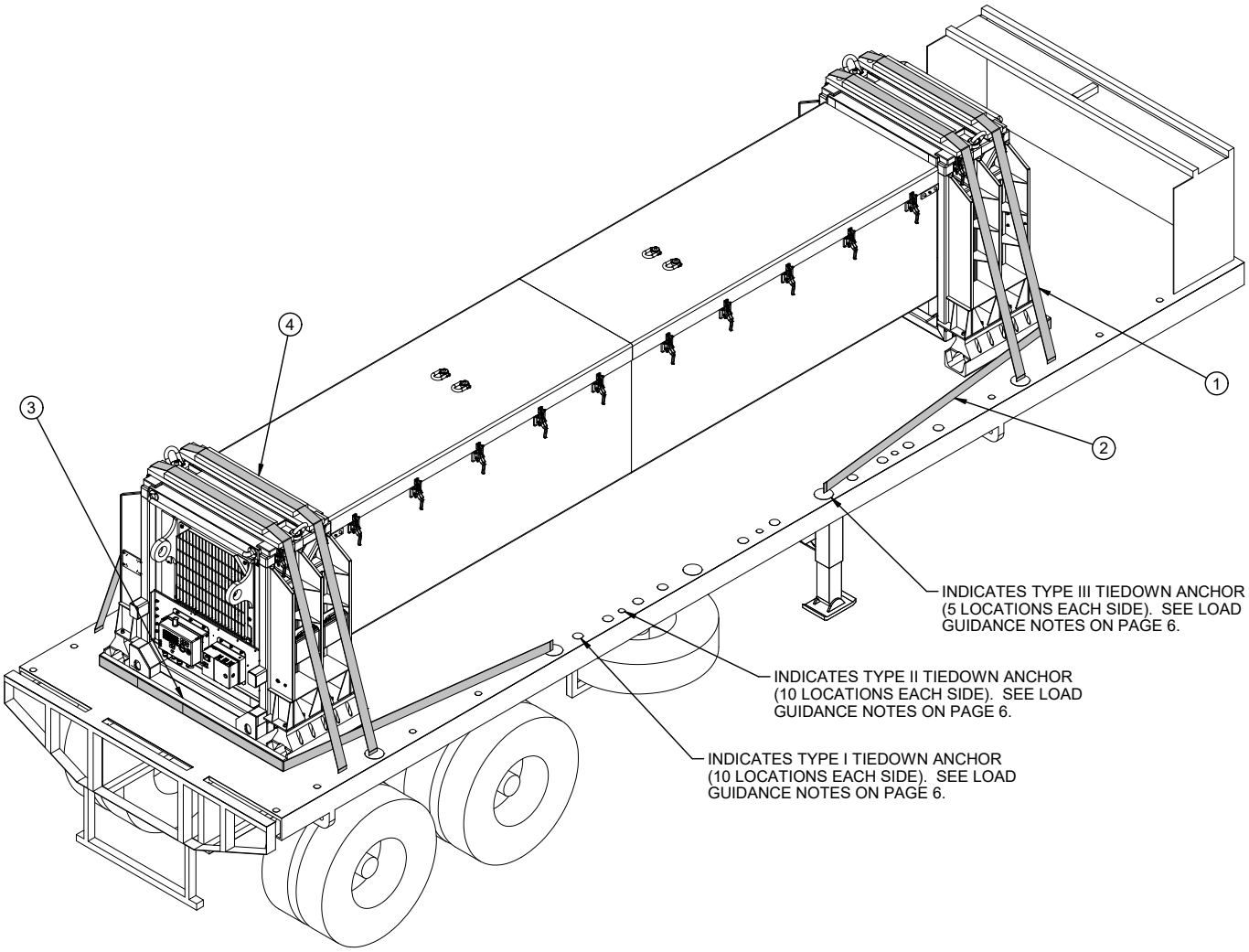

ISOMETRIC VIEW

KEY NUMBERS

① WEB STRAP ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF THE TRAILER, OVER THE SMRTC AND STRAPPING BOARD ASSEMBLY, TO THE CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF TRAILER, AVOIDING THE SMRTC LIFTING RINGS.

② WEB STRAP ASSEMBLY (2 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF THE TRAILER, AROUND THE END OF THE SMRTC AND OVER THE STRAPPING BOARD, TO A TIEDOWN ANCHOR ON OPPOSITE SIDE OF TRAILER.

③ STRAPPING BOARD, 2" X 4" X 67" (2 REQD). POSITION AT THE BASE OF THE SMRTC AT EACH END, BEFORE STRAPS ARE APPLIED.

④ STRAPPING BOARD ASSEMBLY (4 REQD). POSITION UNDER WEB STRAP ASSEMBLY. SEE DETAIL ON PAGE 6.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" x 4"	11	7
2" x 6"	28	28
NAILS	**NO. REQD**	**POUNDS**
6d (2")	24	¼
10d (3")	24	1/2
PLYWOOD, 1/2" - - 5.65 SQ FT REQD - - - 7.77 LBS		
WEB STRAP ASSEMBLY - - - - - - - - - - - - 6 REQD		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	1	13,500 LBS
DUNNAGE		141 LBS
TOTAL WEIGHT		13,641 LBS (APPROX)

ONE THAAD SMRTC ON M871 TACTICAL TRAILER

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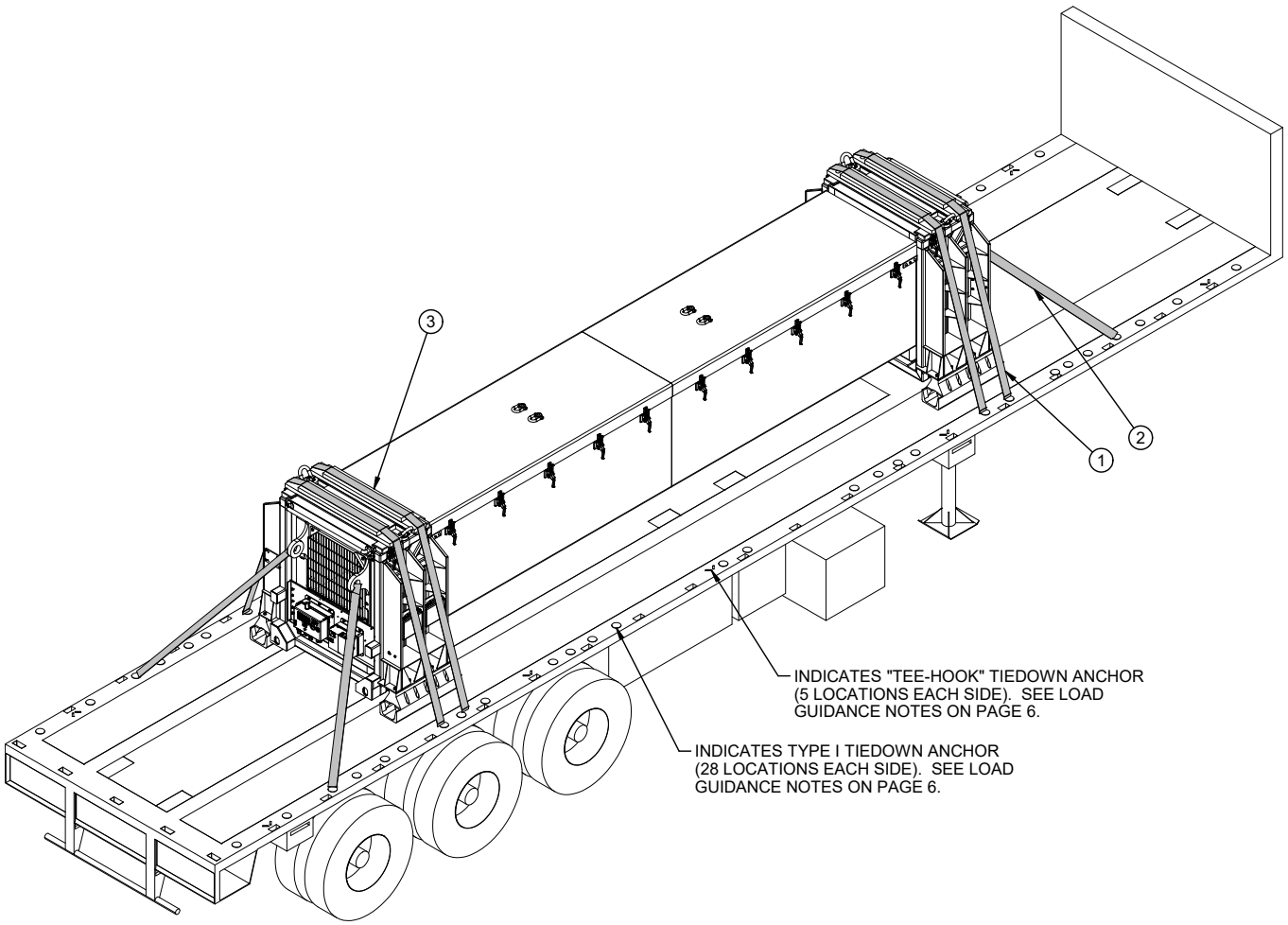


ISOMETRIC VIEW

KEY NUMBERS

① WEB STRAP ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF THE TRAILER, OVER THE SMRTC AND STRAPPING BOARD ASSEMBLY, TO THE CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF TRAILER, AVOIDING THE SMRTC LIFTING RINGS.

② WEB STRAP ASSEMBLY (4 REQD). INSTALL EACH STRAP TO EXTEND FROM A TIEDOWN ANCHOR ON SIDE OF THE TRAILER TO A SMRTC TIEDOWN RING AS SHOWN.

③ STRAPPING BOARD ASSEMBLY (4 REQD). POSITION UNDER WEB STRAP ASSEMBLY. SEE DETAIL ON PAGE 6.

BILL OF MATERIAL

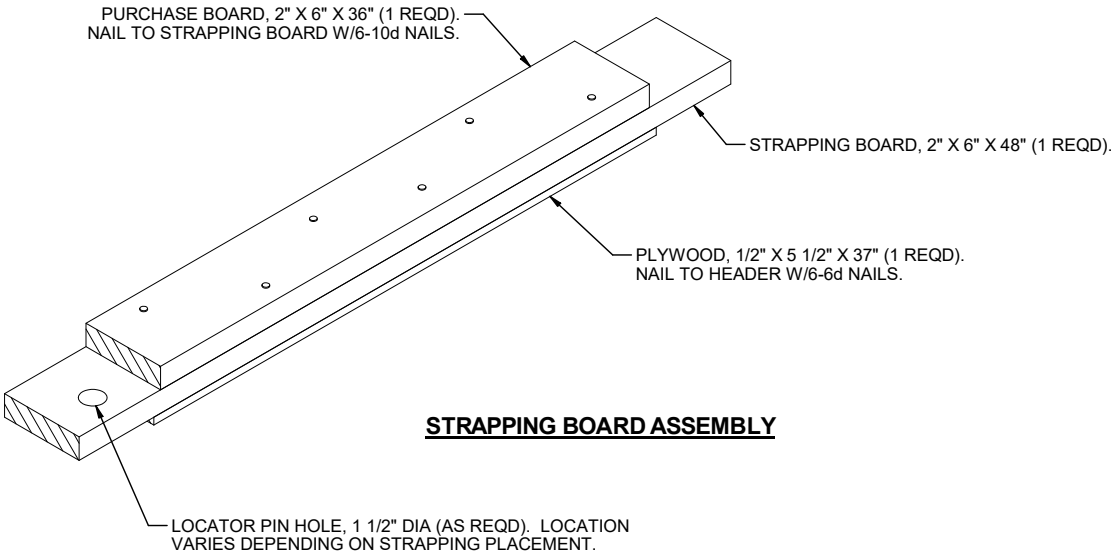
LUMBER	LINEAR FEET	BOARD FEET
2" x 6"	28	28
NAILS	**NO. REQD**	**POUNDS**
6d (2") 10d (3")	24 24	1/4 1/2
PLYWOOD, 1/2" - - 5.65 SQ FT REQD - - - 7.77 LBS WEB STRAP ASSEMBLY - - - - - - - - - - - - 8 REQD		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	1	13,500 LBS
DUNNAGE		147 LBS
TOTAL WEIGHT		13,647 LBS (APPROX)

ONE THAAD SMRTC ON M872 TACTICAL TRAILER

PROJECT GM 923-12



STRAPPING BOARD ASSEMBLY

LOAD GUIDANCE NOTES

1. PRIOR TO LOADING AND/OR UNLOADING, SET BRAKES ON TACTICAL VEHICLE, REMOVE SIDE RACKS FROM SEMITRAILERS, AND CANVAS COVER 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.

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. THE M871 SEMITRAILER IS EQUIPPED WITH THREE DIFFERENT TYPES OF TIEDOWN FITTINGS. TYPE I IS A REMOVEABLE 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 REMOVEABLE TIEDOWN FITTING IS ALSO USED ON THE M872 SEMITRAILER). THERE ARE 10 LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE II IS A REMOVEABLE 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 10 LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. TYPE III IS A FIXED TIEDOWN FITTING THAT HAS ONE RING AND IS RECESSED INTO THE FLOOR. THERE ARE FIVE OF THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M871 SEMITRAILER. SEE THE DETAILS ON PAGE 8.

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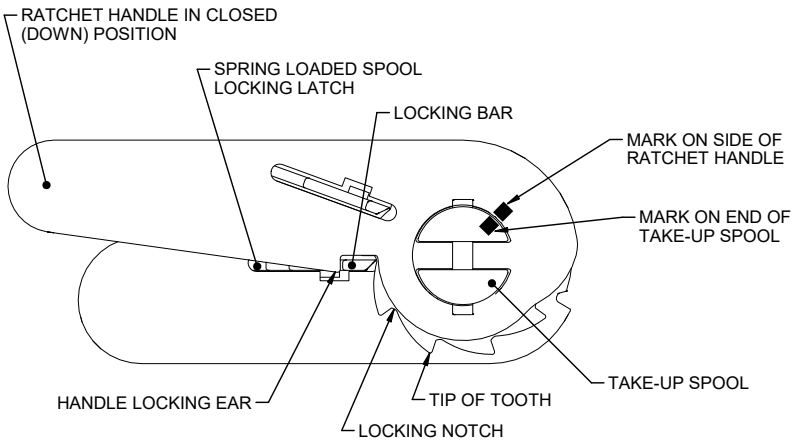
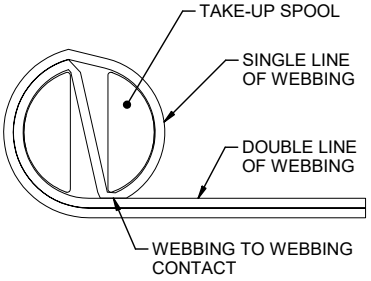
(LOAD GUIDANCE NOTES CONTINUED)

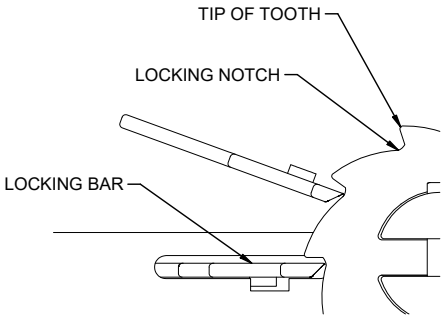
6. THE M872 SEMITRAILER IS EQUIPPED WITH TWO DIFFERENT TYPES OF TIEDOWN FITTINGS. TYPE I IS A REMOVEABLE TIEDOWN FITTING THAT HAS ONE RING AND IS POSITIONED BY REACHING UNDER THE FLOOR OF THE TRAILER, INSERTING IT UP THROUGH THE HOLE AND ROTATING IT INTO POSITION (NOTE THAT THIS REMOVEABLE TIEDOWN FITTING IS ALSO USED ON THE M871 SEMITRAILER). THERE ARE 28 LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M872 SEMITRAILER. HOWEVER, THE QUANTITY AND LOCATION MAY VARY ON SOME M872 SEMITRAILERS. THE SECOND TYPE OF TIEDOWN FITTING IS THE "TEE-HOOK". THIS IS A REMOVEABLE TIEDOWN FITTING EQUIPPED WITH ONE ELONGATED RING AND IS POSITIONED BY INSERTING IT INTO ONE OF THE ELONGATED SLOTTED HOLES WHICH ARE AT A 45° ANGLE TO THE SIDE OF THE TRAILER. THERE ARE FIVE LOCATIONS FOR THESE TIEDOWN FITTINGS ON EACH SIDE OF THE M872 TRAILER. 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 DETAILS ON PAGE 8.



STRAPPING RATCHET (FIGURE 1)



STRAPPING IN TAKE-UP SPOOL (FIGURE 2)



POSITION OF LOCKING BAR WHEN STRAPPING RATCHET FULLY SEATED (FIGURE 3)

SPECIAL NOTES:

1. THE PURPOSE OF THE RATCHET DETAILS AND NOTES ON THIS PAGE ARE TO AUGMENT THE GUIDANCE SET FORTH WITHIN GENERAL NOTE "D" 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 TENTIONING RATCHET, AS SPECIFIED WITHIN GENERAL NOTE "D" 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 CONTACT CONFIGURATION, AS SHOWN IN FIGURE 2 ON THIS PAGE.

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 RATCHET HANDLE, WITH THE HANDLE IN THE CLOSED (DOWN) POSITION, AND ANOTHER SHORT MATCHING MARK ON THE END OF THE SPOOL, AS SHOWN IN FIGURE 1 ON THIS PAGE. 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 RATCHET HANDLE WITH THE HANDLE IN CLOSED POSITION.

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 GEAR SPROCKET ON EACH END OF THE TAKE-UP SPOOL, WHILE SOME RATCHET ASSEMBLIES HAVE ONLY 9 TEETH. THEREFORE, AFTER INITIAL WEBBING-TO-WEBBING CONTACT HAS BEEN MADE, ROTATE (TURN) THE SPOOL THROUGH A MINIMUM OF 6 CLICKS 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 CLICKS TO A MAXIMUM OF 13 CLICKS (1/2 TO 1-1/2 WRAPS) IF THE GEAR HAS 9 TEETH.

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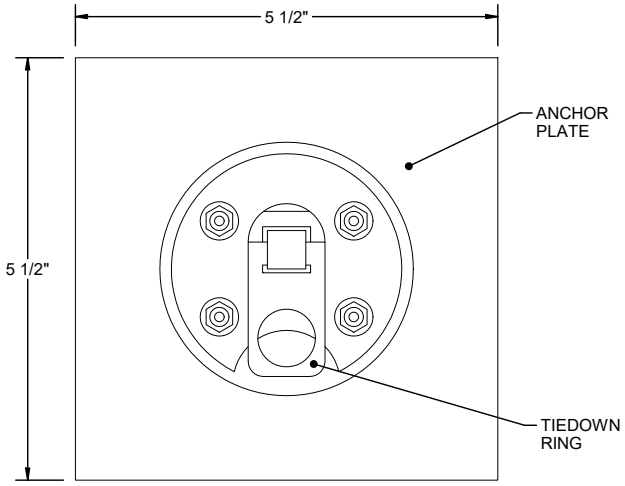
(SPECIAL NOTES CONTINUED)

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 ON THE GEAR SPROCKETS LOCATED ON EACH END OF THE TAKE-UP SPOOL, AS SHOWN IN FIGURE 3 ON THIS PAGE. 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. 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 BELOW THE TIPS OF THE TEETH OF THE GEAR SPROCKET. IT SHOULD BE NOTED THAT ANY PROCEDURES THAT ENSURE PROPER TENSIONING ARE ACCEPTABLE AND THE PROCEDURES ON THE DRAWING ONLY PROVIDE SOME METHODS.

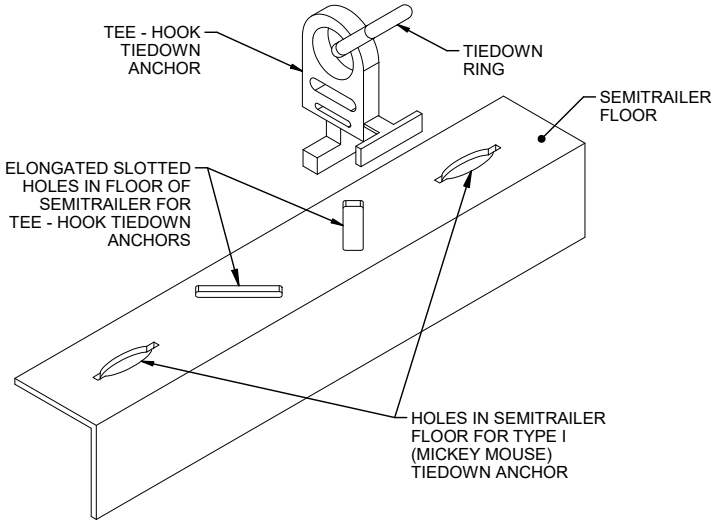
RATCHET/RATCHETING DETAILS



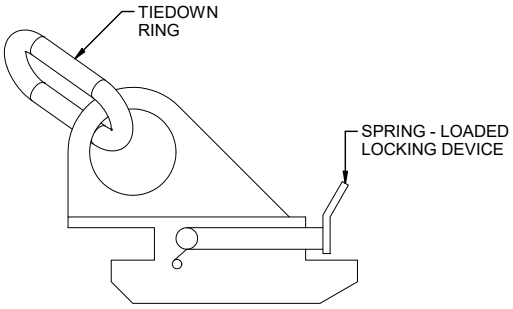
UNIVERSAL TIEDOWN ANCHOR (FRONT VIEW)
SEE SPECIAL NOTE 1

SPECIAL NOTES:

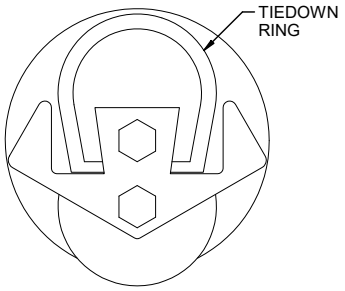
1. IF THE TACTICAL VEHICLES BEING USED ARE NOT EQUIPPED WITH THE 5,000 POUND UNIVERSAL TIEDOWN ANCHOR SHOWN AT LEFT, SEE TB 9-2300-280-30 FOR VEHICLE MODIFICATION PROCEDURES AND INSTALLATION OF THE TIEDOWN ANCHOR. WITH THE EXCEPTION OF THE HEAVY EXPANDED MOBILITY TACTICAL TRUCK (HEMTT), M977 AND/OR M985, 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 10 LOCATIONS IN EACH SIDE RAIL OF THE M871 SEMITRAILER AND APPROXIMATELY 28 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 10 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 FUTHER 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.



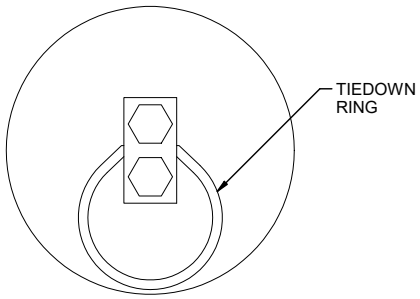
TEE-HOOK TIEDOWN ANCHOR (ISOMETRIC VIEW)
SEE SPECIAL NOTE 2



REMOVABLE TIEDOWN ANCHOR (SIDE VIEW)
SEE SPECIAL NOTE 4



REMOVABLE TIEDOWN ANCHOR (TOP VIEW)
SEE SPECIAL NOTE 3



FIXED TIEDOWN ANCHOR (TOP VIEW)
SEE SPECIAL NOTE 5

TIEDOWN ANCHOR DETAILS

PROJECT GM 923-12