

AVENGER

LOADING AND BRACING⁺ ON EUROPEAN RAILCAR OF GUIDED MISSILE BATTERY CONTROL CENTRAL, VEHICLE MOUNTED, AN/TWQ-1, WITH OR W/O HUTMENT

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⁺ DELINEATED LOADING AND BRACING PROCEDURES COMPLY WITH THE REGOLAMENTO INTERNAZIONALE VEICOLI (RIV); REGULATIONS GOVERNING THE RECIPROCAL USE OF WAGONS IN INTERNATIONAL TRAFFIC.

NOTICE: DEPICTED LOAD IS OVERSIZED, MOVEMENT MUST BE COORDINATED WITH DB OR SNCB.

U.S. ARMY MATERIEL COMMAND DRAWING

| | | | | | | | |
|---|-------------------------------------|-------|-------------------------|--|----------|---------|---------|
| APPROVED, U.S. ARMY AVIATION AND MISSILE COMMAND RA. | ENGINEER | BASIC | LAURA FIEFFER | DO NOT SCALE | | | |
| | | REV. | | WEBSITE: HTTP://WWW.DAC.ARMY.MIL | | | |
| | TECHNICIAN | BASIC | | OCTOBER 1997 | | | |
| | REV. | | | | | | |
| | DRAFTSMAN | BASIC | BARB LEONARD | | | | |
| | | REV. | | | | | |
| APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND DEFENSE AMMUNITION CENTER | TRANSPORTATION ENGINEERING DIVISION | | <i>W. R. Freigh</i> | | | | |
| | VALIDATION ENGINEERING DIVISION | | <i>William F. Ernst</i> | CLASS | DIVISION | DRAWING | FILE |
| | LOGISTICS ENGINEERING OFFICE | | <i>William F. Ernst</i> | 19 | 48 | 7896 | GSE5AV2 |

GENERAL NOTES

GENERAL NOTES CONTINUED

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- B. THE OUTLOADING PROCEDURES SHOWN HEREIN ARE APPLICABLE TO EUROPEAN RAILCARS THAT CONFORM TO THE RIV REQUIREMENTS.
- C. THE LOADS AS SHOWN ON PAGES 4 AND 6 ARE BASED ON RIV RAILCARS (KBS 442/443 AND KLS 442/443) 41'-0-1/8" (12,500MM) LONG BY 9'-1-3/64" (2,770MM) WIDE WITH 18" (458MM) HIGH CAR SIDES. ADDITIONAL UNITS OR OTHER ITEMS MAY BE LOADED ON THE CAR, WITH THE VIEW TOWARD FULL UTILIZATION OF CARRIER EQUIPMENT.
- D. LADING DATA:
 ITEM W/O HUTMENT:
 ITEM DIMENSIONS - 15'-10-1/2" (4,839MM) LONG BY 7'-3" (2,210MM) WIDE BY 8'-9" (2,667MM) HIGH.
 ITEM WEIGHT - - - 7,715 POUNDS (3,507KG) (APPROX).

 ITEM W/HUTMENT:
 ITEM DIMENSIONS - 15'-11" (4,852MM) LONG BY 7'-4" (2,236MM) WIDE BY 9'-4" (2,845MM) HIGH.
 ITEM WEIGHT - - - 8,405 POUNDS (3,821KG) (APPROX).
- E. A LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS OF THE DEPICTED LOAD IS SHOWN IN THE CHART ON THIS PAGE. OTHER TYPES OF RAILCARS CAN BE USED PROVIDING THESE OTHER CARS ARE PROPERLY EQUIPPED FOR THE APPLICATION OF THE PRESCRIBED LOAD-SECURING BLOCKING IN ACCORDANCE WITH THE SPECIFIED PROCEDURES. MINOR DEVIATIONS FROM THE LOCATIONS SHOWN IN THE LOAD VIEWS FOR INSTALLING BLOCKING AND TIEDOWN COMPONENTS ON A CAR ARE PERMITTED. HOWEVER, THE INTENT OF THE SPECIFIED BLOCKING PROCEDURES MUST BE ACHIEVED.
- F. REMOVE ALL POSTS FROM SIDE OF CAR AND PLACE IN RACKS UNDER CAR, AS APPLICABLE.
- G. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE RAILCAR CONCERNED, OR THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS CONTAINED HEREIN MUST BE FOLLOWED FOR BLOCKING, BRACING, AND STAYING OF THIS ITEM.
- H. A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE RAILCAR. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED, SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.

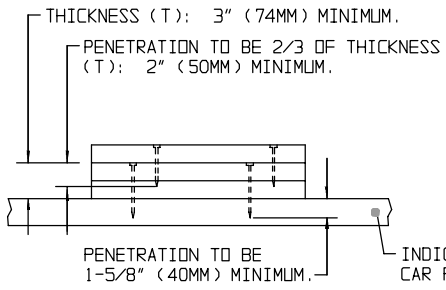
- J. NAILS USED FOR FLOOR BLOCKING WILL HAVE A MINIMUM DIAMETER OF 5MM. NAIL SIZES WILL BE SELECTED TO PROVIDE A MINIMUM OF 40MM PENETRATION INTO THE CAR FLOOR. HOWEVER, THE LENGTH OF THE NAIL WILL BE SUCH THAT THE NAIL DOES NOT COMPLETELY PENETRATE THE FLOOR. SEE THE "NAIL CHART" ON PAGE 3. NAILS WHICH ARE OF OTHER SIZES, OR WHICH HAVE A NOMENCLATURE DIFFERENT THAN THAT USED HEREIN, MAY ALSO BE USED PROVIDED THEY MEET THE MINIMUM REQUIREMENTS STIPULATED IN THIS DOCUMENT.
- K. CAUTION: DURING WIRE ROPE INSTALLATION AVOID ALL CONTACT WITH ELECTRICAL WIRING, VEHICLE CONTROLS AND OTHER APPURTENANCES.
- L. THREE-EIGHTH INCH (3/8") (9.525MM) STEEL WIRE ROPE IS SPECIFIED WHERE REQUIRED FOR TIEDOWNS TO SECURE THE ITEM. IF DESIRED, OR IF 3/8" (9.525MM) STEEL WIRE ROPE IS NOT AVAILABLE, STEEL WIRE ROPE OF A LARGER DIAMETER MAY BE USED. WIRE ROPE CABLE MUST BE TENSIONED SUFFICIENTLY TO CAUSE SLIGHT VEHICLE BODY DEPRESSION. TENSIONING CAN BE ACCOMPLISHED BY EMPLOYING TWO CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- M. ALL HAND BRAKES MUST BE "SET" WITH THE HAND LEVERS WIRE TIED OR BLOCKED, AND TIRES WILL BE INFLATED TO 10 PSI ABOVE REGULAR OPERATING PRESSURE.
- N. THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE BASED ON THE USE OF U.S. NOMINAL LUMBER. IN MOST CASES THE METRIC EQUIVALENT IS GIVEN IN PARENTHESIS FOLLOWING THE DIMENSION. HOWEVER, WHERE THE METRIC EQUIVALENT IS NOT SHOWN, IT MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM. METRIC EQUIVALENTS FOR WEIGHTS ARE BASED ON ONE POUND EQUALS 0.454KG. METRIC EQUIVALENTS FOR TORQUE ARE BASED ON 1 FOOT-POUND EQUALS 1.356 NEWTON-METERS.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

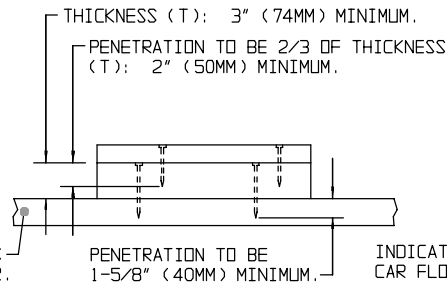
- LUMBER - - - - - : FED SPEC MM-L-751; DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.
- ANTI-CHAFING MATERIAL - - - - - : MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.
- ROPE - - - - - : FED SPEC RR-W-410; IMPROVED PLOW STEEL WIRE, PREFORMED, REGULAR LAY, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO. (OR EQUAL).
- CLIP - - - - - : FED SPEC FF-C-450; TYPE I, CLASS 1, "U" BOLT, CROSSBY, HEAVY DUTY (OR EQUAL).
- THIMBLE - - - - - : FED SPEC FF-T-276; TYPE II.
- LOAD BINDER - - - - - : FED SPEC GGG-B-325.

| LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS | | | |
|---|-------------------------|--------------|--|
| TYPE OF RAILCAR | LENGTH OF RAILCAR | NO. OF ITEMS | MAXIMUM TOTAL WEIGHT (APPROX) OF ITEMS |
| KBS - -442/443 | 41'-0-1/8" (12,500MM) | 2 | 15,260 LBS (6,928 KG) |
| KLS - -442/443 | 41'-0-1/8" (12,500MM) | 2 | 15,260 LBS (6,928 KG) |
| RMMS - 663/664 | 41'-5-51/64" (12,664MM) | 2 | 15,260 LBS (6,928 KG) |
| RS - - 680/681 | 60'-8-23/64" (18,500MM) | 3 | 22,890 LBS (10,392KG) |
| RS - - 683/684 | 60'-8-23/64" (18,500MM) | 3 | 22,890 LBS (10,392KG) |
| SAS - - - 710 | 49'-2-9/16" (15,000MM) | 3 | 22,890 LBS (10,392KG) |



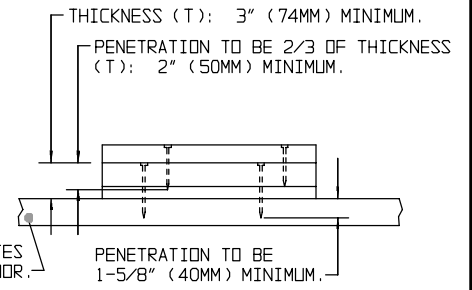
TRIPLED 2" X 6" LUMBER SHOWN

DETAIL A



2" X 4" AND 4" X 4" LUMBER SHOWN

DETAIL B



MIXED THICKNESS OF LUMBER SHOWN

DETAIL C

TYPICAL NAILING OF FLOOR LINE BLOCKING TO CAR FLOOR

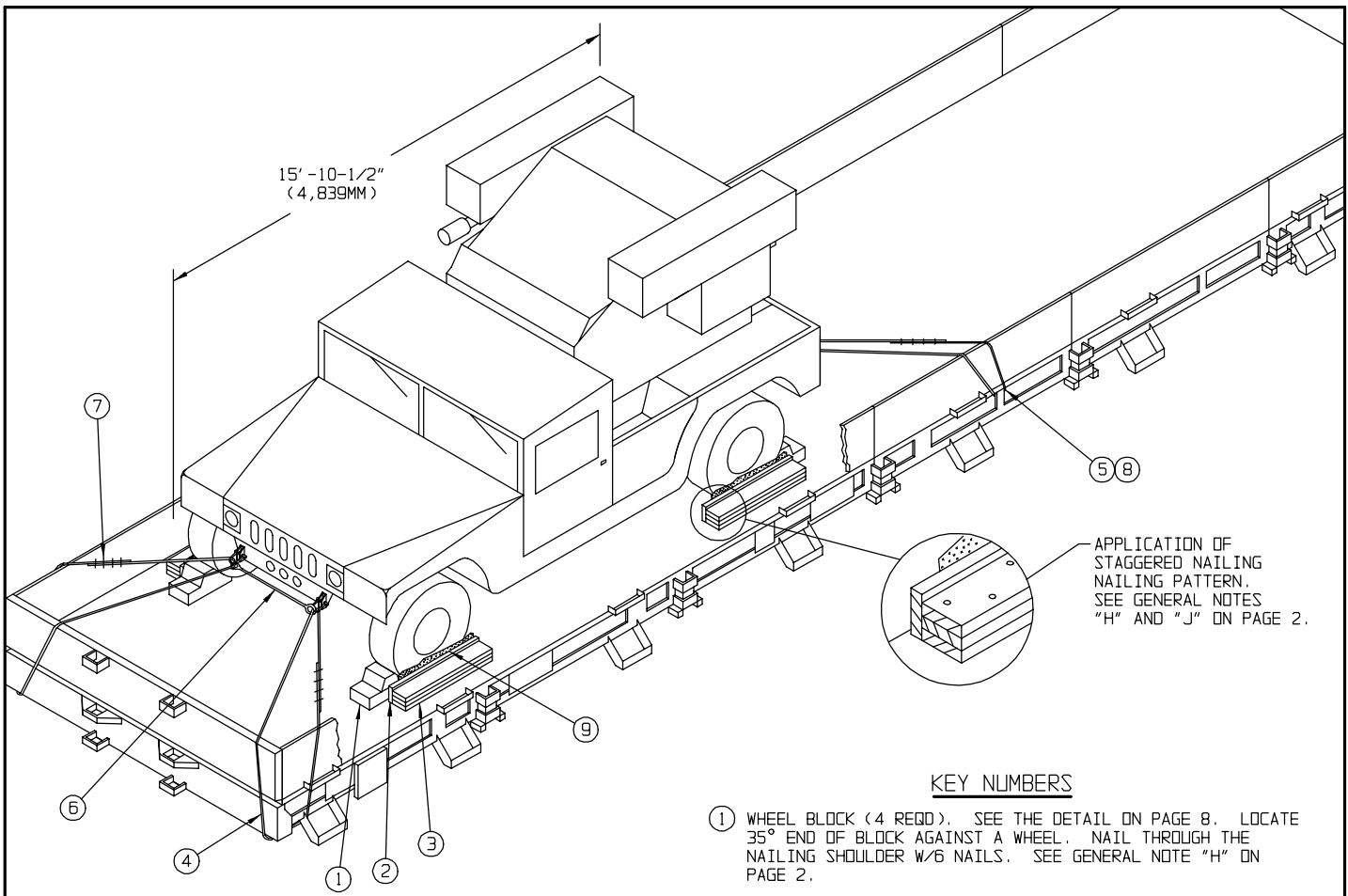
SPECIAL NOTES:

1. THE DETAILS ON THIS PAGE DEPICT POSSIBLE VARIATIONS THAT MAY RESULT FROM USING AVAILABLE LUMBER FOR FLOOR LINE BLOCKING. KEY NUMBERS THROUGHOUT THIS DOCUMENT SPECIFY TRIPLED PIECES OF LUMBER WHICH ARE 2" X 4" IN SIZE FOR SIDE BLOCKING, AS SHOWN IN DETAIL A ABOVE. IT IS PERMISSABLE TO USE MIXED THICKNESSES OF LUMBER AS TYPICALLY SHOWN IN DETAILS B AND C, IN LIEU OF THE SPECIFIED TRIPLED 2" X 4" LUMBER. THE INTENT OF THE SPECIFIED BLOCKING PROCEDURE MUST BE OBTAINED.
2. THE NUMBER OF NAILS USED TO SECURE EACH PIECE OF BLOCKING WILL BE AS SPECIFIED IN THE KEY NUMBERS FOR EACH SPECIFIC PROCEDURE. THE LENGTH OF THE NAILS SELECTED WILL BE ADEQUATE TO NAIL THROUGH THE BLOCKING AND ACHIEVE THE PENETRATION OF THE CAR FLOOR AS SPECIFIED. WHEN NAILING FLOOR LINE BLOCKING TO THE CAR FLOOR, AS DEPICTED IN DETAILS A, B, C THE FOLLOWING APPLIES:

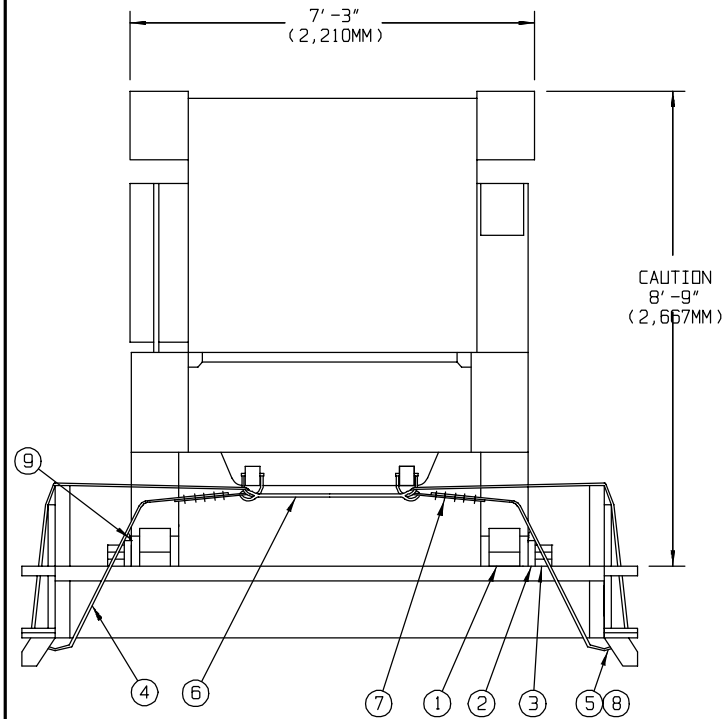
| NAILING GUIDANCE CHART | | |
|---------------------------|----------------|----------------------|
| THICKNESS (T) OF BLOCKING | | SIZE OF NAIL |
| MINIMUM | MAXIMUM | |
| 3" (74MM) | 3" (74MM) | 30d (4-1/2") (114MM) |
| 3" (74MM) | 3-3/8" (87MM) | 40d (5") (127MM) |
| 3-3/8" (87MM) | 4" (100MM) | 50d (5-1/2") (140MM) |
| 4" (100MM) | 4-3/8" (112MM) | 60d (6") (152MM) |

| NAIL CHART | | |
|------------|----------------|------------------|
| SIZE | LENGTH | DIAMETER |
| 10d | 3" (76MM) | 0.1483" (3.77MM) |
| 12d | 3-1/4" (83MM) | 0.1483" (3.77MM) |
| 16d | 3-1/2" (89MM) | 0.1620" (4.11MM) |
| 20d | 4" (102MM) | 0.1920" (4.88MM) |
| 30d * | 4-1/2" (114MM) | 0.2070" (5.26MM) |
| 40d * | 5" (127MM) | 0.2253" (5.72MM) |
| 50d * | 5-1/2" (140MM) | 0.2437" (6.19MM) |
| 60d * | 6" (152MM) | 0.2625" (6.67MM) |

* NAILS WHICH HAVE ADEQUATE DIAMETER FOR NAILING FLOOR LINE BLOCKING. THE LENGTH OF THE NAIL MUST MEET THE REQUIREMENTS OF GENERAL NOTE "J".



ISOMETRIC VIEW



REAR VIEW

KEY NUMBERS

- ① WHEEL BLOCK (4 REQD). SEE THE DETAIL ON PAGE 8. LOCATE 35° END OF BLOCK AGAINST A WHEEL. NAIL THROUGH THE NAILING SHOULDER W/6 NAILS. SEE GENERAL NOTE "H" ON PAGE 2.
- ② RUBBING STRIP, 2" X 6" X 36" (51MM X 152MM X 914MM) (4 REQD). POSITION ON EDGE AND NAIL TO LOWER PIECE MARKED ③ W/5 NAILS.
- ③ SIDE BLOCKING, 2" X 4" X 36" (51MM X 102MM X 914MM) (TRIPLED) (4 REQD). PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/5 NAILS. PLACE THE THIRD PIECE DIRECTLY ON TOP OF THE FIRST TWO PIECES AND NAIL THRU PIECE THREE INTO PIECES ONE AND TWO W/5 NAILS.
- ④ STEEL WIRE ROPE, 3/8" (9.525MM) DIAMETER, 6.56 TONS (5,938 KG) (4 REQD). INSTALL CABLE AS SHOWN TO FORM A COMPLETE LOOP FROM A TIEDOWN FACILITY ON THE RAILCAR THRU TIEDOWN DEVICE ON VEHICLE, THRU EYE OF TURNBUCKLE, PIECE MARKED ⑥, AND BACK TO THE RAILCAR TIEDOWN FACILITY. SEE "DETAIL A" ON PAGE 8. SEE GENERAL NOTES "K" AND "L" ON PAGE 2.
- ⑤ THIMBLE, STANDARD, SIZE 3/8" (8 REQD). USE WITH PIECE MARKED ④, ONE PER RAILCAR TIEDOWN FACILITY AND ONE PER LADING TIEDOWN DEVICE. NOTE THAT AN "OPEN PATTERN" THIMBLE IS RECOMMENDED.
- ⑥ TURNBUCKLE, EYE AND EYE, 3/4" X 18" (2 REQD). POSITION BETWEEN CABLE LOOPS AT FRONT AND/OR REAR OF LADING. SEE "DETAIL A" ON PAGE 8 FOR INSTALLATION GUIDANCE. TIGHTEN FRONT TURNBUCKLE SO THE DISTANCE BETWEEN THE INSIDE SURFACE OF THE EYES IS 33" (838MM), PLUS OR MINUS 1/4" (6MM). TIGHTEN REAR TURNBUCKLE SO THE DISTANCE BETWEEN THE INSIDE SURFACE OF THE EYES IS 40" (1,016MM), PLUS OR MINUS 1/4" (6MM). SEE SPECIAL NOTE 3 ON PAGE 5.
- ⑦ CLIP, WIRE ROPE, SIZE 3/8" (16 REQD). USE FOUR PER CABLE JOINT. SEE THE "CABLE JOINT" DETAIL ON PAGE 8.
- ⑧ CLIP, WIRE ROPE, SIZE 1/2" (8 REQD). USE TO SECURE A THIMBLE, PIECE MARKED ⑤, TO THE WIRE ROPE. ALT: NO. 14 GAGE WIRE MAY BE USED IN LIEU OF A CLIP FOR SECUREMENT OF THE THIMBLE TO THE TIEDOWN CABLE.
- ⑨ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" (51MM) ABOVE PIECE MARKED ②.

APPLICATION OF STAGGERED NAILING PATTERN. SEE GENERAL NOTES "H" AND "J" ON PAGE 2.

SPECIAL NOTES:

1. A ONE UNIT LOAD IS SHOWN ON A 9'-1-3/4" (2,770MM) WIDE EUROPEAN RAILCAR. SEE GENERAL NOTE "E" ON PAGE 2.
2. STEEL WIRE ROPE WILL PASS THRU A RAILCAR TIEDOWN FACILITY, THRU THE TIEDOWN DEVICE ON THE LADING, THRU THE EYE OF THE TURNBUCKLE AND BACK TOWARD THE RAILCAR TIEDOWN FACILITY TO FORM A COMPLETE LOOP. FOUR CLIPS WILL BE USED TO SECURE EACH CABLE JOINT. SEE THE "CABLE JOINT" DETAIL ON PAGE 8. TENSIONING OF THE STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO CABLE GRIPPERS AND AN APPLICABLY SIZED COME-A-LONG TYPE MECHANICAL HOIST. THE STEEL WIRE ROPE SHALL BE TENSIONED SUFFICIENTLY SO AS TO BE TAUT, BUT NOT SO MUCH AS TO DAMAGE THE ITEM TIEDOWN POINTS. THE NUTS ON THE CABLE CLIPS SHALL BE TIGHTENED TO A TORQUE OF APPROXIMATELY 40 FOOT-POUNDS (54 NEWTON-METERS). A PROPER TORQUE CAN BE ACHIEVED BY USING A WRENCH WHICH HAS A HANDLE THAT IS AT LEAST 12" (305MM) LONG. PROVIDE A THIMBLE OR OTHER SUITABLE PROTECTION AT ANY POINT WHERE THE WIRE ROPE PASSES AROUND A SHARP CORNER. SECURE EACH THIMBLE WITH AN ADDITIONAL CLIP OR BY EQUIVALENT MEANS. WHEN USING STEEL WIRE ROPE WHICH IS LARGER THAN 3/8" (9.52MM), THE NUTS ON THE CABLE CLIPS SHALL BE TIGHTENED TO A TORQUE OF AT LEAST 60 FOOT-POUNDS (81 NEWTON-METERS). A WRENCH WHICH HAS A HANDLE THAT IS AT LEAST 15" (381MM) LONG MAY BE USED TO OBTAIN THE 60 FOOT-POUND TORQUE. SEE GENERAL NOTE "L" ON PAGE 2.
3. IF 3/4" X 18" TURNBUCKLES ARE NOT AVAILABLE, EITHER 7/8" X 18" OR 1" X 18" TURNBUCKLES WILL BE SATISFACTORY. TURNBUCKLES OF A SIZE LARGER THAN 1" X 18" ARE TOO LONG WHEN IN THE "CLOSED" POSITION AND CANNOT BE USED. TURNBUCKLES OF A SIZE SMALLER THAN 3/4" X 18" WILL NOT EXTEND FAR ENOUGH TO SPAN THE REQUIRED DISTANCE AND CANNOT BE USED EITHER.

LOAD AS SHOWN*

| ITEM | QUANTITY | WEIGHT (APPROX) |
|-----------------|----------|--------------------|
| AVENGER VEHICLE | | |
| W/O HUTMENT | 1 | 7,715 LBS |
| DUNNAGE | | 185 LBS |
| TOTAL WEIGHT | | 7,900 LBS (APPROX) |

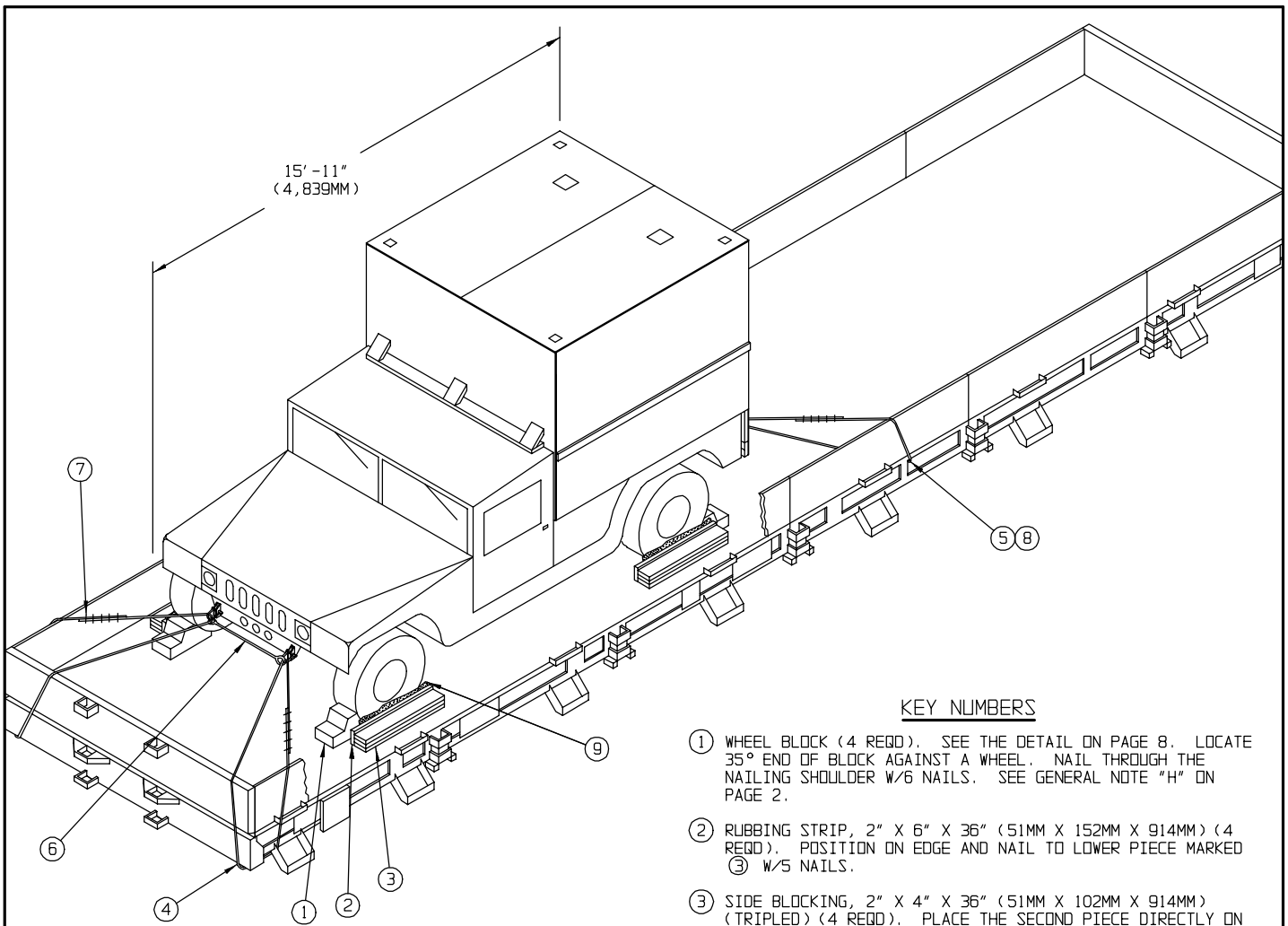
* FOR LOAD ON PAGE 4.

LOAD AS SHOWN*

| ITEM | QUANTITY | WEIGHT (APPROX) |
|-----------------|----------|--------------------|
| AVENGER VEHICLE | | |
| W/HUTMENT | 1 | 8,405 LBS |
| DUNNAGE | | 185 LBS |
| TOTAL WEIGHT | | 8,590 LBS (APPROX) |

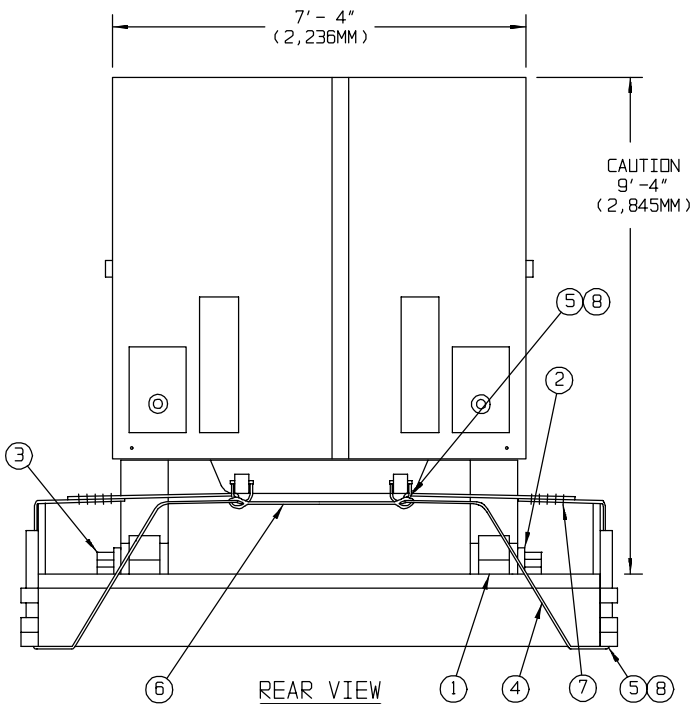
* FOR LOAD ON PAGE 6.

| BILL OF MATERIAL | | |
|---|------------------|------------|
| LUMBER | LINEAR FEET | BOARD FEET |
| 2" X 4" (51MM X 102MM) | 36 FT (10,973MM) | 24 |
| 2" X 6" (51MM X 152MM) | 12 FT (3,658MM) | 12 |
| 8" X 8" (203MM X 203MM) | 6 FT (1,829MM) | 32 |
| NAILS | NO. REQD | POUNDS |
| SIZE AS REQD | 84 | 5 |
| ROPE, STEEL WIRE, 3/8" DIA -- 80' REQD -- -- 20 LBS | | |
| CLIP, 3/8" -- -- -- 16 REQD -- -- 5 LBS | | |
| CLIP, 1/2" -- -- -- 8 REQD -- -- 4 LBS | | |
| THIMBLE, STANDARD, 3/8" -- -- 8 REQD -- -- 2 LBS | | |
| TURNBUCKLE, 3/4" X 18" -- -- 2 REQD -- -- 13 LBS | | |
| WATERPROOF PAPER OR BURLAP -- AS REQD -- -- NIL | | |



KEY NUMBERS

- ① WHEEL BLOCK (4 REQD). SEE THE DETAIL ON PAGE 8. LOCATE 35° END OF BLOCK AGAINST A WHEEL. NAIL THROUGH THE NAILING SHOULDER W/6 NAILS. SEE GENERAL NOTE "H" ON PAGE 2.
- ② RUBBING STRIP, 2" X 6" X 36" (51MM X 152MM X 914MM) (4 REQD). POSITION ON EDGE AND NAIL TO LOWER PIECE MARKED ③ W/5 NAILS.
- ③ SIDE BLOCKING, 2" X 4" X 36" (51MM X 102MM X 914MM) (TRIPLED) (4 REQD). PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/5 NAILS. PLACE THE THIRD PIECE DIRECTLY ON TOP OF THE FIRST TWO PIECES AND NAIL THRU PIECE THREE INTO PIECES ONE AND TWO W/5 NAILS.
- ④ STEEL WIRE ROPE, 3/8" (9.525MM) DIAMETER, 6.56 TONS (5,938 KG) (4 REQD). INSTALL CABLE AS SHOWN TO FORM A COMPLETE LOOP FROM A TIEDOWN FACILITY ON THE RAILCAR THRU TIEDOWN DEVICE ON VEHICLE, THRU EYE OF TURNBUCKLE, PIECE MARKED ⑥, AND BACK TO THE RAILCAR TIEDOWN FACILITY. SEE "DETAIL A" ON PAGE 8. SEE GENERAL NOTES "K" AND "L" ON PAGE 2.
- ⑤ THIMBLE, STANDARD, SIZE 3/8" (8 REQD). USE WITH PIECE MARKED ④, ONE PER RAILCAR TIEDOWN FACILITY AND ONE PER LADING TIEDOWN DEVICE. NOTE THAT AN "OPEN PATTERN" THIMBLE IS RECOMMENDED.
- ⑥ TURNBUCKLE, EYE AND EYE, 3/4" X 18" (2 REQD). POSITION BETWEEN CABLE LOOPS AT FRONT AND/OR REAR OF LADING. SEE "DETAIL A" ON PAGE 8 FOR INSTALLATION GUIDANCE. TIGHTEN FRONT TURNBUCKLE SO THE DISTANCE BETWEEN THE INSIDE SURFACE OF THE EYES IS 33" (838MM), PLUS OR MINUS 1/4" (6MM). TIGHTEN REAR TURNBUCKLE SO THE DISTANCE BETWEEN THE INSIDE SURFACE OF THE EYES IS 40" (1,016MM), PLUS OR MINUS 1/4" (6MM). SEE SPECIAL NOTE 3 ON PAGE 5.
- ⑦ CLIP, WIRE ROPE, SIZE 3/8" (16 REQD). USE FOUR PER CABLE JOINT. SEE THE "CABLE JOINT" DETAIL ON PAGE 8.
- ⑧ CLIP, WIRE ROPE, SIZE 1/2" (8 REQD). USE TO SECURE A THIMBLE, PIECE MARKED ⑤, TO THE WIRE ROPE. ALT: NO. 14 GAGE WIRE MAY BE USED IN LIEU OF A CLIP FOR SECUREMENT OF THE THIMBLE TO THE TIEDOWN CABLE.
- ⑨ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" (51MM) ABOVE PIECE MARKED ②.



BATTERY CONTROL CENTRAL (W/HUTMENT)

SLING GUIDES PROVIDED
ON FIRE UNIT TURRET.

USE INBOARD
FITTINGS.

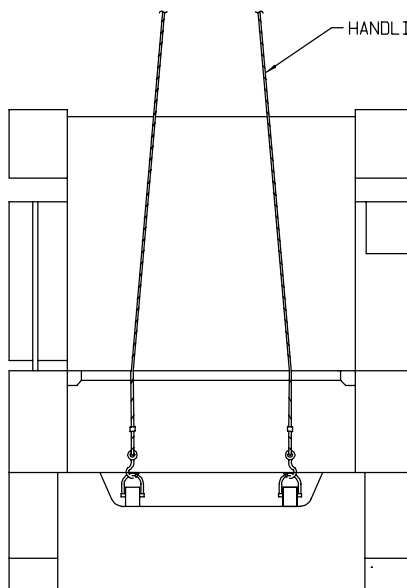
8'-1" (2,464MM) (APPROX)

ELEVATION VIEW

NOTES:

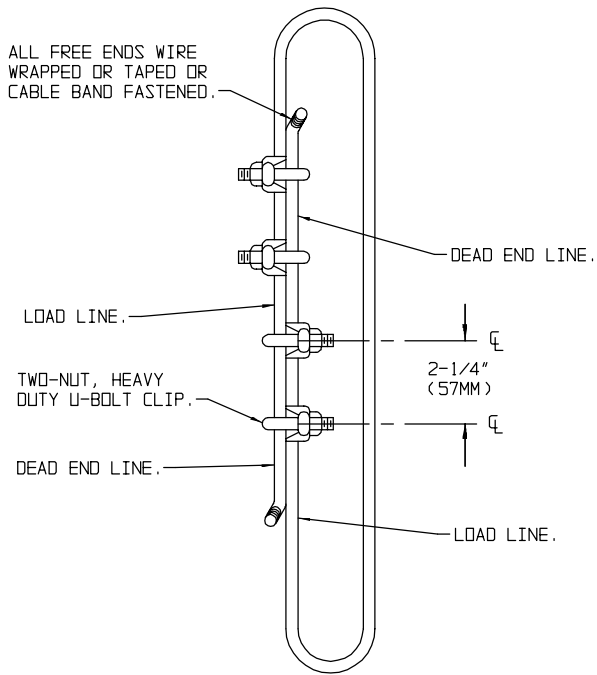
1. WHEN LIFTING THE GUIDED MISSILE BATTERY CONTROL CENTRAL ONTO OR OFF A RAILCAR, THE SLING SYSTEM USED, INCLUDING SPREADER BAR(S) IF NECESSARY, MUST CLEAR THE BATTERY CONTROL CENTRAL. CARE MUST BE USED TO PREVENT DAMAGE TO THE BATTERY CONTROL CENTRAL.
2. THE SLINGING PROVISIONS SHOWN ARE FOR THE BATTERY CONTROL CENTRAL W/O THE HUTMENT COVERING THE FIRE UNIT. THE SLINGING PROVISIONS ARE ALSO APPLICABLE FOR THE BATTERY CONTROL CENTRAL WITH THE HUTMENT ATTACHED. NOTE THAT THE CENTER OF GRAVITY WILL BE NEARER THE REAR OF THE ITEM WHEN THE HUTMENT IS ATTACHED.

HANDLING SLING.



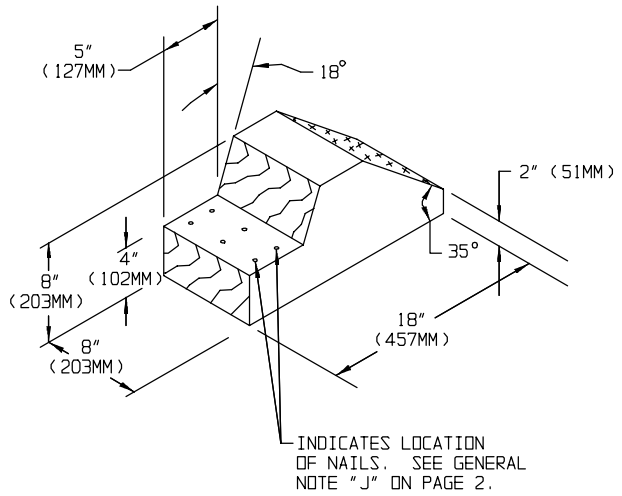
REAR VIEW

PREFERRED SLINGING PROVISIONS

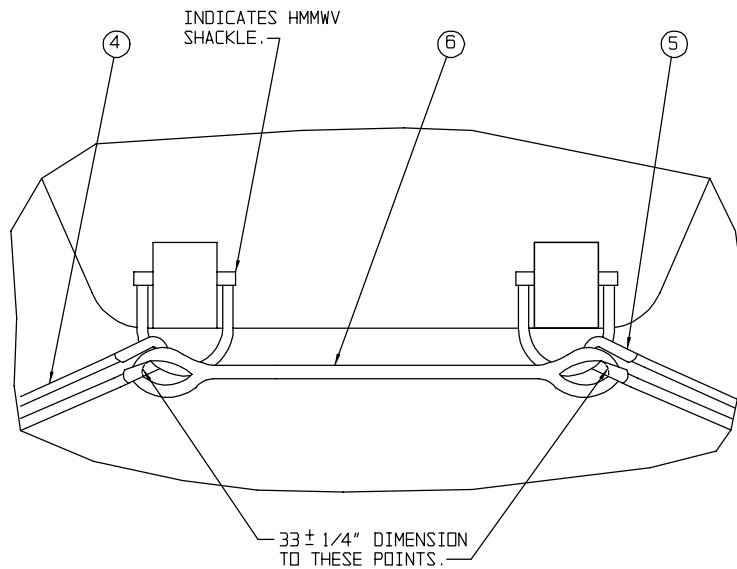


CABLE JOINT

PROPER TIGHTENING OF THE WIRE ROPE CLIP NUTS CAN BE ACCOMPLISHED BY UTILIZING A PROPER SIZED TORQUE WRENCH. AFTER THE NUTS HAVE BEEN INITIALLY TIGHTENED, THE "U" SIDE OF EACH CLIP MUST BE STRUCK SEVERAL TIMES WITH A HAMMER TO INSURE PROPER SEATING INTO THE DEAD END LINE. FINAL TORQUE WILL BE ACQUIRED BY REPEATEDLY AND ALTERNATELY TIGHTENING EACH CLIP NUT. SEE PIECES MARKED ⑦ ON PAGE 4 OR 6.



WHEEL BLOCK



DETAIL A

THIS VIEW DEPICTS THE LOCATION OF THE TURNBUCKLE, PIECE MARKED ⑥, INSTALLED AT THE FRONT OF THE VEHICLE. THE INSTALLATION AT THE REAR OF THE VEHICLE WILL BE SIMILAR. THE DISTANCE BETWEEN THE INSIDE SURFACE OF THE EYES OF THE TURNBUCKLE AT THE REAR WILL BE 40" ± 1/4".