

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 WHICH CONFORM TO THE RIV REQUIREMENTS.
- C. THE LOAD AS SHOWN IS BASED ON RIV RAILCARS (KBS 442/443) 41'-0-1/8" (12,500 MM) LONG BY 9'-1-3/64" (2,770 MM) WIDE WITHOUT CAR SIDEWALLS. ADDITIONAL UNITS OR OTHER ITEMS MAY BE LOADED ON THE CAR, WITH THE VIEW TOWARD FULL UTILIZATION OF CARRIER EQUIPMENT.
- D. LADING DATA:

ITEM DIMENSIONS ----- 13'-10-1/2" (4,229 MM) LONG BY 7'-9" (2,362 MM) WIDE BY 7'-2" (2,184 MM) HIGH.
 ITEM GROSS WEIGHT ----- 6,960 POUNDS (3,157 KG) (APPROX) WITH CABLE REEL.
 6,600 POUNDS (2,995 KG) (APPROX) WITHOUT CABLE REEL.

- E. A LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS OF THE DEPICTED LOAD IS SHOWN IN THE CHART ON THIS PAGE. NOTICE: CARS USED MUST NOT BE EQUIPPED WITH SIDEWALLS OR HAVE SIDEWALLS THAT PROHIBIT TIE DOWN PROCEDURES AS DEPICTED WITHIN THIS DRAWING. MINOR DEVIATIONS FROM THE LOCATIONS SHOWN IN THE LOAD VIEWS FOR INSTALLING BLOCKING AND TIE DOWN 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, IF 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, FOR FULL OR PARTIAL CARLOAD, MUST BE FOLLOWED FOR BLOCKING, BRACING, AND STAYING OF THIS ITEM.
- H. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE RAILCAR, OR WHEN LAMINATING DUNNAGE. 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 LINE BLOCKING WILL HAVE A MINIMUM DIAMETER OF 5 MM. NAIL SIZES WILL BE SELECTED TO PROVIDE A MINIMUM OF 40 MM PENETRATION INTO THE CAR FLOOR. HOWEVER, THE LENGTH OF THE NAIL WILL BE SUCH THAT THE NAIL DOES NOT COMPLETELY PENETRATE THE CAR FLOOR. SEE THE "NAIL CHART" AT THE RIGHT AND THE "TYPICAL NAILING OF FLOOR LINE BLOCKING TO CAR FLOOR" DETAIL 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 WITHIN THIS DOCUMENT.

- K. NAILS USED FOR FABRICATING DUNNAGE ASSEMBLIES SHALL BE OF THE MAXIMUM PRACTICAL LENGTH WHICH WILL PREVENT THE NAIL POINT FROM COMPLETELY PENETRATING THE DUNNAGE ASSEMBLY. THE NAIL POINT IS TO BE CONCEALED WITHIN THE DUNNAGE ASSEMBLY TO PREVENT DAMAGE TO THE LADING.

- L. STEEL WIRE USED FOR HOLD-DOWNS MUST HAVE A MINIMUM DIAMETER OF 3 MM. WHERE REQUIRED WITHIN THIS DOCUMENT, NO. 8 GAGE BLACK ANNEALED WIRE HAS BEEN SPECIFIED FOR WIRE HOLD-DOWNS. IF DESIRED, OR IF NO. 8 GAGE WIRE IS NOT AVAILABLE, WIRE OF A LARGER DIAMETER, OR 3/8" (OR LARGER) STEEL WIRE ROPE, MAY BE SUBSTITUTED.

- M. CAUTION: DURING WIRE ROPE INSTALLATION AVOID ALL CONTACT WITH ELECTRICAL WIRING, VEHICLE CONTROLS AND OTHER APPURTENANCES.

- N. THREE-EIGHTS INCH (3/8") STEEL WIRE ROPE IS SPECIFIED WHERE REQUIRED FOR TIEDOWNS TO SECURE THE ITEM. IF DESIRED, OR IF 3/8" 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 (2) CABLE "GRIPPERS" AND AN APPLICABLE SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

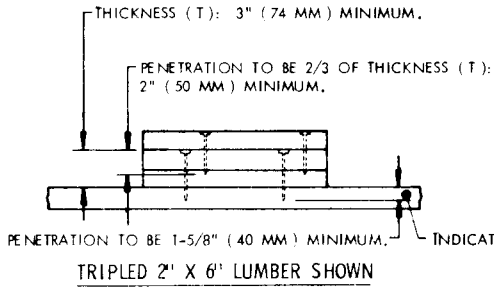
- LUMBER** ----- : DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS. REF: FED SPEC MM-L-751.
- NAILS** ----- : COMMON, CEMENT COATED OR CHEMICALLY ETCHED. REF: FED SPEC FF-N-105
ALT: ANNULAR-RING TYPE NAIL OF THE SAME SIZE.
- WIRE** ----- : ANNEALED, BLACK. REF: FED SPEC QQ-W-461.
- ROPE** ----- : STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY. REF: FED SPEC RR-W-410.
- CLIP** ----- : "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL). REF: FED SPEC FF-C-450, TYPE 1, CLASS 1.
- ANTI-CHAFING MATERIAL** -- : NEUTRAL BARRIER MATERIAL, MIL-B-121 (OR EQUAL).
- THIMBLE** ----- : COMMERCIAL GRADE.

- O. 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.
- P. THE PROCEDURES DEPICTED WITHIN THIS DRAWING ARE BASED ON THE USE OF DIMENSIONAL SIZED 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 BY USING 1" EQUALS 25.4 MM. METRIC EQUIVALENTS FOR WEIGHTS ARE BASED ON 1 LB EQUALS 0.454 KG. METRIC EQUIVALENTS FOR TORQUE ARE BASED ON 1 FOOT-POUND EQUALS 0.7376 NEWTON-METERS.
- * REGOLAMENTO INTERNAZIONALE VEICOLI (RIV): REGULATIONS GOVERNING THE RECIPROCAL USE OF WAGONS IN INTERNATIONAL TRAFFIC.

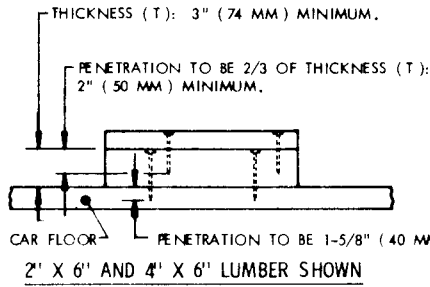
NAIL CHART		
SIZE	LENGTH	DIAMETER
10d	3" (76 MM)	0.1483" (3.77 MM)
12d	3-1/4" (83 MM)	0.1483" (3.77 MM)
16d	3-1/2" (83 MM)	0.1620" (4.11 MM)
20d	4" (102 MM)	0.1920" (4.88 MM)
30d ***	4-1/2" (114 MM)	0.2070" (5.26 MM)
40d ***	5" (127 MM)	0.2253" (5.72 MM)
50d ***	5-1/2" (140 MM)	0.2437" (6.19 MM)
60d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

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

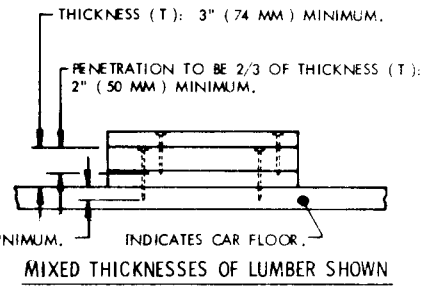
LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS				
TYPE OF RAILCAR	LENGTH OF RAILCAR	NO. OF ITEMS	MAXIMUM TOTAL WEIGHT (APPROX) OF ITEMS	
KLMS 440	34'-11-11/16" (10,660 MM)	2	13,920 LBS (6,314 KG)	
KLM 505	30'-4-9/16" (9,260 MM)	2	13,920 LBS (6,314 KG)	
KLM 506	34'-8-1/2" (10,580 MM)	2	13,920 LBS (6,314 KG)	
KBS 442/443	41'-0-1/8" (12,500 MM)	3	20,880 LBS (9,471 KG)	
KLS 442/443	41'-0-1/8" (12,500 MM)	3	20,880 LBS (9,471 KG)	
RMMS 663/664	41'-5-51/64" (12,644 MM)	3	20,880 LBS (9,471 KG)	
RS 680/681	60'-8-23/64" (18,500 MM)	4	27,840 LBS (12,628 KG)	
RS 683/684	60'-8-23/64" (18,500 MM)	4	27,840 LBS (12,628 KG)	
SAS 710	49'-2-9/16" (15,000 MM)	3	20,880 LBS (9,471 KG)	



DETAIL A



DETAIL B



DETAIL C

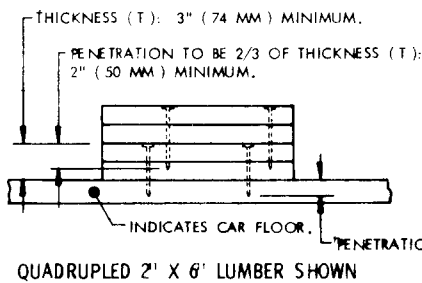
TYPICAL NAILING OF ADDITIONAL LAMINATIONS TO FLOOR LINE BLOCKING

SPECIAL NOTES:

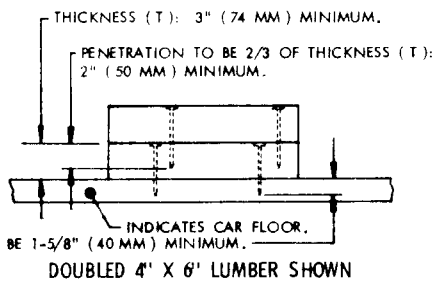
1. THE DETAILS ON THIS PAGE DEPICT POSSIBLE VARIATIONS THAT MAY RESULT FROM USING AVAILABLE LUMBER FOR FLOOR LINE BLOCKING. KEY NUMBERS THROUGHOUT THIS DOCUMENT SPECIFY TRIPLED PIECES OF LUMBER WHICH ARE 2" X 6" IN SIZE FOR SIDE-BLOCKING, AS TYPICALLY SHOWN IN DETAIL A ABOVE. IT IS PERMISSIBLE TO USE MIXED THICKNESSES OF LUMBER, AS TYPICALLY SHOWN IN DETAILS B AND C, IN LIEU OF THE SPECIFIED TRIPLED 2" X 6" LUMBER. WHERE QUADRUPLD 2" X 6" LUMBER IS SPECIFIED, AS TYPICALLY SHOWN IN DETAIL D BELOW, IT IS PERMISSIBLE TO USE DOUBLED 4" X 6" LUMBER, OR MIXED THICKNESSES OF LUMBER, AS TYPICALLY SHOWN IN DETAILS E AND F, IN LIEU OF THE SPECIFIED QUADRUPLD 2" X 6" 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, AND C, THE FOLLOWING APPLIES:

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

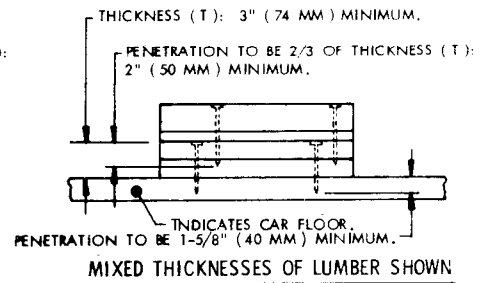
3. WHEN NAILING ADDITIONAL LAMINATIONS TO FLOOR LINE BLOCKING, THE LENGTH OF THE NAIL WILL BE ADEQUATE TO PENETRATE THE ADDITIONAL LAMINATIONS AND PROVIDE THE PENETRATION OF THE FLOOR LINE BLOCKING AS SPECIFIED IN DETAILS.



DETAIL D

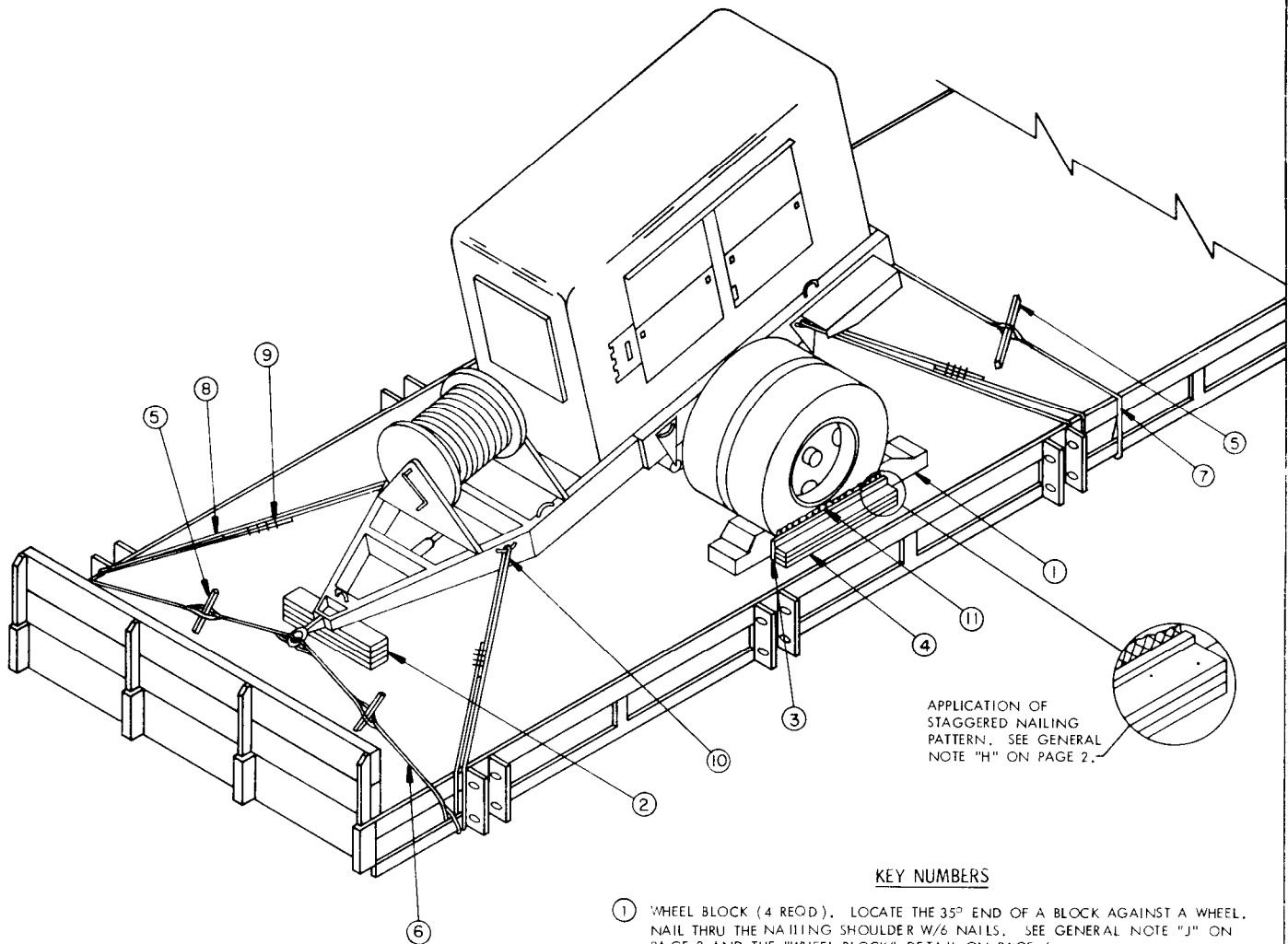


DETAIL E



DETAIL F

TYPICAL NAILING OF ADDITIONAL LAMINATIONS TO FLOOR LINE BLOCKING

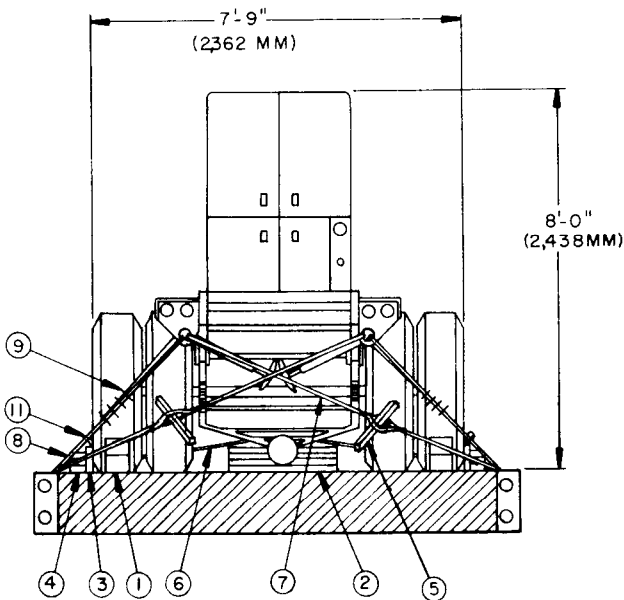


ISOMETRIC VIEW

APPLICATION OF STAGGERED NAILING PATTERN. SEE GENERAL NOTE "H" ON PAGE 2.

KEY NUMBERS

- ① WHEEL BLOCK (4 REQD). LOCATE THE 35° END OF A BLOCK AGAINST A WHEEL. NAIL THRU THE NAILING SHOULDER W/6 NAILS. SEE GENERAL NOTE "J" ON PAGE 2 AND THE "WHEEL BLOCK" DETAIL ON PAGE 6.
- ② SUPPORT ASSEMBLY, 2" X 6" X 28" (51 MM X 152 MM X 711 MM) (QUADRUPLED) (1 REQD). CENTER UNDER THE FRONT OF THE TRAILER AS SHOWN. PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/6 NAILS. PLACE THE THIRD AND FOURTH PIECES DIRECTLY ON TOP OF THE FIRST TWO PIECES AND NAIL THRU PIECES THREE AND FOUR INTO PIECES ONE AND TWO W/6 NAILS. SEE GENERAL NOTE "H" ON PAGE 2. REFER TO THE "TYPICAL NAILING OF FLOOR LINE BLOCKING TO CAR FLOOR" DETAIL ON PAGE 3.
- ③ RUBBING STRIP, 2" X 6" X 36" (51 MM X 152 MM X 914 MM) (2 REQD). POSITION ON EDGE AND NAIL TO LOWER PIECE MARKED ④ W/5 NAILS.
- ④ SIDE BLOCKING, 2" X 6" X 36" (51 MM X 152 MM X 914 MM) (TRIPLED) (2 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.
- ⑤ WIRE TWISTER, 2" X 2" (51 MM X 51 MM) BY A LENGTH TO SUIT (4 REQD) SEE SPECIAL NOTE 2 ON PAGE 5.
- ⑥ SIX (6) STRANDS OF NO. 8 GAGE (3 MM MINIMUM DIAMETER) BLACK ANNEALED WIRE (2 REQD). PASS THRU LADING LUNETTE AND RAILCAR TIEDOWN FACILITY TO FORM A COMPLETE LOOP. TWIST TAUT WITH PIECE MARKED ⑤. SEE GENERAL NOTE "L" ON PAGE 2, AND SPECIAL NOTES 3 AND 4 ON PAGE 5.
- ⑦ SIX (6) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (2 REQD). INSTALL WIRE TO FORM A COMPLETE LOOP FROM A LADING TIEDOWN DEVICE ON ONE SIDE TO A RAILCAR TIEDOWN FACILITY ON THE OPPOSITE SIDE. TWIST TAUT WITH PIECE MARKED ⑤. SEE GENERAL NOTE "I" ON PAGE 2, AND SPECIAL NOTES 3 AND 4 ON PAGE 5.
- ⑧ STEEL WIRE ROPE, 3/8" (9.525 MM) DIAMETER, 6.56 TONS (5938 KG) (4 REQD). INSTALL CABLE AS SHOWN TO FORM A COMPLETE LOOP FROM A TIEDOWN FACILITY ON THE RAILCAR THRU THE LADING TIEDOWN DEVICE AND BACK TO THE RAILCAR TIEDOWN FACILITY. SEE GENERAL NOTES "M" AND "N" ON PAGE 2, AND SPECIAL NOTES 4 AND 5 ON PAGE 5.
- ⑨ CLIP, SIZE 3/8" (24 REQD). USE FOUR (4) PER CABLE JOINT AND ONE (1) PER THIMBLE.
- ⑩ THIMBLE, STANDARD, SIZE 3/8" (8 REQD). USE ONE (1) PER RAILCAR TIEDOWN FACILITY AND ONE (1) PER LADING TIEDOWN DEVICE. SECURE TO WIRE ROPE MARKED ⑧ W/1 CLIP PER THIMBLE.
- ⑪ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" (51 MM) ABOVE PIECE MARKED ③.



REAR VIEW

SPECIAL NOTES:

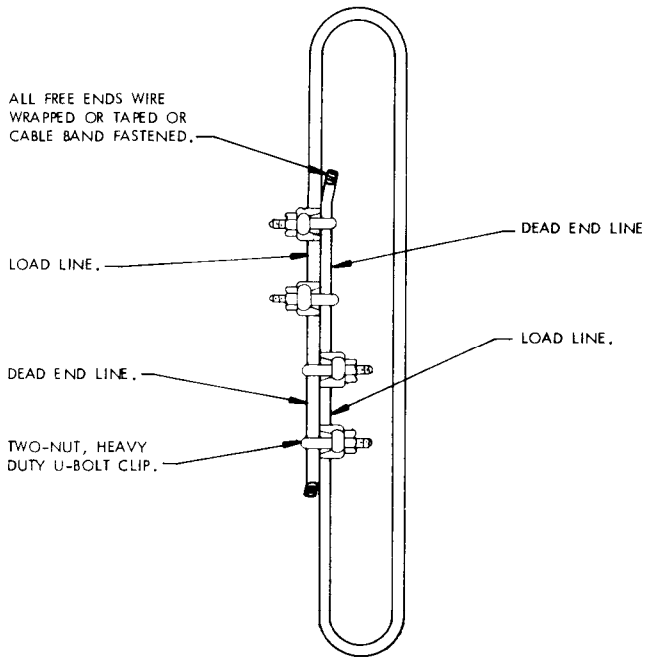
1. A ONE UNIT LOAD IS SHOWN ON A 9'-1-3/64" (2,770 MM) WIDE EUROPEAN RAILCAR. SEE GENERAL NOTE "E" ON PAGE 2.
2. THE WIRE TWISTERS, PIECES MARKED ⑤, MUST NOT PROTRUDE BEYOND THE SIDES OF THE CAR WHEN SECURED FOR MOVEMENT. THE TWISTER SHALL BE SECURED TO PREVENT UNTWISTING AND LOOSENING OF THE WIRE HOLD-DOWN.
3. AT ANY LOCATION WHERE THE TWISTED WIRE HOLD-DOWN PASSES AROUND A SHARP CORNER, PROVIDE SUITABLE CUSHIONING OR BUFFERING MATERIAL TO PROTECT THE WIRE FROM BEING CUT ON THE SHARP CORNER.
4. IF DESIRED, OR IF ANNEALED WIRE IS NOT AVAILABLE FOR FABRICATING TWISTED WIRE HOLD-DOWNS, MARKED AS KEY NUMBER ⑥ AND ⑦, 3/8" (OR LARGER) STEEL WIRE ROPE MAY BE INSTALLED IN LIEU OF THE TWISTED WIRE HOLD-DOWNS. ALSO, IF DESIRED, OR IF 3/8" STEEL WIRE ROPE IS NOT AVAILABLE, A LARGER DIAMETER STEEL WIRE ROPE MAY BE USED FOR ITEM SECUREMENT (SEE KEY NUMBER ⑧).
5. STEEL WIRE ROPE WILL PASS THRU A RAILCAR TIEDOWN FACILITY, THROUGH AN ANCHOR ON THE LADING AS SHOWN, 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 6. TENSIONING OF THE STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO CABLE GRIPPERS ON AN APPLICABLY SIZED COME-ALONG TYPE MECHANICAL HOIST. THE STEEL WIRE ROPE SHALL BE TENSIONED SUFFICIENTLY SO AS TO BE TAUT, BUT NOT SO MUCH AS TO DAMAGE THE ANCHOR. THE NUTS ON THE CABLE CLIPS SHALL BE TIGHTENED TO A TORQUE OF APPROXIMATELY 40 FOOT-POUNDS. A PROPER TORQUE CAN BE ACHIEVED BY USING A WRENCH WHICH HAS A HANDLE THAT IS AT LEAST 12" 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 A STEEL WIRE ROPE WHICH IS LARGER THAN 3/8", THE NUTS ON THE CABLE CLIPS SHALL BE TIGHTENED TO A TORQUE OF AT LEAST 60 FOOT-POUNDS. A WRENCH WHICH HAS A HANDLE THAT IS AT LEAST 15" LONG MAY BE USED TO OBTAIN THE 60 FOOT-POUND TORQUE. SEE GENERAL NOTE "P" ON PAGE 2.
6. NARROWER CARS CAN BE USED FOR SHIPMENT OF THIS ITEM. THE TRIPLED SIDE BLOCKING PIECES AND RUBBING STRIPS MUST BE PRE-POSITIONED AND NAILED PRIOR TO LOADING THE TRAILER MOUNTED GENERATOR. THE ITEM WILL BE FIELD CHECKED AND THE SIDE BLOCKING MATERIAL, MARKED AS KEY NUMBERS ③, ④, AND ①, WILL BE POSITIONED SO AS TO BEAR AGAINST THE INSIDE SURFACE OF THE TIRES OF THE TRAILER.

BILL OF MATERIAL

LUMBER	LENGTH	BOARD FEET
2" X 2" (51 MM X 51 MM)	6 FT (1,828 MM)	2
2" X 6" (51 MM X 152 MM)	34 FT (10,363 MM)	34
8" X 8" (203 MM X 203 MM)	6 FT (1,828 MM)	32
NAILS	NO. REQD	WEIGHT
SIZE AS REQD	86	5 LB
ROPE, STEEL WIRE, 3/8" DIA-----76' REQD-----19 LBS		
CLIP, 3/8"-----16 REQD-----5 LBS		
WIRE, NO. 8 GAGE (3 MM DIA)-----240' REQD-----23 LBS		
THIMBLE, STANDARD, 3/8"-----8 REQD-----NIL		
WATERPROOF PAPER OR BURLAP-----AS REQD-----NIL		

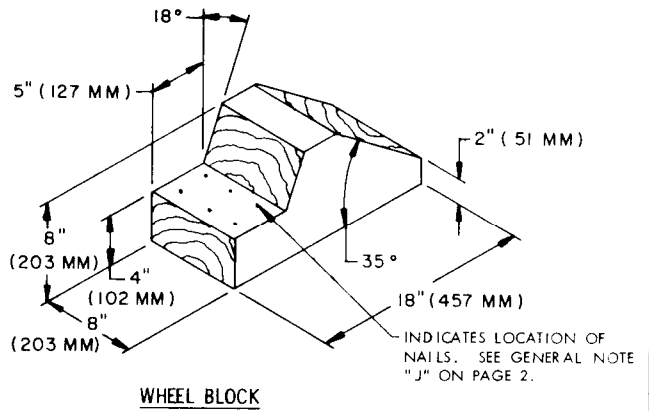
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
45 KW GENERATOR	1	6,960 LBS (3,157 KG)
DUNNAGE		190 LBS (86 KG)
TOTAL WEIGHT		7,150 LBS (3,243 KG)



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.



WHEEL BLOCK