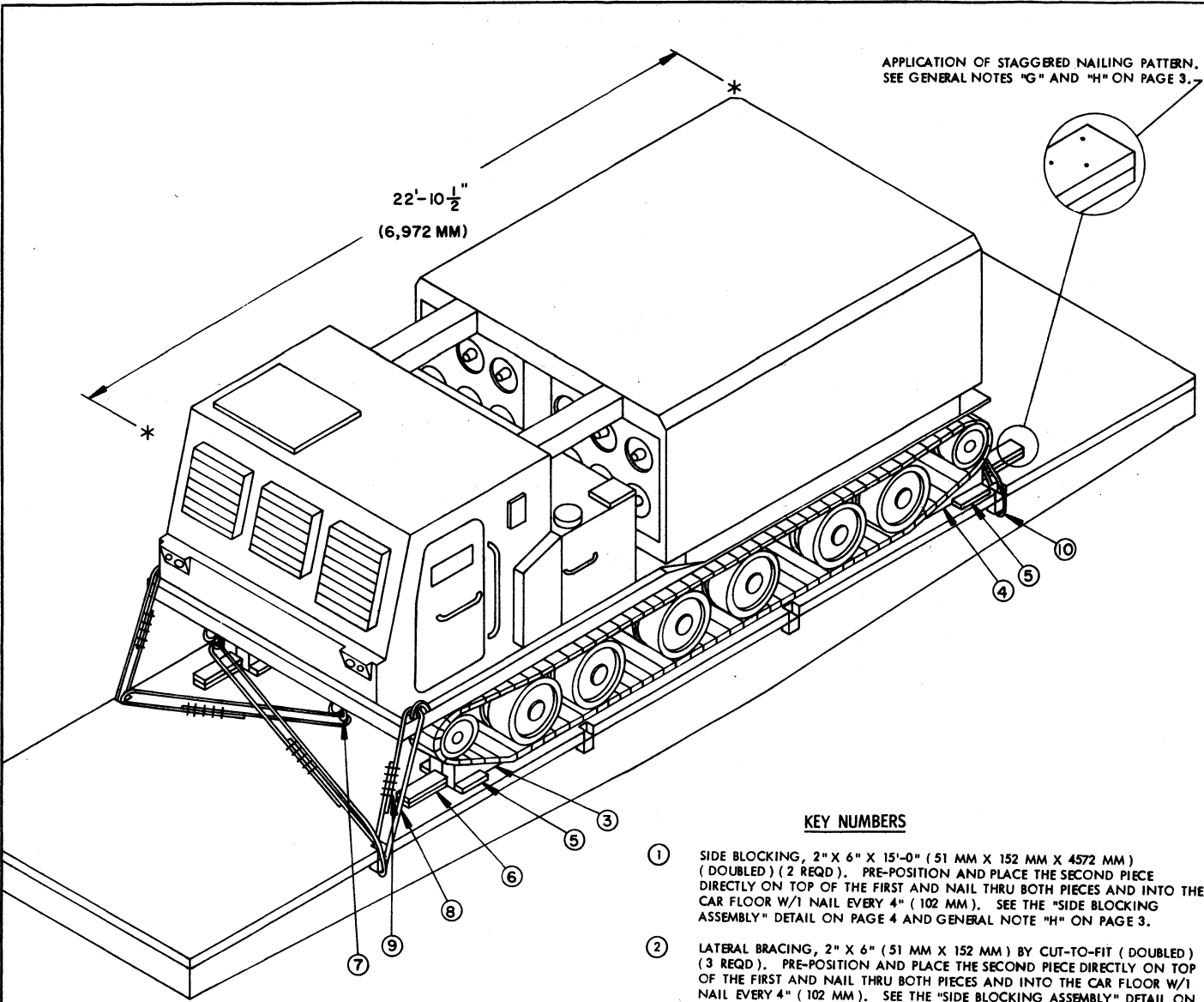
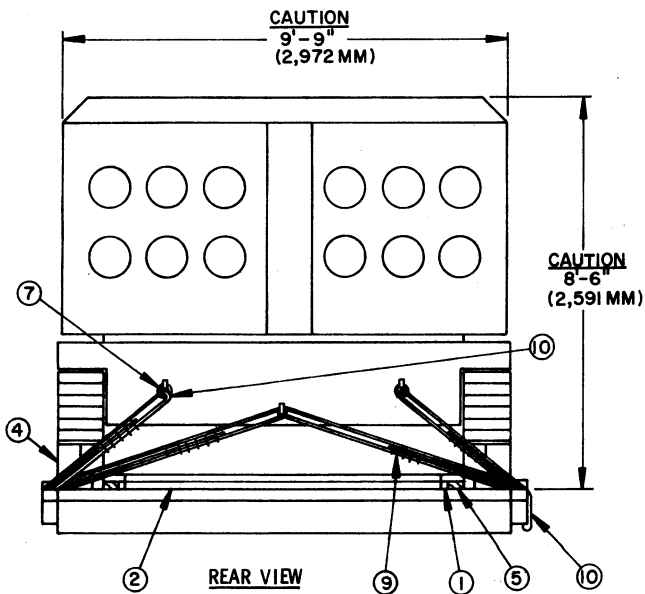


APPLICATION OF STAGGERED NAILING PATTERN.
SEE GENERAL NOTES "G" AND "H" ON PAGE 3.



ISOMETRIC VIEW



REAR VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" X 15'-0" (51 MM X 152 MM X 4572 MM) (DOUBLED) (2 REQD). PRE-POSITION AND PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/1 NAIL EVERY 4" (102 MM). SEE THE "SIDE BLOCKING ASSEMBLY" DETAIL ON PAGE 4 AND GENERAL NOTE "H" ON PAGE 3.
- ② LATERAL BRACING, 2" X 6" (51 MM X 152 MM) BY CUT-TO-FIT (DOUBLED) (3 REQD). PRE-POSITION AND PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/1 NAIL EVERY 4" (102 MM). SEE THE "SIDE BLOCKING ASSEMBLY" DETAIL ON PAGE 4.
- ③ FRONT CHOCK BLOCK (4 REQD). SEE THE DETAIL ON PAGE 5. USE TWO EACH SIDE-BY-SIDE, CENTERED IN FRONT OF EACH VEHICLE TRACK. LOCATE THE BEVELED END OF EACH BLOCK AGAINST THE TRACK. TOENAIL THRU HEEL OF EACH BLOCK TO THE CAR FLOOR W/2 NAILS. TOENAIL ONE SIDE OF EACH BLOCK TO THE CAR FLOOR W/2 NAILS.
- ④ REAR CHOCK BLOCK (4 REQD). SEE THE DETAIL ON PAGE 5. USE TWO EACH SIDE-BY-SIDE, CENTERED BEHIND EACH VEHICLE TRACK. LOCATE THE BEVELED END OF EACH BLOCK AGAINST THE TRACK. TOENAIL THRU HEEL OF EACH BLOCK TO THE CAR FLOOR W/2 NAILS. TOENAIL ONE SIDE OF EACH BLOCK TO THE CAR FLOOR W/2 NAILS.
- ⑤ SIDE CLEAT, 2" X 4" X 12" (51 MM X 102 MM X 305 MM) (8 REQD). POSITION AGAINST THE INSIDE AND OUTSIDE OF PIECES MARKED ③ AND/OR ④ AS SHOWN. NAIL TO CAR FLOOR W/3 NAILS.
- ⑥ BACK-UP CLEAT, 2" X 6" X 18" (51 MM X 152 MM X 457 MM) (DOUBLED) (4 REQD). CENTER AGAINST THE ENDS OF PIECES MARKED ③ AND/OR ④. PLACE THE SECOND PIECE DIRECTLY ON TOP OF THE FIRST AND NAIL THRU BOTH PIECES AND INTO THE CAR FLOOR W/4 NAILS.
- ⑦ SHACKLE, SIZE 7/8" (4 REQD). INSTALL AS SHOWN ONE EACH AT TWO FRONT AND TWO REAR TIE-DOWN POINTS ON VEHICLE.
- ⑧ STEEL WIRE ROPE, 5/8" DIAMETER, 17.9 TONS (8 REQD). INSTALL CABLE AS SHOWN TO FORM A COMPLETE LOOP FROM THE STAKE POCKET ON THE CAR, THRU A LIFT POINT AND/OR TIE-DOWN POINT, AND BACK TO THE STAKE POCKET. SEE THE "CABLE JOINT" DETAIL ON PAGE 4. SEE GENERAL NOTE "F" ON PAGE 3.
- ⑨ CLIP, WIRE ROPE, SIZE 5/8" (52 REQD). USE FIVE (5) PER CABLE JOINT, AND ONE (1) PER THIMBLE.
- ⑩ THIMBLE, STANDARD, SIZE 5/8" (12 REQD). USE ONE (1) PER RAILCAR TIEDOWN FACILITY AND USE ONE (1) PER LADING TIEDOWN FACILITY, EXCEPT AT PINTLE. SECURE TO WIRE ROPE MARKED ⑧ W/1 CLIP PER THIMBLE.

GENERAL NOTES

- 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 EUROPEAN RAILCAR (SAMMP 705) 36'-9" (11,200 MM) LONG BY 10'-4" (3,150 MM) WIDE.
- D. LADING DATA:
 DIMENSIONS-----22'-10-1/2" (6,972 MM) LONG BY 9'-9" (2,972 MM) WIDE BY 8'-6" (2,591 MM) HIGH.
 GROSS WEIGHT---42,772 POUNDS (APPROX) (19,401 KG).
- E. REMOVE ALL POSTS FROM SIDE OF CAR AND PLACE IN RACKS UNDER CAR.
- F. TENSIONING OF THE STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO CABLE GRIPPERS ON 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 ANCHOR. THE NUTS ON THE CABLE CLIPS SHALL BE TIGHTENED TO A TORQUE OF APPROXIMATELY 135 TO 150 FOOT-POUNDS. A PROPER TORQUE CAN BE ACHIEVED BY USING A WRENCH WHICH HAS A HANDLE THAT IS AT LEAST 24" LONG.
- G. **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.
- H. NAILS USED FOR FLOOR LINE 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 CAR FLOOR. SEE THE "NAIL CHART" AT THE UPPER LEFT AND THE "TYPICAL NAILING OF FLOOR LINE BLOCKING TO CAR FLOOR" DETAIL ON PAGE 6. 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.
- J. 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.
- K. A LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS OF THE DEPICTED LOADS IS SHOWN ON THIS PAGE. OTHER TYPES OF RAILCARS CAN BE USED PROVIDING THESE 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.

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" (89 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 "H".

BILL OF MATERIAL		
LUMBER	LENGTH	BOARD FEET
2" X 4" (51 MM X 102MM)	8 FT	6
2" X 6" (51 MM X 152 MM)	103 FT	103
6" X 12" (152 MM X 305 MM)	10 FT	60
NAILS	NO. REQD	WEIGHT
SIZE AS REQD	184	14 LBS
ROPE, STEEL WIRE, 5/8" -----	120' REQD -----	83 LBS
CLIP, 5/8" -----	52 REQD -----	32 LBS
SHACKLE, 7/8" -----	4 REQD -----	16 LBS
THIMBLE, STANDARD 5/8" -----	12 REQD -----	3 LBS

REVISION

REVISION: NO. 1, DATED OCTOBER 1984. CONSISTS OF:
 ADDING "LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS".

LIST OF RAILCARS THAT MAY BE USED FOR SHIPMENTS			
TYPE OF RAILCAR	LENGTH OF RAILCAR	NO. OF ITEMS	MAXIMUM TOTAL WEIGHT (APPROX) OF ITEMS
SAMMP ---- 705	36'-9" (11,200MM)	1	42,772 LBS (19,401 KG)
RLMMP5 --- 650	42'-8-1/8" (13,020MM)	1	42,772 LBS (19,401 KG)
RLMMP ---- 700	31'-6" (9,500MM)	1	42,772 LBS (19,401 KG)
*KLS/KBS-442/443	41'-0-1/8" (12,500MM)	1	42,772 LBS (19,401 KG)

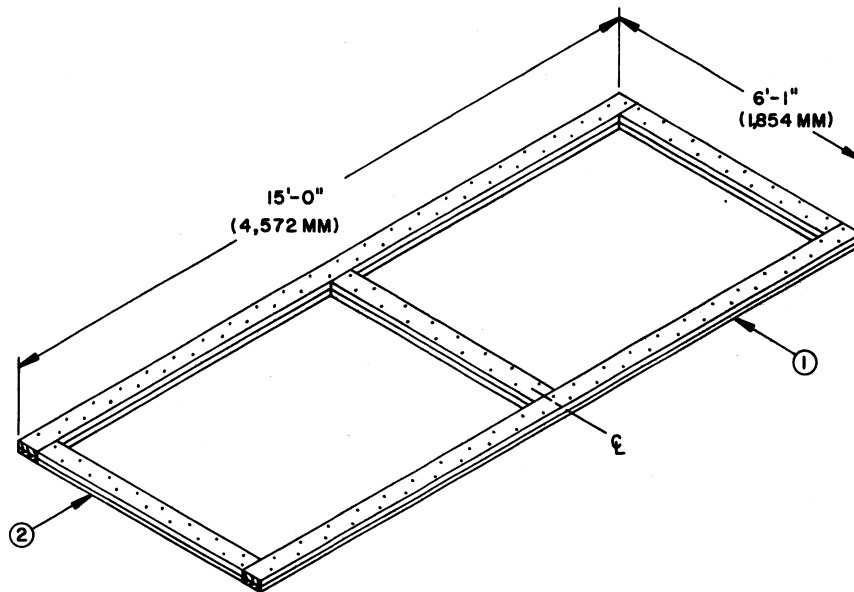
* EVERY EFFORT SHOULD BE MADE TO OBTAIN THE OTHER RAILCARS LISTED IN THIS CHART BEFORE ATTEMPTING TO OBTAIN KLS/KBS RAILCARS.

MATERIAL SPECIFICATIONS

- LUMBER** ----- : DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE FROM MATERIAL DEFECTS. REF: FED SPEC MM-L-751.
- NAILS** ----- : COMMON. REF: FED SPEC FF-N-105.
- 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 I, CLASS 1.
- THIMBLE** ----- : COMMERCIAL GRADE.
- SHACKLE** ----- : TYPE IV, CLASS 4. REF: FED SPEC RR-C-271.

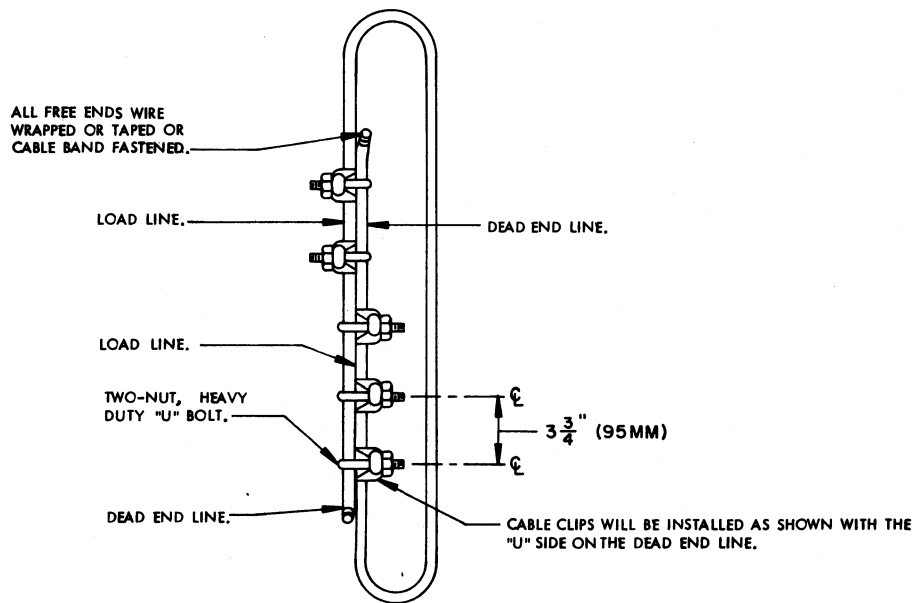
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SELF PROPELLED		
LOADER LAUNCHER -----	1 -----	42,772 LBS (19,401 KG)
DUNNAGE -----		571 LBS (260 KG)
TOTAL WEIGHT -----		43,343 LBS (19,661 KG)



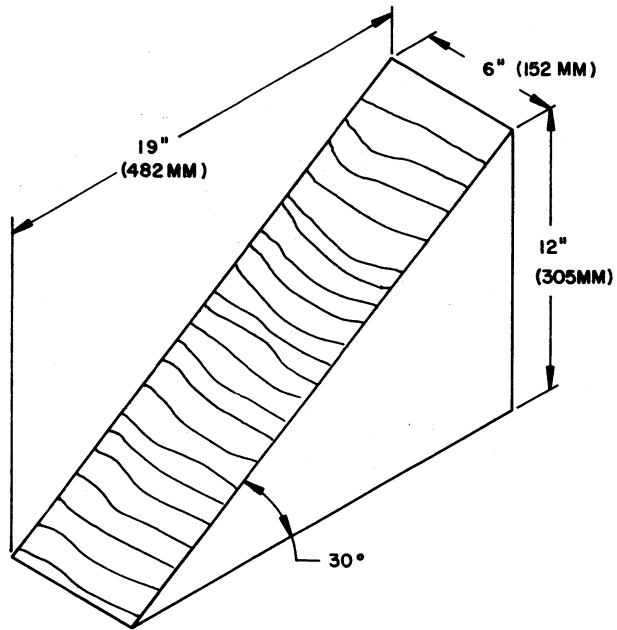
SIDE BLOCKING ASSEMBLY

REFER TO KEY NUMBERS ① AND ② ON PAGE 2 FOR MATERIAL AND NAILING SPECIFICATIONS.



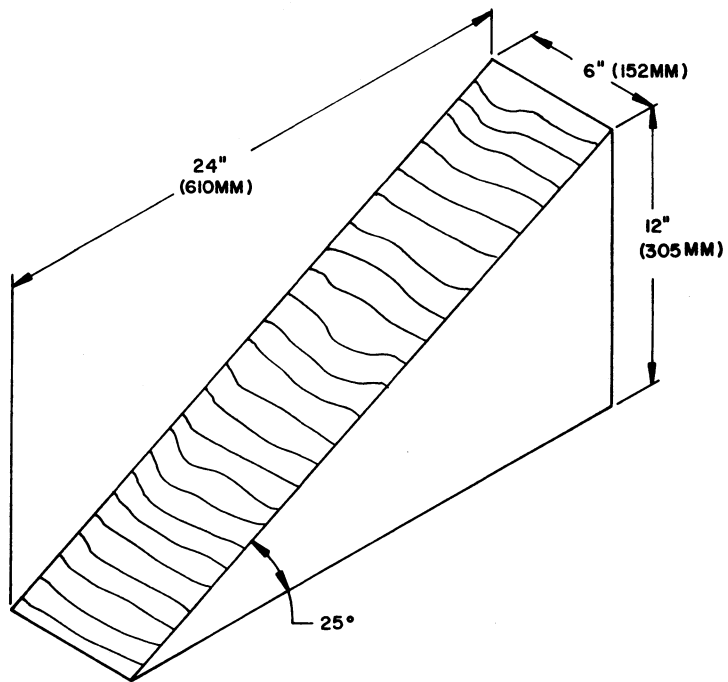
CABLE JOINT

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.



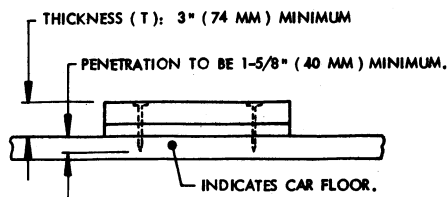
FRONT CHOCK BLOCK

REFER TO KEY NUMBER ③ ON PAGE 2 FOR NAILING SPECIFICATIONS. NOTE: IF 6" X 12" (152 MM X 305 MM) MATERIAL IS NOT AVAILABLE, THE FRONT CHOCK BLOCKS MAY BE CONSTRUCTED FROM FOUR (4) THICKNESSES OF 2" X 12" (51 MM X 305 MM) MATERIAL. LAMINATE W/4 NAILS.



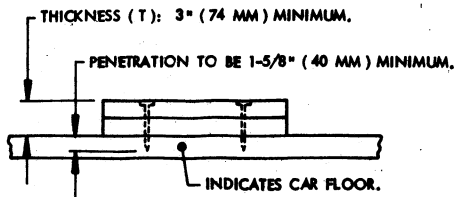
REAR CHOCK BLOCK

REFER TO KEY NUMBER ④ ON PAGE 2 FOR NAILING SPECIFICATIONS. NOTE: IF 6" X 12" (152 MM X 305 MM) MATERIAL IS NOT AVAILABLE, THE REAR CHOCK BLOCKS MAY BE CONSTRUCTED FROM FOUR (4) THICKNESSES OF 2" X 12" (51 MM X 305 MM) MATERIAL. LAMINATE W/4 NAILS.



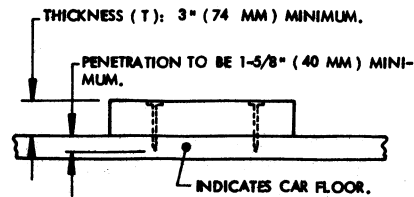
MIXED THICKNESSES OF LUMBER SHOWN

DETAIL A



DOUBLED 2' X 6' LUMBER SHOWN

DETAIL B



4' X 6' 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 DOUBLED PIECES OF LUMBER WHICH ARE 2" X 6" IN SIZE FOR SIDE BLOCKING, AS TYPICALLY SHOWN IN DETAIL B ABOVE. IT IS PERMISSIBLE TO USE 4" X 6" LUMBER, OR MIXED THICKNESSES OF LUMBER, AS TYPICALLY SHOWN IN DETAILS A AND C, IN LIEU OF THE SPECIFIED DOUBLED 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)