

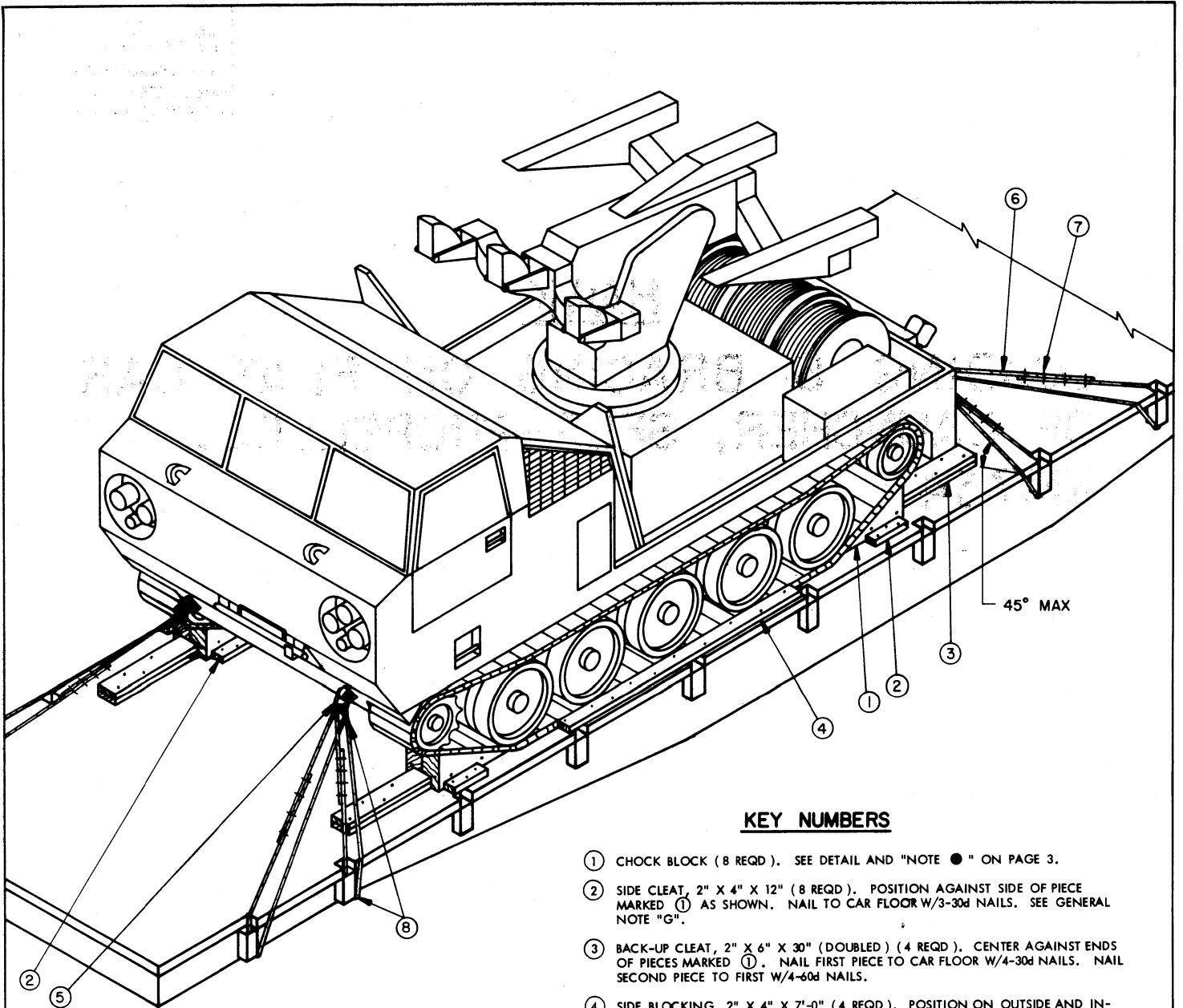
APPROVED BY
 MECH DIV AAR, THEIR LETTER
 DATED 8 APR 1968 FILE LR-11-0
 SIGNED *Joseph C. Mitchell*
 DATE 8 APRIL 1968 MTT-TG
 TEA, MTMTS, FT. EUSTIS, VA.

HAWK

LOADING & BRACING ON FLAT CAR OF LAUNCHER, SELF-PROPELLED, XM754

DRAFTSMAN JPH	PROJ ENG <i>DIW/llh</i>	AMCEN-TECH <i>Stalmer</i>	SUBMITTED <i>W.B. Harding, Col.</i>
CHECKED <i>Nee/JDS</i>	SEC ARMO CTR <i>llh</i>	QMSI-SHED <i>A.D.L.</i>	COMMANDING OFFICER, SAVANNAH ARMY DEPOT
REVISIONS			APPROVED <i>Andrew W. Reid</i>
			ARMY MISSILE COMMAND
			APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND <i>M. L. ...</i>
			U. S. ARMY MATERIEL COMMAND
			23 APRIL 1968
			CLASS DIVISION DRAWING FILE
			19 48 7164 GSE SHA43

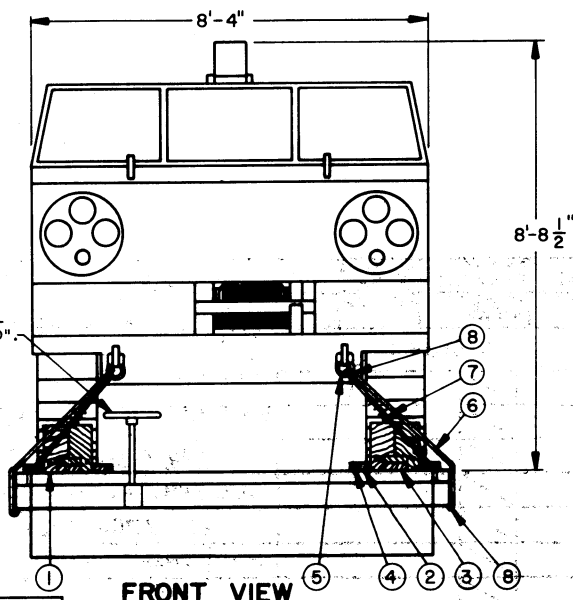
DO NOT SCALE



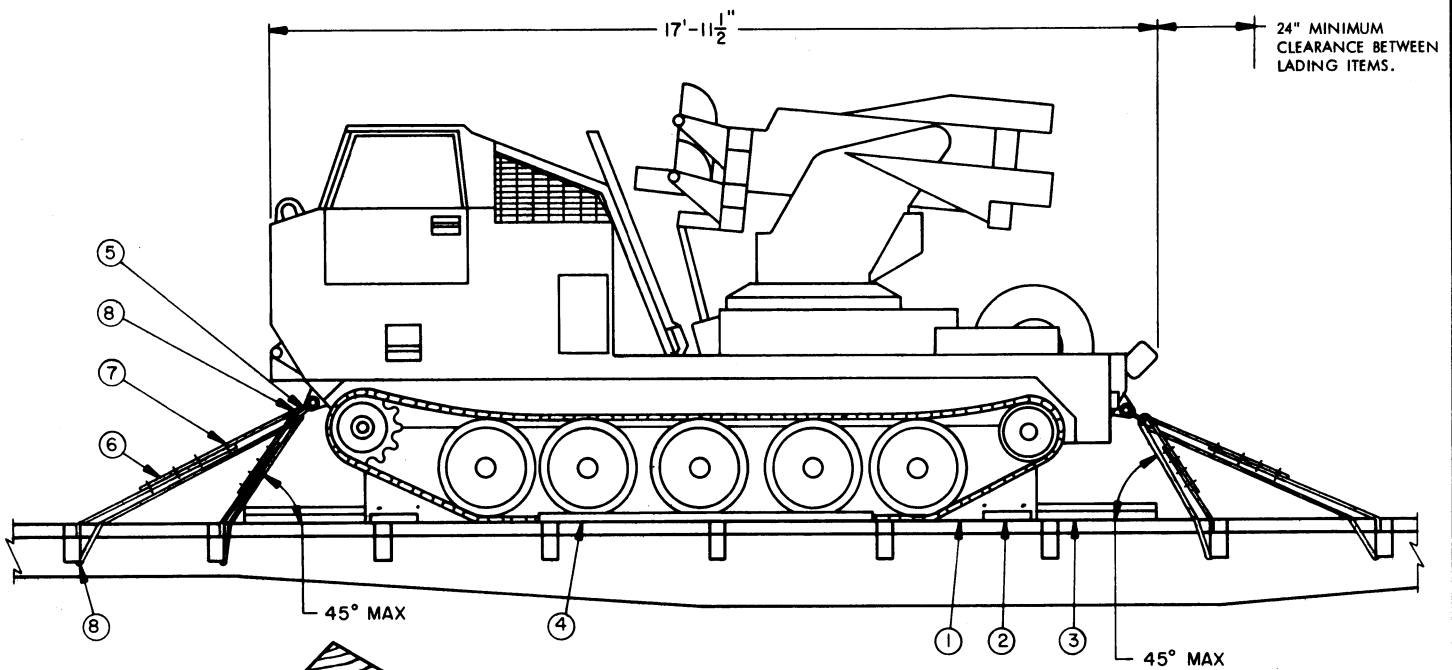
KEY NUMBERS

- ① CHOCK BLOCK (8 REQD). SEE DETAIL AND "NOTE ●" ON PAGE 3.
- ② SIDE CLEAT, 2" X 4" X 12" (8 REQD). POSITION AGAINST SIDE OF PIECE MARKED ① AS SHOWN. NAIL TO CAR FLOOR W/3-30d NAILS. SEE GENERAL NOTE "G".
- ③ BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (4 REQD). CENTER AGAINST ENDS OF PIECES MARKED ①. NAIL FIRST PIECE TO CAR FLOOR W/4-30d NAILS. NAIL SECOND PIECE TO FIRST W/4-60d NAILS.
- ④ SIDE BLOCKING, 2" X 4" X 7'-0" (4 REQD). POSITION ON OUTSIDE AND INSIDE OF EACH TRACK. NAIL TO CAR FLOOR W/1-30d NAIL EVERY 8".
- ⑤ SHACKLE, SIZE 7/8" (4 REQD). INSTALL ONE EACH AT TWO FRONT AND TWO REAR TIE DOWN POINTS ON VEHICLE. NOTE: NOT REQUIRED IF VEHICLE IS ALREADY EQUIPPED WITH SHACKLES WHEN OFFERED FOR SHIPMENT.
- ⑥ STEEL WIRE ROPE, 1/2" DIAMETER, 11.5 TONS (8 REQD). INSTALL CABLE AT 45° MAXIMUM ANGLES AS SHOWN AND TO FORM A COMPLETE LOOP FROM STAKE POCKET ON CAR THRU LADING TIE DOWN DEVICE AND BACK TO STAKE POCKET. SEE GENERAL NOTES "C" AND "E". NOTE: CABLE OF A LARGER SIZE MAY BE USED IF SPECIFIED CABLE IS NOT AVAILABLE.
- ⑦ CLIP, SIZE 1/2" (48 REQD). FOUR (4) PER CABLE AND ONE (1) PER THIMBLE. SEE GENERAL NOTE "C".
- ⑧ THIMBLE, STANDARD, SIZE 1/2" (16 REQD). ONE (1) PER STAKE POCKET AND ONE (1) PER LADING TIE DOWN DEVICE. SECURE TO WIRE ROPE MARKED ⑥ W/1-CLIP PER THIMBLE. SEE GENERAL NOTE "C".

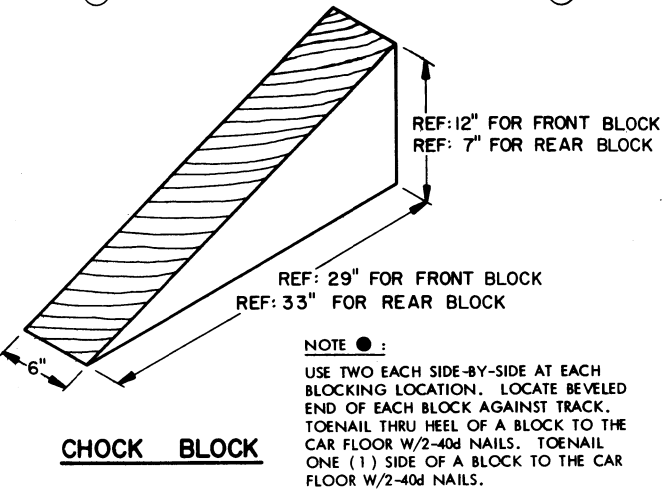
ISOMETRIC VIEW



FRONT VIEW



ELEVATION VIEW



CHOCK BLOCK

GENERAL NOTES

- A. THE LOAD AS SHOWN IS BASED ON A FLATCAR 9'-2" WIDE (PLATFORM); WIDER CARS CAN BE USED. ONLY ONE UNIT OF LADING IS SHOWN; HOWEVER, MULTIPLES OF UNITS, AS SHOWN OR DISSIMILAR IN NATURE, MAY BE LOADED ON A CAR. THE NUMBER OF UNITS TO BE LOADED ON A CAR WILL BE DEPENDENT ON THE SIZE OF THE CAR USED OR THE QUANTITIES OF UNITS TO BE SHIPPED WITH THE VIEW OF FULL UTILIZATION OF CARRIER EQUIPMENT.
- B. LADING DATA:
ITEM DIMENSION ----- 17'-11-1/2" LONG X 8'-4" WIDE X 8'-8-1/2" HIGH.
ITEM GROSS WEIGHT --- 22,650 POUNDS (APPROX).
- C. REFER TO ORD DWG 19-48-C-ORDJU-588, "WIRE ROPE AND ANNEALED WIRE APPLICATION METHODS FOR SECURING LADING ON RAIL & MOTOR CARRIER EQUIP", FOR PROPER TIE DOWN APPLICATION, EXCEPT NUTS ON 1/2" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 85 TO 95 FOOT POUNDS.
- D. REFER TO ASSOCIATION OF AMERICAN RAILROADS MANUAL, "GENERAL RULES GOVERNING THE LOADING OF COMMODITIES ON OPEN TOP CARS", FOR APPLICABLE LOADING RULES: PREFACE, 1-A, 2, 3, 4, 5, 9, 14, 15, AND 19-A.
- E. TO ACHIEVE PROPER CABLE TENSION, EMPLOY TWO (2) CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST. NOTE: CABLES WILL BE TENSIONED SUFFICIENTLY TO CAUSE THE BODY OF THE TRACK VEHICLE TO DEPRESS APPROXIMATELY ONE INCH (1").
- F. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE UNLESS OTHERWISE DIMENSIONED. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE.
- G. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. 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.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	36	24
2" X 6"	20	20
6" X 8"	6	24
6" X 12"	5	30
NAILS	NO. REQD	POUNDS
30d (4-1/2")	80	4
40d (5")	32	2
60d (6")	16	1-3/4
ROPE, STEEL WIRE, 1/2" DIA	128 FT REQD	56 LBS
CLIP, 1/2"	48 REQD	21 LBS
THIMBLE, STANDARD, 1/2"	16 REQD	4 LBS
SHACKLE, 7/8"	4 REQD	9 LBS

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 SAME SIZE.
- ROPE** --: STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 11.5 TONS, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO. (OR EQUAL). REF: FED SPEC RR-W-410.
- CLIPS** --: "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL).
- SHACKLE**: MIL-S-5675A.

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
LAUNCHER, -----	1	22,650 LBS
XM754		
DUNNAGE -----		353 LBS
TOTAL WEIGHT ----		23,003 LBS

