HAWK

LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF LOADER-TRANSPORTER, XM501 SERIES

REVISIONS			
4	JUL 74		Wesley E. Gilleland A. J. Ehringer

DRAFTSMAN JBL | PROJ ENG MWD

CHECKER GRG | LOG ENGRG OFFICE AMSMI-SP

APPROVED
Wesley E. Gilleland
U. S. ARMY MISSILE COMMAND

APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL COMMAND
A. J. Ehringer
USAMC AMMO CENTER

U.S. ARMY MATERIEL COMMAND

JULY 1974

CLASS	DIVISION	DRAWING	FILE
19	48	7415	GSE 11HA33

THIS DRAWING, INCLUDING REVISION 4, SUPERSEDES DRAWING 19-48-7415-GSE 11HA33, DATED 25 OCTOBER 1960, AND ALL REVISIONS THERETO, THROUGH NUMBER 3, DATED NOVEMBER 1971.

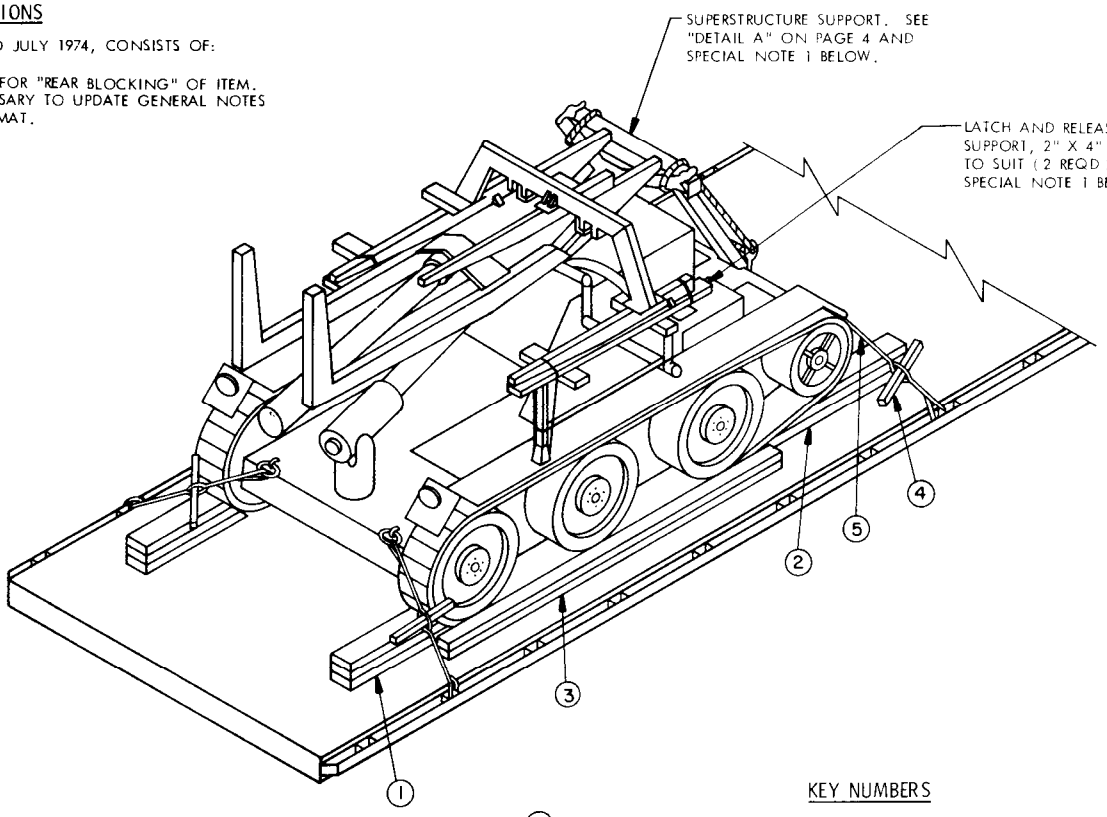
DO NOT SCALE

PROJECT GSE 95-60

REVISIONS

REVISION NO. 4, DATED JULY 1974, CONSISTS OF:

1. CHANGING DETAIL FOR "REAR BLOCKING" OF ITEM.
2. CHANGES AS NECESSARY TO UPDATE GENERAL NOTES AND DRAWING FORMAT.



ISOMETRIC VIEW

KEY NUMBERS

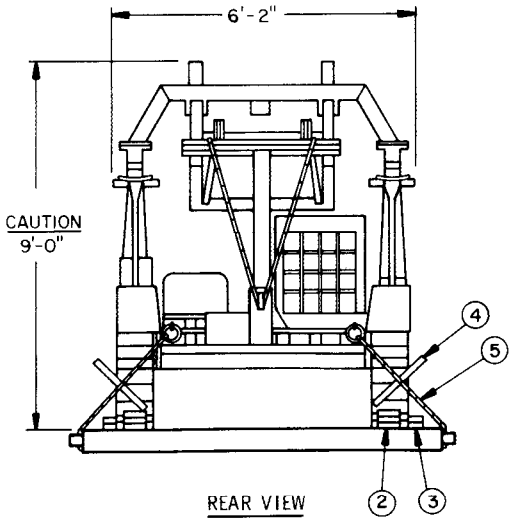
(1) FRONT CHOCK BLOCK (2 REQD). SEE THE DETAIL ON PAGE 4. LOCATE BEVELED END OF BLOCK AGAINST THE TRACK. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE W/5-20d NAILS. SEE GENERAL NOTES "K" AND "L" ON PAGE 3.

(2) REAR CHOCK BLOCK (2 REQD). SEE THE DETAIL ON PAGE 4. LOCATE BEVELED END OF BLOCK AGAINST THE TRACK. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. POSITION EACH ADDITIONAL PIECE SNUGLY AGAINST THE TRACK AND NAIL EACH PIECE W/5-20d NAILS.

(3) SIDE BLOCKING, 2" X 4" X 8'-0" (DOUBLED) (2 REQD). NAIL FIRST PIECE TO TRAILER FLOOR W/1-12d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.

(4) WIRE TWISTER, 2" X 2" BY LENGTH TO SUIT (4 REQD). SEE GENERAL NOTE "F" ON PAGE 3.

(5) SIXTEEN (16) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). PASS THRU TIE DOWN RING ON LOADER-TRANSPORTER AND TRAILER TIE DOWN FACILITY TO FORM A COMPLETE LOOP. TWIST TAUT WITH PIECE MARKED (4). SEE GENERAL NOTES "F", "H" AND "J" ON PAGE 3. ALSO, SEE SPECIAL NOTE 2 BELOW, AND THE "SPECIAL PROVISIONS" ON PAGE 4.

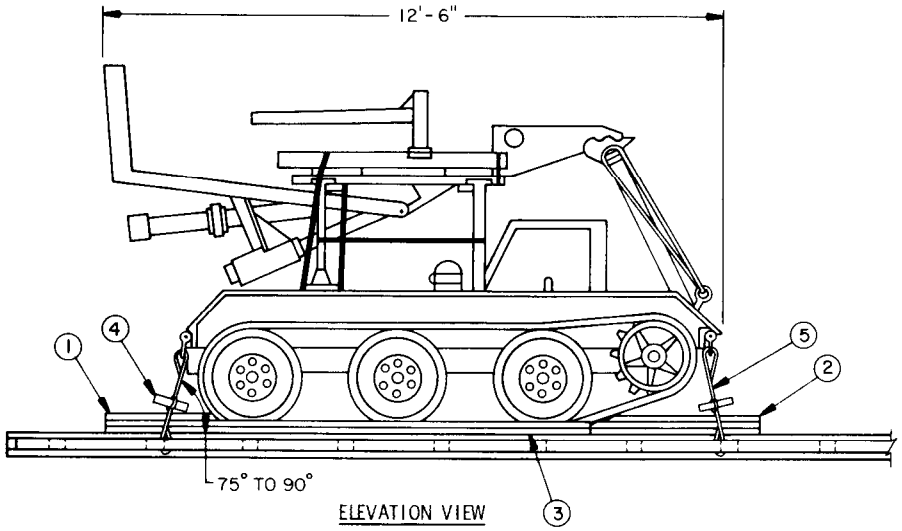


REAR VIEW

SPECIAL NOTES:

1. PREPARATION FOR OUTLOADING DICTATES THAT THE SUPERSTRUCTURE BE TURNED, COLLAPSED AND SECURED TO "DETAIL A" AND REAR CENTER SUPPORT USING TWISTED WIRE AS SHOWN. LATCH AND RELEASE ASSEMBLY MUST BE DISCONNECTED AND SECURED TO THE OUTSIDE MISSILE SUPPORT PADS USING 2" X 4" BY LENGTH TO SUIT AND STEEL STRAPPING AS SHOWN. "DETAIL A" AND 2" X 4" DUNNAGE ARE NOT INCLUDED IN THE BILL OF MATERIAL.

2. STEEL WIRE ROPE (3/8" DIA., PLAIN, PREFORMED, REGULAR LAY, 6.56 TONS, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO. OR EQUAL. REFERENCED SPEC RR-W-410) MAY BE USED IN LIEU OF TWISTED WIRE. INSTALL CABLE TO APPROXIMATE THE ANGLES SHOWN ON TWISTED WIRE INSTALLATION ABOVE AND FORM A COMPLETE LOOP FROM TRAILER TIEDOWN FACILITY, THRU LADING TIE DOWN DEVICE AND BACK TO TIE DOWN FACILITY. USE FOUR (4) SIZE 3/8" CLIPS PER CABLE JOINT AND ONE (1) PER THIMBLE. USE ONE (1) SIZE 3/8" THIMBLE AT TRAILER TIE DOWN FACILITY AND ONE (1) AT LADING TIE DOWN DEVICE (SECURE W/1-CLIP PER THIMBLE). NUTS ON 3/8" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS.



ELEVATION VIEW

GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.

B. THE LOAD AS SHOWN IS BASED ON A FLAT BED OR "LOW-BOY" TRAILER 8'-0" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. TRAILERS WITH ALL METAL FLOORS WILL NOT BE USED. ONLY ONE UNIT OF LADING IS SHOWN; HOWEVER, MULTIPLES OF UNITS, AS SHOWN OR DISSIMILAR IN NATURE, MAY BE LOADED ON A TRAILER. THE NUMBER OF UNITS TO BE LOADED ON A TRAILER WILL BE DEPENDENT ON THE SIZE OF THE TRAILER USED OR THE QUANTITIES OF UNITS TO BE SHIPPED WITH THE VIEW OF FULL UTILIZATION OF CARRIER EQUIPMENT. SEE GENERAL NOTE "M" AT LEFT.

C. ONLY TRAILERS CAPABLE OF SAFELY TRANSPORTING THE LADING TO DESTINATION WITHOUT DAMAGE WILL BE SELECTED. TRAILERS SELECTED MUST HAVE "SOUND" FLOORS WHICH PROVIDE NAIL RETENTION PROPERTIES EQUAL TO OR BETTER THAN SPECIFIED DUNNAGE LUMBER, AND A SUFFICIENT NUMBER OF TIE DOWN FACILITIES OF A STRENGTH EQUAL TO OR BETTER THAN SPECIFIED LADING TIE DOWN ASSEMBLIES.

D. SHIPMENT GROSS WEIGHT, AXLE DISTRIBUTION OF LADING WEIGHT AND OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.

E. LADING DATA:

ITEM DIMENSIONS ------- 12'-6" LONG X 6'-2" WIDE X 9'-0" HIGH.
ITEM GROSS WEIGHT --- 5,250 POUNDS (APPROX).

F. 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. CAUTION: DURING TIE DOWN INSTALLATION, AVOID CONTACT WITH ALL ELECTRICAL WIRING, VEHICLE CONTROLS AND OTHER APPURTENANCES. METAL FILLERS OR COMPARABLE CUSHIONING MATERIAL MUST BE USED BETWEEN TIE DOWN WIRES AND/OR CABLES AND ALL SHARP EDGES. ALL HAND BRAKES MUST BE "SET" WITH THE HAND LEVERS WIRE TIED OR BLOCKED.

G. SEE "SPECIAL PROVISIONS" ON PAGE 4 FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED.

H. TWISTED WIRE CABLE AND/OR STEEL WIRE ROPE MUST BE TENSIONED SUFFICIENTLY TO CAUSE SLIGHT VEHICLE BODY DEPRESSION, AS APPLICABLE. TENSIONING OF STEEL WIRE ROPE CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE GRIPPERS AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.

J. CAUTION: IT IS RECOMMENDED THAT TWISTED WIRE CABLE BE INSTALLED TO APPROXIMATE ANGLE SHOWN; HOWEVER, IF PLACEMENT OF TRANSPORTER TIE DOWN FACILITIES PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT WIRE TIE DOWNS ON THE SAME SIDE OF LADING ARE INSTALLED SO THEIR RETENTION FORCES ACT IN OPPOSITE LONGITUDINAL DIRECTIONS.

K. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-5/8" THICK BY 3-5/8" WIDE OR 1-1/2" THICK BY 3-1/2" WIDE.

L. NOTICE: A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, 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.

(CONTINUED AT LEFT)

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
LOADER-TRANSPORTER	1	5,250 LBS
DUNNAGE		192 LBS
TOTAL WEIGHT		5,442 LBS

(GENERAL NOTES CONTINUED)

M. THREE (3) LOADER-TRANSPORTERS CAN BE SHIPPED ON A 40'-0" LONG FLAT BED TRAILER. HOWEVER, WHEN POSITIONING THE UNITS ON THE TRAILER, ADJACENT UNITS MUST BE ALTERNATELY OFFSET 4" FROM THE LONGITUDINAL CENTER LINE OF THE TRAILER TO PRECLUDE OVERLAPPING OF CHOCK BLOCKS FOR EACH UNIT AND TO PROVIDE CLEARANCE FOR THEIR INSTALLATION. NOTE: IF THE NAILABLE SURFACE ACROSS THE WIDTH OF THE TRAILER DOES NOT PERMIT NAILING THE SIDE BLOCKING PIECES MARKED (3) AGAINST THE OUTSIDE OF THE TRANSPORTER TRACK ALONG THE EDGE OF THE TRAILER, IT WILL BE NECESSARY TO PRE-POSITION BOTH SIDE BLOCKING PIECES FOR EACH LOADER-TRANSPORTER SO AS TO CONTACT THE INNER EDGES OF THE TRACKS.

*BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	6	2
2" X 4"	32	22
2" X 6"	37	37
NAILS	NO. REQD	POUNDS
12d (3-1/4")	76	1-1/4
20d (4")	40	1-1/2
WIRE, NO. 8 GAGE --------- 400' REQD ---------- 37 LBS		

*SEE SPECIAL NOTE 1 ON PAGE 2.

MATERIAL SPECIFICATIONS

LUMBER ---------: DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE OF MATERIAL DEFECTS. REF: FED SPEC MM-L-751.

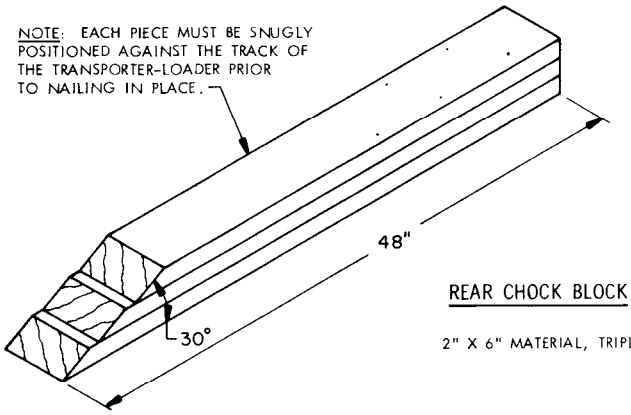
NAILS ---------: COMMON, CEMENT COATED OR CHEMICALLY ETCHED. REF: FED SPEC FF-N-105. ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.

WIRE ----------: ANNEALED, BLACK. REF: FED SPEC QQ-W-461.

ROPE ----------: STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 6 X 19, FLEXIBLE IWRC MACWHYTE WIRE ROPE CO. (OR EQUAL). REF: FED SPEC RR-W-410.

CLIP ----------: "U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL) REF: FED SPEC FF-C-450, TYPE I, CLASS I.

NOTE: EACH PIECE MUST BE SNUGLY POSITIONED AGAINST THE TRACK OF THE TRANSPORTER-LOADER PRIOR TO NAILING IN PLACE.



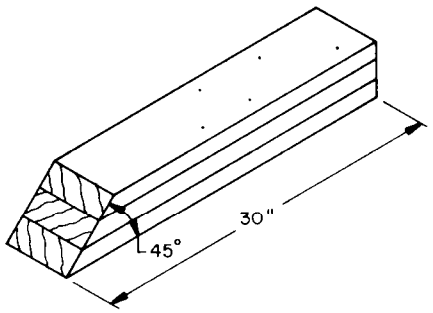
REAR CHOCK BLOCK

2" X 6" MATERIAL, TRIPLED.

SPECIAL PROVISIONS:

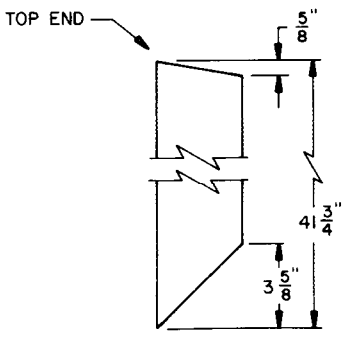
LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED STRANDED ANNEALED WIRE TIE DOWN DUNNAGE MATERIALS PROVIDING THE FOLLOWING CONDITIONS ARE MET:

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING OR DEFORMATION OF LADING TIE DOWN FACILITIES.
2. ONE (1) LINE OF 1/4" CHAIN MAY BE SUBSTITUED FOR EACH STRANDED WIRE TIE-DOWN CABLE MARKED (5). CHAINS SHALL BE INSTALLED AT THE SAME LOCATIONS SHOWN FOR STRANDED WIRE CABLES AND IN THE SAME MANNER AS DIRECTED IN GENERAL NOTE "J" ON PAGE 3.
3. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE USED.
4. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR AND ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION.
5. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY-WIRE TIED TO PREVENT ACCIDENTAL OPENING OR LOOSENING IN TRANSIT.
6. ANTI-CHAFING MATERIAL MUST BE PLACED AND SECURED BETWEEN CHAINS AND THE LADING AT ALL POINTS OF CONTACT, EXCEPT AT DEFINITIVE TIE DOWN POINTS.

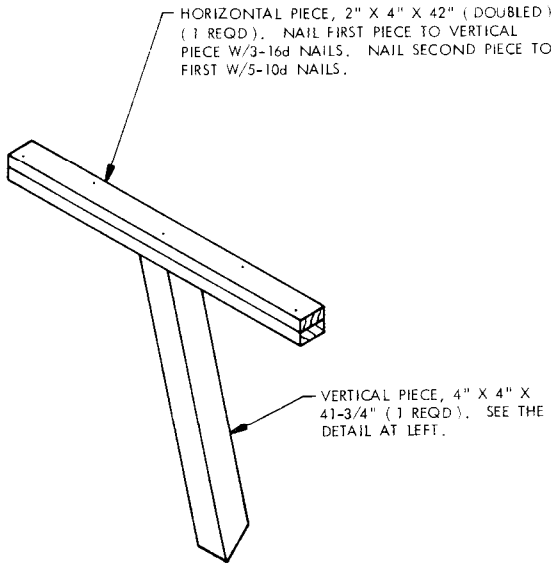


FRONT CHOCK BLOCK

2" X 6" MATERIAL, TRIPLED.



VERTICAL PIECE



DETAIL A