

AADCP

LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF SHELTER, AN/TSQ-73 (MISSILE MINDER)

INDEX

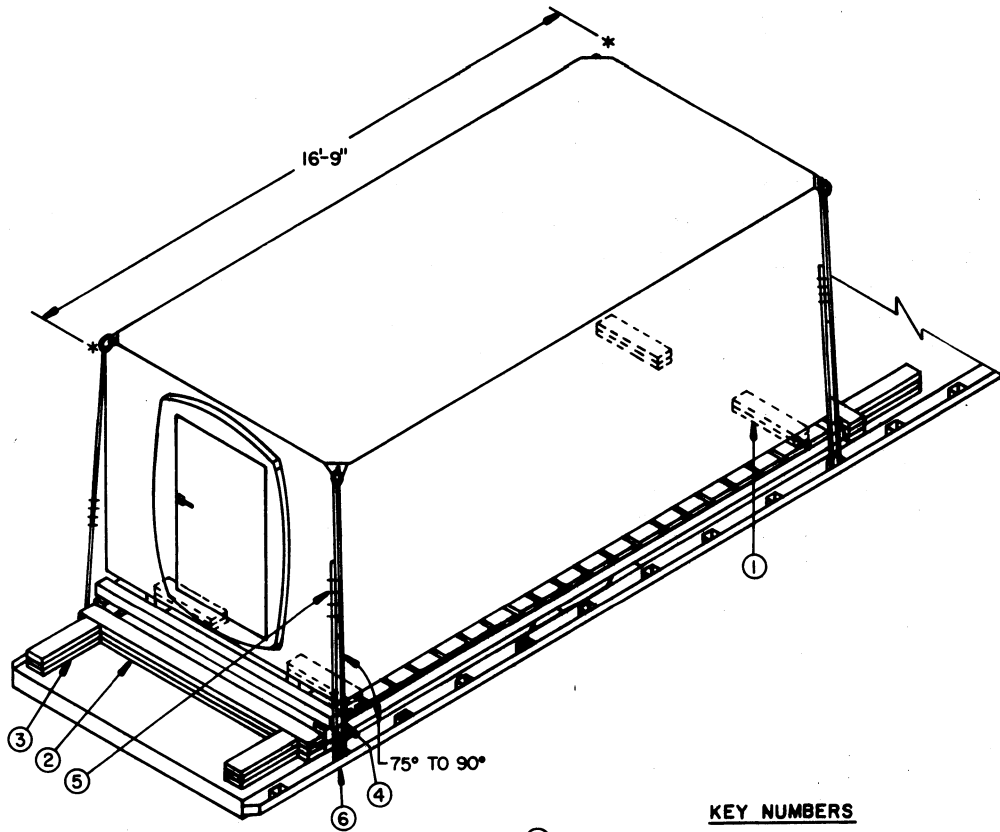
<u>ITEM</u>	<u>PAGE(S)</u>
GENERAL NOTES, AND MATERIAL SPECIFICATIONS-----	3
SHELTER, AN/TSQ-73 (UNCRATED-MOUNTED ON SKID BASE)-----	2,3
SHELTER, AN/TSQ-73 (CRATED)-----	4,5
DETAILS-----	6

REVISIONS				DRAFTSMAN	PROJ. ENG.	AMCM-TDS-PA-RQ	
				<i>W.S. JDS</i>	<i>C.F./JNW</i>		<i>W.S. JDS</i>
				CHECKED BY	LOG ENGRG OFFICE	SIGNATURE	TITLE
					<i>W.S. JDS</i>	<i>S.R.</i>	ASST. - SP
				APPROVED			
				<i>Wesley E. Gilliland</i>			
				U. S. ARMY MISSILE COMMAND			
				APPROVED BY ORDER OF COMMANDING GENERAL			
				U. S. ARMY MATERIEL COMMAND			
				<i>W.S. JDS</i>			
				USAMC AMMO CENTER			
				U. S. ARMY MATERIEL COMMAND			
				MARCH 1973			
				CLASS	DIVISION	DRAWING	FILE
				19	48	7578	GSE IIADI

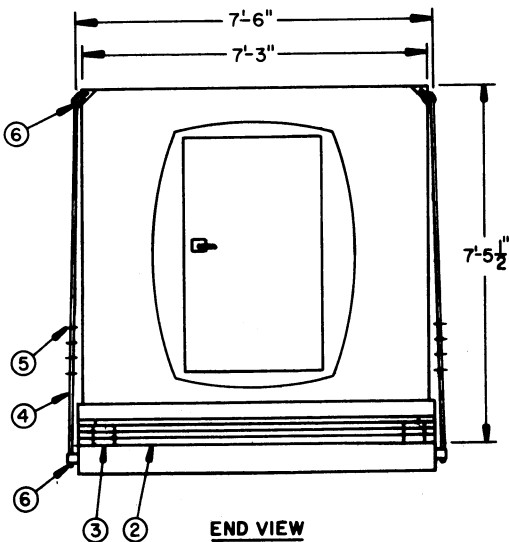
DO NOT SCALE

NOTE ● :

A STANDARD THIMBLE SPECIFIED CAN BE SECURED TO A CABLE WITH A 3/8" CLIP. HOWEVER, IF DESIRED, OR IF THE 3/8" THIMBLE BEING USED IS OF A TYPE WHICH CANNOT BE SECURED TO A CABLE WITH A 3/8" CLIP, A 1/2" CLIP MAY BE USED.



ISOMETRIC VIEW



END VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (4 REQD). PRE-POSITION SO AS TO BE AGAINST THE CRATE SKIDS AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "L" ON PAGE 3.
- ② HEADER, 2" X 6" X 7'-6" (TRIPLD) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-12d NAIL EVERY 8". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 8".
- ③ BACK-UP CLEAT, 2" X 6" X 24" (TRIPLD) (4 REQD). POSITION 3" FROM THE END OF PIECE MARKED ② AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-12d NAILS. NAIL EACH ADDITIONAL PIECE W/6-20d NAILS.
- ④ STEEL WIRE ROPE, 3/8" DIAMETER, 6.56 TONS (4 REQD). INSTALL CABLE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM A TIE DOWN FACILITY ON THE TRAILER THRU A LADING TIE DOWN DEVICE AND BACK TO THE TRAILER TIE DOWN FACILITY. NOTE: CABLE OF LARGER SIZE MAY BE USED. SEE GENERAL NOTES "F", "H", AND "J", AND "SPECIAL PROVISIONS" ON PAGE 3.
- ⑤ CLIP, SIZE 3/8" (24 REQD). USE FOUR (4) PER CABLE AND ONE (1) PER THIMBLE. SEE GENERAL NOTE "F" ON PAGE 3 AND KEY NUMBER ⑥ GUIDANCE BELOW.
- ⑥ THIMBLE, STANDARD SIZE 3/8" (8 REQD). USE ONE (1) PER TRAILER TIE DOWN FACILITY AND ONE (1) PER LADING TIE DOWN DEVICE (ONLY IF IT IS THE PEAR RING OR ROUND RING TYPE). SECURE TO ROPE MARKED ④ W/1-CLIP PER THIMBLE. SEE GENERAL NOTE "F" ON PAGE 3 AND "NOTE ●" ABOVE.

SPECIAL PROVISIONS:

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED WIRE ROPE CABLE AND/OR HOLD-DOWN STRAPPING 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.
2. ONE (1) LINE OF 3/8" CHAIN OR TWO (2) LINES OF 1/4" CHAIN, MAY BE SUBSTITUTED FOR EACH WIRE ROPE CABLE TIE DOWN MARKED ④ ON PAGE 2. CHAINS SHALL BE INSTALLED AT THE SAME LOCATIONS SHOWN FOR WIRE ROPE CABLES AND IN THE SAME MANNER AS DIRECTED IN GENERAL NOTE "J" ON PAGE 3.
3. IN LIEU OF EACH HOLD-DOWN STRAP MARKED ⑤ ON PAGE 4, ONE (1) LINE OF 1/4" CHAIN MAY BE USED. THE STRAPPING BOARD MARKED ④ MUST BE DOUBLED AND LAMINATED W/1-10d NAIL EVERY 12". EACH CHAIN SHALL BE SECURED TO THE LAMINATED BOARD W/4-20d NAILS BY DRIVING EACH NAIL INTO THE BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.
4. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE USED.
5. 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.
6. THE TENSIONING DEVICE OF EACH LOAD BINDER MUST BE SAFETY-WIRE TIED TO PREVENT ACCIDENTAL OPENING OR LOOSENING IN TRANSIT.
7. ANTI-CHAFING MATERIAL MUST BE PLACED AND SECURED BETWEEN CHAINS AND LADING AT ALL POINTS OF CONTACT, EXCEPT AT DEFINITIVE TIE DOWN POINTS AND/OR STRAPPING BOARDS.

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.
- B. THE LOADS AS SHOWN ARE BASED ON FLAT BED OR "LOW-BOY" TRAILERS 8'-0" WIDE WITH WOOD OR WOOD AND METAL FLOORS. 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. **CAUTION:** THE LOADS AS SHOWN MAY REQUIRE "CLEARANCE" CONSIDERATION BECAUSE OF EXCESSIVE LADING SIZE.
- 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 OVER-ALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.
- E. LADING DATA (BARE ITEM):
 - ITEM DIMENSIONS ---- 16'-1" LONG X 7'-3" WIDE X 6'-11" HIGH.
 - ITEM WEIGHT ----- 8,150 POUNDS (APPROX).
 LADING DATA (MOUNTED ON SKID BASE):
 - ITEM DIMENSIONS --- 16'-9" LONG X 7'-6" WIDE X 7'-5-1/2" HIGH.
 - ITEM GROSS WEIGHT - 9,090 POUNDS (APPROX).
 LADING DATA (CRATED):
 - ITEM DIMENSIONS --- 16'-10-1/2" LONG X 8' WIDE X 7'-7-1/4" HIGH.
 - ITEM GROSS WEIGHT - 10,150 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, EXCEPT THAT NUTS ON 3/8" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS.
- G. SEE THE "SPECIAL PROVISIONS" ON THIS PAGE FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED.
- H. TO ACHIEVE PROPER CABLE TENSION, EMPLOY TWO (2) CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- J. **CAUTION:** IT IS RECOMMENDED THAT CABLE TIE DOWNS BE INSTALLED TO APPROXIMATE THE ANGLE SHOWN; HOWEVER, IF PLACEMENT OF TRANSPORTER TIE DOWN FACILITIES PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT CABLE TIE DOWNS ON THE SAME SIDE OF THE 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 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE, OR 1-5/8" THICK BY 5-5/8" 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. 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.
- M. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.

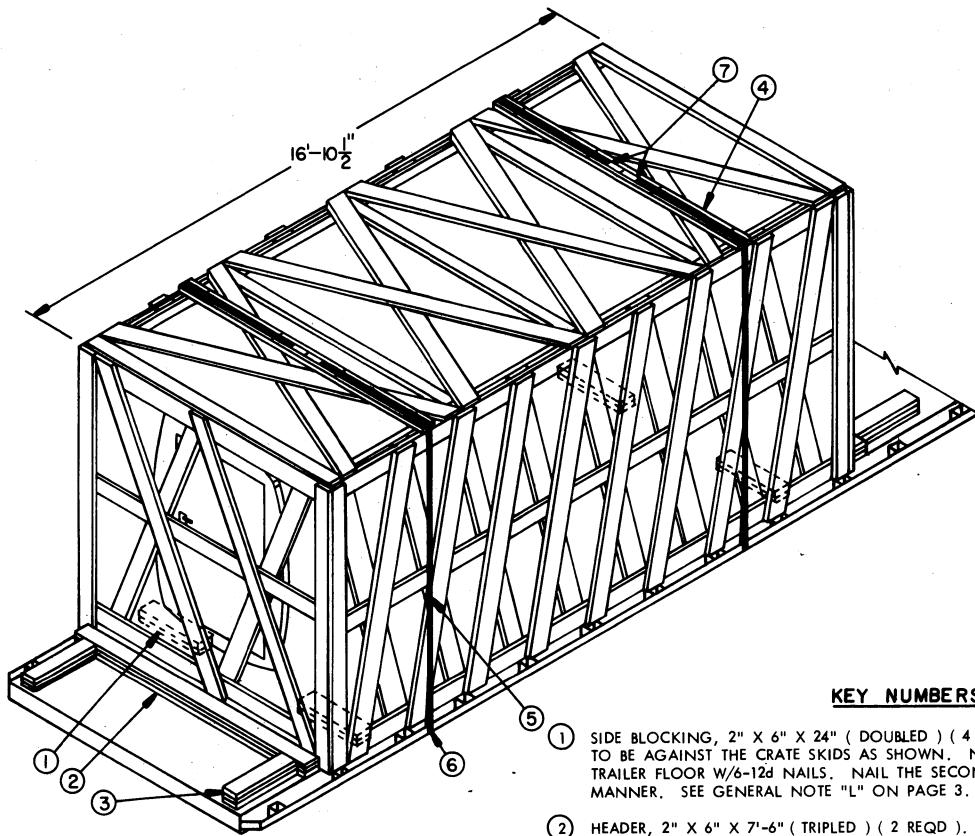
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	85	85
NAILS	NO. REQD	POUNDS
12d (3-1/4")	96	1-3/4
20d (4")	96	3-3/4
ROPE, STEEL WIRE 3/8" DIA. ----- 72' REQD ----- 18 LBS CLIP, 3/8" ----- 24 REQD ----- 7-1/2 LBS THIMBLE, STANDARD 3/8" ----- 8 REQD ----- 1-1/2 LBS		

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 THE SAME SIZE.
- ROPE** ----- : STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 6.56 TONS, 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 1, CLASS 1.
- STRAPPING, STEEL** ----- : TYPE 1, CLASS A, B, OR C. REF: FED SPEC QQ-S-781. (FOR FSN SEE SB-38-100).
- STRAP SEAL, STRAP STAPLE, STAKE**
- POCKET PROTECTOR** ----- : COMMERCIAL GRADE.

LOAD AS SHOWN

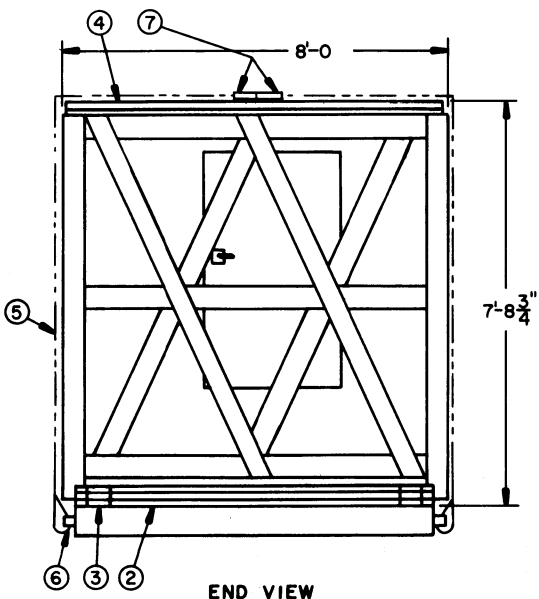
ITEM	QUANTITY	WEIGHT (APPROX)
SHELTER -----	1	8,150 LBS
DUNNAGE -----		245 LBS
SKID BASE -----		940 LBS
TOTAL WEIGHT -----		9,335 LBS



ISOMETRIC VIEW

KEY NUMBERS

- ① SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (4 REQD). PRE-POSITION SO AS TO BE AGAINST THE CRATE SKIDS AS SHOWN. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE GENERAL NOTE "L" ON PAGE 3.
- ② HEADER, 2" X 6" X 7'-6" (TRIPLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR, W/1-12d NAIL EVERY 8". NAIL EACH ADDITIONAL PIECE W/1-20d NAIL EVERY 8".
- ③ BACK-UP CLEAT, 2" X 6" X 24" (TRIPLED) (4 REQD). POSITION CLEAT TO ALIGN WITH THE CRATE SKIDS AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-12d NAILS. NAIL EACH ADDITIONAL PIECE W/6-20d NAILS.
- ④ STRAPPING BOARD, 2" X 6" X 7'-10" (2 REQD).
- ⑤ STEEL STRAPPING, 2" X .050" X 33'-0" (2 REQD). INSTALL EACH STRAP FROM TWO (2) 16'-6" LONG PIECES. STAPLE TO PIECE MARKED ④ W/4 STAPLES. SEE THE "SPECIAL PROVISIONS" ON PAGE 3.
- ⑥ PAD, 2" X .050" STRAP 18" LONG (4 REQD). POSITION UNDER AND SEAL TO PIECE MARKED ⑤. SEE "DETAIL A" ON PAGE 6. ALT: STAKE POCKET PROTECTOR (8 REQD). USE TWO (2) UNDER EACH TIE DOWN FACILITY WITH PIECE MARKED ⑤. SEE "DETAIL B" ON PAGE 6.
- ⑦ SEAL FOR 2" STRAPPING (12 REQD). SEE GENERAL NOTE "M" ON PAGE 3.



END VIEW

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	85	85
NAILS	NO. REQD	POUNDS
12d (3-1/4")	96	1-3/4
20d (4")	96	3-3/4
STRAPPING, STEEL ,2" X .050" ----- 72' REQD ----- 24 LBS		
SEAL, 2" ----- 12 REQD ----- 2-1/2 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SHELTER, CRATED -----	1 -----	10,150 LBS
DUNNAGE -----		245 LBS
TOTAL WEIGHT -----		10,395 LBS

