<u>CHAPARRAL</u>

LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF GUIDED MISSILE SYSTEM, INTERCEPT AERIAL, M54 AND M54AI

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THIS DRAWING, INCLUDING REVISION 1, SUPERSEDES DRAWING 19-48-7566-GSE 11CH4, DATED 30 JANUARY 1970.

		REVIS	SIONS	P.B.		MWD .		m	
	SEP 79	WW	Won J. Goguen	h # 1807 Luvilles					
		/		APPROVED BY ORDER OF COMMANDEM STREET, U.S. ARMY MATERIEL. DEVELOPMENT ARE READINESS COMMAND (DARCON) U.S. ARMY DEFENSE AMMUNITION CERTER AND SCHOOL.					
-	 	K-		U.S. ARMY DARCOM DRAWING SEPTEMBER 1979					
				CLASS	DIVIS	$\overline{}$	DRAWIN		FILE
				19	48	3	756	6	GSE IICH4

DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- THE LOAD AS SHOWN IS BASED ON A FLAT BED OR "LOW-BOY" TRAILER, BY-O" 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. CAUTION; THE LOADS AS SHOWN MAY REQUIRE "CLEARANCE" CONSIDERATION BECAUSE OF EXCESSIVE LADING SIZE.
- 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 ANCHORING FACILITIES OF A STRENGTH EQUAL TO OR BETTER THAN SPECIFIED LADING TIEDOWN ASSEMBLIES. (SEE SPECIAL PROVISIONS OF GENERAL NOTE "G" BELOW). SHIPMENT GROSS WEIGHT, AXLE DISTRIBUTION OF LADING WEIGHT, AND OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.

E. LADING DATA (UNCRATED-MOUNTED ON ALUMINUM BLOCKS):
ITEM DIMENSIONS-----10'-8-1/2" LONG BY 7'-10-3/8" WIDE BY 7'-3-3/4" HIGH.
ITEM GROSS WEIGHT -- 9,720 POUNDS (APPROX).

LADING DATA (UNCRATED-MOUNTED ON SKID BASE) :
ITEM DIMENSIONS-----11'-10-3/4" LONG BY 8'-8" WIDE BY 7'-11-1/4" HIGH.
ITEM GROSS WEIGHT---10,924 POUNDS (APPROX).

LADING DATA (CRATED):

ITEM DIMENSIONS-----11'-11-3/4" LONG BY 8'-9" V/IDE BY 8'-6-7/8" HIGH,
ITEM GROSS WEIGHT--12, 270 POUNDS (APPROX).

- WHEN STEEL STRAPPING 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.
- G. IF THE STAKE POCKETS AND/OR ANCHOR DEVICES ON A TRAILER ARE NOT PROPERLY LOCATED TO PERMIT SECURING OF THE TWO INCH (2") STEEL STRAPPING AS SHOWN, OR IF THE POCKETS AND/OR ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE 2" TIEDOWN STRAPS, STRAPPING MAY BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED. CAUTION: WHEN INSTALLING A TIEDOWN STRAP WHICH ENCOMPASSES BOTH LADING AND TRAILER FRAME AND/OR BED, AVOID TRAILER WHEELS, FIFTH WHEEL PLATE, CONTROLS, AND APPURTENANCES; AND USE PADS ON ALL SHAPP EDGES AS CUSHIONING FOR THE STRAPPING, NOTE: PROVISIONS OF GENERAL NOTE: ""BOVE WILL ALSO APPLY.
- 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 CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS.
- WIRE ROPE CABLE TENSIONING CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE "CRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- SEE THE "SPECIAL PROVISIONS" ON PAGES 5 AND 9 FOR SPECIFICATIONS WHICH MUST BE APPLIED IF CHAINS AND LOAD BINDERS ARE USED IN LIEU OF THE SPECIFIED HOLD-DOWNS.
- 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 AND 6" X 6" MATERIAL IS ACTUALLY 5-1/2" THICK BY 5-1/2"
- M. 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. SEE "APPLICATION OF STAGGERED NAILING PATTERN" ON PAGE 4.

MATERIAL SPECIFICATIONS

<u>LUMBER</u> :	DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE OF MATERIAL DEFECTS, REF: FED SPEC MM-L-751.
NAILS:	COMMON. REF: FED SPEC FF-N-105.
<u>ROPE</u> :	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.
<u>CLIPS</u> ::	"U" BOLT, CROSBY, HEAVY DUTY (OR EQUAL). REF: FED SPEC FF-C-450, TYPE I, CLASS I.
STRAPPING, STEEL:	CLASS I, TYPE I, HEAVY DUTY, FINISH A, B (GRADE 2), OR C. REF: FED SPEC QQ-S-781.
STRAP SEAL:	TYPE D, STYLE I, II, OR IX, CLASS H, REF: FED SPEC QQ-5-781.
STRAP STAPLE, STAKE POCKET PROTECTOR:	COMMERCIAL GRADE.

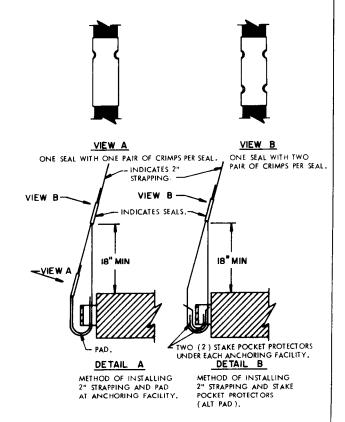
REVISION

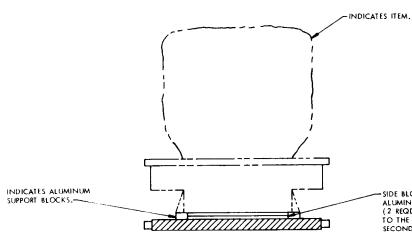
REVISION NO. 1, DATED SEPTEMBER 1979, CONSISTS OF:

DELETING X FROM XM54.
ADDING M54A1 TO THE TITLE,
ADDING PROCEDURE FOR SHIPPING "CRATED" AND "UNCRATED-MOUNTED ON
SKID BASE". ADDING PROCEDURE FOR SHIPPING CHARLO AND CHARACTER SKID BASE".

ADDING "SPECIAL PROVISIONS" FOR USE OF CHAINS AND LOAD BINDERS.

CHANGING PROCEDURES TO CONFORM TO CURRENT STANDARDS.

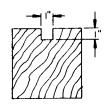




-SIDE BLOCKING, 2" X 6" BY CUT TO FIT BETWEEN ALUMINUM SUPPORT BLOCKS ON ITEM (DOUBLED) (2 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/7-12d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

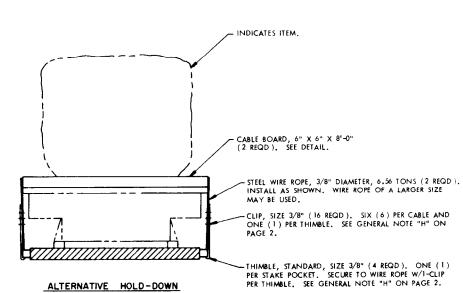
ALTERNATIVE SIDE BLOCKING

MAY BE USED IN LIEU OF PIECES MARKED (2)
ON PAGES 4 AND 5.



CABLE BOARD

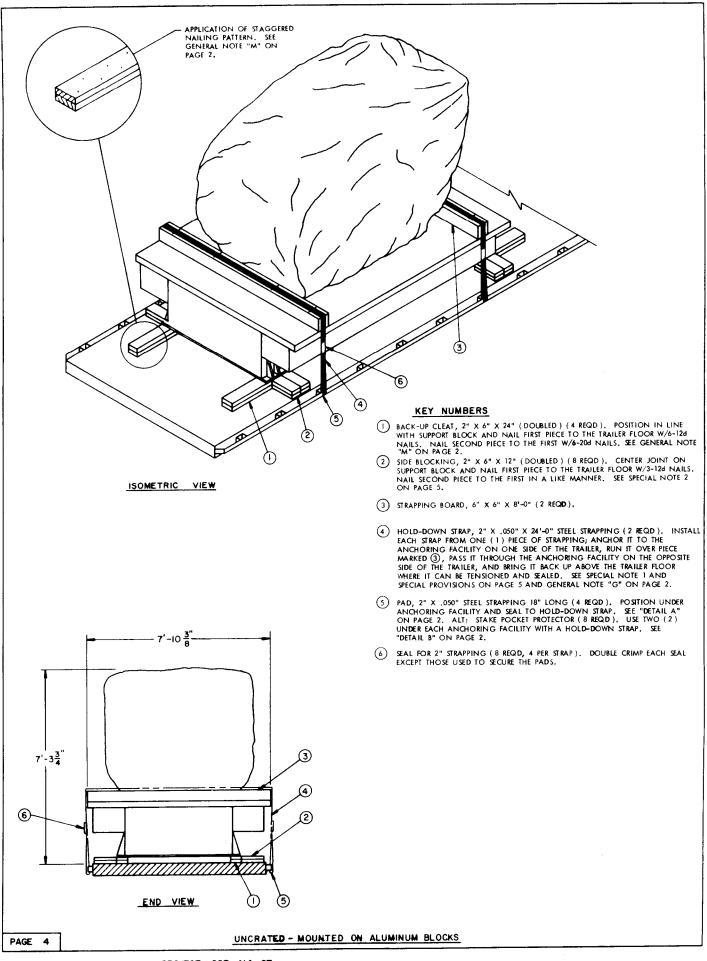
6" X 6" MATERIAL. NOTCH AS SHOWN
TO RETAIN CABLE.

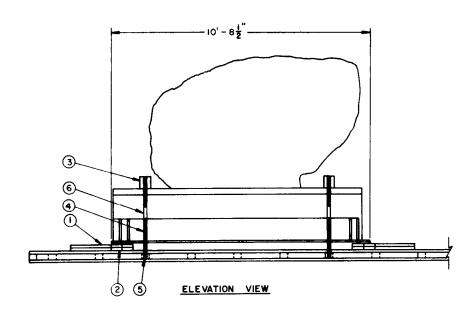


DETAILS

MAY BE USED IN LIEU OF PIECES MARKED ③, ④, ⑤
AND ⑥ ON PAGES 4 AND 5, AND PIECES MARKED ⑤, ⑥,
① AND ⑧ ON PAGES 6 AND 7.

PAGE 3





BIL	L OF MATERIAL	-
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	32	32
6" × 6"	16	48
NAILS	NO. REQD	POUNDS
12d (3-1/4")	72	1-1/4
20d (4")	24	1

1 200 (1)			
STEEL STRAPPING, 2"	x .050" 54	REQD 1	8 LBS
SEAL FOR 2" STRAPPIN	G 8	REQD	2 LBS
STABLE COR 2" STRAPP	NG 8	REQD	NIL

SPECIAL NOTES:

- 1. 3/8" CABLE (OR LARGER) MAY BE USED IN LIEU OF 2" STRAPPING SHOWN AS PIECE MARKED (4) ON PAGE 4 OR PIECE MARKED (6) ON PAGE 6. SEE GENERAL NOTES "H" AND "J" ON PAGE 2. SEE "ALTERNATIVE HOLD-DOWN" DETAIL ON PAGE 3.
 2. PRE-POSITIONED SIDE BLOCKING MAY BE USED IN LIEU OF PIECES MARKED (2). SEE "ALTERNATIVE SIDE BLOCKING" DETAIL ON PAGE 3.
- 3. ITEM MUST BE LOCATED ON TRAILER RELATIVE TO LOCATION OF STAKE POCKETS SO THAT WHEN PIECES MARKED ③ THROUGH ⑥ ON PAGE 4 AND PIECES MARKED (5) THROUGH (8) ON PAGES 6 AND 8 ARE APPLIED THEY WILL BE IN THE SAME GENERAL LOCATION RELATIVE TO THE ITEM

SPECIAL PROVISIONS FOR INTERCEPT AERIAL (ON ALUMINUM BLOCKS AND SKID BASE)

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED HOLD-DOWN STRAPPING DUNNAGE MATERIALS, PROVIDING THE FOLLOWING CONDITIONS ARE MET:

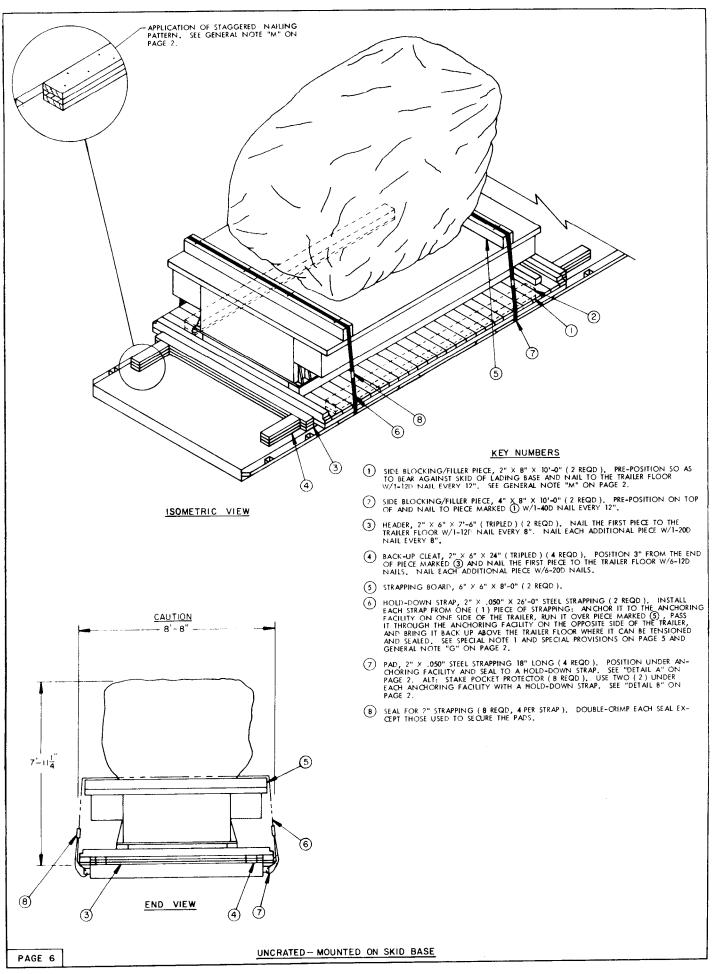
- ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED, <u>CAUTION</u>: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PREVENT DAMAGE TO THE LADING,
- 2. IN LIEU OF EACH HOLD-DOWN STRAP MARKED (4) ON PAGE 4, AND (6) ON PAGE 6, ONE (1) LINE OF 1/4" CHAIN MAY BE USED. EACH CHAIN SHALL BE SECURED TO PIECE MARKED (3) ON PAGE 4 AND PIECE MARKED (3) ON PAGE 6 W/4-20d NAILS BY DRIVING EACH NAIL INTO THE BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.
- 3. IF DESIRED, CHAINS OF A LARGER SIZE THAN SPECIFIED ABOVE MAY BE
- 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.

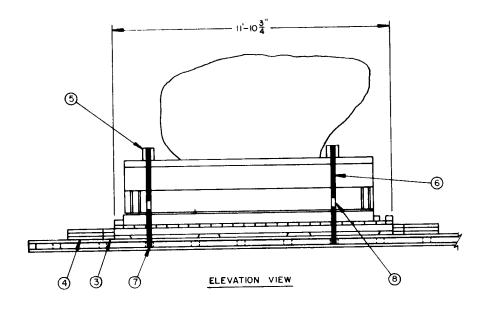
LOAD AS SHOWN

ITEM	QUANTITY	WE	GHT	(APPROX)
	ERIAL IUM BLOCKS		LBS LBS	
	TOTAL WEIGHT	9,902	LB S	

UNCRATED - MOUNTED ON ALUMINUM BLOCKS

PAGE



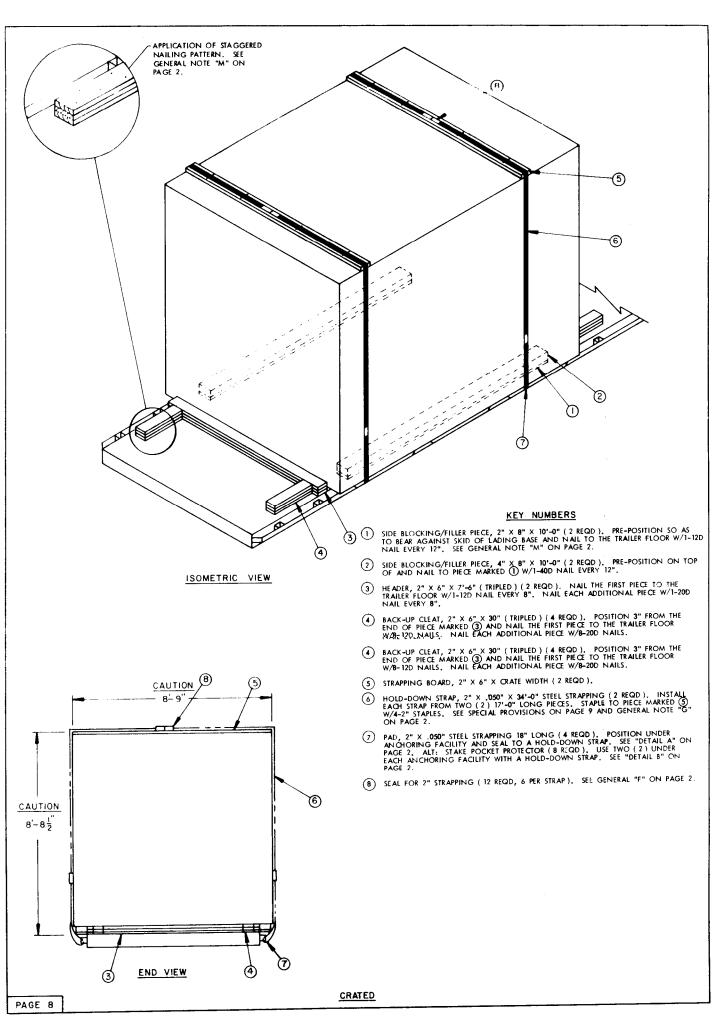


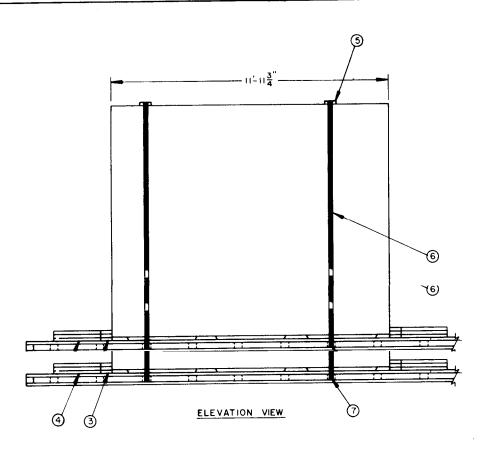
BILL	OF MATERIAL	
LUMBER	LINEAR FEET	BOARD FEET
2" X 6" 2" X 8" 4" X 8" 6" X 6"	69 20 20 16	69 27 54 48
NAILS	NO. REQD	POUNDS
12d (3-1/4") 20d (4") 40d (5")	66 92 20	1-1/4 3-1/2 1-1/4
STEEL STRAPPING, 2" X . SEAL FOR 2" STRAPPING - STAPLE FOR 2" STRAPPING	R KECH) 2 103

LOAD AS SHOWN

UNCRATED-MOUNTED ON SKID BASE

PAGE 7





LUMBER	LINEAR FEET	BOARD FEE
2" 7 6"	93	93
2" X 8"	20	27
4" × 8"	20	54
NAILS	NO, REQD	POUNDS
12d (3-1/4")	74	1-1/4
20d (4")	108	4
40d (5")	20	1-3/4

STAPLE FOR 2" STRAPPING ----- B REQD ----- NIL

SPECIAL PROVISIONS FOR INTERCEPT AFRIAL (CRATED):

LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED HOLD-DOWN STRAPPING DUNNAGE MATERIALS, PROVIDING THE FOLLOWING CONDITIONS ARE MET:

- ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY SHOULD BE USED. CAUTION: EXTREME CARE MUST BE USED IN TENSIONING CHAINS TO PRE-VENT DAMAGE TO THE CRATE.
- 2. IN LIEU OF EACH HOLD-DOWN STRAP MARKED (3), ONE (1) LINE OF 3/8" CHAIN OR TWO (?) LINES OF 1/4" CHAIN MAY BE USED. THE STRAPPING BOARD MARKED (3) MUST BE DOUBLED AND LAMINATED W/1-10J NAIL EVERY 1?". EACH CHAIN SHALL BE SEQURED TO LAMINATED BOARDS W/4-20J NAILS BY PRIVING EACH NAIL INTO THE BOARD THRU AN OPENING IN A CHAIN LINK AND BENDING IT OVER THE LINK.
- 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.
- 5. 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.

LOAD	AS	SHOWN

ITEM	QUANTITY	WEIGH.	(APPROX)
INTERCEP	T AERIAL) 1	12,270	LBS
DUNNAG	E	383	LBS
	TOTAL WEIGHT	12,653	LBS