

HAWK

LOADING AND BRACING ON FLAT BED OR "LOW-BOY" TRAILER OF CW ACQUISITION RADAR SET, AN/MPQ-34 AND/OR AN/MPQ-48, TRAILER MOUNTED

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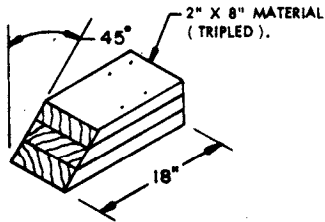
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● FOR TRAILERS EQUIPPED WITH A PNEUMATIC (AIR RIDE) SUSPENSION SYSTEM, SEE THE "ADDITIONAL SPECIAL PROVISIONS" ON PAGE 3.

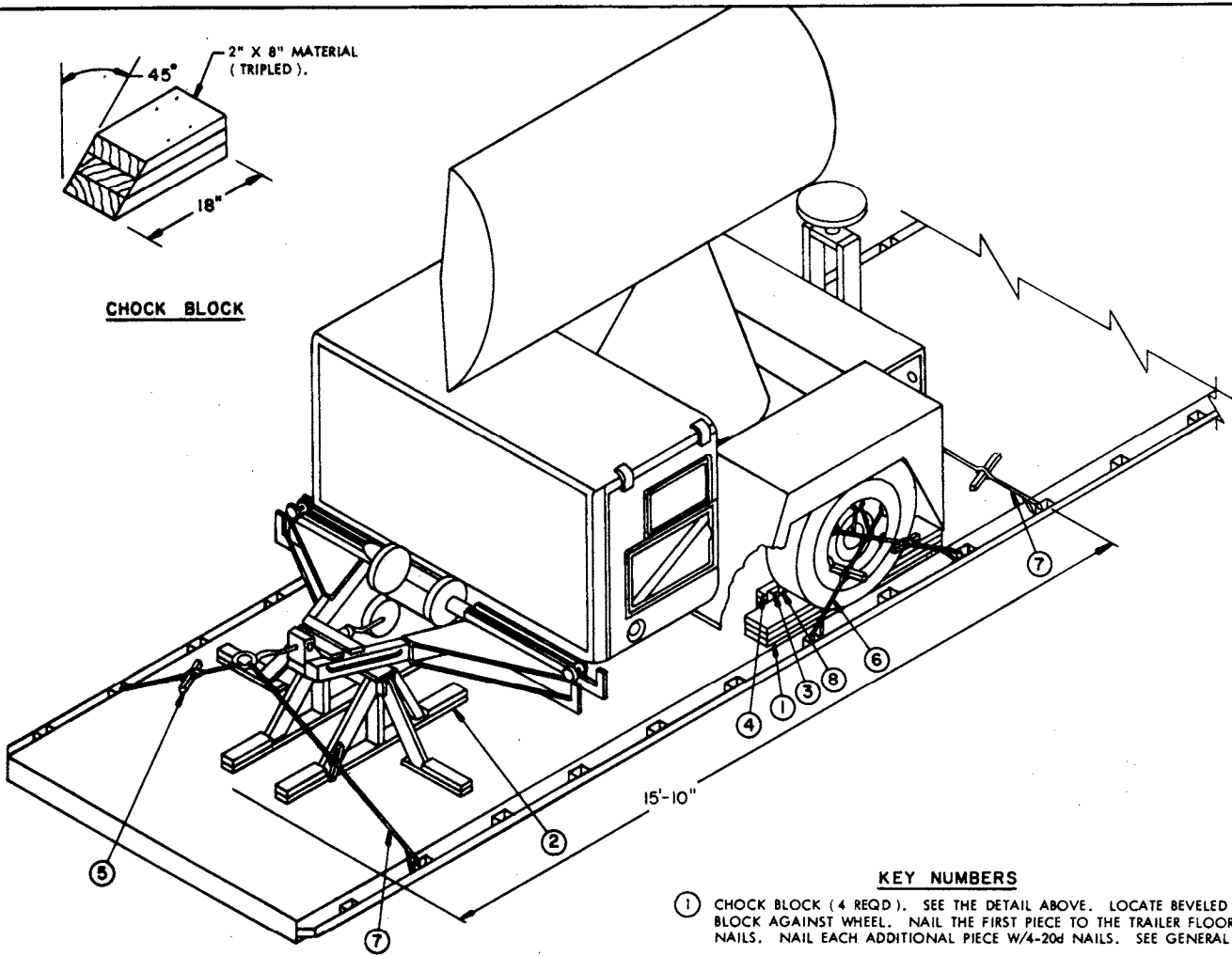
THIS DRAWING, INCLUDING REVISION NO. 4, SUPERSEDES DRAWING 19-48-7403-GSE11HA19, DATED FEBRUARY 1974, AND ALL REVISIONS THERETO, THROUGH NUMBER 3, DATED FEBRUARY 1974.

REVISIONS				DRAFTSMAN BB / DAK	PROJ. ENG. RNS / JAH	CHKD. AK / Geo
4	FEB 79	<i>AK</i> <i>RNS</i>	<i>Wm J. Loggion</i>	<i>RSP</i>	<i>RNS</i>	<i>AK</i>
				APPROVED, U.S. ARMY MISSILE MATERIEL READINESS COMMAND		
				<i>William J. Loggion</i>		
				APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND (DARCOM)		
				<i>John L. Byrd Jr.</i>		
				U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL		
				U.S. ARMY DARCOM DRAWING		
				FEBRUARY 1979		
		CLASS	DIVISION	DRAWING	FILE	
		19	48	7403	GSE 11HA19	

DO NOT SCALE



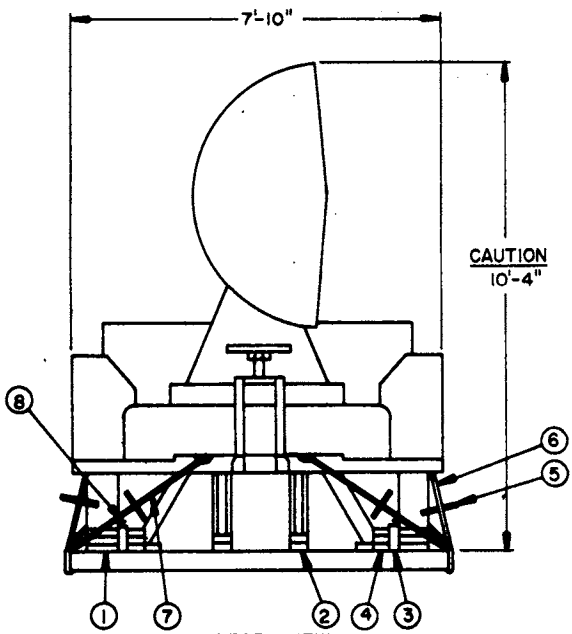
CHOCK BLOCK



ISOMETRIC VIEW

KEY NUMBERS

- ① CHOCK BLOCK (4 REQD). SEE THE DETAIL ABOVE. LOCATE BEVELED END OF BLOCK AGAINST WHEEL. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE W/4-20d NAILS. SEE GENERAL NOTE "L".
- ② FORWARD BLOCKING (1 REQD). SEE THE DETAIL ON PAGE 6.
- ③ RUBBING STRIP, 2" X 6" X 36" (2 REQD). POSITION ON EDGE AND NAIL TO A LOWER PIECE MARKED ④ W/5-12d NAILS.
- ④ SIDE BLOCKING, 2" X 4" X 36" (TRIPLED) (2 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.
- ⑤ WIRE TWISTER, 2" X 2" BY A LENGTH TO SUIT (8 REQD). SEE GENERAL NOTE "F".
- ⑥ SIX (6) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). PASS THRU HOLES IN A WHEEL AND TRANSPORTER TIE DOWN FACILITY TO FORM A COMPLETE LOOP. TWIST TAUT WITH PIECE MARKED ⑤. SEE THE "WHEEL SECUREMENT" DETAIL ON PAGE 6, GENERAL NOTES "F" AND "G", AND THE "SPECIAL PROVISIONS" ON PAGES 3 AND 6.
- ⑦ FOURTEEN (14) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). INSTALL WIRE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM A TIE DOWN FACILITY ON THE TRANSPORTER THRU THE LADING LUNETTE AT THE FRONT AND/OR THE LADING TIE DOWN DEVICE AT THE REAR AND BACK TO THE TRANSPORTER TIE DOWN FACILITY. TWIST TAUT WITH PIECE MARKED ⑤. **NOTE:** IF DESIRED, 3/8" STEEL WIRE ROPE (OR LARGER) MAY BE INSTALLED IN LIEU OF THE WIRE HOLD DOWNS. USE A THIMBLE ("OPEN PATTERN" RECOMMENDED) AT EACH TRANSPORTER TIE DOWN FACILITY AND AT EACH REAR TIE DOWN DEVICE. USE FOUR (4) CLIPS PER EACH CABLE JOINT AND ONE (1) TO SECURE EACH THIMBLE. NOTE THAT NUTS ON 3/8" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS. SEE GENERAL NOTES "H" AND "J" AND THE "SPECIAL PROVISIONS" ON PAGES 3 AND 6.
- ⑧ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE A PIECE MARKED ③.



REAR VIEW

CAUTION
10'-4"

ADDITIONAL SPECIAL PROVISIONS:

FOR TRAILERS EQUIPPED WITH A PNEUMATIC (AIR RIDE) SUSPENSION SYSTEM, THE LADING MAY BE SECURED BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN ACCORDANCE WITH NOTES 1, 4, 5, 6 AND 7 OF THE "SPECIAL PROVISIONS" ON PAGE 6, AND THE FOLLOWING CONDITIONS, WHICH WILL BE MET INSTEAD OF THOSE CONDITIONS SPECIFIED BY NOTES 2 AND 3 ON PAGE 6:

1. IN LIEU OF THE TWO (2) STRANDED WIRE TIE DOWNS MARKED ⑦ ON PAGE 2 AND ⑧ ON PAGE 4, ONE (1) LINE OF 3/8" CHAIN MAY BE SUBSTITUTED FOR SECURING THE LADING LUNETTE. WHEN THE CHAIN IS INSTALLED IT SHALL BE THREADED TO ENCIRCLE ONE SIDE OF THE LUNETTE RING. THE ENDS OF THE CHAIN WILL BE SECURELY FASTENED AT OPPOSITE SIDES OF THE TRANSPORTER.
2. FOR WHEEL AND LADING SECUREMENT ON ONE SIDE, IN LIEU OF THE TWO (2) STRANDED WIRE TIE DOWNS MARKED ⑥ ON PAGE 2 AND MARKED ⑦ ON PAGE 4, AND THE ONE (1) STRANDED WIRE TIE DOWN MARKED ⑦ ON PAGE 2 AND MARKED ⑧ ON PAGE 4, ONE (1) LINE OF 3/8" CHAIN MAY BE SUBSTITUTED. THE CHAIN MAY BE INSTALLED IN ONE OF THE FOLLOWING TWO WAYS. IT MAY RUN FROM A TRANSPORTER TIE DOWN FACILITY REAR OF THE LADING WHEEL, THRU A LIGHTENING HOLE WITHIN THE UPPER AND FORWARD PART OF THE LADING WHEEL, REARWARD AND BACK THRU AN ADJACENT LIGHTENING HOLE OF THE LADING WHEEL, AND FORWARD AND DOWN TO A TRANSPORTER TIE DOWN FACILITY IN FRONT OF THE LADING WHEEL. TO PREVENT DAMAGE TO THE LIGHTENING HOLES AND WHEELS OF THE LADING, A CHAIN MAY BE INSTALLED FROM A REARWARD TIE DOWN FACILITY AT THE SIDE OF THE TRANSPORTER, PASSED BEHIND THE LADING WHEEL AND OVER THE LADING AXLE, AND DOWN TO A FORWARD TIE DOWN FACILITY ON THE SAME SIDE OF THE TRANSPORTER.

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13.
- B. THE LOADS AS SHOWN ARE BASED ON A FLAT BED OR "LOW-BOY" TRAILER 8'-0" WIDE WITH A WOOD OR A WOOD AND METAL FLOOR. 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 LOAD AS SHOWN ON PAGE 2 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 OVERALL DIMENSIONS MUST MEET STATE LAW REQUIREMENTS.
- E. LADING DATA:
 ITEM DIMENSIONS ---- 15'-10" LONG BY 7'-10" WIDE BY 10'-4" HIGH, OR 7'-10" HIGH WHEN ANTENNA IS IN TILTED POSITION.
 ITEM GROSS WEIGHT -- 4,790 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 TWISTED WIRE CABLE 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 ALL SHARP EDGES, AND ANTI-CHAFING MATERIAL MUST BE USED BETWEEN CONTACTING TIE DOWN WIRES AND LADING TIRES. ADDITIONALLY, LADING TIRES WILL BE INFLATED TO HIGH-WAY OPERATING PRESSURE AND ALL HAND BRAKES MUST BE "SET" WITH THE HAND LEVERS WIRE-TIED OR BLOCKED.
- G. SEE THE "SPECIAL PROVISIONS" ON PAGE 6 AND AT LEFT 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 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 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 AND 2" X 4" IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE.
- L. **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 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.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	5	3
2" X 2"	12	4
2" X 4"	61	41
2" X 6"	9	9
2" X 8"	16	22
NAILS	NO. REQD	POUNDS
6d (2")	34	1/4
12d (3-1/4")	120	2
16d (3-1/2")	40	1
20d (4")	66	2-1/2
WIRE, NO. 8 GAGE ----- 280' REQD ----- 26 LBS		
WATERPROOF PAPER OR BURLAP ----- AS REQD ----- NIL		

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.

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 1.

STRAPPING

STEEL: TYPE I OR IV CLASS "A", "B", OR "C". REF: FED SPEC QQ-S-781.

REVISIONS

REVISION NO. 3, DATED FEBRUARY 1974, CONSISTS OF:

1. ADDING PAGES 4 AND 5 DEPICTING ALTERNATIVE METHOD OF POSITIONING THE RADAR ANTENNA IN A TILTED POSITION.

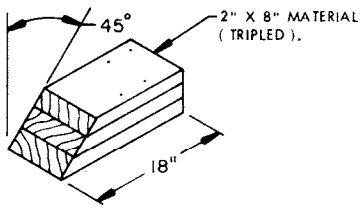
REVISION NO. 4, DATED FEBRUARY 1979, CONSISTS OF:

1. CHANGES AS NECESSARY TO UPDATE DRAWING FORMAT.
2. ADDITION OF "ADDITIONAL SPECIAL PROVISIONS" FOR THE USE OF CHAINS AND LOAD BINDERS.

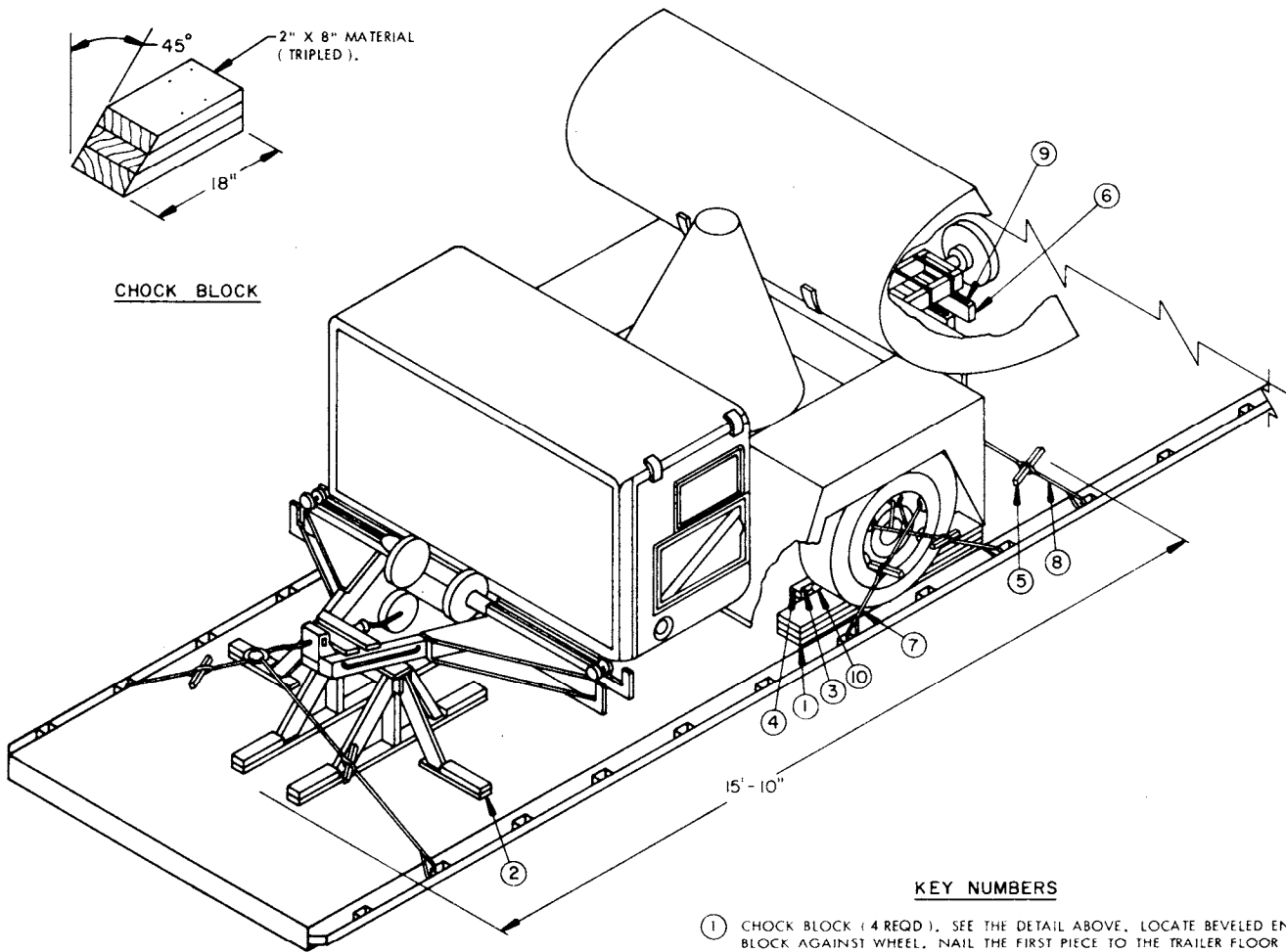
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CW ACQUISITION RADAR	1	4,790 LBS
DUNNAGE		233 LBS
		TOTAL WEIGHT ----- 5,023 LBS

RADAR SET WITH ANTENNA IN THE UPRIGHT POSITION



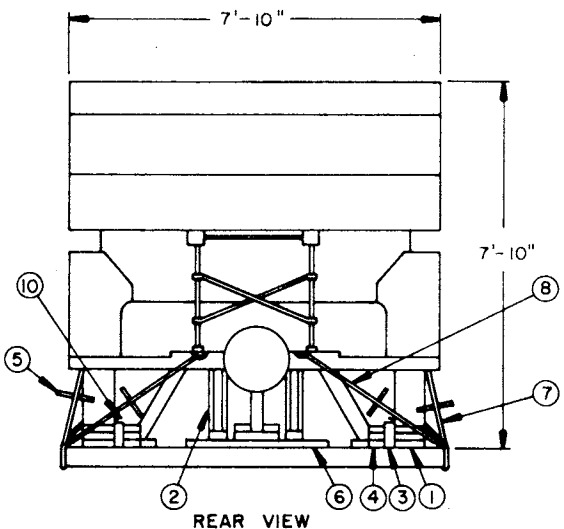
CHOCK BLOCK



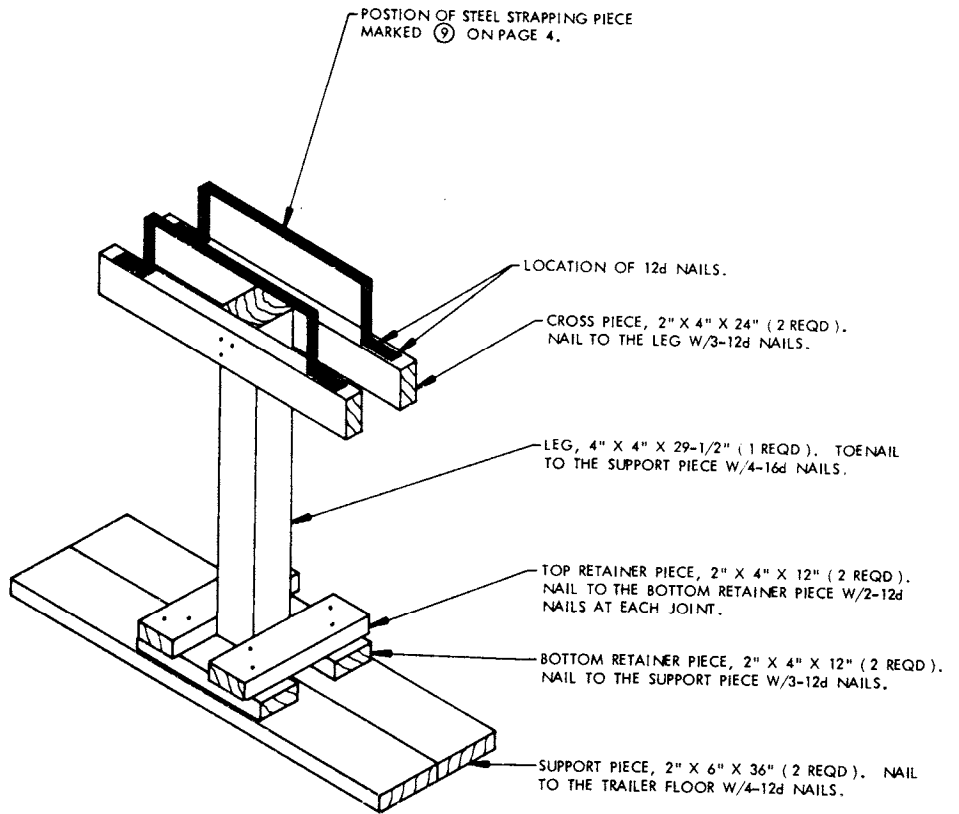
ISOMETRIC VIEW

KEY NUMBERS

- ① CHOCK BLOCK (4 REQD). SEE THE DETAIL ABOVE. LOCATE BEVELED END OF BLOCK AGAINST WHEEL. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE W/4-20d NAILS. SEE GENERAL NOTE "L" ON PAGE 3.
- ② FORWARD BLOCKING (1 REQD). SEE THE DETAIL ON PAGE 6.
- ③ RUBBING STRIP, 2" X 6" X 36" (2 REQD). PREPOSITION AND NAIL TO A LOWER PIECE MARKED ④ W/5-12d NAILS.
- ④ SIDE BLOCKING, 2" X 4" X 36" (TRIPLED) (2 REQD). PREPOSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/5-12d NAILS. NAIL EACH ADDITIONAL PIECE IN A LIKE MANNER.
- ⑤ WIRE TWISER, 2" X 2" BY A LENGTH TO SUIT (8 REQD). SEE GENERAL NOTE "F" ON PAGE 3.
- ⑥ JACK SUPPORT (1 REQD). SEE THE "JACK SUPPORT ASSEMBLY" ON PAGE 5.
- ⑦ SIX (6) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). PASS THRU HOLES IN A WHEEL AND TRANSPORTER TIE DOWN FACILITY TO FORM A COMPLETE LOOP. TWIST TIGHT WITH PIECE MARKED ⑤. SEE THE "WHEEL SECUREMENT" DETAIL ON PAGE 6. SEE GENERAL NOTES "F" AND "G" ON PAGE 3, AND THE "SPECIAL PROVISIONS" ON PAGES 3 AND 6.
- ⑧ FOURTEEN (14) STRANDS OF NO. 8 GAGE BLACK ANNEALED WIRE (4 REQD). INSTALL WIRE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM A TIE DOWN FACILITY ON THE TRANSPORTER THRU THE LADING LUNETTE AT THE FRONT AND/OR THE LADING TIE DOWN DEVICE AT THE REAR AND BACK TO THE TRANSPORTER TIE DOWN FACILITY. TWIST TIGHT WITH PIECE MARKED ⑤. **NOTE:** IF DESIRED, 3/8" STEEL WIRE ROPE (OR LARGER) MAY BE INSTALLED IN LIEU OF THE WIRE HOLD DOWNS. USE A THIMBLE ("OPEN PATTERN" RECOMMENDED) AT EACH TRANSPORTER TIE DOWN FACILITY AND AT EACH REAR TIE DOWN DEVICE. USE FOUR (4) CLIPS PER EACH CABLE JOINT AND ONE (1) TO SECURE EACH THIMBLE. NOTE THAT NUTS ON 3/8" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 35 TO 40 FOOT POUNDS. SEE GENERAL NOTES "H" AND "J" ON PAGE 3, AND THE "SPECIAL PROVISIONS" ON PAGES 3 AND 6.
- ⑨ STEEL STRAPPING, 1-1/4" X .035" X 42" (2 REQD). NAIL THROUGH STRAP TO A 2" X 4" CROSS PIECE OF THE JACK SUPPORT ASSEMBLY W/2-12d NAILS AT EACH END.
- ⑩ WATERPROOF PAPER OR BURLAP OF A SUFFICIENT SIZE TO POSITION UNDER AND EXTEND 2" ABOVE A PIECE MARKED ③.



REAR VIEW

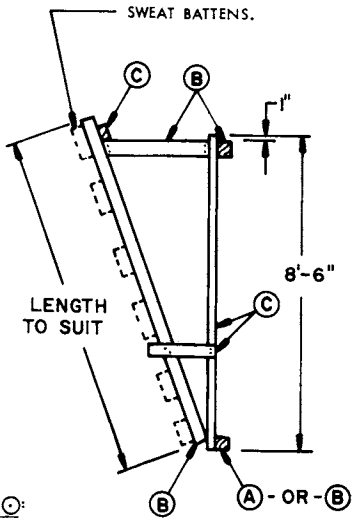


JACK SUPPORT ASSEMBLY

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	5	3
2" X 2"	12	4
2" X 4"	69	46
2" X 6"	15	15
2" X 8"	16	22
4" X 4"	3	4
NAILS	NO. REQD	POUNDS
6d (2")	34	1/4
12d (3-1/4")	146	2-1/2
16d (3-1/2")	44	1-1/4
20d (4")	66	2-1/2
WIRE, NO. 8 GAGE	280' REQD	26 LBS
STEEL STRAPPING, 1-1/4" X .035"	7' REQD	1 LB
WATERPROOF PAPER OR BURLAP	AS REQD	NIL

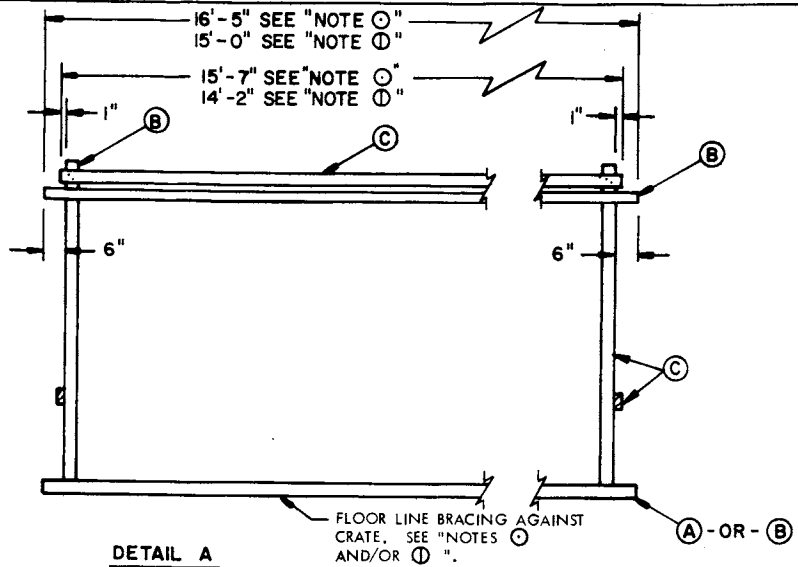
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CW ACQUISITION RADAR	1	4,790 LBS
DUNNAGE		269 LBS
TOTAL WEIGHT		5,059 LBS



NOTE C:

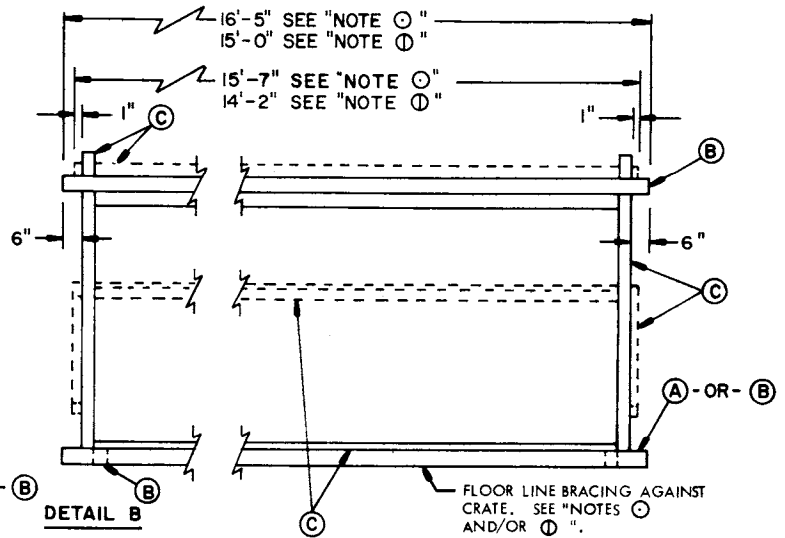
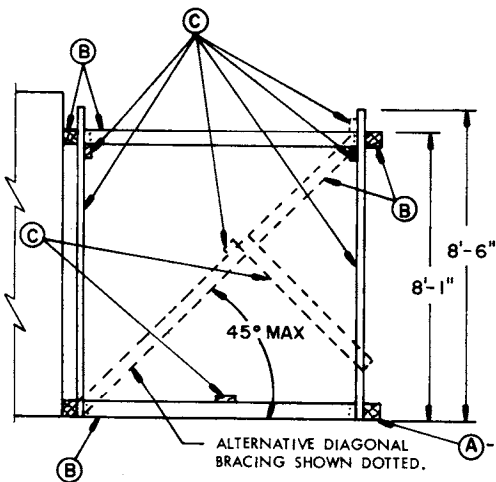
WHEN STOWING ITEMS 1, 2, 4 THRU 10 AND 12, THE DIMENSIONS SHOWN ARE FOR BRACING AGAINST SIDE OF CRATE AND USING FLOOR LINE BRACING MATERIAL (B). WHEN BRACING AGAINST CRATE ENDS, CHANGE DIMENSIONS OF THE BRACING ASSEMBLY, USE 8'-1" IN LIEU OF 16'-5" AND 7'-3" IN LIEU OF 15'-7". ALSO, USE FLOOR LINE BRACING MATERIAL (A) (4" X 6", 6" VERTICAL) AGAINST CRATE IN LIEU OF (B) MATERIAL.



SUGGESTED BRACING AT SIDE OF SHIP.

NOTE D:

WHEN STOWING ITEMS 3 AND 11, THE DIMENSIONS SHOWN ARE FOR BRACING AGAINST SIDE OF CRATE AND USING FLOOR LINE BRACING MATERIAL (B). WHEN BRACING AGAINST CRATE ENDS, CHANGE DIMENSIONS OF BRACING ASSEMBLY, USE 8'-1" IN LIEU OF 15'-0" AND 7'-3" IN LIEU OF 14'-2". ALSO, USE FLOOR LINE BRACING MATERIAL (A) (4" X 6", 6" VERTICAL) AGAINST CRATE IN LIEU OF (B) MATERIAL.



SUGGESTED BRACING AGAINST ADJACENT CARGO.

MINIMUM LUMBER SIZES	
(A)	4" X 6"
(B)	4" X 4"
(C)	2" X 4"

PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE NOTES ON PAGE 2 MUST BE OBSERVED.