

APPROVED BY
 MECH DIV AAR, THEIR LETTER
 DATED 7 MAR 1973 FILE LR-11 0.6
 SIGNED *[Signature]*
 DATE 12 March 73
 TEA, MTMTS, FT EUSTIS, VA.

LANCE

LOADING AND BRACING ON FLAT CAR OF HANDLING UNIT, GUIDED MISSILE, XM39E1

REVISIONS				DRAFTSMAN	PROJ ENG	AMCPM-LCEM
				CBK <i>[Signature]</i>	MWD/JNW	<i>[Signature]</i>
				CHECKER	LOG ENGRS OFFICE	ANSMI-50
				ARC	<i>[Signature]</i>	<i>[Signature]</i>
				W&W	RS#	<i>[Signature]</i>
				APPROVED		
				<i>Wesley E. Gilleland</i>		
				APPROVED BY ORDER OF COMMANDING GENERAL		
				U. S. ARMY MISSILE COMMAND		
				<i>[Signature]</i>		
				U. S. ARMY MATERIEL COMMAND		
				USAMC AMMO CENTER		
				U. S. ARMY MATERIEL COMMAND		
				MARCH 1973		
				CLASS	DIVISION	DRAWING
				19	48	7802
						FILE
						GSE 5LC14

DO NOT SCALE

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 CARS OF VARIOUS WIDTHS WITH STAKE POCKETS SPACED 42" ON CENTER. ONLY ONE UNIT OF LADING (2 PACKAGES) IS SHOWN IN EACH LOAD VIEW; 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.

C. LADING DATA:

<u>ITEM</u>	<u>WEIGHT (APPROX)</u>	<u>DIMENSIONS</u>
BASE ASSEMBLY (CRATED)	1,298 LBS	8'-1" LONG BY 6'-4" WIDE BY 6'-1" HIGH.
BOOM ASSEMBLY (BOXED)	843 LBS	17'-3" LONG BY 26" WIDE BY 22" HIGH.

- 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, AND 15.
- E. ONLY FLAT CARS WITH "SOUND" FLOORS WILL BE USED. CARS WITH STEEL FLOOR ENDS AND/OR EXPOSED STEEL BOLSTERS WHICH INTERFERE WITH PROPER POSITIONING OR NAILING OF THE DUNNAGE WILL NOT BE USED. SEE "TYPICAL END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS" DETAIL ON PAGE 3, FOR APPLICATION-OF-DUNNAGE METHODS WHICH PERMIT THE USE OF SOME CARS THAT HAVE EXPOSED STEEL COMPONENTS.
- F. CAUTION STAKE POCKETS ON FLAT CARS WILL BE USED FOR ANCHORING HOLD-DOWN STRAPPING WHENEVER POSSIBLE. DO NOT USE SWIVEL RING TYPE ANCHOR DEVICES. IF OTHER TYPES ARE USED, THEY MUST BE OF SUFFICIENT WIDTH TO RECEIVE 2" STRAPPING, AND ALSO BE OF A DESIGN WHICH WILL PROVIDE A BEARING SURFACE, ACROSS THE FULL WIDTH OF THE STRAPPING, THAT WILL NOT DEFORM A STRAP, ESPECIALLY AT THE EDGES, WHEN IT IS TENSIONED.
- G. BASED ON FLAT CARS WITH STAKE POCKETS SPACED 42" APART, CONTAINERS MUST BE POSITIONED AS SHOWN TO FACILITATE PROPER APPLICATION OF 2" TIE-DOWN STRAPPING; HOWEVER, IF CARS ARE AVAILABLE WITH STAKE POCKETS SPACED OTHER THAN 42" APART OR IF ADEQUATE TIE-DOWN DEVICES ARE PROVIDED BETWEEN STAKE POCKETS, CONTAINERS SHOULD BE POSITIONED ON THE CAR TO MOST EFFICIENTLY UTILIZE TIE-DOWN ATTACHMENT POINTS.
- H. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, OR AS SHOWN IN "DETAIL A" OR "DETAIL B" ON PAGE 3, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- J. 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.
- K. 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.

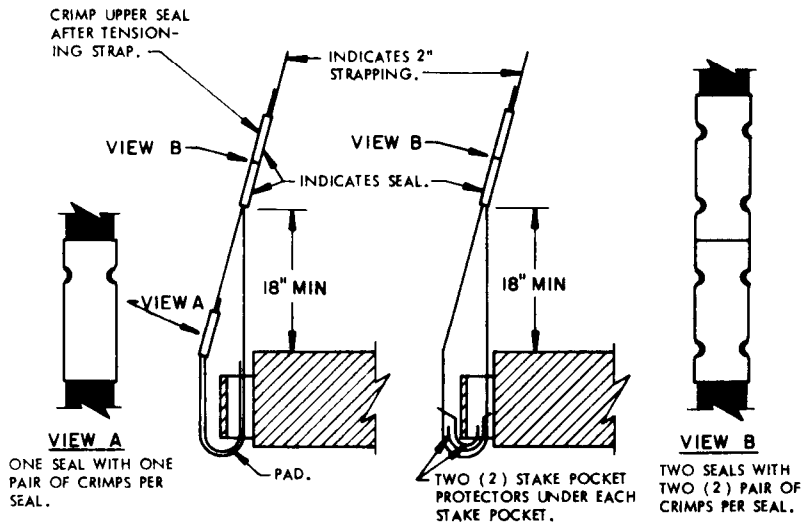
MATERIAL SPECIFICATIONS

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.

STRAPPING, STEEL: TYPE I, CLASS A, B, OR C. REF: FED SPEC QQ-S-781
(FOR FSN SEE SB-38-100).

STRAP SEAL : STRAP
STAPLE; STAKE
POCKET PROTECTOR;
EDGE PROTECTOR: COMMERCIAL GRADE.



DETAIL A
METHOD OF INSTALLING 2" STRAPPING AND PAD AT STAKE POCKET.

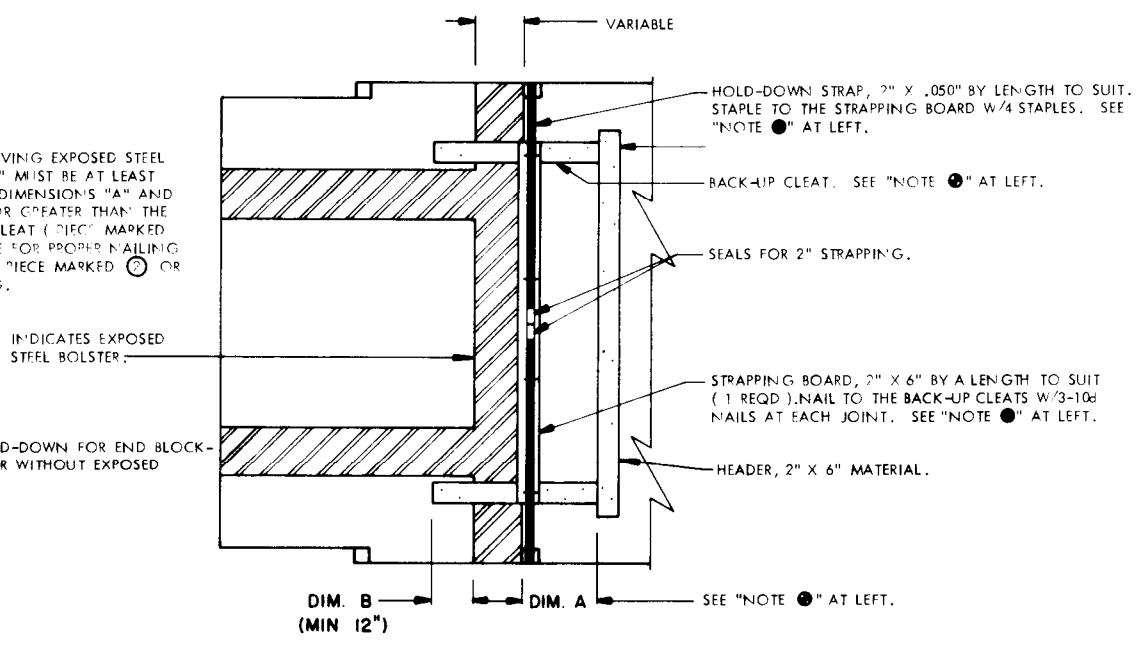
DETAIL B
METHOD OF INSTALLING 2" STRAPPING AND STAKE POCKET PROTECTORS (ALTERNATIVE PAD).

NOTE 1:

WHEN LOADING CARS HAVING EXPOSED STEEL BOLSTERS, DIMENSION "B" MUST BE AT LEAST 12", AND THE TOTAL OF DIMENSIONS "A" AND "B" MUST BE EQUAL TO OR GREATER THAN THE LENGTH OF A BACK-UP CLEAT (PIECE MARKED ② OR ⑤) TO PROVIDE FOR PROPER NAILING TO THE CAR FLOOR. SEE PIECE MARKED ③ OR ⑥ FOR PROPER NAILING.

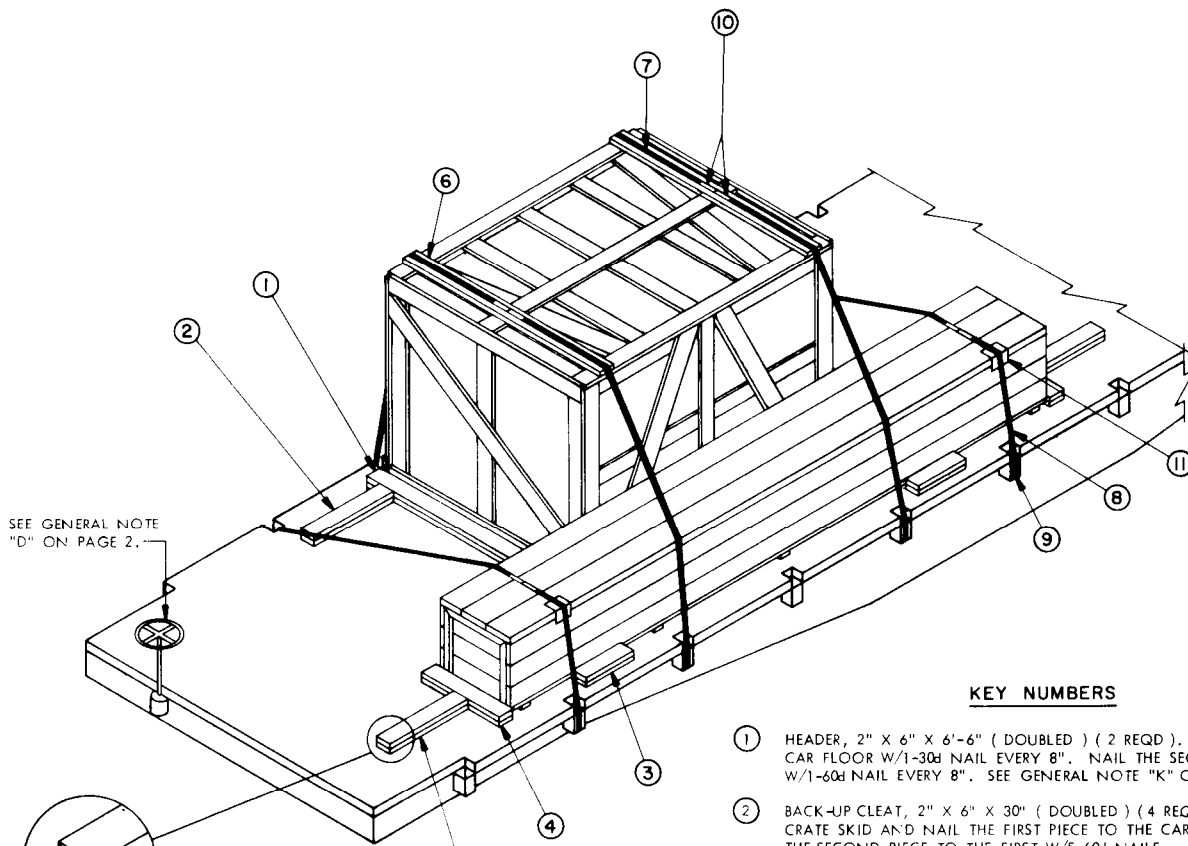
NOTE 2:

THE OPTIONAL STRAP HOLD-DOWN FOR END BLOCKING IS FOR CARS WITH OR WITHOUT EXPOSED STEEL BOLSTERS.



TYPICAL END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS

SEE GENERAL NOTE "E" ON PAGE 2. THE BLOCKING AS SHOWN IS APPLICABLE FOR THE CRATED ITEM.



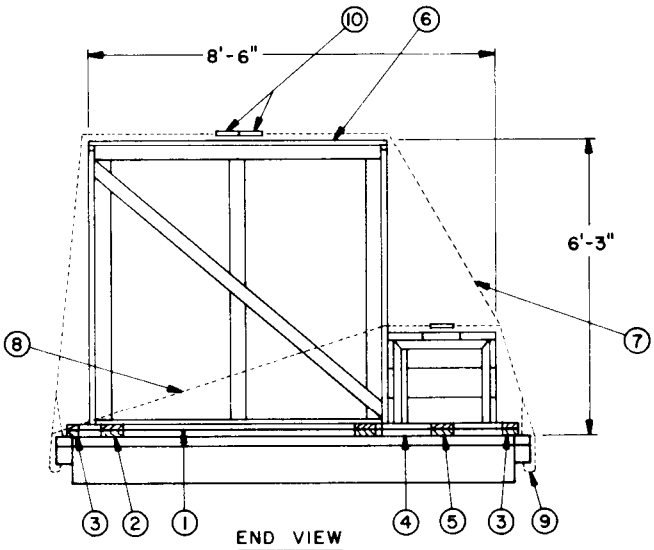
SEE GENERAL NOTE "D" ON PAGE 2.

ISOMETRIC VIEW

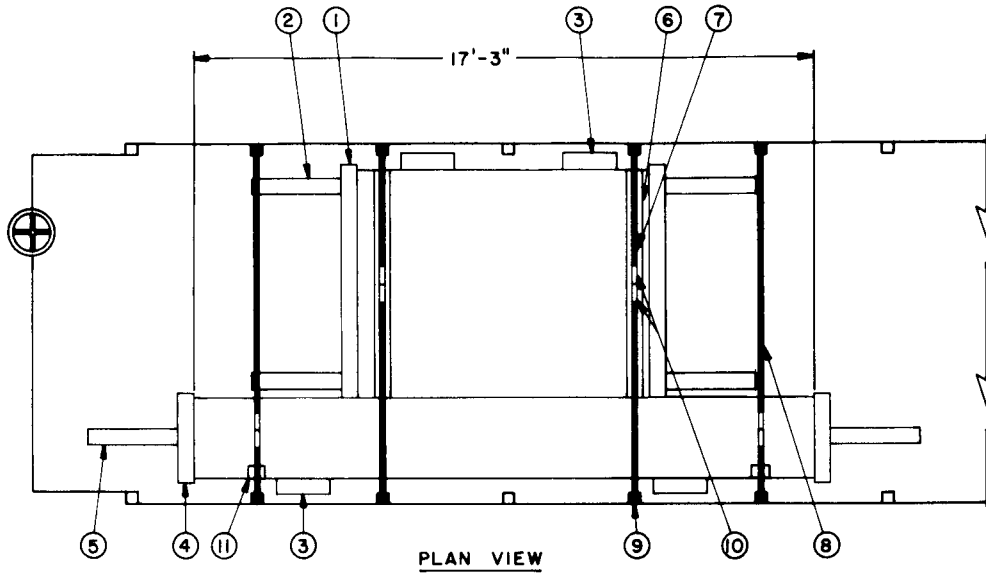
APPLICATION OF STAGGERED NAILING PATTERN. SEE GENERAL NOTE "K" ON PAGE 2.

KEY NUMBERS

- ① HEADER, 2" X 6" X 6'-6" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/1-30d NAIL EVERY 8". NAIL THE SECOND PIECE TO THE FIRST W/1-60d NAIL EVERY 8". SEE GENERAL NOTE "K" ON PAGE 2.
- ② BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (4 REQD). POSITION TO ALIGN WITH CRATE SKID AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-60d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 18" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ④ HEADER, 2" X 6" X 30" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-60d NAILS.
- ⑤ BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (2 REQD). CENTER ON PIECE MARKED ④ AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-60d NAILS.
- ⑥ STRAPPING BOARD, 2" X 6" X 6'-4" (2 REQD).
- ⑦ HOLD-DOWN STRAP, 2" X .050" X 32'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM TWO (2) 16'-0" LONG PIECES, AND STAPLE TO PIECE MARKED ⑥ W/4-2" STAPLES. SEE GENERAL NOTE "H" ON PAGE 2.
- ⑧ HOLD-DOWN STRAP, 2" X .050" X 24'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM ONE PIECE OF STRAPPING; ANCHOR IT TO A STAKE POCKET ON ONE SIDE OF THE CAR, RUN IT OVER THE LADING, PASS IT THRU A STAKE POCKET ON THE OPPOSITE SIDE OF THE CAR, AND BRING IT BACK ABOVE THE STAKE POCKET WHERE IT CAN BE TENSIONED AND SEALED.
- ⑨ PAD, 2" X .050" STEEL STRAP 24" LONG (8 REQD). POSITION UNDER STAKE POCKET AND SEAL TO A PIECE MARKED ⑦ OR ⑧. SEE "DETAIL A" ON PAGE 3. ALT: STAKE POCKET PROTECTOR (16 REQD). USE TWO (2) UNDER EACH STAKE POCKET WITH PIECES MARKED ⑦ OR ⑧. SEE "DETAIL B" ON PAGE 3.
- ⑩ SEAL FOR 2" STRAPPING (28 REQD; 8 PER STRAP MARKED ⑦, 6 PER STRAP MARKED ⑧). EXCEPT FOR THE SEALS USED TO SECURE THE PADS, DOUBLE CRIMP EACH SEAL.
- ⑪ EDGE PROTECTOR FOR 2" STRAPPING (2 REQD). POSITION UNDER PIECE MARKED ⑧ AS SHOWN.



END VIEW



PLAN VIEW

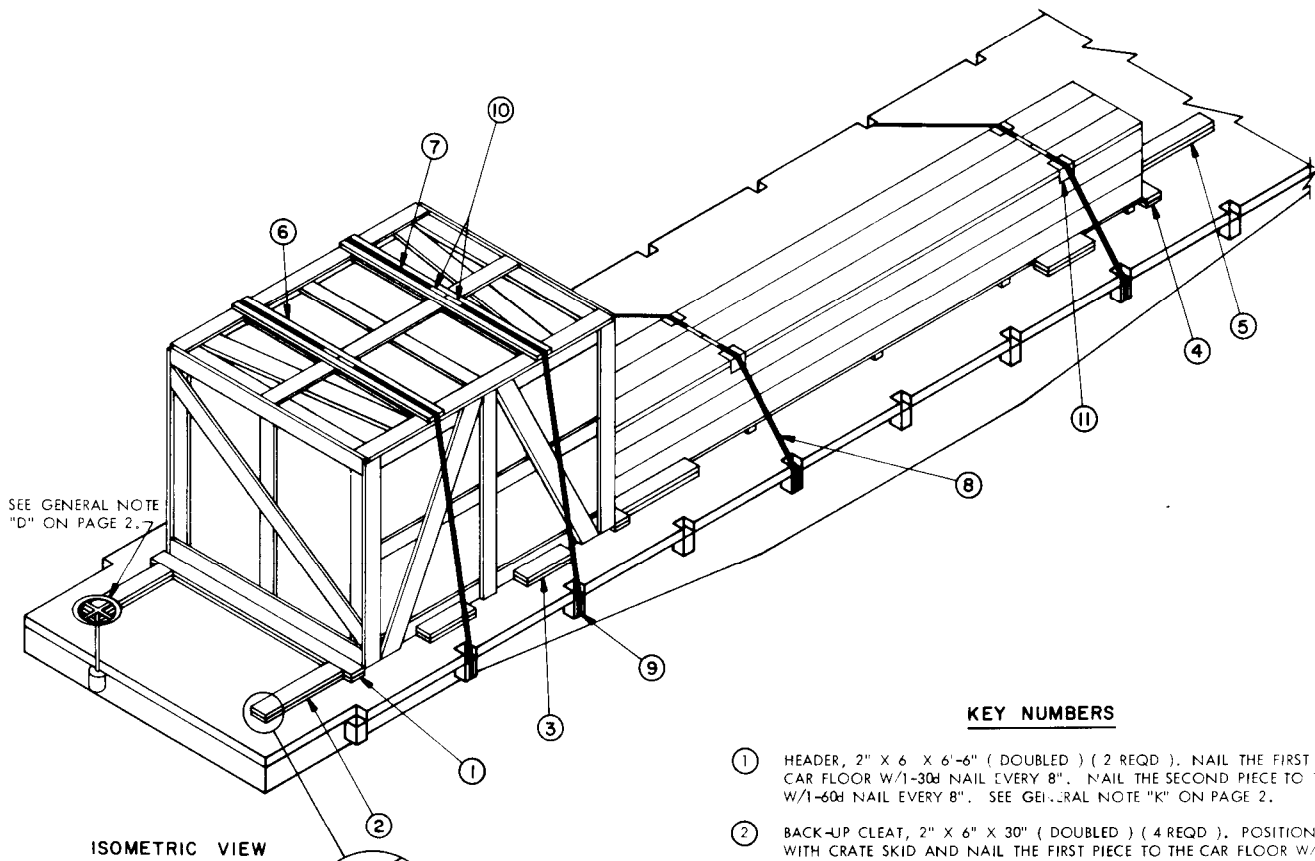
SPECIAL NOTES:

1. A 1-UNIT (2 PACKAGES) LOAD IS SHOWN ON A 10'-0" WIDE (PLATFORM) FLAT CAR WITH STAKE POCKETS SPACED 42" ON CENTER. WIDER CARS CAN BE USED. A 9'-6" WIDE (PLATFORM) CAR IS THE MINIMUM WIDTH CAR THAT CAN BE USED FOR SHIPMENT OF THE DEPICTED LOAD.
2. IF THE CAR TO BE USED IS LESS THAN 9'-6" WIDE, SEE THE PROCEDURES SPECIFIED ON PAGES 6 AND 7.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	91	91
NAILS	NO. REQD	POUNDS
30d (4-1/2")	100	5
60d (6")	60	6
STEEL STRAPPING, 2" X .050" -----	128' REQD -----	43 LBS
SEAL FOR 2" STRAPPING -----	28 REQD -----	6 LBS
STAPLE FOR 2" STRAPPING -----	8 REQD -----	NIL
EDGE PROTECTOR -----	2 REQD -----	NIL

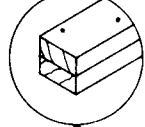
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
HANDLING UNIT, XM39E1 (2 PACKAGES) -----	1 -----	2,141 LBS
DUNNAGE -----		288 LBS
TOTAL WEIGHT -----		2,429 LBS



SEE GENERAL NOTE "D" ON PAGE 2, 7

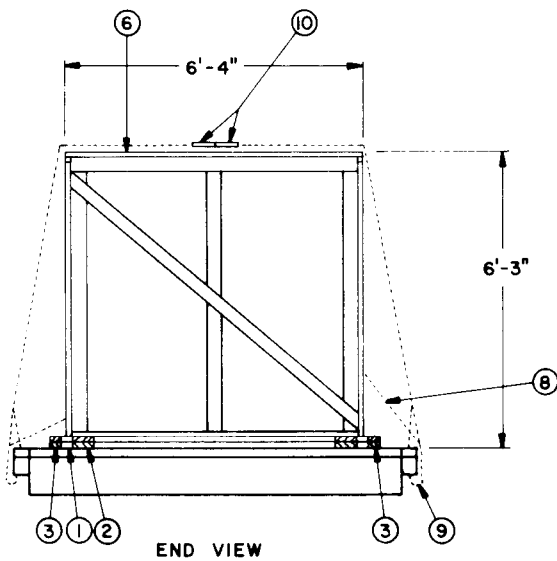
ISOMETRIC VIEW



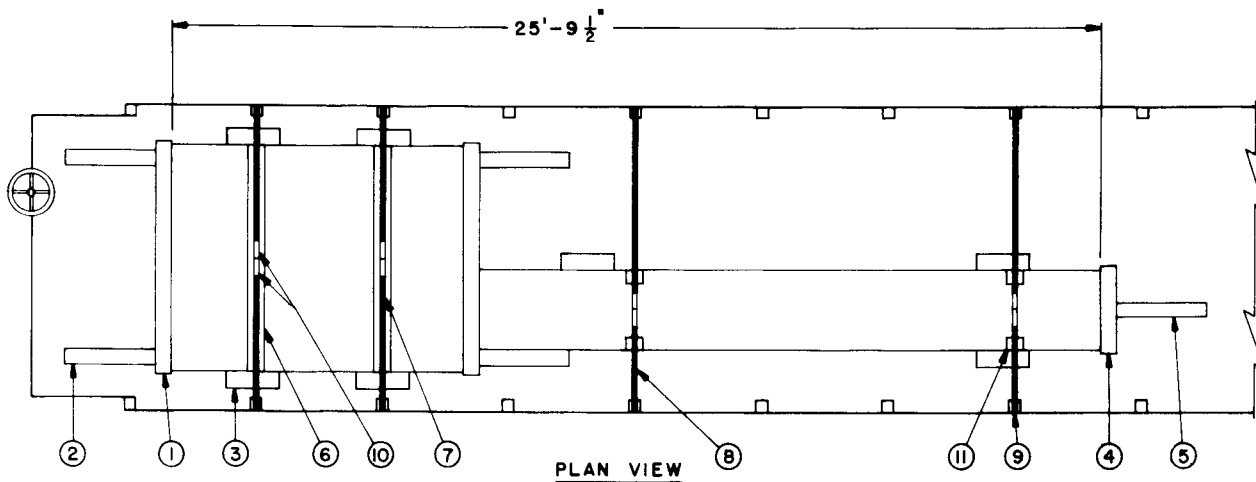
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- ④ HEADER, 2" X 6" X 30" (DOUBLED) (1 REQD). NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-60d NAILS.
- ⑤ BACK-UP CLEAT, 2" X 6" X 30" (DOUBLED) (1 REQD). CENTER ON PIECE MARKED ④ AND NAIL THE FIRST PIECE TO THE CAR FLOOR W/5-30d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/5-60d NAILS.
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END VIEW



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BILL OF MATERIAL		
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DUNNAGE -----		285 LBS
TOTAL WEIGHT -----		2,426 LBS