REV NO. I

APPROVED BY
MECH DIV AAR, THEIR LETTER
DATED APR 8,1990 FILE LR-11.0.70

SIGNED C. W. Mosblech

DATE 22 APRIL 1980

TEA, MTMC, FT EUSTIS, VA.

CHAPARRAL

LOADING AND BRACING ON FLAT CAR OF GUIDED MISSILE SYSTEM, INTERCEPT AERIAL, M54 AND M54AI

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GENERAL NOTES, AND MATERIAL SPECIFICATIONS	
UNCRATED-MOUNTED ON SKID BASE	4, 5
CRATEDINCRATED ON ALUMINUM BLOCKS	

THIS DRAWING, INCLUDING REVISION 1, SUPERSEDES DRAWING 19-48-7880-GSE 5CH4, DATED MARCH 1971.

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		/		CLASS	DIVIS	ION	DRAWIN	ie	FILE
				19	4	8	718	0	GSE 5CH4

DO NOT SCALE

GENERAL NOTES

- THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.
- THE LOADS SHOWN ON PAGES 4 THRU 7 ARE BASED ON FLAT CARS 10'-0" WIDE (PLATFORM). THE LOADS SHOWN ON PAGES 8 THRU 10 ARE BASED ON FLAT CARS 9'-2" WIDE (PLATFORM). WIDER CARS CAN BE USED. ONLY ONE UNIT OF LADING IS SHOWN; HOWEVER, MULTIPLES OF UNITS, AS SHOWN OR DISSIMILAR IN NATURE, MAY BE LOADED ON A CAR IF SPACE PERMITS. 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.
- 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 (UNCRATED-MOUNTED ON ALUMINUM BLOCKS):

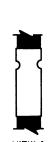
 ITEM DIMENSIONS ------ 10'-8-1/2" LONG BY 7'-10-3/8" WIDE BY 7'-3-3/4" HIGH.

 ITEM GROSS WEIGHT----- 9,720 POUNDS (APPROX).
 - LADING DATA (CRATED):
 ITEM DIMENSIONS------11'-11-3/4" LONG BY 8'-9" WIDE BY 8'-6-7/8" HIGH. ITEM GROSS WEIGHT ----- 12,270 POUNDS (APPROX).
- 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.
- 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.
- WIRE ROPE CABLE TENSIONING CAN BE ACCOMPLISHED BY EMPLOYING TWO (2) CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- ONLY 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 "END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS (TOP VIEW)" DETAIL ON PAGE 3. G.
- WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, OR AS SHOWN IN DETAILS "A" AND "B" BELOW, A MINIMUM OF TWO (2) SEALS (BUTTED TOGETHER) WITH TWO (2) PAIRS OF CRIMPS PER SEAL MUST BE USED.
- CAUTION: STAKE POCKETS WILL BE USED FOR ALL TIE 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" STRAP.
- Dunnage lumber specified throughout this procedural drawing is of nominal size unless otherwise dimensioned. For example, 2" x 6" material is actually 1-1/2" thick by 5-1/2" wide and θ " x 6" material is actually 5-1/2" thick by
- 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.

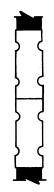
REVISIONS

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

- DELETING X FROM XM54.
 ADDING M54A1 TO THE TITLE.
- ADDING APPLICATION OF STAGGERED NAILING PATTERN ON PAGES 6 AND 8.
- CHANGING "GENERAL NOTES" AND "MATERIAL SPECIFICATIONS" TO CONFORM TO CURRENT STANDARDS.



VIEW A ONE SEAL WITH ONE PAIR OF CRIMPS PER SEAL.



VIEW B TWO SEALS WITH TWO PAIR OF CRIMPS PER SEAL.

MATERIAL SPECIFICATIONS

LUMBER ----DOUGLAS FIR OR COMPARABLE LUMBER WITH STRAIGHT GRAIN AND FREE OF MATERIAL DEFECTS. REF: FED SPEC -----: COMMON. REF: FED SPEC FF-N-105. NAILS --

 -- : STEEL WIRE, PLAIN, PREFORMED, REGULAR LAY, 11.5 TONS, 6 X 19, FLEXIBLE IWRC, MACWHYTE WIRE ROPE CO (OR EQUAL). REF: FED SPEC RR-W-410. ROPE -

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

STRAPPING, STEEL --- : CLASS I, TYPE I, HEAVY DUTY, FINISH A, B (GRADE 2), OR C. REF: FED SPEC QQ-5-781.

- : TYPE D, STYLE I, II, OR IX, CLASS H. REF: FED SPEC STRAP SEAL -QQ-5-781.

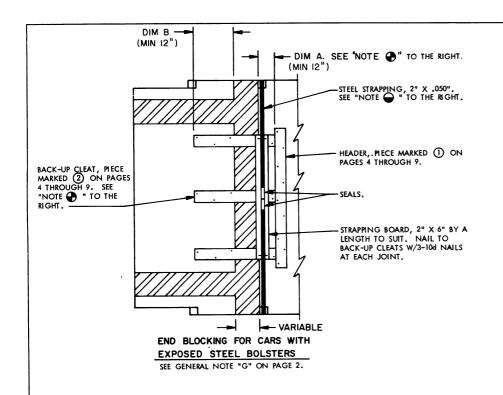
STRAP STAPLE, STAKE POCKET PROTECTOR --- : COMMERCIAL GRADE.

CRIMP UPPER SEAL INDICATES AFTER TENSIONING VIEW B VIEW B 18" MIN 18"MIN VIEW TWO (2) STAKE POCKET PROTECTORS UNDER EACH STAKE DETAIL B

INDICATES

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

METHOD OF INSTALLING 2" STRAPPING AND STAKE POCKET PROTECTORS (ALT PAD).



NOTE :

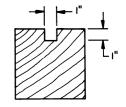
THE OPTIONAL STRAP HOLD DOWN FOR END BLOCKING IS FOR CARS WITH OR WITHOUT EXPOSED STEEL BOLSTERS.

NOTE :

WHEN LOADING CARS HAVING EXPOSED STEEL
BOLSTERS, BOTH DIMENSION "A" AND DIMENSION
"B" MUST BE AT LEAST 12", AND THE SUM OF
DIMENSIONS "A" AND "B" MUST BE EQUAL TO OR
GREATER THAN THE LENGTH OF A BACK-UP CLEAT
(PIECE MARKED ②), TO PROVIDE FOR PROPER
NAILING TO THE CAR FLOOR, SEE PIECE MARKED ②
ON PAGE 4 OR 6 OR 8.

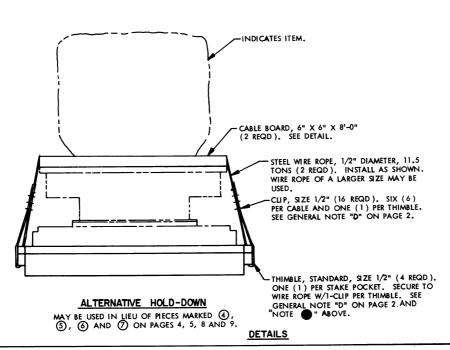
NOTE :

A STANDARD THIMBLE AS SPECIFIED CAN BE SECURED TO A CABLE WITH A 1/2" CLIP. HOWEVER, IF DESIRED, OR IF THE 1/2" THIMBLE BEING USED IS OF A TYPE WHICH CANNOT BE SECURED TO A CABLE WITH A 1/2" CLIP, A 5/8" CUP MAY BE USED.



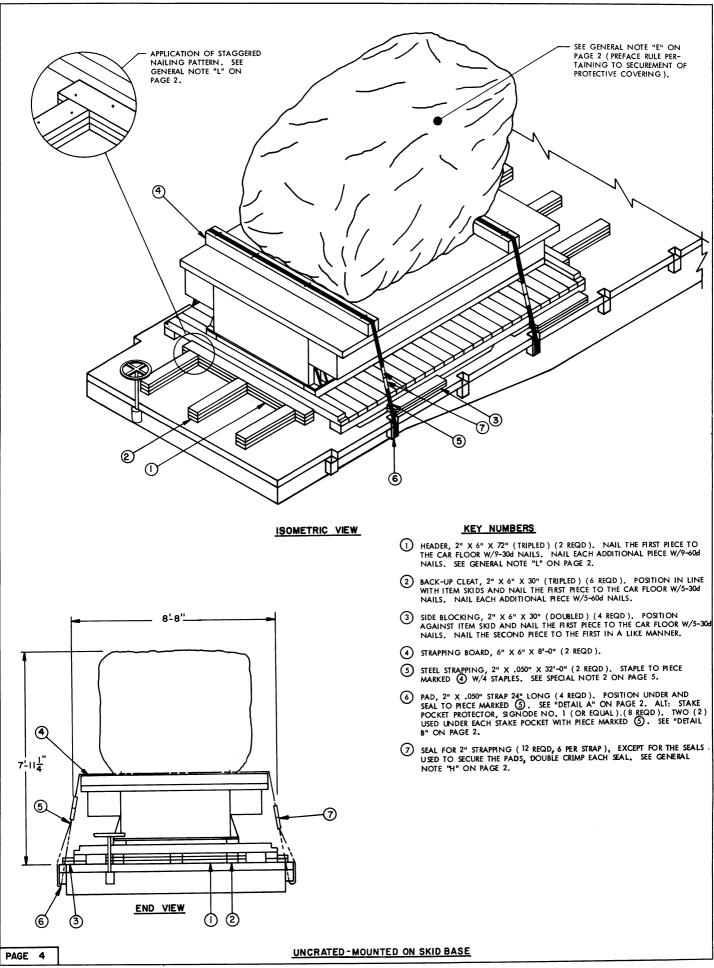
CABLE BOARD

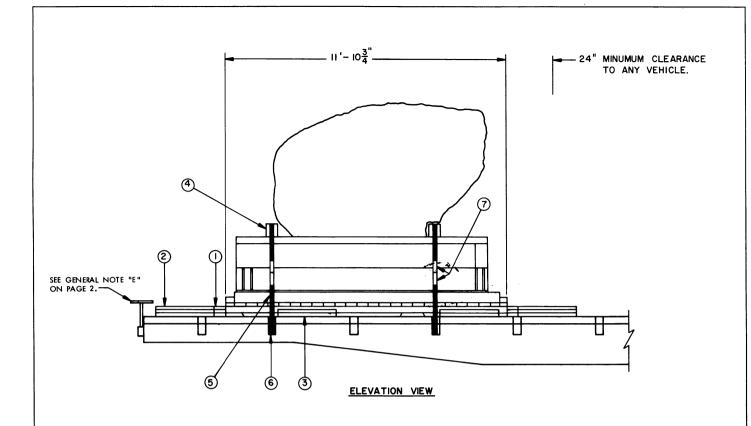
6" X 6" MATERIAL. NOTCH AS SHOWN TO RETAIN CABLE.



PAGE

3





BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" X 6"	101	101		
6" X 6"	16	48		
NAILS	NO. REQD	POUNDS		
30d (4-1/2")	88	4-1/2		
60d (6")	%	9-3/4		
STEEL STRAPPING, 2" X SEAL FOR 2" STRAPPING STAPLE FOR 2" STRAPPIN	• • • • • • • • • • • • • • • • • • • •	2' REQD 24 LBS 2 REQD 3 LBS 8 REQD NIL		

SPECIAL NOTES

- A ONE (1) UNIT LOAD IS SHOWN ON A 10'-0" WIDE (PLATFORM) FLAT CAR WITH STAKE POCKETS SPACED 42" ON CENTER. A WIDER OR NARROWER (9'-2" MINIMUM) FLAT CAR MAY BE USED.
- 2. 1/2" CABLE (OR LARGER) MAY BE USED IN LIEU OF 2" STRAPPING SHOWN AS PIECE MARKED ⑤. SEE GENERAL NOTES "D", "E", AND "F" ON PAGE 2. SEE "ALTERNATIVE HOLD-DOWN" DETAIL ON PAGE 3.
- 3. IF THE FLAT CAR BEING LOADED HAS EXPOSED BOLSTERS, SEE "END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS" DETAIL ON PAGE 3, FOR SPECIAL GUIDANCE WHICH MAY PERMIT USE OF SOME CARS THAT HAVE EXPOSED STEEL COMPONENTS.

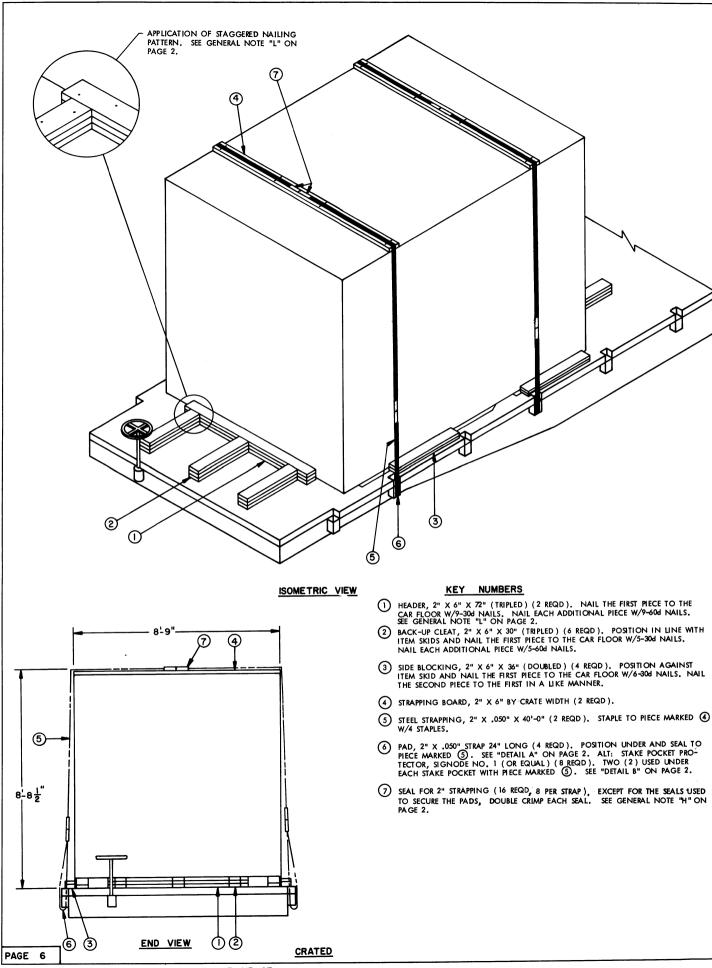
 4. ITEM MUST BE LOCATED ON CAR RELATIVE TO LOCATION OF STAKE POCKETS SO THAT WHEN PIECES MARKED 4 THROUGH 7 ARE APPLIED THEY WILL BE IN THE SAME GENERAL LOCATION RELATIVE TO THE ITEM AS SHOWN AS SHOWN.

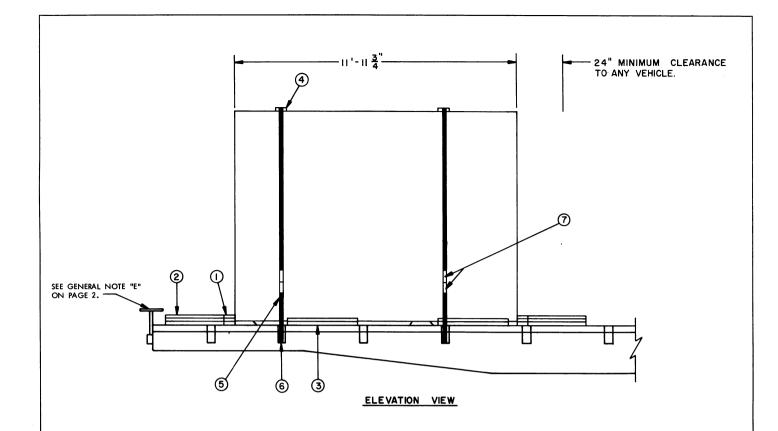
LOAD AS SHOWN

WEIGHT (APPROX) QUANTITY <u>ITEM</u> INTERCEPT AERIAL TOTAL WEIGHT ----- 11,264 LBS

UNCRATED-MOUNTED ON SKID BASE

PAGE 5





BILL OF MATERIAL			
LINEAR FEET	BOARD FEET		
123	123		
NO. REQD	POUNDS		
%	5		
%	9-3/4		
	123 NO. REQD %		

SPECIAL NOTES

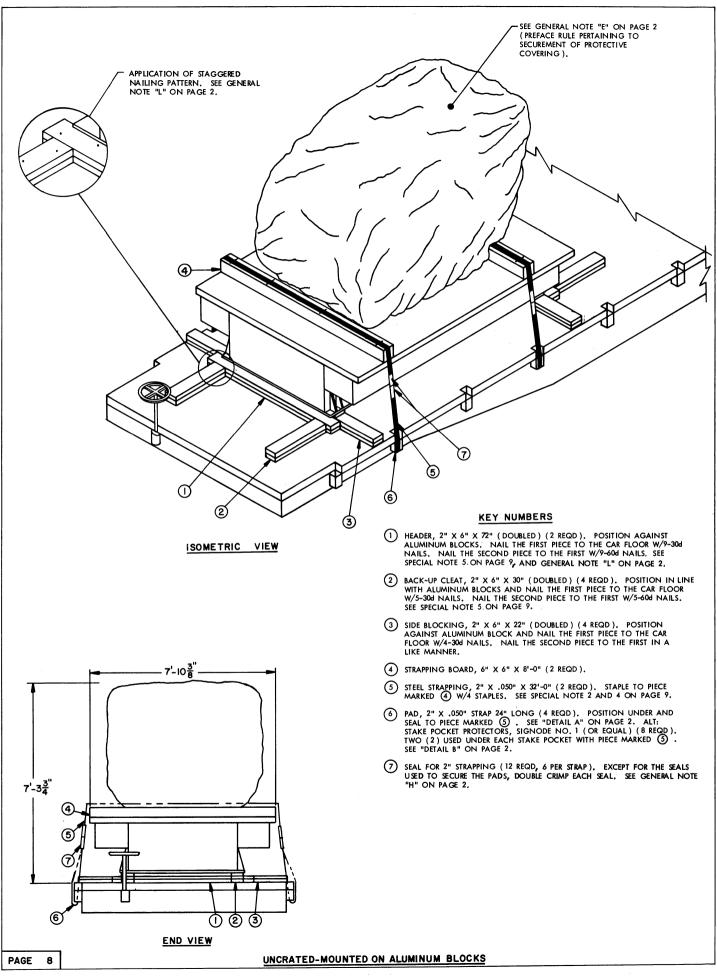
- 1. A ONE (1) UNIT LOAD IS SHOWN ON A 10'-0" WIDE
 (PLATEROM) FLAT CAR WITH STAKE POCKETS SPACED 42" ON
 CENTER. A WIDER FLAT CAR AND A CAR WITH POCKETS
 SPACED OTHER THAN SHOWN MAY BE USED.
 2. IF THE FLAT CAR BEING LOADED HAS EXPOSED BOLSTERS, SEE
 "END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS"
 DETAIL ON PAGE 3, FOR SPECIAL GUIDANCE WHICH MAY
 PERMIT USE OF SOME CARS THAT HAVE EXPOSED STEEL
 COMPONENTS.
 3. ITEM MUST BE LOCATED ON CAR RELATIVE TO LOCATION OF
 STAKE POCKETS SO THAT WHEN PIECES MARKED (4) THROUGH
 (7) ARE APPLIED THEY WILL BE IN THE SAME GENERAL LOCATION RELATIVE TO THE ITEM AS SHOWN.

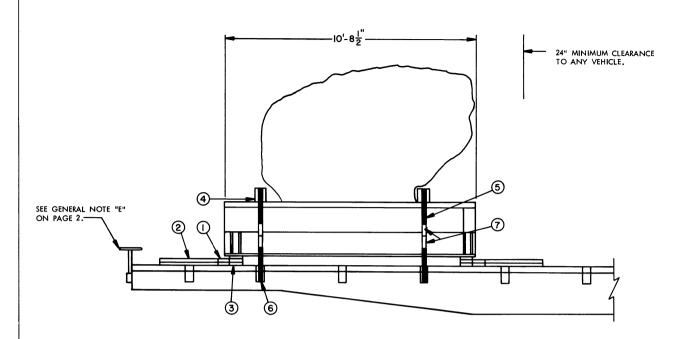
LOAD AS SHOWN

WEIGHT (APPROX) ITEM QUANTITY TOTAL WEIGHT ----- 12,564 LBS

CRATED

PAGE 7





ELEVATION VIEW

SPECIAL NOTES:

- A ONE (1) UNIT LOAD IS SHOWN ON A 9'-2" WIDE (PLATFORM) FLAT CAR WITH STAKE POCKETS SPACED 42" ON CENTER. A WIDER FLAT CAR MAY BE USED.
- 1/2" CABLE (OR LARGER) MAY BE USED IN LIEU OF 2" STRAPPING SHOWN AS PIECE MARKED (\$\overline{3}\). SEE GENERAL NOTES "D", "E", AND "F" ON PAGE 2. SEE "ALTERNATIVE HOLD-DOWN" DETAIL
- IF THE FLAT CAR BEING LOADED HAS EXPOSED BOLSTERS, SEE "END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS" DETAIL ON PAGE 3, FOR SPECIAL GUIDANCE WHICH MAY PERMIT USE. OF SOME CARS THAT HAVE EXPOSED STEEL COMPONENTS.

 ITEM MUST BE LOCATED ON CAR RELATIVE TO LOCATION OF STAKE POCKETS SO THAT WHEN PIECES MARKED ① THROUGH ② ARE APPLIED THEY WILL BE IN THE SAME GENERAL LOCATION RELATIVE TO THE ITEM AS SHOWN.
- THIS ITEM MAY BE BLOCKED BY THE USE OF PRE-POSITIONED HEADERS AND BACK-UP CLEATS AS SHOWN IN THE "PLAN VIEW" ON PAGE 10.

BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
2" X 6"	59	59		
6" X 6"	16	48		
NAILS	NO REQD	POUNDS		
30d (4-1/2")	70	3-1/2		
60d (6")	38	4		

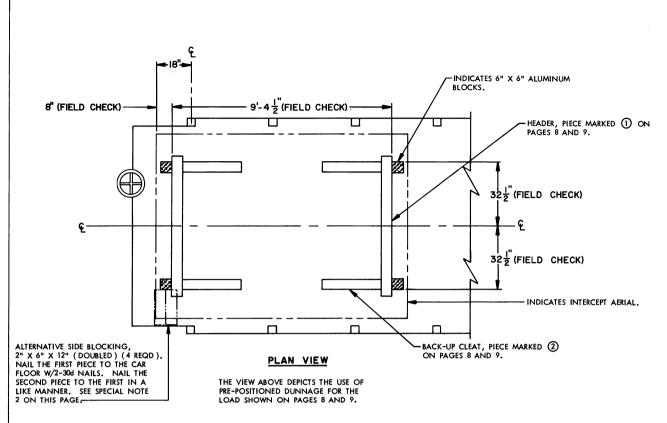
LOAD AS SHOWN

WEIGHT (APPROX) ITEM QUANTITY INTERCEPT AERIAL --- 1 ------ 9,720 LBS ON ALUMINUM BLOCKS

DUNNAGE ----- 249 LBS TOTAL WEIGHT ----- 9,969 LBS

UNCRATED-MOUNTED ON ALUMINUM BLOCKS

PAGE 9



SPECIAL NOTES:

- A ONE (1) UNIT LOAD, DEPICTING THE USE OF PRE-POSITIONED HEADERS AND BACK-UP CLEATS, IS SHOWN ON A 9"-2" WIDE (PLATFORM) FLAT CAR WITH STAKE POCKETS SPACED 42" ON CENTER. A WIDER CAR MAY BE USED.
- 2. WHEN LOADING THE ITEM AS CLOSE TO THE END OF THE CAR AS SHOWN ABOVE, THE SIDE BLOCKING POSITIONED NEAR THE END OF THE CAR MAY BE SHORTENED TO 2" X 6" X 12" (DOUBLED) (4 REQD). SEE "PLAN VIEW "ABOVE. IT WILL ALSO BE NECESSARY TO SHORTEN THE HEADER AT THIS LOCATION TO PROVIDE ROOM FOR THE SIDE BLOCKING. ALL OTHER SIDE BLOCKING WILL BE THE SAME AS PIECE MARKED (3) ON PAGES 8 AND 9.
- SEE PIECES MARKED (4) THROUGH (7) ON PAGES 8 AND 9 FOR ITEM HOLD-DOWN PROCEDURES.