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 MECH DIV AAR, THEIR LETTER
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 SIGNED [Signature] RSE
 DATE 22 DEC 1967
 TEA, MTMTS, FORT EUSTIS, VA.

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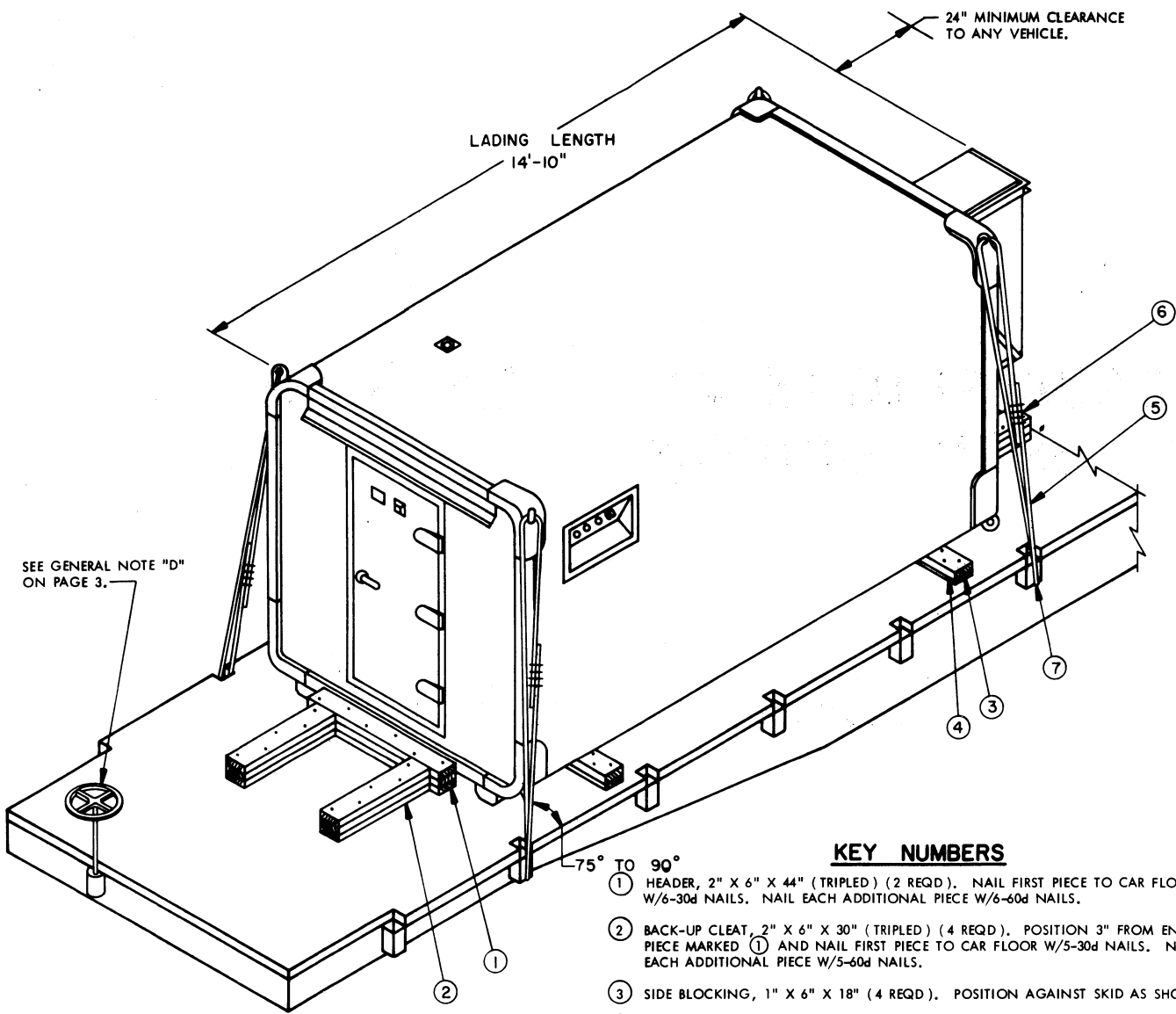
LOADING & BRACING ON FLAT CAR OF SHOP EQUIPMENT

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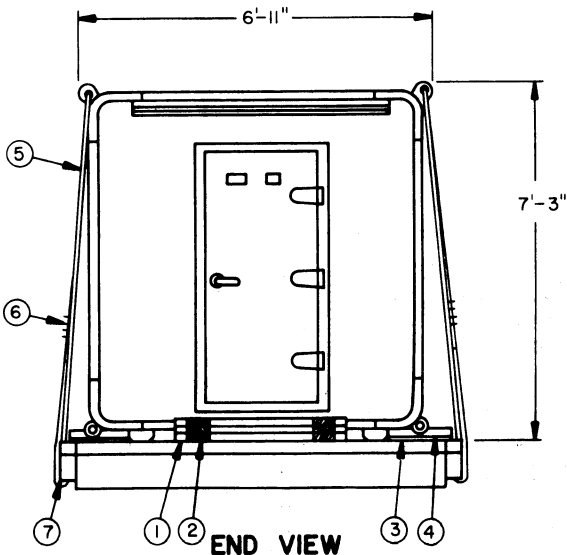
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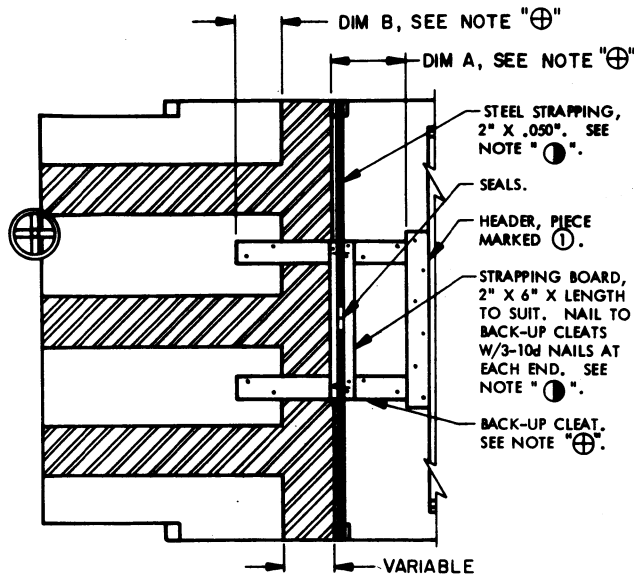
ISOMETRIC VIEW

KEY NUMBERS

- ① HEADER, 2" X 6" X 44" (TRIPLED) (2 REQD). NAIL FIRST PIECE TO CAR FLOOR W/6-30d NAILS. NAIL EACH ADDITIONAL PIECE W/6-60d NAILS.
- ② BACK-UP CLEAT, 2" X 6" X 30" (TRIPLED) (4 REQD). POSITION 3" FROM END OF PIECE MARKED ① AND NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL EACH ADDITIONAL PIECE W/5-60d NAILS.
- ③ SIDE BLOCKING, 1" X 6" X 18" (4 REQD). POSITION AGAINST SKID AS SHOWN.
- ④ SIDE BLOCKING, 2" X 6" X 18" (4 REQD). POSITION ON TOP OF PIECE MARKED ③ AND AGAINST SKID AS SHOWN. NAIL THRU PIECE MARKED ③ TO CAR FLOOR W/3-30d NAILS.
- ⑤ STEEL WIRE ROPE, 1/2" DIAMETER, 11.5 TONS (4 REQD). INSTALL CABLE TO APPROXIMATE THE ANGLE SHOWN AND TO FORM A COMPLETE LOOP FROM STAKE POCKET ON CAR THRU LADING TIE DOWN DEVICE AND BACK TO STAKE POCKET, SEE GENERAL NOTES "C", "E", AND "F" ON PAGE 3.
- ⑥ CLIP, SIZE 1/2" (20 REQD). FOUR (4) PER CABLE AND ONE (1) PER THIMBLE. SEE GENERAL NOTE "C" ON PAGE 3.
- ⑦ THIMBLE, STANDARD, SIZE 1/2" (4 REQD). ONE (1) PER STAKE POCKET. SECURE TO WIRE ROPE MARKED ⑤ W/1 CLIP PER THIMBLE. SEE GENERAL NOTE "C" ON PAGE 3.



END VIEW



END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS

(SEE GENERAL NOTE "G" ON THIS PAGE)

NOTE ①:
OPTIONAL STRAP HOLD DOWN FOR END BLOCKING, FOR CARS WITH OR WITHOUT EXPOSED STEEL BOLSTERS.

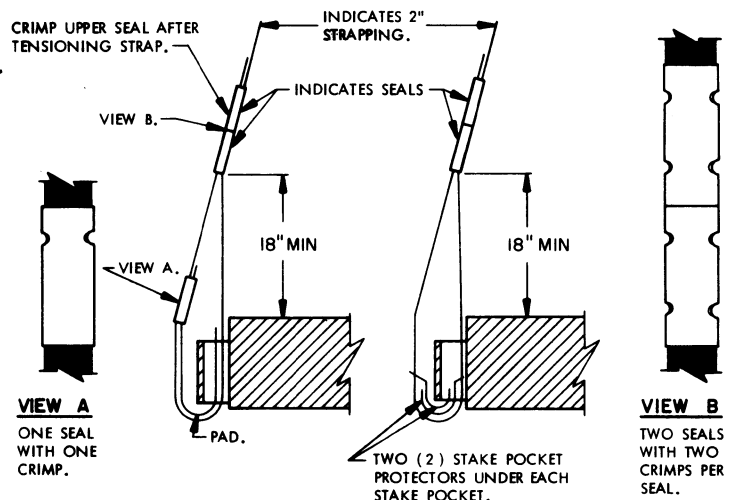
NOTE ⊕:
WHEN LOADING CARS WITH EXPOSED STEEL BOLSTERS, TOTAL OF DIMENSION "A" AND DIMENSION "B" (MIN 12") MUST EQUAL THE LENGTH OF BACK-UP CLEATS (PIECES MARKED ②) TO PROVIDE FOR PROPER NAILING TO THE CAR FLOOR. SEE PIECE MARKED ② FOR PROPER NAILING.

GENERAL NOTES

- A. THE LOAD AS SHOWN ON PAGE 2 IS BASED ON A FLAT CAR 8'-6" WIDE (PLATFORM) AND THE LOAD AS SHOWN ON PAGE 4 IS BASED ON A FLAT CAR 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. 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.
- B. LADING DATA (UNCRATED):
ITEM DIMENSIONS ---- 14'-10" LONG X 6'-11" WIDE X 7'-3" HIGH.
ITEM GROSS WEIGHT - 5,420 POUNDS (APPROX).
LADING DATA (CRATED):
ITEM DIMENSIONS ---- 16'-2" LONG X 8'-1" WIDE X 8'-5-1/2" HIGH.
ITEM GROSS WEIGHT - 7,820 POUNDS (APPROX).
- C. 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 AS SPECIFIED BY "NOTE ②" BELOW.
- 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. TO ACHIEVE PROPER CABLE TENSION, EMPLOY TWO (2) CABLE "GRIPPERS" AND AN APPLICABLY SIZED "COME-A-LONG" TYPE MECHANICAL HOIST.
- F. **CAUTION:** IT IS RECOMMENDED THAT CABLE BE INSTALLED TO APPROXIMATE ANGLE SHOWN; HOWEVER, IF PLACEMENT OF CAR STAKE POCKETS PREVENTS THIS, CARE MUST BE EXERCISED TO ENSURE THAT CABLES ON THE SAME SIDE OF LADING ARE INSTALLED SO THEIR RETENTION FORCES ACT IN OPPOSITE LONGITUDINAL DIRECTIONS --- CONTACT OF CABLE WITH EDGE OF LADING IS PROHIBITED.
- G. 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" DETAIL ON THIS PAGE.
- H. 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 WITH TWO (2) CRIMPS PER SEAL MUST BE USED.

NOTE ②:
NUTS ON 1/2" CABLE CLIPS WILL BE TIGHTENED TO A TORQUE OF 85 TO 95 FOOT POUNDS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	6	3
2" X 6"	58	58
NAILS		POUNDS
30d (4-1/2")	44	2-1/4
60d (6")	64	6-1/2
ROPE, STEEL WIRE, 1/2" DIA	100' REQD	44 LBS
CLIP, 1/2"	20 REQD	9 LBS
THIMBLE, STANDARD, 1/2"	4 REQD	1 LB



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.
- ROPE** ----- : 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.
- CLIPS** ----- : "U" BOLT, CROSBY, HEAVY DUTY.
- STRAPPING, STEEL** : TYPE I OR IV, CLASS A OR C. REF: FED SPEC QQ-S-781. (FOR FSN SEE 58-38-100).

DETAIL A

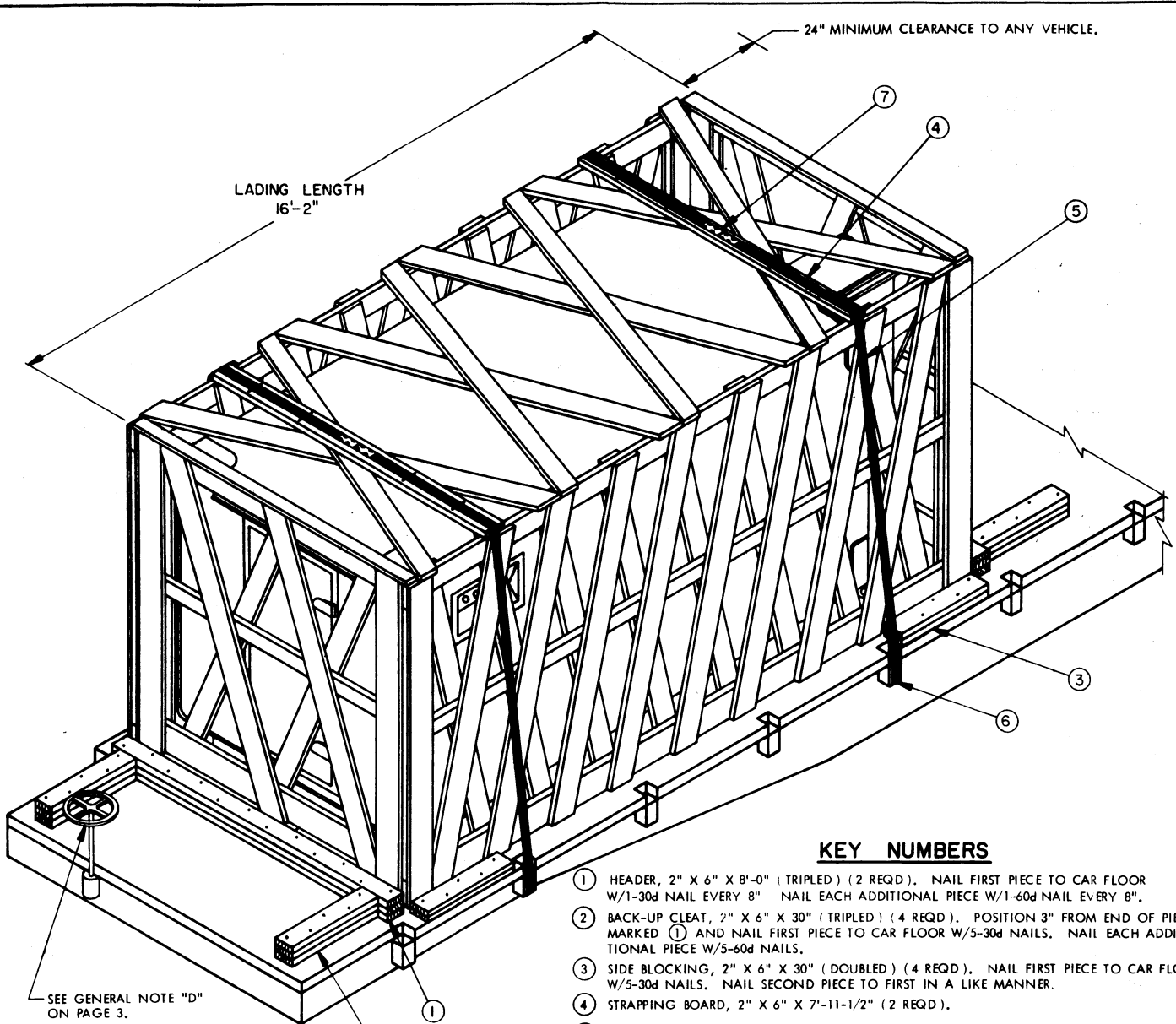
METHOD OF INSTALLING 2" STRAPPING AND PAD AT STAKE POCKET

DETAIL B

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

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SHOP EQUIPMENT (UNCRATED)	1	5,420 LBS
DUNNAGE		216 LBS
TOTAL WEIGHT		5,636 LBS

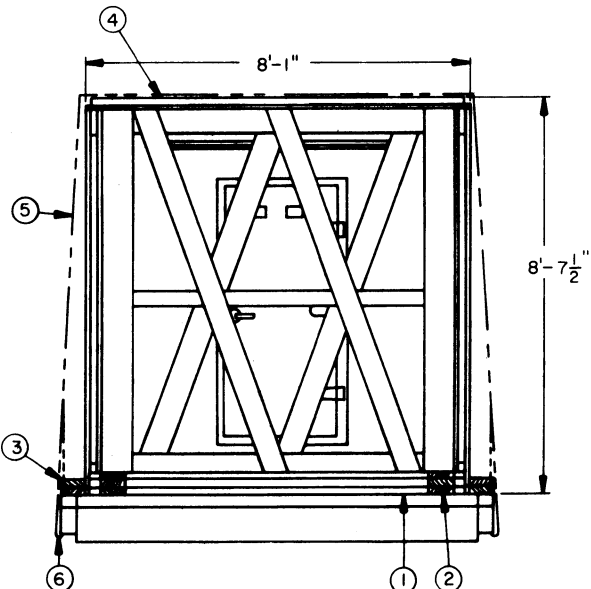


SEE GENERAL NOTE "D" ON PAGE 3.

KEY NUMBERS

- ① HEADER, 2" X 6" X 8'-0" (TRIPLED) (2 REQD). NAIL FIRST PIECE TO CAR FLOOR W/1-30d NAIL EVERY 8" NAIL EACH ADDITIONAL PIECE W/1-60d NAIL EVERY 8".
- ② BACK-UP CLEAT, 2" X 6" X 30" (TRIPLED) (4 REQD). POSITION 3" FROM END OF PIECE MARKED ① AND NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL EACH ADDITIONAL PIECE W/5-60d NAILS.
- ③ SIDE BLOCKING, 2" X 6" X 30" (DOUBLED) (4 REQD). NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL SECOND PIECE TO FIRST IN A LIKE MANNER.
- ④ STRAPPING BOARD, 2" X 6" X 7'-11-1/2" (2 REQD).
- ⑤ STEEL STRAPPING, 2" X .050" X 37'-0" (2 REQD). STAPLE TO PIECE MARKED ④ W/4 STAPLES.
- ⑥ PAD, 2" X .050" STRAP 24" LONG (4 REQD). POSITION UNDER AND SEAL TO PIECE MARKED ⑤. SEE "DETAIL A" ON PAGE 3. ALT: STAKE POCKET PROTECTOR, SIGNODE NO. 1 (OR EQUAL) (8 REQD). TWO (2) USED UNDER EACH STAKE POCKET WITH PIECE MARKED ⑤. SEE "DETAIL B" ON PAGE 3.
- ⑦ SEAL FOR 2" STRAPPING (16 REQD). SEE GENERAL NOTE "H" ON PAGE 3.

ISOMETRIC VIEW



END VIEW

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 6"	114	114
NAILS	NO. REQD	POUNDS
30d (4-1/2")	84	4-1/4
60d (6")	88	9
STEEL STRAPPING, 2" X .050"	82' REQD	28 LBS
SEAL FOR 2" STRAPPING	16 REQD	4 LBS
STAPLE FOR 2" STRAPPING	8 REQD	NIL

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SHOP EQUIPMENT (CRATED)	1	7,820 LBS
DUNNAGE		331 LBS
TOTAL WEIGHT		8,151 LBS