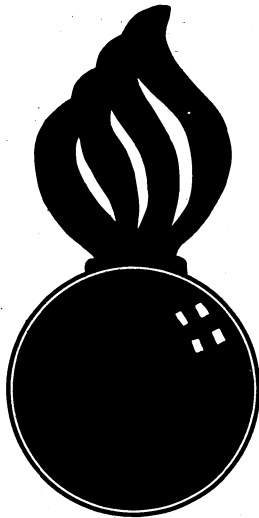


APPROVED
 BUREAU OF EXPLOSIVES
A. F. Grassmuck
 INSPECTOR
 DATE 3/12/63



LOADING & BRACING (CL & LCL) ON FLAT CAR OF AFT BODY SECTION, PACKED IN M410 CONTAINER, FOR THE NIKE-HERCULES GUIDED MISSILE

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LOADING & BRACING (CL & LCL) ON FLAT CAR OF AFT BODY SECTION, PACKED IN M410 CONTAINER, FOR THE NIKE-HERCULES GUIDED MISSILE

| | | | |
|-------------------------|-----------------------------------|---------------------------------|---|
| DRAFTSMAN KSJ | TITLER DIW / DWA | SUBMITTED <i>[Signature]</i> | |
| CHECKER GWP / | APPROVED BY <i>[Signature]</i> | COMMANDER, SAVANNAH ARMY DEPOT | |
| REVISIONS | | | |
| 4 | 3-7-63 | <i>[Signature]</i> | <i>[Signature]</i> |
| | | | APPROVED BY ORDER OF COMMANDER, ARMY MATERIEL COMMAND <i>[Signature]</i> ARMY SUPPLY & MAINTENANCE COMMAND MATERIEL COMMAND U.S.A. |
| 16 DECEMBER 1957 | | | |
| CLASS | DIVISION | DRAWING | FILE |
| 19 | 48 | 5099 | GM5A47 |

DO NOT SCALE

GENERAL NOTES

- A. LOAD AS SHOWN IS BASED ON A FLAT CAR 40'-6" LONG x 9'-2" WIDE (PLATFORM), WITH STAKE POCKETS SPACED 42" ON CENTERS (SEE GENERAL NOTE "K"). LARGER CARS MAY BE USED, HOWEVER, CARS LONGER THAN 40'-6" SHOULD NOT BE ORDERED.
- IN SOME INSTANCES WHEN A LONGER CAR IS FURNISHED FOR USE, OUTLOADING OPERATIONS CAN BE ENHANCED BY TAKING ADVANTAGE OF ONE OF THE FOLLOWING DELINEATED PROCEDURES, AS SPECIFIED.
1. FOR A CAR WHICH IS AT LEAST 44'-0" LONG, SHIFT THE LADING TOWARD THE "A" END OF THE CAR AND INSTALL ONE SET OF "END BLOCKING", PIECES MARKED ① AND ②, NEAR THE "B" END, AS SHOWN BY "ALT END BLOCKING" DETAIL ON PAGE 3.
 2. FOR A CAR WHICH IS AT LEAST 47'-6" LONG, INSTALL BOTH SETS OF "END BLOCKING", PIECES MARKED ① AND ②, NEAR THE ENDS OF THE CAR, AS SHOWN BY "ALT END BLOCKING" DETAIL ON PAGE 3.
NOTE: REFER TO GENERAL NOTE "O" FOR OUTLOADING PROCEDURES APPLICABLE TO EMPTY CONTAINERS.
- B. SELECTION OF RAIL CARS FOR THE TRANSPORT OF THIS ITEM WILL BE IN ACCORDANCE WITH PARA 8,300.4, ORDM 3-4, VOL 3.
- C. **NOTICE:** SHIPMENT WILL BE POSITIONED ON THE RAIL CAR IN COMPLIANCE WITH THE WEIGHT DISTRIBUTION REQUIREMENTS OF THE AAR. THE NUMBER OF UNITS MAY BE ADJUSTED TO FIT THE RAIL CAR CONCERNED OR THE QUANTITY TO BE SHIPPED; HOWEVER, THE APPROVED METHODS CONTAINED HEREIN, FOR FULL OR PARTIAL CARLOAD, MUST BE FOLLOWED FOR BLOCKING, BRACING AND STAYING OF THIS ITEM.
- D. **CAUTION:** THE LADING MUST BE LOADED TOWARD THE "A" END OF THE CAR AS SHOWN, TO SATISFY THE BRAKE WHEEL CLEARANCE REQUIREMENTS OF THE AAR.
- E. 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. RELATIVE TO "END BLOCKING" PROCEDURES SPECIFIED BY GENERAL NOTE "A" (ITEMS 1 AND 2, OF SECOND PARAGRAPH) AND BY GENERAL NOTE "O" (ITEMS 2 AND 3.), SEE "END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS" DETAIL ON PAGE 3.
- F. FOR DETAIL OF THE MHO CONTAINER SEE DRAWING NO 9031007.
CONTAINER DIMENSIONS -- 223-1/2" LONG x 54-3/4" WIDE x 61-1/2" HIGH.
GROSS WEIGHT -- 4006 LBS (APPROX).
- G. TIE BAR FACILITIES, TOGETHER WITH 1-1/4" x .035" STEEL STRAPPING, WILL BE USED TO UNITIZE CONTAINERS AS SHOWN. IF THE CAPACITY OF MHE PERMITS, IT IS RECOMMENDED THAT CONTAINERS BE UNITIZED PRIOR TO PLACEMENT ABOARD THE CAR. WHEN USING A FORK LIFT TRUCK FOR LOADING OR UNLOADING THE CAR, IT IS PERMISSIBLE TO HANDLE A UNITIZED STACK BY PLACING THE TRUCK FORKS UNDER THE SECOND LAYER CONTAINER.
- H. WHEN ANY STRAP IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS WITH TWO (2) CRIMPS PER SEAL MUST BE USED.
- J. **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. **NOTE:** ONLY ONE (1) STRAP MAY BE ANCHORED INTO ANY ONE (1) CAR STAKE POCKET.
- K. THE LOCATIONS SHOWN FOR THE TIE DOWN STRAPPING, PIECES MARKED ⑩ AND ⑪, ARE BASED ON A 40'-6" CAR WHICH HAS STAKE POCKETS SPACED 42" ON CENTER; HOWEVER, THE DEPICTED METHOD OF STRAP APPLICATION IS APPLICABLE TO OTHER LENGTH CARS AND TO CARS HAVING STAKE POCKET SPACINGS OTHER THAN 42". SEE GENERAL NOTE "L". IF DESIRED, THE TIE DOWN STRAPPING CAN BE INSTALLED IN THE MANNER SHOWN ON PAGE 6 FOR THE 7-UNIT LCL LOAD -- PIECES MARKED ⑫ AND ⑬ SUBSTITUTED FOR PIECES MARKED ⑩ AND ⑪ ON PAGES 4 AND 5 -- PROVIDING THE CAR BEING USED IS EQUIPPED WITH STAKE POCKETS WHICH ARE SPACED 42" OR LESS APART OR IS EQUIPPED WITH A SUFFICIENT QUANTITY OF SPECIAL TIE DOWN DEVICES WHICH SATISFY SPECIFICATIONS DELINEATED IN GENERAL NOTE "J".
- L. THE LOCATIONS FOR THE TIE DOWN STRAPPING, PIECES MARKED ⑩ AND ⑪ OR PIECES MARKED ⑫ AND ⑬, SHOULD BE ADJUSTED TO MOST EFFICIENTLY UTILIZE THE AVAILABLE STRAP ANCHOR POINTS. FOR CARS LONGER THAN 40'-6", THE LONGITUDINAL POSITIONS FOR THE LOAD UNITS MAY BE ADJUSTED AS REQUIRED TO HELP SATISFY THIS REQUIREMENT. RELATIVE TO RELOCATING THE LOAD UNITS, PIECES MARKED ⑥ MAY BE LENGTHENED BUT NOT SHORTENED.
- M. **CAUTION:** SLIGHT VARIATION IN COVER CONFIGURATION MIGHT NECESSITATE TURNING ADJACENT CONTAINERS 180° TO PREVENT METAL TO METAL CONTACT.
- N. SPECIFIED OUTLOADING PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED CONTAINERS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE. SEE GENERAL NOTE "O".
- O. FOR THE SHIPMENT OF EMPTY CONTAINERS THE FOLLOWING IS APPLICABLE:
1. FOR OUTLOADING ON CARS WHICH ARE LESS THAN 41'-6" LONG.
 - a. ELIMINATE PIECES MARKED ③.
 - b. REDUCE LENGTH OF PIECES MARKED ② TO 30", WITH A PROPORTIONAL REDUCTION TO THE NAILING.
 - c. ELIMINATE PIECES MARKED ⑩, SUBSTITUTING ONE ADDITIONAL PIECE MARKED ⑪ FOR EACH TWO PIECES ⑩ WHICH ARE ELIMINATED. EACH ADDITIONAL PIECE ⑪ SHOULD BE CENTRALLY LOCATED ON A LOAD UNIT OF FOUR (4) CONTAINERS.
 2. FOR OUTLOADING ON CARS WHICH ARE AT LEAST 41'-6" LONG.
 - a. SHIFT THE LADING TOWARD THE "A" END OF THE CAR AND INSTALL ONE SET OF "END BLOCKING", PIECES MARKED ① AND ②, NEAR THE "B" END, AS SHOWN BY "ALT END BLOCKING" DETAIL ON PAGE 3. **NOTE:** DO NOT REDUCE LENGTH OF PIECES MARKED ②.
 - b. ELIMINATE PIECES MARKED ③.
 - c. ELIMINATE ONE (1) PIECE MARKED ⑤ AND ALL PIECES MARKED ⑥.
 - d. ELIMINATE PIECES MARKED ⑩, SUBSTITUTING ONE ADDITIONAL PIECE MARKED ⑪ FOR EACH TWO PIECES ⑩ WHICH ARE ELIMINATED. EACH ADDITIONAL PIECE ⑪ SHOULD BE CENTRALLY LOCATED ON A LOAD UNIT OF FOUR (4) CONTAINERS.
 3. FOR OUTLOADING ON CARS WHICH ARE AT LEAST 45'-0" LONG.
 - a. INSTALL BOTH SETS OF "END BLOCKING", PIECES MARKED ① AND ②, NEAR THE ENDS OF THE CAR, AS SHOWN BY "ALT END BLOCKING" DETAIL ON PAGE 3. **NOTE:** DO NOT REDUCE LENGTH OF PIECES MARKED ②.
 - b. ELIMINATE PIECES MARKED ③.
 - c. ELIMINATE ONE (1) PIECE MARKED ⑤ AND ALL PIECES MARKED ⑥.
 - d. ELIMINATE PIECES MARKED ⑩, SUBSTITUTING ONE ADDITIONAL PIECE MARKED ⑪ FOR EACH TWO PIECES ⑩ WHICH ARE ELIMINATED. EACH ADDITIONAL PIECE ⑪ SHOULD BE CENTRALLY LOCATED ON A LOAD UNIT OF FOUR (4) CONTAINERS.

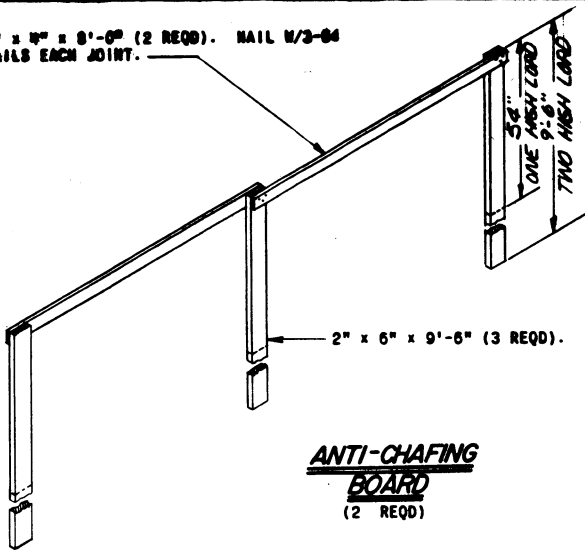
MATERIAL SPECIFICATIONS

LUMBER: SEE PARAGRAPH 8300, ORDM 3-4, VOL 3.

NAILS: COMMON, CEMENT COATED, FED SPEC FF-N-105.
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.

STEEL STRAPPING: TYPE I, CLASS "A" OR "C", FED SPEC QQ-Q-701.
FOR FSN SEE SB-38-100.

1" x 4" x 9'-0" (2 REQD). NAIL W/3-04
NAILS EACH JOINT.

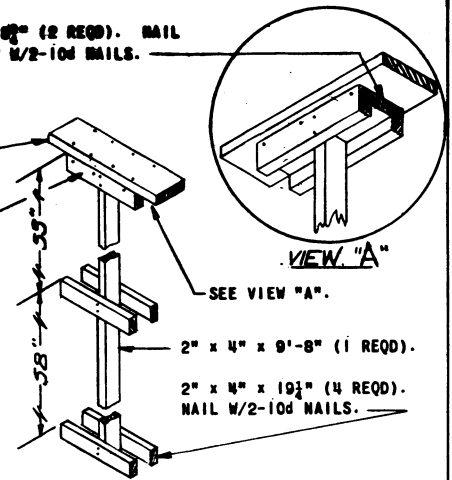


ANTI-CHAFING BOARD
(2 REQD)

2" x 4" x 9'-0" (2 REQD). NAIL
TO 2" x 8" W/2-10d NAILS.

2" x 4" x 32" (1 REQD).
NAIL TO 2" x 4" W/4-10d
NAILS EACH JOINT.

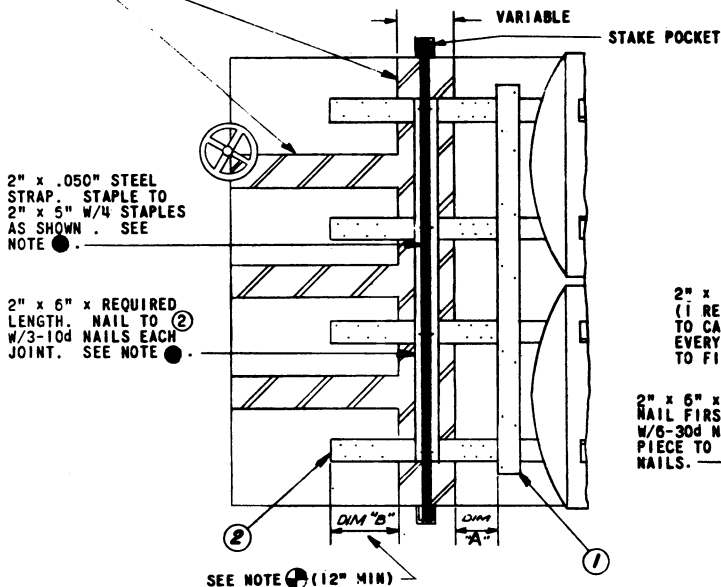
2" x 4" x 19 1/2" (2 REQD).
NAIL W/5-10d NAILS AS
SHOWN IN VIEW "A".



ANTI-CHAFING BOARD
(4 REQD)

MAY BE USED IN LIEU OF PC (4) PAGES 4 AND 5
WHEN SHIPPING EMPTY CONTAINERS ONLY. FOR ONE
(1) HIGH LOADING REMOVE THE TWO (2) LOWER CROSS-
WISE 2" x 4"s AND 58" FROM THE LOWER END OF
THE 9'-8" UPRIGHT PIECE.

EXPOSED STEEL BOLSTERS



END BLOCKING FOR CARS WITH EXPOSED STEEL BOLSTERS

SEE GENERAL NOTE "E", PAGE 2.

NOTE (1):

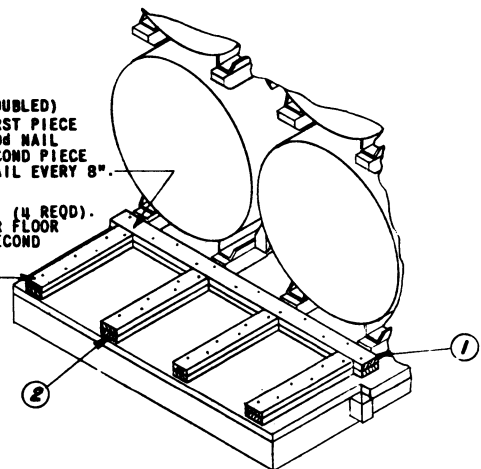
WHEN LOADING CARS WITH EXPOSED STEEL BOLSTERS,
TOTAL DIM "A" AND DIM "B" (12" MIN) MUST BE A
MINIMUM OF 36" TO PROVIDE PROPER NAILING OF
PIECE (2) TO CAR FLOOR. SEE KEY NUMBER (2), PAGE
3, FOR NAILING.

NOTE (2):

MAY BE USED FOR CARS WITH OR
WITHOUT EXPOSED STEEL BOLSTERS.

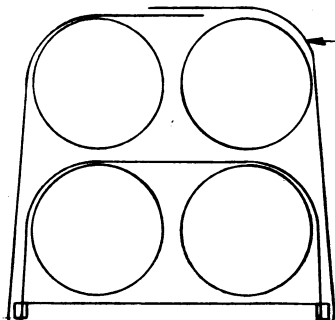
2" x 6" x 8'-3" (DOUBLED)
(1 REQD). NAIL FIRST PIECE
TO CAR FLOOR W/1-30d NAIL
EVERY 8". NAIL SECOND PIECE
TO FIRST W/1-60d NAIL EVERY 8".

2" x 6" x 36" (DOUBLED) (4 REQD).
NAIL FIRST PIECE TO CAR FLOOR
W/6-30d NAILS. NAIL SECOND
PIECE TO FIRST W/6-60d
NAILS.



ALT END BLOCKING

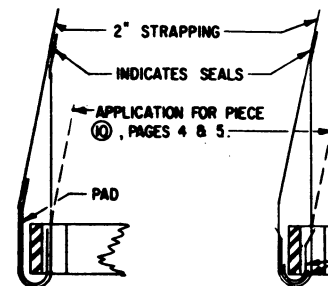
SEE GENERAL NOTE "A", PAGE 2



STRAP THREADING DETAIL

STRAP, PC (1), IS RUN FROM TOP
OF LOAD DOWN TO AND UP THROUGH
STAKE POCKET ON ONE SIDE OF CAR,
BACK UP AND OVER TOP OF FIRST LAYER
CONTAINERS, DOWN TO AND THROUGH
STAKE POCKET ON OPPOSITE SIDE OF CAR,
AND BACK UP TO TOP OF LOAD WHERE IT IS
TENSIONED AND DOUBLE SEALED.

ALTERNATIVE THREADING METHOD:
STRAP, PC (1), IS RUN FROM SIDE OF LOAD
DOWN TO AND UP THROUGH STAKE POCKET ON
ONE SIDE OF CAR, BACK UP AND OVER TOP
OF FIRST LAYER CONTAINERS, DOWN TO AND
THROUGH STAKE POCKET ON OPPOSITE SIDE OF
CAR, AND BACK UP OVER TOP OF LOAD AND
DOWN SIDE OF LOAD WHERE IT IS TENSIONED
AND DOUBLE SEALED.



DETAIL "A"

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

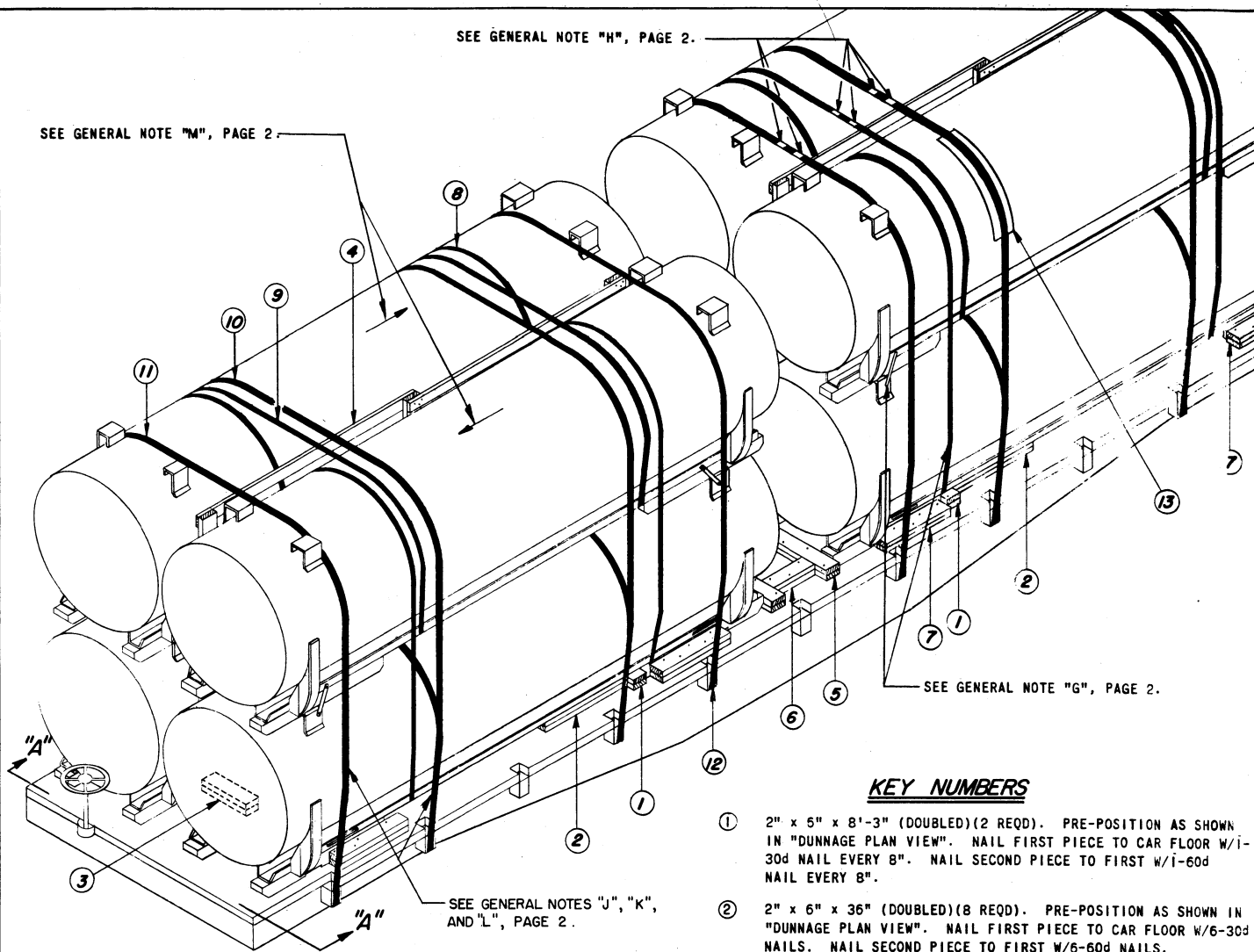
TWO (2) STAKE
POCKET PROTECTORS
UNDER EACH STAKE
POCKET.

DETAIL "B"

METHOD OF INSTALLING 2" STRAP-
PING AND STAKE POCKET PRO-
TECTORS (ALT PAD).

SEE GENERAL NOTE "H", PAGE 2.

SEE GENERAL NOTE "M", PAGE 2.



ISOMETRIC VIEW

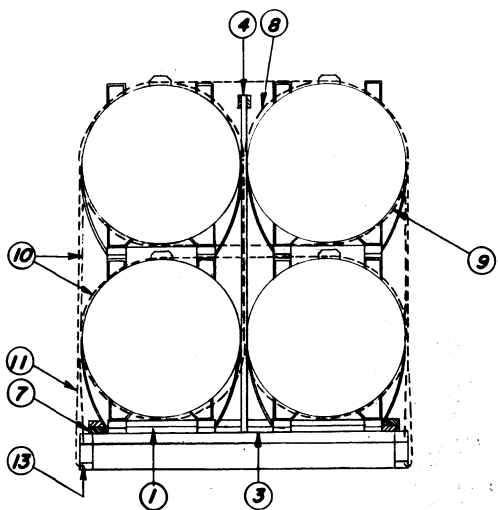
8 UNIT LOAD

SEE GENERAL NOTES "J", "K", AND "L", PAGE 2.

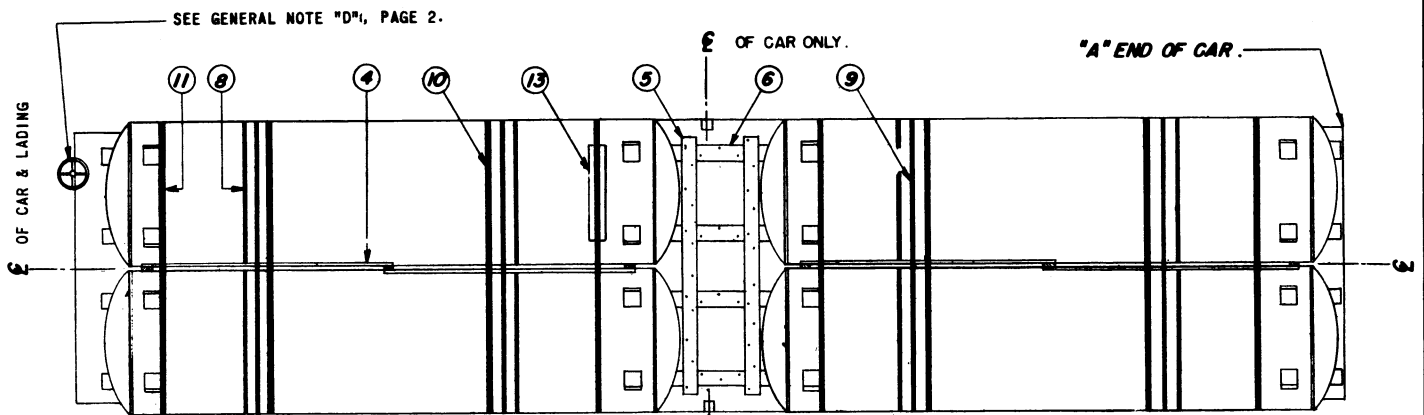
SEE GENERAL NOTE "G", PAGE 2.

KEY NUMBERS

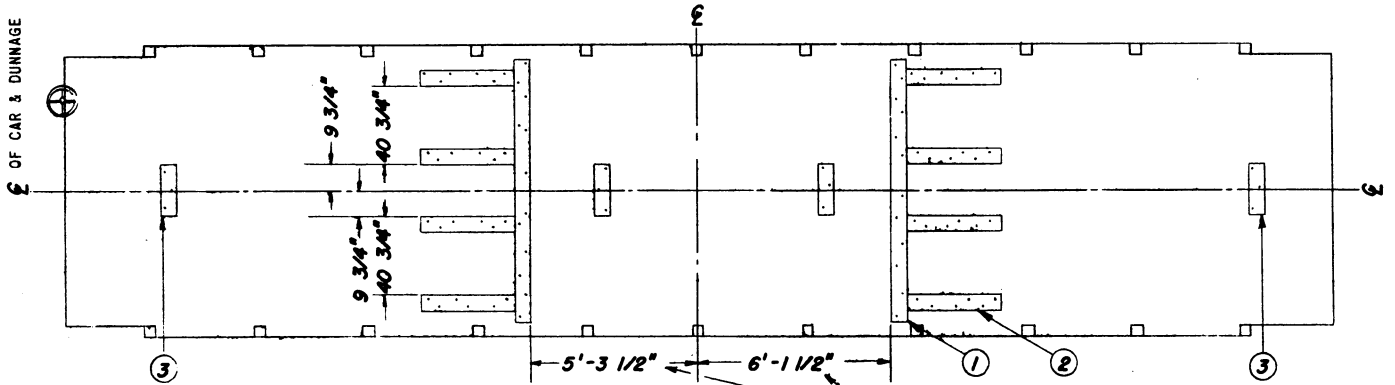
- ① 2" x 5" x 8'-3" (DOUBLED)(2 REQD). PRE-POSITION AS SHOWN IN "DUNNAGE PLAN VIEW". NAIL FIRST PIECE TO CAR FLOOR W/1-30d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST W/1-60d NAIL EVERY 8".
- ② 2" x 6" x 36" (DOUBLED)(8 REQD). PRE-POSITION AS SHOWN IN "DUNNAGE PLAN VIEW". NAIL FIRST PIECE TO CAR FLOOR W/6-30d NAILS. NAIL SECOND PIECE TO FIRST W/6-60d NAILS.
- ③ 2" x 6" x CUT TO FIT BETWEEN ADJACENT CONTAINER SKIDS (REF: 198") (DOUBLED)(4 REQD). NAIL FIRST PIECE TO CAR FLOOR W/3-30d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER.
- ④ ANTI-CHAFING BOARD (2 REQD). SEE DETAIL, PAGE 3.
- ⑤ 2" x 6" x 8'-3" (DOUBLED)(2 REQD). NAIL FIRST PIECE TO CAR FLOOR W/1-30d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST W/1-60d NAIL EVERY 8".
- ⑥ 2" x 6" x CUT TO FIT (18" MIN)(DOUBLED)(4 REQD). ALIGN W/ CONTAINER SKIDS AND NAIL FIRST PIECE TO CAR FLOOR W/3-30d NAILS. NAIL SECOND PIECE TO FIRST W/3-60d NAILS.
- ⑦ 2" x 6" x 30" (DOUBLED)(8 REQD). NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER.
- ⑧ STEEL STRAPPING, 1/4" x .035" x 28'-0" (8 REQD).
- ⑨ STEEL STRAPPING, 1/4" x .035" x 26'-0" (4 REQD).
- ⑩ STEEL STRAPPING, 2" x .050" x 50'-0" (4 REQD). SEE STRAP THREADING DETAIL, PAGE 3, AND GENERAL NOTE "K", PAGE 2.
- ⑪ STEEL STRAPPING, 2" x .050" x 37'-0" (4 REQD). SEE GENERAL NOTE "K", PAGE 2.
- ⑫ PAD, 2" x .050" STRAP 24" LONG (16 REQD). POSITION UNDER AND SEAL TO ⑩ AND/OR ⑪. SEE DETAIL "A", PAGE 3. ALT: SIGNODE NO. 1 STAKE POCKET PROTECTORS (32 REQD). TWO (2) USED UNDER EACH STAKE POCKET WITH ⑩ AND/OR ⑪. SEE DETAIL "B", PAGE 3.
- ⑬ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL. PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINER.



SECTION "A-A"



PLAN VIEW



DUNNAGE PLAN VIEW

SEE GENERAL NOTE "D", PAGE 2.

BILL OF MATERIAL

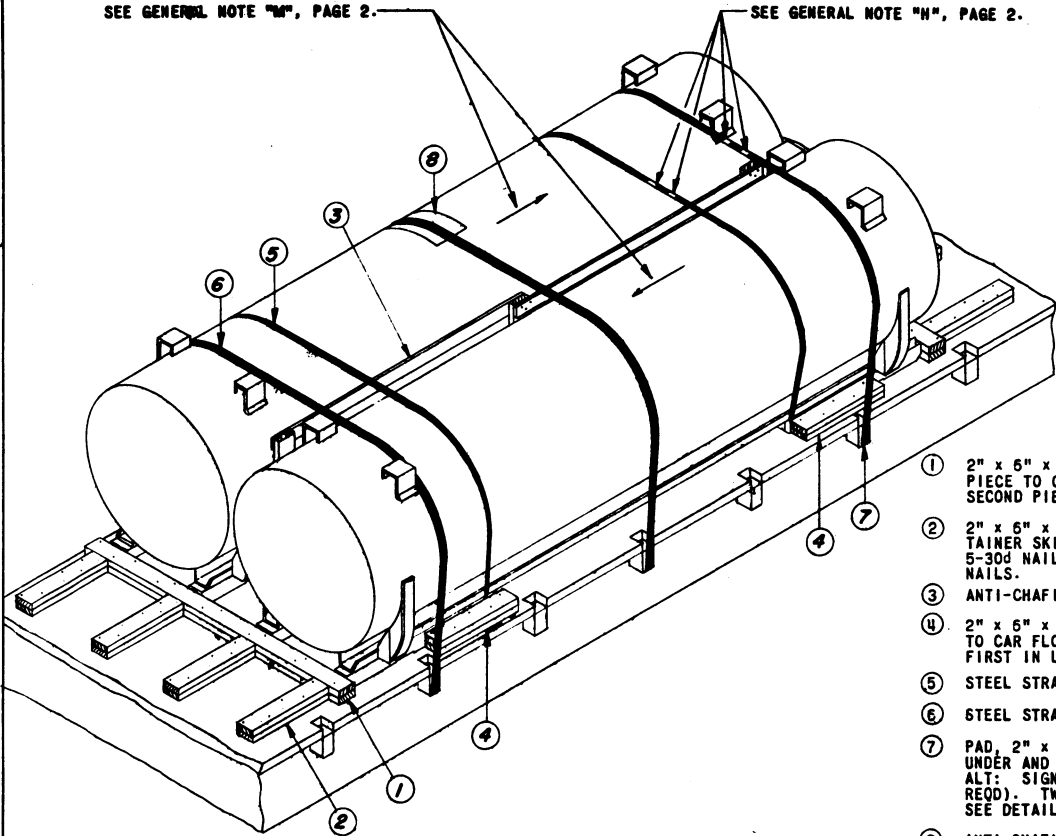
| LUMBER | LINEAL FEET | BOARD FEET |
|--|-------------|------------|
| 1" x 4" | 32 | 11 |
| 2" x 6" | 236 | 236 |
| NAILS | NO. REQD | POUNDS |
| 6d (2") | 24 | - |
| 30d (4 1/2") | 212 | 10-3/4 |
| 60d (6") | 108 | 10-3/4 |
| STEEL STRAPPING, 1 1/2" x .035" - 328' REQD - 47 LBS | | |
| STEEL STRAPPING, 2" x .050" - 380' REQD - 127 LBS | | |
| ANTI-CHAFING MATERIAL----- AS REQD | | |

LOAD AS SHOWN

| ITEM | QUANTITY | WEIGHT (APPROX) |
|--------------------------|----------|----------------------------|
| AFT BODY SECTION----- | 8----- | 36,848 LBS |
| DUNNAGE----- | ----- | 813 LBS |
| TOTAL WEIGHT----- | | 37,661 LBS (APPROX) |

SEE GENERAL NOTE "M", PAGE 2.

SEE GENERAL NOTE "H", PAGE 2.



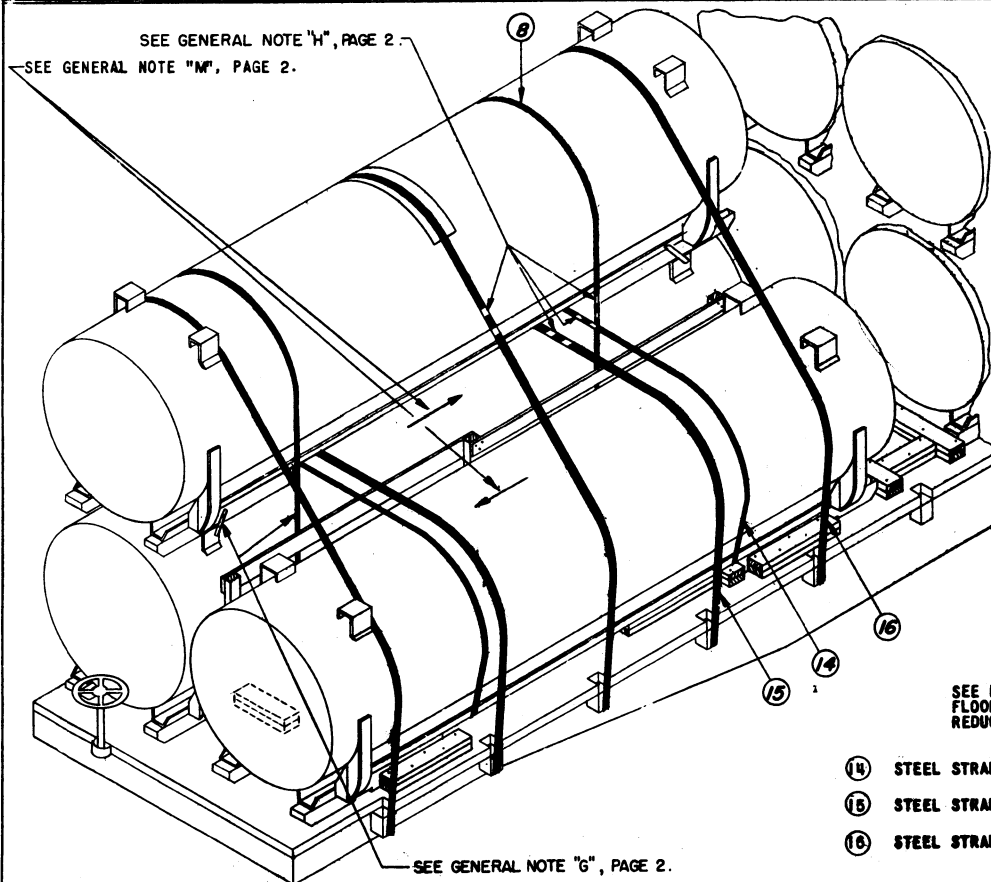
TYPICAL LCL
(2 UNIT LOAD)

KEY NUMBERS (LCL)

- ① 2" x 6" x 8'-3" (DOUBLED)(2 REQD). NAIL FIRST PIECE TO CAR FLOOR W/1-30d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST W/1-60d NAIL EVERY 8".
- ② 2" x 6" x 30" (DOUBLED)(8 REQD). ALIGN WITH CONTAINER SKIDS AND NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL SECOND PIECE TO FIRST W/5-60d NAILS.
- ③ ANTI-CHAFING BOARD (1 REQD). SEE DETAIL, PAGE 3.
- ④ 2" x 6" x 30" (DOUBLED)(4 REQD). NAIL FIRST PIECE TO CAR FLOOR W/5-30d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER.
- ⑤ STEEL STRAPPING, 1 1/2" x .035" x 26'-0" (2 REQD).
- ⑥ STEEL STRAPPING, 2" x .050" x 27'-0" (3 REQD).
- ⑦ PAD, 2" x .050" STRAP 24" LONG (6 REQD). POSITION UNDER AND SEAL TO ⑥. SEE DETAIL "A", PAGE 3. ALT: SIGNODE NO. 1 STAKE POCKET PROTECTORS (12 REQD). TWO USED UNDER EACH STAKE POCKET WITH ⑥. SEE DETAIL "B", PAGE 3.
- ⑧ ANTI-CHAFING, NEUTRAL BARRIER MATERIAL, PLACE UNDER ALL POINTS OF CONTACT WITH CONTAINER.

SEE GENERAL NOTE "H", PAGE 2.

SEE GENERAL NOTE "M", PAGE 2.



SEE GENERAL NOTE "G", PAGE 2.

ISOMETRIC VIEW
(LCL, 7 UNIT LOAD)

KEY NUMBERS

SEE PAGES 4 & 5 FOR KEY NUMBERS APPLICABLE TO FLOOR DUNNAGE AND STRAPPING FOR OTHER LOAD UNITS, REDUCING QUANTITIES OF STRAPS REQUIRED AS NECESSARY.

- ⑭ STEEL STRAPPING, 1 1/2" x .035" x 26'-0" (2 REQD).
- ⑮ STEEL STRAPPING, 2" x .050" x 27'-0" (2 REQD).
- ⑯ STEEL STRAPPING, 2" x .050" x 31'-0" (3 REQD).