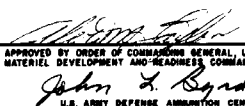


LOADING AND BRACING IN VAN TYPE TRAILER[●] FOR TRAILER-ON-FLAT-CAR (TOFC) SHIPMENT OF UNPALLETIZED MK 82 BOMB CASING (METAL PART WO EXPLOSIVE OR OTHER TYPE FILLER)

● PROCEDURES SPECIFIED WITHIN THIS DRAWING ARE ALSO APPLICABLE TO 40-FOOT INTERMODAL FREIGHT CONTAINERS THAT ARE TO BE MOVED BY CONTAINER-ON-FLAT-CAR (COFC) SERVICE.

DO NOT SCALE

REVISIONS				DESIGNED BY <i>GRS</i>	FIELD ENG <i>MWD/DA</i>
				CHECKED <i>GRS</i>	LOG ENGINE OFFICER <i>W. Sullivan</i>
APPROVED, U. S. ARMY ARMAMENT MATERIEL READINESS COMMAND					
 APPROVED BY ORDER OF COMMANDING GENERAL, U. S. ARMY MATERIEL DEVELOPMENT AND READINESS COMMAND, IDARCOM U. S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL					
U. S. ARMY DARCOM DRAWING					
JANUARY 1980					
CLASS	DIVISION	DRAWING	FILE		
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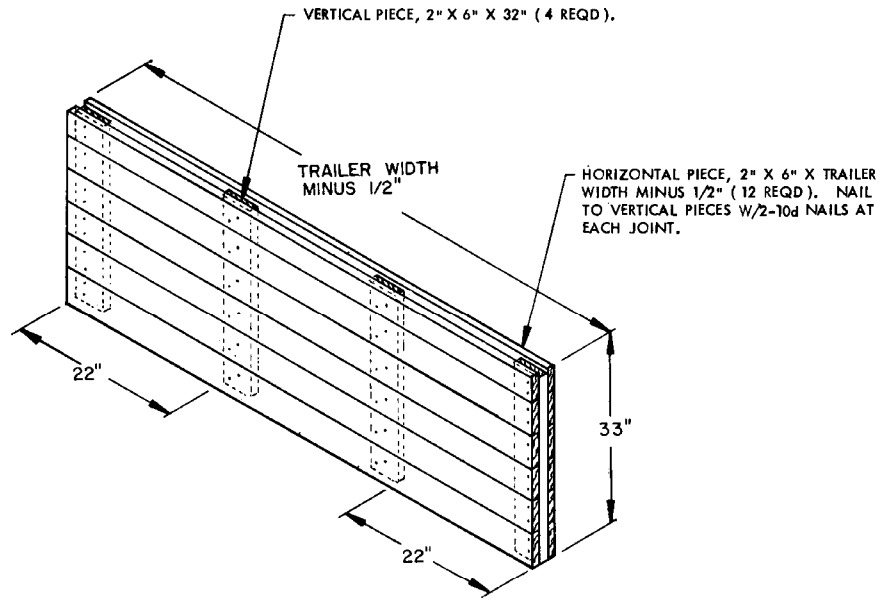
GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURE IS APPLICABLE TO UNPALLETIZED MK82 BOMB CASINGS (METAL PARTS WITHOUT EXPLOSIVE OR OTHER TYPE FILLER).
- C. THE LOAD AS SHOWN IS BASED ON A 40' LONG BY 8' WIDE VAN TYPE TRAILER. THE LOAD IS DESIGNED FOR TRAILER-ON-FLAT-CAR SHIPMENT. HOWEVER, THE LOAD AS DESIGNED IS ALSO APPLICABLE FOR HIGHWAY MOVEMENT AND FOR CONTAINER-ON-FLAT-CAR (COFC) MOVEMENT IN 40' INTERMODAL FREIGHT CONTAINERS. LONGER TRAILERS CAN BE USED.
- D. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- E. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES OR WHEN NAILING DUNNAGE TO THE FLOOR OF THE TRAILER.
- F. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF TWO (2) SEALS, BUTTED TOGETHER, WITH TWO (2) PAIR OF CRIMPS PER SEAL MUST BE USED TO SEAL THE JOINT.
- G. PORTIONS OF THE TRAILER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- H. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION ON PAGE 5 AND THE "REAR-BAY LOADING SEQUENCE" ON PAGE 7.

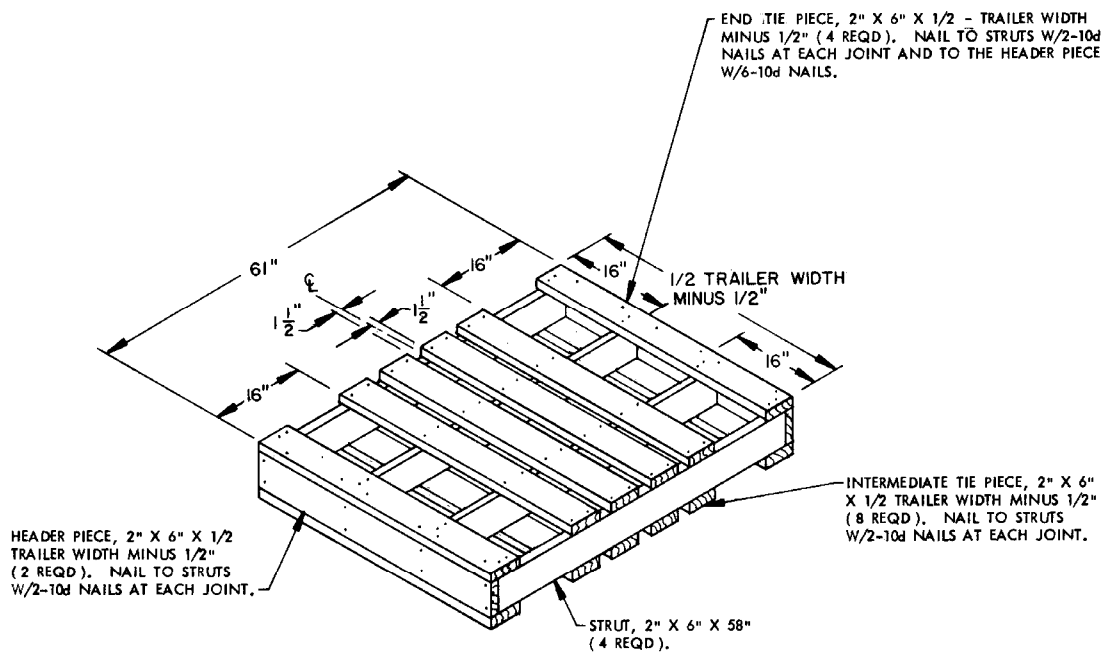
MATERIAL SPECIFICATIONS

- LUMBER ----- : SEE TM 743-200-1, DUNNAGE LUMBER; FED SPEC MM-L-751.
- NAILS ----- : COMMON, FED SPEC FF-N-105.
- PLYWOOD ----- : GROUP B, GRADE *C-D; FED SPEC NN-P-530.
- STRAPPING, STEEL ----- : CLASS I, TYPE I OR IV, HEAVY DUTY, FINISH A, B (GRADE 2) OR C. FED SPEC QQ-S-781.
- STRAP SEAL ----- : TYPE D, STYLE I, II, OR IV, CLASS H, FED SPEC QQ-S-781.

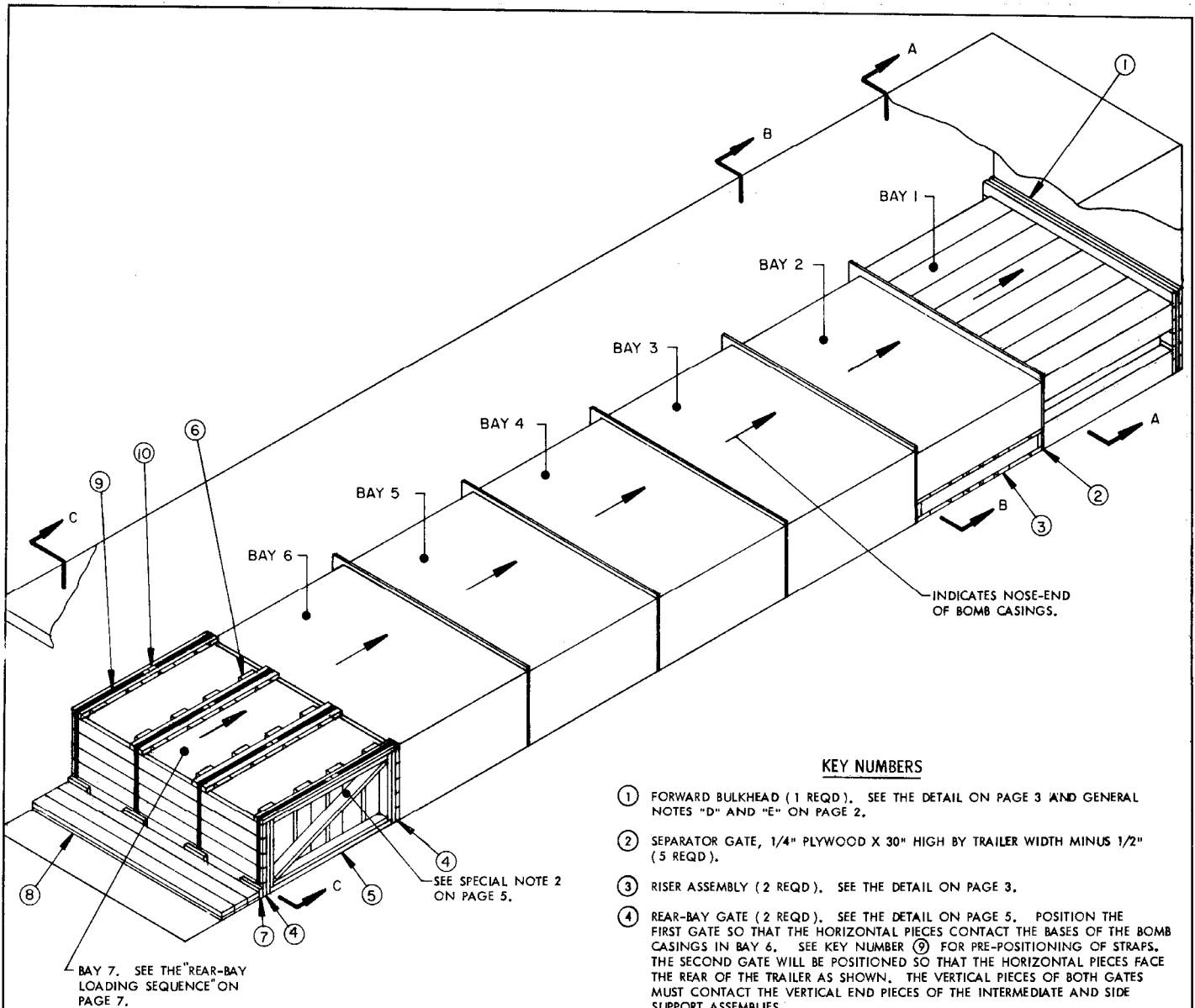
* IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER GRADE MAY BE SUBSTITUTED.



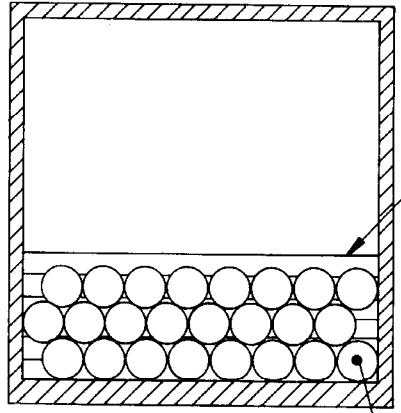
FORWARD BULKHEAD



RISER ASSEMBLY



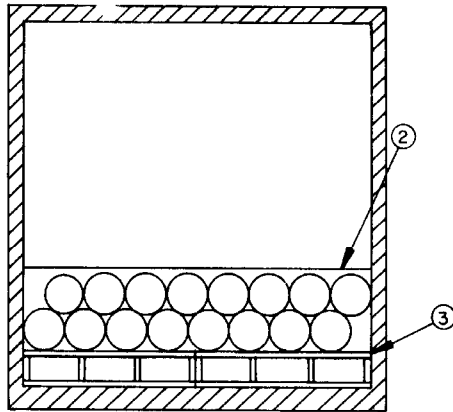
ISOMETRIC VIEW



SECTION A-A

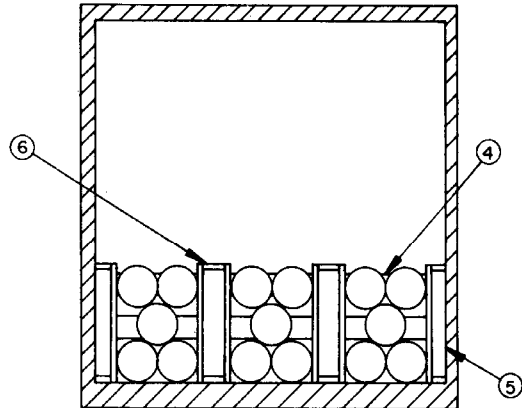
KEY NUMBERS

- ① FORWARD BULKHEAD (1 REQD). SEE THE DETAIL ON PAGE 3 AND GENERAL NOTES "D" AND "E" ON PAGE 2.
- ② SEPARATOR GATE, 1/4" PLYWOOD X 30" HIGH BY TRAILER WIDTH MINUS 1/2" (5 REQD).
- ③ RISER ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 3.
- ④ REAR-BAY GATE (2 REQD). SEE THE DETAIL ON PAGE 5. POSITION THE FIRST GATE SO THAT THE HORIZONTAL PIECES CONTACT THE BASES OF THE BOMB CASINGS IN BAY 6. SEE KEY NUMBER ⑨ FOR PRE-POSITIONING OF STRAPS. THE SECOND GATE WILL BE POSITIONED SO THAT THE HORIZONTAL PIECES FACE THE REAR OF THE TRAILER AS SHOWN. THE VERTICAL PIECES OF BOTH GATES MUST CONTACT THE VERTICAL END PIECES OF THE INTERMEDIATE AND SIDE SUPPORT ASSEMBLIES.
- ⑤ SIDE SUPPORT ASSEMBLY (2 REQD; ONE RIGHT-HAND AND ONE LEFT-HAND). SEE SPECIAL NOTE 2 ON PAGE 5 AND THE DETAIL ON PAGE 6.
- ⑥ INTERMEDIATE SUPPORT ASSEMBLY (2 REQD). SEE SPECIAL NOTE 2 ON PAGE 5 AND THE DETAIL ON PAGE 6.
- ⑦ FILLER BLOCK, 2" X 4" X 9" (4 REQD). ALIGN WITH GATE VERTICAL PIECES AND NAIL TO THE GATE W/2-10d NAILS EACH.
- ⑧ BACK-UP-HEADER, CONSISTING OF ONE 1" X 6" AND ONE 2" X 6" BY TRAILER WIDTH MINUS 1/2" (3 SETS REQD). POSITION THE 2" X 6" PIECE ON TOP OF THE 1" X 6" PIECE AND NAIL THRU BOTH PIECES TO THE TRAILER FLOOR W/1-16d NAIL EVERY 3". SEE GENERAL NOTE "E" ON PAGE 2.
- ⑨ STRAP, 1-1/4" X .035" OR .031" X 18" X 40" LONG STEEL STRAPPING (4 REQD). PRE-POSITION EACH STRAP SO THAT WHEN TENSIONED IT WILL BE CENTERED ON THE STRAPPING BOARD OF A SUPPORT ASSEMBLY MARKED ⑤ OR ⑥. EACH STRAP SHALL ENCIRCLE BOTH REAR-BAY GATES AND A SUPPORT ASSEMBLY. STAPLE EACH STRAP TO THE HORIZONTAL PIECES OF THE FIRST REAR-BAY GATE PRIOR TO SETTING GATE INTO FINAL POSITION.
- ⑩ SEAL FOR 1-1/4" STEEL STRAPPING (8 REQD, 2 PER STRAP). DOUBLE CRIMP EACH SEAL. SEE GENERAL NOTE "F" ON PAGE 2.



SECTION B-B

SEE SPECIAL NOTE 1 BELOW.



SECTION C-C

SEE "REAR BAY LOADING SEQUENCE" ON PAGE 7 AND SPECIAL NOTE 2 BELOW.

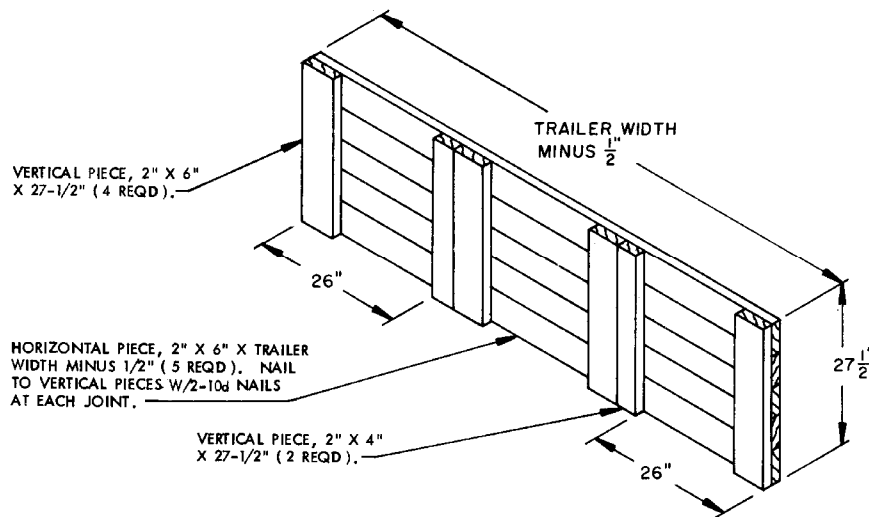
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
BOMB CASING	151	40,770 LBS
DUNNAGE		1,177 LBS
TOTAL WEIGHT		41,947 LBS

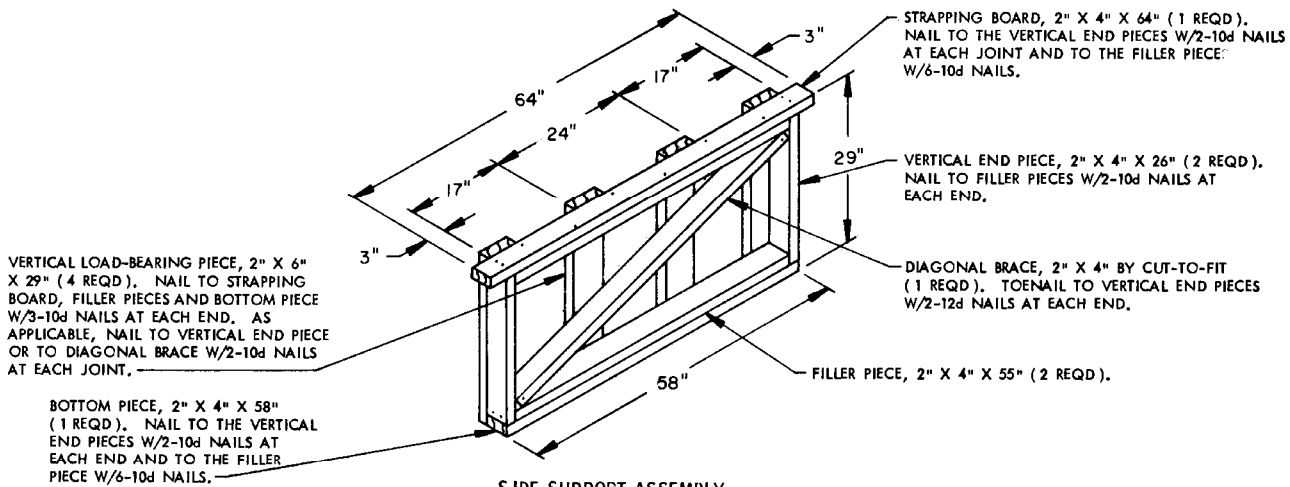
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 6"	23	12
2" X 4"	70	47
2" X 6"	483	483
NAILS	NO. REQD	POUNDS
10d (3")	900	12-1/2
12d (3-1/4")	16	1/4
16d (3-1/2")	93	2
PLYWOOD, 1/4"	94 SQ FT. REQD	65 LBS
STEEL STRAPPING, 1-1/4" X .035" OR .031" - 72'	72' REQD	10 LBS
SEAL FOR 1-1/4" STRAPPING	8 REQD	NIL

SPECIAL NOTES:

1. WHEN LOADING BOMB CASINGS IN THE TRAILER, ALL NOSE ENDS OF THE CASINGS IN ALL BAYS WILL BE POSITIONED TO FACE THE FRONT OF THE TRAILER. THE FIRST AND THIRD LAYERS WITHIN BAYS 1 AND 3 THROUGH 6 SHALL CONTACT THE CURB SIDE WALL OF THE TRAILER WHILE THE SECOND LAYER OF CASINGS SHALL CONTACT THE ROAD SIDE WALL OF THE TRAILER, AS SHOWN IN SECTION A-A. IN BAY 2, THE LAYER TO BE PLACED DIRECTLY ON THE RISER ASSEMBLIES SHALL CONTACT THE ROAD SIDE WALL OF THE TRAILER AS SHOWN IN SECTION B-B. THROUGHOUT THE LENGTH OF BAYS 1 THROUGH 6, ALL BOMB CASINGS WITHIN A LAYER WILL BE IN STRAIGHT LONGITUDINAL ROWS.
2. CAUTION: SUPPORT ASSEMBLIES MARKED (5) AND (6) MUST BE POSITIONED SO THAT THE BOTTOM END OF THE DIAGONAL BRACE OF EACH ASSEMBLY IS LOCATED TOWARD THE REAR OF THE TRAILER AND THE VERTICAL LOAD BEARING PIECES ARE IN CONTACT WITH THE BOMB CASINGS.

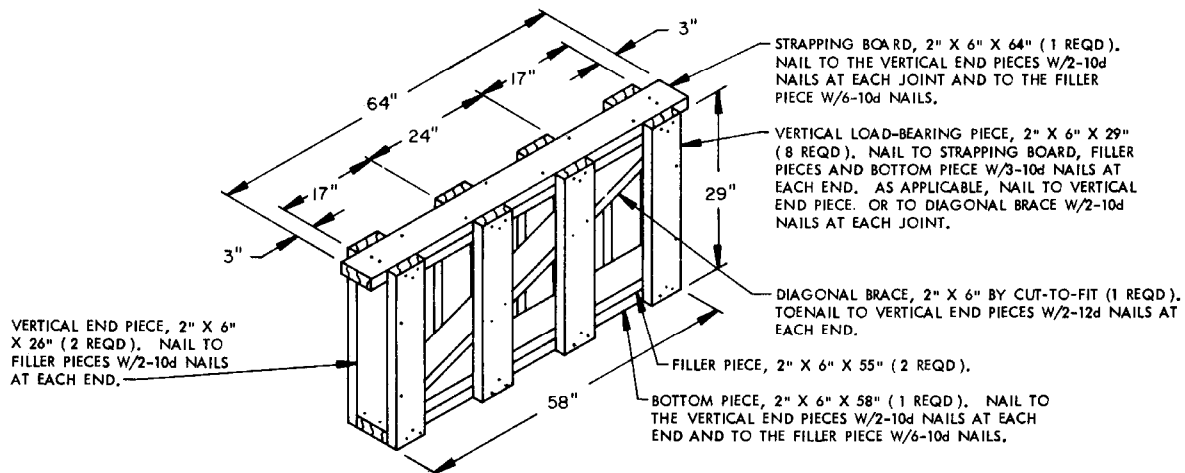


REAR-BAY GATE



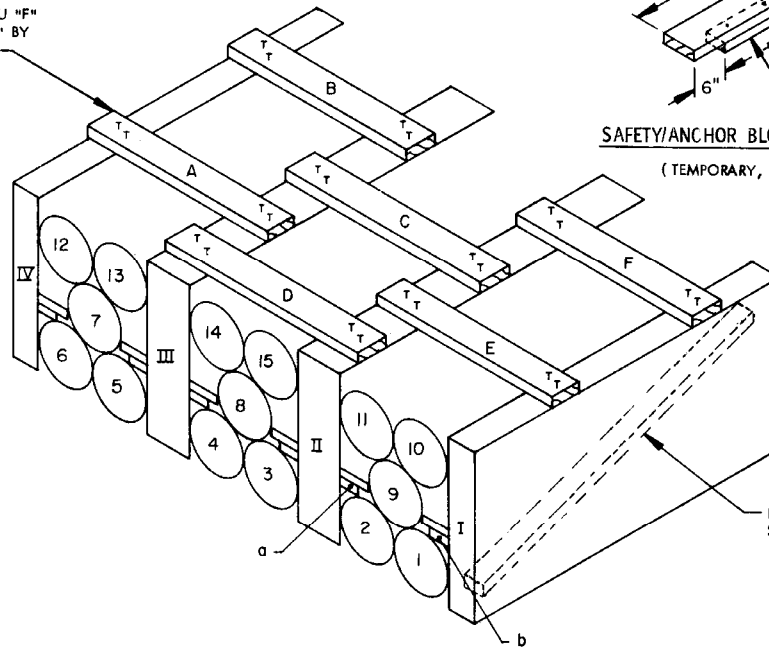
SIDE SUPPORT ASSEMBLY

ONE RIGHT-HAND AND ONE LEFT-HAND REQUIRED. RIGHT-HAND ASSEMBLY SHOWN. THE LEFT-HAND ASSEMBLY WILL HAVE VERTICAL LOAD-BEARING PIECES ON OPPOSITE SIDE FROM THAT SHOWN.



INTERMEDIATE SUPPORT ASSEMBLY

TOP RETAINER "A" THRU "F"
(TEMPORARY), 2" X 6" BY
CUT-TO-FIT (6 REQD).



SAFETY/ANCHOR BLOCK "a" AND "b"
(TEMPORARY, 2 REQD)

DIAGONAL BRACE. SEE
SPECIAL NOTE 2 ON PAGE 5.

REAR-BAY LOADING SEQUENCE

THE FOLLOWING LOADING SEQUENCE WILL BE APPLIED AFTER THE STEEL STRAPS, MARKED ⑨ ON PAGE 4, HAVE BEEN PRE-POSITIONED, STAPLED TO THE FIRST REAR-BAY GATE, MARKED ④ ON PAGE 4, AND THE GATE HAS BEEN PLACED WITH THE HORIZONTAL PIECES AGAINST THE BASES OF THE BOMB CASINGS IN BAY 6. ALL BOMB CASINGS WILL BE LOADED WITH NOSE-END FORWARD.

1. PLACE THE RIGHT-HANDED SIDE SUPPORT ASSEMBLY "I" AGAINST THE CURB-SIDE WALL OF THE TRAILER. SEE SPECIAL NOTE 2 ON PAGE 5 TO ASSURE COMPLIANCE WITH SPECIFIC REQUIREMENTS FOR ALL SUPPORT ASSEMBLIES. NOTE: THE STRAPPING BOARD OF ALL SUPPORT ASSEMBLIES WILL BEAR ON THE TOP OF THE REAR-BAY GATES.
2. LOAD BOMB CASINGS "1" AND "2".
3. PLACE THE INTERMEDIATE SUPPORT ASSEMBLY "II" AGAINST CASING "2".
4. LOAD BOMB CASINGS "3" AND "4".
5. PLACE THE INTERMEDIATE SUPPORT ASSEMBLY "III" AGAINST CASING "4".
6. PLACE THE LEFT-HANDED SIDE SUPPORT ASSEMBLY "IV" AGAINST THE ROAD-SIDE WALL OF THE TRAILER.
7. LOAD BOMB CASINGS "5" AND "6".
8. LOAD BOMB CASINGS "7", "8" AND "9".
9. INSTALL TOP RETAINER PIECES "A", "B", "C" AND "D". FIX IN PLACE WITH PARTIALLY DRIVEN 16d NAILS TO HOLD SUPPORT ASSEMBLIES IN VERTICAL ALIGNMENT.
10. PLACE SAFETY/ANCHOR BLOCKS "a" AND "b", ONE ON EACH SIDE OF CASING "9".
11. LOAD BOMB CASINGS "10" AND "11".
12. MOVE SAFETY/ANCHOR BLOCKS "a" AND "b" TO BLOCK BOMB CASING "7".
13. INSTALL TOP RETAINER PIECES "E" AND "F".
14. REMOVE TOP RETAINER PIECES "A" AND "B".
15. LOAD BOMB CASINGS "12" AND "13".

(CONTINUED AT RIGHT)

(LOADING SEQUENCE CONTINUED)

16. MOVE SAFETY/ANCHOR BLOCKS "a" AND "b" TO BLOCK BOMB CASING "8".
17. REINSTALL TOP RETAINER PIECES "A" AND "B".
18. REMOVE TOP RETAINER PIECES "C" AND "D".
19. LOAD BOMB CASINGS "14" AND "15".
20. REMOVE SAFETY/ANCHOR BLOCKS "a" AND "b".
21. REMOVE TOP RETAINER PIECES "A", "B", "E", AND "F".
22. COMPLETE DUNNAGING OPERATIONS WITH PIECES MARKED ④, ⑦, ⑧, ⑨ AND ⑩ AS SPECIFIED ON PAGE 4.

