

APPROVED
 BUREAU OF EXPLOSIVES
A. F. Grassmick
 MILITARY ASSISTANT
 DATE 6/2/66

REVISION NO 1
 SIGNED *A. F. Grassmick*
 DATE 7/27/66

LOADING & BRACING IN BOX CARS OF BOMB, GP, 1000 LB, AN-M65 SERIES, WITH OR WITHOUT SHIPPING BANDS

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☉ INCLUDES PROCEDURES FOR CONVENTIONAL
 BOX CARS AND BOX CARS EQUIPPED WITH
 MECHANICAL BRACING DEVICES OF VARIOUS
 DESIGN AND MANUFACTURE

THIS PROCEDURE DRAWING SUPERSEDES DRAWINGS:
 19-48-1041-5B6, DATED 15 FEBRUARY 1944, AND
 19-48-1208-5B16, DATED 11 JULY 1944, AND ALL
 REVISIONS THERETO

DO NOT SCALE

DRAFTER W.B.H.	PROJ ENG RP/ret	APSA PJS	SUBMITTED <i>William E. Delemill</i>
CHECKER JDS	ASST. DIR. JDS/GBF		COMMANING OFFICER, SAVANNA ARMY DEPOT
REVISIONS			EXAMINED AND APPROVED <i>Ralph Hall</i>
1	AUG TO	<i>cut</i>	AMMUNITION PROCUREMENT & SUPPLY AGENCY
		<i>om</i>	APPROVED BY ORDER OF COMMANDING GENERAL U. S. ARMY MATERIEL COMMAND
		<i>8/16</i>	<i>Paul Klein</i>
		<i>2</i>	U. S. ARMY MATERIEL COMMAND
			1 AUGUST 1966
			CLASS DIVISION DRAWING FILE
			19 48 4058 5B42

GENERAL NOTES

(GENERAL NOTES CONTINUED)

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AMCR 740-13, AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. LOADS AS SHOWN HEREIN ARE BASED ON BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS, OR ARE BASED ON CONVENTIONAL BOX CARS.
- C. BOX CARS EQUIPPED WITH CONVENTIONAL SLIDING "THRU" DOORS HAVE BEEN SHOWN FOR ALL LOADS HEREIN. MECHANICAL BRACING EQUIPPED CARS HAVING STAGGERED OR PLUG DOORS WILL NOT BE USED. IF A CONVENTIONAL CAR EQUIPPED WITH CONVENTIONAL SLIDING "THRU" DOORS IS NOT AVAILABLE, A CAR EQUIPPED WITH STAGGERED OR PLUG DOORS MAY BE USED. REFER TO THE SPECIAL NOTES SECTION ADJACENT TO EACH LOAD FOR ALTERNATIVE BLOCKING REQUIREMENTS.
- D. UNLOADING PROCEDURES SPECIFIED ON PAGES 4, 5, 10 AND 11 ARE FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES, AND MAY BE ADAPTED AS REQUIRED TO FACILITATE THE USE OF BOX CARS EQUIPPED WITH VARIOUS TYPES OF SELF-CONTAINED MECHANICAL BRACING DEVICES. HOWEVER, FIXED OR ADJUSTABLE WALL MEMBERS AND DOORWAY MEMBERS WITHIN THESE CARS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED HEREIN. **CAUTION:** BOX CARS EQUIPPED WITH MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.
1. FOR BLOCKING THE LOADS WHICH ARE DEPICTED HEREIN, A CROSS MEMBER WILL NOT BE RELIED UPON TO RETAIN MORE LADING ON EITHER SIDE THAN AS SHOWN. **CAUTION:** A CROSS MEMBER WILL NOT BE RELIED UPON TO RETAIN MORE THAN 2,000 POUNDS OF LADING ON EITHER SIDE IF THE LADING UNITS ARE POSITIONED WITHIN A CAR IN ACCORDANCE WITH A LOADING PATTERN NOT SHOWN HEREIN, SUCH AS 1-WIDE DOWN THE CENTER OF THE CAR. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM AND CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE SPACING OF THE LOCKING HOLES IN THE WALL MEMBERS PERMIT. LOCKING BARS (LEVER JACKS) SHOULD BE USED FOR THIS PURPOSE. AN ADDITIONAL 1/2" OF ADJUSTMENT CAN BE MADE BY TURNING A CROSS MEMBER END-FOR-END WHEN LOCKING PINS ON THE MEMBER ARE OFF-CENTER. **NOTE:** IT IS RECOMMENDED THAT EACH CROSS MEMBER BE INSTALLED WITH THE ENDS ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM THE END OF THE CAR).
 2. **CAUTION:** ALL BLOCKING AND BRACING COMPONENTS IN EMPTY CARS AND ALL UNUSED COMPONENTS IN LOADED CARS MUST BE "SECURED" FOR SHIPMENT---ADJUSTABLE WALL MEMBERS TO VERTICAL WALL ATTACHMENT RAILS, AND CROSS MEMBERS TO ADJUSTABLE WALL MEMBERS OR TO FIXED HORIZONTAL WALL MEMBERS OR TO DOORWAY MEMBERS, AND DOORWAY MEMBERS TO DOOR POSTS. COMPONENTS ASSIGNED TO EACH CAR MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS.
 3. IF A CAR HAS A "BOWED END", RATHER THAN SQUARING OFF THE END BY INSTALLING DUNNAGE, ADDITIONAL CROSS MEMBERS CAN BE INSTALLED NEAR THE END WALL OF THE CAR TO PROVIDE A "SQUARED" END. THESE CROSS MEMBERS SHOULD BE INSTALLED AT THE SAME HEIGHTS AS THE CROSS MEMBERS USED THROUGHOUT THE LOAD AS BLOCKING MEMBERS.
- E. UNLOADING PROCEDURES SPECIFIED ON PAGES 6, 7, 8, 9, 12 AND 13 ARE FOR CONVENTIONAL TYPE BOX CARS OF VARIOUS LENGTH AND WIDTH COMBINATIONS.
- F. THE NUMBER OF BOMBS MAY BE ADJUSTED TO FIT THE CAR OR THE QUANTITY TO BE LOADED; HOWEVER, APPROVED METHODS SPECIFIED HEREIN FOR FULL OR PARTIAL CARLOADS MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEM.
- G. DETAILS OF BOMB:
- BOMB, AN-M65, WITH SHIPPING BANDS:
DIMENSIONS ----- 53.95" LONG BY 23.8" DIAMETER.
GROSS WEIGHT ---- 1,033 POUNDS (APPROX).
- BOMB, AN-M65A1B1, WITHOUT SHIPPING BANDS:
DIMENSIONS ----- 53.95" LONG BY 18.75" DIAMETER.
GROSS WEIGHT ---- 1,128 POUNDS (APPROX).
- H. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE.
- J. WHEN ANY STRAP 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.

(CONTINUED AT THE RIGHT)

MATERIAL SPECIFICATIONS

LUMBER ----- : DUNNAGE LUMBER, TM 743-200-1, FED SPEC MM-L-751.

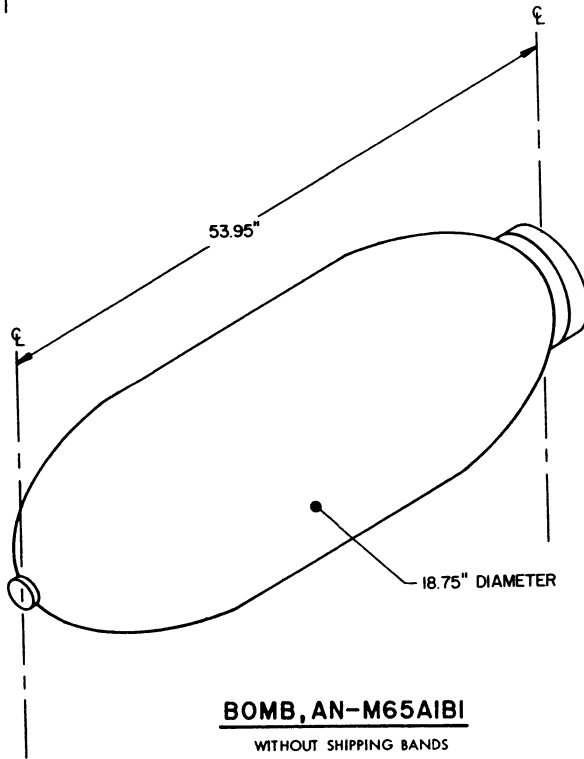
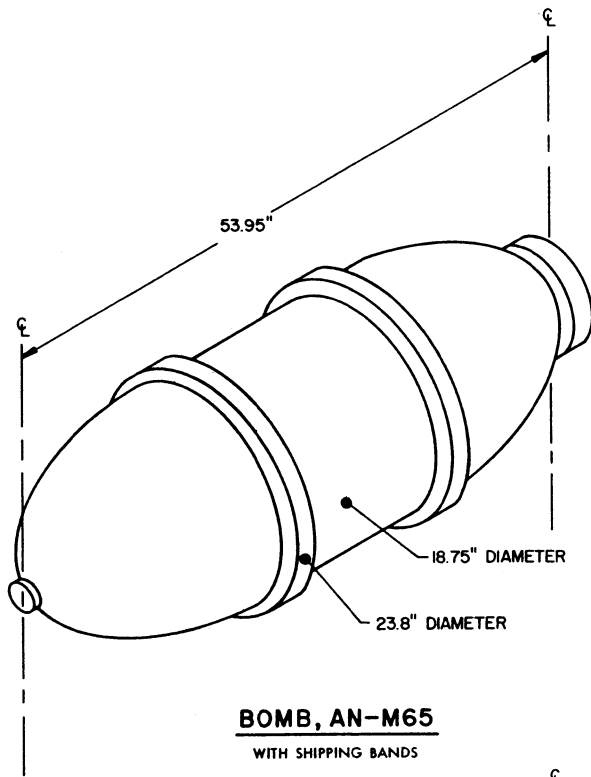
NAILS ----- : COMMON, CEMENT COATED OR CHEMICALLY ETCHED.
FED SPEC FF-N-105.
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE.

STRAPPING, STEEL: TYPE I OR IV, CLASS A, B OR C, FED SPEC QQ-5-781.

REVISIONS

REVISION NO. 1, DATED APRIL 1970, CONSISTS OF:

1. ADDED LOADING AND BRACING PROCEDURES FOR BOMB WITH SHIPPING BANDS.
2. ADDED LOADING AND BRACING PROCEDURES FOR BOX CARS EQUIPPED WITH MECHANICAL BRACING DEVICES.
3. CHANGE IN DRAWING TITLE AND UPDATE DRAWING FORMAT.

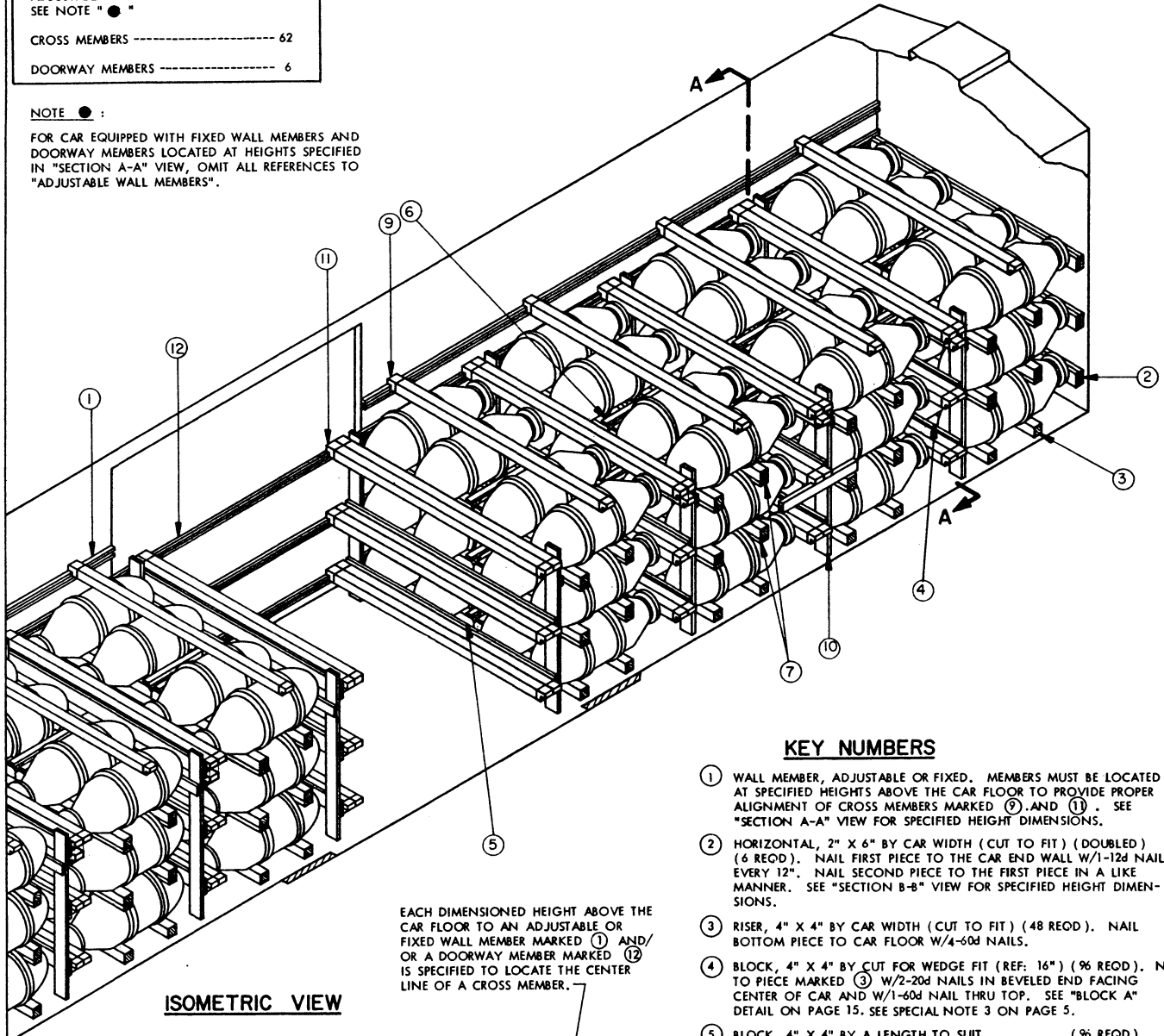


CAR EQUIPMENT REQUIRED

ADJUSTABLE WALL MEMBERS -----	52
SEE NOTE "●"	
CROSS MEMBERS -----	62
DOORWAY MEMBERS -----	6

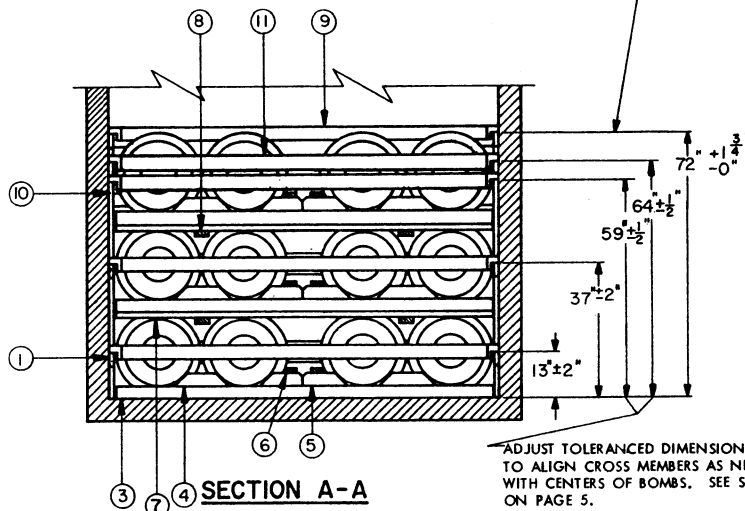
NOTE ● :

FOR CAR EQUIPPED WITH FIXED WALL MEMBERS AND DOORWAY MEMBERS LOCATED AT HEIGHTS SPECIFIED IN "SECTION A-A" VIEW, OMIT ALL REFERENCES TO "ADJUSTABLE WALL MEMBERS".



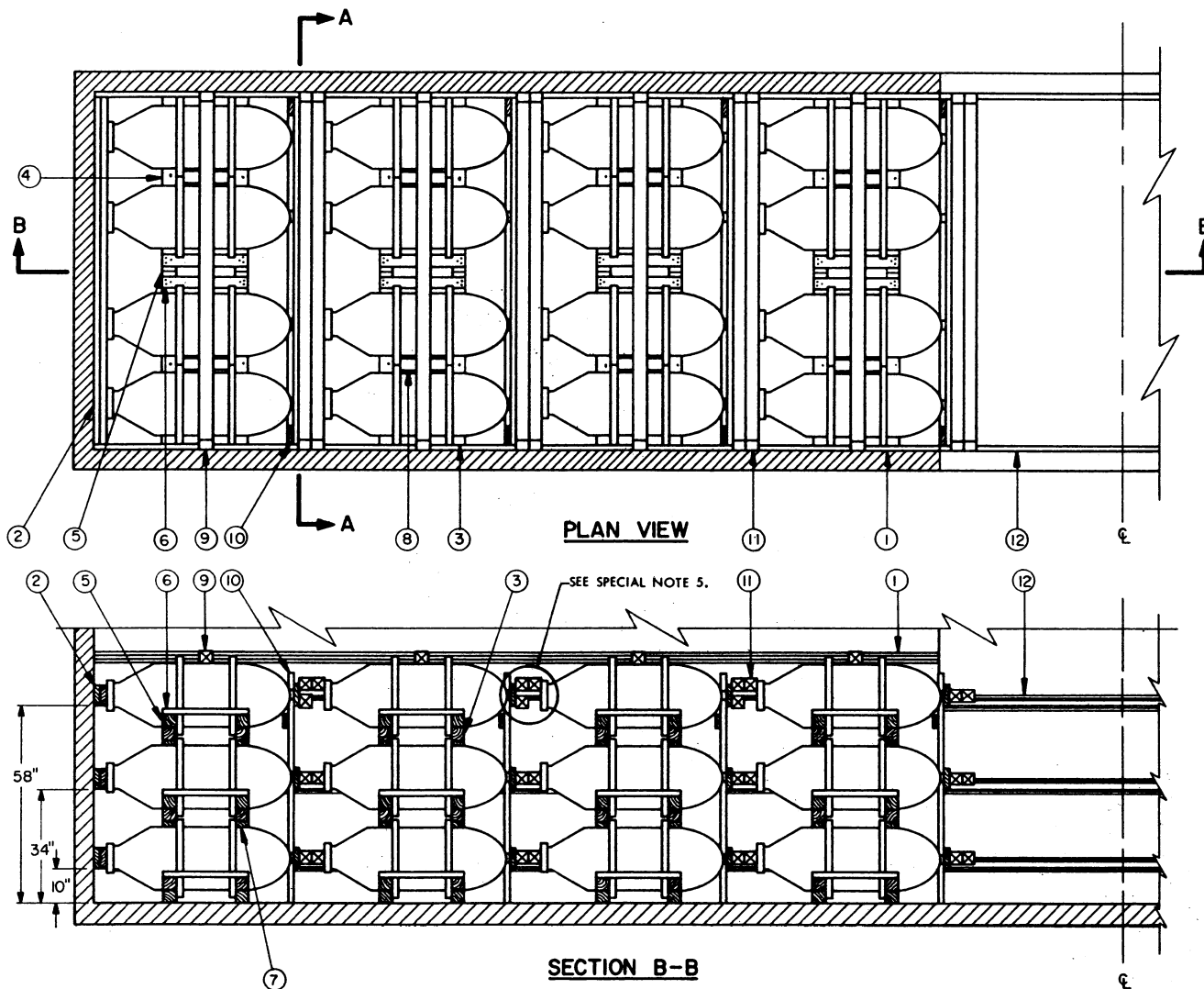
EACH DIMENSIONED HEIGHT ABOVE THE CAR FLOOR TO AN ADJUSTABLE OR FIXED WALL MEMBER MARKED ① AND/OR A DOORWAY MEMBER MARKED ⑫ IS SPECIFIED TO LOCATE THE CENTER LINE OF A CROSS MEMBER.

ISOMETRIC VIEW



KEY NUMBERS

- ① WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED ⑨ AND ⑪. SEE "SECTION A-A" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- ② HORIZONTAL, 2" X 6" BY CAR WIDTH (CUT TO FIT) (DOUBLED) (6 REQD). NAIL FIRST PIECE TO THE CAR END WALL W/1-12d NAIL EVERY 12". NAIL SECOND PIECE TO THE FIRST PIECE IN A LIKE MANNER. SEE "SECTION B-B" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- ③ RISER, 4" X 4" BY CAR WIDTH (CUT TO FIT) (48 REQD). NAIL BOTTOM PIECE TO CAR FLOOR W/4-60d NAILS.
- ④ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 16") (% REQD). NAIL TO PIECE MARKED ③ W/2-20d NAILS IN BEVELED END FACING CENTER OF CAR AND W/1-60d NAIL THRU TOP. SEE "BLOCK A" DETAIL ON PAGE 15. SEE SPECIAL NOTE 3 ON PAGE 5.
- ⑤ BLOCK, 4" X 4" BY A LENGTH TO SUIT (% REQD). NAIL TO PIECE MARKED ③ W/1-60d NAIL THRU TOP AND TOENAIL W/2-16d NAILS THRU SIDE. BEVEL ONE END OF BLOCK WITH A 45° CUT TO FIT AGAINST BOMB. OPPOSITE END WILL BE CUT FOR A WEDGE FIT AGAINST ADJACENT BLOCK AT CENTER OF LOAD WIDTH.
- ⑥ SIDE BLOCK, 2" X 4" X 25" (48 REQD). POSITION TIGHTLY AGAINST BOMB BANDS AND NAIL TO PIECE MARKED ③ W/3-12d NAILS AT EACH END.
- ⑦ SLEEPER, 2" X 4" BY CAR WIDTH (CUT TO FIT) (32 REQD). NAIL TO PIECE MARKED ③ IN SECOND AND THIRD LAYER ONLY W/1-12d NAIL EVERY 12".
- ⑧ SPACER, 2" X 4" X 25" (32 REQD). NAIL TO PIECES MARKED ⑦ W/3-12d NAILS AT EACH END.
- ⑨ CROSS MEMBER (HOLD DOWN). (8 REQD). SEE "ALTERNATIVE HOLD DOWN" DETAIL ON PAGE 15. SEE SPECIAL NOTE 2 ON PAGE 5.
- ⑩ SEPARATOR GATE A (8 REQD). SEE DETAIL ON PAGE 14.
- ⑪ CROSS MEMBER (54 REQD). SEE GENERAL NOTE "D" ON PAGE 2.
- ⑫ DOORWAY MEMBER (6 REQD). POSITION AT HEIGHTS SPECIFIED IN "SECTION A-A" VIEW. FOR THE FIRST TWO LAYERS OF BOMBS. FOR THE TOP LAYER, INSTALL AT 61" PLUS OR MINUS 1".



PLAN VIEW

SECTION B-B

SPECIAL NOTES:

1. A 50'-6" LONG BY 8'-6" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS AND HAVING 10'-0" DOOR OPENINGS IS SHOWN. WIDER CARS MAY BE USED. CARS HAVING SMALLER OR LARGER DOOR OPENINGS MAY BE USED; HOWEVER, BOMBS MUST NOT BE LOADED IN THE DOORWAY TO THE EXTENT THAT THE SHIPPING BANDS WILL NOT FULLY CONTACT A SIDE WALL. CARS EQUIPPED WITH STAGGERED OR PLUG DOORS WILL NOT BE USED.
2. THE 72" LOCATION DIMENSION FOR PIECE MARKED ⑨ MAY BE INCREASED. FOR A VOID OF 1-3/4" OR LESS, FILLER MATERIAL, 4" WIDE BY CAR WIDTH BY THE REQUIRED THICKNESS, WILL BE NAILED TO THE BOTTOM SURFACE OF CROSS MEMBERS PRIOR TO INSTALLATION. IF THE CAR IS EQUIPPED WITH ALL METAL CROSS MEMBERS, FILLER MATERIAL MAY BE WIRE TIED TO A CROSS MEMBER WITH NO. 8 GAGE BLACK ANNEALED WIRE. FOR A SPACE GREATER THAN 1-3/4", SEE THE "ALTERNATIVE HOLD DOWN" DETAIL ON PAGE 15.
3. THE BLOCKS, PIECES MARKED ④, MUST BE OF A LENGTH TO CONTACT THE BODIES OF ADJACENT BOMBS, BUT NOT SO LONG AS TO PREVENT CONTACT OF THE SHIPPING BANDS.
4. THE USE OF 40'-0" LONG CARS IS NOT RECOMMENDED FOR THIS PROCEDURE BECAUSE ONLY SEVENTY-TWO (72) BOMBS CAN BE OUTLOADED.
5. THE CROSS MEMBER INSTALLATION PATTERN SHOWN FOR BRACING THE THIRD LAYER OF BOMBS (2 CROSS MEMBERS BACK-TO-BACK AT 64" AND 1 CROSS MEMBER AT 59") IS APPLICABLE ONLY FOR DODD 28,000 SERIES CARS WHICH HAVE FIXED WALL MEMBERS AT THE 64" HEIGHT, THEREBY NOT PERMITTING ALIGNMENT OF CROSS MEMBERS WITH THE CENTER OF THE BOMBS (61" PLUS OR MINUS 1"). FOR CARS EQUIPPED ONLY WITH FIXED WALL MEMBERS, JUST TWO CROSS MEMBERS BACK-TO-BACK ARE REQUIRED FOR BRACING THE THIRD LAYER OF BOMBS, PROVIDING THE MEMBERS CAN BE POSITIONED AT 61", PLUS OR MINUS 1", ABOVE THE CAR FLOOR. IF THE FIXED WALL MEMBERS ARE LOCATED AT THE 64" HEIGHT, IT WILL BE NECESSARY TO LAMINATE AN ADDITIONAL SLEEPER (PIECE MARKED ⑦) TO THE BOTTOM OF THE SLEEPER WHICH IS NAILED TO THE UNDER SIDE OF THE RISER, (PIECE MARKED ③) BETWEEN THE SECOND AND THIRD LAYERS, TO PROVIDE ACCEPTABLE ALIGNMENT OF BOMBS AND CROSS MEMBERS. THIS CRITERIA FOR CARS WITH FIXED WALL MEMBERS CAN ALSO BE APPLIED TO THE 28,000 SERIES CARS WHEN LESS THAN 62 CROSS MEMBERS ARE AVAILABLE.

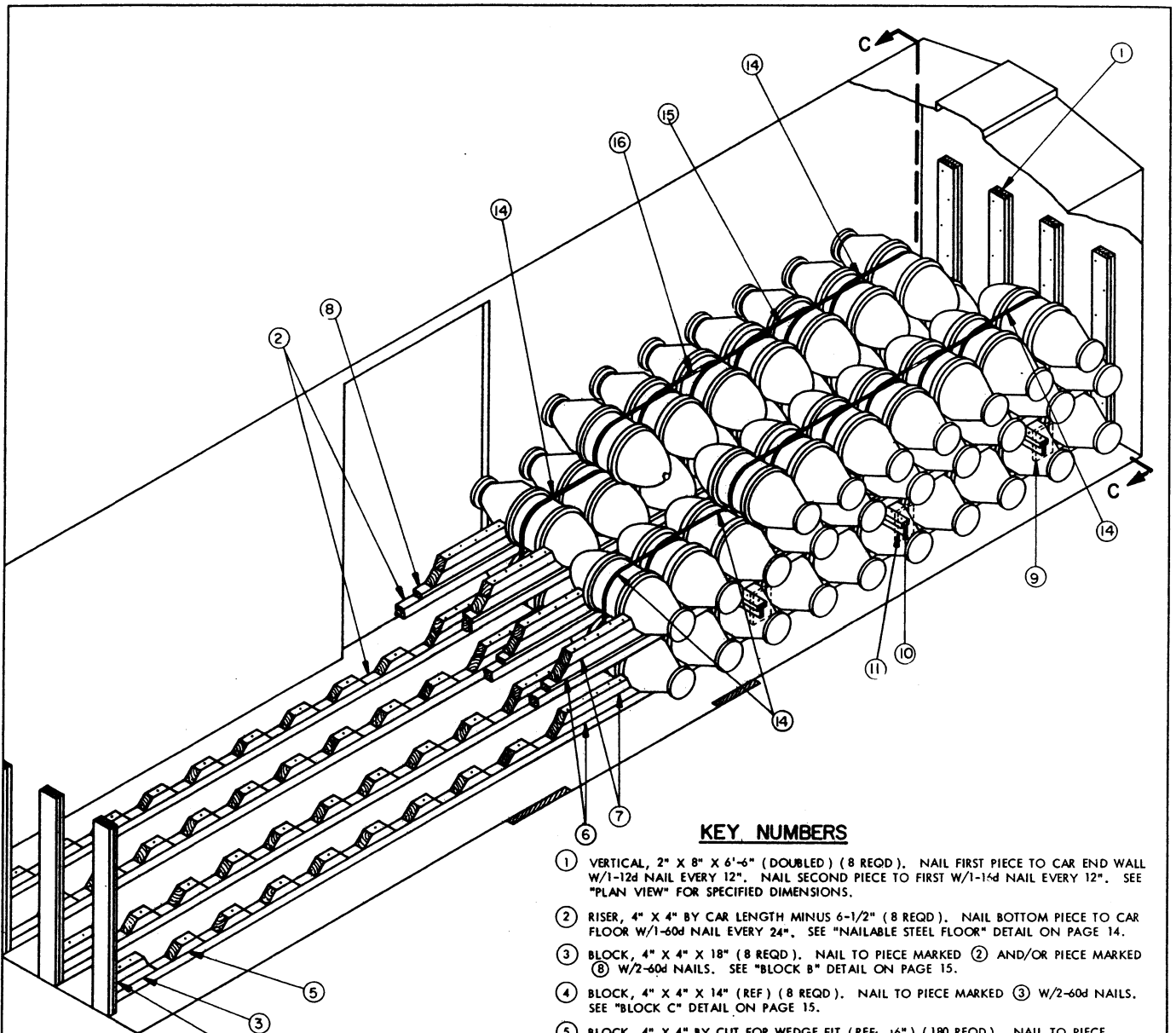
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	507	338
2" X 6"	401	401
4" X 4"	591	788
NAILS	NO. REQD	POUNDS
10d (3")	192	3
12d (3-1/4")	768	13
16d (3-1/2")	384	8-1/4
20d (4")	192	7
60d (6")	272	27-1/4

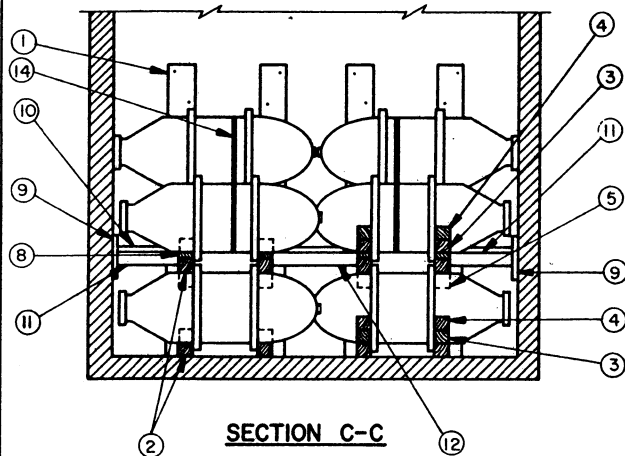
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX.)
1,000 LB BOMB	96	99,168 LBS
DUNNAGE		3,883 LBS

TOTAL WEIGHT ---- 103,051 LBS



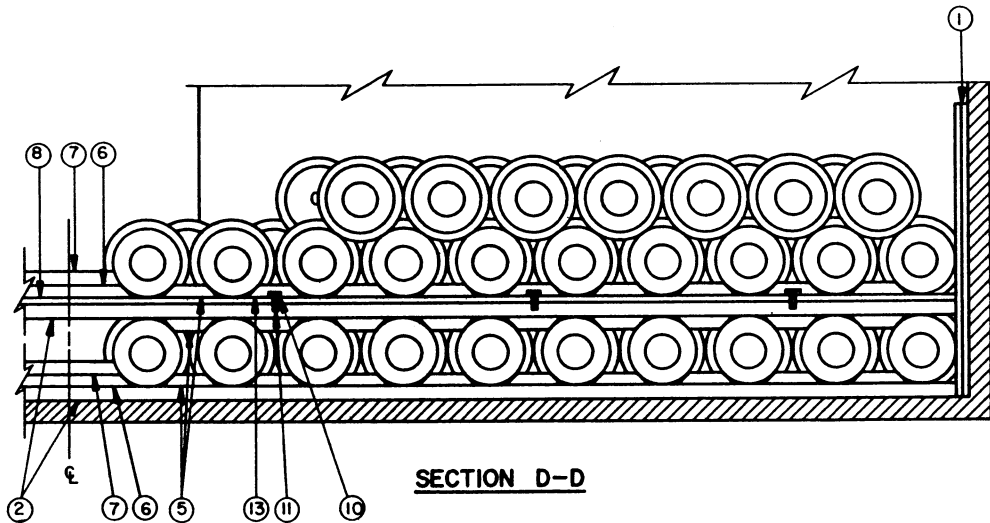
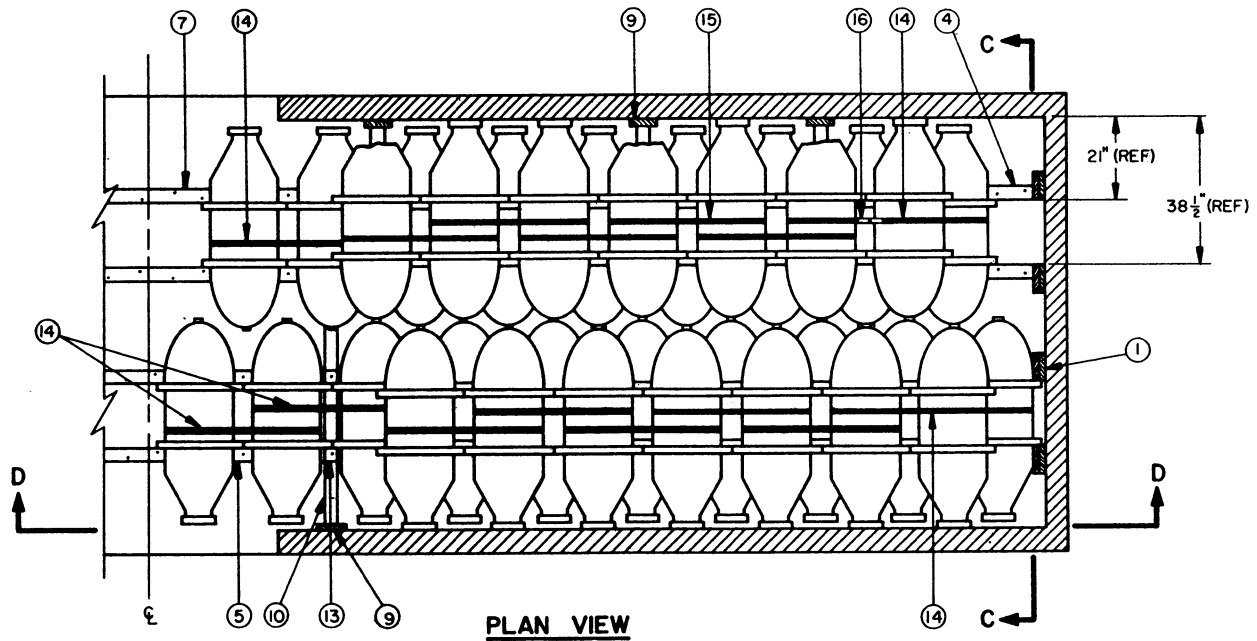
ISOMETRIC VIEW



SECTION C-C

KEY NUMBERS

- ① VERTICAL, 2" X 8" X 6'-6" (DOUBLED) (8 REQD). NAIL FIRST PIECE TO CAR END WALL W/1-12d NAIL EVERY 12". NAIL SECOND PIECE TO FIRST W/1-16d NAIL EVERY 12". SEE "PLAN VIEW" FOR SPECIFIED DIMENSIONS.
- ② RISER, 4" X 4" BY CAR LENGTH MINUS 6-1/2" (8 REQD). NAIL BOTTOM PIECE TO CAR FLOOR W/1-60d NAIL EVERY 24". SEE "NAILABLE STEEL FLOOR" DETAIL ON PAGE 14.
- ③ BLOCK, 4" X 4" X 18" (8 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/2-60d NAILS. SEE "BLOCK B" DETAIL ON PAGE 15.
- ④ BLOCK, 4" X 4" X 14" (REF) (8 REQD). NAIL TO PIECE MARKED ③ W/2-60d NAILS. SEE "BLOCK C" DETAIL ON PAGE 15.
- ⑤ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 16") (180 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/2-20d NAILS IN BEVELED END AND W/1-50d NAIL THRU TOP. SEE "BLOCK A" DETAIL ON PAGE 15. SEE SPECIAL NOTE 2.
- ⑥ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 41") (8 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/5-60d NAILS. SEE "BLOCK D" DETAIL ON PAGE 16.
- ⑦ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 33") (8 REQD). NAIL TO PIECE MARKED ⑥ W/5-60d NAILS. SEE "BLOCK E" DETAIL ON PAGE 16.
- ⑧ SLEEPER, 2" X 4" BY CAR LENGTH MINUS 6-1/2" (4 REQD). NAIL TO PIECE MARKED ② W/1-12d NAIL EVERY 12".
- ⑨ WALL CLEAT, 2" X 8" X 12" (12 REQD). POSITION AS SHOWN AND NAIL TO CAR SIDE WALL W/5-12d NAILS. SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑩ TOP BRACE, 2" X 4" X 56" (12 REQD). NAIL TO PIECE MARKED ⑧ W/3-16d NAILS AT EACH JOINT. NAIL TO PIECE MARKED ⑪ W/4-16d NAILS. NAIL TO PIECE MARKED ⑫ W/5-16d NAILS. SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑪ END BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECE MARKED ⑧ AND PIECE MARKED ⑨ (REF: 15-3/4") (12 REQD). SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑫ CENTER BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECES MARKED ⑧ (REF: 25-3/4") (6 REQD). SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑬ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 16") (24 REQD). NAIL TO PIECE MARKED ⑧ W/2-20d NAILS IN BEVELED END AND W/1-60d NAIL THRU TOP. SEE "BLOCK F" DETAIL ON PAGE 16. NOTE THAT THE 60d NAIL MUST PENETRATE PIECE ⑩.
- ⑭ STEEL STRAPPING, 1-1/4" X .035" X 15'-0" LONG (10 REQD). TO ENCIRCLE FOUR (4) BOMBS. SEE "STRAP THREADING DETAIL" ON PAGE 14.
- ⑮ STEEL STRAPPING, 1-1/4" X .035" X 12'-0" LONG (20 REQD). TO ENCIRCLE THREE (3) BOMBS. SEE "STRAP THREADING DETAIL" ON PAGE 14.
- ⑯ SEAL FOR 1-1/4" STRAPPING (60 REQD). SEE GENERAL NOTE "J" ON PAGE 2.



PLAN VIEW

SECTION D-D

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	245	164
2" X 8"	116	155
4" X 4"	600	800
NAILS	NO. REQD	POUNDS
12d (3-1/4")	280	4-3/4
16d (3-1/2")	224	5
20d (4")	408	14-3/4
60d (6")	400	40
STEEL STRAPPING, 1-1/4" X .035" -----		390' REQD ----- 56 LBS
SEALS, FOR 1-1/4" STRAPPING -----		60 REQD ----- 3 LBS

SPECIAL NOTES:

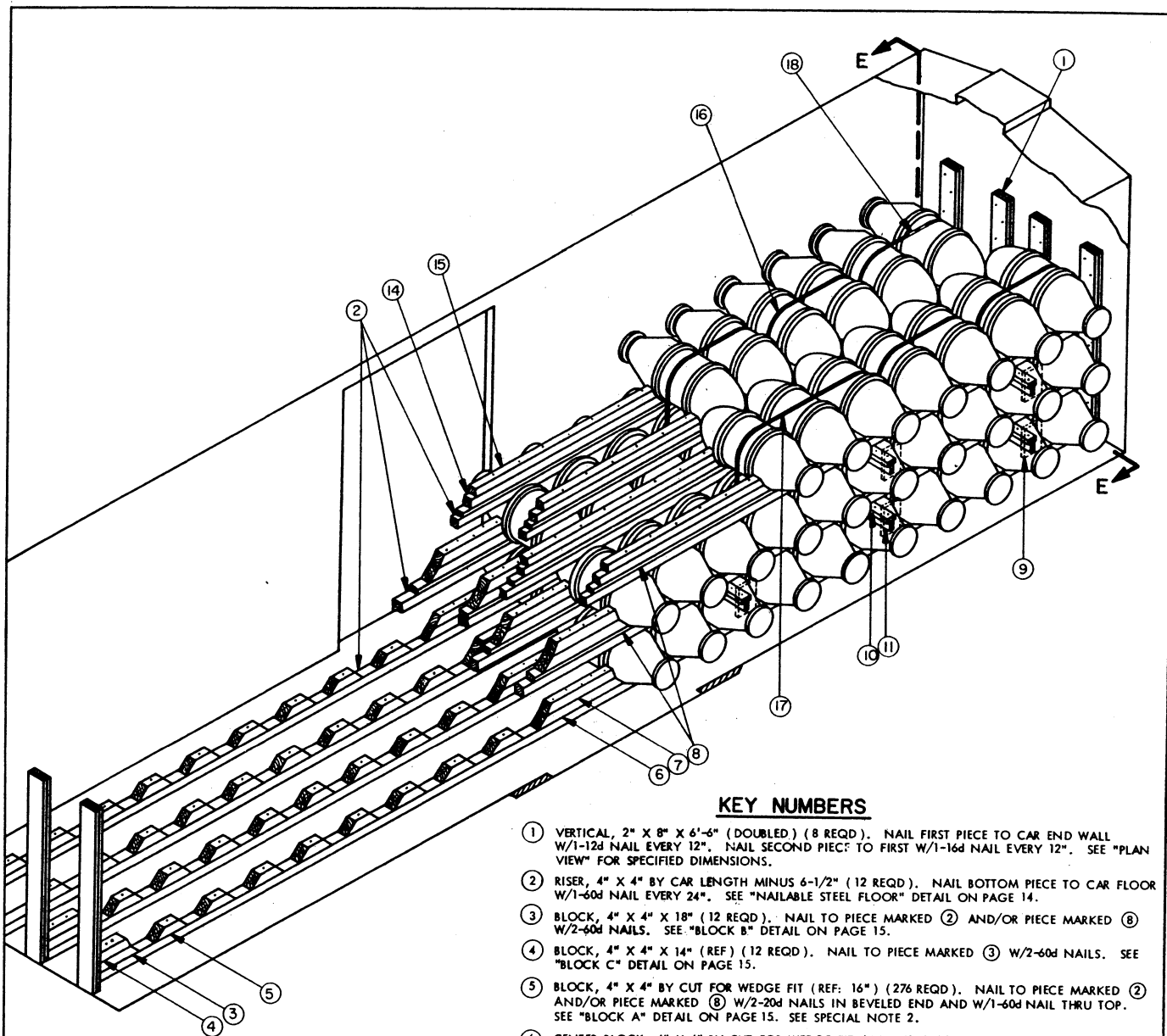
1. A 40'-6" LONG BY 9'-2" WIDE CONVENTIONAL BOX CAR EQUIPPED WITH 6'-0" DOOR OPENINGS IS SHOWN. CARS HAVING LARGER DOOR OPENINGS MAY BE USED. A WIDER CAR MAY BE USED FOR THE SHIPMENT OF THE DEPICTED LOAD. IF A NARROWER CAR IS USED, BLOCK AS SHOWN ON PAGES 8 AND 9.
2. THE BLOCKS, PIECES MARKED (5), MUST BE OF A LENGTH TO CONTACT THE BODIES OF ADJACENT BOMBS, BUT NOT SO LONG AS TO PREVENT CONTACT OF SHIPPING BANDS.
3. IF THE CAR BEING LOADED IS EQUIPPED WITH "THRU" DOORS WIDER THAN 8'-0" OR WITH STAGGERED DOORS OF EITHER THE CONVENTIONAL SLIDING OR THE PLUG TYPE, SPECIAL BLOCKING MUST BE PROVIDED TO BUFFER THE PIECES MARKED (10) AND (11) WHICH ARE IN THE DOORWAY. REPLACE THE APPLICABLE PIECES MARKED (9) WITH DOUBLED 2" X 6" MATERIAL WHICH IS 24" LONGER THAN THE WIDTH OF THE DOOR OPENING(S). NAIL THE FIRST PIECE TO THE CAR WALL W/5-12d NAILS AT EACH END. LAMINATE THE SECOND PIECE W/1-10d NAIL EVERY 24" CAUTION: DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT TO A NAILING STRIP IF A DOOR IS SO EQUIPPED. ADJUST THE LENGTH OF PIECES MARKED (10) AND (11) AS NECESSARY.
4. THE DEPICTED PROCEDURES ARE APPLICABLE FOR 50'-6" LONG CARS. APPROXIMATELY FORTY-SIX (46) BOMBS CAN BE LOADED IN ONE LAYER. ADJUST QUANTITIES OF BLOCKING MATERIAL AS NECESSARY.
5. IF THE BOX CAR HAS A NAILABLE STEEL FLOOR SEE "NAILABLE STEEL FLOOR" DETAIL ON PAGE 14.

LOAD AS SHOWN

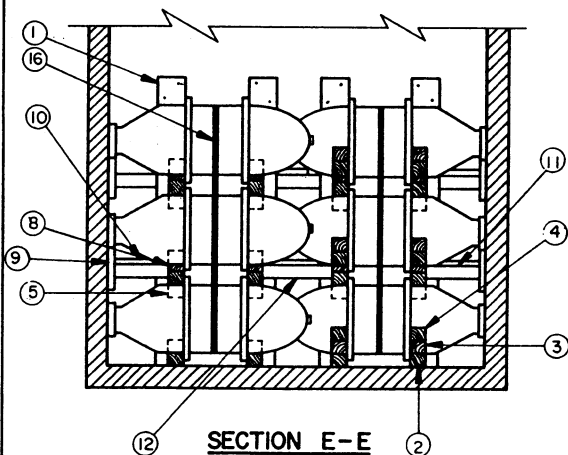
ITEM	QUANTITY	WEIGHT (APPROX)
1,000 LB BOMB -----	104 -----	107,432 LBS
DUNNAGE -----		2,863 LBS
TOTAL WEIGHT -----		110,295 LBS

CONVENTIONAL BOX CAR 40'-6" LONG X 9'-2" WIDE

PAGE 7



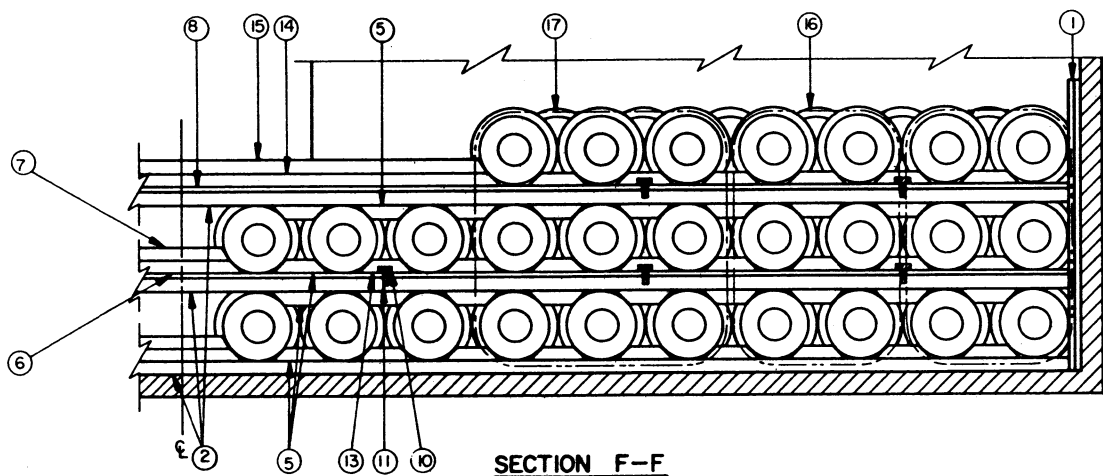
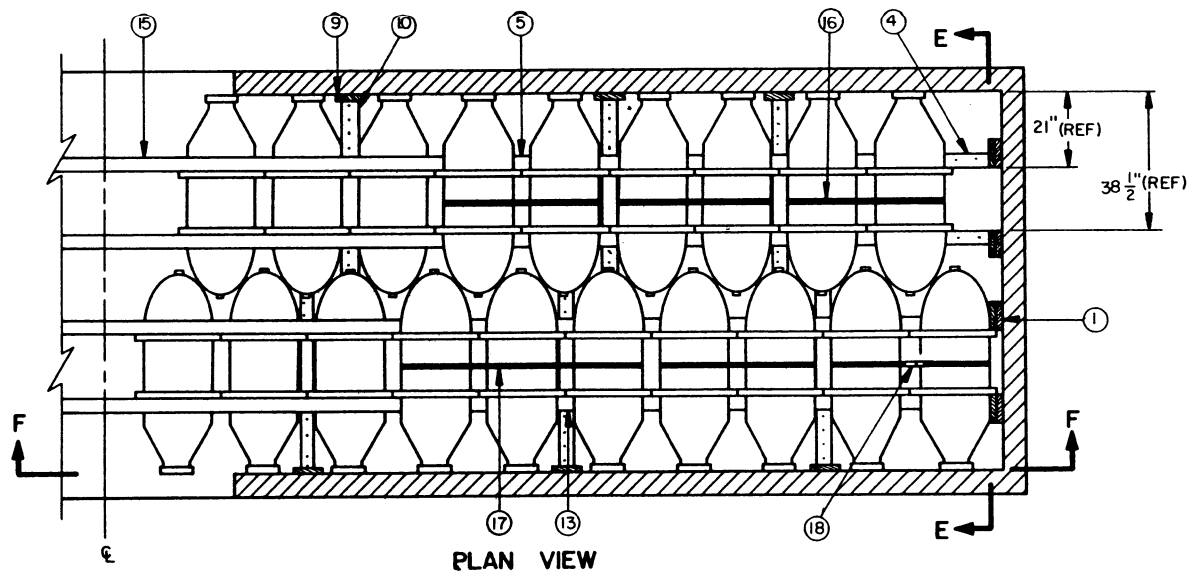
ISOMETRIC VIEW



SECTION E-E

KEY NUMBERS

- ① VERTICAL, 2" X 8" X 6'-6" (DOUBLED) (8 REQD). NAIL FIRST PIECE TO CAR END WALL W/1-12d NAIL EVERY 12". NAIL SECOND PIECE TO FIRST W/1-16d NAIL EVERY 12". SEE "PLAN VIEW" FOR SPECIFIED DIMENSIONS.
- ② RISER, 4" X 4" BY CAR LENGTH MINUS 6-1/2" (12 REQD). NAIL BOTTOM PIECE TO CAR FLOOR W/1-60d NAIL EVERY 24". SEE "NAILABLE STEEL FLOOR" DETAIL ON PAGE 14.
- ③ BLOCK, 4" X 4" X 18" (12 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/2-60d NAILS. SEE "BLOCK B" DETAIL ON PAGE 15.
- ④ BLOCK, 4" X 4" X 14" (REF) (12 REQD). NAIL TO PIECE MARKED ③ W/2-60d NAILS. SEE "BLOCK C" DETAIL ON PAGE 15.
- ⑤ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 16") (276 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/2-20d NAILS IN BEVELED END AND W/1-60d NAIL THRU TOP. SEE "BLOCK A" DETAIL ON PAGE 15. SEE SPECIAL NOTE 2.
- ⑥ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 41") (8 REQD). NAIL TO PIECE MARKED ② AND/OR PIECE MARKED ⑧ W/5-60d NAILS. SEE "BLOCK D" DETAIL ON PAGE 16.
- ⑦ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 33") (8 REQD). NAIL TO PIECE MARKED ⑥ W/5-60d NAILS. SEE "BLOCK E" DETAIL ON PAGE 16.
- ⑧ SLEEPER, 2" X 4" BY CAR LENGTH MINUS 6-1/2" (8 REQD). NAIL TO PIECE MARKED ② W/1-12d NAIL EVERY 12".
- ⑨ WALL CLEAT, 2" X 8" X 12" (20 REQD). POSITION AS SHOWN AND NAIL TO CAR SIDE WALL W/5-12d NAILS. SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑩ TOP BRACE, 2" X 4" X 56" (20 REQD). NAIL TO PIECE MARKED ⑧ W/3-16d NAILS AT EACH JOINT. NAIL TO PIECE MARKED ⑪ W/4-16d NAILS. NAIL TO PIECE MARKED ⑫ W/4-16d NAILS. SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑪ END BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECE MARKED ⑧ AND PIECE MARKED ⑨ (REF: 15-3/4") (20 REQD). SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑫ CENTER BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECES MARKED ⑧ (REF: 17-3/4") (10 REQD). SEE "ANTI-SWAY BRACE ASSEMBLY" DETAIL ON PAGE 15.
- ⑬ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 16") (40 REQD). NAIL TO PIECE MARKED ⑧ W/2-20d NAILS IN BEVELED END AND W/1-60d NAIL THRU TOP. SEE "BLOCK F" DETAIL ON PAGE 16. NOTE THAT THE 60d NAIL MUST PENETRATE PIECE ⑩.
- ⑭ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 14'-5") (4 REQD). NAIL TO PIECE MARKED ⑧ W/1-60d NAIL EVERY 12". SEE "BLOCK D" DETAIL ON PAGE 16.
- ⑮ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 13'-9") (4 REQD). NAIL TO PIECE MARKED ⑭ W/1-60d NAIL EVERY 12". SEE "BLOCK E" DETAIL ON PAGE 16.
- ⑯ STEEL STRAPPING, 1-1/4" X .035" X 19'-0" (10 REQD). TO ENCIRCLE SIX (6) BOMBS. SEE "SECTION F-F".
- ⑰ STEEL STRAPPING, 1-1/4" X .035" X 22'-0" (2 REQD). TO ENCIRCLE NINE (9) BOMBS. SEE "SECTION F-F".
- ⑱ SEAL FOR 1-1/4" STRAPPING (24 REQD). SEE GENERAL NOTE "J" ON PAGE 2.



SPECIAL NOTES:

1. A 40'-6" LONG BY 8'-6" WIDE CONVENTIONAL BOX CAR EQUIPPED WITH 6'-0" DOOR OPENINGS IS SHOWN. CARS HAVING LARGER DOOR OPENINGS MAY BE USED. IF A WIDER CAR IS USED, LOAD AS SHOWN ON PAGES 6 AND 7.
2. THE BLOCKS, PIECES MARKED (5), MUST BE OF A LENGTH TO CONTACT THE BODIES OF ADJACENT BOMBS, BUT NOT SO LONG AS TO PREVENT CONTACT OF SHIPPING BANDS.
3. IF THE CAR BEING LOADED IS EQUIPPED WITH "THRU" DOORS WIDER THAN 8'-0" OR WITH STAGGERED DOORS OF EITHER THE CONVENTIONAL SLIDING OR THE PLUG TYPE, SPECIAL BLOCKING MUST BE PROVIDED TO BUFFER THE PIECES MARKED (10) AND (11) WHICH ARE IN THE DOORWAY. REPLACE THE APPLICABLE PIECES MARKED (9) WITH DOUBLED 2" X 6" MATERIAL WHICH IS 24" LONGER THAN THE WIDTH OF THE DOOR OPENING(S). NAIL THE FIRST PIECE TO THE CAR WALL W/5-12d NAILS AT EACH END. LAMINATE THE SECOND PIECE W/1-10d NAIL EVERY 24". **CAUTION:** DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT TO A NAILING STRIP IF A DOOR IS SO EQUIPPED. ADJUST THE LENGTH OF PIECES MARKED (10) AND (11) AS NECESSARY.
4. IF THE BOX CAR HAS A NAILABLE STEEL FLOOR SEE "NAILABLE STEEL FLOOR" DETAIL ON PAGE 14.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	452	302
2" X 8"	124	166
4" X 4"	999	1332
NAILS	NO. REQD	POUNDS
12d (3-1/2")	474	8
16d (3-1/2")	336	7-1/2
20d (4")	632	22-3/4
60d (6")	644	64-1/2
STEEL STRAPPING, 1-1/4" X .035" ----- 234' REQD -----		34 LBS
SEALS, FOR 1-1/4" STRAPPING ----- 24 REQD -----		2 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
1,000 LB BOMB -----	102 -----	105,366 LBS
DUNNAGE -----		4,604 LBS
TOTAL WEIGHT -----		109,970 LBS

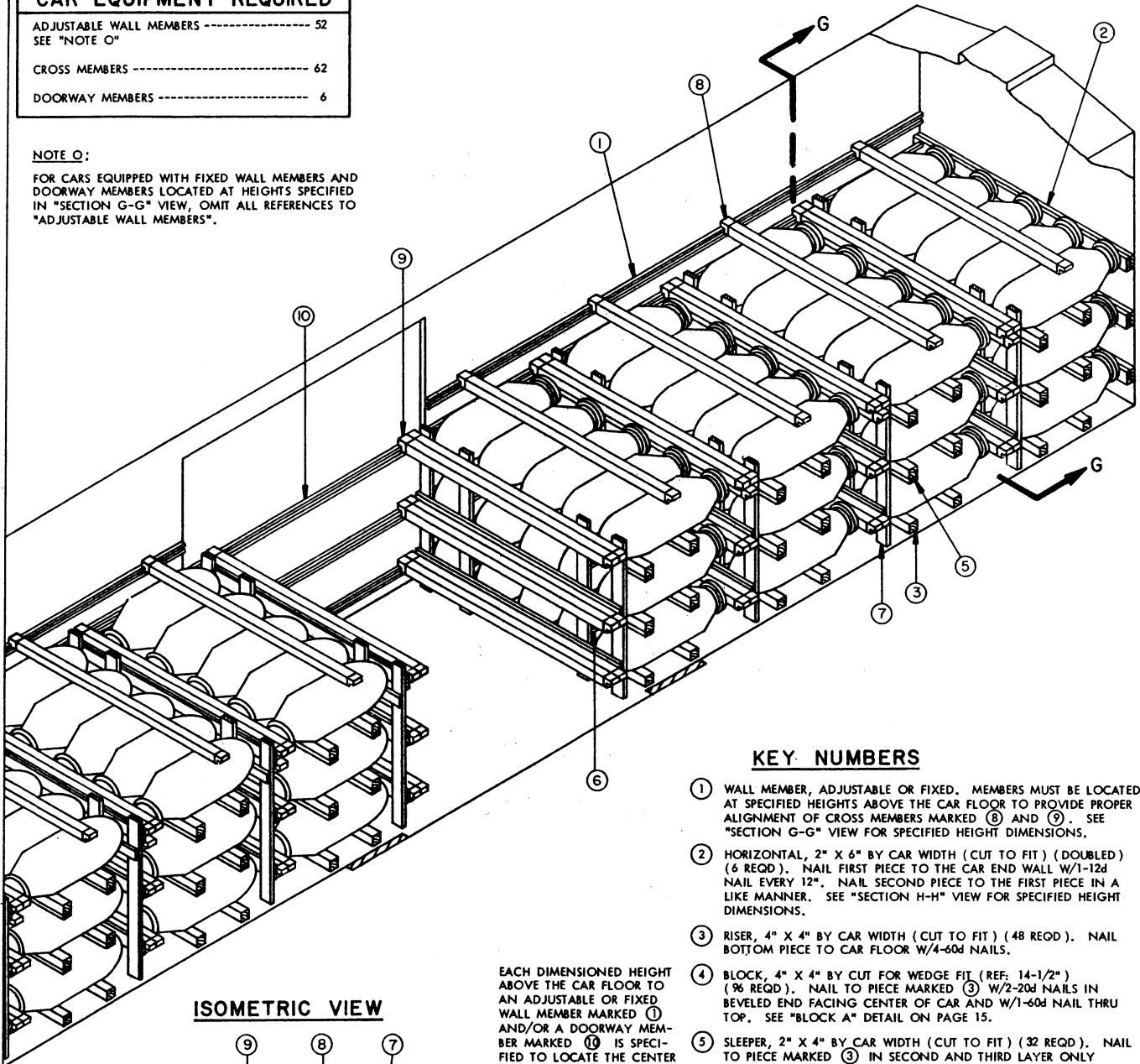
CONVENTIONAL BOX CAR 40'-6" LONG X 8'-6" WIDE

CAR EQUIPMENT REQUIRED

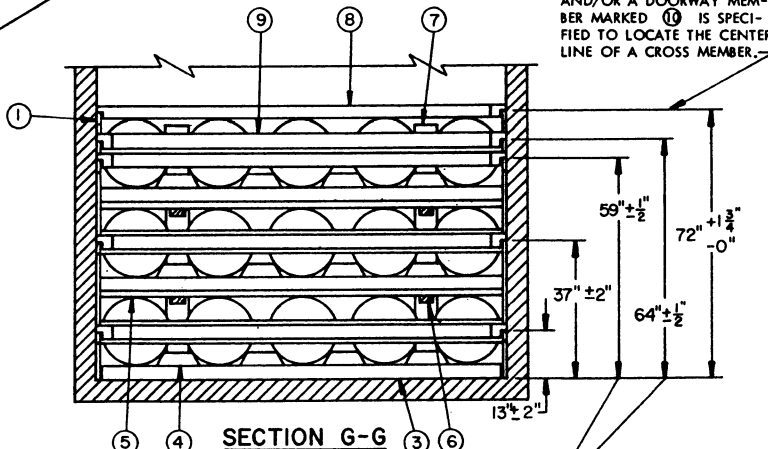
ADJUSTABLE WALL MEMBERS -----	52
SEE "NOTE O"	
CROSS MEMBERS -----	62
DOORWAY MEMBERS -----	6

NOTE O:

FOR CARS EQUIPPED WITH FIXED WALL MEMBERS AND DOORWAY MEMBERS LOCATED AT HEIGHTS SPECIFIED IN "SECTION G-G" VIEW, OMIT ALL REFERENCES TO "ADJUSTABLE WALL MEMBERS".



ISOMETRIC VIEW

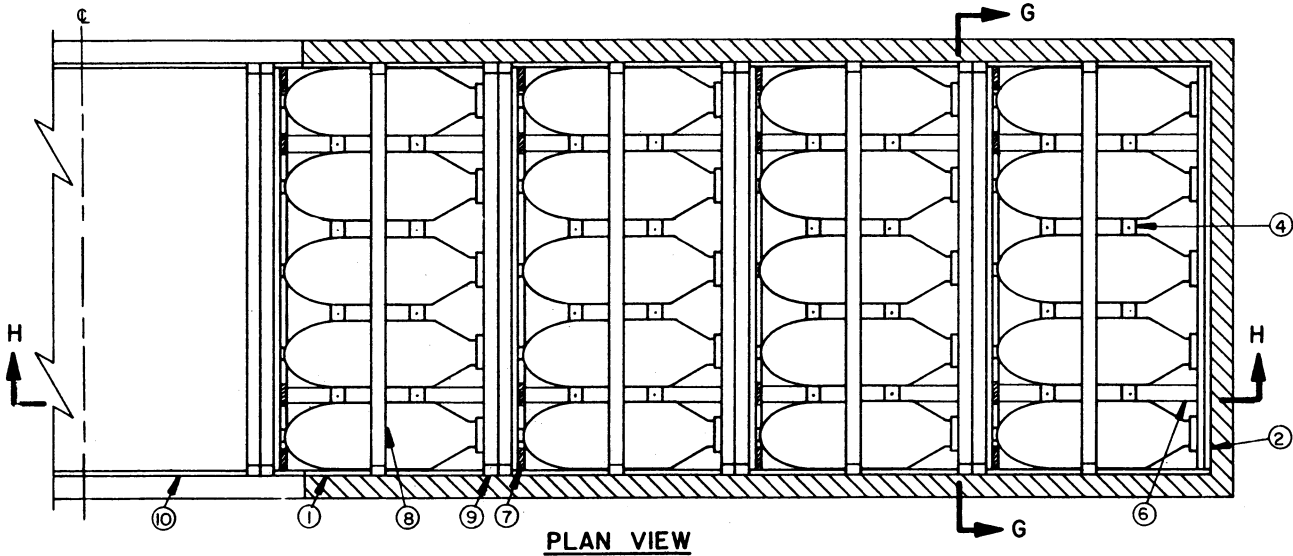


SECTION G-G
ADJUST TOLERANCED DIMENSIONS AS NECESSARY TO ALIGN CROSS MEMBERS AS NEARLY AS POSSIBLE WITH CENTERS OF BOMBS. SEE SPECIAL NOTE 5 ON PAGE 11.

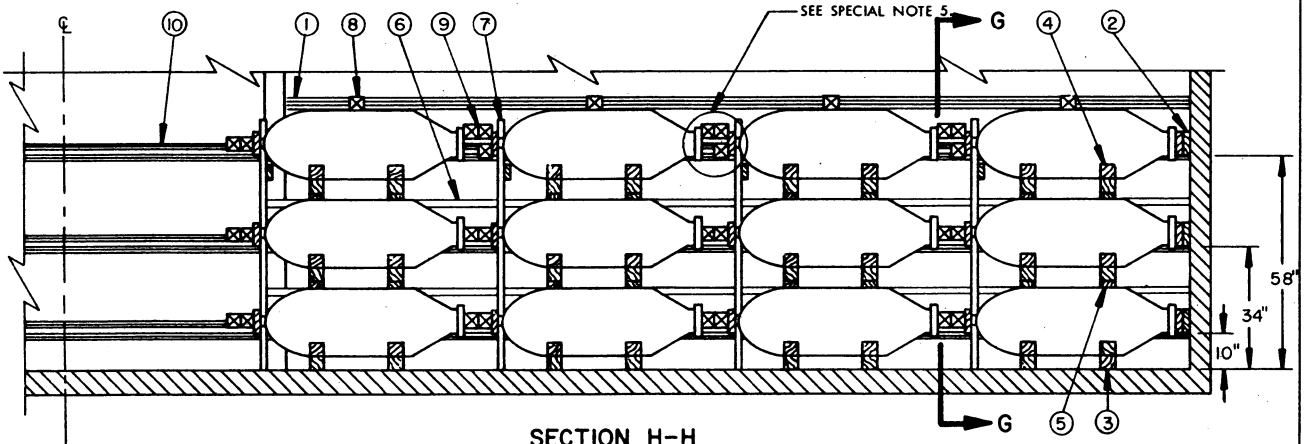
EACH DIMENSIONED HEIGHT ABOVE THE CAR FLOOR TO AN ADJUSTABLE OR FIXED WALL MEMBER MARKED ① AND/OR A DOORWAY MEMBER MARKED ⑩ IS SPECIFIED TO LOCATE THE CENTER LINE OF A CROSS MEMBER.

KEY NUMBERS

- ① WALL MEMBER, ADJUSTABLE OR FIXED. MEMBERS MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE PROPER ALIGNMENT OF CROSS MEMBERS MARKED ⑧ AND ⑨. SEE "SECTION G-G" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- ② HORIZONTAL, 2" X 6" BY CAR WIDTH (CUT TO FIT) (DOUBLED) (6 REQD.). NAIL FIRST PIECE TO THE CAR END WALL W/1-12d NAIL EVERY 12". NAIL SECOND PIECE TO THE FIRST PIECE IN A LIKE MANNER. SEE "SECTION H-H" VIEW FOR SPECIFIED HEIGHT DIMENSIONS.
- ③ RISER, 4" X 4" BY CAR WIDTH (CUT TO FIT) (48 REQD.). NAIL BOTTOM PIECE TO CAR FLOOR W/4-60d NAILS.
- ④ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF. 14-1/2") (96 REQD.). NAIL TO PIECE MARKED ③ W/2-20d NAILS IN BEVELED END FACING CENTER OF CAR AND W/1-60d NAIL THRU TOP. SEE "BLOCK A" DETAIL ON PAGE 15.
- ⑤ SLEEPER, 2" X 4" BY CAR WIDTH (CUT TO FIT) (32 REQD.). NAIL TO PIECE MARKED ③ IN SECOND AND THIRD LAYER ONLY W/1-12d NAIL EVERY 12".
- ⑥ SPACER, 2" X 4" BY CUT TO FIT BETWEEN PIECES MARKED ⑦ AND/OR PIECES MARKED ⑦ AND END WALL OF CAR (32 REQD.). NAIL TO PIECE MARKED ⑤ W/3-12d NAILS AT EACH JOINT.
- ⑦ SEPARATOR GATE B (8 REQD.). SEE DETAIL ON PAGE 17.
- ⑧ CROSS MEMBER (HOLD DOWN) (8 REQD.). SEE "ALTERNATIVE HOLD DOWN" DETAIL ON PAGE 15. SEE SPECIAL NOTE 2 ON PAGE 11.
- ⑨ CROSS MEMBER (54 REQD.). SEE GENERAL NOTE "D" ON PAGE 2.
- ⑩ DOORWAY MEMBER (6 REQD.). POSITION AT HEIGHTS SPECIFIED IN "SECTION G-G" VIEW FOR THE FIRST TWO LAYERS OF BOMBS. FOR THE TOP LAYER, INSTALL AT 61" PLUS OR MINUS 1".



PLAN VIEW



SECTION H-H

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	524	350
2" X 6"	411	411
4" X 4"	517	690
NAILS	NO. REQD	POUNDS
10d (3")	192	3-1/4
12d (3-1/4")	588	10
20d (4")	192	7
60d (6")	160	15

SPECIAL NOTES:

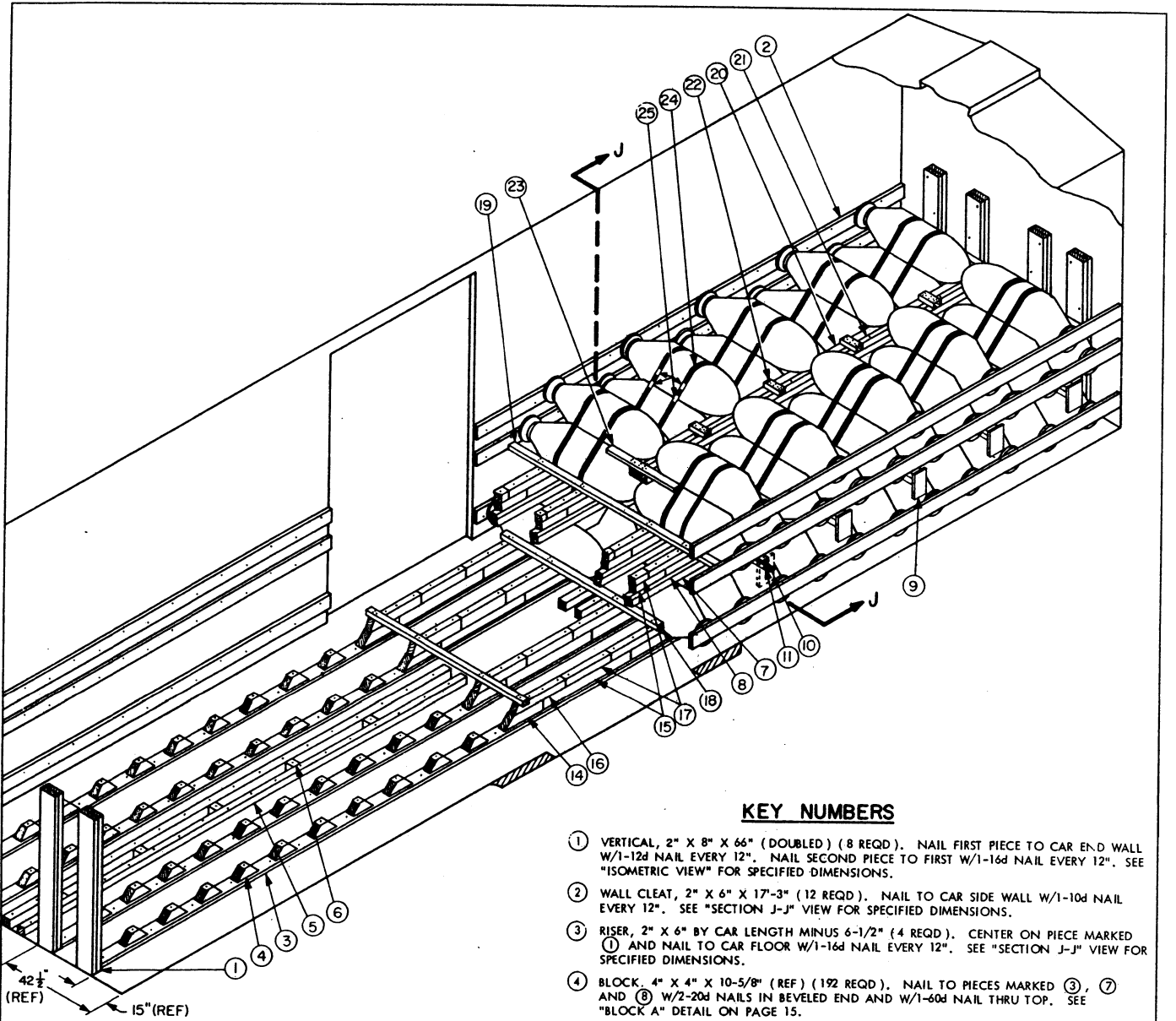
1. A 50'-6" LONG BY 8'-11" WIDE (INSIDE CLEARANCE) BOX CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS AND HAVING 10'-0" DOOR OPENINGS IS SHOWN. WIDER CARS MAY BE USED. CARS HAVING SMALLER OR LARGER DOOR OPENINGS MAY BE USED; HOWEVER, BOMBS MUST NOT BE LOADED IN THE DOORWAY TO THE EXTENT THAT THEY WILL NOT FULLY CONTACT A SIDE WALL. CARS EQUIPPED WITH STAGGERED OR PLUG DOORS WILL NOT BE USED.
2. THE 72" LOCATION DIMENSION FOR PIECE MARKED (8) MAY BE INCREASED. FOR A VOID OF 1-3/4" OR LESS, FILLER MATERIAL, 4" WIDE BY CAR WIDTH BY THE REQUIRED THICKNESS, WILL BE NAILED TO THE BOTTOM SURFACE OF CROSS MEMBERS PRIOR TO INSTALLATION. IF THE CAR IS EQUIPPED WITH ALL METAL CROSS MEMBERS, FILLER MATERIAL MAY BE WIRE TIED TO A CROSS MEMBER WITH NO. 8 GAGE BLACK ANNEALED WIRE. FOR A SPACE GREATER THAN 1-3/4", SEE THE "ALTERNATIVE HOLD DOWN" DETAIL ON PAGE 15.
3. THE BLOCKS, PIECES MARKED (4), MUST BE OF A LENGTH TO CONTACT THE BODIES OF ADJACENT BOMBS.
4. THE USE OF 40'-0" LONG CARS IS NOT RECOMMENDED FOR THIS PROCEDURE BECAUSE ONLY SEVENTY-TWO (72) BOMBS CAN BE OUTLOADED.
5. THE CROSS MEMBER INSTALLATION PATTERN SHOWN FOR BRACING THE THIRD LAYER OF BOMBS (2 CROSS MEMBERS BACK-TO-BACK AT 64" AND 1 CROSS MEMBER AT 59") IS APPLICABLE ONLY FOR DODD 28,000 SERIES CARS WHICH HAVE FIXED WALL MEMBERS AT THE 64" HEIGHT, THEREBY NOT PERMITTING ALIGNMENT OF CROSS MEMBERS WITH THE CENTER OF THE BOMBS (61" PLUS OR MINUS 1"). FOR CARS EQUIPPED ONLY WITH FIXED WALL MEMBERS, JUST TWO CROSS MEMBERS BACK-TO-BACK ARE REQUIRED FOR BRACING THE THIRD LAYER OF BOMBS, PROVIDING THE MEMBERS CAN BE POSITIONED AT 61", PLUS OR MINUS 1", ABOVE THE CAR FLOOR. IF THE FIXED WALL MEMBERS ARE LOCATED AT THE 64" HEIGHT, IT WILL BE NECESSARY TO LAMINATE AN ADDITIONAL SLEEPER (PIECE MARKED (3)) TO THE BOTTOM OF THE SLEEPER WHICH IS NAILED TO THE UNDER SIDE OF THE RISER, (PIECE MARKED (3)) BETWEEN THE SECOND AND THIRD LAYERS, TO PROVIDE ACCEPTABLE ALIGNMENT OF BOMBS AND CROSS MEMBERS. THIS CRITERIA FOR CARS WITH FIXED WALL MEMBERS CAN ALSO BE APPLIED TO THE 28,000 SERIES CARS WHEN LESS THAN 62 CROSS MEMBERS ARE AVAILABLE.

LOAD AS SHOWN

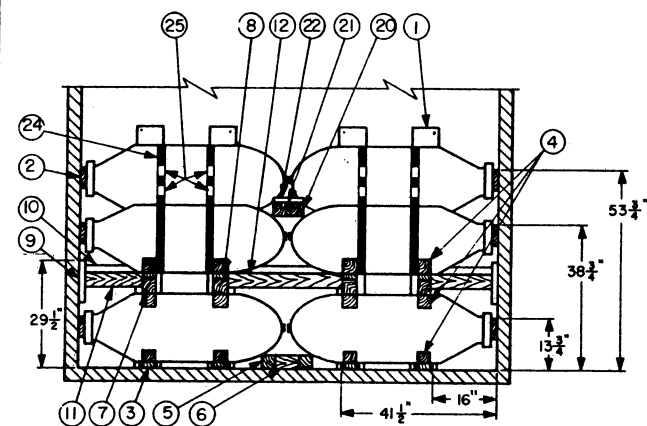
ITEM	QUANTITY	WEIGHT (APPROX)
1,000 LB BOMB	120	135,360 LBS
DUNNAGE		3,553 LBS
TOTAL WEIGHT		138,913 LBS

*CAUTION: THE TOTAL WEIGHT OF A LOAD IN A CAR MUST NOT EXCEED THE LOAD LIMIT WHICH IS STENCILED ON THE SIDE OF THE CAR. ALSO, THE LOAD WEIGHT ON ONE TRUCK MUST NOT EXCEED ONE-HALF OF THE LOAD LIMIT. AS REQUIRED, THE LOAD QUANTITY MAY BE REDUCED FROM WHAT IS SHOWN, PROVIDING THE PRINCIPLE OF THE SPECIFIED BLOCKING AND BRACING PROCEDURES ARE APPLIED TO SECURE THE REDUCED LOAD.

BOX CAR W/MECH BRACING WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS



ISOMETRIC VIEW

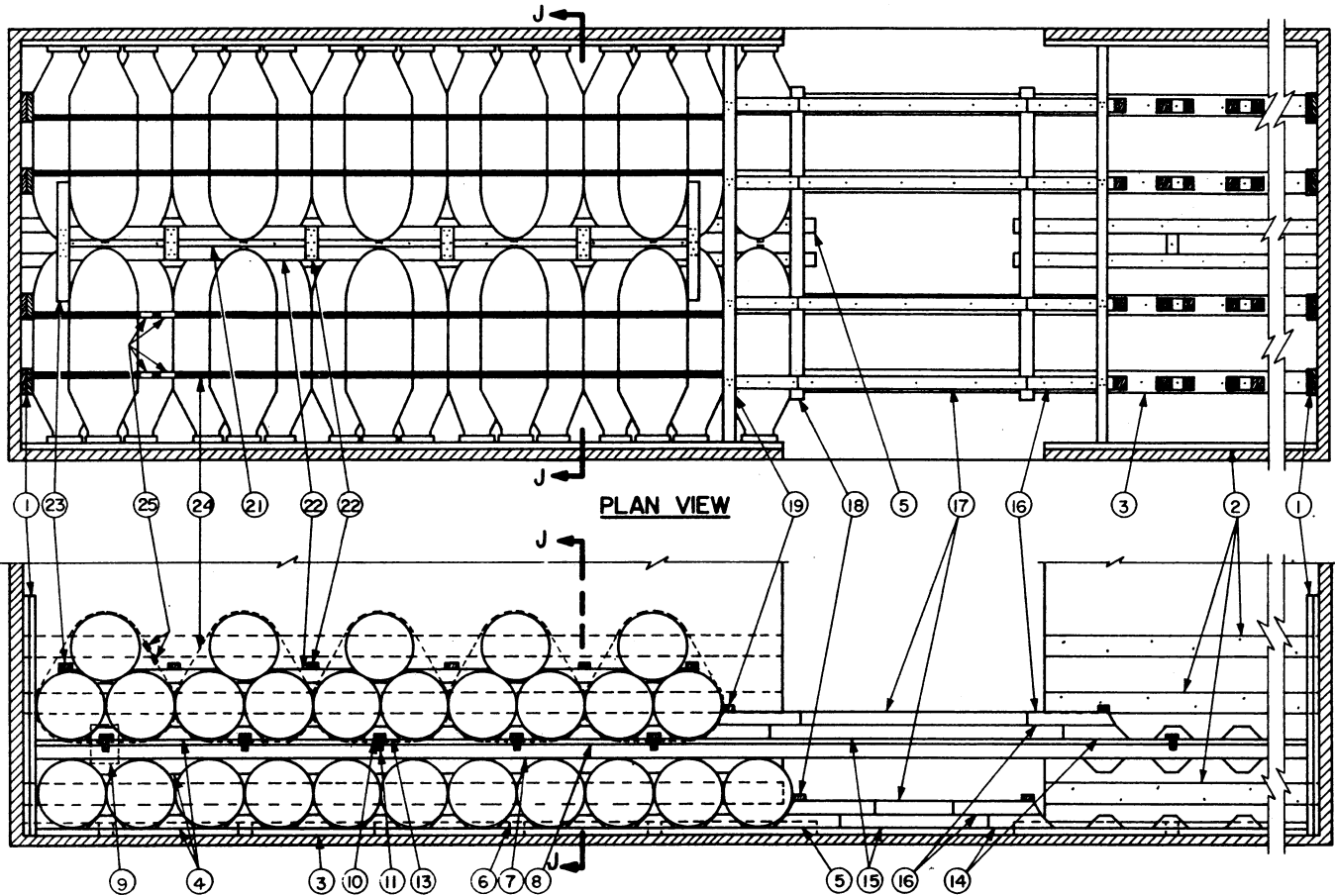


SECTION J-J

KEY NUMBERS

- ① VERTICAL, 2" X 8" X 66" (DOUBLED) (8 REQD). NAIL FIRST PIECE TO CAR END WALL W/1-12d NAIL EVERY 12". NAIL SECOND PIECE TO FIRST W/1-16d NAIL EVERY 12". SEE "ISOMETRIC VIEW" FOR SPECIFIED DIMENSIONS.
- ② WALL CLEAT, 2" X 6" X 17'-3" (12 REQD). NAIL TO CAR SIDE WALL W/1-10d NAIL EVERY 12". SEE "SECTION J-J" VIEW FOR SPECIFIED DIMENSIONS.
- ③ RISER, 2" X 6" BY CAR LENGTH MINUS 6-1/2" (4 REQD). CENTER ON PIECE MARKED ① AND NAIL TO CAR FLOOR W/1-16d NAIL EVERY 12". SEE "SECTION J-J" VIEW FOR SPECIFIED DIMENSIONS.
- ④ BLOCK, 4" X 4" X 10-5/8" (REF) (192 REQD). NAIL TO PIECES MARKED ③, ⑦ AND ⑧ W/2-20d NAILS IN BEVELED END AND W/1-60d NAIL THRU TOP. SEE "BLOCK A" DETAIL ON PAGE 15.
- ⑤ BLOCK, 4" X 4" X 18'-0" (4 REQD). NAIL TO CAR FLOOR W/1-60d NAIL EVERY 12".
- ⑥ SPACER, 4" X 4" BY CUT FOR WEDGE FIT (10 REQD). POSITION BETWEEN PIECES MARKED ⑤ AND NAIL TO CAR FLOOR W/1-40d NAIL THRU TOP.
- ⑦ RISER, 4" X 4" BY CAR LENGTH MINUS 6-1/2" (4 REQD). ALIGN WITH OUTSIDE EDGE OF PIECE MARKED ③.
- ⑧ SLEEPER, 2" X 4" BY CAR LENGTH MINUS 6-1/2" (4 REQD). NAIL TO PIECE MARKED ⑦ W/1-10d NAIL EVERY 12".
- ⑨ WALL CLEAT, 2" X 8" X 12" (20 REQD). POSITION AS SHOWN AND NAIL TO CAR SIDE WALL W/5-10d NAILS. SEE "SECTION J-J" VIEW FOR SPECIFIED DIMENSIONS.
- ⑩ TOP BRACE, 2" X 4" BY CAR WIDTH MINUS 3-1/4" (10 REQD). NAIL TO PIECE MARKED ⑧ W/3-16d NAILS AT EACH JOINT. NAIL TO PIECE MARKED ⑪ W/3-16d NAILS. NAIL TO PIECE MARKED ⑫ W/6-16d NAILS.
- ⑪ END BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECES MARKED ⑦ AND PIECES MARKED ⑨. (20 REQD).
- ⑫ CENTER BRACE, 2" X 4" BY CUT TO FIT BETWEEN PIECES MARKED ⑦ (10 REQD).
- ⑬ BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 10-5/8") (40 REQD). NAIL TO PIECE MARKED ⑧ W/2-20d NAILS IN BEVELED END AND W/1-60d NAIL THRU TOP. SEE "BLOCK B" DETAIL ON PAGE 16. NOTE THAT THE 60d NAIL MUST PENETRATE PIECE MARKED ⑬.
- ⑭ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (REF: 18") (16 REQD). NAIL TO PIECE MARKED ③ AND/OR PIECE MARKED ⑧ W/2-60d NAILS. SEE "BLOCK B" DETAIL ON PAGE 15.
- ⑮ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (8 REQD). NAIL TO PIECE MARKED ③ AND/OR PIECE MARKED ⑧ W/1-60d NAIL EVERY 12".
- ⑯ CENTER BLOCK, 4" X 4" X 24" (16 REQD). NAIL TO PIECE MARKED ⑭ AND PIECE MARKED ⑮ W/3-60d NAILS.

(CONTINUED ON PAGE 13)



(KEY NUMBERS CONTINUED FROM PAGE 12)

ELEVATION VIEW

- ⑰ CENTER BLOCK, 4" X 4" BY CUT FOR WEDGE FIT (8 REQD). NAIL TO PIECE MARKED ⑮ W/1-60d NAIL EVERY 12".
- ⑱ BRACE, 2" X 4" X 7'-6" (2 REQD). NAIL TO LOWER PIECES MARKED ⑲ W/3-16d NAILS AT EACH JOINT.
- ⑲ BRACE, 2" X 4" BY CAR WIDTH MINUS 3-1/4" (2 REQD). NAIL TO UPPER PIECES MARKED ⑲ W/3-16d NAILS AT EACH JOINT.
- ⑳ NOSE END STOP, 4" X 4" X 14'-6" (4 REQD).
- ㉑ SOLID FILL, 4" WIDE MATERIAL BY 14'-6" LONG BY THICKNESS REQUIRED TO FILL VOID BETWEEN PIECES MARKED ㉑. TOENAIL TO PIECE MARKED ㉑ W/1-12d NAIL EVERY 24".
- ㉒ SPACER, 2" X 4" BY CUT TO FIT (8 REQD). NAIL TO PIECE MARKED ㉒ W/2-12d NAILS AND TO PIECE MARKED ㉑ W/3-12d NAILS AT EACH END.
- ㉓ RETAINER BLOCK, 2" X 4" X 36" (4 REQD). NAIL TO PIECE MARKED ㉑ W/2-12d NAILS AND TO PIECE MARKED ㉑ W/3-12d NAILS AT EACH END.
- ㉔ STEEL STRAPPING, 1-1/4" X .035" X 11'-0" (40 REQD). TO ENIRCLE THREE (3) BOMBS. SEE "ELEVATION VIEW".
- ㉕ SEAL FOR 1-1/4" STRAPPING (80 REQD). SEE GENERAL NOTE "J" ON PAGE 2.

SPECIAL NOTES:

1. A 40'-6" LONG BY 9'-4" WIDE CONVENTIONAL BOX CAR EQUIPPED WITH 6'-0" DOOR OPENINGS IS SHOWN. CARS HAVING LARGER DOOR OPENINGS MAY BE USED.
2. IF THE CAR BEING LOADED IS EQUIPPED WITH "THRU" DOORS WIDER THAN 8'-0" OR WITH STAGGERED DOORS OF EITHER THE CONVENTIONAL SLIDING OR THE PLUG TYPE, SPECIAL BLOCKING MUST BE PROVIDED TO BUFFER THE PIECES MARKED ⑩ AND ⑪ WHICH ARE IN THE DOORWAY. REPLACE THE APPLICABLE PIECES MARKED ⑩ WITH DOUBLED 2" X 6" MATERIAL WHICH IS 24" LONGER THAN THE WIDTH OF THE DOOR OPENING(S). NAIL THE FIRST PIECE TO THE CAR WALL W/5-12d NAILS AT EACH END. LAMINATE THE SECOND PIECE W/1-10d NAIL EVERY 24". **CAUTION:** DUNNAGE MATERIAL MUST NOT BE NAILED TO ANY PLUG DOOR, WHETHER MAIN OR AUXILIARY, EXCEPT TO A NAILING STRIP IF A DOOR IS SO EQUIPPED. ADJUST THE LENGTH OF PIECES MARKED ⑩ AND ⑪ AS NECESSARY.

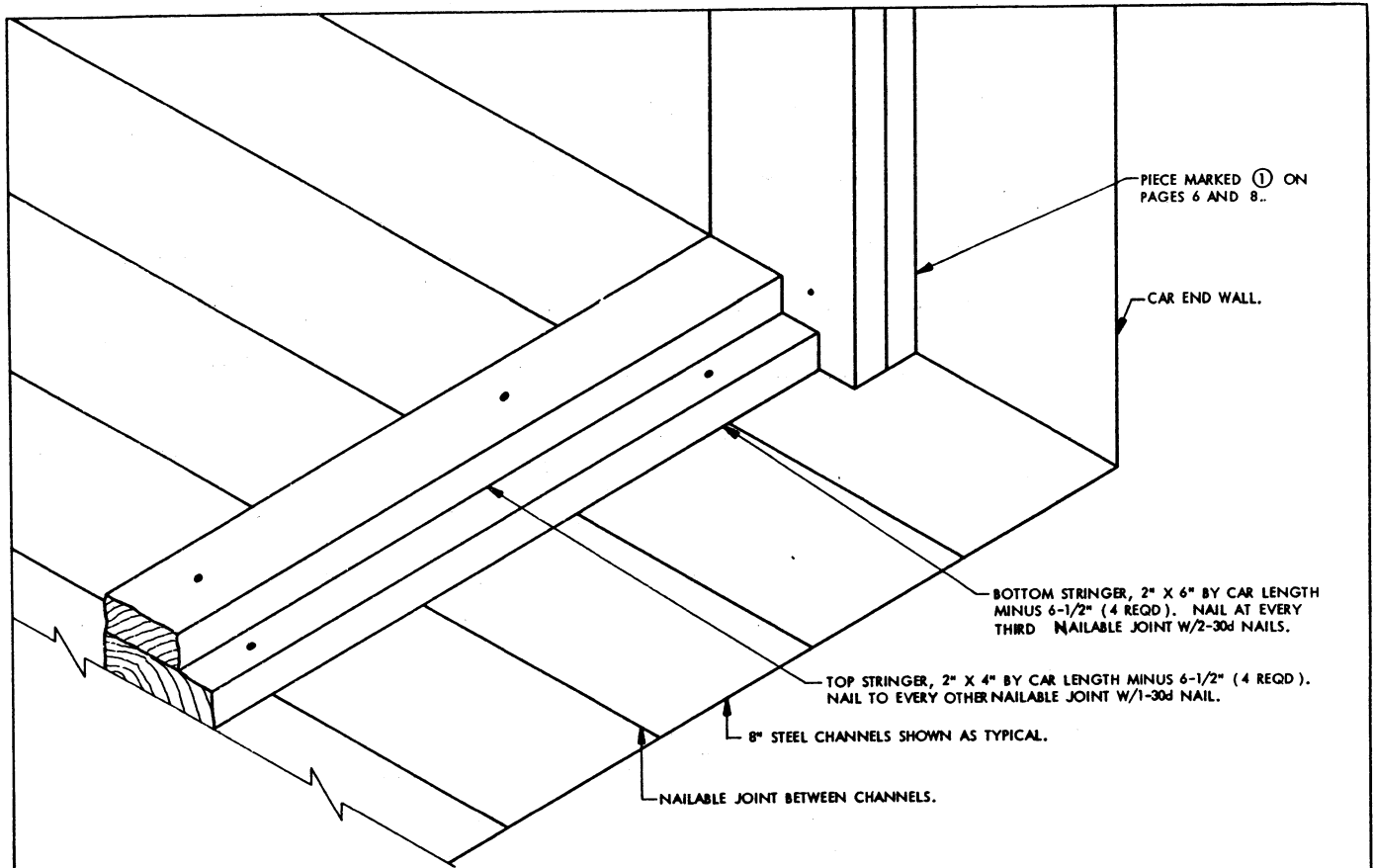
BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	350	230
2" X 6"	367	367
2" X 8"	108	144
4" X 4"	566	753
NAILS	NO. REQD	POUNDS
10d (3")	440	7
12d (3-1/4")	270	4-1/2
16d (3-1/2")	376	8-1/4
20d (4")	484	17-1/2
40d (5")	10	1/2
60d (6")	441	44-1/4
STEEL STRAPPING, 1-1/4" X .035" ----- 440' REQD		63 LBS
SEALS, FOR 1-1/4" STRAP ----- 80 REQD		4 LBS

LOAD AS SHOWN

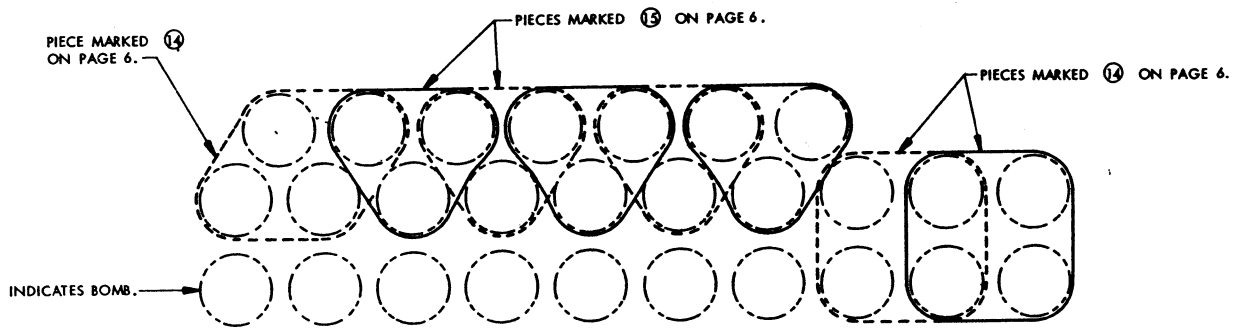
ITEM	QUANTITY	WEIGHT (APPROX)
1,000 LB BOMB	104	117,312 LBS
DUNNAGE		3,875 LBS
TOTAL WEIGHT		121,187 LBS

CONVENTIONAL BOX CAR 40'-6" LONG BY 9'-4" WIDE



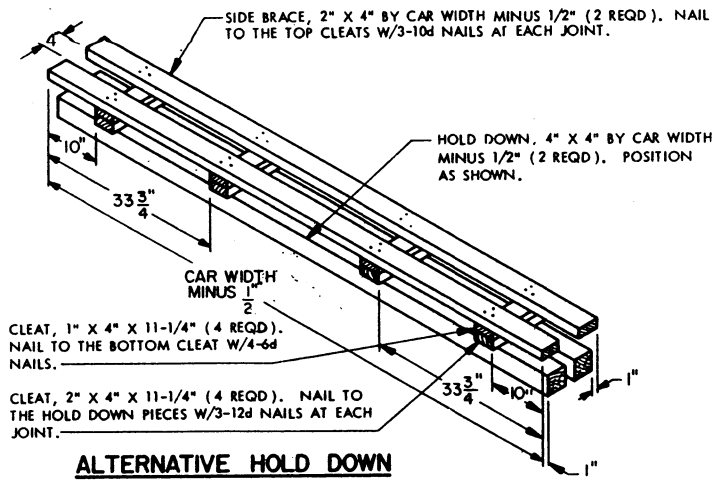
NAILABLE STEEL FLOOR

WHEN CAR BEING LOADED HAS A NAILABLE STEEL FLOOR, USE BOTTOM STRINGER AND TOP STRINGER, AS SHOWN ABOVE, IN LIEU OF EACH PIECE MARKED ② LOCATED ON THE CAR FLOOR IN THE LOADS SHOWN ON PAGES 6 AND 8.



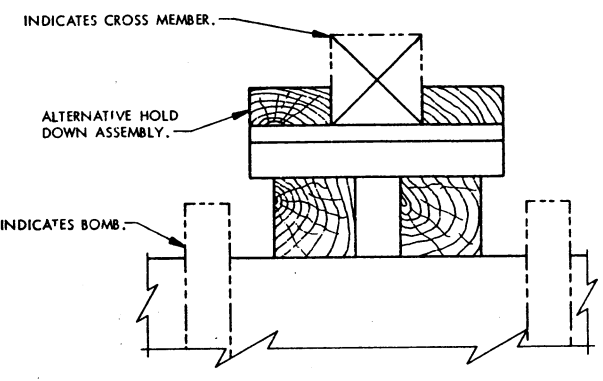
STRAP THREADING DETAIL

THE STRAPPING METHOD SHOWN ABOVE IS USED IN THE LOAD SHOWN ON PAGES 6 AND 7. A TEN-BOMB-LONG PORTION OF THE LOAD IS SHOWN. THE STRAPPING METHOD FOR A NINE-BOMB-LONG PORTION OF THE LOAD WILL BE SIMILAR.

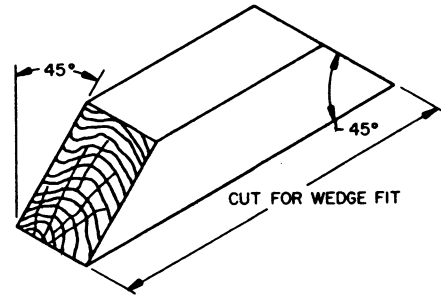


ALTERNATIVE HOLD DOWN

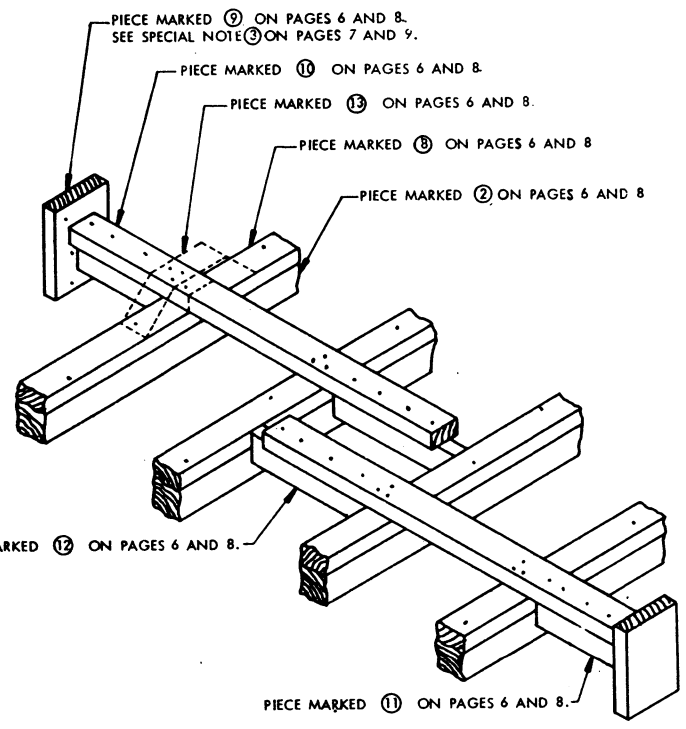
REQUIRED IN LOAD SHOWN ON PAGE 4 WHEN SPACE BETWEEN TOP OF BOMB AND BOTTOM OF THE HOLD DOWN PIECE MARKED ②, IS GREATER THAN 1-3/4". SEE "PLACEMENT OF ALTERNATIVE HOLD DOWN" DETAIL ON THIS PAGE. **NOTE:** EITHER THE TOP OR THE BOTTOM CLEAT PIECES MAY BE ELIMINATED, OR THE THICKNESS OF THE MATERIAL FOR THE HOLD DOWN PIECES MAY BE ADJUSTED TO SATISFY THE EXISTING DIMENSIONAL REQUIREMENT.



PLACEMENT OF ALTERNATIVE HOLD DOWN

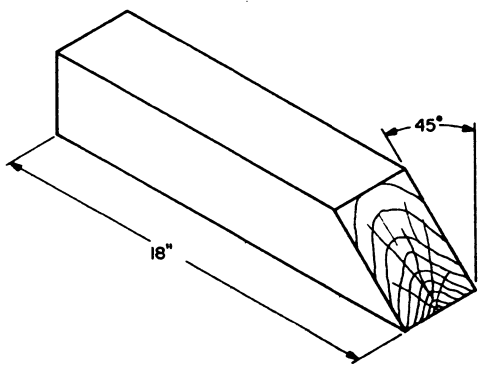


BLOCK A
4" X 4" MATERIAL.

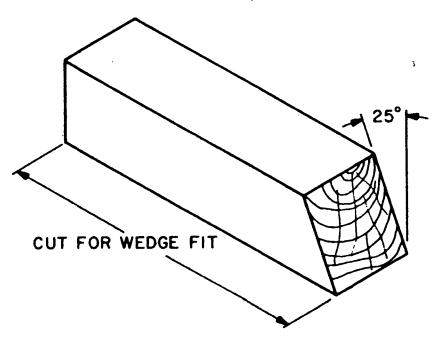


ANTI-SWAY BRACE ASSEMBLY

USED IN LOADS SHOWN ON PAGES 6 THROUGH 9.

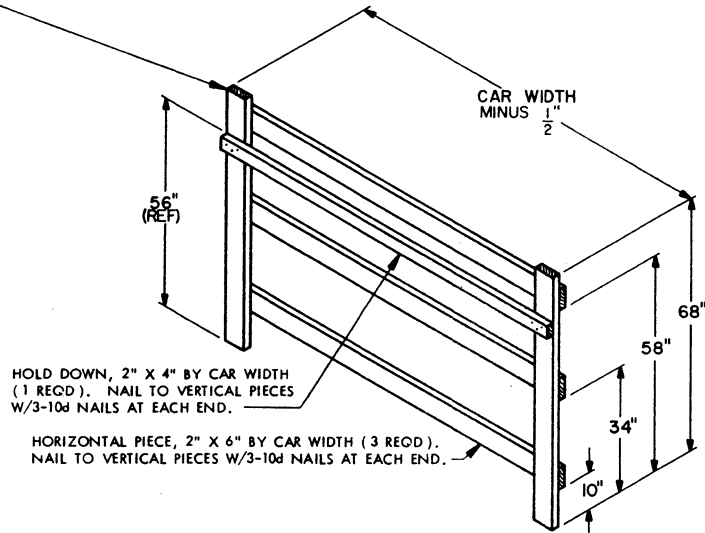


BLOCK B
4" X 4" MATERIAL



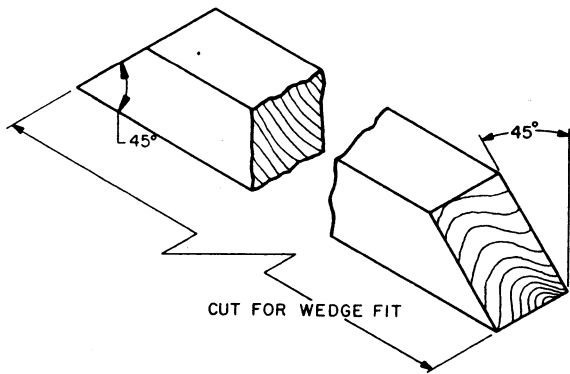
BLOCK C
4" X 4" MATERIAL

← VERTICAL PIECE, 2" X 6" X 68" (2 REQD.).

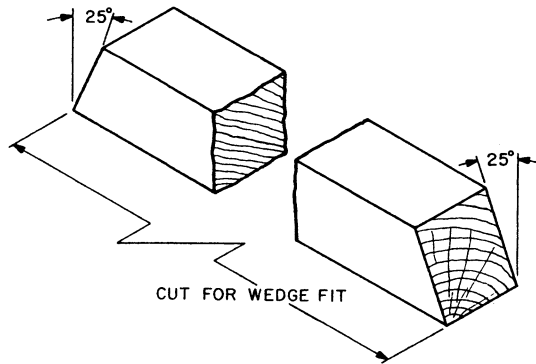


SEPARATOR GATE A

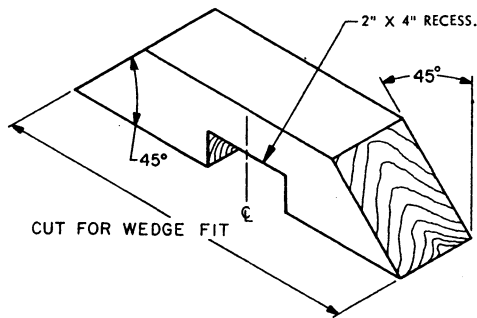
REQUIRED IN THE LOAD SHOWN ON PAGE 4.
NOTE THAT THE HOLD DOWN PIECE IS TO FIT UNDER THE OGIVE OF THE BOMBS.



BLOCK D
4" X 4" MATERIAL.

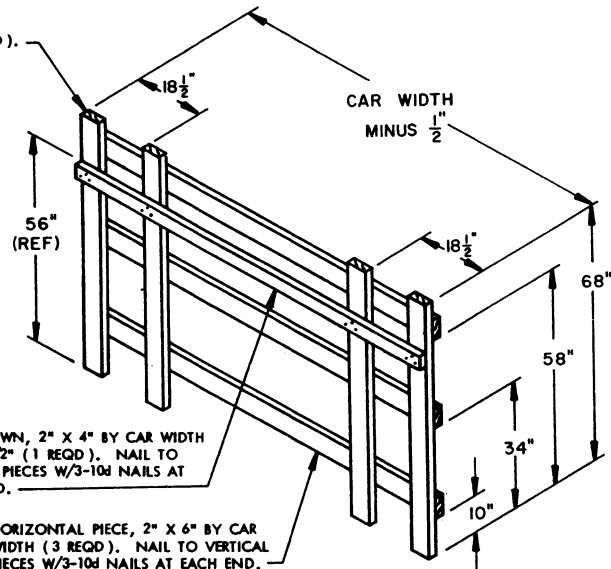


BLOCK E
4" X 4" MATERIAL.



BLOCK F
4" X 4" MATERIAL.

VERTICAL PIECE,
2" X 6" X 68" (4 REQD).



HOLD DOWN, 2" X 4" BY CAR WIDTH
MINUS 1/2" (1 REQD). NAIL TO
VERTICAL PIECES W/3-10d NAILS AT
EACH END.

HORIZONTAL PIECE, 2" X 6" BY CAR
WIDTH (3 REQD). NAIL TO VERTICAL
PIECES W/3-10d NAILS AT EACH END.

SEPARATOR GATE B

