



## GENERAL NOTES

- A. LOADS AS SHOWN HEREIN ARE BASED ON BOX CARS W/MECHANICAL BRACING DEVICES HAVING ADJUSTABLE AND/OR FIXED WALL MEMBERS, AND ON CONVENTIONAL BOX CARS, AND ARE FOR THE M23 CHEMICAL DRUM PACKED THREE PER METAL DRUM, TWELVE DRUMS PER CRATE OR PALLET. SEE GENERAL NOTES "B" AND "L".
- B. PROCEDURES SHOWN HEREIN, FOR BOX CARS W/MECHANICAL BRACING MAY BE ADAPTED AS REQUIRED TO FACILITATE THE USE OF BOX CARS EQUIPPED WITH VARIOUS TYPES OF SELF-COM-~~PAKING MECHANICAL BRACING DEVICES~~ HOWEVER, WALL MEMBERS (ADJUSTABLE OR FIXED) AND DOORWAY MEMBERS MUST BE LOCATED WITHIN THE TOLERANCE LIMITS OF THE SPECIFIED HEIGHTS ABOVE THE CAR FLOOR.  
**CAUTION:** BOX CARS EQUIPPED WITH MEMBERS WHICH DO NOT MEET THE LOCATION REQUIREMENTS MUST NOT BE USED.
- C. **NOTICE:** A 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 ON 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. A CROSS MEMBER WILL BE USED IN SUCH A MANNER THAT IT WILL NOT BE RELIED ON TO RETAIN MORE THAN 4,000 POUNDS OF LADING ON EITHER SIDE. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE MINIMUM AND CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE WALL MEMBER LOCKING HOLE SPACING PERMITS. LOCKING BARS (LEVER JACK) SHOULD BE USED FOR THIS PURPOSE. AN ADDITIONAL 1/2" OF ADJUSTMENT CAN BE MADE BY TUNNING THE CROSS MEMBER END FOR END WHEN LOCKING PINS ARE OFF-CENTER. **NOTE:** IT IS RECOMMENDED THAT CROSS MEMBERS BE INSTALLED WITH EACH END ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS, AT EQUAL HEIGHTS AND AT EQUAL DISTANCES FROM END OF CAR.
- E. **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 NAILS 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.
- F. **LOADING DATA:**  
**CRATE:**  
DIMENSIONS--- 52-1/8" LONG X 36-3/4" WIDE X 52-5/8" HIGH.  
GROSS WEIGHT---1,510 POUNDS (APPROX).  
**PALLET:**  
DIMENSIONS--- 52-1/4" LONG X 35-1/2" WIDE X 49-1/8" HIGH.  
GROSS WEIGHT---4,000 POUNDS (APPROX).
- G. THIS ITEM IS AN FCC CLASS "A" EXPLOSIVE. SPECIFIED OUTLOADING PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED DRUM PACKS WHEN THEY ARE EMPTY OR LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE SHIPPING TITLE.
- H. IN A CAR EQUIPPED WITH ADJUSTABLE WALL MEMBERS, PROVIDING THE FIXED WALL MEMBERS WHICH ARE PRESENT IN SOME "ADJUSTABLE" CARS ARE NOT PROPERLY POSITIONED TO PROVIDE SIDE BEARING SURFACES BETWEEN THE LADING AND THE CAR SIDE WALLS, ADJUSTABLE WALL MEMBERS (AS SHOWN) MUST BE INSTALLED TO PROVIDE A MINIMUM OF ONE SURFACE AREA FOR SIDE BEARING AT SOME LOCATION WITHIN THE HEIGHT OF EACH PALLET/CRATE UNIT.
- I. WHEN ANY SEAL IS MADE AT AN END-OVER-END LAP JOINT OR AS SHOWN IN "SHIPPING DETAILS" ON PAGE 19, A MINIMUM OF TWO (2) SEALS WITH TWO (2) CHIMPS PER SEAL MUST BE USED.
- K. SELECTION OF AN OUTLOADING PROCEDURE FROM THOSE SHOWN HEREIN FOR A SHIPMENT WILL DEPEND ON THE TYPE OF QUANTITY PACK, THE QUANTITY TO BE SHIPPED, AND THE TYPE OF CARRIER EQUIPMENT TO BE USED. THE OUTLOADING PROCEDURE WHICH BEST SUITS THESE VARIABLES SHOULD BE CHOSEN. WHEN MAKING A SHIPMENT, AND THE QUANTITY TO BE SHIPPED CANNOT BE LOADED AND BLOCKED BY THE Q.C. OR L.C. OUTLOADING PROCEDURES SPECIFIED HEREIN, A "FILLER" ASSEMBLY OR ASSEMBLIES, AS DETAILED ON P.A. 17, MAY BE CONSTRUCTED AND USED TO FACILITATE USING ONE OF THE DELINEATED OUTLOADING PROCEDURES.

## GENERAL NOTES (CONT'D)

- L. EITHER A 40'-6" OR 50'-6" LONG BOX CAR HAS BEEN CHOSEN TO DEPICT EACH OF THE OUTLOADING PROCEDURES SPECIFIED HEREIN; HOWEVER, A PROCEDURE SPECIFIED AS BEING APPLICABLE TO ONE LENGTH CAR IS APPLICABLE TO THE OTHER LENGTH CAR ALSO, IF THE FOLLOWING CRITERIA IS OBSERVED.
1. RELATIVE TO PAGE 3 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO CARS WHICH ARE ONLY 40'-6" LONG, WHEN TWO (2) LOAD UNITS (BAYS) OF EIGHT (8) CRATES EACH ARE OMITTED. THIS REDUCES THE QUANTITY OF CROSS MEMBERS REQUIRED TO 24.
  2. RELATIVE TO PAGE 4 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO A FULL LOAD SHIPMENT IN A 50'-6" LONG CAR, WHEN THE TWO CENTER AREA LOAD UNITS (BAYS) OF EIGHT (8) CRATES EACH ARE INCREASED IN LENGTH TO CONTAIN SIXTEEN (16) CRATES EACH.
  3. RELATIVE TO PAGE 5 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO CARS WHICH ARE ONLY 40'-6" LONG, WHEN THE NUMBER OF CRATES LOADED INTO THE END OF THE CAR IS DECREASED FROM 28 AND 32 TO 24 EACH END. THIS REDUCES THE QUANTITY REQUIRED OF PIECES MARKED (1) AND (2) TO TWELVE (12) EACH, AND ELIMINATES THE NEED FOR PIECES MARKED (3) AND (4).
  4. RELATIVE TO PAGE 6 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO A FULL LOAD SHIPMENT IN A 50'-6" LONG CAR, WHEN THE ROW OF CROSSWISE LOADED CRATES IS INCREASED IN LENGTH TO CONTAIN FIFTEEN (15) STACKS OF TWO (2) CRATES EACH AND THE LENGTHWISE ROW OF CRATES IS INCREASED IN LENGTH TO CONTAIN ELEVEN (11) STACKS OF TWO CRATES EACH. THIS INCREASES THE QUANTITY REQUIRED OF PIECES MARKED (1) TO FIFTEEN (15) AND PIECES MARKED (2) TO THIRTEEN (13), AND ELIMINATES THE REQUIREMENT FOR ONE (1) PIECE MARKED (3). ALSO, THE "STRUT BRACING", PIECES MARKED (4) AND (5) MUST BE INSTALLED ON THE OPPOSITE SET OF "CENTER" BLOCKING TO BRACE THE PIECES MARKED (2), INSTEAD OF AS SHOWN TO BRACE PIECES MARKED (3).
  5. RELATIVE TO PAGE 7 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO CARS WHICH ARE ONLY 40'-6" LONG, WHEN ONE (1) LOAD UNIT (BAY) OF EIGHT (8) PALLETS IS OMITTED FROM EACH END OF THE CAR. THIS REDUCES THE QUANTITY OF CROSS MEMBERS REQUIRED TO 18.
  6. RELATIVE TO PAGE 8 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO A FULL LOAD SHIPMENT IN A 50'-6" LONG CAR, WHEN THE TWO CENTER AREA LOAD UNITS (BAYS) OF EIGHT (8) AND TWELVE (12) PALLETS EACH ARE INCREASED IN LENGTH TO CONTAIN SIXTEEN (16) PALLETS EACH.
  7. RELATIVE TO PAGE 9 PROCEDURE: THIS PROCEDURE IS ALSO APPLICABLE TO CARS WHICH ARE ONLY 40'-6" LONG, WHEN THE NUMBER OF PALLETS LOADED INTO THE END OF THE CAR IS DECREASED FROM 32 TO 24. THIS REDUCES THE QUANTITY REQUIRED OF PIECES MARKED (1) AND (2) TO TWELVE (12) EACH.

## REVISION

REVISION NO. 1, DATED 19 FEB 66; PROCEDURES COVERING PALLET PACK INCLUDED

## MATERIAL SPECIFICATIONS

LUMBER ----- DUNNAGE LUMBER, TM 715-9500-1; FED SPEC MM-1-751.

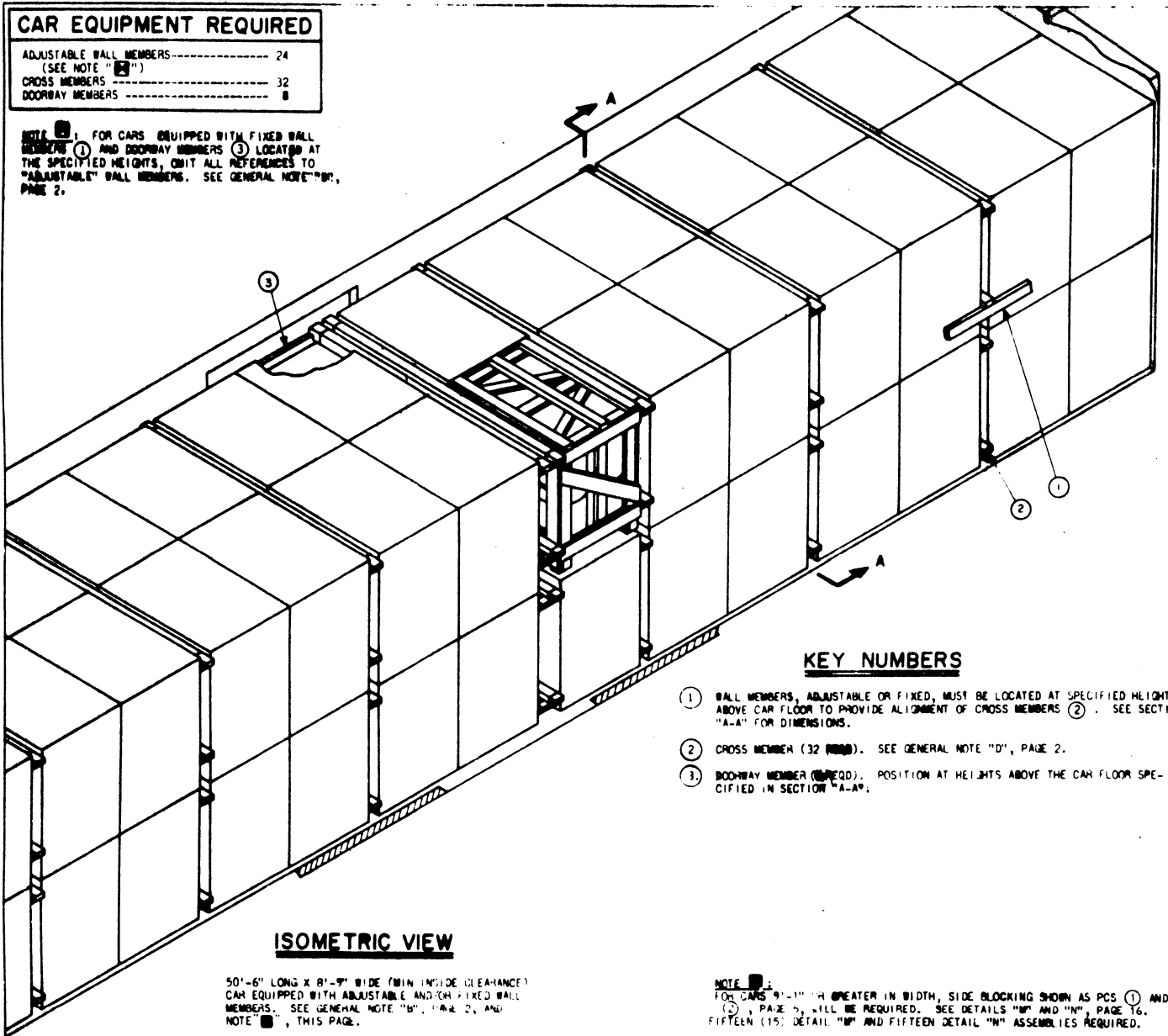
NAILS ----- COMMON, CEMENT COATED, FED SPEC FF-N-105.  
ALT: ANNULAR-RING TYPE NAIL OF SAME SIZE

SHIPPING STEEL TYPE 1, CLASS "A", "B", OR "C", FED SPEC QQ-S-781

# CAR EQUIPMENT REQUIRED

ADJUSTABLE WALL MEMBERS-----	24
(SEE NOTE "B")	
CROSS MEMBERS-----	32
DOORWAY MEMBERS-----	8

NOTE "B": FOR CARS EQUIPPED WITH FIXED WALL MEMBERS (1) AND DOORWAY MEMBERS (3) LOCATED AT THE SPECIFIED HEIGHTS, OMIT ALL REFERENCES TO "ADJUSTABLE" WALL MEMBERS. SEE GENERAL NOTE "B", PAGE 2.



## ISOMETRIC VIEW

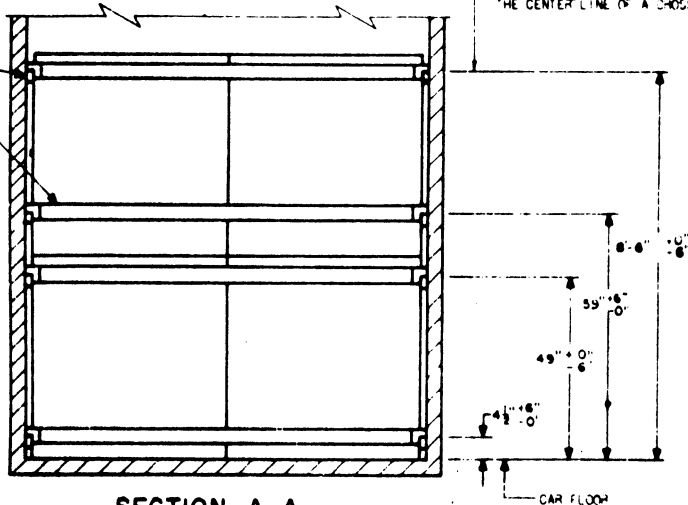
50'-6" LONG X 8'-9" WIDE (MIN INSIDE CLEARANCE)  
CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS. SEE GENERAL NOTE "B", PAGE 2, AND NOTE "B", THIS PAGE.

## KEY NUMBERS

- (1) WALL MEMBERS, ADJUSTABLE OR FIXED, MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE CAR FLOOR TO PROVIDE ALIGNMENT OF CROSS MEMBERS (2). SEE SECTION "A-A" FOR DIMENSIONS.
- (2) CROSS MEMBER (32 REQD). SEE GENERAL NOTE "D", PAGE 2.
- (3) DOORWAY MEMBER (8 REQD). POSITION AT HEIGHTS ABOVE THE CAR FLOOR SPECIFIED IN SECTION "A-A".

NOTE "C": FOR CARS 9'-11" OR GREATER IN WIDTH, SIDE BLOCKING SHOWN AS PCS (1) AND (2), PAGE 5, WILL BE REQUIRED. SEE DETAILS "M" AND "N", PAGE 16. FIFTEEN (15) DETAIL "M" AND FIFTEEN DETAIL "N" ASSEMBLIES REQUIRED.

EACH DIMENSIONED HEIGHT ABOVE THE CAR FLOOR TO A WALL MEMBER (ADJUSTABLE OR FIXED (1)) IS SPECIFIED TO LOCATE THE CENTER LINE OF A CROSS MEMBER.



## SECTION A-A

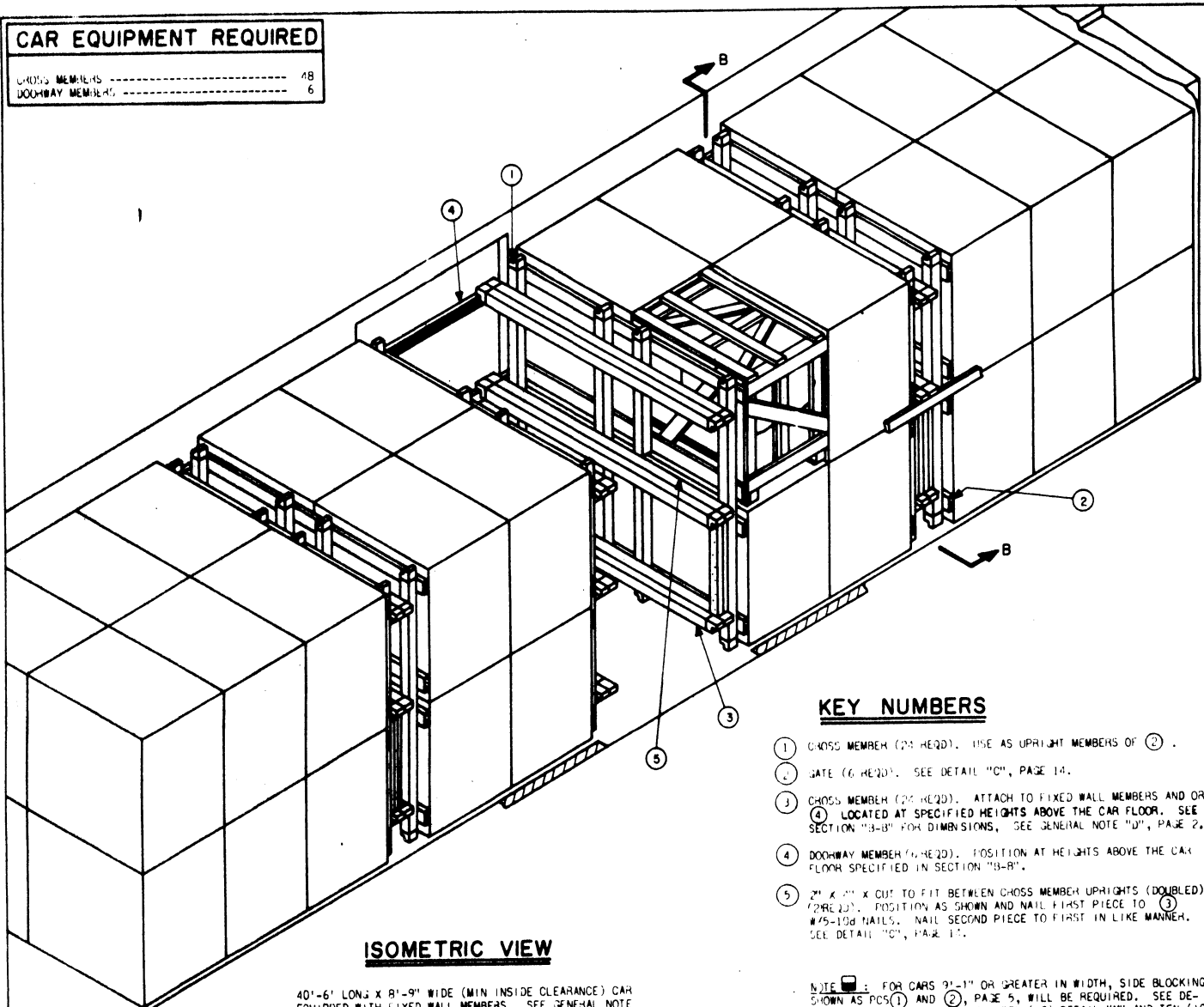
## LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CRATE	60	90,000 LBS.

# BOX CAR W/MECH BRACING WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS (CRATE LOAD)

**CAR EQUIPMENT REQUIRED**

CROSS MEMBERS	48
DOORWAY MEMBERS	6



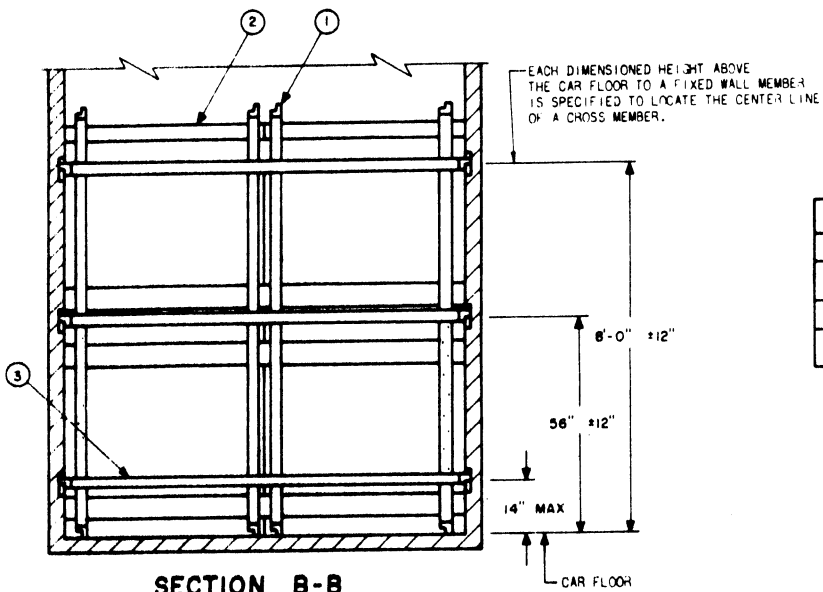
**ISOMETRIC VIEW**

40'-6" LONG X 8'-9" WIDE (MIN INSIDE CLEARANCE) CAR EQUIPPED WITH FIXED WALL MEMBERS. SEE GENERAL NOTE "B", PAGE 2, AND NOTE "C", THIS PAGE.

**KEY NUMBERS**

- ① CROSS MEMBER (24 REQD). USE AS UPRIGHT MEMBERS OF ②.
- ② GATE (6 REQD). SEE DETAIL "C", PAGE 14.
- ③ CROSS MEMBER (24 REQD). ATTACH TO FIXED WALL MEMBERS AND OR ④ LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR. SEE SECTION "B-B" FOR DIMENSIONS. SEE GENERAL NOTE "D", PAGE 2.
- ④ DOORWAY MEMBER (6 REQD). POSITION AT HEIGHTS ABOVE THE CAR FLOOR SPECIFIED IN SECTION "B-B".
- ⑤ 2" X 4" X CUT TO FIT BETWEEN CROSS MEMBER UPRIGHTS (DOUBLED) (2 REQD). POSITION AS SHOWN AND NAIL FIRST PIECE TO ③ WITH 75-10d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER. SEE DETAIL "C", PAGE 14.

NOTE: FOR CARS 9'-11" OR GREATER IN WIDTH, SIDE BLOCKING SHOWN AS PCS ① AND ②, PAGE 5, WILL BE REQUIRED. SEE DETAILS "M" AND "N", PAGE 16. TEN (10) DETAIL "M" AND TEN (10) DETAIL "N" ASSEMBLIES REQUIRED.



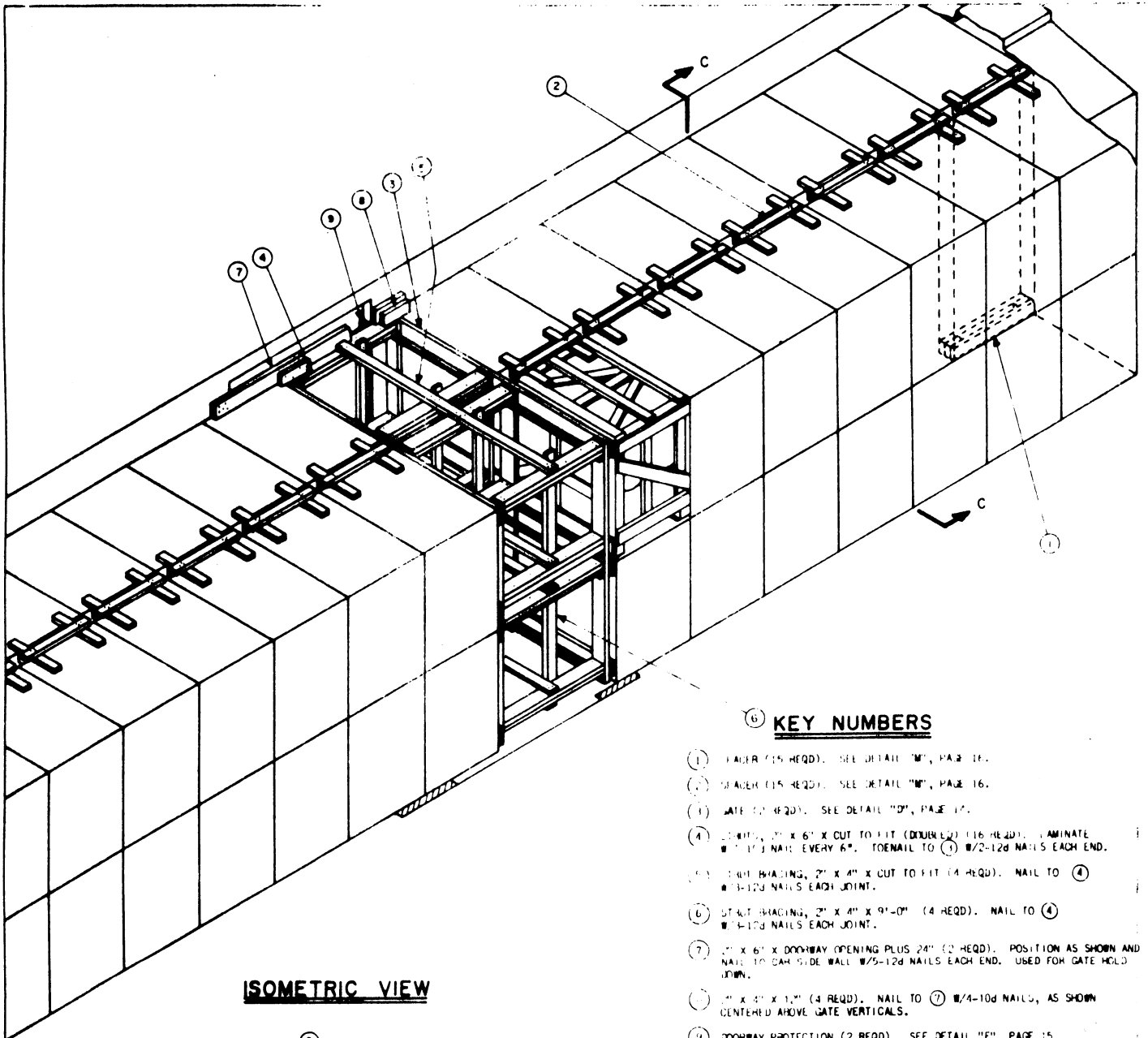
**SECTION B-B**

BILL OF MATERIAL		
LUMBER	LINEAL FEET	BOARD FEET
2" X 4"	93	60
2" X 6"	104	204
NAILS	NO. REQD	POUNDS
10d (3")	428	7

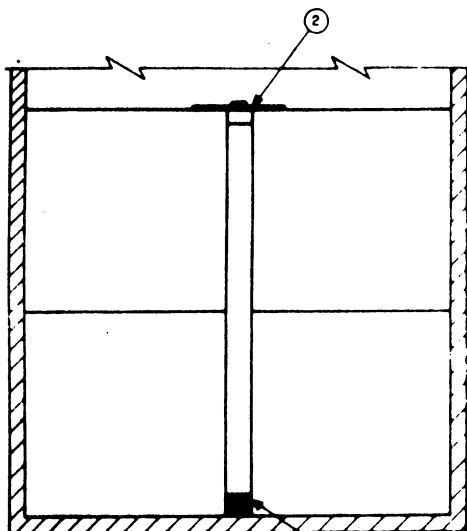
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
CRATE	40	60,400 LBS
DUNNAGE		677 LBS
TOTAL WEIGHT		61,077 LBS

**BOX CAR W/MECH BRACING WITH FIXED WALL MEMBERS (CRATE LOAD)**



**ISOMETRIC VIEW**



**SECTION C-C**

**KEY NUMBERS**

- ① FADER (15 REQD.). SEE DETAIL "M", PAGE 16.
- ② TRACER (15 REQD.). SEE DETAIL "M", PAGE 16.
- ③ LATH (22 REQD.). SEE DETAIL "D", PAGE 17.
- ④ STRINGER, 2" X 6" X CUT TO FIT (DOUBLED) (16 REQD.). LAMINATE # 1-1/2" NAIL EVERY 6". TOENAIL TO ① #2-12d NAILS EACH END.
- ⑤ STRING BRACING, 2" X 4" X CUT TO FIT (4 REQD.). NAIL TO ④ #3-12d NAILS EACH JOINT.
- ⑥ STRUT BRACING, 2" X 4" X 9'-0" (4 REQD.). NAIL TO ④ #3-12d NAILS EACH JOINT.
- ⑦ 2" X 6" X DOORWAY OPENING PLUS 24" (2 REQD.). POSITION AS SHOWN AND NAIL TO CAR SIDE WALL #2-12d NAILS EACH END. USED FOR GATE HOLD DOWN.
- ⑧ 2" X 4" X 1" (4 REQD.). NAIL TO ⑦ #4-10d NAILS, AS SHOWN CENTERED ABOVE GATE VERTICALS.
- ⑨ DOORWAY PROTECTION (2 REQD.). SEE DETAIL "E", PAGE 15.

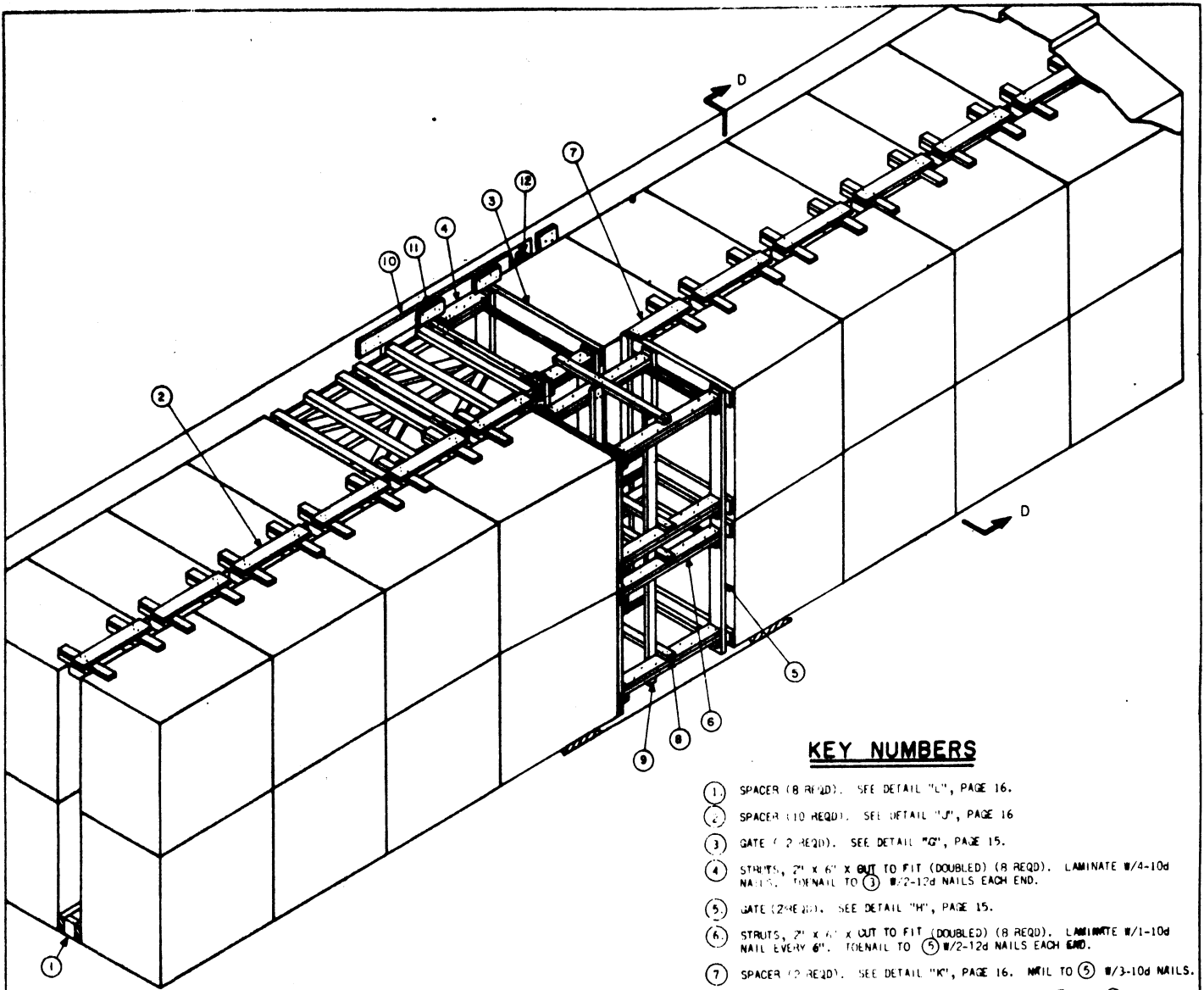
**BILL OF MATERIAL**

CLUMBER	LINEAL FEET	BOARD FEET
1" X 4"	45	15
1" X 6"	90	45
2" X 2"	74	25
2" X 2"	36	18
2" X 4"	75	50
2" X 6"	315	315
2" X 4"	38	50
NAILS	NO. REQD.	POUNDS
6d (2")	48	1/4
10d (3")	726	11-1/4
12d (3-1/4")	120	2

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
CRATE	60	90,600 LBS
DUNNAGE		1,309 LBS
<b>TOTAL WEIGHT</b>		<b>91,909 LBS</b>

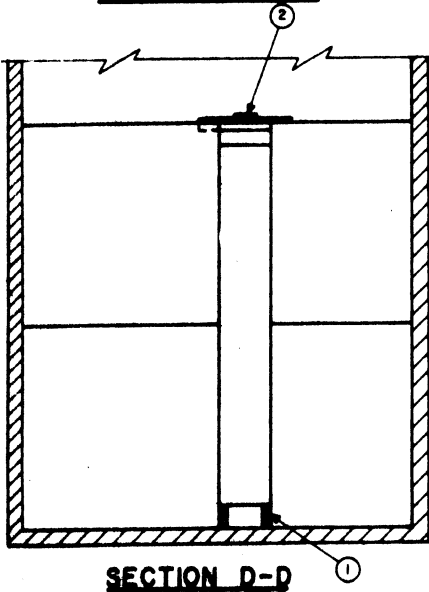
**CONVENTIONAL BOX CAR 50'-6" LONG X 9'-2" WIDE (CRATE LOAD)**



**KEY NUMBERS**

- ① SPACER (8 REQ'D). SEE DETAIL "L", PAGE 16.
- ② SPACER (10 REQ'D). SEE DETAIL "J", PAGE 16.
- ③ GATE (2 REQ'D). SEE DETAIL "G", PAGE 15.
- ④ STRUTS, 2" X 6" X OUT TO FIT (DOUBLED) (8 REQ'D). LAMINATE W/4-10d NAILS. TO NAIL TO ① W/2-12d NAILS EACH END.
- ⑤ GATE (2 REQ'D). SEE DETAIL "H", PAGE 15.
- ⑥ STRUTS, 2" X 6" X OUT TO FIT (DOUBLED) (8 REQ'D). LAMINATE W/1-10d NAIL EVERY 6". TO NAIL TO ⑤ W/2-12d NAILS EACH END.
- ⑦ SPACER (2 REQ'D). SEE DETAIL "K", PAGE 16. NAIL TO ⑤ W/3-10d NAILS.
- ⑧ STRUT BRACING, 2" X 4" X 52" (4 REQ'D). NAIL TO ⑥ AND ④ W/3-12d NAILS EACH JOINT.
- ⑨ STRUT BRACING, 2" X 4" X 91-0" (2 REQ'D). NAIL TO ⑥ W/3-12d NAILS EACH JOINT.
- ⑩ 2" X 6" X DOOR OPENING PLUS 24" (2 REQ'D). POSITION AS SHOWN AND NAIL TO CAR SIDE WALL W/5-12d NAILS EACH END. USED FOR GATE HOLD DOWN.
- ⑪ 2" X 4" X 1" (4 REQ'D). NAIL TO ⑩ W/4-10d NAILS, AS SHOWN CENTERED ABOVE GATE VERTICALS.
- ⑫ DOORWAY PROTECTION (1 REQ'D). SEE DETAIL "E", PAGE 15. TWO (2) DOORWAY PROTECTION ASSEMBLIES REQUIRED IF DOORWAY OPENING IS 10'-0" IN WIDTH OR GREATER, OR IF A FULL CAR LOAD SHIPMENT IS MADE IN A 40'-6" LONG CAR.

**ISOMETRIC VIEW**



**SECTION D-D**

**BILL OF MATERIAL**

LUMBER	LINEAL FEET	BOARD FEET
1" X 4"	79	27
1" X 6"	34	17
2" X 2"	75	25
2" X 4"	18	9
2" X 6"	92	61
2" X 6"	266	266
4" X 4"	24	32
NAILS	NO. REQ'D	POUNDS
6d (2")	152	1
10d (3")	584	9
12d (2-1/4")	153	2-1/2

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
SHAKE	40	60,400 LBS
DAMAGE		1,108 LBS
<b>TOTAL WEIGHT</b>		<b>61,508 LBS</b>

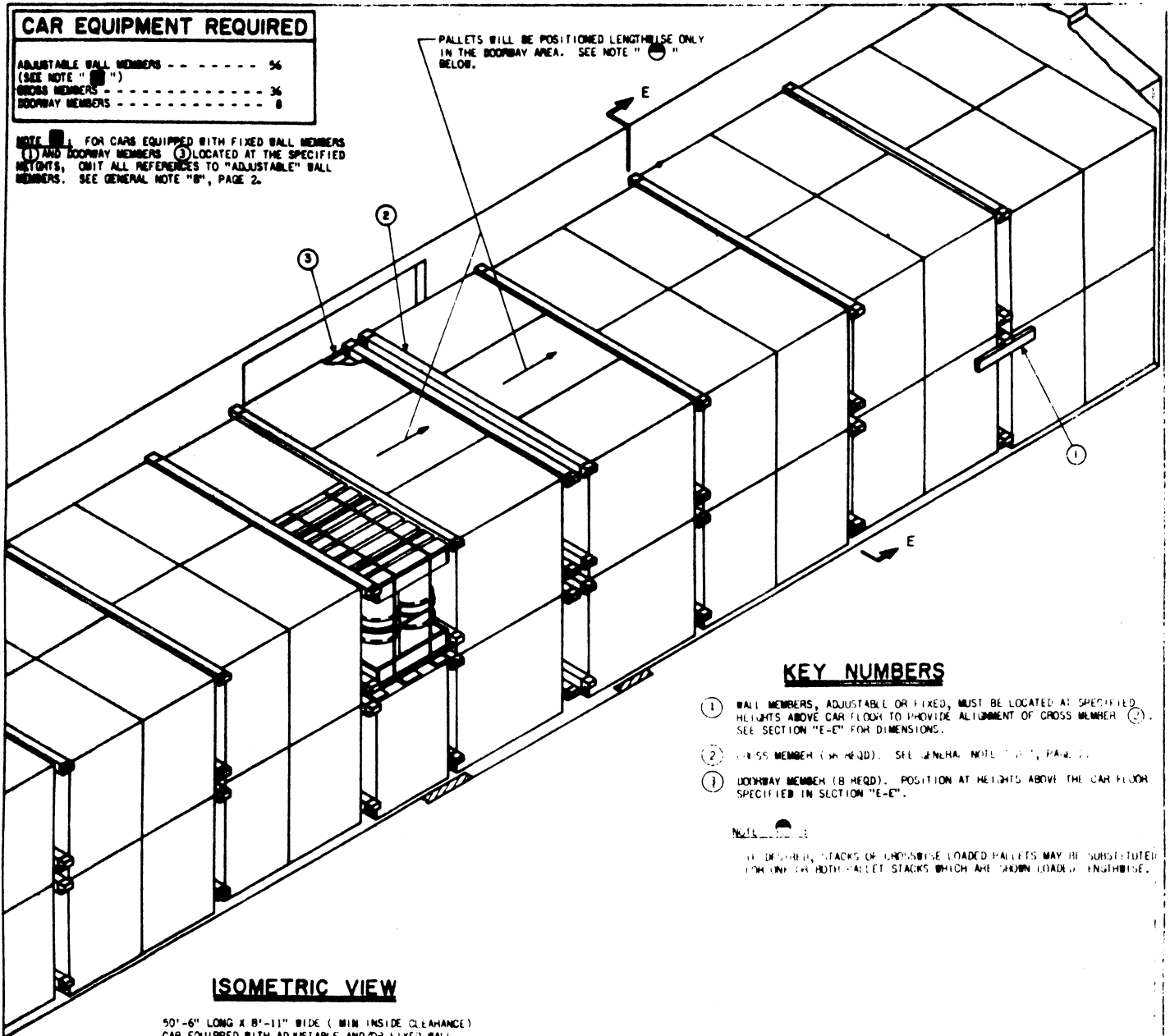
**CONVENTIONAL BOX CAR 40'-6" LONG X 8'-6" WIDE (CRATE LOAD)**

**CAR EQUIPMENT REQUIRED**

ADJUSTABLE WALL MEMBERS	56
(SEE NOTE "1")	
CROSS MEMBERS	36
DOORWAY MEMBERS	8

NOTE 1. FOR CARS EQUIPPED WITH FIXED WALL MEMBERS (1) AND DOORWAY MEMBERS (3) LOCATED AT THE SPECIFIED HEIGHTS, OMIT ALL REFERENCES TO "ADJUSTABLE" WALL MEMBERS. SEE GENERAL NOTE "B", PAGE 2.

PALLETS WILL BE POSITIONED LENGTHWISE ONLY IN THE DOORWAY AREA. SEE NOTE "C" BELOW.



**KEY NUMBERS**

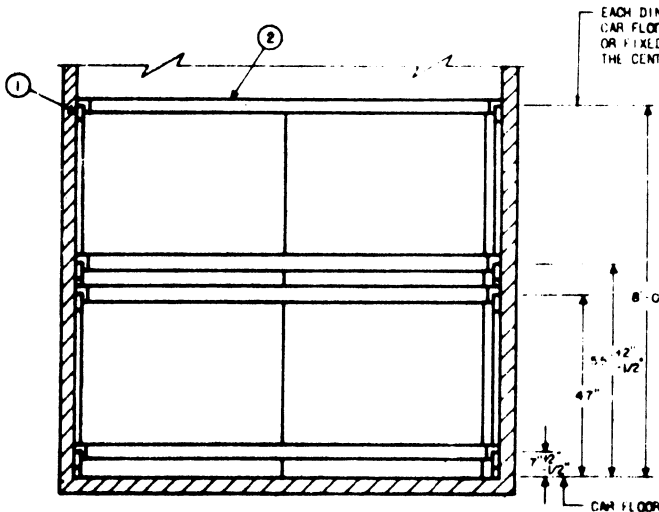
- ① WALL MEMBERS, ADJUSTABLE OR FIXED, MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE CAR FLOOR TO PROVIDE ALIGNMENT OF CROSS MEMBER ②. SEE SECTION "E-E" FOR DIMENSIONS.
- ② CROSS MEMBER (B REQ'D). SEE GENERAL NOTE "C", PAGE 2.
- ③ DOORWAY MEMBER (B REQ'D). POSITION AT HEIGHTS ABOVE THE CAR FLOOR SPECIFIED IN SECTION "E-E".

**NOTES**

IF DESIRED, STACKS OF CROSSWISE LOADED PALLETS MAY BE SUBSTITUTED FOR ONE OR BOTH PALLET STACKS WHICH ARE PAWN LOADED LENGTHWISE.

**ISOMETRIC VIEW**

50'-6" LONG X 8'-11" WIDE (MIN INSIDE CLEARANCE)  
CAR EQUIPPED WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS. SEE GENERAL NOTE "B", PAGE 2.



**SECTION E-E**

TOLERANCE FOR ALL DIMENSIONS = ± 1/8"

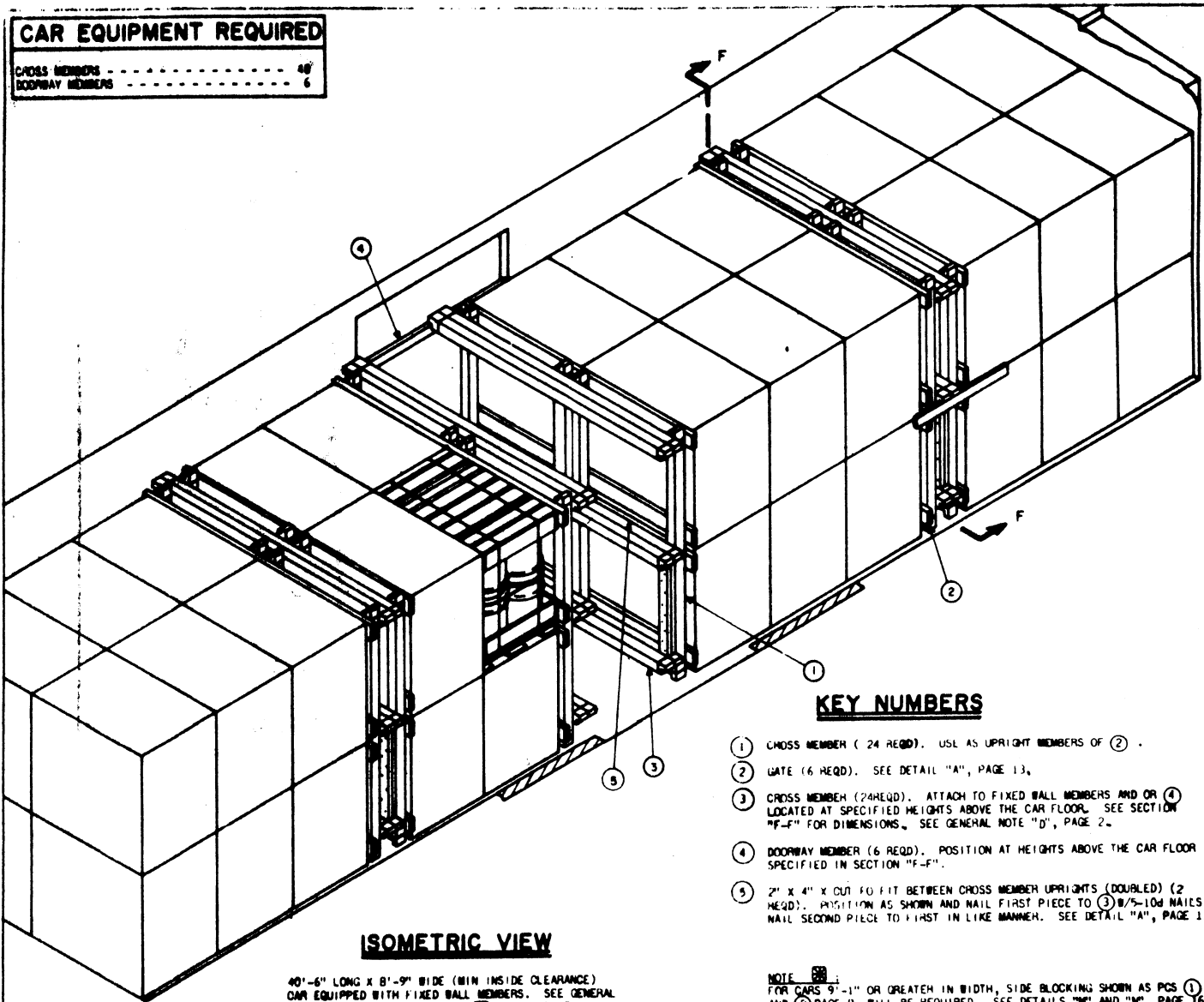
**BOX CAR W/MECH BRACING WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS (PALLET LOAD)**

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET	64	89,600 LBS.

**CAR EQUIPMENT REQUIRED**

CROSS MEMBERS ..... 48'  
DOORWAY MEMBERS ..... 6



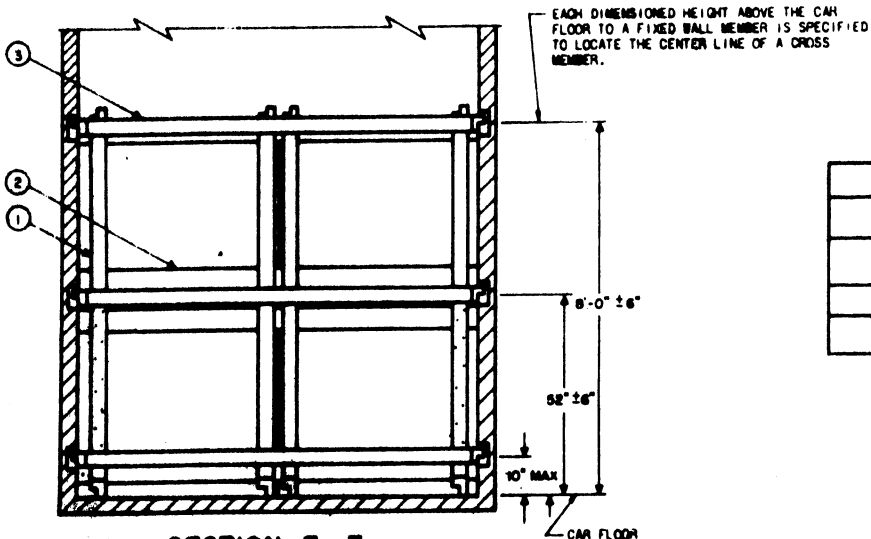
**ISOMETRIC VIEW**

40'-6" LONG X 8'-9" WIDE (MIN INSIDE CLEARANCE)  
CAR EQUIPPED WITH FIXED WALL MEMBERS. SEE GENERAL  
NOTE "B", PAGE 2, AND NOTE "C", THIS PAGE.

**KEY NUMBERS**

- ① CROSS MEMBER (24 REQD). USL AS UPRIGHT MEMBERS OF ②.
- ② GATE (6 REQD). SEE DETAIL "A", PAGE 13.
- ③ CROSS MEMBER (24 REQD). ATTACH TO FIXED WALL MEMBERS AND OR ④ LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR. SEE SECTION "F-F" FOR DIMENSIONS. SEE GENERAL NOTE "D", PAGE 2.
- ④ DOORWAY MEMBER (6 REQD). POSITION AT HEIGHTS ABOVE THE CAR FLOOR SPECIFIED IN SECTION "F-F".
- ⑤ 2" X 4" X CUT TO FIT BETWEEN CROSS MEMBER UPRIGHTS (DOUBLED) (2 REQD). POSITION AS SHOWN AND NAIL FIRST PIECE TO ③ 8/9-10d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER. SEE DETAIL "A", PAGE 13.

NOTE: FOR CARS 9'-1" OR GREATER IN WIDTH, SIDE BLOCKING SHOWN AS PCS AND ② PAGE 9, WILL BE REQUIRED. SEE DETAILS "M" AND "N", PAGE 16. ELEVEN (11) DETAIL "M" AND ELEVEN (11) DETAIL "N" ASSEMBLIES REQUIRED.



**SECTION F-F**

BILL OF MATERIAL		
LUMBER	LINEAL FEET	BOARD FEET
2" X 4"	90	60
2" X 6"	210	210
NAILS	NO. REQD	POUNDS
10d (3")	428	7

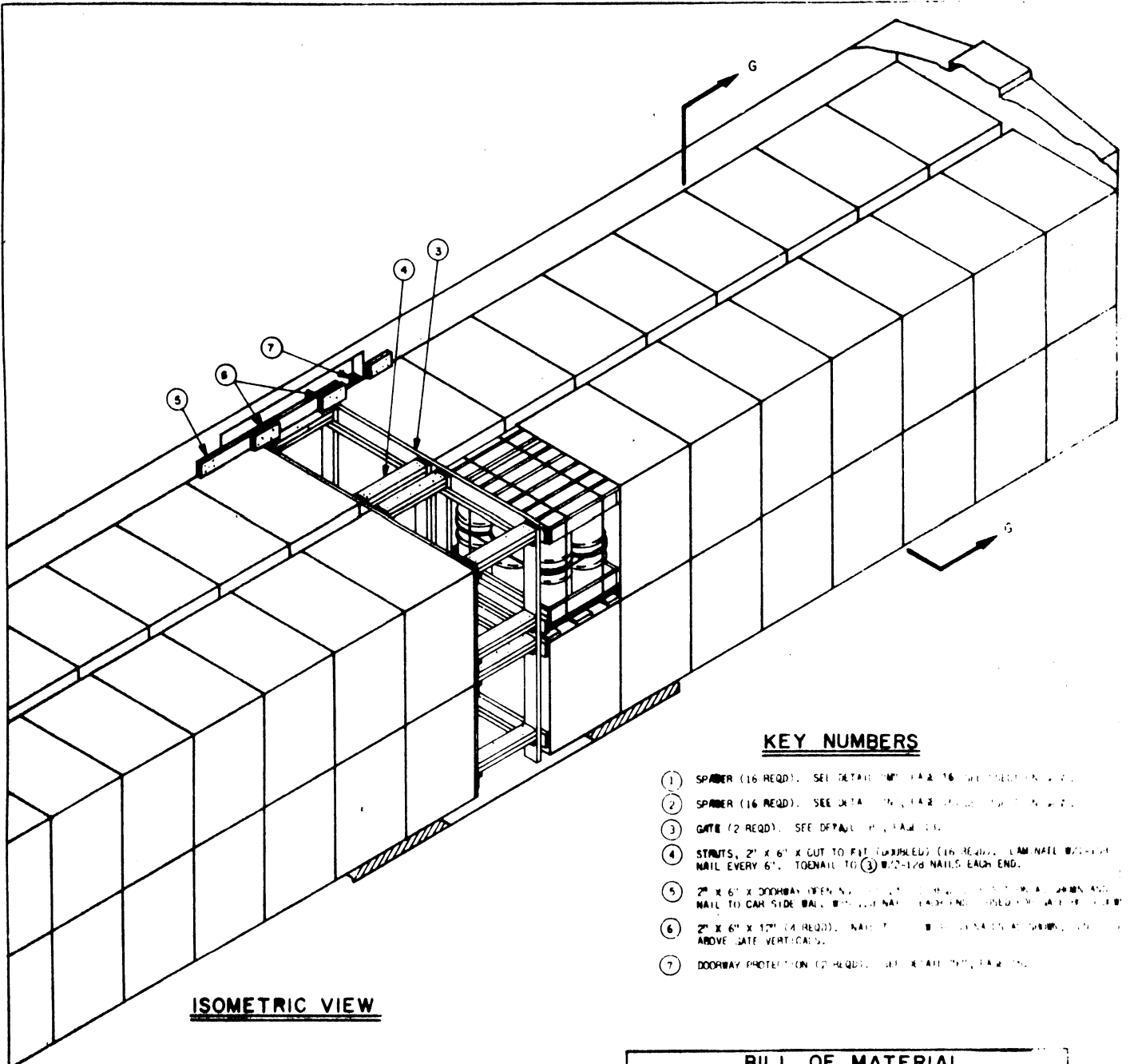
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET	44	61,600 LBS
DUNNAGE		682 LBS

TOTAL WEIGHT ----- 62,282 LBS

**BOX CAR W/MECH BRACING WITH FIXED WALL MEMBERS (PALLET LOAD)**

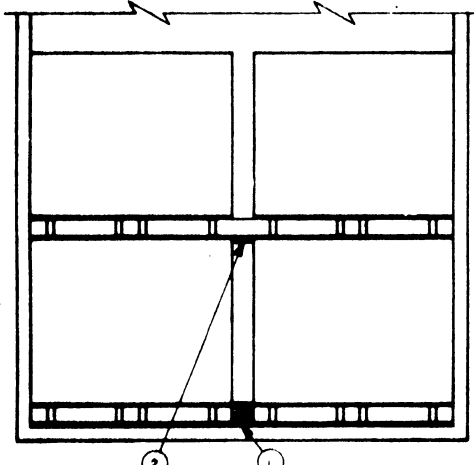




**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SPACER (16 REQD.). SEE DETAIL (M) FOR A & B. SEE DETAIL (N) FOR C & D.
- ② SPACER (16 REQD.). SEE DETAIL (M) FOR A & B. SEE DETAIL (N) FOR C & D.
- ③ GATE (2 REQD.). SEE DETAIL (H) FOR A & B.
- ④ STRUTS, 2" X 6" X CUT TO FIT DOUBLED (16 REQD.). LAM NAIL WITH 6d NAIL EVERY 6". TO NAIL TO ③ W/2-1/2" NAILS EACH END.
- ⑤ 2" X 6" X DOORWAY OPENING (2 REQD.). SEE DETAIL (M) FOR A & B. LAM AND NAIL TO CAR SIDE WALL WITH 12d NAIL EACH END. USE 6d NAIL TO NAIL ABOVE GATE VERTICALS.
- ⑥ 2" X 6" X 12" (4 REQD.). NAIL TO CAR SIDE WALL WITH 12d NAIL EACH END. USE 6d NAIL TO NAIL ABOVE GATE VERTICALS.
- ⑦ DOORWAY PROTECTION (2 REQD.). SEE DETAIL (H) FOR A & B.



**SECTION G-G**

**BILL OF MATERIAL**

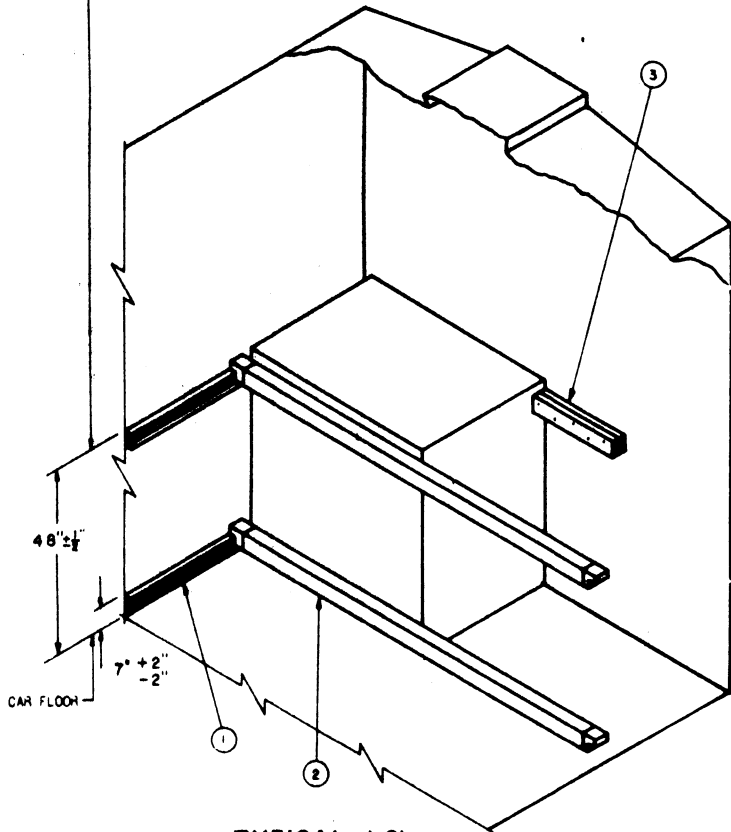
LUMBER	LINEAL FEET	WEIGHT (LBS)
1" X 4"	112	112
1" X 6"	48	48
2" X 2"	74	74
2" X 3"	33	33
2" X 6"	367	367
4" X 4"	41	41
NAILS		POUNDS
6d (2")	48	112
10d (3")	400	6-1/4
12d (3-1/4")	308	5-1/4

**LOAD AS SHOW**

ITEM	QUANTITY	WEIGHT (LBS)
PALLET	64	89,600
DAMAGE		1,312
<b>TOTAL WEIGHT</b>		<b>90,912</b>

**CONVENTIONAL BOX CAR 50'-6" LONG X 9'-2" WIDE (PALLET LOAD)**

EACH DIMENSIONED HEIGHT ABOVE THE CAR FLOOR TO WALL MEMBER (ADJUSTABLE OR FIXED) ① IS SPECIFIED TO LOCATE THE CENTER LINE OF A CROSS MEMBER.



**TYPICAL LCL**

**KEY NUMBERS**

- ① WALL MEMBER, ADJUSTABLE OR FIXED, MUST BE LOCATED AT SPECIFIED HEIGHTS ABOVE THE CAR FLOOR TO PROVIDE ALIGNMENT OF CROSS MEMBER.
- ② CROSS MEMBER (2 REQD). SEE GENERAL NOTE "D", PAGE 2.
- ③ 2" X 4" X 24" (DOUBLED) (1 REQD). NAIL FIRST PIECE TO CAR END WALL W/5-10d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER.

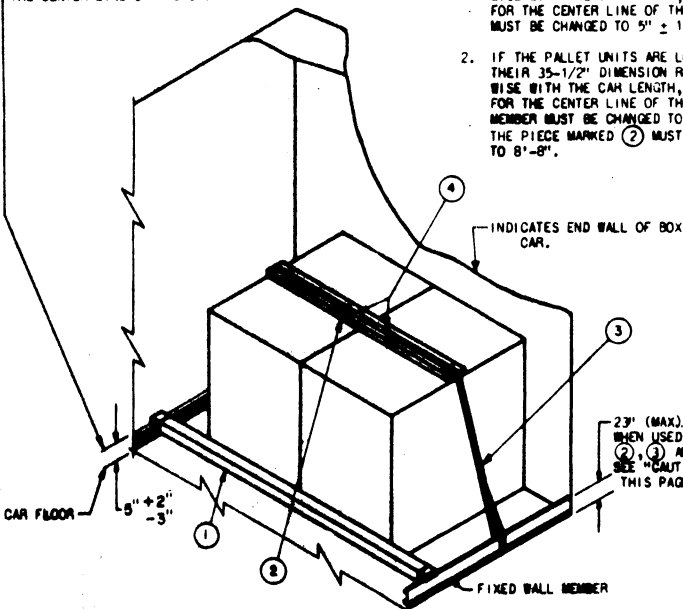
- [1] DEPICTED LCL PROCEDURE IS ALSO APPLICABLE FOR THE SHIPMENT OF AN "LCL CRATE LOAD", PROVIDING THE FOLLOWING CRITERIA IS SATISFIED.
1. THE CRATE UNITS MUST BE LOADED WITH THEIR 52-1/8" DIMENSION RUNNING LENGTHWISE WITH THE CAR LENGTH.
  2. THE LOCATION FOR THE LOWER WALL MEMBER MUST BE CHANGED TO 6" ± 3".
  3. THE LOCATION FOR THE UPPER WALL MEMBER MAY BE CHANGED TO 48" ± 3".

**BOX CAR W/MECH BRACING WITH ADJUSTABLE AND/OR FIXED WALL MEMBERS (PALLET LOAD) [1]**

[2] DEPICTED LCL PROCEDURE IS ALSO APPLICABLE FOR THE SHIPMENT OF AN "LCL PALLET LOAD", PROVIDING THE FOLLOWING CRITERIA IS SATISFIED.

1. IF THE PALLET UNITS ARE LOADED WITH THEIR 52-1/4" DIMENSION RUNNING LENGTHWISE WITH THE CAR LENGTH, THE LOCATION FOR THE CENTER LINE OF THE CROSS MEMBER MUST BE CHANGED TO 5" ± 1".
2. IF THE PALLET UNITS ARE LOADED WITH THEIR 35-1/2" DIMENSION RUNNING LENGTHWISE WITH THE CAR LENGTH, THE LOCATION FOR THE CENTER LINE OF THE CROSS MEMBER MUST BE CHANGED TO 5" ± 2", AND THE PIECE MARKED ② MUST BE LENGTHENED TO 8'-8".

EACH DIMENSIONED HEIGHT ABOVE THE CAR FLOOR TO A WALL MEMBER (FIXED) IS SPECIFIED TO LOCATE THE CENTER LINE OF A CROSS MEMBER.



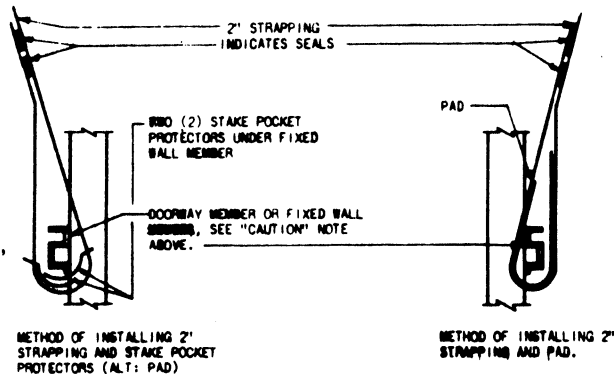
**TYPICAL LCL**

**BOX CAR W/MECH BRACING WITH FIXED WALL MEMBERS (CRATE LOAD) [2]**

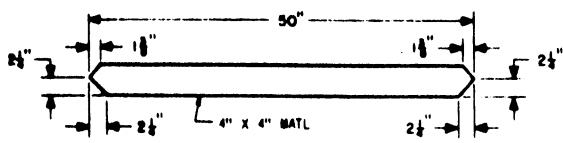
**KEY NUMBERS**

- ① CROSS MEMBER (1REQD). SEE GENERAL NOTE "D", PAGE 2.
- ② 2" X 6" X 6'-1-1/2" (1 REQD).
- ③ STEEL STRAPPING, 2" X .050" X 20'-0" (1 REQD). STAPLE TO ② W/3-2" STAPLES. SEE "STRAPPING DETAILS".
- ④ SEALS FOR 2" STRAP (6 REQD). SEE GENERAL NOTE "J", PAGE 2.

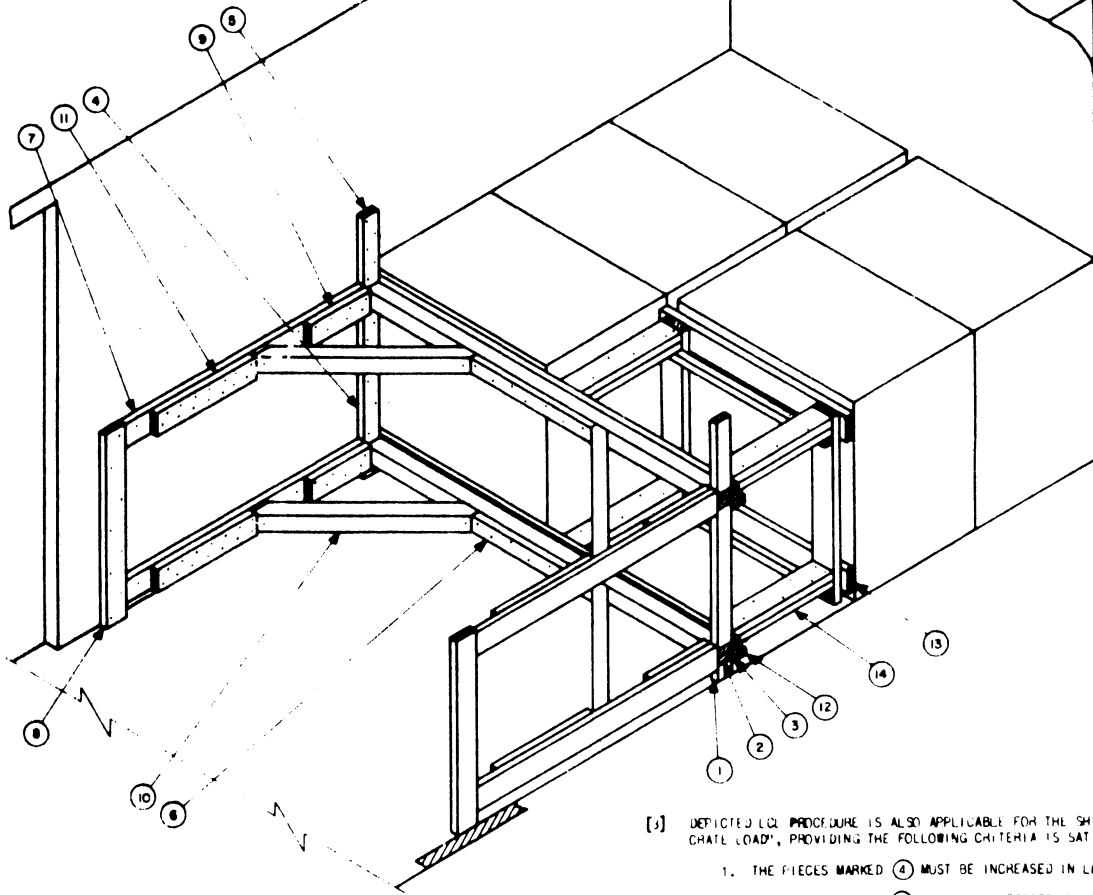
**CAUTION:** INSTALL STRAPPING AROUND FIXED WALL MEMBERS OR DOORWAY MEMBERS WHICH ARE LOCATED 30" BELOW THE TOP OF THE CRATES TO BE CONTACTED BY THE STRAPPING. DO NOT INSTALL STRAPPING AROUND ADJUSTABLE WALL MEMBERS.



**STRAPPING DETAILS**

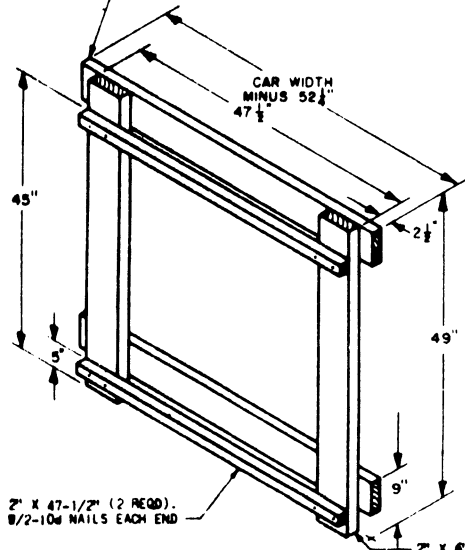


**BRACE**  
(4 REQ)



- [4] DEPICTED LCL PROCEDURE IS ALSO APPLICABLE FOR THE SHIPMENT OF AN "LCL CRATE LOAD", PROVIDING THE FOLLOWING CRITERIA IS SATISFIED.
1. THE PIECES MARKED (4) MUST BE INCREASED IN LENGTH TO 40".
  2. THE PIECES MARKED (8) MUST BE INCREASED IN LENGTH TO 54".
  3. IF USED, "DETAIL-O", PIECE MARKED (13), MUST BE INCREASED IN HEIGHT TO 52-1/2" AND THE UPPER 2" X 2" STRUT-REST NAILLED THERE TO MUST BE PLACED 4" DOWN FROM THE TOP EDGE.

2" X 6" X CAR WIDTH MINUS 52-1/4" (2 REQ). NAIL #3-10d NAILS AT EACH JOINT.



**DETAIL "O"**  
(1 REQ)

**TYPICAL LCL**

8'-9" WIDE CAR OR GREATER. SEE NOTES "A" AND "B" BELOW.

NOTE: FOR CARS 9'-1" OR GREATER, SIDE BLOCKING SHOWN AS PC (1), PAGE 9, WILL BE REQUIRED. SEE DETAIL "M", PAGE 16. TWO (2) DETAIL "M" ASSEMBLIES REQUIRED.

NOTE: "K-BRACE" AS SHOWN IS ADEQUATE TO RETAIN A MAXIMUM LCL LOAD OF 14,000 POUNDS. FOR OTHER "K-BRACE" TYPE BLOCKING PROCEDURES REFER TO DRAWING 19-48-221 J-5P34.

"K-BRACE" BLOCKING MAY ALSO BE USED FOR BLOCKING A PARTIAL LAYER WITHIN A NEARLY FULL CAR LOAD, LOADED AND "CENTER" BLOCKED IN A MANNER SUCH AS SHOWN FOR THE LOAD ON PAGE 5 OR 6 OR 9.

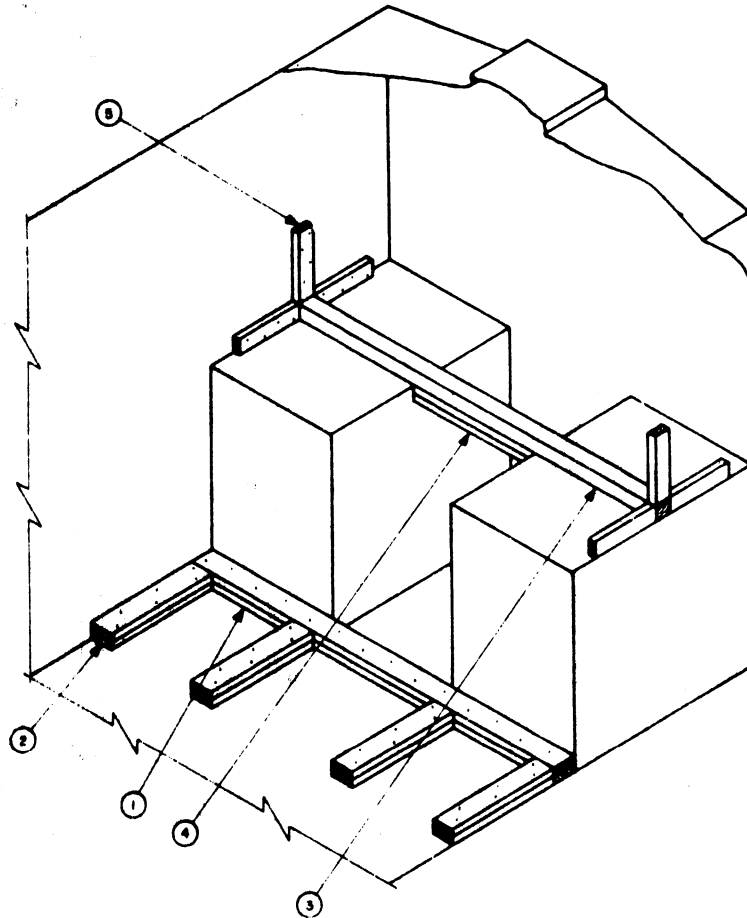
**KEY NUMBERS**

- (1) 2" X 4" X 4-1/2" (2 REQ). NAIL TO CAR SIDE WALL #2-10d NAILS.
- (2) 4" X 4" X CAR WIDTH (2 REQ).
- (3) 2" X 6" X CAR WIDTH (2 REQ). NAIL TO (2) #7-12d NAIL EVERY 6".
- (4) 2" X 4" X 36-1/4" (2 REQ). NAIL TO CAR SIDE WALL #7-12d NAILS.
- (5) 2" X 4" X 18" (2 REQ). NAIL TO CAR SIDE WALL #7-12d NAILS.
- (6) 2" X 4" X 36" (2 REQ). NAIL TO (2) #7-16d NAILS.
- (7) 2" X 6" X 72" (4 REQ). NAIL TO CAR SIDE WALL #7-16d NAILS.
- (8) 2" X 6" X 50" (2 REQ). NAIL TO CAR SIDE WALL #7-12d NAILS.
- (9) 2" X 6" X 18" (4 REQ). NAIL TO (7) #7-16d NAILS.
- (10) BRACE, 4" X 4" X 50" (4 REQ). SEE "BRACE" DETAIL. TOENAIL TO (2) AND (7) #7-10d NAIL EACH END.
- (11) 2" X 6" X 30" (4 REQ). NAIL TO (7) #7-14-16d NAILS.
- (12) 2" X 2" X 52-1/2" (2 REQ). NAIL TO (3) #7-10d NAILS.
- (13) GATE (1 REQ). SEE DETAIL "O".
- (14) STRUTS, 2" X 6" X CUT TO FIT (DOUBLED) (4 REQ). LAMINATE #7-10d NAILS. TOENAIL TO (1) AND (3) #7-12d NAILS EACH END.

PIECES (12) THRU (14) ONLY REQD WHEN SHIPPING AN ODD-NUMBER QUANTITY OF PALLETS, WHICH IS GREATER THAN ONE (1).

**CONVENTIONAL BOX CAR (PALLET LOAD)**

[3]



**TYPICAL LCL**

(SEE CAUTION NOTE AND NOTE " 1 " BELOW)

**NOTE:** FOUR (4) JACK UP CLEATS, SHOWN AS PCE (2), ARE ADEQUATE FOR RETAINING A MAXIMUM LCL LOAD OF 17,500 LBS. ONLY ONE SET OF PIECES MARKED (1) AND (4) REQUIRED, REGARDLESS OF THE LENGTH OF THE LCL LOAD; INSTALL AS SHOWN ABOVE THE LADING UNITS IMMEDIATELY ADJACENT TO THE "END BLOCKING" PIECES MARKED (1) AND (2).

**CAUTION:** THE CRATE UNITS MUST NOT BE LOADED WITH THEIR 36-3/4" DIMENSION LENGTHWISE WITH THE CAR LENGTH. ALSO, THE PALLET UNITS MUST NOT BE LOADED WITH THEIR 92-1/4" DIMENSION LENGTHWISE WITH THE CAR LENGTH.

**NOTE:** IF THE CAR FURNISHED FOR AN "LCL CRATE LOAD" IS 9'-3" OR GREATER IN BIRTH, THE CRATE UNITS MAY BE LOADED THREE WIDE ACROSS THE WIDTH OF THE CAR, ELIMINATING THE REQUIREMENT FOR THE PIECE MARKED (1).

**KEY NUMBERS**

- (1) 2" X 6" X CAR WIDTH (DOUBLED) (1 REQD.). NAIL FIRST PIECE TO CAR FLOOR #7-16d NAIL EVERY 8". NAIL SECOND PIECE TO FIRST #1-40d NAIL EVERY 8".
- (2) 2" X 6" X 10' (DOUBLED) (4 REQD.). NAIL FIRST PIECE TO CAR FLOOR #7-16d NAILS. NAIL SECOND PIECE TO FIRST #7-40d NAILS. SEE NOTE " 1 ".
- (3) HOLD DOWN, 4" X 4" X CAR WIDTH (1 REQD.).
- (4) 2" X 4" X 10' (DOUBLED) (1 REQD.). NAIL FIRST PIECE TO (3) #6-12d NAILS. NAIL SECOND PIECE TO FIRST IN LIKE MANNER. SEE NOTE " 1 ".
- (5) 2" X 4" X 18" (6 REQD.). NAIL TO CAR SIDE WALL #4-10d NAILS.

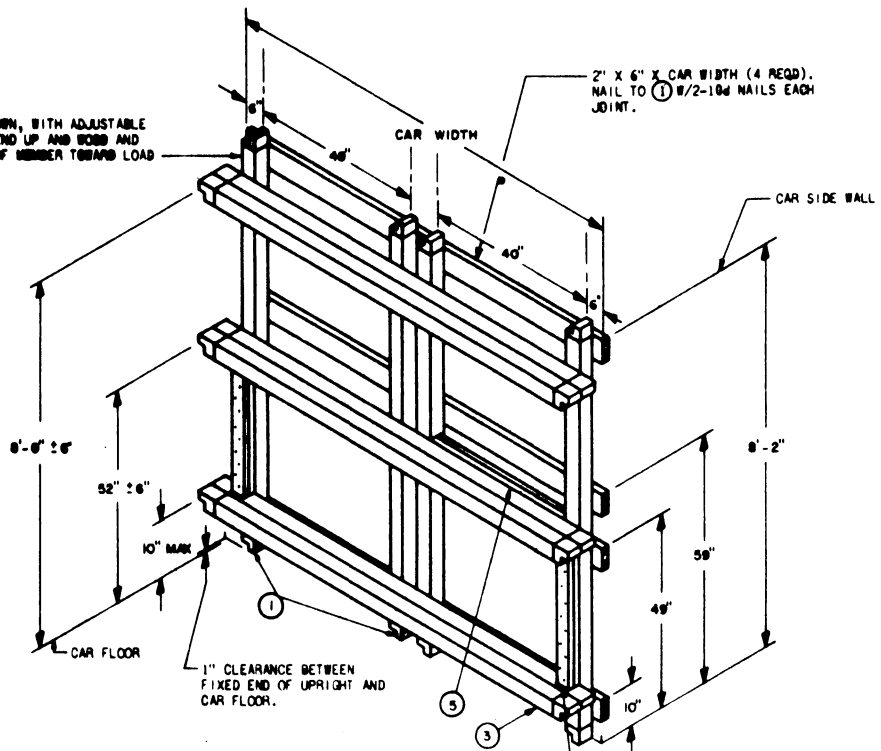
(4) DEPICTED LCL PROCEDURE IS ALSO APPLICABLE FOR THE SHIPMENT OF AN "LCL PALLET LOAD", PROVIDING THE FOLLOWING CRITERIA IS SATISFIED.

- 1. THE PALLET UNITS MUST BE LOADED WITH THEIR 35-1/2" DIMENSION RUNNING LENGTHWISE WITH THE CAR LENGTH.
- 2. FOR A TWO-WIDE LOAD, ELIMINATE THE PIECE MARKED (1).

NOTE THAT A JAM AT LEAST 1'-9" WIDE IS REQUIRED FOR THIS LCL METHOD, IF SHIPPING A TWO-WIDE LOAD.

**CONVENTIONAL BOX CAR (CRATE LOAD)** [4]

POSITION AS SHOWN, WITH ADJUSTABLE (TELESCOPING) END UP AND WOOD AND METAL SURFACE OF MEMBER TOWARD LOAD



2" X 6" X 6" CAR WIDTH (4 REQD).  
NAIL TO ① 1/2-10d NAILS EACH JOINT.

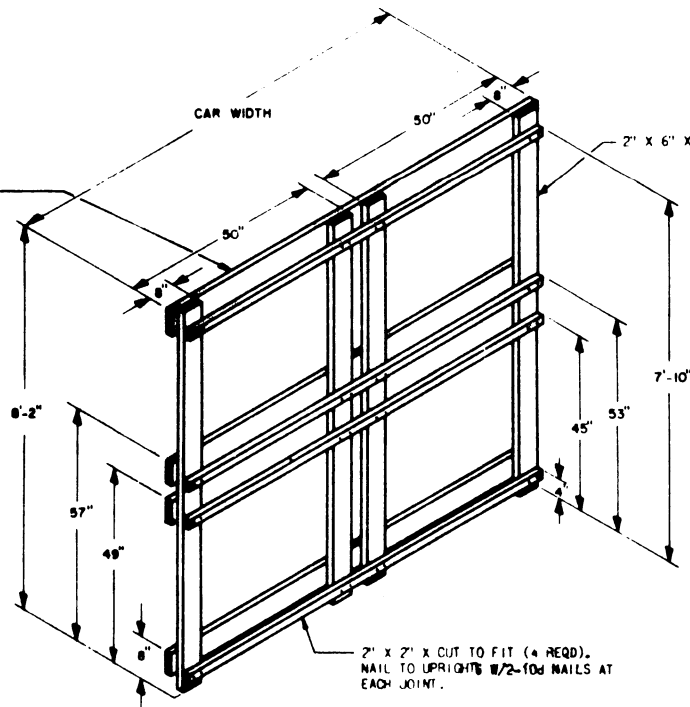
CAR SIDE WALL

**DETAIL "A"**

(6 REQD)

2" X 4" X 4" CUT TO FIT BETWEEN CROSS MEMBERS (DOUBLED) (2 REQD). NAIL FIRST PIECE TO UPRIGHT 1/2-10d NAIL EVERY 4". NAIL SECOND PIECE TO FIRST IN LIKE MANNER.

2" X 6" X 6" CAR WIDTH (4 REQD).  
NAIL TO UPRIGHTS 1/2-10d NAILS AT EACH JOINT.



2" X 6" X 8"-2" (4 REQD).

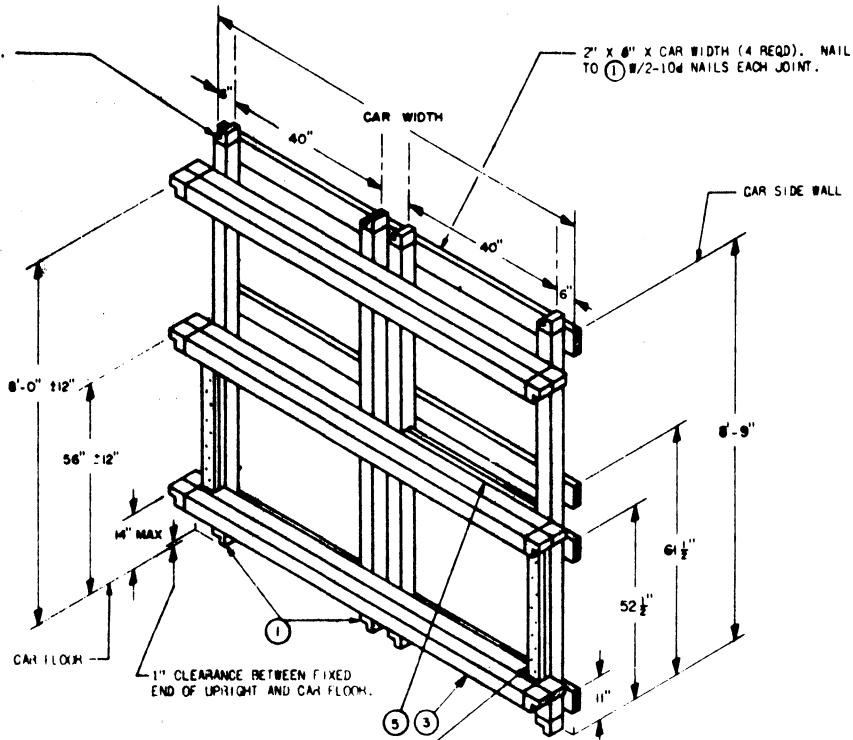
**DETAIL "B"**

(2 REQD)

2" X 2" X 2" CUT TO FIT (4 REQD).  
NAIL TO UPRIGHTS 1/2-10d NAILS AT EACH JOINT.

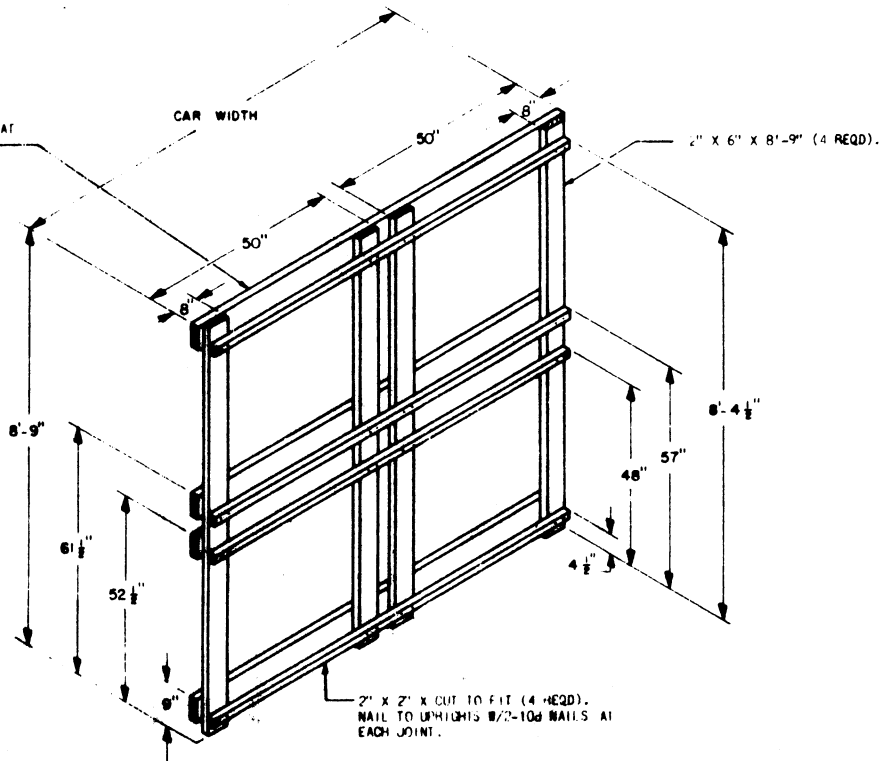
**DETAILS**

POSITION AS SHOWN, WITH ADJUSTABLE (TELESCOPING) END UP AND WOOD AND METAL SURFACE OF MEMBER TOWARD LOAD.



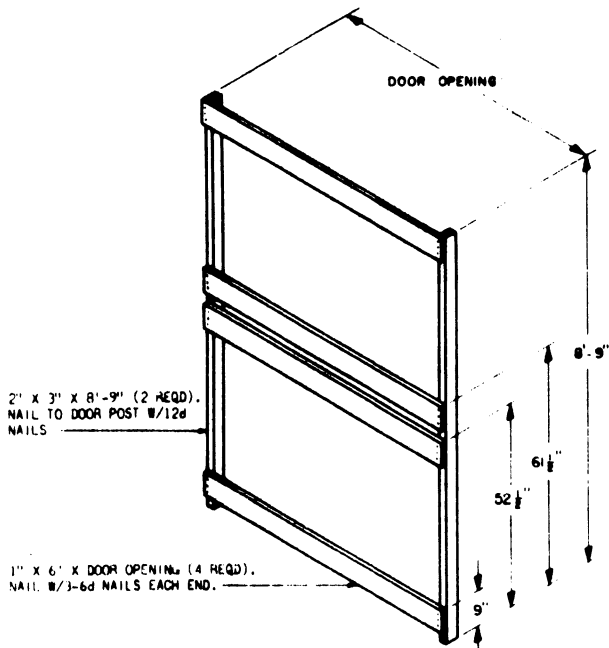
**DETAIL "C"**  
 (6 REQD)  
 2" x 4" x CUT TO FIT BETWEEN CROSS MEMBERS (DOUBLED) (2 REQD). NAIL FIRST PIECE TO UPRIGHT #2-10d NAIL EVERY 4". NAIL SECOND PIECE TO FIRST IN LIKE MANNER.

2" x 6" x CAR WIDTH (4 REQD). NAIL TO UPRIGHTS #2-10d NAILS AT EACH JOINT.



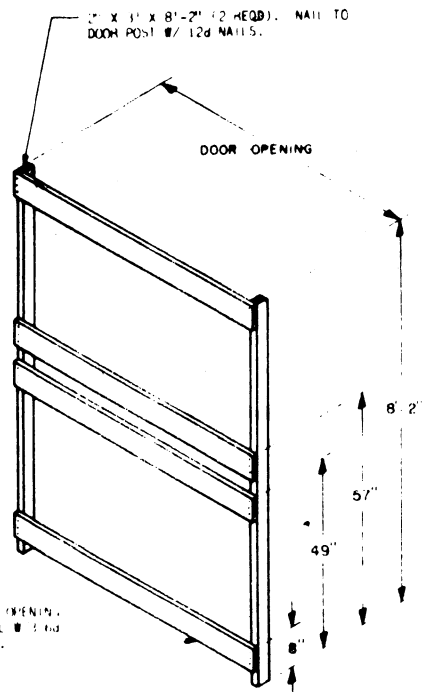
**DETAIL "D"**  
 (2 REQD)

**DETAILS**



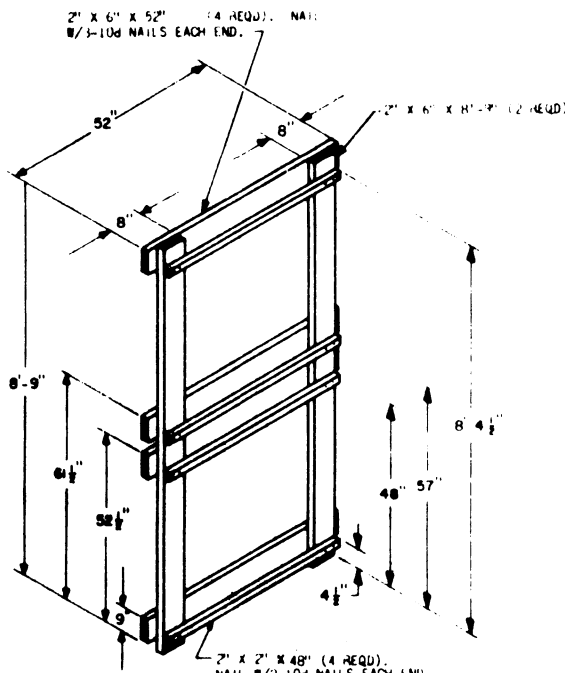
**DETAIL "E"**

(2 REQD)



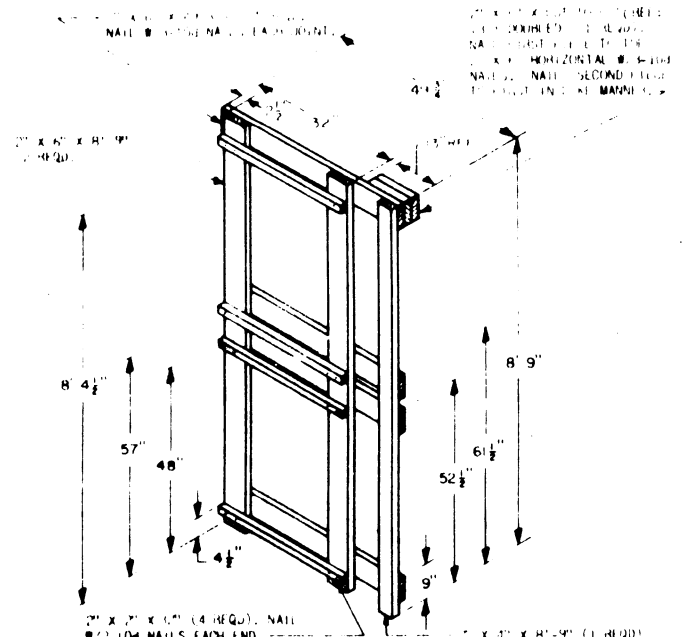
**DETAIL "F"**

(2 REQD)



**DETAIL "G"**

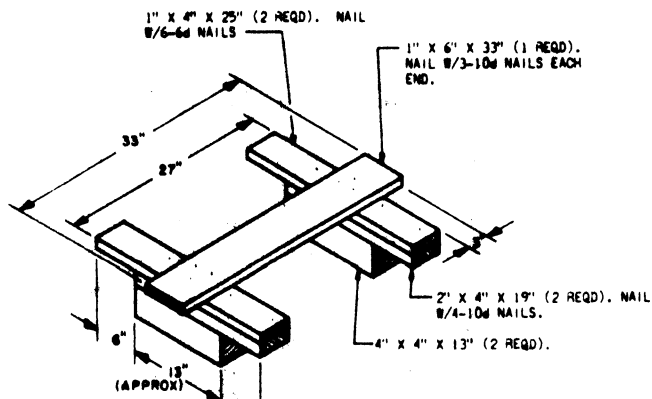
(2 REQD)



**DETAIL "H"**

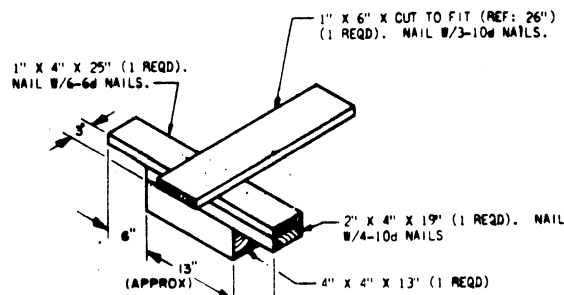
(2 REQD, ONE RIGHT HAND AS SHOWN  
AND ONE LEFT HAND.)

**DETAILS**



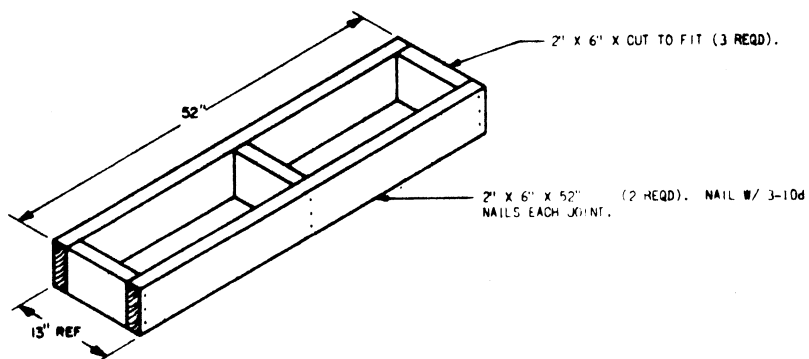
**DETAIL "J"**

(10 REQD)



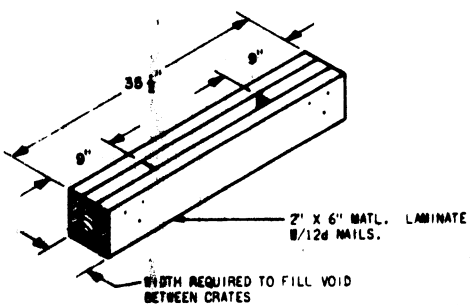
**DETAIL "K"**

(2 REQD)



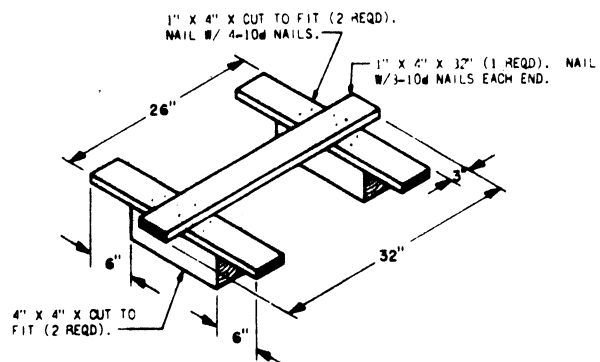
**DETAIL "L"**

(8 REQD)



**DETAIL "M"**

(AS REQD)

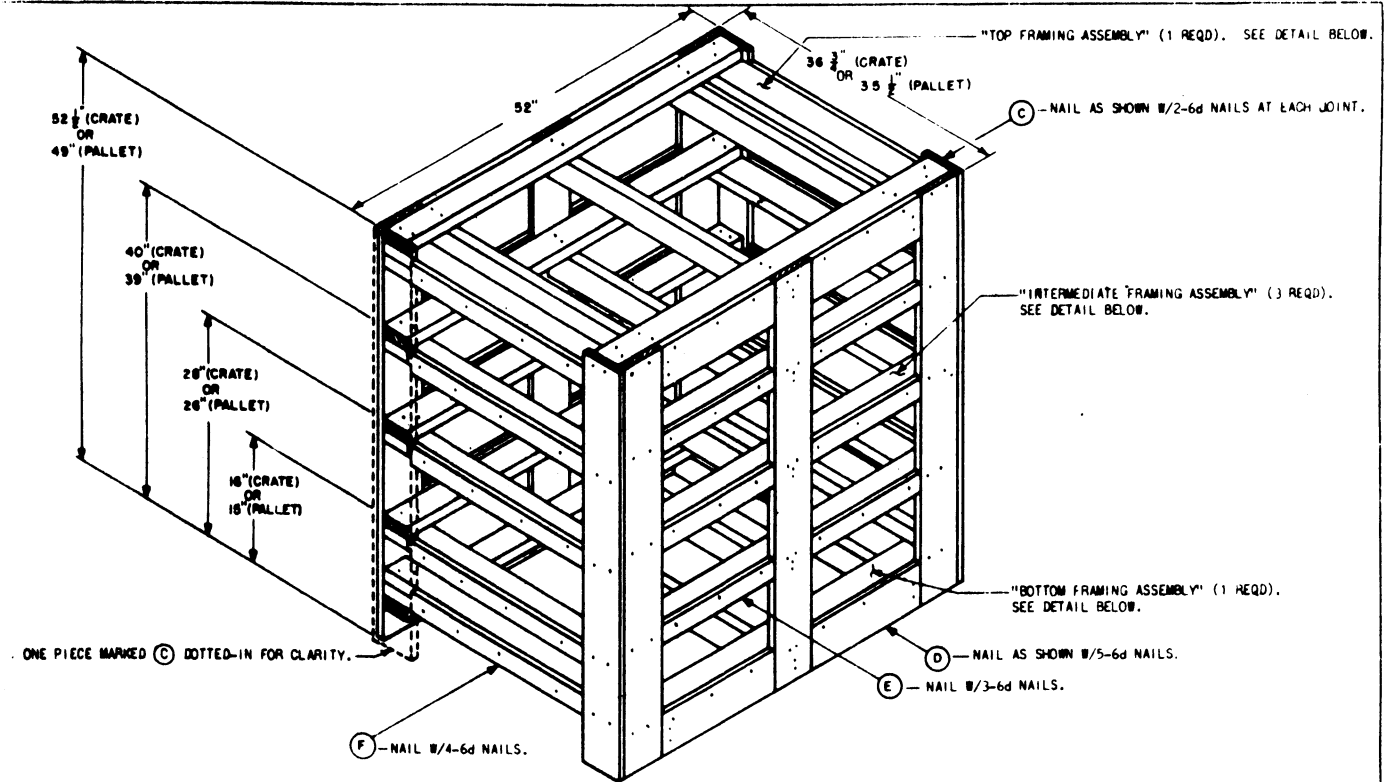


**DETAIL "N"**

(AS REQD)

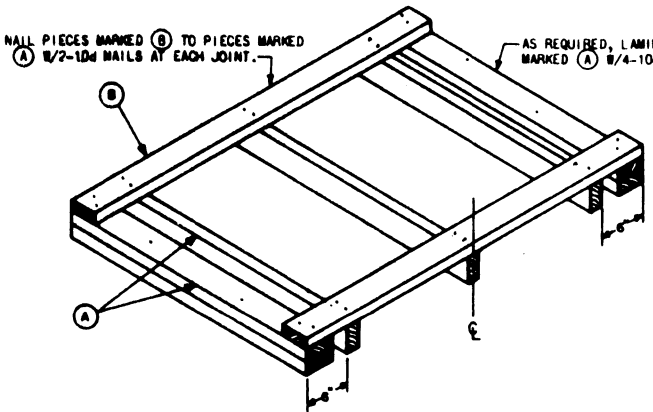
**DETAILS**





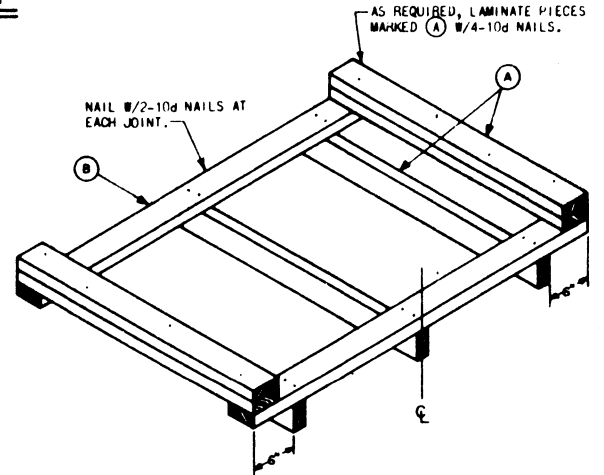
**COMPLETE ASSEMBLY**

(APPROX UNIT WEIGHT: 280 LBS)



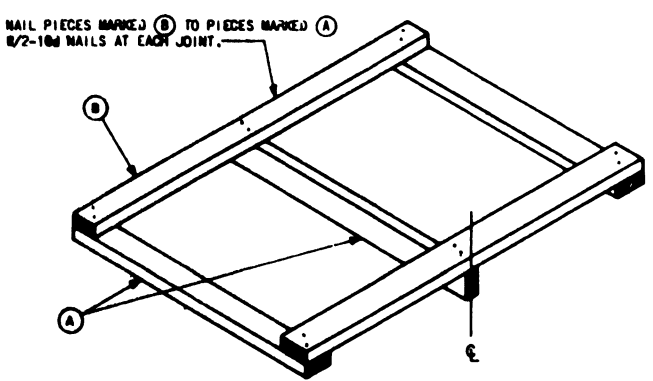
**TOP FRAMING ASSEMBLY**

(1 REQD)



**BOTTOM FRAMING ASSEMBLY**

(1 REQD)



**INTERMEDIATE FRAMING ASSEMBLY**

(3 REQD)

MATERIAL REQUIREMENTS				
PIECE IDENTITY	QUANTITY REQUIRED	MATERIAL	LENGTH	
			CRATE	PALLET
A	23	2" X 4"	35-1/4"	34"
B	10	2" X 4"	50-1/2"	50-1/2"
C	10	1" X 6"	52-1/2"	49"
D	8	1" X 6"	16-3/4"	16-3/4"
E	12	1" X 3"	CUT-TO-FIT (REF: 16-3/4")	CUT-TO-FIT (REF: 16-3/4")
F	10	1" X 3"	CUT-TO-FIT (REF: 25")	CUT-TO-FIT (REF: 24-1/4")
6d NAIL	306	STEEL	2"	2"
10d NAIL	92	STEEL	3"	3"

**CRATE / PALLET FILLER ASSEMBLY**

