

*O n Italy*

DATE 8/5/96

# LOADING AND BRACING<sup>●</sup> IN MILVAN CONTAINERS<sup>⊕</sup> OF PALLETIZED UNITS OF SEPARATE LOADING PROJECTILES

## INDEX

<u>ITEM</u>	<u>PAGE(S)</u>
GENERAL NOTES AND MATERIAL SPECIFICATIONS - - - - -	2,3
PALLET UNIT DETAILS - - - - -	3,4
DETAILS - - - - -	5
155MM PROJECTILE, 8/SMALL WOODEN PALLET (METHODS 1 AND 2) - - - - -	6-11
155MM PROJECTILE, 8/LARGE WOODEN PALLET (METHODS 1 AND 2) - - - - -	12-17
8" PROJECTILE, 6 SHORT/WOODEN PALLET (METHODS 1 AND 2) - - - - -	18-23
8" PROJECTILE, 6 TALL/WOODEN PALLET (METHODS 1 AND 2) - - - - -	24-31
8" PROJECTILE, 6/LARGE WOODEN PALLET (METHODS 1 AND 2) - - - - -	32-35
155MM PROJECTILE, 8 TALL/METAL PALLET (METHODS 1 AND 2) - - - - -	36-39
155MM PROJECTILE, 8 SHORT/METAL PALLET (METHODS 1 AND 2) - - - - -	40-43
TYPICAL REDUCED LOAD PROCEDURE - - - - -	44

● LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS.

⊕ ONLY MILVAN CONTAINERS WHICH HAVE BEEN MODIFIED TO INCLUDE A MECHANICAL LOAD-BRACING SYSTEM THAT SATISFIES THE REQUIREMENTS OF THE BUREAU OF EXPLOSIVES PAMPHLET 6C WILL BE USED FOR THE MOVEMENT OF AMMUNITION BY T/COFC SERVICE. CAUTION: OTHER REQUIREMENTS OF PAMPHLET 6C ALSO APPLY.

## U.S. ARMY MATERIEL COMMAND DRAWING

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JULY 1981

DO NOT SCALE

REVISION NO. 2

APRIL 1996

SEE THE REVISION LISTING ON PAGE 3

CLASS

19

DIVISION

48

DRAWING

4163

FILE

15PE1002

**GENERAL NOTES**

**(GENERAL NOTES CONTINUED)**

- 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 PROCEDURES ARE APPLICABLE TO LOADS OF PALLETIZED SEPARATE LOADING PROJECTILES. SUBSEQUENT REFERENCE TO PALLET UNIT HEREIN MEANS THE PALLETIZED UNIT WITH AMMUNITION ITEMS. SEE PAGES 3 AND 4 OF THIS DRAWING FOR PALLET UNIT DETAILS AND U.S. AMC DRAWING 19-48-4076-20PE1001 FOR BUNDLING PROCEDURES. CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE MILVAN MUST NOT BE EXCEEDED.
- C. THE LOAD VIEWS WITHIN THIS DRAWING DEPICT PALLET UNITS WHICH ARE BUNDLED TOGETHER INTO GROUPS OF TWO OR THREE IN ACCORDANCE WITH DRAWING 19-48-4076-20PE1001. IT IS RECOMMENDED, BUT NOT REQUIRED, THAT PALLET UNITS BE BUNDLED AS SHOWN IN THE LOAD VIEWS WITH THE FOLLOWING EXCEPTIONS: WHEN USING THE SHIPPING SKID AS DEPICTED IN THE LOADS ON PAGES 32 AND 34, PALLET UNITS MUST BE BUNDLED INTO GROUPS OF TWO. ALSO, DUE TO THE LOAD CONFIGURATIONS, SOME LOADS REQUIRE SINGLE PALLET UNITS AT THE REAR OF THE LOAD.
- D. THE LOADS AS SHOWN ARE BASED ON A 20' LONG BY 8' WIDE BY 8' HIGH MILVAN CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 87" HIGH. THE LOADS ARE DESIGNED FOR TRAILER/CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT.
- E. THE SPECIFIED OUTLOADING PROCEDURES ARE FOR CONTAINERS EQUIPPED WITH SELF-CONTAINED MECHANICAL BRACING DEVICES AS DESCRIBED WITHIN BUREAU OF EXPLOSIVES PAMPHLET 6C. CROSS MEMBER ATTACHMENT FACILITIES WITHIN THESE CONTAINERS MUST PROVIDE FOR THE INSTALLATION OF LOAD BLOCKING CROSS MEMBERS AT THE HEIGHTS SPECIFIED. THE HEIGHT DIMENSIONS SPECIFIED WITHIN THIS DRAWING FOR THE INSTALLATION OF CROSS MEMBERS CONFORM WITH THE BUREAU OF EXPLOSIVES PAMPHLET 6C, WITH THE EXCEPTION THAT TWO ADDITIONAL BELT RAILS HAVE BEEN SHOWN: ONE AT 72" AND ONE AT 83" HIGH FROM THE CONTAINER FLOOR. VOIDS LENGTHWISE WITHIN THE LOAD MUST BE HELD TO A MINIMUM. CROSS MEMBERS MUST BE PLACED AGAINST THE LADING AS TIGHTLY AS THE HOLE SPACING IN THE CROSS MEMBER ATTACHMENT FACILITY PERMITS. EACH CROSS MEMBER WILL BE INSTALLED WITH THE ENDS ATTACHED AS NEARLY AS POSSIBLE IN "MATED" POSITIONS (AT EQUAL HEIGHT AND AT EQUAL DISTANCES FROM THE END OF THE CONTAINER). CROSS MEMBERS IN EMPTY CONTAINERS AND THOSE NOT USED IN LOADED CONTAINERS MUST BE FASTENED INTO BELT RAILS FOR SHIPMENT. COMPONENTS ASSIGNED TO EACH CONTAINER MUST REMAIN THEREWITH EVEN THOUGH UNUSED DURING SOME SHIPMENTS. SEE THE "FILL DETAIL" ON PAGE 5 FOR THE DUNNAGING METHOD REQUIRED TO ELIMINATE AN EXCESSIVE LENGTHWISE VOID WITHIN A LOAD. THE LOAD BLOCKING COMPONENT DESIGNATED AS "CROSS MEMBER" HEREIN, IS IDENTIFIED AS "BEAM ASSEMBLY" WITHIN TM 55-8115-200-23 & P, DATED DECEMBER 1979. THE BEAM ASSEMBLY IS FURTHER IDENTIFIED AS NSN 8115-00-165-6623.
- F. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.

(CONTINUED AT RIGHT)

- G. WHEN LOADING PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE DUNNAGE ASSEMBLIES). THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 1-1/2". TO FACILITATE VARIANCE IN THE CONTAINER AND/OR PALLET UNITS TO BE SHIPPED, THE FOLLOWING CRITERIA WILL BE APPLIED. FOR THE "SIDE FILL ASSEMBLIES", THE SPACER PIECES MAY BE INCREASED OR DECREASED IN THICKNESS AND/OR OMITTED ON ONE OR BOTH SIDES OF CONTAINER. FOR THE "SEPARATOR GATE ASSEMBLIES", ADDITIONAL PIECES OF APPROPRIATE THICKNESS MAY BE LAMINATED TO THE HORIZONTAL PIECES W/1 APPROPRIATELY SIZED NAIL EVERY 12" OR THE HORIZONTAL PIECES MAY BE DECREASED IN THICKNESS.
- H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE MILVAN WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. A STAGGERED NAILING PATTERN WILL BE USED WHENEVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES OR WHEN LAMINATING DUNNAGE. ADDITIONALLY, THE NAILING PATTERN FOR AN UPPER PIECE OF LAMINATED DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN THROUGH ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- K. PORTIONS OF THE MILVAN DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- L. EACH PAIR OF CROSS MEMBERS USED FOR VERTICAL HOLD-DOWN SHOULD BE CENTERED WITHIN EACH LOAD BAY AND ALIGNED OVERTOP THE OUTERMOST VERTICAL PIECES OF THE SEPARATOR GATES. HOLD-DOWN ASSEMBLIES SHOULD FIT SNUGLY BETWEEN CROSS MEMBERS AND PALLET COVERS. NO MORE THAN 1/2" OF SPACE BETWEEN A CROSS MEMBER AND A HOLD-DOWN ASSEMBLY IS PERMITTED. TO PROVIDE FOR A PROPER FIT, THE HEIGHT OF A HOLD-DOWN ASSEMBLY MAY BE ADJUSTED BY CHANGING THE WIDTH OR THICKNESS OF THE SPACER PIECES.
- M. TO MAKE LOADING EASIER, TO HELP ACHIEVE A TIGHT LOAD ACROSS A CONTAINER, AND TO PREVENT UNACCEPTABLE DAMAGE TO PALLET UNITS WHEN LOADING A MILVAN, A SLIP-SHEET CAN BE USED EFFECTIVELY AS A "SHOEHORN" TYPE DEVICE. THE SLIP-SHEET WILL PROVIDE A SMOOTH SURFACE THAT WILL PREVENT PALLETS/PALLET STRAPS FROM INTERLOCKING OR CATCHING ON OTHER PROJECTIONS WHEN LATERALLY ADJACENT PALLET UNITS ARE BEING LOADED. A SLIP-SHEET WILL BE USED AFTER EACH ROW OF PALLETS IS LOADED WITH ONE OF ITS SIDES IN TIGHT CONTACT AT ONE SIDE OF THE MILVAN OR DUNNAGE ASSEMBLY. THE SLIP-SHEET IS TO BE PLACED AGAINST THE OTHER SIDE OF THE ROWS AS THEY ARE BEING LOADED. AFTER ALL ROWS ARE COMPLETED, THE SLIP-SHEET IS TO BE REMOVED FOR SUBSEQUENT USE WITH THE NEXT. A SLIP-SHEET OF SUITABLE SIZE CAN BE MADE FROM A SHEET OF 1/8" TEMPERED HARDBOARD (MASONITE) OR FROM A SHEET OF ANY OTHER MATERIAL THAT WILL SATISFY THE REQUIREMENTS.
- N. MAXIMUM LOAD WEIGHT CRITERIA:

THE MAXIMUM LOAD WEIGHTS ARE CONTROLLED BY EQUIPMENT CAPABILITY FACTORS. ALTHOUGH THE HEAVIEST MAXIMUM LOADS ARE DELINEATED IN THE LOAD VIEWS, PROVISIONS ARE INCLUDED WITHIN THIS DRAWING SO THAT THE BASIC LOADS CAN BE ADJUSTED TO SATISFY A LESSER QUANTITY OF LADING UNITS. DEPENDING ON TRANSPORTATION ROUTING, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY "WEIGHT LAWS" OF CERTAIN STATES. ALSO, IT MAY BE NECESSARY TO REDUCE THE LOAD WEIGHT TO SATISFY OTHER WEIGHT RESTRICTIONS IMPOSED ON THE INTERMODAL CONTAINER SYSTEM.

D. SPECIAL T/COFC NOTES:

- 1. CAUTION: LOADED CONTAINERS MUST BE ON CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE, REGARDLESS OF THE LOAD WEIGHT WITHIN THE CONTAINER.
- 2. LOAD LIMITS OF T/COFC RAIL CARS MUST NOT BE EXCEEDED, NOR WILL A CAR BE LOADED SO THAT THE TRUCK UNDER ONE END OF THE CAR CARRIES MORE THAN ONE-HALF OF THE LOAD LIMIT FOR THAT CAR.
- 3. CHASSIS/CONTAINERS COUPLED INTO A 40-FOOT TRAILER CONFIGURATION MUST BE PLACED AT THE B-END OF A TOFC RAIL CAR. THE REAR END OF THE 40-FOOT UNIT WILL OVERHANG THE END OF THE CAR IF IT IS PLACED AT THE A-END. TWENTY-FOOT AND 40-FOOT UNITS CAN BE LOADED ON THE SAME CAR.

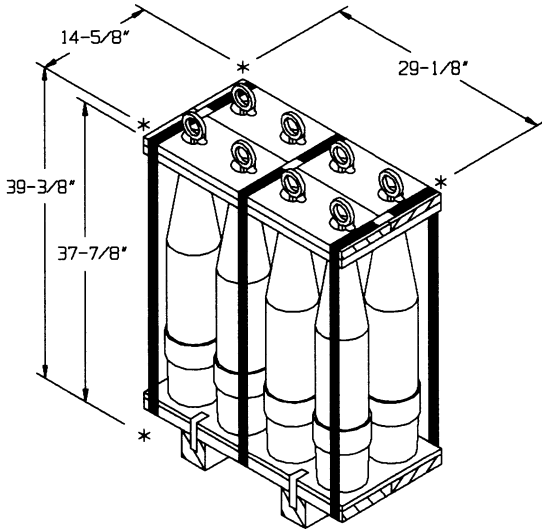
- P. WHETHER A CONTAINER IS FULL OR IS LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF THE LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MID-POINT OF THE CONTAINER.

(CONTINUED ON PAGE 3)

**MATERIAL SPECIFICATIONS**

- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.
- PLYWOOD - - - - - : COMMERCIAL ITEM DESCRIPTION A-A-55057, TYPE A, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
- WIRE, CARBON STEEL - - : ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.
- STAPLE - - - - - : FED SPEC FF-N-105; 15/16" OR 1" CROWN WIDTH X 3/4" LEG LENGTH FOR 3/4" STRAPPING AND 1-17/32" CROWN WIDTH X 3/4" LEG LENGTH FOR 1-1/4" STRAPPING, TYPE III, STYLE 3.

- Q. THE QUANTITY OF CONTAINERS SHOWN IN THE LOAD ON PAGE 2 MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE "TYPICAL REDUCED LOAD PROCEDURE" ON PAGE 44.
- IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT (ONE OR TWO PALLET UNITS), LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE REAR OF THE LOAD.
  - IF A LOAD IS REDUCED BY A LARGE AMOUNT (MORE THAN TWO LADING UNITS), LADING UNITS SHOULD BE ELIMINATED AS REQUIRED AND THE TOTAL LOAD SHIFTED FORE OR AFT, AS NECESSARY, TO ACHIEVE A SYMMETRICAL WEIGHT DISTRIBUTION. THE DEPICTED PROCEDURES WILL BE FOLLOWED AS CLOSELY AS POSSIBLE, MAKING ONLY THOSE ADJUSTMENTS TO THE DUNNAGE WHICH ARE REQUIRED TO ACCOMMODATE THE NUMBER OF UNITS TO BE SHIPPED.
- R. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4 MM AND ONE POUND EQUALS 0.454 KG.
- S. IF 2" X 3" DUNNAGE LUMBER IS NOT READILY AVAILABLE, TWO ACCEPTABLE SIZE 2" X 3" PIECES CAN BE MADE BY RIPPING (SAWING) A PIECE OF NOMINAL SIZE 2" X 6" LUMBER ON THE CENTER LINE OF ITS 5-1/2" WIDTH.



**155MM SLP, 8/LARGE WOODEN PALLET**

UNIT WEIGHT - - - - - 874 LBS (APPROX)  
CUBE - - - - - 9.7 CU FT

REFER TO THE LOADS ON PAGES 12 AND 14

INCLUDES, BUT IS NOT LIMITED TO DODICS:  
D273, D501, D502, D503, D509, D514, D515, D528,  
D529, D563, D579, AND D864

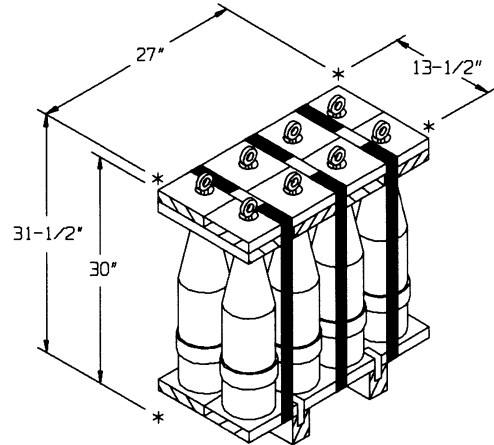
**REVISIONS**

REVISION NO. 1, DATED SEPTEMBER 1984, CONSISTS OF:

- ADDING MILVAN STUFFING PROCEDURES FOR A SIXTH PALLET UNIT.
- UPDATING DRAWING FORMAT TO CONFORM WITH NO.1 ABOVE.

REVISION NO. 2, DATED APRIL 1996, CONSISTS OF:

- STREAMLINING/ECONOMIZING THE PROCEDURES.
- ADDING PROCEDURES FOR 155MM SEPARATE LOADING PROJECTILES ON METAL PALLETTS.
- DELETING PROCEDURES FOR 175MM SEPARATE LOADING PROJECTILES.

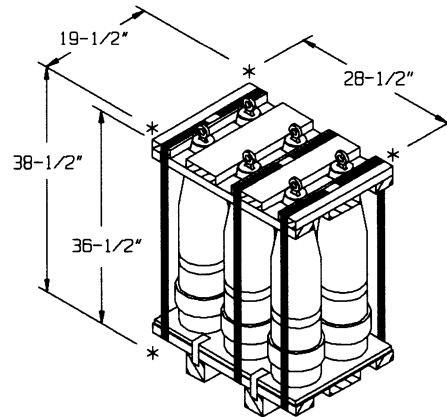


**155MM SLP, 8/SMALL WOODEN PALLET**

UNIT WEIGHT - - - - - 800 LBS (APPROX)  
CUBE - - - - - 6.6 CU FT

REFER TO THE LOADS ON PAGES 6 AND 8

INCLUDES, BUT IS NOT LIMITED TO DODICS:  
D505, D506, D542, D544, D545, D547, D548, D549,  
D550, D551, D554, D561, D562, D568, AND D571

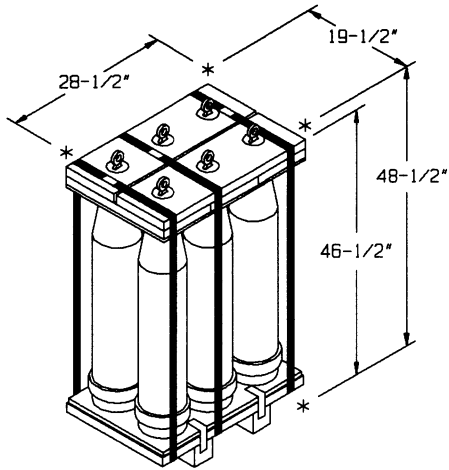


**8" SLP, 6 SHORT/WOODEN PALLET**

UNIT WEIGHT - - - - - 1,256 LBS (APPROX)  
CUBE - - - - - 12.4 CU FT

REFER TO THE LOADS ON PAGES 18 AND 20

INCLUDES, BUT IS NOT LIMITED TO DODICS:  
D649, D651, D680, AND D684

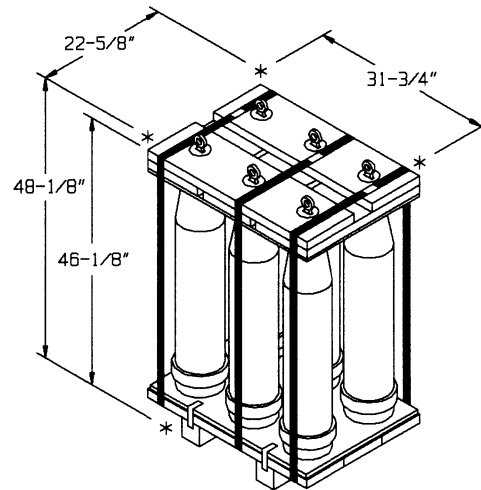


**8" SLP, 6 TALL/WOODEN PALLET**

UNIT WEIGHT ----- 1,296 LBS (APPROX)  
 CUBE ----- 15.6 CU FT

REFER TO THE LOADS ON PAGES 24 AND 26

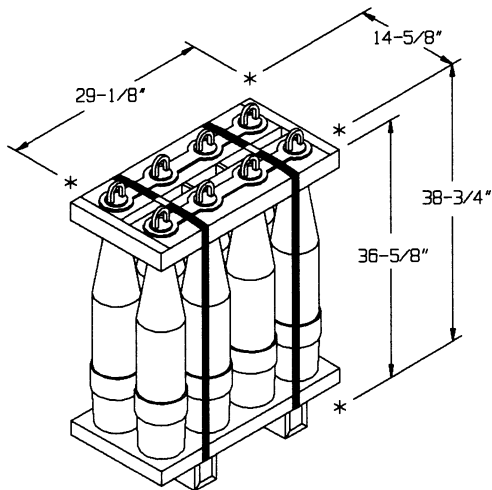
INCLUDES, BUT IS NOT LIMITED TO DODICS:  
 D624 AND D651



**8" SLP, 6/LARGE WOODEN PALLET**

UNIT WEIGHT ----- 1,301 LBS (APPROX)  
 CUBE ----- 19.8 CU FT

REFER TO THE LOADS ON PAGES 32 AND 34

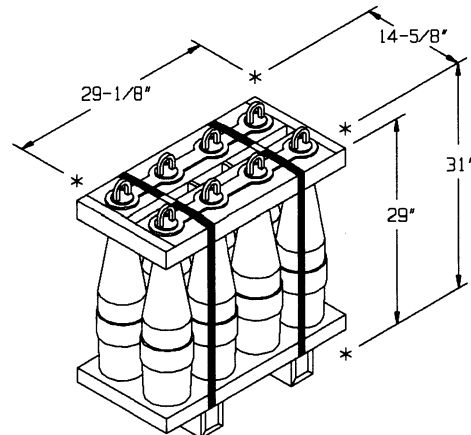


**155MM SLP, 8 TALL/METAL PALLET**

UNIT WEIGHT ----- 897 LBS (APPROX)  
 CUBE ----- 9.6 CU FT

REFER TO THE LOADS ON PAGES 36 AND 38

INCLUDES, BUT IS NOT LIMITED TO DODICS:  
 D513, D544, D550, AND D561

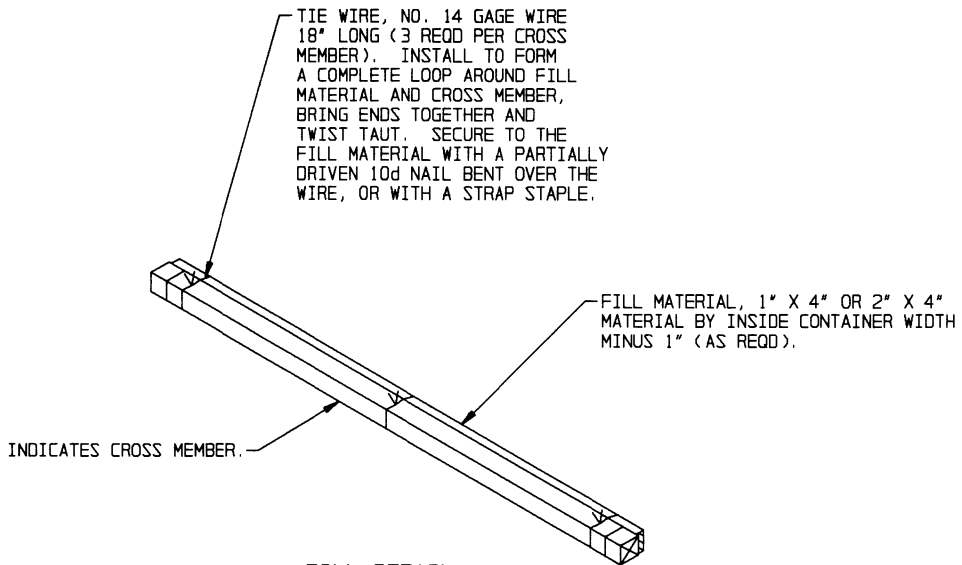


**155MM SLP, 8 SHORT/METAL PALLET**

UNIT WEIGHT ----- 857 LBS (APPROX)  
 CUBE ----- 7.6 CU FT

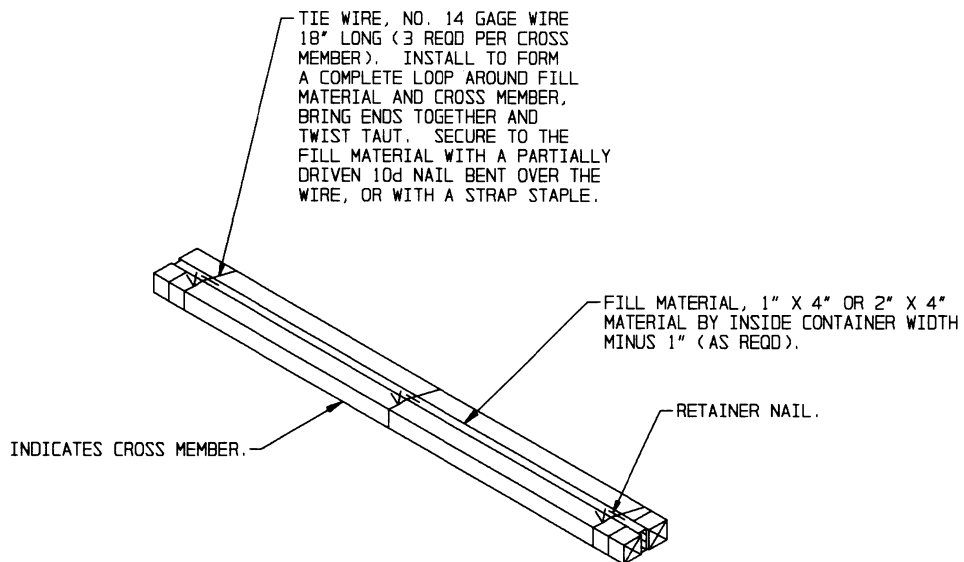
REFER TO THE LOADS ON PAGES 40 AND 42

INCLUDES, BUT IS NOT LIMITED TO DODICS:  
 D501, D502, D503, D505, D509, D514, D515, D528,  
 D563, AND D854



#### FILL DETAIL

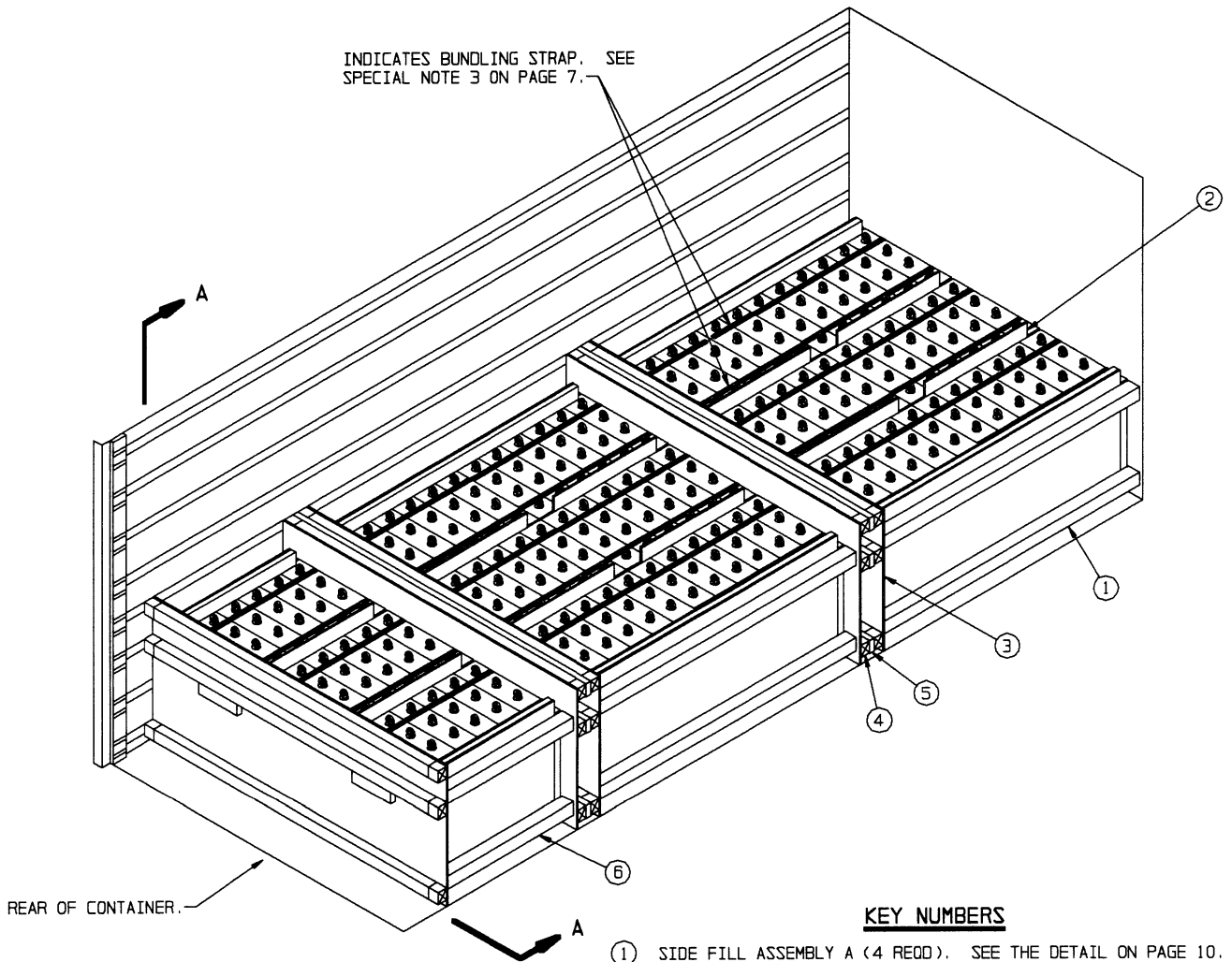
THIS DETAIL DEPICTS METHOD OF POSITIONING FILL MATERIAL BETWEEN CROSS MEMBER AND LADING, WHEN THE VOID BETWEEN THE TWO IS GREATER THAN 1" FOR LONGITUDINAL BRACING.



#### FILL DETAIL

THIS DETAIL DEPICTS METHOD OF POSITIONING FILL MATERIAL BETWEEN CROSS MEMBERS WHEN DOUBLED CROSS MEMBERS ARE REQUIRED.

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 3 ON PAGE 7.

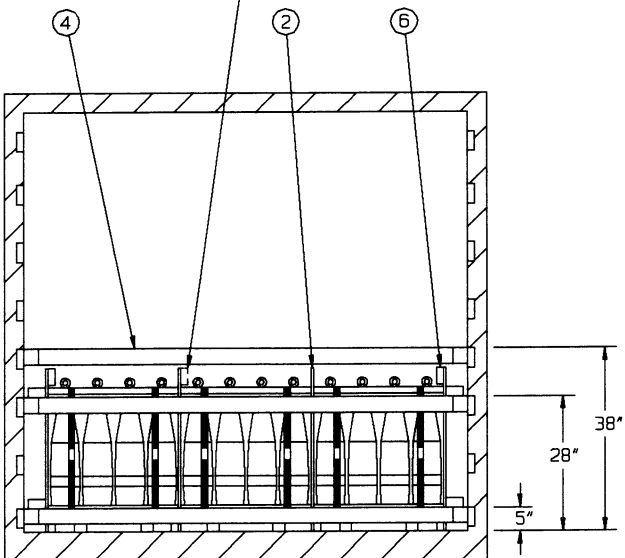


**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY A (4 REQD). SEE THE DETAIL ON PAGE 10.
- ② SEPARATOR A (10 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10.
- ③ LOAD BEARING GATE A (5 REQD). SEE THE DETAIL ON PAGE 11.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION A-A" VIEW BELOW AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ SIDE FILL ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 10.

SEE SPECIAL NOTE 4 ON PAGE 7.



**SECTION A-A**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "A", TEN SEPARATORS "A", FIVE LOAD BEARING GATES "A", AND TWO SIDE FILL ASSEMBLIES "B".
2. INSTALL TWO SIDE FILL ASSEMBLIES "A".
3. LOAD 18 PALLET UNITS AND INSTALL FOUR SEPARATORS "A".
4. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "A".
6. REPEAT STEPS 2 THRU 5.
7. INSTALL TWO SIDE FILL ASSEMBLIES "B".
8. LOAD NINE PALLET UNITS AND INSTALL TWO SEPARATORS "A".
9. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 6 IS FOR SMALL WOODEN PALLET UNITS OF 155MM SEPARATE LOADING PROJECTILES.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, AND ③, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 6, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 6.
4. WHEN LOADING PALLET UNITS WITHOUT BUNDLING STRAPS, A RETAINER PIECE MUST BE APPLIED TO ONE OF THE TWO SEPARATORS "A" IN EACH ROW, OVER THE CENTER PALLET UNITS. SEE THE "SECTION A-A" VIEW ON PAGE 6 AND THE "TYPICAL SEPARATOR DETAIL" ON PAGE 10.

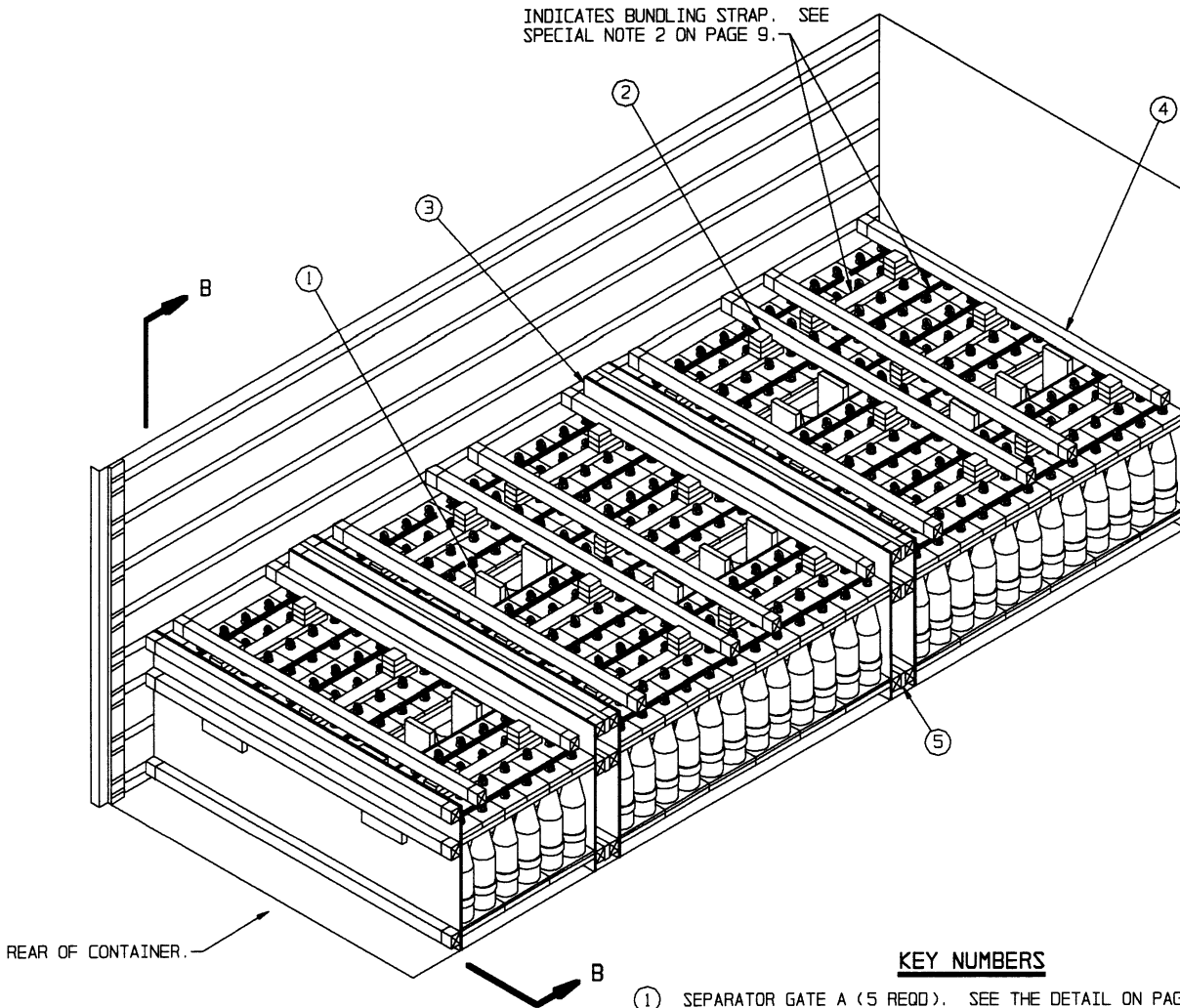
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	42	21
2" X 4"	89	60
4" X 4"	67	89
NAILS	NO. REQD	POUNDS
6d (2")	204	1-1/4
10d (3")	18	1/2
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	290.1 SQ FT REQD	398.9 LBS
CROSS MEMBER		15 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	45	36,000 LBS
DUNNAGE		742 LBS
CONTAINER		5,700 LBS
<b>TOTAL WEIGHT</b>		<b>42,442 LBS (APPROX)</b>

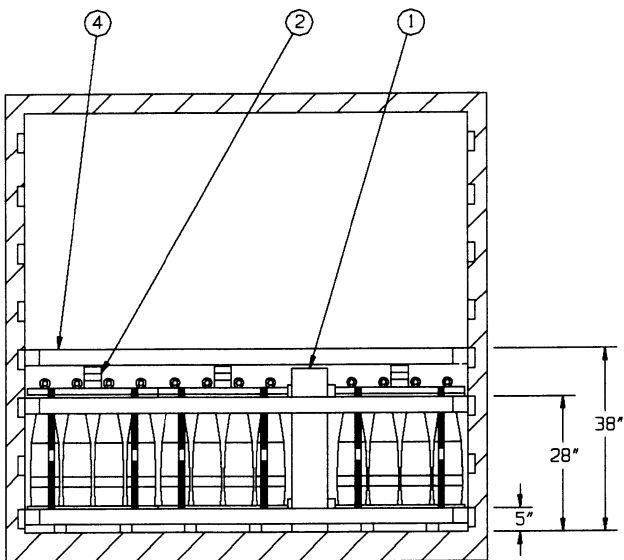
INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 9.



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SEPARATOR GATE A (5 REQD). SEE THE DETAIL ON PAGE 11.
- ② HOLD-DOWN ASSEMBLY A (15 REQD). SEE THE DETAIL ON PAGE 11. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF THREE PALLET UNITS IN LOAD BAYS AS SHOWN ABOVE.
- ③ LOAD BEARING GATE A (5 REQD). SEE THE DETAIL ON PAGE 11.
- ④ CROSS MEMBER (25 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 38" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION B-B" VIEW BELOW, GENERAL NOTE "L" ON PAGE 2 AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.



**SECTION B-B**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.



**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SEPARATOR GATES "A", 15 HOLD-DOWN ASSEMBLIES "A", AND FIVE LOAD BEARING GATES "A".
2. LOAD NINE PALLET UNITS AND INSTALL ONE SEPARATOR GATE "A".
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "A" AND TWO CROSS MEMBERS.
4. REPEAT STEPS 2 AND 3, ENSURING THAT THE SEPARATOR GATE "A" IS ON THE OPPOSITED SIDE OF THE CONTAINER FROM THE ONE INSTALLED IN STEP 2 ABOVE.
5. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS.
6. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "A".
7. REPEAT STEPS 2 THRU 6.
8. REPEAT STEPS 2, 3 AND 5.
9. INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 8 IS FOR SMALL WOODEN PALLET UNITS OF 155MM SEPARATE LOADING PROJECTILES.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 8, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 8.

**BILL OF MATERIAL**

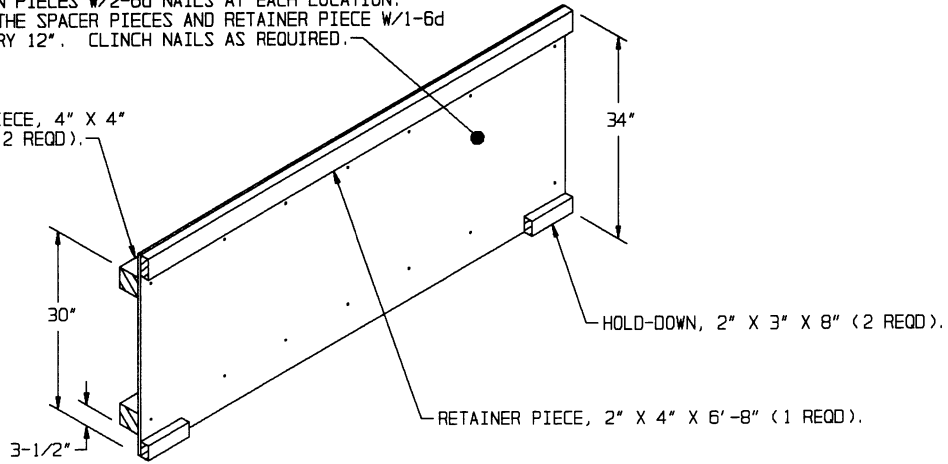
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	33	11
2" X 4"	173	115
2" X 8"	43	58
NAILS	NO. REQD	POUNDS
6d (2")	90	3/4
10d (3")	318	5
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	120.0 SQ FT REQD	165.0 LBS
CROSS MEMBER	25 REQD	

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	45	36,000 LBS
DUNNAGE		540 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		42,240 LBS (APPROX)

PLYWOOD, 1/2" X 34" X 6'-8" (1 REQD). NAIL TO THE HOLD-DOWN PIECES W/2-6d NAILS AT EACH LOCATION. NAIL TO THE SPACER PIECES AND RETAINER PIECE W/1-6d NAIL EVERY 12". CLINCH NAILS AS REQUIRED.

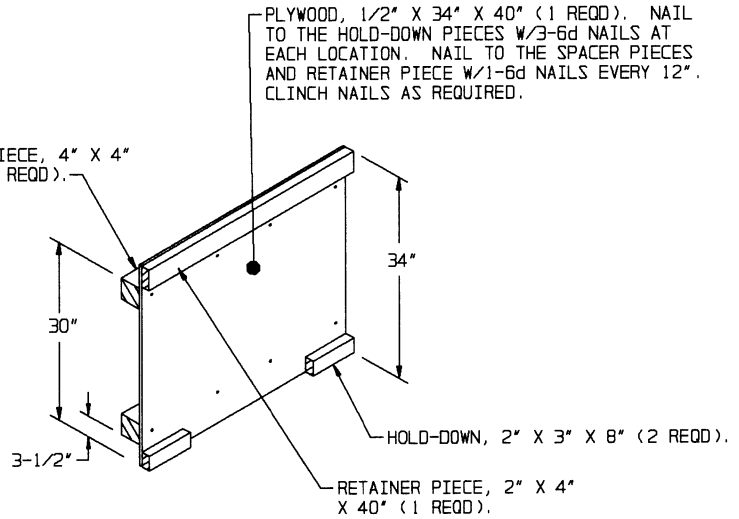
SPACER PIECE, 4" X 4" X 6'-8" (2 REQD).



**SIDE FILL ASSEMBLY A**

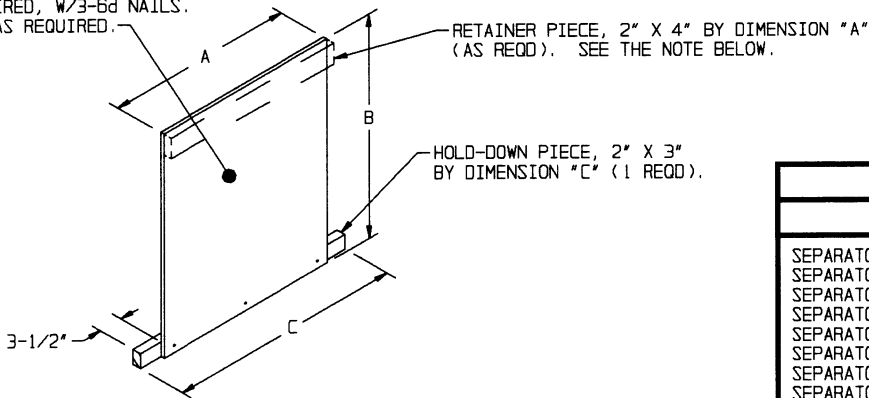
PLYWOOD, 1/2" X 34" X 40" (1 REQD). NAIL TO THE HOLD-DOWN PIECES W/3-6d NAILS AT EACH LOCATION. NAIL TO THE SPACER PIECES AND RETAINER PIECE W/1-6d NAILS EVERY 12". CLINCH NAILS AS REQUIRED.

SPACER PIECE, 4" X 4" X 40" (2 REQD).



**SIDE FILL ASSEMBLY B**

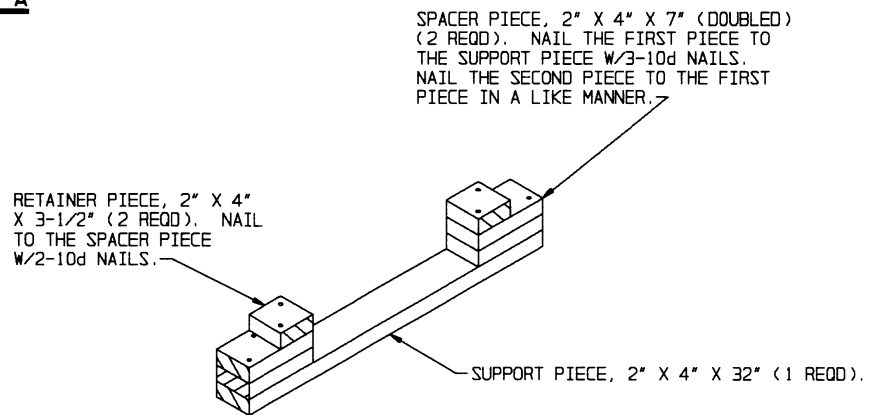
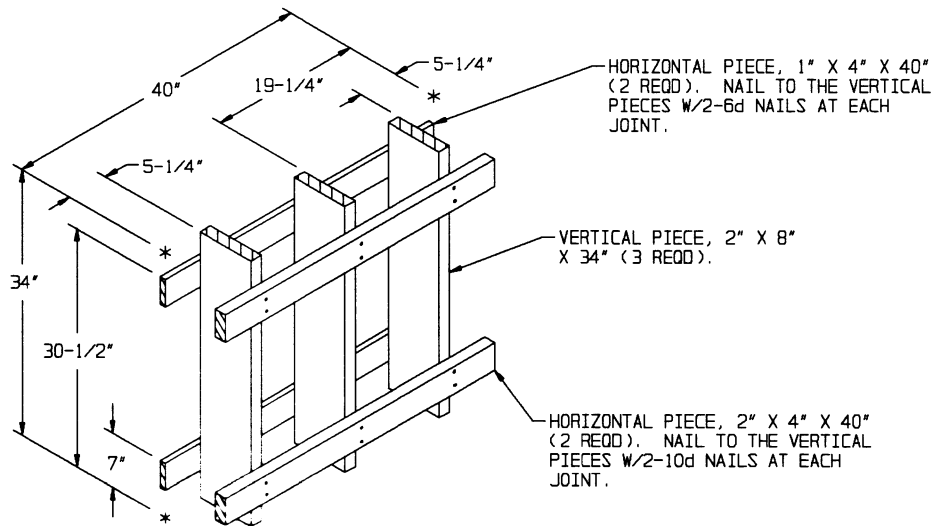
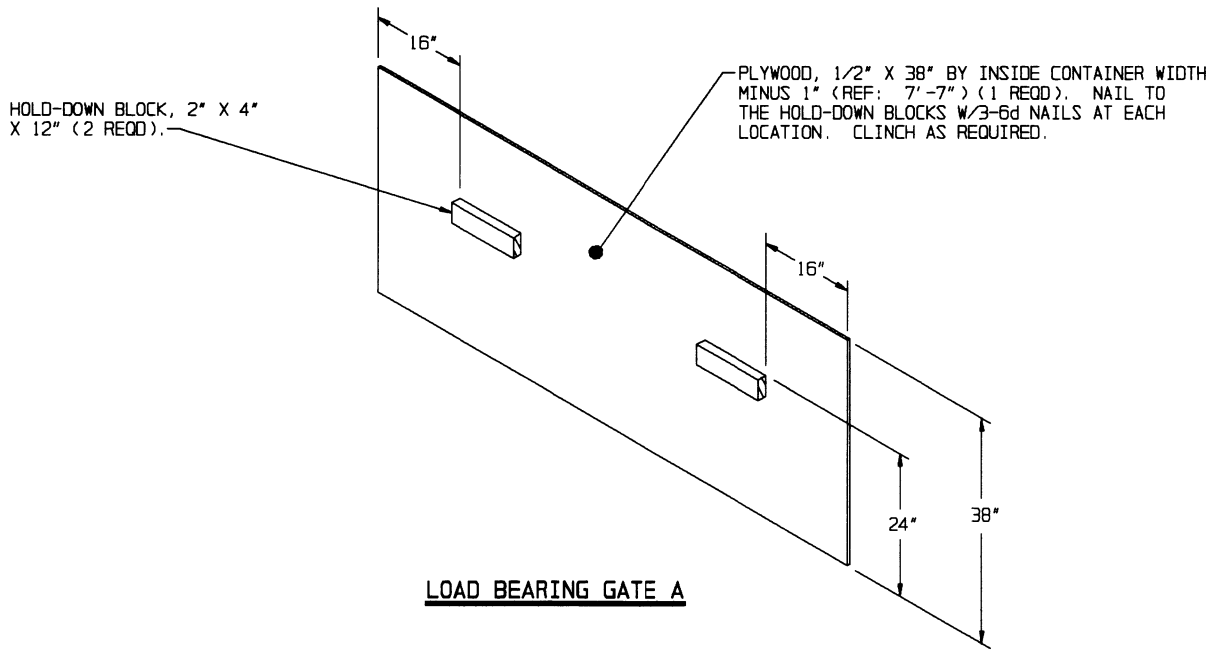
PLYWOOD, 1/2" (1 REQD). NAIL TO THE HOLD-DOWN PIECE AND RETAINER PIECE, IF REQUIRED, W/3-6d NAILS. CLINCH AS REQUIRED.



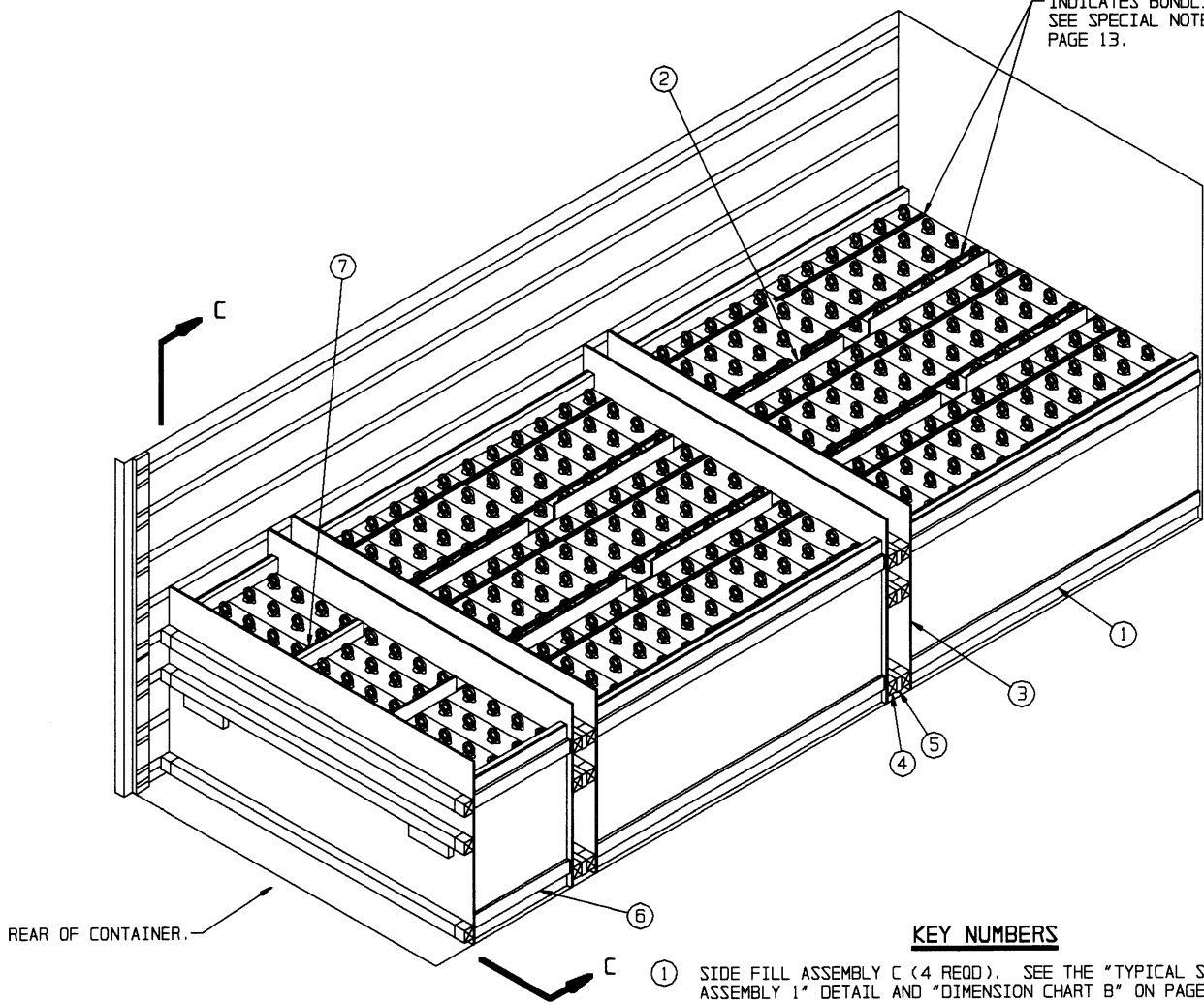
**TYPICAL SEPARATOR DETAIL**

DIMENSION CHART A			
	A	B	C
SEPARATOR "A"	32"	34"	39"
SEPARATOR "B"	36"	42"	43"
SEPARATOR "C"	21"	42"	28"
SEPARATOR "D"	31"	41"	38"
SEPARATOR "F"	36"	41"	43"
SEPARATOR "G"	22"	40"	29"
SEPARATOR "H"	36"	33"	43"
SEPARATOR "J"	22"	33"	29"

SEE "DIMENSION CHART A" AT RIGHT. RETAINER PIECES ARE ONLY REQUIRED WHEN LOADING SINGE (NOT BUNDLED) PALLET UNITS.



INDICATES BUNDLING STRAP.  
SEE SPECIAL NOTE 3 ON  
PAGE 13.

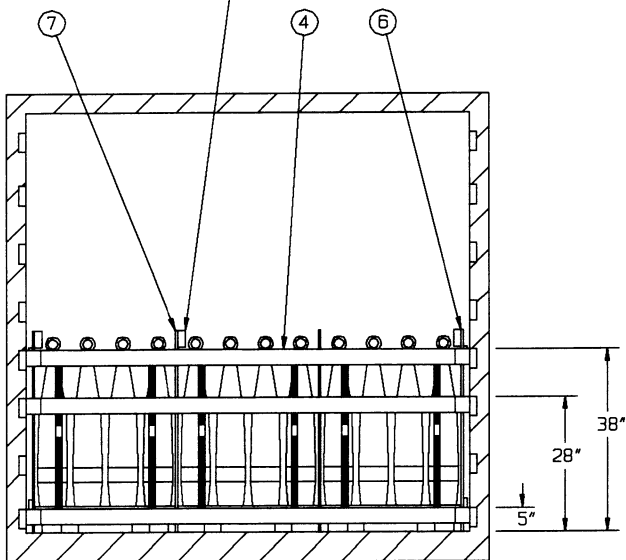


**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY C (4 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 1" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ② SEPARATOR B (8 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10.
- ③ LOAD BEARING GATE B (5 REQD). SEE THE DETAIL ON PAGE 17.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION C-C" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ SIDE FILL ASSEMBLY D (2 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 2" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ⑦ SEPARATOR C (2 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10. NOTE THAT ONE RETAINER PIECE IS REQUIRED FOR ONE SEPARATOR GATE "C" BECAUSE THE REARMOIST TWO ROWS OF PALLET UNITS ARE NOT BUNDLED.

SEE SPECIAL NOTE  
4 ON PAGE 13.



**SECTION C-C**

LOAD BEARING GATE, PIECE MARKED ③,  
HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "C", EIGHT SEPARATORS "B", FIVE LOAD BEARING GATES "B", TWO SIDE FILL ASSEMBLIES "D", AND TWO SEPARATORS "C".
2. INSTALL TWO SIDE FILL ASSEMBLIES "C".
3. LOAD 18 PALLET UNITS AND INSTALL FOUR SEPARATORS "B".
4. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "B".
6. REPEAT STEPS 2 THRU 5.
7. INSTALL TWO SIDE FILL ASSEMBLIES "D".
8. LOAD SIX PALLET UNITS AND INSTALL TWO SEPARATORS "C".
9. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 12 IS FOR LARGE WOODEN PALLET UNITS OF 155MM SEPARATE LOADING PROJECTILES.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, ⑤, AND ⑦, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 12, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 12.
4. WHEN LOADING PALLET UNITS WITHOUT BUNDLING STRAPS, A RETAINER PIECE MUST BE APPLIED TO ONE OF THE TWO SEPARATORS "B" OR "C" IN EACH ROW, OVER THE CENTER PALLET UNITS, AS SHOWN AT THE REAR OF THE LOAD ON PAGE 12. SEE THE "SECTION C-C" VIEW ON PAGE 12 AND THE "TYPICAL SEPARATOR DETAIL" ON PAGE 10.

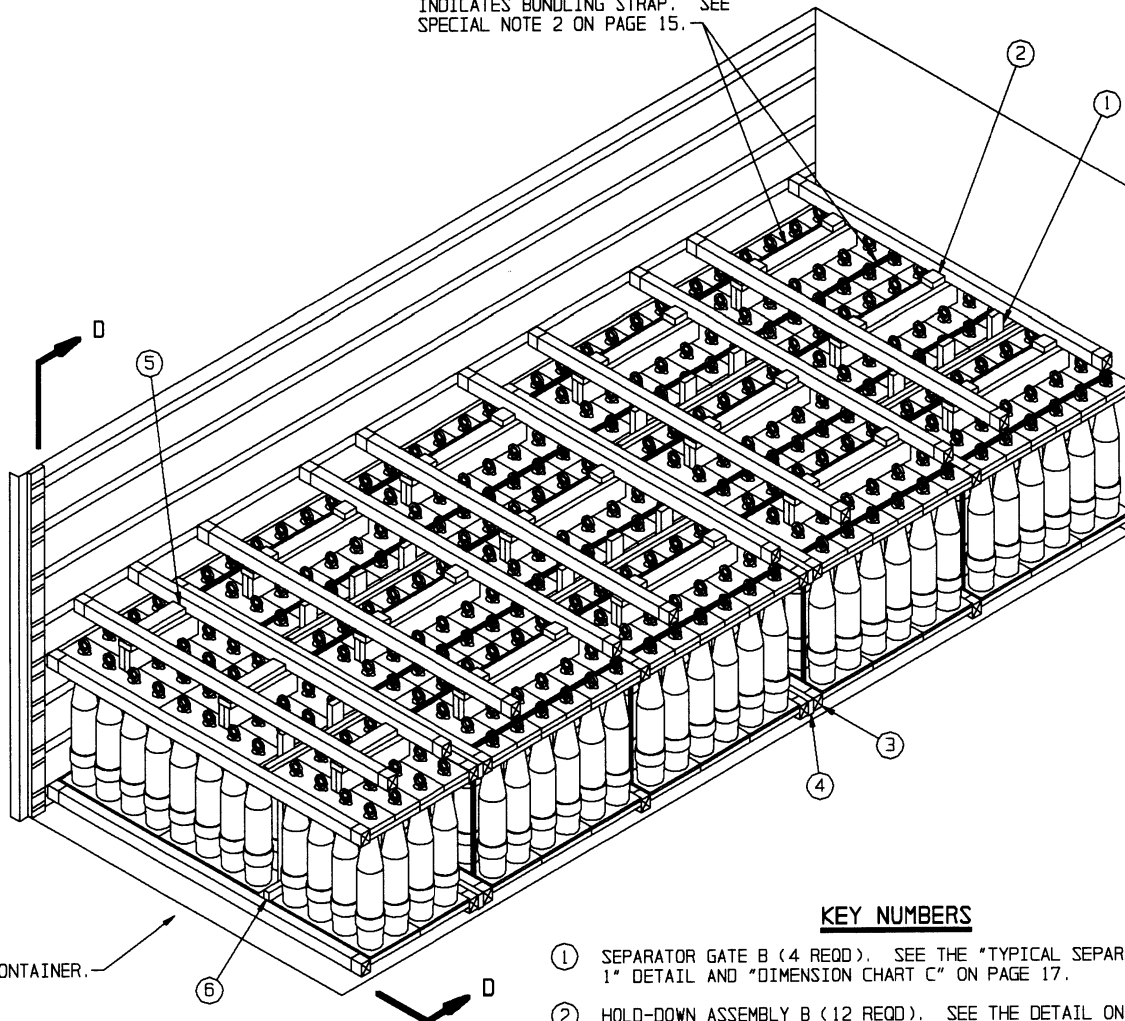
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	63	21
2" X 3"	42	21
2" X 4"	90	60
NAILS	NO. REQD	POUNDS
6d (2")	180	1-1/4
10d (3")	48	3/4
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	366.4 SQ FT REQD	503.8 LBS
CROSS MEMBER	15 REQD	

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	36,708 LBS
DUNNAGE		711 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		43,119 LBS (APPROX)

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 15.

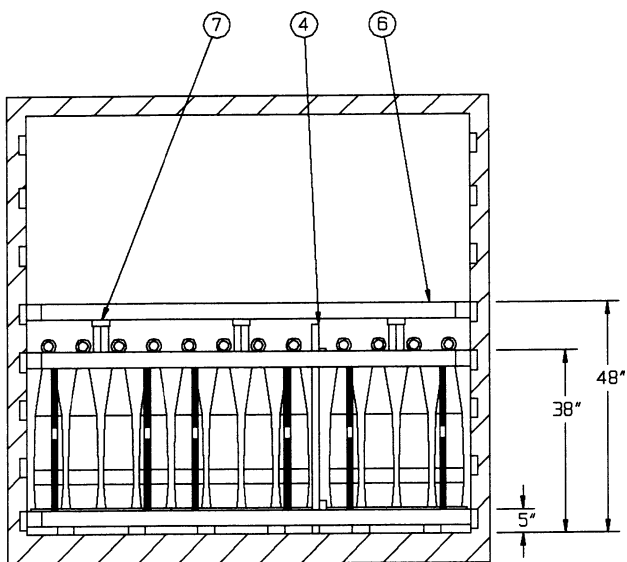


REAR OF CONTAINER.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SEPARATOR GATE B (4 REQD). SEE THE "TYPICAL SEPARATOR GATE 1" DETAIL AND "DIMENSION CHART C" ON PAGE 17.
- ② HOLD-DOWN ASSEMBLY B (12 REQD). SEE THE DETAIL ON PAGE 15. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF THREE PALLET UNITS IN THE LOAD BAYS AS SHOWN ABOVE.
- ③ CROSS MEMBER (24 REQD). POSITION AT THE 5" AND 38" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 48" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION D-D" VIEW BELOW, GENERAL NOTE "L" ON PAGE 2, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ④ FILL MATERIAL (4 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑤ HOLD-DOWN ASSEMBLY C (3 REQD). SEE THE DETAIL ON PAGE 15. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF TWO PALLET UNITS IN THE LOAD BAY AS SHOWN ABOVE.
- ⑥ SEPARATOR GATE C (1 REQD). SEE THE "TYPICAL SEPARATOR GATE 2" DETAIL AND "DIMENSION CHART C" ON PAGE 17.



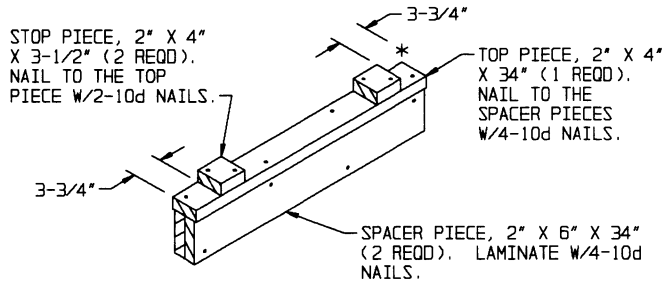
**SECTION D-D**

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

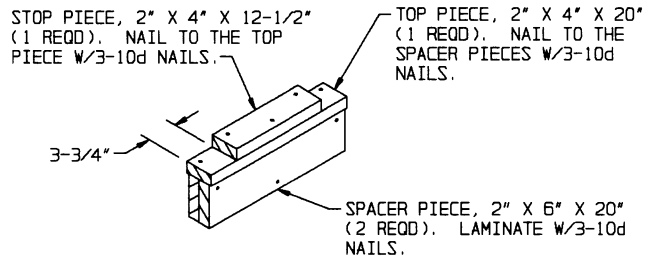
1. PREFABRICATE FOUR SEPARATOR GATES "B", 12 HOLD-DOWN ASSEMBLIES "B", THREE HOLD-DOWN ASSEMBLIES "C", AND ONE SEPARATOR GATE "C".
2. LOAD NINE PALLET UNITS AND INSTALL ONE SEPARATOR GATE "B".
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "B" AND TWO CROSS MEMBERS.
4. REPEAT STEPS 2 AND 3, ENSURING THAT THE SEPARATOR GATE "B" IS ON THE OPPOSITED SIDE OF THE CONTAINER FROM THE ONE INSTALLED IN STEP 2 ABOVE.
5. INSTALL FOUR CROSS MEMBERS WITH FILL MATERIAL.
6. REPEAT STEPS 2 THRU 5.
7. INSTALL SIX PALLET UNITS AND INSTALL ONE SEPARATOR GATE "C".
8. INSTALL THREE HOLD-DOWN ASSEMBLIES "C" AND TWO CROSS MEMBERS.
9. INSTALL TWO CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 14 IS FOR LARGE WOODEN PALLET UNITS OF 155MM SEPARATE LOADING PROJECTILES.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 14, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 14.



**HOLD-DOWN ASSEMBLY B**

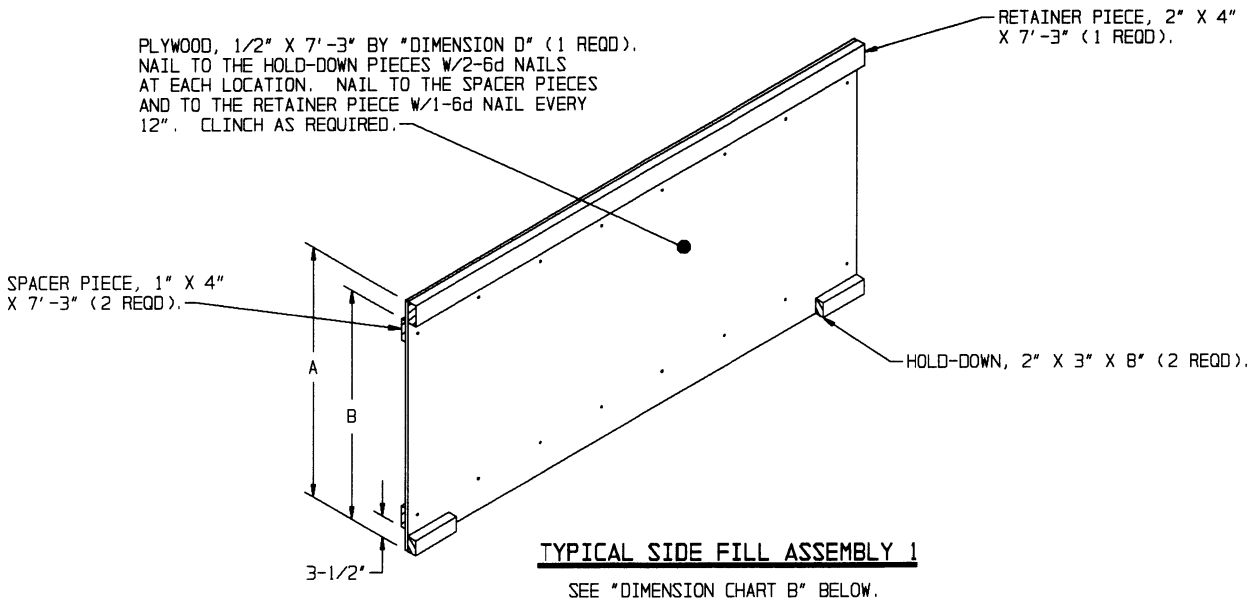


**HOLD-DOWN ASSEMBLY C**

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	165	110
2" X 6"	78	78
NAILS	NO. REQD	POUNDS
10d (3")	239	3-3/4
WIRE, NO. 14 GAGE	18' REQD	NIL
CROSS MEMBER		24 REQD

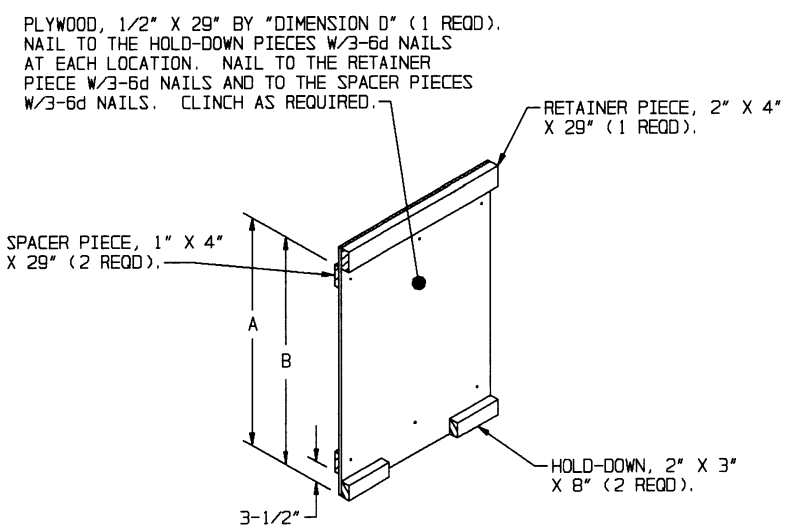
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	36,708 LBS
DUNNAGE		379 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		42,787 LBS (APPROX)



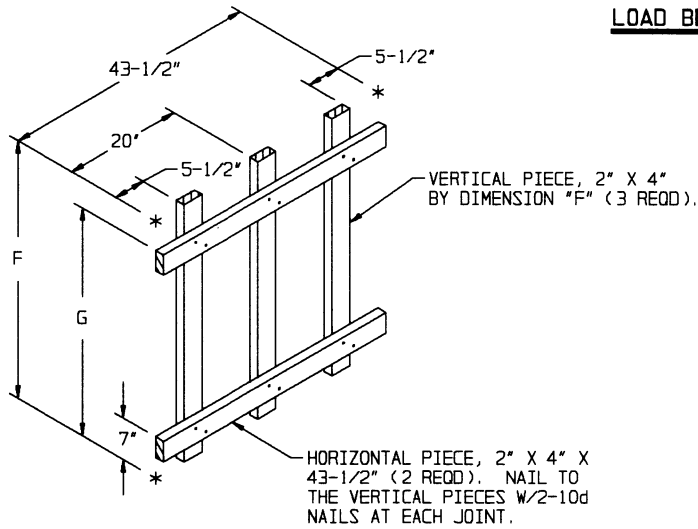
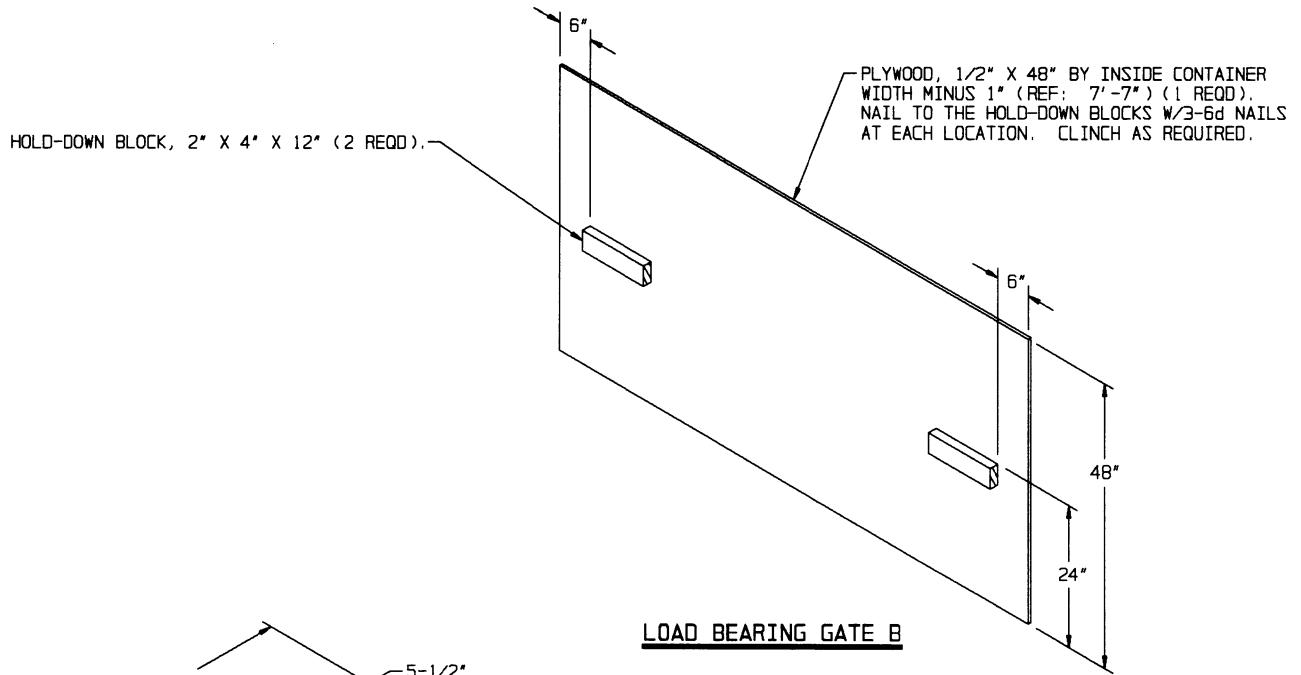
**TYPICAL SIDE FILL ASSEMBLY 1**  
 SEE "DIMENSION CHART B" BELOW.

DIMENSION CHART B		
	D	E
SIDE FILL ASSEMBLY "C"	42"	39"
SIDE FILL ASSEMBLY "D"	42"	39"
SIDE FILL ASSEMBLY "J"	41"	37-1/2"
SIDE FILL ASSEMBLY "K"	41"	37-1/2"
SIDE FILL ASSEMBLY "L"	33"	29"
SIDE FILL ASSEMBLY "M"	33"	29"



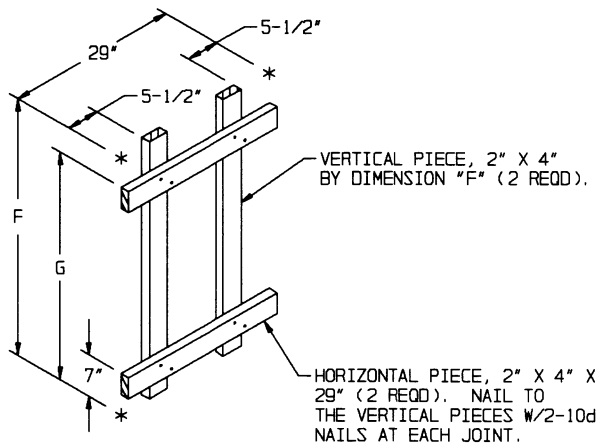
**TYPICAL SIDE FILL ASSEMBLY 2**  
 SEE "DIMENSION CHART B" ABOVE.





**TYPICAL SEPARATOR GATE 1**

SEE "DIMENSION CHART C" AT RIGHT.

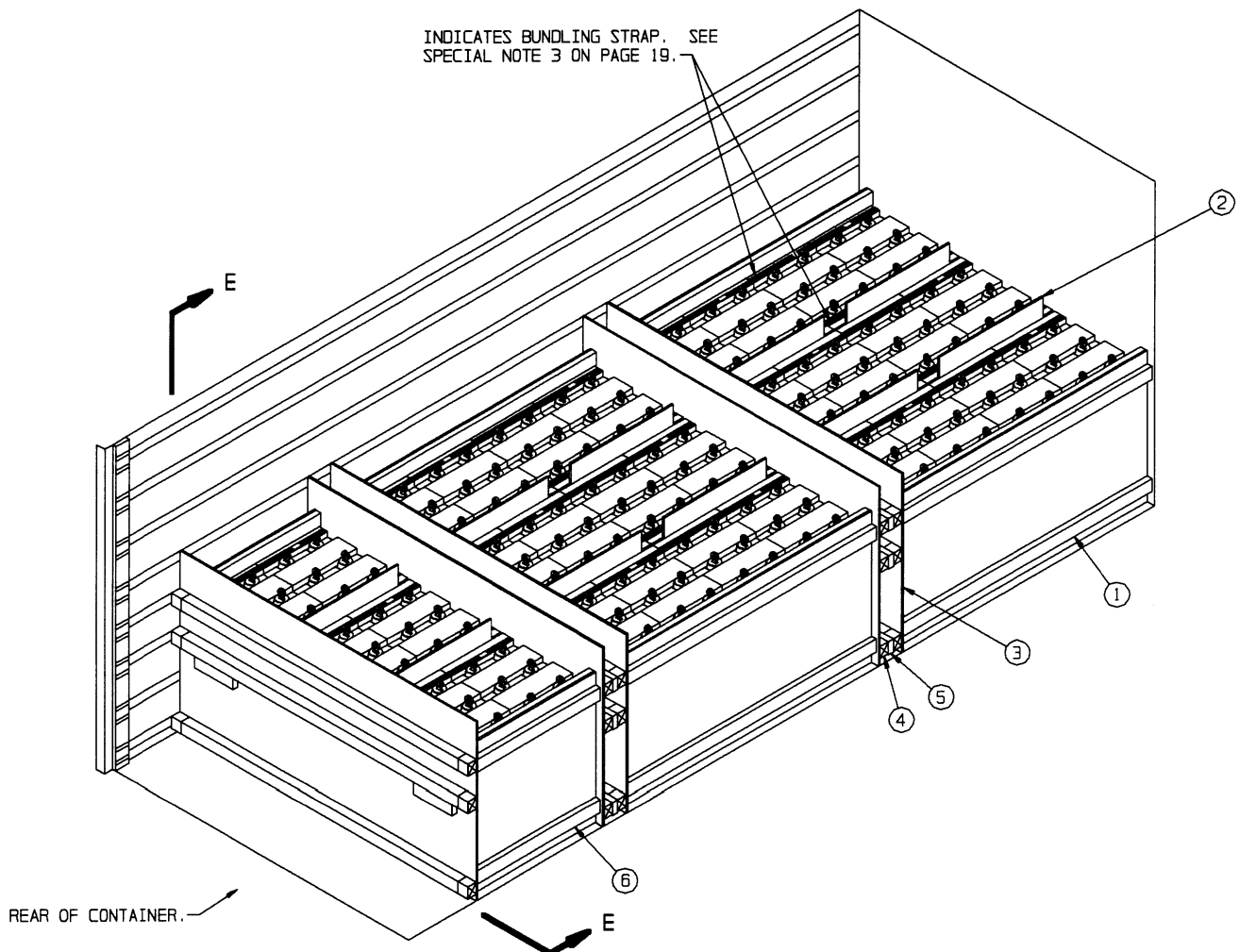


**TYPICAL SEPARATOR GATE 2**

SEE "DIMENSION CHART C" AT RIGHT.

DIMENSION CHART C		
	A	B
SEPARATOR GATE "B"	44"	39"
SEPARATOR GATE "C"	44"	39"
SEPARATOR GATE "F"	44"	37"
SEPARATOR GATE "G"	44"	37"
SEPARATOR GATE "H"	34"	29-1/2"
SEPARATOR GATE "J"	34"	29-1/2"

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 3 ON PAGE 19.

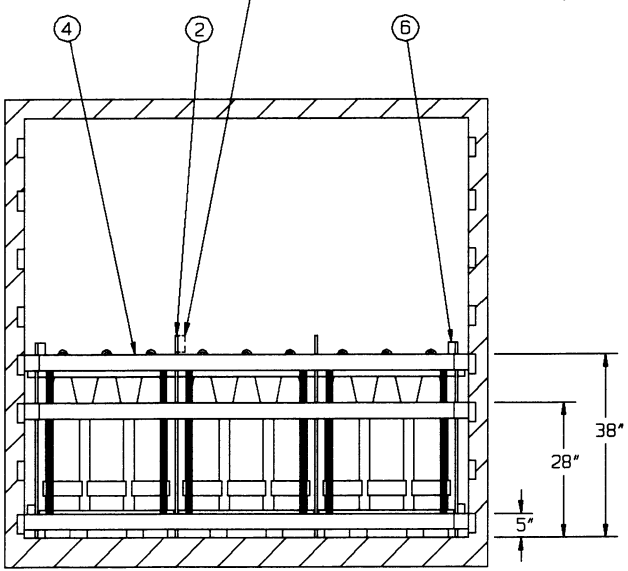


**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY E (4 REQD). SEE THE DETAIL ON PAGE 22.
- ② SEPARATOR D (10 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" PAGE 10.
- ③ LOAD BEARING GATE B (5 REQD). SEE THE DETAIL ON PAGE 17.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION E-E" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ SIDE FILL ASSEMBLY F (2 REQD). SEE THE DETAIL ON PAGE 22.

SEE SPECIAL NOTE 4 ON PAGE 19.



**SECTION E-E**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "E", TEN SEPARATORS "D", FIVE LOAD BEARING GATES "B", AND TWO SIDE FILL ASSEMBLIES "F".
2. INSTALL TWO SIDE FILL ASSEMBLIES "E".
3. LOAD 12 PALLET UNITS AND INSTALL FOUR SEPARATORS "D".
4. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "B".
6. REPEAT STEPS 2 THRU 5.
7. INSTALL TWO SIDE FILL ASSEMBLIES "F".
8. LOAD SIX PALLET UNITS AND INSTALL TWO SEPARATORS "D".
9. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

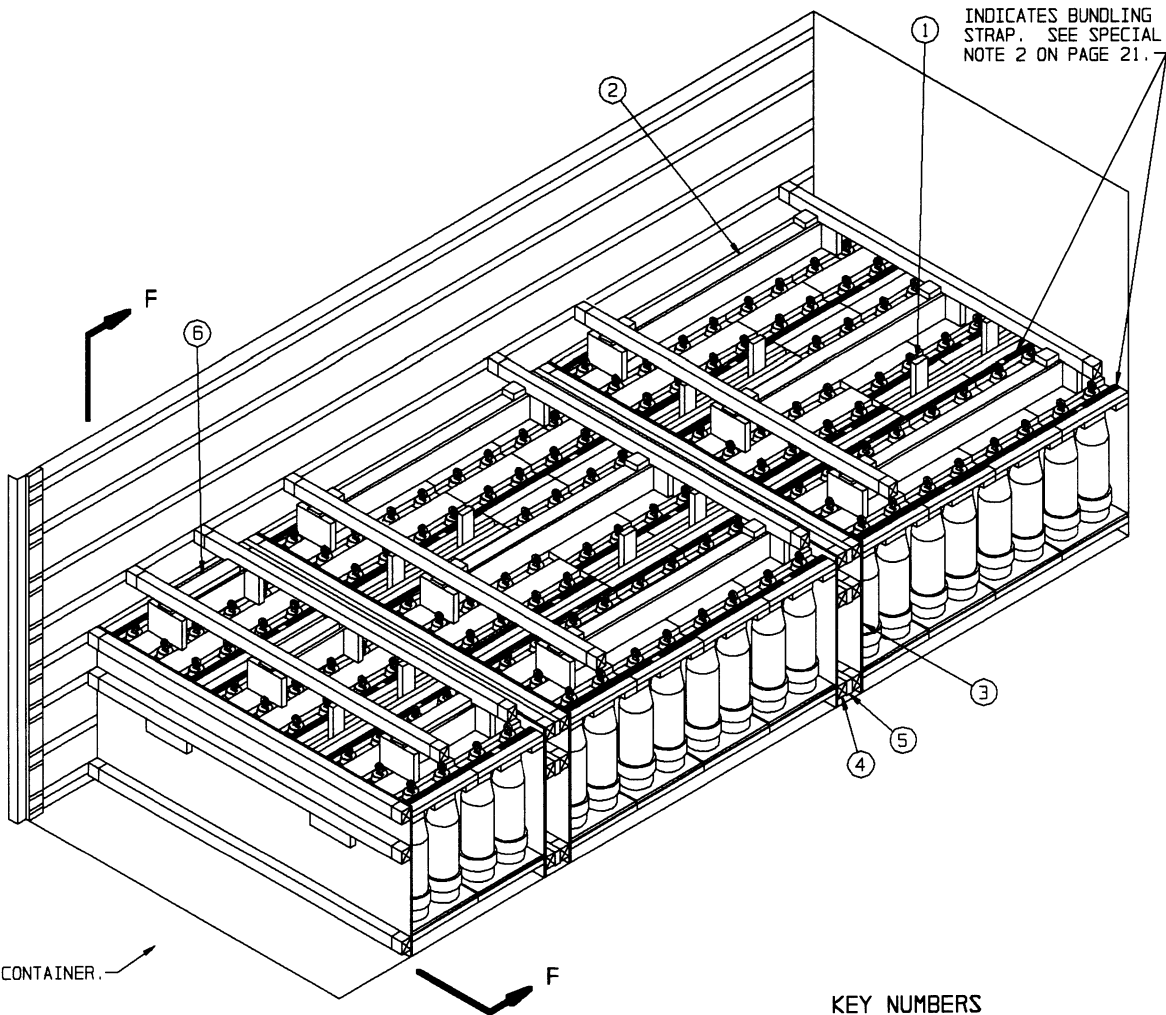
1. THE LOAD AS DEPICTED ON PAGE 18 IS FOR PALLET UNITS OF SHORT 8" SEPARATE LOADING PROJECTILES.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, AND ③, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 18, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 18.
4. WHEN LOADING PALLET UNITS WITHOUT BUNDLING STRAPS, A RETAINER PIECE MUST BE APPLIED TO ONE OF THE TWO SEPARATORS "D" IN EACH ROW, OVER THE CENTER PALLET UNITS. SEE THE "SECTION E-E" VIEW ON PAGE 18 AND THE "TYPICAL SEPARATOR DETAIL" ON PAGE 10.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 3"	40	20
2" X 4"	152	102
NAILS	NO. REQD	POUNDS
6d (2")	180	1-1/4
10d (3")	60	1
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	348.0 SQ FT REQD	478.5 LBS
CROSS MEMBER		15 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	30	37,680 LBS
DUNNAGE		726 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		44,106 LBS (APPROX)

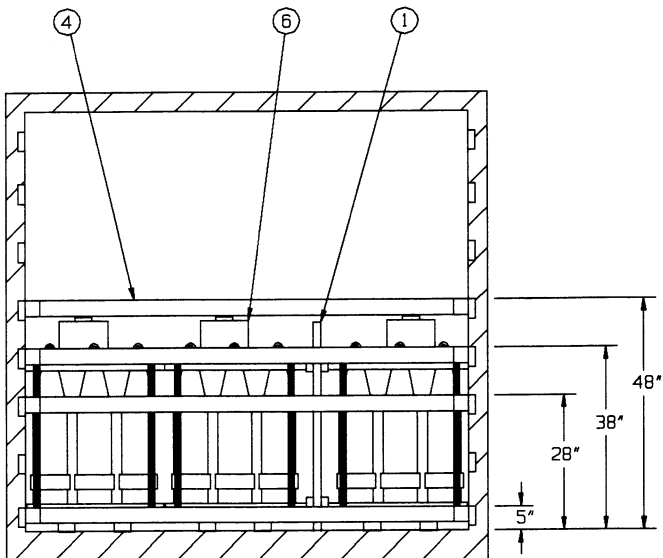


① INDICATES BUNDLING STRAP, SEE SPECIAL NOTE 2 ON PAGE 21.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SEPARATOR GATE D (5 REQD). SEE THE DETAIL ON PAGE 23.
- ② HOLD-DOWN ASSEMBLY D (6 REQD). SEE THE DETAIL ON PAGE 23. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF FOUR PALLET UNITS IN LOAD BAYS AS SHOWN ABOVE.
- ③ LOAD BEARING GATE A (5 REQD). SEE THE DETAIL ON PAGE 11.
- ④ CROSS MEMBER (21 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 48" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION F-F" DETAIL BELOW, GENERAL NOTE "L" ON PAGE 2, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ HOLD-DOWN ASSEMBLY E (3 REQD). SEE THE DETAIL ON PAGE 23. POSITION ON THE CENTER OF THE PALLET COVERS OF EACH ROW OF TWO PALLET UNITS IN THE LAST LOAD BAY AS SHOWN ABOVE.



**SECTION F-F**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FIVE SEPARATOR GATES "D", SIX HOLD-DOWN ASSEMBLIES "D", FIVE LOAD BEARING GATES "A", AND THREE HOLD-DOWN ASSEMBLIES "E".
2. LOAD 12 PALLET UNITS AND INSTALL TWO SEPARATOR GATE "D", ENSURING THAT THE SEPARATOR GATES "D" ARE ON OPPOSITE SIDES OF THE CONTAINER.
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "D" AND TWO CROSS MEMBERS.
4. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "A".
6. REPEAT STEPS 2 THRU 5.
7. LOAD SIX PALLET UNITS AND INSTALL ONE SEPARATOR GATE "D".
8. INSTALL THREE HOLD-DOWN ASSEMBLIES "E" AND TWO CROSS MEMBERS.
9. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS.
10. INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 20 IS FOR PALLET UNITS OF SHORT 8" SEPARATE LOADING PROJECTILES.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 20, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 20.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	38	13
2" X 4"	160	107
2" X 8"	51	68
NAILS	NO. REQD	POUNDS
6d (2")	84	1/2
10d (3")	167	2-3/4
WIRE, NO. 14 GAGE	----- 27' REQD	----- 1/2 LB
PLYWOOD, 1/2"	----- 120.0 SQ FT REQD	----- 165.0 LBS
CROSS MEMBER	-----	----- 21 REQD

**LOAD AS SHOWN**

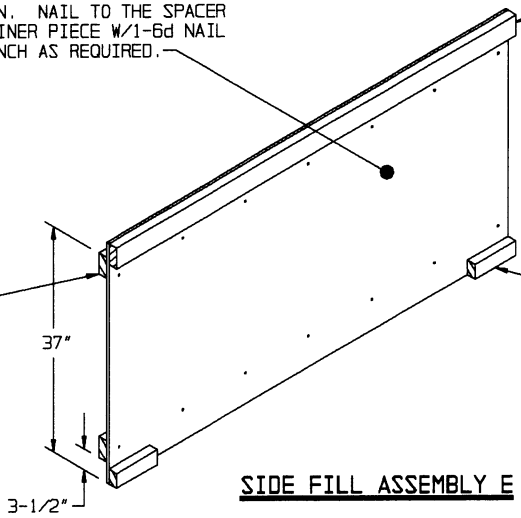
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	----- 30	----- 37,680 LBS
DUNNAGE	-----	----- 545 LBS
CONTAINER	-----	----- 5,700 LBS
TOTAL WEIGHT		----- 43,925 LBS (APPROX)

PLYWOOD, 1/2" X 40-1/2" X 6'-5" (1 REQD).  
 NAIL TO THE HOLD-DOWN PIECES W/2-6d NAILS  
 AT EACH LOCATION. NAIL TO THE SPACER  
 PIECES AND RETAINER PIECE W/1-6d NAIL  
 EVERY 12". CLINCH AS REQUIRED.

SPACER PIECE, 2" X 4"  
 X 6'-5" (2 REQD).

RETAINER PIECE, 2" X 4"  
 X 6'-5" (1 REQD).

HOLD-DOWN, 2" X 3" X 8" (2 REQD).



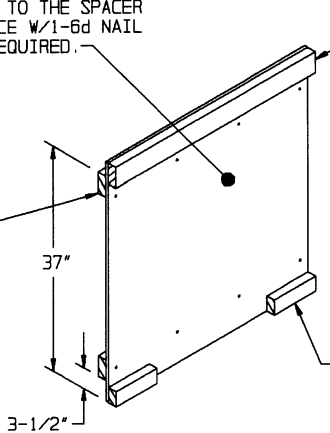
**SIDE FILL ASSEMBLY E**

PLYWOOD, 1/2" X 40-1/2" X 38" (1 REQD).  
 NAIL TO THE HOLD-DOWN PIECES W/2-6d NAILS  
 AT EACH LOCATION. NAIL TO THE SPACER  
 PIECES AND RETAINER PIECE W/1-6d NAIL  
 EVERY 12". CLINCH AS REQUIRED.

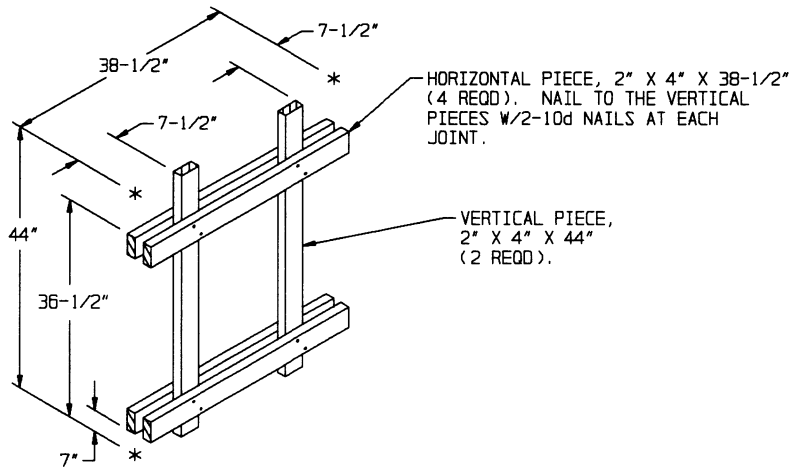
SPACER PIECE, 2" X 4"  
 X 38" (2 REQD).

RETAINER PIECE, 2" X 4"  
 X 38" (1 REQD).

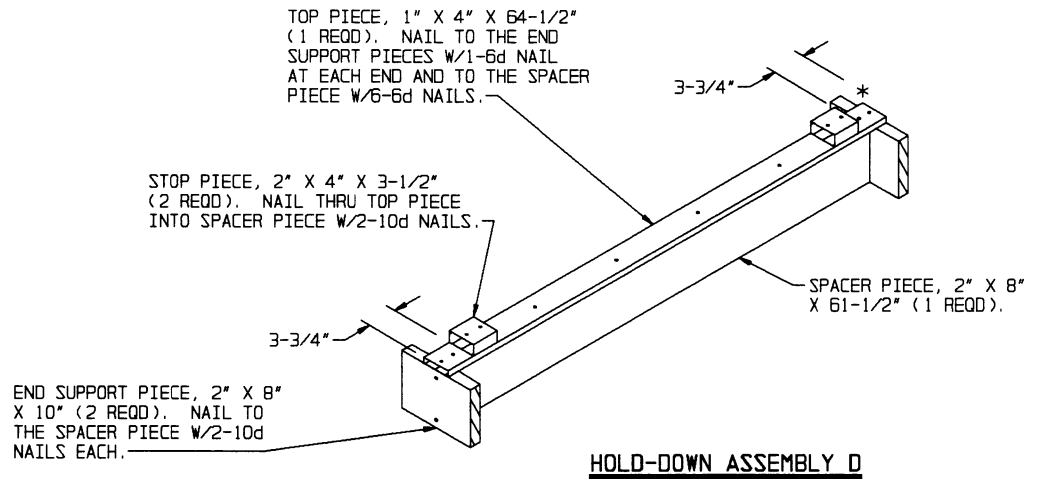
HOLD-DOWN, 2" X 3" X 8" (2 REQD).



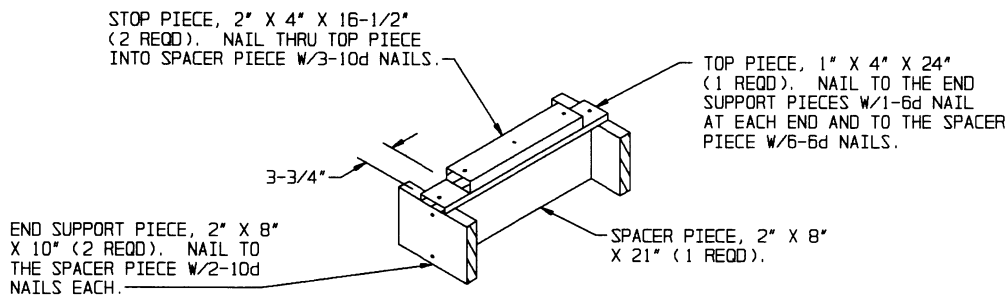
**SIDE FILL ASSEMBLY F**



**SEPARATOR GATE B**

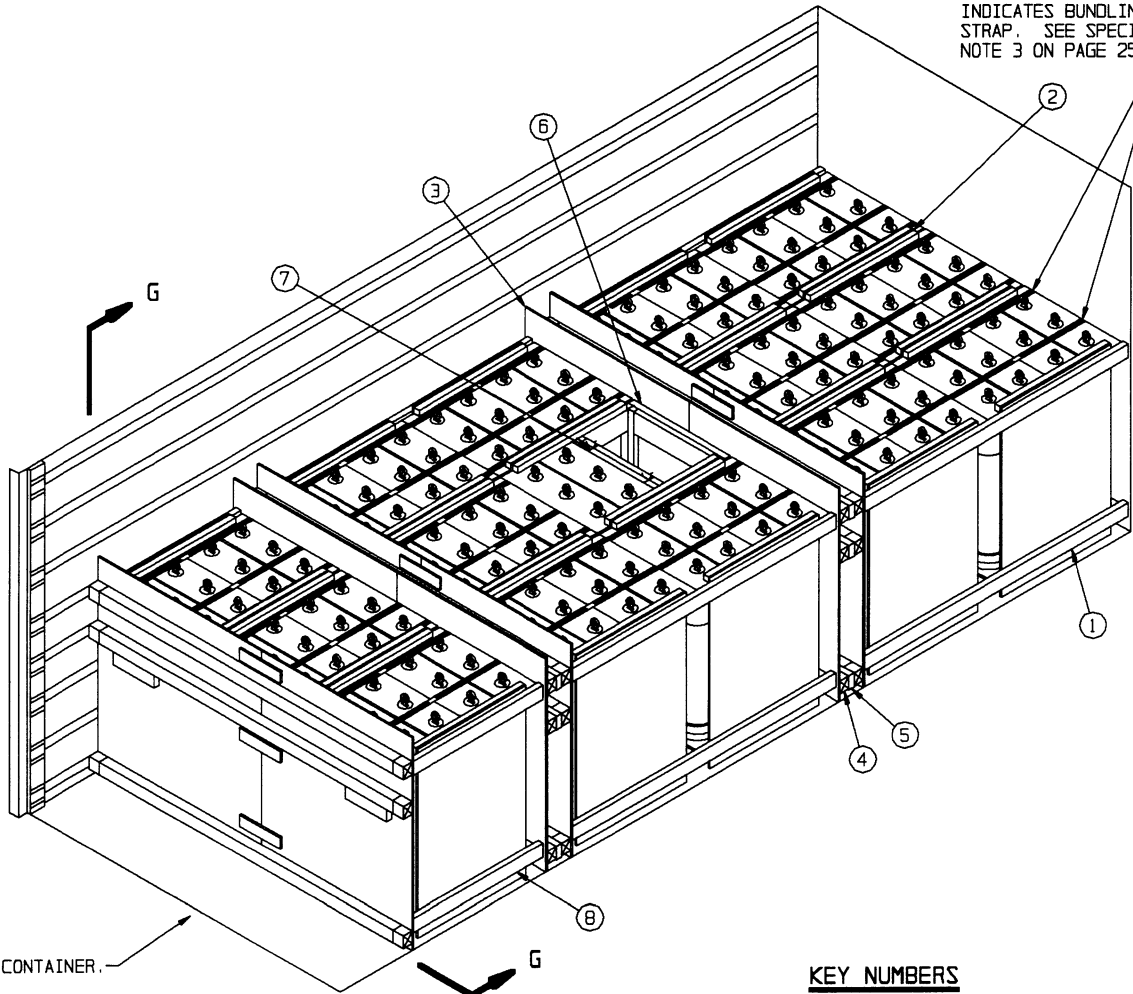


**HOLD-DOWN ASSEMBLY D**



**HOLD-DOWN ASSEMBLY E**

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 3 ON PAGE 25.

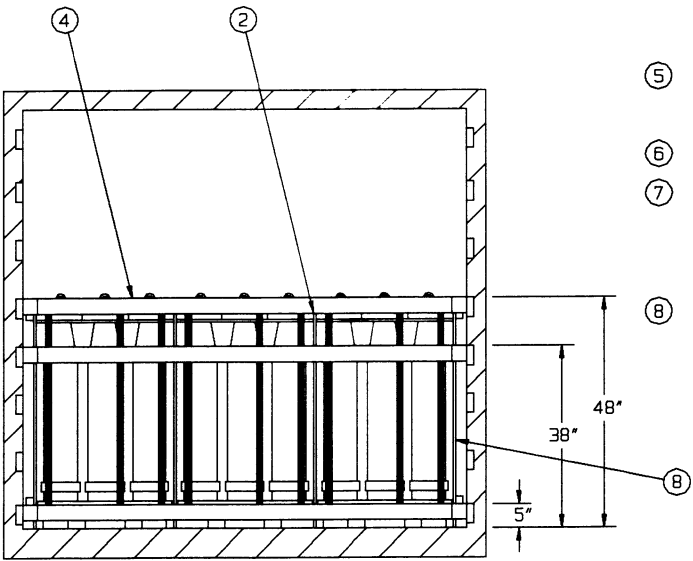


REAR OF CONTAINER.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY G (4 REQD). SEE THE DETAIL ON PAGE 28.
- ② SEPARATOR E (10 REQD). SEE THE DETAIL ON PAGE 29.
- ③ LOAD BEARING GATE C (5 REQD). SEE THE DETAIL ON PAGE 28. NOTE: IF DESIRED, THE "ALTERNATIVE LOAD BEARING GATE C" ON PAGE 29 MAY BE USED IN LIEU OF THE LOAD BEARING GATE SHOWN ABOVE.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 48" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION G-G" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ OMITTED-UNIT ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 44.
- ⑦ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (2 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE OMITTED UNIT ASSEMBLY AND THE PALLET UNITIZING STRAP. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO THE OMITTED UNIT ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE OR WITH A STRAP STAPLE.
- ⑧ SIDE FILL ASSEMBLY H (2 REQD). SEE THE DETAIL ON PAGE 28.



**SECTION G-G**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.



**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "G", TEN SEPARATORS "E", FIVE LOAD BEARING GATES "C", TWO SIDE FILL ASSEMBLIES "H", AND ONE OMITTED UNIT ASSEMBLY.
2. INSTALL TWO SIDE FILL ASSEMBLIES "G".
3. LOAD 12 PALLET UNITS AND INSTALL FOUR SEPARATORS "E".
4. INSTALL ONE LOAD BEARING GATE "C" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "C".
6. REPEAT STEPS 2 THRU 5, INSTALLING ONE OMITTED UNIT ASSEMBLY WITH TIE WIRE IN PLACE ON ONE OF THE FOUR PALLET UNITS IN THE CENTER ROW, AS SHOWN ON PAGE 24.
7. INSTALL TWO SIDE FILL ASSEMBLIES "H".
8. LOAD SIX PALLET UNITS AND INSTALL TWO SEPARATORS "E".
9. INSTALL ONE LOAD BEARING GATE "C" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

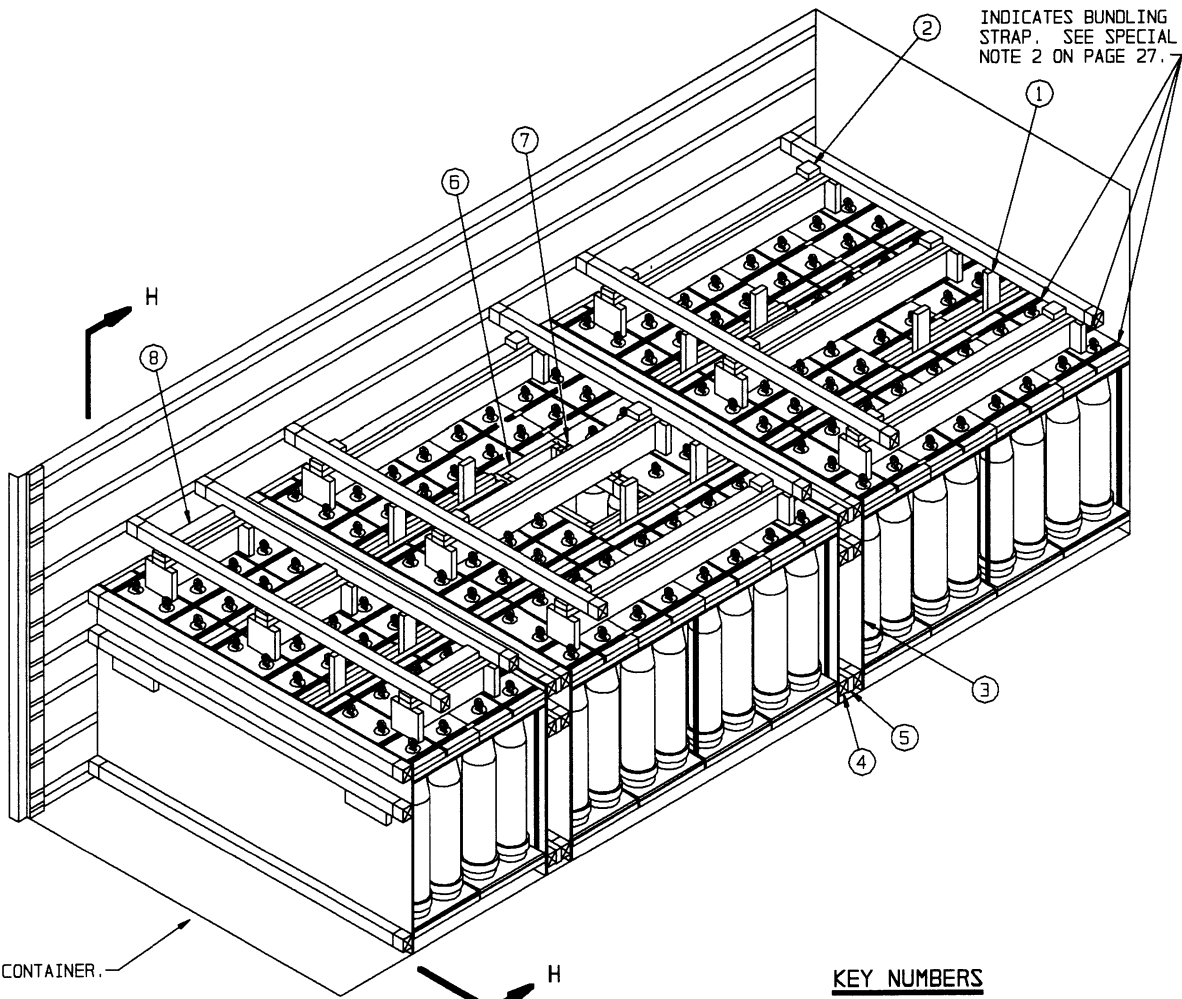
1. THE LOAD AS DEPICTED ON PAGE 24 IS FOR PALLET UNITS OF TALL 8" SEPARATE LOADING PROJECTILES.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, AND ③, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 24. UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 24.
4. IF THE TOTAL WEIGHT OF 30 PALLET UNITS IS LESS THAN 38,335 POUNDS, THE OMITTED UNIT ASSEMBLY MAY BE OMITTED AND ONE MORE PALLET UNIT MAY BE LOADED. ENSURE THAT THE TOTAL WEIGHT OF THE LOADED MILVAN IS NO GREATER THAN 44,800 POUNDS.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	96	32
2" X 3"	45	23
2" X 4"	114	76
2" X 6"	23	23
NAILS	NO. REQD	POUNDS
6d (2")	300	2
10d (3")	96	1-1/2
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	370.0 SQ FT REQD	508.8 LBS
CROSS MEMBER		15 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	29	37,584 LBS
DUNNAGE		821 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		44,105 LBS (APPROX)

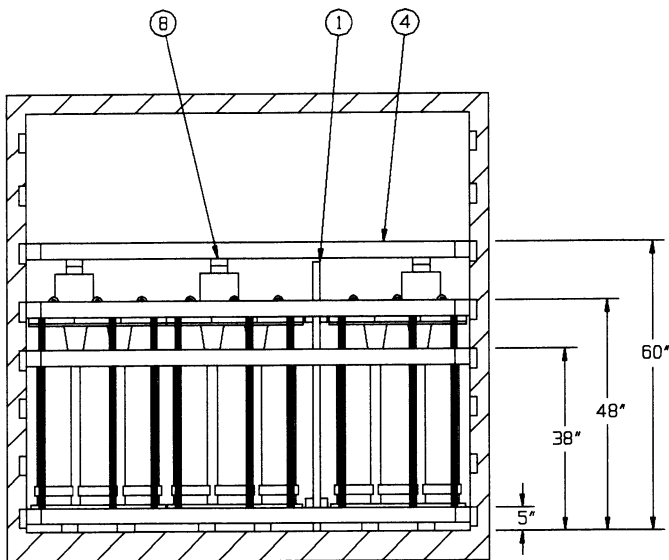


REAR OF CONTAINER.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SEPARATOR GATE E (5 REQD). SEE THE DETAIL ON PAGE 30.
- ② HOLD-DOWN ASSEMBLY F (6 REQD). SEE THE DETAIL ON PAGE 31. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF FOUR PALLET UNITS IN THE LOAD BAYS AS SHOWN ABOVE.
- ③ LOAD BEARING GATE D (5 REQD). SEE THE DETAIL ON PAGE 30.
- ④ CROSS MEMBER (21 REQD). POSITION AT THE 5", 38" AND 48" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 60" HEIGHT FOR VERTICAL HOLD-DOWN. SEE "SECTION H-H" BELOW, GENERAL NOTE "L" ON PAGE 2, AND THE "FILL DETAIL AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ OMITTED UNIT ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 44.
- ⑦ TIE WIRE, NO. 14 GAGE WIRE, 24" LONG (2 REQD). INSTALL TO FORM A COMPLETE LOOP AROUND THE OMITTED UNIT ASSEMBLY AND THE PALLET UNITIZING STRAP. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO THE OMITTED UNIT ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE OR WITH A STRAP STAPLE.
- ⑧ HOLD-DOWN ASSEMBLY G (3 REQD). SEE THE DETAIL ON PAGE 31. POSITION ON THE CENTER OF THE PALLET COVERS OF EACH ROW OF TWO PALLET UNITS IN THE LAST LOAD BAY AS SHOWN ABOVE.



**SECTION H-H**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FIVE SEPARATOR GATES "E", SIX HOLD-DOWN ASSEMBLIES "G", FIVE LOAD BEARING GATES "D", ONE OMITTED UNIT ASSEMBLY, AND THREE HOLD-DOWN ASSEMBLIES "H".
2. LOAD 12 PALLET UNITS AND INSTALL TWO SEPARATOR GATE "E", ENSUREING THAT THE SEPARATOR GATES "E" ARE ON OPPOSITE SIDES OF THE CONTAINER.
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "G" AND TWO CROSS MEMBERS.
4. INSTALL ONE LOAD BEARING GATE "D" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "D".
6. REPEAT STEPS 2 THRU 5, INSTALLING ONE OMITTED UNIT ASSEMBLY WITH TIE WIRE IN PLACE OF ONE OF THE FOUR PALLET UNITS IN THE CENTER ROW, AS SHOWN ON PAGE 26.
7. LOAD SIX PALLET UNITS AND INSTALL ONE SEPARATOR GATE "E".
8. INSTALL ONE LOAD BEARING GATE "D" AGAINST ALREADY LOADED PALLET UNITS.
9. INSTALL THREE CROSS MEMBERS.

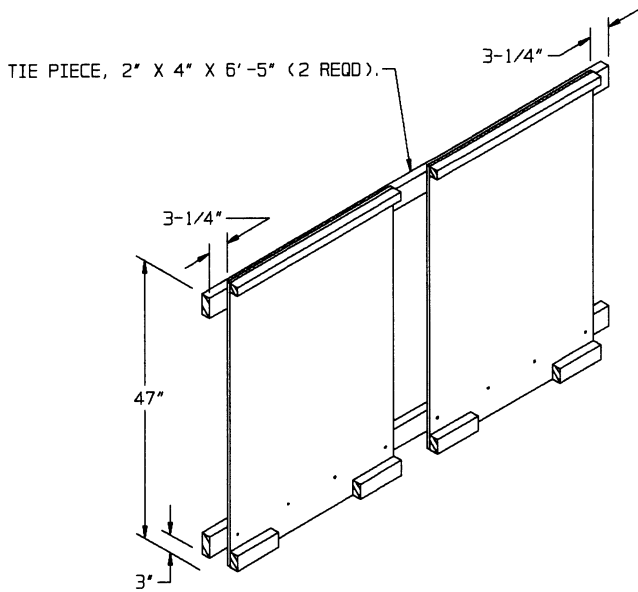
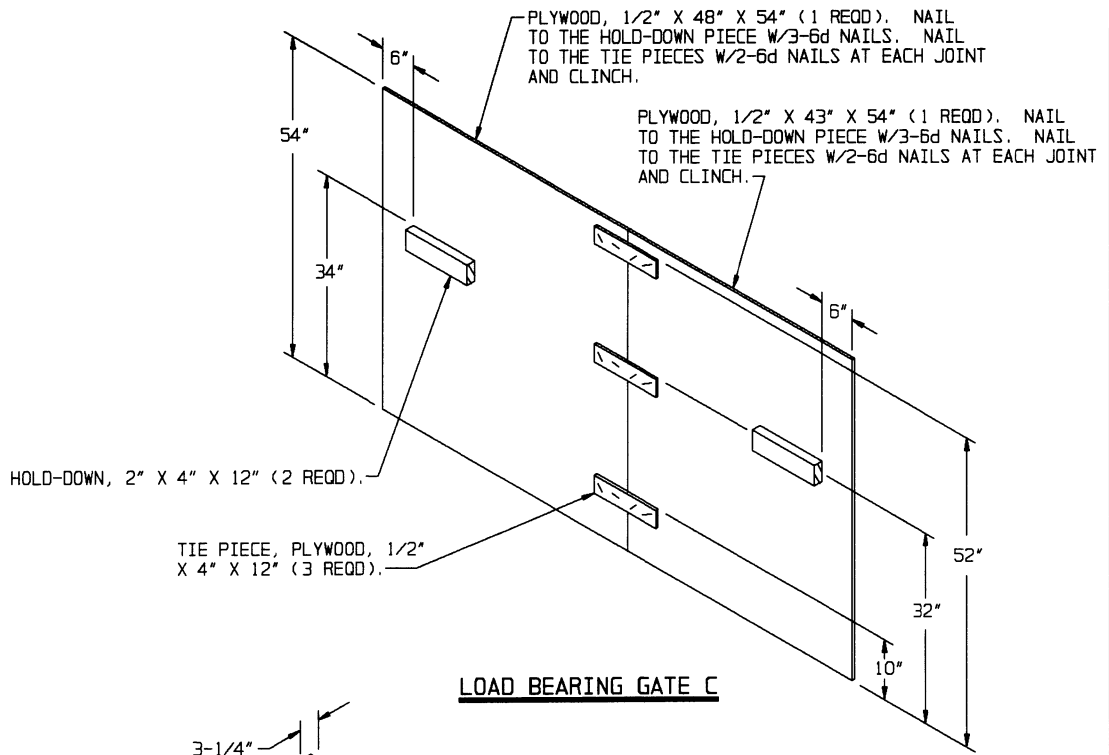
**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 26 IS FOR PALLET UNITS OF TALL 8" SEPARATE LOADING PROJECTILES.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 26, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 26.
3. IF THE TOTAL WEIGHT OF 30 PALLET UNITS IS LESS THAN 38,400 POUNDS, THE OMITTED UNIT ASSEMBLY MAY BE OMITTED AND ONE MORE PALLET UNIT MAY BE LOADED. ENSURE THAT THE TOTAL WEIGHT OF THE LOADED MILVAN IS NO GREATER THAN 44,800 POUNDS.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 2"	16	5
2" X 4"	266	177
2" X 6"	23	23
2" X 8"	48	64
NAILS	NO. REQD	POUNDS
6d (2")	30	1/4
10d (3")	311	5
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	151.7 SQ FT REQD	208.6 LBS
CROSS MEMBER	21 REQD	

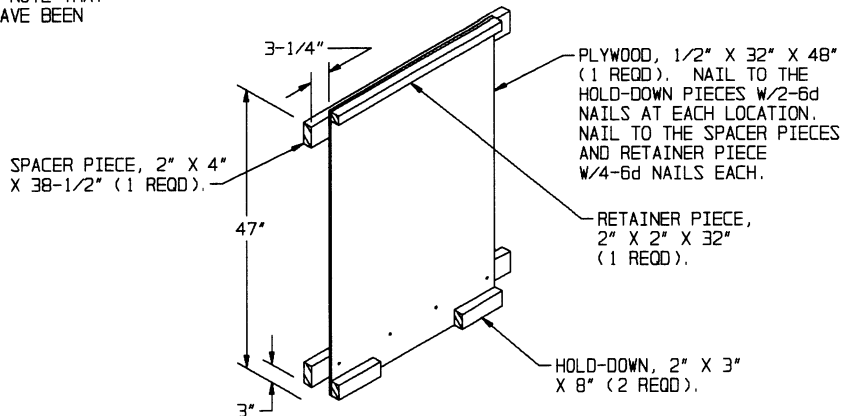
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	29	37,584 LBS
DUNNAGE		752 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		44,036 LBS (APPROX)



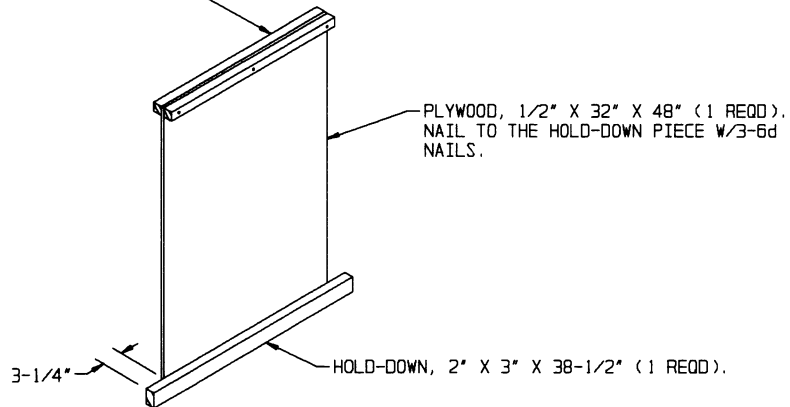
**SIDE FILL ASSEMBLY G**

THIS SIDE FILL ASSEMBLY IS CONSTRUCTED USING TWO SIDE FILL ASSEMBLIES "H" DEPICTED BELOW. NOTE THAT THE TWO SPACER PIECES 38-1/2" IN LENGTH HAVE BEEN REPLACED WITH TWO TIE PIECES 6'-5" LONG.

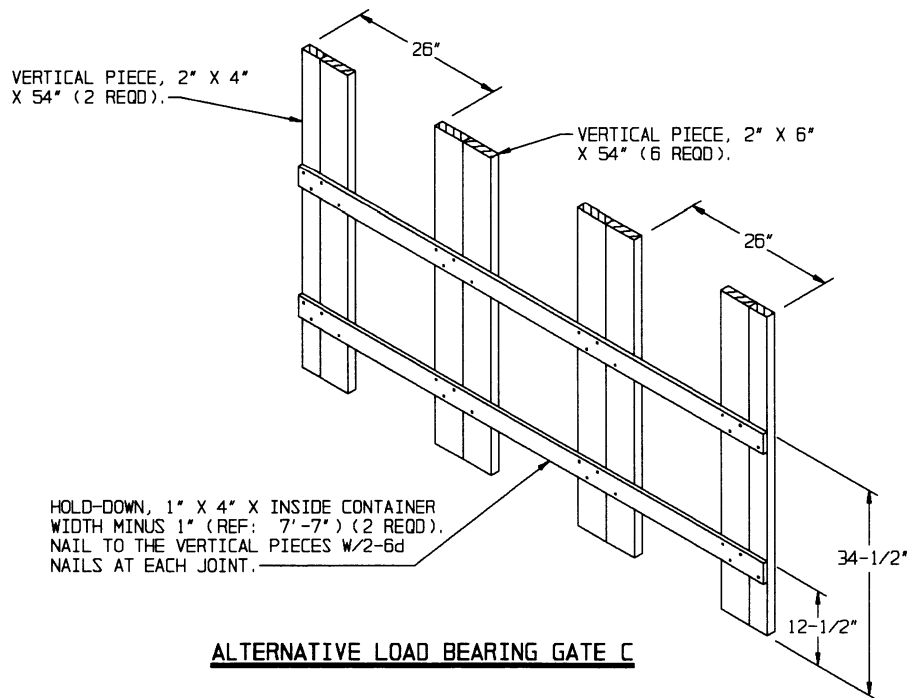


**SIDE FILL ASSEMBLY H**

RETAINER PIECE, 2" X 2" X 32"  
(2 REQD). NAIL THRU PLYWOOD  
INTO RETAINER PIECE ON OPPOSITE  
SIDE W/3-10d NAILS.



**SEPARATOR E**

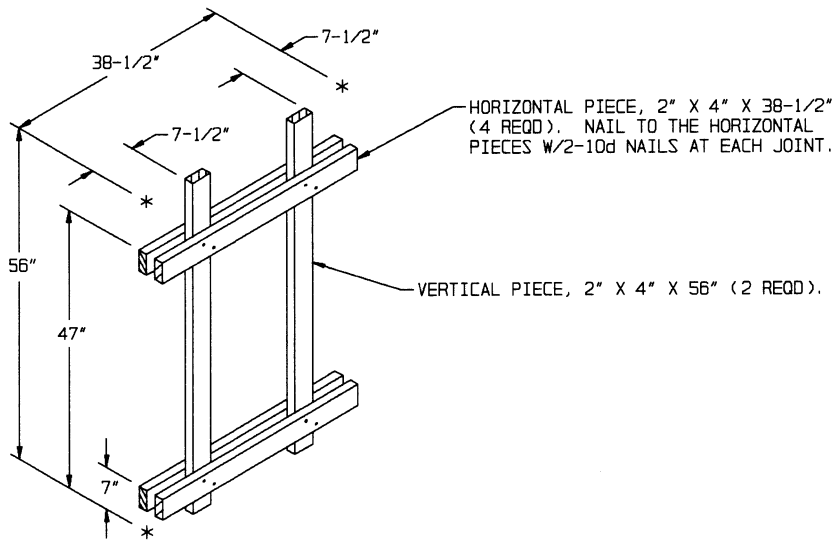


**ALTERNATIVE LOAD BEARING GATE C**

HOLD-DOWN BLOCK, 2" X 4" X 12"  
(2 REOD).

PLYWOOD, 1/2" X 48" BY INSIDE CONTAINER WIDTH  
MINUS 1" (REF: 7'-7") (1 REOD). NAIL TO THE  
HOLD-DOWN BLOCKS W/3-6d NAILS AT EACH LOCATION.  
CLINCH AS REQUIRED.

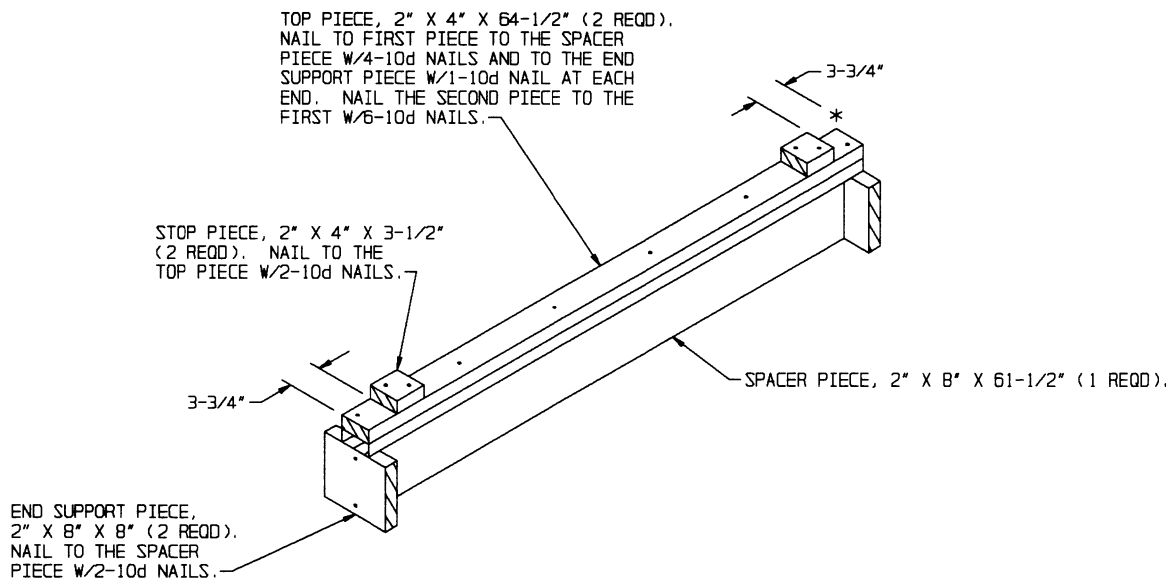
**LOAD BEARING GATE D**



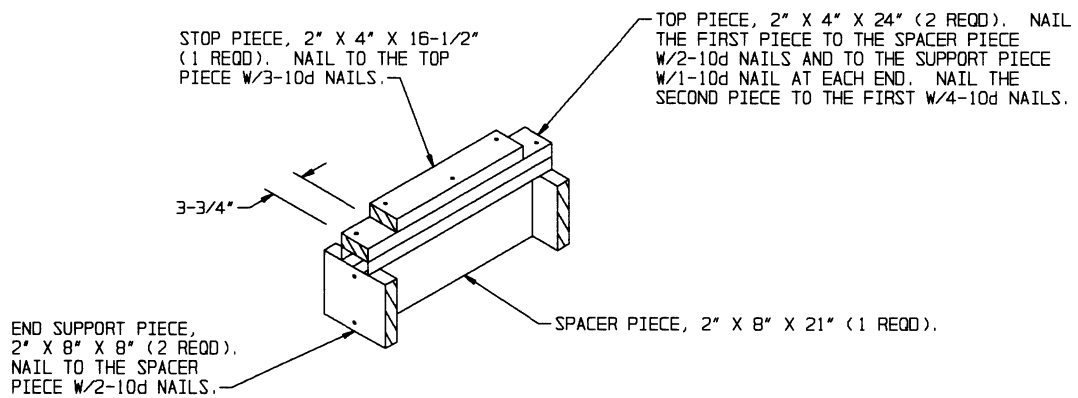
HORIZONTAL PIECE, 2" X 4" X 38-1/2"  
(4 REOD). NAIL TO THE HORIZONTAL  
PIECES W/2-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 4" X 56" (2 REOD).

**SEPARATOR GATE E**

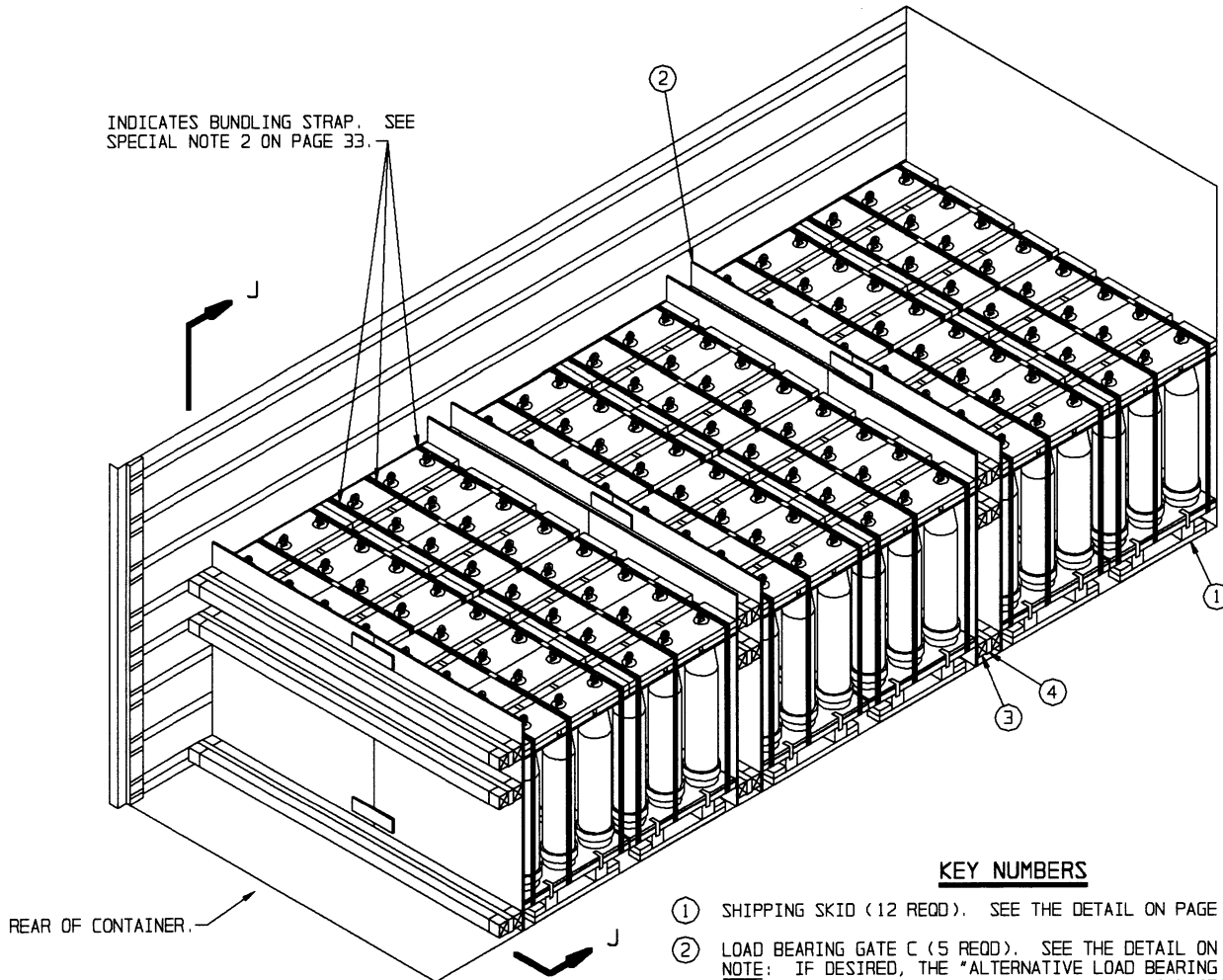


**HOLD-DOWN ASSEMBLY F**



**HOLD-DOWN ASSEMBLY G**

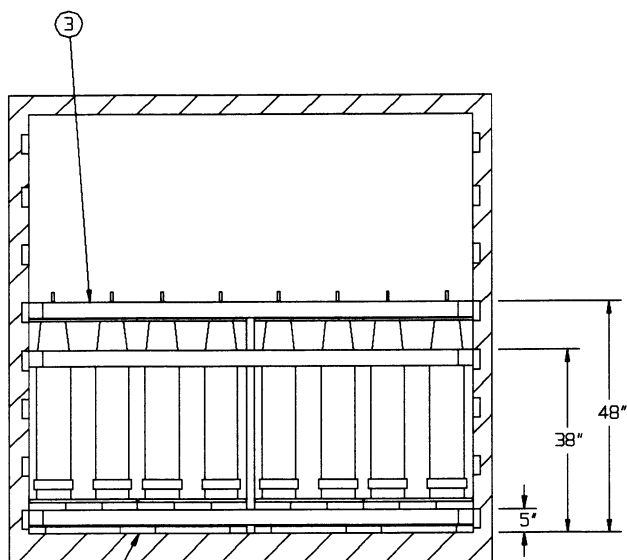
INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 33.



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SHIPPING SKID (12 REQD). SEE THE DETAIL ON PAGE 33.
- ② LOAD BEARING GATE C (5 REQD). SEE THE DETAIL ON PAGE 28. NOTE: IF DESIRED, THE "ALTERNATIVE LOAD BEARING GATE E" ON PAGE 29 MAY BE USED IN LIEU OF THE LOAD BEARING GATE SHOWN ABOVE.
- ③ CROSS MEMBER (18 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION J-J" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ④ FILL MATERIAL (9 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.



① **SECTION J-J**  
LOAD BEARING GATE, PIECE MARKED ②, HAS BEEN OMITTED FOR CLARITY.

**8" PROJECTILE, 6/LARGE WOODEN PALLET (METHOD 1)**

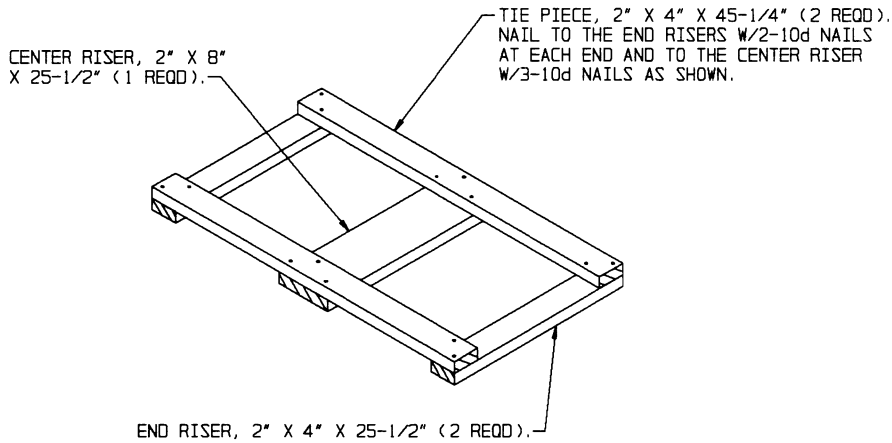


**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

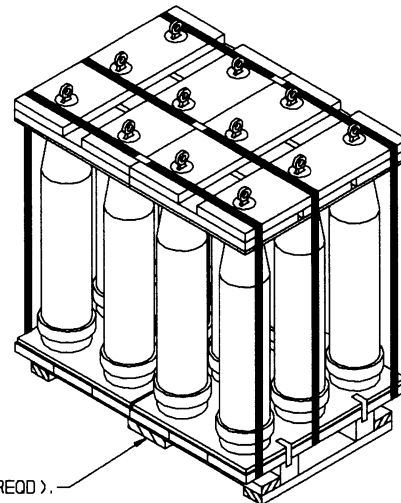
1. PREFABRICATE 12 SHIPPING SKIDS AND FIVE LOAD BEARING GATES "C".
2. SET TWO BUNDLED PALLET UNITS ON A SHIPPING SKID AND LOAD INTO THE CONTAINER.
3. REPEAT STEP 2 THREE TIMES.
4. INSTALL ONE LOAD BEARING GATE "C" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "C".
6. REPEAT STEPS 2 THRU 5.
7. REPEAT STEPS 2 THRU 4 AND INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 32 IS FOR 8" SEPARATE LOADING PROJECTILES ON LARGE WOODEN PALLETS.
2. PALLET UNITS MUST BE BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO FOR SHIPMENT IN THE CONFIGURATION DEPICTED ON PAGE 32. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 32, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES.



**SHIPPING SKID**



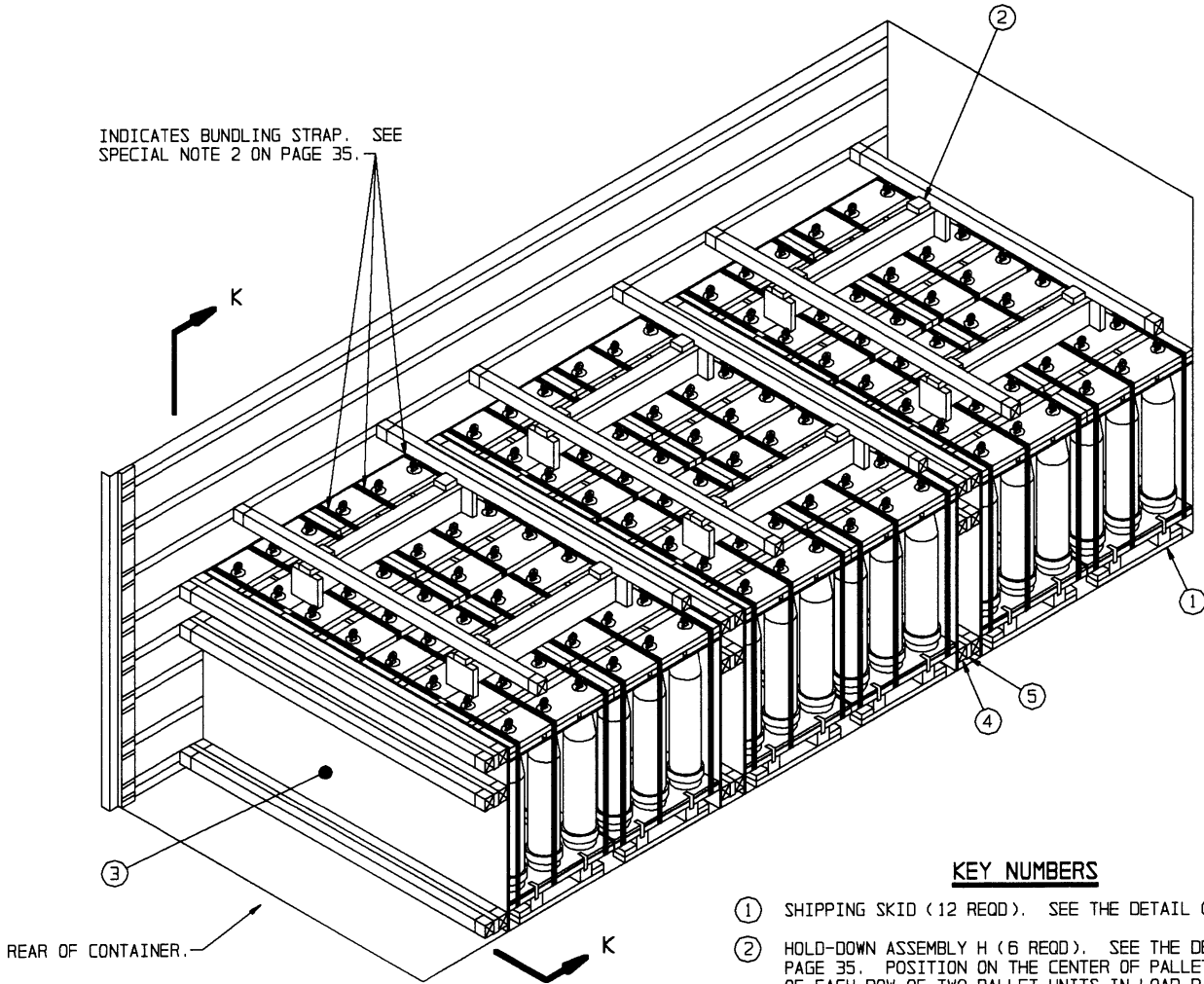
**PALLET UNITS ON SHIPPING SKID**

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	220	73
2" X 8"	26	35
NAILS	NO. REQD	POUNDS
6d (2")	90	1/2
10d (3")	195	3
WIRE, NO. 14 GAGE	41' REQD	3/4 LB
PLYWOOD, 1/2"	175.6 SQ FT REQD	241.5 LBS
CROSS MEMBER		18 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	24	31,224 LBS
DUNNAGE		462 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		37,386 LBS (APPROX)

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 35.

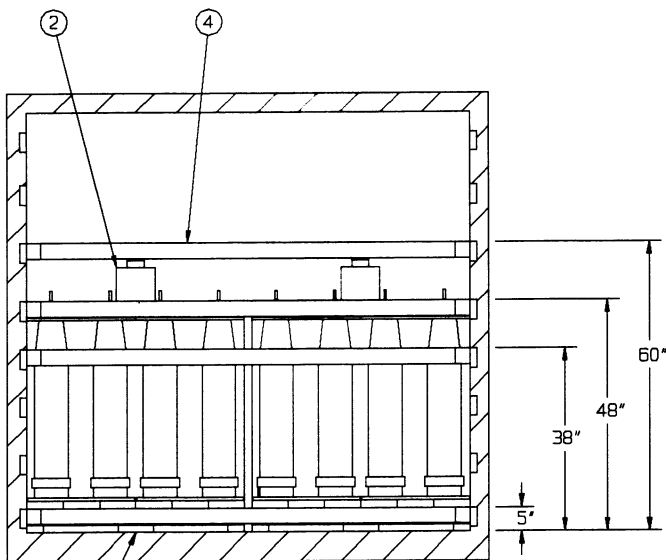


REAR OF CONTAINER.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SHIPPING SKID (12 REQD). SEE THE DETAIL ON PAGE 33.
- ② HOLD-DOWN ASSEMBLY H (6 REQD). SEE THE DETAIL ON PAGE 35. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF TWO PALLET UNITS IN LOAD BAYS AS SHOWN ABOVE.
- ③ LOAD BEARING GATE D (5 REQD). SEE THE DETAIL ON PAGE 30.
- ④ CROSS MEMBER (18 REQD). POSITION AT THE 5", 38" AND 48" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 60" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION K-K" VIEW BELOW, GENERAL NOTE "L" ON ON PAGE 2, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (9 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.



**SECTION K-K**  
LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

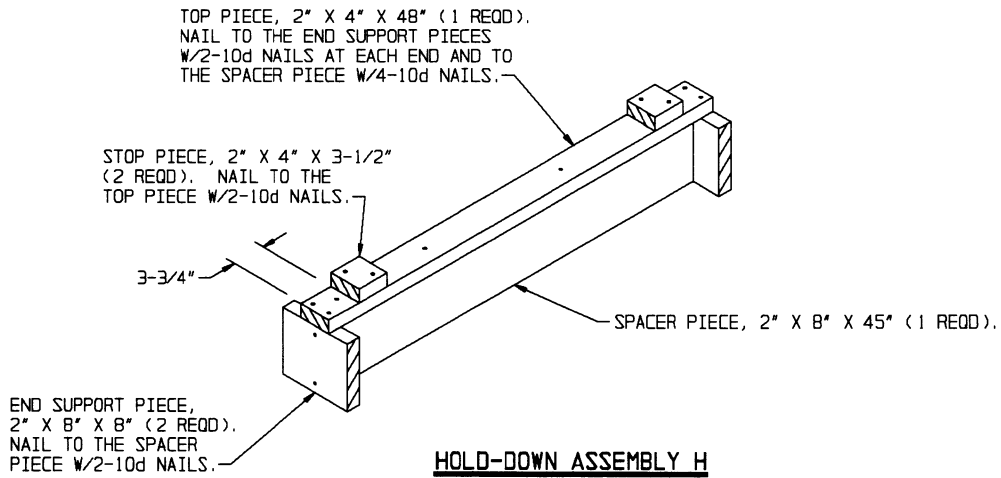
**8" PROJECTILE, 6/LARGE WOODEN PALLET (METHOD 2)**

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE 12 SHIPPING SKIDS, FIVE LOAD BEARING GATES "D", AND SIX HOLD-DOWN ASSEMBLIES "H".
2. SET TWO BUNDLED PALLET UNITS ON A SHIPPING SKID AND LOAD INTO THE CONTAINER.
3. REPEAT STEP 2 THREE TIMES.
4. INSTALL TWO HOLD-DOWN ASSEMBLIES "H" AND TWO CROSS MEMBERS.
5. INSTALL ONE LOAD BEARING GATE "D" AGAINST ALREADY LOADED PALLET UNITS.
6. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "D".
7. REPEAT STEPS 2 THRU 6.
8. REPEAT STEPS 2 THRU 5 AND INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL.

**SPECIAL NOTES:**

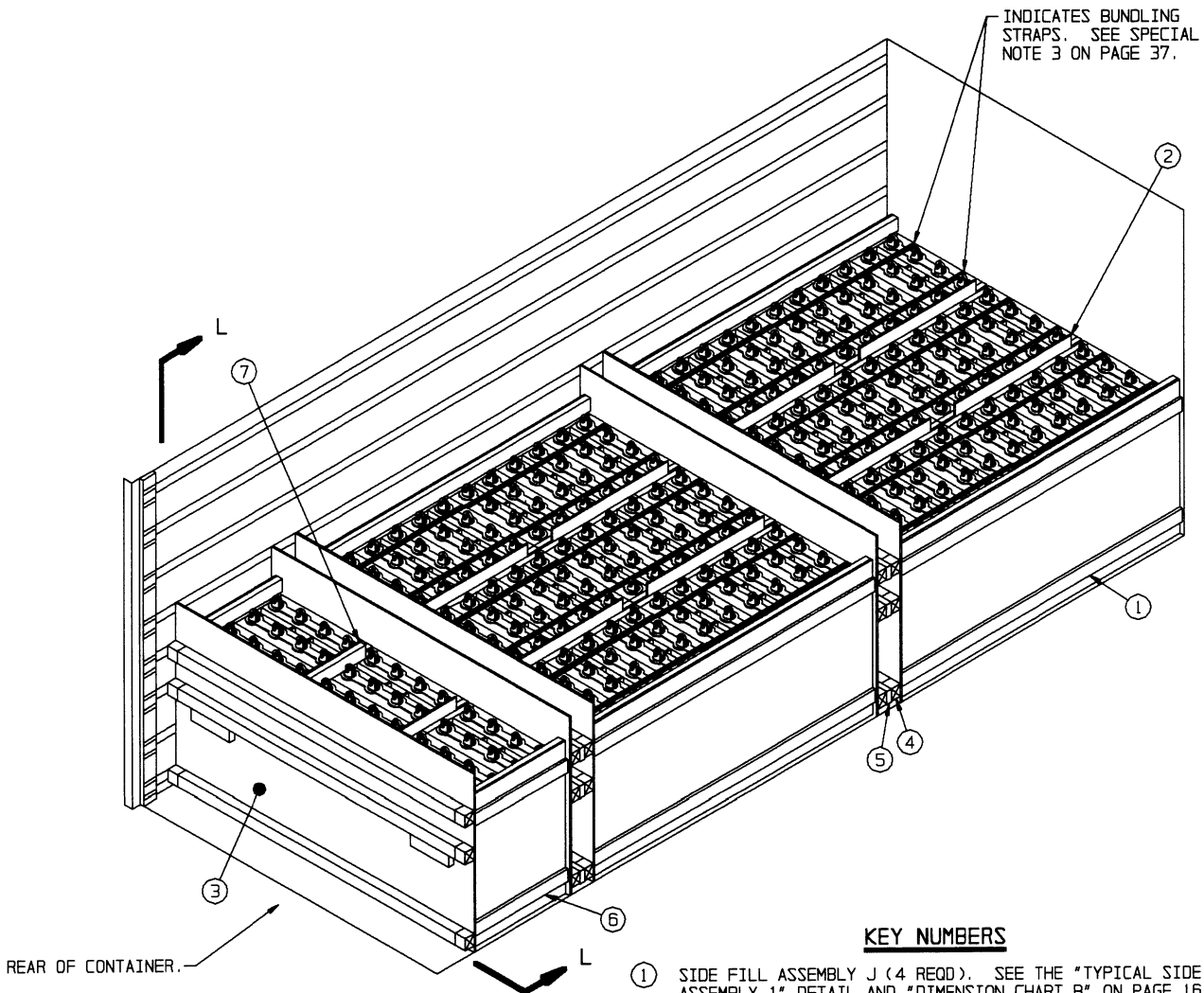
1. THE LOAD AS DEPICTED ON PAGE 34 IS FOR 8" SEPARATE LOADING PROJECTILES ON LARGE WOODEN PALLETS.
2. PALLET UNITS MUST BE BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF TWO FOR SHIPMENT IN THE CONFIGURATION DEPICTED ON PAGE 34. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 34, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES.



BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	248	165
2" X 8"	56	75
NAILS	NO. REQD	POUNDS
6d (2")	30	1/4
10d (3")	291	4
WIRE, NO. 14 GAGE	41' REQD	1 LB
PLYWOOD, 1/2"	151.6 SQ FT REQD	208.5 LBS
CROSS MEMBER		18 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	24	31,224 LBS
DUNNAGE		694 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		37,618 LBS (APPROX)

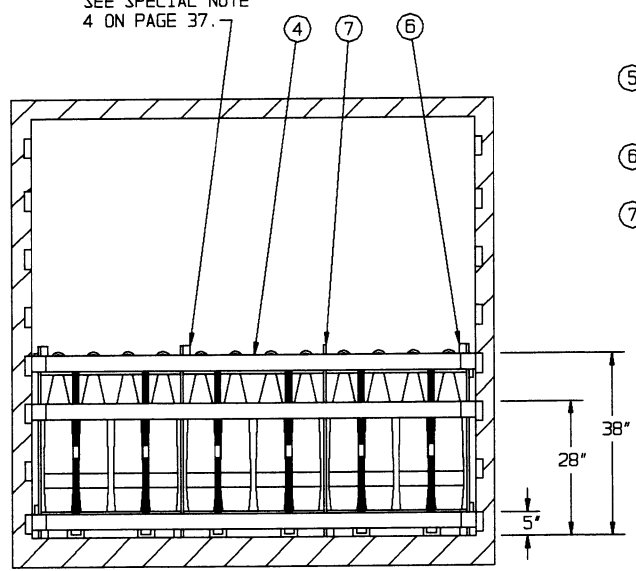


**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY J (4 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 1" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ② SEPARATOR F (8 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10.
- ③ LOAD BEARING GATE B (5 REQD). SEE THE DETAIL ON PAGE 17.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION L-L" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAILS ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ SIDE FILL ASSEMBLY K (2 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 2" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ⑦ SEPARATOR G (2 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10. NOTE THAT ONE RETAINER PIECE IS REQUIRED FOR ONE SEPARATOR GATE "G" BECAUSE THE REARMOIST TWO ROWS OF PALLET UNITS ARE NOT BUNDLED.

SEE SPECIAL NOTE 4 ON PAGE 37.



**SECTION L-L**

LOAD BEARING GATE, PIECE MARKED ③, HAS BEEN OMITTED FOR CLARITY.

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "J", EIGHT SEPARATORS "F", FIVE LOAD BEARING GATES "B", TWO SEPARATORS "G" (ONE WITH A RETAINER PIECE), AND TWO SIDE FILL ASSEMBLIES "K".
2. INSTALL TWO SIDE FILL ASSEMBLIES "J".
3. LOAD 18 PALLET UNITS AND INSTALL FOUR SEPARATORS "F".
4. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "B".
6. REPEAT STEPS 2 THRU 5.
7. INSTALL TWO SIDE FILL ASSEMBLIES "K".
8. LOAD SIX PALLET UNITS AND INSTALL TWO SEPARATORS "G".
9. INSTALL ONE LOAD BEARING GATE "B" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 36 IS FOR TALL 155MM SEPARATE LOADING PROJECTILES ON METAL PALLETS.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, ⑤, AND ⑦, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 36. UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 36.
4. WHEN LOADING PALLET UNITS WITHOUT BUNDLING STRAPS, A RETAINER PIECE MUST BE APPLIED TO ONE OF THE TWO SEPARATORS "F" OR "G" IN EACH ROW, OVER THE CENTER PALLET UNITS, AS SHOWN AT THE REAR OF THE LOAD ON PAGE 36. SEE THE "SECTION L-L" VIEW ON PAGE 36 AND THE "TYPICAL SEPARATOR DETAIL" ON PAGE 10.

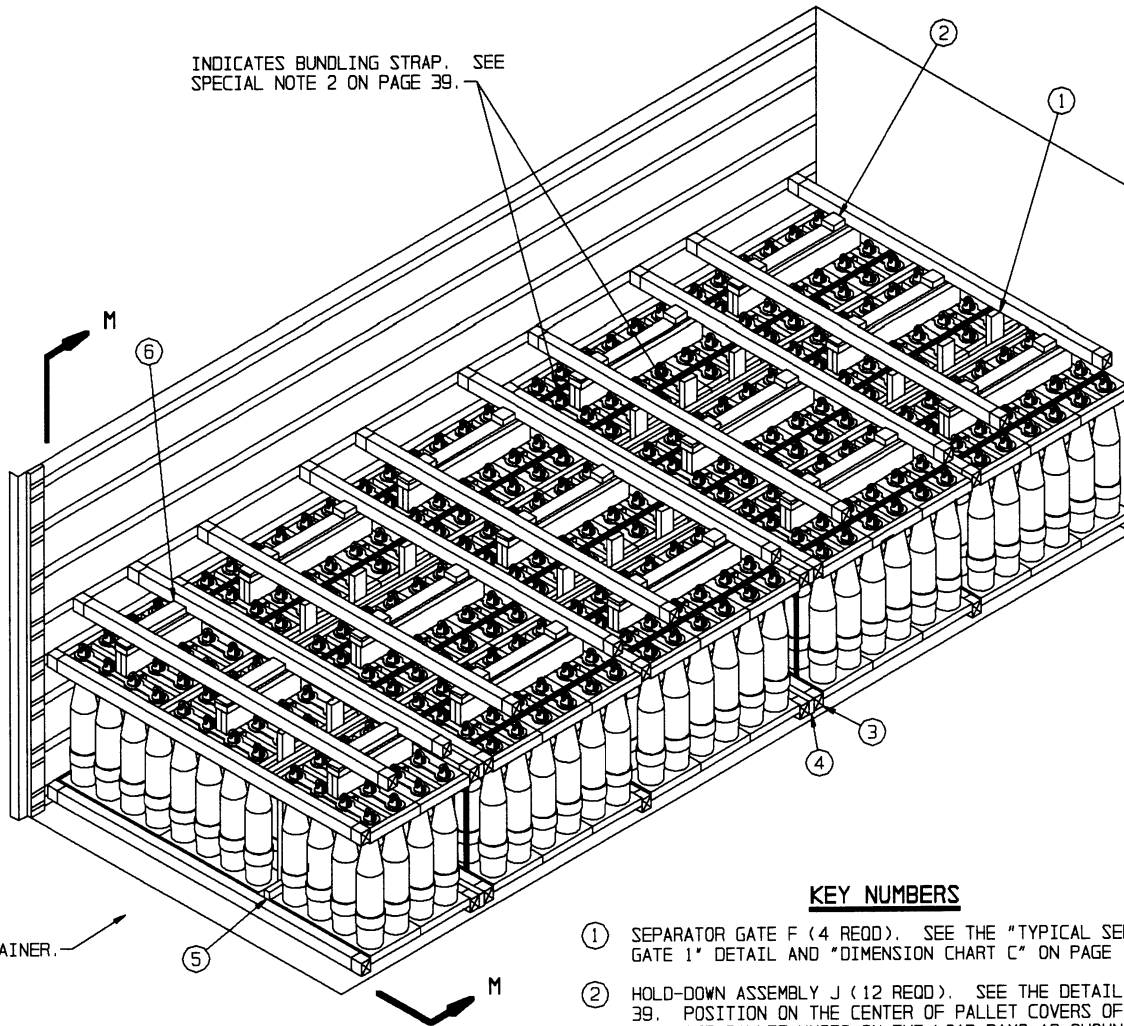
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	68	23
2" X 3"	42	21
2" X 4"	92	62
NAILS	NO. REQD	POUNDS
6d (2")	209	1-1/4
10d (3")	18	1/4
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	361.8 SQ FT REQD	497.5 LBS
CROSS MEMBER		15 REQD

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	37,674 LBS
DUNNAGE		712 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		44,086 LBS (APPROX)

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 39.

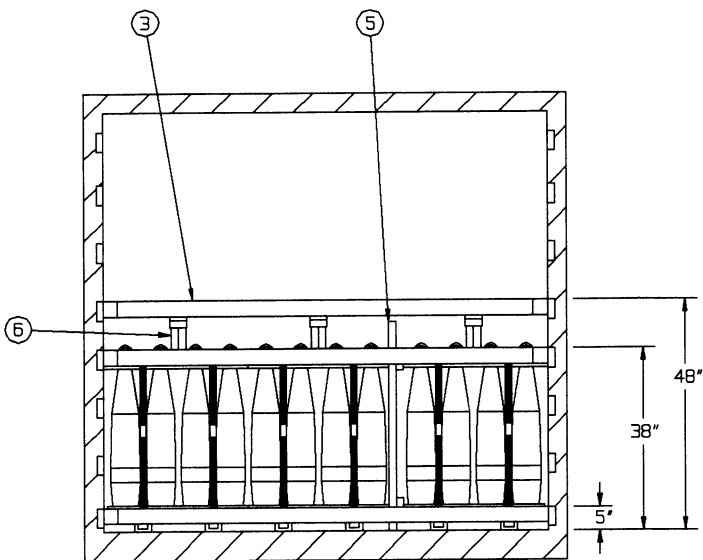


REAR OF CONTAINER.

**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SEPARATOR GATE F (4 REQD). SEE THE "TYPICAL SEPARATOR GATE 1" DETAIL AND "DIMENSION CHART C" ON PAGE 17.
- ② HOLD-DOWN ASSEMBLY J (12 REQD). SEE THE DETAIL ON PAGE 39. POSITION ON THE CENTER OF PALLET COVERS OF EACH ROW OF THREE PALLET UNITS IN THE LOAD BAYS AS SHOWN ABOVE.
- ③ CROSS MEMBER (24 REQD). POSITION AT THE 5" AND 38" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 48" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION M-M" VIEW BELOW, GENERAL NOTE "L" ON PAGE 2, AND THE "FILL DETAIL" AND "FILL DETAIL INSTALLATION" DETAILS ON PAGE 5.
- ④ FILL MATERIAL (4 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑤ SEPARATOR GATE G (1 REQD). SEE THE "TYPICAL SEPARATOR GATE 2" DETAIL AND "DIMENSION CHART C" ON PAGE 17.
- ⑥ HOLD-DOWN ASSEMBLY K (3 REQD). SEE THE DETAIL ON PAGE 39.



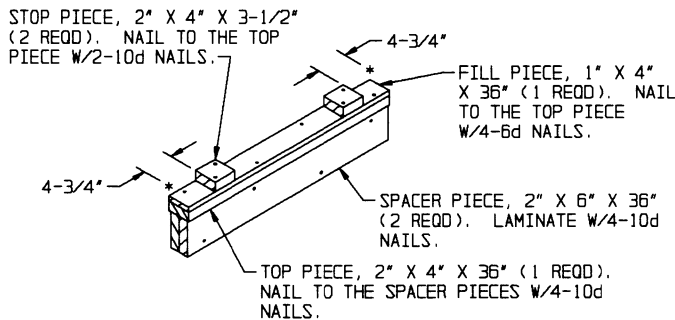
**SECTION M-M**

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

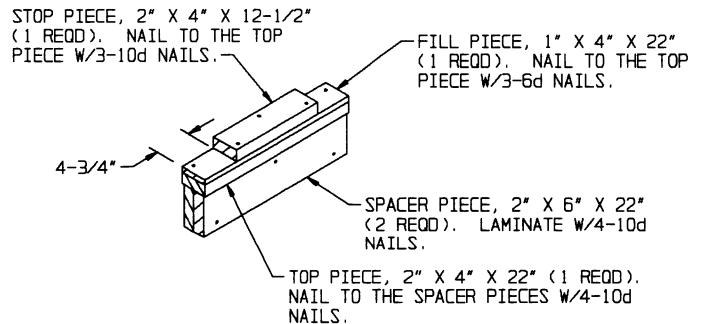
1. PREFABRICATE FOUR SEPARATOR GATES "F", 12 HOLD-DOWN ASSEMBLIES "J", ONE SEPARATOR GATE "G", AND THREE HOLD-DOWN ASSEMBLIES "K".
2. LOAD NINE PALLET UNITS AND INSTALL ONE SEPARATOR GATE "F".
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "J" AND TWO CROSS MEMBERS.
4. REPEAT STEPS 2 AND 3, ENSURING THAT THE SEPARATOR GATE "F" IS ON THE OPPOSITED SIDE OF THE CONTAINER FROM THE ONE INSTALLED IN STEP 2 ABOVE.
5. INSTALL FOUR CROSS MEMBERS WITH FILL MATERIAL.
6. REPEAT STEPS 2 THRU 5.
7. LOAD SIX PALLET UNITS AND INSTALL ONE SEPARATOR GATE "G".
8. INSTALL THREE HOLD-DOWN ASSEMBLIES "K" AND TWO CROSS MEMBERS.
9. INSTALL REMAINING TWO CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 38 IS FOR TALL 155MM SEPARATE LOADING PROJECTILES ON METAL PALLETETS.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 38, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 38.



**HOLD-DOWN ASSEMBLY J**

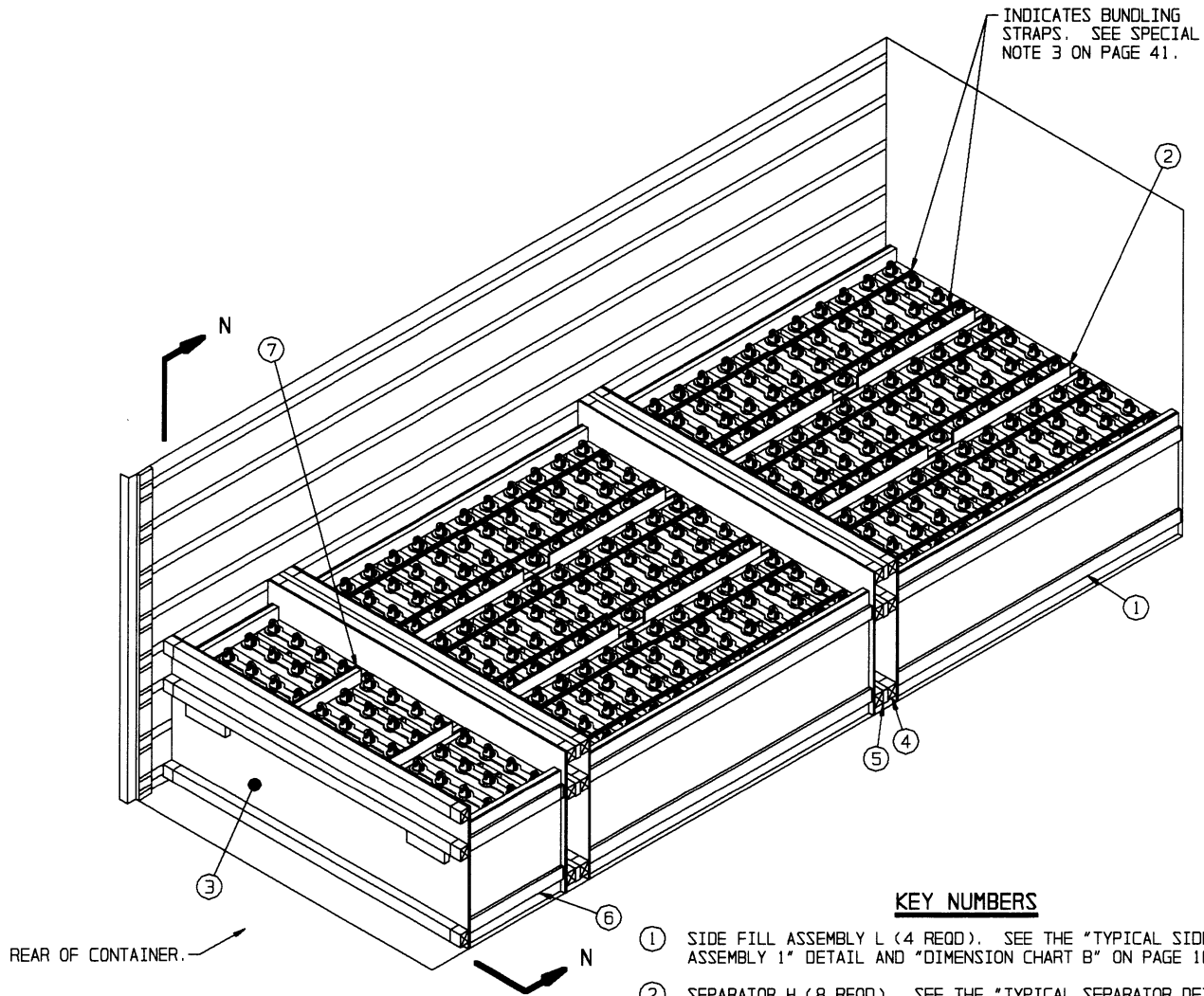


**HOLD-DOWN ASSEMBLY K**

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	54	18
2" X 4"	155	103
2" X 6"	83	83
NAILS	NO. REQD	POUNDS
6d (2")	57	1/2
10d (3")	239	3-3/4
WIRE, NO. 14 GAGE	18' REQD	NIL
CROSS MEMBER		24 REQD

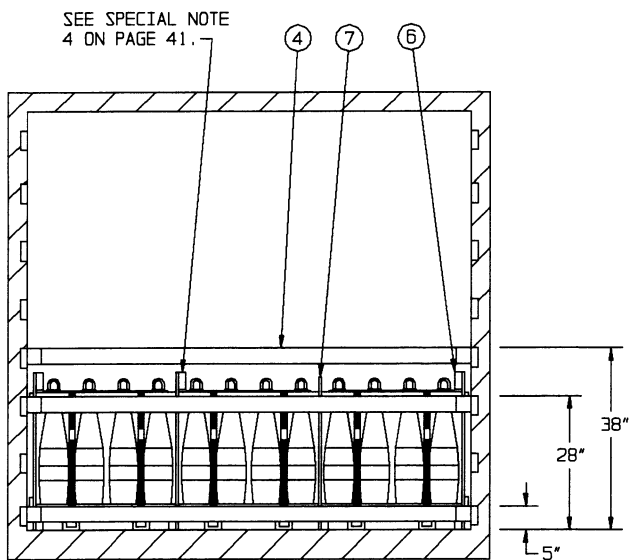
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	37,674 LBS
DUNNAGE		413 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		43,787 LBS (APPROX)



**KEY NUMBERS**

- ① SIDE FILL ASSEMBLY L (4 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 1" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ② SEPARATOR H (8 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" ON PAGE 10.
- ③ LOAD BEARING GATE A (5 REQD). SEE THE DETAIL ON PAGE 11.
- ④ CROSS MEMBER (15 REQD). POSITION AT THE 5", 28" AND 38" HEIGHTS FOR LONGITUDINAL BRACING. SEE THE "SECTION N-N" VIEW BELOW, AND THE "FILL DETAIL" AND "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑤ FILL MATERIAL (6 REQD). INSTALL BETWEEN ADJACENT CROSS MEMBERS. SEE THE "FILL MATERIAL INSTALLATION" DETAIL ON PAGE 5.
- ⑥ SIDE FILL ASSEMBLY M (2 REQD). SEE THE "TYPICAL SIDE FILL ASSEMBLY 2" DETAIL AND "DIMENSION CHART B" ON PAGE 16.
- ⑦ SEPARATOR J (2 REQD). SEE THE "TYPICAL SEPARATOR DETAIL" AND "DIMENSION CHART A" DETAIL ON PAGE 10.





**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SIDE FILL ASSEMBLIES "L", EIGHT SEPARATORS "H", FIVE LOAD BEARING GATES "A", TWO SEPARATORS "J" (ONE WITH A RETAINER PIECE), AND TWO SIDE FILL ASSEMBLIES "M".
2. INSTALL TWO SIDE FILL ASSEMBLIES "L".
3. LOAD 18 PALLET UNITS AND INSTALL FOUR SEPARATORS "H".
4. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS.
5. INSTALL SIX CROSS MEMBERS WITH FILL MATERIAL AND ONE LOAD BEARING GATE "A".
6. REPEAT STEPS 2 THRU 5.
7. INSTALL TWO SIDE FILL ASSEMBLIES "M".
8. LOAD SIX PALLET UNITS AND INSTALL TWO SEPARATORS "J".
9. INSTALL ONE LOAD BEARING GATE "A" AGAINST ALREADY LOADED PALLET UNITS AND INSTALL THREE CROSS MEMBERS.

**SPECIAL NOTES:**

1. THE LOAD AS DEPICTED ON PAGE 40 IS FOR SHORT 155MM SEPARATE LOADING PROJECTILES ON METAL PALLETS.
2. THE THICKNESS OF THE PLYWOOD USED ON THE SIDE FILL ASSEMBLIES AND THE SEPARATORS, PIECES MARKED ①, ②, ⑤, AND ⑦, MUST BE VARIED AS NECESSARY TO ENSURE NO MORE THAN 1-1/2" VOID ACROSS THE WIDTH OF THE LOAD. SEE ALSO GENERAL NOTE "G" ON PAGE 2.
3. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 40, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 40.
4. WHEN LOADING PALLET UNITS WITHOUT BUNDLING STRAPS, A RETAINER PIECE MUST BE APPLIED TO ONE OF THE TWO SEPARATORS "H" OR "J" IN EACH ROW, OVER THE CENTER PALLET UNITS, AS SHOWN AT THE REAR OF THE LOAD ON PAGE 40. SEE THE "SECTION N-N" VIEW ON PAGE 40 AND THE "TYPICAL SEPARATOR DETAIL" ON PAGE 10.

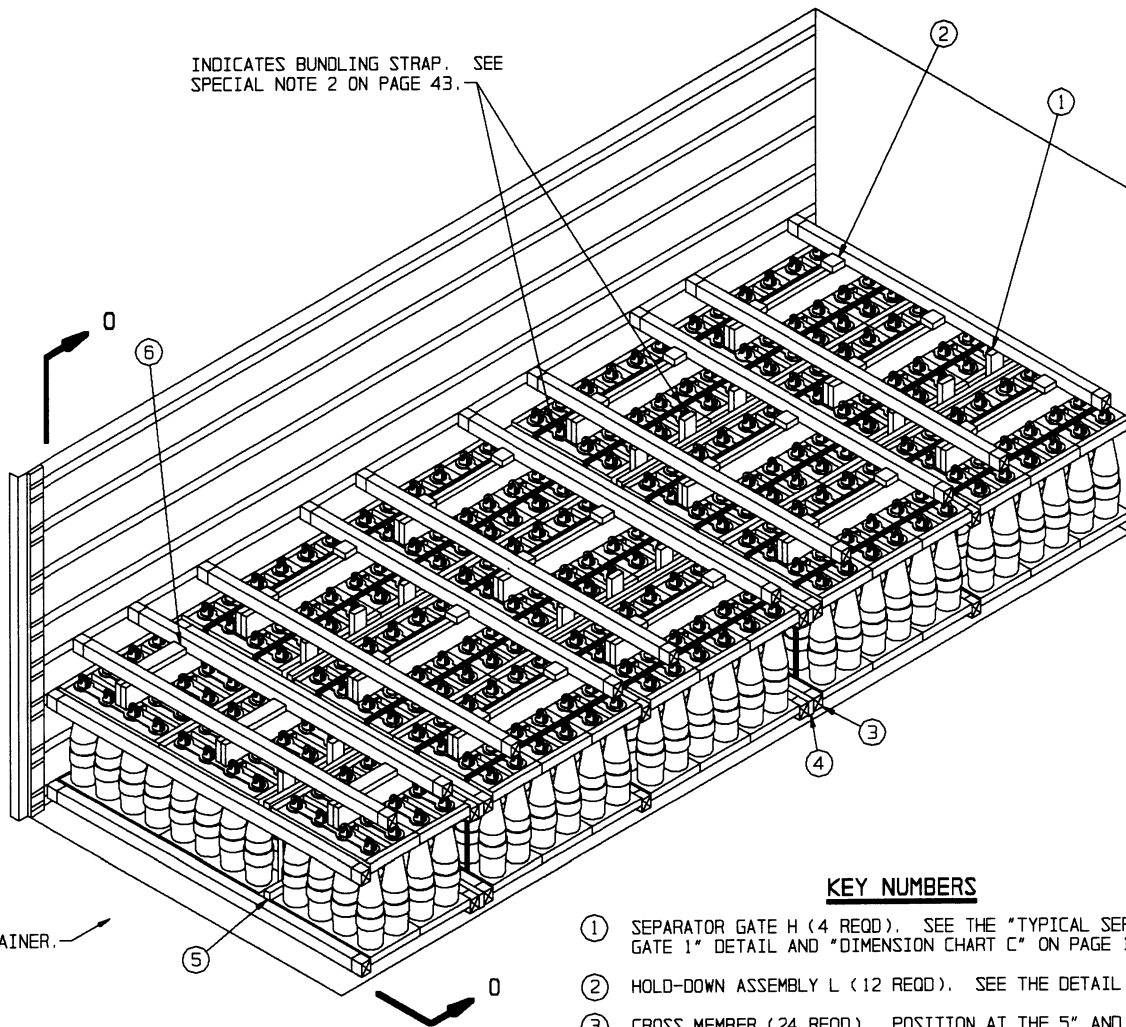
**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	68	23
2" X 3"	42	21
2" X 4"	90	60
NAILS	NO. REQD	POUNDS
6d (2")	198	1-1/2
10d (3")	18	1/4
WIRE, NO. 14 GAGE	27' REQD	1/2 LB
PLYWOOD, 1/2"	289.2 SQ FT REQD	397.7 LBS
CROSS MEMBER	15 REQD	

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	35,994 LBS
DUNNAGE		608 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		42,302 LBS (APPROX)

INDICATES BUNDLING STRAP. SEE SPECIAL NOTE 2 ON PAGE 43.

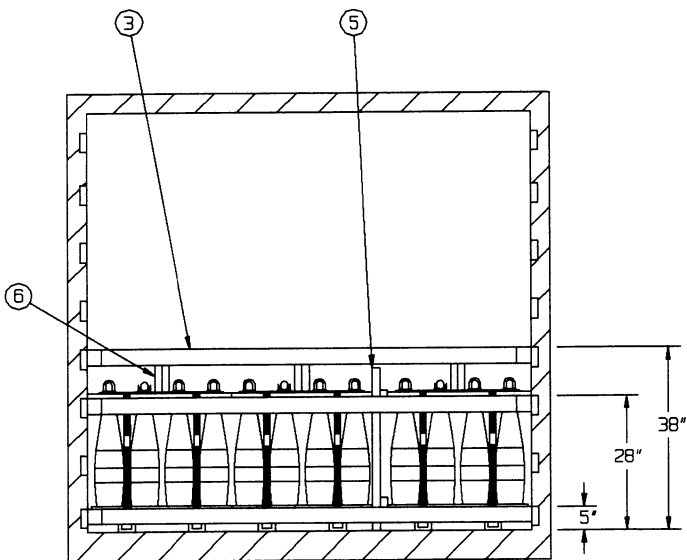


REAR OF CONTAINER.

ISOMETRIC VIEW

KEY NUMBERS

- ① SEPARATOR GATE H (4 REQD). SEE THE "TYPICAL SEPARATOR GATE 1" DETAIL AND "DIMENSION CHART C" ON PAGE 17.
- ② HOLD-DOWN ASSEMBLY L (12 REQD). SEE THE DETAIL ON PAGE 43.
- ③ CROSS MEMBER (24 REQD). POSITION AT THE 5" AND 28" HEIGHTS FOR LONGITUDINAL BRACING AND AT THE 38" HEIGHT FOR VERTICAL HOLD-DOWN. SEE THE "SECTION 0-0" VIEW BELOW, GENERAL NOTE "L" ON PAGE 2, AND THE "FILL DETAIL" AND "FILL DETAIL INSTALLATION" DETAILS ON PAGE 5.
- ④ FILL MATERIAL (4 REQD). SEE THE "FILL DETAIL INSTALLATION" DETAIL ON PAGE 5.
- ⑤ SEPARATOR GATE J (1 REQD). SEE THE "TYPICAL SEPARATOR GATE 2" DETAIL AND "DIMENSION CHART C" ON PAGE 17.
- ⑥ HOLD-DOWN ASSEMBLY M (3 REQD). SEE THE DETAIL ON PAGE 43.



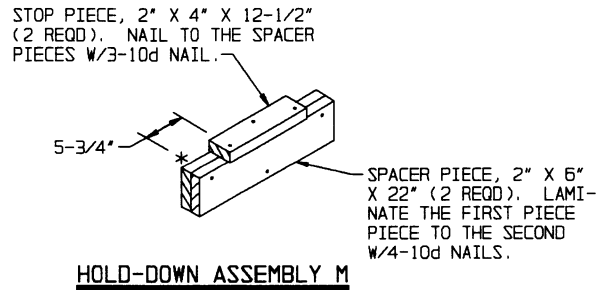
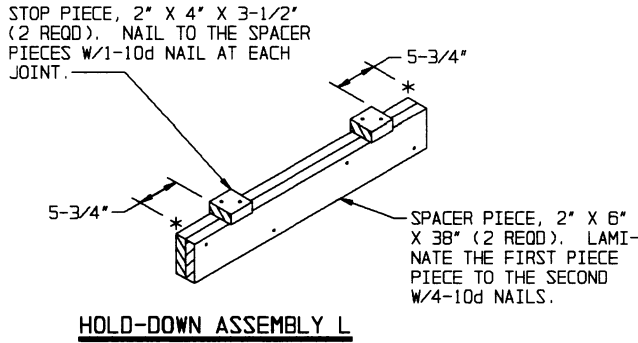
SECTION 0-0

**RECOMMENDED SEQUENTIAL LOADING PROCEDURES**

1. PREFABRICATE FOUR SEPARATOR GATES "H", 12 HOLD-DOWN ASSEMBLIES "L", ONE SEPARATOR GATE "J", AND THREE HOLD-DOWN ASSEMBLIES "M".
2. LOAD NINE PALLET UNITS AND INSTALL ONE SEPARATOR GATE "H".
3. INSTALL THREE HOLD-DOWN ASSEMBLIES "L" AND TWO CROSS MEMBERS.
4. REPEAT STEPS 2 AND 3, ENSURING THAT THE SEPARATOR GATE "H" IS ON THE OPPOSITED SIDE OF THE CONTAINER FROM THE ONE INSTALLED IN STEP 2 ABOVE.
5. INSTALL FOUR CROSS MEMBERS WITH FILL MATERIAL.
6. REPEAT STEPS 2 THRU 5.
7. LOAD SIX PALLET UNITS AND INSTALL ONE SEPARATOR GATE "J".
8. INSTALL THREE HOL-DOWN ASSEMBLIES "M" AND TWO CROSS MEMBERS.
9. INSTALL REMAINING TWO CROSS MEMBERS.

**SPECIAL NOTES:**

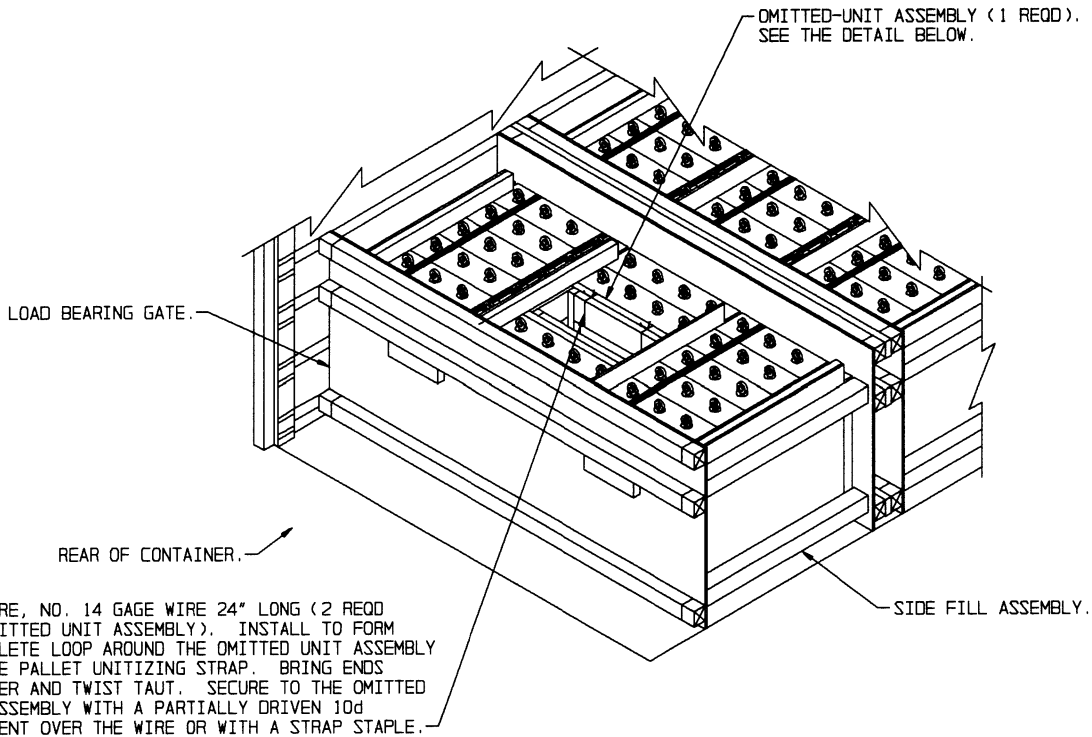
1. THE LOAD AS DEPICTED ON PAGE 42 IS FOR SHORT 155MM SEPARATE LOADING PROJECTILES ON METAL PALLETS.
2. PALLET UNITS WHICH ARE ALREADY BUNDLED TOGETHER WITH STEEL STRAPPING INTO GROUPS OF THREE MAY REMAIN BUNDLED FOR SHIPMENT. ONLY THE BUNDLING STRAPS HAVE BEEN SHOWN IN THE LOAD ON PAGE 42, UNITIZATION STRAPS HAVE BEEN OMITTED FOR CLARITY PURPOSES. BUNDLING STRAPS HAVE BEEN SHOWN AS TYPICAL ONLY, AND ARE NOT SPECIFICALLY REQUIRED WHEN LOADING IN ACCORDANCE WITH THE PROCEDURES DETAILED ON PAGE 42.



BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	113	75
2" X 6"	87	87
NAILS	NO. REQD	POUNDS
10d (3")	182	3
WIRE, NO. 14 GAGE	18' REQD	NIL
CROSS MEMBER		24 REQD

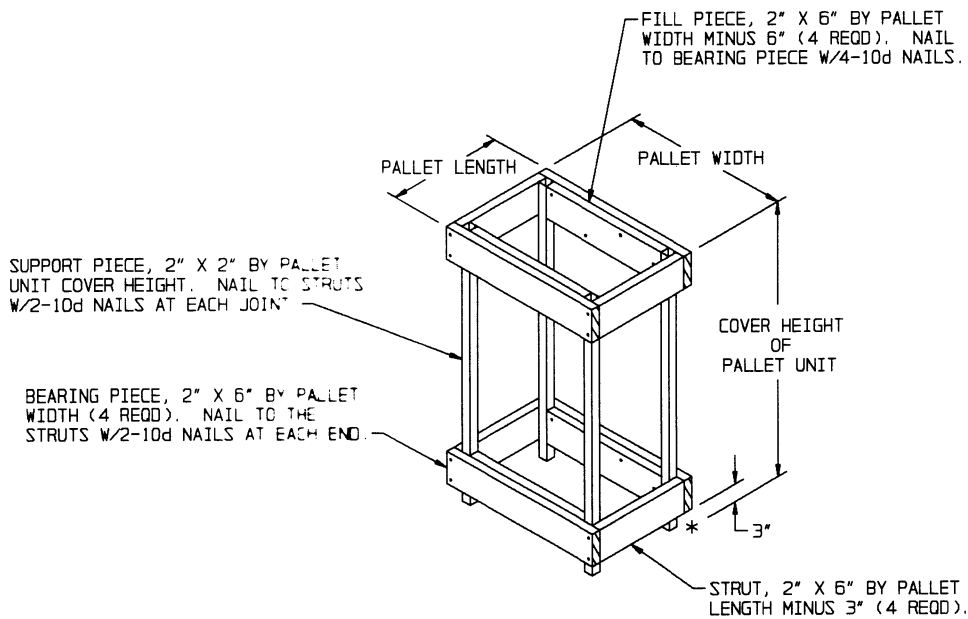
**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	42	35,994 LBS
DUNNAGE		327 LBS
CONTAINER		5,700 LBS
TOTAL WEIGHT		42,021 LBS (APPROX)



TIE WIRE, NO. 14 GAGE WIRE 24" LONG (2 REOD PER OMITTED UNIT ASSEMBLY). INSTALL TO FORM A COMPLETE LOOP AROUND THE OMITTED UNIT ASSEMBLY AND THE PALLET UNITIZING STRAP. BRING ENDS TOGETHER AND TWIST TAUT. SECURE TO THE OMITTED UNIT ASSEMBLY WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE OR WITH A STRAP STAPLE.

**TYPICAL REDUCED-LOAD PROCEDURE**



**OMITTED-UNIT ASSEMBLY**

THE ASSEMBLY AS SPECIFIED ABOVE IS FOR USE IN PLACE OF AN OMITTED PALLET UNIT AND WILL BE REQUIRED FOR SOME LOADS TO PROVIDE A 3-WIDE LOADING PATTERN THROUGHOUT THE LENGTH OF THESE LOADS. IT WILL NEVER BE REQUIRED TO USE MORE THAN TWO ASSEMBLIES IN ANY ONE LOAD. CAUTION: AN ASSEMBLY OR ASSEMBLIES MUST ONLY BE PLACED WITHIN THE MIDDLE ROW OF A LOAD.