

APPROVED BY
BUREAU OF EXPLOSIVES

J. A. Ashman

DATE *10/27/92*

STINGER

LOADING AND BRACING • WITH WOODEN DUNNAGE IN END OPENING ISO CONTAINERS OF THE COMPLETE ROUND PACKED IN WIREBOUND AND/OR ALUMINUM CONTAINERS (UNITIZED AND UNUNITIZED OR PALLETIZED AND UNPALLETIZED)

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- LOADING AND BRACING SPECIFICATIONS SET FORTH WITHIN THIS DRAWING ARE APPLICABLE TO LOADS THAT ARE TO BE SHIPPED BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) RAIL CARRIER SERVICE. THESE SPECIFICATIONS MAY ALSO BE USED FOR LOADS THAT ARE TO BE MOVED BY MOTOR OR WATER CARRIERS. SEE GENERAL NOTE "P" ON PAGE 2.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY MISSILE COMMAND

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MAY 1993

CLASS

DIVISION

DRAWING

FILE

19

48

8188

GM15SR2

DO NOT SCALE

PROJECT GM 838-91

GENERAL NOTES

(GENERAL NOTES CONTINUED)

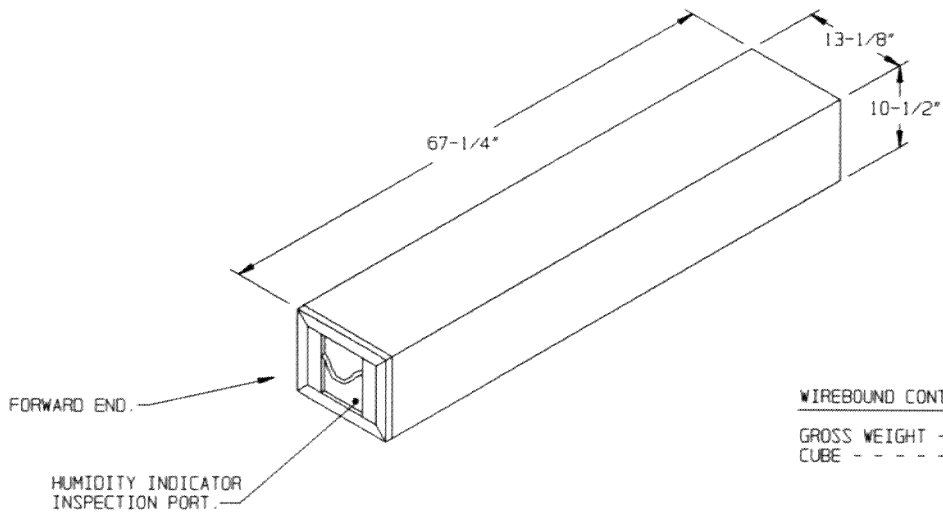
- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF THE STINGER GUIDED MISSILE PACKED IN WIREBOUND CONTAINER AND/OR ALUMINUM CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER MEANS WIREBOUND CONTAINER AND/OR ALUMINUM CONTAINER WITH CONTENTS. ALSO, SUBSEQUENT REFERENCE TO SKIDDED UNIT MEANS THE SKIDDED UNIT OF NINE (9) WIREBOUND CONTAINERS WITH CONTENTS AND SUBSEQUENT REFERENCE TO PALLETIZED UNIT MEANS THE PALLETIZED UNIT OF NINE (9) ALUMINUM CONTAINERS WITH CONTENTS. CAUTION: REGARDLESS OF THE QUANTITY OF CONTAINERS OR PALLET UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE END OPENING ISO CONTAINER MUST NOT BE EXCEEDED.
- C. FOR DETAILS OF THE WIREBOUND CONTAINER, SEE US ARMY MISSILE COMMAND DRAWING NO. 11509503 AND "WIREBOUND CONTAINER" DETAIL ON PAGE 3.
 CONTAINER DIMENSIONS - - - 67-1/4" LONG X 13-1/8" WIDE X 10-1/2" HIGH (APPROX).
 GROSS WEIGHT - - - - - 77 POUNDS (APPROX).
 CUBE - - - - - 5.4 CUBIC FEET.
- D. FOR DETAILS OF THE ALUMINUM CONTAINER, SEE US ARMY MISSILE COMMAND DRAWING NO. 11486952 AND "ALUMINUM CONTAINER" DETAIL ON PAGE 4.
 CONTAINER DIMENSIONS - - - 65-9/16" LONG X 13" WIDE X 13-3/8" HIGH (APPROX).
 GROSS WEIGHT - - - - - 86 POUNDS (APPROX).
 CUBE - - - - - 6.6 CUBIC FEET.
- E. FOR DETAILS OF THE UNITIZED WIREBOUND CONTAINERS, SEE US ARMY DARCOM DRAWING NO. 19-48-5239-GM20SR1 AND "SKIDDED UNIT" DETAIL ON PAGE 3.
 SKIDDED UNIT DIMENSIONS - 39-3/8" LONG X 67-1/4" WIDE X 36-1/2" HIGH (APPROX).
 GROSS WEIGHT - - - - - 749 POUNDS (APPROX).
 CUBE - - - - - 55.9 CUBIC FEET.
- F. FOR DETAILS OF THE PALLETIZED ALUMINUM CONTAINERS, SEE US ARMY DARCOM DRAWING NO. 19-48-5239-GM20SR1 AND "PALLETIZED UNIT" DETAIL ON PAGE 4.
 PALLETIZED UNIT DIMENSIONS - - - - - 42" LONG X 67-1/16" WIDE X 45-5/8" HIGH (APPROX).
 GROSS WEIGHT - - - - - 952 POUNDS (APPROX).
 CUBE - - - - - 73.8 CUBIC FEET.
- G. THESE PROCEDURES CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE CONTAINERS WHEN THEY ARE LOADED WITH AN ITEM OTHER THAN THE SPECIFIED GUIDED MISSILE, OR WHEN THEY ARE EMPTY.
- H. THE LOAD AS SHOWN IS BASED ON A 4,700 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH END OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 95" HIGH. THE LOAD IS DESIGNED FOR TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF TRANSPORT. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN BE USED.
- J. WHEN LOADING MISSILE CONTAINERS OR PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE CONTAINER SIDE WALLS AND FORWARD/REAR BLOCKING ASSEMBLIES).

- K. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" BY 5-1/2" WIDE.
- L. 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.
- M. IN SOME CONTAINERS, SUCH AS SOME ALL STEEL CONTAINERS, THERE IS A SLOT AT THE CORNERS OF THE FORWARD WALL. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES OF THE FORWARD STRUT ASSEMBLIES TO PROVIDE A FLAT SURFACE FOR THE 2" X 4" BUFFER PIECES. A PIECE OF 2" X 4", 2" X 3", OR A SPECIAL WIDTH PIECE CUT-TO-FIT CAN BE USED. THIS FILL PIECE WILL BE NAILED WITH ONE APPROPRIATELY SIZED NAIL EVERY 12". THIS PIECE IS NOT REQUIRED WHEN THE ENDWALL OF THE CONTAINER IS SMOOTH AND FLAT.
- N. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- O. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF SIDEWALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- P. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLATCAR (T/COFC). SPECIAL T/COFC NOTES FOLLOW:
 - 1. A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
 - 2. THE LOAD LIMIT OF A T/COFC RAILCAR 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.
- Q. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS OR MODIFIED FLATBED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- 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 25.4MM AND ONE POUND EQUALS 0.454KG.

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MATERIAL SPECIFICATIONS

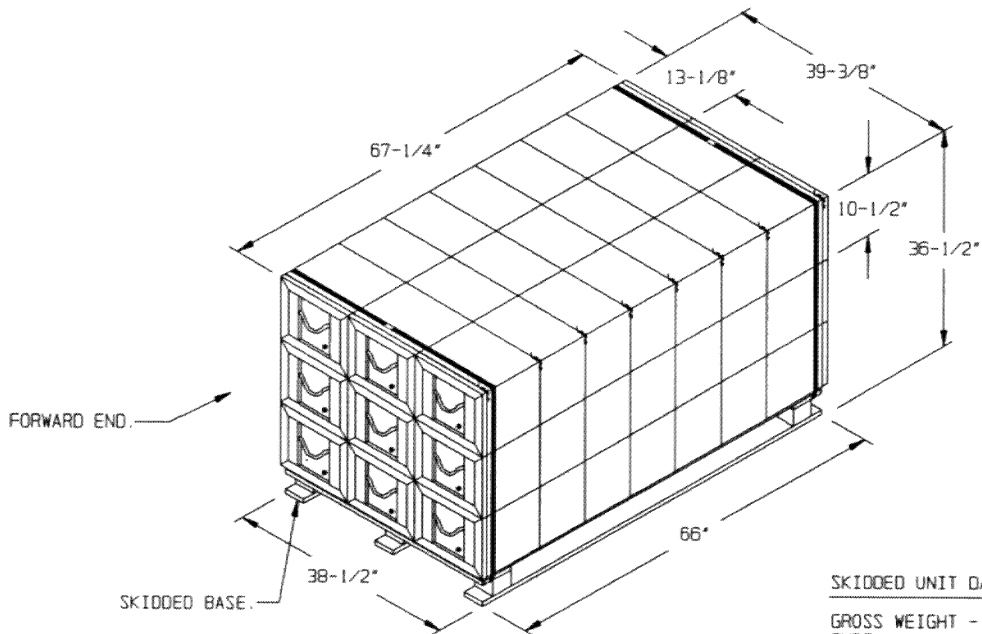
- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.
- PLYWOOD - - - - - : COMMERCIAL ITEM DESCRIPTION A-A-55057, TYPE A, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
- WIRE, CARBON STEEL - : ASTM A653; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800" DIA, GRADE 1006 OR BETTER.



WIREBOUND CONTAINER DATA:

GROSS WEIGHT - - - - - 77 LBS (APPROX)
 CUBE - - - - - 5.4 CU FT (APPROX)

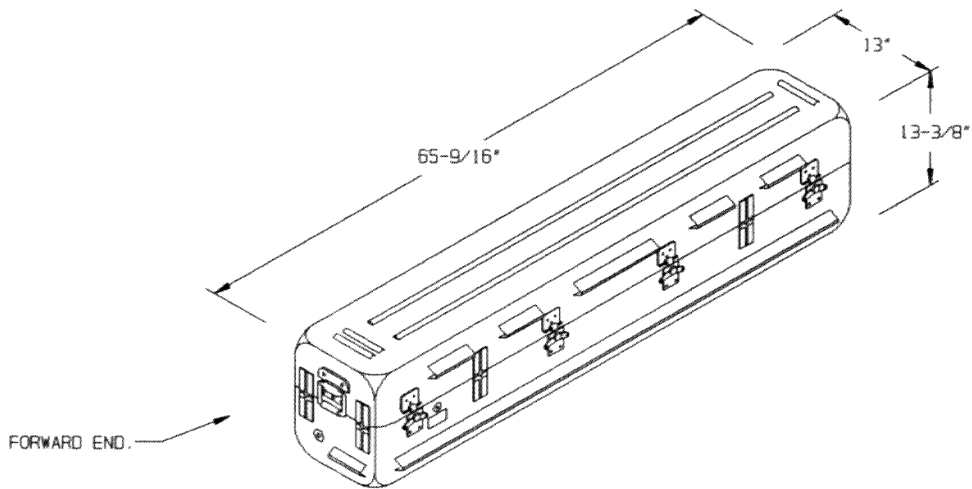
WIREBOUND CONTAINER



SKIDDED UNIT DATA:

GROSS WEIGHT - - - 749 LBS (APPROX)
 CUBE - - - - - 55.93 CU FT (APPROX)

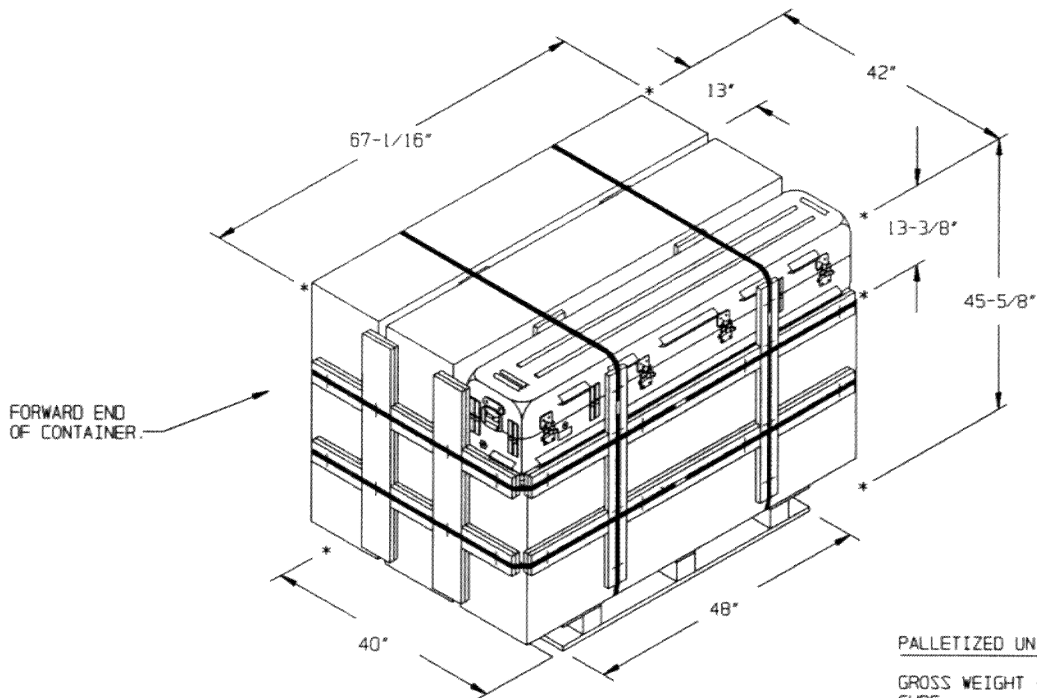
SKIDDED UNIT OF NINE (9) GUIDED MISSILES,
 PACKED ONE (1) PER WIREBOUND (WOODEN) BOX



ALUMINUM CONTAINER DETAIL

GROSS WEIGHT - - - 86 LBS (APPROX)
 CUBE - - - - - 6.6 CU FT (APPROX)

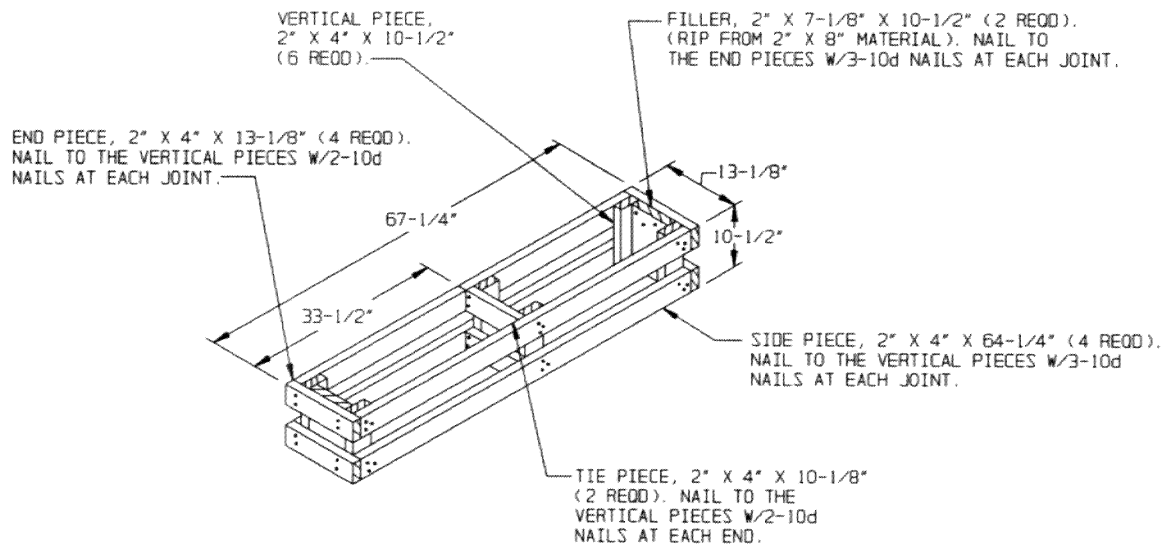
ALUMINUM CONTAINER



PALLETIZED UNIT DATA:

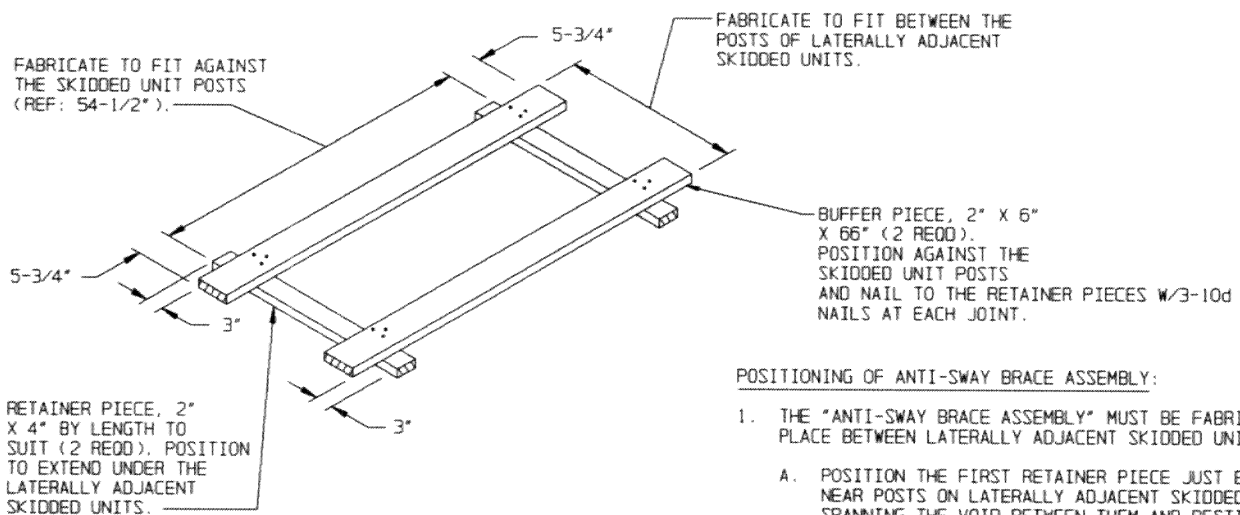
GROSS WEIGHT - - - 952 LBS (APPROX)
 CUBE - - - - - 73.81 CU FT (APPROX)

PALLETIZED UNIT OF NINE (9) GUIDED MISSILES
 PACKED ONE (1) PER ALUMINUM CONTAINER



FILLER ASSEMBLY A

THE FILLER ASSEMBLY SHOWN ABOVE IS TO BE USED WITHIN LOADS TO TAKE THE PLACE OF AN OMITTED WIREBOUND CONTAINER. IT MUST BE USED IN THE TOP LAYER ONLY.

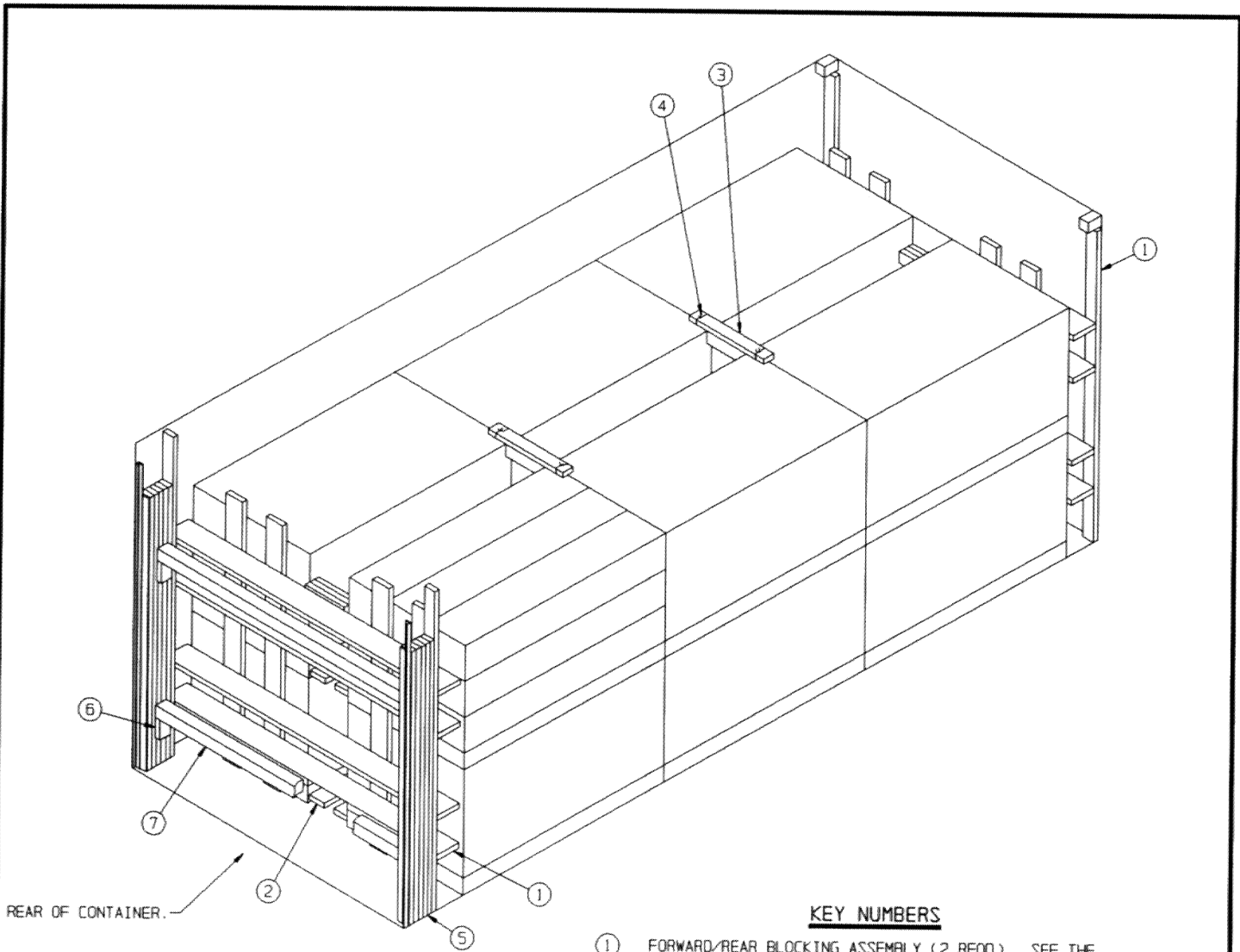


ANTI-SWAY BRACE ASSEMBLY

THIS ANTI-SWAY BRACE ASSEMBLY IS DESIGNED FOR USE BETWEEN 1-TIER OR 2-TIER LOADS OF UNITIZED WIREBOUND CONTAINERS (SKIDDED UNITS). SEE THE "POSITIONING OF ANTI-SWAY BRACE ASSEMBLY A" ON THIS PAGE.

POSITIONING OF ANTI-SWAY BRACE ASSEMBLY:

1. THE "ANTI-SWAY BRACE ASSEMBLY" MUST BE FABRICATED IN PLACE BETWEEN LATERALLY ADJACENT SKIDDED UNITS.
 - A. POSITION THE FIRST RETAINER PIECE JUST BEHIND THE NEAR POSTS ON LATERALLY ADJACENT SKIDDED UNITS, SPANNING THE VOID BETWEEN THEM AND RESTING ON THE BOTTOM BOARDS OF THE SKIDDED UNITS.
 - B. POSITION A 2" X 4" X 66" BUFFER PIECE 6" FROM THE END OF THE FIRST RETAINER PIECE AND EXTENDING 5-3/4" BEYOND THE EDGE OF THE FIRST RETAINER PIECE. NAIL THE BUFFER PIECE TO THE RETAINER PIECE W/3-10d NAILS.
 - C. KEEPING THE FIRST BUFFER PIECE AGAINST THE SIDE OF A SKIDDED UNIT, POSITION THE SECOND BUFFER PIECE AGAINST THE SIDE OF THE LATERALLY ADJACENT SKIDDED UNIT AND EXTENDING 5-3/4" BEYOND THE EDGE OF THE FIRST RETAINER PIECE. NAIL THE BUFFER PIECE TO THE RETAINER PIECE W/3-10d NAILS.
 - D. HOLD THE END OF BOTH BUFFER PIECES AND PUSH THE PARTIAL ASSEMBLY FORWARD UNTIL THE FIRST RETAINER PIECE CONTACTS THE SKIDDED UNIT POSTS ON THE FAR END.
 - E. POSITION THE SECOND RETAINER PIECE JUST BEHIND AND CONTACTING THE NEAR POSTS ON LATERALLY ADJACENT SKIDDED UNITS.
 - F. KEEP THE TWO BUFFER PIECES AGAINST THE SIDES OF THE LATERALLY ADJACENT SKIDDED UNITS AND NAIL EACH ONE TO THE SECOND RETAINER PIECE W/3-10d NAILS.



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REOD). SEE THE "FORWARD/REAR BLOCKING ASSEMBLY A" ON PAGE 10.
- ② ANTI-SWAY BRACE ASSEMBLY (6 REOD). SEE THE DETAIL ON PAGE 5. INSTALL BETWEEN LATERALLY ADJACENT UNITS.
- ③ TOP-OF-LOAD ANTI-SWAY BRACE (2 REOD). SEE THE DETAIL ON PAGE 11. WIRE TIE IN PLACE AS SHOWN BY THE "POSITIONING OF TOP-OF-LOAD ANTI-SWAY BRACE ASSEMBLY" ON PAGE 11.
- ④ TIE WIRE, NO. 14 GAGE WIRE 24" LONG (4 REOD).
- ⑤ FILL MATERIAL, 4" WIDE BY 6'-6" LONG MATERIAL (AS REQUIRED). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/6 NAILS OF A SUITABLE SIZE (10d FOR 2" MATERIAL). LAMINATE EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A LIKE MANNER.
- ⑥ STRUT LEDGER, 2" X 4" X 6" (4 REOD). INSTALL PRIOR TO INSTALLING THE SPANNER PIECES, PIECE MARKED ⑦. NAIL TO THE FILL MATERIAL, PIECE MARKED ⑤, W/2-10d NAILS.
- ⑦ SPANNER PIECE, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (2 REOD). INSTALL THE UPPER SPANNER PIECE SUCH THAT THE TOP EDGE OF THE SPANNER PIECE IS AT THE SAME HEIGHT AS THE TOP EDGE OF THE BEAM IN THE REAR BLOCKING ASSEMBLY, PIECE MARKED ①. INSTALL THE LOWER SPANNER PIECE SUCH THAT THE BOTTOM EDGE IS AT THE SAME HEIGHT AS THE BOTTOM EDGE OF THE LOWEST BEAM IN THE REAR BLOCKING ASSEMBLY. TOENAIL TO THE FILL MATERIAL, PIECE MARKED ⑤, W/2-12d NAILS AT EACH END. NOTE: PIECES MARKED ⑥ AND ⑦ ARE ONLY REQUIRED WHEN USING 6" OR MORE OF SOLID FILL MATERIAL.

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

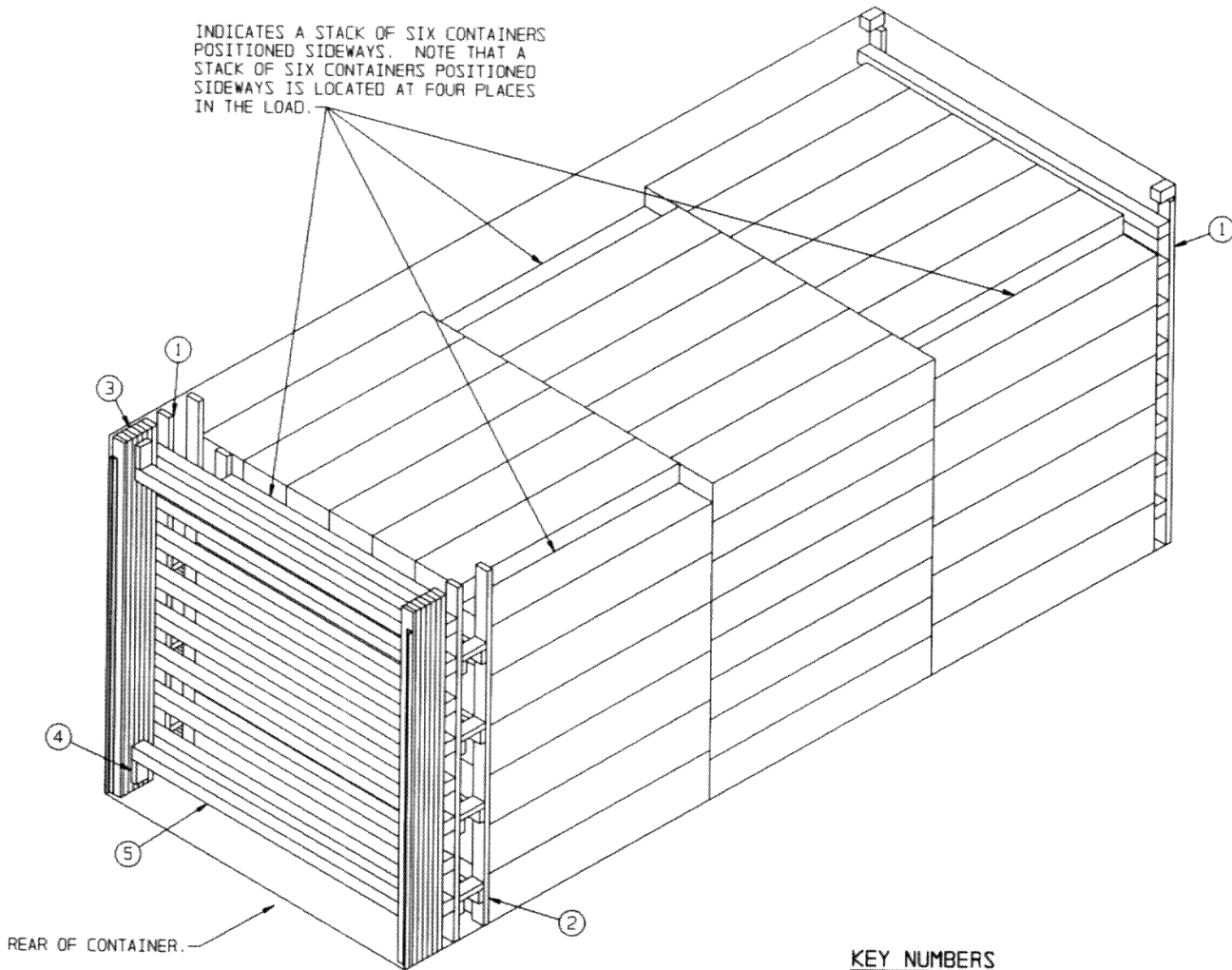
1. PREFABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES "A", SIX ANTI-SWAY BRACE ASSEMBLIES AND TWO TOP-OF-LOAD ANTI-SWAY BRACES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL TWO ANTI-SWAY BRACE ASSEMBLIES (THESE ASSEMBLIES MUST BE FABRICATED IN PLACE, BETWEEN THE PALLET UNITS).
4. LOAD FOUR PALLET UNITS, INSTALL ONE TOP-OF-LOAD ANTI-SWAY BRACE AND INSTALL TWO ANTI-SWAY BRACE ASSEMBLIES.
5. REPEAT STEP 4.
6. INSTALL THE REAR BLOCKING ASSEMBLY.
7. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
8. INSTALL THE FOUR STRUT LEDGERS AND TWO SPANNER PIECES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	170	113
2" X 6"	66	66
2" X 8"	61	81
4" X 4"	14	19
NAILS	NO. REQD	POUNDS
10d (3")	276	4-1/4
12d (3-1/4")	8	1/4
WIRE, NO. 14 GAGE	8' REQD	1/4 LB

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT	12	8,988 LBS
DUNNAGE		563 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		14,251 LBS (APPROX)

INDICATES A STACK OF SIX CONTAINERS POSITIONED SIDWAYS. NOTE THAT A STACK OF SIX CONTAINERS POSITIONED SIDWAYS IS LOCATED AT FOUR PLACES IN THE LOAD.



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE "FORWARD/REAR BLOCKING ASSEMBLY B" ON PAGE 10.
- ② FILLER ASSEMBLY (2 REQD). SEE THE "FILLER ASSEMBLY B" DETAIL ON PAGE 11.
- ③ FILL MATERIAL, 4" WIDE BY 6'-6" LONG MATERIAL (AS REQUIRED). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/7 NAILS OF A SUITABLE SIZE (10d FOR 2" MATERIAL). LAMINATE EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A LIKE MANNER.
- ④ STRUT LEDGER, 2" X 4" X 6" (4 REQD). INSTALL PRIOR TO INSTALLING THE SPANNER PIECES, PIECE MARKED ⑤. NAIL TO THE FILL MATERIAL, PIECE MARKED ③, W/2-10d NAILS.
- ⑤ SPANNER PIECE, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (2 REQD). INSTALL THE UPPER SPANNER PIECE SUCH THAT THE TOP EDGE OF THE SPANNER PIECE IS AT THE SAME HEIGHT AS THE TOP EDGE OF THE BEAM IN THE REAR BLOCKING ASSEMBLY, PIECE MARKED ①. INSTALL THE LOWER SPANNER PIECE SUCH THAT THE BOTTOM EDGE IS AT THE SAME HEIGHT AS THE BOTTOM EDGE OF THE LOWEST BEAM IN THE REAR BLOCKING ASSEMBLY. TOENAIL TO THE FILL MATERIAL, PIECE MARKED ③, W/2-10d NAILS AT EACH END. NOTE: PIECES MARKED ④ AND ⑤ ARE ONLY REQUIRED WHEN USING 6" OR MORE OF SOLID FILL MATERIAL.

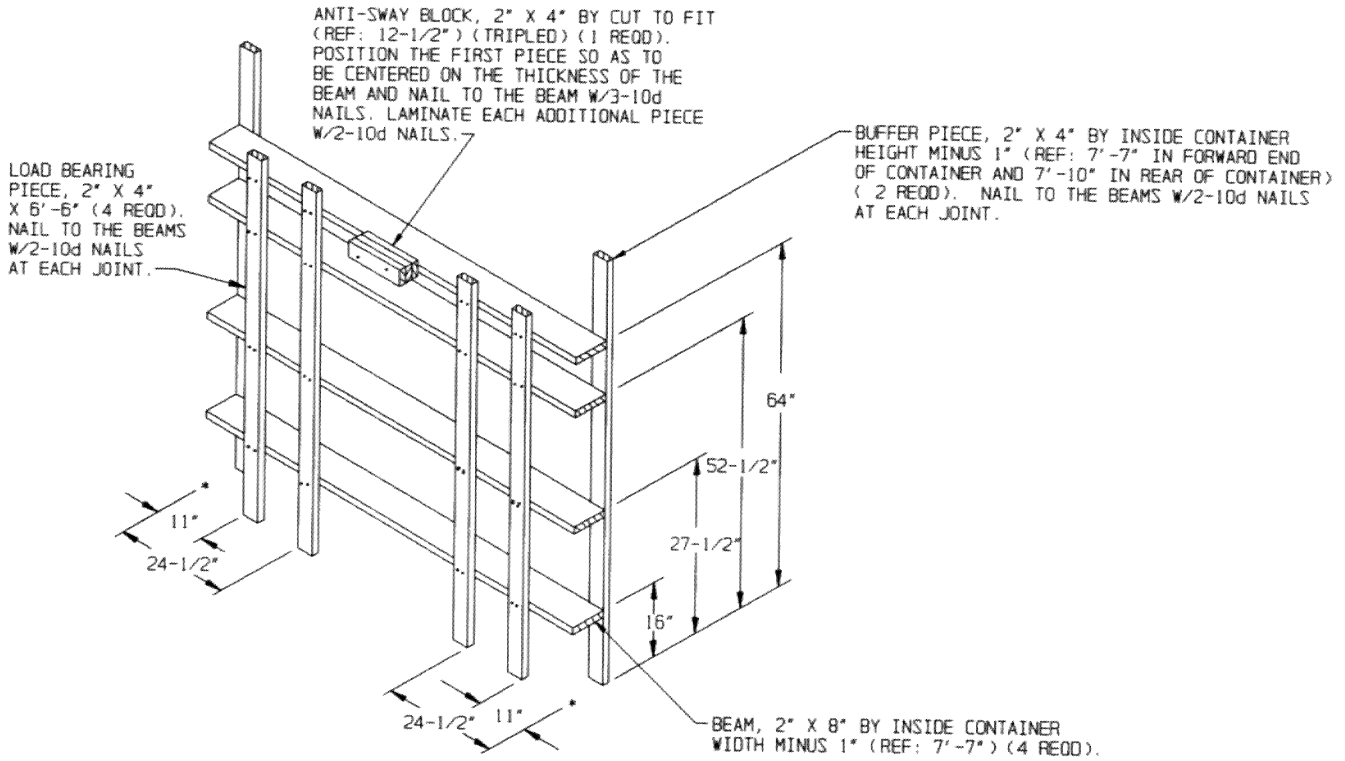
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PREFABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES "B" AND TWO FILLER ASSEMBLIES "B".
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD ONE HUNDRED SIXTY-TWO WIREBOUND CONTAINERS.
4. LOAD REMAINING SIX WIREBOUND CONTAINERS AND INSTALL TWO FILLER ASSEMBLIES.
5. INSTALL THE REAR BLOCKING ASSEMBLY.
6. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
7. INSTALL THE FOUR STRUT LEDGERS AND TWO SPANNER PIECES.

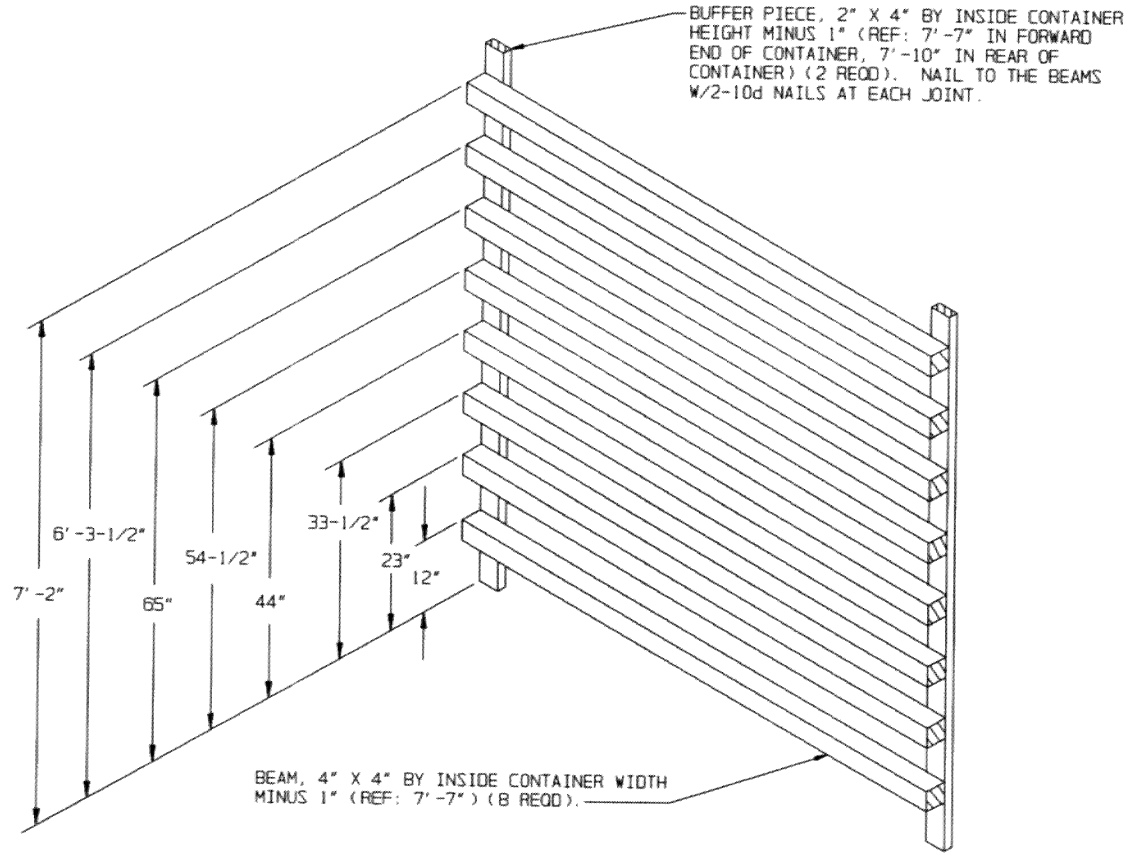
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	182	121
4" X 4"	136	181
NAILS	NO. REQD	POUNDS
10d (3")	266	4
12d (3-1/4")	8	1/4

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER	168	12,936 LBS
DUNNAGE		608 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		18,244 LBS (APPROX)

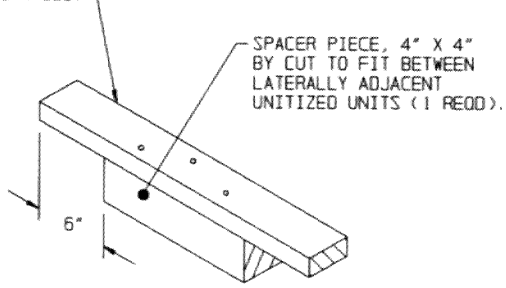


FORWARD/REAR BLOCKING ASSEMBLY A



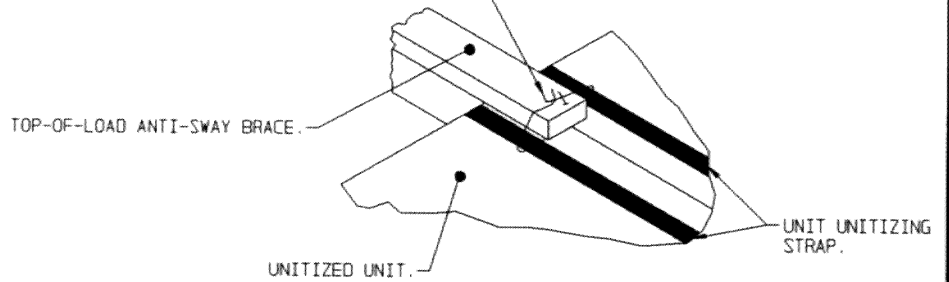
FORWARD/REAR BLOCKING ASSEMBLY B

SUPPORT PIECE, 2" X 4" BY LENGTH TO SUIT (1 REOD). NAIL TO THE SPACER PIECE W/3-10d NAILS.

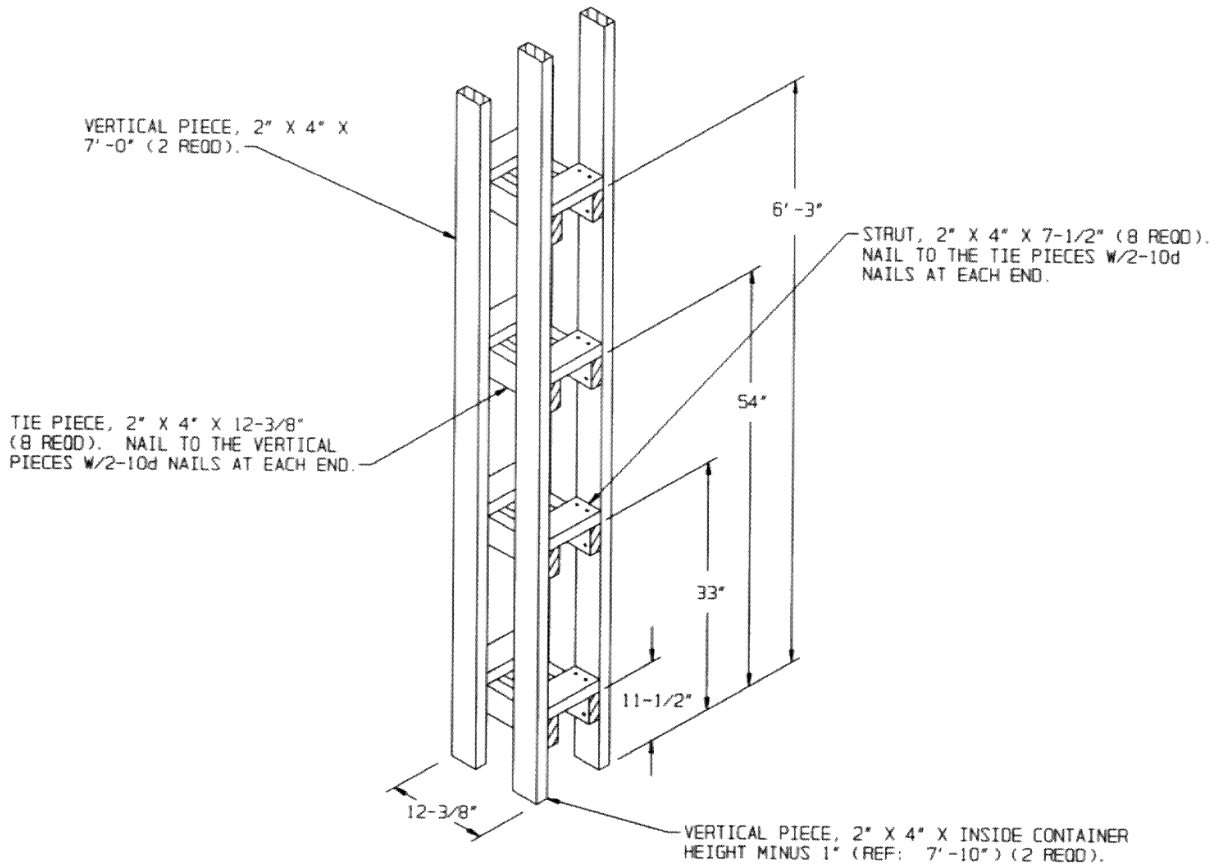


TOP-OF-LOAD ANTI-SWAY BRACE

TIE WIRE, NO. 14 GAGE WIRE BY LENGTH TO SUIT (AS REOD). THREAD WIRE UNDER THE UNIT UNITIZING STRAPS, BRING ENDS UP OVER TOP OF SUPPORT PIECE AND TWIST TIGHT. SECURE WITH A PARTIALLY DRIVEN 10d NAIL BENT OVER THE WIRE, OR WITH A STAPLE.

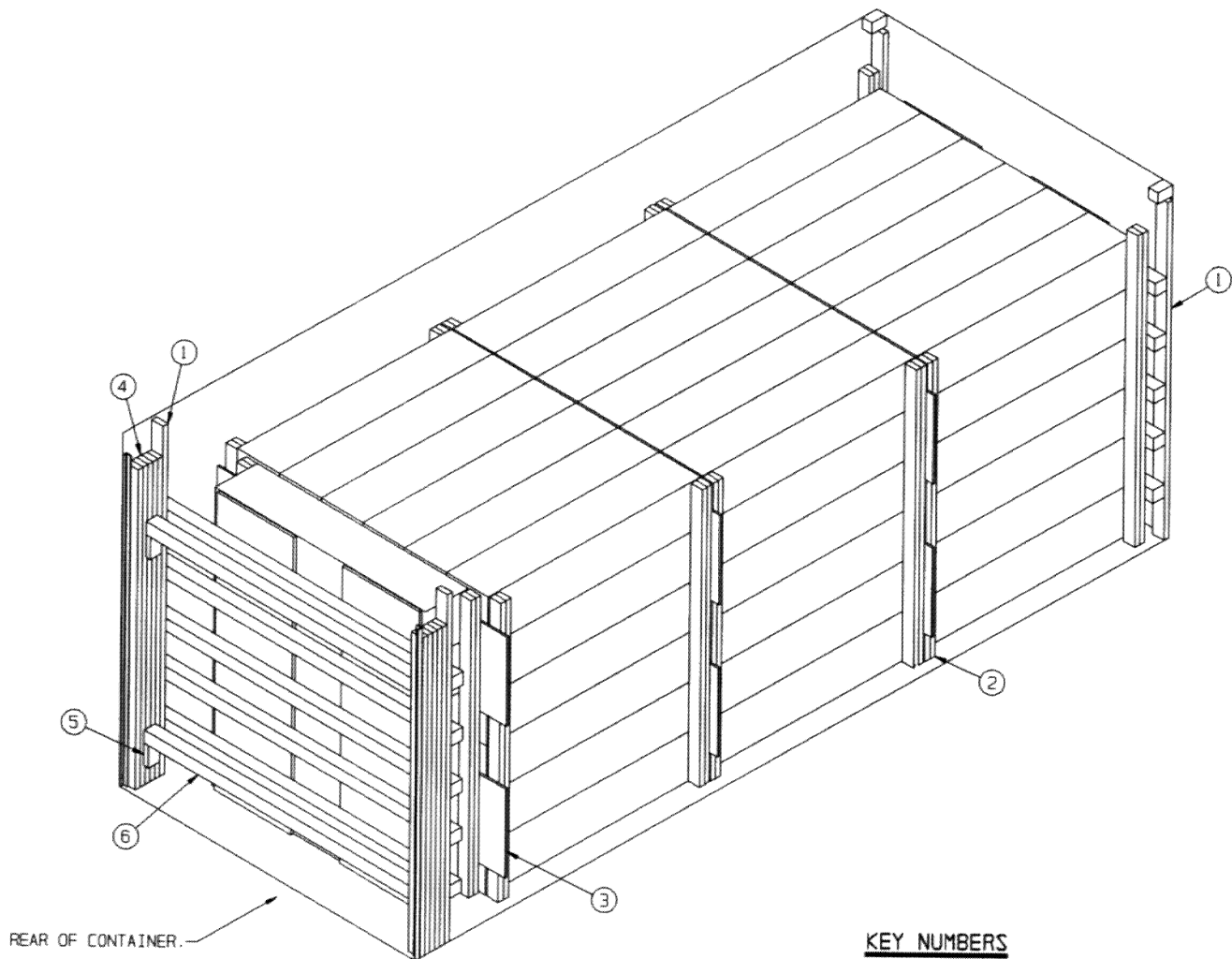


POSITIONING OF TOP-OF-LOAD ANTI-SWAY BRACE



FILLER ASSEMBLY B

DETAILS



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD/REAR BLOCKING ASSEMBLY (2 REQD). SEE THE "FORWARD/REAR BLOCKING ASSEMBLY C" ON PAGE 16.
- ② SEPARATOR GATE A (2 REQD). SEE THE "SEPARATOR GATE A" DETAIL ON PAGE 17.
- ③ SEPARATOR GATE B (1 REQD). SEE THE "SEPARATOR GATE B" DETAIL ON PAGE 17.
- ④ FILL MATERIAL, 4" WIDE BY 6'-6" LONG MATERIAL (AS REQUIRED). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/7 NAILS OF A SUITABLE SIZE (10d FOR 2" MATERIAL). LAMINATE EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER.
- ⑤ STRUT LEDGER, 2" X 4" X 6" (4 REQD). INSTALL PRIOR TO INSTALLING THE SPANNER PIECES, PIECE MARKED ⑥. NAIL TO THE FILL MATERIAL, PIECE MARKED ④, W/2-10d NAILS.
- ⑥ SPANNER PIECE, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (2 REQD). INSTALL THE UPPER SPANNER PIECE SUCH THAT THE TOP EDGE OF THE SPANNER PIECE IS AT THE SAME HEIGHT AS THE TOP EDGE OF THE BEAM IN THE REAR BLOCKING ASSEMBLY, PIECE MARKED ①. INSTALL THE LOWER SPANNER PIECE SUCH THAT THE BOTTOM EDGE IS AT THE SAME HEIGHT AS THE BOTTOM EDGE OF THE LOWEST BEAM IN THE REAR BLOCKING ASSEMBLY. TOENAIL TO THE FILL MATERIAL, PIECE MARKED ④, W/2-12d NAILS AT EACH END. NOTE: PIECES MARKED ⑤ AND ⑥ ARE ONLY REQUIRED WHEN USING 6" OR MORE OF SOLID FILL MATERIAL.

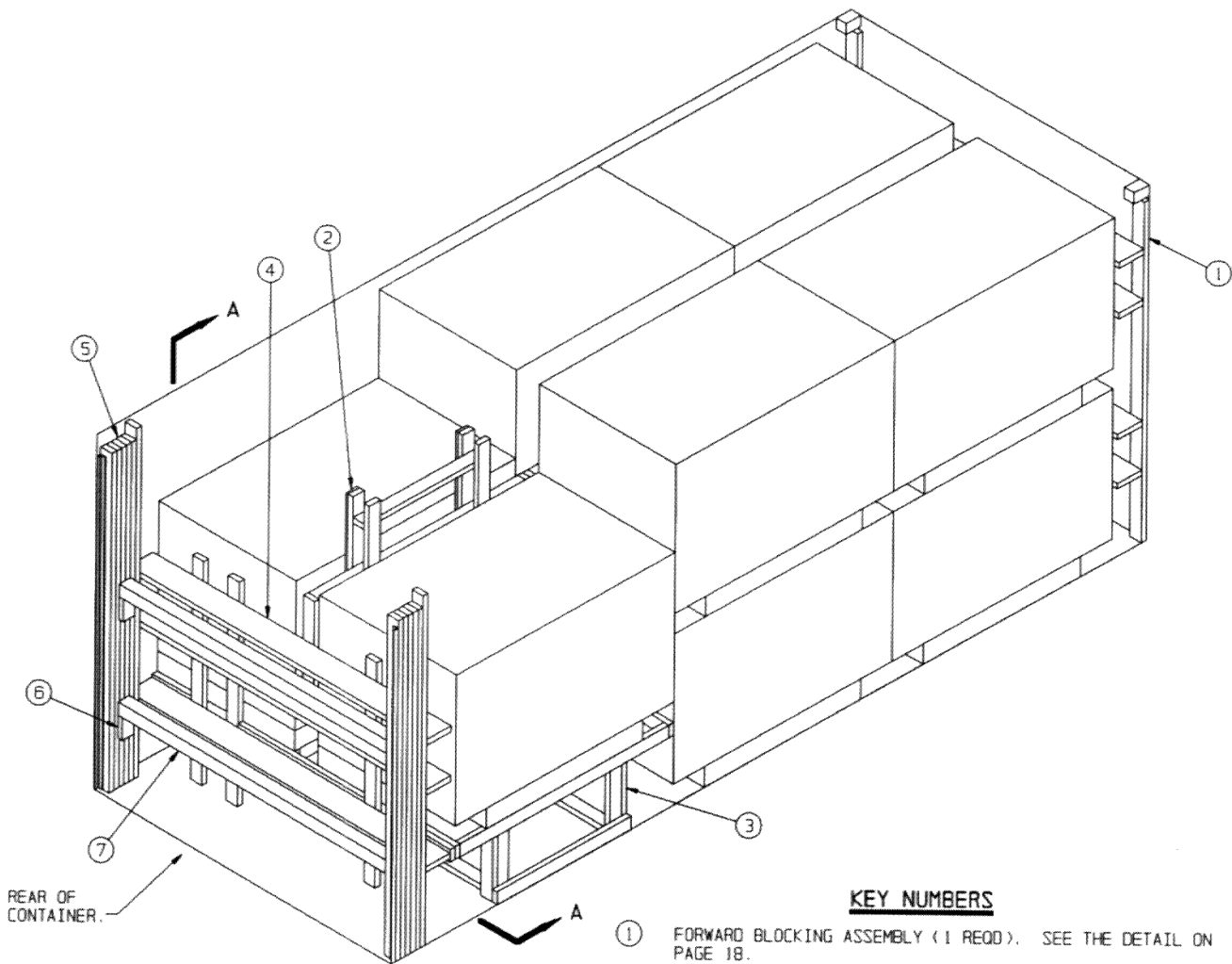
RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PREFABRICATE TWO FORWARD/REAR BLOCKING ASSEMBLIES "C", TWO SEPARATOR ASSEMBLIES "A" AND ONE SEPARATOR ASSEMBLY "B".
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD THIRTY-SIX CONTAINERS AND INSTALL ONE SEPARATOR ASSEMBLY "A".
4. REPEAT STEP 3.
5. LOAD THIRTY-SIX CONTAINERS AND INSTALL ONE SEPARATOR ASSEMBLY "B".
6. LOAD SIX CONTAINERS AND INSTALL THE REAR BLOCKING ASSEMBLY.
7. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
8. INSTALL THE FOUR STRUT LEDGERS AND TWO SPANNER PIECES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	14	5
2" X 4"	290	193
4" X 4"	90	120
NAILS	NO. REQD	POUNDS
6d (2")	104	3/4
10d (3")	240	3-3/4
12d (3-1/4")	8	1/4
PLYWOOD, 1/2"	144 SQ FT REQD	198 LBS

LOAD AS SHOWN

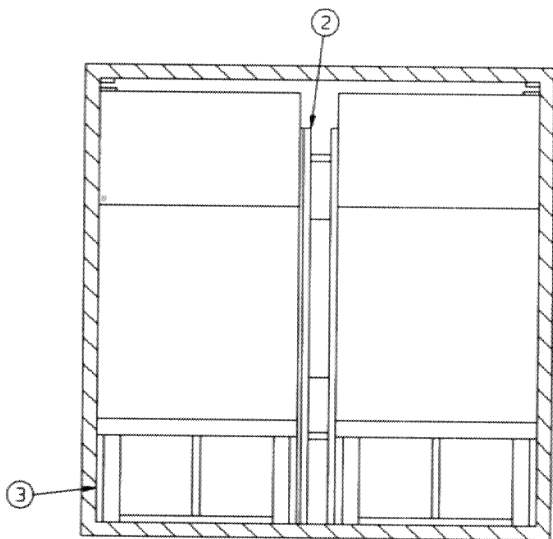
ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	114	9,776 LBS
DUNNAGE		839 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		15,315 LBS (APPROX)



ISOMETRIC VIEW

KEY NUMBERS

- ① FORWARD BLOCKING ASSEMBLY (1 REOD). SEE THE DETAIL ON PAGE 18.
- ② SPACER ASSEMBLY (3 REOD). SEE THE DETAIL ON PAGE 19.
- ③ RISER ASSEMBLY (2 REOD). SEE THE DETAIL ON PAGE 19.
- ④ REAR BLOCKING ASSEMBLY (1 REOD). SEE THE DETAIL ON PAGE 18.
- ⑤ FILL MATERIAL, 4" WIDE BY 7'-7" LONG MATERIAL (AS REOD). NAIL THE FIRST PIECE TO THE REAR BLOCKING ASSEMBLY W/7 NAILS OF A SUITABLE SIZE (10d FOR 2" MATERIAL). LAMINATE EACH ADDITIONAL PIECE TO THE PREVIOUS PIECE IN A SIMILAR MANNER.
- ⑥ STRUT LEDGER, 2" X 4" X 6" (4 REOD). INSTALL PRIOR TO INSTALLING THE SPANNER PIECES, PIECE MARKED ⑦. NAIL TO THE FILL MATERIAL, PIECE MARKED ⑤, W/2-10d NAILS.
- ⑦ SPANNER PIECE, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (2 REOD). INSTALL THE UPPER SPANNER PIECE SUCH THAT THE TOP EDGE OF THE SPANNER PIECE IS AT THE SAME HEIGHT AS THE TOP EDGE OF THE BEAM IN THE REAR BLOCKING ASSEMBLY, PIECE MARKED ④. INSTALL THE LOWER SPANNER PIECE SUCH THAT THE BOTTOM EDGE IS AT THE SAME HEIGHT AS THE BOTTOM EDGE OF THE LOWEST BEAM IN THE REAR BLOCKING ASSEMBLY. TOENAIL TO THE FILL MATERIAL, PIECE MARKED ⑤, W/2-12d NAILS AT EACH END. NOTE: PIECES MARKED ⑥ AND ⑦ ARE ONLY REQUIRED WHEN USING 6" OR MORE OF SOLID FILL MATERIAL.



SECTION A-A

RECOMMENDED SEQUENTIAL LOADING PROCEDURES

1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY, ONE REAR BLOCKING ASSEMBLY, THREE SPACER ASSEMBLIES AND TWO RISER ASSEMBLIES.
2. INSTALL THE FORWARD BLOCKING ASSEMBLY.
3. LOAD FOUR PALLET UNITS AND INSTALL ONE SPACER ASSEMBLY.
4. REPEAT STEP 3.
5. INSTALL TWO RISER ASSEMBLIES, LOAD TWO PALLET UNITS AND INSTALL ONE SPACER ASSEMBLY.
6. INSTALL THE REAR BLOCKING ASSEMBLY.
7. INSTALL THE FILL MATERIAL BETWEEN THE REAR BLOCKING ASSEMBLY AND THE LOAD RETAINERS.
8. INSTALL THE FOUR STRUT LEDGERS AND TWO SPANNER PIECES.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	57	19
2" X 4"	419	279
2" X 8"	53	71
4" X 4"	14	19
NAILS	NO. REQD	POUNDS
6d (2")	30	1/4
10d (3")	490	7-3/4
12d (3-1/4")	8	1/4

LOAD AS SHOWN

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
PALLET UNIT	10	9,520 LBS
DUNNAGE		784 LBS
CONTAINER		4,700 LBS
TOTAL WEIGHT		15,004 LBS (APPROX)

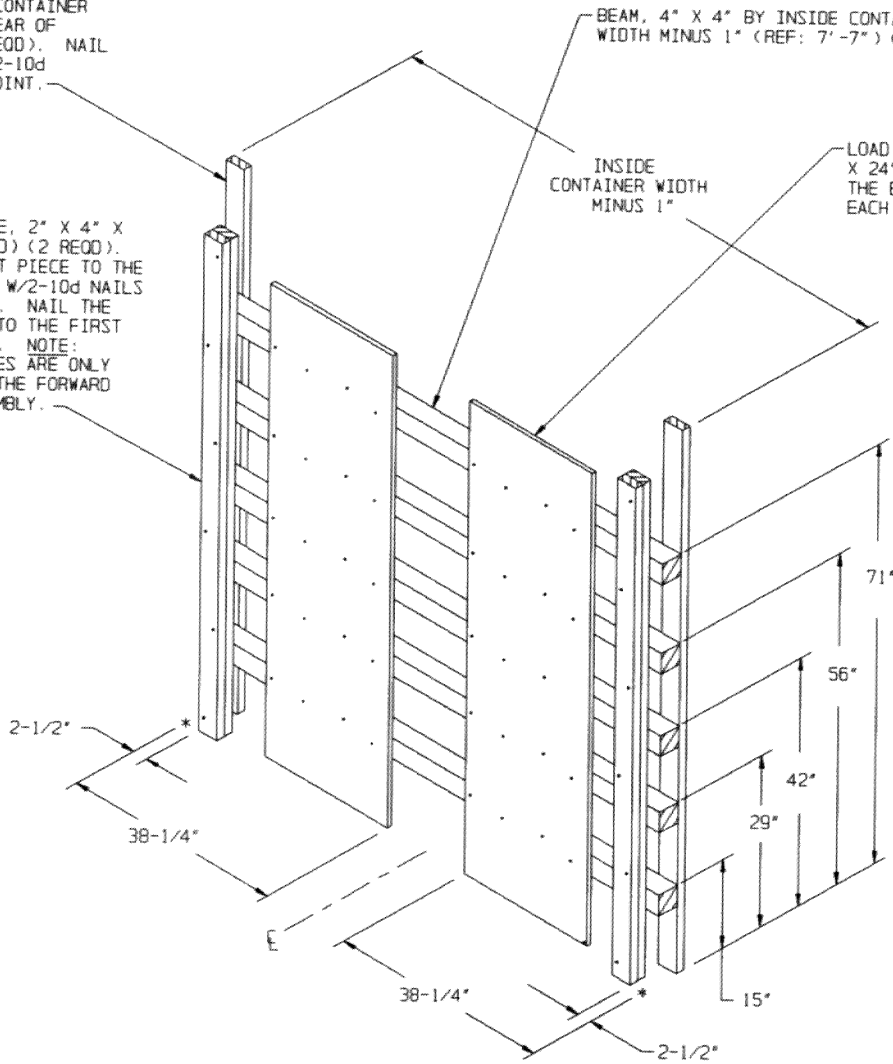
BUFFER PIECE, 2" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-7" IN FORWARD END OF CONTAINER AND 7'-10" IN REAR OF CONTAINER) (2 REQD). NAIL TO THE BEAMS W/2-10d NAILS AT EACH JOINT.

BEAM, 4" X 4" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (5 REQD).

INSIDE CONTAINER WIDTH MINUS 1"

LOAD BEARING PIECE, PLYWOOD, 1/2" X 24" X 6'-8" (2 REQD). NAIL TO THE BEAM ASSEMBLY W/4-6d NAILS AT EACH JOINT.

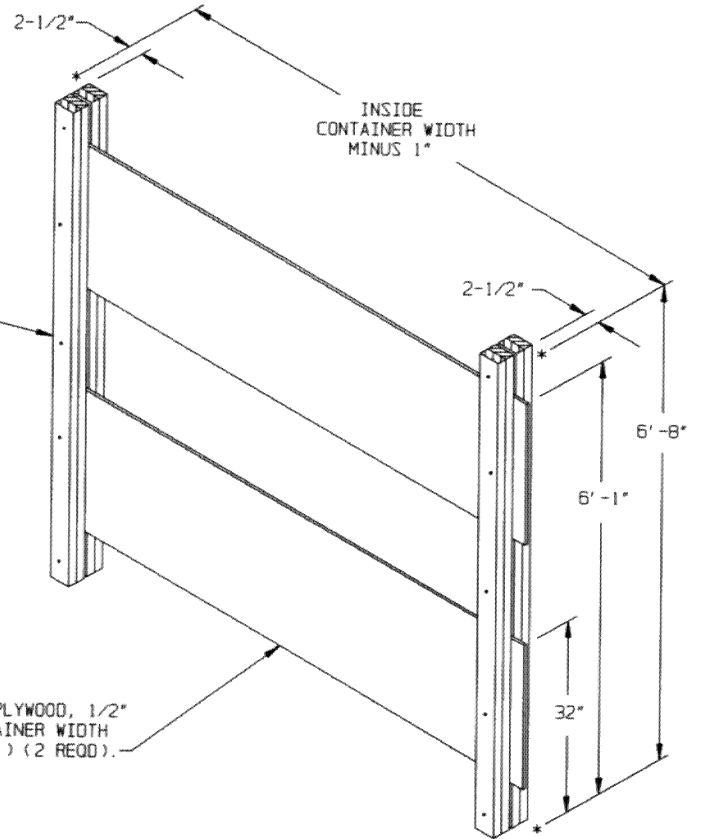
RETAINER PIECE, 2" X 4" X 7'-0" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE BEAM ASSEMBLY W/2-10d NAILS AT EACH JOINT. NAIL THE SECOND PIECE TO THE FIRST W/6-10d NAILS. NOTE: RETAINER PIECES ARE ONLY REQUIRED FOR THE FORWARD BLOCKING ASSEMBLY.



FORWARD/REAR BLOCKING ASSEMBLY C

RETAINER PIECE, 2" X 4" X 6'-8" (DOUBLED) (4 REED).
 NAIL THE FIRST PIECE THRU THE PLYWOOD INTO THE RETAINER PIECE ON OPPOSITE SIDE W/2-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST PIECE W/5-10d NAILS.

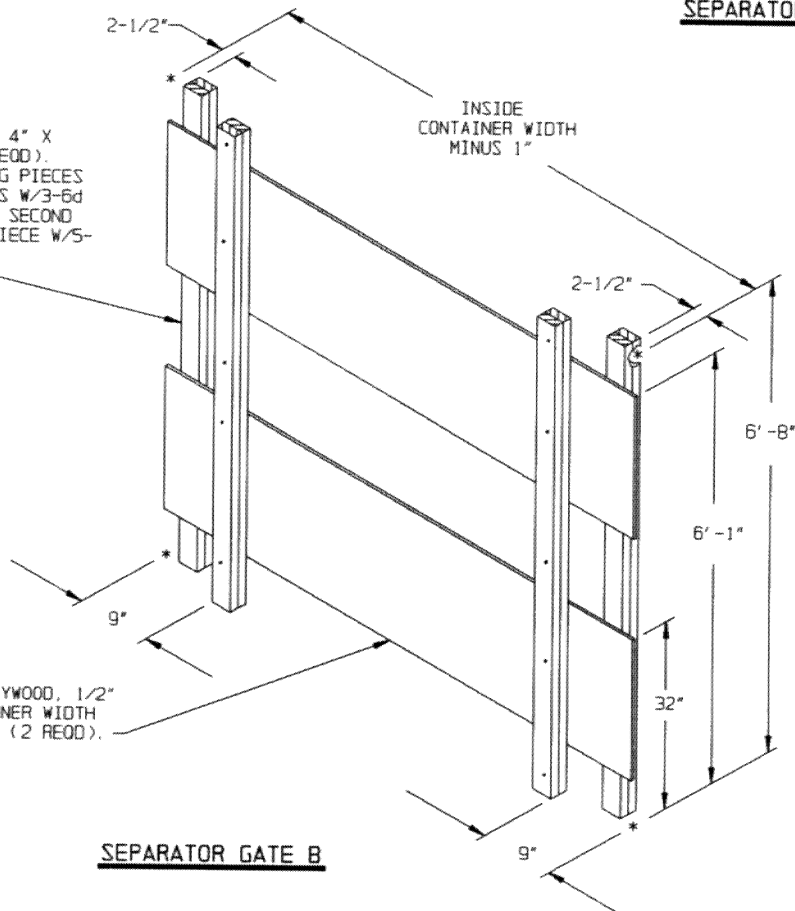
LOAD BEARING PIECE, PLYWOOD, 1/2" X 24" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (2 REED).



SEPARATOR GATE A

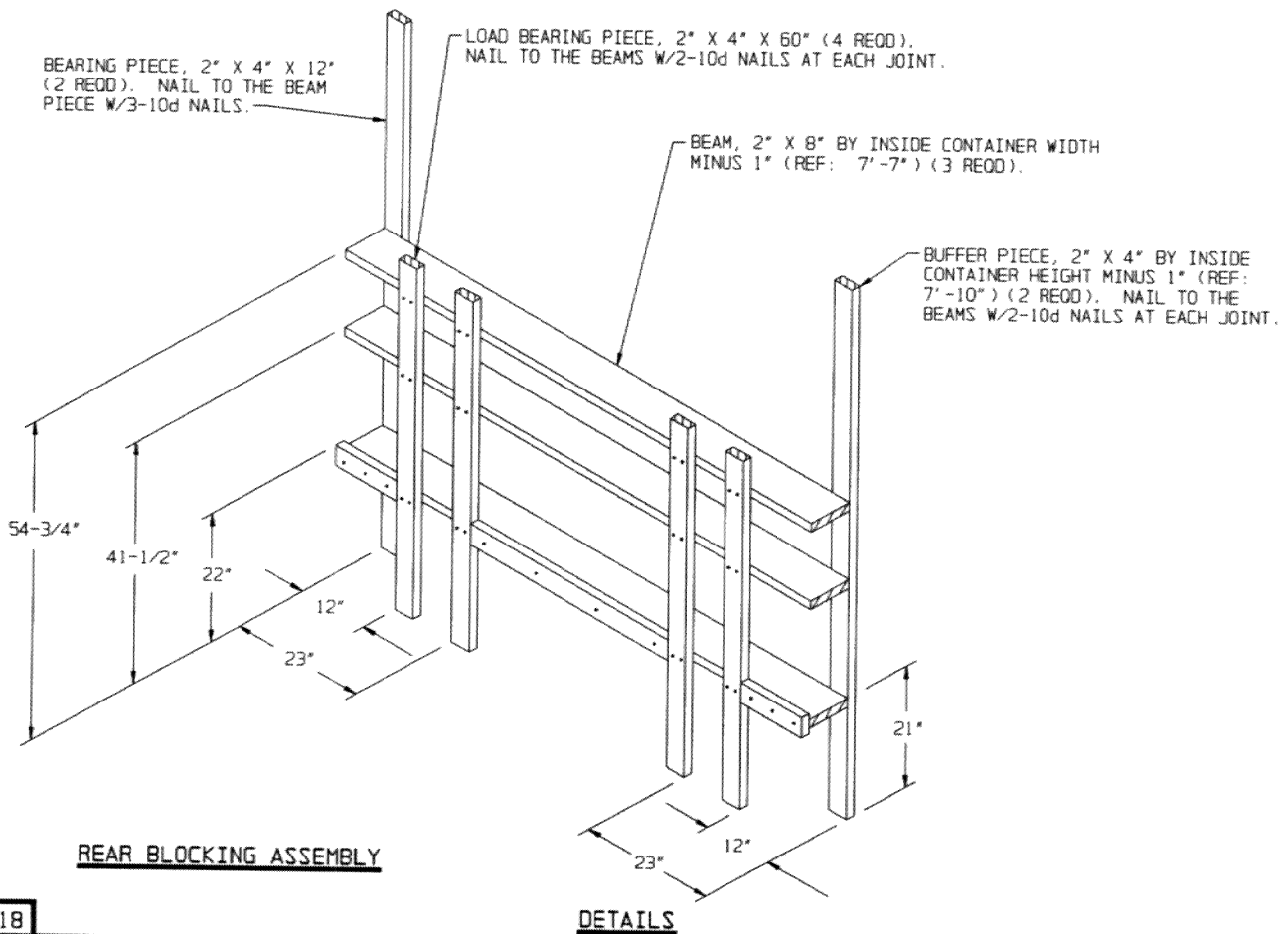
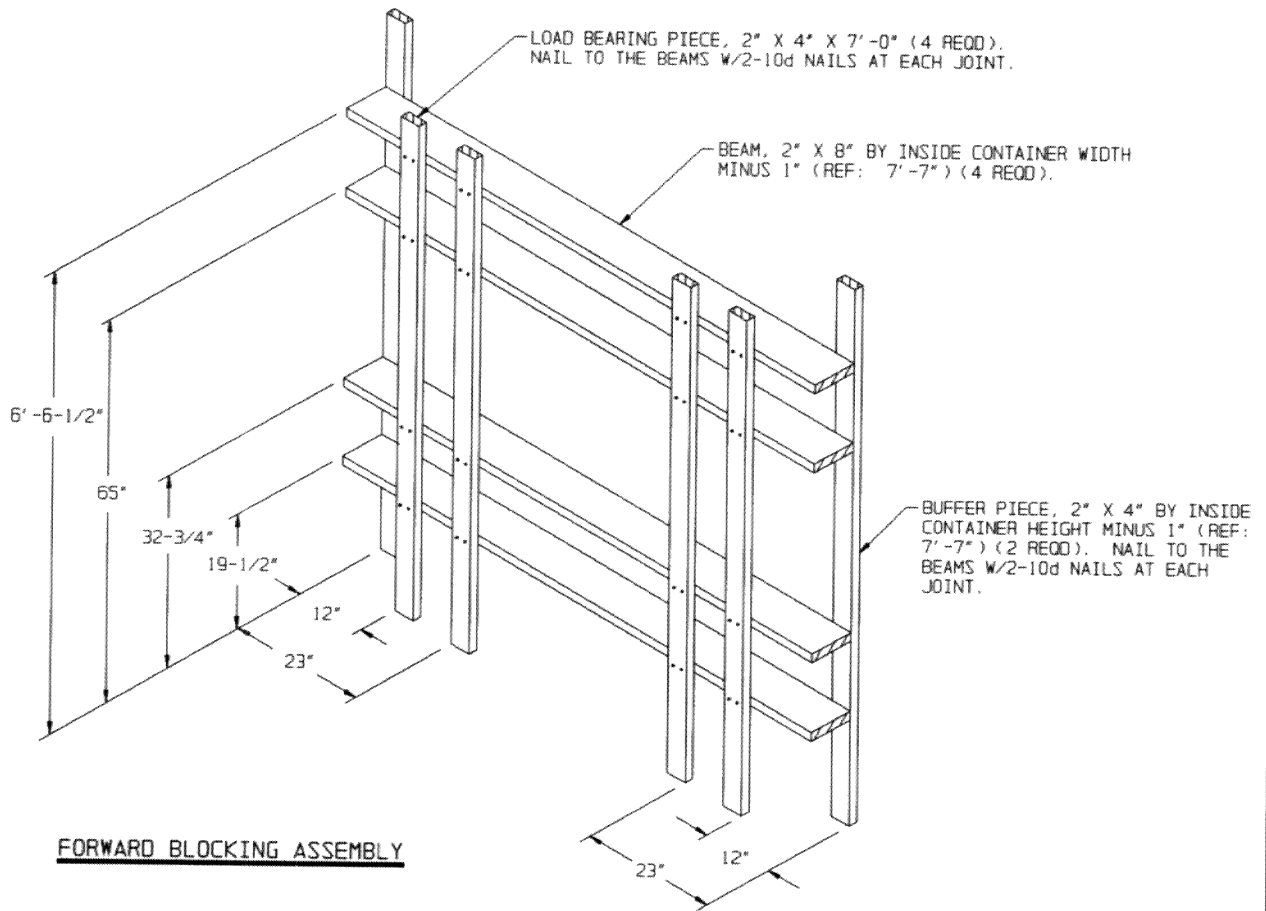
RETAINER PIECE, 2" X 4" X 6'-8" (DOUBLED) (4 REED).
 NAIL THE LOAD BEARING PIECES TO THE RETAINER PIECES W/3-6d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST PIECE W/5-10d NAILS.

LOAD BEARING PIECE, PLYWOOD, 1/2" X 24" BY INSIDE CONTAINER WIDTH MINUS 1" (REF: 7'-7") (2 REED).



SEPARATOR GATE B

DETAILS



FILLER, 1" X 4" X 7'-0"
(2 REOD). NAIL TO THE
VERTICAL PIECES W/5-6d
NAILS.

SPACER PIECE, 2" X 4" X
37" (2 REOD).

VERTICAL PIECE, 2" X 4" X 7'-0"
(4 REOD). NAIL TO THE
TIE PIECES W/2-10d NAILS AND TO THE
SPACER PIECES W/2-10d NAILS
AT EACH END.

STOP PIECE, 2" X 4" 33-3/4"
(2 REOD). NAIL TO THE TIE
PIECES W/2-10d NAILS AT EACH
END.

TIE PIECE, 2" X 4"
X 64" (2 REOD).

6'-6-1/2"

65"

19-1/2"

SPACER ASSEMBLY

LONGITUDINAL PIECE, 2" X 4"
X 63-1/2" (2 REOD). NAIL TO
THE SUPPORT PIECE W/2-10d
NAILS AND TO THE VERTICAL
PIECES W/2-10d NAILS.

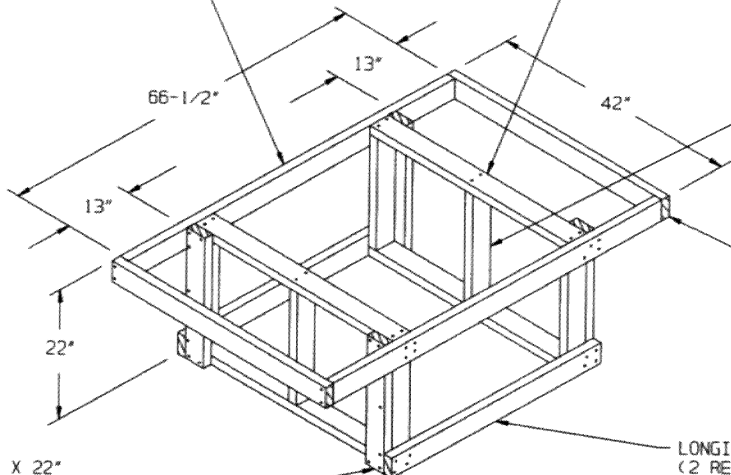
LATERAL PIECE, 2" X 4" X 39"
(4 REOD). NAIL TO THE SUPPORT
PIECES W/2-10d NAILS AT EACH
JOINT.

SUPPORT PIECE, 2" X 4"
X 19" (6 REOD).

STOP PIECE, 2" X 4" X 42"
(2 REOD) NAIL TO THE
LONGITUDINAL PIECE W/2-10d

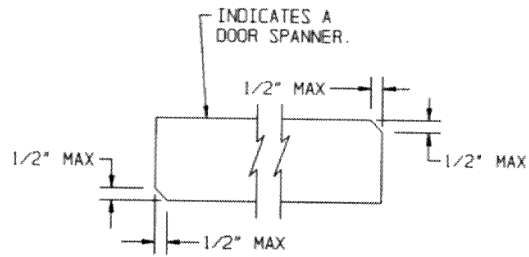
LONGITUDINAL PIECE, 2" X 4" X 40-1/2"
(2 REOD). NAIL TO THE SUPPORT PIECE
W/2-10d NAILS AND TO THE VERTICAL
PIECES W/2-10d NAILS.

VERTICAL PIECE, 2" X 4" X 22"
(4 REOD). NAIL TO THE LATERAL
PIECES W/2-10d NAILS AND TO THE
SUPPORT PIECES W/3-10d NAILS.



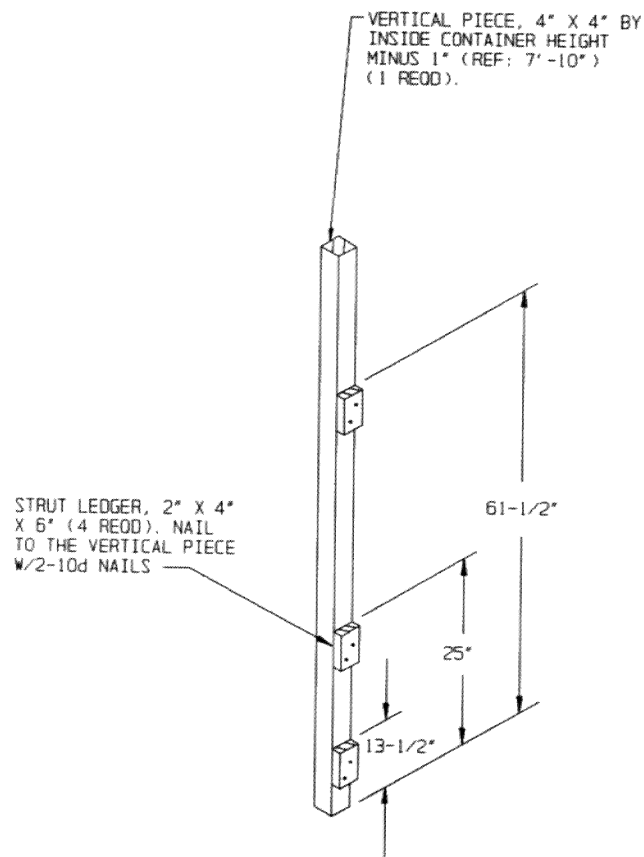
RISER ASSEMBLY

DETAILS



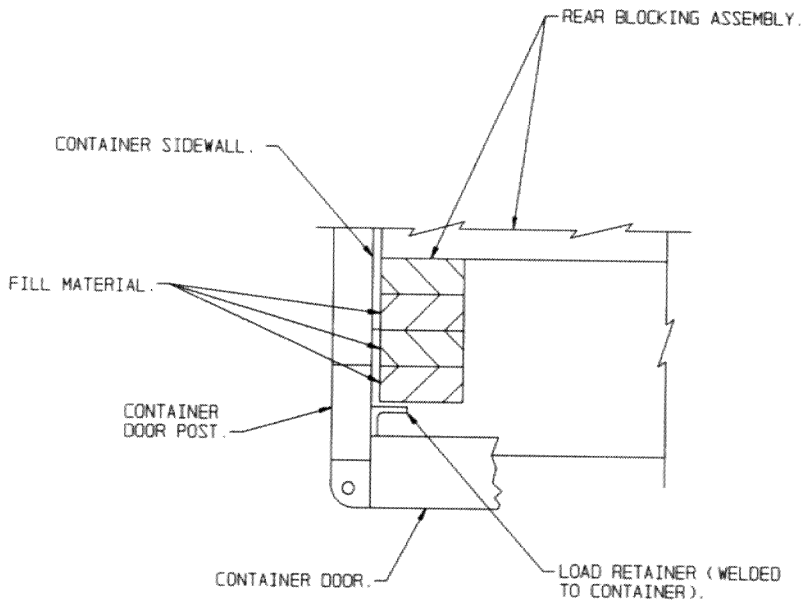
BEVEL-CUT

IF DESIRED, EACH END OF A DOOR SPANNER PIECE MAY BE BEVEL-CUT AS SHOWN ABOVE TO FACILITATE THE ACHIEVEMENT OF A TIGHT DOOR-POST-TO-DOOR-POST FIT.



DOOR POST VERTICAL

TWO DOOR POST VERTICALS ARE REQUIRED WITHIN THE LOADS SHOWN IN THIS DRAWING WHEN THE ISO CONTAINER IS NOT EQUIPPED WITH PRE-WELDED LOAD RETAINERS. THE DOOR POST VERTICALS MUST BE NAILED TO THE DOOR POST VERTICAL RETAINER. NAIL THROUGH THE HOLES IN THE DOOR POST VERTICAL RETAINER INTO THE DOOR POST VERTICAL W/4-10d NAILS. SEE "DETAIL B" AND THE SPECIAL NOTE ON PAGE 21.

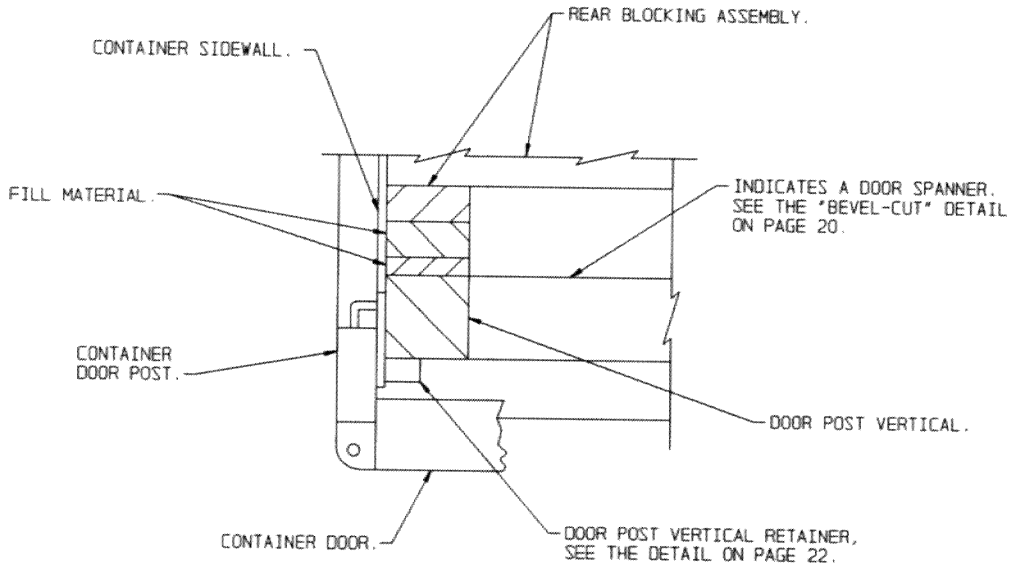


DETAIL A

A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE FILL MATERIAL AND ADJACENT DUNNAGE PIECES.

SPECIAL NOTE:

WHEN COMMERCIAL CONTAINERS ARE NOT EQUIPPED WITH PRE-WELDED LOAD RETAINERS, AS DEPICTED IN "DETAIL B" BELOW, DOOR POST VERTICALS, DOOR POST VERTICAL RETAINERS AND DOOR SPANNERS WILL BE REQUIRED FOR THE LOADS DEPICTED WITHIN THIS DRAWING. SEE VARIOUS LOADS WITHIN AMC DRAWING 19-48-4153-15PA1002 FOR EXAMPLES. SEE PAGE 22 FOR DETAILS OF THE METAL DOOR POST VERTICAL RETAINER.

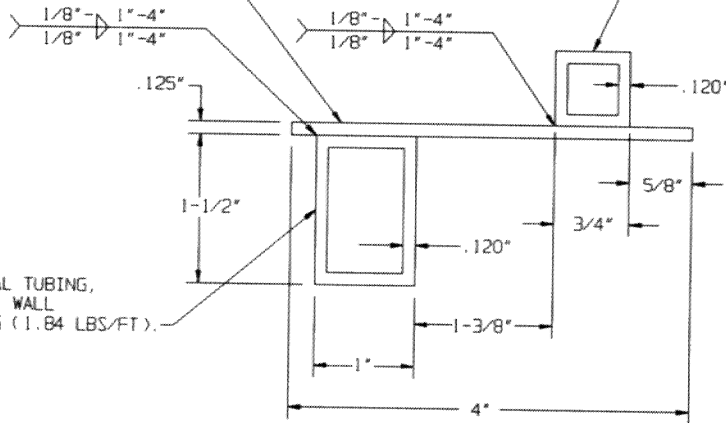


DETAIL B

A PARTIAL PLAN VIEW OF THE LEFT REAR PORTION OF THE CONTAINER IS SHOWN DEPICTING THE PROPER POSITION OF THE DOOR POST VERTICAL RETAINER AND ADJACENT DUNNAGE PIECES.

STEEL STRIP, 1/8" THICK BY 4" WIDE
BY 83" LONG (1.70 LBS/FT).

SQUARE STRUCTURAL TUBING, 3/4" SQUARE
BY .120" WALL THICKNESS BY 83" LONG
(1.03 LBS/FT).



RECTANGULAR STRUCTURAL TUBING,
1-1/2" BY 1" BY .120" WALL
THICKNESS BY 83" LONG (1.84 LBS/FT).

VIEW A

SQUARE STRUCTURAL TUBING,
3/4" SQUARE BY .120" WALL
THICKNESS BY 83" LONG
(1.03 LBS/FT).



RECTANGULAR STRUCTURAL TUBING,
1-1/2" BY 1" BY .120" WALL THICKNESS
BY 83" LONG (1.84 LBS/FT).

DRILL 5/32", 4 HOLES.

STEEL STRIP, 1/8" THICK BY 4" WIDE
BY 83" LONG (1.70 LBS/FT).

DOOR POST VERTICAL RETAINER

NOTE: THE ABOVE ASSEMBLY HAS BEEN SHOWN ROTATED 90° FROM THE ORIENTATION IN WHICH IT IS INSTALLED IN THE LEFT REAR CORNER OF THE CONTAINER. THE ASSEMBLY HAS BEEN ROTATED FOR HOLE LOCATION CLARITY.