APPROVED BY
BUREAU OF EXPLOSIVES

Ja / lerhund

## LOADING AND BRACING WITH WOODEN DUNNAGE IN SIDE OPENING ISO CONTAINERS OF BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS AND SKID BASES

### **INDEX**

<u>ITEM</u>	PAGE(S)
GENERAL NOTES AND MATERIAL SPECIFICATIONS	2,3
TYPICAL PALLET AND SKIDDED UNIT DETAILS	3-6,65
LOAD PLANNING CHARTS	
TYPICAL REDUCED-LOAD PROCEDURES	
TYPICAL LOADING PROCEDURES	
TYPICAL DETAILS	10-67
ALTERNATIVE FORWARD/REAR BLOCKING ASSEMBLY	
LOADING CONFIGURATION CHART	74-81

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.

	IA . Z . U	RMY	MATERI	EL C		AND DE	RAWING
	APPROVED, U.S. ARMY AR	MAMENT, MU	DNA ZMOITINU	DRAFT	NAMZ	TECHNICIAN	ENGINEER
	CHEMICAL COMMAND						L. FIEFFER
-	. 101	f 1					
_	sufer.	popu	4	VALIDAT ENGINEE	RING	TRANSPORTATION ENGINEERING	ENGINEERING
	APPROVED BY ORDER OF CO ARMY MATERIEL COMMAND	OMMANDING	GENERAL, U.S.	DIVIS		NOIZIVIO	OFFICE
	$\gamma$	1	13		MKI	U. Frence	Re W7 Einst
	John L	:3i	1.rd fr	V	NC	VEMBER 1	993
	U.S. ARMY DEFENSE AMMU	NITION CH	NTER AND SCHOOL	CLASS	NOISIVIO	DRAWING	FILE
DO NOT SCALE				19	48	4267	15PA1009

PROJECT CA 280-92

### **GENERAL NOTES**

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1 AND AUGMENTS TM 743-200-1 (CHAPTER 5).
- B. THE OUTLOADING PROCEDURES SPECIFIED IN THIS DRAWING ARE APPLICABLE TO LOADS OF BOXED AMMUNITION AND COMPONENTS ON 4-WAY ENTRY PALLETS AND SKIDDED BASES. SUBSCIUENT REFERENCE TO A PALLET UNIT OR A SKIDDED UNIT HEREIN MEANS THE UNIT WITH AMMUNITION ITEMS. SEE PAGES 3 THRU 6 AND PAGE 65 FOR "TYPICAL UNIT DETAILS". CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE CONTAINER MUST NOT BE EXCEEDED.
- C. THE LOADS AS SHOWN ARE BASED ON 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" HIGH AND A MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. THE LOAD IS DESIGNED FOR TRAILER-CONTAINER-ON-FLATCAR (T/COFC) SHIPMENT, HOWEVER, THE LOAD AS DESIGNED CAN ALSO BE MOVED BY MOTOR OR WATER CARRIERS. NOTICE: OTHER CONTAINERS OF THE SAME DESIGN CONFIGURATION CAN ALSO BE USED.
- D. WHEN LOADING THE 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". EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE SIDE FILL OR CENTER FILL ASSEMBLIES. NAIL EACH ADDITIONAL PIECE TO THE VERTICAL PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS AND QUANTITY OF THE DUNNAGE LUMBER USED MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE SIZE OF THE LADING UNIT.
- E. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 6" MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE. THOSE MEMBERS SPECIFICALLY IDENTIFIED AS "STRUTS" WITHIN THE KEY NUMBERS OF A DEPICTED LOAD ARE SPECIFIED TO BE 4" X 4" MATERIAL, IT IS PERMISSIBLE TO USE TWO LAMINATED PIECES OF 2" X 4" MATERIAL IN LIEU OF EACH 4" X 4" STRUT. DOUBLED 2" X 4" STRUTS WILL BE LAMINATED W/1-10d NAIL EVERY 6".
- F. 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.
- G. IN SOME CONTAINERS THERE IS A SLOT AT THE CORNERS OF THE ENDWALLS. A PIECE OF DUNNAGE MATERIAL MUST BE LAMINATED TO THE BUFFER PIECES OF THE END BLOCKING ASSEMBLY TO PROVIDE A FLAT SUPFACE FOR THE 1" X 4" OR 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.
- H. CAUTION: DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- J. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEW FOR CLARITY PURPOSES.
- K. TO MAKE LOADING EASIER, TO HELP ACHIEVE A TIGHT LOAD ACROSS A CONTAINER, AND TO PREVENT UNACCEPTABLE DAMAGE TO LADING UNITS WHEN LOADING A CONTAINER, A SLIP-SHEET CAN BE USED EFFECTIVELY AS A "SHOEHORN" TYPE DEVICE. THE SLIP-SHEET WILL PROVIDE A SMOOTH SURFACE THAT WILL PREVENT UNIT STRAPS AND/OR BOXES AND/OR BOX CLEATS FROM INTERLOCKING OR CATCHING ON OTHER PROJECTIONS WHEN LATERALLY ADJACENT LADING UNITS ARE BEING LOADED. A SLIP-SHEET WILL BE USED AFTER ONE-HALF OF A STACK IS LOADED WITH ONE OF ITS SIDES IN TIGHT CONTACT AT ONE SIDE OF THE CONTAINER. THE SLIP-SHEET IS TO BE PLACED AGAINST THE OTHER SIDE OF THE HALFSTACK BEFORE THE HALF OF THE STACK IS LOADED. AFTER A STACK IS COMPLETED, THE SLIP-SHEET IS TO BE REMOVED FOR SUBSEQUENT USE WITH THE NEXT STACK. 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 REQUIREMENT.

(CONTINUED AT RIGHT)

### (GENERAL NOTES CONTINUED)

- L. 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.
- M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET OF 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.
- N. 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.
- O. THE QUANTITY OF LADING UNITS SHOWN IN THE LOADS MAY BE REDUCED FOR SHIPMENT, IF DESIRED. SEE THE "TYPICAL REDUCED LOAD" ON PAGE 72. WHEN A CONTAINER IS TO BE 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
  - 1. IF A LOAD IS REDUCED BY ONLY A SMALL AMOUNT (ONE OR TWO LADING UNITS), LADING UNITS NORMALLY MAY BE ELIMINATED FROM THE CENTER OF THE LOAD, UNLESS STRUTS ARE USED IN THE LOAD, IN WHICH CASE LADING UNITS SHOULD BE ELIMINATED AT THE ENDS OF THE LOAD (FILLER ASSEMBLIES MUST NOT BE INSTALLED IMMEDIATELY ADJACENT TO CENTER GATES AND STRUTS).
  - 2. 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.
- P. WHERE 2" X 2" PIECES ARE SPECIFIED FOR STRUT LEDGERS, 2" X 4" MATERIAL MAY BE SUBSTITUTED, IF DESIRED.

(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.

STRAPPING, STEEL - -: ASTM D3953; FLAT STRAPPING, TYPE 1, HEAVY DUTY, FINISH A, B (GRADE 2), OR C.

SEAL, STRAP ---: ASTM D3953; CLASS H, FINISH A, B (GRADE 2), OR C, DOUBLE NOTCH TYPE, STYLE I, II, OR IV.

WIRE, CARBON STEEL -: ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, .0800° DIA, GRADE 1006 OR BETTER.

FIBERBOARD - - - - -: FED SPEC PPP-F-320; TYPE SF (SOLID FIBERBOARD), CLASS DOMESTIC, ALL GRADES.

### (GENERAL NOTES CONTINUED FROM PAGE 2)

- Q. WHEN STEEL STRAPPING IS SEALED AT AN END-OVER-END LAP JOINT, A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS BEING USED. A MINIMUM OF TWO SEALS, BUTTED TOGETHER WITH TWO PAIR OF CRIMPS PER SEAL WILL BE USED TO SEAL THE JOINT WHEN A CRIMP-TYPE SEALER IS BEING USED. REFER TO THE "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 73 FOR GUIDANCE.
- R. THE BUFFER PIECE OF AN END BLOCKING ASSEMBLY MAY BE DOUBLED TO DECREASE THE AMOUNT OF FILL MATERIAL REQUIRED IN A CENTER FILL ASSEMBLY. SEE THE "END BLOCKING ASSEMBLY D" ON PAGE 22 FOR AND EXAMPLE. THE BUFFER PIECES MAY ALSO BE 1" X 4" MATERIAL INSTEAD OF 2" X 4" MATERIAL IF ADDITIONAL VOID IS NEEDED FOR CENTER BLOCKING IN A LOAD, SEE "END BLOCKING ASSEMBLY F" ON PAGE 30 FOR AN EXAMPLE.
- S. THE 4" X 4" STRUTS DEPICTED IN LOADS WITHIN THIS DRAWING ARE CAPABLE OF SUPPORTING 3,000 POUNDS EACH. FOR EXAMPLE, IF A LOAD OF EIGHT PALLET UNITS IS STRUTTED IN THE MIDDLE (FOUR PALLET UNITS ON EITHER SIDE OF THE GATES), AND EACH PALLET UNITS WEIGHS 3,000 POUNDS, FOUR STRUTS ARE REQUIRED, ONE HALF OF THE LOAD (THE FORCE TAKEN BY THE STRUTS) IS 12,000 POUNDS, DIVIDED BY 3,000 EQUATES TO FOUR STRUTS. DOUBLED 2" X 4" STRUTS WILL SUPPORT 2,500 POUNDS EACH. THE QUANTITY OF STRUTS REQUIRED IS NOT SOLELY DETERMINED BY THE WEIGHT OF THE LOAD. THE LADING UNITS MUST BE FULLY SUPPORTED AND BLOCKED ONLY AGAINST SECTIONS THAT ARE STRONG ENOUGH TO SUPPORT THE FULL LOAD, FOR EXAMPLE, DO NOT BLOCK AGAINST THE MIDDLE OF A WIREBOUND BOX.

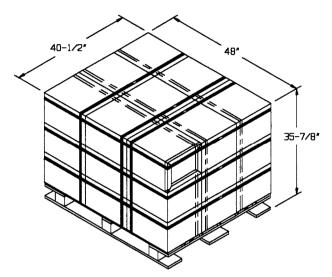
### T. MAXIMUM LOAD WEIGHT CRITERIA:

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 TO REDUCE THE LOAD WEIGHT TO SATISFY SET WEIGHT RESTRICTIONS IMPOSED ON THE INTERMODAL CONTAINER SYSTEM.

(CONTINUED AT RIGHT)

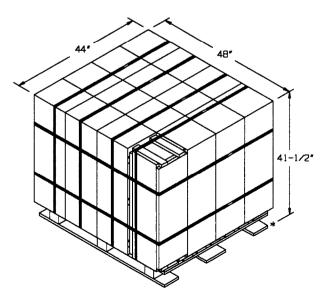
### (GENERAL NOTES CONTINUED)

U. LOAD-BLOCKING STRUTS WHICH ARE 48" OR LONGER MUST BE STIFFENED BY THE APPLICATION OF HORIZONTAL AND VERTICAL STRUT BRACING AS SHOWN IN THE "STRUT BRACING DETAIL" ON PAGE 73. BRACING IS NOT REQUIRED IF THE STRUTS FOR THE LOAD BEING SHIPPED ARE SHORTER THAN 48". THE LENGTH OF THE LOAD-BLOCKING STRUTS SHOULD BE KEPT AS SHORT AS POSSIBLE (APPROX 12" MINIMUM), BUT IN THE EVENT IT IS NECESSARY TO USE STRUTS WHICH ARE 8"-0" OR MORE IN LENGTH, IT WILL BE NECESSARY TO APPLY AN ADDITIONAL SET OF HORIZONTAL AND VERTICAL STRUT BRACING PIECES. STRUT BRACING SHOULD BE APPLIED SO AS TO PROVIDE NEARLY EQUAL SPACES BETWEEN THE BRACING PIECES AND THE DUNNAGE ASSEMBLIES AND/OR BETWEEN ADJACENT STRUT BRACING PIECES. NOTE THAT HORIZONTAL STRUT BRACING PIECES FOR THE UPPER NOTE THAT HORIZONTAL STRUT BRACING PIECES FOR THE UPPER LEVEL OF STRUTS FOR ALL BUT THE UPPERMOST TIER OF A LOAD MAY BE DIFFICULT TO APPLY TO THE TOP SURFACES OF THE STRUT AS DEPICTED. STRUT BRACING WILL BE EQUALLY EFFECTIVE IF APPLIED TO THE UNDER SIDE OF THOSE STRUTS.



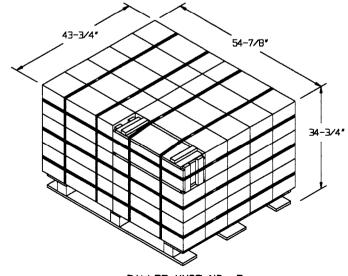
### PALLET UNIT NO. 1

UNIT WEIGHT - - - - - 1,518 POUNDS (APPROX)



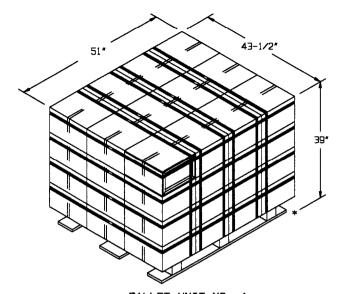
### PALLET UNIT NO. 2

UNIT WEIGHT - - - - 1,322 POUNDS (APPROX)



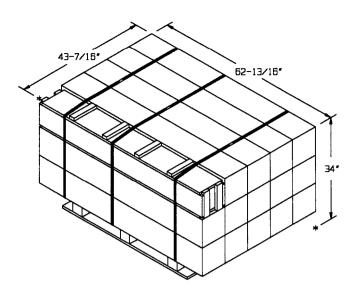
### PALLET UNIT NO. 3

UNIT WEIGHT - - - - 1,868 POUNDS (APPROX)
CUBE - - - - - - 48.3 CUBIC FEET



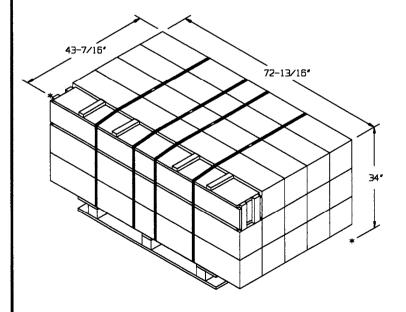
### PALLET UNIT NO. 4

UNIT WEIGHT - - - - 2,729 POUNDS (APPROX)
CUBE - - - - - - 50.1 CUBIC FEET



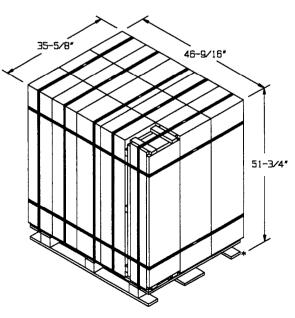
### PALLET UNIT NO. 5

UNIT WEIGHT - - - - 1,988 POUNDS (APPROX)
CUBE - - - - - - 53.7 CUBIC FEET



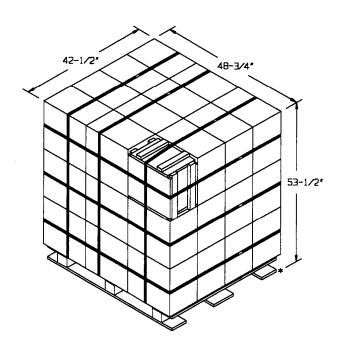
### PALLET UNIT NO. 6

UNIT WEIGHT - - - - 2,524 POUNDS (APPROX)
CUBE - - - - - - - - 62.2 CUBIC FEET



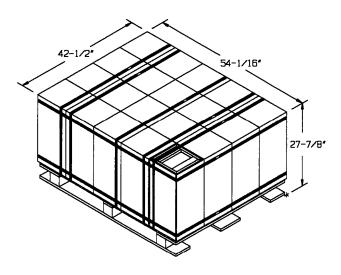
### PALLET UNIT NO. 7

UNIT WEIGHT - - - - 2,188 POUNDS (APPROX)
CUBE - - - - - - 49.7 CUBIC FEET



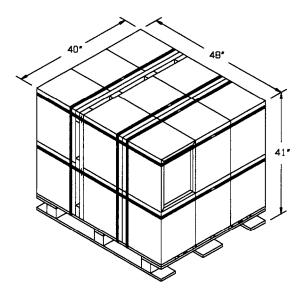
### PALLET UNIT NO. 8

UNIT WEIGHT - - - - 2,679 POUNDS (APPROX)
CUBE - - - - - - 64.2 CUBIC FEET



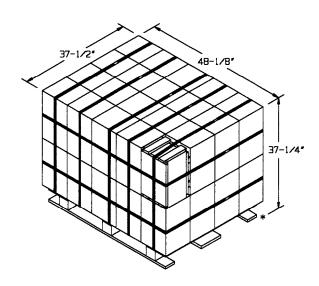
### PALLET UNIT NO. 9

UNIT WEIGHT - - - - - 1,377 POUNDS (APPROX)
CUBE - - - - - - 37.1 CUBIC FEET



### PALLET UNIT NO. 10

UNIT WEIGHT - - - - - 2,051 POUNDS (APPROX)
CUBE - - - - - - 45.6 CUBIC FEET

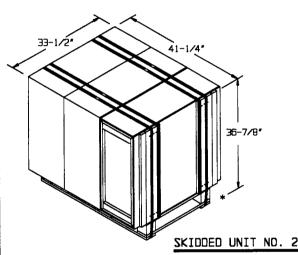


### PALLET UNIT NO. 11

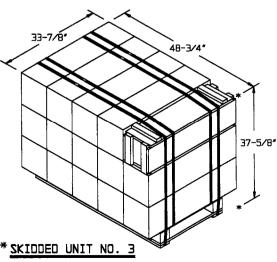
UNIT WEIGHT - - - - - 1,552 POUNDS (APPROX)
CUBE - - - - - - 38.9 CUBIC FEET

# SKIDDED UNIT NO. 1

UNIT WEIGHT - - - - - 294 POUNDS (APPROX)



UNIT WEIGHT - - - - 480 POUNDS (APPROX)
CUBE - - - - - - 29.5 CUBIC FEET



UNIT WEIGHT - - - - 1,037 POUNDS (APPROX)
CUBE - - - - - - 36.0 CUBIC FEET

\* THE DETAIL FOR SKIDDED UNIT NO. 4 IS ON PAGE 65. THIS UNIT IS 48-3/8" L X 32-1/8" W X 31" H AND 790 POUNDS.

### SPECIAL NOTES:

- 1. THE FOLLOWING SPECIAL NOTES AND THE FIVE CHARTS ON PAGE 7 ARE PRESENTED AS GUIDANCE IN THE SELECTION OF A LOAD PATTERN, AND IN DETERMINING THE QUANTITY OF UNITS WHICH CAN BE LOADED IN A 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING ISO CONTAINER, BASED ON THE SIZE AND WEIGHT OF THE PALLETIZED OR SKIDDED UNIT TO BE LOADED.
- 2. CHART NO. 1 MAY BE USED IN SELECTING A LOAD PATTERN FOR THE WIDTH OF THE CONTAINER WHICH IS TO BE LOADED. THE LOAD PATTERN WILL BE BASED EITHER ON THE UNIT LENGTH ACROSS THE CONTAINER OR ON THE UNIT WIDTH ACROSS THE CONTAINER, DEPENDENT UPON THE LENGTH OR WIDTH DIMENSIONS OF THE UNIT TO BE LOADED. UNIT SIZE RANGES AND LOAD PATTERNS FOR AN 89° INSIDE WIDTH CONTAINER ARE GIVEN. CONTAINERS OF OTHER WIDTHS MAY BE USED, HOWEVER, THE SIZE RANGE OF THE UNITS WHICH CAN BE LOADED IN THE TWO LOAD PATTERNS WILL HAVE TO BE CALCULATED. THE SMALLER FIGURE SHOWN FOR UNIT SIZE RANGE IS BASED ON THE MINIMUM UNIT LENGTH OR WIDTH, AS APPLICABLE, AND THE LARGER FIGURE IS CALCULATED ON THERE BEING AT LEAST 1" EXCESS LATERAL SPACE REMAINING IN THE CONTAINER AFTER THE UNITS ARE POSITIONED.
- 3. CHART NO. 2 MAY BE USED IN DETERMINING THE QUANTITY OF UNITS WHICH CAN BE POSITIONED WITHIN ONE ROW IN THE LENGTH OF THE CONTAINER. THE UNIT SIZE RANGE FOR A 20' CONTAINER IS BASED ON THE INSIDE LENGTH OF THE CONTAINER BEING 19'-4" LONG AND ALSO ON A REQUIRED TOTAL INSIDE BLOCKING THICKNESS AVERAGING BETWEEN 14-1/2" AND 25".
- 4. CHART NO. 3 MAY BE USED IN DETERMINING THE NUMBER OF TIERS WHICH CAN BE LOADED IN A CONTAINER, BASED ONLY UPON THE HEIGHT OF THE UNIT. THE INSIDE HEIGHT OF AN B'-6' CONTAINER IS 8B'. THE HEIGHT RANGE OF THE UNITS SPECIFIED ALLOWS AT LEAST 1/2' CLEARANCE AT THE ROOF. NO ALLOWANCE HAS BEEN MADE FOR DOOR OPENING HEIGHT CLEARANCE. FOR LOADS WHICH ARE OF SUCH A HEIGHT AS TO EXTEND TO WITHIN 3' OR 4' OF THE ROOF, IT MAY NOT BE POSSIBLE TO PLACE THE TOP UNITS IN THE DOOR SIDE LOAD BAYS. THE ACTUAL NUMBER OF TIERS WHICH CAN BE LOADED WILL BE BASED ON SEVERAL FACTORS SUCH AS THE WEIGHT OF THE UNITS AND THE QUANTITY THAT IS TO BE SHIPPED.
- 5. CHART NO. 4 MAY BE USED AS GUIDANCE IN DETERMINING THE QUANTITY OF UNITS WHICH CAN BE LOADED IN A CONTAINER, BASED ONLY UPON THE WEIGHT OF THE UNIT. THE "UNIT WEIGHT IN LBS" COLUMN SPECIFIES WEIGHTS RANGING FROM 250 POUNDS, THE APPROXIMATE MINIMUM, TO 4,000 POUNDS, THE MAXIMUM WEIGHT ALLOWABLE IN A PALLET UNIT. THE QUANTITY REQUIRED TO MAKE A SPECIFIED LOAD WEIGHT FOR A UNIT WHICH WEIGHS SOMEWHERE BETWEEN THE FIGURES GIVEN WILL HAVE TO BE CALCULATED BASED ON THE MAXIMUM LADING WEIGHT RESTRICTION FOR THE CONTAINER TO BE LOADED. FOR EXAMPLE, A TOTAL LOAD OF 22 PALLETIZED OR SKIDDED UNITS WEIGHING 2,000 POUNDS EACH CAN BE LOADED IN A CONTAINER WITHOUT EXCEEDING A 52,910 POUND CONTAINER GROSS WEIGHT LIMITATION.
- 6. CHART NO. 5 MAY BE USED AS GUIDANCE IN DETERMINING THE NUMBER AND CONFIGURATION OF THE BOX BEAM ASSEMBLIES REQUIRED TO FABRICATE THE FORWARD/REAR BLOCKING ASSEMBLIES FOR A SPECIFIED CONTAINER LOAD WEIGHT. THE BOX BEAM ASSEMBLIES WILL BE ARRANGED IN SUCH A MANNER SO AS TO PROVIDE MAXIMUM SUPPORT FOR EACH TIER BEING BLOCKED. ADDITIONALLY, THE BEAM ASSEMBLIES WILL BE ARRANGED IN A SYMMETRICAL PATTERN FOR EACH TIER. A MINIMUM OF TWO BOX BEAM ASSEMBLIES ARE REQUIRED PER TIER OF LADING, UNLESS THE PALLETIZED OR SKIDDED UNIT BEING LOADED IS CONFIGURED AS A TWO OR ONE BOX HIGH UNIT, IN WHICH CASE ONE BOX BEAM MAY BE USED PER TIER OF LADING, PROVIDING EACH LAYER OF BOXES IS IN CONTACT WITH A BOX BEAM.
- 7. CHART NO. 6 MAY BE USED AS GUIDANCE IN DETERMINING THE COMBINATIONS OF LENGTHS AND WIDTHS WHICH ARE ACCEPTABLE FOR CHIMNEY-PATTERN LOADS.
- 8. WHENEVER THE GROSS WEIGHT OF THE LADING BEING LOADED IN A CONTAINER EXCEEDS 28,000 POUNDS AND THE TOTAL HEIGHT OF THE LOAD IS LESS THAN 70", ADDITIONAL SIDEWALL STRENGTHENING MUST BE PROVIDED. THIS ADDITIONAL SIDEWALL STRENGTHENING IS USUALLY PROVIDED IN THE FORM OF SIDE FILL ASSEMBLIES. FOR ADDITIONAL GUIDANCE, SEE THE SIDE FILL ASSEMBLIES ON PAGES 19, 23, 27, 35, 39, 51, 62 AND 66. WHENEVER THE GROSS WEIGHT OF THE LADING IS LESS THAN 28,000 POUNDS, OR WHEN THE HEIGHT OF THE LADING IS AT LEAST 70", AND THERE IS MORE THAN 1-1/2" OF UNBLOCKED SPACE ACROSS THE WIDTH OF THE LOAD BAY, THIS UNBLOCKED SPACE MUST BE FILLED OUT EITHER BY PLACING SIDE FILL ASSEMBLIES AT THE SIDES OF THE LOAD OR CRIB FILL ASSEMBLIES IN THE CENTER OF THE LOAD. FOR ADDITIONAL GUIDANCE, SEE THE CRIB FILL ASSEMBLIES ON PAGES 11, 35, 43, 55, 58, 63 AND 66. WHENEVER THE GROSS WEIGHT OF THE LADING IS LESS THAN 28,000 POUNDS OR THE LOAD IS AT LEAST 70" TALL, AND THE UNBLOCKED SPACE ACROSS THE WIDTH OF THE LOAD BAY IS 1-1/2" OR LESS, NEITHER SIDE BLOCKING NOR CENTER BLOCKING WILL BE REQUIRED.

CHART NO. 1				
	HTDIW NI ZTINU	OF 89" INSIDE	WIDTH CONTAINE	R
	UNIT SIZE RANGE			
LOAD PATTERN	PALLETIZED OR SKIDDED UNITS (LENGTH ACROSS CONTAINER) (WIDTH ACROSS CONTAINER)			
	UNIT LENGTH LOAD PAGE		UNIT WIDTH	LOAD PAGE
2-WIDE	25" - 44"	8, 12, 16 20, 24, 28, 36, 40, 44	25" - 44"	56
3-WIDE	25" - 29-1/4 <b>"</b>		25" - 29-1/4"	52

CHART NO. 3			
TIERS IN HEIGHT OF 88° INSIDE HEIGHT CONTAINER			
NUMBER OF UNIT HEIGHT RANGE TIERS			
3 UP TO 29" 2 29" - 43-3/4" 1 OVER 43-3/4"			

CHART NO. 2			
UNITS IN LENGTH OF 232" INSIDE LENGTH CONTAINER			
NUMBER OF UNIT SIZE UNITS LONG RANGE			
876543	UNDER 27-1/4" 27-1/4" - 31" 31-1/4" - 36-1/4" 36-1/2" - 43-1/2" 43-3/4" - 54-1/4" 54-1/2" - 72-1/2"		

### NOTE ▲:

A BOX BEAM ASSEMBLY CONSISTS OF TWO PIECES OF PLYWOOD AND TWO OR THREE PIECES OF NOMINAL LUMBER. EACH END BLOCKING ASSEMBLY CONSISTS OF TWO BUFFER PIECES NAILED TO THE QUANTITY OF BOX BEAM ASSEMBLIES OUTLINED IN "CHART 5" BELOW. SEE ALSO THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68. THE BOX BEAM CONFIGURATIONS IN "CHART 5" ARE AS FOLLOWS:

CONFIGURATION A - TWO 2" X 4" BEAMS AND 1/2" X 9-1/2" PLYWOOD. SEE "END BLOCKING ASSEMBLY A" ON PAGE 10 FOR AN EXAMPLE.

CONFIGURATION B - TWO 2" X 4" BEAMS AND 3/4" X 9-1/2" PLYWOOD. SEE "END BLOCKING ASSEMBLY C" ON PAGE 18 FOR AN EXAMPLE.

CONFIGURATION C - TWO 2" X 6" BEAMS AND 1/2" X 9-1/2" PLYWOOD, SEE "END BLOCKING ASSEMBLY D" ON PAGE 22 FOR AN EXAMPLE.

CONFIGURATION D - TWO 2" X 6" BEAMS AND 3/4" X 9-1/2" PLYWOOD. CONSTRUCT SIMILAR TO CONFIGURATION C, EXCEPT USE 3/4" PLYWOOD.

CONFIGURATION E - THREE 2" X 4" BEAMS AND 1/2" X 11-1/2" PLYWOOD. CONSTRUCT SIMILAR TO CONFIGURATION F, EXCEPT USE 1/2" PLYWOOD.

CONFIGURATION F - THREE 2" X 4" BEAMS AND 3/4" X 11-1/2" PLYWOOD. SEE "END BLOCKING ASSEMBLY F" ON PAGE 30 FOR AN EXAMPLE.

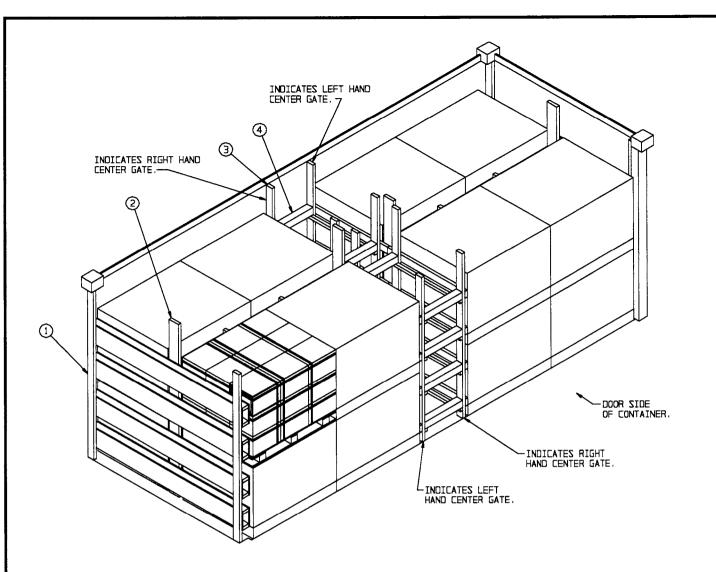
CONFIGURATION G - THREE 2" X 6" BEAMS AND 1/2" X 11-1/2" PLYWOOD. CONSTRUCT SIMILAR TO CONFIGURATION E, EXCEPT USE 2" X 6" LUMBER.

CONFIGURATION H - THREE 2" X 6" BEAMS AND 3/4" X 11-1/2" PLYWOOD. CONSTRUCT SIMILAR TO CONFIGURATION F, EXCEPT USE 2" X 6" LUMBER.

CHART NO. 5								
REQUIRE	REQUIRED BOX BEAM ASSEMBLIES FOR FORWARD/REAR BLOCKING ASSEMBLY						Y	
CONFIGURATION	CONFIGURATION MAXIMUM LOAD WEIGHT IN POUNDS							
OF BOX BEAM					SZEMBLY			
NOTE ▲ ABOVE >	1	2	3	4	5	6	7	8
<b>▼</b> ⊞ ∩ □ Ш ⊨ ⊡ ĭ	6,325 8,815 11,400 15,085 8,060 11,030 14,875 19,260	12,650 17,630 22,800 30,170 16,120 22,060 29,750 38,520	18, 975 26, 445 34, 200 45, 255 24, 180 33, 090 44, 625 57, 780	25,300 35,260 45,600 60,340 32,240 44,120 59,500	31,625 44,075 57,000 40,300 55,150	37,950 52,890 48,360	44,275 56,420	50,600

CHART NO. 4	4		
MAXIMUM NUMBER OF UNITS PER CONTAINER BY WEIGHT			
NO. OF UNITS (52,910 LB LADING LIMIT)	UNIT WEIGHT IN LBS		
184 153 115 926 557 540 41 385 330 287 254 221 209 198 117 116 119 119 119 119 119 119 119 119 119	250 300 400 500 600 700 800 900 1,000 1,100 1,200 1,300 1,400 1,500 1,600 1,700 1,800 1,900 2,10		

CHART NO. 6			
CONTAINER WIDTH 89° (INSIDE DIMENSION)			
UNIT LENGTH OR WIDTH	PALLETIZED OR SKIDDED UNIT LENGTH/WIDTH COMBINATIONS MINIMUM TO MAXIMUM UNIT WIDTH		
443°440°48°48°48°48°48°48°48°48°48°48°48°48°48°	36" - 46" 36" - 47" 36" - 47" 38" - 48" 40" - 51" 42" - 55" 42" - 55" 43" - 55" 45" - 55" 46" - 55" 46" - 66" 50" - 66" 51" - 62"		



### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY A (2 REOD). SEE THE DETAIL ON PAGE 10 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- ② CRIB FILL ASSEMBLY A (2 REOD). SEE THE DETAIL ON PAGE 11.
- CENTER GATE A (4 REOD, 2 RIGHT HAND AND 2 LEFT HAND).
   SEE THE DETAIL ON PAGE 10.
- (4) STRUT, 4" X 4" BY CUT TO FIT (REF: 22") (16 RECD).
  TOENAIL TO PIECES MARKED (3) W/2-12d NAILS AT EACH END.
  SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.

- PRE-FABRICATE TWO END BLOCKING ASSEMBLIES A, TWO CRIB FILL ASSEMBLIES A AND FOUR CENTER GATES A, TWO RIGHT HAND AND TWO LEFT HAND.
- 2. INSTALL ONE END BLOCKING ASSEMBLY A AND LOAD FOUR PALLET UNITS.
- 3. REPEAT STEP TWO.
- 4. INSTALL TWO CENTER GATES A (ONE RIGHT HAND AND ONE LEFT HAND) AND EIGHT STRUTS.
- 5. INSTALL THE TWO CRIB FILL ASSEMBLIES A AND LOAD THE REMAINING EIGHT PALLET UNITS.
- 6. REPEAT STEP 4.

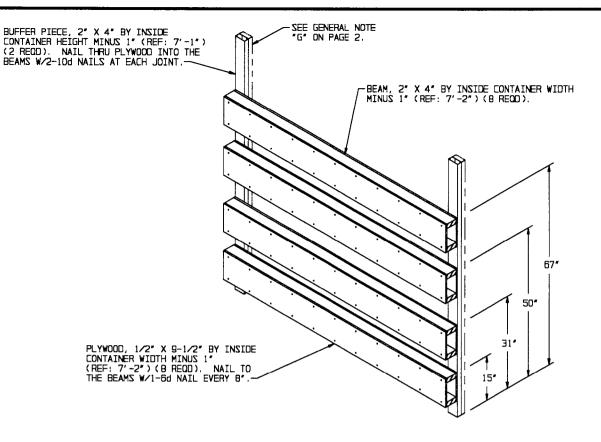
BILL OF MATERIAL				
LUMBER	LINEAR FEET	BOARD FEET		
1" X 4" 2" X 2" 2" X 4" 2" X 5" 4" X 4"	64 54 323 51 30	22 18 215 51 40		
NAILS	NO. REQD	POUNDS		
6d (2") 10d (3") 12d(3-1/4")	416 256 64	2-1/2 4 1-1/4		
PLYWOOD, 1/2" 90.78 SQ FT REQD 124.82 LBS				

### NWOHZ ZA DAOL

<u>ITEM</u>	QUANTITY	WEIGHT (APPROX)
DUNNAGE	16	827 LBS

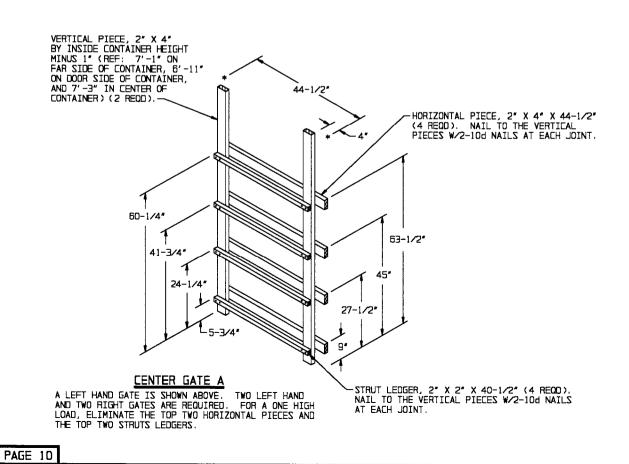
TOTAL WEIGHT - - - - - - - 31,165 LBS (APPROX)

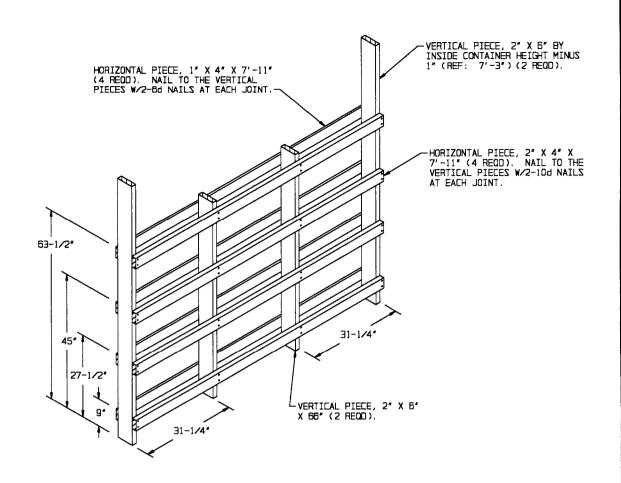
PALLET UNIT NO. 1 CONTAINER LOAD



### END BLOCKING ASSEMBLY A

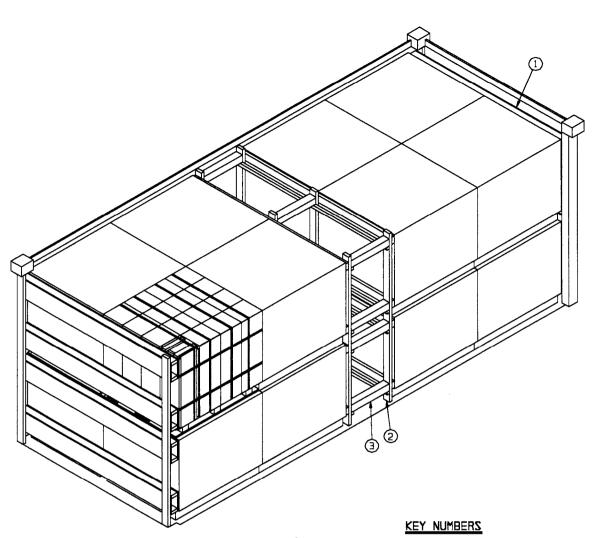
NOTE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 25,300 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 12,650 POUNDS.





### CRIB FILL ASSEMBLY A

FOR A ONE HIGH LOAD, REDUCE THE 66" VERTICAL PIECES TO 30" AND ELIMINATE THE TOP FOUR HORIZONTAL PIECES.



- (1) END BLOCKING ASSEMBLY B (2 REOD). SEE THE DETAIL ON PAGE 14 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- 2 CENTER GATE B (2 REQD). SEE THE DETAIL ON PAGE 15.
- (3) STRUT, 4" X 4" BY CUT TO FIT (REF: 22") (12 REQD). TOENAIL TO THE VERTICAL PIECE OF THE CENTER GATE, PIECE MARKED (1), W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES B AND TWO CENTER GATES B.
- 2. INSTALL ONE END BLOCKING ASSEMBLY B.
- 3. LOAD EIGHT PALLET UNITS.
- 4. REPEAT STEPS 2 AND 3.
- 5. INSTALL TWO CENTER GATES B.
- 6. INSTALL THE STRUTS BETWEEN THE TWO CENTER GATES.

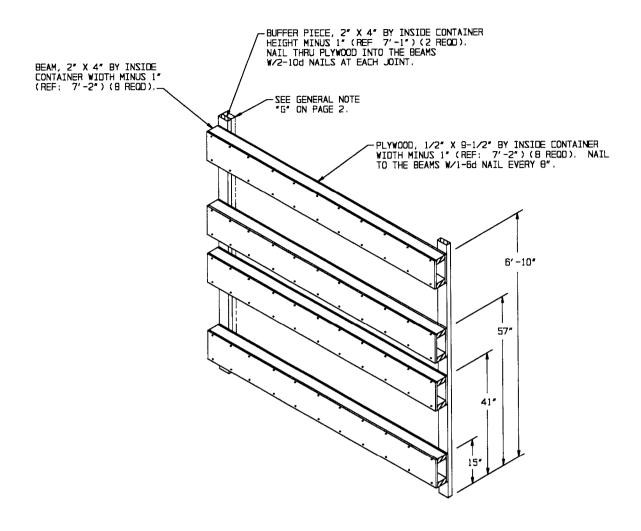
BILL OF MATERIAL				
LUMBER	LUMBER LINEAR FEET			
2" X 2" 2" X 4" 4" X 4"	59 244 22	20 163 30		
NAILS	NO. REOD	ZONUOS		
6d (2") 352 2-1/4 10d (3") 160 2-1/2 12d(3-1/4") 48 1				
PLYWOOD, 1/2" 90.78 SQ FT REQD 124.82 LBS				

### LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT		497 LBS

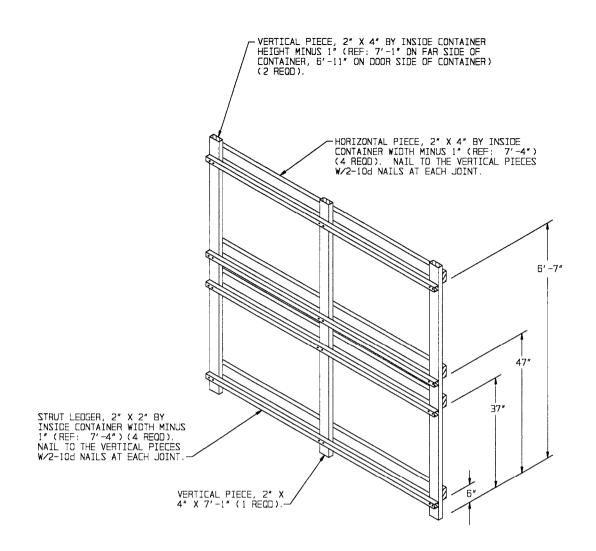
TOTAL WEIGHT - - - - - - 27,699 LBS (APPROX)

PALLET UNIT NO. 2 CONTAINER LOAD



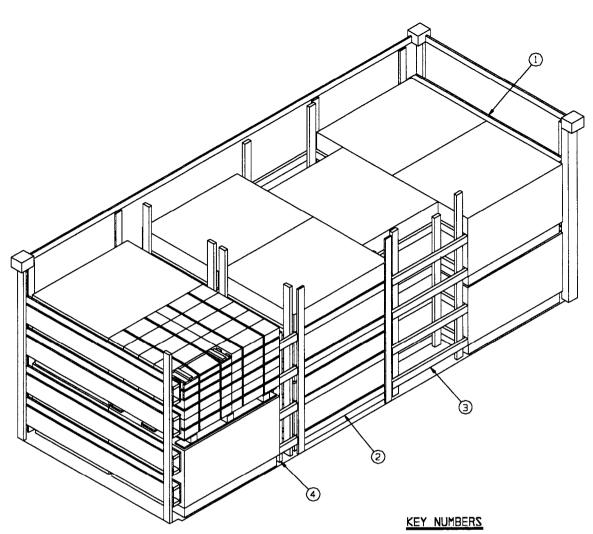
### END BLOCKING ASSEMBLY B

NOTE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 25,300 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 12,650 POUNDS.



### CENTER GATE B

FOR A ONE HIGH LOAD, REDUCE THE CENTER VERTICAL PIECE TO 44" AND ELIMINATE THE TOP TWO STRUT LEDGERS AND THE TOP TWO HORIZONTAL PIECES.



- (1) END BLOCKING ASSEMBLY C (2 REOD). SEE THE DETAIL ON PAGE 18 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- SIDE FILL ASSEMBLY A (3 REQD). SEE THE DETAIL ON PAGE 19.
- FILLER ASSEMBLY A (2 REQD). SEE THE DETAIL ON PAGE 19.
- 4 CENTER FILL A (2 REOD). SEE THE DETAIL ON PAGE 18.

PALLET UNIT NO. 3 CONTAINER LOAD

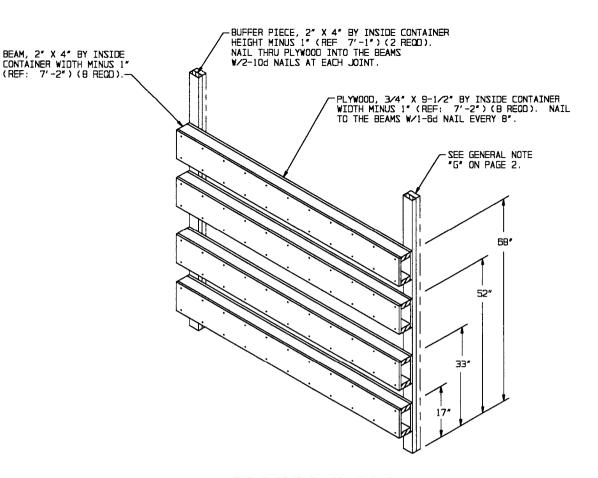
- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES C, TWO FILLER
  ASSEMBLIES A AND THREE SIDE FILL ASSEMBLIES A. TWO CENTER
  FILL ASSEMBLIES A MAY BE PARTIALLY ASSEMBLED AT THIS TIME
  BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL
  PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY C.
- 3. INSTALL ONE SIDE FILL ASSEMBLY A AND LOAD FOUR PALLET UNITS.
- 4. REPEAT STEPS 2 AND 3.
- 5. INSTALL ONE FILLER ASSEMBLY A.
- 6. LOAD FOUR PALLET UNITS.
- MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE THE ASSEMBLY AND INSTALLATION OF ONE CENTER FILL ASSEMBLY A.
- B. INSTALL THE SECOND FILLER ASSEMBLY A AND LOAD TWO PALLET UNITS.
- 9. REPEAT STEP 7 AND INSTALL THE THIRD SIDE FILL ASSEMBLY A.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 2" X 4"	97 366	33 244
ZJIAN	NO. REQD	20NUO9
6d (2") 10d (3")	400 320	2-1/2 5
PLYWOOD, 3/4" 90.78 SO FT REOD 187.23 LBS		

### LOAD AS SHOWN

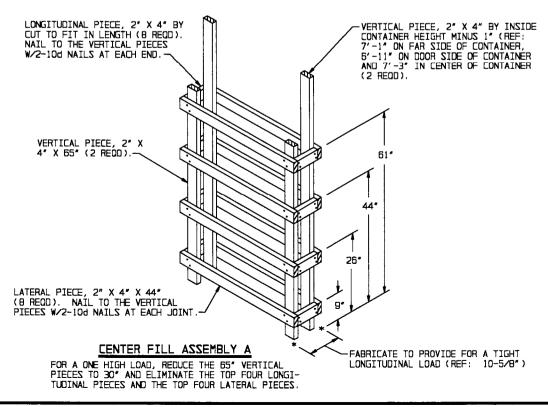
ITEM	QUANTITY	WEIGHT (APPROX)
PALLET UNIT DUNNAGE		749 LBS

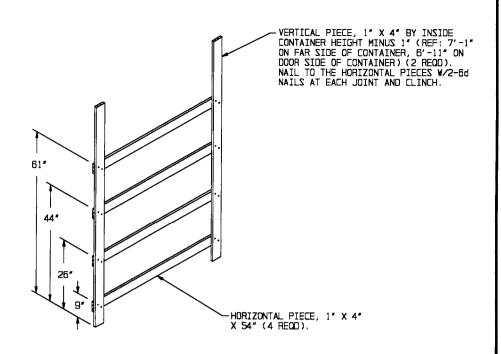
TOTAL WEIGHT - - - - - - 32,951 LBS (APPROX)



### END BLOCKING ASSEMBLY C

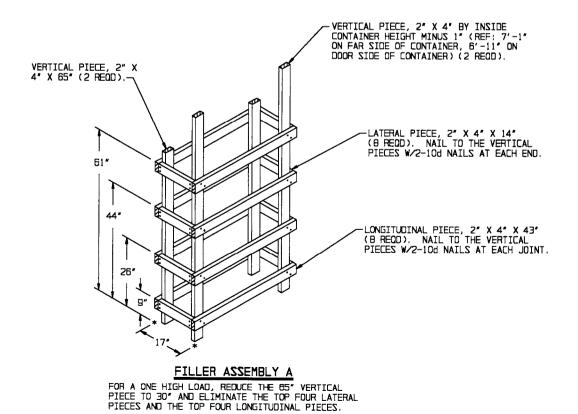
NOTE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 35,260 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 17,630 POUNDS.

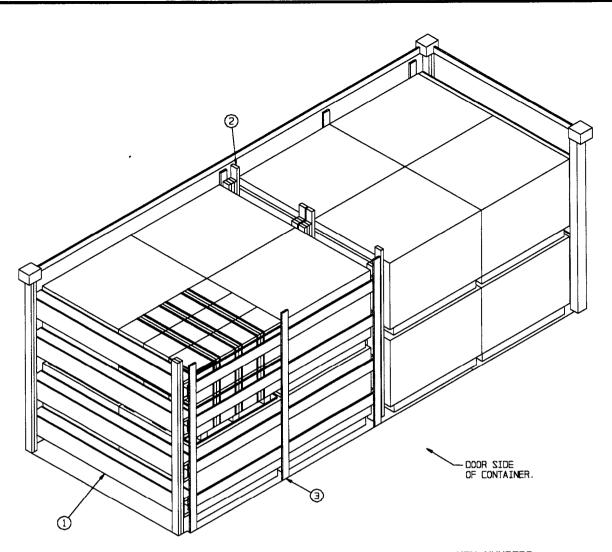




### SIDE FILL ASSEMBLY A

FOR A ONE HIGH LOAD, ELIMINATE THE TOP TWO HORIZONTAL PIECES.





### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY D (2 REOD). SEE THE DETAIL ON PAGE 22 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- (2) CENTER FILL ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 22.
- $\begin{tabular}{lllll} \hline \end{tabular}$  SIDE FILL ASSEMBLY B (2 REOD). SEE THE DETAIL ON PAGE 23.

PALLET UNIT NO. 4 CONTAINER LOAD

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES D AND TWO SIDE FILL ASSEMBLIES B. TWO CENTER FILL ASSEMBLIES B MAY BE PARTIALLY ASSEMBLED AT THIS TIME BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- INSTALL ONE END BLOCKING ASSEMBLY D AND LOAD FOUR PALLET UNITS.
- INSTALL ONE END BLOCKING ASSEMBLY D, ONE SIDE FILL ASSEMBLY B, AND LOAD FOUR PALLET UNITS.
- 4. MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE THE ASSEMBLY AND INSTALLATION OF ONE CENTER FILL ASSEMBLY B.
- 5. LOAD EIGHT PALLET UNITS.
- 6. REPEAT STEP FOUR.
- 7. INSTALL THE REMAINING SIDE FILL ASSEMBLY B.

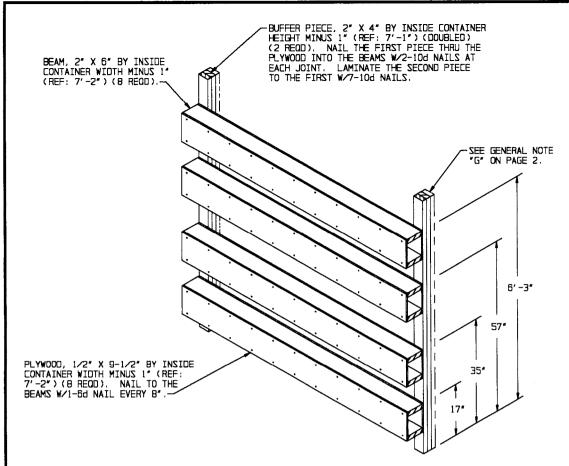
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 1" X 6" 2" X 4" 2" X 6"	41 74 220 115	14 37 147 115
NAILS	NO. REQD	POUNDS
6d (2") 10d (3")	424 240	2-1/2 3-3/4
PLYWOOD, 3/4" 90.78 SO FT REOD 187.23 LBS		

### NWOHZ ZA DAOL

ITEM	QUANTITY	WEIGHT (APPROX	()
DUNNAGE		820 LBS	

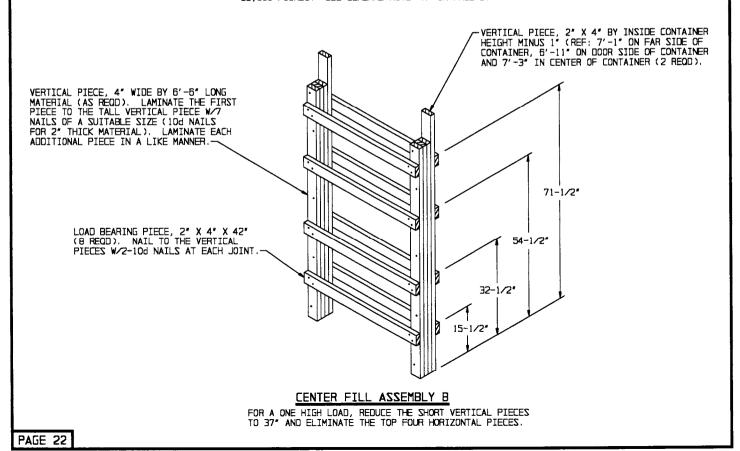
TOTAL WEIGHT - - - - - - 50,534 LBS (APPROX)

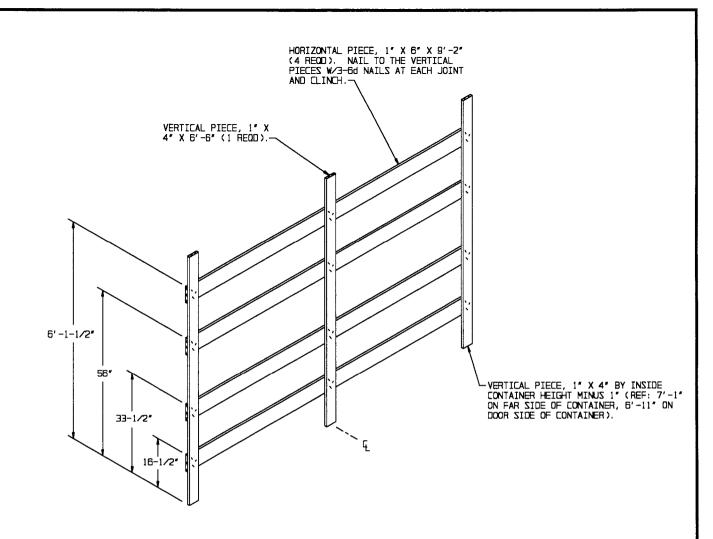
PALLET UNIT NO. 4 CONTAINER LOAD



### END BLOCKING ASSEMBLY D

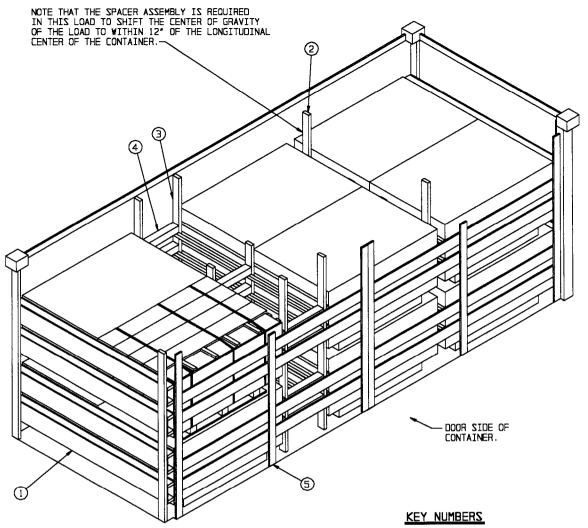
NOTE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 45,600 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 22,800 POUNDS. SEE GENERAL NOTE "R" ON PAGE 3.





### SIDE FILL ASSEMBLY B

FOR A ONE HIGH LOAD, REDUCE THE CENTER VERTICAL PIECE TO 37" AND ELIMINATE THE TOP TWO HORIZONTAL PIECES.



- (1) END BLOCKING ASSEMBLY E (2 REOD). SEE THE DETAIL ON PAGE 26 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- 2) SPACER ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 27.
- (3) CENTER GATE C (2 REQD). SEE THE DETAIL ON PAGE 27.
- (4) STRUT, 4" X 4" BY CUT TO FIT (REF: 21") (12 REOD). TOENAIL TO THE VERTICAL PIECE OF THE CENTER GATE, PIECE MARKED (3), W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.
- $\begin{picture}(5)\line 1.5\textwidth $\mathcal{C}(2)$ SIDE FILL ASSEMBLY C (2 REQD). SEE THE DETAIL ON PAGE 27. \end{picture}$

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES E, TWO CENTER GATES C, ONE SPACER ASSEMBLY A AND TWO SIDE FILL ASSEMBLIES C.
- 2. INSTALL ONE END BLOCKING ASSEMBLY E AND LOAD FOUR PALLET UNITS.
- 3. REPEAT STEP TWO.
- 4. INSTALL THE SPACER ASSEMBLY A AND LOAD FOUR PALLET UNITS.
- 5. INSTALL THE TWO CENTER GATES C AND THE 12 STRUTS.
- 6. INSTALL THE TWO SIDE FILL ASSEMBLIES C.

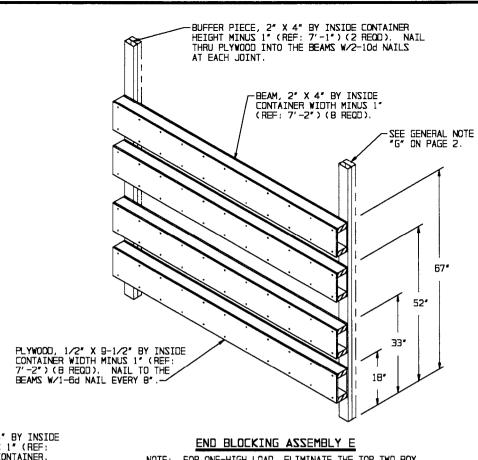
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 1" X 6" 2" X 2" 2" X 4" 4" X 4"	39 74 58 325 21	13 37 20 217 28
NAILS	NO. REOD	POUNDS
6d (2") 10d (3") 12d (3-1/4")	424 224 48	2-1/2 3-1/2 1
PLYW00D, 1/2" -	90.78 S0 FT RI	EOD 124.82 LBS

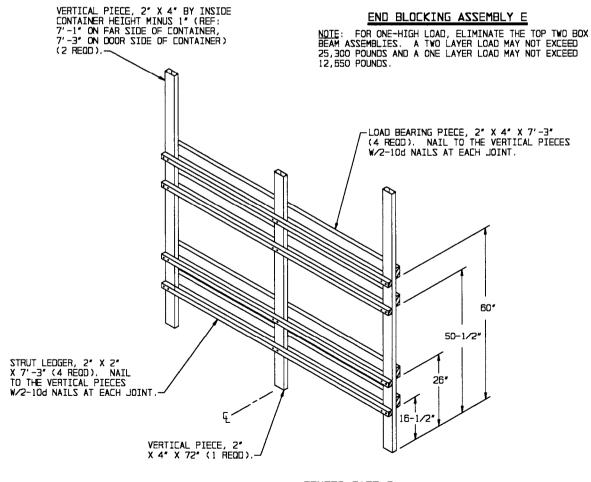
### NWOHZ ZA DADL

ITEM	QUANTITY WEIGHT (APPROX)
DUNNAGE	12 23,856 LBS 762 LBS 6,050 LBS

TOTAL WEIGHT - - - - - - 30,668 LBS (APPROX)

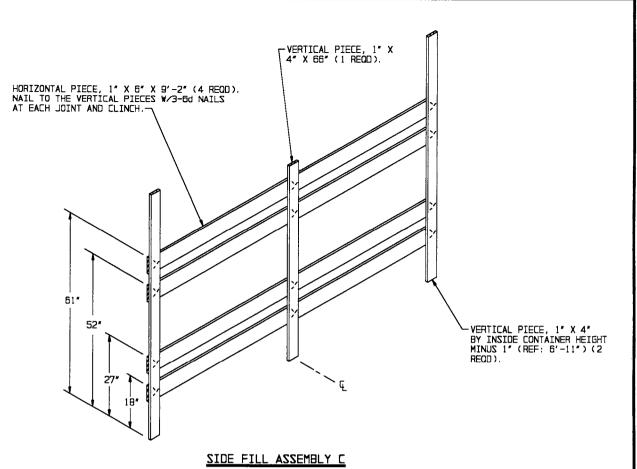
PALLET UNIT NO. 5 CONTAINER LOAD



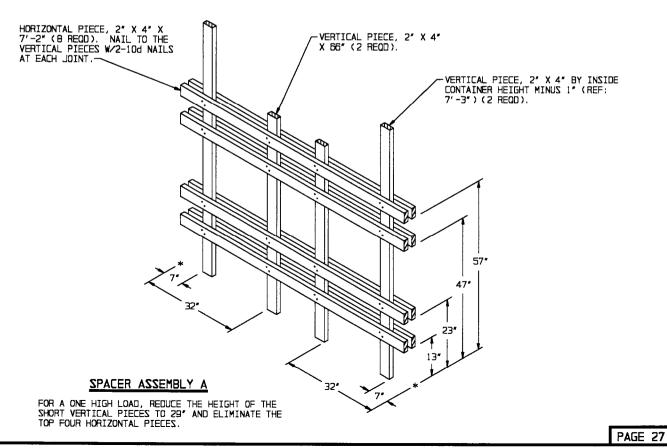


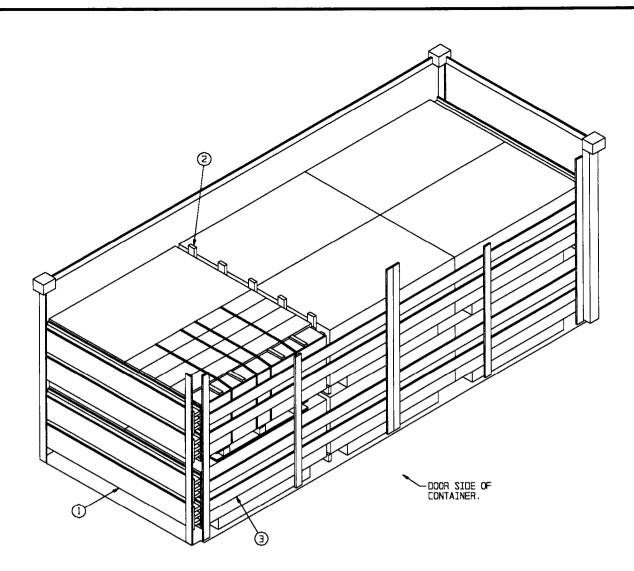
### CENTER GATE C

FOR A ONE HIGH LOAD, REDUCE THE CENTER VERTICAL PIECE TO 34° AND ELIMINATE THE TOP TWO STRUT LEDGERS AND THE TOP TWO LOAD BEARING PIECES.



FOR A ONE HIGH LOAD, AND ELIMINATE THE TOP TWO HORIZONTAL PIECES.





### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY F (2 REDD). SEE THE DETAIL ON PAGE 30 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- ② CENTER FILL ASSEMBLY C (1 REQD). SEE THE DETAIL ON PAGE 31.
- 3 SIDE FILL ASSEMBLY C (2 REOD). SEE THE DETAIL ON PAGE 27.

PAGE 28

PALLET UNIT NO. 6 CONTAINER LOAD

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES F AND TWO SIDE FILL ASSEMBLIES C. ONE CENTER FILL ASSEMBLY C MAY BE PARTIALLY ASSEMBLED AT THIS TIME, BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY F AND LOAD FOUR PALLET UNITS.
- 3. REPEAT STEP 2.
- 4. LOAD FOUR PALLET UNITS.
- 5. MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE THE ASSEMBLY AND INSTALLATION OF THE CENTER FILL ASSEMBLY C.
- 6. INSTALL THE TWO SIDE FILL ASSEMBLIES C.

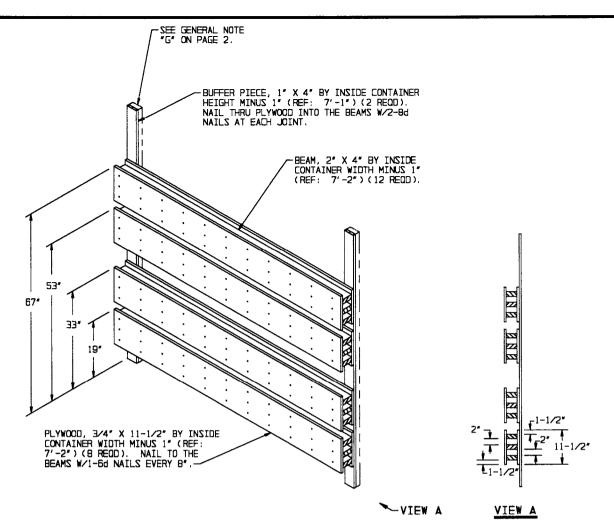
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 1" X 6" 2" X 4"	67 74 217	23 37 145
NAILS	NO. REQD	POUNDS
6d (2") 8d (2-1/2") 10d (3")	600 96 20	3-3/4 3/4 1/2
PLYWOOD, 3/4" 109.89 SO ET REDD 226.65 LBS		

### LOAD AS SHOWN

ITEM	<u>QUANTITY</u>	WEIGHT (APPROX)
DUNNAGE	12	645 LBS

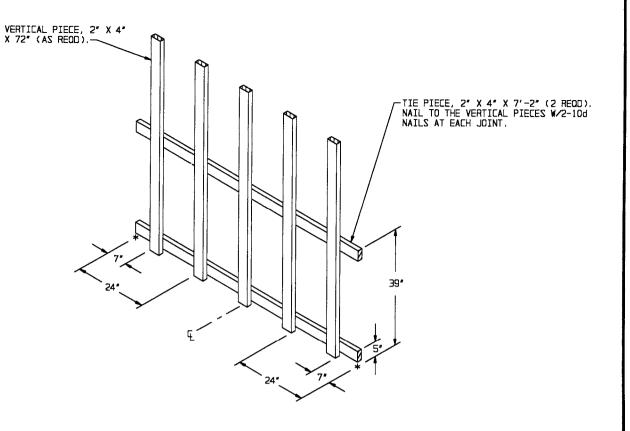
TOTAL WEIGHT - - - - - - 36,938 LBS (APPROX)

PALLET UNIT NO. 6 CONTAINER LOAD

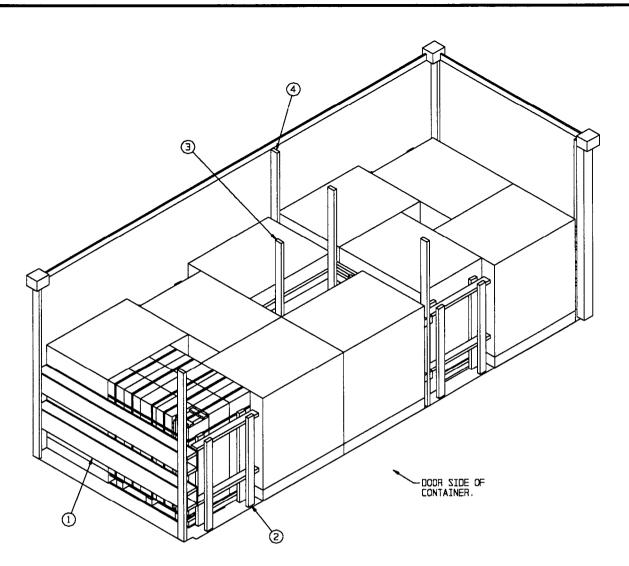


### END BLOCKING ASSEMBLY F

NOTE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 44,120 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 22,060 POUNDS. SEE GENERAL NOTE "R" ON PAGE 3.



### 



### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY G (2 REQD). SEE THE DETAIL ON PAGE 34 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- $\ensuremath{ \begin{tabular}{lllll} \ensuremath{ \begin{tabular}{llll} \ensuremath{ \begin{tabular}{lllll} \ensuremath{ \begin{tabular}$
- $\begin{tabular}{lllll} \hline \end{tabular}$  CRIB FILL ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 35.
- (4) CENTER FILL ASSEMBLY D (1 REQD). SEE THE DETAIL ON PAGE 34.

PAGE 32 PALLET UNIT NO. 7 CONTAINER LOAD

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES G, FOUR SIDE FILL ASSEMBLIES D AND ONE CRIB FILL ASSEMBLY B. ONE CENTER FILL FILL ASSEMBLY D MAY BE PARTIALLY ASSEMBLED AT THIS TIME BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY G AND LOAD TWO PALLET UNITS.
- 3. INSTALL ONE SIDE FILL ASSEMBLY D AND LOAD TWO PALLET UNITS.
- 4. INSTALL ONE END BLOCKING ASSEMBLY  ${\tt G}$  , ONE SIDE FILL ASSEMBLY  ${\tt D}$  AND LOAD FOUR PALLET UNITS.
- 5. LOAD ONE PALLET UNIT.
- 6. INSTALL THE CRIB FILL ASSEMBLY B.
- 7. LOAD ONE PALLET UNIT.
- B. MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE THE CONSTRUCTION AND INSTALLATION OF THE CENTER FILL ASSEMBLY D.
- 9. INSTALL REMAINING TWO SIDE FILL ASSEMBLIES D.

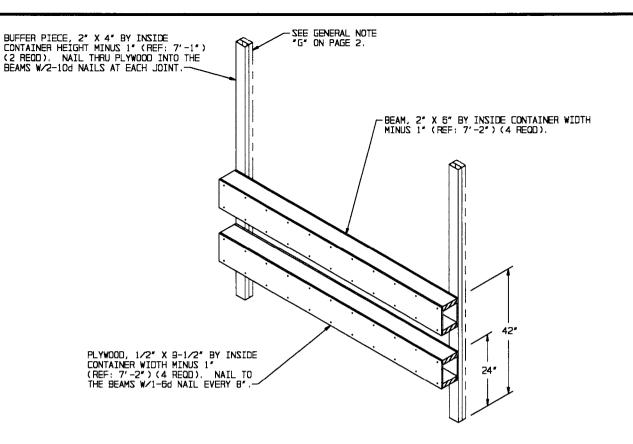
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4" 2" X 3" 2" X 4" 2" X 6"	24 12 186 81	8 5 124 81
ZJIAN	NO. REQD	SONDO
6d (2") 10d (3")	208 192	1-1/4 3
PLYW00D, 1/2" 45.39 SQ FT REQD 62.41 LBS		

### LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
DUNNAGE	10	505 LBS

TOTAL WEIGHT - - - - - - 28,435 LBS (APPROX)

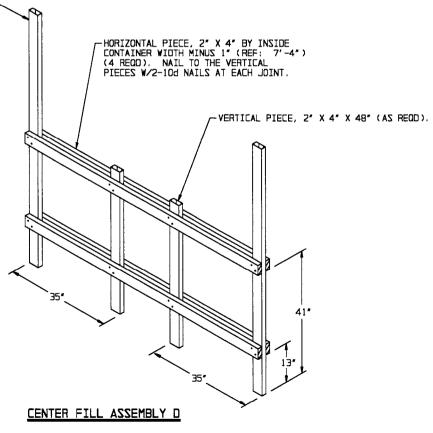
PALLET UNIT NO. 7 CONTAINER LOAD

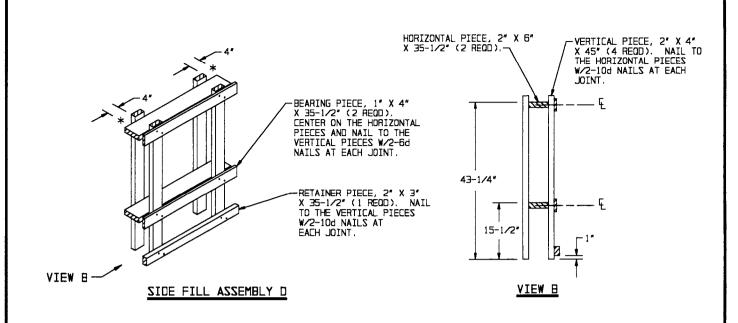


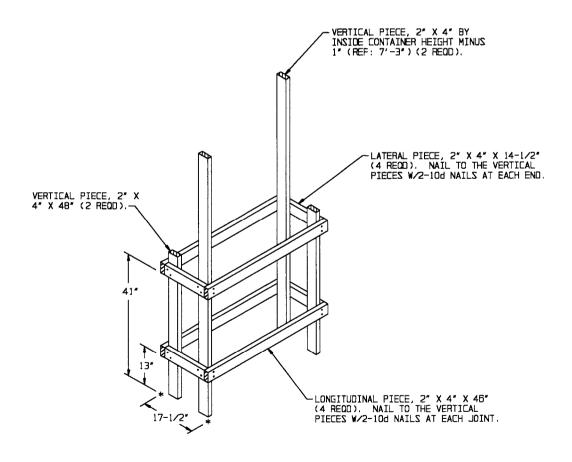
### VERTICAL PIECE, 2" X 4" BY INSIDE CONTAINER HEIGHT MINUS 1" (REF: 7'-1" ON FAR SIDE OF CONTAINER AND 6'-11" ON DOOR SIDE OF CONTAINER) (AS REOD).

### END BLOCKING ASSEMBLY G

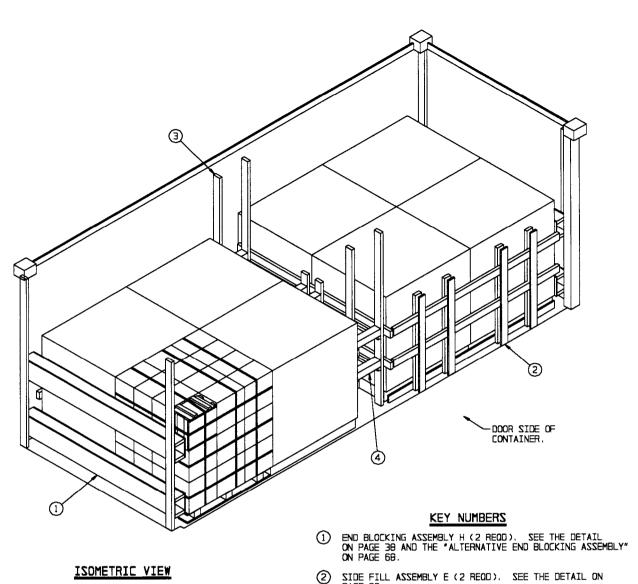
A ONE LAYER LOAD MAY NOT EXCEED 22,800 POUNDS.







CRIB FILL ASSEMBLY B



- $\begin{tabular}{llll} \hline \end{tabular}$  SIDE FILL ASSEMBLY E (2 REOD). SEE THE DETAIL ON PAGE 39.
- 3 CENTER GATE D (2 REQD). SEE THE DETAIL ON PAGE 38.
- (4) STRUT, 4" X 4" BY CUT TO FIT (REF: 15") (8 REOD). TOENAIL TO PIECES MARKED (3) W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.

- PRE-FABRICATE TWO END BLOCKING ASSEMBLIES H, TWO SIDE FILL ASSEMBLIES E AND TWO CENTER GATES D.
- 2. INSTALL ONE END BLOCKING ASSEMBLY H AND LOAD FOUR PALLET UNITS.
- 3. INSTALL ONE SIDE FILL ASSEMBLY E.
- 4. INSTALL ONE END BLOCKING ASSEMBLY H AND ONE SIDE FILL ASSEMBLY E, AND LOAD FOUR PALLET UNITS.
- 5. INSTALL THE TWO CENTER GATES D AND THE EIGHT STRUTS.

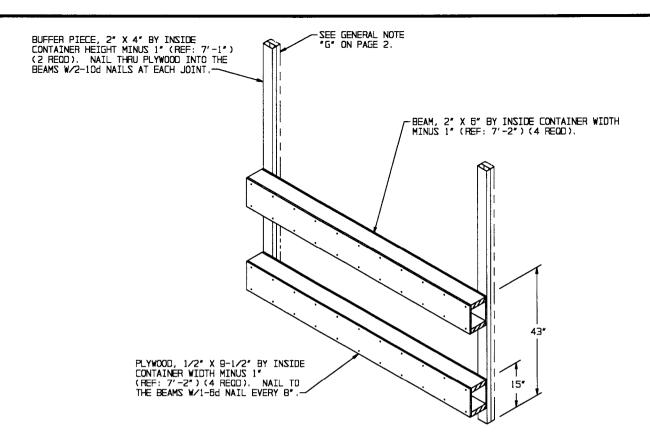
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
1" X 4" 2" X 2" 2" X 4" 2" X 6" 4" X 4"	48 27 165 58 10	16 9 110 58 14	
NAILS	NO. REQD	POUNDS	
6d (2") 10d (3") 12d(3-1/4")	224 128 32	1-1/2 2 3/4	
PLYWOOD, 1/2" 45.39 SQ FT REQD 62.41 LBS			

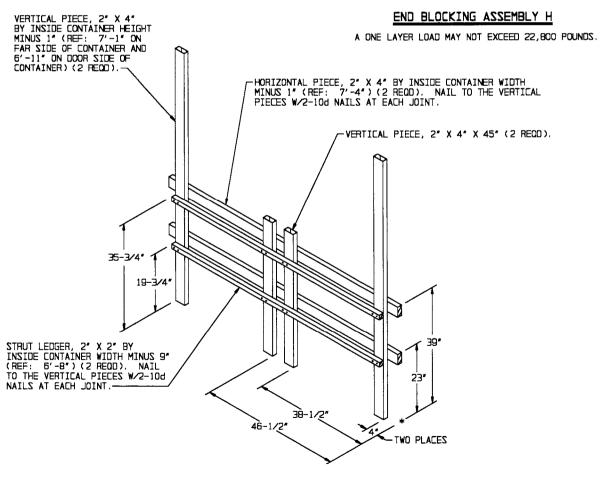
## NWOHZ ZA DAOL

ITEM	QUANTITY	WEIGHT	(APPROX)
DUNNAGE		481	LB2

TOTAL WEIGHT - - - - - - 27,963 LBS (APPROX)

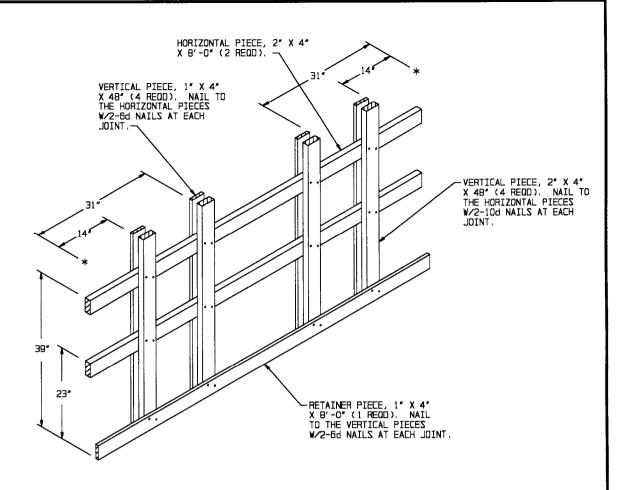
PALLET UNIT NO. B CONTAINER LOAD



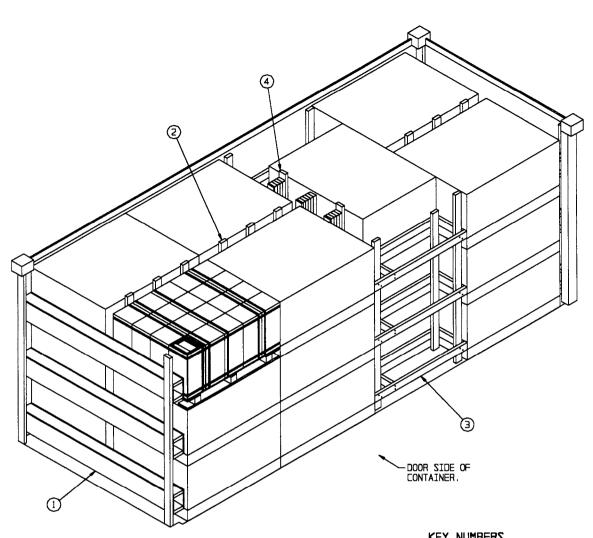


PAGE 38

CENTER GATE D



SIDE FILL ASSEMBLY E



ISOMETRIC VIEW

### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY J (2 REOD). SEE THE DETAIL ON PAGE 42 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- $\begin{tabular}{lllll} \hline \end{tabular}$  CRIB FILL ASSEMBLY C (3 REQD). SEE THE DETAIL ON PAGE 43.
- $\begin{tabular}{ll} \hline \end{tabular}$  FILLER ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 43.
- (4) CENTER FILL ASSEMBLY E (1 REQD). SEE THE DETAIL ON PAGE 42.

- PRE-FABRICATE TWO END BLOCKING ASSEMBLIES J, TWO FILLER ASSEMBLIES B AND THREE CRIB FILL ASSEMBLIES B. ONE CENTER FILL ASSEMBLY E MAY BE PARTIALLY ASSEMBLED AT THIS TIME, BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY J.
- 3. LOAD SIX PALLET UNITS AND INSTALL ONE CRIB FILL ASSEMBLY B.
- 4. REPEAT STEPS 2 AND 3.
- 5. REPEAT STEP 3.
- 6. INSTALL ONE FILLER ASSEMBLY B.
- 7. LOAD THREE PALLET UNITS.
- B. MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE THE ASSEMBLY AND INSTALLATION OF THE CENTER FILL ASSEMBLY E.
- 9. INSTALL SECOND FILLER ASSEMBLY E.

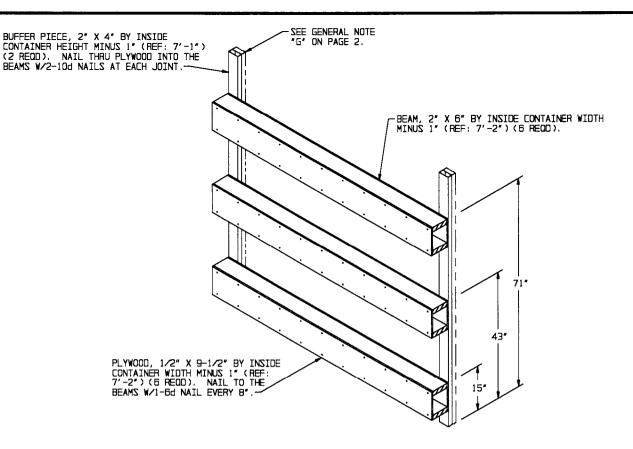
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
1" X 4" 2" X 4" 2" X 6"	21 392 86	7 262 86	
NAILS	NO. REOD	20 <b>N</b> U09	
6d (2") 10d (3")	285 342	1-3/4 5-1/2	
PLYWOOD. 1/2" 68.09 SO FT REOD 93.62 LBS			

### NWOHZ ZA DAOL

ITEM	QUANTITY	WEIGHT	(APPROX)
DUNNAGE	21	811	LB2

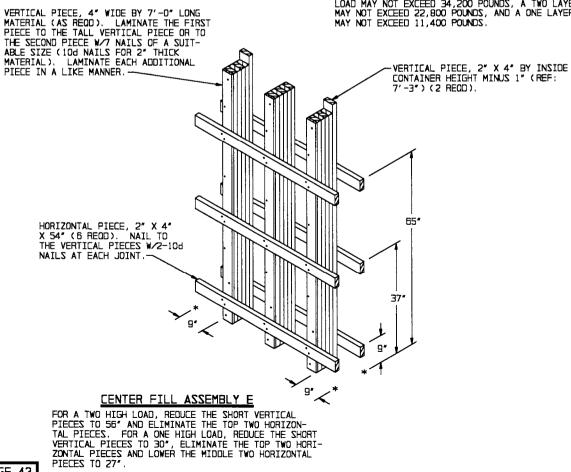
TOTAL WEIGHT - - - - - - 35,778 LBS (APPROX)

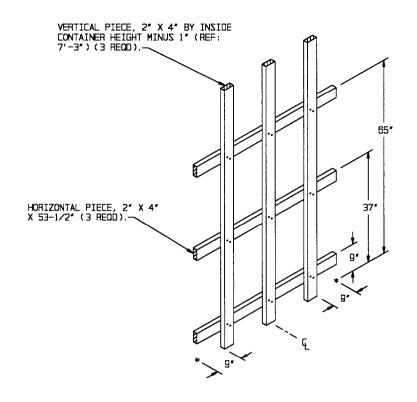
PALLET UNIT NO. 9 CONTAINER LOAD



### END BLOCKING ASSEMBLY J

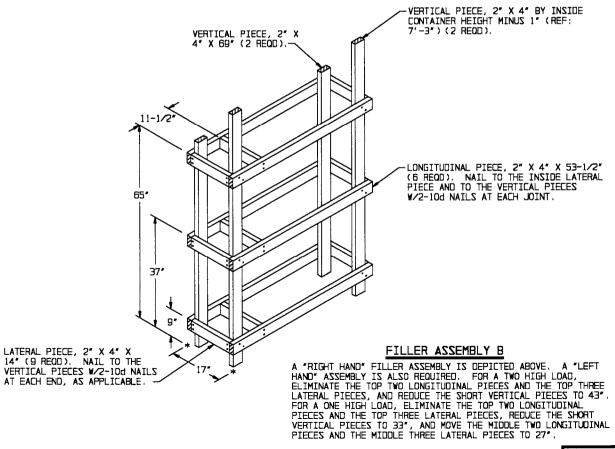
NOTE: FOR TWO-HIGH LOAD, ELIMINATE THE TOP BOX BEAM ASSEMBLY, AND FOR A ONE HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A THREE LAYER LOAD MAY NOT EXCEED 34,200 POUNDS, A TWO LAYER LOAD MAY NOT EXCEED 22,800 POUNDS, AND A ONE LAYER LOAD MAY NOT EXCEED 11,400 POUNDS.

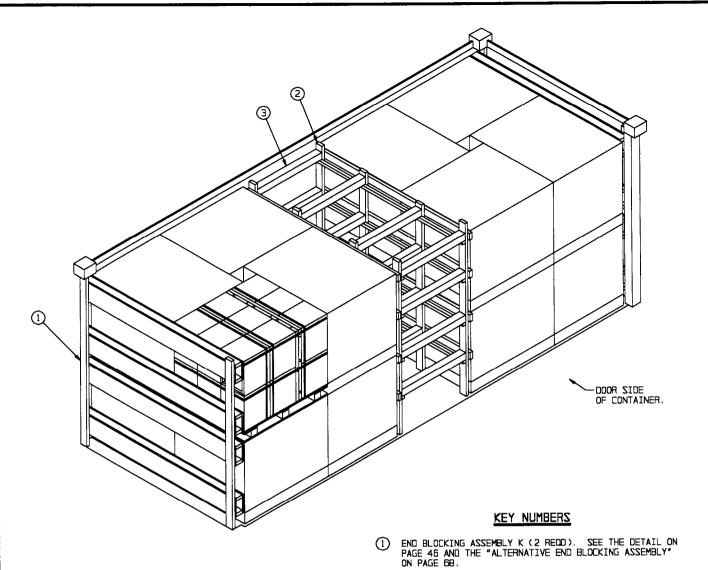




### CRIB FILL ASSEMBLY C

FOR A TWO HIGH LOAD, ELIMINATE THE TOP HORIZONTAL PIECE, AND FOR A ONE HIGH LOAD, ELIMINATE THE TOP HORIZONTAL PIECE AND LOWER THE MIDDLE HORIZONTAL PIECE TO 27"





- 2 CENTER GATE E (2 REOD). SEE THE DETAIL ON PAGE 47.
- (3) STRUT, 4" X 4" BY CUT TO FIT (REF: 37") (16 REQD).
  TOENAIL TO PIECES MARKED (2) W/2-12d NAILS AT EACH END.
  SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.

ISOMETRIC VIEW

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES K AND TWO CENTER GATES E.
- 2. INSTALL ONE END BLOCKING ASSEMBLY K AND LOAD EIGHT PALLET UNITS.
- 3. REPEAT STEP TWO.
- 4. INSTALL THE TWO CENTER GATES E AND THE 16 STRUTS.

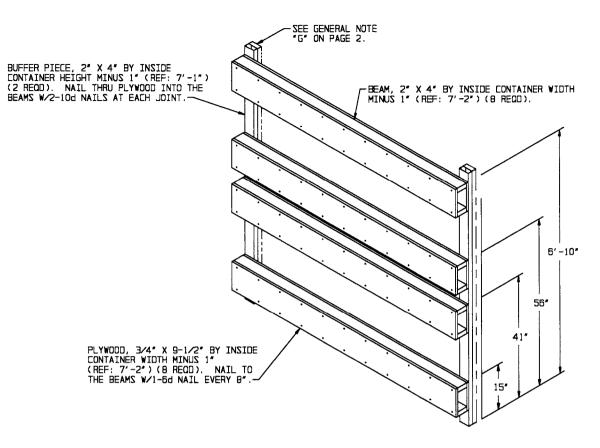
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
2" X 2" 2" X 4" 4" X 4"	58 258 50	20 172 67	
NAILS	NO. REOD	POUNDS	
6d (2") 10d (3") 12d (3-1/4")	352 192 64	2-1/4 3 1-1/4	
PLYWOOD, 3/4" 90.78 SO FT REOD 187.23 LBS			

# LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT	( APPROX )
DUNNAGE	16	712	LBZ

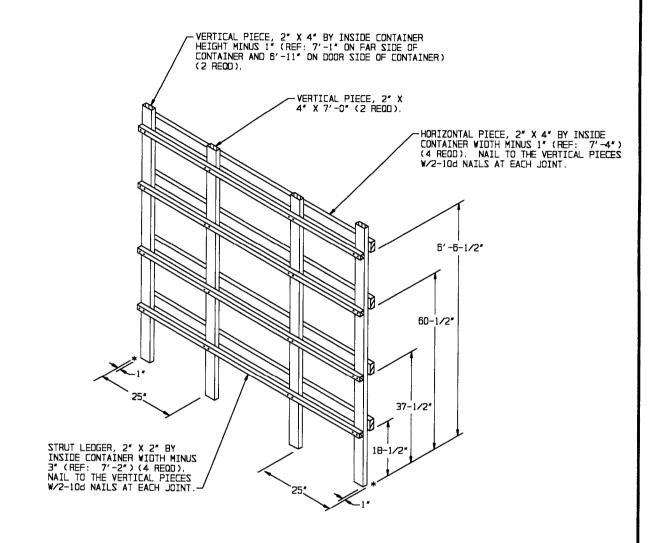
TOTAL WEIGHT - - - - - - 39,578 LBS (APPROX)

PALLET UNIT NO. 10 CONTAINER LOAD



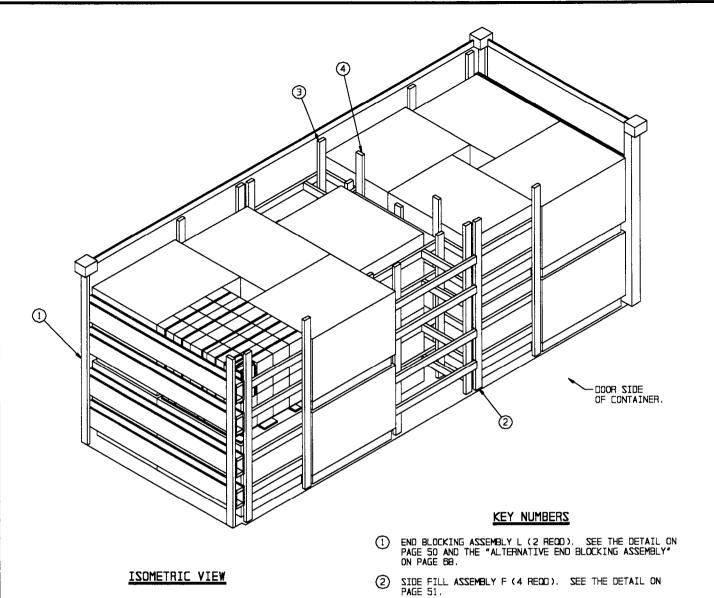
### END BLOCKING ASSEMBLY K

NOIE: FOR ONE-HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 25,260 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 17,630 POUNDS.



CENTER GATE E

FOR A ONE HIGH LOAD, REDUCE THE CENTER VERTICAL
PIECE TO 48° AND ELIMINATE THE TOP TWO STRUT
LEDGERS AND THE TOP TWO HORIZONTAL PIECES.



- 3 FILLER ASSEMBLY C (2 REOD). SEE THE DETAIL ON PAGE 51.
- $\bigodot$  CENTER FILL ASSEMBLY F (1 REQD). SEE THE DETAIL ON PAGE 50.

PAGE 48

PALLET UNIT NO. 11 CONTAINER LOAD

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES L, FOUR SIDE FILL ASSEMBLIES F AND TWO FILLER ASSEMBLIES C. THE CENTER FILL ASSEMBLY F MAY BE PARTIALLY ASSEMBLED AT THIS TIME, BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES OR SIZE OF HORIZONTAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY L AND LOAD FOUR PALLET UNITS.
- 3. INSTALL ONE SIDE FILL ASSEMBLY F AND LOAD FOUR PALLET UNITS.
- INSTALL ONE END BLOCKING ASSEMBLY L AND ONE SIDE FILL ASSEMBLY F, AND LOAD EIGHT PALLET UNITS.
- 5. INSTALL ONE FILLER ASSEMBLY C AND LOAD TWO PALLET UNITS.
- 6. MEASURE THE VOID BETWEEN THE PALLET UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE AND INSTALL THE CENTER FILL ASSEMBLY F.
- 7. INSTALL THE REMAINING FILLER ASSEMBLY C AND THE TWO REMAINING SIDE FILL ASSEMBLIES F.

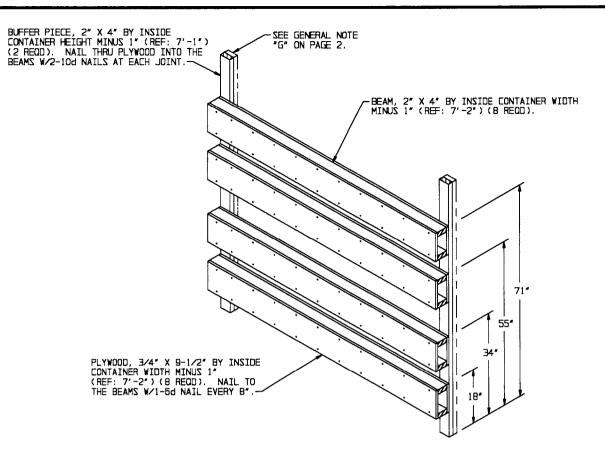
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
2" X 4" 2" X 8"	438 16	292 22	
2JIAN	NO. REQD	2DNU09	
6d (2") 10d (3")	352 336	2-1/4 5-1/4	
PLYWOOD, 3/4" 90,78 SQ FT REQD 187,23 LBS			

### NWOHZ ZA DAOL

<u>ITEM</u>	QUANTITY	WEIGHT (APPROX)
DUNNAGE -		823 LBS

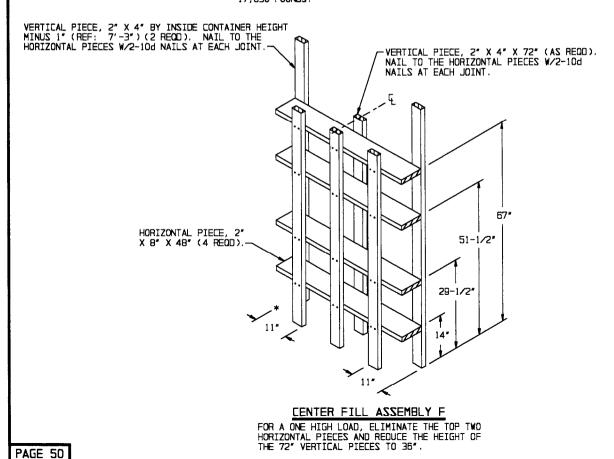
TOTAL WEIGHT - - - - - - 34,809 LBS (APPROX)

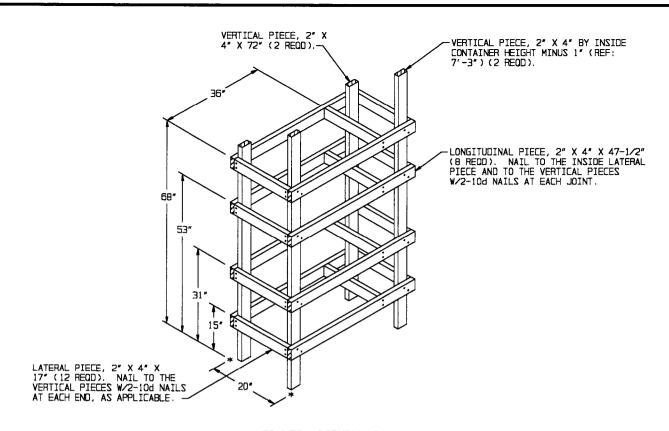
PALLET UNIT NO. 11 CONTAINER LOAD



### END BLOCKING ASSEMBLY L

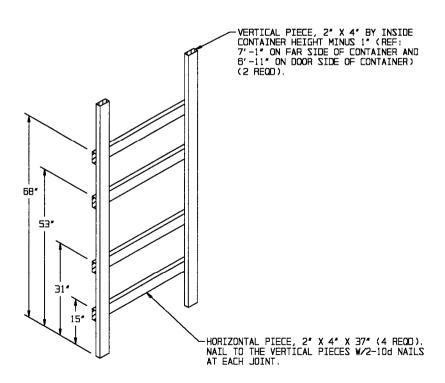
NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 35,260 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 17,630 POUNDS.





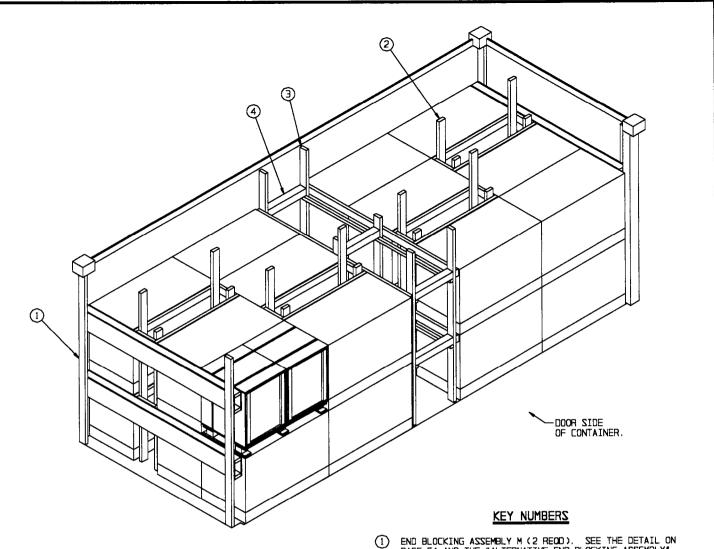
# FILLER ASSEMBLY C

A "RIGHT HAND" FILLER ASSEMBLY IS DEPICTED ABOVE. A "LEFT HAND" ASSEMBLY IS ALSO REQUIRED. FOR A ONE HIGH LOAD, ELIMINATE THE TOP FOUR LONGITUDINAL PIECES AND THE TOP SIX LATERAL PIECES, AND REDUCE THE SHORT VERTICAL PIECES TO 36".



### SIDE FILL ASSEMBLY F

FOR A ONE HIGH LOAD, ELIMINATE THE TOP TWO HORIZONTAL PIECES.



ISOMETRIC VIEW

- (1) END BLOCKING ASSEMBLY M (2 REOD). SEE THE DETAIL ON PAGE 54 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- (2) CRIB FILL ASSEMBLY D (4 REOD). SEE THE DETAIL ON PAGE 55.
- 3 CENTER GATE F (2 REQD). SEE THE DETAIL ON PAGE 54.
- (4) STRUT, 4" X 4" BY CUT TO FIT (REF: 22") (5 REQD), TOENAIL TO PIECES MARKED (3) W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 73.

- PRE-FABRICATE TWO END BLOCKING ASSEMBLIES M, FOUR CRIB FILL ASSEMBLIES D AND TWO CENTER GATES F.
- 2. INSTALL ONE END BLOCKING ASSEMBLY M.
- 3. LOAD TWO SKIDDED UNITS.
- 4. INSTALL ONE CRIB FILL ASSEMBLY D AND LOAD FOUR SKIDDED UNITS.
- 5. REPEAT STEPS 2, 3 AND 4.
- 6. LOAD FOUR SKIDDED UNITS.
- 7. INSTALL ONE CRIB FILL ASSEMBLY D AND LOAD TWO SKIDDED UNITS.
- B. REPEAT STEPS 6 AND 7.
- 9. INSTALL THE TWO CENTER GATES F AND THE SIX STRUTS.

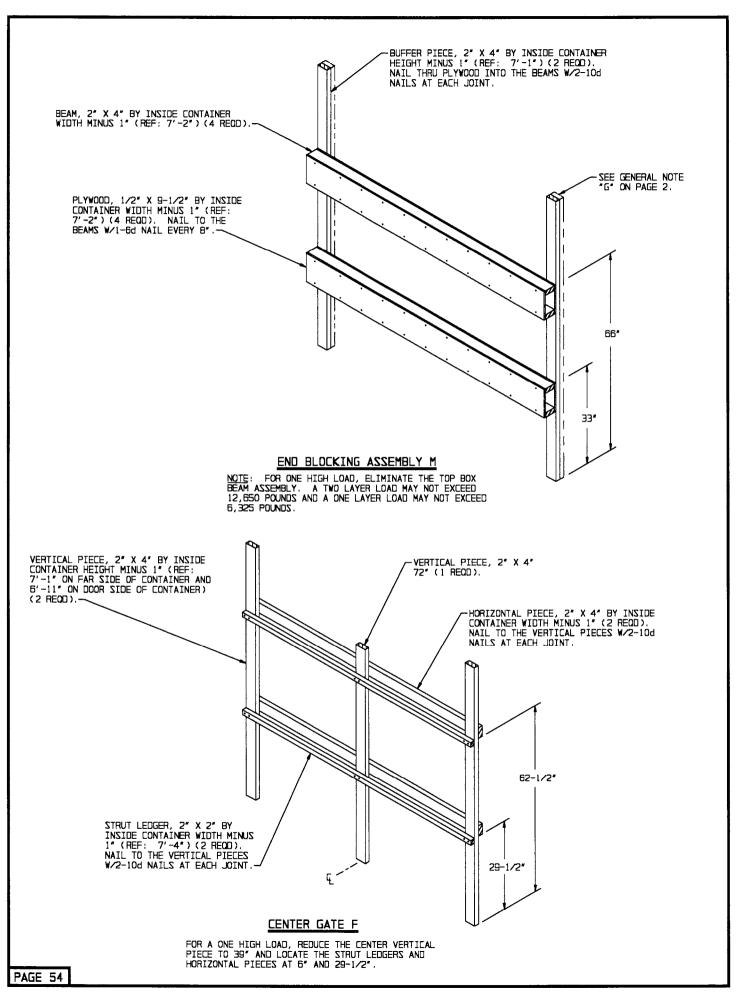
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
2" X 2" 2" X 4" 4" X 4"	30 337 11	10 225 15	
NAILS	NO. REOD	POUNDS	
6d (2") 10d (3") 12d (3-1/4")	176 208 24	1-1/4 3-1/4 1/2	
PLYWOOD, 1/2" 45.39 SO FT REOD - ~ 62.41 LBS			

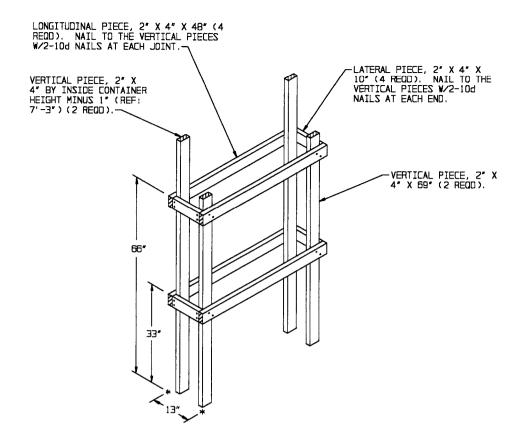
### LOAD AS SHOWN

<u>ITEM</u>	QUANTITY	WEIGHT (APPROX)
SKIDDED UNIT		568 LBS

TOTAL WEIGHT - - - - - - 13,674 LBS (APPROX)

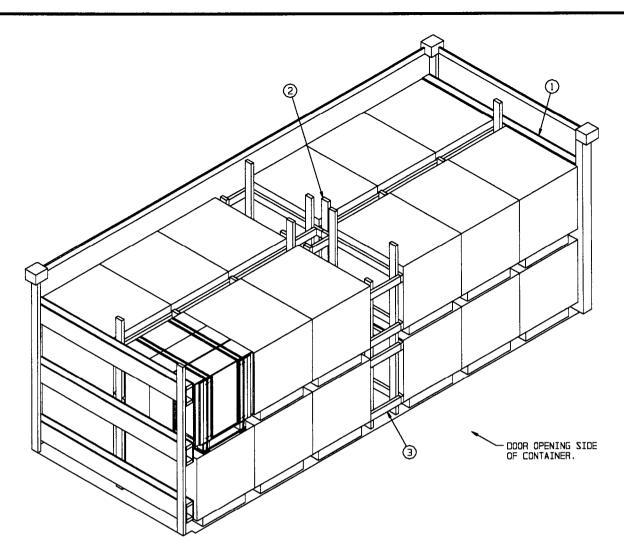
SKIDDED UNIT NO. 1 CONTAINER LOAD





### CRIB FILL ASSEMBLY D

FOR A ONE HIGH LOAD, REDUCE THE SHORT VERTICAL PIECES TO 39°, AND MOVE THE LATERAL AND LONGITUDINAL PIECES TO 9° AND 33°.



ISOMETRIC VIEW

### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY N (2 REQD). SEE THE DETAIL ON PAGE 59 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- $\ensuremath{ \begin{tabular}{ll} \ensuremath{ \begin{tabular}{ll$
- (3) CENTER FILL ASSEMBLY G (2 REOD, ONE RIGHT HAND AND ONE LEFT HAND). SEE THE DETAIL ON PAGE 59.

- PRE-FABRICATE TWO END BLOCKING ASSEMBLIES N, TWO CRIB FILL ASSEMBLIES E AND TWO CENTER FILL ASSEMBLIES G, ONE RIGHT HAND AND ONE LEFT HAND.
- 2. INSTALL ONE END BLOCKING ASSEMBLY N AND LOAD SIX SKIDDED UNITS.
- 3. REPEAT STEP TWO.
- 4. INSTALL ONE CENTER FILL ASSEMBLY G (LEFT HAND).
- 4. INSTALL THE TWO CRIB FILL ASSEMBLIES E AND LOAD THE REMAINING 12 SKIDDED UNITS.
- 5. INSTALL ONE CENTER FILL ASSEMBLY G (RIGHT HAND).

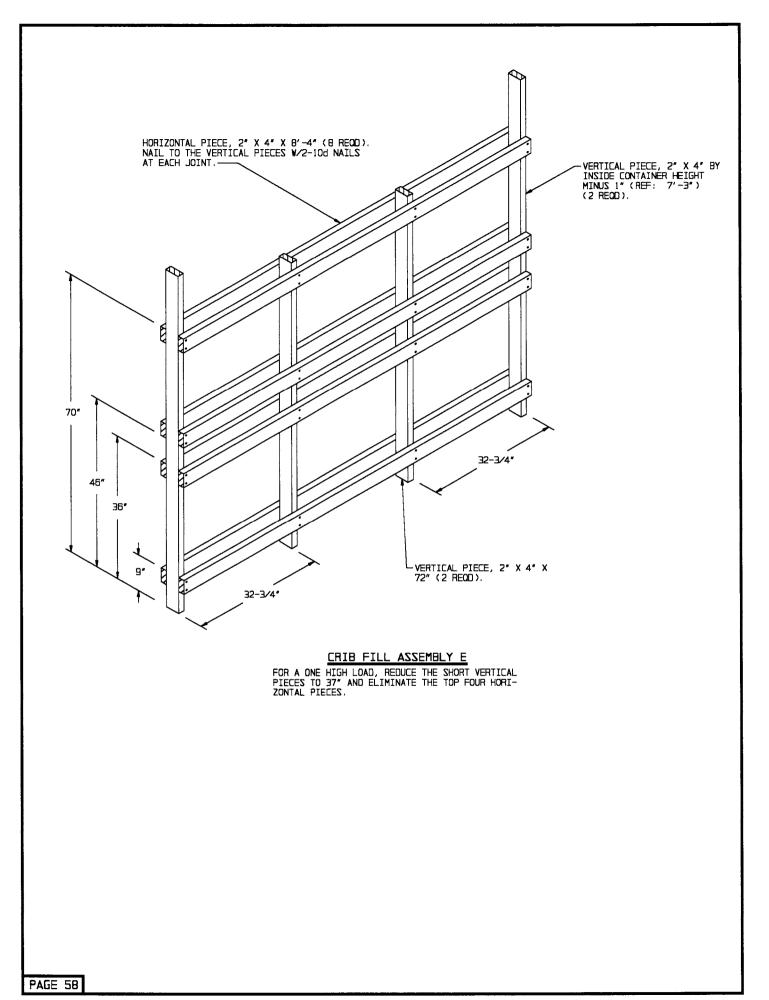
BILL OF MATERIAL			
LUMBER	LINEAR FEET	BOARD FEET	
2" X 4"	434	290	
ZJIAN	NO. REOD	2DNU09	
6d (2°) 10d (3°)	254 304	1-3/4 4-3/4	
PLYWOOD, 1/2" 68.08 SQ FT REQD 93.61 LBS			

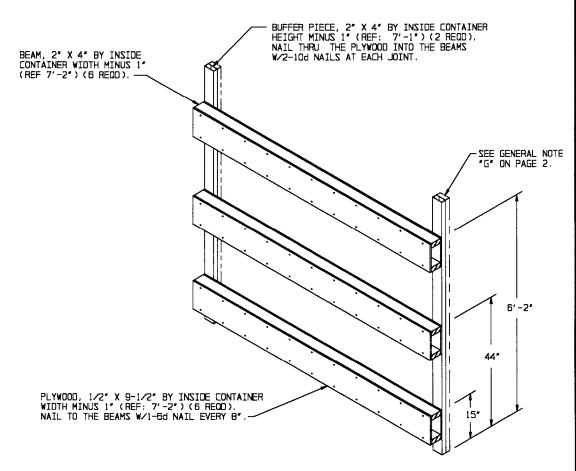
### NWOHZ ZA DADJ

ITEM	QUANTITY	WEIGHT (APPROX)
DUNNAGE	24	- 581 LBS

TOTAL WEIGHT - - - - - - 18,251 LBS (APPROX)

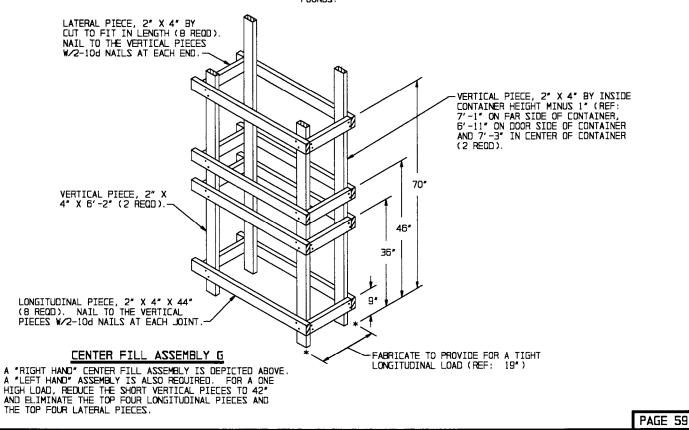
SKIDDED UNIT NO. 2 CONTAINER LOAD

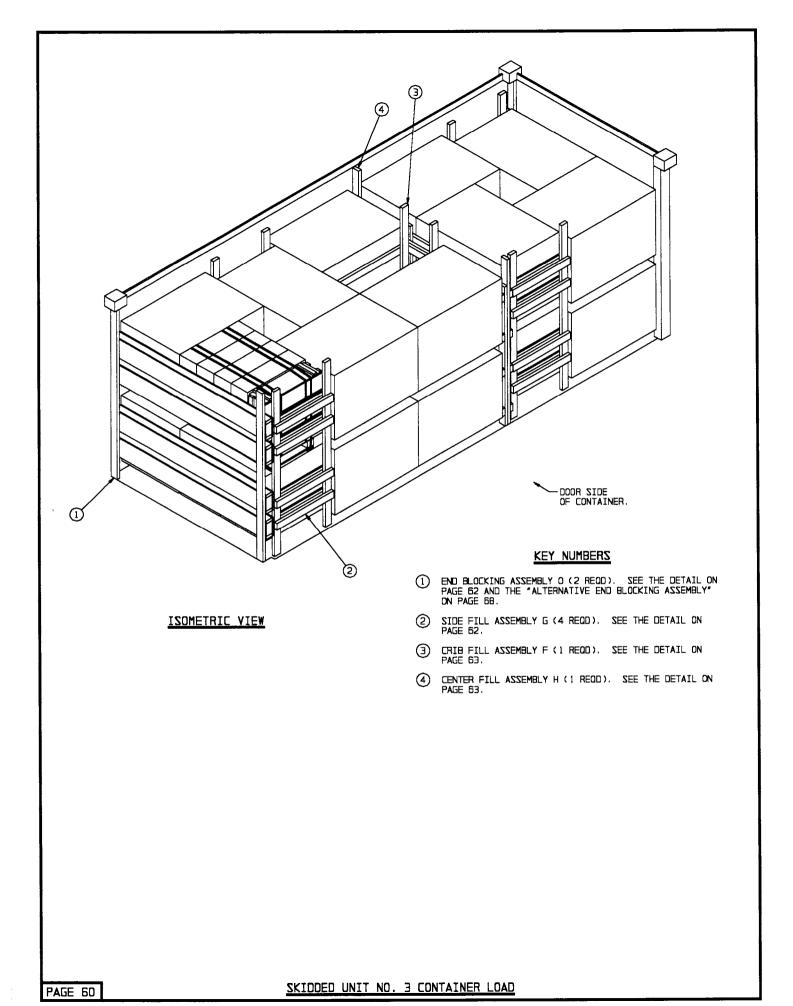




### END BLOCKING ASSEMBLY N

NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP BOX BEAM ASSEMBLY AND LOCATE THE MIDDLE BOX BEAM ASSEMBLY AT 36-3/4". A TWO LAYER LOAD MAY NOT EXCEED 18,975 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 12,650 POUNDS.





- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES O, FOUR SIDE FILL ASSEMBLIES G AND ONE CRIB FILL ASSEMBLY F. THE CENTER FILL ASSEMBLY H MAY BE PARTIALLY ASSEMBLED AT THIS TIME, BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY O AND LOAD FOUR SKIDDED UNITS.
- 3. INSTALL ONE SIDE FILL ASSEMBLY G AND LOAD FOUR SKIDDED UNITS.
- INSTALL ONE END BLOCKING ASSEMBLY O, ONE SIDE FILL ASSEMBLY G AND LOAD EIGHT SKIDDED UNITS.
- 5. LOAD TWO SKIDDED UNITS.
- 6. MEASURE THE VOID BETWEEN THE SKIDDED UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE AND INSTALL THE CENTER FILL ASSEMBLY H AND THE CRIB FILL ASSEMBLY F.
- 7. LOAD TWO SKIDDED UNITS.
- B. INSTALL THE REMAINING TWO SIDE FILL ASSEMBLIES G.

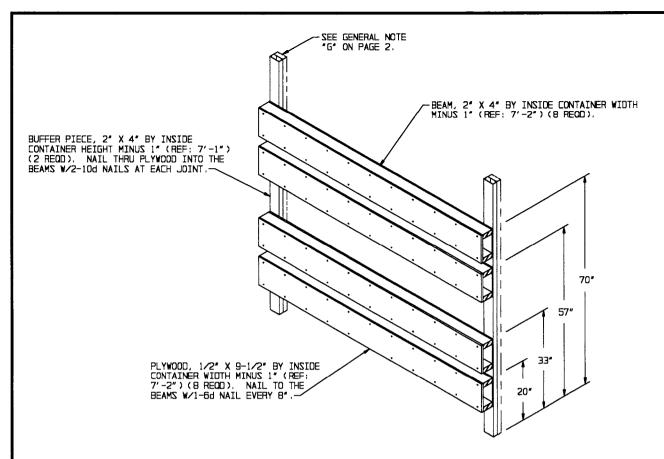
В	BILL OF MATERIAL											
LUMBER	LINEAR FEET	BOARD FEET										
1" X 4" 2" X 4"	44 423	15 282										
ZJIAN	NO. REOD	2DNU09										
6d (2") 10d (3")	416 344	2-1/2 5-1/2										
PLYWOOD, 1/2" -	90.78 SQ FT RI	EQD 124.82 LBS										

### LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
SKIDDED UNIT	<del></del>	727 LBS

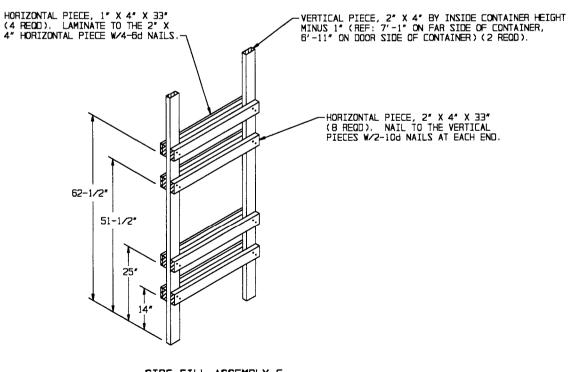
TOTAL WEIGHT - - - - - - 27,517 LBS (APPROX)

SKIDDED UNIT NO. 3 CONTAINER LOAD



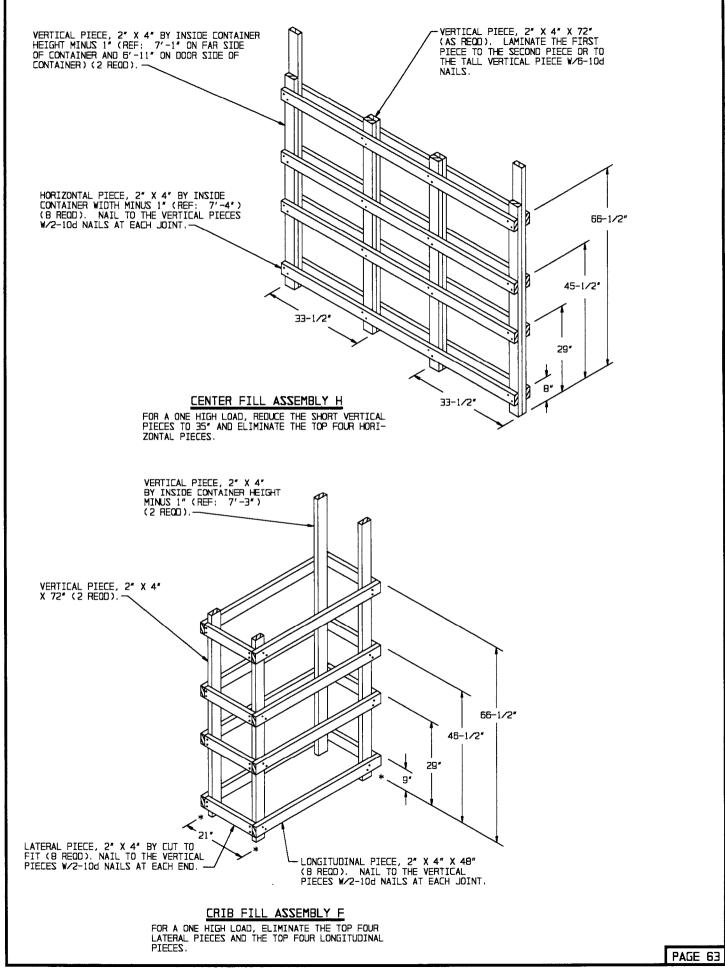
### END BLOCKING ASSEMBLY O

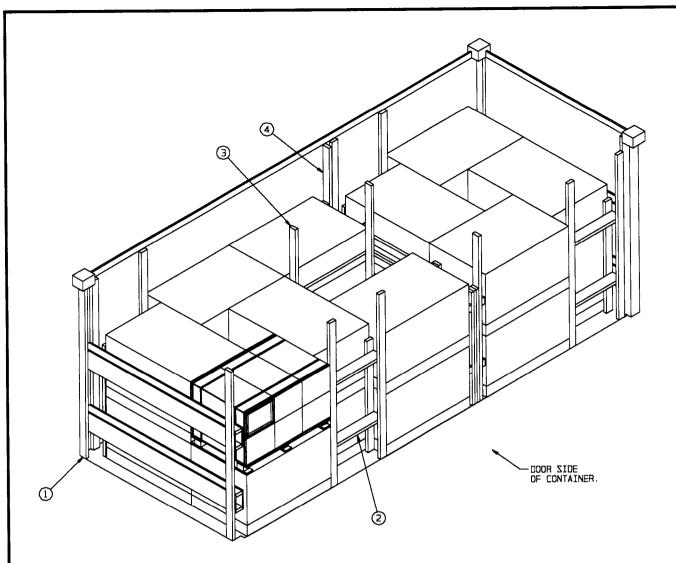
NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP TWO BOX BEAM ASSEMBLIES. A TWO LAYER LOAD MAY NOT EXCEED 25,300 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 12,650 POUNDS.



# SIDE FILL ASSEMBLY G

FOR A ONE HIGH LOAD, ELIMINATE THE TOP SIX HORIZONTAL PIECES.





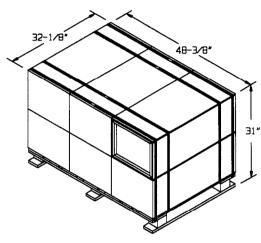
# ISOMETRIC VIEW

### KEY NUMBERS

- (1) END BLOCKING ASSEMBLY P (2 REOD). SEE THE DETAIL ON PAGE 67 AND THE "ALTERNATIVE END BLOCKING ASSEMBLY" ON PAGE 68.
- 2 SIDE FILL ASSEMBLY H (4 REQD). SEE THE DETAIL ON PAGE 56.
- (1 REQD). SEE THE DETAIL ON PAGE 56.
- (4) CENTER FILL ASSEMBLY J (1 REQD). SEE THE DETAIL ON PAGE 67.

SKIDDED UNIT NO. 4 CONTAINER LOAD

- 1. PRE-FABRICATE TWO END BLOCKING ASSEMBLIES P, FOUR SIDE FILL ASSEMBLIES H AND ONE CRIB FILL ASSEMBLY G. THE CENTER FILL ASSEMBLY J MAY BE PARTIALLY ASSEMBLED AT THIS TIME BUT CANNOT BE COMPLETED UNTIL THE REQUIRED NUMBER OF VERTICAL PIECES IS DETERMINED.
- 2. INSTALL ONE END BLOCKING ASSEMBLY P AND LOAD FOUR SKIDDED UNITS.
- 3. INSTALL ONE SIDE FILL ASSEMBLY H AND LOAD FOUR SKIDDED UNITS.
- INSTALL ONE END BLOCKING ASSEMBLY P, ONE SIDE FILL ASSEMBLY H AND LOAD EIGHT SKIDDED UNITS.
- 5. LOAD TWO SKIDDED UNITS.
- 6. MEASURE THE VOID BETWEEN THE SKIDDED UNITS AT THE CENTER OF THE CONTAINER AND COMPLETE AND INSTALL THE CENTER FILL ASSEMBLY J AND THE CRIB FILL ASSEMBLY G.
- 7. LOAD TWO SKIDDED UNITS.
- B. INSTALL REMAINING TWO SIDE FILL ASSEMBLIES H.



SKIDDED UNIT NO. 4

UNIT WEIGHT - - - - 790 POUNDS (APPROX)
CUBE - - - - - - 27.9 CUBIC FEET

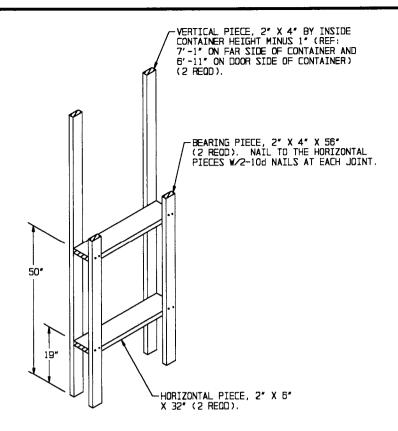
BILL OF MATERIAL												
LUMBER	BOARD FEET											
2" X 4" 2" X 6"	336 22	224 22										
NAILS	NO. REOD	ZDNUOP										
6d (2") 10d (3")	176 220	1-1/4 3-1/2										
PLYW00D, 3/4" -	45.39 SQ FT RI	EQD 93.62 LBS										

### LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)	
SKIDDED UNIT DUNNAGE CONTAINER		591 LBS	

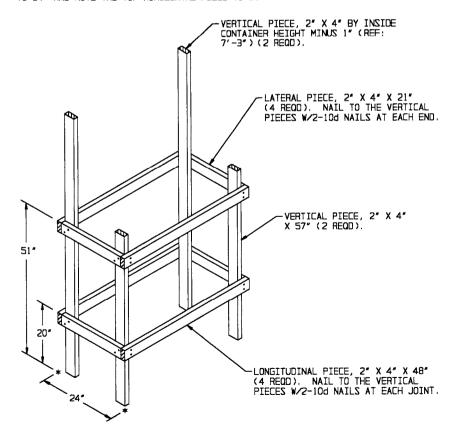
TOTAL WEIGHT - - - - - - 22,441 LBS (APPROX)

SKIDDED UNIT NO. 4 CONTAINER LOAD



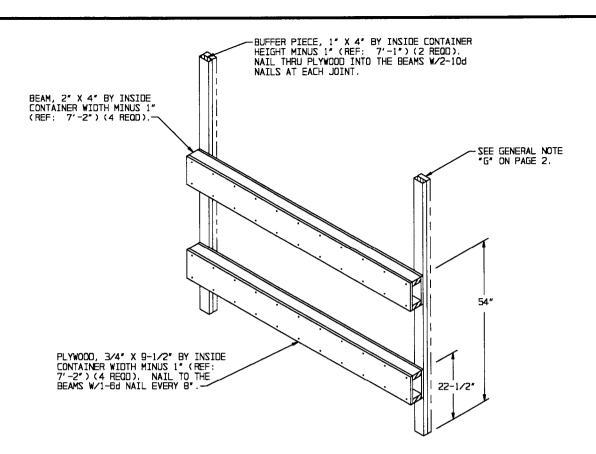
### SIDE FILL ASSEMBLY H

FOR A ONE HIGH LOAD, REDUCE THE BEARING PIECES TO 34" AND MOVE THE TOP HORIZONTAL PIECE TO 31"



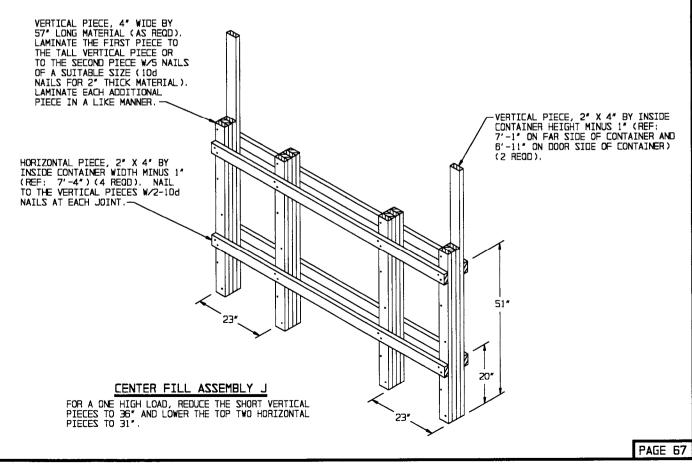
### CRIB FILL ASSEMBLY G

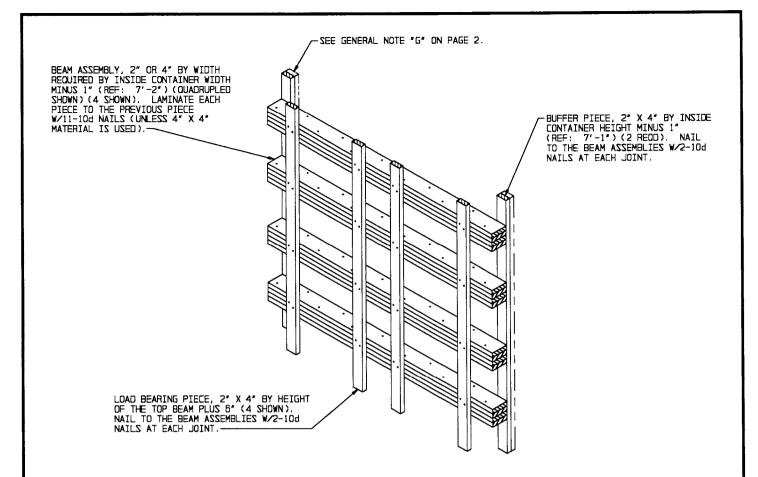
FOR A ONE HIGH LOAD, REDUCE THE SHORT VERTICAL PIECES TO 36" AND MOVE THE TOP TWO LATERAL PIECES AND TOP TWO LONGITUDINAL PIECES TO 31".



### END BLOCKING ASSEMBLY P

NOTE: FOR A ONE HIGH LOAD, ELIMINATE THE TOP BOX BEAM ASSEMBLY. A TWO LAYER LOAD MAY NOT EXCEED 17,630 POUNDS AND A ONE LAYER LOAD MAY NOT EXCEED 8,815 POUNDS.



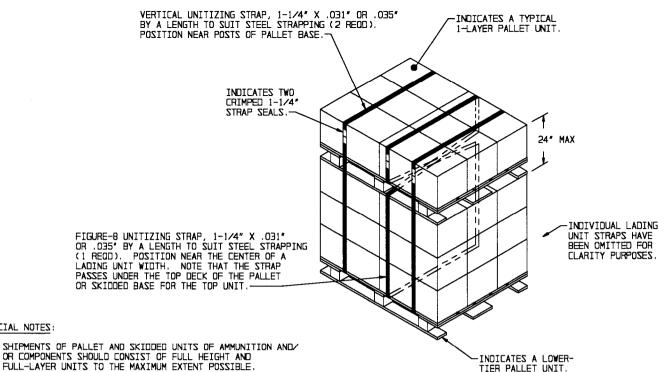


#### ALTERNATIVE END BLOCKING ASSEMBLY

SIZE/WEIGHT OF BEAMS												
SIZE OF BEAM WEIGHT PER BEAM												
2" X 4"	830 FB2											
2" X 6"	2,200 LBS											
2" X 8"	3,850 LBS											
2" X 10"	6,225 LBS											
4" X 4"	2,080 LBS											

### SPECIAL NOTES:

- THE ALTERNATIVE END BLOCKING ASSEMBLY MAY BE USED IN PLACE OF THE END BLOCKING ASSEMBLIES DEPICTED WITHIN THE LOADS ON PAGES 8 THRU 64, IF DESIRED.
- 2. BEAM ASSEMBLIES MUST BE LOCATED TO FULLY SUPPORT THE LADING UNITS. A MINIMUM OF TWO BEAM ASSEMBLIES ARE REQUIRED PER TIER OF LADING, UNLESS THE LADING UNIT CONSISTS OF ONLY ONE OR TWO LAYERS OF BOXES, IN WHICH CASE ONLY ONE BEAM ASSEMBLY IS REQUIRED PER LAYER, PROVIDING EACH LAYER OF BOXES IS IN CONTACT WITH A BEAM ASSEMBLY.
- 3. LOAD BEARING PIECES MUST BE LOCATED TO FULLY SUPPORT THE LADING UNITS. QUANTITY OF LOAD BEARING PIECES MAY BE VARIED TO SUIT THE LADING UNIT BEING SHIPPED.
- 4. THE QUANTITY AND SIZE OF BEAMS USED IN A BEAM ASSEMBLY WILL BE DETERMINED USING THE CHART AT LEFT. FOR EXAMPLE, IF SIXTEEN LADING UNITS ARE TO BE LOADED TWO TIERS HIGH AND TWO UNITS WIDE, AND EACH UNIT WEIGHS 2,500 POUNDS, THE TOTAL LADING WEIGHT IS 40,000 POUNDS. FOUR BEAM ASSEMBLIES WILL BE REQUIRED, SO EACH BEAM ASSEMBLY MUST BE CAPABLE OF SUPPORTING 10,000 POUNDS. THE BLOCKING ASSEMBLY MUST THEREFORE BE CONSTRUCTED USING EITHER FIVE 2" X 6" BEAMS IN EACH ASSEMBLY, OR TWO 2" X 10" BEAMS IN EACH ASSEMBLY, A BEAM ASSEMBLY WILL CONSIST OF A MINIMUM OF TWO BEAMS.



#### SPECIAL NOTES:

- OR COMPONENTS SHOULD CONSIST OF FULL HEIGHT AND OR COMPONENTS SHOULD LONSIS! OF FULL HEIGHT AND FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT OR THE QUANTITY OF ITEMS NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LESS-THAN-FULL LADING UNITS WITHIN A LOAD. THE PROCEDURES ON THIS PAGE AND ON PAGE 70 ARE PRESENTED AS GUIDANCE IN THE SHIPMENT OF THESE PARTIAL UNITS.
- 2. A LESS-THAN-FULL HEIGHT LADING UNIT, WHICH IS TO BE SHIPPED ON TOP OF A LOAD (CONTAINER HEIGHT PERMITTING) IN ACCORDANCE WITH THE PROCEDURES DELINEATED ON THIS PAGE, MUST NOT BE MORE THAN 24" IN HEIGHT. REFER TO THE "PARTIAL UNIT ON TOP OF LOAD" CHART BELOW FOR GUIDANCE AS TO THE MAXIMUM PERMISSIBLE NUMBER OF LAYERS IN A UNIT WHICH IS TO BE STRAPPED ON TOP OF THE LOAD BASED ON THE HEIGHT OF THE BOXES AND THE NUMBER OF LAYERS IN THE UNIT TO WHICH THE PARTIAL UNIT IS TO BE SECURED. TO WHICH THE PARTIAL UNIT IS TO BE SECURED.
- A LOW HEIGHT (24° MAX) LESS-THAN-FULL-HEIGHT LADING UNIT SHOULD BE POSITIONED NEAR THE LONGITUDINAL CENTER OF THE CONTAINER IN ORDER TO ENSURE THE PROPER LOAD WEIGHT DISTRIBUTION WITHIN THE CONTAINER. SEE GENERAL NOTE "O"
- THE PARTIAL UNIT WILL BE STRAPPED TO THE LADING UNIT DIRECTLY BELOW WITH TWO VERTICAL UNITIZING STRAPS AND A FIGURE-B UNITIZING STRAP. SEE THE "SECUREMENT OF A PARTIAL UNIT ON TOP" VIEW ABOVE FOR GUIDANCE.
- IF THE PARTIAL UNIT TO BE SHIPPED EXCEEDS 24" IN HEIGHT, THE PROCEDURES SPECIFIED ON PAGE 70 WILL APPLY.
- LEFTOVER BOXES, IN AN AMOUNT WHICH IS LESS THAN THE OUANTITY IN ONE LAYER OF A UNIT, CAN BE SECURED TO THE TOP OF A PARTIAL UNIT FOR SECUREMENT ON TOP OF A LOAD WITH THE FOLLOWING LIMITATIONS:
  - THE HEIGHT OF THE PARTIAL UNIT FOR SHIPMENT OF A LESS-THAN-FULL-HEIGHT LADING UNIT ON TOP OF A LOAD, WITH BOXES ADDED, MUST NOT EXCEED 24" IN HEIGHT.
  - B. LEFTOVER BOXES ON TOP OF A PARTIAL UNIT ARE APPLICABLE FOR CONUS AND OCONUS SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOTS TO POSTS, CAMPS AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE AND PACK PLANTS TO DEPOTS. <u>CAUTION</u>: A LOAD CONTAINING LEFTOVER BOXES IN AN AMOUNT WHICH IS LESS THAN A FULL LAYER, AND SECURED TO THE TOP OF A PARTIAL UNIT, MUST NOT BE DESTINED FOR BREAKBULK SHIPMENT OVERSEAS BY WATER
  - C. THE LEFTOVER BOXES MUST BE SECURED TO THE PARTIAL UNIT WITH THEIR OWN STRAPPING, SEPARATE FROM THE STRAPS FOR THE PARTIAL UNIT. SEE THE DETAILS ON PAGE 71 FOR GUIDANCE IN STRAP APPLICATION.

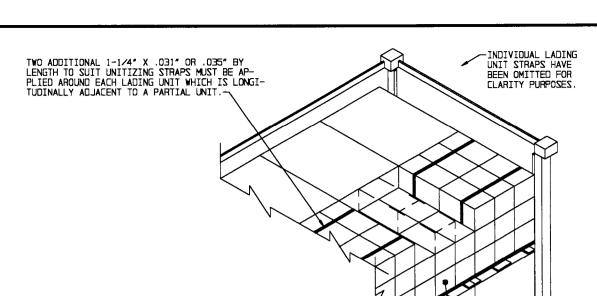
#### SECUREMENT OF PARTIAL LADING UNIT ON TOP

THE PALLET UNITS SHOWN ABOVE ARE TYPICAL. THE PRO-CEDURES ARE ALSO APPLICABLE FOR OTHER PALLET AND

PARTIAL UNIT ON TOP OF LOAD												
NO. OF LAYERS IN UNIT BELOW	MAXIMUM NUMBER OF LAYERS WHICH CAN BE STRAPPED ON TOP OF LOAD											
1	NOT APPLICABLE											
2	1 LAYER OF BOXES IF 18" OR LESS BOX HEIGHT											
3	2 LAYERS OF BOXES IF 9" OR LESS BOX HEIGHT 1 LAYER OF BOXES IF OVER 9"											
4 THRU B	3 LAYERS OF BOXES IF 6" OR LESS BOX HEIGHT 2 LAYERS OF BOXES IF OVER 6" BUT NOT MORE THAN 9" 1 LAYER OF BOXES IF OVER 9"											

NOTE: FOR FOUR LAYERS OF BOXES, SHIP IN TWO 2-LAYER UNITS ON TOP OF LOAD, FOR THREE LAYERS OF BOXES OVER 6" IN HEIGHT, SHIP IN ONE 1-LAYER AND ONE 2-LAYER UNITS ON TOP OF LOAD, AND FOR TWO LAYERS OF BOXES OVER 9" IN HEIGHT, SHIP IN TWO 1-LAYER UNITS ON TOP OF LOAD.

SHIPMENT OF PARTIAL LADING UNIT



PARTIAL UNI	T WITHIN A TIER (LAYER)
NO. OF LAYERS IN ADJACENT UNITS	MINIMUM NUMBER OF LAYERS WHICH CAN BE SHIPPED WITHIN A TIER
1	NOT APPLICABLE
2	CANNOT BE USED (SEE NOTE 4)
3	2 LAYERS
4	3 LAYERS
5	3 LAYERS
6	4 LAYERS
7	5 LAYERS
В	5 LAYERS

### ISOMETRIC VIEW

# SPECIAL NOTES:

- 1. SHIPMENTS OF PALLET AND SKIDDED UNITS OF AMMUNITION AND/
  OR COMPONENTS SHOULD CONSIST OF FULL HEIGHT AND
  FULL-LAYER UNITS TO THE MAXIMUM EXTENT POSSIBLE.
  HOWEVER, THE END OF A LOT OR THE QUANTITY OF ITEMS
  NEEDED TO FILL A REQUISITION, MAY NECESSITATE THE
  SHIPMENT OF ONE OR MORE LESS-THAN-FULL LADING UNITS
  WITHIN A LOAD. THE PROCEDURES ON THIS PAGE AND ON PAGE
  69 ARE PRESENTED AS GUIDANCE IN THE SHIPMENT OF THESE
  PARTIAL UNITS.
- 2. A LESS-THAN-FULL HEIGHT LADING UNIT, WHICH IS TO BE SHIPPED WITHIN A TIER HAS A LIMITATION AS TO THE MINIMUM NUMBER OF FULL LAYERS OF BOXES. THE HEIGHT OF THE PARTIAL UNIT MUST BE AT LEAST 56% (2/3) OF THE HEIGHT OF THE LONGITUDINALLY ADJACENT UNITS. REFER TO THE "PARTIAL UNIT WITHIN A TIER (LAYER)" CHART ABOVE FOR GUIDANCE AS TO THE MINIMUM NUMBER OF LAYERS OF BOXES PERMISSIBLE IN THE PARTIAL UNIT, BASED ON THE NUMBER OF LAYERS IN THE LONGITUDINALLY ADJACENT UNITS.
- 3. A PARTIAL UNIT SHOULD BE POSITIONED NEAR THE LONGITUDINAL CENTER OF THE CONTAINER IN ORDER TO ENSURE THE PROPER LOAD WEIGHT DISTRIBUTION WITHIN THE CONTAINER. SEE GENERAL NOTE "O" ON PAGE 2.
- 4. ALL LESS-THAN-FULL HEIGHT LADING UNITS WHICH ARE TO BE SHIPPED WITHIN A TIER MUST CONSIST OF FULL LAYERS OF BOXES TO A HEIGHT AT LEAST 2/3 OF THE HEIGHT OF THE LONGITUDINALLY ADJACENT UNITS.

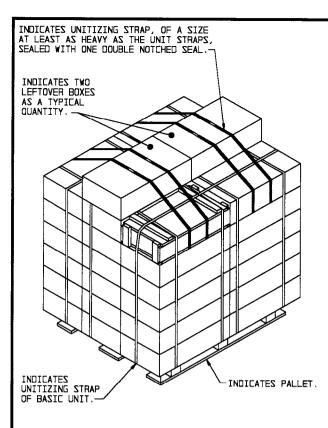
(SPECIAL NOTES CONTINUED AT RIGHT)

### (SPECIAL NOTES CONTINUED)

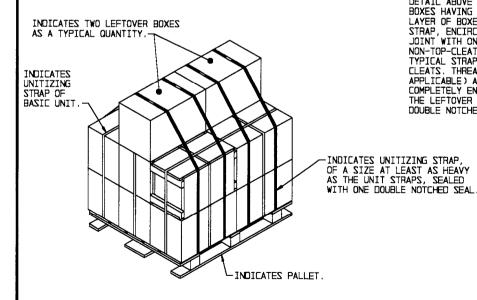
INDICATES A LESS-THAN-FULL HEIGHT LADING UNIT.

- A NEARLY-FULL-HEIGHT LESS-THAN-FULL-SIZE UNIT, OR A FULL HEIGHT UNIT HAVING LESS THAN A COMPLETE QUANTITY OF BOXES IN THE TOP LAYER, CAN BE SHIPPED WITHIN A TIER OF A LOAD. CAUTION: THE PARTIAL UNIT MUST BE LOCATED IN THE TOP TIER OF A LOAD; OTHER UNITS MUST NOT BE PLACED ON TOP OF THE PARTIAL UNIT. THE PARTIAL UNIT SHOULD BE PLACED IN THE LOAD SO THAT THERE IS AT LEAST ONE FULL HEIGHT UNIT BETWEEN IT AND A FORWARD OR REAR BLOCKING ASSEMBLY. THE ONLY ADDITIONAL DUNNAGE NEEDED IS THE FOUR 1-1/4" UNITIZING STRAPS DEPICTED IN THE "POSITIONING OF PARTIAL LADING UNIT WITHIN A TIER" VIEW ABOVE.
- 5. IF THE PARTIAL UNIT TO BE SHIPPED CONSISTS OF LESS FULL LAYERS OF BOXES THAN THE MINIMUM NUMBER PERMISSIBLE LISTED IN THE "PARTIAL UNIT WITHIN A TIER (LAYER)" CHART, AND IF THE PARTIAL UNIT EXCEEDS THE 24" MAXIMUM SPECIFIED FOR SHIPMENT OF A LESS-THAN-FULL-HEIGHT LADING UNIT ON TOP OF A LOAD, THE PARTIAL UNIT MUST BE BROKEN DOWN INTO TWO UNITS AND SECURED SEPARATELY.
- LEFTOVER BOXES, IN AN AMOUNT WHICH IS LESS THAN THE QUANTITY IN ONE LAYER OF A UNIT, CAN BE SECURED TO THE TOP OF A PARTIAL UNIT FOR SECUREMENT ON TOP OF A LOAD WITH THE FOLLOWING LIMITATIONS:
  - A. LEFTOVER BOXES ON TOP OF A PARTIAL UNIT ARE APPLICABLE FOR CONUS AND OCONUS SHIPMENTS FROM DEPOT TO DEPOT OR FROM DEPOTS TO POSTS, CAMPS AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADQUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE AND PACK PLANTS TO DEPOTS. CAUTION: A LOAD CONTAINING LEFTOVER BOXES IN AN AMOUNT WHICH IS LESS THAN A FULL LAYER, AND SECURED TO THE TOP OF A PARTIAL UNIT, MUST NOT BE DESTINED FOR BREAKBULK SHIPMENT OVERSEAS BY WATER CARRIER.
  - B. THE LEFTOVER BOXES MUST BE SECURED TO THE PARTIAL UNIT WITH THEIR OWN STRAPPING, SEPARATE FROM THE STRAPS FOR THE PARTIAL UNIT. SEE THE DETAILS ON PAGE 71 FOR GUIDANCE IN STRAP APPLICATION.

SHIPMENT OF PARTIAL LADING UNIT



### SECUREMENT OF TOP-CLEATED BOXES

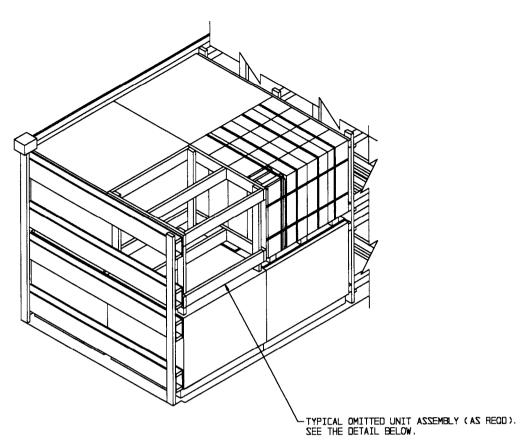


#### SPECIAL NOTES:

- 1. SHIPMENTS OF PALLET OR SKIDDED UNITS OF AMMUNITION AND/OR COMPONENTS SHOULD CONSIST OF FULL-HEIGHT UNITS TO THE MAXIMUM EXTENT POSSIBLE. HOWEVER, THE END OF A LOT OR THE DUANTITY OF ITEMS NEEDED TO FILL A REGUISITION, MAY NECESSITATE THE SHIPMENT OF ONE OR MORE LEFTOVER BOXES. LEFTOVER BOXES ARE DESCRIBED AS A QUANTITY OF BOXES WHICH IS INSUFFICIENT FOR A FULL-LAYERED PARTIAL UNIT FOR SHIPMENT EITHER ON TOP OF A LOAD AS SHOWN ON PAGE 69 OR WITHIN A TIER AS SHOWN ON PAGE 70. THEY ARE USUALLY BOXES OF THE SAME AMMUNITION ITEM AS THE BALANCE OF THE LOAD ALTHOUGH THEY MAY BE ANY OTHER COMPATIBLE ITEM.
- 2. SHIPMENT OF LEFTOVER BOXES IS APPLICABLE FOR CONUS AND OCONUS MOTOR CARRIER SHIPMENTS FROM DEPOT TO DEPOT, OR FROM DEPOTS TO POSTS, CAMPS, AND STATIONS, OR, UPON APPROVAL FROM HIGHER HEADOUARTERS, FOR SHIPMENTS FROM LOAD, ASSEMBLE AND PACK PLANTS TO DEPOTS. CAUTION: A LOAD CONTAINING LEFTOVER BOXES IN AN AMOUNT WHICH IS LESS THAN A FULL LAYER, AND SECURED TO THE TOP OF A FULL OR PARTIAL UNIT, MUST NOT BE DESTINED FOR BREAKBULK SHIPMENT OVERSEAS BY WATER CARRIER.
- 3. THE PROCEDURES ON THIS PAGE ARE PRESENTED AS GUIDANCE IN THE SECUREMENT OF LEFTOVER BOXES FOR SHIPMENT. THE VIEW AT TOP LEFT DEPICTS TWO LEFTOVER BOXES SECURED TO A FULL-HEIGHT UNIT WHEN THE BOXES ON THE UNIT HAVE TOP CLEATS. THE VIEW AT LEFT BELOW DEPICTS TWO LEFTOVER BOXES SECURED TO A FULL-HEIGHT UNIT WHEN THE BOXES ON THE UNIT DO NOT HAVE TOP CLEATS. THE QUANTITIES SHOWN ARE TYPICAL. THE PROCEDURES ARE ALSO APPLICABLE FOR SECUREMENT OF LEFTOVER BOXES TO PARTIAL UNITS FOR SHIPMENT ON TOP OF A LOAD. SEE SPECIAL NOTE 5 ON PAGE 69 FOR LIMITATIONS. IN ADDITION, THE PROCEDURES ARE APPLICABLE FOR SECURING LEFTOVER BOXES TO A PARTIAL UNIT FOR SHIPMENT WITHIN A TIER. SEE SPECIAL NOTE 7 ON PAGE 70 FOR LIMITATIONS.
- 4. THE QUANTITY OF LEFTOVER BOXES WHICH CAN BE SECURED TO FULL OR PARTIAL UNITS MAY VARY FROM ONE TO NOT MORE THAN THE QUANTITY IN ONE LAYER ON THE UNIT. IN OTHER WORDS, NOT MORE THAN THREE BOXES CAN BE STRAPPED TO A 3-BOX LONG UNIT. LEFTOVER BOXES MUST NOT BE STACKED. IF THE QUANTITY OF LEFTOVER BOXES TO BE SHIPPED IS MORE THAN THE QUANTITY IN ONE FULL LAYER, BOXES MUST BE STRAPPED TO MORE THAN ONE UNIT.
- S. LEFTOVER BOXES MUST BE SECURED TO A FULL OR PARTIAL UNIT WITH A MINIMUM OF TWO PIECES OF STEEL STRAPPING (SEPARATE FROM UNIT STRAPS) OF A SIZE AT LEAST AS HEAVY AS THE STRAPPING USED TO SECURE THE BOXES ON THE PALLET OR SKIDDED UNIT UNDERNEATH THE LEFTOVER BOXES TO THE PALLET OR SKIDDED BASE. THE "SECUREMENT OF TOP-CLEATED BOXES" DETAIL ABOVE DEPICTS A TYPICAL STRAP APPLICATION FOR BOXES HAVING TOP CLEATS. THREAD A STRAP UNDER THE TOP LAYER OF BOXES, AS NEAR AS PRACTICAL TO THE ADJACENT UNIT STRAP, ENCIRCLE THE LEFTOVER BOXES, TENSION, AND SEAL THE JOINT WITH ONE DOUBLE NOTCHED SEAL. THE "SECUREMENT OF NON-TOP-CLEATED BOXES" DETAIL, LOWER LEFT, DEPICTS A TYPICAL STRAP APPLICATION FOR BOXES WHICH DO NOT HAVE TOP CLEATS. THREAD A STRAP UNDER THE TOP DECK BOARDS (AS APPLICABLE) AS NEAR AS PRACTICAL TO A PALLET POST, COMPLETELY ENCIRCLE THE PALLETIZED OR SKIDDED UNIT AND THE LEFTOVER BOXES, TENSION, AND SEAL THE JOINT WITH ONE DOUBLE NOTCHED SEAL.

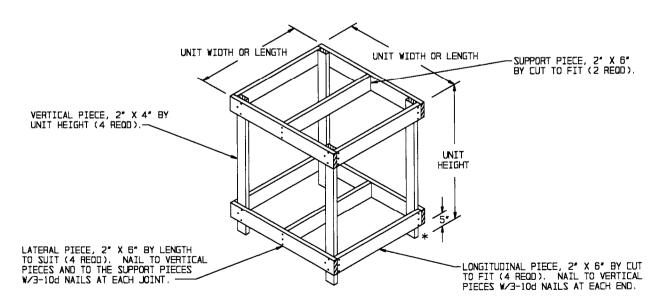
SECUREMENT OF NON-TOP-CLEATED BOXES

PROCEDURES FOR SHIPMENT OF LEFTOVER BOXES



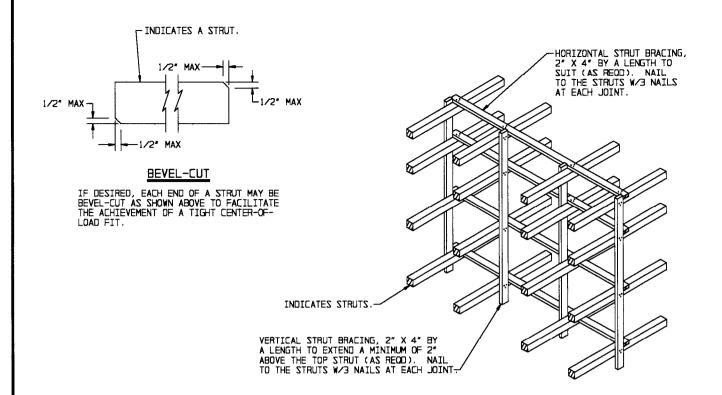
### TYPICAL REDUCED LOAD

SEE GENERAL NOTE "O" ON PAGE 2.



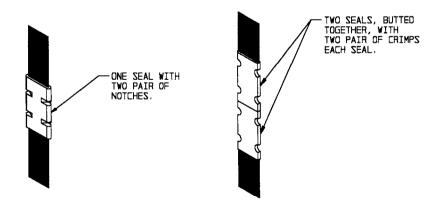
### TYPICAL OMITTED UNIT ASSEMBLY

THE ASSEMBLY AS DEPICTED ABOVE IS FOR USE IN PLACE OF AN OMITTED LADING UNIT, AND WILL BE REQUIRED FOR SOME LOADS TO PROVIDE A ONE OR TWO-WIDE LOADING PATTERN THROUGHOUT THE LENGTH OF THESE LOADS. THE MAXIMUM NUMBER OF OMITTED-UNIT ASSEMBLIES ALLOWED IN A LOAD ARE AS FOLLOWS: ONE ASSEMBLY FOR A ONE-HIGH, TWO-WIDE LOAD CONFIGURATION AND THREE ASSEMBLIES FOR A TWO-HIGH, TWO-WIDE LOAD CONFIGURATION.



### TYPICAL STRUT BRACING

THE STRUT BRACING SHOWN IS FOR A 2-HIGH LOAD. THE PROCEDURE MAY BE ADAPTED FOR USE IN A 1-HIGH LOAD OR OTHER HEIGHT LOADS.



### STRAP JOINT A

METHOD OF SECURING A STRAP JOINT WHEN USING A NOTCH-TYPE SEALER.

### STRAP JOINT B

METHOD OF SECURING A STRAP JOINT WHEN USING A CRIMP-TYPE SEALER.

### END-OVER-END LAP JOINT DETAILS

					LOAD]	ING CO	ONFIGU	RATIO	N CHA	₹T					
	MON		(INCHES/			LOAD	END BLKNG	CTD:IT	SIDE FILL	CENTER	CENTER	CRIB FILL A224	FILLER	LADNG UNITS PER CNTR	APPROX GROSS WEIGHT
A010 A011 A011 A011 A059 A059 A062 A062 A063 A064 A066 A066 A066 A066 A066 A066 A066	NSN  1305-00-028-5035 1305-00-892-4254 1305-01-232-8338 1305-01-155-5462 1305-01-155-5461 1305-01-155-5461 1305-01-155-5461 1305-01-155-5461 1305-01-155-5457 1305-01-258-8692 1305-01-155-5457 1305-01-252-0153 1305-01-156-7584 1305-00-968-5892 1305-00-968-5892 1305-00-968-5892 1305-00-968-5892 1305-00-968-5892 1305-00-98-5569 1305-00-98-5569 1305-00-98-5569 1305-00-98-5569 1305-00-1015-6185 1305-00-965-6320 1305-00-1015-6185 1305-00-1258-8693 1305-01-258-8693 1305-01-258-8693 1305-01-258-8693 1305-01-258-8694 1305-01-155-5463 1305-01-155-5463 1305-01-155-5463 1305-00-182-3126 1305-00-182-3127 1305-00-182-3127 1305-00-182-3127 1305-00-182-3127 1305-00-182-3127 1305-00-182-3127 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126 1305-00-182-3126	EN. 77-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	NCHES	No.	WGT . 1552 1960 2045 3931 3931 3931 3931 3931 3931 3931 393	LOADE 48 220 60 220 8 220 220 220 220 220 220 220 220	BLXSS	STRUT	SIDE FILL ASSY F51 B23 B23 B23 B23 B23 B23 B23 B23 B23 B23	CENTER FILLY ASSY A 18 B222 B222 B222 B222 B222 B222 B222 B	CENTER GATE		FILLER ASSY. C51	NIT	SSTT > 1000006600000000000000000000000000000
A130 A131 A131 A131 A136 A136 A143 A165 A212 A216 A216 A216 A218	1305-00-914-4675 1305-00-914-4675 1305-00-105-9968 1305-00-105-9968 1305-00-926-9436 1305-00-926-9436 1305-00-926-3942 1305-00-926-3942 1305-00-028-6535 1305-00-028-6515 1305-00-028-6515 1305-00-028-6515 1305-00-028-6515	43-1/2 43-1/2 35 35 43-1/2 35 40-1/2 43-1/2 43-1/2 35 43-1/2 35	51 51 46 46 51 46 51 46	39 39 46-1/8 46-1/8 39 46-1/8 39 46-1/8 34-1/2	3355 3355 3312 3072 3043 3192 3547 3032 2967 3259 1595 3739 1776	20 20 32 32 20 32 20 32 8 20 60 20	D-2* D-2* H-2 H-2 D-2* H-2 D-2* H-2 D-2* B-4 D-2* C-4 H-2		B23 B23 D35 D35 B23 D35 B23 D35 B23 G62 B23 G62 B23 G62	B22 B22 J67 J67 B22 J67 B22 J67 G59 B22 H63 B22 H63		835 835 835 835 658 F63 F63		8 8 10 10 8 10 8 20 8 20 10	33,570 33,570 39,810 37,410 31,080 38,610 35,110 37,070 30,390 32,810 38,740 36,650 42,370 41,820

 $\underline{\text{NOTE}}\colon$  THE INFORMATION LISTED IN THE CHART ABOVE FOR EACH DODIC AND NSN WILL BE INTERPRETED AS FOLLOWS:

END BLOCKING ASSEMBLY: THE LETTER CORRESPONDS TO THE CONFIGURATION TYPES LISTED IN CHART NO. 5 ON PAGE 7, AND THE NUMBER REFERS TO THE QUANTITY OF BOX BEAM ASSEMBLIES REQUIRED IN EACH END BLOCKING ASSEMBLY, I.E., "C-4" WOULD INDICATE THAT FOUR BOX BEAM ASSEMBLIES EACH CONSTRUCTED OF TWO 2" X 6" BEAMS WITH 1/2" X 9-1/2" PLYWOOD WOULD BE NEEDED FOR EACH END BLOCKING ASSEMBLY. AN "\*" AFTER THE NUMBER INDICATES THAT THE BUFFER PIECES WILL BE DOUBLED ON BOTH END BLOCKING ASSEMBLIES.

SIDE FILL ASSEMBLY, CENTER FILL ASSEMBLY, CENTER GATE, CRIB FILL ASSEMBLY, FILLER ASSEMBLY: THE LETTER INDICATES THE PARTICULAR DETAIL TO REFER TO, AND THE NUMBER INDICATES THE PAGE NUMBER OF THE DETAIL.

STRUT: REFERS TO THE LENGTH OF THE STRUTS TO BE USED IN THE CENTER OF THE LOAD, IF REQUIRED. IN ALL CENTER GATE ASSEMBLIES AND STRUTS, THE STRUTS MUST BE INSTALLED WITH THE CENTER GATE ASSEMBLIES ALREADY IN PLACE IN THE LOAD.

IF THE SPACE IS BLANK, THAT PARTICULAR TYPE OF ASSEMBLY IS NOT REQUIRED IN THAT PARTICULAR LOAD. LOCATIONS OF ASSEMBLY PIECES MUST BE ADJUSTED TO ACCOMMODATE THE PARTICULAR UNIT BEING LOADED AND TO ENSURE THAT LADING UNITS ARE PROPERLY SUPPORTED. FOR EXAMPLE, IF AN END BLOCKING ASSEMBLY HAS TWO BEAM ASSEMBLIES PER LAYER OF LADING, THE BEAM ASSEMBLY HAS TWO HEIGHTS MUST BE ADJUSTED AS REQUIRED TO ENSURE THAT THE TOP AND BOTTOM BOXES OF THAT LAYER OF LADING ARE SUPPORTED. GROSS CONTAINER WEIGHTS REFLECT AN APPROXIMATE MAXIMUM GROSS WEIGHT OF 52,910 POUNDS. LOADS MUST BE ADJUSTED FOR CONTAINERS WITH MAXIMUM GROSS WEIGHT OF LESS THAN 52,910 POUNDS. THE MAXIMUM GROSS WEIGHT OF THE CONTAINER MUST NOT BE EXCEEDED.

NOTE THAT OTHER LOAD CONFIGURATIONS MAY PROVE MORE ECONOMICAL OR FEASIBLE DEPENDING ON LOCAL REQUIREMENTS AND CONDITIONS. THE CHART ABOVE WAS FORMULATED USING AVERAGE LOADING CONDITIONS AND ASSUMING THAT THE LADING UNIT DIMENSIONS LISTED ARE CORRECT. ACTUAL DIMENSIONS MAY VARY, AND IN VARYING, DICTATE A DIFFERENT LOAD CONFIGURATION. THE CHART ABOVE IS FOR GUIDANCE PURPOSES ONLY.

LOADING CONFIGURATION CHART				
LADING UNIT DIMENSIONS (INCHES/POUNDS)  END SIDE CENTER	CRIB	CTI   CD	LADNG 2TINU	APPROX GROSS WETGHT
DODIC NSN LEN. WIDTH HEIGHT WGT. PAGE ASSY. STRUT ASSY. ASSY. GATE		YZZA	ENTR.	(LBZ)
LOAD BLKNG FILL CENTER	FILL F	A19 C51 A19 C51 A19 C51 A19 A19 A19 A19 A19 A19	PER	WEIGHT

<sup>\*</sup>SEE THE NOTE ON PAGE 74.

^THESE LOADS ARE NOT CONDUCIVE TO SHIPPING IN SIDE OPENING CONTAINERS, DUE TO PALLET SIZE.

<THESE LOADS REQUIRE THE USE OF A SPACER ASSEMBLY, AS DEPICTED ON PAGE 27.

						ING C	ONFIGU	RATIO	I CHAF	₹T					
DODIC	NSN	LADI	NG UNIT (INCHES/ WIDTH		WGT.	LOAD PAGE	BLKNG ASSY.	STRUT	SIDE FILL ASZY.	CENTER FILL ASSY.	CENTER GATE	CRIB FILL ASSY.	FILLER ASSY.	LADNG UNITS PER CNTR.	APPROX GROSS WEIGHT (LBS)
8535 8535 8535 8536 8536 8536 8536 8533 8536 8533 8533	1310-00-151-3198	41-1/4 41-1/4 41-1/4 41-1/4 41-1/4 40-1/8 40-1/2 40-1/2 43 43 43 43 43 43 43 43 43 43 43 43 43	53-1/4 53-1/4 53-1/4 53-1/4 53-1/4 53-1/2 48-1/2 48-1/2 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4 47-3/4	######################################	1618 1618 1618 1678 1678 1863 1614 1614 1337 1337 1337 1337 1337 1237 1237 1237	2220 8 8 8 6 6 6 4 7 4 4 8 8 8 8 20 4 2 8 8 8 8 2 2 8 8 8 8 2 2 8 2 8 5 2 8 6 2 4 4 8 8 4 4 4 4 8 8 8 8 8 8 8 8 8 8 8	*** 	19 22 22219 19 19 19 19 19 19 19 19 19 19 23 18 35 37 23 1/22 23 20 20		822 15 15 15 15 15 15 15 15 15 15 15 15 15	E47 A10 A10 A10 A10 E47 E47 E47 E47 E47 E47 E47 E47 C26 C26 E47 C26 C26 E47 C26 C38 D38 C38 C47	E58 A11 E58 A11 E58 A11 E58 F63 A11 E58 F63 A11	A19 A19 A19 C51 C51 C51 C51 C51 C51 C51	166668600000000000000000000000000000000	43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 43,600 40,000 40,700 40

<sup>\*</sup>SEE THE NOTE ON PAGE 74. ^THESE LOADS ARE NOT CONDUCIVE TO SHIPPING IN SIDE OPENING CONTAINERS, DUE TO PALLET SIZE.

Company   Comp					1	L <b>OA</b> D:	ING CO	ONFIGU	RATIO	N CHAF	RT					
13   15   16   18   18   18   18   18   18   18					( ZONUOS	νS		BLKNG		FILL	FILL		FILL		UNITS PER	APPROX GROSS WEIGHT
1315-00-028-5016   47-14   31-26   42-50   1881   60   8-4   866   869   863									STRUT			GATE		. YZZA		38,180
H459	C706 C706 C706 C706 C706 C706 C708 C708 C708 C708 C708 C708 C708 C708	1315-00-935-9212 1315-00-028-5015 1315-00-028-5006 1315-00-028-5014 1315-00-028-5011 1315-00-028-5014 1315-00-028-5014 1315-00-028-5020 1315-00-926-935 1315-00-935-9131 1315-00-935-9131 1315-00-935-9214 1315-01-158-849 1315-01-158-849 1315-01-158-8199 1315-01-128-9789 1315-01-289-9789 1315-01-289-9789 1320-00-926-10320 1320-00-926-10320 1320-00-935-5186 1320-00-935-5186 1320-00-935-9283 1320-00-935-9283 1320-00-935-9283 1320-00-926-4102 1320-00-935-9283 1320-00-935-9283 1330-00-143-7120 1330-00-143-7120 1330-00-174-8815 1330-01-171-8869 1330-01-171-8869 1330-01-171-8869 1330-01-171-8869 1330-00-189-5502 1330-00-198-570 1330-00-198-571 1330-00-198-5857 1330-00-198-5857 1330-00-198-5857 1330-00-289-6854 1330-00-289-6854 1330-00-289-6854 1330-00-289-6854 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416 1330-00-198-5416	EN. 14447-1144888888888888888888888888888888	N	HEI 5/8 8 22-5/8 8 24-24-5/8 8 33-3-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	WGT. 1561 1561 1561 1561 1561 1561 1561 156	PA 66666666666666666448666466886666666666	NOT	27-5/8 27-5/8 27-5/8 14 14 14 13-1/2 13-1/2 13-1/2 13-1/2 38-1/2 38-1/2 22 22	F1257	## ## ## ## ## ## ## ## ## ## ## ## ##	C26 C26 C26 C26 C26 C26	F1LL ASSY.  F63	C51 C51 C51 C51	TY	WEISS)  88,180  80,580
H490   1340-00-935-9256   37-1/8   46-1/2   52-3/4   3304   48   D-2	H459 H4589 H4889 H4889 H4890 H4990 H4990 H4990 H4990	1340-00-223-7224 1340-00-401-4460 1340-01-108-8850 1340-00-935-6025 1340-00-143-7100 1340-00-143-7219 1340-00-935-9257 1340-00-935-9252 1340-00-926-1945 1340-00-935-9256 1340-00-935-9256 1340-00-935-9256	43-1/2 70-1/8 43-1/2 35-5/8 43-1/2 43-1/2 43-1/2 35-5/8 35-5/8 35-5/8 35-5/8 35-5/8	62-7/8 19-7/8 72-7/8 46-1/8 62-7/8 62-7/8 62-7/8 46-1/8 46-1/8 46-1/8 46-1/8 46-1/8	34 23-3/4 34 51-3/4 34 34 51-3/4 51-3/4 51-3/4 51-3/4 52-3/4	1988 1239 2479 2187 1988 1688 1988 2187 2187 2187 2187 3304	24 28 28 32 24 24 24 32 32 32 32 32 48	A-4 D-3 E-4 C-2 A-4 A-4 C-2 C-2 C-2 C-2	21 21 21	C27 A11 C27 D35 C27 C27 C27 D35 D35 D35 D35	H63 C31 D34 D34 D34 D34 D34 D34	C26 C26 C26	835 835 835 835 835	C51	12 36 12 10 12 12 10 10 10	20, 160 30, 670 36, 370 28, 430 30, 670 27, 070 30, 670 28, 430 28, 430 28, 430 28, 430 36, 360 36, 360

\*SEE THE NOTE ON PAGE 74.

#THESE ITEMS HAVE BEEN ASSIGNED TO COMPATIBILITY GROUP "L", AND, THEREFORE, REQUIRE ADDITIONAL HANDLING AND TRANSPORTATION CONSIDERATIONS. FOR EXAMPLE, CONTAINERS LOADED WITH SKIDDED UNITS OF DODIC H110 CANNOT BE STOWED ABOARD A VESSEL. FOR ALL DETAILED REQUIREMENTS AND RESTRICTIONS, REFER TO 48 CFR.

					LOAD:	ING C	ONFIGU	RATIO	V CHA	रा					
DODIE	MEN				LOAD	ENO BLKNG	STOUT	SIDE	CENTER	CENTER	CRIB FILL	FILLER	LADNG UNITS PER	APPROX GROSS WEIGHT	
L116A L117A L117A L119 L119 L275 L275 L275 L275 L275 L275 L275 L276 L306 L307 L314 L314 L314 L314 L314 L314 L314 L314	NSN  1340-00-143-7107 1340-00-912-4548 1340-00-912-4548 1340-00-912-4548 1340-00-912-4548 1340-00-935-6134 1340-00-935-6134 1340-00-935-6134 1340-00-191-3315 1340-01-199-8683 1340-01-199-8683 1340-01-199-8683 1340-01-021-4491 1340-00-021-4491 1340-00-021-4478 1340-00-021-4478 1340-00-021-4478 1340-00-021-4478 1340-00-021-4478 1340-00-021-4478 1340-00-021-478 1340-00-135-8924 1340-00-235-8924 1340-00-355-8924 1340-00-154-1679 1340-01-154-1679 1340-01-154-1679 1340-01-154-1679 1340-01-154-1679 1340-01-154-1679 1345-00-028-5105 1345-00-028-5101 1345-00-028-5121 1345-01-028-5121 1345-01-028-5131 1345-00-028-5121 1345-01-028-5131 1345-00-028-5121 1345-01-028-5131 1345-00-028-5121 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3497 1345-01-078-3491 1345-01-085-2891	LAI	HE   日   日   日   日   日   日   日   日   日		VGT.  2188 2188 2187 1988 2187 1988 2112 2112 2112 2112 2112 2112 2112		END	29 17-1/2 18 37-1/4 20-1/2 25-1/2 35-1/2 5-1/2 21 21	SIELLASSY	CENTER	C26		FILLER ASSY.  C51  C51  C51  C51  C51  C51  C51  C5	ZTINU	22095

\*SEE THE NOTE ON PAGE 74.

ATHESE LOADS ARE NOT CONDUCIVE TO SHIPPING IN SIDE OPENING CONTAINERS, DUE TO PALLET SIZE.

<sup>\*</sup>SEE THE NOTE ON PAGE 74.

\*THESE LOADS ARE NOT CONDUCIVE TO SHIPPING IN SIDE OPENING CONTAINERS, DUE TO PALLET SIZE.

\*THESE LOADS REQUIRE THE USE OF A SPACER ASSEMBLY, AS DEPICTED ON PAGE 27.

LOADING CONFIGURATION CHART															
		LADING UNIT DIMENSIONS (INCHES/POUNDS)				LOAD	BLKNG END	STRUT	SIDE	CENTER FILL ASSY.	CENTER GATE	CRIB FILL ASSY.	FILLER	LADNG UNITS PER CNTR.	APPROX GROSS WEIGHT (LBS)
DODII	NSN  1375-01-082-9920 1375-01-083-2822 1375-01-082-9921 1375-01-082-9921 1375-01-082-9923 1375-01-082-9923 1375-01-083-9925 1375-01-083-9825 1375-01-083-9825 1375-01-083-2821 1390-01-032-6130 1390-00-868-2044 1390-01-247-4013 1390-00-158-8194 1390-01-158-8194 1390-01-158-8193 1390-01-050-8897 1390-00-926-3932 1390-00-182-3029 1390-00-182-3029 1390-00-182-3132 1390-00-764-9124 1390-00-764-9124 1390-01-137-5444 1390-01-137-5444 1390-01-137-5444 1390-01-137-5444	43-7/8 43-7/8	46-1/8 51-1/4 45-1/2 51-1/4 47-5/8 51-1/4 51-1/4 51-1/4 51-1/4 51-1/4 51-1/4 51-1/4 51-1/4	HEIGHT 30 30 30 30 30 30 30 31-1/4 31-1/4 31-1/4 31-1/4 31-1/4 31-1/4 49 45-1/2 31-1/4 49-3/4 31-1/4 47-3/4 47-3/4 31-1/4	1743 1599 3112	PAGE 8 8 8 8 8 8 8 9 222222222222244 222248 2222222222	A A A A B B A B B B B B B B B C C C C B C B	35-3/4	B23 B23 B23 B23 B23 B23 B23 B23 B23 B23	A18 A18 A18 A18 A18 A18 A18 B22 B22 B22 B22 B22 B22 B22 B22 B22 B2	038	A11 A11 A11 A11 A11 A11 A11 A11 B35	C51	16616616666666666666666666666666666666	25,670 26,900 27,970 26,970 26,970 34,370 30,610 33,140 33,140 34,780 34,780 34,780 34,780 34,780 34,780 34,780 34,780 31,630 34,780 31,630

\*SEE THE NOTE ON PAGE 74.

