

APPROVED BY
 BUREAU OF EXPLOSIVES
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LOADING AND BRACING^① WITH WOODEN DUNNAGE IN SIDE OPENING COMMERCIAL CONTAINERS OF GAU-8/A 30MM AMMUNITION PACKAGED IN AUTOMATIC LOADING SYSTEM (ALS) CNU-309/E AND/OR CNU-332/E CONTAINERS

① 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 "M" ON PAGE 2.

DO NOT SCALE

REVISIONS			DRAWN BY	TYPIST	CHECKER	TECHNICIAN	ENGINEER
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DEV			19	48	7115	SP 15M6	
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GENERAL NOTES

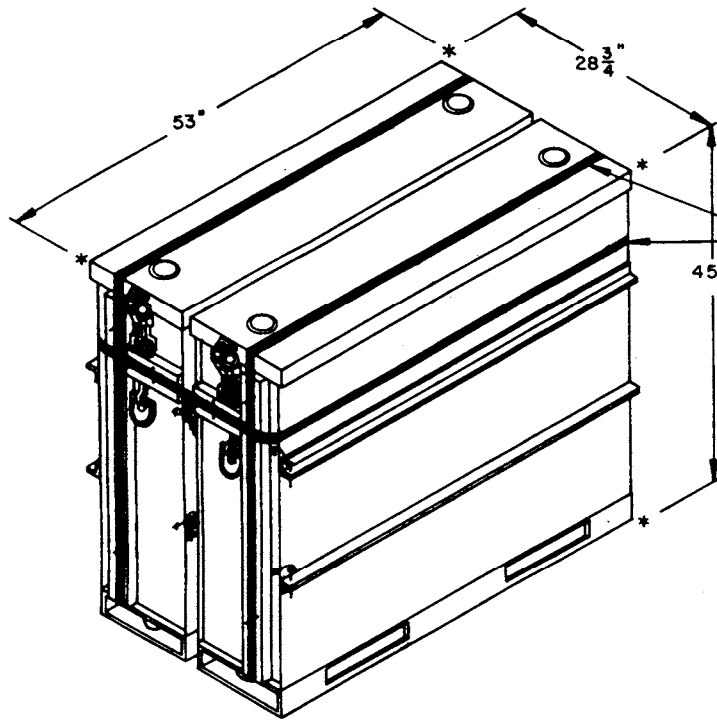
(GENERAL NOTES CONTINUED)

- 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 GAU-8/A 30MM AMMUNITION IN AUTOMATIC LOADING SYSTEM (ALS), CNU-309/E AND/OR CNU-332/E CONTAINERS. THE SHIPPING AND STORAGE CONFIGURATION FOR THE CONTAINERS CONSISTS OF TWO CONTAINERS UNITIZED INTO ONE TWIN-PACK UNIT. SUBSEQUENT REFERENCE TO TWIN-PACK UNIT HEREIN MEANS TWO CNU-309/E OR CNU-332/E CONTAINERS WITH 30MM AMMUNITION UNITIZED TOGETHER. SEE PAGE 3 FOR DETAILS OF THE TWIN-PACK UNITS. **CAUTION:** REGARDLESS OF THE QUANTITY OF TWIN-PACK UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF THE CONTAINER MUST NOT BE EXCEEDED.
- C. THE LOAD AS SHOWN IS BASED ON A 6,050 POUND 20' LONG BY 8' WIDE BY 8'-6" HIGH SIDE OPENING INTERMODAL COMMERCIAL CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 89" WIDE BY 88" 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.
- D. WHEN LOADING CNU-309/E OR CNU-332/E TWIN PACK UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE END AND SIDE DUNNAGE ASSEMBLIES). ALTHOUGH A TOTAL OF 1-1/2" OF UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS PERMITTED, LATERAL VOIDS WITHIN THE LOAD ARE TO BE HELD TO A MINIMUM. EXCESSIVE SLACK CAN BE ELIMINATED FROM A LOAD BY LAMINATING ADDITIONAL PIECES OF APPROPRIATE THICKNESS TO THE BEARING PIECE ON THE SIDE FILL ASSEMBLY. NAIL EACH ADDITIONAL PIECE TO THE BEARING PIECE W/1 APPROPRIATELY SIZED NAIL EVERY 12". ADDITIONALLY, THE THICKNESS OF THE BEARING PIECE MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN THE CNU-309/E OR CNU-332/E TWIN-PACK UNIT SIZE.
- E. DUNNAGE LUMBER SPECIFIED IS OF NOMINAL SIZE. FOR EXAMPLE, 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- 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. **CAUTION:** DO NOT NAIL DUNNAGE MATERIAL TO THE CONTAINER WALLS OR FLOOR. ALL NAILING WILL BE WITHIN THE DUNNAGE.
- H. PORTIONS OF THE CONTAINER DEPICTED WITHIN THIS DRAWING, SUCH AS THE SIDE DOORS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- J. THIS ITEM IS A DOT CLASS "A" EXPLOSIVE. THE OUTLOADING PROCEDURES SPECIFIED HEREIN CAN ALSO BE UTILIZED FOR THE SHIPMENT OF THE DEPICTED TWIN-PACK UNITS WHEN THEY ARE LOADED WITH AN ITEM WHICH IS IDENTIFIED DIFFERENTLY BY NOMENCLATURE THAN THE ITEM DESIGNATED WITHIN THE DRAWING TITLE. SEE GENERAL NOTE "L" BELOW.
- K. WHEN REFERRING TO THE TWIN-PACK UNIT LENGTH OR UNIT WIDTH THE 53" OR 52-3/8" DIMENSION OF THE TWIN-PACK UNIT CONSTITUTES THE LENGTH AND THE 28-3/4" DIMENSION CONSTITUTES THE WIDTH. SEE THE TWIN-PACK UNIT DETAILS ON PAGE 3.
- L. CNU-309/E AND CNU-332/E TWIN-PACK UNITS ARE CERTIFIED PACKAGING APPROVED IN ACCORDANCE WITH TITLE 49 OF THE CODE OF FEDERAL REGULATIONS PARAGRAPH 173.7 (A) BY CONTAINER CERTIFICATION NUMBER AF-78-51 AND DOT EXEMPTION 8101. A COPY OF THE DOT-EBT01 WILL BE PROVIDED THE CARRIER AT TIME OF LOADING FOR CARRIAGE ABOARD THE VEHICLE.
- M. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET 6C APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR (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 FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- O. 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.
- P. RECOMMENDED SEQUENTIAL LOADING PROCEDURES:
1. PREFABRICATE TWO ENDWALL BUFFERS, TWO SIDEWALL BUFFERS, TWO SEPARATOR GATES, TWO CENTER GATES, AND TWO SIDE FILL ASSEMBLIES.
 2. INSTALL ONE ENDWALL BUFFER AND ONE SIDEWALL BUFFER.
 3. LOAD THREE CNU-309/E OR CNU-332/E TWIN PACK UNITS.
 4. INSTALL ONE SEPARATOR GATE.
 5. REPEAT STEP 3.
 6. REPEAT STEP 2.
 7. REPEAT STEP 3.
 8. REPEAT STEP 4.
 9. REPEAT STEP 3.
 10. INSTALL TWO CENTER GATES AND SIX STRUTS.
 11. INSTALL TWO SIDE FILL ASSEMBLIES.
- Q. TWIN PACK UNITS OF CNU-309/E CONTAINERS SHOULD BE INSPECTED AND, AS REQUIRED, LOOSE UNITIZING STEEL STRAPPING MUST BE REPLACED OR RETENSIONED.

(CONTINUED AT RIGHT)

MATERIAL SPECIFICATIONS

- LUMBER**-----: SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS**-----: FED SPEC FF-N-105; COMMON.
- PLYWOOD**-----: FED SPEC NN-P-530; GROUP B, 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.

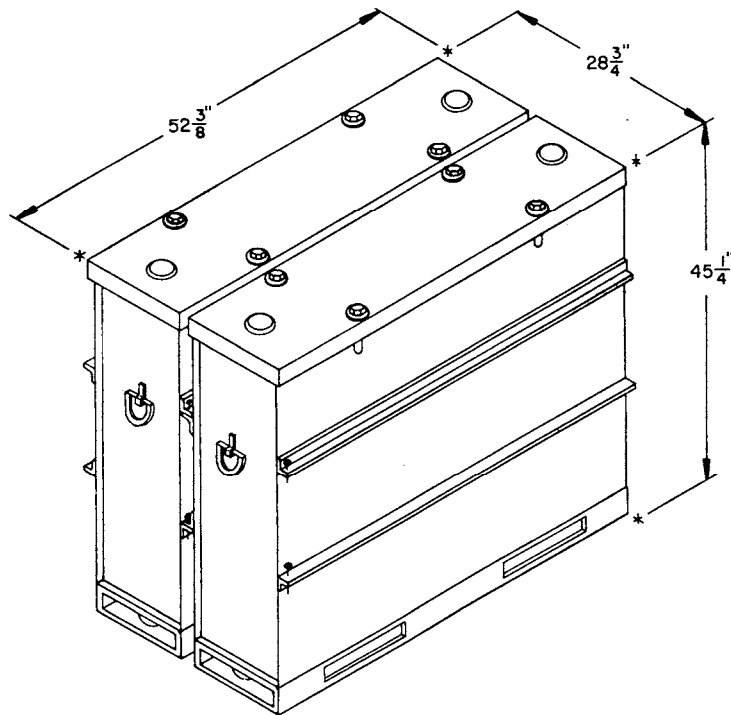


INDICATES UNITIZING STRAP.
SEE GENERAL NOTE "Q" ON
PAGE 2.

TWIN-PACK UNIT (CNU-309E CONTAINER)

TWIN-PACK UNIT DATA:

NUMBER OF CONTAINERS	-----	TWO (2)
GROSS WEIGHT	-----	2,350 LBS (APPROX)
CUBE	-----	39.9 CUBIC FEET

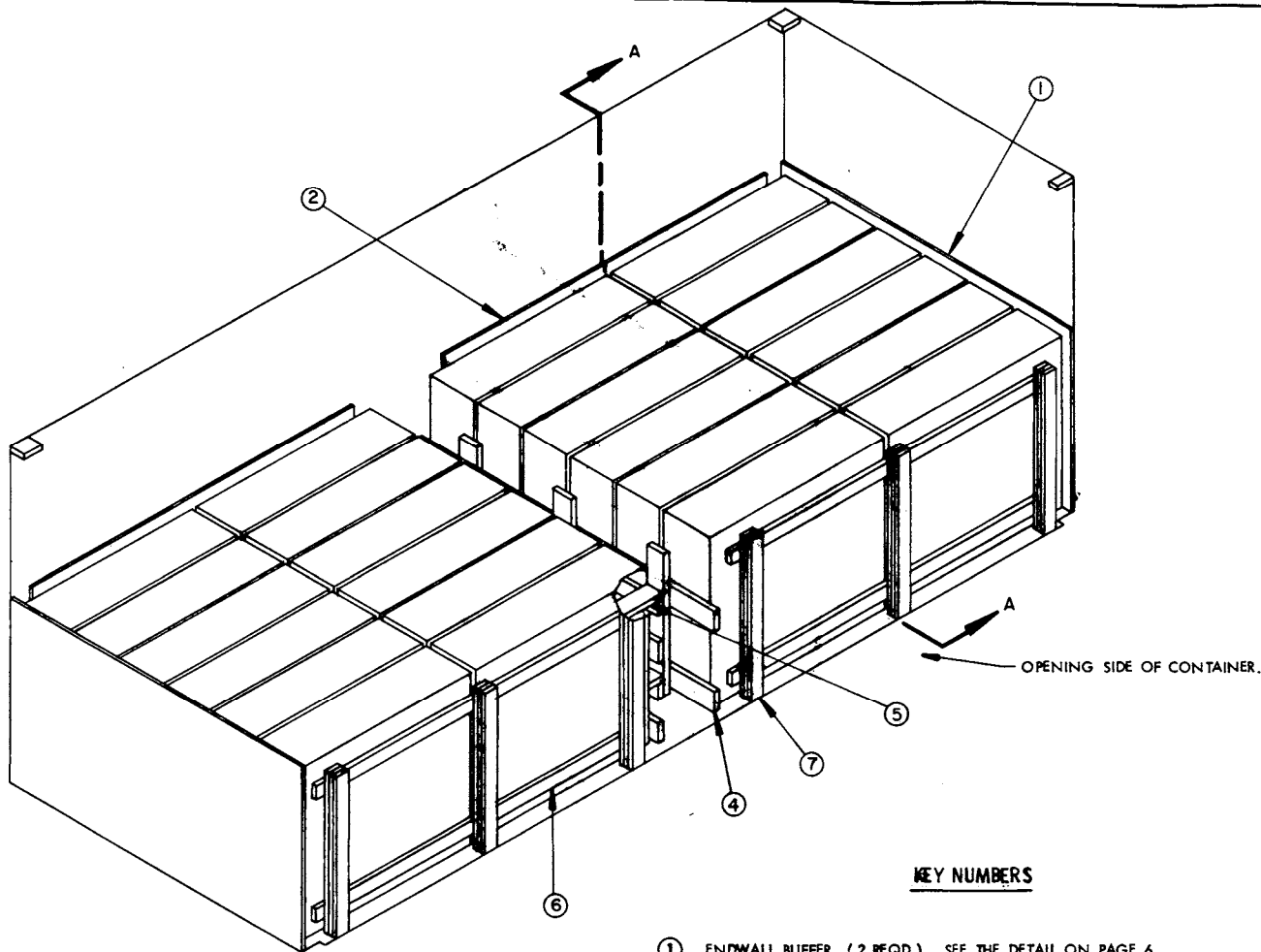


TWIN-PACK UNIT (CNU-332E CONTAINER)

TWIN-PACK UNIT DATA:

NUMBER OF CONTAINERS	-----	TWO (2)
GROSS WEIGHT	-----	2,350 LBS (APPROX)
CUBE	-----	39.4 CUBIC FEET

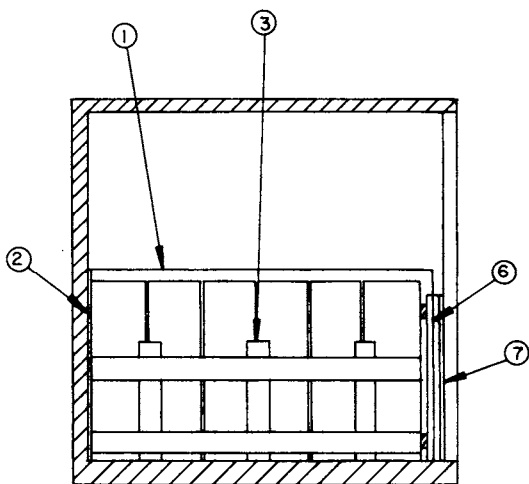
TWIN-PACK UNIT DETAILS



ISOMETRIC VIEW

KEY NUMBERS

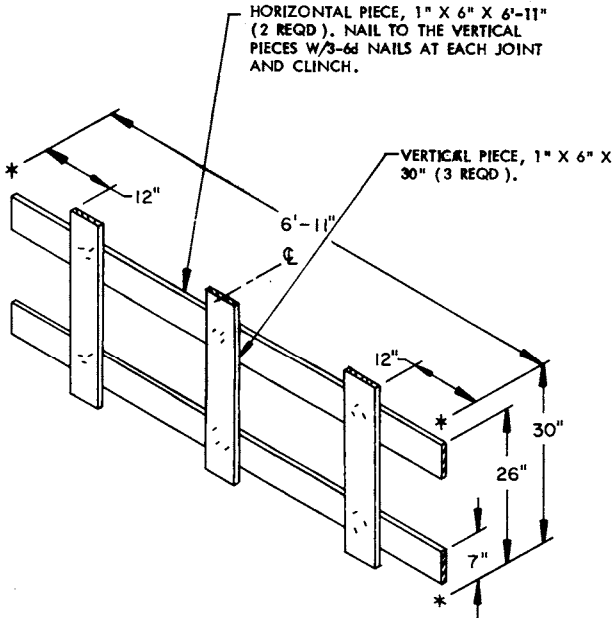
- ① ENDWALL BUFFER (2 REQD). SEE THE DETAIL ON PAGE 6.
- ② SIDEWALL BUFFER (2 REQD). SEE THE DETAIL ON PAGE 6.
- ③ SEPARATOR GATE (2 REQD). SEE THE DETAIL ON PAGE 5. SEE GENERAL NOTE "F" ON PAGE 2.
- ④ CENTER GATE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6.
- ⑤ STRUT, 2" X 6" BY CUT TO FIT (REF: 12-1/2") (6 REQD). TOENAIL TO PIECE MARKED ④ W/2-16d NAILS AT EACH END.
- ⑥ SIDE FILL ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 6. SEE GENERAL NOTE "D" ON PAGE 2.
- ⑦ FILL MATERIAL, 4" WIDE BY 42" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE VERTICAL PIECES OF THE SIDE FILL ASSEMBLY, PIECE MARKED ⑥, AND/OR LAMINATE TOGETHER W/4 NAILS OF A SUITABLE SIZE (6d NAILS FOR 1" MATERIAL AND 16d NAILS FOR 2" MATERIAL).



SECTION A-A

SPECIAL NOTES:

1. A 12 TWIN-PACK LOAD IS SHOWN IN A SIDE OPENING INTERMODAL COMMERCIAL CONTAINER.
2. THE CNU-332/E TWIN-PACK UNITS ARE SHOWN IN THE ISOMETRIC VIEW ON PAGE 4. THE PROCEDURES ARE ALSO APPLICABLE FOR SHIPMENTS OF CNU-309/E TWIN-PACK UNITS. SEE SPECIAL NOTES 3 AND 4.
3. THE SEPARATOR GATES, SHOWN AS PIECES MARKED (3), ARE ONLY REQUIRED WHEN SHIPPING THE CNU-332/E TWIN-PACK UNITS.
4. BOTH THE CNU-309/E TWIN-PACK UNITS AND THE CNU-332/E TWIN-PACK UNITS MAY BE SHIPPED IN THE SAME CONTAINER, HOWEVER, ALL UNITS WITHIN A LOAD BAY MUST BE OF THE SAME MODEL. A SEPARATOR GATE, PIECE MARKED (3), IS REQUIRED BETWEEN ADJACENT LENGTHWISE LOAD UNITS OF UNLIKE MODELS.

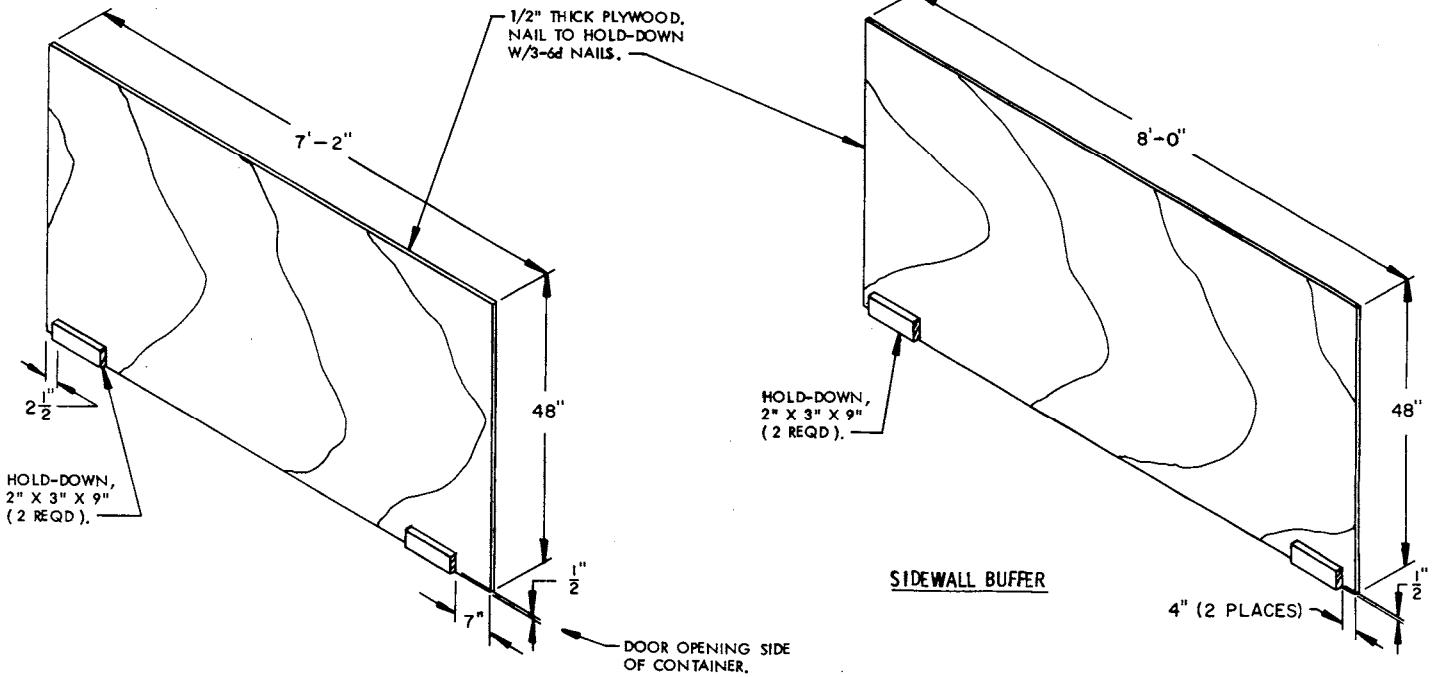


SEPARATOR GATE

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	21	7
1" X 6"	43	22
2" X 3"	6	3
2" X 4"	60	40
2" X 6"	57	57
NAILS	NO. REQD	POUNDS
6d (2")	72	1/2
10d (3")	108	1-3/4
16d (3-1/2")	24	3/4
PLYWOOD 1/2"-----121 SQ FT REQD-----166 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
TWIN-PACK UNIT	12	28,200 LBS
DUNNAGE		415 LBS
CONTAINER		6,050 LBS
TOTAL WEIGHT		34,665 LBS (APPROX)



ENDWALL BUFFER

RIGHT HAND AND LEFT HAND ENDWALL BUFFERS ARE REQUIRED. A RIGHT HAND BUFFER IS SHOWN.

