

VOLCANO

UNITIZATION PROCEDURES FOR
VOLCANO MINE SYSTEM HARDWARE,
M548A1 MOUNTING KIT, ONE
CROSSMEMBER AND TWO BEAMS
PACKED IN FIBERGLASS REINFORCED
PLASTIC CONTAINERS

U.S. ARMY MATERIEL COMMAND DRAWING				
APPROVED, U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND <i>David A. Pichon</i> <i>Timothy R. Ford</i> SMCAR-ESK AMSMC-THJ	DRAFTSMAN ENGINEER BETTY J. KUNDERT SANDRA M. SCHULTZ			
	SUPPLY ENGINEERING DIVISION <i>[Signature]</i>	TRANSPORTATION ENGINEERING DIVISION <i>[Signature]</i>	VALIDATION ENGINEERING DIVISION <i>[Signature]</i>	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND <i>[Signature]</i>	LOGISTICS ENGINEERING OFFICE <i>[Signature]</i> OCTOBER 1991			
U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL	CLASS	DIVISION	DRAWING	FILE
	19	48	4240/5	20PM 1009

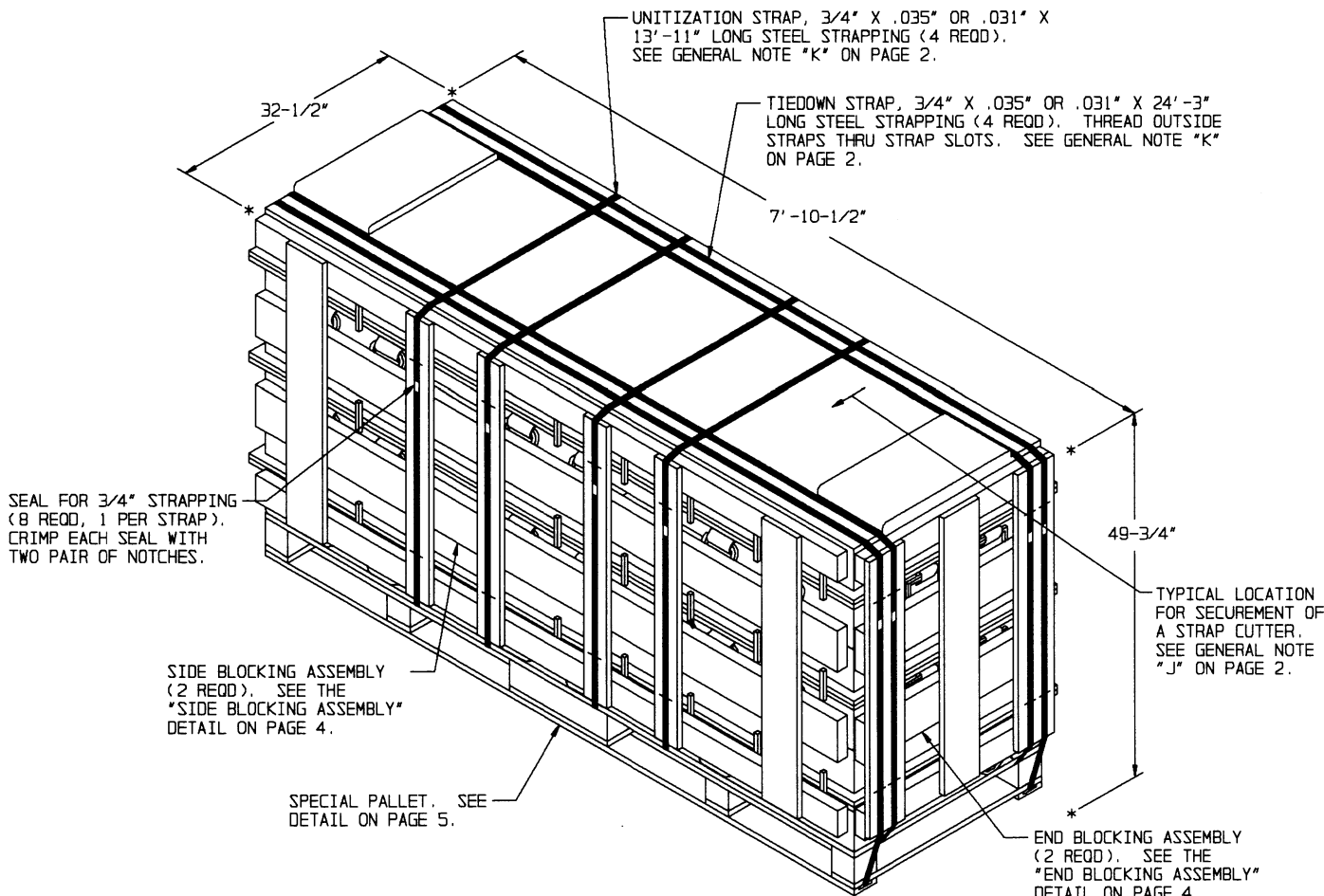
DO NOT SCALE

GENERAL NOTES

- A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1, AND AUGMENTS TM 743-200-1 (CHAPTER 5) AND CONFORMS TO MIL-STD-1660.
- B. DIMENSIONAL LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF A NOMINAL SIZE, UNLESS OTHERWISE SPECIFIED. 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.
- C. DETAILS OF THE FIBERGLASS REINFORCED PLASTIC CONTAINER.
 - CONTAINER DIMENSIONS -- LENGTH -- 93"
 - WIDTH -- 31"
 - HEIGHT -- 15"
 - GROSS WEIGHT (BEAMS OR CROSSMEMBERS)- 824 LBS (APPROX)
- D. A PLUS OR MINUS 1/4" IS ALLOWED ON OVERALL DIMENSIONS OF ANY DUNNAGE ASSEMBLY; HOWEVER, SIMILAR PIECES IN AN ASSEMBLY MUST BE WITHIN 1/8" OF THE SAME DIMENSION.
- E. WHEN ASSEMBLING A UNIT LOAD, CARE SHALL BE TAKEN TO INSURE THAT THE CONTAINER AND/OR DUNNAGE ASSEMBLIES ARE EVENLY ALIGNED HORIZONTALLY AND VERTICALLY SO THAT THE SIDES AND ENDS OF THE UNIT LOAD DO NOT EXCEED A 1/2" TOLERANCE.
- F. IN ORDER TO OBTAIN COMPACT (SOUND) UNITS, STRAPS SHALL BE LOCATED IN PROPER ALIGNMENT AND PROPERLY TENSIONED SO AS TO NOT CAUSE CONTAINER DISTORTION. AFTER TENSIONING, EACH STRAP WILL BE SECURED USING ONE SEAL AND TWO PAIR OF NOTCHES PER SEAL. ALL STRAPPING MUST BE STRAIGHT WITHIN 2" ON ANY SURFACE OF THE UNITIZED LOAD, I.E., TOP, BOTTOM, SIDES, OR ENDS THAT IT ENCOMPASSES.
- G. WHEN APPLYING ANY STRAP, CARE MUST BE EXERCISED TO ASSURE THAT THE END OF THE STRAP ON THE UNDERSIDE OF THE JOINT EXTENDS AT LEAST 6" BEYOND THE SEAL. THIS EXTRA MINIMUM LENGTH OF STRAP IS REQUIRED TO PERMIT SUBSEQUENT TIGHTENING OF LOOSENED STRAPPING. RETENSIONING CAN BE ACCOMPLISHED WITHOUT REPLACING STRAPPING OR SPLICING STRAPPING THROUGH THE USE OF A MANUAL OR PNEUMATIC FEEDWHEEL TYPE TENSIONING TOOL AND THE APPLICATION OF ONE ADDITIONAL SEAL.
- H. ANTI-CHAFING (NEUTRAL BARRIER) MATERIAL MUST BE PLACED BETWEEN ALL CONTAINERS AND STRAPPING.
- J. FOR THE METHOD OF SECURING A STRAP CUTTER TO THE PALLET UNIT, SEE AMC DRAWING 19-48-4127-20P1000.
- K. INSTALL THE UNITIZATION STRAPS TO ENCIRCLE THE CONTAINERS AS SHOWN. INSTALL THE TIEDOWN STRAPS AFTER THE UNITIZATION STRAPS. STAPLE STRAPS TO THE BLOCKING ASSEMBLIES.
- 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. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING THE DUNNAGE ASSEMBLIES WHICH ARE SPECIFIED WITHIN THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIC NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS.
- N. DIMENSIONS GIVEN FOR DUNNAGE PIECES OR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY AND INSTALLATION. DUNNAGE ASSEMBLIES MUST BE CONSTRUCTED SUCH THAT THE VERTICAL PIECES WILL BE LOCATED IN LINE WITH THE STRAPPING, AND/OR THE HANDLES, AND THE HORIZONTAL PIECES WILL CONTACT THE CONTAINER.
- P. ALL WOODEN DUNNAGE SHALL BE PRESERVATIVE TREATED IN ACCORDANCE WITH THE PROCEDURES SPECIFIED IN MIL-B-2427 FOR CLEATED WOODEN BOXES. IF THE DUNNAGE CONSISTS OF MORE THAN ONE COMPONENT, IT MUST BE ASSEMBLED PRIOR TO TREATMENT. THE LETTERS PA DENOTING P056 (COPPER QUINOLINOLATE), PB DENOTING M-GARD W550 (ZINC NAPHTHENATE EMULSIFIABLE) OR PC DENOTING M-GARD W510 OR CUNAPSOL (COPPER NAPHTHENATE) MUST BE APPLIED TO THE WOOD DUNNAGE IN LETTERS AT LEAST ONE INCH HIGH.

MATERIAL SPECIFICATIONS

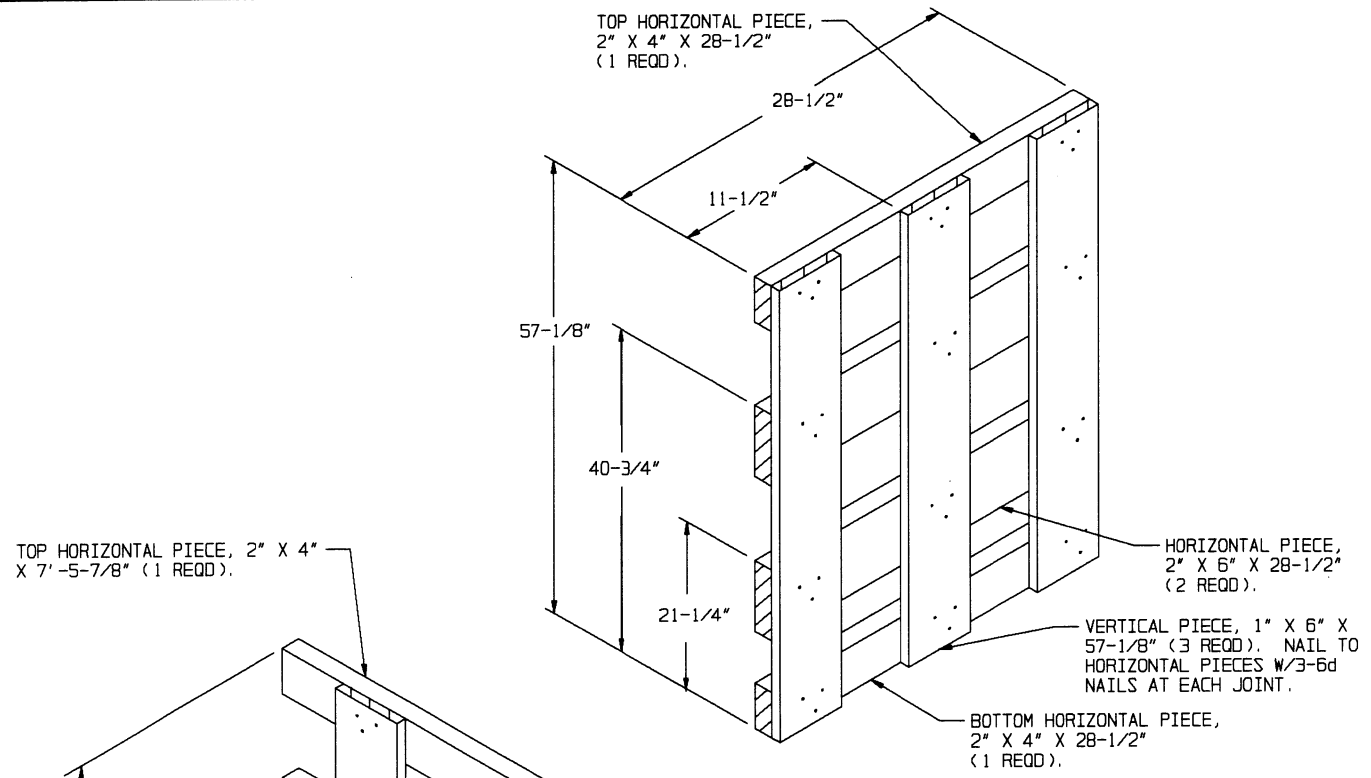
- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS - - - - - : FED SPEC FF-N-105; COMMON.
- PLYWOOD - - - - - : COMMERCIAL ITEM DESCRIPTION A-A-55057, TYPE A, CONSTRUCTION AND INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
- STRAPPING, STEEL - - - : ASTM-D-3953; FLAT STRAPPING, TYPE 1 OR 2, HEAVY DUTY, FINISH B (GRADE 2), SIZE 3/4" X .035" OR .031".
- SEAL, STRAP - - - - - : ASTM-D-3953; CLASS H, FINISH B (GRADE 2), TYPE D, STYLE I, II, OR IV.
- STAPLE - - - - - : FED SPEC FF-N-105; 15/16" OR 1" CROWN WIDTH X 3/4" LEG LENGTH FOR 3/4" STRAPPING AND 1-17/32" CROWN WIDTH X 3/4" LEG LENGTH FOR 1-1/4" STRAPPING, TYPE III, STYLE 3.
- ANTI-CHAFING MATERIAL - - - - - : MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.



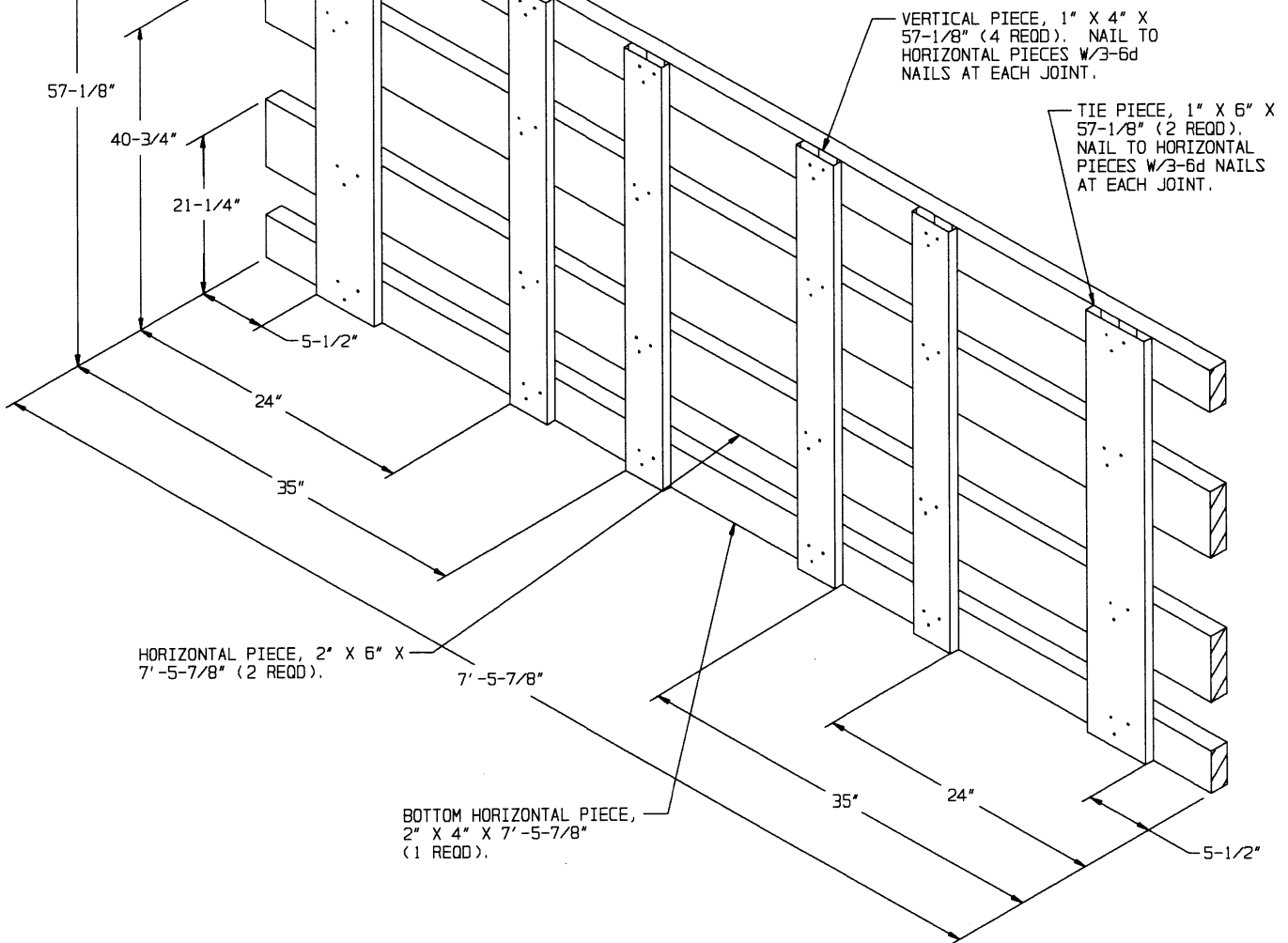
UNIT LOAD

CROSSMEMBER AND 3 BEAM CONTAINERS AT 824 LBS	-----	2,472 LBS
DUNNAGE	-----	291 LBS
TOTAL WEIGHT	-----	2,763 LBS
CUBE	-----	88.4 CU FT

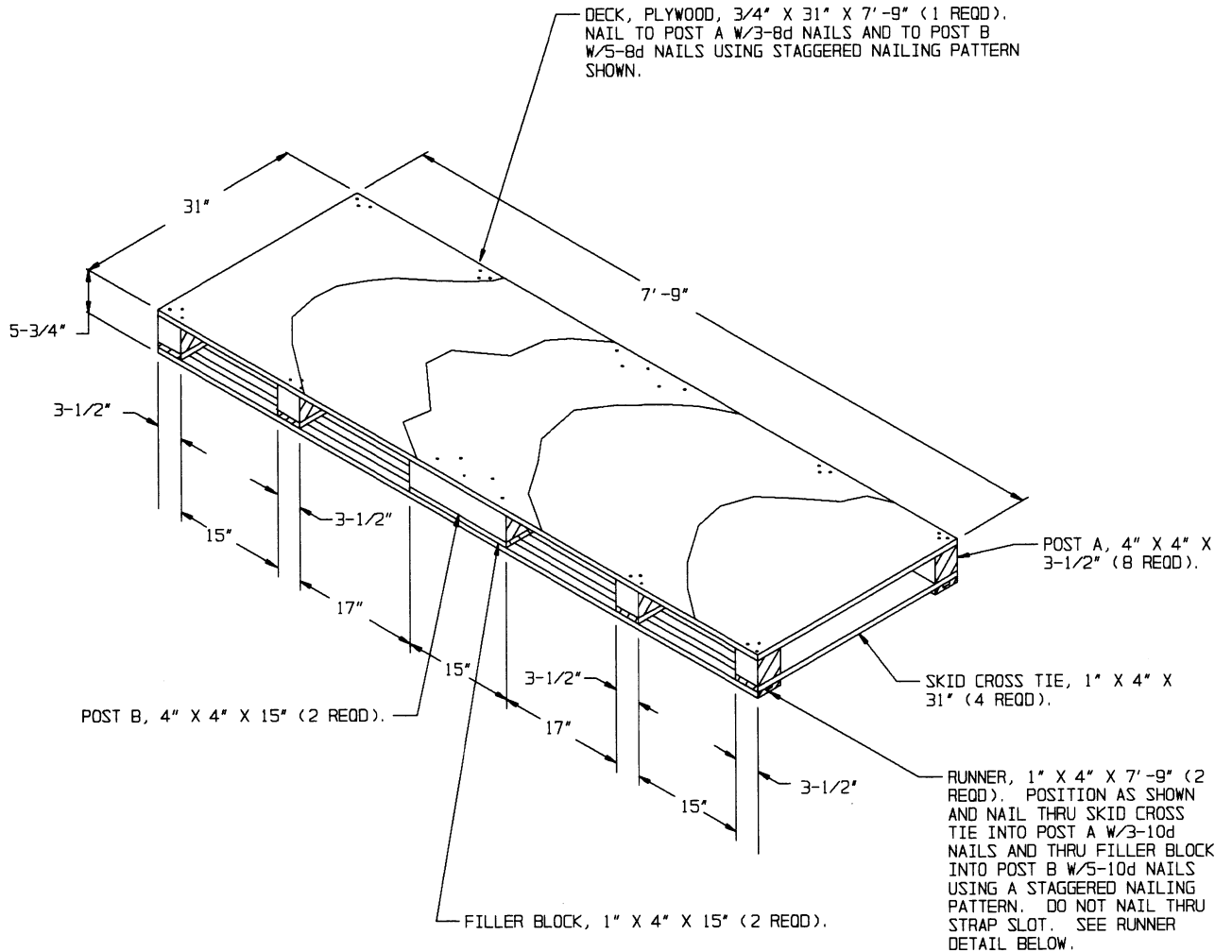
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET / LBS
1" X 4"	66.41	22.14 / 44.28
1" X 6"	47.60	23.80 / 47.60
2" X 4"	39.46	26.30 / 52.60
2" X 6"	39.46	39.46 / 78.92
4" X 4"	4.83	6.44 / 12.88
NAILS	NO. REOD	POUNDS
6d (2")	216	1.27
8d (2-1/2")	34	0.36
10d (3")	34	0.52
PLYWOOD, 3/4"	20.02 SQ FT REOD	41.29 LBS
STEEL STRAPPING, 3/4"	152.67' REOD	10.90 LBS
SEAL FOR 3/4" STRAPPING	8 REOD	NIL
STAPLE, 15/16" X 3/4"	32 REOD	NIL
ANTI-CHAFING MATERIAL	AS REOD	NIL



END BLOCKING



SIDE BLOCKING ASSEMBLY



SPECIAL PALLET

