APPROVED BY
BUREAU OF EXPLOSIVES

DATE 12/1/00

APPENDIX 21

LOADING AND BRACING ● PROCEDURES FOR STRATEGIC CONFIGURED LOAD (SCL) ON CONTAINER ROLL IN/OUT PLATFORM (CROP)

SCL #21 - DRAGON/AT4

INDEX

NOTICE: THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC CROP OUTLOADING PROCEDURES DRAWING 19-48-4905-CA17Q6.

● **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.**

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY
OPERATIONS SUPPORT COMMAND

Jim Fore

APPROVED BY ORDER OF COMMANDING GENERAL,
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CLASS	DIVISION	DRAWING	FILE
19	48	4905/ 21	CA17Q6

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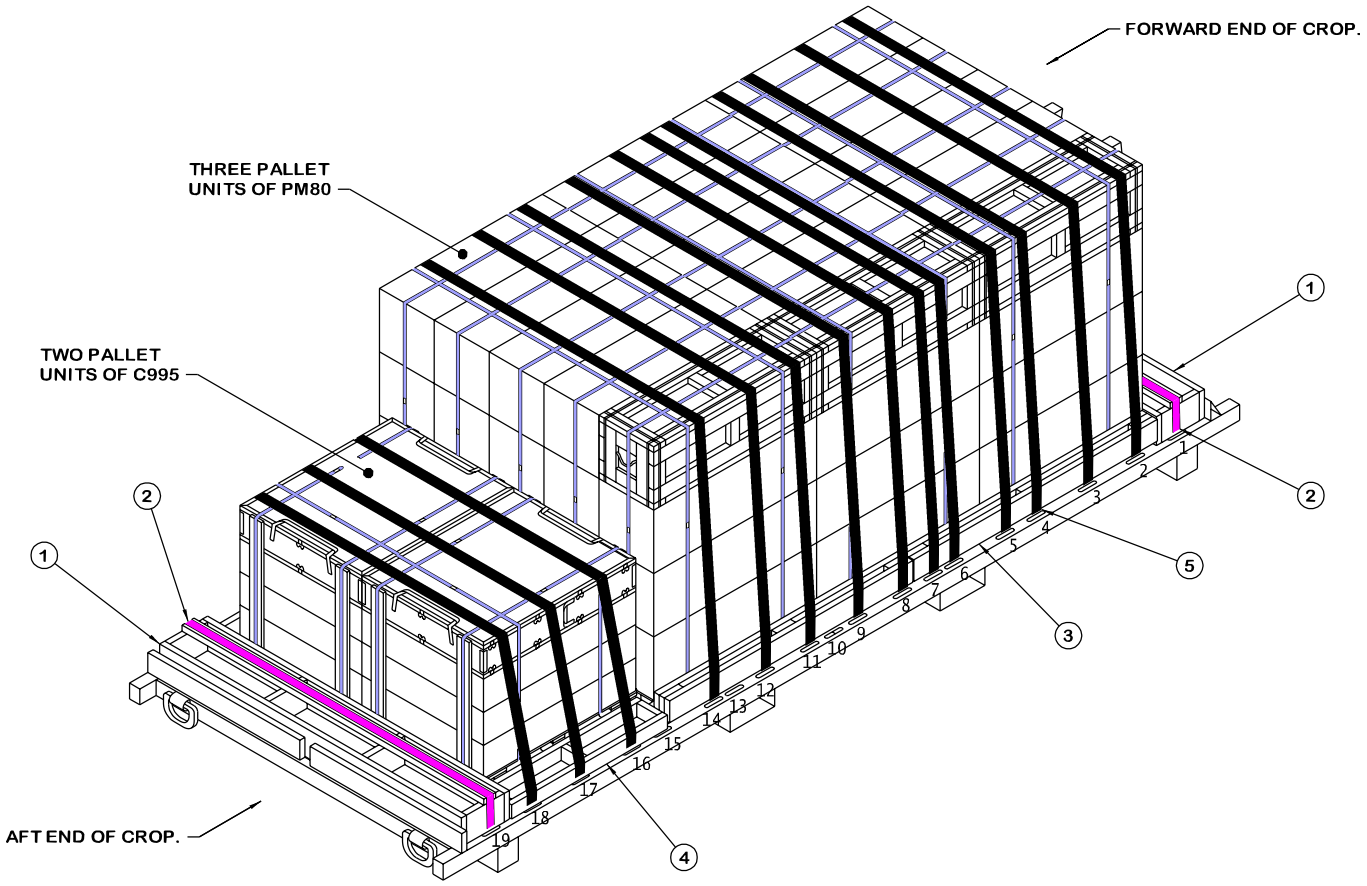


ISOMETRIC VIEW

KEY NUMBERS

(1) END BLOCKING ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 5. CENTER THE FORWARD ASSEMBLY AGAINST THE FORWARD END GATE. AFTER THE PALLETS ARE LOADED, CENTER THE AFT ASSEMBLY ON THE DECK OF THE CROP AGAINST THE AFT END GATE. ANY REMAINING GAP BETWEEN THE END BLOCKING AND THE CROP END GATE MUST BE FILLED BY LAMINATING ADDITIONAL 1" OR 2" X 8" X 7'-4" PIECES TO THE END BLOCKING W/8 NAILS OF A SUITABLE SIZE.

(2) RETAINER STRAP, 2-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY (2 REQD). INSTALL TO EXTEND FROM A TIEDOWN RING ON SIDE OF CROP, OVER TOP OF STRAPPING BOARD OF END BLOCKING ASSEMBLY, TO CORRESPONDING TIEDOWN RING ON OPPOSITE SIDE OF CROP. POSITION STRAP SCUFF SLEEVES AT SHARP EDGES. TAKE UP EXCESS SLACK IN STRAP AND THEN RATCHET TIGHT. SEE GENERAL NOTE "F" ON PAGE 3.

(3) SIDE BLOCKING ASSEMBLY A (4 REQD). SEE THE DETAIL ON PAGE 5. INSTALL TWO ASSEMBLIES ON EACH SIDE OF CROP ADJACENT TO THE PM80 PALLET UNITS. SEE GENERAL NOTE "G" ON PAGE 3.

(4) SIDE BLOCKING ASSEMBLY B (2 REQD). SEE THE DETAIL ON PAGE 5. INSTALL ONE ASSEMBLY ON EACH SIDE OF CROP ADJACENT TO THE C995 PALLET UNITS. SEE GENERAL NOTE "G" ON PAGE 3.

(5) HOLD-DOWN STRAP, 3-INCH WIDE WEB STRAP TIEDOWN ASSEMBLY FOR CROP (14 REQD). INSTALL EACH HOLD-DOWN STRAP TO EXTEND FROM THE DESIGNATED TIEDOWN ANCHOR ON ONE SIDE OF CROP, OVER TOP OF PALLET UNITS, TO CORRESPONDING TIEDOWN ANCHOR ON OPPOSITE SIDE OF CROP. FIRMLY TENSION STRAP. SEE GENERAL NOTE "F" ON PAGE 3.

RECOMMENDED SEQUENTIAL PROCEDURES

1. PREFABRICATE THE TWO END BLOCKING ASSEMBLIES, THE FOUR SIDE BLOCKING ASSEMBLIES "A" AND THE TWO SIDE BLOCKING ASSEMBLIES "B".
2. INSTALL THE FORWARD END BLOCKING ASSEMBLY, CENTERING AGAINST THE FORWARD END GATE OF THE CROP.
3. LOAD THREE PALLET UNITS OF PM80. CENTER THE FIRST PALLET UNIT ON THE DECK OF THE CROP AND PLACE TIGHTLY AGAINST THE FORWARD END BLOCKING ASSEMBLY. LOAD THE REMAINING TWO PALLET UNITS IN LINE WITH THE FIRST, PLACING THEM TIGHTLY TOGETHER.
4. LOAD TWO PALLET UNITS OF C995. CENTER THE TWO UNITS TIGHTLY AGAINST THE PM80 PALLET UNITS.
5. INSTALL THE AFT END BLOCKING ASSEMBLY, CENTERING ON THE DECK OF THE CROP AGAINST THE AFT END GATE. FILL ANY REMAINING GAP AS INSTRUCTED IN KEY NUMBER ①.
6. INSTALL TWO 2" RETAINER STRAPS, ONE OVER EACH END BLOCKING ASSEMBLY.
7. INSTALL THE FOUR SIDE BLOCKING ASSEMBLIES "A".
8. INSTALL THE TWO SIDE BLOCKING ASSEMBLIES "B".
9. INSTALL FOURTEEN 3" WEB STRAP TIEDOWN ASSEMBLIES TO EXTEND FROM A TIEDOWN ANCHOR ON ONE SIDE OF THE CROP, OVER THE TOP OF THE PALLET UNITS, TO THE CORRESPONDING TIEDOWN ANCHOR ON THE OPPOSITE SIDE OF THE CROP.
10. NAIL THROUGH THE HOOK ATTACHMENT SLOT OF A HOLD-DOWN STRAP INTO EACH END OF THE SIDE BLOCKING ASSEMBLIES W/1-10d PARTIALLY DRIVEN NAIL AND BEND OVER SIDE OF HOOK.

GENERAL NOTES

A. THIS APPENDIX CANNOT STAND ALONE BUT MUST BE USED IN CONJUNCTION WITH THE BASIC LOADING PROCEDURES DRAWING 19-48-4905-CA17Q6. TO PRODUCE AN APPROVED LOAD, ALL PERTINENT PROCEDURES, SPECIFICATIONS AND CRITERIA SET FORTH WITHIN THE BASIC DRAWING WILL APPLY TO THE PROCEDURES DELINEATED IN THIS APPENDIX. ANY EXCEPTIONS TO THE BASIC PROCEDURES ARE SPECIFIED IN THIS APPENDIX.

B. THE OUTLOADING PROCEDURES DEPICTED IN THIS DRAWING ARE APPLICABLE TO LOADS OF SCL #21. SEE PAGE 4 FOR DETAILS OF THE PALLET UNITS. AN M3 (SUMMA) CROP IS SHOWN AS TYPICAL. OTHER MANUFACTURER'S CROPS CAN BE USED FOR THE LOAD SHOWN ON PAGE 2. THE SEQUENTIAL LOADING PROCEDURES DEPICTED AT LEFT DESCRIBE THE SEQUENCE USED TO LOAD AN M3 CROP. ACTUAL CROP CONFIGURATION WILL DETERMINE WHETHER THE SEQUENTIAL LOADING STARTS AT THE AFT OR THE FORWARD END OF THE CROP.

C. THE LOADING PROCEDURES DEPICTED HEREIN MAY ALSO BE USED FOR OUTLOADING SIMILAR SCL LOADS WHEN IDENTIFIED BY DIFFERENT NATIONAL STOCK NUMBERS (NSN) THAN WHAT IS SHOWN ON PAGE 4, PROVIDED THE OVERALL UNIT DIMENSIONS DO NOT VARY FROM WHAT IS DELINEATED HEREIN.

D. DIMENSIONS, CUBE AND WEIGHT OF THE PALLET UNITS WILL VARY SLIGHTLY DEPENDING UPON THE ACTUAL DIMENSIONS OF THE BOXES AND THE WEIGHT OF THE SPECIFIC ITEM BEING UNITIZED.

E. DIMENSIONS GIVEN FOR DUNNAGE ASSEMBLIES WILL BE FIELD CHECKED PRIOR TO THEIR ASSEMBLY. PALLET UNITS MUST FIT SNUGLY AGAINST THE DUNNAGE ASSEMBLIES. THIS GUIDANCE MUST BE APPLIED PRIOR TO BEGINNING AN OUTLOADING OPERATION. ALSO, DUE TO VARIATIONS OF PALLET UNIT DIMENSIONS, ADJUSTMENTS MAY BE REQUIRED AS TO THE LOCATION OF CERTAIN PIECES ON DUNNAGE ASSEMBLIES.

F. ALL WEB STRAP TIEDOWN ASSEMBLIES MUST HAVE THE EXCESS LENGTH OF THE STRAP SECURED. ROLL UP AND BUNDLE THE EXCESS LENGTH OF WEB STRAP, SECURING WITH CABLE TIES. SEE THE "STRAP END SECUREMENT" DETAIL AND GENERAL NOTE "K.12" IN THE BASIC PROCEDURE DRAWING 19-48-4905-CA17Q6.

G. EACH END OF THE SIDE BLOCKING ASSEMBLIES MUST BE SECURED BY NAILING A 10d NAIL THRU A 3" WEBSTRAP HOOK SLOT. SEE "STRAP HOOK DETAIL" AND GENERAL NOTE "G.2" IN THE BASIC PROCEDURES DRAWING 19-48-4905-CA17Q6.

H. 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 0.454 KG.

BILL OF MATERIAL

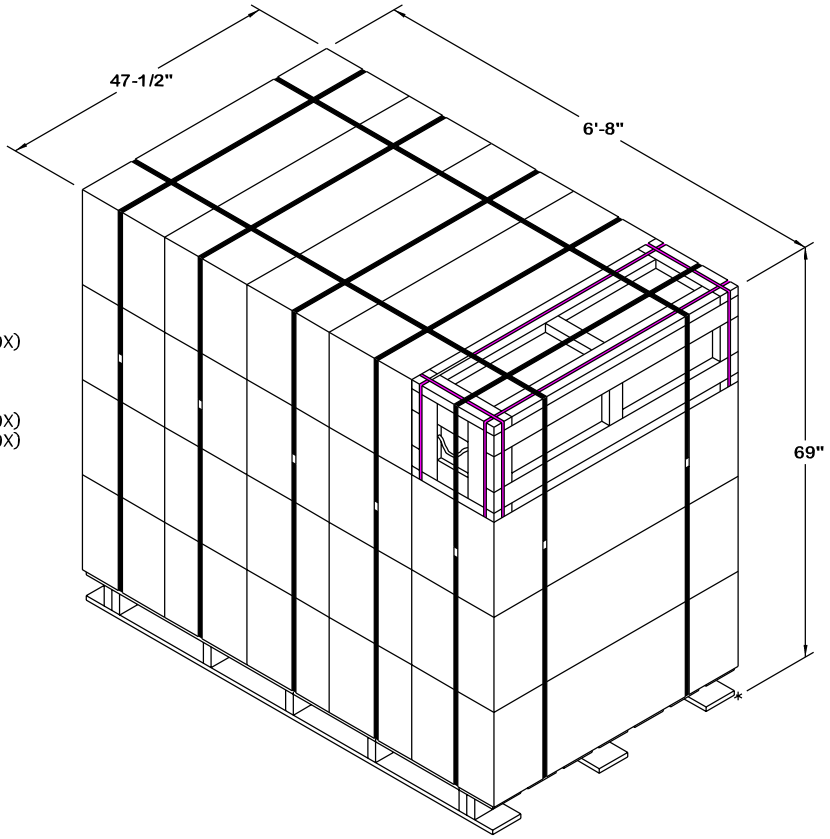
LUMBER	LINEAR FEET	BOARD FEET
2" X 4" 2" X 6" 2" X 8"	33 54 37	22 54 49
NAILS	**NO. REQD**	**POUNDS**
10d (3")	172	3
2" WEBSTRAP TIEDOWN ASSEMBLY - - - - - - - - 2 REQD - - - - 11 LBS		

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
PM80 PALLET UNIT	3	4,362 LBS
C995 PALLET UNIT	2	1,356 LBS
DUNNAGE		264 LBS
CROP		3,800 LBS
TOTAL WEIGHT		9,782 LBS (APPROX)

SCL #21 COMPOSITION CHART

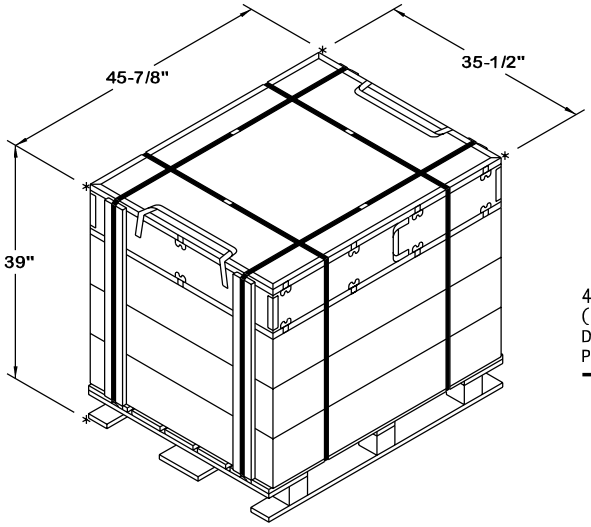
DODIC	NSN	NOMENCLATURE	UNIT DWG	REQD	UNITS REQD	HC
PM80	1427-01-273-1228	GUIDED MISSILE AND LAUNCHER, HEAT DRAGON II	5218	60	3 PALLETS	1.2.1E
C995	1310-01-245-4950	LAUNCHER AND CARTRIDGE, 84MM M136 AT4	4116/37	40	2 PALLETS	1.1E



PM80 PALLET UNIT DETAIL

20 BOXES OF MISSILES,
(1 PER BOX) AT 67 LBS - - - - - - - 1,340 LBS (APPROX)
DUNNAGE - - - - - - - - - - - - - - - 11 LBS
PALLET - - - - - - - - - - - - - - - - 103 LBS

TOTAL WEIGHT - - - - - - 1,454 LBS (APPROX)
CUBE - - - - - - - - - 151.7 CU FT (APPROX)



C995 PALLET UNIT DETAIL

4 BOXES OF ROCKET LAUNCHERS
(5 PER BOX) AT 150 LBS - - - - - - - - - 600 LBS (APPROX)
DUNNAGE - - - - - - - - - - - - - - - - - 13 LBS
PALLET - - - - - - - - - - - - - - - - - - 65 LBS

TOTAL WEIGHT - - - - - - - - 678 LBS (APPROX)
CUBE - - - - - - - - - - - 36.8 CU FT (APPROX)

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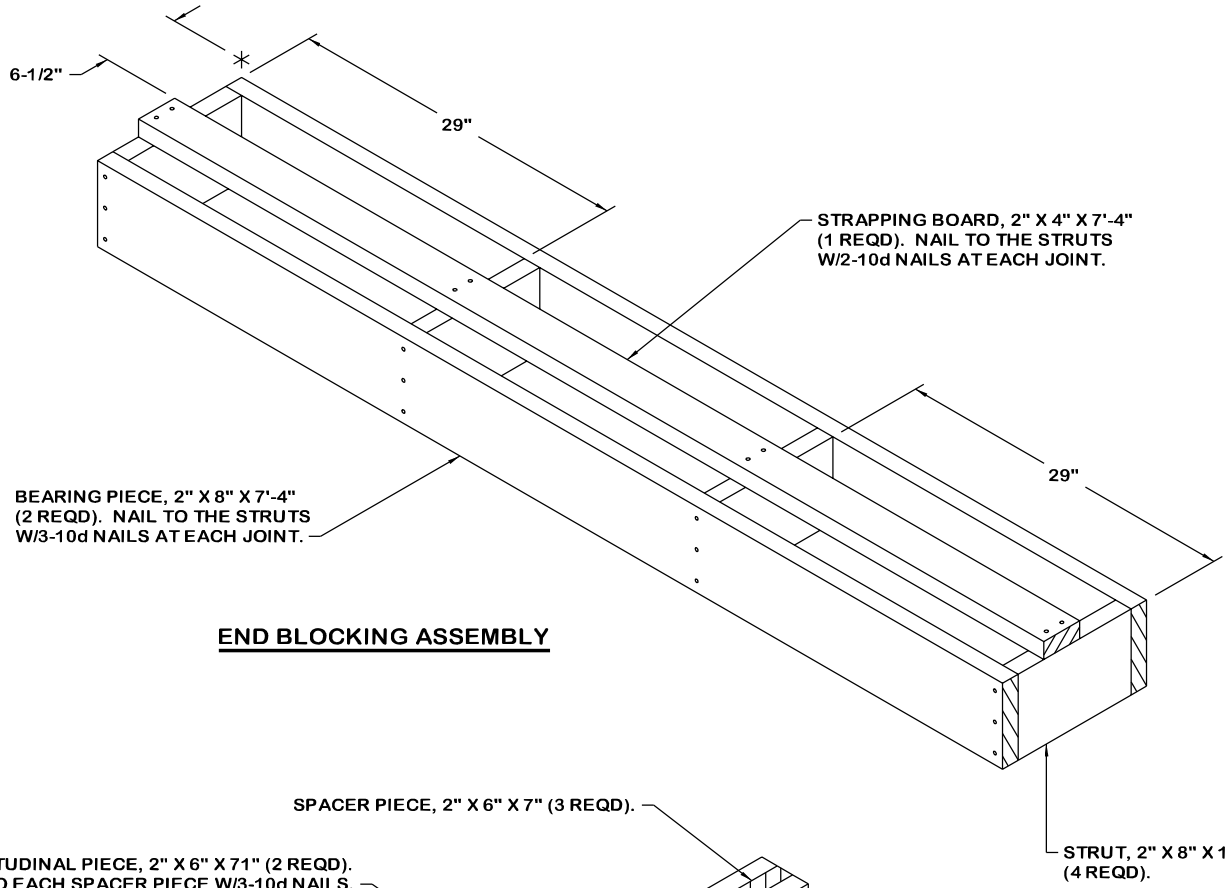
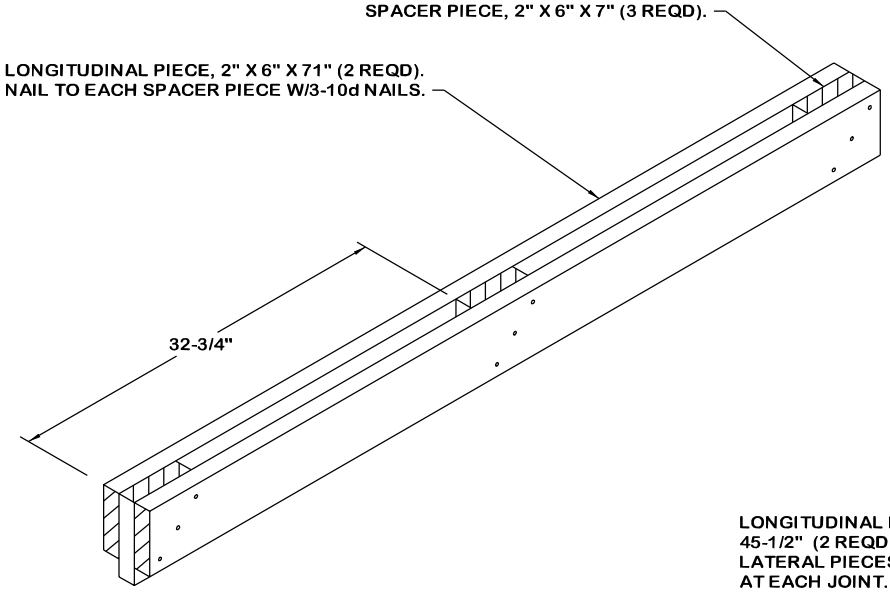
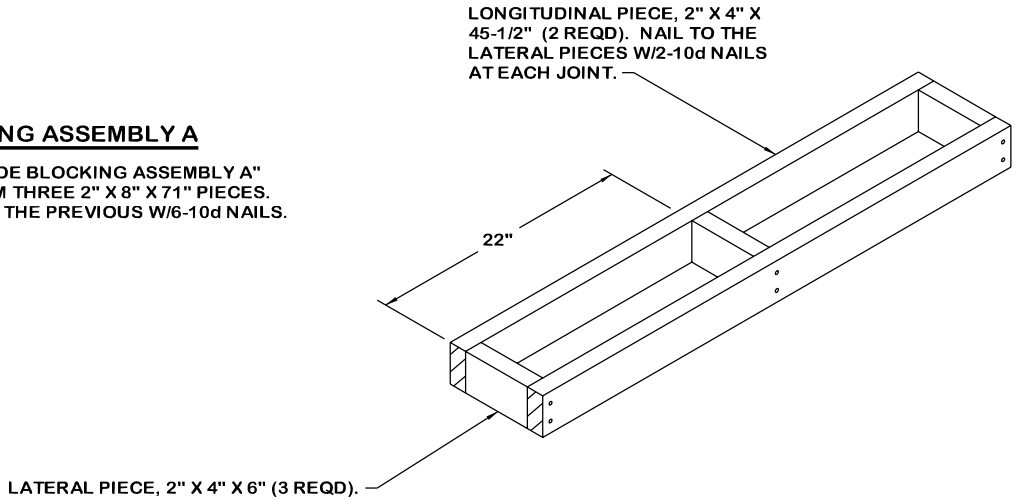


END BLOCKING ASSEMBLY



SIDE BLOCKING ASSEMBLY A

NOTE: AN ALTERNATE "SIDE BLOCKING ASSEMBLY A" MAY BE FABRICATED FROM THREE 2" X 8" X 71" PIECES. LAMINATE EACH PIECE TO THE PREVIOUS W/6-10d NAILS.



SIDE BLOCKING ASSEMBLY B

DETAILS

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