APPROVED BY	APPROVED BY
U. S. COAST GUARD	BUREAU OF EXPLOSIVES
Michael Minine H.	E. P. Ralley
	SUPERVISOR, MILITARY & INTERMODAL SERVICES
DATE \$/14/84	DATE 8/13/84

LOADING AND BRACING WITH WOODEN DUNNAGE IN 6-FOOT HIGH OPEN TOP COMMERCIAL CONTAINERS OF PALLETIZED UNITS OF SEPARATE LOADING PROJECTILES

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 "L" ON PAGE 2.

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GENERAL NOTES

- 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 HEREIN ARE APPLICABLE TO PALLETIZED UNITS OF 155MM AND 8" SEPARATE LOADING PROJECTILES. SUBSEQUENT REFERENCE TO PALLET UNIT MEANS THE PALLET UNIT WITH AMMUNITION ITEMS. SEE PAGE 3 FOR DETAILS OF THE PALLET UNITS. CAUTION: REGARDLESS OF THE QUANTITY OF UNITS TO BE SHIPPED, THE "MAXIMUM GROSS WEIGHT" OF 44,800 POUNDS MUST NOT BE EXCEEDED.
- C. THE LOADS AS SHOWN ARE BASED ON A 4,700 POUND 20' LONG BY B'
 WIDE BY 6' HIGH INTERMODAL COMMERCIAL CONTAINER WITH INSIDE DIMENSIONS OF 19'-4" LONG BY 92" WIDE BY 60" HIGH. THE LOADS ARE DESIGNED
 FOR TRAILER/CONTAINER CON-FLAT-CAR (T/COFC) SHIPMACH, HOWEVER, THE
 LOADS AS DESIGNED CAN ALSO BE MOVED BY OTHER SURFACE MODES OF
 TRANSPORT (MOTOR AND WATER). NOTICE: OTHER CONTAINERS OF THE
 SAME DESIGN CONFIGURATION CAN BE USED, HOWEVER, THE CONFIGURATION
 OF THE REAR CORNER POSTS AND ADJACENT WELDED STEEL ANGLE PIECES
 MUST BE AS DEPICTED HEREIN SO THAT SPECIFIED BLOCKING AND BRACING
 PROCEDURES CAN BE APPLIED.
- D. WHEN LOADING PALLET UNITS, THEY ARE TO BE POSITIONED SO AS TO ACHIEVE A TIGHT LOAD (TIGHT AGAINST THE FORWARD AND SIDE DUNNAGE ASSEMBLIES). ALTHOUGH A TOTAL OF ONE AND ONE-HALF INCHES (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 BAY BY LAMINATING ADDITIONAL VERTICAL PIECES OF APPROPRIATE THICKNESS TO THE VERTICAL PIECES OF ONE OR MORE OF THE "SEPARATOR ASSEMBLIES" USED BETWEEN UNIT ROWS WITHIN THAT LOAD BAY. FOUR (4) NAILS OF A SUITABLE LENGTH WILL BE USED TO LAMINATE EACH ADDED VERTICAL PIECE. ADDITIONALLY, THE NUMBER AND THICKNESS OF THE VERTICAL PIECES OF ONE OR MORE OF THE "SEPARATOR ASSEMBLIES" USED BETWEEN UNIT ROWS WITHIN A LOAD BAY MAY BE ADJUSTED AS REQUIRED TO FACILITATE VARIANCE IN PALLET UNIT SIZE.
- E. DUNNAGE LUMBER SPECIFIED IS OF A NOMINAL SIZE. FOR EXAMPLE, 1" X 6"
 MATERIAL IS ACTUALLY 3/4" THICK BY 5-1/2" WIDE, 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE AND 4" X 4" MATERIAL IS ACTUALLY 3-1/2"
 THICK BY 3-1/2" WIDE. NOTE; ALL SPECIFIED DUNNAGE LUMBER IS SOFT-WOOD
 EXCEPT THAT REQUIRED FOR THE TWO DOOR POST VERTICAL PIECES. THE 4" X 4"
 DOOR POST VERTICALS MUST BE HARDWOOD, SUCH AS OAK, IF DESIRED, PILOT
 HOLES FOR THE NAILS TO BE DRIVEN INTO THE DOOR POST VERTICALS MAY BE
 PREDRILLED.
- F. A STAGGERED NAILING PATTERN WILL BE USED WHEREVER 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 CONTAINERS DEPICTED WITHIN THIS DRAWING, SUCH AS ONE OF THE SIDE WALLS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- J. ALTHOUGH PROCEDURES FOR A 3-PROJECTILE PALLET UNIT OF 8" SEPARATE LOAD-ING PROJECTILES HAVE NOT BEEN SHOWN, THE PROCEDURES DELINEATED ON PAGES 16 THRU 19 FOR A 6-PROJECTILE PALLET UNIT MAY BE USED BY STRAPPING TWO OF THE 3-PROJECTILE PALLET UNITS TOGETHER USING TWO STRAPS, 1-1/4" WIDE, AND TWO SEALS, ONE PER STRAP. CRIMP EACH SEAL WITH TWO PAIR OF NOTCHES.
- K. IF 2" X 3" DUNNAGE LUMBER IS NOT READILY AVAILABLE, TWO ACCEPTABLE SIZE 2" X 3" PIECES CAN BE MADE BY RIPPING (SAWING) A PIECE OF NOMINAL SIZE 2" X 6" LUMBER ON THE CENTER LINE OF ITS 5-1/2" WIDTH.
- L. REQUIREMENTS CITED WITHIN THE BUREAU OF EXPLOSIVES PAMPHLET & APPLY WHEN THE SHIPMENT MOVES BY TRAILER/CONTAINER-ON-FLAT-CAR (T/COFC). SPECIAL T/COFC NOTES FOLLOW.
 - A LOADED CONTAINER MUST BE ON A CHASSIS EQUIPPED WITH TWO BOGIE ASSEMBLIES WHEN BEING MOVED IN TOFC SERVICE.
 - THE LOAD LIMIT OF A T/COFC RAIL CAR 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.

(CONTINUED AT RIGHT)

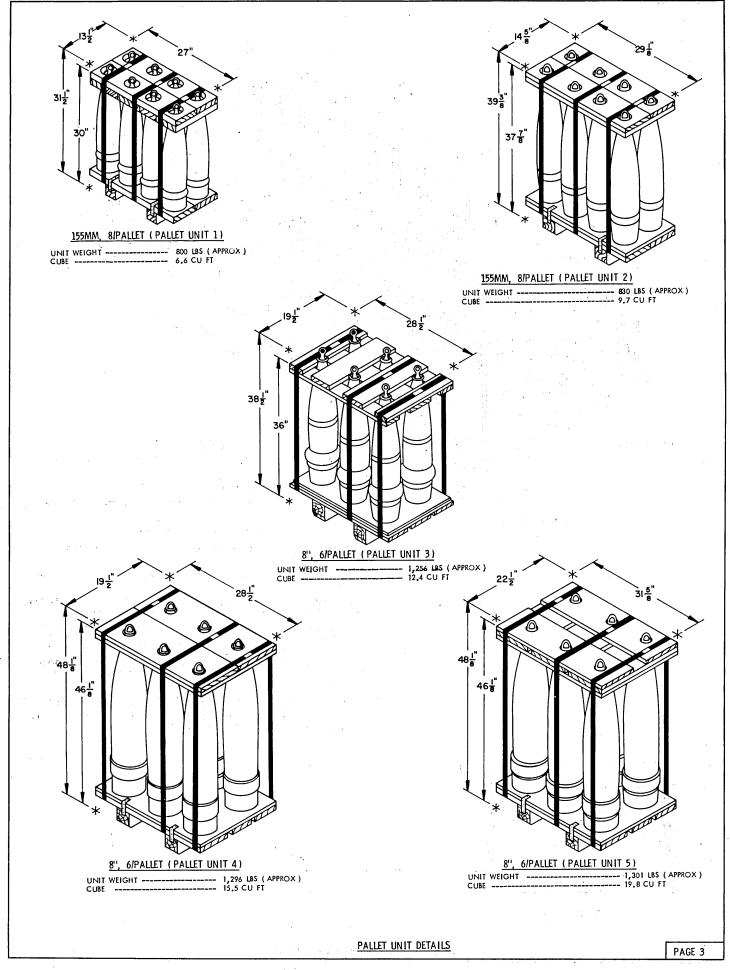
MATERIAL SPECIFICATIONS

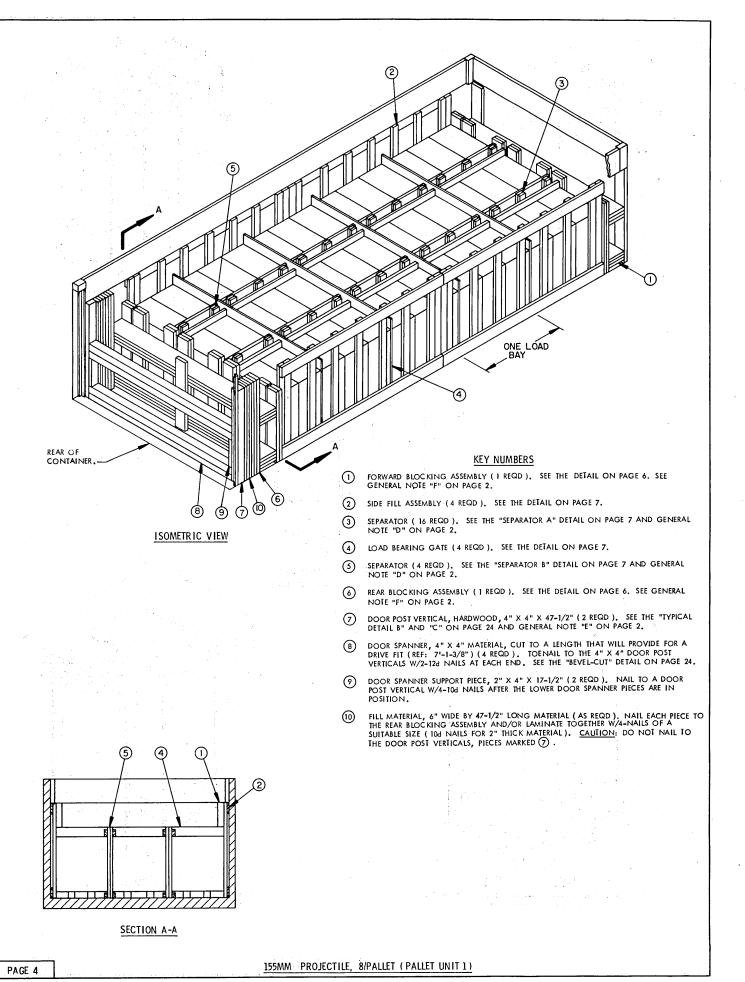
<u>LUMBER</u> :	TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
PLYWOOD:	FED SPEC NN-P-530; GROUP B, CONSTRUCTION AND INDUSTRIA PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.
NAILS::	FED SPEC FF-N-105; COMMON.

(GENERAL NOTES CONTINUED)

- M. DURING INTRASTATE AND/OR INTERSTATE MOVES BY MOTOR CARRIER, A PROPER CHASSIS/MODIFIED FLAT BED TRAILER MUST BE USED TO PRECLUDE VIOLATION OF ONE OR MORE "WEIGHT LAWS" APPLICABLE TO THE STATE OR STATES INVOLVED.
- N. CONVERSION TO METRIC EQUIVALENTS:

DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENT MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25,4MM AND ONE POUND EQUALS 0,454 KG.





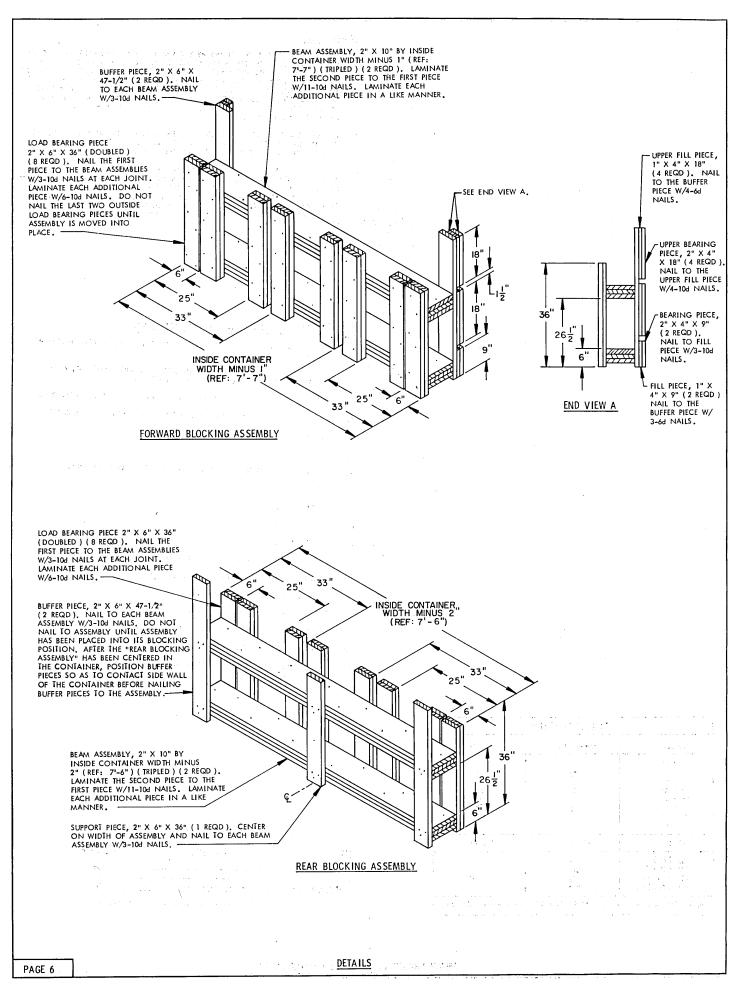
- 1. THE LOAD VIEWS AND THE "LOAD AS SHOWN" SECTION ON PAGES 4 AND 5 ARE BASED ON A LOAD OF 155MM PROJECTILES PALLETIZED 8 PER PALLET UNIT IN "PALLET UNIT I". SEE THE PALLET UNIT DETAIL ON PAGE 3. NOTE: THE 31-1/2" UNIT HEIGHT DIMENSION WILL VARY SLIGHTLY, DEPENDING ON THE PROJECTILE BEING SHIPPED; HOWEVER, THE PROCEDURES SPECIFIED ON PAGES 4 AND 5 ARE APPLICABLE TO ALL 155MM SLP'S WHICH ARE PALLETIZED 8 PER PALLET UNIT IN "PALLET UNIT I". VARIANCE IN UNIT WEIGHT DOES NOT AFFECT THE VALIDITY OF THE DELINEATED PROCEDURES.
- IF A CONTAINER IS TO BE LOADED WITH LESS PALLET UNITS THAN SHOWN, SEE THE "TYPICAL OMITTED-UNIT ASSEMBLY" DETAIL, THE "TYPICAL REDUCED-LOAD" DETAIL AND THE "REDUCED LOAD PROVISIONS" ON PAGE 25.
- 3. IF THE QUANTITY OF PALLET UNITS, AS SHOWN ON PAGE 4, TO BE SHIPPED IS REDUCED BY ONE OR MORE STACKS, STRUTS AND STRUT SUPPORT PIECES WILL BE USED IN LIEU OF THE SOLID FILL PICTURED IN THE LOAD ON PAGE 4. THE SEPARATORS WILL BE MODIFIED IF A LOAD BAY OF ONE STACK EXISTS WHEN THE QUANTITY TO BE SHIPPED IS REDUCED, AND THE SIDE FILL ASSEMBLIES WILL BE MODIFIED BY SHORTENING THE TWO REAR ASSEMBLIES. THE PRINCIPLES SHOWN ON PAGE 4 WILL BE APPLIED.

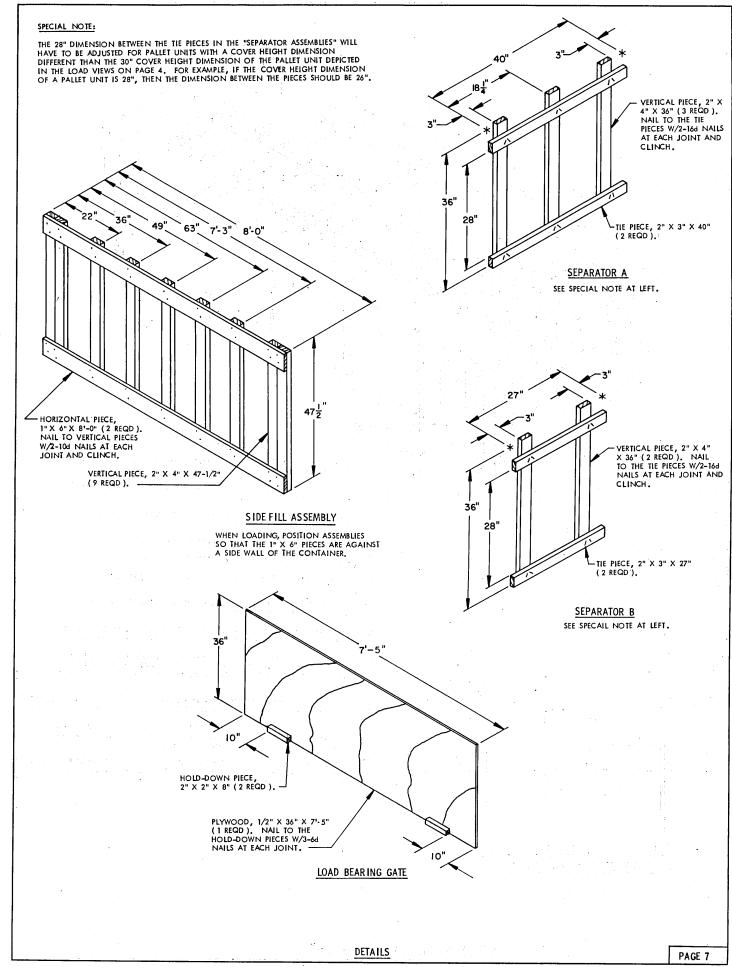
RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

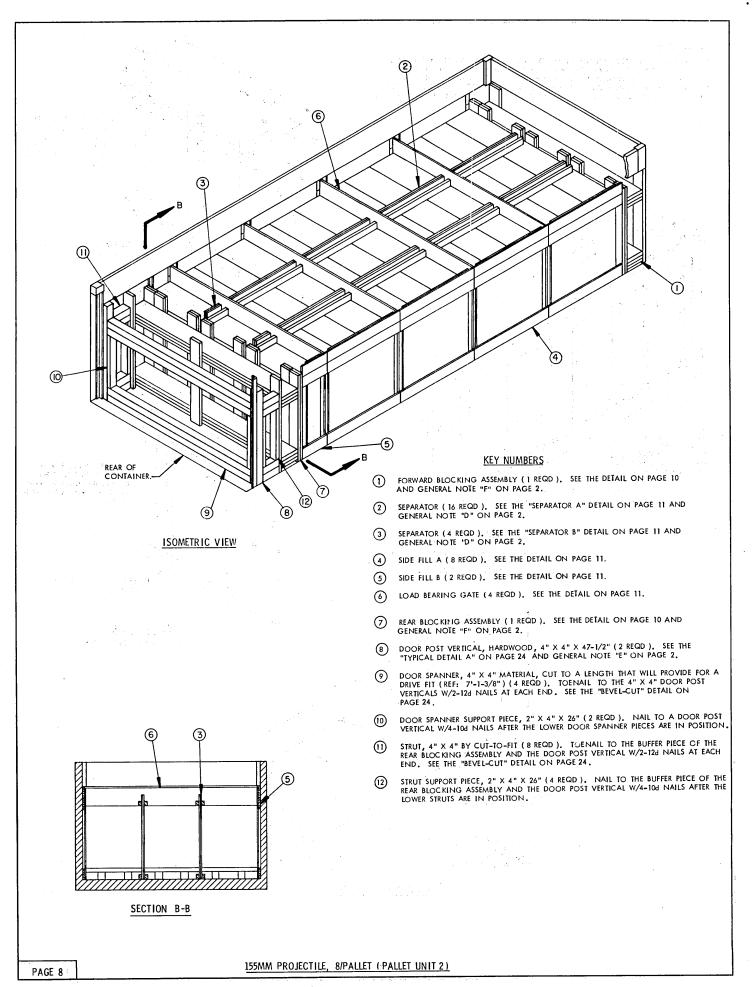
- PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
- PREFABRICATE FOUR SIDE FILL ASSEMBLIES, SIXTEEN SEPARATORS "A", FOUR SEPARATORS "B", AND FOUR LOAD BEARING GATES.
- 3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL ASSEMBLIES.
- 4. LOAD NINE PALLET UNITS AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES.
- 5. INSTALL ONE LOAD BEARING GATE.
- 6. REPEAT STEP 4.
- 7. INSTALL ONE LOAD BEARING GATE AND TWO SIDE FILL ASSEMBLIES.
- 8. REPEAT STEP 4.
- 9. REPEAT STEP 5.
- 10. REPEAT STEP 4.
- 11. REPEAT STEP 5.
- 12. LOAD SIX PALLET UNITS AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
- 13. INSTALL THE REAR BLOCKING ASSEMBLY.
- 14. INSTALL THE TWO DOOR POST VERTICALS.
- 15. CLOSE THE CONTAINER DOOR HEADER.
- 16. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION.
- 17. INSTALL THE SOLID FILL LOAD BLOCKING MATERIAL.
- 18. INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

LUMBER	LINEAR FEET	BOARD FEET
LOWIDER	EHALAK ILLI	DOARD TEET
1" X 4"	8	3
1" X 6"	72	36
2" X 2"	6	· 2
2" X 3"	134	67
2" X 4"	321	214
2" X 6"	122	122
2" X 10"	91	152
4" X 4"	37	49
NAILS	NO . REQD	POUNDS
6d (2")	46	1/4
10d ((3")	512	8
12d (3-1/4")	16	1/2
16d (3-1/2")	224	5

ITEM	QUANTITY	WEIGH	[(APPROX)
PALLET UNIT	42	33,600	LBS
DUNNAGE		1,477	LBS
CONTAINER		4,365	LBS
TOT4	I WEIGHT	39.442	LBS







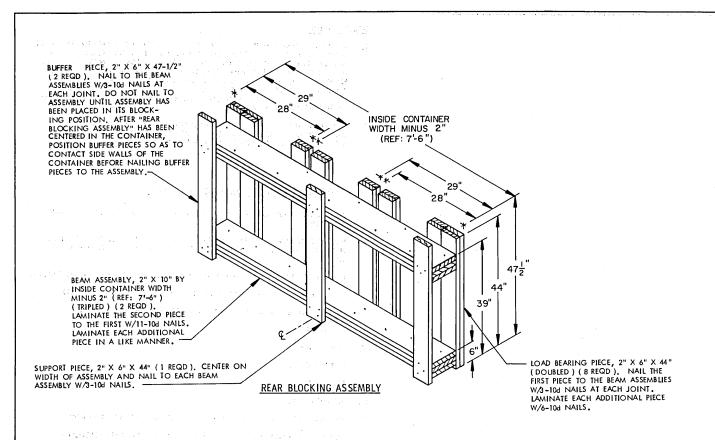
- 1. THE LOAD VIEWS AND THE "LOAD AS SHOWN" SECTION ON PAGES 8 AND 9 ARE BASED ON A LOAD OF 155MM PROJECTILES PALLETIZED 8 PER PALLET UNIT IN "PALLET UNIT 2". SEE THE PALLET UNIT DETAIL ON PAGE 3. NOTE: THE 39-3/8" UNIT HEIGHT DIMENSION WILL VARY SLIGHTLY, DEPENDING ON THE PROJECTILE BEING SHIPPED, HOWEVER, THE PROCEDURES SPECIFIED ON PAGES 8 AND 9 ARE APPLICABLE TO ALL 155MM SLP'S WHICH ARE PALLETIZED 8 PER PALLET UNIT IN "PALLET UNIT 2". VARIANCE IN UNIT WEIGHT DOES NOT AFFECT THE VALIDITY OF THE DELINEATED PROCEDURES.
- IF A CONTAINER IS TO BE LOADED WITH LESS PALLET UNITS THAN SHOWN, SEE THE "TYPICAL OMITTED-UNIT ASSEMBLY" DETAIL, THE "TYPICAL REDUCED-LOAD" DETAIL, AND THE "REDUCED LOAD PROVISIONS" ON PAGE 25.

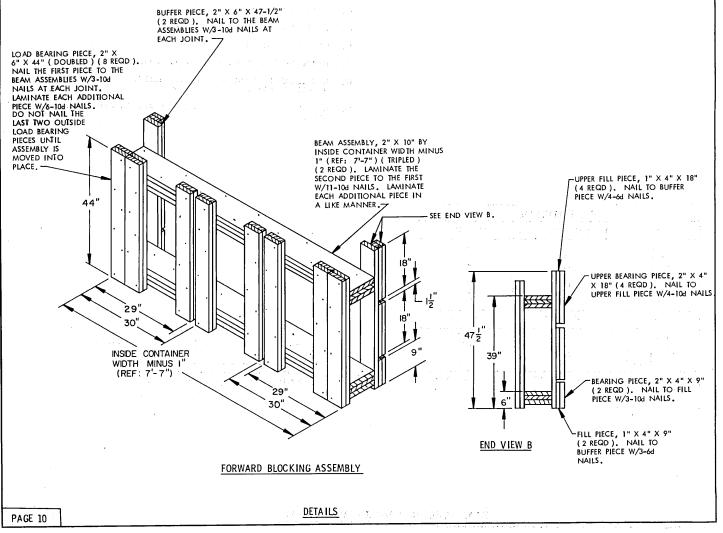
RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

- PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
- PREFABRICATE EIGHT SIDE FILL "A" ASSEMBLIES, TWO SIDE FILL "B" ASSEMBLIES, SIXTEEN SEPARATORS "A", FOUR SEPARATORS "B", AND FOUR LOAD BEARING GATES
- 3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL "A" ASSEMBLIES.
- 4. LOAD NINE PALLET UNITS AND INSTALL FOUR SEPARATOR "A" ASSEMBLIES.
- 5. INSTALL ONE LOAD BEARING GATE AND TWO SIDE FILL "A" ASSEMBLIES.
- 6. REPEAT STEP 4.
- 7. REPEAT STEP 5.
- 8. REPEAT STEP 4.
- 9. REPEAT STEP 5.
- 10. REPEAT STEP 4.
- 11. INSTALL ONE LOAD BEARING GATE AND TWO SIDE FILL "B" ASSEMBLIES.
- 12. LOAD THREE PALLET UNITS AND INSTALL FOUR SEPARATOR "B" ASSEMBLIES.
- 13. INSTALL REAR BLOCKING ASSEMBLY.
- 14. INSTALL THE TWO DOOR POST VERTICALS.
- 15. CLOSE THE CONTAINER DOOR HEADER.
- 16. INSTALL THE TWO DOOR SPANNER PIECES AT THE LOWEST POSITION.
- 17. INSTALL THE STRUTS AND STRUT SUPPORT PIECES BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
- 18. INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

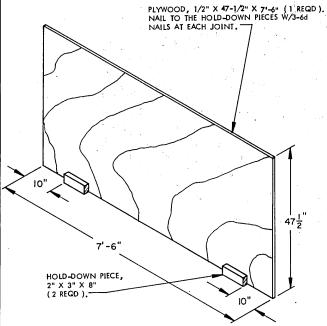
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	. 8	3
1" X 6"	95	48
2" X 3"	132	66
2" X 4"	21	14
2" X 6"	138	138
2" X 10"	91	152
4" X 4"	38	51
NAILS	NO. REQD	POUNDS
6d (2")	46	1/2
8d (2-1/2")	486	5-1/4
10d (3")	374	6
12d (3-1/4")	40	3/4

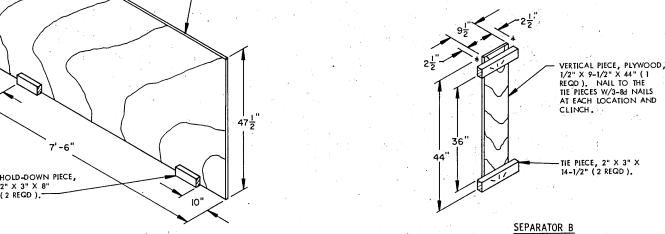
1	TEM -	QUANTITY	WEIGHT (APPROX	Κ)
1	PALLET UNI	T 39	32,370 LBS	
	DUNNAGE .		1,567 LBS	
9	CON TAINER		4,365 LBS	
	Ψ,	TOTAL WEIGHT	38.302 LBS	

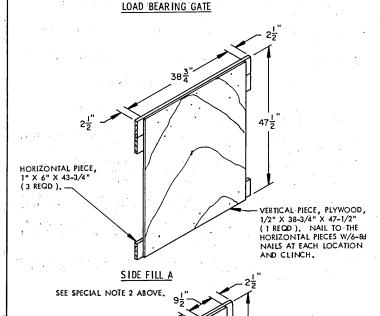




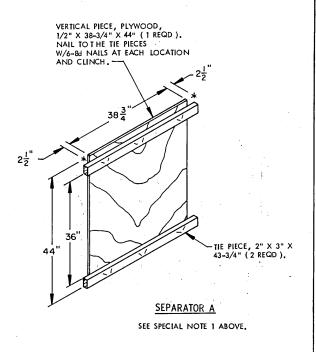
- THE 36" DIMENSION BETWEEN THE TIE PIECES IN THE SEPARATOR ASSEMBLIES WILL HAVE TO BE ADJUSTED FOR PALLET UNITS WITH A COVER HEIGHT DIMENSION DIFFERENT THAN THE 37–7/8" COVER HEIGHT DIMENSION OF THE PALLET UNIT DEPICTED IN THE LOAD VIEWS ON PAGE 8. FOR EXAMPLE, IF THE COVER HEIGHT DIMENSION OF A PALLET UNIT IS 36", THEN THE DIMENSION BETWEEN TIE PIECES SHOULD BE 34".
- WHEN LOADING, POSITION SIDE FILL ASSEMBLIES SO THAT THE 1" X 6" PIECES OF THE ASSEMBLIES ARE AGAINST A SIDE WALL OF THE CONTAINER.







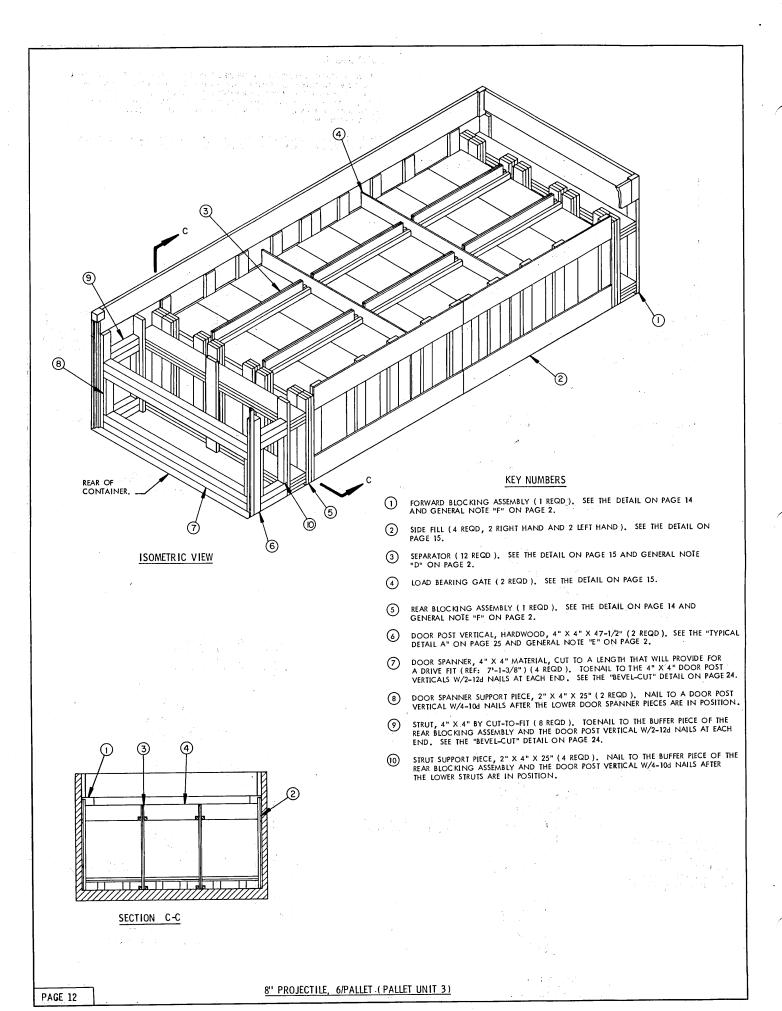
SEE SPECIAL NOTE 2 ABOVE.



SEE THE SPECIAL NOTE 1 ABOVE.

HORIZONTAL PIECE, 1" X 6" X 14-1/2" (3 REQD). VERTICAL PIECE, PLYWOOD, 1/2" X 9-1/2" X 47-1/2" (1 REOD). NAIL TO THE HORIZONTAL PIECES W/3-84 NAILS AT EACH LOCATION AND CLINCH.— 47 2 SIDE FILL B **DETAILS**

PAGE 11



- 1. THE LOAD VIEWS AND THE "LOAD AS SHOWN" SECTION ON PAGES 12 AND 13 ARE BASED ON A LOAD OF 8" PROJECTILES PALLETIZED 6 PER PALLET UNIT IN "PALLET UNIT 3". SEE THE PALLET UNIT DETAIL ON PAGE 3. NOTE: THE 38-1/2" UNIT HEIGHT DIMENSION WILL VARY SUGHTLY, DEPENDING ON THE PROJECTILE BEING SHIPPED; HOWEVER, THE PROCEDURES SPECIFIED ON PAGES 12 AND 13 ARE APPLICABLE TO ALL 8" SLP'S WHICH ARE PALLETIZED 6 PER PALLET UNIT IN "PALLET UNIT 3". VARIANCE IN UNIT WEIGHT DOES NOT AFFECT THE VALIDITY OF THE DELINEATED PROCEDURES.
- IF A CONTAINER IS TO BE LOADED WITH LESS PALLET UNITS THAN SHOWN, SEE THE "TYPICAL OMITTED-UNIT ASSEMBLY" DETAIL, THE "TYPICAL REDUCED-LOAD" DETAIL, AND THE "REDUCED LOAD PROVISIONS" ON PAGE 25.
- 3. IF DESIRED, THREE ADDITIONAL PALLET UNITS MAY BE SHIPPED IN THE LOAD DEPICTED ON PAGE 12. IN LIEU OF STRUTS, SOLID FILL WILL BE SUBSTITUTED. ONE ADDITIONAL LOAD BEARING GATE WILL BE REQUIRED, FOUR 19" SEPARATORS WILL BE REQUIRED AND THE TWO REAR SIDE FILL ASSEMBLIES WILL BE LENGTHENED ACCORDINGLY.

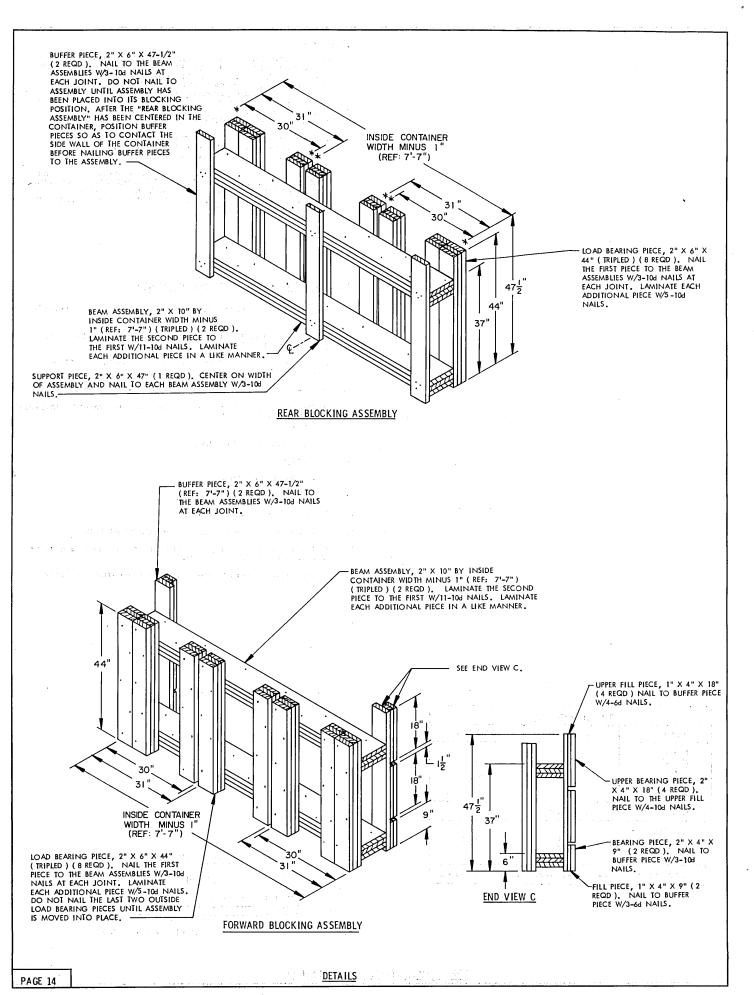
RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

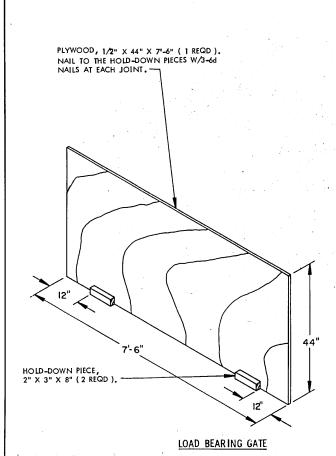
- 1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
- PREFABRICATE FOUR SIDE FILL ASSEMBLIES, TWELVE SEPARATOR ASSEMBLIES, AND TWO LOAD BEARING GATES.
- 3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND INSTALL TWO SIDE FILL ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND).
- 4. LOAD NINE PALLET UNITS AND INSTALL FOUR SEPARATOR ASSEMBLIES.
- INSTALL ONE LOAD BEARING GATE AND TWO SIDE FILL ASSEMBLIES (ONE RIGHT HAND AND ONE LEFT HAND).
- 6. REPEAT STEP 4.
- 7. INSTALL ONE LOAD BEARING GATE.
- 8. REPEAT STEP 4.
- 9. INSTALL THE REAR BLOCKING ASSEMBLY.
- 10. INSTALL THE TWO DOOR POST VERTICALS.
- 11. CLOSE THE CONTAINER DOOR HEADER.
- 12. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION.
- 13. INSTALL THE STRUTS AND STRUT SUPPORT PIECES BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
- INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

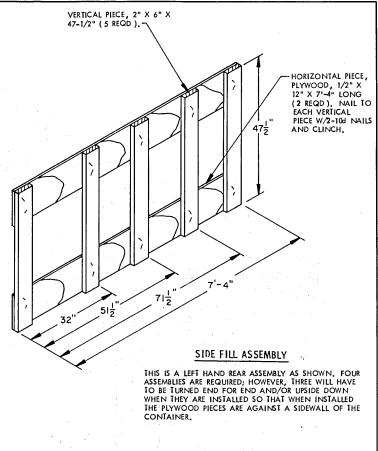
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	8	3
2" X 3"	116	58
2" X 4"	20	14
2" X 6"	291	291
2" X 10"	91	152
1" X 4"	132	175
NAILS	NO. REQD	POUNDS
6d (2")	34	1/4
8d (2-1/2")	144	1-3/4
10d (3")	478	7-1/2
12d (3-1/4")	36	3/4

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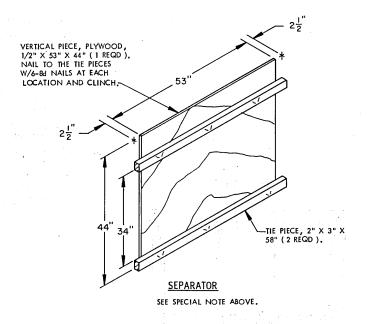
LOAD AS SHOWN

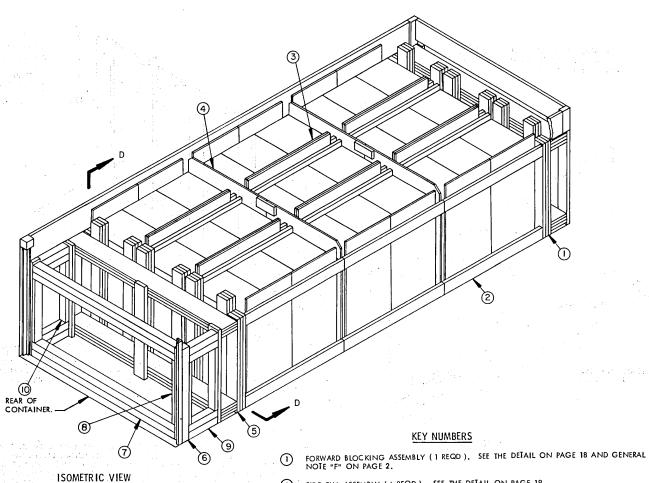




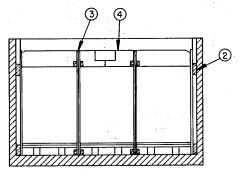


THE 34" DIMENSION BETWEEN THE TIE PIECES IN THE "SEPARATOR ASSEMBLIES" WILL HAVE TO BE ADJUSTED FOR PALLET UNITS WITH A COVER HEIGHT DIMENSION DIFFERENT THAN THE 36" COVER HEIGHT DIMENSION OF THE PALLET UNIT DEPICTED IN THE LOAD VIEWS ON PAGE 12. FOR EXAMPLE, IF THE COVER HEIGHT DIMENSION OF A PALLET UNIT IS 34", THEN THE DIMENSION BETWEEN TIE PIECES SHOULD BE 32".





- SIDE FILL ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 19.
- SEPARATOR ($12\ \text{REQD}$). SEE THE DETAIL ON PAGE 19 AND GENERAL NOTE "D" ON PAGE 2. 3
- LOAD BEARING GATE (2 REQD). SEE THE DETAIL ON PAGE 19. 4
- REAR BLOCKING ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 18 AND GENERAL NOTE "F" ON PAGE 2. <u>(5)</u>
- DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" ($2\ REQD$). SEE THE "TYPICAL DETAIL A" ON PAGE 25 AND GENERAL NOTE "E" ON PAGE 2.
- DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (4 REQD). TOENAIL TO THE 4" X 4" DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT"DETAIL ON PAGE 24.
- Door spanner support Piece, 2" x 4" x 33" (2 regd). Nail to a door post vertical w/4-10d nails after the lower door spanner pieces are in Position.
- STRUT, 4" \times 4" BY CUT-TO-FIT (8 REQD). TOENAIL TO THE BUFFER PIECE OF THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICAL W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON PAGE 24.
- STRUT SUPPORT PIECE, 2" X 4" X 33" (4 REQD). NAIL TO THE BUFFER PIECE OF THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICAL W/4-10d NAILS AFTER THE LOWER STRUTS ARE IN POSITION.



SECTION D-D

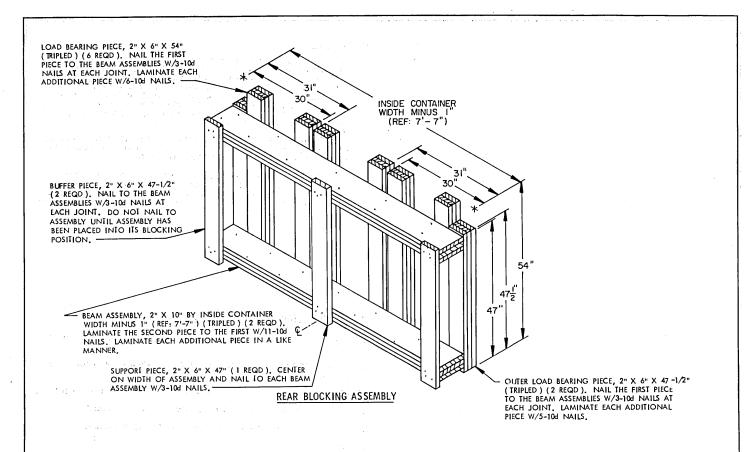
- 1. THE LOAD VIEWS AND THE "LOAD AS SHOWN" SECTION ON PAGES 16 AND 17 ARE BASED ON A LOAD OF 8" PROJECTILES PALLETIZED 6 PER PALLET UNIT IN "PALLET UNIT 4". SEE THE PALLET UNIT DETAIL ON PAGE 3. NOTE: THE 38-1/2" UNIT HEIGHT DIMENSION WILL VARY SLIGHTLY, DEPENDING ON THE PROJECTILE BEING SHIPPED; HOWEVER, THE PROCEDURES SPECIFIED ON PAGES 16 AND 17 ARE APPLICABLE TO ALL 8" SLP"S WHICH ARE PALLETIZED 6 PER PALLET UNIT IN "PALLET UNIT 4". VARIANCE IN UNIT WEIGHT DOES NOT AFFECT THE VALIDITY OF THE DELINEATED PROCEDURES.
- IF A CONTAINER IS TO BE LOADED WITH LESS PALLET UNITS THAN SHOWN, SEE THE "TYPICAL OMITTED-UNIT ASSEMBLY" DETAIL, THE "TYPICAL REDUCED-LOAD" DETAIL, AND THE "REDUCED LOAD PROVISIONS" ON PAGE 25.
- 3. IF DESIRED, THREE ADDITIONAL PALLET UNITS MAY BE SHIPPED IN THE LOAD DEPICTED ON PAGE 16. IN LIEU OF STRUTS, SOLID FILL WILL BE SUBSTITUTED. ONE ADDITIONAL LOAD BEARING GATE WILL BE REQUIRED, FOUR 19" SEPARATORS WILL BE REQUIRED AND THE TWO REAR SIDE FILL ASSEMBLIES WILL BE LENGTHENED ACCORDINGLY.

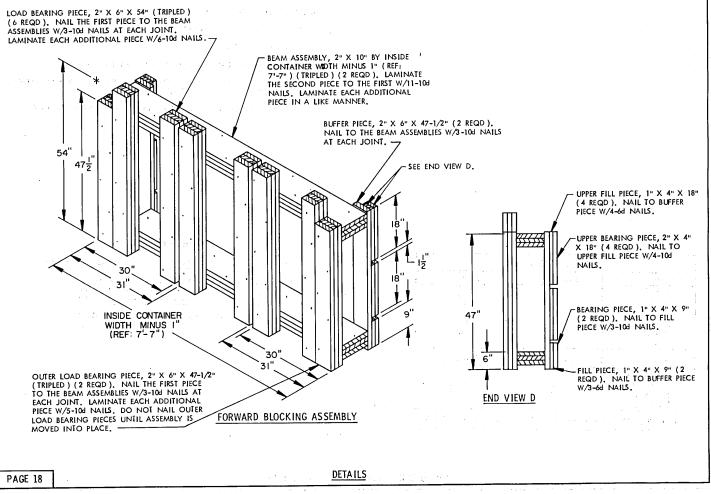
RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

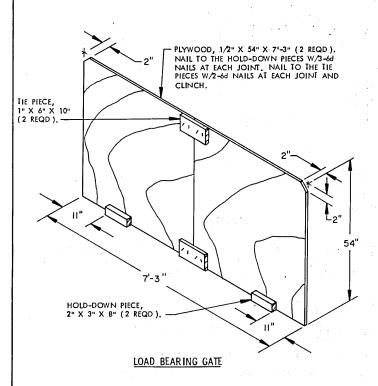
- 1. PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY.
- PREFABRICATE SIX SIDE FILL ASSEMBLIES, TWELVE SEPARATORS, AND TWO LOAD BEARING GATES.
- 3. INSTALL THE FORWARD BLOCKING ASSEMBLY AND TWO SIDE FILL ASSEMBLIES.
- 4. LOAD NINE PALLET UNITS AND INSTALL FOUR SEPARATOR ASSEMBLIES.
- 5. INSTALL ONE LOAD BEARING GATE AND TWO SIDE FILL ASSEMBLIES.
- 6. REPEAT STEP 4.
- 7. REPEAT STEP 5.
- 8. REPEAT STEP 4.
- 9. INSTALL REAR BLOCKING ASSEMBLY.
- 10. INSTALL THE TWO DOOR POST VERTICALS.
- 11. CLOSE THE CONTAINER DOOR HEADER.
- 12. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION.
- 13. INSTALL THE STRUTS AND STRUT SUPPORT PIECES BETWEEN THE REAR BLOCKING ASSEMBLY AND THE DOOR POST VERTICALS.
- INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNERS.

ITEM	QUANTITY	WEIGH	(APPROX)
DUNNAGE -	27	1,626	LBS
	TOTAL WEIGHT	40,983	LBS

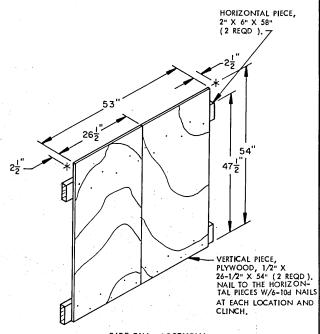
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	В	3
1" X 6"	2	1
2" X 3".	116	58
2" X 4"	24	16
2" X 6"	287	287
2" X 10"	91	152
4" X 4"	22	29
NAILS	NO. REQD	POUNDS
6d (2")	42	1/4
8d (2-1/2")	144	1-3/4
10d (3")	458	7-1/4
12d (3-1/4")	48	4 1



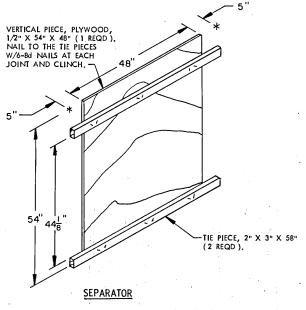




THE 44-1/8" DIMENSION BETWEEN THE TIE PIECES IN THE "SEPARATOR ASSEMBLIES" WILL HAVE TO BE ADJUSTED FOR PALLET UNITS WITH A COVER HEIGHT DIMENSION DIFFERENT THAN THE 46-1/8" COVER HEIGHT DIMENSION OF THE PALLET UNIT DEPICTED IN THE LOAD VIEWS ON PAGE 16. FOR EXAMPLE, IF THE COVER HEIGHT DIMENSION OF A PALLET UNIT IS 44", THEN THE DIMENSION BETWEEN THE PIECES SHOULD BE 42".



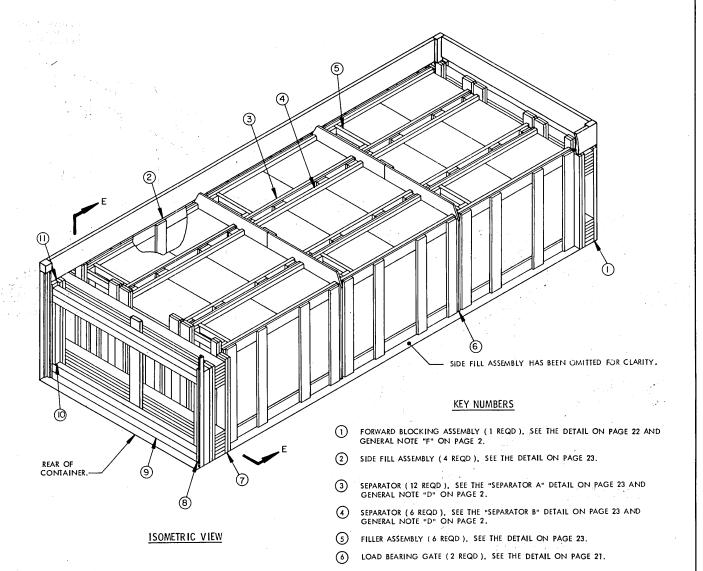
SIDE FILL ASSEMBLY



SEE THE SPECIAL NOTE AT LEFT.

DETAILS

PAGE 19



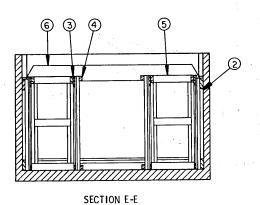
RFAR BLOCKING ASSEMBLY (1 REQD.), SEE THE DETAIL ON PAGE 22 AND GENERAL NOTE "F" ON PAGE 2.

DOOR POST VERTICAL, HARDWOOD, 4" X 4" X 47-1/2" (2 REQD). SEE THE "TYPICAL DETAIL B" AND "C" ON PAGE 24 AND GENERAL NOTE "E" ON PAGE 2.

DOOR SPANNER, 4" X 4" MATERIAL, CUT TO A LENGTH THAT WILL PROVIDE FOR A DRIVE FIT (REF: 7'-1-3/8") (4 REQD), TOENAIL TO THE 4" X 4" DOOR POST VERTICALS W/2-12d NAILS AT EACH END. SEE THE "BEVEL-CUT" DETAIL ON

Door spanner support piece, 2" x 4" x 33" (2 reqd). Nail to a door post vertical w/4-10d nails after the lower door spanner pieces are in

FILL MATERIAL, 6" WIDE BY 47-1/2" LONG MATERIAL (AS REQD). NAIL EACH PIECE TO THE REAR BLOCKING ASSEMBLY AND/OR LAMINATE TOGETHER W/5 NAILS OF A SUITABLE SIZE (10d NAILS FOR 2" THICK MATERIAL). CAUTION: DO NOT NAIL TO THE DOOR POST VERTICALS, PIECES MARKED (8)



PAGE 20

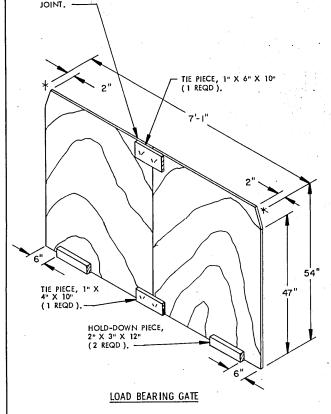
8" PROJECTILE, 6/PALLET (PALLET UNIT 5)

9

PAGE 24.

POSITION.

PLYWOOD, 1/2" X 42-1/2" X 54" (2 REQD), NAIL TO THE TIE PIECES W/2-64 NAILS AT EACH JOINT AND CLINCH, NAIL TO THE HOLD-DOWN PIECES W/3-64 NAILS AT EACH



LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	88	29
1" X 6"	127	63
2" X 3"	54	27
2" X 4"	141	94
2" X 6"	625	625
4" X 4"	37	49
NAILS	NO. REQD	POUNDS
6d (2")	130	1
10d (3")	1084	16-3/4
12d (3-1/4")	40	3/4

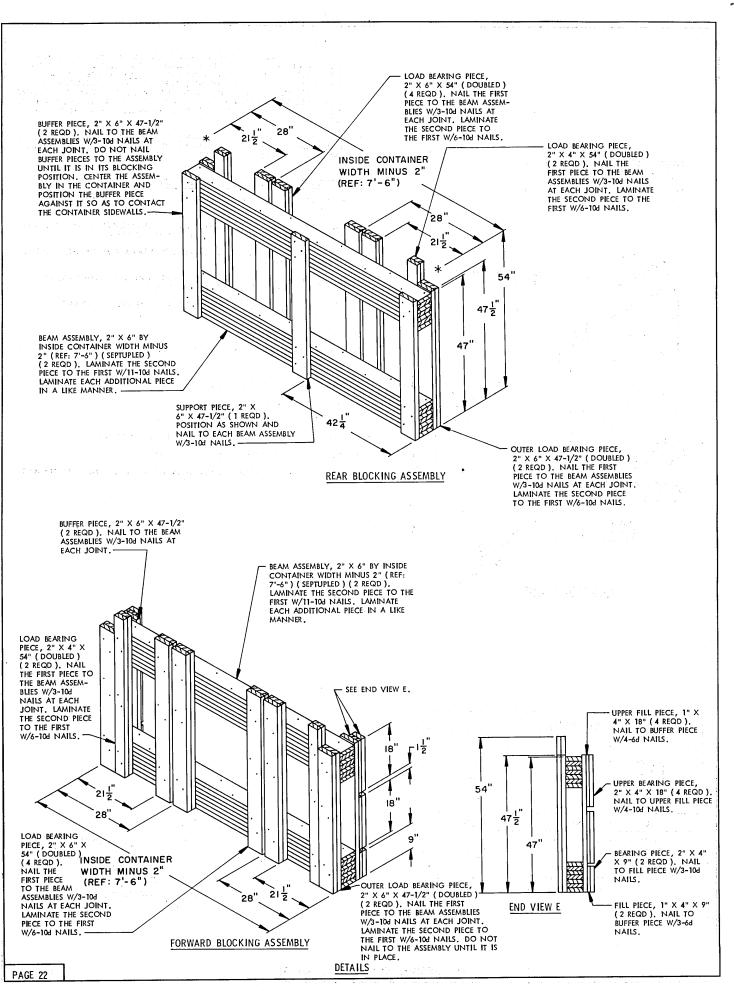
SPECIAL NOTES:

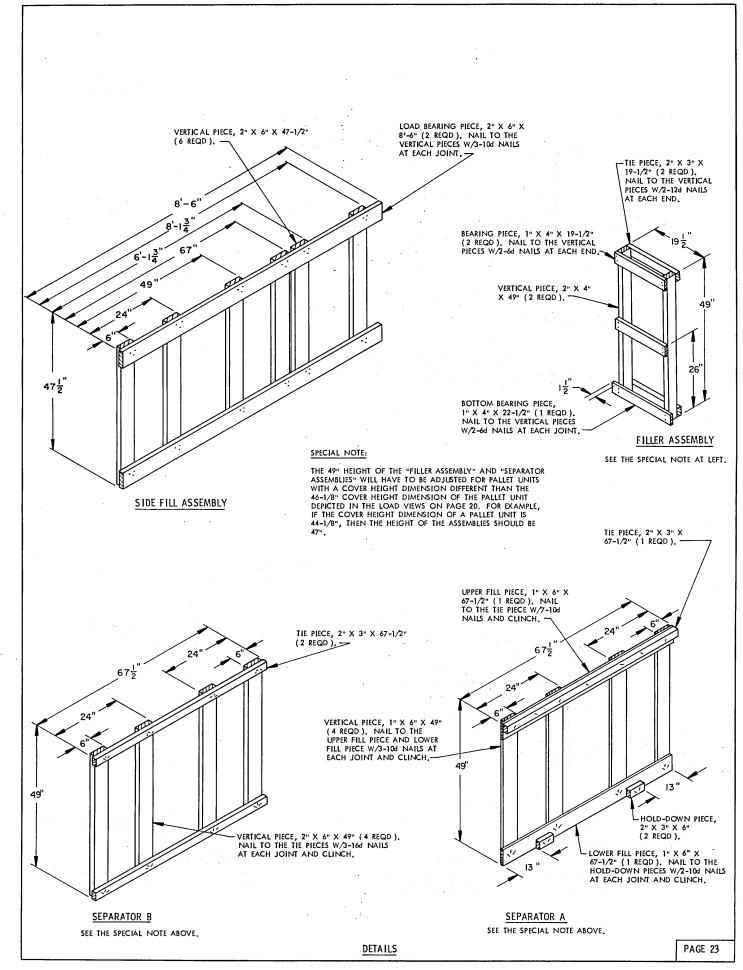
- 1. THE LOAD VIEWS AND THE "LOAD AS SHOWN" SECTION ON PAGES 20 AND 21 ARE BASED ON A LOAD OF 8" PROJECTILES PALLETIZED 6 PER PALLET UNIT IN "PALLET UNIT 5". SEE THE PALLET UNIT DETAIL ON PAGE 3. NOTE: THE 48-1/8" UNIT HEIGHT DIMENSION WILL VARY SLIGHTLY, DEPENDING ON THE PROJECTILE BEING SHIPPED; HOWEVER, THE PROCEDURES SPECIFIED ON PAGES 20 AND 21 ARE APPLICABLE TO ALL 8" SLP'S WHICH ARE PALLETIZED 6 PER PALLET UNIT IN THE "PALLET UNIT 5". VARIANCE IN UNIT WEIGHT DOES NOT AFFECT THE VALIDITY OF THE DELINEATED PROCEDURES.
- 2. IF A CONTAINER IS TO BE LOADED WITH LESS PALLET UNITS THAN SHOWN, SEE THE "TYPICAL OMITTED-UNIT ASSEMBLY" DETAIL, THE "TYPICAL REDUCED-LOAD" DETAIL, AND THE "REDUCED LOAD PROVISIONS" ON PAGE 25.

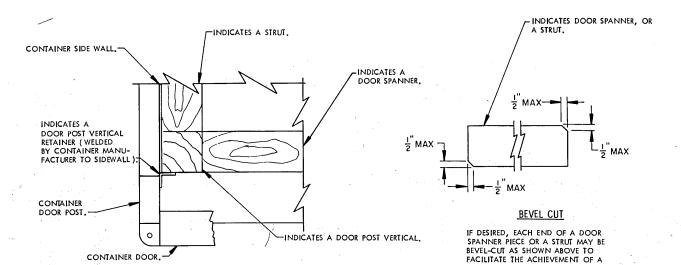
RECOMMENDED SEQUENTIAL LOADING PROCEDURES:

- PREFABRICATE ONE FORWARD BLOCKING ASSEMBLY AND ONE REAR BLOCKING ASSEMBLY
- PREFABRICATE FOUR SIDE FILL ASSEMBLIES, TWELVE SEPARATORS "A", SM SEPARATORS
 "B", TWO LOAD BEARING GATES, AND SM FILLER ASSEMBLIES.
- INSTALL THE FORWARD BLOCKING ASSEMBLY, TWO SIDE FILL ASSEMBLIES, AND TWO SEPARATOR "A" ASSEMBLIES.
- LOAD SEVEN PALLET UNITS AND INSTALL TWO SEPARATOR "A" ASSEMBLIES, TWO SEPARATOR "B" ASSEMBLIES AND TWO FILLER ASSEMBLIES.
- INSTALL ONE LOAD BEARING GATE, TWO SIDE FILL ASSEMBLIES AND TWO SEPARATOR "A" ASSEMBLIES.
- 6. REPEAT STEP 4.
- 7. INSTALL ONE LOAD BEARING GATE AND TWO SEPARATOR "A" ASSEMBLIES.
- 8. REPEAT STEP 4.
- 9. INSTALL REAR BLOCKING ASSEMBLY.
- 10. INSTALL THE TWO DOOR POST VERTICALS.
- 11. CLOSE THE CONTAINER DOOR HEADER.
- 12. INSTALL TWO DOOR SPANNER PIECES AT THE LOWEST POSITION.
- 13. INSTALL THE SOLID FILL LOAD BLOCKING MATERIAL.
- INSTALL THE DOOR SPANNER SUPPORT PIECES AND THE REMAINING DOOR SPANNER PIECES.

<u>ITEM</u>	QUANTITY	WEIGH	T (APPROX)
	21		
	TOTAL WEIGHT	33,567	LBS

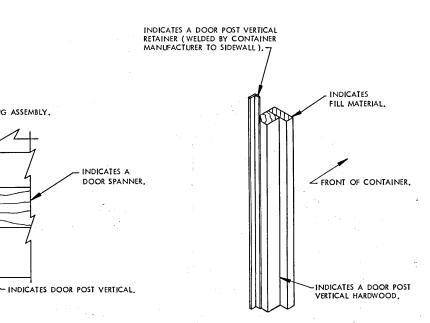






TYPICAL DETAIL A

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



TIGHT DOOR-POST-TO-DOOR-POST FIT OR A TIGHT REAR-OF-LOAD FIT.

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

INDICATES A

REAR BLOCKING ASSEMBLY.

TYPICAL DETAIL C

DOOR SPANNERS AND DOOR SPANNER SUPPORT PIECE HAVE BEEN OMITTED FOR CLARITY PURPOSES.

PAGE 24

CONTAINER SIDE WALL.

INDICATES

DOOR POST VERTICAL
RETAINER (WELDED BY CONTAINER MANUFACTURER TO
SIDEWALL).

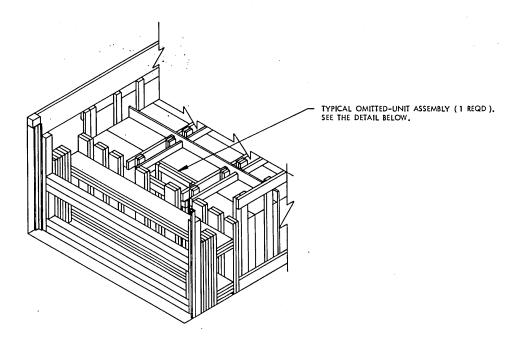
CONTAINER DOOR POST .-

0

CONTAINER DOOR 3

FILL MATERIAL.

TYPICAL DETAILS

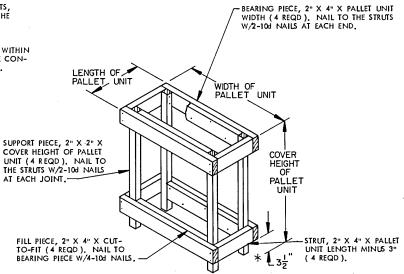


TYPICAL REDUCED LOAD

REDUCED LOAD PROVISIONS

WHEN A CONTAINER IS TO BE LOADED WITH A REDUCED QUANTITY OF LADING UNITS, THE LENGTHWISE CENTER OF GRAVITY OF A LOAD MUST BE WITHIN 12", IN EITHER DIRECTION, OF THE MIDPOINT IN A COMMERCIAL INTERMODAL CONTAINER, AND THE FOLLOWING CRITERIA WILL APPLY:

- A. IF A LOAD IS REDUCED BY ONLY A SMALL QUANTITY OF LADING UNITS, THE UNITS NORMALLY MAY BE ELIMINATED FROM THE REAR OF THE LOAD.
- B. IF A LOAD IS REDUCED BY A LARGE QUANTITY OF LADING UNITS, THE UNITS SHOULD BE ELIMINATED FROM THE MIDDLE ROW IN THE CONTAINER, AS REQUIRED, SO THAT A SYMMETRICAL WEIGHT DISTRIBUTION IS ACHIEVED.
- C. LADING UNITS WILL ONLY BE OMITTED FROM THE MIDDLE ROW WITHIN THE CONTAINER. LADING UNITS IN THE OUTSIDE ROWS OF THE CONTAINER ARE NOT TO BE REPLACED BY OMITTED-UNIT ASSEMBLIES.



TYPICAL OMITTED-UNIT ASSEMBLY

THE ASSEMBLY DEPICTED ABOVE IS FOR USE IN PLACE OF AN OMITTED PALLET UNIT, <u>CAUTION</u>: AN ASSEMBLY MUST ONLY BE PLACED WITHIN THE MIDDLE ROW OF A LOAD BAY. SEE THE "TYPICAL REDUCED-LOAD" DETAIL ABOVE.

TYPICAL REDUCED-LOAD PROCEDURES

PAGE 25

PAGE 26 PROJECT <u>CA 203-84</u>