LOADING AND BRACING (TL & LTL) ON FLATBED TRAILER • OF CBU ITEMS PACKED IN THE CNU-79/E CONTAINER

INDEX

• CAUTION: THE OUTLOADING PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE TO HIGHWAY MOVEMENTS; NOT TRAILER-ON-FLAT CAR MOVEMENTS.

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY INDUSTRIAL OPERATIONS COMMAND

APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND

William J Ernst

DEFENSE AMMUNITION CENTER

ENGINEER	BASIC		
	REV.	MICHAEL SARDONE	
TECHNICIAN	BASIC	PATTY BRIGHT	
	REV.		
DRAFTSMAN	BASIC	PHYLLIS BELLICH	
	REV.		
TRANSPORTATION ENGINEERING DIVISION		William R. Trench	
VALIDATION ENGINEERING DIVISION		Jerome H. Kaplan (TESTED)	
LOGISTICS ENGINEERING OFFICE		William J Ernst	

DO NOT SCALE

WEBSITE: HTTP://WWW.DAC.ARMY.MIL

JULY 1993

REVISION NO. 1 — JUNE 1997

SEE THE REVISION LISTING ON PAGE 2

CLASS	DIVISION	DRAWING	FILE
19	48	8507	SP11M11

PROJECT SP 209-92

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 CONTAINED HEREIN ARE APPLICABLE TO CBU ITEMS WHEN THEY ARE PACKAGED IN THE CNU-79/E CONTAINER. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CNU-79/E CONTAINER WITH CONTENTS.

C. FOR DETAILS OF THE 116" LONG CONTAINER, SEE DRAWING NO. 9256640 AND PAGE 3 OF THIS DOCUMENT.

CONTAINER DIMENSIONS - - - 116" LONG X 31-3/8" WIDE X 31-1/4" HIGH
GROSS WEIGHT - - - - - - - - - - - 1,489 - 1,610 POUNDS (APPROX)

FOR DETAILS OF THE 104" LONG CONTAINER, SEE DRAWING NO. 9264363.

CONTAINER DIMENSIONS - - - 104" LONG X 31-3/8" WIDE X 31-1/4" HIGH
GROSS WEIGHT - - - - - - - - - - - 1,085 POUNDS (APPROX)

D. THE LOADS SHOWN HEREIN ARE BASED ON 8'-0" WIDE BY 40'-0" LONG FLATBED TRAILERS. WIDER TRAILERS AND TRAILERS OF OTHER LENGTHS MAY BE USED. TRAILERS MUST HAVE WOOD OR WOOD AND METAL FLOORS. TRAILERS HAVING ALL-METAL FLOORS CANNOT BE USED. CAUTION: IF THE TRAILER FLOOR IS EQUIPPED WITH EXPOSED METAL DECKING ABOVE THE BOGIE ASSEMBLY, OR ELSEWHERE, FIELD MEASUREMENTS SHOULD BE MADE TO ENSURE THAT THE METAL DECKING DOES NOT INTERFERE WITH THE PROPER POSITIONING AND NAILING OF THE DUNNAGE AS SPECIFIED BY THE PROCEDURES SHOWN HEREIN.

E. SELECTION OF A VEHICLE USED TO TRANSPORT THE DESIGNATED ITEM MUST COMPLY WITH AR 55-355, CHAPTER 29, FOR EXPLOSIVES AND OTHER DANGEROUS ARTICLES, IN FULL.

F. GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY.

G. NOTICE: A SHIPMENT WILL BE POSITIONED ON A TRAILER CONSISTENT WITH STATE WEIGHT LAWS.

H. OTHER TYPES OF LADING ITEMS MAY BE LOADED ON A TRAILER WHICH IS PARTIALLY LOADED WITH THE DESIGNATED ITEM, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIVES ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

(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.
STRAP, WEB	WEB SLING AND TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.
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.
STAPLE, STRAP	COMMERCIAL GRADE.
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.
CHAIN	NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.
LOAD BINDER	FED SPEC GGG-B-325.

(GENERAL NOTES CONTINUED)

J. CAUTION: REGARDLESS OF THE TYPE OF TRAILER INVOLVED, ONLY THOSE TRAILERS HAVING TIEDOWN ANCHORING FACILITIES WHICH PROVIDE HOLDING STRENGTH EQUAL TO OR GREATER THAN THE STRENGTH OF THE HOLD-DOWN STRAPS OR CHAINS AND WHICH ALIGN NEAR THE INDICATED LOCATIONS FOR THE HOLD-DOWN STRAPS OR CHAINS SHOULD BE USED. IF THE TRAILER ANCHOR DEVICES ARE NOT PROPERLY POSITIONED TO RECEIVE STRAPPING OR CHAINS, AS SHOWN, OR IF THE ANCHOR DEVICES ARE NOT EQUAL TO OR GREATER THAN THE STRENGTH OF THE TIEDOWN STRAPS OR CHAINS, STEEL STRAPS MAY BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED. CAUTION: AVOID TRAILER WHEELS, FIFTH WHEEL PLATE CONTROLS AND OTHER APPURTENANCES. USE EDGE PROTECTORS OR PADS ON ALL SHARP EDGES. NEITHER CHAINS NOR WEB STRAPS WILL BE APPLIED TO FORM A COMPLETE LOOP WHICH ENCOMPASSES BOTH THE LADING AND THE TRAILER FRAME AND/OR BED.

K. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 6"MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE AND 1" X 4" MATERIAL IS ACTUALLY 3/4" THICK BY 3-1/2" WIDE.

L. A STAGGERED NAILING PATTERN WILL BE USED WHEN DUNNAGE IS NAILED TO THE FLOOR OF THE TRANSPORTING VEHICLE, OR WHEN LAMINATING DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN FLOOR BOARDS. 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.

M. 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 "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

N. FOR ADDITIONAL GUIDANCE, ATTENTION IS DIRECTED TO THE "SPECIAL NOTES" SECTION WHICH IS IMMEDIATELY ADJACENT TO A DEPICTED OUTLOADING METHOD.

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.

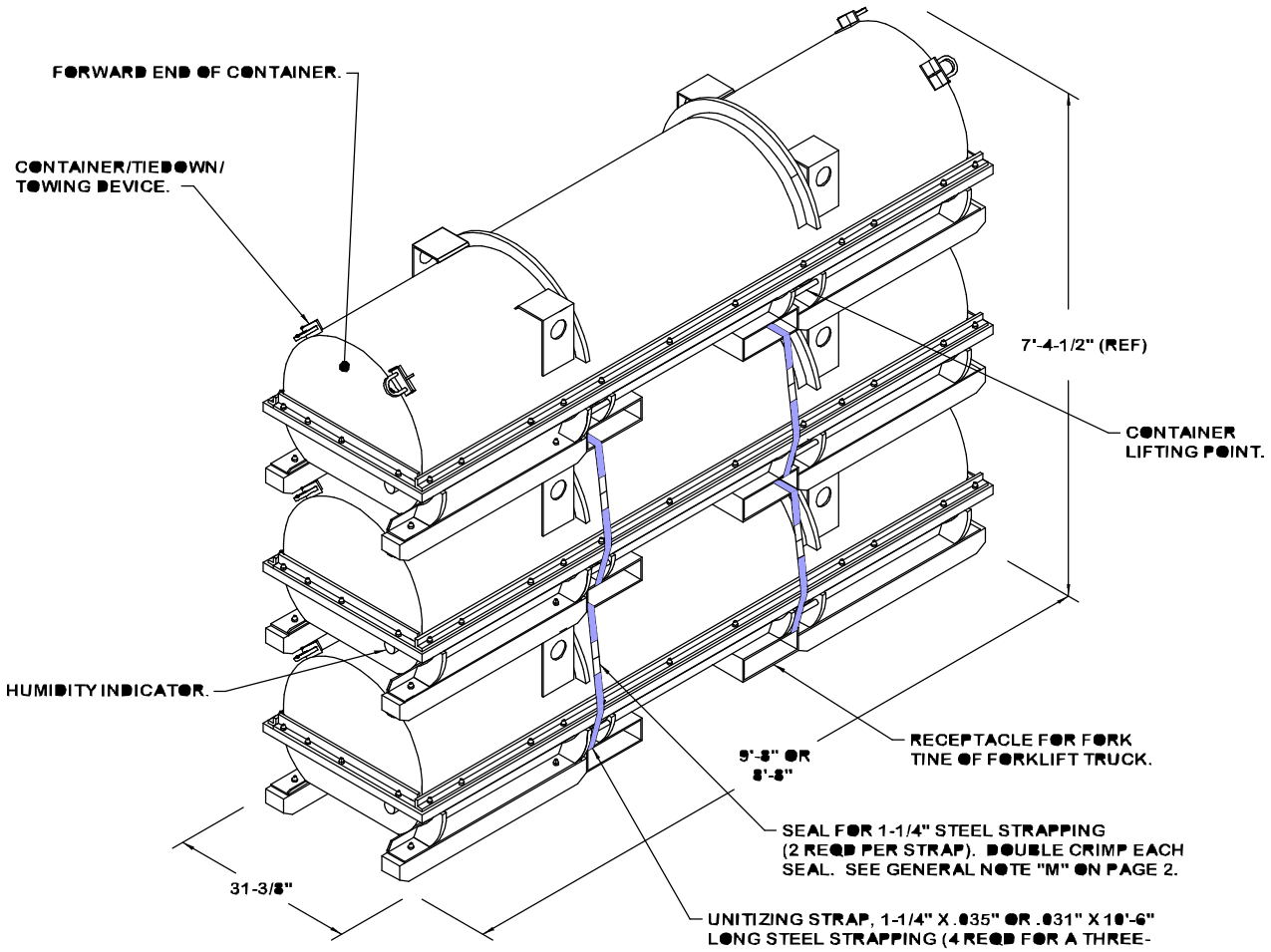
P. IF CHAINS AND LOAD BINDERS ARE BEING USED IN LIEU OF STEEL STRAPPING, THE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 20 MUST BE APPLIED TO ENSURE ADEQUATE SECUREMENT OF THE LOAD PRIOR TO SHIPMENT. SEE THE LOAD VIEW AND SPECIAL NOTES ON PAGES 6 AND 7 FOR THE 116" LONG CONTAINER, OR THE LOAD VIEW AND SPECIAL NOTES ON PAGES 12 AND 13 FOR THE 104" LONG CONTAINER.

Q. THE TRANSPORTING VEHICLE OPERATOR SHOULD BE INSTRUCTED TO PERIODICALLY INSPECT THE TIEDOWN CHAINS AND LOAD BINDERS DURING TRANSIT AND TIGHTEN IF NECESSARY.

R. IF WEB STRAPS ARE BEING USED IN LIEU OF STEEL STRAPPING, THE "SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN" ON PAGE 9 MUST BE APPLIED TO ENSURE ADEQUATE SECUREMENT OF THE LOAD PRIOR TO SHIPMENT. SEE THE LOAD VIEW AND SPECIAL NOTES ON PAGES 8 AND 9 FOR THE 116" LONG CONTAINER, OR THE LOAD VIEW AND SPECIAL NOTES ON PAGES 14 AND 15 FOR THE 104" LONG CONTAINER.

REVISION

1. ADJUSTING CONTAINER DIMENSIONS AND WEIGHTS.
2. ADDING PROCEDURES FOR WEB STRAP TIEDOWN.
3. INCLUDING PROVISIONS FOR THE USE OF FIRE HOSE.
4. UPDATING DRAWING FORMAT.



TYPICAL STACK DETAIL

116" LONG CONTAINER SHOWN.

UNITIZATION AND HANDLING PROCEDURES

1. STACKING AND UNITIZATION PROCEDURES:

   A. AN UPPER CONTAINER SHOULD BE PLACED AS CLOSE AS POSSIBLE IN VERTICAL ALIGNMENT WITH THE NEXT LOWER CONTAINER.

   B. POSITION THE AFT END OF AN UPPER CONTAINER ABOVE THE AFT END OF THE NEXT LOWER CONTAINER.

   C. THE CONTAINER SKIDS OF AN UPPER CONTAINER SHOULD BE FULLY SEATED UPON THE STACKING PADS ON THE COVER OF THE NEXT LOWER CONTAINER.

2. INSTALLATION OF 1-1/4" X .035" OR .031" UNITIZING STEEL STRAPPING. SEE GENERAL NOTE "M" ON PAGE 2.

   A. EACH OF THE TWO SETS OF UNITIZING STRAPS SHOULD BE POSITIONED AROUND THE CONTAINERS AS SHOWN; THREAD STRAPPING THROUGH THE FORK TINE RECEPTACLES OF THE TWO LOWER CONTAINERS, AND/OR THROUGH THE FORK TINE RECEPTACLES OF THE TWO UPPER CONTAINERS, AS NEAR AS PRACTICAL TO THE INSIDE ENDS OF THE CONTAINER SKIDS. PLACE STRAPPING SO THAT IT LAYS FLAT AND STRAIGHT WITH THE BODY SURFACES OF THE CONTAINERS; I.E., VERTICAL ALONG SIDES AND STRAIGHT ACROSS TOP AND BOTTOM OF THE STACK.

   B. STRAPPING WILL BE FIRMLY TENSIONED, AND EACH END-OVER-END LAP JOINT WILL BE SEALED WITH TWO DOUBLE-CRIMPED STRAP SEALS AS SHOWN. THE LAP JOINTS WILL BE MADE ALONG THE SIDE OF THE STACK SO THAT THE SEALS WILL NOT BE IN CONTACT WITH THE CONTAINERS. DURING STRAP TENSIONING, CARE SHOULD BE EXERCISED TO ENSURE THAT THE CONTAINERS ARE NOT DAMAGED. EXCESS STRAPPING (STRAP ENDS) SHOULD BE CUT OFF OF BROKEN OFF NEAR THE JOINT SEALS.

(CONTINUED AT RIGHT)

(UNITIZING AND HANDLING PROCEDURES CONTINUED)

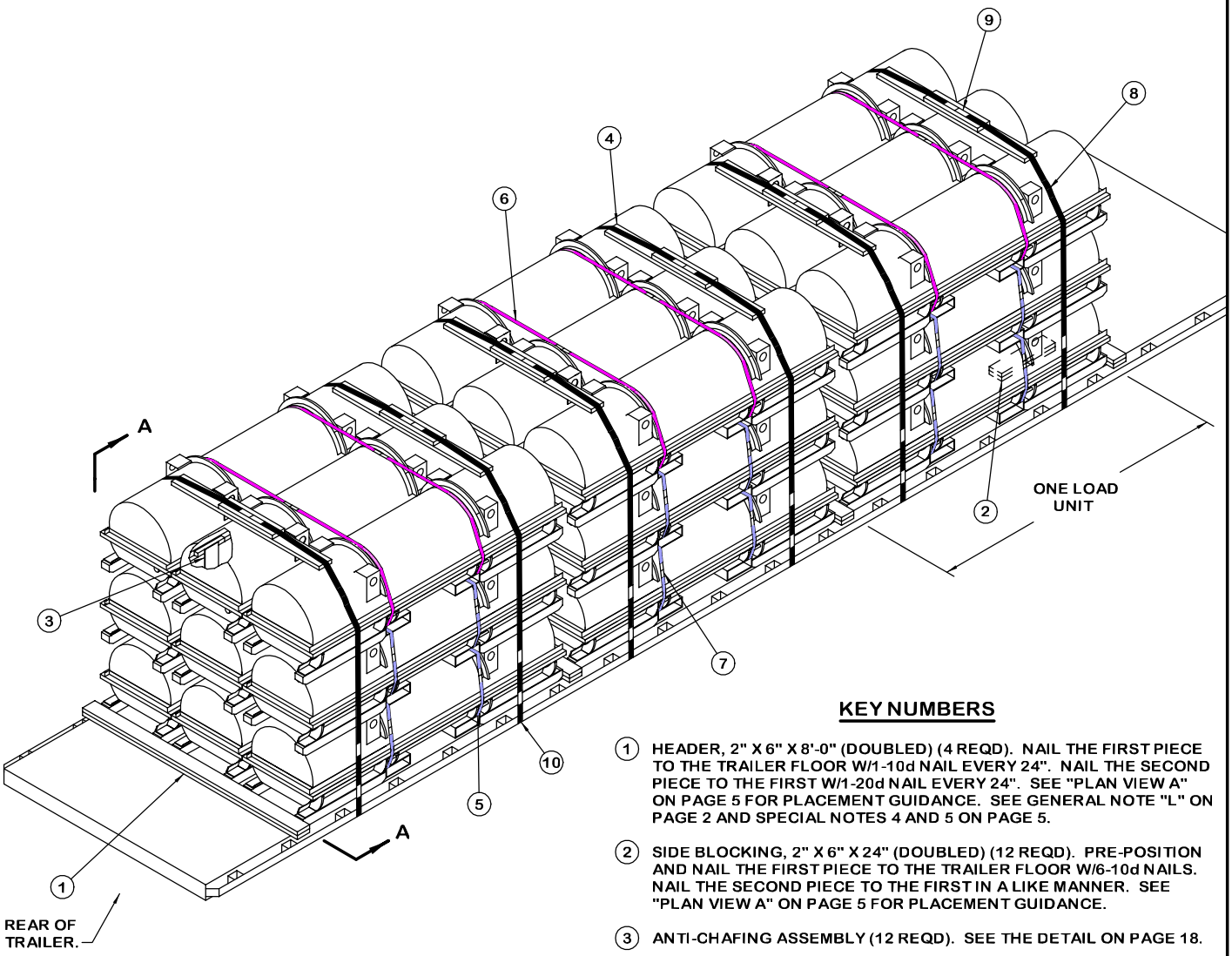
3. CONTAINER OR CONTAINER STACK HANDLING PROCEDURES.

   A. APPROVED MATERIAL HANDLING EQUIPMENT (FORKLIFT TRUCKS, CRANES, HAND TRUCKS, DOLLIES, ROLLER ASSEMBLIES, SLINGS, SPREADER BARS, ETC.) IS SPECIFIED IN OTHER DOCUMENTS. PRECAUTIONARY HANDLING TECHNIQUES NORMALLY EMPLOYED OR AS SPECIFIED FOR THE TYPE OF COMMODITY INVOLVED WILL BE OBSERVED.

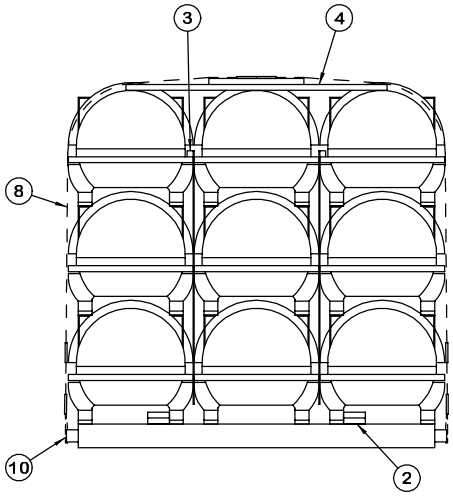
   B. ONLY APPROVED AND APPROPRIATELY SIZED MATERIALS HANDLING EQUIPMENT WILL BE USED FOR HANDLING THE DEPICTED CONTAINERS.

   C. IF HANDLING IS ACCOMPLISHED WITH A FORKLIFT TRUCK, THE CONTAINERS SHOULD BE HANDLED FROM A SIDE POSITION. CAUTION: END HANDLING IS NOT PERMITTED. FOR VERY SHORT "INCHING" SPEED MOVEMENTS, SUCH AS WILL BE EXPERIENCED DURING TRUCK LOADING, A UNITIZED TWO OR THREE-HIGH CONTAINER STACK MAY BE HANDLED BY INSERTING THE FORKS OF A FORKLIFT TRUCK INTO THE SECOND LAYER CONTAINER FORK TINE RECEPTACLES.

   D. IF ONE CONTAINER IS HANDLED BY SLINGING, THE SLING MAY BE ATTACHED TO THE LIFTING POINTS ON THE CONTAINER. HOWEVER, IF A TWO OR THREE-HIGH STACK IS HANDLED BY SLING, DO NOT ATTACH THE SLING TO THE LIFTING POINTS ON A CONTAINER. THE SLING USED MUST BE OF SUCH A DESIGN THAT LIFTING IS DONE ON THE BOTTOM OF THE LOWEST CONTAINER.



ISOMETRIC VIEW



SECTION A-A

PIECES MARKED ⑤ THRU ⑦
OMITTED FOR CLARITY.

KEY NUMBERS

① HEADER, 2" X 6" X 8'-0" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW A" ON PAGE 5 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2 AND SPECIAL NOTES 4 AND 5 ON PAGE 5.

② SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW A" ON PAGE 5 FOR PLACEMENT GUIDANCE.

③ ANTI-CHAFING ASSEMBLY (12 REQD). SEE THE DETAIL ON PAGE 18.

④ STRAPPING BOARD ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 17.

⑤ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (36 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT. SEE SPECIAL NOTE 2 ON PAGE 5.

⑥ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (6 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN.

⑦ SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

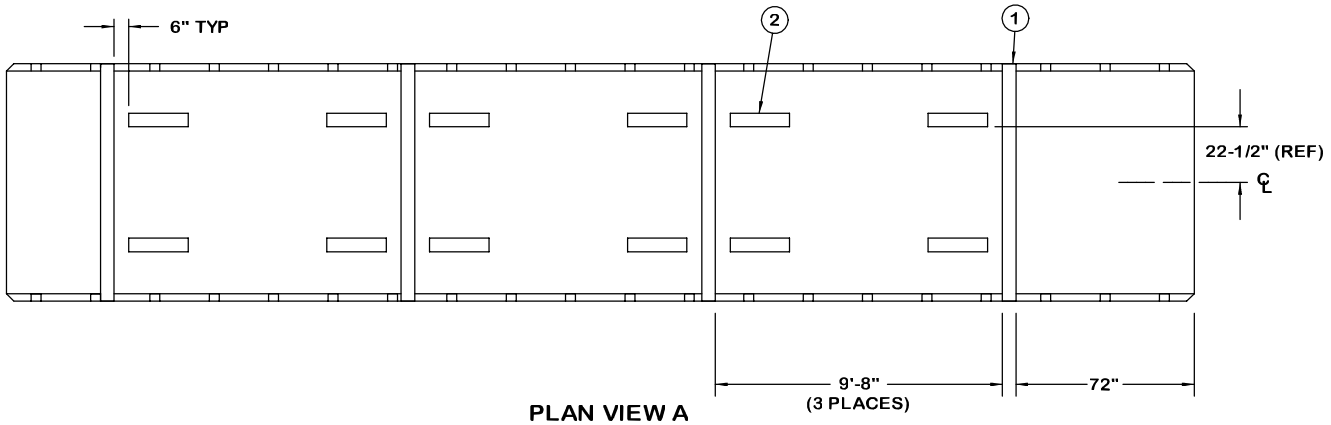
⑧ HOLD-DOWN STRAP, 2" X . 050" OR .044" X 31'-0" LONG STEEL STRAPPING (6 REQD). INSTALL EACH STRAP FROM TWO 15'-6" LONG PIECES. STAPLE TO THE STRAPPING BOARD ASSEMBLY W/2 STAPLES. SEE GENERAL NOTE "J" ON PAGE 2.

⑨ SEAL FOR 2" STEEL STRAPPING (36 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED ⑩. SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

⑩ PAD, 2" X .050" OR .044" X 18" LONG STEEL STRAPPING (12 REQD). POSITION UNDER ANCHORING FACILITY AND SEAL TO HOLD-DOWN STRAPS, PIECES MARKED ⑧. ALT: STAKE POCKET PROTECTOR (24 REQD). USE TWO UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 19.

(116" LONG CONTAINER)
27-CONTAINER LOAD ON A 40'-0" LONG TRAILER

PROJECT SP 209-92



PLAN VIEW A

(116" LONG CONTAINER)

SPECIAL NOTES:

1. A 27-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED.

2. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

3. THE DEPICTED LOAD CAN BE REDUCED BY ONE OR TWO CONTAINERS BY FORMING ONE OR TWO 8-CONTAINER LOAD UNITS AS SHOWN BY THE REAR LOAD UNIT ON PAGE 16. THE LOAD CAN BE REDUCED BY MULTIPLES OF THREE CONTAINERS BY OMITTING COMPLETE LAYERS FROM THE TOP OF ONE OR MORE LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR ADDITIONAL GUIDANCE.

4. THE 72" LOCATION DIMENSION AT THE FRONT OF THE TRAILER SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED OTHER THAN AT THE EXTREME REAR, THE LOCATION DIMENSION SHOULD BE 42". FOR 45-FOOT LONG TRAILERS, THE LOCATION DIMENSIONS SHOULD BE APPROXIMATELY 8'-0" FOR "WESTERN" TYPE TRAILERS AND 66" FOR TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT. SEE SPECIAL NOTE 6.

5. IF DESIRED, THE LOAD UNITS MAY BE SEPARATED SIMILAR TO THE LOAD PATTERN SHOWN FOR THE CHAIN TIEDOWN METHOD ON PAGES 6 AND 7. SEE SPECIAL NOTE 5 ON PAGE 7 FOR WEIGHT DISTRIBUTION GUIDANCE.

6. IF A 45-FOOT OR 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR LOAD UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. A 27-UNIT LOAD SHOULD CONSIST OF THREE LOAD UNITS OF SIX CONTAINERS AND ONE LOAD UNIT OF NINE. FOR A 45-FOOT CONTAINER HAVING REAR TANDEMS LOCATED IN THE "WESTERN" POSITION, THE FRONT HEADER CAN BE LOCATED 24" FROM THE TRAILER FRONT. THE 9-CONTAINER LOAD UNIT SHOULD BE THE THIRD LOAD UNIT FROM THE FRONT. FOR A 45-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED AT OTHER THAN THE "WESTERN" POSITION, THE FRONT HEADER CAN BE LOCATED AT THE SAME 24" AND THE 9-CONTAINER LOAD UNIT SHOULD BE THE SECOND LOAD UNIT FROM THE FRONT. FOR A 48-FOOT TRAILER, THE FRONT HEADER CAN BE 42" FROM THE TRAILER FRONT AND THE 9-CONTAINER LOAD UNIT SHOULD BE THE SECOND LOAD UNIT FROM THE FRONT. THESE LOAD PATTERNS WILL ALLOW FOR A 25 LINEAR FOOT SAVING IN 1-1/4" STEEL STRAPPING BUT WILL REQUIRE AN ADDITIONAL 32 LINEAR FEET OF 2" X 6" MATERIAL.

BILL OF MATERIAL

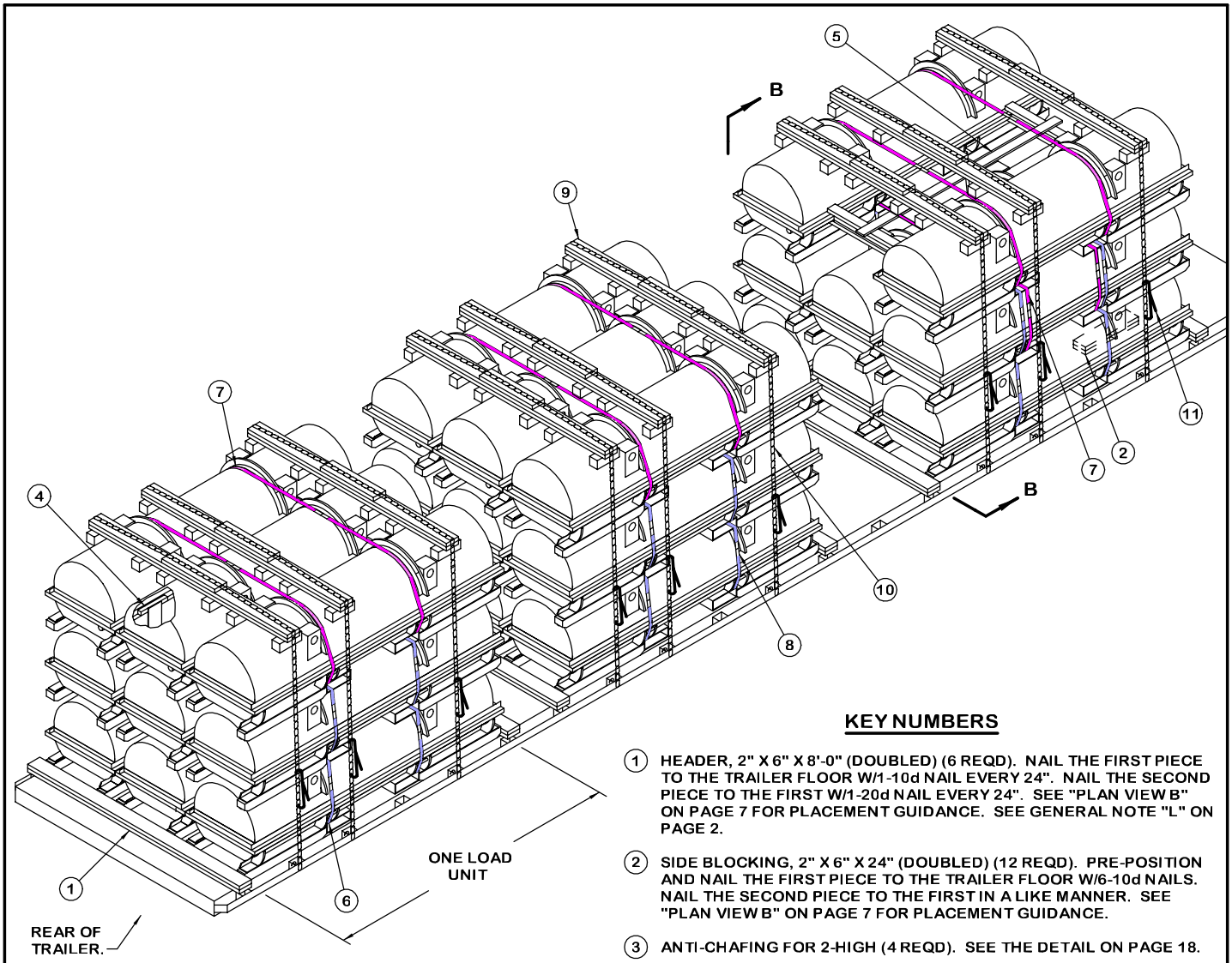
LUMBER	LINEAR FEET	BOARD FEET
2" X 2" 2" X 6"	12 157	4 157
NAILS	**NO. REQD**	**POUNDS**
4d (1") 10d (3") 20d (4")	36 178 16	NIL 2-3/4 3/4

1/4" PLYWOOD - - - - - - - - 2 SHEETS REQD - - - - - - - - - - 44 LBS
1-1/4" STEEL STRAPPING - - - - 492' REQD - - - - - - - - - - 71 LBS
2" STEEL STRAPPING - - - - - - - 204' REQD - - - - - - - - - - 68 LBS
SEAL FOR 1-1/4" STRAPPING - - - 84 REQD - - - - - - - - - - 4 LBS
SEAL FOR 2" STRAPPING - - - - - 36 REQD - - - - - - - - - - - 8 LBS
STAPLE FOR 2" STRAPPING - - - 12 REQD - - - - - - - - - - - - NIL

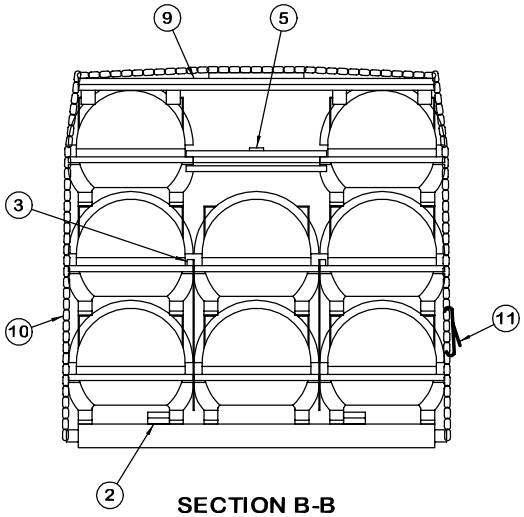
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	27	43,200 LBS
DUNNAGE		521 LBS
TOTAL WEIGHT		43,721 LBS (APPROX)

(116" LONG CONTAINER)
27-CONTAINER LOAD ON A 40'-0" LONG TRAILER



ISOMETRIC VIEW



SECTION B-B

PIECES MARKED (6) THRU (8) OMITTED FOR CLARITY.

KEY NUMBERS

(1) HEADER, 2" X 6" X 8'-0" (DOUBLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW B" ON PAGE 7 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2.

(2) SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW B" ON PAGE 7 FOR PLACEMENT GUIDANCE.

(3) ANTI-CHAFING FOR 2-HIGH (4 REQD). SEE THE DETAIL ON PAGE 18.

(4) ANTI-CHAFING FOR 3-HIGH (8 REQD). SEE THE DETAIL ON PAGE 18.

(5) ANTI-SWAY BRACE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 17.

(6) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (34 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT.

(7) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (8 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN. INSTALL TWO SIMILARLY, TO ENCIRCLE THE SECOND LAYER OF AN 8-CONTAINER LOAD UNIT.

(8) SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

(9) CHAIN BOARD (9 REQD). SEE THE "CHAIN BOARD ASSEMBLY" DETAIL ON PAGE 18.

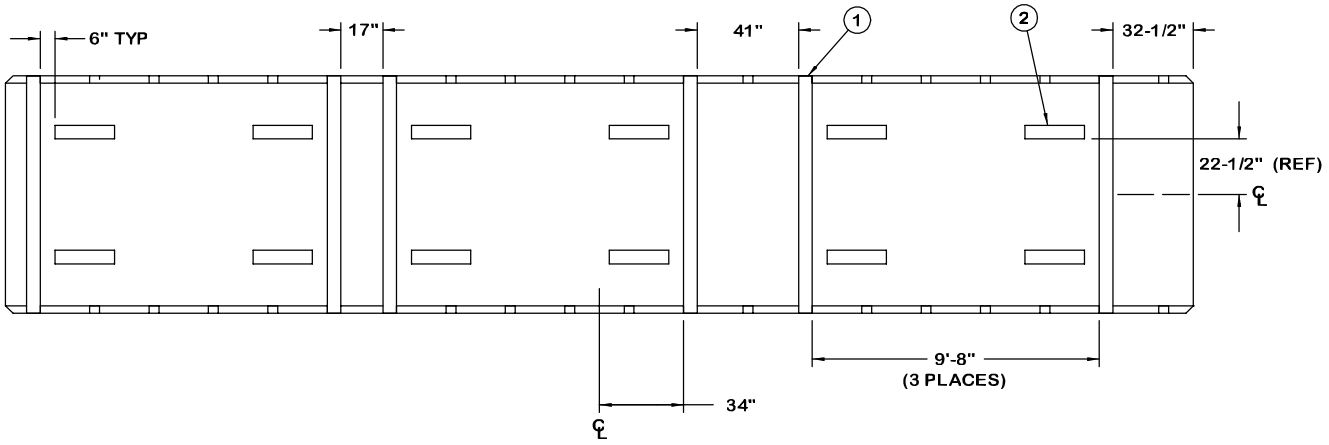
(10) CHAIN, BINDING, 5/16" GRADE 70 BY A LENGTH TO SUIT (9 REQD). POSITION AS SHOWN ABOVE, FASTENING THE CHAIN TO THE TRAILER STAKE POCKETS. SEE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 20.

(11) LOAD BINDER, 5/16", OVER-CENTER TYPE (9 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED (10), TO THE CHAIN BOARD ASSEMBLY, PIECE MARKED (9), W/1-20d NAIL AT EACH END, BENDING OVER TO FORM A LOOP AROUND THE CHAIN LINK. SEE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 20.

(116" LONG CONTAINER)

26-CONTAINER LOAD ON A 40'-0" LONG TRAILER (CHAIN TIEDOWN METHOD)

PROJECT SP 209-92



PLAN VIEW B

(116" LONG CONTAINER)

(SPECIAL NOTES CONTINUED)

6. IF A 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. THE FRONT HEADER SHOULD BE 8-1/2" FROM THE FRONT AND THERE SHOULD BE 17" BETWEEN THE HEADERS BETWEEN LOAD UNITS BASED ON A TRAILER EQUIPPED WITH THE FRONT AND REAR POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. A 26-UNIT LOAD SHOULD CONSIST OF THREE LOAD UNITS OF SIX CONTAINERS AND ONE LOAD UNIT OF EIGHT. THE 8-CONTAINER LOAD UNIT SHOULD BE THE THIRD LOAD UNIT FROM THE FRONT. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT. THIS LOAD PATTERN WILL ALLOW FOR A 25 LINEAR FOOT SAVINGS IN 1-1/4" STEEL STRAPPING BUT WILL REQUIRE AN ADDITIONAL 48 LINEAR FEET OF 2" X 6" MATERIAL. A 45-FOOT TRAILER IS NOT LONG ENOUGH TO ALLOW POSITIONING OF FOUR LOAD UNITS WITH THE REQUIRED SPACING BETWEEN LOAD UNITS TO PROVIDE PROPER ALIGNMENT OF CONTAINERS FOR ATTACHMENT OF THE CHAINS.

SPECIAL NOTES:

1. A 26-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED. SEE SPECIAL NOTE 6.

2. NOTE: THE CHAINS MUST BE ATTACHED TO THE TRAILER STAKE POCKETS AND VERTICALLY IN LINE WITH THE CHAIN BOARDS. THE CHAIN BOARDS CAN BE SHIFTED LEFT OR RIGHT TO PROVIDE FOR VERTICAL ALIGNMENT. SEE GENERAL NOTES "P" AND "Q" ON PAGE 2.

3. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

4. THE DEPICTED LOAD CAN BE INCREASED BY OMITTING PIECE MARKED ⑤ IN THE LOAD VIEW, AND FORMING AN ADDITIONAL 9-CONTAINER LOAD UNIT AT THE FORWARD END OF THE TRAILER; REVERSE THIS PROCEDURE OF DECREASING THE QUANTITY BY TWO CONTAINERS. THE LOAD CAN BE REDUCED BY MULTIPLES OF THREE CONTAINERS BY OMITTING COMPLETE LAYERS FROM THE TOP OF ONE OR MORE LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR GUIDANCE.

5. THE DIMENSIONS SHOWN AT THE FRONT OF THE TRAILER AND BETWEEN THE LOAD UNITS SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT LONG TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN THE EXTREME REAR, THE DIMENSIONS SHOULD BE 8-1/2", 17, AND 41" FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. FOR 45-FOOT LONG TRAILERS HAVING REAR TANDEMS IN THE "WESTERN" POSITION. THE LOCATION DIMENSIONS SHOULD BE 26-1/2", 65", AND 41" FROM FRONT TO REAR, RESPECTIVELY. FOR 45-FOOT TRAILERS WHICH HAVE THE REAR TANDEMS LOCATED AT OTHER THAN THE EXTREME REAR, THE DIMENSIONS SHOULD BE 26-1/2", 17" AND 7'-5" FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT, PROVIDING THE LOAD UNITS ARE LOCATED SO THE CHAINS EXTEND OVER THE CONTAINERS AT THE APPROXIMATE LOCATIONS SHOWN.

(CONTINUED AT LEFT)

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	13	5
2" X 2"	12	4
2" X 4"	17	12
2" X 6"	297	297
4" X 4"	45	60
NAILS	**NO. REQD**	**POUNDS**
4d (1")	36	NIL
6d (2")	16	NIL
10d (3")	277	4-1/2
16d (3-1/2")	18	1/2
20d (4")	132	5

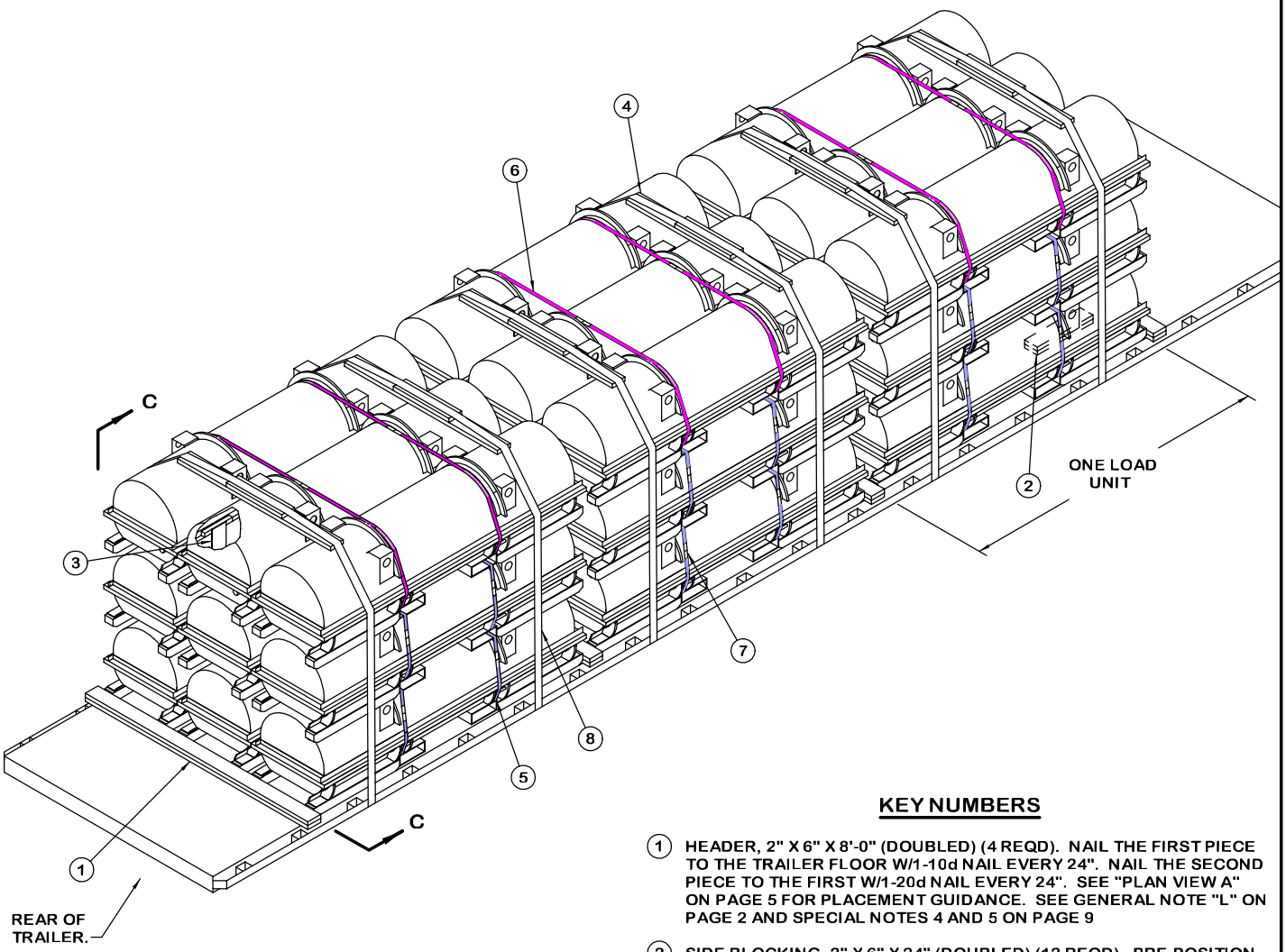
1/4" PLYWOOD	2 SHEETS REQD	44 LBS
1-1/4" STEEL STRAPPING	509' REQD	73 LBS
SEAL FOR 1-1/4" STRAPPING	84 REQD	4 LBS
CHAIN, BINDING, 5/16"	212' REQD	255 LBS
BINDER, LOAD	9 REQD	54 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	26	41,600 LBS
DUNNAGE		1,196 LBS
TOTAL WEIGHT		42,796 LBS (APPROX)

(116" LONG CONTAINER)
26-CONTAINER LOAD ON A 40'-0" LONG TRAILER (CHAIN TIEDOWN METHOD)

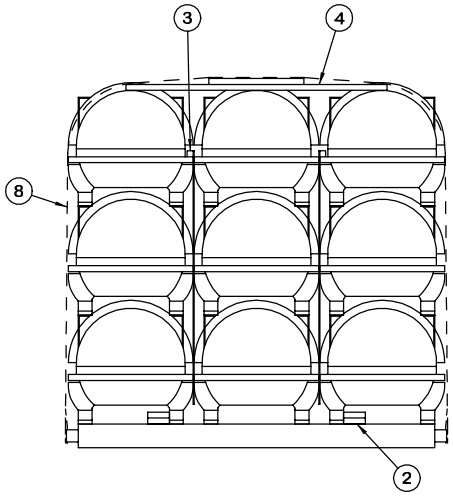
PROJECT SP 209-92



ISOMETRIC VIEW

KEY NUMBERS

1. HEADER, 2" X 6" X 8'-0" (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW A" ON PAGE 5 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2 AND SPECIAL NOTES 4 AND 5 ON PAGE 9
2. SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW A" ON PAGE 5 FOR PLACEMENT GUIDANCE.
3. ANTI-CHAFING ASSEMBLY (12 REQD). SEE THE DETAIL ON PAGE 18.
4. STRAPPING BOARD ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 17.
5. STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (36 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT. SEE SPECIAL NOTE 2 ON PAGE 9.
6. BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (6 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN.
7. SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.
8. WEB STRAP ASSEMBLY (6 REQD). POSITION TO EXTEND FROM A WINCH ON ONE SIDE OF THE TRAILER, OVER THE CONTAINERS, TO AN ATTACHMENT POINT ON THE OPPOSITE SIDE. SEE THE "SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN" ON PAGE 9.



SECTION C-C

PIECES MARKED ⑤ THRU ⑦ OMITTED FOR CLARITY.

(116" LONG CONTAINER)

27-CONTAINER LOAD ON A 40'-0" LONG TRAILER (WEB STRAP TIEDOWN METHOD)

PROJECT SP 209-92

SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN

LADING MAY BE SECURED TO A FLATBED TRAILER BY WEB STRAP ASSEMBLIES IN LIEU OF STEEL STRAPPING OR CHAINS AND LOAD BINDERS, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. ONLY WEB STRAPS OF GOOD QUALITY WILL BE USED. ALL WEB STRAPS AND ASSOCIATED HARDWARE SHALL CONFORM TO THE WEB SLING & TIEDOWN ASSOCIATION RECOMMENDED STANDARD SPECIFICATION FOR SYNTHETIC WEB TIEDOWNS, FIRST PUBLISHED IN 1991.

2. ALL WEB STRAP TIEDOWN ASSEMBLIES SHALL BE PERMANENTLY LABELED WITHIN 18" OF ONE END TO SHOW:

   A. NAME OR TRADEMARK OF MANUFACTURER

   B. WORKING LOAD LIMIT (WLL)

   C. DATE OF MANUFACTURE (MONTH AND YEAR)

3. WEB STRAP ASSEMBLY MINIMUM BREAKING STRENGTH WILL BE AT LEAST THREE TIMES THE WLL MARKED ON THE STRAP.

4. THE TOTAL MINIMUM BREAKING STRENGTH (MBS) OF THE STRAPS USED TO RESTRAIN AMMUNITION ITEMS WILL BE AT LEAST 1-1/2 TIMES THE TOTAL WEIGHT OF THE ITEMS, WITH A MINIMUM OF TWO STRAPS POSITIONED OVER EACH LOAD UNIT ON A TRAILER. WRITTEN PROOF OF THE MBS OF THE STRAPS SHALL BE PROVIDED BY THE CARRIER TO THE SHIPPING ACTIVITY IF REQUESTED.

5. CARRIERS MUST COMPLY WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS APPLICABLE TO CARGO RESTRAINT USING WEB STRAPS.

6. WHEN USING STRAPS AND WINCHES FOR CARGO RESTRAINT, THE STRAPS WILL BE TENSIONED UNTIL TIGHT WITHOUT CAUSING DAMAGE TO THE CARGO. ONLY WINCH BARS WILL BE USED FOR OPERATING THE STRAP WINCHES.

7. BEFORE AND DURING INSTALLATION, THE WEB STRAP ASSEMBLIES SHALL BE INSPECTED FOR DEFECTS. STRAPS HAVING ANY OF THE FOLLOWING DEFECTS WILL NOT BE USED FOR THE RESTRAINT OF ANY AMMUNITION LOAD, WITH THE EXCEPTION OF ONE WITH FRAYED ENDS. A STRAP HAVING FRAYED ENDS CAN BE USED IF THE FRAYED END IS TRIMMED AND MELTED WITH HEAT OR FLAME UNTIL ALL STRANDS ARE SEIZED.

   A. STRAP ASSEMBLY HARDWARE: SHALL BE INSPECTED FOR BENT HOOKS, GOUGES, CORROSION, SIGNS OF REPAIR, BENT RATCHETS OR WINCHES, WEAR, OR ANY OTHER NOTICEABLE DEFECTS.

   B. STRAP WEBBING: SHALL BE INSPECTED FOR KNOTS, EXCESSIVE ABRASIVE WEAR, TEARS, PUNCTURES, CUTS, ACID OR CAUSTIC BURNS, BROKEN STITCHES, FRAYED ENDS, OIL OR GREASE SPOTS EXCEEDING 6 SQUARE INCHES, BLEACHING OF COLOR, INCREASED STIFFNESS, SPLICES, VISIBLE WEAR INDICATOR THREADS, OR ANY OTHER NOTICEABLE DEFECTS.

8. RATCHET HANDLES MUST BE IN THE LOCKED POSITION AND/OR WINCH LOCKING DEVICES MUST BE FULLY SEATED IN THE TEETH OF THE WINCH.

9. IF THE WINCHES BEING USED ARE THE REMOVABLE TYPE HAVING BOLTS FOR ATTACHMENT TO THE TRAILER, CARE MUST BE EXERCISED WHEN ATTACHING THE WINCHES TO THE TRAILER. IF EXCESSIVE FORCE IS EXERTED ON THE BOLT DURING TENSIONING, DEFORMATION OF THE WINCH BRACKET MAY OCCUR, AND SUBSEQUENTLY CAUSE FAILURE OF THE WINCH BRACKET DURING TRANSPORT. WINCHES MUST BE FASTENED TO THE TRAILER WITH A MINIMUM OF TWO BOLTS.

(CONTINUED AT RIGHT)

SPECIAL NOTES:

1. A 27-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED.

2. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

3. THE DEPICTED LOAD CAN BE REDUCED BY ONE OR TWO CONTAINERS BY FORMING ONE OR TWO 8-CONTAINER LOAD UNITS AS SHOWN BY THE REAR LOAD UNIT ON PAGE 16. THE LOAD CAN BE REDUCED BY MULTIPLES OF THREE CONTAINERS BY OMITTING COMPLETE LAYERS FROM THE TOP OF ONE OR MORE LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR ADDITIONAL GUIDANCE.

4. THE 72" LOCATION DIMENSION AT THE FRONT OF THE TRAILER SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED OTHER THAN AT THE EXTREME REAR, THE LOCATION DIMENSION SHOULD BE 42". FOR 45-FOOT LONG TRAILERS, THE LOCATION DIMENSIONS SHOULD BE APPROXIMATELY 8'-0" FOR "WESTERN" TYPE TRAILERS AND 66" FOR TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT. SEE SPECIAL NOTE 6.

5. IF DESIRED, THE LOAD UNITS MAY BE SEPARATED SIMILAR TO THE LOAD PATTERN SHOWN FOR THE CHAIN TIEDOWN METHOD ON PAGES 6 AND 7. SEE SPECIAL NOTE 5 ON PAGE 7 FOR WEIGHT DISTRIBUTION GUIDANCE.

6. IF A 45-FOOT OR 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR LOAD UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. A 27-UNIT LOAD SHOULD CONSIST OF THREE LOAD UNITS OF SIX CONTAINERS AND ONE LOAD UNIT OF NINE. FOR A 45-FOOT CONTAINER HAVING REAR TANDEMS LOCATED IN THE "WESTERN" POSITION, THE FRONT HEADER CAN BE LOCATED 24" FROM THE TRAILER FRONT. THE 9-CONTAINER LOAD UNIT SHOULD BE THE THIRD LOAD UNIT FROM THE FRONT. FOR A 45-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED AT OTHER THAN THE "WESTERN" POSITION, THE FRONT HEADER CAN BE LOCATED AT THE SAME 24" AND THE 9-CONTAINER LOAD UNIT SHOULD BE THE SECOND LOAD UNIT FROM THE FRONT. FOR A 48-FOOT TRAILER, THE FRONT HEADER CAN BE 42" FROM THE TRAILER FRONT AND THE 9-CONTAINER LOAD UNIT SHOULD BE THE SECOND LOAD UNIT FROM THE FRONT. THESE LOAD PATTERNS WILL ALLOW FOR A 25 LINEAR FOOT SAVING IN 1-1/4" STEEL STRAPPING BUT WILL REQUIRE AN ADDITIONAL 32 LINEAR FEET OF 2" X 6" MATERIAL.

(SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN CONTINUED)

10. DRIVERS MUST BE INSTRUCTED TO PERIODICALLY CHECK THE TIGHTNESS OF THE WEB STRAP ASSEMBLIES AND RE-TIGHTEN, IF NECESSARY.

11. IF PROVIDED ON OR WITH THE WEB STRAP ASSEMBLIES, SCUFF SLEEVES/WEB PROTECTORS WILL BE USED WHEREVER THE STRAP PASSES OVER A SHARP CORNER OR IRREGULAR SURFACE. IF NOT PROVIDED, ANTI-CHAFING MATERIAL OF A SUITABLE THICKNESS WILL BE USED TO INSURE THAT THE STRAP WEBBING IS NOT DAMAGED DURING TRANSPORT OF THE LOAD.

12. THE HARDWARE FITTING OF THE TIEDOWN ASSEMBLIES MUST BE ATTACHED TO THE TRAILER IN SUCH A MANNER THAT THEY WILL REMAIN IN PLACE IF SLACK DEVELOPS IN THE STRAP DURING TRANSPORT.

BILL OF MATERIAL

LUMBER	LINEAR FEET	BOARD FEET
2" X 2" 2" X 6"	12 157	4 157
NAILS	**NO. REQD**	**POUNDS**
4d (1") 10d (3") 20d (4")	36 178 16	NIL 2-3/4 3/4
1/4" PLYWOOD -------- 2 SHEETS REQD ---------- 44 LBS		
1-1/4" STEEL STRAPPING ---- 492' REQD ---------- 71 LBS		
SEAL FOR 1-1/4" STRAPPING --- 84 REQD ---------- 4 LBS		
WEB STRAP ASSEMBLIES ---------- 6 REQD		

LOAD AS SHOWN

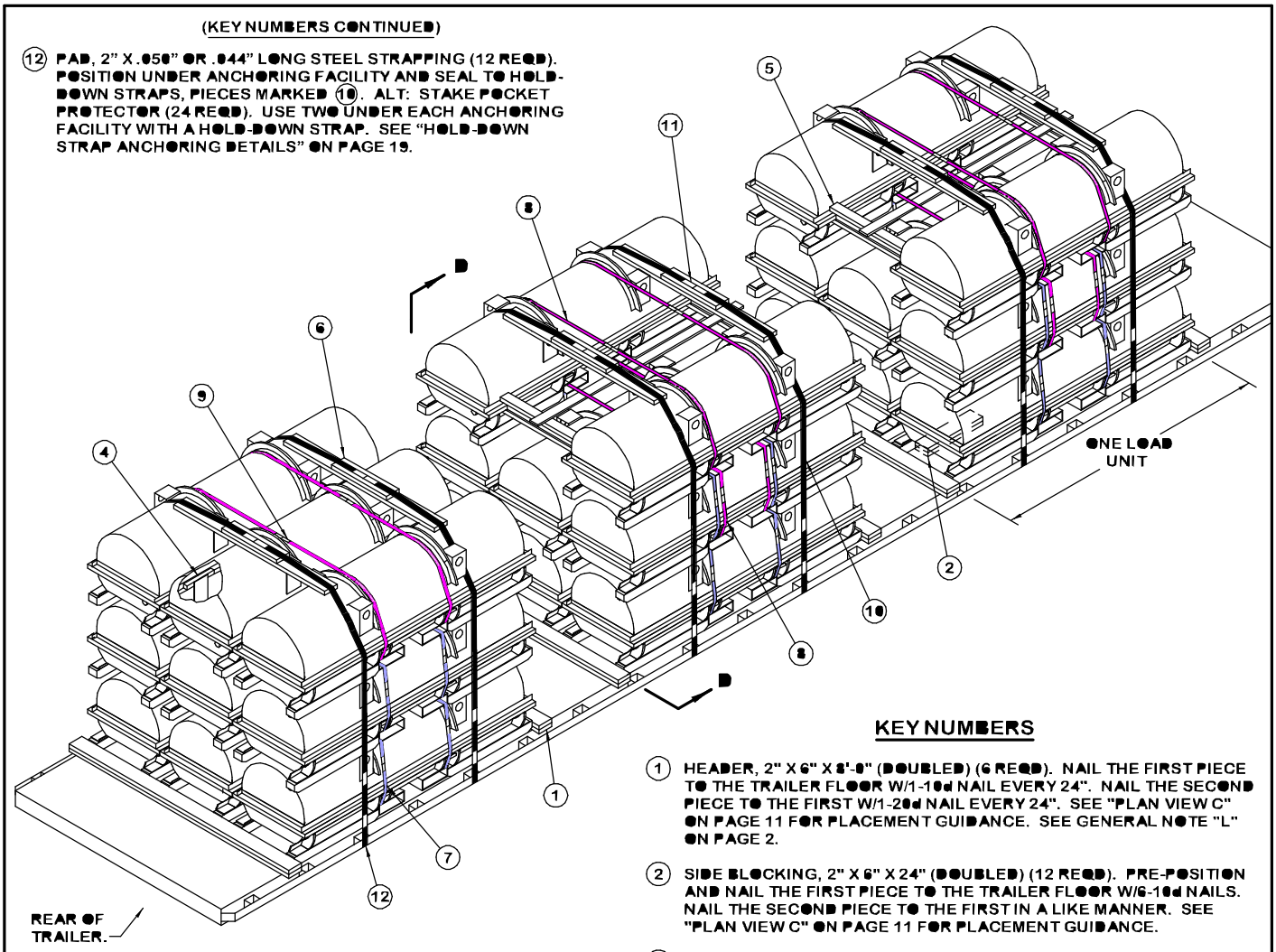
ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	27	43,200 LBS
DUNNAGE		521 LBS
TOTAL WEIGHT		43,721 LBS (APPROX)

(116" LONG CONTAINER)

27-CONTAINER LOAD ON A 40'-0" LONG TRAILER (WEB STRAP TIEDOWN METHOD)

(KEY NUMBERS CONTINUED)

(12) PAD, 2" X .050" OR .044" LONG STEEL STRAPPING (12 REQD). POSITION UNDER ANCHORING FACILITY AND SEAL TO HOLD-DOWN STRAPS, PIECES MARKED (10). ALT: STAKE POCKET PROTECTOR (24 REQD). USE TWO UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 19.



ISOMETRIC VIEW

KEY NUMBERS

(1) HEADER, 2" X 6" X 8'-0" (DOUBLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW C" ON PAGE 11 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2.

(2) SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW C" ON PAGE 11 FOR PLACEMENT GUIDANCE.

(3) ANTI-CHAFING FOR 2-HIGH (8 REQD). SEE THE DETAIL ON PAGE 18.

(4) ANTI-CHAFING FOR 3-HIGH (4 REQD). SEE THE DETAIL ON PAGE 18.

(5) ANTI-SWAY BRACE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 17.

(6) STRAPPING BOARD ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 17.

(7) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 16'-6" LONG STEEL STRAPPING (32 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT.

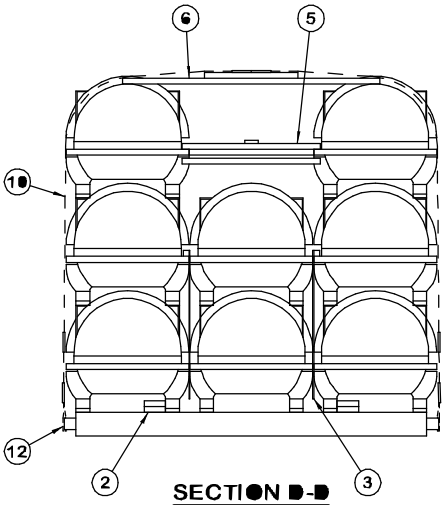
(8) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (10 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN. INSTALL TWO SIMILARLY, TO ENCIRCLE THE SECOND LAYER OF AN 8-CONTAINER LOAD UNIT.

(9) SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

(10) HOLD-DOWN STRAP, 2" X .050" OR .044" X 31'-0" LONG STEEL STRAPPING (6 REQD). INSTALL EACH STRAP FROM TWO 15'-6" LONG PIECES. STAPLE TO THE STRAPPING BOARD ASSEMBLY W/2 STAPLES. SEE GENERAL NOTE "J" ON PAGE 2.

(11) SEAL FOR 2" STEEL STRAPPING (36 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECES MARKED (12). SEE THE "HOLD-DOWN STRAP ANCHORING DETAILS" AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

(CONTINUED ABOVE)

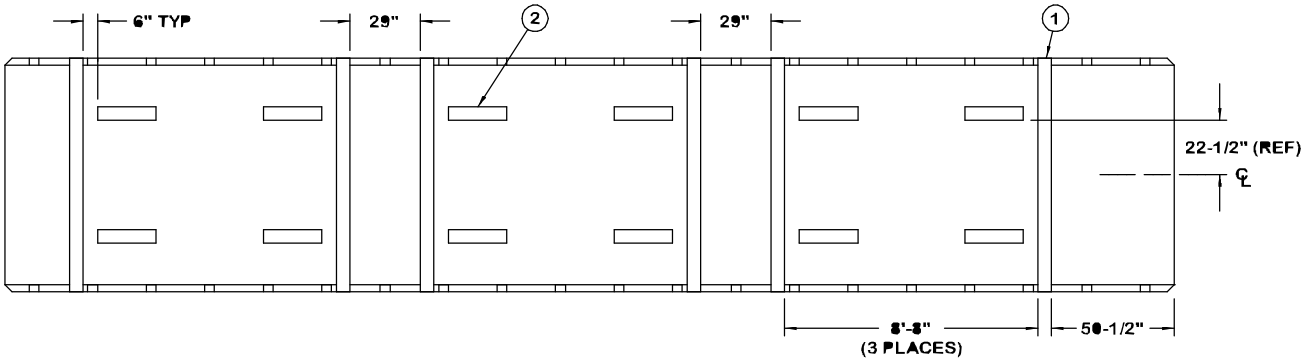


SECTION B-B

PIECES MARKED (7) THRU (9) OMITTED FOR CLARITY.

(104" LONG CONTAINER)

25-CONTAINER LOAD ON A 40'-0" LONG FLATBED TRAILER



PLAN VIEW C

(104" LONG CONTAINER)

(SPECIAL NOTES CONTINUED)

5. IF A 45-FOOT OR 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR LOAD UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. A 25-UNIT LOAD SHOULD CONSIST OF ONE LOAD UNIT OF FIVE, TWO LOAD UNITS OF SIX, AND ONE LOAD UNIT OF EIGHT. FOR 45-FOOT LONG TRAILERS WHICH HAVE THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION, THE FRONT HEADER SHOULD BE 26-1/2" FROM THE FRONT AND THERE SHOULD BE 5" BETWEEN THE OTHER HEADERS. FOR 45-FOOT TRAILERS HAVING THE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 8-1/2" AT THE FRONT AND 5", 29", AND 29" BETWEEN THE OTHER HEADERS FROM FRONT TO REAR RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE FIRST AND THE FOURTH LOAD UNITS SHOULD BE SIX CONTAINERS, THE SECOND SHOULD BE FIVE, AND THE THIRD LOAD UNIT SHOULD BE EIGHT CONTAINERS. FOR A 48-FOOT LONG TRAILER, THE FRONT HEADER SHOULD BE LOCATED 26-1/2" FROM THE FRONT, WITH THE OTHERS SPACED 5", 29", AND 29" FROM FRONT TO REAR. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE FIRST LOAD UNIT SHOULD BE FIVE CONTAINERS, THE SECOND AND FOURTH SHOULD BE SIX CONTAINERS, AND THE THIRD LOAD UNIT SHOULD BE EIGHT CONTAINERS. THE LOCATION DIMENSIONS AND CONTAINER PLACEMENTS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

SPECIAL NOTES:

1. A 25-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED.

2. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

3. THE DEPICTED LOAD CAN BE INCREASED BY OMITTING PIECE MARKED (5) IN THE LOAD VIEW, AND FORMING ONE OR TWO ADDITIONAL 9-CONTAINER LOAD UNITS. THE LOAD CAN BE REDUCED BY THREE CONTAINERS BY OMITTING A COMPLETE LAYER FROM THE TOP OF THE 9-CONTAINER LOAD UNIT, OR BY TWO OR FOUR CONTAINERS BY OMITTING THE TOP LAYER FROM ONE OR BOTH 8-CONTAINER LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR ADDITIONAL GUIDANCE.

4. THE DIMENSIONS SHOWN AT THE FRONT OF THE TRAILER AND BETWEEN THE LOAD UNITS SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 26-1/2", 29" AND 53" FROM FRONT TO REAR, RESPECTIVELY. THESE DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FORM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. FOR 45-FOOT LONG TRAILERS HAVING THE REAR TANDEMS IN THE "WESTERN" POSITION, THE LOCATION DIMENSIONS SHOULD BE 26-1/2", 77" AND 77" FROM FRONT TO REAR RESPECTIVELY. FOR 45-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 26-1/2", 53" AND 77" FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

(CONTINUED AT LEFT)

BILL OF MATERIAL

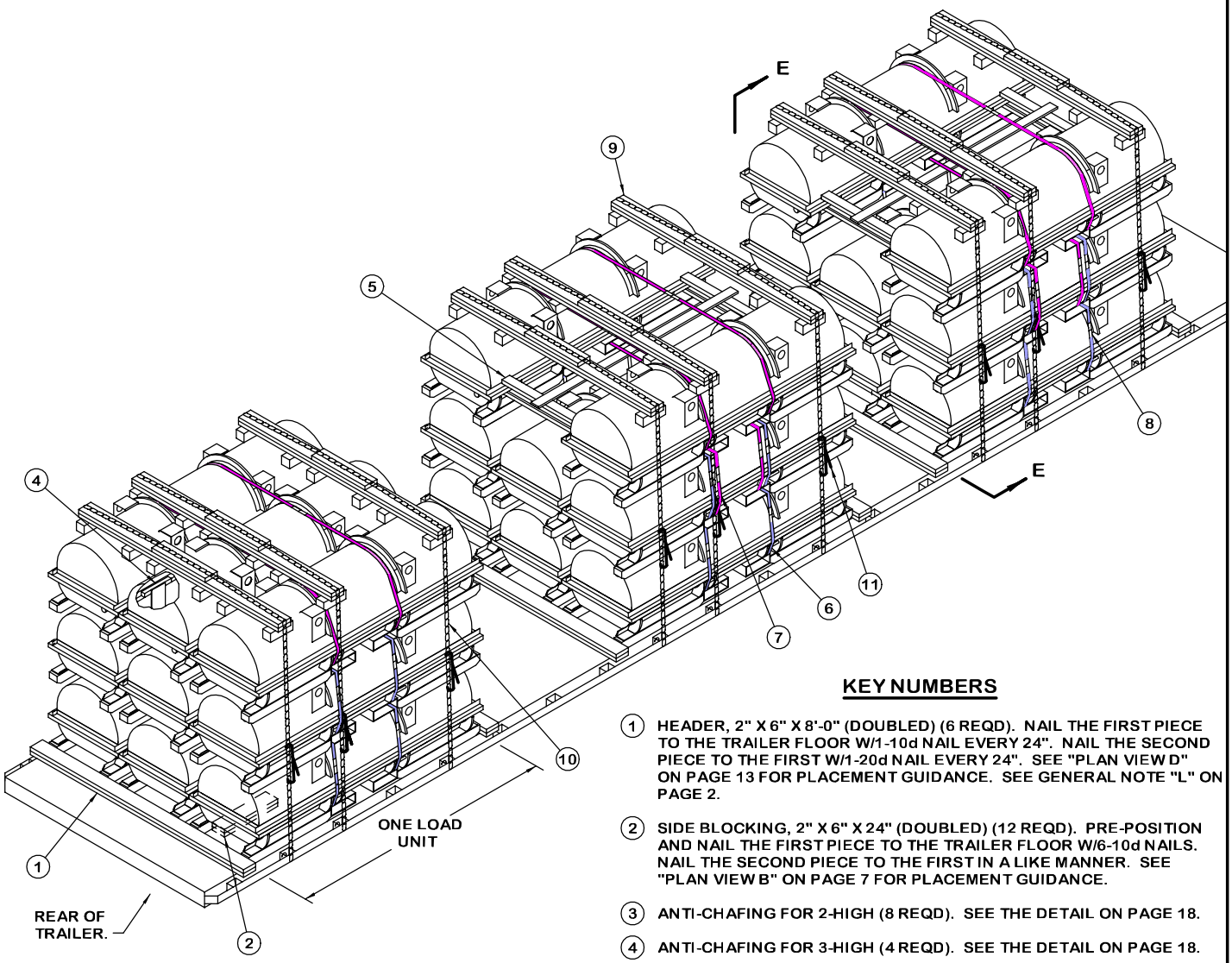
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	26	9
2" X 2"	12	4
2" X 4"	35	24
2" X 6"	189	189
NAILS	**NO. REQD**	**POUNDS**
4d (1")	36	NIL
6d (2")	32	NIL
10d (3")	226	3-1/2
20d (4")	24	1

1/4" PLYWOOD --------- 1 SHEET REQD ---------- 22 LBS
1-1/4" STEEL STRAPPING ---- 526' REQD ---------- 76 LBS
2" STEEL STRAPPING ------- 204' REQD ---------- 68 LBS
SEAL FOR 1-1/4" STRAPPING --- 84 REQD ---------- 4 LBS
SEAL FOR 2" STRAPPING ----- 36 REQD ---------- 8 LBS
STAPLE FOR 2" STRAPPING --- 12 REQD ---------- NIL

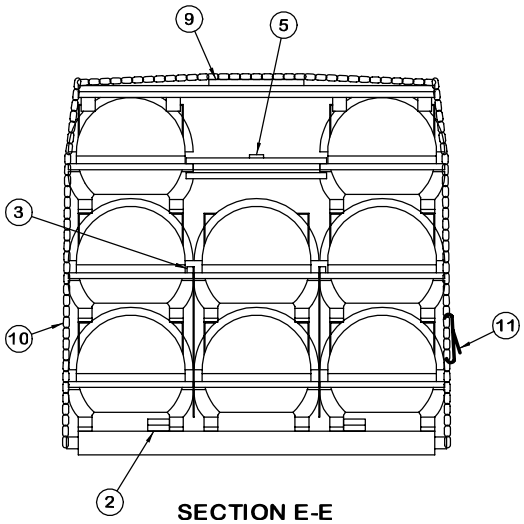
LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	25	40,250 LBS
DUNNAGE		635 LBS
TOTAL WEIGHT		42,885 LBS (APPROX)

(104" LONG CONTAINER)
25-CONTAINER LOAD ON A 40'-0" LONG FLATBED TRAILER



ISOMETRIC VIEW



SECTION E-E

PIECES MARKED ⑥ THRU ⑧ OMITTED FOR CLARITY.

KEY NUMBERS

① HEADER, 2" X 6" X 8'-0" (DOUBLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW D" ON PAGE 13 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2.

② SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW B" ON PAGE 7 FOR PLACEMENT GUIDANCE.

③ ANTI-CHAFING FOR 2-HIGH (8 REQD). SEE THE DETAIL ON PAGE 18.

④ ANTI-CHAFING FOR 3-HIGH (4 REQD). SEE THE DETAIL ON PAGE 18.

⑤ ANTI-SWAY BRACE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 17.

⑥ STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (32 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT.

⑦ BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (10 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN. INSTALL TWO SIMILARLY, TO ENCIRCLE THE SECOND LAYER OF AN 8-CONTAINER LOAD UNIT.

⑧ SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

⑨ CHAIN BOARD (9 REQD). SEE THE "CHAIN BOARD ASSEMBLY" DETAIL ON PAGE 18.

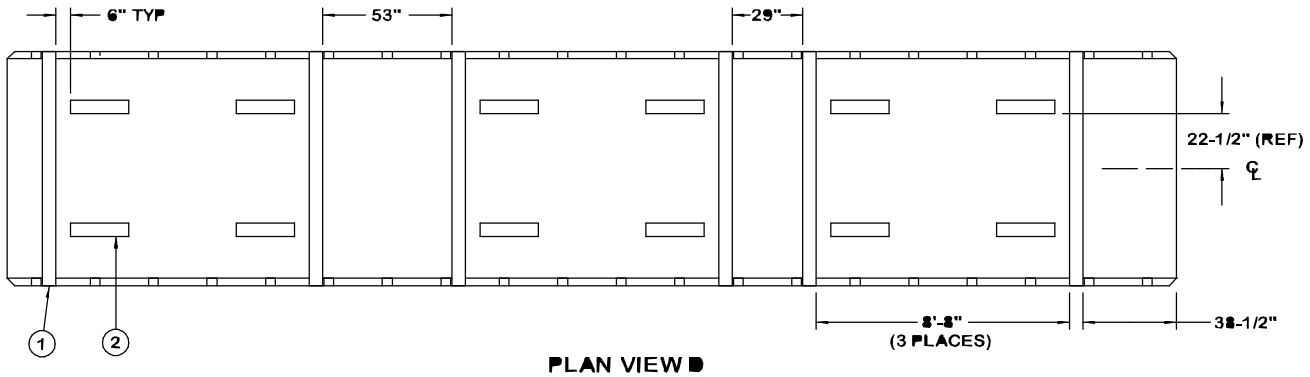
⑩ CHAIN, BINDING, 5/16" GRADE 70 BY A LENGTH TO SUIT (9 REQD). POSITION AS SHOWN ABOVE, FASTENING THE CHAIN TO THE TRAILER STAKE POCKETS. SEE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 20.

⑪ LOAD BINDER, 5/16", OVER-CENTER TYPE (9 REQD, 1 PER CHAIN). WIRE TIE HANDLE TO PREVENT OPENING DURING TRANSPORT. FASTEN THE TENSIONED CHAIN, PIECE MARKED ⑩, TO THE CHAIN BOARD ASSEMBLY, PIECE MARKED ⑨, W/1-20d NAIL AT EACH END, BENDING OVER TO FORM A LOOP AROUND THE CHAIN LINK. SEE "SPECIAL PROVISIONS FOR CHAIN TIEDOWN" ON PAGE 20.

(104" LONG CONTAINER)

25-CONTAINER LOAD ON A 40'-0" LONG TRAILER (CHAIN TIEDOWN METHOD)

PROJECT SP 209-92



PLAN VIEW B

(104" LONG CONTAINER)

(SPECIAL NOTES CONTINUED)

6. IF A 45-FOOT OR 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. A 25-UNIT LOAD SHOULD CONSIST OF ONE LOAD UNIT OF FIVE, TWO LOAD UNITS OF SIX, AND ONE LOAD UNIT OF EIGHT. FOR 45-FOOT LONG TRAILERS WHICH HAVE THE REAR TANDEMS IN THE "WESTERN" POSITION, THE FRONT HEADER SHOULD BE 8-1/2" FROM THE FRONT. THERE SHOULD BE 5", 29", AND 29" BETWEEN THE OTHER HEADERS FROM FRONT TO REAR, RESPECTIVELY. FOR 45-FOOT TRAILERS HAVING THE REAR TANDEMS LOCATED AT OTHER THAN THE EXTREME REAR, THE DIMENSIONS SHOULD BE 8-1/2" AT FRONT AND 5", 5" , AND 29" BETWEEN THE OTHER HEADERS FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH FRONT AND REAR STAKE POCKETS 6" FROM THE END AND REMAINING POCKETS SPACED 24" ON CENTER. THE FIRST AND THIRD LOAD UNITS SHOULD BE SIX CONTAINERS, THE SECOND LOAD UNIT SHOULD BE FIVE, AND THE FOURTH LOAD UNIT SHOULD BE EIGHT CONTAINERS. FOR A 48-FOOT LONG TRAILER, THE FRONT HEADER SHOULD BE LOCATED 14-1/2" FROM THE FRONT, WITH THE OTHERS SPACED 5", 29", AND 29" FROM FRONT TO REAR. THESE LOCATION DIMENSIONS ARE BASED ON A TRAILER EQUIPPED WITH THE FRONT AND REAR POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24"ON CENTER. THE FIRST LOAD UNIT SHOULD BE FIVE CONTAINERS, THE SECOND AND FOURTH LOAD UNITS SHOULD BE SIX CONTAINERS, AND THE THIRD LOAD UNIT SHOULD BE EIGHT CONTAINERS. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

SPECIAL NOTES:

1. A 25-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED.

2. NOTE: THE CHAINS MUST BE ATTACHED TO THE TRAILER STAKE POCKETS AND VERTICALLY IN LINE WITH THE CHAIN BOARDS. THE CHAIN BOARDS CAN BE SHIFTED LEFT OR RIGHT TO PROVIDE FOR VERTICAL ALIGNMENT. SEE GENERAL NOTES "P" AND "Q" ON PAGE 2.

3. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

4. THE DEPICTED LOAD CAN BE INCREASED BY OMITTING PIECE MARKED ⑤ IN THE LOAD VIEW, AND FORMING ONE OR TWO ADDITIONAL 9-CONTAINER LOAD UNITS. THE LOAD CAN BE REDUCED BY MULTIPLES OF THREE CONTAINERS BY OMITTING A COMPLETE LAYER FROM THE TOP OF THE 9-CONTAINER LOAD UNIT OR BY TWO OR FOUR CONTAINERS BY OMITTING THE TOP LAYER FROM ONE OR BOTH 8-CONTAINER LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR GUIDANCE.

5. THE DIMENSIONS SHOWN AT THE FRONT OF THE TRAILER AND BETWEEN THE LOAD UNITS SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT LONG TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN THE EXTREME REAR, THE DIMENSIONS SHOULD BE 14-1/2", 29", AND 53" FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. FOR 45-FOOT LONG TRAILERS HAVING REAR TANDEMS IN THE "WESTERN" POSITION, THE LOCATION DIMENSIONS SHOULD BE 32-1/2", 77", AND 5" FROM FRONT TO REAR, RESPECTIVELY. FOR 45-FOOT TRAILERS WHICH HAVE THE REAR TANDEMS LOCATED AT OTHER THAN THE EXTREME REAR, THE DIMENSIONS MAY BE THE SAME. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

(CONTINUED AT LEFT)

BILL OF MATERIAL

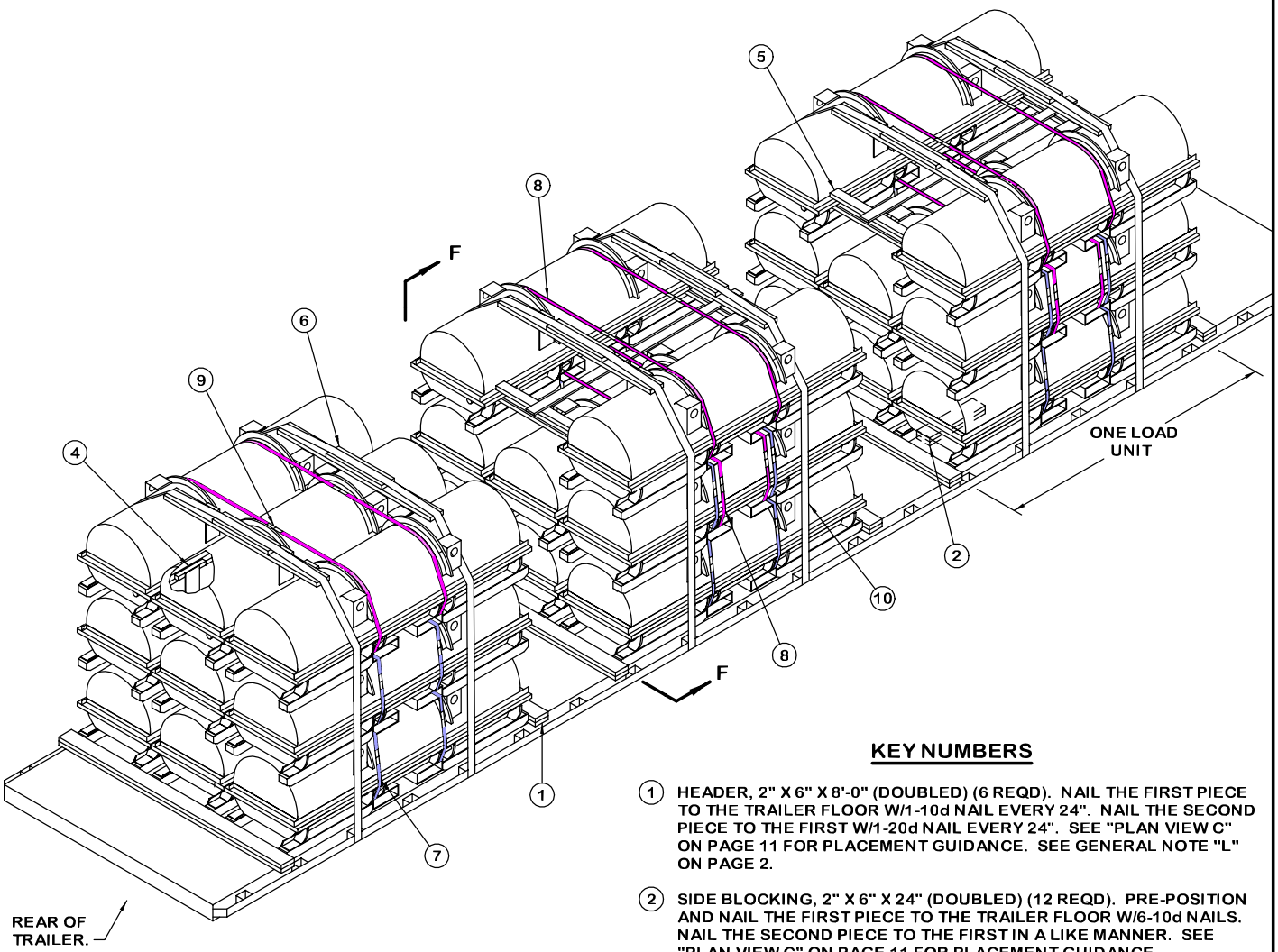
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	26	9
2" X 2"	12	4
2" X 4"	35	24
2" X 6"	297	297
4" X 4"	35	47
NAILS	**NO. REQD**	**POUNDS**
4d (1")	36	NIL
6d (2")	32	NIL
10d (3")	307	4-3/4
16d (3-1/2")	18	1/2
20d (4")	108	4

1/4" PLYWOOD	1 SHEET REQD	22 LBS
1-1/4" STEEL STRAPPING	526' REQD	76 LBS
SEAL FOR 1-1/4" STRAPPING	84 REQD	4 LBS
CHAIN, BINDING, 5/16"	212' REQD	255 LBS
BINDER, LOAD	9 REQD	54 LBS

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	25	41,400 LBS
DUNNAGE		1,183 LBS
TOTAL WEIGHT		42,583 LBS (APPROX)

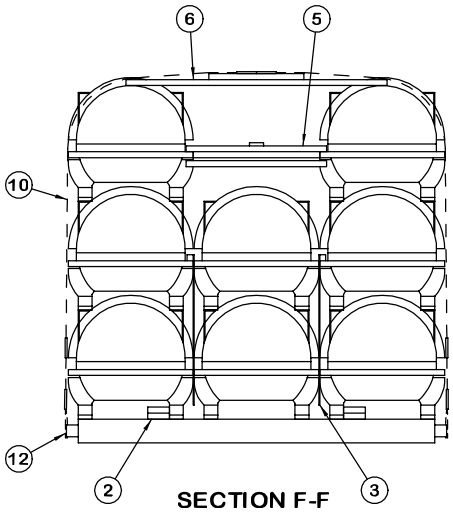
(104" LONG CONTAINER)
25-CONTAINER LOAD ON A 40'-0" LONG TRAILER (CHAIN TIEDOWN METHOD)



ISOMETRIC VIEW

KEY NUMBERS

1. HEADER, 2" X 6" X 8'-0" (DOUBLED) (6 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE "PLAN VIEW C" ON PAGE 11 FOR PLACEMENT GUIDANCE. SEE GENERAL NOTE "L" ON PAGE 2.
2. SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (12 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW C" ON PAGE 11 FOR PLACEMENT GUIDANCE.
3. ANTI-CHAFING FOR 2-HIGH (8 REQD). SEE THE DETAIL ON PAGE 18.
4. ANTI-CHAFING FOR 3-HIGH (4 REQD). SEE THE DETAIL ON PAGE 18.
5. ANTI-SWAY BRACE ASSEMBLY (2 REQD). SEE THE DETAIL ON PAGE 17.
6. STRAPPING BOARD ASSEMBLY (6 REQD). SEE THE DETAIL ON PAGE 17.
7. STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (32 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT.
8. BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (10 REQD). INSTALL THROUGH THE FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN. INSTALL TWO SIMILARLY, TO ENCIRCLE THE SECOND LAYER OF AN 8-CONTAINER LOAD UNIT.
9. SEAL FOR 1-1/4" STEEL STRAPPING (84 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2 AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.
10. WEB STRAP ASSEMBLY (6 REQD). POSITION TO EXTEND FROM A WINCH ON ONE SIDE OF THE TRAILER, OVER THE CONTAINERS, TO AN ATTACHMENT POINT ON THE OPPOSITE SIDE. SEE THE "SPECIAL PROVISIONS FOR WEB STRAP TIEDOWN" ON PAGE 9.



SECTION F-F

PIECES MARKED ⑦ THRU ⑨ OMITTED FOR CLARITY.

(104" LONG CONTAINER)

25-CONTAINER LOAD ON A 40'-0" LONG TRAILER (WEB STRAP TIEDOWN METHOD)

PROJECT SP 209-92

SPECIAL NOTES:

1. A 25-CONTAINER LOAD IS SHOWN ON A 40'-0" LONG BY 8'-0" WIDE FLATBED TRAILER. OTHER LENGTH TRAILERS AND WIDER TRAILERS MAY BE USED.

2. IF DESIRED, AND IF THE CAPACITY OF THE FORKLIFT TRUCK PERMITS, THREE CONTAINERS MAY BE STACKED AND UNITIZED PRIOR TO PLACEMENT ON THE TRAILER. SEE THE "UNITIZATION AND HANDLING PROCEDURES" ON PAGE 3.

3. THE DEPICTED LOAD CAN BE INCREASED BY OMITTING PIECE MARKED ⑤ IN THE LOAD VIEW, AND FORMING ONE OR TWO ADDITIONAL 9-CONTAINER LOAD UNITS. THE LOAD CAN BE REDUCED BY THREE CONTAINERS BY OMITTING A COMPLETE LAYER FROM THE TOP OF THE 9-CONTAINER LOAD UNIT, OR BY TWO OR FOUR CONTAINERS BY OMITTING THE TOP LAYER FROM ONE OR BOTH 8-CONTAINER LOAD UNITS. SEE THE "TYPICAL LTL" ON PAGE 16 AND SPECIAL NOTES ON PAGE 17 FOR ADDITIONAL GUIDANCE.

4. THE DIMENSIONS SHOWN AT THE FRONT OF THE TRAILER AND BETWEEN THE LOAD UNITS SHOULD PROVIDE FOR PROPER WEIGHT DISTRIBUTION FOR A 40-FOOT TRAILER HAVING THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION (AT THE EXTREME REAR OF THE TRAILER). FOR 40-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 26-1/2", 29" AND 53" FROM FRONT TO REAR, RESPECTIVELY. THESE DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FORM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. FOR 45-FOOT LONG TRAILERS HAVING THE REAR TANDEMS IN THE "WESTERN" POSITION, THE LOCATION DIMENSIONS SHOULD BE 20-1/2", 77" AND 77" FROM FRONT TO REAR RESPECTIVELY. FOR 45-FOOT TRAILERS WHICH HAVE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 20-1/2", 53" AND 77" FROM FRONT TO REAR, RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE LOCATION DIMENSIONS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

5. IF A 45-FOOT OR 48-FOOT LONG TRAILER IS FURNISHED FOR LOADING, THE LOAD CAN BE FOUR LOAD UNITS IN LENGTH IN LIEU OF THREE AS SHOWN. A 25-UNIT LOAD SHOULD CONSIST OF ONE LOAD UNIT OF FIVE, TWO LOAD UNITS OF SIX, AND ONE LOAD UNIT OF EIGHT. FOR 45-FOOT LONG TRAILERS WHICH HAVE THE REAR TANDEMS LOCATED IN THE "WESTERN" POSITION, THE FRONT HEADER SHOULD BE 20-1/2" FROM THE FRONT AND THERE SHOULD BE 5" BETWEEN THE OTHER HEADERS. FOR 45-FOOT TRAILERS HAVING THE REAR TANDEMS LOCATED AT OTHER THAN AT THE EXTREME REAR, THE DIMENSIONS SHOULD BE 8-1/2" AT THE FRONT AND 5", 29", AND 29" BETWEEN THE OTHER HEADERS FROM FRONT TO REAR RESPECTIVELY. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 6" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE FIRST AND THE FOURTH LOAD UNITS SHOULD BE SIX CONTAINERS, THE SECOND SHOULD BE FIVE, AND THE THIRD LOAD UNIT SHOULD BE EIGHT CONTAINERS. FOR A 48-FOOT LONG TRAILER, THE FRONT HEADER SHOULD BE LOCATED 26-1/2" FROM THE FRONT, WITH THE OTHERS SPACED 5", 29", AND 29" FROM FRONT TO REAR. THESE LOCATION DIMENSIONS ARE BASED ON TRAILERS EQUIPPED WITH THE FRONT AND REAR STAKE POCKETS 12" FROM THE END AND THE REMAINING POCKETS SPACED 24" ON CENTER. THE FIRST LOAD UNIT SHOULD BE FIVE CONTAINERS, THE SECOND AND FOURTH SHOULD BE SIX CONTAINERS, AND THE THIRD LOAD UNIT SHOULD BE EIGHT CONTAINERS. THE LOCATION DIMENSIONS AND CONTAINER PLACEMENTS ARE ADVISORY AND MAY BE ADJUSTED TO SUIT.

BILL OF MATERIAL

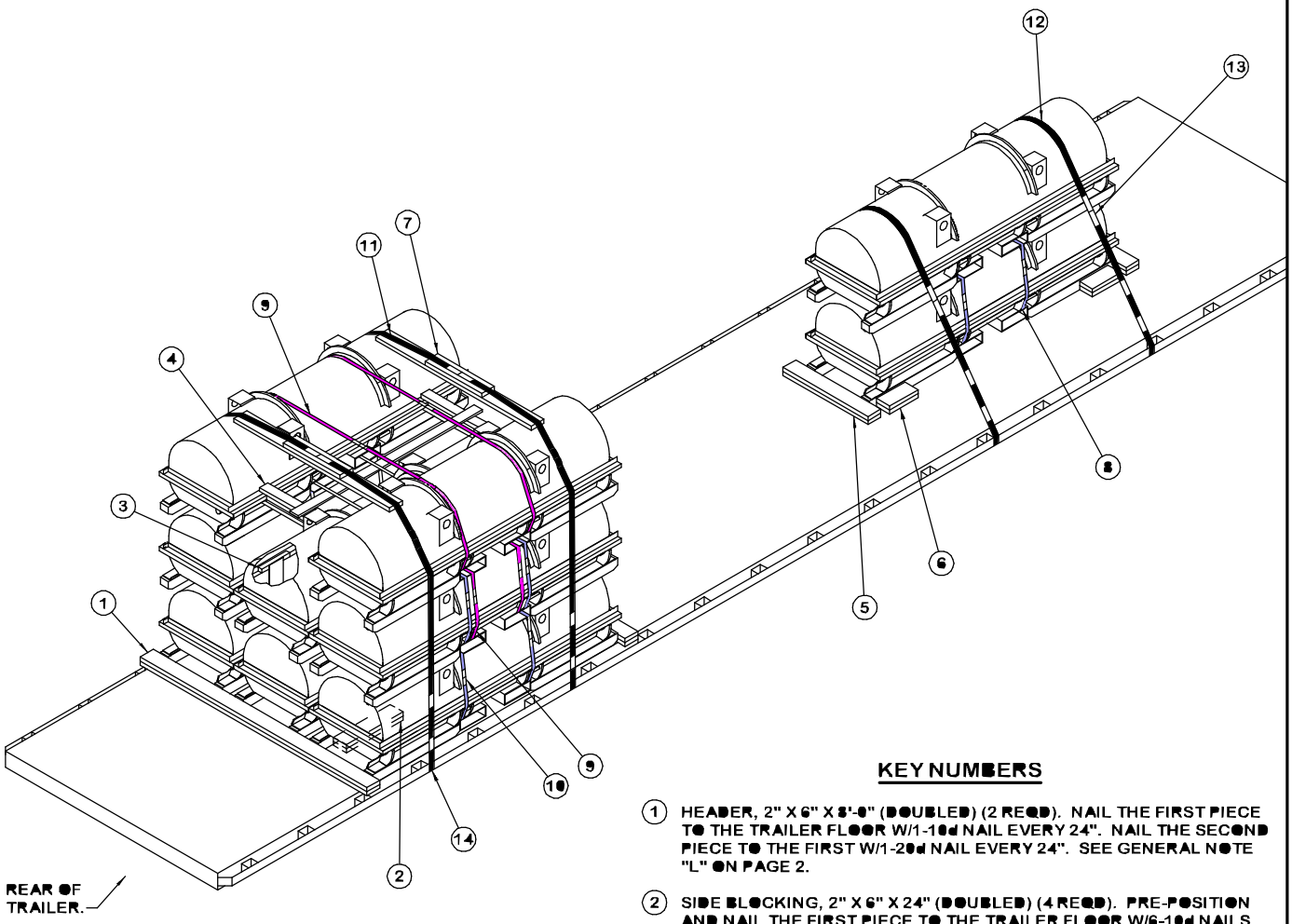
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	26	9
2" X 2"	12	4
2" X 4"	35	24
2" X 6"	189	189
NAILS	**NO. REQD**	**POUNDS**
4d (1")	36	NIL
6d (2")	32	NIL
10d (3")	226	3-1/2
20d (4")	24	1

1/4" PLYWOOD ---------- 1 SHEET REQD ---------- 22 LBS
1-1/4" STEEL STRAPPING ---- 526' REQD ---------- 76 LBS
SEAL FOR 1-1/4" STRAPPING --- 84 REQD ---------- 4 LBS
WEB STRAP ASSEMBLIES ---------- 4 REQD

LOAD AS SHOWN

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER	27	43,200 LBS
DUNNAGE		559 LBS
TOTAL WEIGHT		43,759 LBS (APPROX)

(104" LONG CONTAINER)
25-CONTAINER LOAD ON A 40'-0" LONG TRAILER (WEB STRAP TIEDOWN METHOD)



ISOMETRIC VIEW

(KEY NUMBERS CONTINUED)

(10) SEAL FOR 1-1/4" STEEL STRAPPING (32 REQD, 2 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS. SEE GENERAL NOTE "M" ON PAGE 2, AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

(11) HOLD-DOWN STRAP, 2" X .050" OR .044" X 31'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM TWO 15'-6" LONG PIECES. STAPLE TO THE STRAPPING BOARD W/2 STAPLES. SEE GENERAL NOTE "J" ON PAGE 2.

(12) HOLD-DOWN STRAP, 2" X .050" OR .044" X 22'-0" LONG STEEL STRAPPING (2 REQD). INSTALL EACH STRAP FROM 13'-0" AND 9'-0" LONG PIECES.

(13) SEAL FOR 2" STRAPPING (24 REQD, 6 PER STRAP). CRIMP EACH SEAL WITH TWO PAIR OF CRIMPS, EXCEPT THOSE USED TO SECURE THE PADS, PIECE MARKED (14). SEE "HOLD-DOWN STRAP ANCHORING DETAILS" AND "END-OVER-END LAP JOINT DETAILS" ON PAGE 19.

(14) PAD, 2" X .050" OR .044"X 18" LONG STEEL STRAPPING (8 REQD). POSITION UNDER ANCHORING FACILITY AND SEAL TO HOLD-DOWN STRAPS, PIECES MARKED (11) AND (12). ALT: STAKE POCKET PROTECTOR (16 REQD). USE TWO UNDER EACH ANCHORING FACILITY WITH A HOLD-DOWN STRAP. SEE "HOLD-DOWN STRAP ANCHORING DETAILS" ON PAGE 19.

KEY NUMBERS

(1) HEADER, 2" X 6" X 8'-0" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". NAIL THE SECOND PIECE TO THE FIRST W/1-20d NAIL EVERY 24". SEE GENERAL NOTE "L" ON PAGE 2.

(2) SIDE BLOCKING, 2" X 6" X 24" (DOUBLED) (4 REQD). PRE-POSITION AND NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. SEE "PLAN VIEW D" ON PAGE 13 FOR PLACEMENT GUIDANCE. SEE SPECIAL NOTES ON PAGE 17.

(3) ANTI-CHAFING FOR 2-HIGH (4 REQD). SEE THE "ANTI-CHAFING ASSEMBLY" DETAIL ON PAGE 18.

(4) ANTI-SWAY BRACE ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 17.

(5) HEADER, 2" X 6" X 36" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST W/3-20d NAILS.

(6) SIDE BLOCKING, 2" X 6" X 12" (DOUBLED) (4 REQD). POSITION AGAINST THE CONTAINER SKIDS AS SHOWN ABOVE. NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. NAIL THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.

(7) STRAPPING BOARD (2 REQD). SEE THE "STRAPPING BOARD ASSEMBLY" DETAIL ON PAGE 17.

(8) STACK UNITIZING STRAP, 1-1/4" X .035" OR .031" X 10'-6" LONG STEEL STRAPPING (12 REQD). INSTALL THROUGH FORK TINE OPENINGS OF THE LOWER TWO CONTAINERS, AND/OR THROUGH FORK TINE OPENINGS OF THE TOP TWO CONTAINERS, AS SHOWN ON PAGE 3. STRAPS SHOULD BE POSITIONED AS FAR APART AS THE FORK TINE OPENINGS PERMIT.

(9) BUNDLING STRAP, 1-1/4" X .035" OR .031" X 19'-0" LONG STEEL STRAPPING (4 REQD). INSTALL THROUGH FORK TINE OPENINGS TO ENCIRCLE LATERALLY ADJACENT CONTAINERS IN THE TOP LAYER AS SHOWN. INSTALL TWO SIMILARLY, TO ENCIRCLE THE SECOND LAYER OF THE 8-CONTAINER LOAD UNIT.

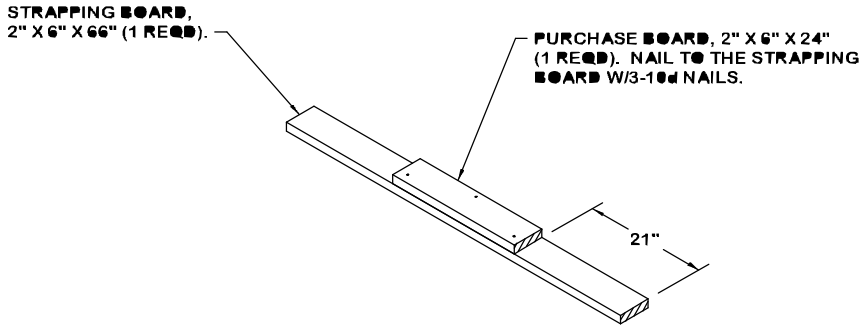
(CONTINUED AT LEFT)

TYPICAL LTL (10-CONTAINER LOAD) ON A 40'-0" LONG FLATBED TRAILER

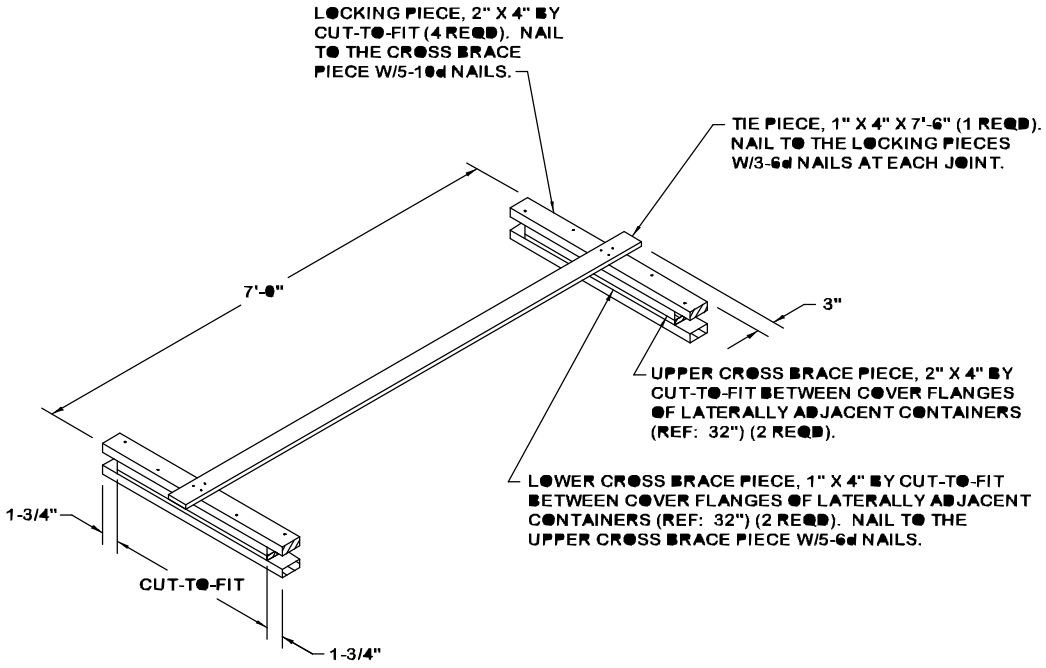
SPECIAL NOTES:

1. A 10-UNIT LOAD IS SHOWN IN THE TYPICAL LTL ON PAGE 16. THE NUMBER OF CONTAINERS CAN BE ADJUSTED TO SUIT. SEE THE "PLAN VIEW" DETAIL ON PAGE 5, 7, 11, OR 13 FOR PLACEMENT GUIDANCE OF THE PRE-POSITIONED SIDE BLOCKING, PIECE MARKED ②.

2. THE 2-HIGH STACK AT THE FRONT OF THE TRAILER WILL NOT BE INCREASED; IF 3 CONTAINERS ARE TO BE LOADED IN A GROUP, THE CONTAINERS MUST ALL BE ON THE FLOOR.

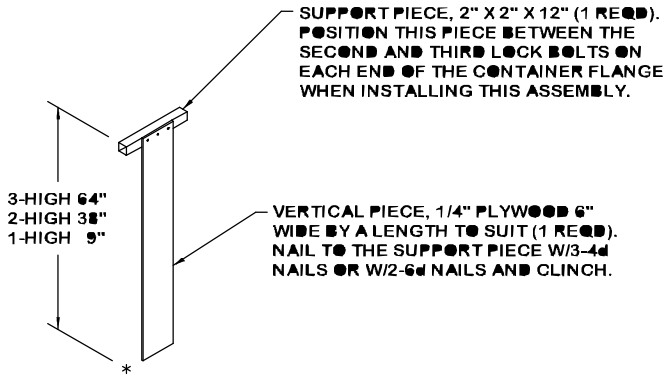


STRAPPING BOARD ASSEMBLY

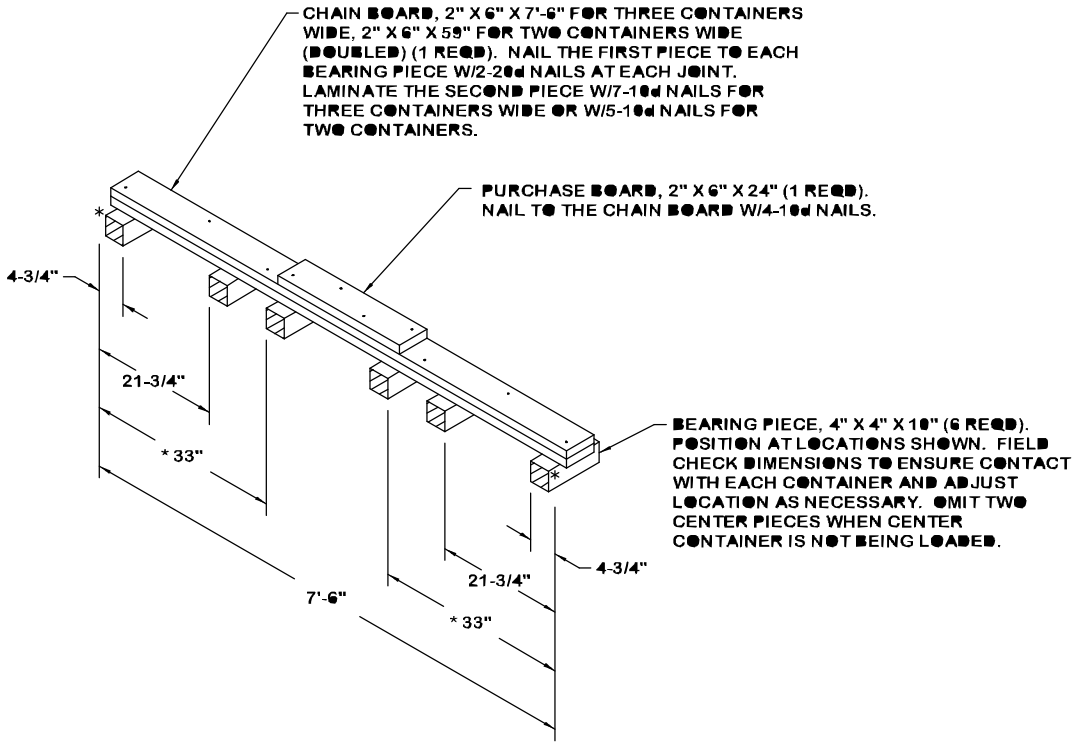


ANTI-SWAY BRACE ASSEMBLY

ONE OF THE TWO LOCKING PIECES ON EACH END ASSEMBLY MUST BE APPLIED AFTER THE CROSS BRACES AND THE OTHER LOCKING PIECE HAVE BEEN ASSEMBLED AND POSITIONED BETWEEN THE CONTAINERS. THE TIE PIECE WILL BE APPLIED AFTER THE END ASSEMBLIES HAVE BEEN INSTALLED.

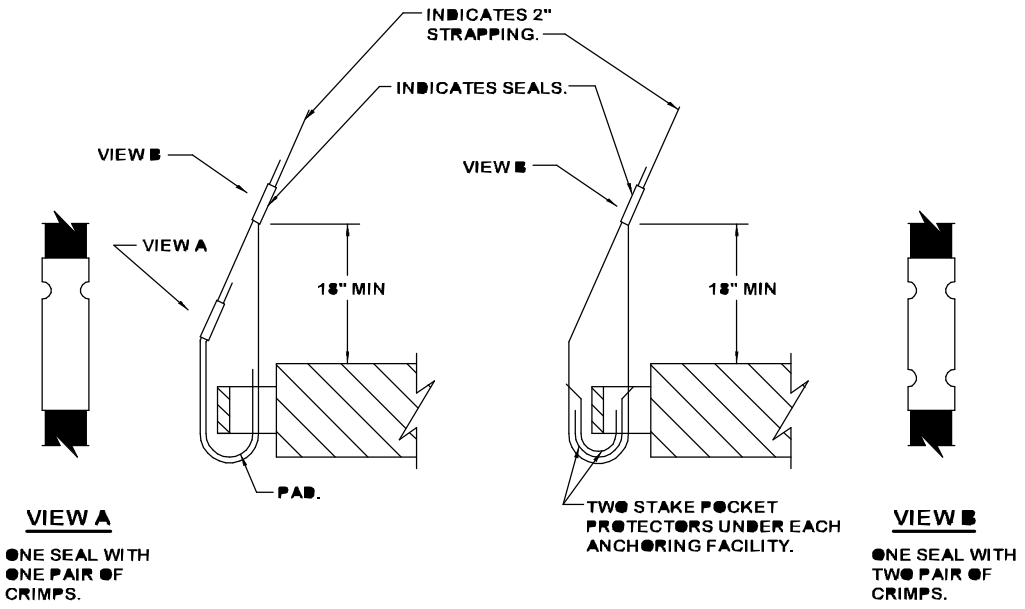


ANTI-CHAFING ASSEMBLY



CHAIN BOARD ASSEMBLY

* THE TWO CENTER BEARING PIECES MAY BE OMITTED IF AN 8-CONTAINER OR 5-CONTAINER LOAD UNIT IS FORMED.



VIEW A

ONE SEAL WITH ONE PAIR OF CRIMPS.

VIEW B

ONE SEAL WITH TWO PAIR OF CRIMPS.

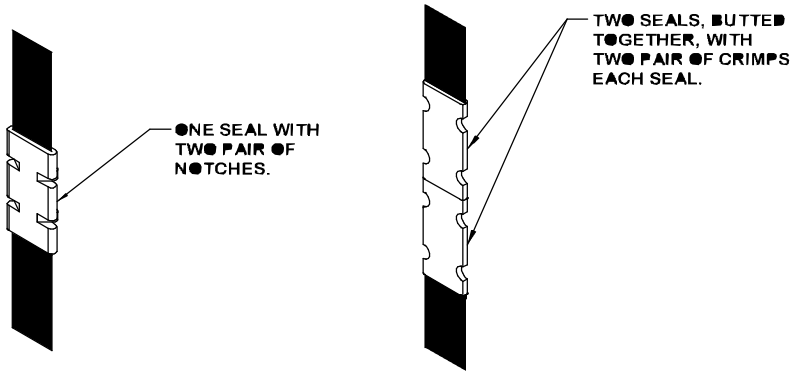
DETAIL A

METHOD OF INSTALLING 2" STRAPPING AND PAD AT ANCHORING FACILITY.

DETAIL B

METHOD OF INSTALLING 2" STRAPPING AND STAKE POCKET PROTECTORS (ALT PAD).

HOLD-DOWN STRAP ANCHORING DETAILS



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

SPECIAL PROVISIONS FOR CHAIN TIEDOWN

LADING MAY BE SECURED TO THE FLATBED TRAILER BY CARRIER-OWNED CHAINS AND LOAD BINDERS IN LIEU OF SPECIFIED STRAPPING, PROVIDED THE FOLLOWING CONDITIONS ARE MET AND THE PROCEDURES CONTAINED ON PAGES 6 AND 7 AND PAGES 12 AND 13 ARE FOLLOWED.

1. ONLY CHAINS AND LOAD BINDERS OF GOOD QUALITY WILL BE USED. ALL CHAINS AND LOAD BINDERS SHALL CONFORM TO THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975.

2. ALL CHAINS SHALL BE MARKED AS PRESCRIBED BY THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 1975. AT LEAST ONE LINK IN EVERY 36 LINKS SHALL CARRY THE MANUFACTURER'S PERMANENT AND DISTINCTIVE MARK IDENTIFYING THE GRADE OF CHAIN. CHAINS NOT MARKED IN THIS MANNER SHALL NOT BE USED. IN ADDITION TO THE GRADE MARKING, THE CHAIN MAY ALSO CARRY LETTER MARKINGS OR SYMBOLS IDENTIFYING THE CHAIN MANUFACTURER. THE PRESENCE OF THE MANUFACTURER'S IDENTIFICATION MARKING IS NOT MANDATORY.

3. BEFORE AND DURING INSTALLATION, THE CHAINS AND LOAD BINDERS SHALL BE INSPECTED FOR BENT HOOKS, STRETCH, GOUGES, BENT LINKS, WEAR, OR ANY OTHER NOTICEABLE DEFECTS. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF A CHAIN OR LOAD BINDER. CHAINS MUST NOT BE TWISTED DURING INSTALLATION. CAUTION: EXTREME CARE MUST BE EXERCISED WHEN TENSIONING CHAINS TO PREVENT DAMAGE OR PERMANENT DEFORMATION TO THE LADING.

4. CHAIN SIZES AND GRADES APPROVED FOR USE WITH FLATBED TRAILER LOADS ARE AS FOLLOWS:

   A. 3/8", GRADE 43 HIGH TEST CHAIN
   B. 5/16", GRADE 70 BINDING CHAIN
   C. 3/8", GRADE 70 BINDING CHAIN
   D. 5/16", GRADE 80 ALLOY STEEL CHAIN
   E. 3/8", GRADE 80 ALLOY STEEL CHAIN

5. THE GRABHOOKS ON THE ENDS OF THE CHAIN MAY BE OF THE FOLLOWING TYPES WITH GRADE MARKINGS AS INDICATED.

   A. CLEVIS GRABHOOKS, 3/8" SIZE, DO NOT REQUIRE GRADE MARKING. ALLOY GRABHOOKS, 5/16" SIZE, SHALL CARRY THE MANUFACTURER'S GRADE MARK OF 7, 70, OR 700. THE HOOKS SHALL BE USED ON THE APPROPRIATE SIZE CHAIN.

   B. CLOSED EYE GRABHOOKS, 3/8" AND 5/16" SIZE, MAY BE USED ON THE APPROPRIATE SIZE CHAIN IF THEY ARE A PART OF A CHAIN ASSEMBLY WHICH WAS PROVIDED BY A CHAIN MANUFACTURER, AND THE CHAIN ASSEMBLY CARRIES THE CORRECT GRADE IDENTIFICATION MARKING AS PREVIOUSLY STATED. CLOSED EYE GRABHOOKS THAT FORM A PART OF THE CHAIN ASSEMBLY ARE EXEMPT FROM GRADE MARKINGS.

6. CONNECTING LINKS USED FOR CHAIN REPAIR MUST BE CORRECTLY MARKED AND BE EQUAL TO OR GREATER IN STRENGTH THAN THE CHAIN THEY ARE REPAIRING. CHAINS WITH UNMARKED CONNECTING LINKS SHALL NOT BE USED.

7. CHAIN AND FITTING OF A HIGHER GRADE MAY BE SUBSTITUTED FOR THE GRADES SPECIFIED IN NOTE 4 ABOVE.

8. LOAD BINDERS SHALL BE 5/16" TO 3/8" SIZE AND HAVE A MINIMUM BREAKING STRENGTH OF 16,200 POUNDS (WORKING LOAD LIMIT OF 5,400 POUNDS). OVERCENTER TYPE LOAD BINDERS SHALL BE SAFETY WIRED TO PREVENT ACCIDENTAL OPENING DURING TRANSPORT. LOAD BINDER SIZE SHALL BE COMPATIBLE WITH THE SIZE OF THE CHAIN BEING USED.

PROVISIONS FOR THE USE OF FIREHOSE IN LIEU OF CHAIN BOARDS OR STRAPPING BOARDS

FIRE HOSE THAT IS NO LONGER SUITABLE FOR USE IN FIRE FIGHTING APPLICATIONS CAN BE SUBSTITUTED FOR THE DOUBLED 2" BY 6" WOODEN CHAIN BOARDS OR SINGLE 2" BY 6" STRAPPING BOARDS, AS SPECIFIED HEREIN, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

1. SUBSTITUTION AND APPLICATION GUIDANCE

   A. FIRE HOSE MAY BE USED WHEREVER A CHAIN OR STRAPPING BOARD CONTACTS A RIGID SURFACE OF THE LOAD PROVIDED GOUGING, SCRATCHING, CRACKING, BENDING, CRUSHING, OR OTHER VISIBLE DAMAGE DOES NOT OCCUR TO THE LOAD.

   B. ONE OR MORE SEGMENTS OF FIRE HOSE MAY BE USED TO REPLACE EACH CHAIN OR STRAPPING BOARD PROVIDING LOAD PROTECTION DURING TENSIONING OF TIEDOWNS AND LOAD SHIPMENT; I.E., A CHAIN BOARD NEED NOT BE REPLACED BY A SINGLE SEGMENT OF HOSE, MULTIPLE SEGMENTS MAY BE USED INSTEAD, AS LONG AS THEY ARE SECURELY FASTENED TO THE TIEDOWN. REGARDLESS OF THE NUMBER OF SEGMENTS USED, THE HOSE LENGTH WILL BE SUCH THAT IT EXTENDS AT LEAST 6" BEYOND THE EDGE OF THE LOAD.

   C. FIRE HOSE CANNOT BE USED IN PLACE OF A PURCHASE BOARD ON A LOAD CONSISTING OF MORE THAN TWO PALLETS OR CONTAINERS ACROSS THE WIDTH OF THE TRAILER. THE FIRE HOSE CAN BE APPLIED TO THE OUTER STACKS, HOWEVER, A PURCHASE BOARD ASSEMBLY WILL STILL BE REQUIRED TO PROVIDE VERTICAL HOLD-DOWN ON THE CENTER STACK(S).

2. ACCEPTABLE FIRE HOSE

   A. FIRE HOSE TO BE USED WILL BE A RUBBER LINED SINGLE OR DOUBLE JACKETED TYPE; I.E., IT MUST HAVE A RUBBER LINING INSIDE A SINGLE OR DOUBLED FABRIC (COTTON, LINEN, ETC.) JACKET.

   B. THE COLLAPSED WIDTH OF THE HOSE MUST BE A MINIMUM OF 2-1/2".

   C. THE HOSE SEGMENTS USED MUST NOT CONTAIN DEFECTS THAT WILL ALLOW DIRECT CONTACT OF THE CHAIN OR LOAD BINDER WITH THE LOAD. THE HOSE THICKNESS MUST ALSO BE OF SUCH A THICKNESS THAT DENTING OR DAMAGE TO THE LOAD DOES NOT OCCUR DURING CHAIN OR STRAP TENSIONING.

3. SECUREMENT TO CHAINS OR STRAPS

   A. THE SEGMENTS OF HOSE USED UNDER EACH CHAIN OR STRAP WILL BE SECURED TO THE CHAIN OR STRAP WITH ONE FASTENER EVERY 12", WITH A MINIMUM OF TWO FASTENERS REQUIRED PER HOSE SEGMENT.

   B. FASTENERS CAN CONSIST OF PLASTIC ELECTRICAL TIES, NO. 14 GAGE WIRE, OR TAPE. REGARDLESS OF THE TYPE OF FASTENING USED, IT MUST PROVIDE A POSITIVE MEANS OF SECUREMENT OF THE HOSE TO THE CHAIN OR STRAP AND MUST NOT DAMAGE THE SURFACE OF THE CONTAINER, PALLET, OR ITEM IT CONTACTS.