


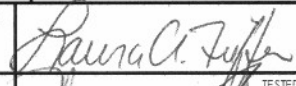
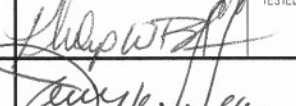
# LOADING AND BRACING (TL & LTL) IN VAN TRAILERS\* OF CHARGE, DEMOLITION, LINEAR, HE, M59 AND PRACTICE, M69 PACKED IN METAL CONTAINERS

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\* **CAUTION:** THE OUTLOADING PROCEDURES SHOWN HEREIN ARE ONLY APPLICABLE TO HIGHWAY MOVEMENTS, NOT TRAILER-ON-FLATCAR MOVEMENTS.

## U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY JOINT MUNITIONS COMMAND		<b>CAUTION:</b> VERIFY PRIOR TO USE AT WWW.DAC.ARMY.MIL THAT THIS IS THE MOST CURRENT VERSION OF THIS DOCUMENT. THIS IS PAGE 1 OF 22.					
		<b>DO NOT SCALE</b>		<b>JUNE 1986</b>			
		ENGINEER OR TECHNICIAN	BASIC REV.	MELVIN DAEMER MELVIN SIX		REVISION NO. 1	OCTOBER 2006
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIEL COMMAND		TRANSPORTATION ENGINEERING DIVISION			SEE THE REVISION LISTING ON PAGE 3		
		VALIDATION ENGINEERING DIVISION			TESTED	CLASS	DIVISION
		ENGINEERING DIRECTORATE			19	48	4204
U.S. ARMY DEFENSE AMMUNITION CENTER							

PROJECT CA 217-85

## 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 SPECIFIED OUTLOADING PROCEDURES ARE APPLICABLE TO LOADS OF LINEAR DEMOLITION CHARGES, HE M59, AND PRACTICE M69, (MICLIC) IN METAL SHIPPING AND STORAGE CONTAINERS. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS THE CONTAINER WITH MICLIC ITEMS INSTALLED. SEE PAGE 3 AND NAVAL SEA SYSTEMS COMMAND DRAWING 6120593 FOR DETAILS OF THE CONTAINER.
- C. THE OUTLOADING PROCEDURES DEPICTED WITHIN THIS DOCUMENT ARE APPLICABLE FOR SHIPMENTS IN CONVENTIONAL TYPE VAN TRAILERS AND APPLY TO TRAILERS HAVING WOOD, OR WOOD AND METAL, OR ALL METAL FLOORS. REGARDLESS OF THE DIMENSIONS OF THE VAN TRAILERS SHOWN, THE PROCEDURES ARE ALSO APPLICABLE FOR TRAILERS WHICH ARE 89" THRU 102" IN WIDTH AND FOR TRAILERS OF OTHER LENGTHS FROM THE SHORTEST TO THE LONGEST AVAILABLE (REF: 24' TO 53'), AND FOR STRAIGHT TRUCK VANS. THE SPECIFIED BRACING IS ADEQUATE FOR LOADS WEIGHING UP TO AND INCLUDING THE MAXIMUM WEIGHTS PERMITTED BY LAW.
- D. SELECTION OF A VEHICLE FOR THE TRANSPORT OF THE DESIGNATED ITEM IS THE RESPONSIBILITY OF THE ORIGINATING CARRIER AND THE SHIPPER. ONLY VEHICLES IN ACCORDANCE WITH THE REQUIREMENTS OF THE APPLICABLE REGULATORY DOCUMENTS WILL BE SELECTED FOR USE.
- E. THE GROSS WEIGHT AND AXLE DISTRIBUTION OF WEIGHT FOR A LOAD WILL BE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THE APPLICABLE LOADING REQUIREMENTS, AND THE SHIPPER WILL LOAD ACCORDINGLY. THE TOTAL WEIGHT OF THE LADING, OF THE DUNNAGE, OF THE TRACTOR, AND OF THE SEMITRAILER CARRYING THE LADING MUST NOT EXCEED THE MAXIMUM GROSS WEIGHT ALLOWED FOR THE STATE OR STATES THRU WHICH THE LOAD IS TO BE TRANSPORTED BY MOTOR CARRIER. LIKEWISE, THE GROSS WEIGHT ON A SINGLE OR TANDEM AXLE MUST NOT EXCEED THE MAXIMUM ALLOWABLE WEIGHT. IF THERE IS ANY DOUBT AS TO WHETHER THE TOTAL GROSS WEIGHT OR AXLE WEIGHT EXCEEDS THE MAXIMUM ALLOWED, WEIGHT SHOULD BE VERIFIED BY ACTUALLY WEIGHING THE LOADED VEHICLE.
- F. **NOTICE:** A SHIPMENT WILL BE POSITIONED IN THE TRAILER CONSISTENT WITH STATE WEIGHT LAWS. THE NUMBER OF LADING UNITS MAY BE ADJUSTED TO FIT THE SIZE OF THE TRAILER TO BE LOADED OR THE QUANTITY TO BE SHIPPED. COMBINATIONS OF THE OUTLOADING PROCEDURES SPECIFIED MAY BE USED; HOWEVER, THE APPROVED METHODS SHOWN MUST BE FOLLOWED AS CLOSELY AS POSSIBLE FOR BLOCKING, BRACING, AND STAYING OF THE DESIGNATED ITEMS.
- G. THE "LOAD AS SHOWN" FOR MOST OF THE FULL LOADS DEPICTED HEREIN IS BASED ON AN APPROXIMATE LADING WEIGHT OF 43,000 POUNDS. THE SPECIFIED BLOCKING AND BRACING FOR THE FULL LOADS IS ADEQUATE FOR THE RETENTION OF LOADS UP TO 45,000 POUNDS, IF IT IS DESIRED TO INCREASE THE LADING WEIGHT.
- H. OTHER TYPES OF LADING ITEMS MAY BE LOADED INTO TRAILERS WHICH ARE PARTIALLY LOADED WITH HE M59, AND PRACTICE M69, (MICLIC) IN METAL SHIPPING AND STORAGE CONTAINERS, PROVIDING THE TOTAL LOAD IS COMPATIBLE, EXISTING DIRECTIONS ARE NOT VIOLATED, AND THE OTHER LADING ITEMS ARE BLOCKED AND BRACED TO EQUAL THE BLOCKING AND BRACING CRITERIA SPECIFIED HEREIN.

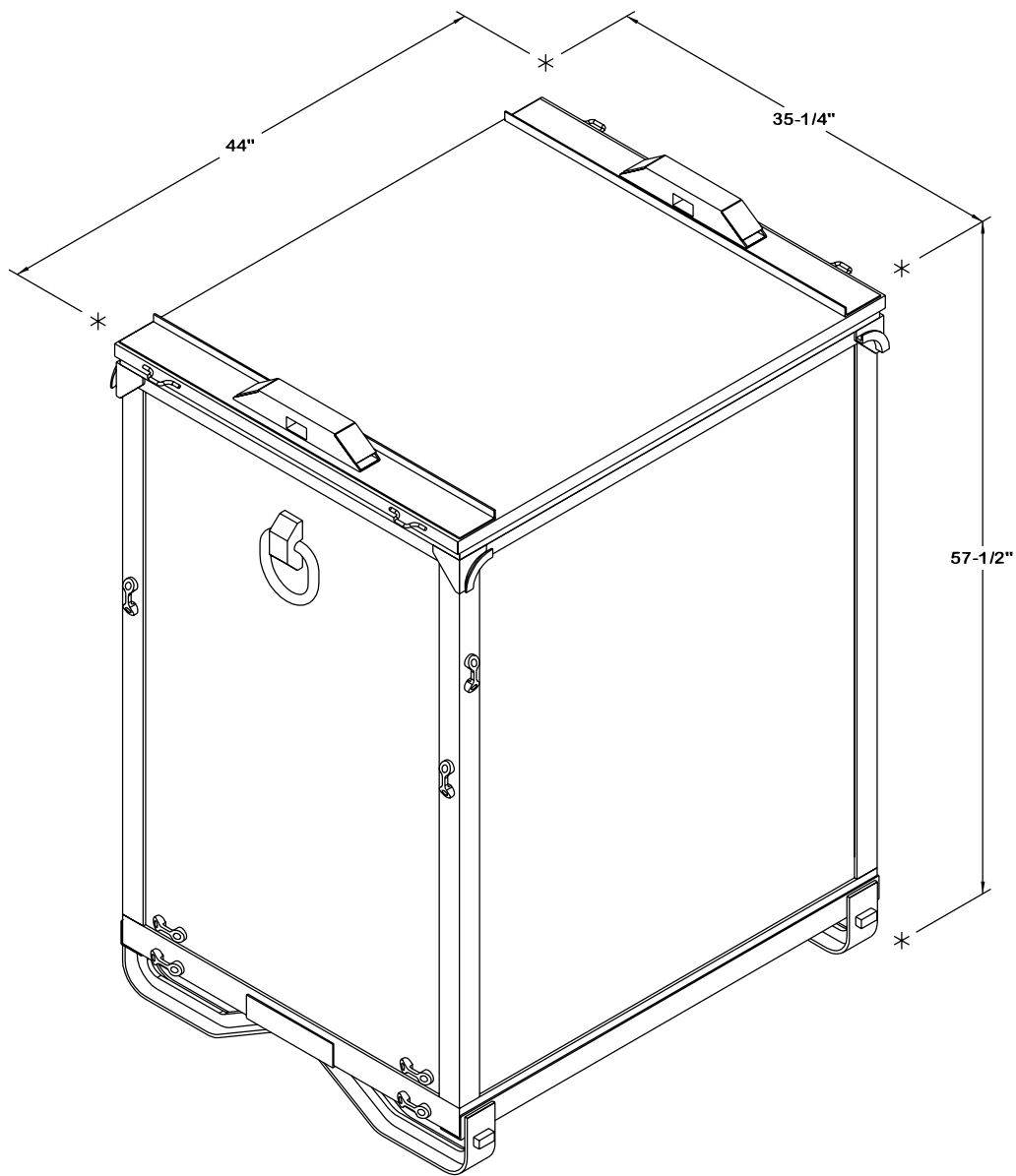
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## MATERIAL SPECIFICATIONS

- LUMBER - - - - - : SEE TM 743-200-1 (DUNNAGE LUMBER) AND FED SPEC MM-L-751.
- NAILS - - - - - : ASTM F1667; COMMON STEEL NAIL LCMS OR NLCMS).
- 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.
- ANTI-CHAFING MATERIAL - - - - - : MIL-B-121 (OR EQUAL); NEUTRAL BARRIER MATERIAL.

## (GENERAL NOTES CONTINUED)

- J. SOME LOADS ARE SHOWN IN TRAILERS HAVING ROUNDED CORNERS AT THE FORWARD END. IF THE CONVENTIONAL VAN TRAILER BEING USED IS EQUIPPED WITH A SQUARE FRONT, A FLAT FRONT SURFACE OF 7'-4" WIDTH OR GREATER OR WITH AN INSTALLED BULKHEAD, OMIT THE FORWARD BLOCKING ASSEMBLY AND POSITION THE CONTAINERS DIRECTLY AGAINST THE FORWARD POSITION OF THE TRAILER.
- K. 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 "STRAP JOINT A" AND "STRAP JOINT B" DETAILS ON PAGE 22 FOR GUIDANCE.
- L. DUNNAGE LUMBER SPECIFIED THROUGHOUT THIS PROCEDURAL DRAWING IS OF NOMINAL SIZE. FOR EXAMPLE, 2" X 4" MATERIAL IS ACTUALLY 1-1/2" THICK BY 3-1/2" WIDE AND 2" X 6" MATERIAL IS ACTUALLY 1-1/2" THICK BY 5-1/2" WIDE.
- M. **NOTICE:** A STAGGERED NAILING PATTERN WILL BE USED WHEREVER POSSIBLE WHEN NAILS ARE DRIVEN INTO JOINTS OF DUNNAGE ASSEMBLIES. ALSO, 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 THE PIECE, ONTO OR RIGHT BESIDE A NAIL IN A LOWER PIECE.
- N. POWER DRIVEN STAPLES MAY BE USED AS ALTERNATIVE FASTENERS FOR NAILS WHEN CONSTRUCTING DUNNAGE ASSEMBLIES, WHICH ARE TO BE USED IN THE DELINEATED TRAILER LOADS SHOWN THROUGHOUT THIS DRAWING. THE STAPLES TO BE USED MUST BE EQUAL IN LENGTH TO THE SPECIFIED NAIL SIZE AND MUST BE SUBSTITUTED ON A ONE STAPLE FOR ONE NAIL BASIS. STAPLES WHICH ARE 2-1/2" OR LESS IN LENGTH SHOULD BE IN ACCORDANCE WITH ASTM F1667 AS NEARLY AS PRACTICABLE. STAPLES WHICH ARE LONGER THAN 2-1/2", WILL BE A COMMERCIAL GRADE AND OF A QUALITY EQUIVALENT TO THOSE MANUFACTURED BY SENCO PRODUCTS INCORPORATED. **NOTE:** STAPLES WILL NOT BE SUBSTITUTED FOR NAILS IN ANY LOAD RESTRAINING FLOOR DUNNAGE APPLICATION.
- O. PORTIONS OF THE TRAILERS, SUCH AS SIDEWALLS, ENDWALLS, AND ROOFS, HAVE NOT BEEN SHOWN IN THE LOAD VIEWS FOR CLARITY PURPOSES.
- P. THE UNBLOCKED SPACE ACROSS THE WIDTH OF A LOAD BAY IS NOT TO EXCEED 2". INSTALLING SIDE FILL ASSEMBLIES OR CRIB FILL ASSEMBLIES BETWEEN THE CONTAINERS AS REQUIRED CAN ELIMINATE EXCESSIVE SLACK FROM A LOAD.
- Q. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS AND THE REAR DOOR MEASURES 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9", USE THE REAR BLOCKING AS SHOWN ON PAGE 4. IF THE SPACE AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "A" OR "B" AS DEPICTED ON PAGE 20. **NOTE:** REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER FLOOR IS CONFIGURED SUCH AS TO ALLOW NAILING IN THIS AREA. **CAUTION:** THE NAILED HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
- R. **CAUTION:** WHEN POWER OR PNEUMATIC NAILERS ARE BEING USED IN THE APPLICATION OF NAILED FLOORLINE BLOCKING OR BRACING, CONTAINERS BEING LOADED INTO THE CONVEYANCE MUST BE POSITIONED TO ALLOW A CLEAR PATH OF EXIT FOR THE OPERATOR AT ALL TIMES, SHOULD AN EMERGENCY EXIT BECOME NECESSARY.
- S. CONVERSION TO METRIC EQUIVALENTS: DIMENSIONS WITHIN THIS DOCUMENT ARE EXPRESSED IN INCHES, AND WEIGHTS ARE EXPRESSED IN POUNDS. WHEN NECESSARY, THE METRIC EQUIVALENTS MAY BE COMPUTED ON THE BASIS OF ONE INCH EQUALS 25.4MM AND ONE POUND EQUALS 0.454 KG.



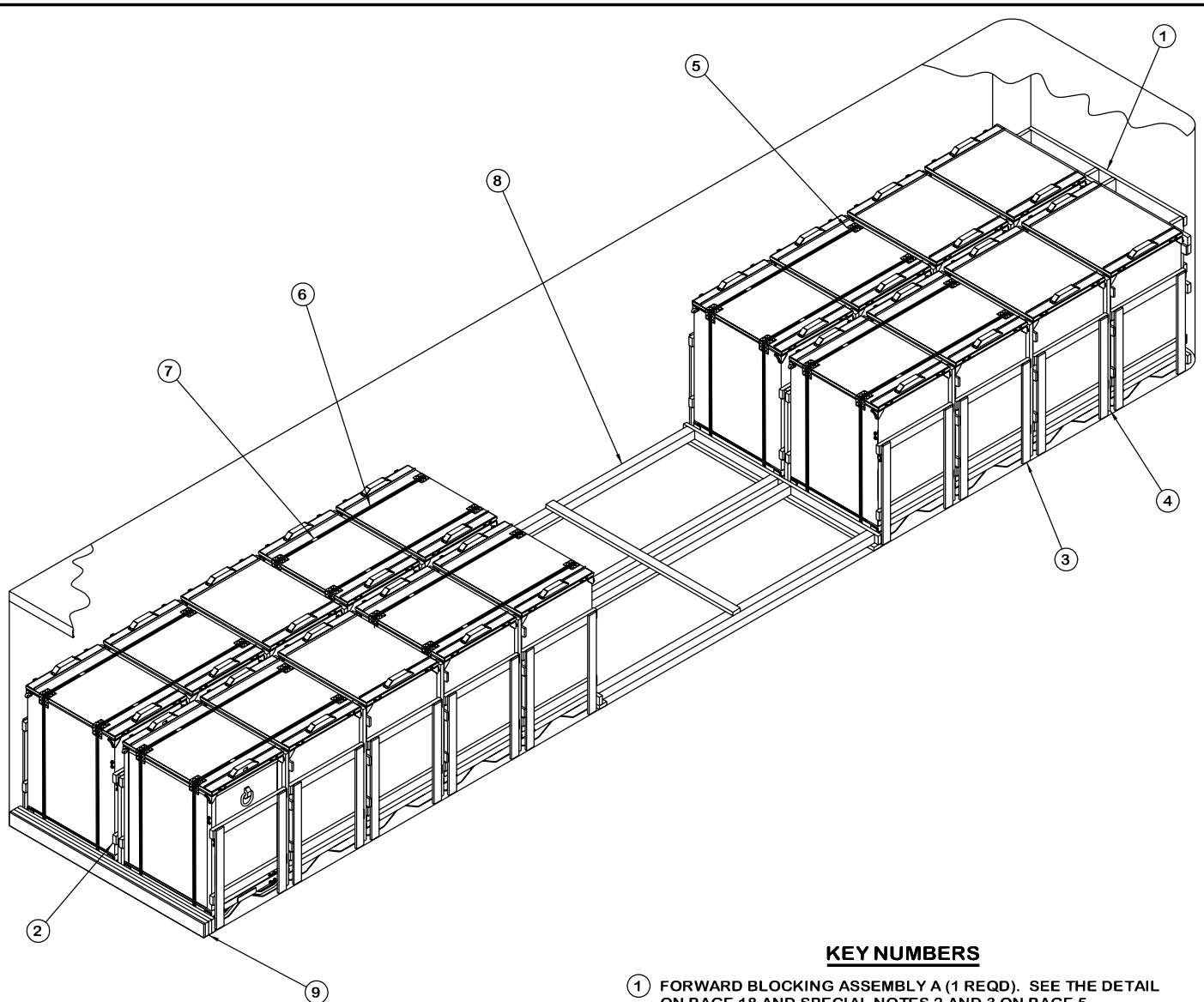
**CONTAINER DETAIL**

GROSS WEIGHT  
 M59 WITH HE COMP C4 CHARGE - - - - - 2,500 LBS (APPROX)  
 M69 WITH PRACTICE ELECTRIC CHARGE - - 2,390 LBS (APPROX)  
 CUBE - - - - - 51.6 CUBIC FEET

**REVISION**

REVISION NO. 1, DATED OCTOBER 2006, CONSISTS OF:

1. UPDATING DRAWING.
2. ADDING LOADING PROCEDURES.



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 18 AND SPECIAL NOTES 2 AND 3 ON PAGE 5.
- ② CRIB FILL ASSEMBLY (9 REQD). SEE THE DETAIL ON PAGE 17 AND SPECIAL NOTE 4 ON PAGE 5.
- ③ SIDE FILL ASSEMBLY A (18 REQD). SEE THE DETAIL ON PAGE 21. INSTALL ASSEMBLY BETWEEN THE CONTAINER LIFT AND TIE-DOWN CLEAVISES.
- ④ LOAD BEARING GATE A (7 REQD). SEE THE DETAIL ON PAGE 19.
- ⑤ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ⑥ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 22'-4" LONG STEEL STRAPPING (12 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS FORKLIFT OPENINGS ALLOW.
- ⑦ SEAL FOR 1-1/4" STRAPPING (12 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑧ CENTER SPACER ASSEMBLY (1 REQD). SEE DETAIL ON PAGE 17 AND SPECIAL NOTE 5 ON PAGE 5.
- ⑨ REAR BLOCKING, 1" OR 2" X 6" BY INSIDE TRAILER WIDTH MINUS 1/2" (AS REQD, 4 SHOWN). LAMINATE EACH PIECE TO THE PREVIOUS PIECE W/8 NAILS OF A SUITABLE SIZE (6d NAILS FOR 1" MATERIAL OR 10d NAILS FOR 2" THICK MATERIAL). SEE SPECIAL NOTE 6 ON PAGE 5.

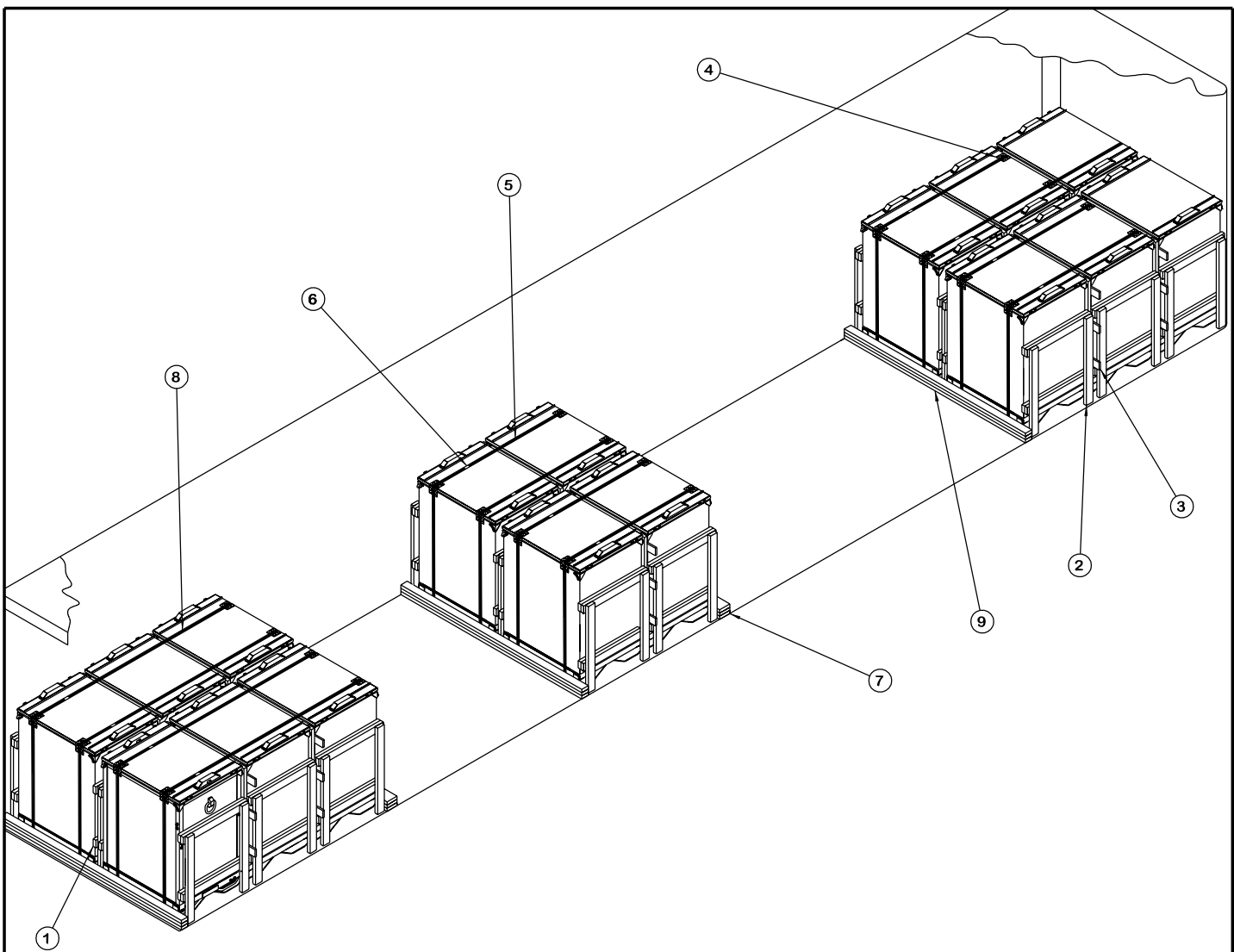
**SPECIAL NOTES:**

1. AN 18 CONTAINER LOAD OF M69 CHARGES IS SHOWN IN A 40'-0" LONG BY 7'-8" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. A TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. IF A TRAILER WITH SQUARE FRONT CORNERS IS TO BE LOADED, THE FORWARD BLOCKING ASSEMBLY "A" ON PAGE 4 WILL NOT BE REQUIRED.
3. IF THE TRAILER HAS SUFFICIENT NAILING AREA AT THE FRONT OF THE LOAD, A NAILED HEADER MAY BE USED IN PLACE OF THE FORWARD BLOCKING ASSEMBLY "A". SEE THE LOAD ON PAGE 6 FOR GUIDANCE ON INSTALLING A NAILED HEADER.
4. CRIB FILL ASSEMBLIES ARE REQUIRED TO ALLOW A MINIMUM OF 3" OF LATERAL SPACING BETWEEN CONTAINERS.
5. CENTER SPACER ASSEMBLY, AS SHOWN ON PAGE 4, IS TO BE USED FOR THE PURPOSE OF PROVIDING FOR PROPER WEIGHT DISTRIBUTION, AND IS SHOWN AS TYPICAL ONLY. IF THE TRAILER TO BE LOADED IS LONGER THAN 40', THE LOCATION OF THE ASSEMBLY, AND OR THE STRUT LENGTHS, MAY BE DIFFERENT FROM WHAT IS SHOWN. IF A SHORTER TRAILER IS USED FOR THE DEPICTED LOAD, THIS ASSEMBLY MAY NOT BE REQUIRED. **NOTE:** THE CENTER SPACER ASSEMBLY MUST NOT BE POSITIONED NEXT TO A FORWARD BLOCKING ASSEMBLY, IF REQUIRED.
6. IF THE SPACE AT THE REAR OF THE LOAD, BETWEEN THE CONTAINERS AND THE REAR DOOR MEASURES 1-1/2" OR LESS REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THE 9", USE THE REAR BLOCKING AS SHOWN. IF THE VOID AT THE REAR OF THE LOAD IS 9" OR GREATER, USE THE "REAR BLOCKING ASSEMBLY A", AS SHOWN ON PAGE 20. **NOTE:** REAR BLOCKING ASSEMBLIES MAY BE REPLACED WITH NAILED HEADERS AT THE REAR OF THE LOAD, PROVIDED THE TRAILER IS CONFIGURED SUCH AS TO ALLOW NAILING IN THE AREA IN QUESTION. REFER TO THE REAR HEADER ON PAGE 6 AND THE HEADER NAILING CHARTS ON PAGE 7 FOR GUIDANCE. **CAUTION:** THE NAILED HEADER METHOD IS REQUIRED WHEN LOADING VAN TRAILERS EQUIPPED WITH ROLL-UP TYPE DOORS.
7. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY OMITTING ONE OR MORE CONTAINERS FROM THE LOAD.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	290	97
1" X 6"	8	4
2" X 4"	484	323
2" X 6"	49	49
4" X 4"	44	58
NAILS	NO. REQD	POUNDS
6d (2")	329	2
10d (3")	269	4-1/4
STEEL STRAPPING, 1-1/4" - 254' REQD - - - - - 38 LBS		
SEAL FOR 1-1/4" STRAPPING - 12 REQD - - - - - 3/4 LB		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER, M69 PRACTICE	18	42,300 LBS
DUNNAGE	-	1,101 LBS
TOTAL WEIGHT		43,401 LBS (APPROX)



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① CRIB FILL ASSEMBLY (8 REQD). SEE THE DETAIL ON PAGE 17 AND SPECIAL NOTE 3 ON PAGE 7.
- ② SIDE FILL ASSEMBLY B (16 REQD). SEE THE DETAIL ON PAGE 21.
- ③ LOAD BEARING GATE A (5 REQD). SEE THE DETAIL ON PAGE 19.
- ④ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ⑤ BUNDLING STRAP A, 1-1/4" X .031" OR .035" X 20'-8" LONG STEEL STRAPPING (8 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS POSSIBLE.
- ⑥ SEAL FOR 1-1/4" STRAPPING (12 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑦ FORWARD HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS EVENLY SPACED. LAMINATE THE SECOND W/6-20d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑧ BUNDLING STRAP B, 1-1/4" X .031" OR .035" X 26'-9" LONG STEEL STRAPPING (4 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS POSSIBLE.
- ⑨ REAR HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7 AND SPECIAL NOTE 4 ON PAGE 7.

**SPECIAL NOTES:**

1. A 16 CONTAINER LOAD OF M59 CHARGES IS SHOWN IN A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. A TRAILER WITH 5" ROUNDED FRONT CORNERS IS SHOWN. IF A TRAILER WITH 6" OR GREATER ROUNDED FRONT CORNERS IS TO BE LOADED, A FORWARD BLOCKING ASSEMBLY "A", AS SHOWN ON PAGE 4, WILL BE REQUIRED. SEE THE DETAIL ON PAGE 18. IF THE TRAILER HAS SUFFICIENT NAILING AREA AT THE FRONT OF THE LOAD, A NAILED HEADER MAY BE USED IN PLACE OF THE FORWARD BLOCKING ASSEMBLY "A".
3. CRIB FILL ASSEMBLIES ARE REQUIRED TO ALLOW A MINIMUM OF 3" OF LATERAL SPACING BETWEEN CONTAINERS.
4. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9" USE NAILED HEADER AS SHOWN OR THE REAR BLOCKING AS SHOWN ON PAGE 4. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOOR IS 9" OR GREATER, USE THE NAILED HEADER AS SHOWN OR THE REAR BLOCKING ASSEMBLY "A" AS DETAILED ON PAGE 20. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER ON PAGE 6, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
5. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD.

<b>FORWARD HEADER NAILING CHART *</b>	
# NAILS	MAX. LOAD WEIGHT (LBS)
3	15,000
4	20,000
5	25,000
6	30,000
7	35,000
8	40,000
9	45,000

\* HEADERS AT THE FRONT END OF A LOAD OR AT THE FRONT END OF A DIVIDED LOAD WILL BE DOUBLED 2" X 6" MATERIAL. THE NUMBER OF NAILS INDICATED ABOVE REFERS TO THE NUMBER OF NAILS USED IN EACH LAMINATION OF A HEADER, FOR EXAMPLE 8 NAILS MEANS THE FIRST BOARD IS NAILED TO THE TRAILER FLOOR W/8-10d NAILS, AND THE SECOND BOARD IS LAMINATED TO THE FIRST W/8-20d NAILS, FOR A TOTAL OF 8-10d AND 8-20d NAILS PER HEADER.

<b>REAR HEADER NAILING CHART *</b>	
# NAILS	MAX. LOAD WEIGHT (LBS)
6	15,000
7	17,500
8	20,000
9	22,500
10	25,000
11	27,500
12	30,000
13	32,500
14	35,000
15	37,500
16	40,000
17	42,500
18	45,000

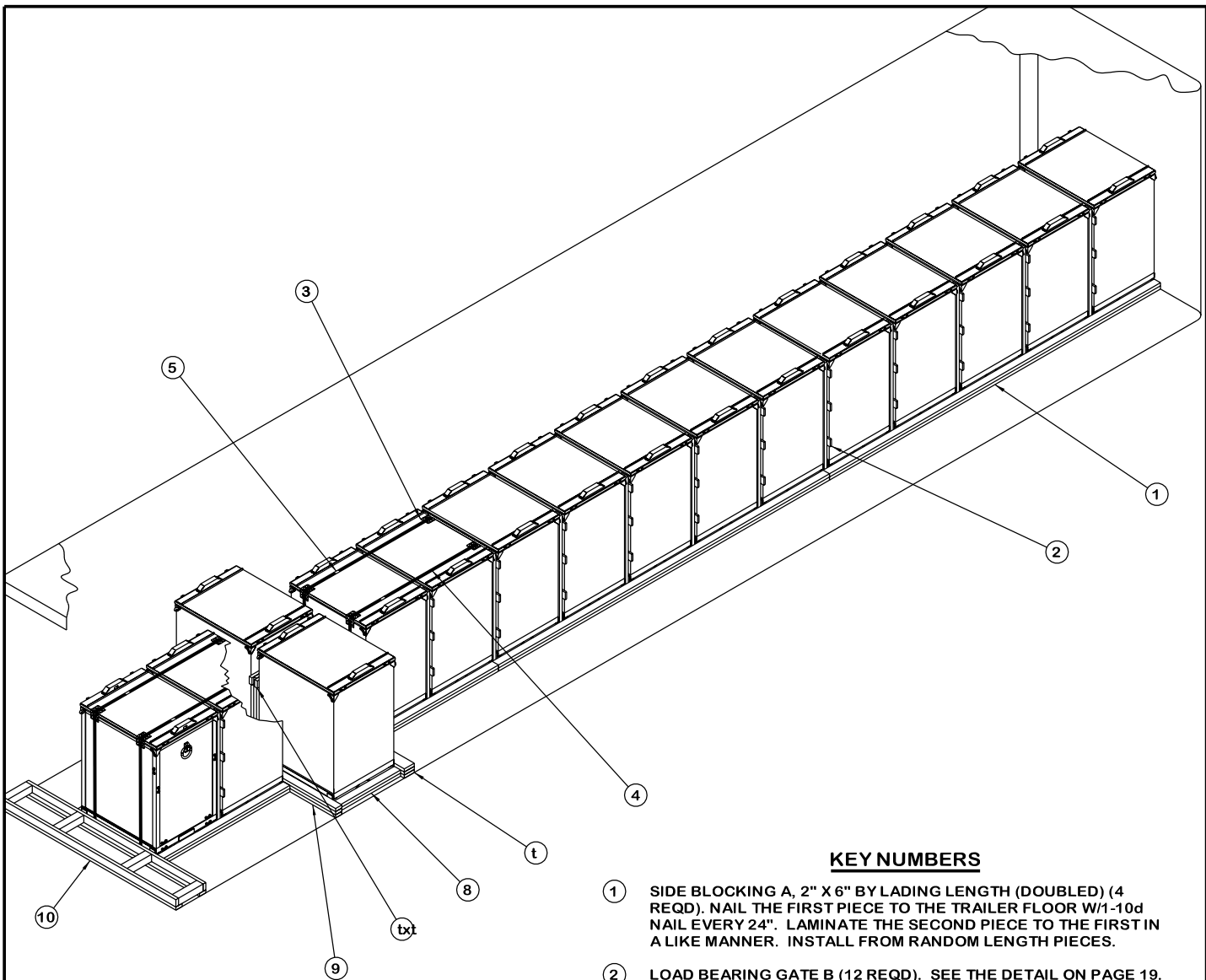
\* HEADERS AT THE REAR OF A FULL LOAD OR AT THE REAR END OF A DIVIDED LOAD WILL BE DOUBLED 2" X 4" MATERIAL. THE NUMBER OF NAILS INDICATED ABOVE REFERS TO THE NUMBER OF NAILS USED IN EACH LAMINATION OF A HEADER, FOR EXAMPLE 8 NAILS MEANS THE FIRST BOARD IS NAILED TO THE TRAILER FLOOR W/8-10d NAILS, AND THE SECOND BOARD IS LAMINATED TO THE FIRST W/8-10d NAILS, FOR A TOTAL OF 16-10d NAILS. NOTE: REAR HEADERS MAY BE HANDLED IN THE SAME MANNER AS FORWARD HEADERS, USING 2" X 6" MATERIAL WITH 10d AND 20d NAILS, IF DESIRED.

<b>BILL OF MATERIAL</b>		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	122	41
2" X 4"	606	404
2" X 6"	49	49
NAILS	NO. REQD	POUNDS
6d (2")	120	3/4
10d (3")	490	7-3/4
20d (4")	32	1-1/4
STEEL STRAPPING, 1-1/4" - - 278' REQD - - -		40 LBS
SEAL FOR 1-1/4" STRAPPING - - 12 REQD - - -		3/4 LBS
ANTI-CHAFING MATERIAL - - - - AS REQD - - - -		NIL

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER, M59 HE - -	16 - - - - -	40,000 LBS
DUNNAGE - - - - -		1,036 LBS

TOTAL WEIGHT - - - - - 41,036 LBS (APPROX)



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE BLOCKING A, 2" X 6" BY LADING LENGTH (DOUBLED) (4 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. INSTALL FROM RANDOM LENGTH PIECES.
- ② LOAD BEARING GATE B (12 REQD). SEE THE DETAIL ON PAGE 19.
- ③ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ④ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 22'-4" LONG STEEL STRAPPING (4 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS ALLOWED.
- ⑤ SEAL FOR 1-1/4" STRAPPING (4 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑥ FORWARD HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS EVENLY SPACED. LAMINATE THE SECOND W/6-20d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑦ CRIB FILL ASSEMBLY (1 REQD). SEE THE DETAIL ON PAGE 17 AND SPECIAL NOTE 3 ON PAGE 9.
- ⑧ SIDE BLOCKING B, 2" X 6" X 34" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/3-10d NAIL. LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER.
- ⑨ REAR HEADER, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑩ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 20 AND SPECIAL NOTE 4 ON PAGE 9.



**SPECIAL NOTES:**

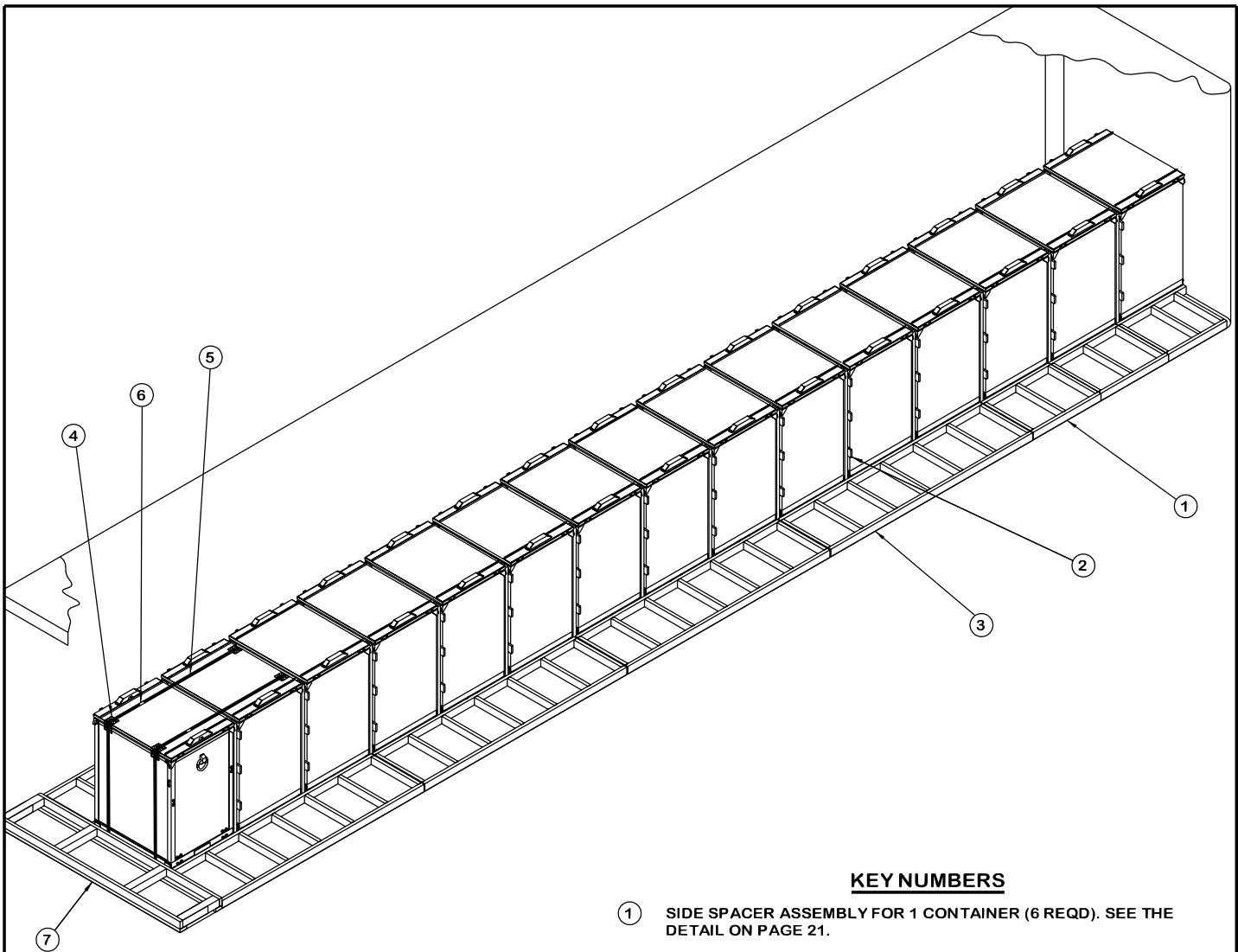
1. A 16 CONTAINER COMBINATION LOAD OF M59 CHARGES IS SHOWN IN A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. A TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. TRAILERS WITH FLAT FRONT, OR LARGE-ANGLED CORNERS MAY BE USED.
3. CRIB FILL ASSEMBLIES ARE REQUIRED TO ALLOW A MINIMUM OF 3" OF LATERAL SPACING BETWEEN LATERALLY ADJACENT CONTAINERS.
4. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9" USE NAILED HEADER OR THE REAR BLOCKING AS SHOWN ON PAGE 4. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOOR IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "B" AS SHOWN OR THE NAILED HEADER AS SHOWN ON PAGE 6. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
5. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	132	44
2" X 4"	365	243
2" X 6"	25	25
4" X 4"	5	6
NAILS	NO. REQD	POUNDS
6d (2")	144	1
10d (3")	272	4-1/4
STEEL STRAPPING, 1-1/4" - 85' REQD	- - - - -	12 LBS
SEAL FOR 1-1/4" STRAPPING - 4 REQD	- - - - -	1/4 LB
ANTI-CHAFING MATERIAL - - - AS REQD	- - - - -	NIL

**LOAD AS SHOWN**

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER, M59 HE	- - - - 16	- - - - - 40,000 LBS
DUNNAGE	- - - - -	- - - - - 653 LBS
TOTAL WEIGHT		- - - - - 40,653 LBS (APPROX)



**ISOMETRIC VIEW**

**KEY NUMBERS**

- ① SIDE SPACER ASSEMBLY FOR 1 CONTAINER (6 REQD). SEE THE DETAIL ON PAGE 21.
- ② LOAD BEARING GATE B (14 REQD). SEE THE DETAIL ON PAGE 19.
- ③ SIDE SPACER ASSEMBLY FOR 3 CONTAINERS (8 REQD). SEE THE DETAIL ON PAGE 21.
- ④ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ⑤ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 22'-4" LONG STEEL STRAPPING (2 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS ALLOWED.
- ⑥ SEAL FOR 1-1/4" STRAPPING (2 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑦ REAR BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 20 AND SPECIAL NOTE 3 ON PAGE 11.

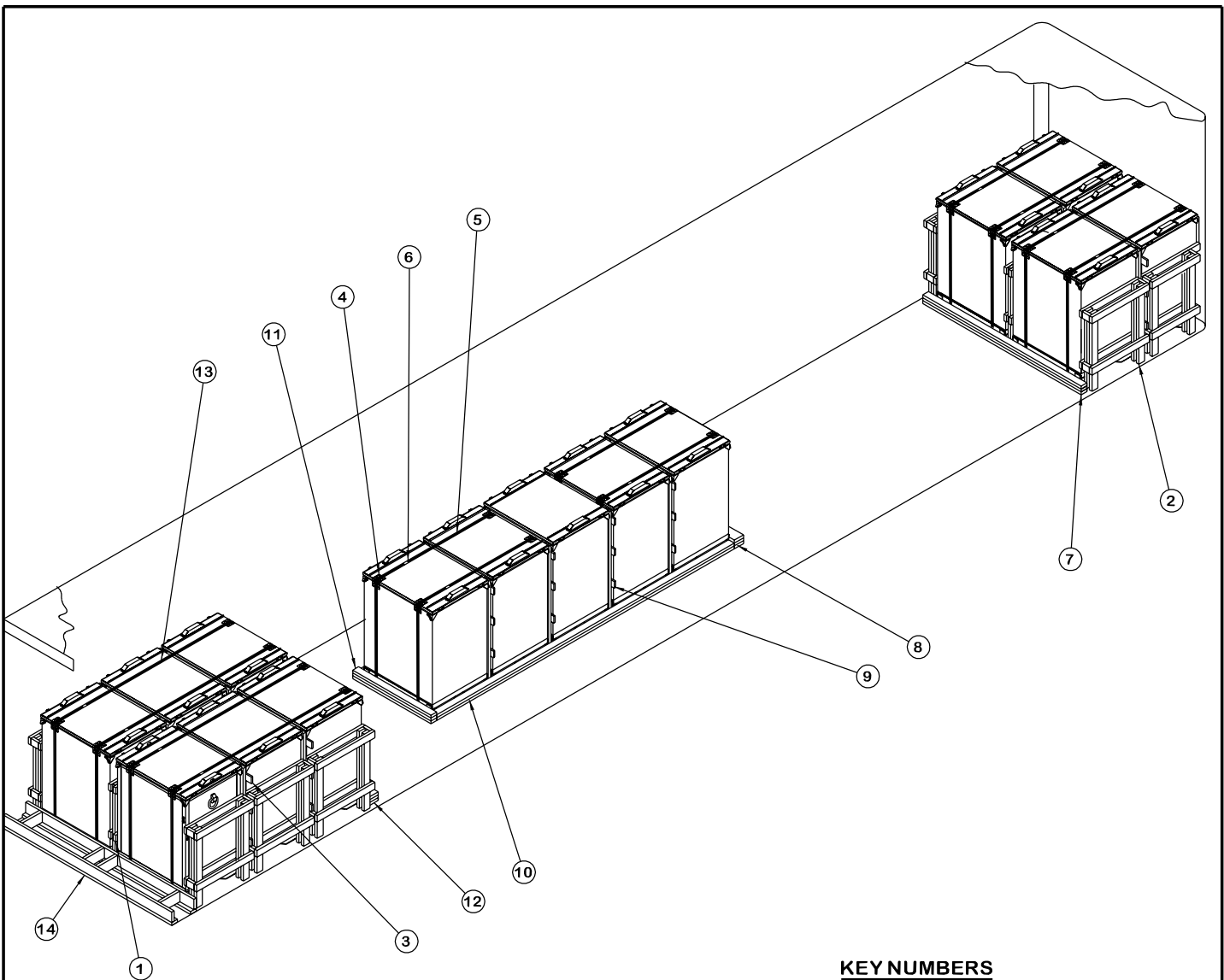
**SPECIAL NOTES:**

1. A 15 CONTAINER LOAD OF M59 CHARGES IS SHOWN IN A 48'-0" LONG BY 8'-2" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. A TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. TRAILERS WITH FLAT FRONT, OR LARGE-ANGLED CORNERS MAY BE USED.
3. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9" USE NAILED HEADER OR THE REAR BLOCKING AS SHOWN ON PAGE 4. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOOR IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "B" AS SHOWN OR THE NAILED HEADER AS SHOWN ON PAGE 6. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
4. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD.

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	154	52
2" X 4"	498	332
4" X 4"	7	9
NAILS	NO. REQD	POUNDS
6d (2")	168	1
10d (3")	328	5-1/4
STEEL STRAPPING, 1-1/4" - 43' REQD - - - - - 6 LBS		
SEAL FOR 1-1/4" STRAPPING - 4 REQD - - - - - NIL		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

**LOAD AS SHOWN**

<u>ITEM</u>	<u>QUANTITY</u>	<u>WEIGHT (APPROX)</u>
CONTAINER, M59 HE	15	37,500 LBS
DUNNAGE		796 LBS
TOTAL WEIGHT		38,296 LBS (APPROX)



**ISOMETRIC VIEW**

**(KEY NUMBERS CONTINUED)**

- ⑩ SIDE BLOCKING, 2" X 6" BY LADING LENGTH (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/1-10d NAIL EVERY 24". LAMINATE THE SECOND PIECE TO THE FIRST IN A LIKE MANNER. INSTALL FROM RANDOM LENGTH PIECES.
- ⑪ REAR HEADER B, 2" X 4" X 48" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/4-10d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑫ FORWARD HEADER B, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (DOUBLED) (2 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS EVENLY SPACED. LAMINATE THE SECOND W/6-20d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑬ BUNDLING STRAP B, 1-1/4" X .031" OR .035" X 26'-9" LONG STEEL STRAPPING (4 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS POSSIBLE.
- ⑭ REAR BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 20 AND SPECIAL NOTE 4 ON PAGE 13.

**KEY NUMBERS**

- ① CRIB FILL ASSEMBLY (5 REQD). SEE THE DETAIL ON PAGE 17 AND SPECIAL NOTE 3 ON PAGE 13.
- ② SIDE FILL ASSEMBLY C (10 REQD). SEE THE DETAIL ON PAGE 21.
- ③ LOAD BEARING GATE A (3 REQD). SEE THE DETAIL ON PAGE 19.
- ④ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ⑤ BUNDLING STRAP A, 1-1/4" X .031" OR .035" X 20'-8" LONG STEEL STRAPPING (8 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS POSSIBLE.
- ⑥ SEAL FOR 1-1/4" STRAPPING (12 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑦ REAR HEADER A, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/6-10d NAILS. LAMINATE THE SECOND PIECE TO THE FIRST W/6-10d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑧ FORWARD HEADER A, 2" X 6" X 48" (TRIPLED) (1 REQD). NAIL THE FIRST PIECE TO THE TRAILER FLOOR W/4-10d NAILS EVENLY SPACED. LAMINATE THE SECOND W/4-20d NAILS. SEE THE HEADER NAILING CHARTS ON PAGE 7.
- ⑨ LOAD BEARING GATE B (4 REQD). SEE THE DETAIL ON PAGE 19.

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**SPECIAL NOTES:**

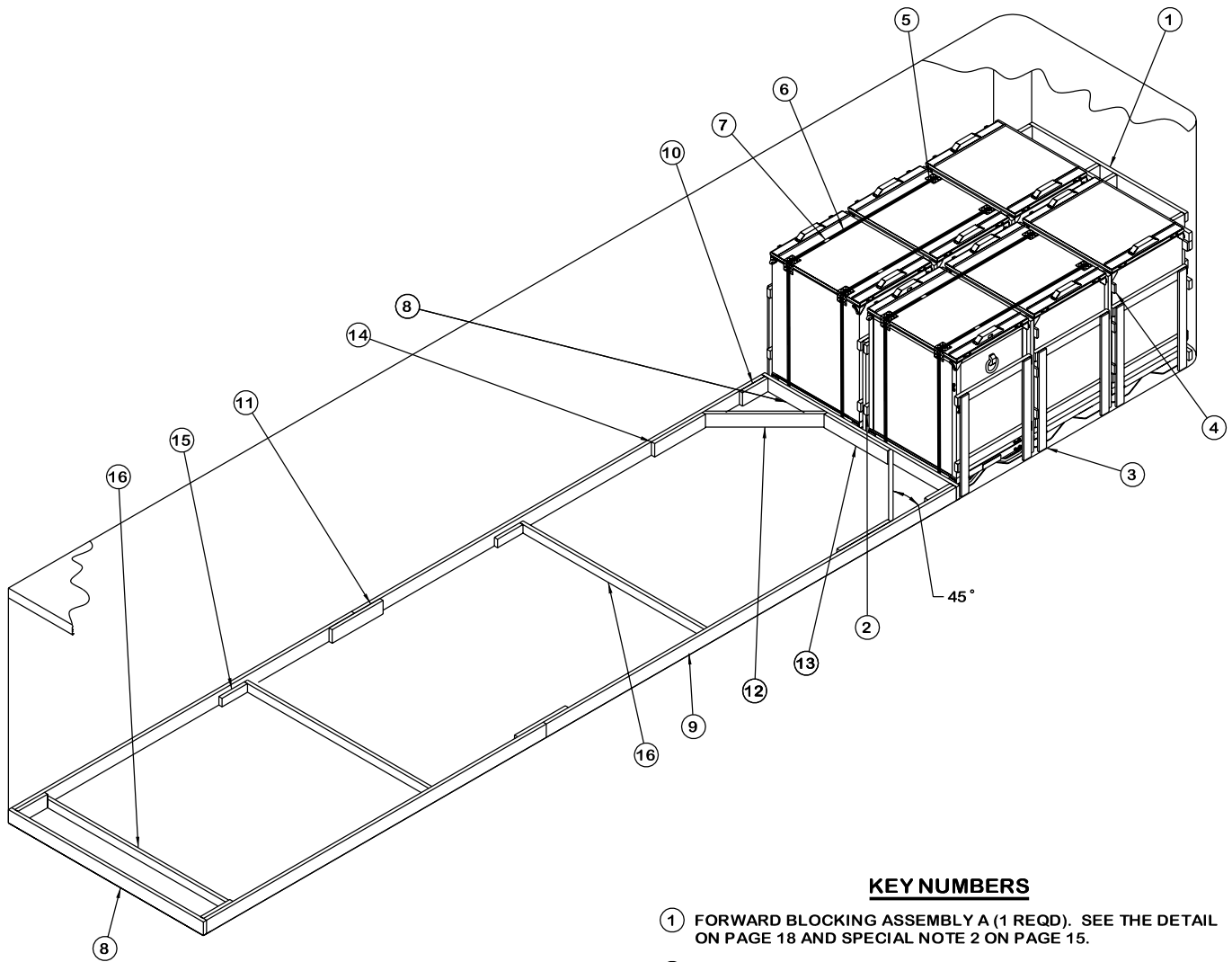
1. A 15 CONTAINER COMBINATION LOAD OF M59 CHARGES IS SHOWN IN A 53'-0" LONG BY 8'-6" WIDE (INSIDE DIMENSIONS) VAN TRAILER. TRAILERS OF OTHER LENGTHS AND WIDTHS MAY BE USED.
2. A TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. TRAILERS WITH FLAT FRONT, OR LARGE-ANGLED CORNERS MAY BE USED.
3. CRIB FILL ASSEMBLIES ARE REQUIRED TO ALLOW A MINIMUM OF 3" OF LATERAL SPACING BETWEEN LATERALLY ADJACENT CONTAINERS.
4. IF THE SPACE AT THE REAR OF THE LOAD IS 1-1/2" OR LESS, REAR BLOCKING IS NOT REQUIRED. IF THE SPACE AT THE REAR OF THE LOAD IS GREATER THAN 1-1/2" BUT LESS THAN 9" USE NAILED HEADER OR THE REAR BLOCKING AS SHOWN ON PAGE 4. IF THE SPACE AT THE REAR OF THE LOAD BETWEEN THE CONTAINERS AND THE REAR DOOR IS 9" OR GREATER, USE THE REAR BLOCKING ASSEMBLY "A" AS SHOWN OR THE NAILED HEADER AS SHOWN ON PAGE 6. IF THE TRAILER IS EQUIPPED WITH A METAL THRESHOLD PLATE AND IT INTERFERES WITH THE NAILING OF THE REAR HEADER, ONE OF THE REAR BLOCKING ASSEMBLIES DESCRIBED ABOVE MUST BE INSTALLED.
5. THE DEPICTED LOAD CAN BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED OR TO SUIT THE WEIGHT OF THE UNIT BEING LOADED. A LOAD CAN BE REDUCED BY OMITTING ONE OR MORE FULL LOAD UNITS FROM THE LOAD.

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
1" X 4"	110	37
2" X 4"	469	313
2" X 6"	26	26
NAILS	NO. REQD	POUNDS
6d (2")	108	3/4
10d (3")	542	8-1/2
20d (4")	28	1
STEEL STRAPPING, 1-1/4" - 278' REQD - - - - - 40 LBS		
SEAL FOR 1-1/4" STRAPPING - 12 REQD - - - - - 3/4 LB		
ANTI-CHAFING MATERIAL - - - AS REQD - - - - - NIL		

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
CONTAINER, M59 HE	15	37,500 LBS
DUNNAGE		799 LBS
<b>TOTAL WEIGHT</b>		<b>38,299 LBS (APPROX)</b>



**ISOMETRIC VIEW**

(KEY NUMBERS CONTINUED)

- ⑬ CENTER CLEAT, 2" X 6" BY CUT-TO-FIT BETWEEN THE DIAGONAL BRACES (1 REQD). NAIL TO THE HEADER W/6-10d NAILS.
- ⑭ BACK-UP CLEAT, 2" X 6" X 24" (2 REQD). NAIL TO A SIDE STRUT W/8-10d NAILS.
- ⑮ STRUT BRACE RETAINING CLEAT, 2" X 4" X 12" (AS REQD). NAIL TO A SIDE STRUT W/3-10d NAILS. SEE SPECIAL NOTE 4 ON PAGE 15.
- ⑯ STRUT BRACE, 2" X 4" BY TRAILER WIDTH MINUS 3" IN LENGTH (MINIMUM OF ONE REQD). NAIL TO THE POCKET CLEATS AND/OR TO THE STRUT BRACE RETAINING CLEATS W/2-12d NAILS AT EACH END. SEE SPECIAL NOTES 4 AND 5 ON PAGE 15.

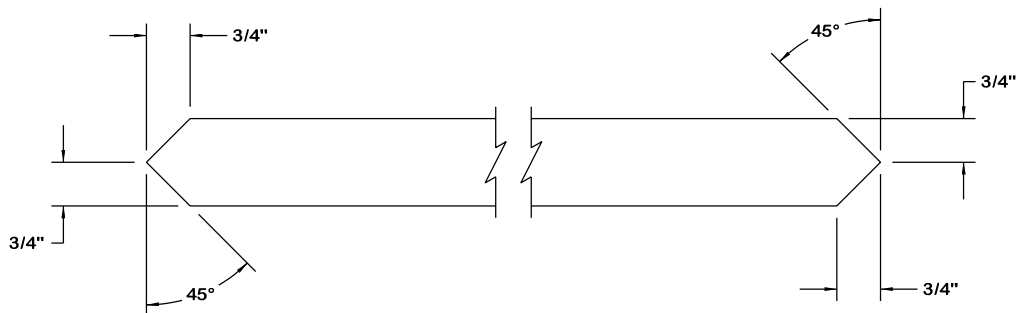
**KEY NUMBERS**

- ① FORWARD BLOCKING ASSEMBLY A (1 REQD). SEE THE DETAIL ON PAGE 18 AND SPECIAL NOTE 2 ON PAGE 15.
- ② CRIB FILL ASSEMBLY (3 REQD). SEE THE DETAIL ON PAGE 17.
- ③ SIDE FILL ASSEMBLY A (6 REQD). SEE THE DETAIL ON PAGE 21.
- ④ LOAD BEARING GATE A (2 REQD). SEE THE DETAIL ON PAGE 19.
- ⑤ ANTI-CHAFING NEUTRAL BARRIER MATERIAL (AS REQD). PLACE UNDER ALL STRAPS AT POINTS OF CONTACT WITH CONTAINERS.
- ⑥ BUNDLING STRAP, 1-1/4" X .031" OR .035" X 20'-8" LONG STEEL STRAPPING (4 REQD, 2 PER BUNDLE). INSTALL AS FAR APART AS POSSIBLE.
- ⑦ SEAL FOR 1-1/4" STRAPPING (4 REQD, 1 PER STRAP). DOUBLE NOTCH EACH SEAL.
- ⑧ HEADER, 2" X 6" X TRAILER WIDTH MINUS 1/2" IN LENGTH (2 REQD).
- ⑨ SIDE STRUT, 2" X 6" BY CUT-TO-FIT BETWEEN THE HEADERS (2 REQD).
- ⑩ POCKET CLEAT, 2" X 6" X 12" (4 REQD). NAIL TO A SIDE STRUT, PIECE MARKED 6, W/3-10d NAILS. TOENAIL TO THE ADJACENT HEADER W/3-12d NAILS.
- ⑪ SPLICE PIECE, 2" X 6" X 24" (AS REQD). CENTER ON JOINT OF SIDE STRUTS AND NAIL W/4-10d NAILS TO EACH END OF SIDE STRUTS. SEE SPECIAL NOTE 4 ON PAGE 15.
- ⑫ DIAGONAL BRACE, 2" X 6" X 42" (2 REQD). DOUBLE BEVEL EACH END WITH 45° CUTS. INSTALL AS SHOWN AND TOENAIL TO THE ADJACENT HEADER AND SIDE STRUT W/2-16d NAILS AT EACH END. SEE THE "DIAGONAL BRACE BEVEL DETAIL" ON PAGE 15.

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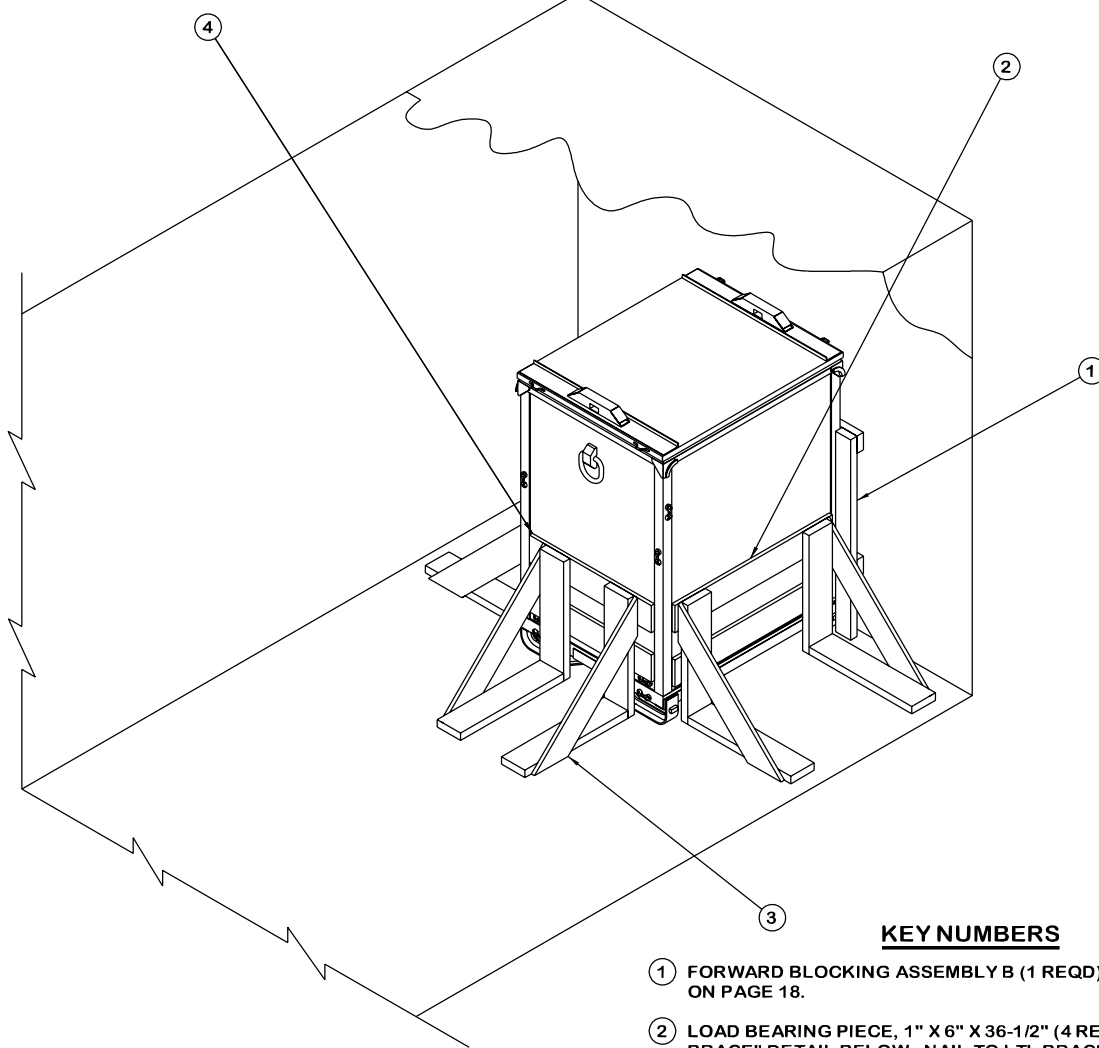
**SPECIAL NOTES:**

1. A SIX CONTAINER LOAD IS SHOWN IN A 7'-8" WIDE (INSIDE DIMENSION) VAN TRAILER. TRAILERS OF OTHER WIDTHS MAY BE USED.  
  
A TRAILER WITH ROUNDED FRONT CORNERS IS SHOWN. IF A TRAILER WITH SQUARE FRONT CORNERS IS TO BE LOADED THE FORWARD BLOCKING ASSEMBLY "A", AS SHOWN ON PAGE 14, WILL NOT BE REQUIRED. IF THE TRAILER HAS SUFFICIENT NAILING AREA AT THE FRONT OF THE LOAD, A NAILED HEADER MAY BE USED IN PLACE OF THE FORWARD BLOCKING ASSEMBLY "A".
2. CRIB FILL ASSEMBLIES ARE REQUIRED TO ALLOW A MINIMUM OF 3" OF LATERAL SPACING BETWEEN CONTAINERS.
3. DEPENDING ON THE NUMBER OF CONTAINERS BEING LOADED, EACH OF THE SIDE STRUTS ON PAGE 14 MAY NEED TO BE FORMED FROM MORE THAN ONE PIECE OF MATERIAL. IF SUCH IS THE CASE, THE SIDE STRUTS MUST BE SPLICED. SPLICING CAN BE ACCOMPLISHED BY CENTERING A 2" X 6" X 24" PIECE ON THE JOINT OF THE SIDE STRUTS AND NAILING IT W/4-10d NAILS AT EACH END OF THE SIDE STRUTS. **NOTE:** IF DESIRED, THE STRUT BRACES ON PAGE 14, MAY BE NAILED TO THE SPLICE PIECES IN LIEU OF USING ADDITIONAL STRUT BRACE RETAINING CLEATS.
4. ALL LOADS THAT UTILIZE THE BLOCKING PROCEDURES DEPICTED ON PAGE 14, REGARDLESS OF THE NUMBER OF CONTAINERS, REQUIRE ONE STRUT BRACE POSITIONED AT THE REAR OF THE TRAILER AND NAILED TO THE POCKET CLEATS. AN ADDITIONAL STRUT BRACE AND TWO STRUT BRACE RETAINING CLEATS MUST BE APPLIED FOR EVERY 7'-0" OF SIDE STRUT LENGTH, WHEN THE SIDE STRUTS ARE LONGER THAN 7'-0".
5. THE "K-BRACE" BLOCKING, AS SHOWN ON PAGE 14, IS ADEQUATE FOR RETAINING A MAXIMUM LOAD OF 20,000 POUNDS.
6. THE DEPICTED LOAD CAN BE INCREASED TO SUIT THE QUANTITY TO BE SHIPPED. SEE THE PROCEDURES ON PAGES 4 THRU 13 FOR GUIDANCE. THE DEPICTED LOAD CAN ALSO BE REDUCED TO SUIT THE QUANTITY TO BE SHIPPED.



**DIAGONAL BRACE BEVEL DETAIL**

DEPICTED ABOVE IS THE TOP VIEW OF 2" X 6" MATERIAL. SEE THE LOAD ON PAGE 14.



**ISOMETRIC VIEW**

**SPECIAL NOTES:**

1. A 7'-8" WIDE (INSIDE DIMENSION) CONVENTIONAL VAN TRAILER WHICH HAS A NAILABLE FLOOR IS SHOWN. TRAILERS OF OTHER WIDTHS CAN BE USED.
2. MORE THAN ONE CONTAINER CAN BE SHIPPED, PROVIDING THE CAPACITY OF THE LTL BRACES IS NOT EXCEEDED. THE LOAD SHOULD BE FORMED IN ROWS, WITH UNITS POSITIONED AGAINST OPPOSITE SIDE WALLS. THE PROPER SIDE FILL ASSEMBLY AND CRIB FILL WILL BE INSTALLED BETWEEN LATERALLY ADJACENT UNITS.
3. EACH BRACE AS APPLIED FOR LONGITUDINAL BRACING WILL SUPPORT 2,000 POUNDS OF LADING, HOWEVER NOT LESS THAN TWO BRACES WILL BE USED AGAINST EACH CONTAINER. ADDITIONAL LTL BRACES MAY BE INSTALLED FOR RETENTION OF A HEAVIER LOAD.

**KEY NUMBERS**

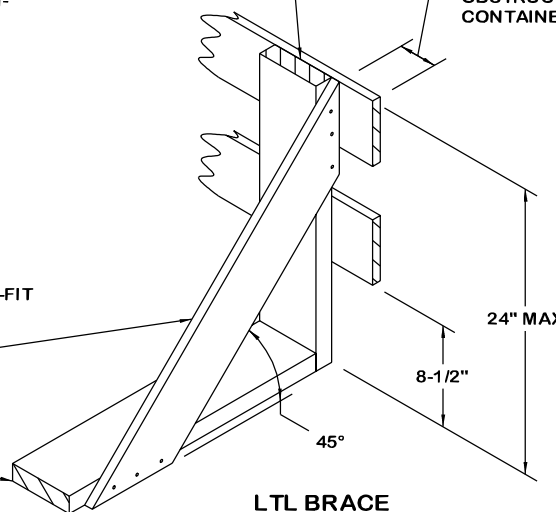
- ① FORWARD BLOCKING ASSEMBLY B (1 REQD). SEE THE DETAIL ON PAGE 18.
- ② LOAD BEARING PIECE, 1" X 6" X 36-1/2" (4 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO LTL BRACES W/3-6d NAILS AT EACH JOINT.
- ③ LTL BRACE (6 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO TRAILER FLOOR W/10-10d NAILS.
- ④ LOAD BEARING PIECE, 1" X 6" X 28" (2 REQD). SEE THE "LTL BRACE" DETAIL BELOW. NAIL TO LTL BRACES W/3-6d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 24"  
(1 REQD). NAIL TO BACK-UP  
CLEAT W/2-10d NAILS.

LOCATE LTL BRACE AGAINST  
LOAD BEARING PIECE IN A  
MANNER THAT LTL BRACE  
WILL NOT CONTACT ANY  
OBSTRUCTIONS ON THE  
CONTAINER.

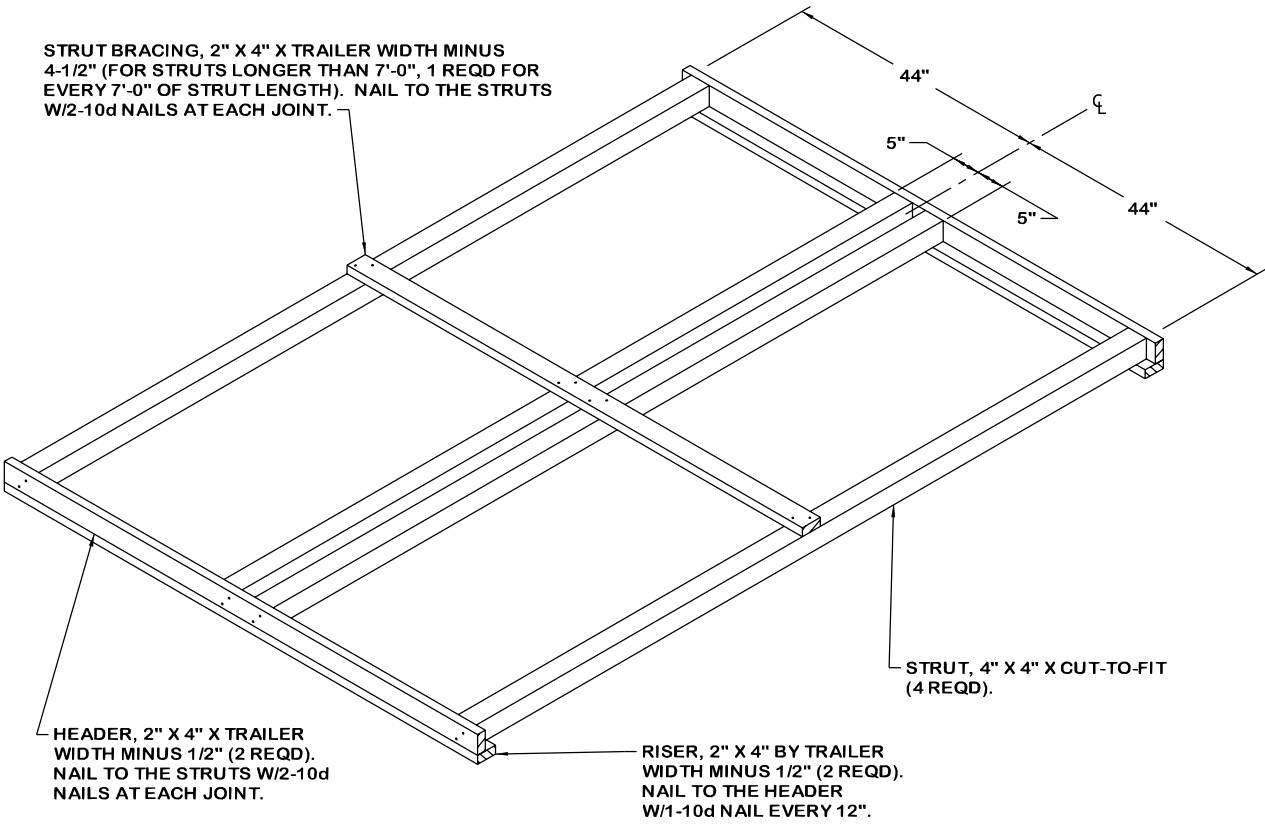
ANGLE BRACE, 1" X 6" BY CUT-TO-FIT  
(1 REQD). NAIL TO THE VERTICAL  
PIECE AND THE BACK-UP CLEAT  
W/3-8d NAILS AT EACH END.

BACK-UP CLEAT 2" X  
6" X 24" (1 REQD).

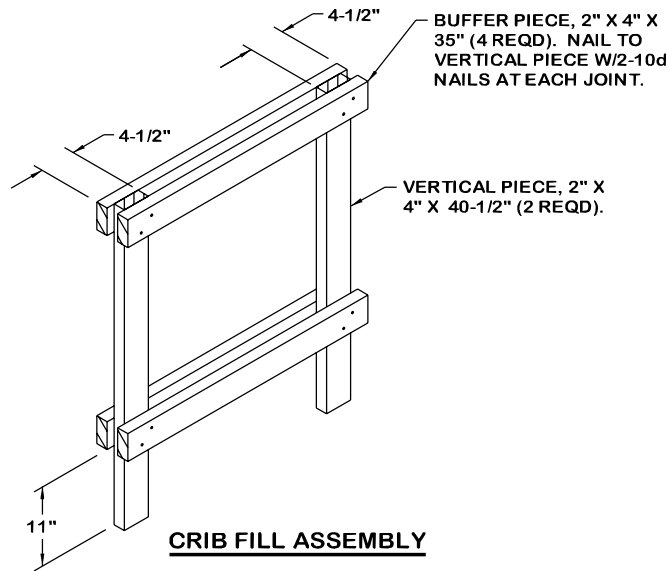


**LTL BRACE**





**CENTER SPACER ASSEMBLY**



**CRIB FILL ASSEMBLY**

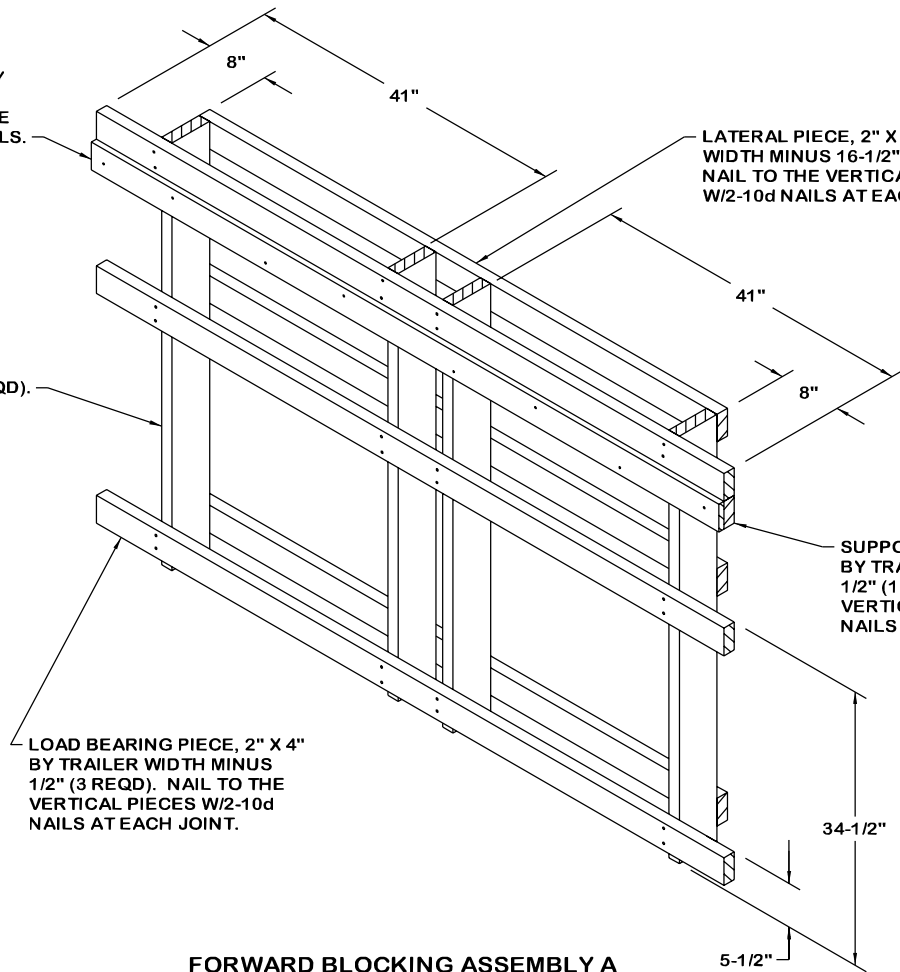
BLOCKING PIECE, 1" X 4" BY TRAILER WIDTH MINUS 1/2" (1 REQD). LAMINATE TO THE SUPPORT PIECE W/8-6d NAILS.

LATERAL PIECE, 2" X 4" BY TRAILER WIDTH MINUS 16-1/2" (3 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

VERTICAL PIECE, 2" X 6" X 54" (4 REQD).

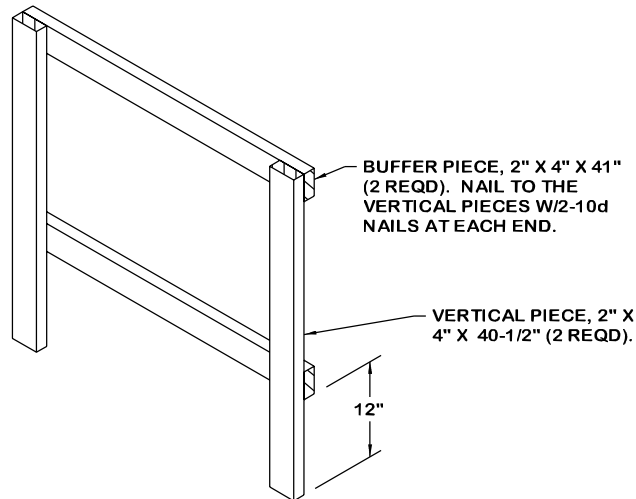
SUPPORT PIECE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (1 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.

LOAD BEARING PIECE, 2" X 4" BY TRAILER WIDTH MINUS 1/2" (3 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH JOINT.



**FORWARD BLOCKING ASSEMBLY A**

THIS ASSEMBLY IS DESIGNED FOR USE AT THE FRONT END OF A TRAILER WHICH HAS ROUNDED CORNERS, AND IS APPLICABLE FOR A CORNER RADIUS 6-1/2" TO 8". IF THE RADIUS IS LESS THAN 6-1/2" VERTICAL PIECES WILL BE 2" X 4" IN LIEU OF THE 2" X 6" PIECES. IF THE TRAILER TO BE LOADED HAS LARGE-ANGLED CORNERS AT THE FORWARD END REFER TO PAGE 22 FOR GUIDANCE.



BUFFER PIECE, 2" X 4" X 41" (2 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS AT EACH END.

VERTICAL PIECE, 2" X 4" X 40-1/2" (2 REQD).

**FORWARD BLOCKING ASSEMBLY B**

THIS ASSEMBLY IS DESIGNED FOR USE WHEN THE NARROW SIDE OF THE CONTAINER IS TOWARD THE FRONT OF THE TRAILER.

VERTICAL PIECE,  
2" X 6" X 54" (4 REQD).

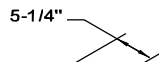
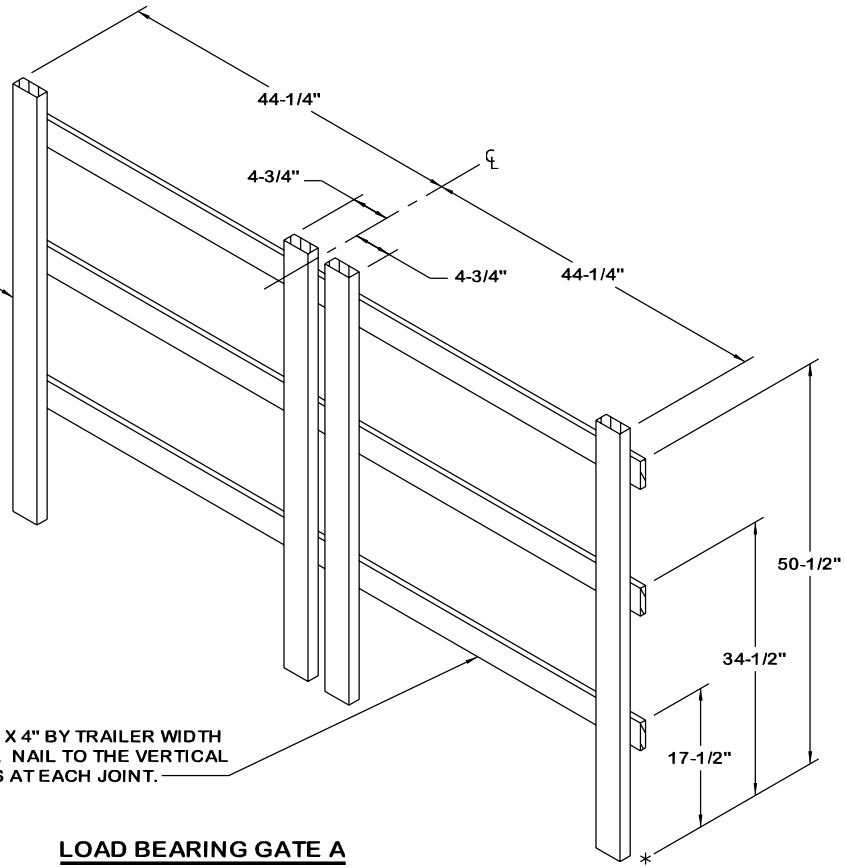
BLOCKING PIECE, 1" X 4" BY TRAILER WIDTH  
MINUS 1/2" (3 REQD). NAIL TO THE VERTICAL  
PIECES W/2-6d NAILS AT EACH JOINT.

**LOAD BEARING GATE A**

VERTICAL PIECE,  
2" X 6" X 54" (2 REQD).

BLOCKING PIECE, 1" X 4" X 44"  
(3 REQD). NAIL TO THE VERTICAL  
PIECES W/2-6d NAILS AT EACH JOINT.

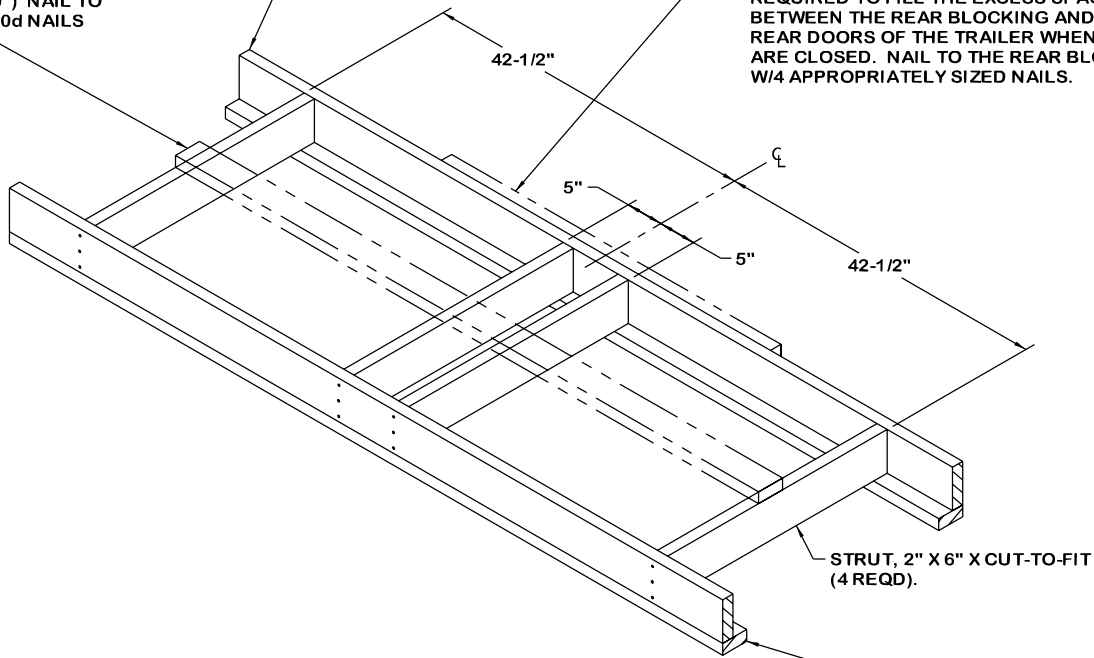
**LOAD BEARING GATE B**



STRUT BRACING, 2" X 4" X 7'-1"  
(1 REQD FOR EVERY 7'-0" OF  
STRUT LENGTH FOR STRUTS  
LONGER THAN 7'-0") NAIL TO  
THE STRUTS W/2-10d NAILS  
AT EACH JOINT.

HEADER, 2" X 6" BY TRAILER  
WIDTH MINUS 1/2" (2 REQD).  
NAIL TO THE STRUTS W/3-10d  
NAILS AT EACH JOINT.

IF THE TRAILER IS EQUIPPED WITH REAR  
CONER POSTS, INSTALL SOLID FILL, 6"  
WIDE X 48" LONG BY THE THICKNESS  
REQUIRED TO FILL THE EXCESS SPACE  
BETWEEN THE REAR BLOCKING AND THE  
REAR DOORS OF THE TRAILER WHEN THEY  
ARE CLOSED. NAIL TO THE REAR BLOCKING  
W/4 APPROPRIATELY SIZED NAILS.



**REAR BLOCKING ASSEMBLY A**

THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF  
A LOAD WHEN THE SPACE BETWEEN THE LADING AND  
THE TRAILER DOOR IS MORE THAN 9" AND TWO ROWS  
OF CONTAINERS ARE LOADED ADJACENT TO THE TRAILER  
DOORS. NOTE: THE ABOVE VIEW IS ROTATED 180° FROM  
THE POSITION IN WHICH IT WILL BE INSTALLED.

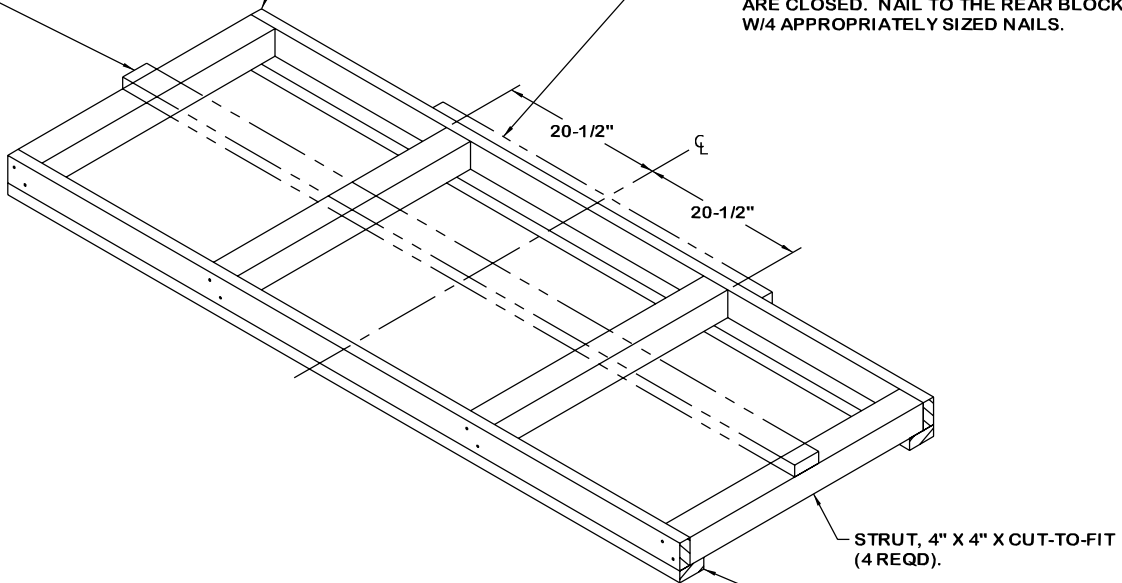
STRUT, 2" X 6" X CUT-TO-FIT  
(4 REQD).

RISER, 2" X 4" BY TRAILER  
WIDTH MINUS 1/2" (2 REQD).  
NAIL TO THE HEADER  
W/1-10d NAIL EVERY 12".

STRUT BRACING, 2" X 4" BY TRAILER WIDTH  
MINUS 1/2" (1 REQD FOR EVERY 7'-0" OF  
STRUT LENGTH FOR STRUTS  
LONGER THAN 7'-0"). NAIL TO THE STRUTS  
W/2-10d NAILS  
AT EACH JOINT.

HEADER, 2" X 4" BY TRAILER  
WIDTH MINUS 1/2" (2 REQD).  
NAIL TO THE STRUTS W/2-10d  
NAILS AT EACH JOINT.

IF THE TRAILER IS EQUIPPED WITH REAR  
CONER POSTS, INSTALL SOLID FILL, 4"  
WIDE X 48" LONG BY THE THICKNESS  
REQUIRED TO FILL THE EXCESS SPACE  
BETWEEN THE REAR BLOCKING AND THE  
REAR DOORS OF THE TRAILER WHEN THEY  
ARE CLOSED. NAIL TO THE REAR BLOCKING  
W/4 APPROPRIATELY SIZED NAILS.

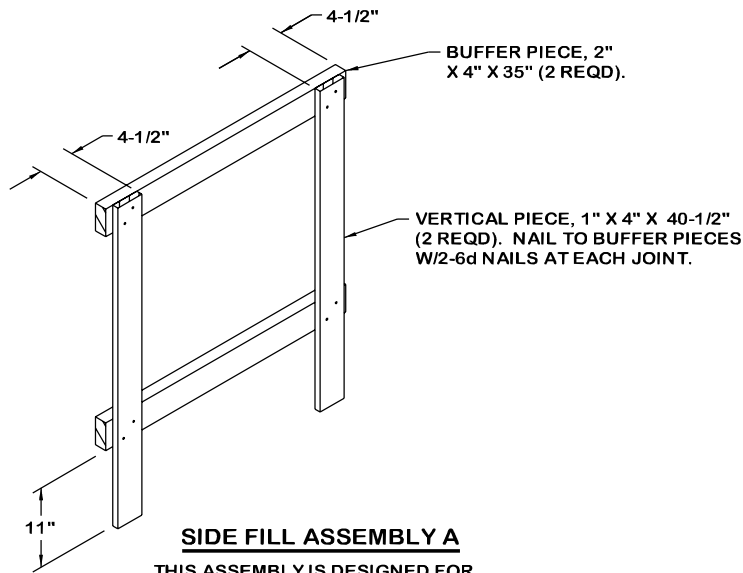


**REAR BLOCKING ASSEMBLY B**

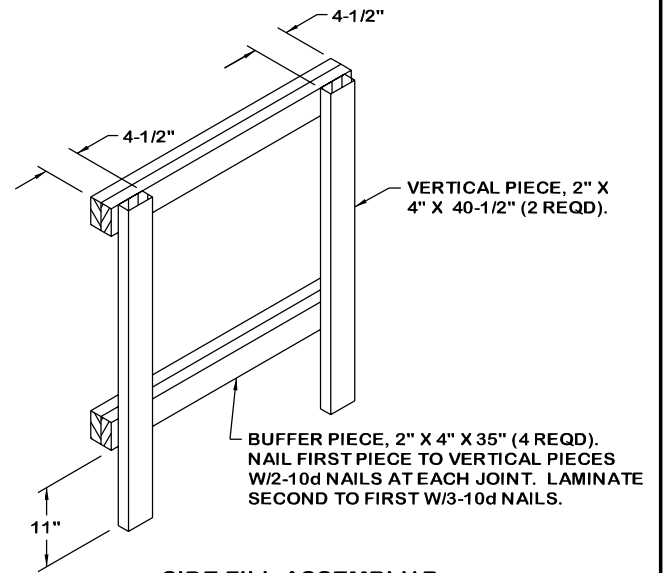
THIS ASSEMBLY IS DESIGNED FOR USE AT THE REAR OF  
A LOAD WHEN THE SPACE BETWEEN THE LADING AND  
THE TRAILER DOOR IS MORE THAN 9" AND ONE ROW  
OF CONTAINERS IS LOADED ADJACENT TO THE TRAILER  
DOORS. NOTE: THE ABOVE VIEW IS ROTATED 180° FROM  
THE POSITION IN WHICH IT WILL BE INSTALLED.

STRUT, 4" X 4" X CUT-TO-FIT  
(4 REQD).

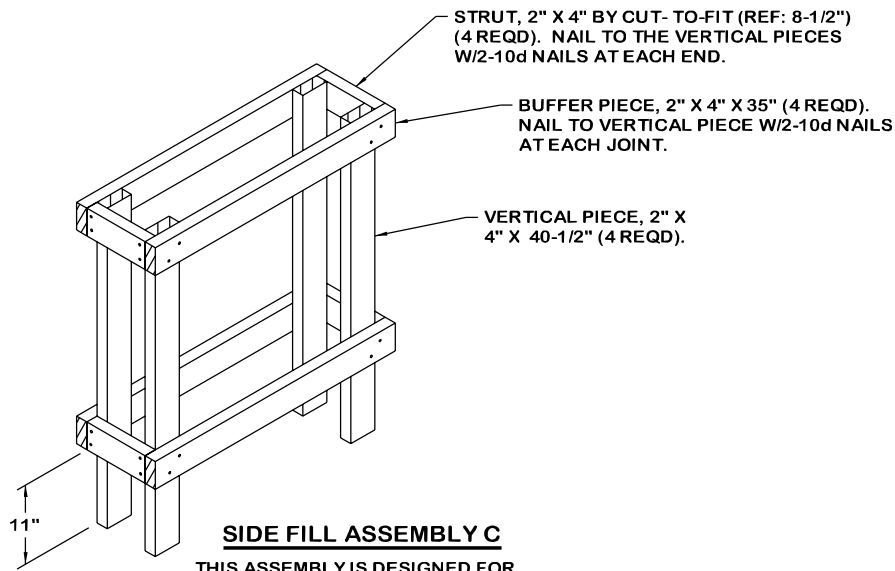
RISER, 2" X 4" BY TRAILER  
WIDTH MINUS 1/2" (2 REQD).  
NAIL TO THE HEADER  
W/1-10d NAIL EVERY 12".



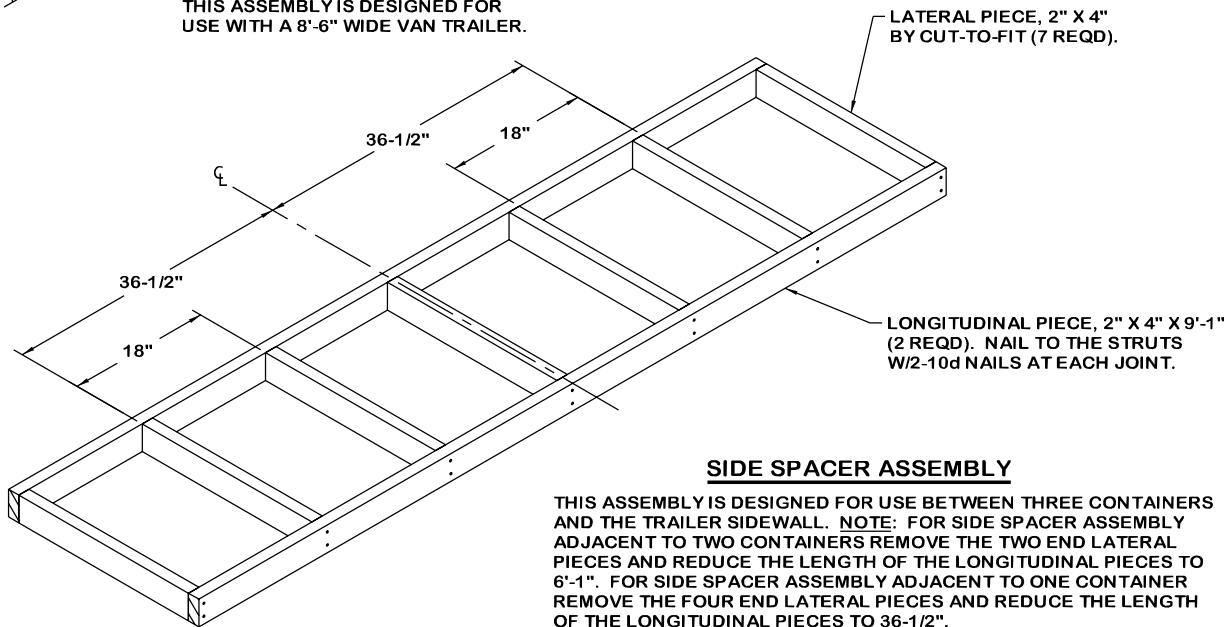
THIS ASSEMBLY IS DESIGNED FOR USE WITH A 7'-8" WIDE VAN TRAILER.



THIS ASSEMBLY IS DESIGNED FOR USE WITH A 8'-2" WIDE VAN TRAILER.



THIS ASSEMBLY IS DESIGNED FOR USE WITH A 8'-6" WIDE VAN TRAILER.



THIS ASSEMBLY IS DESIGNED FOR USE BETWEEN THREE CONTAINERS AND THE TRAILER SIDEWALL. **NOTE:** FOR SIDE SPACER ASSEMBLY ADJACENT TO TWO CONTAINERS REMOVE THE TWO END LATERAL PIECES AND REDUCE THE LENGTH OF THE LONGITUDINAL PIECES TO 6'-1". FOR SIDE SPACER ASSEMBLY ADJACENT TO ONE CONTAINER REMOVE THE FOUR END LATERAL PIECES AND REDUCE THE LENGTH OF THE LONGITUDINAL PIECES TO 36-1/2".

**FORWARD LOADING PATTERN**

FORWARD SPACER ASSEMBLY (2 REQD, 1 LEFT AND 1 RIGHT HAND). SEE THE DETAIL BELOW.

FORWARD END OF TRAILER

THIS PROCEDURE IS APPLICABLE TO THE LOADING OF A CONTAINER IN THE FORWARD END OF A VAN TRAILER HAVING LARGE-ANGLED FRONT CORNERS (REF: 18"). THE PROCEDURE MAY ALSO BE USED IN TRAILERS HAVING SQUARE CORNERS, OR ROUNDED FRONT CORNERS, OR ANGLED CORNERS OF ANOTHER SIZE.

INDICATES CONTAINERS

HEADER, 2" X 6" BY TRAILER WIDTH MINUS 1/2" (1 SHOWN). SEE HEADER NAILING CHARTS ON PAGE 7.

SIDE FILL ASSEMBLY C (2 SHOWN). SEE DETAIL ON PAGE 21.

CRIB FILL ASSEMBLY (1 SHOWN). SEE DETAIL ON PAGE 17.

LENGTH TO SUIT

FABRICATE TO FIT MINUS 1/2".

STRUT, 2" X 4" BY CUT-TO-FIT (4 REQD). NAIL TO THE VERTICAL PIECES W/2-10d NAILS.

BUFFER PIECE, 2" X 4" BY LENGTH TO SUIT. NAIL TO THE VERTICAL PIECE W/2-10d NAILS AT EACH JOINT.

RETAINER PIECE, 2" X 4" X 45" (2 REQD). NAIL TO THE VERTICAL PIECE W/2-10d NAILS AT EACH JOINT.

13-1/2"

**FORWARD SPACER ASSEMBLY**

THIS ASSEMBLY IS DESIGNED FOR LATERAL BRACING OF A CONTAINER LOCATED IN THE FRONT OF A LARGE-ANGLED CORNER VAN TRAILER AS SHOWN IN THE "FORWARD LOADING PATTERN" VIEW ABOVE. RIGHT AND LEFT HAND SPACER ASSEMBLIES ARE REQUIRED.

VERTICAL PIECE, 2" X 4" X 40-1/2" (4 REQD).

TWO SEALS, BUTTED TOGETHER, WITH TWO PAIR OF CRIMPS EACH SEAL.

ONE SEAL WITH TWO PAIR OF NOTCHES.

**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**

SEE GENERAL NOTE "K" ON PAGE 2.