

GENERAL NOTES:

1. THIS DOCUMENT PROVIDES DETAILED INSTRUCTIONS FOR TRUCKLOADING THE LONG RANGE ANTI-SHIP MISSILE (LRASM) PACKAGED IN THE CNU-745/E SHIPPING AND STORAGE CONTAINER.
2. THE PROCEDURES AND PRACTICES CONTAINED HEREIN ARE INTENDED FOR FLATBED TRAILERS, 96 TO 102 INCHES WIDE.
3. TRAILER DECK TYPES. THE DUNNAGING PROCEDURES SHOWN ON PAGES 4 AND 5 REQUIRE USE OF A TRAILER WITH A PREDOMINANTLY WOOD DECK. LATERAL AND LONGITUDINAL RESTRAINT OF THE LOAD IS ACCOMPLISHED WITH NAILED WOOD FLOOR BLOCKING. THE OVERALL WIDTH OF THE WOOD PORTION OF THE DECK SHALL BE AT LEAST 80". WHEN A PREDOMINANTLY WOOD DECK TRAILER IS NOT AVAILABLE, THE PROCEDURES ON PAGES 7 AND 8 SHALL BE FOLLOWED. ON SUCH TRAILERS, CHAINS ARE USED IN LIEU OF NAILED FLOOR BLOCKING TO PROVIDE LATERAL AND LONGITUDINAL RESTRAINT OF THE LOAD. IF DESIRED, CHAINS MAY BE USED IN LIEU OF NAILED FLOOR BLOCKING ON TRAILERS WITH A PREDOMINANTLY WOOD DECK.
4. IN ORDER TO ENSURE CONTINUOUS ENGAGEMENT OF THE STACKING FEATURES, STACKED CONTAINERS SHALL BE UNTIZED AS SHOWN IN DETAIL A ON PAGE 6.
5. THE UPPER TWO CONTAINERS IN A FOUR-CONTAINER STACK SHALL BE BANDED TOGETHER WITH TWO "BUNDLING" STRAPS, ITEM 7. THE STRAPS SHALL PASS THROUGH THE FORK POCKETS AND OVER THE TOPS OF THE UPPER CONTAINERS. EACH STRAP SHALL BE SECURED WITH ONE DOUBLE NOTCHED SEAL, ITEM 8.
6. A STAGGERED NAILING PATTERN WILL BE USED WHEN NAILS ARE DRIVEN INTO FLOOR DUNNAGE. THE NAILING PATTERN WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL DOES NOT PENETRATE INTO OR NEAR A CRACK BETWEEN TRAILER FLOOR BOARDS. THE NAILING FOR AN UPPER PIECE OF FLOOR DUNNAGE WILL BE ADJUSTED AS REQUIRED SO THAT A NAIL FOR THAT PIECE WILL NOT BE DRIVEN NEAR A NAIL IN A LOWER PIECE.
7. TIEDOWN:
 - A. QUANTITY. THE QUANTITY OF TIEDOWNS REQUIRED SHALL BE AS SHOWN IN THE ILLUSTRATIONS (I.E., FOUR FOR A STACK OF FOUR CONTAINERS, THREE FOR STACKS OF ONE OR TWO CONTAINERS).
 - B. EITHER CHAIN, 4-INCH WEB STRAPS, OR STEEL STRAPPING MAY BE USED FOR TIEDOWN.
 - C. WEB STRAPS ARE THE PREFERRED METHOD OF TIEDOWN, BEING THAT THEY ARE THE EASIEST TO APPLY AND LEAST LIKELY TO CAUSE DAMAGE TO THE CONTAINER COVERS. WEB STRAP TIEDOWNS SHALL CONFORM TO AND BE APPLIED AS SPECIFIED IN NAVSEA DRAWING 6214037 AND IN THIS DRAWING. ONLY ASSEMBLIES WITH 4-INCH STRAPPING SHALL BE USED.
 - D. CHAINS:
 - 1) CHAINS, FITTINGS, AND LOAD BINDERS SHALL CONFORM TO AND BE APPLIED AS SPECIFIED IN MIL-STD-1320 EXCEPT THAT THE CHAIN/GRAB HOOKS SHALL BE ATTACHED TO THE STAKE POCKETS (NOT AROUND THE RUB RAIL). RATCHET TYPE LOADBINDERS ARE PREFERRED. HOWEVER, IF USING OVER-THE-CENTER TYPE LOADBINDERS, THE HANDLES SHALL BE SECURED IN THE CLOSED POSITION USING .08 DIA OR THICKER STEEL WIRE (ASTM A853; ANNEALED AT FINISH, BLACK OXIDE FINISH, GRADE 1006 OR BETTER).
 - 2) TO PREVENT THE CHAINS FROM GOUGING/MARRING THE CONTAINER COVERS, PROTECTIVE PADS (FIRE HOSE SCRAP, OUT-OF-SERVICE WEB TIEDOWN STRAPPING, OR OTHER SUITABLE MATERIAL) SHALL BE PLACED UNDERNEATH THE CHAINS WHERE THEY CONTACT THE CONTAINER COVERS. PADS SHALL BE HELD IN PLACE AT EACH END WITH PLASTIC ZIP TIES OR STEEL WIRE.
 - E. STEEL STRAPPING:
 - 1) STRAPPING SIZE SHALL BE 2 X .044-.050.
 - 2) STEEL STRAPPING SHALL CONFORM TO ASTM D3953, TYPE 1, HEAVY DUTY, FINISH A, B (ANY GRADE), OR C. SEALS SHALL CONFORM TO ASTM D3953, CLASS H, FINISH A, B (ANY GRADE), OR C, STYLE I, II, III, OR IV.
 - 3) STEEL STRAP TIEDOWNS SHALL BE APPLIED BY ATTACHING SEPARATE LENGTHS TO EACH SIDE OF THE TRAILER AND THEN JOINING THEM TOGETHER AT THE TOP OF THE LOAD. ATTACH STRAPS TO THE SIDE OF THE TRAILER BY LOOPING IT AROUND THE RUB RAIL OR STAKE POCKET AND BACK ONTO ITSELF. A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WILL BE USED TO SEAL THE JOINT WHEN A NOTCH-TYPE SEALER IS USED. A MINIMUM OF ONE SEAL WITH TWO PAIR OF CRIMPS WILL BE USED WHEN CRIMP-TYPE SEALERS ARE USED. THE LAP JOINT AT THE TOP OF THE LOAD SHALL BE END-OVER-END AND SHALL BE SECURED WITH A MINIMUM OF ONE SEAL WITH TWO PAIR OF NOTCHES WHEN A NOTCH-TYPE SEALER IS USED. WHEN USING A CRIMP-TYPE SEAL, TWO SEALS WITH TWO PAIR OF CRIMPS SHALL BE USED.
 - 4) TO PROTECT THE STRAP FROM POSSIBLE SHARP EDGES OF THE RUB RAIL OR STAKE POCKET, AN ADDITIONAL PIECE OF STRAPPING (APPROXIMATELY 18 INCHES) SHALL BE PLACED UNDERNEATH THE STRAP AT THIS LOCATION. IT SHALL BE SECURED TO THE LOAD BEARING STRAP USING ONE SEAL WITH EITHER A SINGLE NOTCH OR A SINGLE CRIMP.
 - F. DURING PRE-LOADING INSPECTION REQUIRED BY NAVSEA SWO20-AG-SAF-010, ALL CHAIN AND WEB STRAP TIEDOWNS SHALL BE INSPECTED FOR DEFECTS. THE INSPECTION PROCEDURE FOR WEB STRAPS SHALL BE AS SPECIFIED IN DRAWING 6214037. CHAINS, FITTINGS AND LOAD BINDERS SHALL BE INSPECTED FOR STRETCH, GOUGING, BENT LINKS, WEAR, AND ANY OTHER NOTICEABLE DEFECTS THAT WOULD AFFECT THE STRENGTH OF THE ASSEMBLY. RESULTS OF THESE INSPECTIONS SHALL BE RECORDED IN ITEM 12-T OF DD FORM 626. ANY DEFICIENCY SHALL BE CAUSE FOR REJECTION OF THE CHAINS, FITTINGS, BINDERS, OR WEB STRAPPING ASSEMBLIES.
8. ALL CHAINS USED FOR LATERAL AND LONGITUDINAL RESTRAINT OF CONTAINERS (I.E., AS PER PAGES 7 AND 8) SHALL BE GRADE 70 SIZE 3/8. IF DEEMED NECESSARY TO PREVENT THE RESTRAINT CHAINS FROM DAMAGING THE CONTAINERS, PLACE AN APPROPRIATELY SIZED PIECE OF PROTECTIVE MATERIAL (E.G., FIRE HOSE SCRAP, OUT-OF-SERVICE WEB TIEDOWN, OR OTHER SUITABLE MATERIAL) BETWEEN EACH CHAIN AND WHERE IT BEARS AGAINST THE CONTAINERS.

GENERAL NOTES (CONT'D):

9. LUMBER:

A. ALL LUMBER SHALL CONFORM TO VOLUNTARY PRODUCT STANDARD PS 20 (AMERICAN SOFTWOOD LUMBER STANDARD).

B. IN ORDER TO COMPLY WITH INTERNATIONAL STANDARDS FOR PHYTOSANITARY MEASURES (ISPM) NUMBER 15, ALL LUMBER ITEMS SHALL BE HEAT TREATED AND THEN MARKED IN ACCORDANCE WITH DOD MANUAL 4140.65.

10. LESS THAN FULL LOADS. LESS THAN FULL LOADS MAY CONSIST OF ANY COMBINATION OF 1-CONTAINER, 2-CONTAINER, AND 4-CONTAINER STACKS. LOCATION OF THE STACKS ALONG THE TRAILER'S LENGTH SHALL BE AT THE DRIVER'S DISCRETION OR AS NECESSARY TO SATISFY GROSS AXLE WEIGHT LIMITATIONS.

11. GROSS VEHICLE WEIGHT. ALTHOUGH THE ILLUSTRATION ON PAGE 4 SHOWS TEN CONTAINERS LOADED ONTO THE TRAILER, THE ACTUAL MAXIMUM NUMBER OF CONTAINERS THAT CAN BE SHIPPED DEPENDS ON THE AXLE WEIGHTS OF THE TRACTOR-TRAILER BEFORE LOADING AND THE ALLOWABLE AXLE AND GROSS VEHICLE WEIGHT LIMITS ALONG THE ROUTE TO THE DESTINATION. THE MAXIMUM GROSS WEIGHT OF THE TRACTOR-TRAILER AND THE ALLOWABLE AXLE WEIGHTS ARE THE RESPONSIBILITY OF THE CARRIER. THE CARRIER WILL ADVISE THE SHIPPER OF THESE LIMITATIONS, AND THE SHIPPER SHALL LOAD THE TRAILER IN SUCH A MANNER THAT THE TRACTOR-TRAILER WILL NOT EXCEED THESE LIMITATIONS.

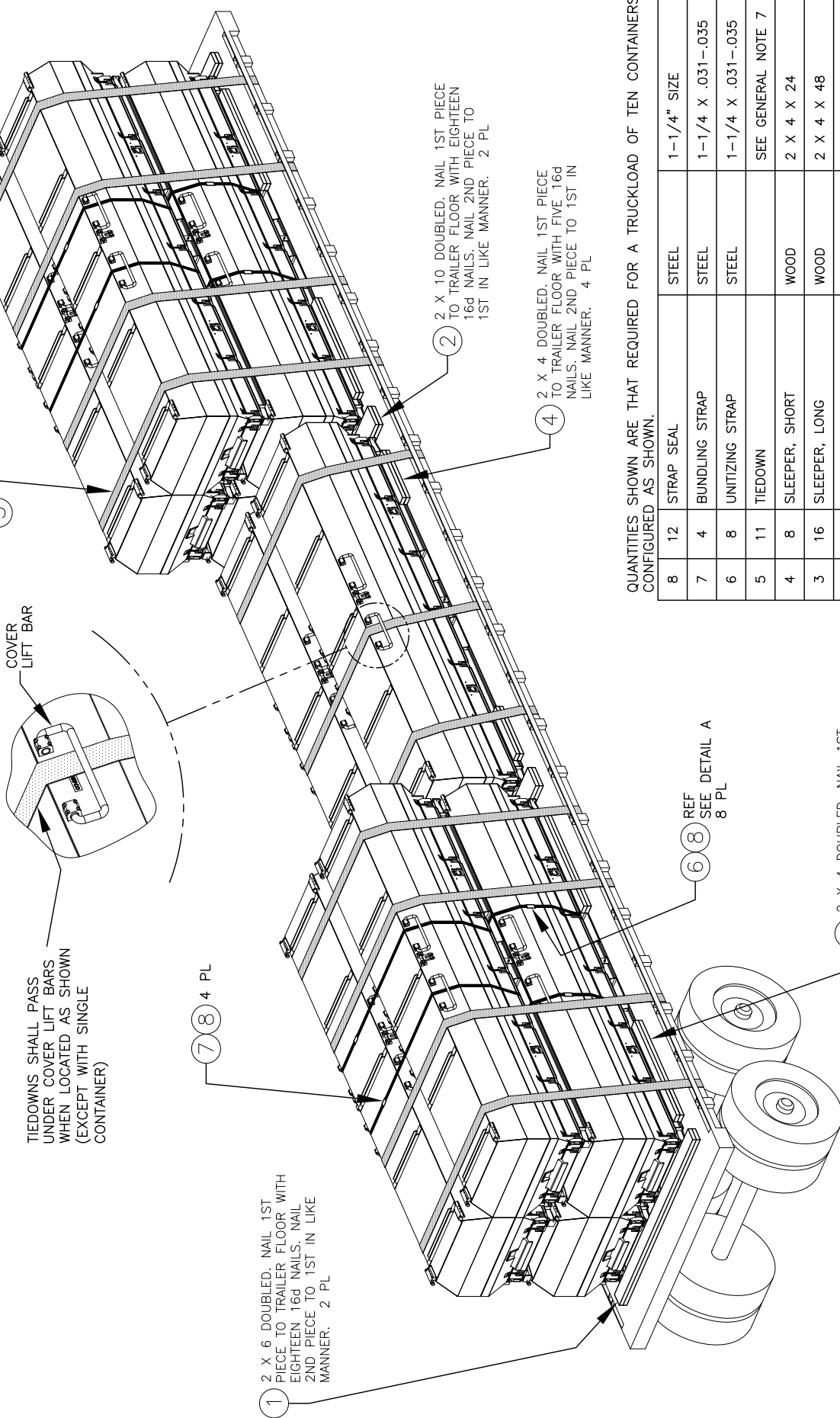
12. AFTER BLOCKING, BRACING AND TIEDOWNS HAVE BEEN INSPECTED, THE CONTAINERS SHALL BE COMPLETELY COVERED WITH FIRE RESISTANT WATERPROOF TARPULINS. THE TARPULINS MAY BE UNDER THE TIEDOWNS.

13. APPROPRIATE PLACARDS SHALL BE ATTACHED TO THE FRONT, BOTH SIDES, AND REAR OF THE TRAILER. SHIPPING DOCUMENTS SHALL BE PLACED IN AN ACCESSIBLE AREA INSIDE THE CAB.

14. UNLESS OTHERWISE SPECIFIED, ALL MATERIAL SHALL BE AS SPECIFIED IN MIL-STD-1320.

15. FOR GENERAL TRUCKLOADING PROCEDURES REFER TO MIL-STD-1320.

FULL TRUCKLOAD - 10 CONTAINERS - WOOD DECK TRAILER



TIEDOWNS SHALL PASS UNDER COVER LIFT BARS WHEN LOCATED AS SHOWN (EXCEPT WITH SINGLE CONTAINER)

COVER LIFT BAR

1 2 X 6 DOUBLED, NAIL 1ST PIECE TO TRAILER FLOOR WITH EIGHTEEN 16d NAILS, NAIL 2ND PIECE TO 1ST IN LIKE MANNER. 2 PL

2 2 X 10 DOUBLED, NAIL 1ST PIECE TO TRAILER FLOOR WITH EIGHTEEN 16d NAILS, NAIL 2ND PIECE TO 1ST IN LIKE MANNER. 2 PL

4 2 X 4 DOUBLED, NAIL 1ST PIECE TO TRAILER FLOOR WITH FIVE 16d NAILS, NAIL 2ND PIECE TO 1ST IN LIKE MANNER. 4 PL

6 8 REF SEE DETAIL A 8 PL

3 2 X 4 DOUBLED, NAIL 1ST PIECE TO TRAILER FLOOR WITH NINE 16d NAILS, NAIL 2ND PIECE TO 1ST IN LIKE MANNER. 8 PL

NOTE

ALTHOUGH THE ILLUSTRATION SHOWS THE TWO-CONTAINER STACK IN THE MIDDLE POSITION, THE STACKS MAY BE ARRANGED IN ANY MANNER AS PER THE DRIVER'S PREFERENCE OR AS NECESSARY TO SATISFY GROSS AXLE WEIGHT LIMITATIONS.

QUANTITIES SHOWN ARE THAT REQUIRED FOR A TRUCKLOAD OF TEN CONTAINERS, CONFIGURED AS SHOWN.

ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS
8	12	STRAP SEAL	STEEL	1-1/4" SIZE
7	4	BUNDLING STRAP	STEEL	1-1/4 X .031-.035
6	8	UNITIZING STRAP	STEEL	1-1/4 X .031-.035
5	11	TIEDOWN		SEE GENERAL NOTE 7
4	8	SLEEPER, SHORT	WOOD	2 X 4 X 24
3	16	SLEEPER, LONG	WOOD	2 X 4 X 48
2	4	FWD/AFT HEADER, INTERMEDIATE	WOOD	2 X 10 X 84
1	4	FWD/AFT HEADER, ENDS	WOOD	2 X 6 X 84

LIST OF MATERIALS

NAVSEA DWG NO. 8601331

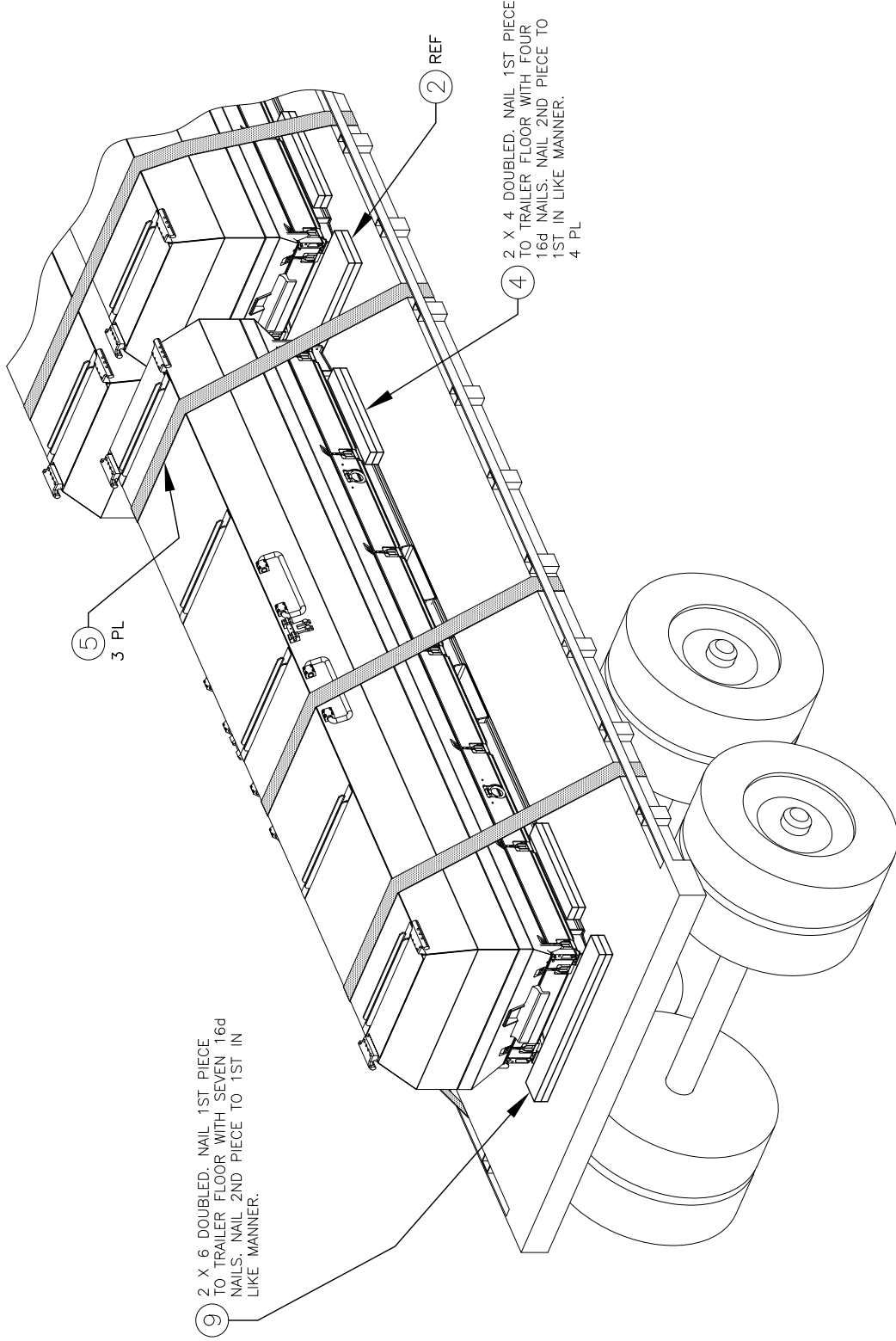
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SINGLE CONTAINER - WOOD DECK TRAILER



ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	WOOD	2 X 6 X 48	DIMENSIONS
9	2	FWD/AFT HEADER, SINGLE-WIDE		WOOD		
5	3	PL				
4						
2						

LIST OF MATERIALS

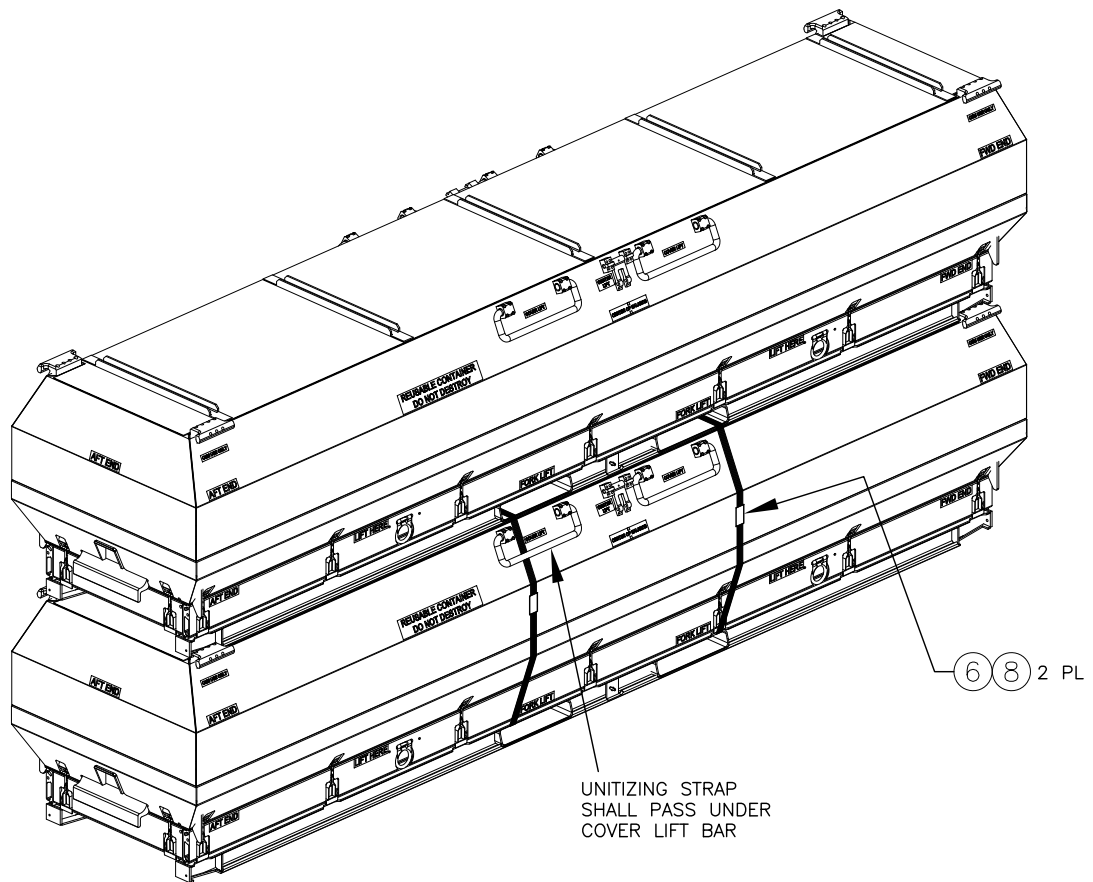
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DETAIL A

CONTAINER UNITIZING PROCEDURE

UNITIZING PROCEDURE:

1. PREPARE UNIT LOAD BY STACKING ONE CONTAINER ON TOP OF ANOTHER, MAKING SURE THE STACKING FEATURES ARE ALIGNED AND FULLY ENGAGED.
2. FEED UNITIZING STRAPS, ITEM 6, THROUGH THE FORK POCKETS OF THE LOWER CONTAINER AND THROUGH THE FORK POCKETS OF THE UPPER CONTAINER. POSITION STRAPS AT THE FWD/AFT EXTREMES OF THE FORK POCKETS AS SHOWN. TENSION AND SECURE EACH STRAP WITH ONE DOUBLE NOTCHED SEAL, ITEM 8. WHEN A FORKLIFT OF SUFFICIENT CAPACITY TO LIFT TWO CONTAINERS IS NOT AVAILABLE, CONTAINERS WILL HAVE TO BE Banded TOGETHER IN PLACE ON THE TRAILER. STRAPPING SHALL BE PRE-POSITIONED AS NECESSARY.



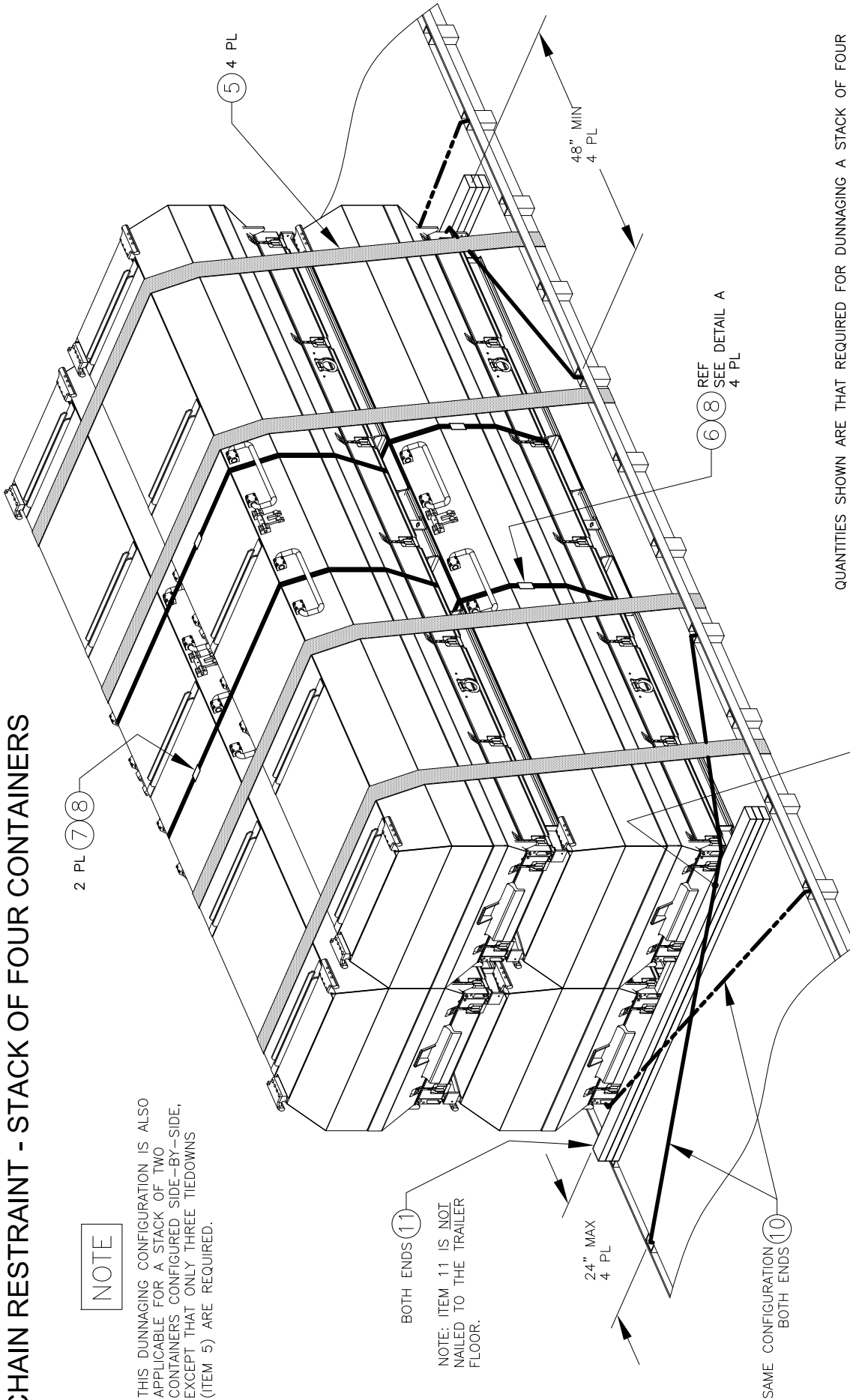
NOTES

1. UNITIZATION OF CONTAINERS IS AUTHORIZED AS PART OF THE TRUCKLOADING PROCEDURE ONLY. MOVEMENT OF UNITIZED CONTAINERS SHALL BE LIMITED TO THAT NECESSARY TO LOAD AND UNLOAD THE VEHICLE. CONTAINERS SHALL BE DE-UNITIZED AFTER BEING UNLOADED FROM THE VEHICLE.
2. UNITIZED CONTAINERS SHALL BE LIFTED USING THE FORKLIFT POCKETS OF THE LOWER CONTAINER ONLY. HOISTING OF UNITIZED CONTAINERS USING THE LIFT RINGS IS PROHIBITED.

CHAIN RESTRAINT - STACK OF FOUR CONTAINERS

NOTE

THIS DUNNAGING CONFIGURATION IS ALSO APPLICABLE FOR A STACK OF TWO CONTAINERS CONFIGURED SIDE-BY-SIDE, EXCEPT THAT ONLY THREE TIEDOWNS (ITEM 5) ARE REQUIRED.



QUANTITIES SHOWN ARE THAT REQUIRED FOR DUNNAGING A STACK OF FOUR CONTAINERS AS SHOWN ON THIS PAGE.

ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS
11	2	SEPARATOR ASSEMBLY	WOOD	SEE DETAIL B
10	4	CHAIN, RESTRAINT	SEE GENERAL NOTE 8	
LIST OF MATERIALS				

AFTER TENSIONING CHAIN, DRIVE A 16d NAIL THROUGH ONE CHAIN LINK AT APPROXIMATELY THIS LOCATION. NAIL SHALL BE DRIVEN ABOUT 1.25" INTO BOARD AND THEN CLINCHED OVER CHAIN LINK.
4 PL

NAVSEA
DWG NO.

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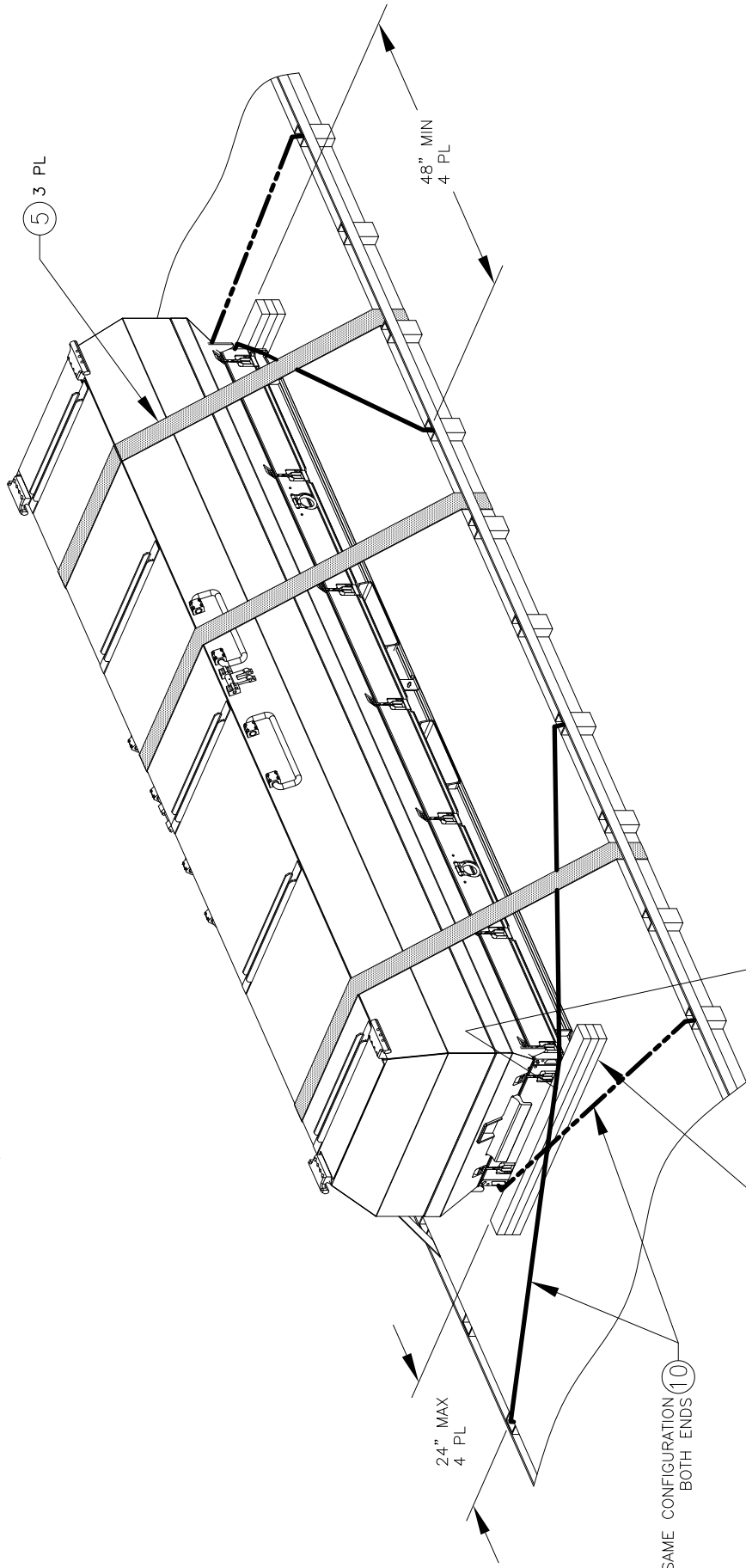
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CHAIN RESTRAINT - SINGLE CONTAINER



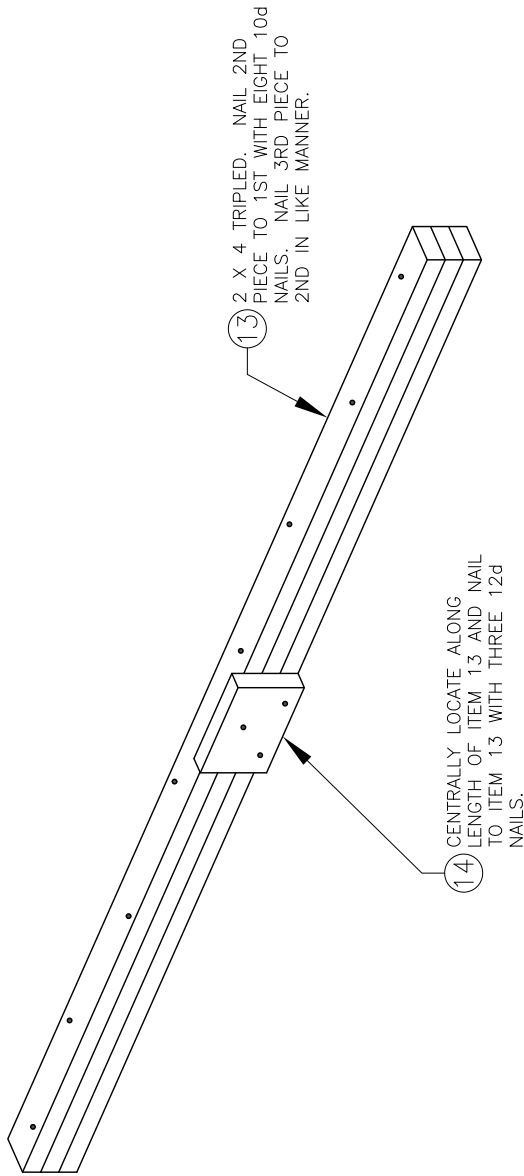
NAIL 2ND PIECE TO 1ST WITH SIX 10d NAILS. NAIL 3RD PIECE TO 2ND IN LIKE MANNER. PLACE UNDER CHAIN AS SHOWN.

NOTE: THESE BOARDS ARE NOT NAILED TO THE TRAILER FLOOR.

AFTER TENSIONING CHAIN, DRIVE A 16d NAIL THROUGH ONE CHAIN LINK AT APPROXIMATELY THIS LOCATION. NAIL SHALL BE DRIVEN ABOUT 1.25" INTO BOARD AND THEN CLINCHED OVER CHAIN LINK.

ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	WOOD	2 X 4 X 48	DIMENSIONS
12	6	CHAIN BOARD				

LIST OF MATERIALS



DETAIL B

SEPARATOR ASSEMBLY

(ONLY REQUIRED WHEN USING CHAINS FOR LATERAL AND LONGITUDINAL RESTRAINT)

QUANTITIES SHOWN ARE THAT REQUIRED ONE DETAIL B ASSEMBLY

14	1	SPACER BOARD	WOOD	2 X 6 X 9
13	3	CHAIN BOARD	WOOD	2 X 4 X 84-96
ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS

LIST OF MATERIALS