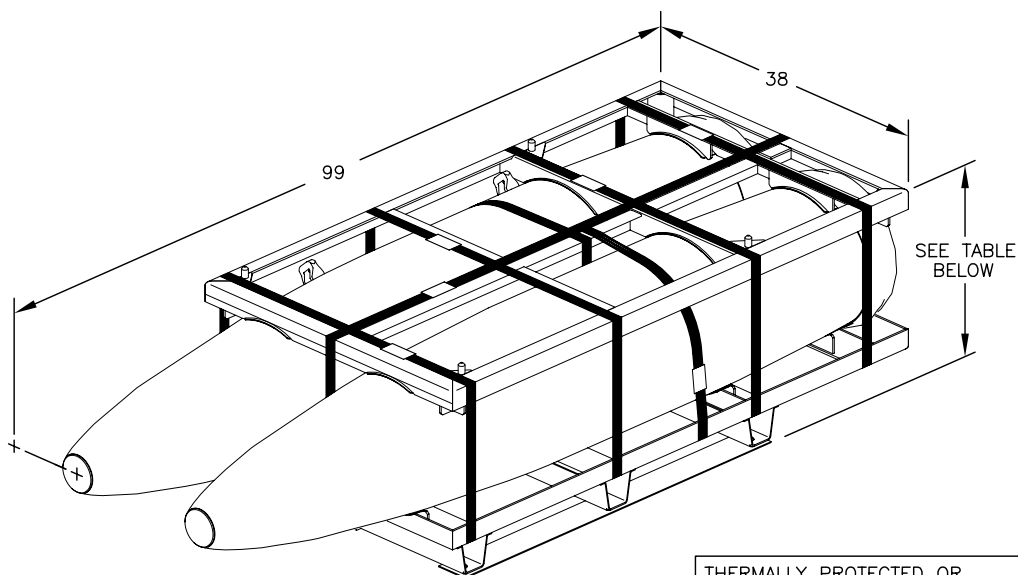


# TRUCKLOAD

## 2,000 LB BOMB, MK 84 SERIES, BLU-II7 SERIES AND BDU-56 SERIES IN UNIT LOAD ADAPTER, MK 79 SERIES

UNIT LOAD DATA	COATED	UNCOATED
UNIT LOAD DOCUMENT.....	NAVSEA DWG 6214081.....	NAVSEA DWG 6214081.....
DIMENSIONS.....	SEE ILLUSTRATION.....	SEE ILLUSTRATION.....
GROSS WEIGHT.....	4,141 LBS.....	4,152 LBS.....
CUBE.....	54.4 CU-FT.....	53.9 CU-FT.....



	OVERALL HEIGHT	STACKING HEIGHT
THERMALLY PROTECTED OR THERMAL PROTECTION REMOVED	25	23-3/4
NON-THERMALLY PROTECTED	24-3/4	23-1/2

**NOTES:**

- GROSS WEIGHT IS ESTIMATED ONLY. DO NOT USE FOR SHIPPING WEIGHT.
- UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.
- SEE SW020-AC-SAF-010 FOR THE FOLLOWING INFORMATION:
  - CROSS REFERENCE TO ASSOCIATED RAILCAR LOADING, UNITIZATION, AND CONTAINER LOADING MILITARY STANDARDS
  - HAZARD CLASSIFICATION

NOTE: WHEN IT IS A MILITARY NECESSITY TO SHIP USING A VAN TRAILER, REFER TO ARMY DRAWING 19-48-4263 FOR LOADING PROCEDURES.

REV.	REVISION DESCRIPTION	DATE	TDA	SYSCOM
A	SEE NWSC IHD DET EARLE ECP I08004	2008-5-20	S/ C CHAPIN	S/ R SMITH
-	ORIGINAL ISSUE, SUPERSEDES MIL-STD-1320-53D	7/9/99	S/ STANTON	S/ K ZIMMS

TECH DATA MANAGEMENT SUPERVISOR	S/ A STANTON	1999-7-9
SYSTEMS ENG. SUPERVISOR	S/ G BENDER	1999-7-9
S/ KENNETH H. ZIMMS 1999-7-9 NAVSEASYSKOM ( BY DIRECTION )		

DISTRIBUTION STATEMENT A  
APPROVED FOR PUBLIC RELEASE: DISTRIBUTION IS UNLIMITED

REQUIREMENTS FOR CONSTRUCTION OF THIS LOAD SHALL CONSIST OF THIS DOCUMENT & THE LATEST ISSUE OF MIL-STD-1320 (NAVY)

THIS LOAD IS AUTHORIZED & RELEASED FOR HIGHWAY SHIPMENT ONLY

DEPARTMENT OF THE NAVY NAVAL SEA SYSTEMS COMMAND ARLINGTON, VA 22242-5160	CAGE CODE 53711	DWG NO. 6214078	REV. A
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## GENERAL NOTES:

1. THIS DOCUMENT PROVIDES DETAILED INSTRUCTIONS FOR TRUCKLOADING 2,000 LB BOMBS (MK 84 SERIES, BLU-117 SERIES, AND BDU-56 SERIES) UNITIZED ON THE MK 79 SERIES UNIT LOAD ADAPTER..
2. THE PROCEDURES AND PRACTICES CONTAINED HEREIN ARE INTENDED FOR 40 FT AND LONGER FLATBED TRAILERS 96 TO 102 INCHES WIDE.
3. BECAUSE THIS LOADING PLAN RELIES SIGNIFICANTLY ON WOOD DUNNAGE NAILED TO THE TRAILER FLOOR, THE FLOOR OF THE TRAILER (EITHER FLATBED OR VAN) SHALL BE PREDOMINANTLY WOOD.
4. UNIT LOADS MAY BE STACKED TWO HIGH. IN ORDER TO ENSURE CONTINUOUS ENGAGEMENT OF THE STACKING FEATURES, STACKED UNIT LOADS SHALL BE BANDED TOGETHER AS SHOWN IN DETAIL B. THE UPPER TWO UNIT LOADS IN A TWO-WIDE BY TWO-HIGH STACK SHALL BE BANDED TOGETHER WITH TWO STEEL BUNDLING STRAPS. THE BUNDLING STRAPS SHALL PASS UNDER THE LOWER FRAME AND OVER THE TOP FRAME OF THE UPPER TWO UNIT LOADS. POSITIONING A TWO-HIGH UNIT LOAD STACK ALONGSIDE A SINGLE UNIT LOAD IS NOT AUTHORIZED.
5. 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.
6. LESS THAN FULL LOAD SHIPMENTS MAY CONSIST OF ANY COMBINATION OF STACKS CONTAINING 1, 2, OR 4 UNIT LOADS. A STACK CONSISTING OF THREE UNIT LOADS (I.E., TWO UNIT LOADS POSITIONED NEXT TO A SINGLE UNIT LOAD) IS NOT PERMITTED. A ONE-WIDE AND TWO-HIGH STACK OF UNIT LOADS BY ITSELF IS ALSO NOT PERMITTED.
7. TIEDOWN:
  - A. THE QUANTITY OF TIEDOWN ASSEMBLIES REQUIRED SHALL BE AS SHOWN IN THE ILLUSTRATIONS. EITHER CHAIN, 4-INCH WEB STRAPS, OR STEEL STRAPPING MAY BE USED FOR TIEDOWN.
  - B. WEB STRAPS ARE THE PREFERRED METHOD OF TIEDOWN, BEING THAT THEY ARE THE EASIEST TO APPLY AND THEY DO NOT REQUIRE THE USE OF PROTECTOR BOARDS. 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.
  - C. CHAINS, FITTINGS, AND LOAD BINDERS SHALL CONFORM TO AND BE APPLIED AS SPECIFIED IN THE GENERAL TRUCKLOADING DOCUMENT, MIL-STD-1320 (NAVY) 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). TO PREVENT DAMAGE TO THE PALLET FRAMES, DOUBLED 2 X 6 PROTECTOR BOARDS SHALL BE PLACED UNDER THE CHAINS AS SHOWN IN DETAIL A. NAILS SHALL BE USED TO KEEP THE CHAINS IN PLACE ON TOP OF THE PROTECTOR BOARDS. THIS IS ACCOMPLISHED BY DRIVING A NAIL THROUGH ONE CHAIN LINK AND PARTIALLY INTO THE PROTECTOR BOARD ASSEMBLY AND THEN CLINCHING THE NAIL OVER THE CHAIN. USE ONE NAIL NEAR EACH END OF THE PROTECTOR BOARD ASSEMBLIES. APPLY NAILS AFTER CHAINS ARE TENSIONED.
  - D. DURING PRE-LOADING INSPECTION REQUIRED BY NAVSEA SW020-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.
  - E. STEEL STRAPPING:
    - 1) STRAPPING SHALL BE 2 X .044 OR 2 X .050 AND 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.
    - 2) STEEL STRAP TIEDOWNS SHALL BE ATTACHED TO THE SIDES OF THE TRAILER BY LOOPING THE STRAP 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.
    - 3) STRAPPING JOINED IN AN END-OVER-END LAP JOINT 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.

## GENERAL NOTES (CONT'D):

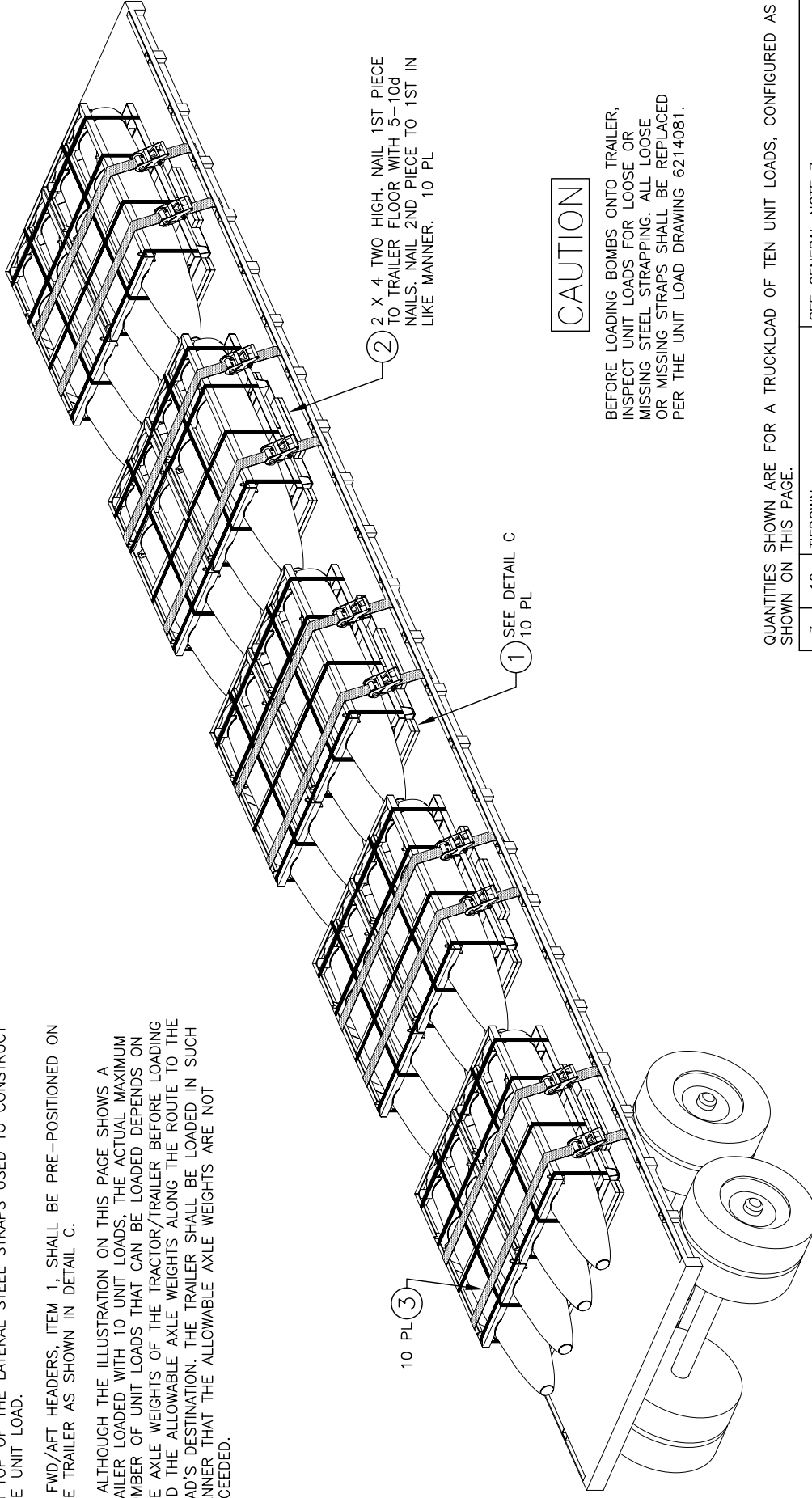
8. LUMBER SHALL CONFORM TO VOLUNTARY PRODUCT STANDARD PS 20-2005 (AMERICAN SOFTWOOD LUMBER STANDARD).
9. NAILS SHALL CONFORM TO ASTM F1667 DESIGNATION F1667 NL CM S - XX B, WHERE "XX" DESIGNATES THE SIZE (I.E., 10d, 16d, 20d, ETC.).
10. STEEL STRAPPING USED FOR STACKING AND BUNDLING SHALL CONFORM TO 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.
11. 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 BOMBS 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. AFTER BLOCKING, TIEDOWNS AND TARPULINS HAVE BEEN INSPECTED; ATTACH SHIPPING DOCUMENTS TO THE TRAILER IN AN ACCESSIBLE AREA.
14. FOR GENERAL TRUCKLOADING PROCEDURES REFER TO THE GENERAL TRUCKLOADING DOCUMENT, MIL-STD-1320 (NAVY).

# NOTES

## TYPICAL FULL TRUCKLOAD - FLATBED TRAILER

(SEE NOTE 3 ON THIS PAGE REGARDING MAX QUANTITY)

- DO NOT POSITION STEEL STRAP OR WEB TIEDOWN STRAPS ON TOP OF THE LATERAL STEEL STRAPS USED TO CONSTRUCT THE UNIT LOAD.
- FWD/AFT HEADERS, ITEM 1, SHALL BE PRE-POSITIONED ON THE TRAILER AS SHOWN IN DETAIL C.
- ALTHOUGH THE ILLUSTRATION ON THIS PAGE SHOWS A TRAILER LOADED WITH 10 UNIT LOADS, THE ACTUAL MAXIMUM NUMBER OF UNIT LOADS THAT CAN BE LOADED DEPENDS ON THE AXLE WEIGHTS OF THE TRACTOR/TRAILER BEFORE LOADING AND THE ALLOWABLE AXLE WEIGHTS ALONG THE ROUTE TO THE LOAD'S DESTINATION. THE TRAILER SHALL BE LOADED IN SUCH MANNER THAT THE ALLOWABLE AXLE WEIGHTS ARE NOT EXCEEDED.



### CAUTION

BEFORE LOADING BOMBS ONTO TRAILER, INSPECT UNIT LOADS FOR LOOSE OR MISSING STEEL STRAPPING. ALL LOOSE OR MISSING STRAPS SHALL BE REPLACED PER THE UNIT LOAD DRAWING 6214081.

QUANTITIES SHOWN ARE FOR A TRUCKLOAD OF TEN UNIT LOADS, CONFIGURED AS SHOWN ON THIS PAGE.

ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS
3	10	TIEDOWN	SEE GENERAL NOTE 7	
2	20	SLEEPER	WOOD	2 X 4 X 24
1	20	FWD/AFT HEADER	WOOD	2 X 6 X 72

#### LIST OF MATERIALS

NAVSEA  
DWG NO.

6214078

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SIZE A

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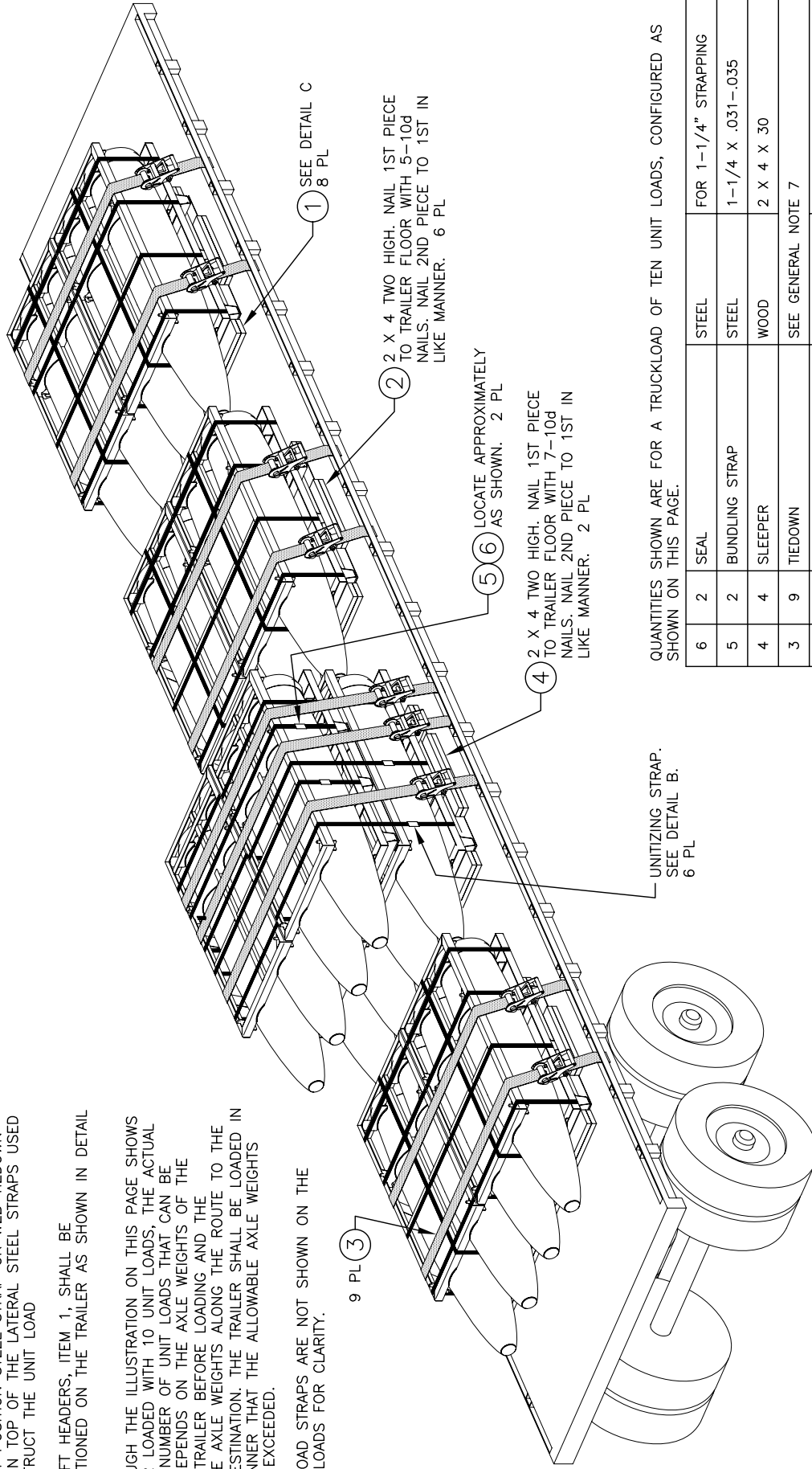
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# TYPICAL FULL TRUCKLOAD (W/ STACKED PALLETS) - FLATBED TRAILER

(SEE NOTE 3 ON THIS PAGE REGARDING MAX QUANTITY)

## NOTES

- DO NOT POSITION STEEL STRAP OR WEB TIEDOWN STRAPS ON TOP OF THE LATERAL STEEL STRAPS USED TO CONSTRUCT THE UNIT LOAD
- FWD/AFT HEADERS, ITEM 1, SHALL BE PRE-POSITIONED ON THE TRAILER AS SHOWN IN DETAIL C.
- ALTHOUGH THE ILLUSTRATION ON THIS PAGE SHOWS A TRAILER LOADED WITH 10 UNIT LOADS, THE ACTUAL MAXIMUM NUMBER OF UNIT LOADS THAT CAN BE LOADED DEPENDS ON THE AXLE WEIGHTS OF THE TRACTOR/TRAILER BEFORE LOADING AND THE ALLOWABLE AXLE WEIGHTS ALONG THE ROUTE TO THE LOAD'S DESTINATION. THE TRAILER SHALL BE LOADED IN SUCH MANNER THAT THE ALLOWABLE AXLE WEIGHTS ARE NOT EXCEEDED.
- UNIT LOAD STRAPS ARE NOT SHOWN ON THE STACKED LOADS FOR CLARITY.



QUANTITIES SHOWN ARE FOR A TRUCKLOAD OF TEN UNIT LOADS, CONFIGURED AS SHOWN ON THIS PAGE.

ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS
6	2	SEAL	STEEL	FOR 1-1/4" STRAPPING
5	2	BUNDLING STRAP	STEEL	1-1/4 X .031-.035
4	4	SLEEPER	WOOD	2 X 4 X 30
3	9	TIEDOWN	SEE GENERAL NOTE 7	
2	12	SLEEPER	WOOD	2 X 4 X 24
1	16	FWD/AFT HEADER	WOOD	2 X 6 X 72

## LIST OF MATERIALS

NAVSEA DWG NO. 6214078

REV. A

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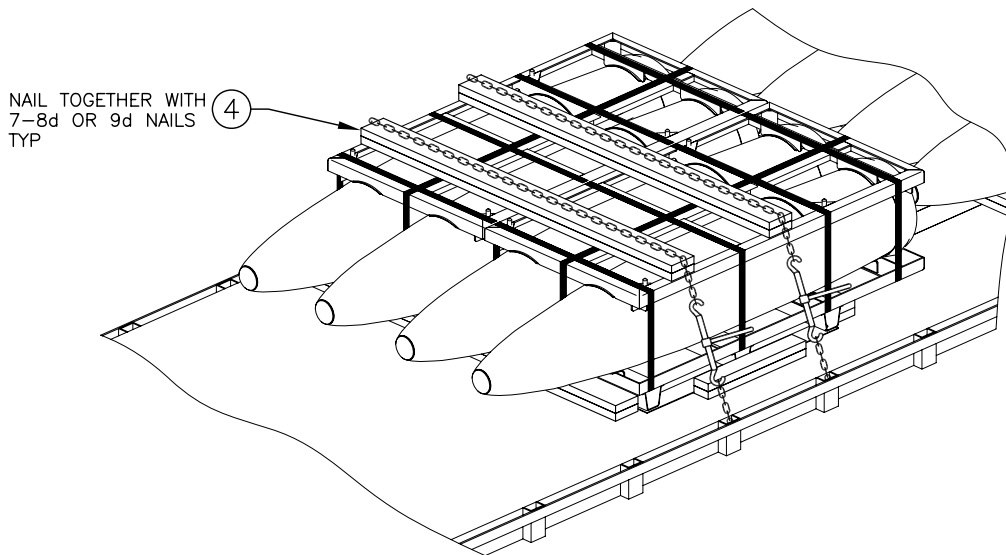
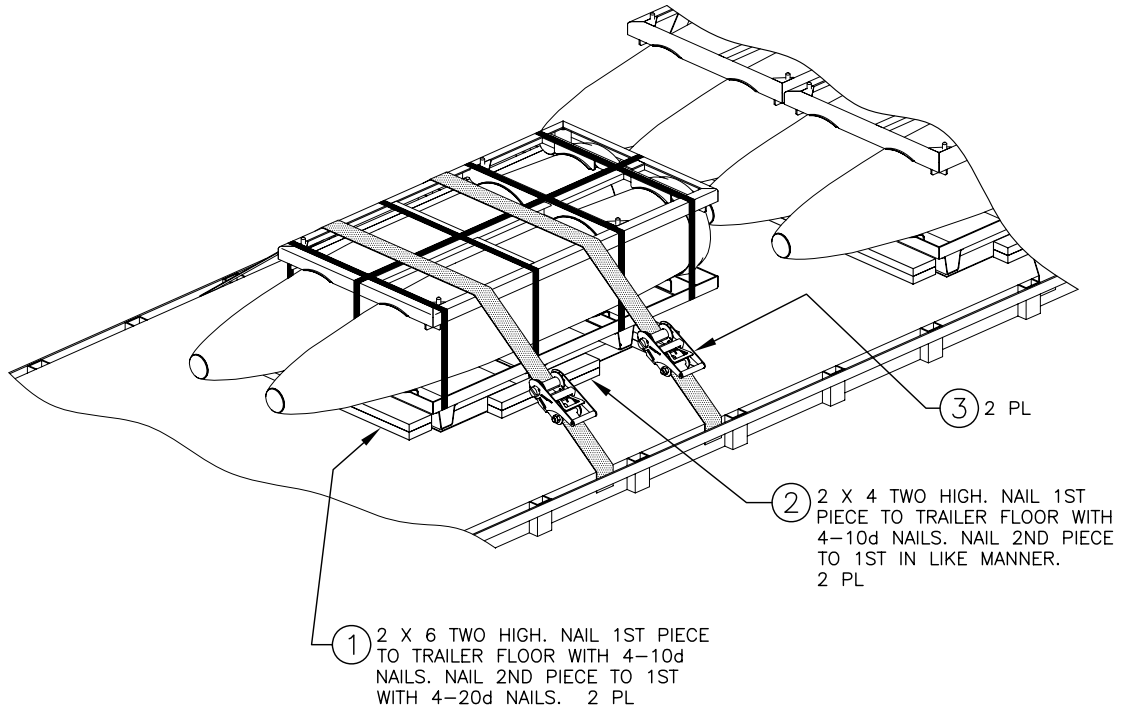
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## CAUTION

BEFORE LOADING BOMBS ONTO TRAILER, INSPECT UNIT LOADS FOR LOOSE OR MISSING STEEL STRAPPING. ALL LOOSE OR MISSING STRAPS SHALL BE REPLACED PER THE UNIT LOAD DRAWING 6214081.

# BLOCKING & BRACKING - SINGLE UNIT LOAD



## DETAIL A

CHAIN PROTECTOR BOARDS

4	AR	PROTECTOR BOARD	WOOD	2 X 6 X 76
3	2	TIEDOWN	SEE GENERAL NOTE 7	
2	4	SLEEPER	WOOD	2 X 4 X 24
1	4	FWD/AFT HEADER (SINGLE UNIT LOAD)	WOOD	2 X 6 X 36
ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS

### LIST OF MATERIALS

NAVSEA  
DWG NO.

6214078

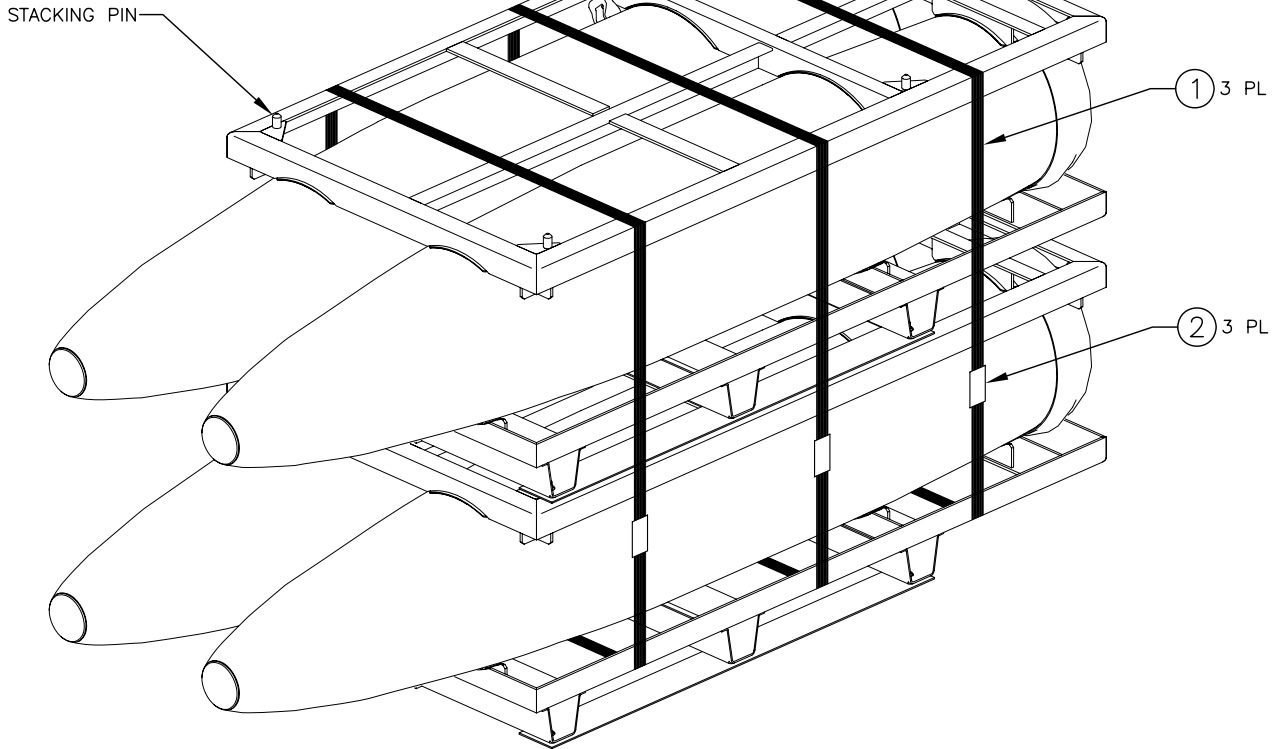
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NOTE: STRAPPING USED TO  
CONSTRUCT UNIT LOAD  
OMITTED FROM ILLUSTRATION  
FOR CLARITY.



STACKING NOTES:

1. TWO-HIGH STACKING OF UNIT LOADS ON THE TRAILER IS AUTHORIZED.
2. BEFORE STACKING, INSPECT THE LOWER UNIT LOAD TO ENSURE THAT ALL FOUR STACKING PINS ARE PRESENT AND UNDAMAGED. IF ANY PINS ARE MISSING OR DAMAGED, THEN THAT UNIT LOAD CANNOT BE STACKED UPON.
3. AFTER STACKING, MAKE SURE THAT THE STACKING FEATURES AT ALL FOUR CORNERS ARE FULLY ENGAGED. IF STACKING FEATURE ALIGNMENT/ENGAGEMENT AT ALL FOUR CORNERS IS NOT POSSIBLE, THEN THAT PAIR OF UNIT LOADS SHALL NOT BE STACKED.
4. TO ENSURE CONTINUOUS ENGAGEMENT OF THE STACKING FEATURES, STACKED UNIT LOADS SHALL BE Banded TOGETHER WITH STEEL STRAPPING, ITEM 1. THREE STRAPS ARE REQUIRED, POSITIONED APPROXIMATELY AS SHOWN. THREAD STRAPS UNDER BOTTOM FRAME OF LOWER UNIT LOAD AND OVER TOP OF UPPER UNIT LOAD. TENSION AND SECURE EACH STRAP WITH ONE DOUBLE NOTCHED SEAL, ITEM 2.
5. IF A FORKLIFT WITH A SAFE WORKING LOAD GREATER THAN OR EQUAL TO THE WEIGHT OF TWO UNIT LOADS IS NOT AVAILABLE, THEN UNIT LOADS WILL HAVE TO BE STACKED IN PLACE ON THE TRAILER. STRAPPING SHALL BE PRE-POSITIONED AS NECESSARY.
6. THE BANDING TOGETHER OF UNIT LOADS IS AUTHORIZED AS PART OF THE TRUCKLOADING PROCEDURE ONLY. MOVEMENT OF MULTIPLE UNIT LOADS SHALL BE LIMITED TO THAT NECESSARY TO LOAD AND UNLOAD THE VEHICLE. THE BANDING FOR STACKED UNIT LOADS SHALL BE REMOVED AFTER UNLOADING FROM THE VEHICLE.

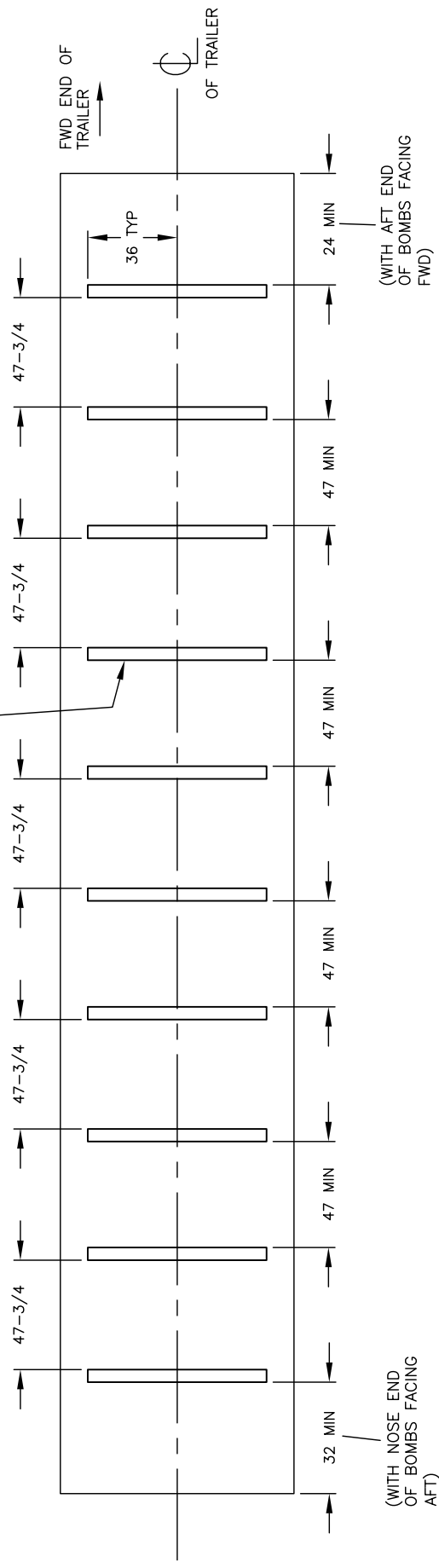
## DETAIL B

STACKING PROCEDURE

2	3	SEAL	STEEL	FOR 1-1/4" STRAPPING
1	3	UNITIZING STRAP	STEEL	1-1/4 X .031-.035
ITEM	REQ'D	DESCRIPTION	MAT'L/DWG	DIMENSIONS

LIST OF MATERIALS

① 2 X 6 TWO HIGH. NAIL 1ST  
PIECE TO TRAILER FLOOR WITH  
6-10d NAILS. NAIL 2ND PIECE  
TO 1ST WITH 6-20d NAILS.  
TYP



# DETAIL C

(PRE-POSITIONED FLOOR BLOCKING)