THAAD

MINIMUM REQUIREMENTS FOR THE HANDLING AND STOWAGE ABOARD SHIPS OF TERMINAL HIGH ALTITUDE AREA DEFENSE (THAAD) MISSILE PACKED IN SINGLE MISSILE ROUND TRANSPORT CONTAINER (SMRTC)

INDEX

U.S. ARMY MATERIEL COMMAND DRAWING

APPROVED, U.S. ARMY
AVIATION AND MISSILE COMMAND

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DO NOT SCALE

MARCH 2022

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CLASS	DIVISION	DRAWING	FILE
19	48	5788	GM18TH1

PROJECT GM 920-10

GENERAL NOTES

A. THIS DOCUMENT HAS BEEN PREPARED AND ISSUED IN ACCORDANCE WITH AR 740-1.

B. THIS DRAWING DEPICTS MINIMUM PROCEDURES APPLICABLE TO THE HANDLING AND STOWAGE ABOARD SHIPS OF THE THAAD MISSILE PACKED IN SMRTC. SUBSEQUENT REFERENCE TO CONTAINER HEREIN MEANS SMRTC WITH THAAD MISSILE. SEE PAGE 3 AND LOCKHEED-MARTIN DRAWING 13640484 FOR DETAILS OF THE SMRTC.

C. OTHER TYPES OF CARGO MAY BE STORED ON THE SAME DECK, PROVIDED THE ITEMS STOWED ARE COMPATIBLE WITH THE CONTAINER SHOWN HEREIN.

D. PERTINENT PROVISIONS OF TITLE 46 AND 49 CODE OF FEDERAL REGULATIONS APPLY.

E. ALTHOUGH DESIRABLE, A LEVEL LIFT IS NOT MANDATORY. THE CENTER OF BALANCE OF THIS ITEM IS SHOWN ON PAGE 3 TO ASSIST IN DETERMINING CABLE LENGTHS TO ASSURE A SAFE LIFT.

F. THE HANDLING SLING SHOULD BE EQUIPPED WITH SAFETY TYPE HOOKS AND SHALL BE OF DESIGN AND CONFIGURATION TO LIFT THE ITEM IN SUCH A MANNER THAT THE CONTAINER IS NOT DAMAGED.

G. **CAUTION**: CARE MUST BE EXERCISED TO ENSURE THAT PRESSURE IS NOT APPLIED AGAINST THE SIDES AND TOP OF THE CONTAINER. ALSO, PERSONNEL SHALL NOT STAND OR WALK ON THE TOP OF THE CONTAINER.

J. STOWAGE OF THIS ITEM IS RESTRICTED TO THE WEATHER DECK AND IS NOT STACKABLE. ALSO, OTHER CARGO ITEMS MUST NOT BE STACKED OR STOWED ON TOP OF THE CONTAINER.

K. LIFTING THE CONTAINER BY SLING SHALL ONLY BE ACCOMPLISHED BY UTILIZING THE LIFTING RINGS. EACH SMRTC WILL BE HANDLED INDIVIDUALLY AND SHOULD BE ACCOMPLISHED BY USING THE LIFT POINTS DESIGNATED HEREIN.

L. CARE MUST BE TAKEN TO ENSURE THAT THE SMRTC SKIDS DO NOT INTERFERE WITH THE WEATHER DECK TIEDOWN PROVISIONS. IF THE SMRTC CANNOT BE ORIENTED SUCH THAT INTERFERENCE IS AVOIDED, WOODEN DECKING MUST BE INSTALLED TO PROVIDE A RAISED FLAT SURFACE FOR PLACEMENT OF THE SMRTC.

M. CONTAINERS SHOULD BE POSITIONED TO AVOID CONTAINER-TO-CONTAINER CONTACT. IF CONTACT CANNOT BE AVOIDED, AN ANTI-CHAFING ASSEMBLY MUST BE INSTALLED AND SECURED BETWEEN CONTAINERS. SEE THE DETAIL ON PAGE 6.

N. STEEL WIRE ROPE TIEDOWNS MAY BE USED TO SECURE THE SMRTC TO THE DECK. WHEN USING STEEL WIRE ROPE, THEY WILL BE SUBSTITUTED ON A ONE-FOR-ONE BASIS WITH THE CHAINS AND RATCHET TYPE LOAD BINDERS.

O. NO MORE THAN TWO TIEDOWN CABLES OR CHAINS WILL BE ATTACHED TO ANY ONE TIEDOWN FITTING OR FACILITY.

P. SECURING THE CONTAINER TO THE WEATHER DECK SHALL ONLY BE ACCOMPLISHED BY UTILIZING THE SMRTC AND WEATHER DECK TIEDOWN PROVISIONS.

Q. THE TYPICAL STOWAGE ON WEATHER DECK PROCEDURES SHOWN ON PAGE 4, ARE ONLY FOR GUIDANCE PURPOSES. AS A MINIMUM, IT OR A COMPARABLE STOWAGE METHOD WILL BE USED.

R. 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 25.4 MM, AND ONE POUND EQUALS 0.45 KG.

MATERIAL SPECIFICATIONS

LUMBER - - - - - - -: SEE TM 743-200-1 (DUNNAGE LUMBER) AND VOLUNTARY PRODUCT STANDARD PS 20.

NAILS - - - - - - -: ASTM F1667; COMMON STEEL NAIL NLCMS OR NLCMMS).

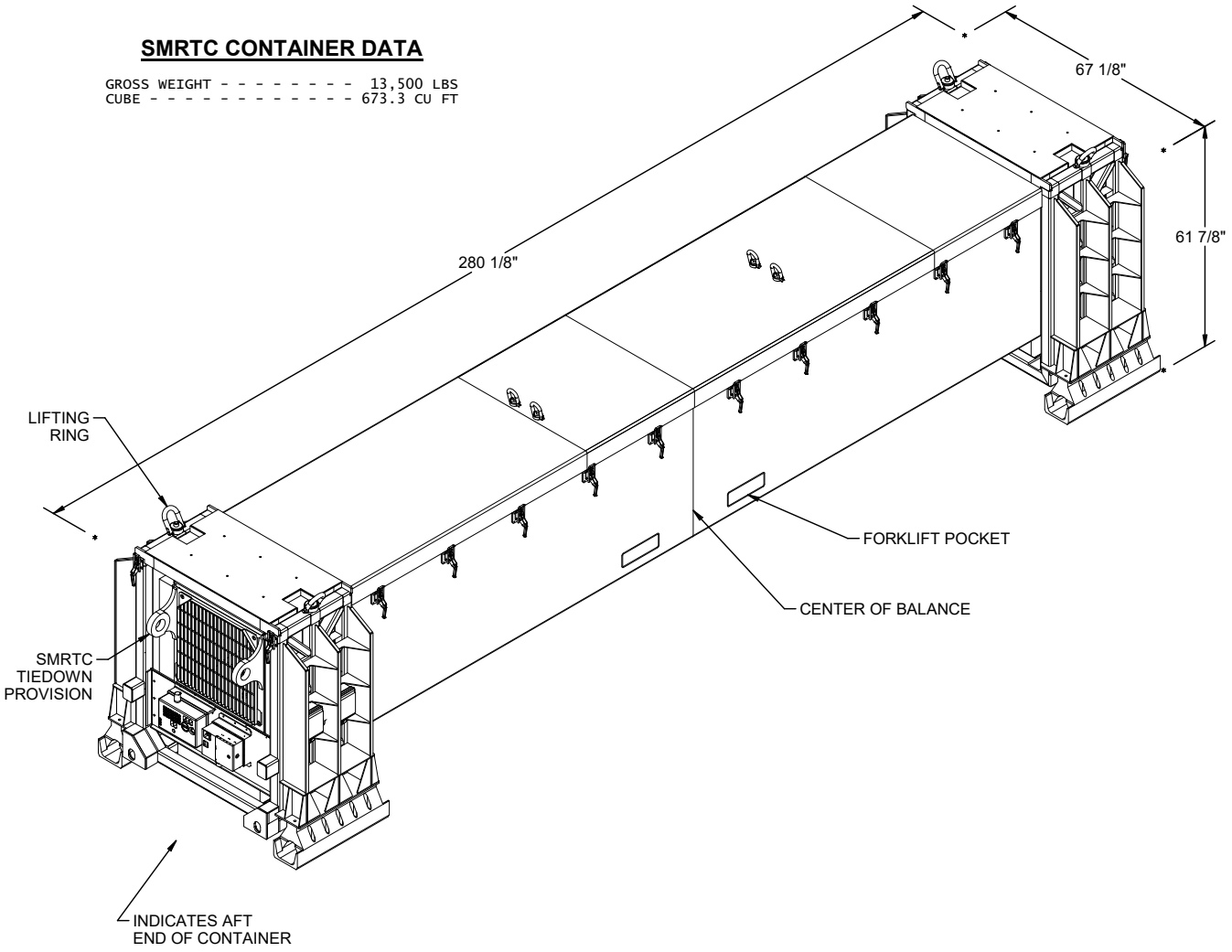
PLYWOOD - - - - - -: COMMERCIAL ITEM DESCRIPTION A-A-55057, INDUSTRIAL PLYWOOD, INTERIOR WITH EXTERIOR GLUE, GRADE C-D. IF SPECIFIED GRADE IS NOT AVAILABLE, A BETTER INTERIOR OR AN EXTERIOR GRADE MAY BE SUBSTITUTED.

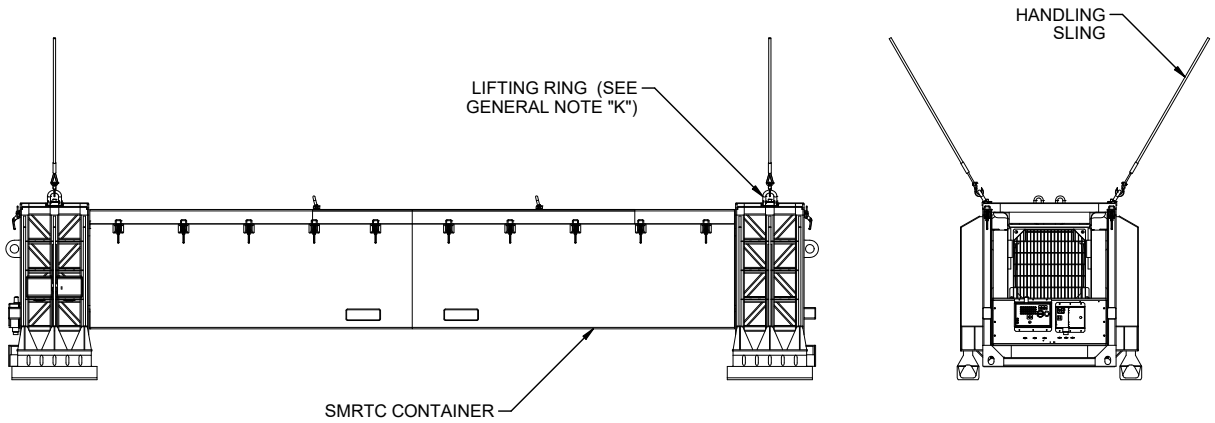
CHAIN - - - - - - -: NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 2010.

LOAD BINDER - - - -: FED SPEC GG-B-325.

SMRTC CONTAINER DATA

GROSS WEIGHT - - - - - - - - 13,500 LBS
CUBE - - - - - - - - - - - - - 673.3 CU FT



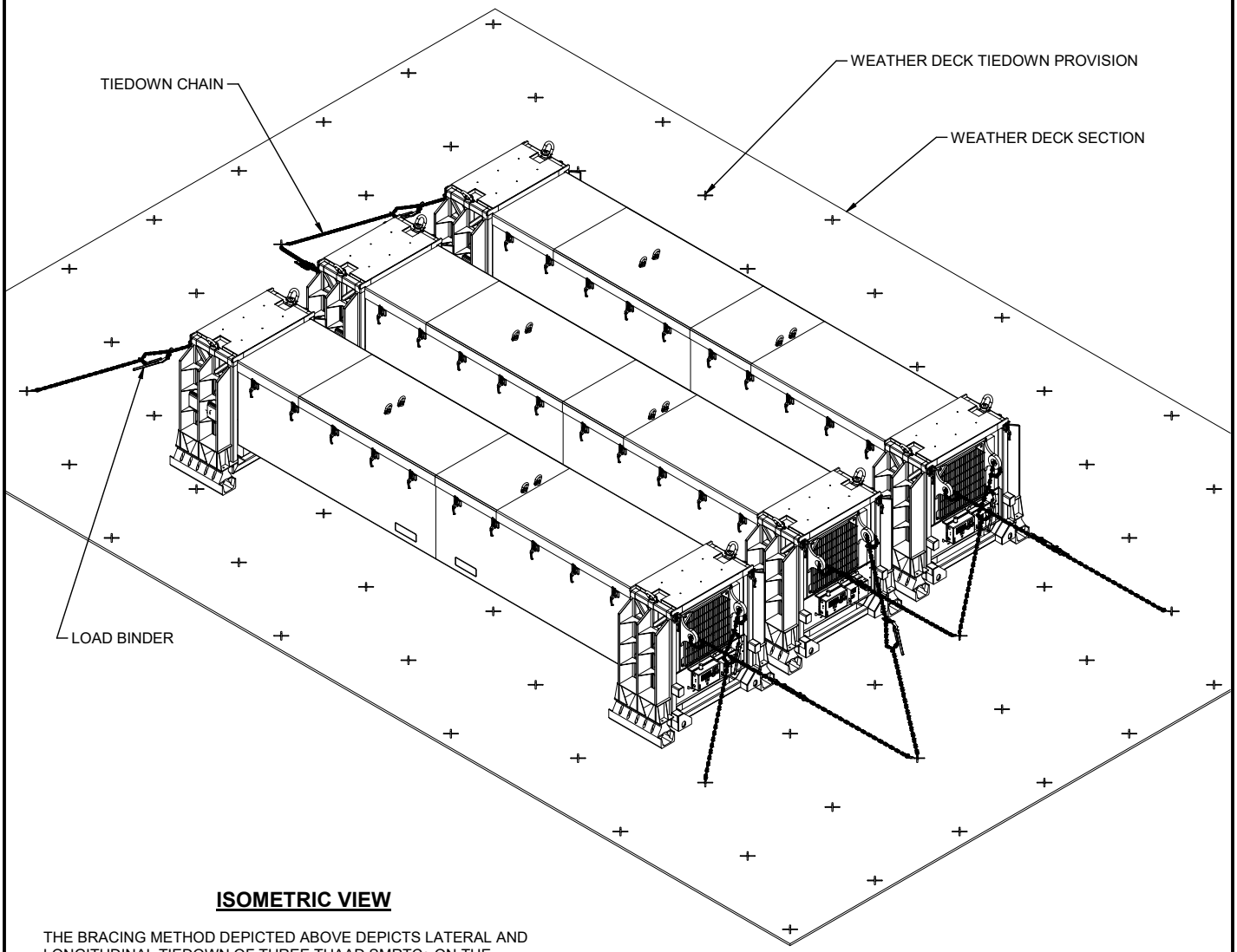


ATTACHMENT OF HANDLING SLING TO SMRTC CONTAINER

PROJECT GM 920-10

SPECIAL NOTES:

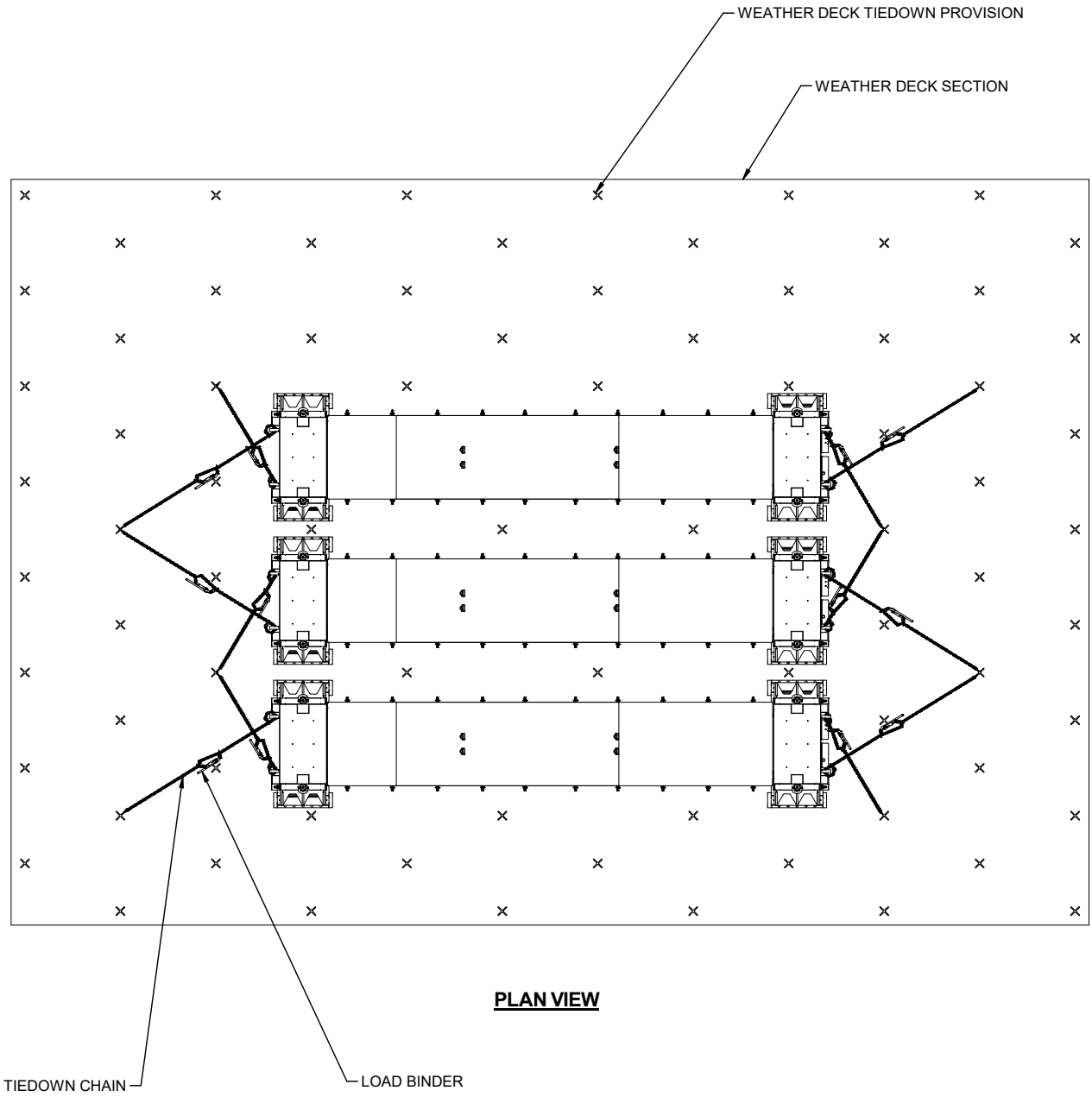
1. EACH THAAD SMRTC CONTAINER MUST BE SECURED TO THE DECK WITH FOUR TIEDOWN CHAINS, ATTACHED TO THE TIEDOWN PROVISIONS ON THE FORWARD AND AFT ENDS OF THE CONTAINERS.
2. THE LOCATION AND QUANTITY OF TIEDOWN FITTINGS ON THE WEATHER DECK MAY VARY FROM WHAT IS SHOWN. THE TIEDOWN PATTERN AS SHOWN MAY VARY ACCORDINGLY TO ACCOMMODATE THESE DIFFERENCES.



ISOMETRIC VIEW

THE BRACING METHOD DEPICTED ABOVE DEPICTS LATERAL AND LONGITUDINAL TIEDOWN OF THREE THAAD SMRTCs ON THE WEATHER DECK OF A SHIP. PRECAUTIONARY PROVISIONS FOR HANDLING, STOWAGE AND BRACING AS SPECIFIED IN THE GENERAL NOTES ON PAGE 2 MUST BE OBSERVED.

TYPICAL STOWAGE ON WEATHER DECK



PLAN VIEW

TYPICAL STOWAGE ON WEATHER DECK

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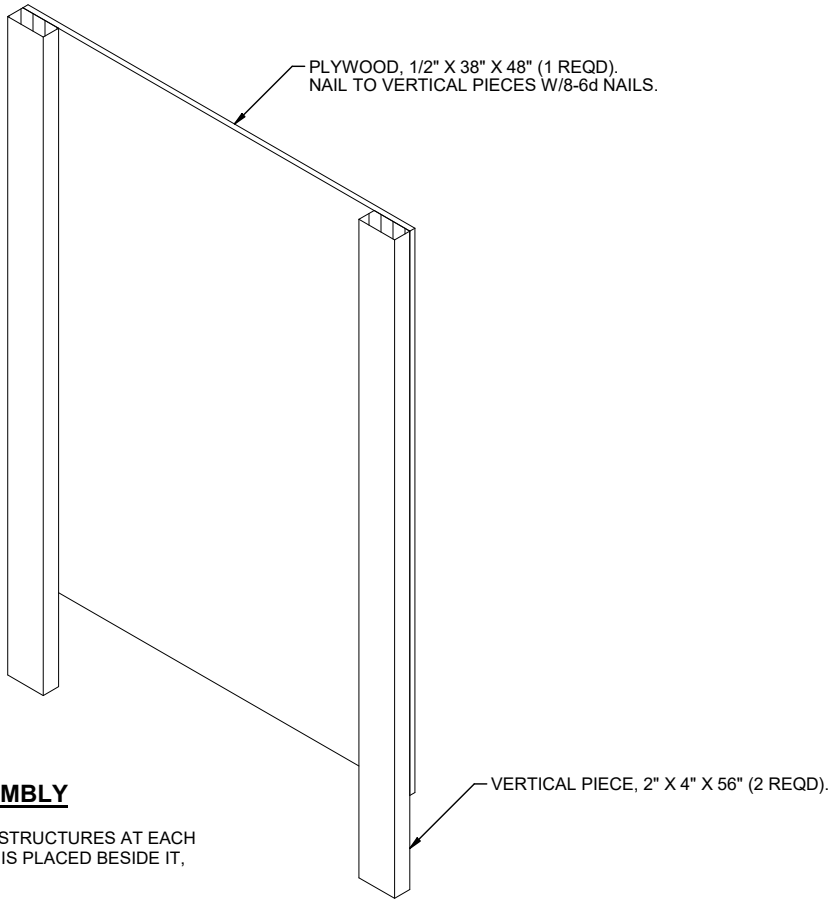

ANTI-CHAFING ASSEMBLY

THE ASSEMBLY IS PLACED AGAINST THE FIN STRUCTURES AT EACH END OF THE SMRTC WHEN ANOTHER SMRTC IS PLACED BESIDE IT, TO PREVENT METAL-TO-METAL CONTACT.

SPECIAL PROVISIONS FOR CHAIN TIEDOWN

LADING MAY BE SECURED TO THE WEATHER DECK BY CHAINS AND LOAD BINDERS, PROVIDED THE FOLLOWING CONDITIONS ARE MET.

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 2010.

2. ALL CHAINS SHALL BE MARKED AS PRESCRIBED BY THE NATIONAL ASSOCIATION OF CHAIN MANUFACTURER'S WELDED CHAIN SPECIFICATION ADOPTED NOVEMBER 2010. 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 SHIP LOADS ARE AS FOLLOWS:

   A. 5/16", GRADE 80 ALLOY STEEL CHAIN
   B. 3/8", GRADE 80 ALLOY STEEL CHAIN
   C. 1/2", GRADE 80 ALLOY STEEL CHAIN
   D. 5/16", GRADE 100 ALLOY STEEL CHAIN
   E. 3/8", GRADE 100 ALLOY STEEL CHAIN
   F. 1/2", GRADE 100 ALLOY STEEL CHAIN

(CONTINUED AT RIGHT)

(SPECIAL PROVISIONS FOR CHAIN TIEDOWN CONTINUED)

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", 5/16", AND 1/2" 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 AT LEFT.

8. LOAD BINDERS SHALL BE 5/16" TO 1/2" SIZE AND HAVE A MINIMUM BREAKING STRENGTH OF 16,500 POUNDS (WORKING LOAD LIMIT OF 5,500 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.