



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
US ARMY DEFENSE AMMUNITION CENTER  
1 C TREE ROAD  
MCALESTER, OK 74501-9053

SJMAC-DEV (70-1pp)

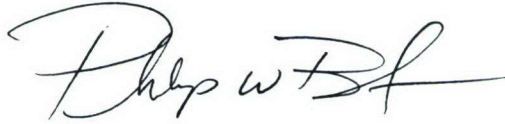
6 February 2007

MEMORANDUM FOR SEE DISTRIBUTION

SUBJECT: Report No. 06-04A2, "Transportability Testing of the Joint Modular Intermodal Platform (JMIP)", TP-94-01, "Transportability Testing Procedures"

1. Enclosed please find subject report dated November 2006.
2. The POC is the undersigned, SJMAC-DEV, DSN 956-8908.

FOR THE DIRECTOR:



JERRY W. BEAVER  
Chief, Validation Engineering Division

Encl  
as

DISTRIBUTION:

Commander,  
ARDEC Logistics Research & Engineering Directorate (AMSRD-AAR-AIL-P) Al  
Galonski/Robert Kim, Bldg 455, Picatinny Arsenal, NJ 07806-5001  
ARDEC Logistics Research & Engineering Directorate (AMSRD-AAR-AIL-F)  
Robert Holt/Nelson Gravenstede, Picatinny Arsenal, NJ 07806-5001  
U.S. Army Joint Munitions Command (AMSJM-TT) Richard Nesbitt, Rock Island, IL  
61299-6000  
ARDEC Logistics Research & Engineering Directorate (AMSRD-AAR-AIL-P-(R))  
Dave Piskorik, Rock Island, IL 61299-7300  
U.S. Army Aviation & Missile Command (AMSAM-MMC-MM-DT), Redstone Arsenal, AL  
35898-5070  
U.S. Army Materiel Command (AMSAM-LG), 5001 Eisenhower Avenue, Alexandria, VA  
22333-0001

(CONT)

SJMAC-DEV

SUBJECT: Report No. Report No. 06-04A2, "Transportability Testing of the Joint Modular Intermodal Platform (JMIP)", TP-94-01, "Transportability Testing Procedures"

DISTRIBUTION (CONT):

Director,

✓ Defense Technical Information Center, 8725 John J. Kingman Road, Suite 0944, Fort Belvoir,  
VA 22060-6218

Military Traffic Management Command-Transportation Engineering Agency (MTTE-DPE/  
Mr. Cato), 720 Thimble Shoals Blvd., Newport News, VA 23606-2574

Commandant,

U.S. Army Ordnance Missile & Munitions Center & School

(ATSK-CMT-Z), James Kisner, Redstone Arsenal, AL 35897-6095

U.S. Army Transportation School (ATSP-CDT), Fort Eustis, VA 23604

**FINAL REPORT  
NOVEMBER 2006**

**REPORT NO. 06-04A2**



**TRANSPORTABILITY TESTING OF THE JOINT MODULAR  
INTERMODAL PLATFORM (JMIP)  
TP-94-01,  
“TRANSPORTABILITY TESTING PROCEDURES”**

Prepared for:

Distribution Unlimited:

TACOM/ ARDEC  
Logistics Research and Development Activity  
ATTN: AMSRD-AAR-AIL-F  
Picatinny Arsenal, NJ 07806



**DEFENSE AMMUNITION CENTER  
VALIDATION ENGINEERING DIVISION  
MCALESTER, OKLAHOMA 74501-9053**

## **AVAILABILITY NOTICE**

A copy of this report will be furnished each attendee on automatic distribution. Additional copies or authority for reprinting may be obtained by written request from:

Director  
U.S. Army Defense Ammunition Center  
ATTN: SJMAC-DEV  
1 C Tree Road, Bldg. 35  
McAlester, OK 74501-9053

## **DISTRIBUTION INSTRUCTIONS**

Destroy this report when no longer needed. Do not return.

\*\*\*

Citation of trade names in this report does not constitute an official endorsement.

\*\*\*

The information contained herein will not be used for advertising purposes.

**REPORT NO. 06-04A2**  
**TRANSPORTABILITY TESTING OF THE**  
**JOINT MODULAR INTERMODAL PLATFORM (JMIP)**  
**TP-94-01, REV. 2, JUNE 2004, "TRANSPORTABILITY TESTING**  
**PROCEDURES"**

**NOVEMBER 2006**

**ABSTRACT**

The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SJMAC-DEV), was tasked by the Logistics Research and Development Activity (AMSRD-AAR-AIL-F), Picatinny Arsenal, NJ to conduct transportability retesting on the Joint Modular Intermodal Platform (JMIP) manufactured by SEA BOX Inc, East Riverton, NJ. The testing was conducted in accordance with TP-94-01, Revision 2, June 2004 "Transportability Testing Procedures."

The major change on the JMIP from the unit previously tested (Report 06-04A1) was that the material of the pins that hold the cams in position was changed to a harder strength material.

The objective of the testing was to evaluate the Joint Modular Intermodal Platform (JMIP) when transportability tested in accordance with TP-94-01, Revision 2, June 2004 for use during the Limited Military Utility Assessment (LMUA). The retest was to determine if the JMIP could be transported on/off road in an intermodal container. Previously the JMIP had successfully completed the on/off road testing with a PLS truck (Report 06-04A1).

The following observations resulted from the testing of JMIP:

1. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to cause excessive movement of JMIP. Future designs of the cam locking devices should prevent the bolts from moving in or out.

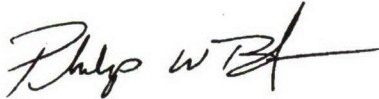
2. The bail bar of the A-frame rested against the container door when in the container transport position.

3. During the washboard course testing, the bolts holding the A-frame in the container transport position failed and the testing was discontinued.

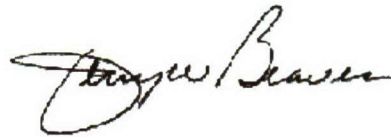
The JMIP, as currently designed, is **not adequate** for the transportation of ammunition in an intermodal container.

Prepared by:

Reviewed by:



PHILIP W. BARICKMAN  
Lead Validation Engineer



JERRY W. BEAVER  
Chief, Validation Engineering Division

**U.S. ARMY DEFENSE AMMUNITION CENTER**

VALIDATION ENGINEERING DIVISION  
MCALESTER, OK 74501-9053

**REPORT NO. 06-04A2**

**Transportability Testing of the Joint Modular Intermodal Platform (JMIP)  
TP-94-01, Revision 2, June 2004 "Transportability Testing Procedures"**

TABLE OF CONTENTS

PART	PAGE NO.
1. INTRODUCTION .....	1-1
A. BACKGROUND .....	1-1
B. AUTHORITY .....	1-1
C. OBJECTIVE.....	1-1
D. OBSERVATIONS .....	1-2
E. CONCLUSION.....	1-2
2. ATTENDEES.....	2-1
3. TEST EQUIPMENT .....	3-1
4. TEST PROCEDURES .....	4-1
A. RAIL TEST .....	4-1
B. ON/OFF ROAD TESTS .....	4-3
1. HAZARD COURSE .....	4-3
2. ROAD TRIP.....	4-4
3. PANIC STOPS .....	4-4
4. WASHBOARD COURSE .....	4-4
C. OCEAN-GOING VESSEL TEST. Shipboard Transportation Simulator .	4-4
5. TEST RESULTS.....	5-1
5.1 TESTING DATE –12 September 2006 .....	5-1
A. ON/OFF ROAD TESTS .....	5-1
1. HAZARD COURSE .....	5-1
2. ROAD TRIP .....	5-2
3. PANIC STOPS .....	5-3
4. HAZARD COURSE .....	5-3
5. WASHBOARD COURSE.....	5-3
B. OBSERVATIONS.....	5-4
C. CONCLUSION.....	5-5
6. DRAWINGS.....	6-1

## **PART 1 – INTRODUCTION**

**A. BACKGROUND.** The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SJMAC-DEV), was tasked by the Logistics Research and Development Activity (AMSRD-AAR-AIL-F), Picatinny Arsenal, NJ to conduct transportability retesting on the Joint Modular Intermodal Platform (JMIP) manufactured by SEA BOX Inc, East Riverton, NJ. The testing was conducted in accordance with TP-94-01, Revision 2, June 2004 “Transportability Testing Procedures.”

The major change on the JMIP from the unit previously tested (Report 06-04A1) was that the material of the pins that hold the cams in position was changed to a harder strength material.

**B. AUTHORITY.** This test was conducted IAW mission responsibilities delegated by the U.S. Army Joint Munitions Command (JMC), Rock Island, IL. Reference is made to the following:

1. AR 740-1, 15 June 2001, Storage and Supply Activity Operation.
2. OSC-R, 10-23, Mission and Major Functions of U.S. Army Defense Ammunition Center (DAC) 21 Nov 2000.

**C. OBJECTIVE.** The objective of the testing was to evaluate the Joint Modular Intermodal Platform (JMIP) when transportability tested in accordance with TP-94-01, Revision 2, June 2004 for use during the Limited Military Utility Assessment (LMUA). The retest was to determine if the JMIP could be transported on/off road in an intermodal container. Previously the JMIP had successfully completed the on/off road testing with a PLS truck (Report 06-04A1).

**D. OBSERVATIONS.**

1. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to cause excessive movement of JMIP. Future designs of the cam locking devices should prevent the bolts from moving in or out.

2. The bail bar of the A-frame rested against the container door when in the container transport position.

3. During washboard course testing the bolts holding the A-frame in the container transport position failed and the testing was discontinued.

**E. CONCLUSION.** The JMIP, as currently designed, is **not adequate**, for the transportation of ammunition in an intermodal container.

## **PART 2 - ATTENDEES**

### **ATTENDEE**

### **MAILING ADDRESS**

Philip Barickman  
DSN 956-8992  
(918) 420-8992

Director  
U.S. Army Defense Ammunition Center  
ATTN: SJMAC-DEV  
1 C Tree Road, Bldg. 35  
McAlester, OK 74501-9053

Michael S. Bartosiak  
DSN 956-8083  
(918) 420-8083

Director  
U.S. Army Defense Ammunition Center  
ATTN: SJMAC-DET  
1 C Tree Road, Bldg. 35  
McAlester, OK 74501-9053

Richard Garside  
DSN 956-8050  
(918) 420-8050

Director  
U.S. Army Defense Ammunition Center  
ATTN: SJMAC-DET  
1 C Tree Road, Bldg. 35  
McAlester, OK 74501-9053

Nelson Gravenstede  
(973) 724-2115

U.S. Army Armament Research,  
Development and Engineering Center  
Logistics Research & Engineering Dir.  
ATTN: AMSRD-AAR-AIL-F  
Picatinny Arsenal, NJ 07806-5001

Robert Kim  
(973) 724-7235

U.S. Army Armament Research,  
Development and Engineering Center  
Logistics Research & Engineering Dir.  
ATTN: AMSRD-AAR-AIL-P  
Picatinny Arsenal, NJ 07806-5001

### **PART 3 - TEST EQUIPMENT**

1. Joint Modular Intermodal Platform  
Manufactured by SEA BOX, East Riverton, NJ  
Model Number: J-MIP LN702  
Serial Number: 00002  
Date of Manufacture: 27 February 2006  
Tare Weight: 3,960 pounds
  
2. Joint Modular Intermodal Container  
Manufactured by British Aerospace Engineering  
Weight: 310 pounds  
Length: 51-3/4 inches  
Width: 43-3/4 inches  
Height: 43-1/4 inches
  
3. Joint Modular Intermodal Container  
Manufactured by Naval PHST Center - Earle, NJ  
Closed JMIC  
Weight: 325 pounds  
Length: 51-3/4 inches  
Width: 43-3/4 inches  
Height: 43 inches
  
4. Joint Modular Intermodal Container  
Manufactured by Naval PHST Center – Earle, NJ  
Open Framed JMIC  
Weight: 285 pounds  
Length: 51-3/4 inches  
Width: 43-3/4 inches  
Height: 43 inches

5. Palletized Load System Truck

Model #: M1074

Manufactured by Oshkosh Truck Corporation, Oshkosh, WI

ID #: 10T2P1NH6N1044011

NSN: 2320-01-304-2277

Serial #: 44011

Curb Weight: 55,000 pounds

6. Truck, Tractor, MTV, M1088 A1

ID #: J0231

NSN: 2320 01 447 3893

VSN: NL1FR5

MFG Serial #: T-018447EFJM

Weight: 19,340 pounds

7. Semitrailer, flatbed, breakbulk/container transporter, 34 ton

Model #: M872A1

Manufactured by Heller Truck Body Corporation, Hillsdale, NJ

ID #: 11-1505 NX05NZ

NSN: 2330 01 109 8006

Weight: 19,240 pounds

8. Intermodal Container

ID # CMCU 200006-8

Date of Manufacture: 06/99

Manufactured by Charleston Marine Containers, Charleston, SC

Tare Weight: 4,870 pounds

Maximum Gross Weight: 67,200 pounds

## **PART 4 - TEST PROCEDURES**

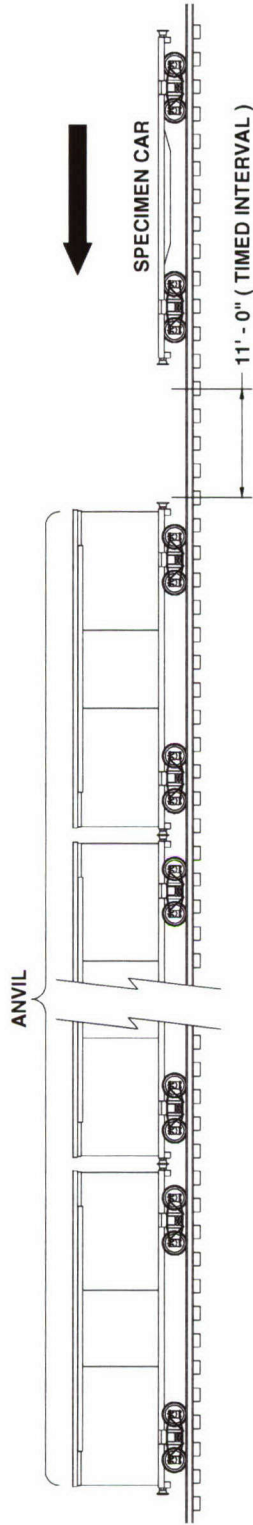
The test procedures outlined in this section were extracted from TP-94-01, "Transportability Testing Procedures," Revision 2, June 2004, for validating tactical vehicles and outloading procedures used for shipping munitions by tactical truck, railcar, and ocean-going vessel.

The rail impact will be conducted with the loaded intermodal container secured directly to the railcar. Inert (non-explosive) items were used to build the load. The test loads were prepared using the blocking and bracing procedures proposed for use with munitions (***see Part 6- Drawings for procedures***). The weight and physical characteristics (weights, physical dimensions, center of gravity, etc.) of the test loads were similar to live (explosive) ammunition.

**A. RAIL TEST. RAIL IMPACT TEST METHOD.** The test load or vehicle will be secured to a flatcar. The equipment needed to perform the test will include the specimen (hammer) car, four empty railroad cars connected together to serve as the anvil, and a railroad locomotive. The anvil cars will be positioned on a level section of track with air and hand brakes set and with draft gears compressed. The locomotive unit will push the specimen car toward the anvil at a predetermined speed, then disconnect from the specimen car approximately 50 yards away from the anvil cars allowing the specimen car to roll freely along the track until it strikes the anvil. This will constitute an impact. Impacting will be accomplished at speeds of 4, 6, and 8.1 mph in one direction and at a speed of 8.1 mph in the reverse direction. The tolerance for the speeds is plus 0.5 mph, minus 0.5 mph for the 4 mph and 6 mph impacts, and plus 0.5 mph, minus 0 mph for the 8.1 mph impacts. The impact speeds will be determined by using an electronic counter to measure the time for the specimen car to traverse an 11-foot distance immediately prior to contact with the anvil cars (see Figure 1).

**ASSOCIATION OF AMERICAN RAILROADS (AAR)**

**STANDARD TEST PLAN**



**4 BUFFER CARS (ANVIL)  
WITH DRAFT GEAR  
COMPRESSED AND AIR BRAKES IN A SET  
POSITION**

**ANVIL CAR TOTAL WT. 250,000 LBS (APPROX)**

**SPECIMEN CAR IS RELEASED BY SWITCH ENGINE  
TO**

**ATTAIN: IMPACT NO. 1 @ 4 MPH**

**IMPACT NO. 2 @ 6 MPH**

**IMPACT NO. 3 @ 8.1 MPH**

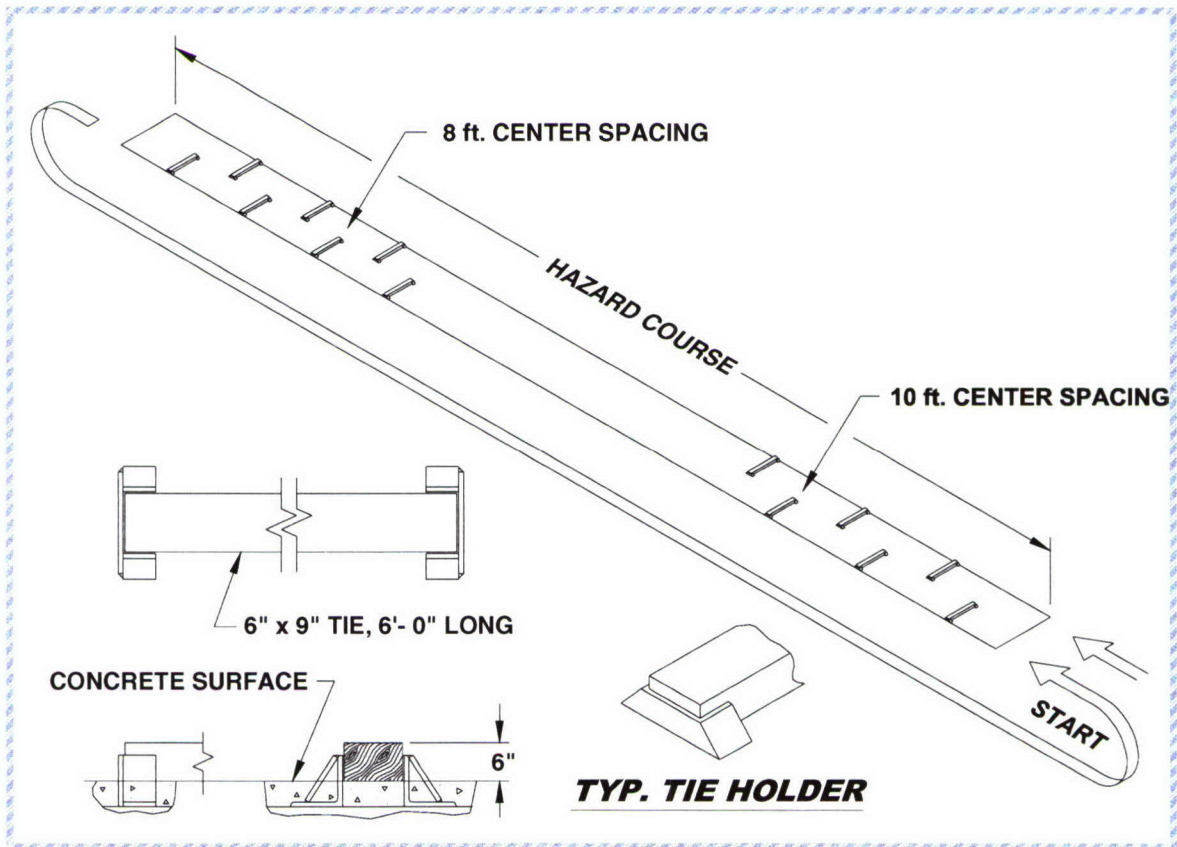
**THEN THE CAR IS REVERSED AND RELEASED BY  
SWITCH ENGINE TO ATTAIN:**

**IMPACT NO. 4 @ 8.1 MPH**

**Figure 1. Rail Impact Sketch**

**B. ON/OFF ROAD TEST.**

**1. HAZARD COURSE.** The test load or vehicle will be transported over the 200-foot-long segment of concrete-paved road consisting of two series of railroad ties projecting 6 inches above the level of the road surface. The hazard course will be traversed two times (see Figure 2).



**Figure 2. Hazard Course Sketch**

- a. The first series of 6 ties are spaced on 10-foot centers and alternately positioned on opposite sides of the road centerline for a distance of 50 feet.
- b. Following the first series of ties, a paved roadway of 75 feet separates the first and second series of railroad ties.

c. The second series of 7 ties are spaced on 8-foot centers and alternately positioned on opposite sides of the road centerline for a distance of 48 feet.

d. The test load is driven across the hazard course at speeds that will produce the most violent vertical and side-to-side rolling reaction obtainable in traversing the hazard course (approximately 5 mph).

**2. ROAD TRIP.** The test load or vehicle will be transported for a distance of 30 miles over a combination of roads surfaced with gravel, concrete, and asphalt. The test route will include curves, corners, railroad crossings and stops and starts. The test load or vehicle will travel at the maximum speed for the particular road being traversed, except as limited by legal restrictions.

**3. PANIC STOPS.** During the road trip, the test load or vehicle will be subjected to three (3) full airbrake stops while traveling in the forward direction and one in the reverse direction while traveling down a 7 percent grade. The first three stops are at 5, 10, and 15 mph while the stop in the reverse direction is approximately 5 mph. This testing will not be required if the Rail Impact Test is performed.

**4. WASHBOARD COURSE.** The test load or vehicle will be driven over the washboard course at a speed that produces the most violent response in the vertical direction.

**C. OCEAN-GOING VESSEL TEST. Shipboard Transportation Simulator (Test Method 5).** The Shipboard Transportation Simulator (STS) is used for testing loads in 8-foot-wide by 20-foot-long intermodal freight containers. The specimen shall be positioned onto the STS and securely locked in place using the cam lock at each corner. Using the procedure detailed in the operating instructions, the STS shall begin oscillating at an angle of 30 degrees, plus or minus 2 degrees, either side of vertical center and a frequency of 2 cycles-per-

minute (30 seconds, plus or minus 2 seconds) for a duration of two (2) hours. This frequency shall be observed for apparent defects that could cause a safety hazard. The frequency of oscillation shall then be increased to 4 cycles-per-minute (15 seconds, plus or minus one second per cycle) and the apparatus operated for two (2) hours. If an inspection of the load does not indicate an impending failure, the frequency of oscillation shall be further increased to 5 cycles-per-minute (12 seconds, plus or minus one second per cycle), and the apparatus operated for four (4) hours. The operation does not necessarily have to be continuous; however, no changes or adjustments to the load or load restraints shall be permitted at any time during the test. After once being set in place, the test load (specimen) shall not be removed from the apparatus until the test has been completed or is terminated.

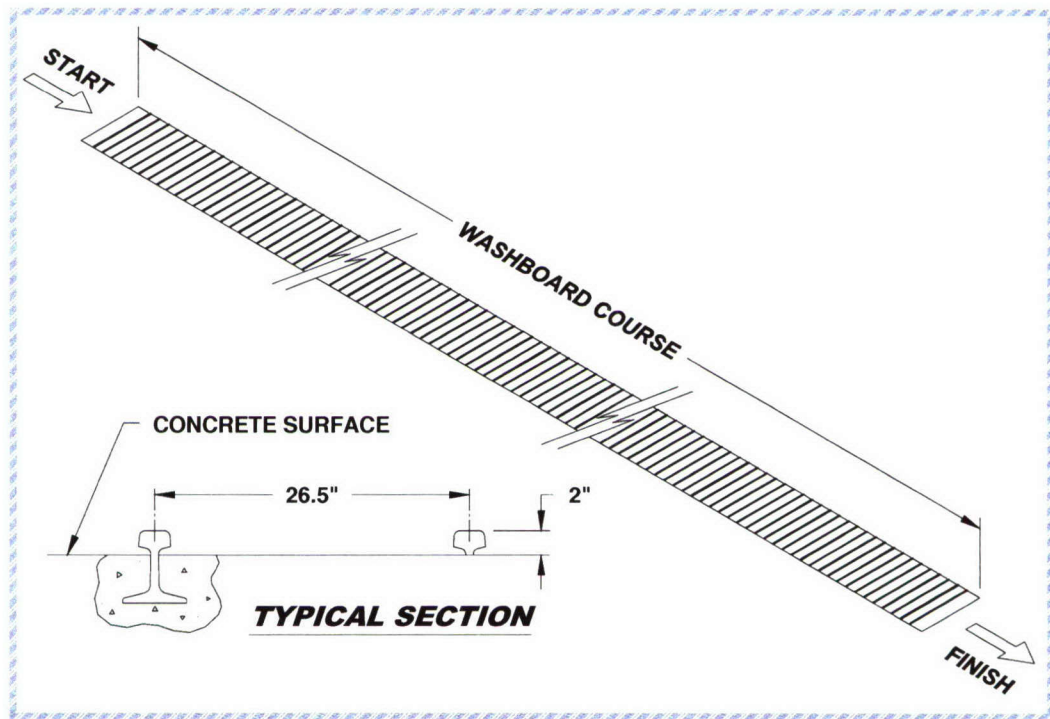


Figure 3. Washboard Course Sketch

## **PART 5 - TEST RESULTS**

### **5.1**

Test Specimen: SEA BOX JMIP in an Intermodal Container.

Payload: 4 BAE JMICs and 2 Navy JMICs.

Testing Date: 12 September 2006

Gross Weight: 20,670 pounds (Including JMIP, interface frames, JMICs and intermodal container).

Note:

The bail bar of the A-frame rested against the container door when in the intermodal transport position.

#### **A. ON/OFF ROAD TESTS.**

##### **1. HAZARD COURSE.**



**Photo 1. Hazard Course Testing of the JMIP in the Intermodal Container.**

Pass No.	Elapsed Time	Avg. Velocity (mph)
1	24 Seconds	6
2	22 Seconds	7

Figure 4.

**Remarks:**

1. Figure 4 lists the average speeds of the test load through the Hazard Course.
2. The adjustment bolts on the cams moved during Passes 1 & 2. The JMIP remained secure in the container. The pin that prevents the cam from rotating does not rest against the cam which may allow the cams and adjustment bolts to move.

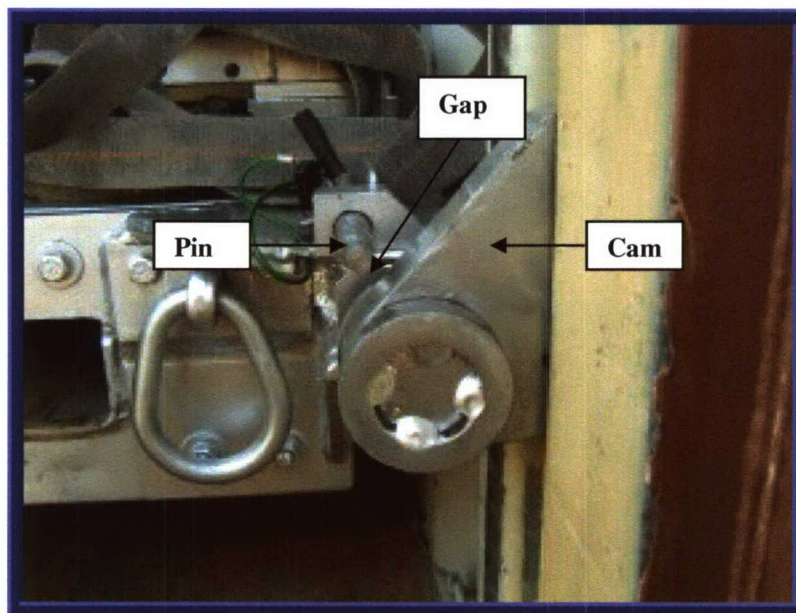


Photo 2. Pin Distance from the Cam.

**2. ROAD TRIP:**

**Remarks:**

1. The Road Trip was conducted between the Road Hazard Course Passes #2 and #3.
2. Inspection following the Road Trip revealed no damage or movement of the JMIP.

3. **PANIC STOPS:** Inspection following the completion of the reverse 5 MPH panic stop revealed that the JMIP slid toward the door of the container 0.25 inches. Due to the contact of the bail bar, the container door was difficult to close.

4. **HAZARD COURSE:**

Pass No.	Elapsed Time	Avg. Velocity (mph)
3	24 Seconds	6
4	24 Seconds	6

Figure 5.

**Remarks:**

1. Figure 5 lists the average speeds of the test load through the Hazard Course.
2. The adjustment bolts on the cams moved during Passes 3 & 4. The JMIP remained secure in the container.

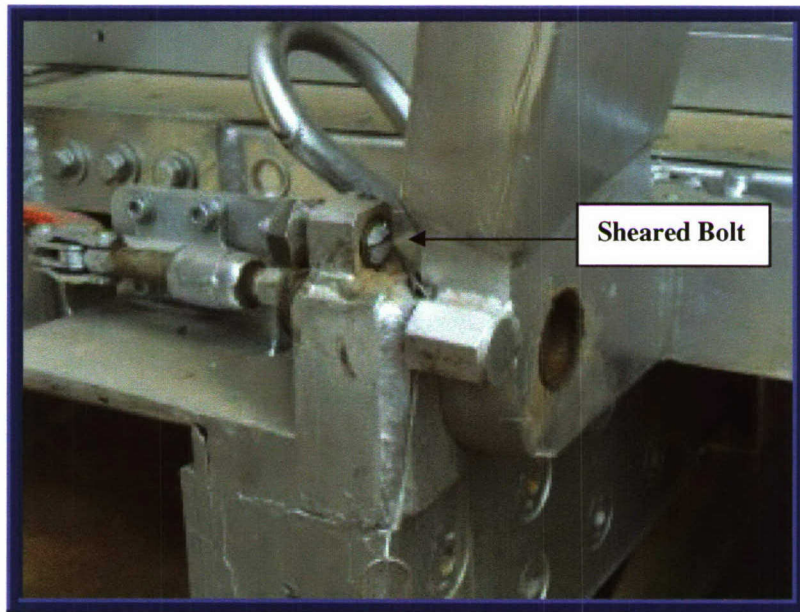
5. **WASHBOARD COURSE:**

**Remark:**

Inspection following the Washboard Course revealed that one of the bolts that held the A-frame in the container transport position failed.



**Photo 3. Washboard Course Testing JMIP.**



**Photo 4. Damaged Bolt.**

**B. OBSERVATIONS.**

1. Some movement of the adjustment bolt on the cams did occur during the testing. The movement of the cam locking bolt was not significant enough to

cause excessive movement of JMIP. Future designs of the cam locking devices should prevent the bolts from moving in or out.

2. The bail bar of the A-frame rested against the container door when in the container transport position.

3. During the washboard course testing the bolts holding the A-frame in the container transport position failed and testing was discontinued.

**C. CONCLUSION.** The JMIP, as currently designed, is **not adequate**, for the transportation of ammunition in an intermodal container.

## **PART 6 – DRAWINGS**

The following drawing represents the load configuration that was subjected to the test criteria.

# TEST SKETCH

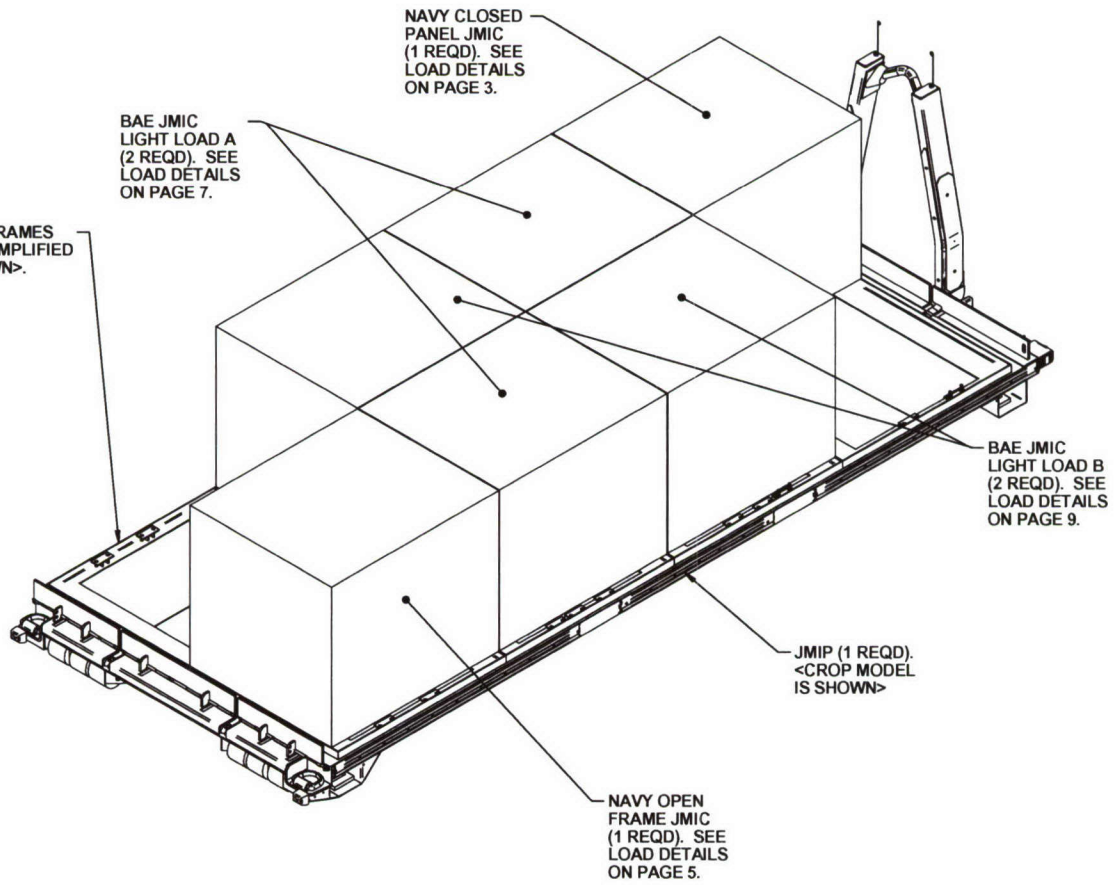
## **LOADING AND BRACING OF JOINT MODULAR INTERMODAL CONTAIN- ERS (JMICS) ON THE JOINT MODU- LAR INTERMODAL PLATFORM (JMIP)**

---

**THIS TEN PAGE DOCUMENT DEPICTS NAVY AND  
BAE JMIC PROTOTYPES ON A SEABOX PROTOTYPE  
JMIP FOR INTEGRATION TRANSPORTABILITY TEST-  
ING AT AN APPROXIMATE 15,000 LBS GROSS LOAD**

PREPARED DURING JULY 2006 BY:  
U.S. ARMY DEFENSE AMMUNITION CENTER  
ATTN: SJMAC-DET  
POC: MICHAEL BARTOSIAK  
DSN 956-8083  
COMM (918) 420-8083  
FAX (918) 420-8811  
E-MAIL: MICHAEL.BARTOSIAK@US.ARMY.MIL

LAURAA. FIEFFER  
CHIEF, TRANSPORTATION ENGINEERING DIVISION

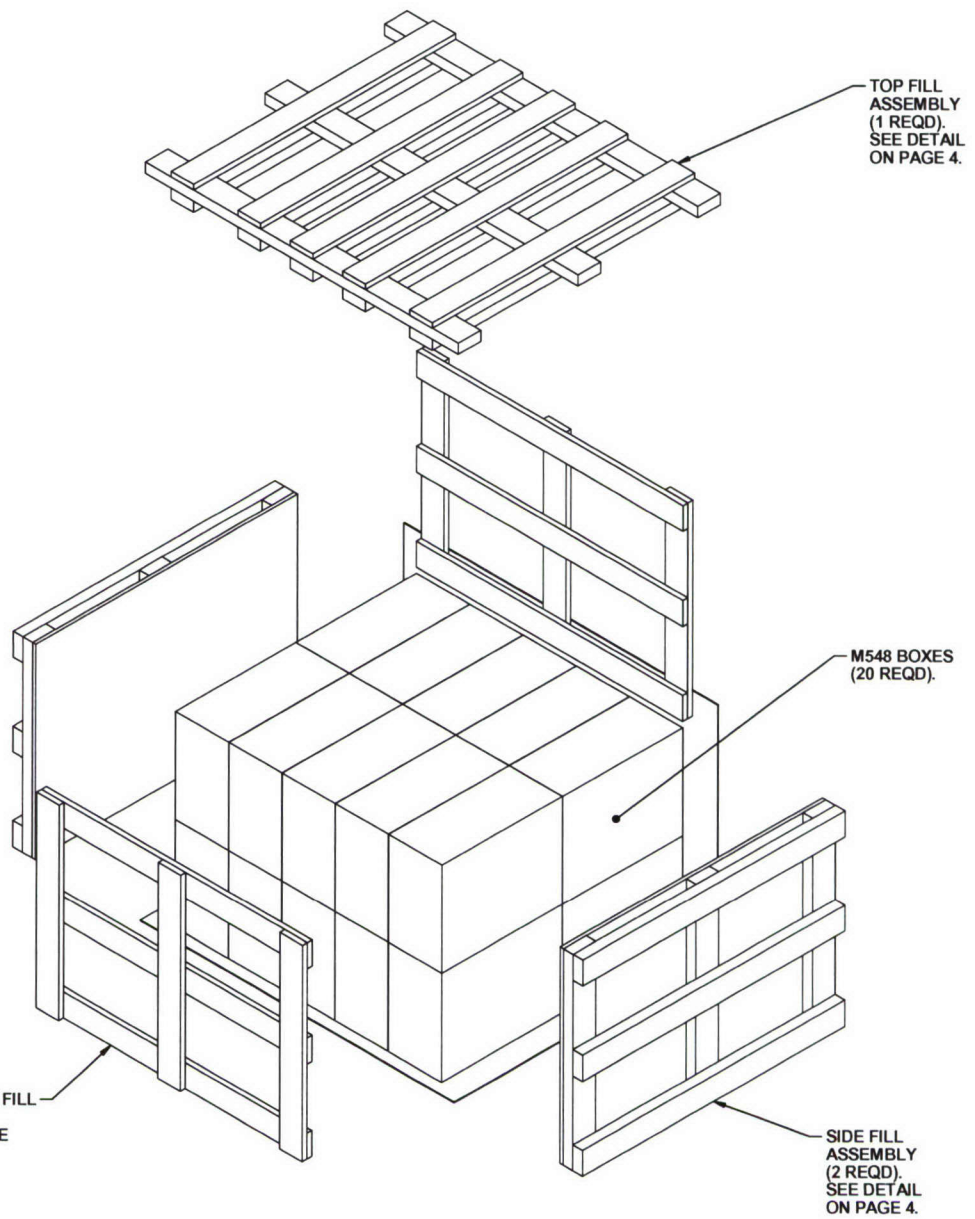


**ISOMETRIC VIEW**

**LOAD AS SHOWN**

ITEM	QUANTITY	WEIGHT (APPROX)
NAVY PANEL JMIC	1	2,971 LBS
NAVY FRAME JMIC	1	2,916 LBS
BAE JMIC (4 BOXES)	2	1,832 LBS
BAE JMIC (8 BOXES)	2	2,792 LBS
INTERFACE FRAMES	4	580 LBS
JMIP	1	3,800 LBS

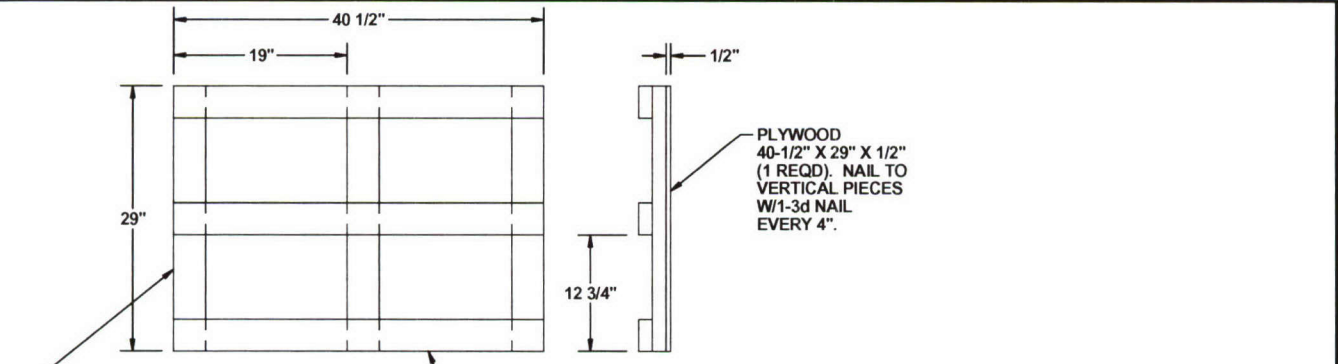
TOTAL WEIGHT - - - - - 14,891 LBS (APPROX)



**NAVY CLOSED PANEL JMIC UNIT**

20 M548 BOXES @ 125 LBS	-----	2,500 LBS
DUNNAGE	-----	146 LBS
CLOSED PANEL NAVY JMIC	-----	325 LBS
<hr/>		
TOTAL WEIGHT	-----	2,971 LBS (APPROX)
CUBE	-----	56.4 CU FT (APPROX)

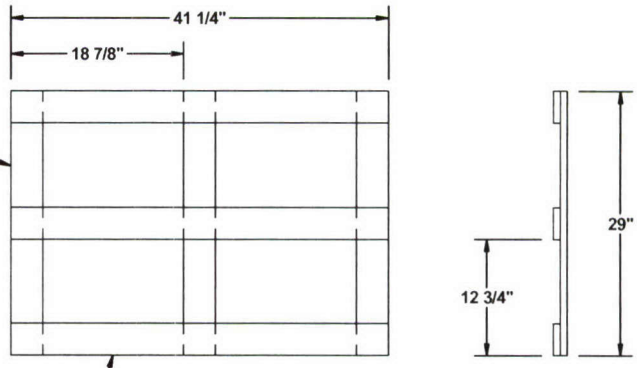
BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" x 4"	52	18
2" x 4"	64	43
NAILS	NO. REQD	POUNDS
3d (1-1/4")	84	.16
6d (2")	60	.35
10d (3")	36	.54
NAVY PANEL JMIC	1 REQD	325 LBS
1/2 PLYWOOD	17 SQ FT	23 LBS



VERTICAL PIECE  
2" X 4" X 29"  
(3 REQD).

HORIZONTAL PIECE  
2" X 4" X 40 1/2"  
(3 REQD). NAIL TO  
VERTICAL PIECES  
W/2-10d NAILS AT  
EACH JOINT.

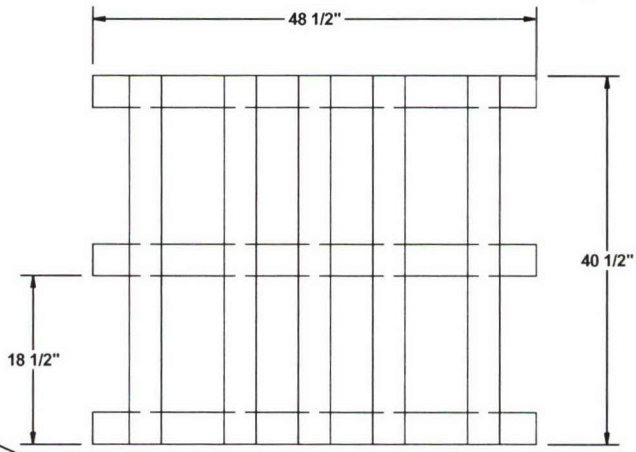
**SIDE FILL ASSEMBLY**  
(2 REQD)



VERTICAL PIECE  
1" X 4" X 29"  
(3 REQD). NAIL TO  
HORIZONTAL PIECES  
W/2-3d NAILS AT  
EACH JOINT.

HORIZONTAL PIECE  
1" X 4" X 41-1/4"  
(3 REQD).

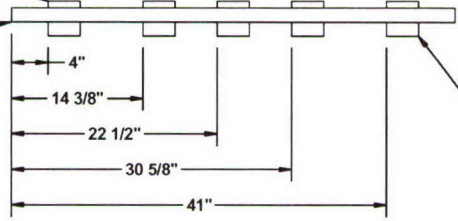
**FRONT/REAR FILL ASSEMBLY**  
(2 REQD)



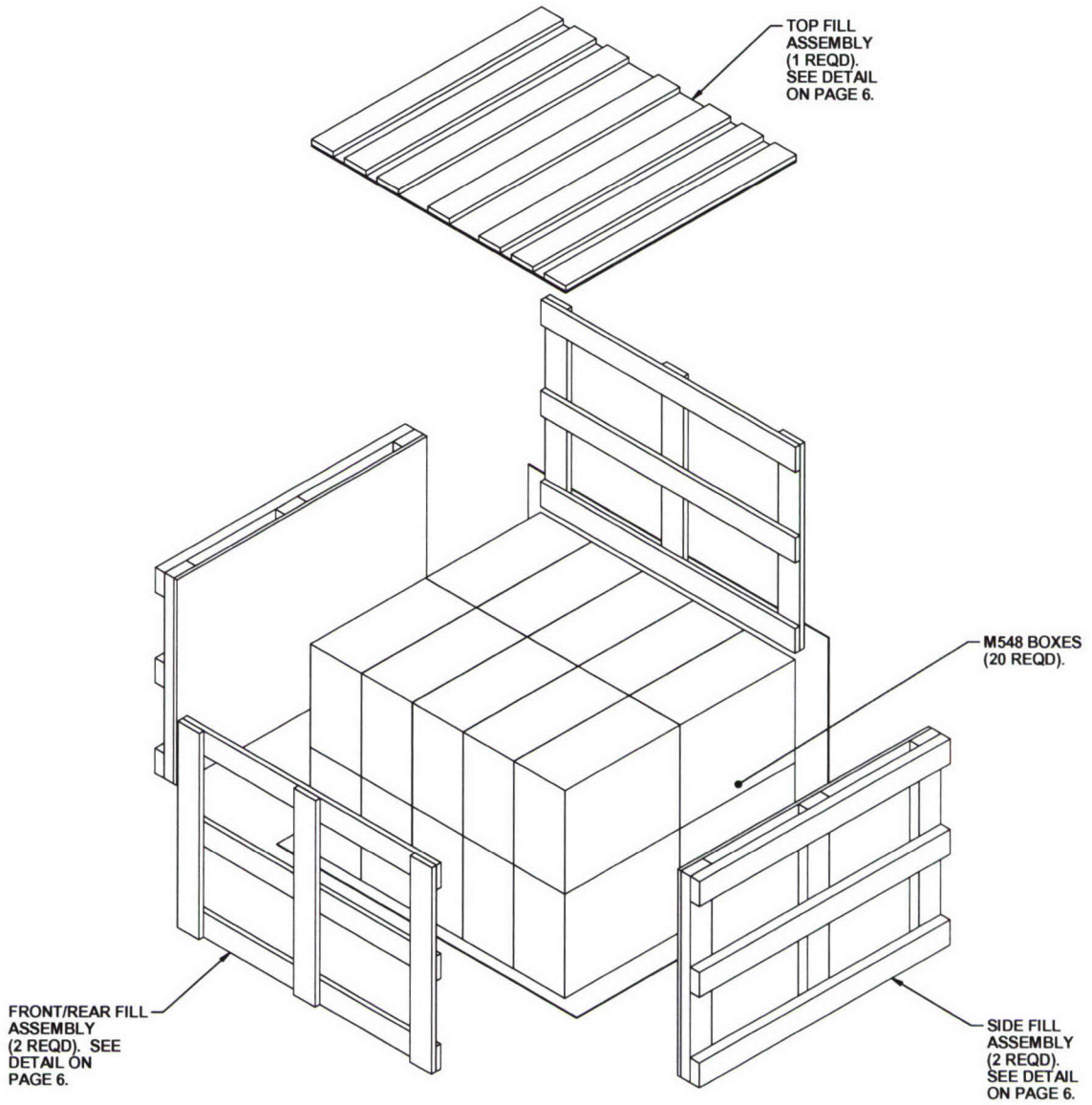
SECONDARY LONGITUDINAL  
PIECE, 1" X 4" X 40 1/2"  
(5 REQD). NAIL TO LATERAL  
PIECES W/2-6d NAILS AT  
EACH JOINT.

LATERAL PIECE  
2" X 4" X 48-1/2"  
(3 REQD). NAIL TO  
LONGITUDINAL  
PIECES W/2-6d NAILS  
AT EACH JOINT.

LONGITUDINAL PIECE  
2" X 4" X 40 1/2"  
(5 REQD).



**TOP FILL ASSEMBLY**  
(1 REQD)



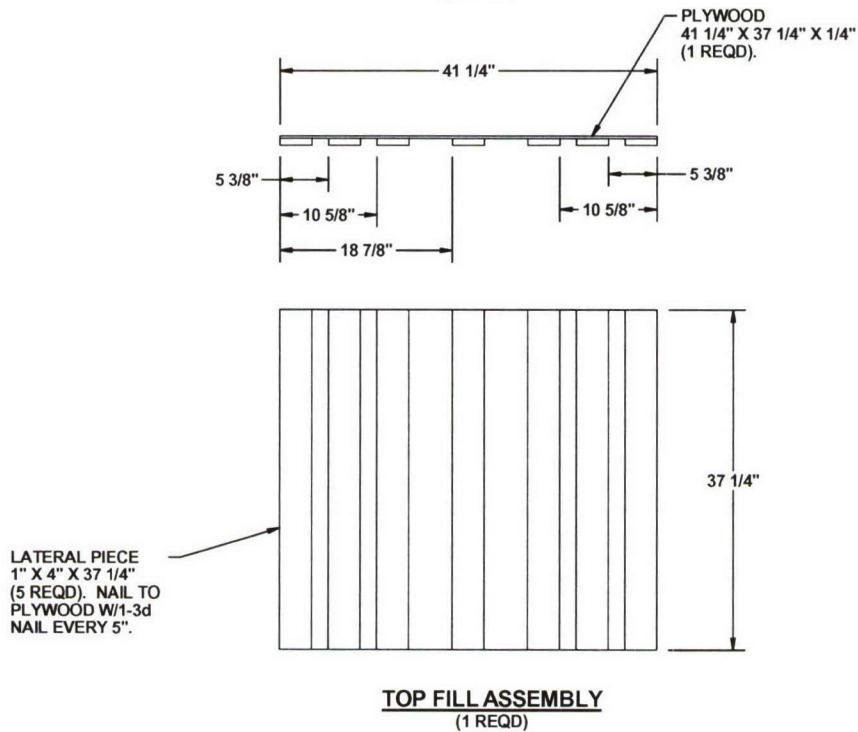
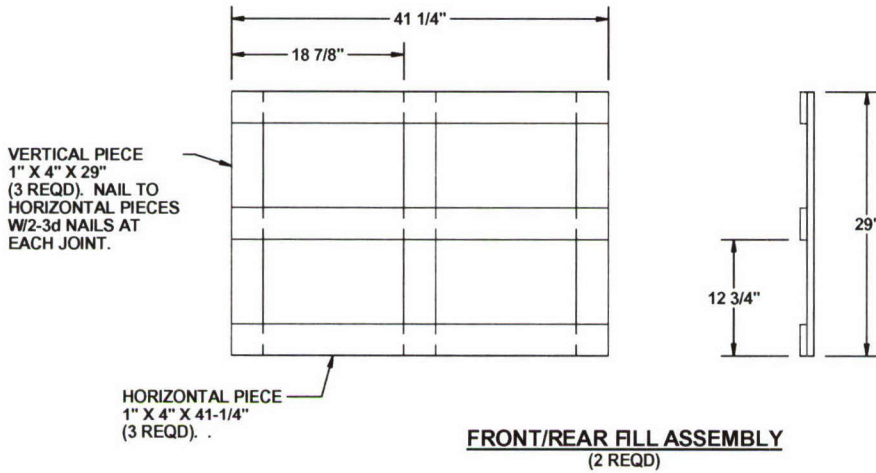
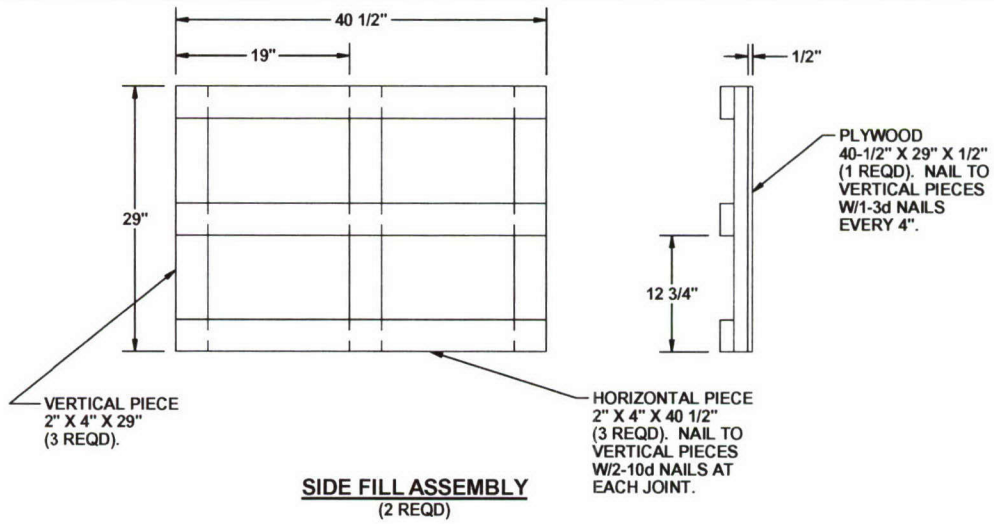
**NAVY OPEN FRAME JMJC UNIT**

STRAPPING NOT SHOWN, SEE STRAPPING DETAIL 1 & 2 ON PAGE 7 FOR FURTHER INFORMATION.

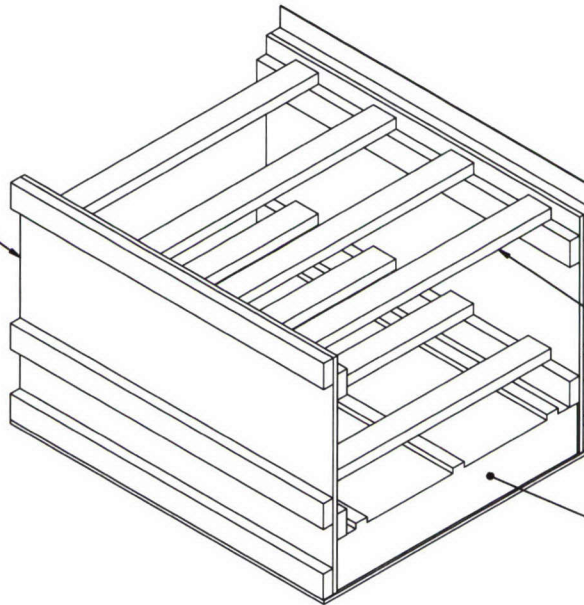
20 M548 BOXES @ 125 LBS	-----	2,500 LBS
DUNNAGE	-----	127 LBS
OPEN FRAME NAVY JMJC	-----	285 LBS

TOTAL WEIGHT ----- 2,912 LBS (APPROX)  
 CUBE ----- 56.4 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
1" x 4"	57	19
2" x 4"	35	24
NAILS	NO. REQD	POUNDS
3d (1-1/4")	126	.23
10d (3")	36	.55
NAVY OPEN FRAME JMJC	1 REQD	285 LBS
PLYWOOD, 1/4"	11 SQ FT	8 LBS
PLYWOOD, 1/2"	17 SQ FT	23 LBS
STEEL STRAPPING, 1-1/4"	56' REQD	9 LBS
SEAL FOR 1-1/4" STRAPPING	4 REQD	NIL



END FILL ASSEMBLIES  
(2 REQD). SEE END  
FILL ASSEMBLY A DETAIL  
ON PAGE 8.



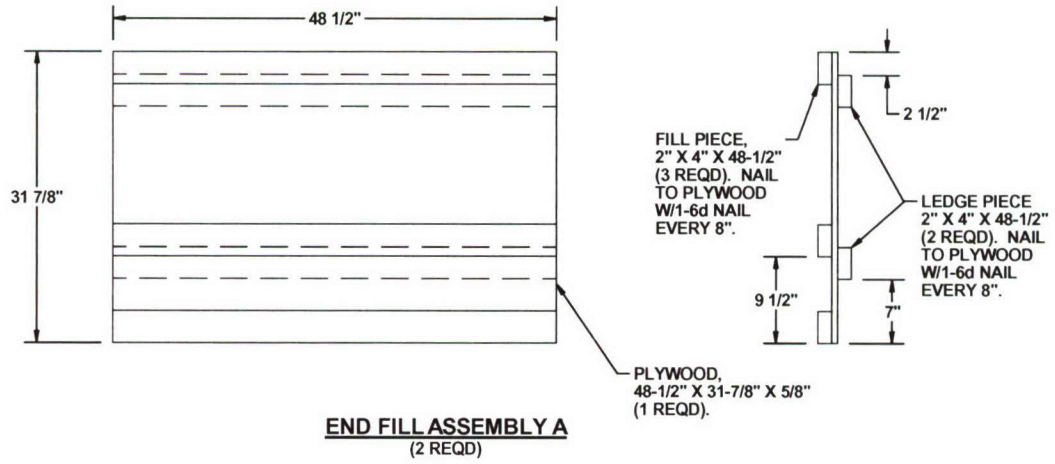
STRUTS, 2" X 4" X  
CUT TO FIT (37-11/32 REF)  
(8 REQD). NAIL TO LEDGE  
PIECES ON END FILL  
ASSEMBLIES W/2-10d NAILS  
AT EACH JOINT.

C445 WOODEN BOXES  
(4 REQD).

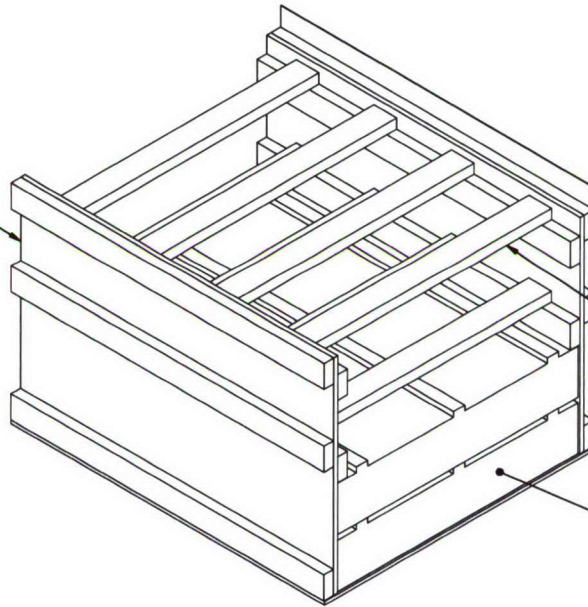
**BAE JMIC UNIT - LIGHT LOAD A**  
(2 REQD)

4 C445 BOXES @ 120 LBS	-----	480 LBS
DUNNAGE	-----	126 LBS
BAE JMIC	-----	310 LBS
<hr/>		
TOTAL WEIGHT	-----	916 LBS (APPROX)
CUBE	-----	56.7 CU FT (APPROX)

BILL OF MATERIAL		
LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	66	44
NAILS	NO. REQD	POUNDS
6d (2")	60	.35
10d (3")	32	.48
BAE JMIC	1 REQD	310 LBS
5/8 PLYWOOD	22 SQ FT	37 LBS



END FILL ASSEMBLIES  
(2 REQD). SEE END  
FILL ASSEMBLY B DETAIL  
ON PAGE 10.



STRUTS, 2" X 4" X  
CUT TO FIT (37-11/32 REF)  
(8 REQD), NAIL TO LEDGE  
PIECES ON END FILL  
ASSEMBLIES W/2-10d NAILS  
AT EACH JOINT.

C445 WOODEN BOXES  
(8 REQD).

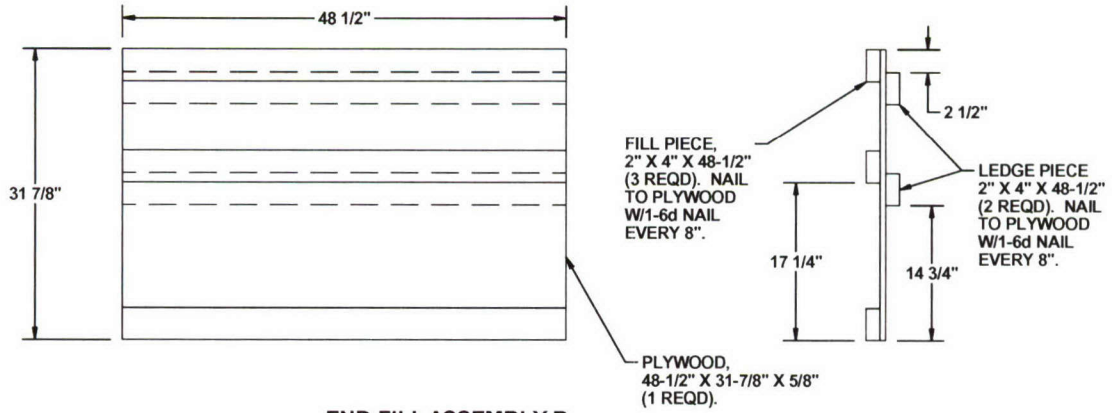
**BAE JMIC UNIT - LIGHT LOAD B**  
(2 REQD)

8 C445 BOXES @ 120 LBS - - - - - 960 LBS  
DUNNAGE - - - - - 126 LBS  
BAE JMIC - - - - - 310 LBS

TOTAL WEIGHT - - - - - 1,396 LBS (APPROX)  
CUBE - - - - - 56.7 CU FT (APPROX)

**BILL OF MATERIAL**

LUMBER	LINEAR FEET	BOARD FEET
2" X 4"	66	44
NAILS	NO. REQD	POUNDS
6d (2")	60	.35
10d (3")	32	.48
BAE JMIC - - - - -	1 REQD - - - - -	310 LBS
5/8 PLYWOOD - - - - -	22 SQ FT - - - - -	37 LBS



**END FILL ASSEMBLY B**  
(2 REQD)