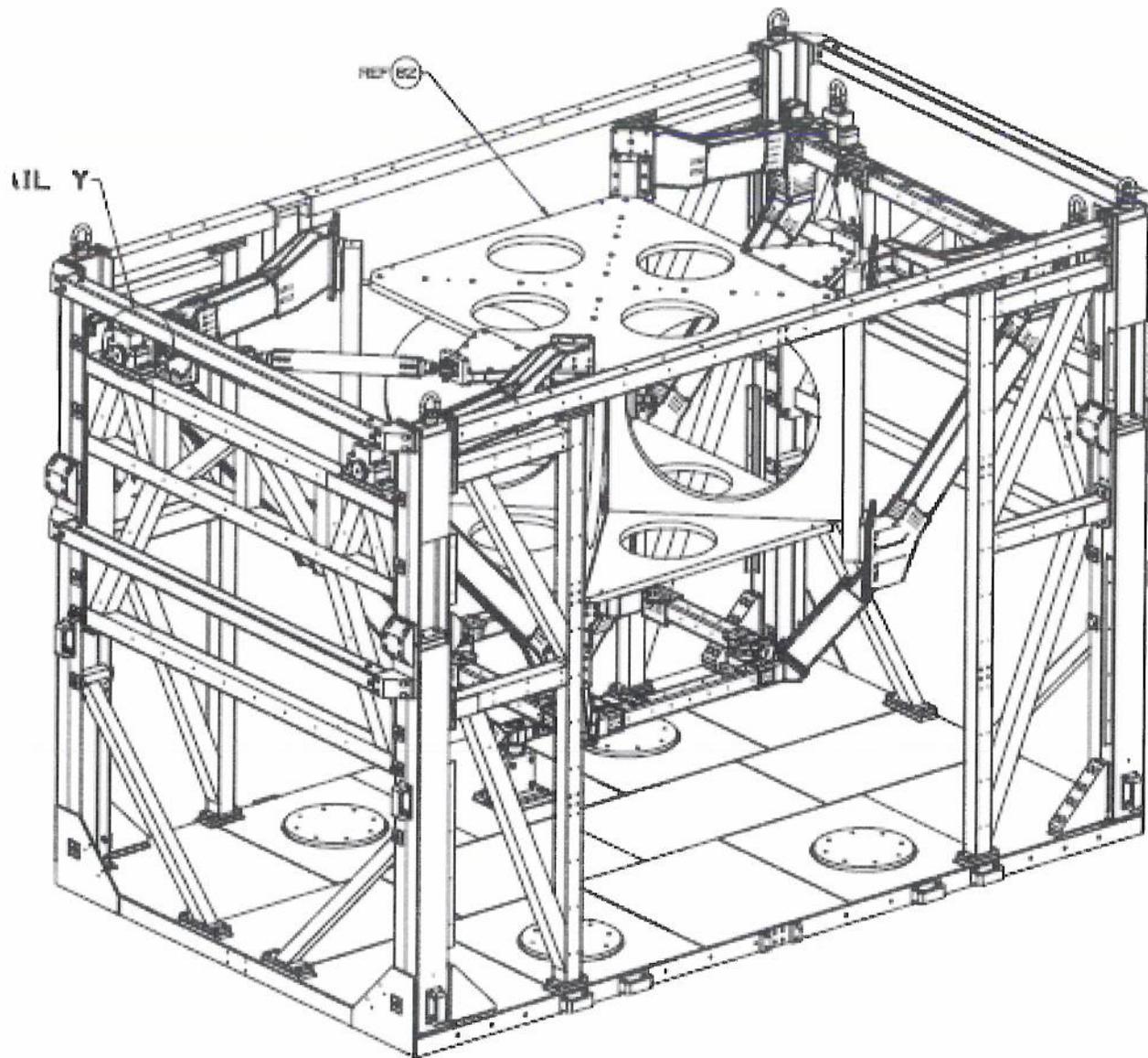


PAYLOAD HAZARD REPORT		a. NO: GHR-AMS02-010
b. PAYLOAD: Alpha Magnetic Spectrometer-02 (AMS-02) GSE		c. PHASE: III
d. SUBSYSTEM: GHE Static Structures	e. HAZARD GROUP: Structures	f. DATE: August 2010
g. HAZARD TITLE: Structural Failure of AMS-02 Support Stands During Static Operations		i. HAZARD CATEGORY <input checked="" type="checkbox"/> CATASTROPHIC <input type="checkbox"/> CRITICAL
h. APPLICABLE SAFETY REQUIREMENTS: KHB 1700.7C, Section: 4.5.1.6 Stands		
j. DESCRIPTION OF HAZARD: Structural failure of the Alpha Magnetic Spectrometer-02 (AMS-02) GSE while it is being used as a support/work stand could result in a disabling injury to personnel and/or damage to the AMS-02 payload or ground support equipment.		
k. HAZARD CAUSES: 1. Inadequate structural design. 2. Improper assembly/adjustment of the PSS vertical corner supports.		
l. HAZARD CONTROLS: (See continuation sheet)		
m. SAFETY VERIFICATION METHODS: (See continuation sheet)		
n. STATUS OF VERIFICATION: (See continuation sheet)		
o. APPROVAL	PAYLOAD ORGANIZATION	SSP/ISS
PHASE I		
PHASE II		
PHASE DIII	<i>J. M. TRENTA</i> 8/25/10	<i>[Signature]</i> 8/25/10

PAYLOAD HAZARD REPORT CONTINUATION SHEET	a. NO: GHR-AMS02--010
b. PAYLOAD: Alpha Magnetic Spectrometer-02 (AMS-02) GSE	c. Phase III
k. HAZARD CAUSES: 1. Inadequate structural design.	
1. HAZARD CONTROLS: 1.1 Ensure the design of all support hardware meets requirements of KHB 1700.7C. 1.2 Procedures to ensure ground support hardware will be configured correctly prior to use.	
m. SAFETY VERIFICATION METHODS: 1.1.1 Stress analyses demonstrating positive margins of safety. 1.2.1 Review of procedures to verify compliance with assumptions in stress analysis.	
n. STATUS OF VERIFICATION: 1.1.1 Closed, 12/14/09. ESCG-4450-06-STAN-DOC-0003, Structural analysis for PSS in the low and mid configurations. ESCG-4450-09-STAN-DOC-0128, Structural analysis of the PSS in the high configuration. ESCG-4005-05-STAN-DOC-102, Structural Stress Analysis for the LUSS GHE. 1.2.1 Closed to SVTL.	

PAYLOAD HAZARD REPORT CONTINUATION SHEET	a. NO: GHR-AMS02--010
b. PAYLOAD: Alpha Magnetic Spectrometer-02 (AMS-02) GSE	c. Phase III
k. HAZARD CAUSES: 2. Improper assembly/adjustment of the PSS vertical corner supports.	
l. HAZARD CONTROLS: 2.1 The part numbers and torque values for the bolts used to adjust the vertical corner supports of the PSS will be specified in the assembly/adjustment procedure. 2.2 Vertical supports are keyed so that they can only be installed correctly. 2.3 Proper procedures for installing corner supports.	
m. SAFETY VERIFICATION METHODS: 2.1.1 Review of the PSS assembly/adjustment procedure to ensure the inclusion of the part numbers and torque values. 2.2.1 Review of design to ensure that supports are keyed. 2.3.1 Review of procedures to ensure they properly direct how to install the corner supports.	
n. STATUS OF VERIFICATION: 2.1.1 Closed to SVTL. 2.2.1 Closed 12/15/09. ESCG-4420-09-CED-MEMO-0009, <i>Mechanical Design of the Primary Support Stand Corner Supports (Rail Extensions)</i> , 12/14/09. 2.3.1 Closed to SVTL.	

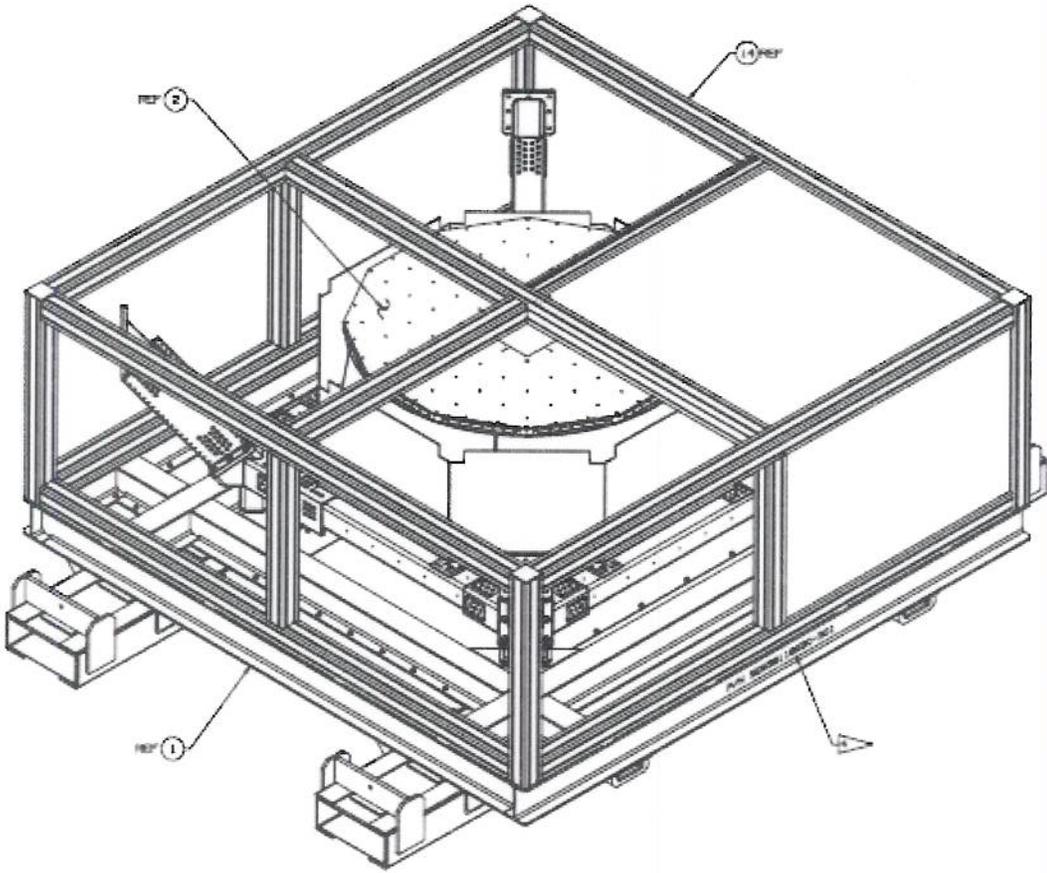


Primary Support Stand (In "High" Configuration)

GROUND SUPPORT LIFTING/HANDLING EQUIPMENT MATRIX

DESIGNATOR NUMBER	ITEM NAME	SLING (Note 1)		CRIT WELDS (Note 2)		ACTUAL LOADS (lbs)	RATED LOADS (lbs)	PROOF LOAD (lbs)	SAFETY FACTOR (Note 3)		VERIFICATION STATUS
		Met	Syn	Yes	No				Ult	Yield	
SEG38117000-301	Primary Support Stand Assembly (High Level Configuration)	X			X	15,108	N/A	N/A	-	> 3	Stress analysis completed per Document ESCG-4450-09-STAN-DOC-0128
SEG38117000-305	(High Level Setup Assembly)	X			X	15,108	N/A	N/A	-	> 3	
SEG38117000-313	(High Level Shipping Configuration)	X			X	15,108	N/A	N/A	-	> 3	
SEG38117000-303	(Medium Level Configuration)	X			X	15,108	N/A	N/A	>2.0	>1.6 The minimum margin of safety is MSu = 0.02	Stress analysis per Document ESCG-4450-06-STAN-DOC-0003. This analysis corresponds to the Truck Transportation of the PSS in the Mid Configuration

- Notes:
- 1 Identify whether slings are Metallic (Met) or Synthetic (Syn) by placing an "X" in the appropriate column. For synthetic slings, see Table 4-1 of KHB 1700.7 for the required safety factors and proof load test criteria.
 - 2 Denote whether to the device has a critical weld by placing an "X" in the appropriate column. If there are critical welds, other test may to applicable (see KHB 1700.7 para. 4.5.1.1.D). A critical weld is a weld, which constitutes a single point of failure. Where feasibly, critical welds should be eliminated.
 - 3 Per KHB 1700.7, Table 4-1, the safety factor shall be given in Ultimate:Rated. For structural members, a 3:1 safety factor against worst case failure mode that will result in local yielding is acceptable.



LUSS Shipping Assembly with LUSS and Shipping Panels

GROUND SUPPORT LIFTING/HANDLING EQUIPMENT MATRIX

DESIGNATOR NUMBER	ITEM NAME	SLING (Note 1)		CRIT WELDS (Note 2)		ACTUAL LOADS (lbs)	RATED LOADS (lbs)	PROOF LOAD (lbs)	SAFETY FACTOR (Note 3)		VERIFICATION STATUS
		Met	Syn	Yes	No				Ult	Yield	
SEG38116930	Lower USS Shipping Assembly	X			X	3051	N/A	N/A	> 3	> 3	Stress Analysis per document ESCG-4405-05-STAN-DOC-0102
SEG38116948-001	Lower USS GHE Hoist Tee (Used when lifting PAS)	X			X	3051	4X 1750	14,000	> 5	> 3	

- Notes:
- 1 Identify whether slings are Metallic (Met) or Synthetic (Syn) by placing an "X" in the appropriate column. For synthetic slings, see Table 4-1 of KHB 1700.7 for the required safety factors and proof load test criteria.
 - 2 Denote whether to the device has a critical weld by placing an "X" in the appropriate column. If there are critical welds, other test may to applicable (see KHB 1700.7 para. 4.5.1.1.D). A critical weld is a weld, which constitutes a single point of failure. Where feasibly, critical welds should be eliminated.
 - 3 Per KHB 1700.7, Table 4-1, the safety factor shall be given in Ultimate:Rated. For structural members, a 3:1 safety factor against worst case failure mode that will result in local yielding is acceptable.
 - 4 Margin of Safety greater than 2.0 is defined as "HIGH".