Critical Lift Plan

I. Project Information

A. Project Title [redacted]

B. Project Location Mauna Kea Summit, Hawaii

II. Contractor/Customer Information

A. Customer [redacted]

B. Lifting Contractor [redacted]

III. Lifting Personnel

A. Lifting Supervisor [redacted]

B. Crane Operator [redacted] – Copy of Hoisting Machine Operator's Certificate attached.

C. Rigger/Oiler [redacted]

IV. Load Information [redacted], maximum weight 4000 kg, maximum weight, including block & rigging 4500 kg

V. Crane Information

A. Manufacturer Demag

B. Model No. HC-320

C.	Serial No	74004
D.	Year of Manufacture	1975
E.	Lift Capacity	110 MT
F.	Boom Length	39 meters
G.	Inspection Certification	10/6/06. Expires 10/4/07. Will be renewed prior to an October lift.
H.	Configuration for this lift	39 meter Main boom only, fully extended with 20 MT single sheave block and 3 part 21 mm wire rope. Wire rope SWL per part 7,500 kg, total line SWL 22,500 kg.

VI. Site Information

A.	Overhead Obstacles	None
B.	Underground Obstacles	Cesspool nearby. Must be definitely located before crane setup.
C.	Maneuvering Space	Adequate
D.	Ground Conditions	Level, well compacted granular fill material. Area is frequently driven upon by heavy water trucks. Tire marks are evident but there is no sign of sinking. The ground is capable of supporting the crane with load with no additional cribbing.

VII. Lift Information

A.	Number of Cranes	One
B.	Number of Lifts	Two, same item two times
C.	Location/Setup of Crane	Between the cesspool and the 200 mm thick concrete slab on the North side of the telescope structure. The crane's center of rotation will be approximately 4 meters from the outside of the building foundation. Though the ground appears well capable of supporting the crane on standard outriggers, we will provide additional safety by using 3.75 square meter crane mats under each stabilizer.
D.	Swing Path	The load will be reoriented on the 200 mm thick concrete slab using the crane and a fork truck. There will be little or no swing for the reorientation. After reorientation the crane will lift the load and boom up to and approximate 3 meter lift radius, rotate counter clockwise, boom down and telescope out through the telescope doors until approximately directly over the placement location. The telescope doors may have to be rotated during this phase of the lift. The load will then be slowly lowered vertically until nearly in position above the placement location, make minor adjustments to location on horizontal axis and very slowly lower the load into the placement location.
E.	Boom Length	39 meters
F.	Lifting Radius	Maximum 24 meters. Maximum Load per chart at 24 meter radius – 6100 kg. Surplus capacity at maximum radius -

		1600 kg. Maximum allowable radius with lift plan load – 26 meters.
G.	Boom Angle	51 degrees
H.	Hoist Speed	Maximum 700 mm/second Speed for fine adjustment 8 mm/second
I.	Height of Lift	Approximate height at final location 6 meters above crane at ground. Maximum usable hook height before two-block warning at 24 meter radius: 30.5 meters
J.	Swing Speed	Maximum to be employed, 1 rotational degree per second (52 mm per second at 3 meter radius).
K.	Method of Communication	Visual with standard hand signals when possible. Two way radio communication when visual signals not possible and particularly when lowering the load into place. An additional radio will be provided to the operator who rotates the telescope doors.

VIII. Rigging Information

A.	Lift Points	Owner provided lifting eyes threaded into the [redacted] at locations shown in proposal documents.
B.	Rigging Procedure	Two wire rope slings will attach two custom length spreader bars to the hook

using the sling eye and shackles.

Round slings and shackles will attach the spreader bars to the load.

The crane operator will personally inspect all rigging before beginning the lift.

During the reorientation lift only one spreader bar will be attached to the crane. The other will be attached to the fork truck to allow each spreader bar to be raised or lowered individually in order to allow reorientation of the load.

C. Rigging Hardware

2 ea. - 2.3 meter spreader bars, 2000 kg minimum SWL

4 ea. – 3 meter +/- round slings, minimum 2000 kg SWL

12 ea. – Shackles, min 1000 kg SWL

2 ea. – 2 part wire rope sling, minimum SWL 1000 kg per part.

D. Rigging Weight

< 200 kg

IX. Restrictions

A. Environmental

1. Under the following conditions the lift operation will be halted:

a) When conditions are such that lightening could occur.

b) When winds exceed 5 on the Beauford scale (21 knots), or when it appears such winds are possible during the course of the lift.

c) When there is heavy rain that could impact vision.

B. Other – When directed by the lift supervisor or customer.

X. Pre-mobilization Checklist

	Item	Person Responsible	Completion Time (before mobilization)
Safety and Environmental Protection			
	Obtain overweight permit	[redacted]	7 days
	Notify MKSS of mobilization date	[redacted]	7 days
	Positively locate cesspool and sewer line location	[redacted]	7 days
	Schedule police escorts	[redacted]	3 days
	Grade gravel road	[redacted]	2 days maximum
	Load spill kit*	[redacted]	1 day
	Conduct environmental briefing (sensitive area, spill protection and procedures)	[redacted]	1 day
	Review Lift Plan with lift personnel	[redacted]	1 day
	Weather check (delay mobilization if unfavorable conditions are likely)	[redacted]	1 day
Equipment Preparation			
	Rent fork truck	[redacted]	30 days
	Winterize Crane	[redacted]	7 days
	Inspect all equipment for leaks, repair all found	[redacted]	7 days
	Install 20-ton block with 3 part line	[redacted]	1 day
	Remove fold-away boom extension	[redacted]	1 day
	Service Crane, replace all filters	[redacted]	3 days
	Secure weight rack on assist truck	[redacted]	3 days
	Install tow hitch on assist truck	[redacted]	7 days
Rigging Preparation			
	Order rigging	[redacted]	Completed
	Assemble rigging, make dry run lift with test weight	[redacted]	7 days
	Charge signal radios (4 each)	[redacted]	1 day
	*Spill kit includes absorbent pads, absorbent boom, minimum 2 drip pans, one barrel, plastic bags (barrel and bags for any contaminated materials), two spade shovels.		

Submitted by:

[redacted]
Manager, [redacted]

Acknowledged and Approved by:

[redacted]
Lift Supervisor, [redacted]

Acknowledged and Approved by:

(Name)
(Title), [redacted]