

POD
NASA

Reimb Fed

REVISION 1
DATED

Mar 92

MEMORANDUM OF AGREEMENT
Between
The National Aeronautics and Space Administration
and
U.S. Army Corps of Engineers, Pacific Ocean Division

I. Purpose: The purpose of this Memorandum of Agreement (MOA) is to establish the relationships, arrangements, and general procedures under which the National Aeronautics and Space Administration (NASA) and the Pacific Ocean Division, Corps of Engineers, Department of the Army (Corps), will operate in executing this specific task.

II. General Scope: This work will generally provide for the rehabilitation and modification of NASA's Infrared Telescope Facility (IRTF) on Mauna Kea, Hawaii. The work will consist of design, design management, contracting for construction, and construction management.

III. Responsibilities:

A. NASA is responsible for:

1. Requirements Definition: NASA will provide an adequate definition of requirements which will form the basis for design and for preparation of any required environmental documents. The requirements are to be provided by Mr. Art Monteville of the University of Hawaii, and scope shall remain within the limits of NASA Form 1509, Facility Project-Brief Project Documents, enclosed herein (see Enclosures 1 and 2).

2. Funds: NASA will provide the necessary funds to accomplish the design and construction, and to reimburse the Corps for Supervision, Inspection and Engineering Services (SIES).

NASA Construction of Facilities Funds has been committed on Order Number W-17,671 in the amounts indicated below to reimburse the U.S. Army Corps of Engineers for design and construction services as follows:

"Current", doing additional work.

6/17/94

per Russell Takara

808-438-3411

<u>Fund Source</u>	<u>Approp. Symbol</u>	<u>Object Class</u>	<u>Unique Proj. No.</u>	<u>Project</u>	<u>Proposed Commitment Total</u>
6-CoF	801/30107	2549	1096	Design - FY 92 Rehab/Mod ITRF	\$70,000*
7-CoF	801/40107	3213	1096	Construction - FY 92 Rehab/Mod IRTF	\$540,000
6-CoF	802/40107	2549	9736	Design - FY 93 Restoration/ Modernization	\$185,000**
7-CoF	80X0107	3211	9736	Construction - FY 93 Restor/Mod IRTF	\$2,000,000**

Construction funds in the amount indicated on the Current Working Estimate (CWE) based on the acceptable low bid received by the Corps of Engineers, which includes Supervision, Inspection and Engineering Services (SIES) during construction will be provided subject to FY 1992 and FY 1993 NASA Authorization and Appropriation authority.

The U.S. Army Corps of Engineers will bill NASA on an SF-1080 on a monthly basis for work performed on this order. Please reference "W-17,671" on each SF-1080 that you submit.

The SF-1080s will be forwarded to the following address:

NASA Headquarters
Chief, Headquarters Accounting Branch
Code BFH
400 Maryland Avenue, SW
Washington, DC 20546

3. Program Management: NASA will provide the necessary approval of design and acceptance of the construction.

B. The Corps is responsible for:

1. Project Management: The project will be assigned to the Pacific Ocean Division for design and construction execution.

2. Design: The Corps will be responsible for the design of the rehabilitation/modification work; schedule design milestone dates; and coordination with NASA.

* Changed Revision 1

** Added Revision 1

INSTALLATION PROGRAM OFFICE	BRIEF PROJECT DOCUMENTATION CONTINUATION SHEET*		CONTROL NUMBER 92HRAZ
PROJECT TITLE Rehab & Mod Infrared Telescope Facility, Mauna Kea, Hawaii	DATE	SUB/REV. NO. A/	
<p data-bbox="277 1793 302 2026">SCOPE/DESCRIPTION</p> <p data-bbox="321 1612 345 2011">Basis of Need (continued)</p> <p data-bbox="358 92 448 2011">The ladder presently used to reach the mezzanine presents a safety problem in the severe high altitude environment. The facility was built on a flattened-off volcanic cone. The retaining wall is necessary to arrest observed erosion which will ultimately threaten building stability.</p>			

ENCLOSURE 2

Facility Project-Brief Project Document

PROJECT TITLE Restoration and Modernization of Infrared Telescope Facility, Mauna Kea, Hawaii		INSTALLATION/PROGRAM OFFICE IRT/P/S	PROJECT CODE																				
APPROVED FACILITY PROJECT COST ESTIMATE		RELATED COST DATA (Not included in the Approved Facility Project Cost Estimate but required to make the facility initially operable)	DATE Feb 1, 1992																				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">ITEMS (LIST)</th> <th>AMOUNT</th> </tr> <tr> <td colspan="2">TOTAL</td> <td style="text-align: right;">\$2,000,000</td> </tr> </table>		ITEMS (LIST)		AMOUNT	TOTAL		\$2,000,000	PER (Amount) \$40,000	DESIGN (Amount) \$185,000														
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TOTAL		\$2,000,000																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>RELATED COSTS INVOLVED</th> <th>AMOUNT</th> </tr> <tr> <td>YES (Identify) NONE</td> <td></td> </tr> <tr> <td>ITEM</td> <td>AMOUNT</td> </tr> <tr> <td>TO BE PURCHASED</td> <td></td> </tr> <tr> <td>TRANSFER OF EXCESS</td> <td></td> </tr> <tr> <td>EXISTING</td> <td></td> </tr> <tr> <td>OTHER REAL ESTATE</td> <td></td> </tr> <tr> <td>OTHER (Specify)</td> <td></td> </tr> </table>		RELATED COSTS INVOLVED	AMOUNT	YES (Identify) NONE		ITEM	AMOUNT	TO BE PURCHASED		TRANSFER OF EXCESS		EXISTING		OTHER REAL ESTATE		OTHER (Specify)		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>FUTURE FUNDING</td> <td></td> </tr> <tr> <td>ACTIVATION</td> <td></td> </tr> </table>		FUTURE FUNDING		ACTIVATION	
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FUTURE FUNDING																							
ACTIVATION																							
CATEGORY Institutional Critical JUSTIFICATION Restoration/Modernization WORK IDENTIFICATION FY 1993 Project # 9736 FUND SOURCE Cof 7 SCOPE/DESCRIPTION																							

This project provides for the restoration and modernization of the Infrared Telescope Facility, Mauna Kea, Hawaii. Work consists of modification of existing roof access room and ladder; restoration and modernization of the thermal environmental systems; installation of a dome de-icing system; resurfacing of the mezzanine walkway; and installation of a drainage system.

Neither OMB A-95 nor the Randolph-Sheppard Act Amendments of 1974 are applicable for this project.
 No Environmental Impact Statement is required.

BASIS OF NEED
 This project is necessary to accommodate the changing suite of instruments used, as well as the upgrade of the image enhancement of the telescope and to correct safety deficiencies in the dome and drainage system.

As the number of astronomical instruments has increased in both number and complexity, and the telescope image enhancement being upgraded, it has become necessary to increase the cooling system to improve dome seeing. The cooling system has deteriorated and requires restoration and modernization, which are essential for the (continued)

PER START 3/15/91 COMPL 7/30/92	SUBMITTED BY Art Montville, Astronomy, University of Hawaii	SIGNATURE AND TITLE	DATE
		Francis X. Durso, Chief, Fac. Planning & Projects Office	DATE
FINAL START 3/31/92 COMPL 3/30/93	CONCURRENCE BY JX CONCURRENCE	SIGNATURE AND TITLE	DATE
		Billie J. McGarvey, Director, Facilities Engineering Div.	DATE
CONSTRUCTION AWARD 3/31/93	APPROVED BY	SIGNATURE AND TITLE	DATE
ACTIVATION START COMPL 3/31/94			

INSTALLATION PROGRAM OFFICE IRTF/S	BRIEF PROJECT DOCUMENTATION CONTINUATION SHEET*		CONTROL NUMBER
PROJECT TITLE: Restoration and Modernization of Infrared Telescope Facility, Mauna Kea, Hawaii	DATE	Feb 1, 1992	SUB/REV. NO. 0

Basis of Need (Continued)

operation of cryogenic-array instruments. The shutter tracks and dome require heat traced to prevent snow and ice buildup. Presently, the dome tracks and dome must be cleared of ice and snow by the day crew using ice axes while hanging on the dome ladders at an altitude of 13,796 feet.

The dome and mezzanine drainage system was badly designed and needs to be reworked to correct and prevent the ice from forming on the mezzanine and observation room floors presenting a safety problem at this severe altitude.