

# **ENVIRONMENTAL IMPACT ANALYSIS PROCESS**

**SAIPAN (PACBAR) RADAR  
MITIGATION STATUS REPORT  
31 AUGUST 1990**

**DEPARTMENT OF THE AIR FORCE**

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# **ENVIRONMENTAL IMPACT ANALYSIS PROCESS**

**SAIPAN (PACBAR) RADAR  
MITIGATION STATUS REPORT  
31 AUGUST 1990**

**PREPARED FOR:  
DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE SYSTEMS DIVISION  
DEPARTMENT OF ENVIRONMENTAL PLANNING  
DIRECTORATE OF ACQUISITION CIVIL ENGINEERING**

**PREPARED BY:  
ENVIRONMENTAL SOLUTIONS, INC.  
IRVINE, CALIFORNIA**

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**CHAPTER 1.0**  
**EXECUTIVE SUMMARY**

## 1.0 EXECUTIVE SUMMARY

### 1.1 OVERVIEW

This Mitigation Measures Status Report documents the progress to date on USAF efforts to implement the mitigation requirements for the Saipan (PACBAR) Radar facility. The report: (1) contains the mitigations required as conditions of project implementation for the design/construction, operations, and other phases of the project (Appendix A), and (2) provides an assessment of their current status. The compilation of this information into a single source document will assist the USAF in its planning for activation and operation of the project. The 150 mitigation measures addressed herein are designed to reduce the overall environmental impacts of the program. This report updates and supersedes the initial Mitigation Status Report completed 3 July 1989.

#### 1.1.1 SAIPAN (PACBAR) RADAR

The U.S. Air Force (USAF) has constructed a radar facility and approximately two miles of access road on Mt. Petosukara, Saipan, Commonwealth of the Northern Mariana Islands (CNMI). Known as Saipan (PACBAR) Radar, the facility is located on about four acres of land in the Marpi Commonwealth Forest. The project included paving and constructing drainage improvements for the 1.9 miles of access road between Beach Road and the project site (see Section 2.1.2).

In accordance with the USAF Environmental Impact Analysis Process (EIAP), an initial site evaluation and environmental reconnaissance were conducted by USAF/SSD/DEV at the beginning of the project in 1981. Subsequent preparation of the Environmental Assessment was begun in 1984 and completed in 1987. Project construction began in February 1988 and was completed in May 1989. Activation began in mid-1989, extending through 1990. Site operation is planned to begin in 1991.

#### 1.1.2 PURPOSE OF STATUS REPORT

The primary purpose of this status report is to provide a mechanism whereby the USAF and local permitting agencies can track USAF implementation of mitigation measures associated with the radar facility. It also provides a comprehensive list for implementation of future mitigations. In addition, it provides a model which can be utilized for future projects on Saipan and elsewhere.

### 1.2 MITIGATIONS SUMMARY

#### 1.2.1 SOURCES OF MITIGATION MEASURES

Mitigation measures are conditions or stipulations which are applied to a project to minimize adverse impacts of its implementation. For the Saipan (PACBAR) Radar, some mitigations apply to a project phase, while others have no specific time requirement. Commonly, mitigation measures are identified by their association with an environmental discipline, such as vegetation, cultural resources, or socioeconomics.

For the Saipan (PACBAR) Radar, 150 mitigation measures have been identified from the six permitting documents:

- Coastal Resources Management Permit
- U.S. Fish and Wildlife Service - Section 7 Requirements
- U.S. Fish and Wildlife Service - Section 7 Consultation
- Memorandum of Understanding between USAF and Department of Natural Resources
- PACBAR III Environmental Assessment
- Coastal Zone Management Act - Federal Consistency Determination

#### 1.2.2 IMPLEMENTATION OF MITIGATION MEASURES

The USAF has expended significant time and effort to assure implementation of all mitigation measures to which it has committed. Many of the mitigation requirements were incorporated into the design phase of the project and so are "Complete" and an integral part of the radar facility project. Five mitigation measures are "In Progress," for timely completion; the remainder are "Ongoing," projected to continue throughout the entire operational life of the facility.

#### 1.2.3 MITIGATIONS IDENTIFICATION AND EVALUATION

Mitigation measures were compiled based on review of the project's environmental and permitting documents and files of the USAF and Resident Officer in Charge of Construction (ROICC). They were evaluated based on USAF and ROICC files, field interviews with the ROICC, and visual checks of constructed facilities, which involved visual observation, measurements, and photo-documentation.

The initial evaluation was conducted in April 1989 by a team comprised of representatives of the USAF, the U.S. Navy (USN), and the environmental contractor. Field interviews were conducted with representatives of the Federal Electric Corporation (FEC), USAF/WSMC, and USAF/SSD/CNSE, and there were discussions with members of the Coastal Resources Management (CRM) during the evaluation process. As a result of CRM input, USAF made some field changes to the erosion control system.

A subsequent evaluation occurred in June 1990 by a team comprised of USAF representatives and the environmental contractor. The status of mitigation measures discussed herein reflects the results of that recent evaluation.

For purposes of reference, summaries of mitigations according to number, project phase, environmental discipline, source document, subject, and/or status are presented in Chapter 3.0, Tables 3.1-3.7.

### 1.3 USAF MITIGATIONS IMPLEMENTATION

There are 150 mitigation measures in the six permitting documents for the Saipan (PACBAR) Radar. These have been identified and evaluated as to their environmental compliance and status. Relative to environmental compliance, each mitigation was determined to be "In Compliance," or "Not In Compliance." The status of each mitigation, relative to its completion, was determined to be "Complete," "In Progress," or "Ongoing." As described above, these categories were verified through documentation, field observation, and/or interview.

Of the 150 mitigations, 103 are Complete, five are In Progress, and 42 are Ongoing. Of the Ongoing mitigations, nine apply to the design/construction phase, 29 apply to operations, and four are considered "other." Two were completed differently from the exact wording of the mitigation. These are considered Complete, but noted under Not Done on Table 3.3 (Summary of Mitigations by Project Phase) (see Section 4.1).

### 1.4 CONCLUSIONS

This evaluation concludes that 69 percent of the 150 mitigation measures have been completed by the USAF. Most of the remainder are Ongoing, over the life of the facility, while five are In Progress. A review of the impacts projected in the Environmental Assessment (EA) reveals that, in implementing these suggested mitigation measures, the USAF has kept project-related impacts within the limits projected in the EA.

**CHAPTER 2.0**  
**INTRODUCTION**

## 2.0 INTRODUCTION

### 2.1 OVERVIEW OF SAIPAN (PACBAR) RADAR

#### 2.1.1 U.S. AIR FORCE MISSION

The USAF has constructed a radar facility and 1.9 miles of access road on Mt. Petosukara, Saipan, Commonwealth of the Northern Mariana Islands (CNMI), as shown in Figure 2.1 (Project Location Map). The facility is a dedicated sensor of the USAF Space Surveillance Network. The primary role of the facility is to detect, track, and identify low earth orbit satellites, and newly launched satellites from the Far East and the Soviet Union.

#### 2.1.2 FACILITY DESCRIPTION

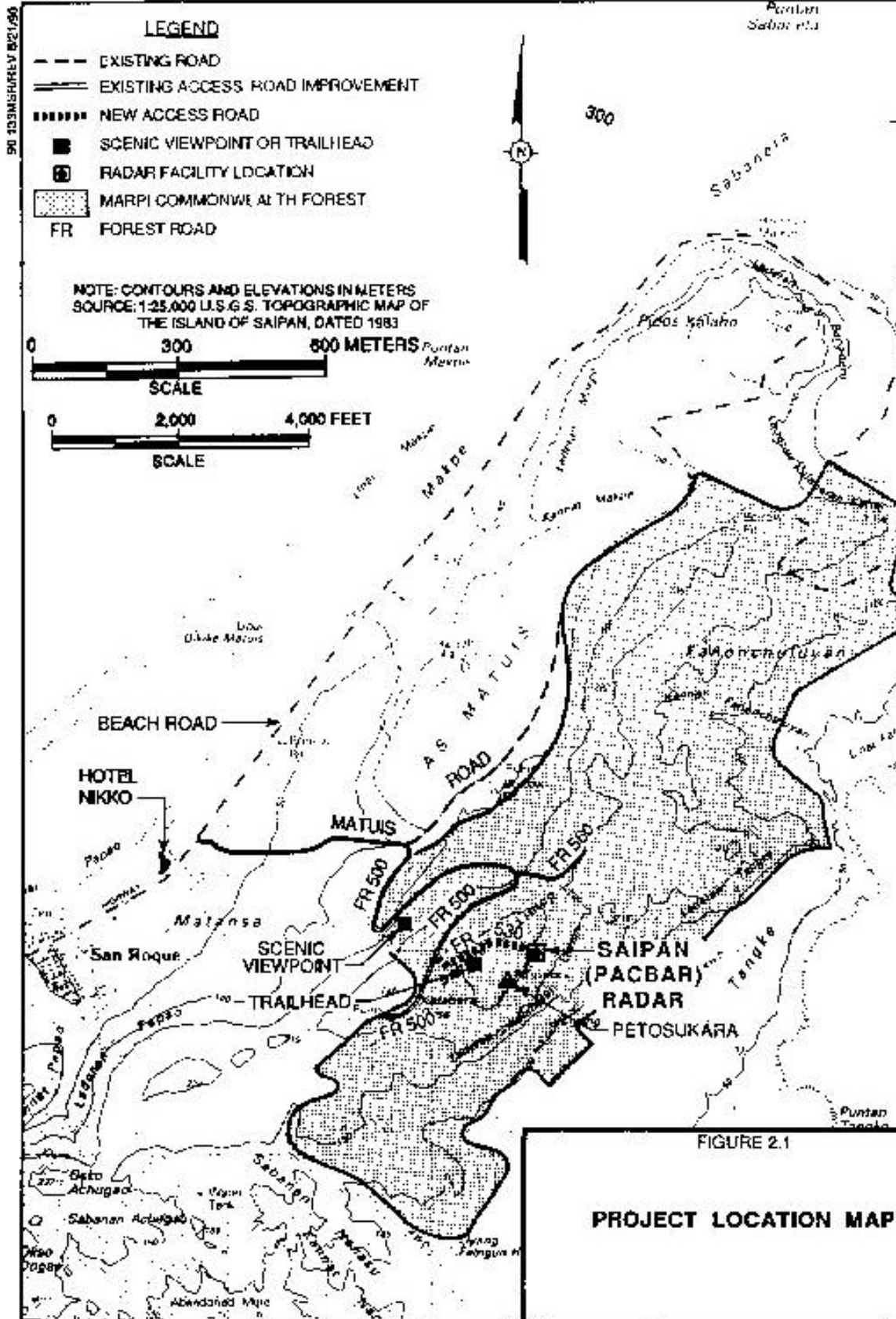
The Saipan (PACBAR) Radar facility is located on about four acres of land on Mt. Petosukara, in the Marpi Commonwealth Forest of Saipan. Access to the facility is via Beach Road to Matuis Road, then to Forest Road 500 and Forest Road 530, which consists of about 1500 feet of new roadway. The route to the radar facility is shown in Figure 2.2 (Radar Site Vicinity Map). The project includes roadway and/or drainage improvements for the 1.9-mile distance between Beach Road and the project site. The entire road, from the Beach Road intersection to the radar facility, is paved with asphalt. The access road design includes an engineered drainage control system designed to maintain storm runoff flows in controlled, vegetated, and/or rock-protected ditches. The primary material for erosion protection is hard limestone riprap or other, equivalent material. In areas where flows would be of relatively low velocity, seeded and planted vegetation are utilized.

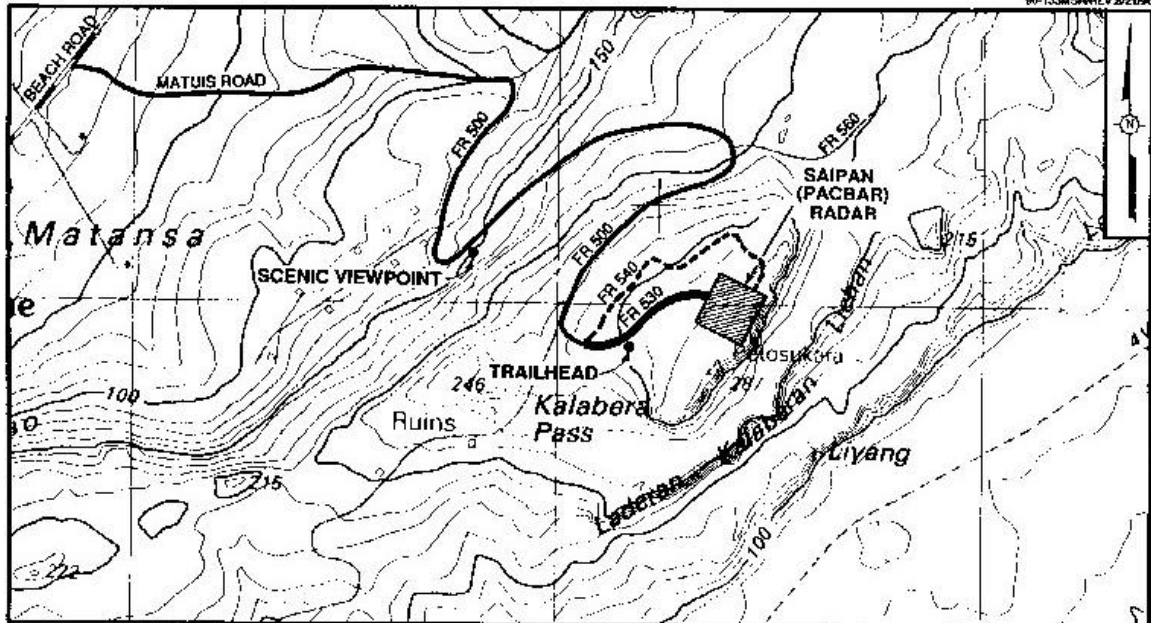
In cooperation with the Department of Natural Resources (DNR), one scenic viewpoint and one trailhead have been established along the access road, with parking for nine vehicles at each location (see Figure 2.2).

The radar facility site is enclosed by a 7-foot chain link security fence, surrounded by a 30-foot clear zone. The parking lot for employees and visitors is paved and located outside the fence. Within the fenced area, the primary structures are the operations and generator buildings and the radar pedestal and antenna. Other structures include a guardhouse, hazardous/flammable materials storage building, pump/chlorinator building, 30,000-gallon concrete water storage tank, two air conditioners, two demineralized water heat exchangers, and two steel, 15,000-gallon, above-ground, diesel fuel storage tanks. Underground items include a 1,000-gallon waste oil storage tank, septic tank, leach field, and raw rainwater silt catchment basin. These features are shown in Figure 2.3 (Radar Facility Site Layout).

The project began in 1981, with a site evaluation and preliminary environmental survey conducted by USAF SSD/DEV. Preparation of the Environmental Assessment began in 1984 and was completed in 1987. Construction began in February 1988 and was completed in May 1989. The initial field check on the status of the project and mitigation measures was conducted by USAF and the environmental contractor during April 1989. A subsequent field evaluation was conducted in June 1990. An overview of the timeline for completed, ongoing, and future project-related activities is shown in Tables 2.1 (Saipan [PACBAR] Radar: Construction/Activation Schedule of Activities) and 2.2 (Saipan [PACBAR] Radar: Activation/ Operations Schedule of Activities). The site activation aspect of the project shown in the tables includes the transport, installation, integration, and check-out of electronic and computer equipment.







<p><b>LEGEND</b></p> <ul style="list-style-type: none"> <li> IMPROVED ACCESS ROAD</li> <li> NEW ACCESS ROAD</li> <li> ABANDONED ACCESS ROAD</li> <li> PROJECT SITE</li> </ul>	<p>0      300      600 METERS</p> <p>SCALE</p> <hr/> <p>0      2,000      4,000 FEET</p> <p>SCALE</p>	<p>FIGURE 2.2</p> <p><b>RADAR SITE VICINITY MAP</b></p>
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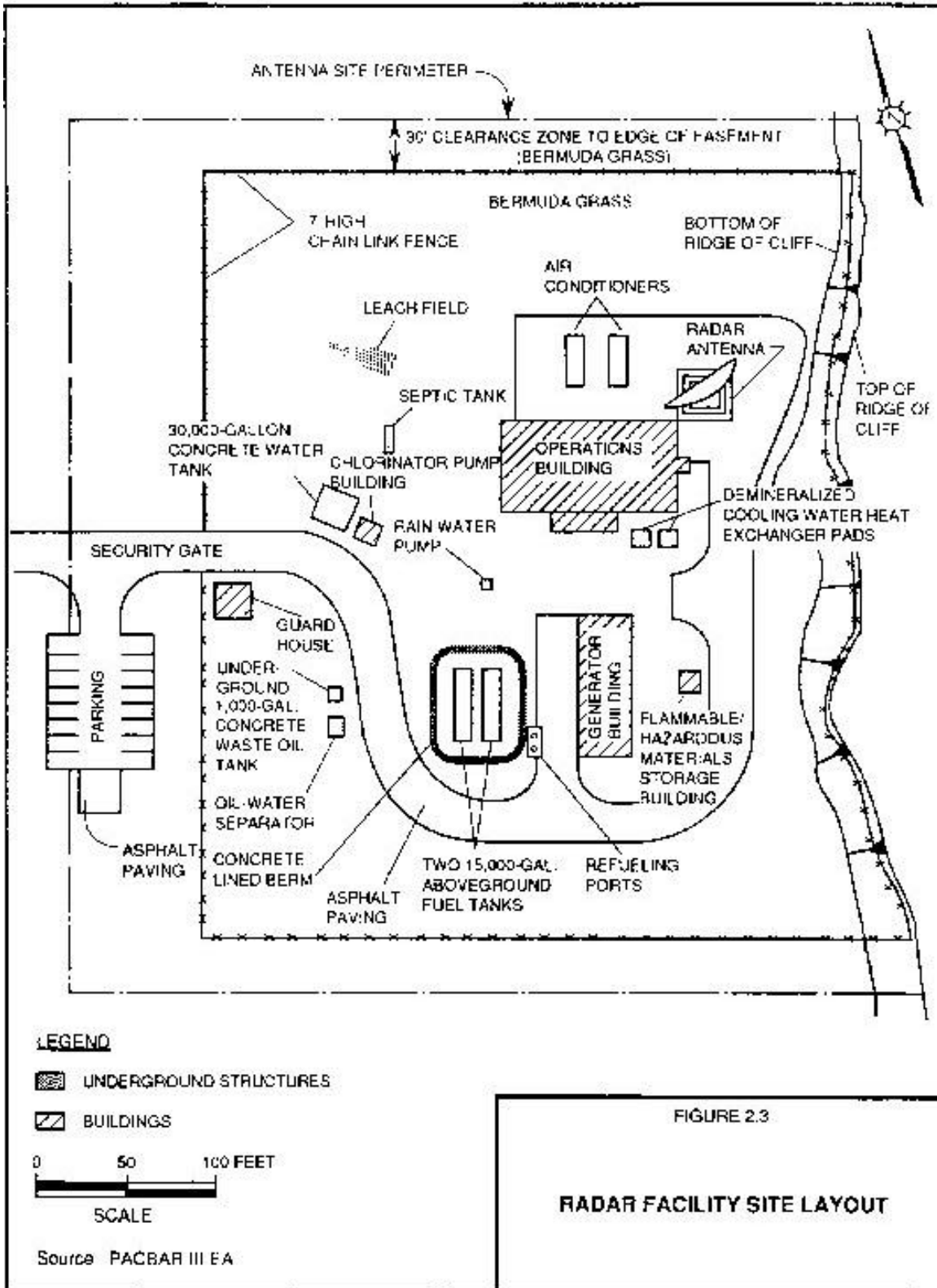


TABLE 2.1  
 SAIPAN (PACBAR) RADAR  
 CONSTRUCTION/ACTIVATION  
 SCHEDULE OF ACTIVITIES

ACTIVITY	YEAR	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	END OF PROJECT
<b>ENVIRONMENTAL ASSESSMENT</b>													
• Site Evaluation		■											
• Preliminary Environmental Survey		▲											
• Alternative Site Survey			■										
• Initial Scoping					■								
• Data Gathering					■								
• Data Analysis					■	■							
• Draft EA						■	▲						
• Public Hearing							▲						
• Revised Draft EA							▲						
• Final EA								▲					
<b>PERMITS</b>													
• Section 7 Committee								▲					
• Memoranda of Understanding								▲					
• CZMA Consultancy Determination								▲	▲				
• CRM Permit								▲					
<b>ENVIRONMENTAL DOCUMENTS</b>													
• Archeological Survey							▲						
• Pre-Construction Megapode Survey								▲					
• Erosion Control Design Narrative								▲					
• Erosion Control Design Permitting Plans								▲					
• As-Built Erosion Control Report									▲				
• Hazardous Waste Management Plan										▲			
• Mitigation Status Report											▲		
• Mitigation Status Report (Update)												▲	
• Operations Mitigation Manual													▲
• Spill Prevention, Control, and Countermeasure Plan													▲
• Spill Prevention, Control, and Countermeasure Plan (Update)													▲
<b>PROJECT</b>													
• Design				■	■	■	■	■	■				
• Construction									■	■	■		
• Site Activation												■	
• Operations													■

LEGEND ■ Denial of Activity  
 ▲ Document Finalized

MOI 131 (02/1990)

**TABLE 2.2**  
**SAIPAN (PACBAR) RADAR**  
**ACTIVATION/OPERATIONS**  
**SCHEDULE OF ACTIVITIES**

ACTIVITY \ YEAR	1989	1990	1991	1992	1993	1994	1995	1996	1997	END OF PROJECT
<b>PROJECT</b>										
• Site Activation	—————									
• Operations		—————▶								
<b>PERMIT REQUIREMENTS</b>										
• Forest Enhancement	—————									
• Radiofrequency Assessment		▲	▲	▲	▲	▲	—————▶			
<b>ENVIRONMENTAL COMPLIANCE</b>										
• USFWS Biological Opinion	12/4/86									
• Federal Consistency Determination	3/16/87									
• CRM Permit	5/20/87									
• Environmental Assessment	6/25/87									
• Quarterly Reports		▲	▲	▲	▲	▲	▲	▲	▲	▲
• Annual Audit			▲	▲	▲	▲	—————▶			
• Project Decommissioning										▲

LEGEND: ——— Duration of Activity  
 ▲ Document Finalized

## 2.2 PURPOSE OF REPORT

This report has been prepared to serve several different purposes. Primarily, it is to provide a mechanism to enable the USAF to track implementation of mitigation measures associated with the Saipan (PACBAR) Radar facility. Also, it is to document completed PACBAR mitigation measures in a manner which can be referenced and verified. It will be used by the USAF to check on the compliance and status of operational mitigations, and assure their implementation, as stipulated in the Environmental Assessment, federal legislation, and in federal and Saipan agency permits issued for the project. Another purpose of this report is to inform participating agencies of the status of the environmental mitigation measures relative to the status of the facility.

The information contained herein will be used by the USAF in follow-on activities to the initial construction of the radar station and, over the long term, through the operational phase of the facility. It provides the initial documentation of environmental compliance of the radar facility. The subsequent compliance document, to be utilized on an ongoing basis over the life of the radar station, is the Operations Mitigation Manual (OMM) (Vols. I, II, III). The OMM contains detailed procedures and checklists for maintaining compliance with long-term mitigation requirements.

In addition to its specific use for this project, this report will provide a model to be utilized for future projects associated with the burgeoning development on Saipan and elsewhere. In the future, it can be utilized by public agencies and private developers in the preparation of mitigation programs for other projects in the military and private sectors utilizing local and regional resources.

This report updates and supersedes the initial Mitigation Status Report of 3 July 1989.

**CHAPTER 3.0**  
**MITIGATIONS SUMMARY**

## 3.0 MITIGATIONS SUMMARY

### 3.1 INTRODUCTION TO MITIGATIONS

Mitigation measures are conditions or stipulations applied to a project to minimize adverse environmental impacts. These measures may involve physical or procedural requirements which are to be followed to reduce an environmental impact and/or as a condition of gaining approval to implement a project. The range of potential mitigation measures is broad, including requirements to revegetate construction areas, criteria for hiring local personnel, specification of certain colors on building exteriors, and measures to provide protection for local fish and wildlife.

The USAF Environmental Impact Analysis Process and agency permitting process both affect project design, construction, and operations through mitigation measures which are specified as a result of each process. The manner in which mitigation measures are specified and implemented is shown in Figure 3.1 (Mitigation Measures Process Flow Diagram). Basically, the figure shows how the environmental planning process interacts with and influences the USAF program to design, construct, and operate the Saipan (PACBAR) Radar facility.

As shown in Figure 3.1, mitigations contained within both the Environmental Assessment (EA) and agency permits become specifications. These specifications are then incorporated into the project design, through the construction bid package and USAF operations plans. Those which apply to project construction are monitored as part of the construction surveillance program and recorded in the progress reports for construction activities and in this Mitigation Status Report. As shown in the figure, mitigations which apply to USAF operations plans are incorporated into USAF activation and operations activities and recorded in the Operations Mitigation Manual. The Status Report is used as the initial monitor for USAF construction plans and subsequent activation and operations. The Operations Mitigation Manual is the document which will be used over the life of the facility to maintain compliance with the conditions of the various mitigation measures derived from permits, agreements, and regulations.

Mitigation measures may be proposed by the project proponent, as well as by agencies with permitting authority for a particular project or action and, for projects subject to public scrutiny, by the people whose lives may be affected by implementation of the proposed action. Initially, mitigations are proposed and implemented in the design process. They also may be established during the environmental review process and/or during agency permitting activities. Responsibility for implementing the mitigation measures rests with the project proponent or owner. This responsibility varies. It may last for a short period of time, during the entire period of project operations or, in some cases, for a specified period of time subsequent to project operations. In all cases, adequate implementation of established mitigation measures is a requirement for project continuation, as administered by the permitting agencies.

A list of mitigation measures, arranged by subject, is provided in Table 3.1 (Index of Mitigation Measures). The table provides some indication of which specific topics have received the most attention or are of greatest concern, based on the number of mitigations in which they appear. As shown, some topics are addressed under many different mitigations; others occur only once or twice. For example, brown tree snakes, which are addressed in eight mitigations, are of greater apparent concern than are utilities, which appear only once. Other subjects which are known to be of special concern to local agencies, and are addressed in numerous mitigation measures, are erosion control, hazardous waste, ordnance removal, radiofrequency emissions, and revegetation. (Another list of these mitigations is provided in a different format in Table 3.6, which lists the mitigations in numerical order according to their source document.)



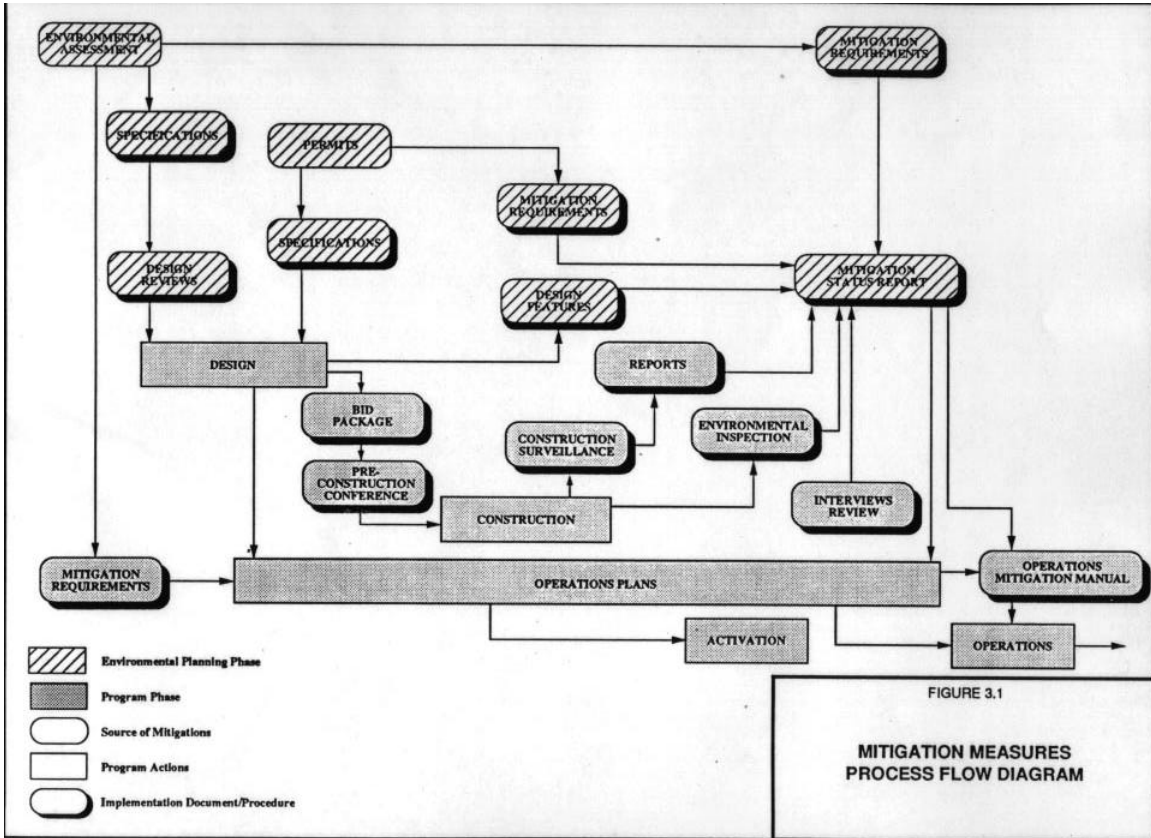


FIGURE 3.1

**MITIGATION MEASURES  
PROCESS FLOW DIAGRAM**

**TABLE 3.1**  
**INDEX OF MITIGATION MEASURES**

---

Subject of Mitigation	Mitigation Numbers
• Access road clearing	128
• Air quality	40, 141
• Archaeological monitoring	80
• Boresight tower road, barrier	34, 35, 56, 118
• Brown tree snakes	22, 29, 30, 31, 32, 37, 63, 133
• Clearing minimum	19, 125, 127
• Clearing at base of cliff	20, 58, 129
• Communication with agencies	150
• Conformance with MOU	1
• CRM permit, data requirements	15, 16, 38
• Design specifications	5
• Dust control	39, 109, 142
• Education-workers	12
• Education-forest resources	69, 70, 71
• Employment, school	2, 96, 97, 107, 138
• Endangered species protection	73
• Endangered species posters	26
• Erosion control	4, 41, 48, 49, 62, 113, 114, 117, 124, 125
• Equipment hauls	108
• Explosives prohibited	111
• Fire suppression	104
• Flammable materials storage building	102
• Forester inspection	57
• Fuel tank containment, separator	9, 43, 101, 116, 147
• Fuel spill plans	47
• Habitat enhancement	24, 27, 36, 65, 135
• Habitat protection	23, 64
• Hazardous material storage building	44
• Hazardous waste plan	80, 81, 82, 83, 84, 85, 86, 87, 88, 137
• Hazardous waste management	6
• Inspection during clearing	18, 126
• Megapode protection	72, 134
• Noise-construction	139
• Noise muffler	51, 52
• Noise-operation	140

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**TABLE 3.1**

## INDEX OF MITIGATION MRASURES

**(Continued)**

SUBJECT OF MITIGATION	MITIGATION NUMBERS
• Ordnance removal, storage buildings	78, 79, 90, 91, 92, 93, 94, 95, 112, 119
• Permit requirements	17
• Pesticide	42, 110, 146
• Poaching	8
• Public information/education signs	28, 67
• Radar buildings paint color	120
• Radar decommissioning	99
• Radiofrequency emissions	10, 53, 54, 55, 89, 100, 136
• Revegetation	21, 50, 59, 60, 61, 66, 109, 130, 131, 132
• Road drainage	105, 114
• Road improvement	113
• Road responsibility	3
• Road strengthening	13
• Road survey-biologist	25, 68
• Septic/leach system	46, 115, 144
• Skeletal remains-removal	77, 119
• Site inspection by agency	14
• Spill plan	45, 149
• Utilities	123
• Viewpoint, trailhead	33, 76, 98, 106, 121, 122
• Visual impact-antenna radar building	74, 75
• Waste oil tank	103, 148
• Water-potable, other	143
• Wildfire	7
• Wildlife area planting	11
• Work limits	109

NOTE: Some mitigations address more than one subject. Therefore, some mitigation numbers may appear more than once.

A graphic depiction of the most mentioned environmental concerns, as indicated by the number of times they appear as individual mitigation measures (see Appendix A), is shown in Table 3.2 (Primary Environmental Concerns). As shown, the greatest number of mitigations (28) is related to vegetation and habitat of the Marpi Commonwealth Forest. The next most common subject is hazardous waste (15), followed by drainage/erosion control and employment/education (11 each). Four major concerns are addressed under seven mitigation measures each (brown tree snakes, ordnance removal, radiofrequency emissions, and viewpoint/trailhead), and fuel storage/containment is addressed in six. Other subjects shown (and the remainder of mitigations, which are not indicated on the figure) are each addressed in three or fewer different mitigation measures.

## 3.2 TYPES OF MITIGATION

### 3.2.1 PROJECT PHASES

For purposes of tracking the implementation of project-related mitigation requirements, the radar facility project is comprised of three phases: (1) design/construction, (2) operations, and (3) other. The design/construction phase of the project is scheduled for completion in 1991, when Saipan (PACBAR) Radar is planned to be officially opened. The operations phase is expected to last for about 25 years, or until the facility is no longer needed. The "other" phase is for issues not clearly applicable to either project design/construction or operations. It is into this "other" category that mitigation measures which address things such as legal issues, decommissioning requirements, and forest enhancement programs have been assigned.

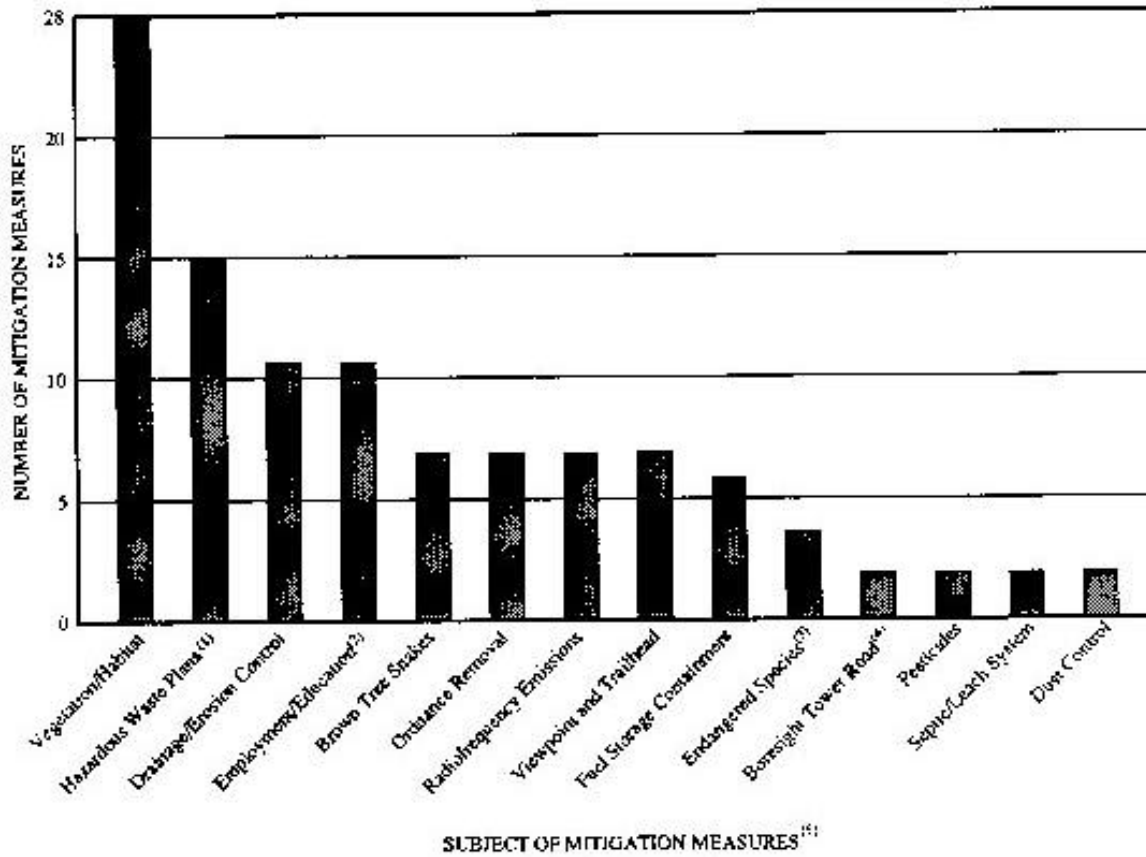
Just as there are many and diverse aspects to a project, there are many and diverse kinds of mitigation measures. Some are applied relative to the phase of a project, from its initial design to decommissioning at the end of the useful life of the facility. Some mitigations specify construction procedures, while others address operational requirements. Some are requirements to make physical improvements to an area, in return for its use and/or use of its resources.

For the Saipan (PACBAR) Radar design phase, mitigation measures included such diverse requirements as that the new drainage facilities be designed to result in a reduction of soil erosion and subsequent deposition in the PauPau Lagoon, and that the operational staff and general public be protected from electromagnetic radiation emanating from the radar antenna. Construction mitigations included the requirement that construction activities be contained within a specified area (for the radar facility) and corridor (for the road). Operational mitigation measures include the requirement for 50 percent of operations personnel to be hired from the local labor force and for operations personnel to be instructed and reminded that the Micronesian megapode is an endangered species which must not be disturbed. Area improvement mitigations include the requirement for habitat enhancement in the vicinity of the radar facility and at other, specified locations, and restoration of a cleared roadway (Forest Road 540) which the USAF elected not to develop. The number and status of mitigations for each project phase are presented in Table 3.3 (Summary of Mitigations by Project Phase).

### 3.2.2 ENVIRONMENTAL DISCIPLINES

Commonly, mitigation measures are identified by their association with an environmental discipline, such as ground water, vegetation, or archaeological resources. These are usually included in the environmental documentation completed for a project and also may be reflected in specific permits issued by agencies with jurisdiction over project activities. These mitigations also may be associated with a particular project phase.

**TABLE 3.2**  
**PRIMARY ENVIRONMENTAL CONCERNS**  
**SAIPAN (PACBAR) RADAR**  
**MITIGATION MEASURES**



**Notes:**

- (1) Includes Spill and Management Plans.
- (2) Includes Informational Posters.
- (3) Also included under Education, Vegetation
- (4) Includes Road and Road Barrier.
- (5) Some mitigation's apply to more than one subject.

**TABLE 3.3****SUMMARY OF THE MITIGATIONS BY PROJECT PHASE**

Project Phase	Number Of Mitigations	Mitigation Status					
		Complete	In Progress	Not Done As Originally Planned*	Ongoing	Percent Complete	Percent Ongoing
Design/Construction	100	90	1	(2)	9	90%	9%
Operations	35	6	0	0	29	17	83
Other	15	7	4	0	4	47	27
<b>TOTAL</b>	<b>150</b>	<b>103</b>	<b>5</b>	<b>(2)</b>	<b>42</b>	<b>69%</b>	<b>28%</b>

90-133(8/18/90)

\*These two requirements (No. 31, 83) were not done according to the precise wording in the mitigation measures. However, the overall goal of each was accomplished, using approved alternative procedures. Therefore, they are considered to have been fulfilled and are counted as being Complete. A detailed explanation of each is presented in Appendix A.3 (Mitigation 31) and A.5 (Mitigation 83).

For the Saipan (PACBAR) Radar, there are mitigation requirements for virtually all of the environmental disciplines addressed in the EA. These include requirements for: (1) water to be used for dust control during construction to minimize impacts to air quality, (2) use of a water-based pesticide to minimize water quality impacts, (3) construction specifications to require that equipment have engine exhaust mufflers to minimize noise, and (4) buildings to be painted a color compatible with the forest background. A complete listing of mitigation measures by environmental discipline is contained in Table 3.4 (Summary of Mitigations by Environmental Discipline).

### 3.3 OVERVIEW OF MITIGATION REQUIREMENTS

The 150 identified mitigation measures for the Saipan (PACBAR) Radar facility are derived from six source documents:

- Coastal Resources Management (CRM) Permit
- U.S. Fish and Wildlife Service (USFWS) - Section 7 Requirements
- U.S. Fish and Wildlife Service (USFWS) - Section 7 Consultation
- Memorandum of Understanding between USAF and Department of Natural Resources (DNR) (USAF/DNR MOU)
- PACBAR III Environmental Assessment (EA)
- Coastal Zone Management Act (CZMA) - Federal Consistency Determination

The greatest number of mitigations are derived from the Environmental Assessment (EA) and the Coastal Zone Management Act - Federal Consistency Determination. The rest are found in the Coastal Resources Management Permit, USFWS - Section 7 Requirements and Consultation, and the Memorandum of Understanding between the USAF and CNMI DNR. The mitigations are grouped according to source document in Appendix A and shown in summary form in Table 3.5 (Summary of Mitigation Status by Source Document).

Some mitigation requirements are contained in more than one source document, primarily where more than one agency is interested in and/or has jurisdiction over the same resource or issue. For example, Section 7 requires habitat enhancement, as does the CRM Permit, USAF/DNR MOU, and CZMA Federal Consistency Determination. These mitigation requirements are contained in more than one source document, as indicated in Table 3.6 (List of Mitigation Measures by Source Document and Subject). The status of the mitigations is shown in Table 3.7 (Catalog of Mitigation Measures by Source Document, Number, and Project Phase). The individual source documents are discussed in the following sections.

#### 3.3.1 COASTAL RESOURCES MANAGEMENT PERMIT

In concurrence with CNMI environmental agencies, the Coastal Resources Management Office (CRM) is the lead agency responsible for coordinating permit submittals and fees for the Saipan (PACBAR) Radar facility. The primary emphasis of the CRM is to incorporate its rules and those of other CNMI agencies into the project. As such, the mitigation requirements of this agency involve every aspect of the radar facility (see Appendix A.1, Mitigation #1). Of the 17 mitigation measures required under this permit, five are Complete, one is In Progress, and 11 are Ongoing.

#### 3.3.2 U.S. FISH AND WILDLIFE SERVICE - SECTION 7 REQUIREMENTS

The federal Endangered Species Act (ESA) of 1973, as amended, extends legal protection to plants and animals listed as endangered or threatened by the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). The ESA authorizes the USFWS and NMFS

**TABLE 3.4****SUMMARY OF MITIGATIONS BY ENVIRONMENTAL DISCIPLINE**

Environmental Discipline	Number Of Mitigations	Number Complete	Number In Progress	Not Done As Originally Planned*	Number Ongoing	Percent Complete	Percent Ongoing
Aesthetics	6	5	1	0	0	83%	0%
Aesthetics/Recreation	2	2	0	0	0	100	0
Administration/Compliance	9	4	0	0	5	44	56
Air Quality	4	3	0	0	1	75	25
Archaeology/History	5	4	0	0	1	80	20
Geology/Soils	1	1	0	0	0	100	0
Hazardous Waste	22	9	0	(1)	13	41	59
Hydrology	16	14	0	0	2	88	12
Land Use	1	0	0	0	1	0	100
Land Use/Recreation	1	1	0	0	0	100	0
Noise	2	2	0	0	0	100	0
Safety	18	10	0	0	8	56	44
Socioeconomics	5	2	0	0	3	40	60
Transportation	2	2	0	0	0	100	0
Utilities	1	1	0	0	0	100	0
Vegetation	25	22	2	0	1	88	4
Vegetation/Hydrology	1	1	0	0	0	100	0
Vegetation/Wildlife	7	5	2	0	0	71	0
Water Supply	1	0	0	0	1	0	100
Wildlife/Endangered Species	14	8	0	0	3	57	43
Wildlife/Brown Tree Snake	7	7	0	(1)	0	100	0
Total	150	103	5	(2)	42	69%	28%

\* These are so noted because they were completed, but in manner different from the wording in the original mitigation measure (see Table 3.3).

Note: Status as of June 1990



**TABLE 3.5****SUMMARY OF MITIGATIONS STATUS  
BY SOURCE DOCUMENT**

Mitigation Requirement Contained In	Number Of Mitigations	Number Complete	Number In Progress	Number Ongoing	Not Done As Originally Planned*	Number Documented	Percent Complete	Percent Ongoing
CRM Permit	17	5	1	11	0	16	29%	65%
USFWS, Section 7 Requirements	10	9	0	1	0	10	90	10
USFES, Section 7 Consultation	5	5	0	0	(1)	5	100	0
USAF/DNR MOU	6	5	1	0	0	6	83	0
PACBAR III EA	61	44	1	16	(1)	56	72	26
CZMA Federal Consistency Determination	51	35	2	14	0	50	69	27
<b>TOTAL</b>	<b>150</b>	<b>103</b>	<b>5</b>	<b>42</b>	<b>(2)</b>	<b>137</b>	<b>69%</b>	<b>28%</b>

\* These are so noted because they were completed, but in a manner different from the wording in the original mitigation measure (see Table 3.3).

Note: Status as of June 1990.

**TABLE 3.6**

**LIST OF MITIGATION MEASURES  
BY SOURCE DOCUMENT AND SUBJECT**

Source Document	Mitigation Number	Subject Of Mitigation	Duplication Or Related Mitigation Numbers
Coastal Resources Management Permit	1	Conformance with MOU	
	2	Employment, School	96, 107, 138
	3	Road Responsibility	
	4	Erosion Control	41, 48, 49, 62, 105, 113, 114, 117, 145
	5	Design Specifications	
	6	Hazardous Waste Management	45, 81-88, 137, 149
	7	Wildfire	
	8	Poaching	
	9	Fuel Tank Containment	43, 47, 101, 116, 147
	10	Radiofrequency Emissions	53, 54, 55, 89, 100, 1366
	11	Wildfire Area Planting	24, 27, 36, 65, 135
	12	Education- Workers	46, 69, 70, 71
	13	Road Strengthening	108
	14	Site Inspection by Agency	
	15	CRM Permit	16, 38
	16	CRM Permit	15, 38
	17	Permit Requirements	
U.S. Fish and Wildlife Service, Section 7 Consultation	18	Inspection during Clearing	19, 23, 58, 64, 109,127, 128
	19	Clearing Minimum	18, 23, 58, 64, 109, 127, 128
	20	Clearing at Base of Cliff	58
	21	Revegetation	59, 60, 61, 130, 131, 132
	22	Brown Tree Snakes	29, 30, 31, 32, 37, 63
	23	Habitat Protection	25, 58, 64, 68, 69, 70, 71, 72, 109, 127, 128
	24	Habitat Enhancement	11, 27, 36, 65, 135
	25	Road Survey- Biologist	68
	26	Endangered Species Posters	28, 67, 69-71
	27	Habitat Enhancement	11, 24, 36, 65, 135
	28	Public Information/Education Signs	26, 67, 69-71
	29	Brown Tree Snakes	30-32, 37, 63, 133
	30	Brown Tree Snakes	29, 31, 32, 37, 63, 133
	31	Brown Tree Snakes	29, 30, 32, 37, 63, 133
	32	Brown Tree Snakes	28-31, 37, 63, 133
USAF/DNR Memorandum of Understanding	33	Viewpoint, Trailhead	73, 76, 98, 106, 121, 122
	34	Boresight Tower Road	50, 56, 66
	35	Boresight Tower Road Barrier	118
	36	Habitat Enhancement	11, 24, 27, 65, 135
	37	Brown Tree Snakes	28-32, 63, 133
	38	CRM Permit, Data Requirements	15, 16
PACBAR III Environmental Assessment	39	Dust Control	40, 109, 142
	40	Air Quality	39, 141
	41	Erosion Control	4, 48, 49, 62, 105, 113, 114, 117, 145
	42	Pesticide	110, 146
	43	Fuel Tank Containment/Separator	9, 48, 101, 116, 147
	44	Hazardous Material Storage Building	102
	45	Spill Plan	4, 81-88, 137, 149
	46	Septic/ Leach System	115, 144
	47	Fuel Spill Plans	9, 101, 116, 147
	48	Erosion Control	4, 41, 49, 62, 105, 113, 114, 117, 145
	49	Erosion Control	4, 41, 48, 32, 105, 113, 114, 117, 145
	50	Revegetation	34, 66
	51	Noise Muffler	52, 139, 140
	52	Noise Muffler	51, 139, 140
	53	Radiofrequency Emissions	10, 54, 55, 89, 100, 136
	54	Radiofrequency Emissions	10, 53, 54, 89, 100, 136
	55	Radiofrequency Emissions	10, 53, 54, 89, 100, 136
	56	Boresight Tower Road	34, 50, 66

**TABLE 3.6**

**LIST OF MITIGATION MEASURES  
BY SOURCE DOCUMENT AND SUBJECT**

Source Document	Mitigation Number	Subject Of Mitigation	Duplicate Or Related Mitigation Numbers
PACBAR III Environmental Assessment (Continued)	57	Forester Inspection	126
	58	Clearing Minimum	64, 109, 125, 126, 127, 128, 129
	59	Revegetation	60, 61, 131, 132
	60	Revegetation	61, 131, 132
	61	Revegetation	130, 131, 132
	62	Erosion Control	4, 41, 48, 49, 105, 113, 114, 117, 145
	63	Brown Tree Snakes	29-32, 37, 133
	64	Habitat Protection	68, 71, 72, 109
	65	Habitat Enhancement	135
	66	Revegetation	34, 50
	67	Public Information/Education Signs	26, 28, 69-71
	68	Road Survey- Biologist	25
	69	Education- Forest Resources	26, 28, 69, 70-71
	70	Education- Forest Resources	26, 28, 69, 71
	71	Education- Forest Resources	26, 28, 69, 71
	72	Megapode Protection	134
	73	Endangered Species Protection	33, 76, 98, 106, 121
	74	Visual Impact- Antenna	75, 120
	75	Visual Impact- Radar Buildings	120
	76	Viewpoint, Trailhead	98, 106, 121
	77	Skeletal Remains- Removal	119
	78	Ordnance- Removal	90-95, 112, 119
	79	Ordnance Storage Buildings	119
	80	Archaeological Monitoring	
	81	Hazardous Waste Plan	6, 45, 82-88, 137, 149
	82	Hazardous Waste Plan	6, 45, 81, 83-88, 137, 149
	83	Hazardous Waste Plan	6, 45, 82, 84-88, 137, 169
	84	Hazardous Waste Plan	6, 45, 81-83, 85, 88, 137, 149
	85	Hazardous Waste Plan	6, 45, 81-84, 86-88, 137, 149
	86	Hazardous Waste Plan	6, 45, 81-85, 87, 88, 137, 149
	87	Hazardous Waste Plan	6, 45, 82-86, 88, 137, 149
	88	Hazardous Waste Plan	6, 45, 81-87, 137, 149
	89	Radiofrequency Emissions	10, 53-55, 100, 136
90	Ordnance Removal	91-95, 112	
91	Ordnance Removal	92-95, 112	
92	Ordnance Removal	93-95, 112	
93	Ordnance Removal	94-95, 112	
94	Ordnance Removal	95, 112	
95	Ordnance Removal	112	
96	Employment	1, 107, 138	
97	Employment		
98	Viewpoint, Trailhead	74, 106, 121	
99	Radar Decommissioning		
CZM Federal Consistency Determination	100	Radiofrequency Emissions	10, 53-55, 89, 136
	101	Fuel Tank Containment	9, 43, 7, 116, 149
	102	Flammable Materials Storage Building	44
	103	Waste Oil Tank	148
	104	Fire Suppression	
	105	Road Drainage	4, 41, 48, 49, 62, 113, 114, 117, 145
	106	Viewpoint, Trail Head	98, 121, 122
	107	Employment	96, 138
	108	Equipment Hauls	13, 126
	109	Dust Control, Revegetation, Work Limits	40, 129, 128, 142
	110	Pesticide	42, 146
	111	Explosives Prohibited	
	112	Ordnance Removal	119
	113	Road Improvement and Erosion Control	4, 41, 48, 49, 62, 105, 114, 117, 145
	114	Erosion Control	41, 48, 49, 62, 105, 113, 117, 145
	115	Septic/Leach System	144

**TABLE 3.6****LIST OF MITIGATION MEASURES  
BY SOURCE DOCUMENT AND SUBJECT**

Source Document	Mitigation Number	Subject Of Mitigation	Duplicate Or Related Mitigation Numbers
CZM Federal Consistency Determination (Continued)	116	Fuel Tank Containment	9, 41, 43, 47, 101, 147
	117	Erosion Control	4, 41, 48, 49, 62, 105, 113, 114, 145
	118	Boresight Tower Road Barrier	35
	119	Skeletal Remains Removal	77
	120	Radar Buildings Paint Color	75
	121	Viewpoint, Trail Head	98, 106, 122
	122	Viewpoint, Trail Head	98, 106, 121
	123	Utilities	
	124	Erosion Control	
	125	Clearing Minimum	18, 23, 58, 64, 109, 126, 127, 128
	126	Inspection during Clearing	18, 23, 58, 64, 109, 125, 127, 128
	127	Clearing Minimum	18, 23, 58, 64, 109, 125, 126, 128
	128	Access Road Clearing	126
	129	Clearing Minimum	
	130	Revegetation Types	131, 132
	131	Revegetation Contractor	132
	132	Revegetation Schedule	
	133	Brown Tree Snakes	28-32, 37, 63
	134	Megapode Protection	37, 63
	135	Habitat Enhancement	11, 24, 27, 65, 135
	136	Radiofrequency Emissions	10, 53-55, 89, 100
	137	Hazardous Waste Plan	6, 45, 81-88, 149
	138	Employment	1, 96, 107
	139	Noise - Construction	54, 52, 140
	140	Noise - Operation	51, 52, 139
	141	Fuel Sulfur Content	
	142	Dust Control	39, 40, 109
	143	Water - Potable and Other	
	144	Septic/Leach System	115
	145	Erosion Control	4, 41, 48, 49, 62, 405, 113, 114, 117
146	Pesticide	42, 110	
147	Fuel Tank Containment	7, 43, 47, 101, 116	
148	Waste Oil Tank	103	
149	Spill Plan	6, 45, 81-88, 137	
150	Communication with Agencies		

**TABLE 3.7**

**CATALOG OF MITIGATION MEASURES  
SOURCE DOCUMENT, NUMBER, AND PROJECT PHASE**

Source Document	Mitigation Number	Mitigation Compliance(1)	Mitigation Status(2)	Documentation(3)	Project Phase		
					Design/Construction	Operations	Other
1. CRM Permit	1	X	O	X			√
	2	X	O	X			
	3	X	O	X		√	
	4	X	X	X	√	√	
	5	X	X	X	√		
	6	X	O	X	√		
	7	X	O	X			
	8	X	O	TBO		√	
	9	X	O	X	√	√	
	10	X	O	X		√	
	11	X	IP	X			√
	12	X	X	X	√		
	13	X	X	X	√		
	14	X	O	X		√	
	15	X	O	X		√	
	16	X	O	X			√
	17	X	X	X		√	
2. USFWS, Section 7 Requirements	18	X	X	X	√		
	19	X	X	X	√		
	20	X	X	X	√		
	21	X	X	X	√		
	22	X	X	X	√		
	23	X	X	X	√		
	24	X	X	X	√		√
	25	X	X	X	√		
	26	X	O	X		√	
	27	X	X	X			√
3. USFWS, Section 7 Consultation	28	X	X	X			√
	29	X	X	X	√		
	30	X	X	X	√		
	31	X	X	X	√		
	32	X	X	X	√		
4. USAF/DNR Memorandum of Understanding	33	X	X	X	√		
	34	X	X	X			√
	35	X	X	X	√		
	36	X	IP	X			√
	37	X	X	X	√		
	38	X	X	X			√
5. PACBAR III Environmental Assessment	39	X	X	X	√		
	40	X	X	X		√	
	41	X	X	X	√		
	42	X	X	X	√		
	43	X	O	X	√		
	44	X	O	X		√	
	45	X	O	X		√	
	46	X	X	X			
	47	X	X	X	√		
	48	X	X	X	√		
	49	X	X	X	√		
	50	X	X	X	√		√
	51	X	X	X	√		

(1) X = In Compliance, NIC = Not in Compliance

(2) X = Complete, IP = In Progress, O = Ongoing (construction and/or operations)

(3) X = Complete, TBO = To Be Obtained

**TABLE 3.7**

**CATALOG OF MITIGATIONS MEASURES  
SOURCE DOCUMENT, NUMBER, AND PROJECT PHASE**

Source Document	Mitigation Number	Mitigation Compliance(1)	Mitigation Status(2)	Documen-tation(3)	Project Phase		
					Design/Construction	Operations	Other
5. PACBAR III Environmental Assessment (Continued)	52	X	X	X	√		
	53	X	O	X		√	
	54	X	O	X		√	
	55	X	O	X		√	
	56	X	X	X		√	
	57	X	X	X			
	58	X	X	X	√		
	59	X	X	X	√		
	60	X	X	X	√		
	61	X	X	X	√		
	62	X	X	X	√		
	63	X	X	X	√		
	64	X	X	X	√		
	65	X	IP	X	√		
	66	X	X	X			√
	67	X	O	TBO			√
	68	X	X	X			√
	69	X	O	X	√		
	70	X	O	X		√	
	71	X	O	X		√	
	72	X	X	X		√	
	73	X	X	X	√		
	74	X	X	X		√	
	75	X	X	X	√		
	76	X	X	X	√		
	77	X	X	X	√		
	78	X	X	X	√		
	79	X	O	X	√		
	80	X	X	X		√	
81	X	X	X	√			
82	X	X	X	√			
83	X	X	X	√			
84	X	X	X	√			
85	X	O	X	√			
86	X	X	X		√		
87	X	X	X	√			
88	X	O	X	√			
89	X	O	X	√		√	
90	X	X	X		√		
91	X	X	X	√			
92	X	X	X	√			
93	X	X	X	√			
94	X	X	X	√			
95	X	X	X	√			
96	X	O	X	√		√	
97	X	X	X		√		
98	X	X	X	√			
99	X	O	TBO			√	
6. CZMA Federal Consistency Determination	100	X	X	X		√	
	101	X	O	X	√		
	102	X	X	X	√		
	103	X	O	X	√		
	104	X	O	X	√		
	105	X	O	X	√		
	106	X	X	X	√		

(1) X = In Compliance, NIC = Not in Compliance

(2) X = Complete, IP = In Progress, O = Ongoing (construction and/or operations)

(3) X = Complete, TBO = To Be Obtained

**TABLE 3.7**  
**CATALOG OF MITIGATIONS MEASURES**  
**SOURCE DOCUMENT, NUMBER, AND PROJECT PHASE**

Source Document	Mitigation Number	Mitigation Compliance(1)	Mitigation Status(2)	Documen- tation(3)	Project Phase		
					Design/ Construction	Operations	Other
6. CZMA Federal Consistency Determination (Continued)	107	X	X	X	√		
	108	X	X	X	√		
	109	X	X	X	√		
	110	X	X	X	√		
	111	X	X	X	√		
	112	X	X	X	√		
	113	X	X	X	√		
	114	X	X	X	√		
	115	X	X	X	√		
	116	X	O	X	√		
	117	X	X	X	√		
	118	X	X	X	√		
	119	X	X	X	√		
	120	X	IP	X	√		
	121	X	X	X	√		
	122	X	X	X	√		
	123	X	X	X	√		
	124	X	X	X	√		
	125	X	X	X	√		
	126	X	X	X	√		
	127	X	X	X	√		
	128	X	X	X	√		
	129	X	X	X	√		
	130	X	X	X	√		
	131	X	X	X	√		
	132	X	X	X	√		
	133	X	X	X	√		
	134	X	X	X	√		
	135	X	IP	X	√		√
	136	X	O	X		√	
	137	X	O	X		√	
	138	X	O	X		√	
	139	X	X	X	√		
	140	X	O	X		√	
141	X	O	X		√		
142	X	X	X	√			
143	X	O	X		√		
144	X	X	X	√			
145	X	X	X	√			
146	X	X	X	√			
147	X	X	X	√			
148	X	O	X	√			
149	X	O	X		√		
150	X	O	X		√		

(1) X = In Compliance, NIC = Not in Compliance  
(2) X = Complete, IP = In Progress, O = Ongoing (construction and/or operations)  
(3) X = Complete, TBO = To Be Obtained

to review proposed federal actions to assess potential impacts to listed species. Section 7 of the ESA requires a proposed major federal action to be evaluated by the USFWS and/or NMFS for its potential to affect listed species or critical habitat. In compliance with the "Section 7 Consultation" process, the USFWS and/or NMFS evaluates a biological assessment prepared by the federal agency proposing the action and issues a "biological opinion" as to whether or not the proposed action is likely to jeopardize listed species or critical habitat (see Section 3.3.3).

The Section 7 mitigation requirements occur throughout the design/construction and operations phases of the radar facility project. Of the 10 requirements for the Saipan (PACBAR) Radar, nine are Complete, and one is Ongoing (see Table 3.7).

### 3.3.3 U.S. FISH AND WILDLIFE SERVICE - SECTION 7 CONSULTATION

As directed by Section 7 of the ESA, "Interagency Cooperation Regulations," the USFWS was consulted regarding the effects of the radar facility on three federally listed endangered species of birds:

- Micronesian megapode (*Megapodius laperouse*)
- Vanikoro swiftlet (*Aerodramus vanikorensis bartschi*)
- Nightingale reed warbler (*Acrocephalus luscinia*)

As a result of this consultation, the USFWS issued its biological opinion, which stated that the proposed action was not likely to jeopardize the continued existence of the three listed species or result in the destruction or adverse modification of critical habitat. The consultation was initiated on 28 July 1986, and the USFWS responded on 9 September 1986. All five mitigation requirements in the consultation letter are Complete (see Table 3.7).

### 3.3.4 MEMORANDUM OF UNDERSTANDING - USAF/DEPARTMENT OF NATURAL RESOURCES

The USAF/DNR Memorandum of Understanding (MOU) was established in order to implement those aspects of the project with which the DNR was concerned. The MOU refined the details of the project mitigation requirements in a manner that provided the USAF with a method to implement them. It also provided sufficient implementation details to satisfy the CRM so that they would issue their permit. The MOU procedural details assure USAF completion of the mitigation requirements.

The primary concerns addressed by the MOU center on reforestation and habitat enhancement. Of the six mitigation requirements in the MOU, three were to occur during the design/construction phase of the project, and three during the "other" phase over an unspecified time period. Five of these requirements are Complete, and one is In Progress (see Table 3.7).

### 3.3.5 PACBAR III ENVIRONMENTAL ASSESSMENT

The PACBAR III Environmental Assessment (EA) was prepared in accordance with: (1) the National Environmental Policy Act (NEPA), as implemented by Executive Order 11514, 42 USC 4321, (2) the President's Council on Environmental Quality (CEQ) Regulations, Title 40 Code of Federal Regulations (CFR), Part 1500 et seq., and (3) USAF Regulations 19-1, 19-2, 19-7, and 19-9, which constitute USAF directives for compliance with NEPA.

Of the 61 mitigation requirements contained within the EA, 39 apply to the design/construction phase of the project, and most of the rest apply to operations. Forty-four are Complete, one is In



Progress, and 16 are Ongoing (see Table 3.7). The primary environmental disciplines addressed in these mitigation requirements are biology, safety, and hazardous waste.

### 3.3.6 COASTAL ZONE MANAGEMENT ACT - FEDERAL CONSISTENCY DETERMINATION

The federal Coastal Zone Management Act (CZMA) of 1972, as amended, Section 307(c)(1), and implemented by the National Oceanic and Atmospheric Administration (NOAA), requires that a Federal Consistency Determination be submitted. All federal agencies are required to ensure that their activities are consistent to the maximum extent practicable with the NOAA-approved state coastal management plan for actions that may have direct effects on the coastal zone. The establishment of CNMI and the CNMI Coastal Zone Management Program, as amended through January 1987, have been approved by NOAA.

For the Island of Saipan, the permitting agency for the Federal Consistency Determination is the Coastal Resources Management Office, to which the USAF submitted the Federal Consistency Determination for approval on 25 February 1987. Approval was granted on 16 March 1987. Of the 51 mitigation requirements in the Federal Consistency Determination, 41 apply to the design/construction phase of the project, nine apply to project operations, and one to "other." Thirty-five of these mitigations are Complete, two are In Progress, and 14 are Ongoing (see Table 3.7).

### 3.4 IMPLEMENTATION EFFORTS

The USAF has expended a great deal of time and effort to assure implementation of all mitigation measures to which it has committed. Some examples are presented in the following paragraphs. Many of the mitigation requirements were incorporated into the design phase of the project and so are an integral part of the completed facility.

One example relates to the access road. The initial project design called for crushed coral to be used for the road surface. However, during the environmental review process, the CNMI - Department of Environmental Quality (DEQ) requested that the road be paved with asphalt rather than coral. This would minimize runoff and subsequent siltation across Beach Road, so as not to increase turbidity in PauPau Lagoon. In addition to paving the road, the USAF created an erosion control system, incorporating ditches and culverts. This additional mitigation measure reduces the amount of silt deposited on Beach Road as a result of storm runoff. These measures were incorporated into the access road design and have been completed.

Another mitigation measure required that disturbance to the Marpi Commonwealth Forest be minimized. This measure was incorporated into construction contractor requirements. Boundaries specifying the limits of construction were established on the construction drawings and strictly adhered to by the contractor.

Prior to breaking ground, a large pre-construction meeting was held. About one-half of the meeting was spent addressing environmental issues, such as limiting disturbance to the forest. The purpose of the meeting was twofold: to make the contractor aware of both the importance of environmental issues and of the necessity for environmental compliance during project construction activities.

Further, the USAF requested that the ROICC be involved in thorough construction surveillance, the results to be incorporated into monthly reports to the USAF. These reports included sections on environmental issues and the status of activities associated with preventing the brown tree snake from gaining access to the island. To assist in everyday environmental compliance requirements, a

matrix of mitigations was prepared and distributed to both the ROICC and other project personnel for use during project construction.

This Mitigation Status Report is an additional effort to assure that the mitigation measures are implemented as specified by the various permitting agencies. To date, most are Complete, with one In Progress, and the remainder Ongoing throughout the operational life of the radar facility.

### 3.5 MITIGATIONS TRACKING METHODOLOGY

#### 3.5.1 APRIL 1989 EVALUATION

##### 3.5.1.1 Procedures

The initial task in assessing the status of mitigation measures was to review the project's environmental and permitting documents and identify the mitigation measures specified in each one. The mitigations were then assembled and catalogued according to their source document.

The next step was to conduct a search of USAF and ROICC document files. Relevant materials which had been prepared subsequent to the initial mitigation requirements were collected and reviewed. These materials included the contractor's environmental protection plan, minutes of weekly contractor meetings, daily activity reports, information and documentation of pesticides permitted and used, procedures for preventing infestation of the brown tree snake, and contract requirements relating to revegetation, specifically requiring that the revegetation subcontractor continue the task until 95 percent of the vegetation has been established.

Subsequent to this task, representatives of the USAF and the environmental contractor conducted field interviews with the Resident Officer in Charge of Construction (Lt. John Bergstrom, U.S. Navy [USN]). They also conducted visual checks of constructed facilities, such as observing that an oil/water separator had been built and that drainage channels were appropriately lined with grass or riprap. Additionally, the limits of construction disturbance were observed, measured, and photo-documented as having been strictly adhered to, in compliance with mitigation requirements. In some instances, structures also were measured to verify that mitigation requirements had been fulfilled. For example, calculations were made to verify the volume of the containment berm around the generator fuel tanks and the physical parameters of the drainage control system, such as the depth and width of culverts.

Field interviews were conducted with the ROICC to verify that certain mitigation requirements had been fulfilled as designed. These included verification that the oil/water separator and the sound suppression system for the generator, both shown on the design drawings and visually inspected, had actually been built according to design specifications.

##### 3.5.1.2 Participants

The evaluation of mitigation measures was conducted by a team comprised of representatives of the USAF, USN, and the environmental contractor. The USAF was represented by John Edwards SSD/DEV, and the USN was represented by Lt. John Bergstrom, ROICC, and Dan Patterson, ROICC. The environmental contractor, Environmental Solutions, Inc., was represented by Richard Ellison, P. E. and Kerry Parkinson, P. E.

Field interviews regarding operational mitigations were conducted with Dan Sanders, representing the Federal Electric Corporation, David Rentschler, USAF/WSMC, and Capt. Tarek Abboushi, USAF/SSD/CNSC. In addition, members of the CRM were briefed on the proposed mitigation assessment process, solicited for input, and apprised of the results at the conclusion of the field work.

## 3.5.2 JUNE 1990 EVALUATION

### 3.5.2.1 Procedures

The initial task involved identifying the In Progress and Ongoing mitigation measures and then assessing those which had changed since the previous evaluation in April 1989. The next step was to conduct a search of USAF and FEC document files. Relevant materials which had been prepared since the previous evaluation were collected and reviewed. These materials included: (1) the flammable/hazardous materials storage building (#44); (2) documentation of the two previously recorded "Not Done" mitigation measures (#31, 83); (3) changes to the use of short wave radio for reporting fires (#7), (4) hazardous waste handling and transport (#6), habitat enhancement (#11), and radiofrequency emissions testing (#10).

The next task involved a visual inspection of the facility, access road, and blockaded boresight tower road to assess compliance with mitigation requirements. At the same time, these observations were recorded with still camera photographs and video, to provide a permanent record of conditions at the time of evaluation.

Visual inspection of the erosion control and drainage system revealed potential problems on the south side of Matuis Road, particularly along an area approximately 600 to 800 feet east of Beach Road. It was noted that fill had been placed from the edge of Matuis Road onto the adjacent land in such a manner that runoff would be diverted onto the road. Sediment would then be deposited onto Matuis Road and into the erosion control system. It was further noted that, if left alone, the road shoulder would eventually erode (see Appendix C.2, Memo of 6 June 1990).

It also was noted that land clearing, grading, and road construction have been conducted in the MPLC subdivision located south of Matuis Road. These activities have resulted in an increased potential for erosion and resulting sediment transport onto Matuis Road and into the erosion control system. Sediment transport could be reduced by the construction of runoff detention basins at the lower elevations of the subdivision, with erosion-resistant ditches discharging into either the existing erosion control system or into thickly vegetated natural drainage swales.

In addition, the June 1990 evaluation involved looking at other, new and/or proposed projects with the potential to impact the radar facility's erosion control system. These projects were discussed in a meeting with the CRM, during which the progress of the radar facility's mitigation measures also was discussed. As a result of this meeting, held on 11 June 1990, and USAF recommendations, the Marianas Public Land Corporation (MPLC) has accepted responsibility for impacts to the newly installed erosion control system that could result from current and proposed developments. William R. Conception, Executive Director of the Marianas Public Land Corporation, agreed that the erosion control system that the USAF developed along the road to the radar facility worked and that the land development project under his control could impact that system. He stated that they were trying to minimize any impacts to the erosion control system (see Appendix C.2).

A detailed account of each mitigation measure and its current disposition is presented in Appendix A (Individual Mitigation Measures, Arranged by Source Document). A record of the June 1990 onsite observations is contained in Appendix E (Mitigation Measures Status Update).

### 3.5.2.2 Participants

The re-evaluation of mitigation measures was conducted by a team comprised of representatives of the USAF, FEC, and the environmental contractor. The USAF was represented by John Edwards SSD/DEV, and the FEC was represented by Dan Sanders, Site Manager of the Saipan (PACBAR) Radar facility. The environmental contractor, Environmental Solutions, Inc., was represented by Kerry Parkinson, P. E.

**CHAPTER 4.0**  
**STATUS OF MITIGATIONS**

## 4.0 STATUS OF MITIGATIONS

### 4.1 SUMMARY

There are 150 mitigation measures for the Saipan (PACBAR) Radar which have been identified and evaluated as to their status. They are categorized as Complete, In Progress, Ongoing, or Not Done. These categories have been verified through documentation, field observation, and/or interview (see Section 5.1).

Those which are Complete require no further action. These include construction of fuel spill containment facilities and establishing and adhering to limits of construction. The five that are still In Progress involve: (1) the habitat enhancement program, and (2) painted color of the radar facility buildings. Mitigation measures which are Ongoing usually are procedural requirements which will occur so long as the facility is in operation. These include hiring requirements and coordination with local agencies.

Those which were not done as originally planned, but which were completed and in compliance with the purpose of the mitigation measures, relate to inspection of shipping vessels for the brown tree snake and documentation of hazardous waste generated during construction. The snake inspections were not conducted because the shippers would not allow access to their vessels for such purpose. This was discovered prior to the commencement of construction, and alternative arrangements were made, in coordination with the CNMI Department of Fish and Wildlife (DFW). The requirement for hazardous waste documentation was not fulfilled, according to the language of the mitigation because the contractor did not maintain records of such waste generated during construction. However, mitigation is considered Complete because the contractor did submit documentation of procedures followed during construction and a statement that requirements of the Environmental Protection Plan were followed. A status summary of the 150 mitigation measures is presented in Table 3.7. Mitigations which require further action are listed in Table 4.1 (Mitigations In Progress and Ongoing - by Project Phase).

### 4.2 COMPLETED MITIGATIONS

To date, 103 (69 percent) of the 150 mitigation measures are Complete, as shown in Figure 4.1 (Completed Mitigation Measures by Source and Project Phase). As shown in the figure, all but five of the mitigations either are Complete or are Ongoing over the life of the facility. Of the three identified project phases, 90 percent of the design/construction mitigations are Complete, while 17 percent of operations and 47 percent of "other" mitigation requirements have been fulfilled. Of the 47 mitigations which have not been completed, 42 are Ongoing over the life of the facility, and five are In Progress. A detailed accounting of each mitigation measure is shown in Appendix A.

A graphic representation of the status of the 150 mitigation measures is shown in Table 4.2 (Status of Mitigation Measures by Source Document). The table shows that most of the mitigation requirements occur in two of the six source documents: (1) the PACBAR III EA, and (2) the Federal Consistency Determination, with 61 and 51 mitigations, respectively. The table also shows that most of the 150 mitigation measures are Complete and that all but five of the remainder are Ongoing. Most of the ongoing mitigations are planned to continue for the duration of facility operation, although some are not scheduled for completion until the project is decommissioned.

Another presentation shows the status of the mitigation measures according to their project phase (Table 4.3, Status of Mitigation Measures by Project Phase). As shown, two-thirds of all mitigations apply to the design/construction phase, and 90 percent of these are Complete. The table also shows that, as would be expected, most of the Ongoing mitigations are in the

**TABLE 4.1**

**MITIGATION IN PROGRESS AND ONGOING – BY PROJECT PHASE**

Project Phase	Mitigation Number	Subject Of Mitigation	Deposition
<u>Design/</u> Construction			
In Progress:	120	Radar Building Paint Color	Building painted to blend with forest. Color to be re-evaluated for next scheduled painting.
Ongoing:	6	Hazardous Waste Management	USAF responsible for off-island handling of hazardous material.
	9	Fuel Tank Containment	Construction complete. USAF Responsible for maintenance.
	43	Fuel Tank Containment/Separator	Berms, etc. constructed. Valve separator to be kept closed.
	101	Fuel Tank Containment	Storage tanks complete. USAF responsible for maintenance.
	103	Waste Oil Tank	Construction complete. USAF responsible for maintenance.
	104	Fire Suppression	System complete. USAF responsible for maintenance.
	105	Road Drainage	Diversion structures complete. USAF responsible for maintenance.
	116	Fuel Tank Containment	Fuel storage/containment system complete. USAF responsible for maintenance.
	148	Waste Oil Tank	Construction complete. USAF Responsible for maintenance.
Not done as originally planned, but In Compliance and Complete.	31	Brown Tree Snakes	On ship snake inspection not allowed by shipping line. Alternate methods pre-negotiated with CNMI Fish and Wildlife.
	83	Hazardous Waste Plan	Plan was submitted by Black Micro. Receive information on types of materials used and disposition of materials.
Operations			
Ongoing:	2	Employment, School	Employ 50% local residents. Enhance local education curriculum.
	3	Road Responsibility	Maintain road and structures for erosion on Forest Road 530.
	7	Wildfire	Establish and maintain procedures to notify Saipan Fire Division of any wildfires.
	8	Poaching	Report any poaching to Division of Fish and Wildlife.
	10	Radiofrequency Emissions	Provide all EMR test results to CRM.

Status as of June 1990

**TABLE 4.1**

**MITIGATIONS NOT RESOLVED – BY PROJECT PHASE**

Project Phase	Mitigation Number	Subject of Mitigation	Deposition
<u>Operations</u> (Cont.)			
Ongoing:	14	Site Inspection by Agency	Enable CRM to access the site.
	15	CRM Permit	Notify CRM of any change in project or owner.
	26	Endangered Species Posters	Conduct employee orientation. Posted information signs are to be maintained.
	44	Hazardous Material Storage Building	Building in use. USAF responsible for maintenance.
	45	Spill Plan	FEC has Spill Prevention, Control, and Countermeasure Plan in development.
	53	Radiofrequency Emissions	Same as 89, 136. Limit switches on radar – to be done after survey.
	54	Radiofrequency Emissions	Same as 53. Limit switches on radar – to be done after survey.
	55	Radiofrequency Emissions	If EMR survey indicates, change operational procedures.
	69	Education – Forest Resources	Same as 70 and 71. Inform new employees about endangered species.
	70	Education – Forest Resources	Same as 69 and 71. Inform new employees about endangered species.
	71	Education – Forest Resources	Same as 69 and 70. Inform new employees about endangered species.
	79	Ordnance Storage Buildings	Inform new employees to not disturb the four ordnance storage buildings.
	85	Hazardous Waste Plan	Provide sealed containers and appropriate labels.
	88	Hazardous Waste Plan	Complete the plan. Conduct operations in accordance with hazardous waste management plan.
	89	Radiofrequency Emissions	Same as 53, 136. Limit switches on radar – to be done after survey.
	96	Employment	Same as 138. Goal is to employ 75% local residents within five years.
	136	Radiofrequency Emissions	Same as 53, 89. Limit switches on radar – to be done after survey.
	137	Hazardous Waste Plan	Same as 88. Complete hazardous waste management plan. Maximum storage time is 270 days.
	138	Employment	Same as 96. Goal is to employ 75% local residents within five years.

Status as of June 1990.

**TABLE 4.1**

**MITGATIONS NOT RESOLVED – BY PROJECT PHASE**

Project Phase	Mitigation Number	Subject Of Mitigation	Deposition
<u>Operations</u> (Cont.)			
Ongoing:	141	Fuel Sulfur Content	Diesel fuel sulfur content not to exceed 2.5 weight percent.
	143	Water – Potable and Other	Use treated rainwater for non- – potable uses.
	149	Spill Plan	Comply with Spill Plan.
	150	Communication with Agencies	USAF to continue consultation with agencies of CNMI and federal government.
<b>Other</b>			
In Progress:	11	Wildlife Area Planting	One – half of allotted \$80,000 had been expended by USAF.
	36	Habitat Enhancement	One – half of allotted \$80,000 has been expended by USAF.
	65	Habitat Enhancement	One – half of allotted \$80,000 has been expended by USAF.
	135	Habitat Enhancement	One – half of allotted \$80,000 has been expended by USAF.
Ongoing:	1	Conformance with MOU	Implement mitigations, forest enhancement.
	16	CRM Permit	Maintain lawful operation of facility and compliance with permits.
	67	Public Information/Education Signs	Signs to remain posted and be maintained.
	99	Radar Decommissioning	To occur when project is decommissioned.

Status as of June 1990.



**TABLE 4.4**

**MITIGATIONS TO BE COMPLETED BY USAF**

Source Document	Mitigation Number	Subject Of Mitigation	Current Status	
CRM Permit	1	Conformance with MOU	O	
	2	Employment, School	O	
	3	Road Responsibility	O	
	6	Hazardous Waste Spill Plan	O	
	7	Wildfire	O	
	8	Wildfire	O	
	9	Hazardous Waste	O	
	10	Radiofrequency Emissions	O	
	11	Wildlife Area Planting	IP	
	14	Administration/Compliance	O	
	15	CRM Permit	O	
	16	CRM Permit	O	
	USFWS Section 7 Requirements	26	Endangered Species Posters	O
	USAF/DNR Memorandum of Understanding	36	Habitat Enhancement	IP
	PACBAR III EA	43	Fuel Tank Containment, Separator	O
		44	Hazardous Material Storage Building	O
45		Hazardous Waste Spill Plan	O	
53		Radiofrequency Emissions	O	
54		Radiofrequency Emissions	O	
55		Radiofrequency Emissions	O	
65		Habitat Enhancement	IP	
67		Public Information/Education Signs	O	
69		Education-Forest Resources	O	
70		Education-Forest Resources	O	
71		Education-Forest Resources	O	
79		Ordnance Storage Buildings	O	
85		Hazardous Waste Plan	O	
88		Hazardous Waste Plan	O	
89		Radiofrequency Emissions	O	
96		Local Employment	O	
99		Radar Decommissioning	O	
Federal Consistency Determination	101	Fuel Tank Containment	O	
	103	Waste Oil Tank	O	
	104	Fire Suppression	O	
	105	Road Drainage	O	
	116	Fuel Tank Containment	O	
	120	Radar Buildings Paint Color	IP	
	135	Habitat Enhancement	IP	
	136	Radiofrequency Emissions	O	
	137	Hazardous Waste Plan	O	
	138	Local Employment	O	
	140	Noise-Operation	O	
	141	Fuel Sulfur Content	O	
	143	Water-Potable and Other	O	
	148	Waste Oil Tank	O	
	149	Spill Plan	O	
	150	Communication with Agencies	O	

IP = In Progress

O = Ongoing

Status as of June 1990

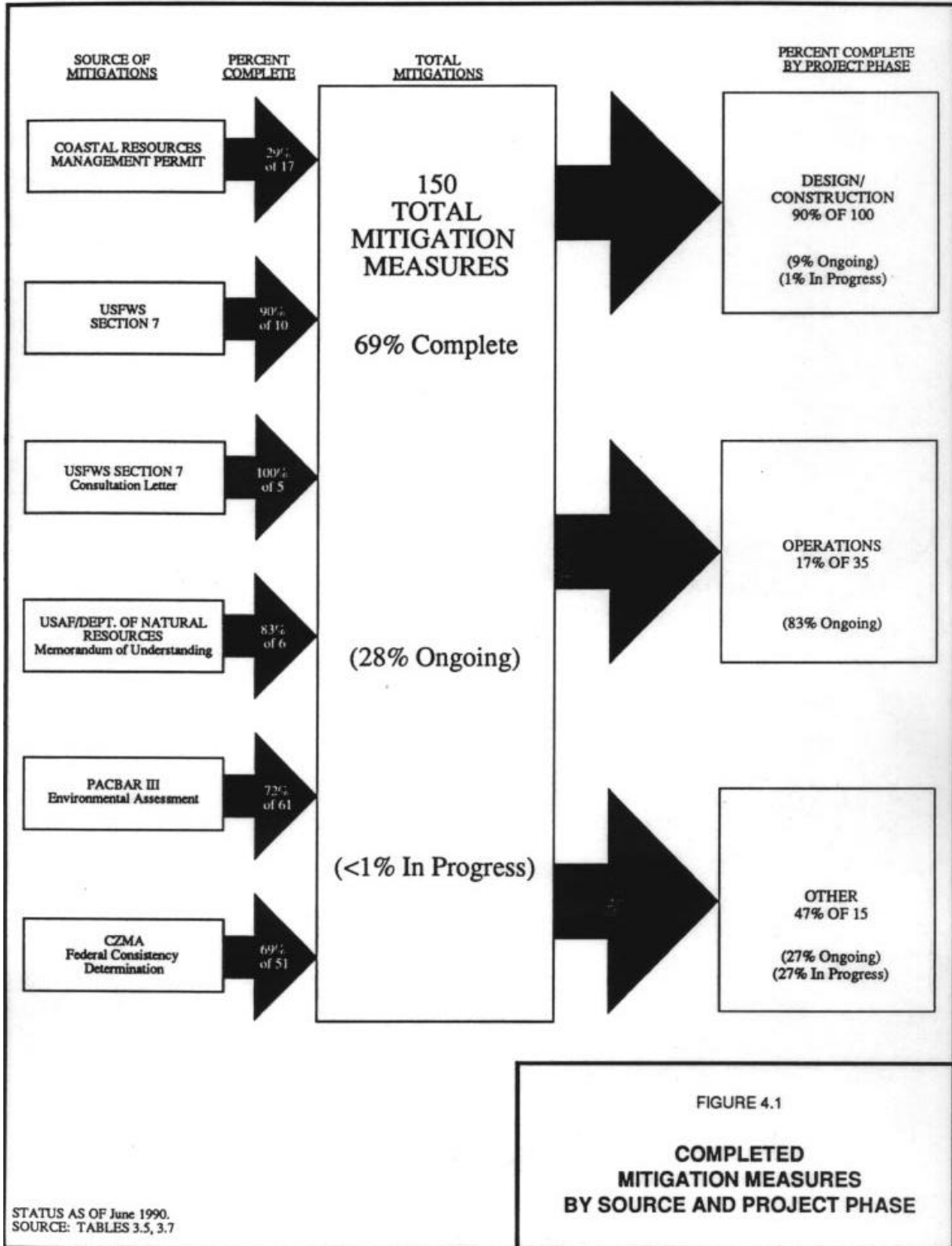
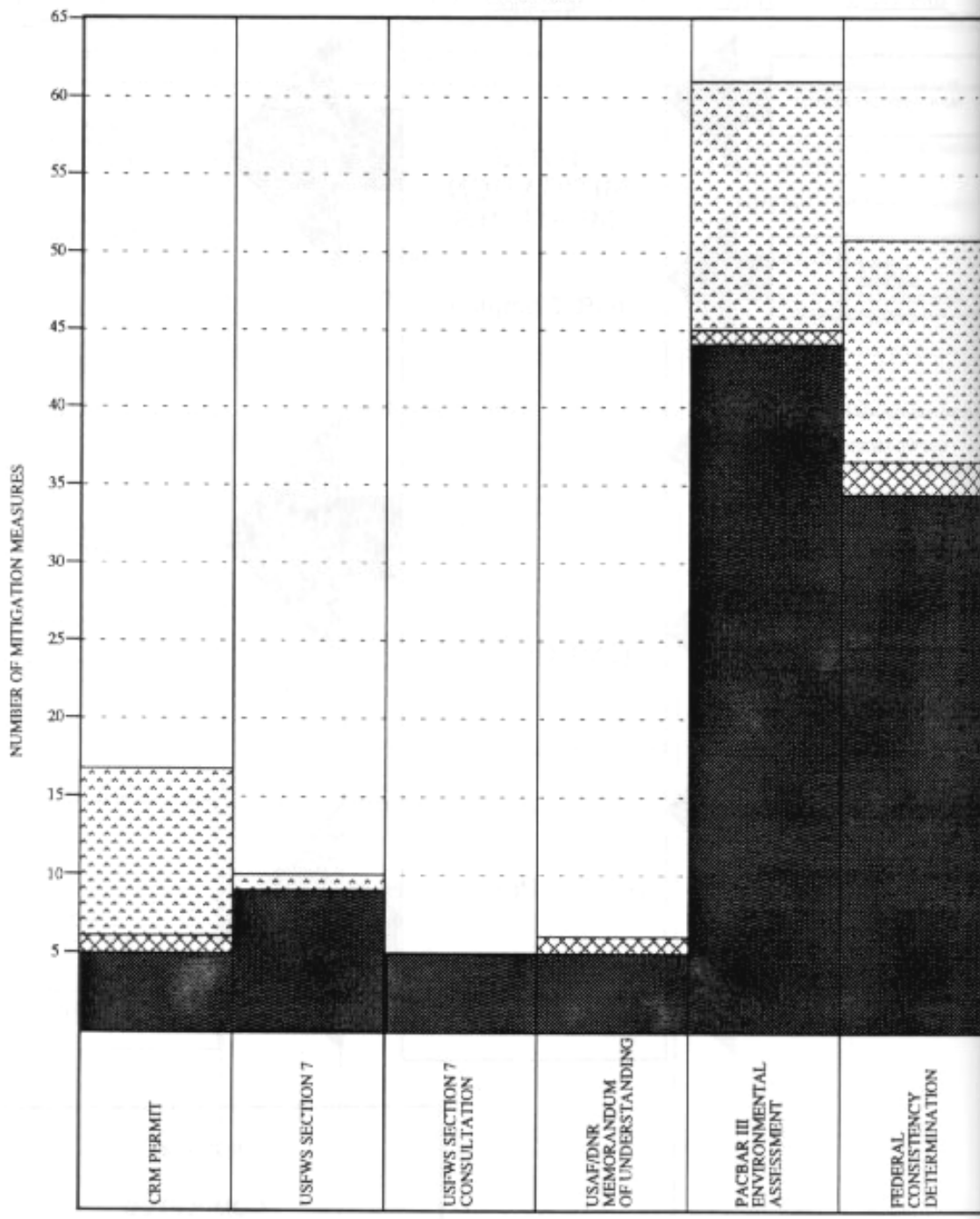


TABLE 4.2

STATUS OF MITIGATION MEASURES  
BY SOURCE DOCUMENT



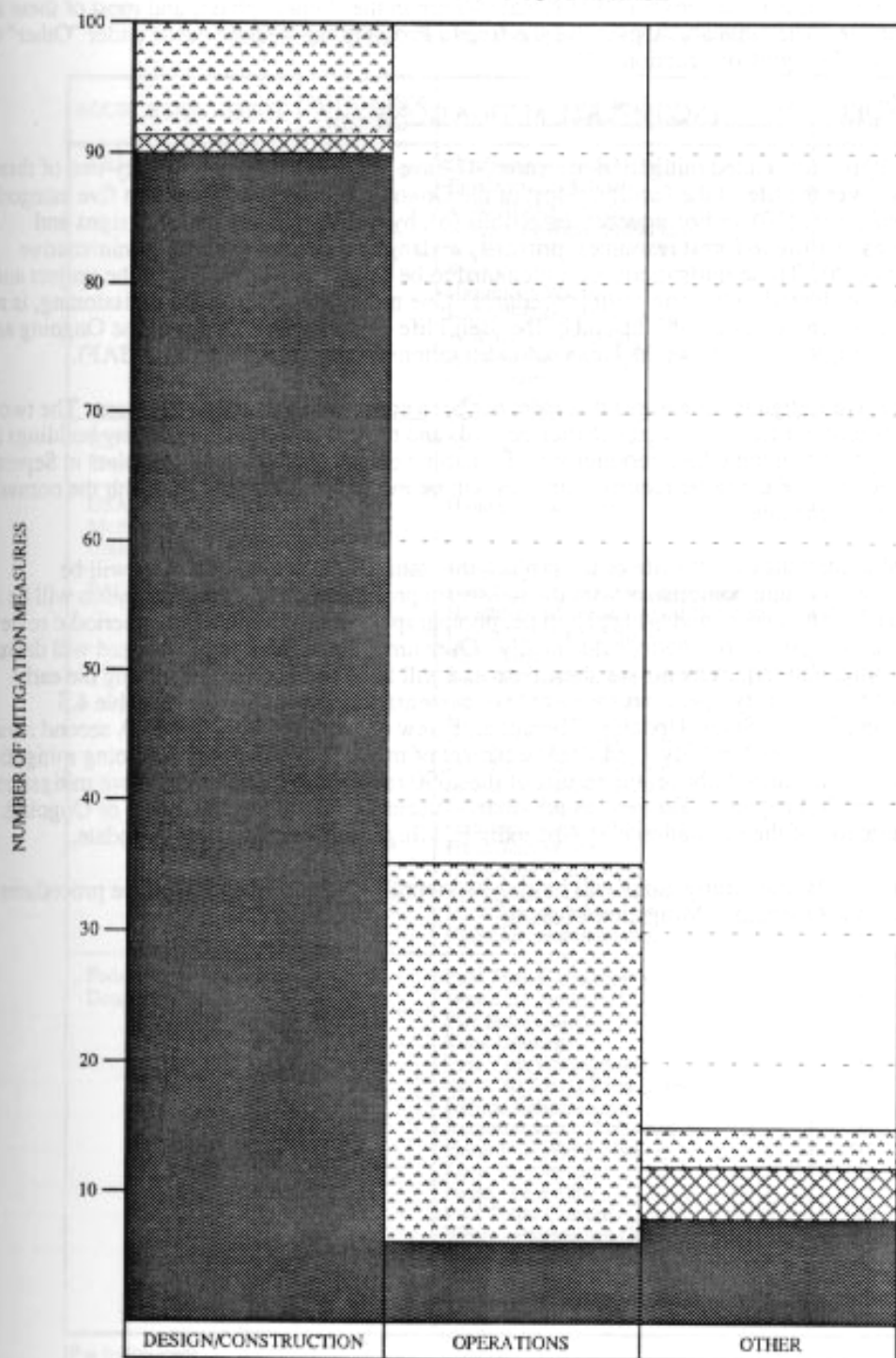
Legend:  
 [Dotted] Ongoing mitigations  
 [Cross-hatched] In Progress mitigations  
 [Solid black] Complete mitigations

SOURCE DOCUMENT

Status as of June 1990

90-133 (6/21/90)

**TABLE 4.3**  
**STATUS OF MITIGATION MEASURES**  
**BY PROJECT PHASE**



**Legend:**  
 Ongoing mitigations  
 In Progress mitigations  
 Complete mitigations

Status as of June 1990.  
 90-133 (R20/90)

"Operations" phase of the project. The remainder are in the "Other" phase, and most of these also are Complete. The table also shows that the five In Progress mitigations occur under "Other" (4) and "Project Design/Construction" (1).

#### 4.3 RESOLUTION OF INCOMPLETE MITIGATIONS

Of the 150 permit-related mitigation measures, 47 have not been completed. Forty-two of these are Ongoing, over the life of the facility. Most of the Ongoing mitigations fall within five categories: hazardous waste (10), radiofrequency emissions (6), hydrology (6), educational signs and procedures relating to forest resources, primarily endangered species (5), and administrative compliance (5). These mitigations are anticipated to be Ongoing over the life of the project and, as such, are considered to be long-term procedures. One mitigation, radar decommissioning, is not scheduled for completion until the end of the useful life of the facility. A list of the Ongoing and In Progress mitigations is shown in Table 4.4 (Mitigations To Be Completed by USAF).

There are five mitigation measures that have not been completed and are In Progress. The two categories represented are habitat enhancement (4) and the color of the radar facility buildings (1). It is anticipated that the USAF requirements for habitat enhancement will be complete in September 1993. The color of the radar facility buildings will be evaluated in conjunction with the normal maintenance schedule.

At periodic intervals over the life of the project, the status of mitigation measures will be documented to assure compliance with the long-term procedures. This documentation will be in the form of written notes and, as appropriate, photographs. It is anticipated that periodic review of incomplete mitigations be conducted annually. Over time, the number to be checked will decrease, as most mitigation requirements are short-term and will have been completed during the early months of radar facility operation. A sample documentation form is shown as Table 4.5 (Mitigation Measure Status Update). The initial review occurred in April 1989. A second review occurred in June 1990 and involved a reassessment of many In Progress and Ongoing mitigation measures. As discussed above, the results of the 1990 review indicate that only five mitigation measures are In Progress. The rest, as previously discussed, are either Complete or Ongoing. Documentation of the evaluation is in Appendix E, Mitigation Measures Status Update.

In the future, Ongoing mitigations will be checked monthly, in accordance with the procedures outlined in the Operations Mitigation Manual.

**CHAPTER 5.0**  
**CONCLUSIONS**

## 5.0 CONCLUSIONS

### 5.1 INTRODUCTION

As indicated in Chapter 3.0, Mitigations Summary, the majority of the 150 mitigation measures (69 percent) have been completed by the USAF, and all but five of the remainder are ongoing, over the life of the facility. Mitigations which were of particular interest during the permitting process were those associated with erosion control improvements to Matuis Road, construction of the new access road, and protection of endangered species, especially the Micronesian megapode.

Other mitigations were implemented to reduce impacts related to air quality, noise, radiofrequency emissions, vegetation/habitat, aesthetics, hazardous waste, safety, and socioeconomics. A review of projected impacts reveals that the USAF, in implementing suggested mitigation measures, has kept project-related impacts within the envelope projected in the EA.

This is indicated in Figures 5.1A (Aerial View of Radar Site, Pre-Construction) and 5.1B (Aerial Views of Radar Site, Post-Construction) as shown in the photographs. Areas outside of the project perimeter appear undisturbed, with vegetation growing thick at the project boundaries, especially along the edge of the cliff. Potential impacts and mitigation measures of greatest concern to persons and agencies on the Island of Saipan are discussed below.

### 5.2 EROSION

Construction associated with the access road has been completed. The ability of both the Matuis Road improvements and the new access road to accommodate extensive surface water flows and result in less siltation than occurred prior to construction was demonstrated during and after typhoon conditions which occurred in April 1989. There was significantly less siltation across Beach Road after the 1989 storm than after periods of precipitation prior to USAF improvements.

An analysis of these changes to local erosion impacts is discussed in the June 1989 As-Built Erosion Control Report for the radar facility. The report demonstrates and concludes that the new access road erosion control system satisfies the criteria originally established in 1987. The as-built capacity of all ditches is at least suitable to convey runoff from a 10-year storm. Further, the capacity of each culvert exceeds the estimated requirement for a 100-year storm. The improvements to the Beach/Matuis Road intersection are indicated in Figures 5.2A (Looking North at Intersection of Beach and Matuis Roads [Pre-Construction]), 5.2B (Looking North at Intersection of Beach and Matuis Roads Prior to Completion of Stilling Basin), and 5.2C (Looking South at Intersection of Beach and Matuis Roads Prior to Completion of Stilling Basin). Additional photo-documentation is contained in Appendix D.7 through D.20.

The Erosion Control Report was prepared in order to provide a first step in basic overall watershed management for the area. It will serve as a baseline for other, nearby projects to utilize in preparation of their own erosion control plans.

### 5.3 THREATENED AND ENDANGERED SPECIES

In accordance with mitigation requirements, the USAF has completed a variety of programs to promote the protection of local threatened and endangered species of animals. For project construction, these included: (1) a pre-construction survey, (2) educating construction personnel as to the importance of these animals, (3) implementing procedures (such as limits of construction) to minimize interference with the animals' normal activities, (4) posting informational signs in construction areas, and (5) preparing and distributing pocket-sized cards with information and

procedures to protect the Micronesian megapode and other endangered and protected species (see Appendix A.1, Mitigation No. 26 and Appendix A.6, #134, Micronesian Megapode Protection Card). Subsequent to project construction, the USAF prepared three informational signs to be displayed at the radar facility. These signs remind employees that it is illegal to disturb threatened and endangered species of animals and their habitat.

The USAF has adhered to all mitigation measures adopted to protect local threatened and endangered species, and no sightings have been reported by project construction personnel or representatives of the USAF or USN. Therefore, as projected in the EA, the USAF believes that the project will have no adverse impact on local threatened or endangered species and that there will be an overall increase in the amount of suitable forest habitat.

#### 5.4 REFORESTATION AND FOREST ENHANCEMENT

The EA anticipated that a maximum of three acres of forest vegetation would be disturbed for the radar facility. However, due to elimination of the originally planned boresight tower, only 0.1 acre was disturbed, so actual impacts were less than originally projected. In association with initial USAF activities, an area of limestone forest was impacted by bulldozer activity. Since that time, however, the USAF has planted more than 600 trees in the area of primary impact and more than 70 trees along the original access road. This new vegetation has become established, and the impacted area is responding to the forest enhancement program (see Section 5.3).

The USAF is fulfilling its responsibility for a reforestation habitat enhancement program which involves replanting an area 1.5 times as large as that being utilized for the radar facility and new access road (see Mitigations No. 11, 36, 65, and 135).

#### 5.5 AIR QUALITY

The EA addressed potential air quality impacts resulting from project construction and operation. The EA projected that dust would be generated during construction of the radar facility, access road, and drainage improvements. This impact was mitigated by a watering program. Other mitigation measures required that trash and vegetation not be burned, but be hauled offsite for proper disposal. This precluded the generation of smoke and ash from a controlled burn, and eliminated a potential fire hazard.

Operation of the diesel generator is predicted to result in emissions of particulates, sulfur dioxide, carbon monoxide, volatile organic compounds, and nitrogen oxides. These emissions are not significant, as predicted in the EA.

#### 5.6 SPILL CONTROL

The potential for spillage of diesel fuel exists due to the presence of the aboveground fuel tanks. The effect has been mitigated by location of the tank within a concrete containment berm with the capacity to hold the entire contents of both tanks in the event of a spill.

Another measure which reduces the potential for a spill to occur is the installation of a mechanical pump and filtration device which blends used oil into the fuel supply. The use of this oil/fuel blending system significantly reduces the volume of hazardous waste produced at the facility. Further, its use has eliminated the need to store and transport waste oil.

In addition, a Spill Prevention, Control, and Countermeasure (SPCC) Plan was prepared by the USAF and sent to appropriate agencies. No comments have been received to date.



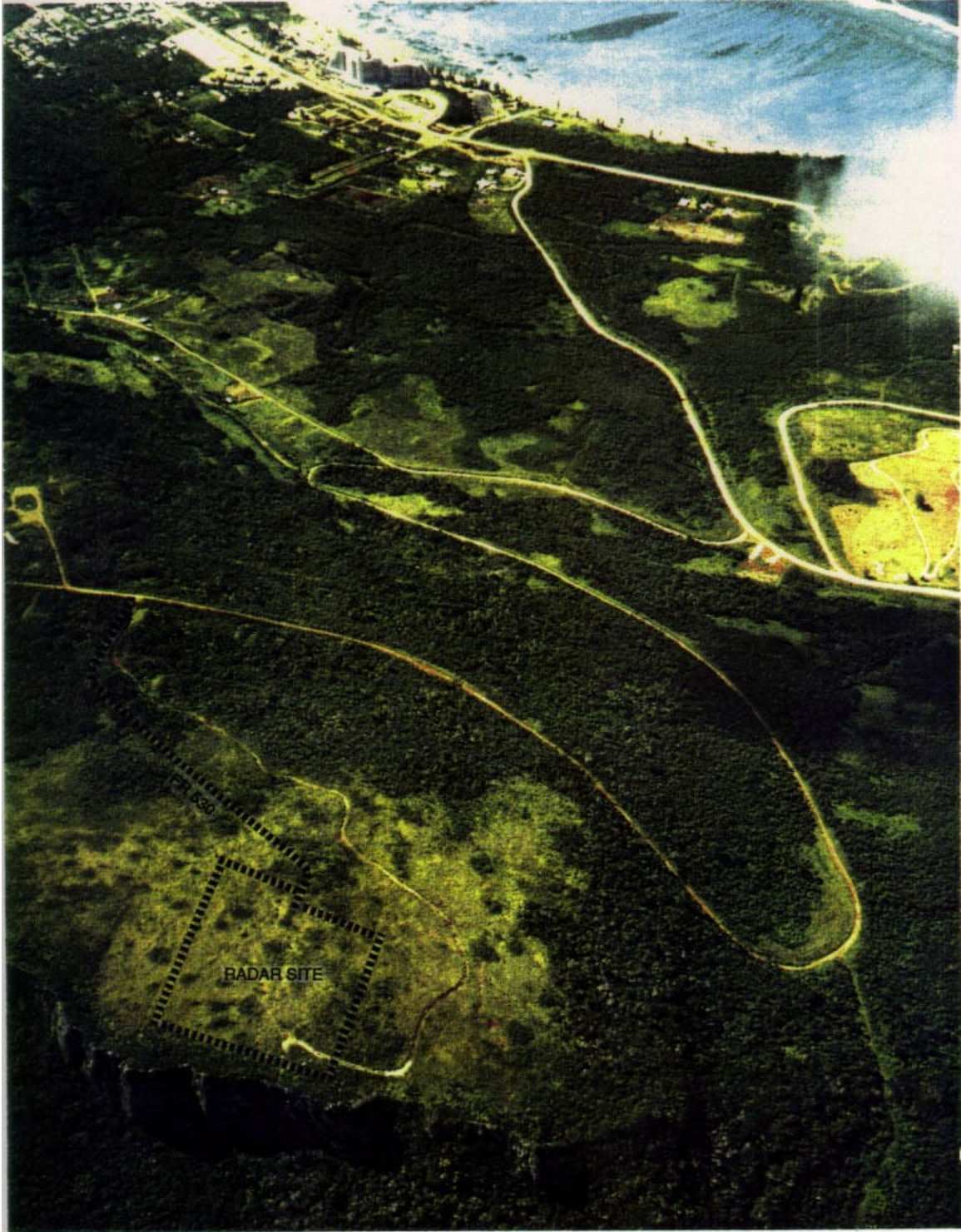






Figure 5.2A

Looking North at Intersection of Beach and Matuis Roads  
Pre-construction





## 5.7 NOISE

Projected effects addressed in the EA were construction noise and, during operations, facility noise and noise from hauling of equipment and supplies through nearby towns. USAF-proposed mitigation measures included restrictions on hours of operations and mufflers on construction equipment. These measures were effective during project construction. Projected noise associated with the hauling of equipment and supplies through nearby towns during project construction is not known to have resulted in complaints to local officials.

Operational noise has been mitigated through design, as the diesel engines are located in an enclosed building, and by the requirement that mufflers be installed on engine exhausts. As projected in the EA, project noise will not have adverse impacts on the surrounding environment.

## 5.8 RADIOFREQUENCY EMISSIONS

Radiofrequency (RF) emissions were measured in a test conducted 27 February 1990, in compliance with the requirements of USAF Occupational Safety and Health (AFOSH) Regulation 161-9. The test results are shown in Appendix E.5 (Radiofrequency Emissions Test Results and Correspondence). As shown, the test results indicate that actual power density levels near or inside the radar facility are at or below the acceptable AFOSH worker exposure level of 10 mW/cm<sup>2</sup> for the wave lengths being considered, with measured values ranging from 0.1 mW/cm<sup>2</sup> to 10 mW/cm<sup>2</sup>. The 10 mW/cm<sup>2</sup> measurement occurred on the top of the operations building, the tallest building at the radar facility, while the 0.1 mW/cm<sup>2</sup> measurement was taken at the operator's console. In the EA, estimated near-field emissions were limited to onsite ground level personnel exposure, predicted to be 5.54 mW/cm<sup>2</sup>, a value much greater than the actual 0.1 mW/cm<sup>2</sup> recorded at the operator's console.

Emissions also were measured along the ridge line east of the radar site, with levels from 0.2 to 5.7 mW/cm<sup>2</sup>. The EA did not predict RF emissions at these locations, but did predict emissions for Mt. Petosukara, located about 680 feet south of the radar facility and at virtually the same elevation. The EA estimated that emissions at Mt. Petosukara would be 36.5 mW/cm<sup>2</sup>, much greater than the maximum value of 5.7 mW/cm<sup>2</sup> measured along the ridge line. As shown, therefore, the actual measured RF emissions for the Saipan (PACBAR) Radar are far less than those predicted in the EA.

Although there is the potential for exposure to heating effects of RF emissions from the radar, adherence to AFOSH regulations for permissible exposure levels (PELs) will protect humans and wildlife from such adverse effects.

Although there is the potential for exposure to heating effects of RF emissions from the radar, adherence to USAF Occupational Safety and Health (AFOSH) standards of permissible exposure levels (PELs) will protect humans and wildlife from such adverse effects.

Potential impacts were mitigated as follows, in accordance with measures discussed in the EA. After initial antenna installation, and prior to operations, USAF tested the antenna and installed elevation and azimuth limit switches to assure protection of the public. Also, the specific exposure footprint for the actual operating mode was measured to confirm that PELs are below the public access limit in public access areas (See Appendix E). In the future, if onsite measurements show unexpected conditions, there may be additional actions, including: (1) requirements for personnel to remain in shielded areas during some operations, (2) provision of shielding at the guardhouse or other unprotected area(s), and/or (3) restrictions on certain critical operating angles.

## 5.9 AESTHETICS

It was anticipated that the radar antenna would be visible from five selected scenic viewpoints identified in the EA. One of these was Mount Tagpochau, approximately seven miles south of the project site, and the other four were about two to three miles to the north. Most views of the completed antenna are less noticeable than anticipated, as shown in Appendix D (Photo Documentation D.1-D.6). However, the radar antenna is most visible from Mount Tagpochau. To minimize visibility, the EA stipulated that the radar facility buildings would be painted a color compatible with the forest environment. To further minimize their visibility, buildings will be painted a darker color that blends better with the forest environment the next time they are painted for maintenance reasons.

## 5.10 HAZARDOUS WASTE

The EA anticipated that waste materials generated during project construction would consist of typical construction debris, including used paint, solvent and adhesive containers and, possibly, some pesticide containers. The EA specified that the construction contractor submit for CRM approval a waste generation and disposal plan. Such plan was to specify the proper handling, storage, and disposal of wastes and waste containers generated during project construction. Such a plan was submitted, although the types and quantities of wastes were not reported by the construction contractor. Therefore, their disposal was not documented at that time. However, subsequent to the completion of construction, USAF received a letter and supporting documentation from Black Micro. The letter explained the procedures followed by Black Micro for handling of hazardous materials during project construction, and stated that the company had "never deviated from all the requirements of the Environmental Protection Plan" (see Appendix A.5, Mitigation No. 81, and Appendix B.6, Hazardous Waste Management). Therefore, the mitigation is Complete.

The FEC is preparing a hazardous waste management plan to be utilized during project operations. Further, as part of normal operating procedures, and in accordance with EPA regulations, substances considered hazardous, such as waste oil and solvents, will be stored onsite prior to shipment to an appropriate disposal facility. The nearest receiving facility for Saipan, located in EPA Region IX, is in the state of California. Since the radar facility is more than 200 miles from the nearest disposal facility, up to 6,000 kilograms of waste may be stored there for a period of 270 days prior to shipment. As specified in the EA, an appropriate storage building has been installed. Compliance with EPA procedures will assure that there will be no adverse impacts related to hazardous wastes during the operational life of the radar facility.

## 5.11 SAFETY

As addressed in the EA, potential sources of impacts related to safety included World War II ammunition storage sites and unexploded ordnance. These were known to occur within the project site and larger construction area for both the radar facility and access road. Prior to construction, the project area was searched for unexploded ordnance. Four World War II Japanese 81 mm mortar projectiles were discovered.

During pre-construction orientation, all personnel were instructed in proper procedures in the event that unexploded ordnance was discovered during construction activities. However, there were no discoveries and no incidents. The potential for impact, noted in the EA, was not realized.

## 5.12 SOCIOECONOMICS

### 5.12.1 EMPLOYMENT AND ECONOMICS

As projected in the EA, construction and operation of the radar facility provide a source of employment and economic growth for Saipan. For example, with the exception of the USN Resident Officer in Charge of Construction (ROICC), a local firm was utilized for road construction activities and installation of drainage improvements. The use of local employment was facilitated by the primary contractor, Black Micro, Inc., a CNMI firm with about 20 years of local business experience.

Project operations also will utilize local residents to the extent possible. More than 50 percent of radar facility employees are local residents. The radar facility is operated by FEC, a private contractor which makes serious efforts to utilize local employees. It is a USAF goal that, within five years, 75 percent of the employees will be local residents. This exceeds the 50 percent mitigation requirement.

Further, in an action which may facilitate future employment of local residents in skilled positions at the Saipan (PACBAR) Radar and other facilities, the USAF has contributed \$200,000 worth of electronics equipment and books for the development of additional electronics and technical courses at the junior college.

One effect of the Saipan (PACBAR) Radar facility has been an infusion of money into the local economy. The USAF construction contract had a value in excess of \$5 million. Additional monies expended by USAF include \$80,000 to the soil conservation district, some of which was utilized for local jobs on forest enhancement. Another \$11,000 went to the Commonwealth Forester, \$9,000 for the pre-construction archaeological work, and \$1,500 to the CNMI Department of Fish and Wildlife (DFW). Also, USAF personnel who visit the island for work associated with the radar facility participate in the local economy by utilizing local hotels and businesses. These effects are comparable to those addressed in the EA.

### 5.12.2 LAND USE

Land use impacts projected in the EA involve the direct effect of utilizing about seven acres within the Marpi Commonwealth Forest. This effect is being mitigated through a habitat enhancement program for 1.5 times the area disturbed for the radar facility. Indirect effects are related to increased public use of the area due to improved access and the potential associated disruption to wildlife. These effects will be minimized by restricting employees to the confines of the radar facility, and through the provision of the scenic viewpoint and trailhead to encourage forest visitors to stay within designated areas. Another indirect effect is that there is additional development anticipated in the area as a result of the improved access road. Also, there have been proposals to site other projects within the Marpi Forest area. In general, the indirect impacts to land use may exceed those anticipated during environmental analysis and preparation of the EA.

### 5.12.3 TRANSPORTATION

The EA anticipated that transport of the 60-ton radar pedestal and 65-ton yoke might require improvements to the roads, bridge, and culverts over which the equipment would be hauled. Such evaluation was made prior to the haul, and no work was required. The haul was completed without incident. A portion of Beach Road was improved by CNMI shortly before the radar components were transported to the site. This improvement was not a requirement for transport of the radar. Transportation impacts related to construction correspond to those anticipated in the EA. Impacts during operation are expected to be minor, as projected in the EA.

### 5.13 EFFECT OF THIS STATUS REPORT

This Mitigation Status Report is an indication of the demonstrated interest which the USAF has in completion of mitigation requirements for the Saipan (PACBAR) Radar facility. It provides extensive records of the status of all 150 mitigation measures, as well as documentation procedures which will enable USAF to follow the longer term mitigations. (Ongoing mitigations will be checked monthly, according to procedures specified in the Operations Mitigation Manual.) In addition to its value to the USAF, this report provides a mechanism for the CRM and other interested agencies to track the status of mitigation requirements which may be of special interest to them.



**CHAPTER 6.0**  
**LIST OF ACRONYMS**

## 6.0 LIST OF ACRONYMS

AFOSH	USAF Occupational Safety and Health
BOD	Beneficial Occupancy Date
CEQ	Council on Environmental Quality
CRF	Code of Federal Regulations
CMNI	Commonwealth of the Northern Mariana Islands
CRM	Coastal Resources Management
CZMA	Coastal Zone Management Act
DEQ	Department of Environmental Quality
DFW	CNMI Department of Fish and Wildlife
DOD	Department of Defense
DNR	Department of Natural Resources
EA	Environmental Assessment
ESA	Endangered Species Act
FEC	Federal Electric Corporation
MOU	Memorandum of Understanding
MPLC	Marianas Public Land Corporation
NEPA	National Environmental Protection Act
NMFS	National Marine Fisheries Service
OMM	Operations Mitigation Manual
PACBAR	Pacific Barrier
PEL	Permissible Exposure Level
RF	Radiofrequency
ROICC	Resident Officer in Charge of Construction
USAF	United States Air Force
USFWS	United States Fish and Wildlife Service
USN	United States Navy

## **APPENDIX A**

### **INDIVIDUAL MITIGATION MEASURES, ARRANGED BY SOURCE DOCUMENT**

- A. 1 Coastal Resources Management Permit (#1-17)**
- A.2 U.S. Fish and Wildlife Service, Section 7 Requirements (#18-27)**
- A.3 U.S. Fish and Wildlife Service, Section 7 Consultation (#28-32)**
- A.4 USAF/Department of Natural Resources Memorandum of Understanding (#33-38)**
- A.5 PACBAR III Environmental Assessment (#39-99)**
- A.6 Coastal Zone Management Act, Federal Consistency Determination (#100-150)**

**A.1 Coastal Resources Management Permit (#1-17)**

## MITIGATION NO. 1

Source Document: CRM PERMIT

Page Number: 2

Project Phase: Other

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition A: All work shall be conducted and completed in a manner consistent with the terms of the "Memorandum of Understanding Regarding U.S. Air Force Tracking Station within the Marpi Commonwealth Forest between the Western Space and Missile Center and the CNMI Department of Natural Resources and Marianas Public Land Corporation," the subsequently developed Statement of Work for Environmental Mitigation Measures, the information provided in the Final Environmental Impact Assessment (June 25, 1987), and the Access Road Drainage and Erosion Control Design Narrative (April 1987) and supporting design drawings (May 1987). To the extent that the forest access mitigation measures to be implemented by the U.S. Air Force may differ slightly between these plans, the stricter mitigation measure will be the one to be implemented and which the Air Force must comply with.

### DISPOSITION

1. MOU work modified by Joint Agreement 2 November 1988. Purchase orders totaling \$80,000 have been signed.
2. Design narrative backcheck in progress. Report will be provided to CRM with as-built flow calculations.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 2

Source Document: CRM PERMIT

Page Number: 2

Project Phase: Operation

Environmental Discipline: Socioeconomics

### MITIGATION REQUIREMENT

Condition B: Within six months of start of construction, representatives of the U.S. Air Force will meet with representatives of the Northern Marianas College to discuss cooperative measures to increase the number of local residents with the minimum background required for technical employment positions at the radar facility. This will include a suggested curriculum of existing courses available at Northern Marianas College and suggested additions to the curriculum. Additional measures suggested by the College will be considered. During site activation, classrooms by the College will be considered (sic.). During site activation, classroom space at the college will be utilized, if available, for technical training of new site personnel. An attempt will be made to employ 75 percent local residents within five years of initial operation. Within one year of IOC, the Air Force will ensure that at least 50 percent of the employees at the site are local residents.

### DISPOSITION

1. U.S. Air Force donated over \$200,000 worth of electronics equipment and books to the college.
2. Electronics curriculum was created.
3. More than 50% of employees are local residents as of June 1990.
4. FEC Confirmed.
5. Documentation: Letters.
6. Reference: Appendix C.7.
7. Reference Mitigation Nos. 96, 107, 138.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 3

Source Document: CRM PERMIT

Page Number: 2

Project Phase: Operation

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

Condition C: The U.S. Air Force shall be the agency responsible for maintenance of the erosion control structures and the road used exclusively by the Air Force and its contractor(s). This consists of the new section of road from the Marpi road to the radar station.

### DISPOSITION

1. As agreed upon.
2. FEC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 4

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

Condition D: Any road construction to be undertaken during the rainy season (July-December) must be controlled to minimize potential damage. Enforcement of this condition will be in accordance with CRM Rules and Regulations, Section 14 A-G.

### DISPOSITION

1. Erosion control matting and palm fronds were used on an as needed basis.
2. Ref. Sec. 1560 of specifications - erosion and sedimentation control measures.
3. Reference:
  - Appendix B.1, Sections 2.2.3, 2.2.4.2, 2.2.4.4.
  - Appendix B.2, Sections 2.3.3, 2.3.4.1, 2.3.4.2, 2.3.4.4.
4. Reference Mitigation Nos. 41, 48, 49, 62, 105, 113, 114, 117.

### COMPLIANCE

In compliance.

### STATUS

Complete.





## MITIGATION NO. 5

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Construction

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition E: Three complete copies of the 100 percent design specifications will be provided to CRM. An operating plan covering emergency evacuation, safety, maintenance of roads and erosion control structures under Air Force control, hazardous waste management, etc. will be delivered to CRMO prior to initial operations.

### DISPOSITION

1. Copies were provided.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 6

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Condition F: The U.S. Air Force shall be responsible for the off-island transport and disposal of any hazardous material to a permitted hazardous waste disposal facility.

### DISPOSITION

1. Statement of work for hazardous waste transportation contract being developed.
2. FEC confirmed.
3. Reference Mitigation Nos. 45, 81-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 7

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Operation

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Condition G: In the interest of providing additional wildfire protection for the northern end of Saipan, the radar facility operator must maintain 24-hour FM radio communications with the Saipan Fire Division, and shall report any and all wildfires observed from the radar facility.

### MODIFICATION

Communication will be by telephone, as radio frequency is overcrowded (see Appendix E.4).

### DISPOSITION

1. CRM permit has been amended, per above MODIFICATION.
2. Communication will be by telephone.
3. Documentation: Letters
4. Reference: Appendix C.3.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 8

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Operation

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

Condition H: In the interest of providing additional wildlife protection for the endangered species of the Commonwealth, the radar facility operator shall record and report to the Division of Fish and Wildlife any observed instances of poaching or illegal gathering of threatened or endangered species, including deer, fruit bat, coconut crab, and the Marianas megapode.

### DISPOSITION

1. This requirement is in the preliminary guard operating procedures and will be included in the final operating procedures.
2. For any questions on this matter, see the site supervisor.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 9

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Condition I: In accordance with the supporting information provided in the Environmental Impact (sic.) Assessment, the aboveground diesel fuel tank will be surrounded by a concrete berm of sufficient size to contain the entire contents of the tank in the event of a spill.

DISPOSITION (same as Mitigation Nos. 101, 116)

1. Tank volumes checked.
2. Containment area will hold 2.35 times the volume of both tanks.
3. Four-inch observation pipe is present in waste oil tank.
4. Joint sealing of concrete to be completed in May 1989.
5. ROICC confirmed.
6. Field measure and calculate volume.
7. Reference:
  - Appendix C.8, PACBAR Field Notes, Tank Volume Calculation.
  - Appendix C.8, PACBAR Field Notes, Volume Calculations.
  - Appendix C.8, PACBAR Field Notes.
  - Appendix D.23.
8. Reference Mitigation Nos. 43, 47.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 10

Source Document: CRM PERMIT

Page Number: 3

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Condition J: The U.S. Air Force shall provide CRMO with the results of all tests taken to determine the level of radiofrequency emissions. Power density levels will not exceed personnel or public exposure levels (PELs) at areas of human access or wildlife habitat.

### DISPOSITION

1. Test was performed 27 February 1990.
2. Report was provided to CRM on 6 June 1990.
3. Reference Mitigations 53, 54, 55, 89, 100, 136.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

MITIGATION NO. 11

Source Document: CRM PERMIT

Page Number: 3, 4

Project Phase: Other

Environmental Discipline: Vegetation

MITIGATION REQUIREMENT

Condition K: At the end of the one-year planting project for Mitigation for Intrusion into the Marpi Commonwealth Forest (see memo entitled "PACBAR Environmental Mitigation Measures") and after any necessary replanting efforts, the Air Force shall commence and be responsible for a further one-year maintenance effort as follows. Each of the 68 individual plots located in the Marpi, Naftan, Bird Island, and Kagman Wildlife Areas shall be inspected on a monthly basis, and any vines or weedy undergrowth in the immediate vicinity of (within 1 meter) and which might inhibit growth of the planted trees shall be removed using hand tools. Estimated costs for this additional one-year plant maintenance effort would be as follows:

Labor - 70 manhours/month x 12 months @ \$3.67/hour	\$3,082
Transportation - Rental fees for heavy duty truck @ \$75/day for 36 days	2,700
Gasoline - 150 gallons @ \$1.07/gallon	160
Contingency fees - (secretarial, administrative) - 15%	891
Profit allowance - 15%	<u>891</u>
TOTAL	\$7,724

DISPOSITION

1. This mitigation has been expanded and modified, per 2 November 1988 Memorandum of Understanding, which establishes \$80,000 for this work, including four years of maintenance and work to be done by the Soil and Water Conservation District.
2. \$40,000 already sent to CNMI. Invoices dated 8 May 1989, 12 December 1988, and 15 March 1990 (See Appendix C.1).
3. Reference Mitigation Nos. 24, 27, 36, 65, 135.

COMPLIANCE

In compliance.

STATUS

In progress.



## MITIGATION NO. 12

Source Document: CRM PERMIT

Page Number: 4

Project Phase: Construction

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition L: The applicant is responsible for ensuring that all contractors, subcontractors, and other persons carrying out any work related to this project shall be informed of all permit conditions prior to commencing any construction activities.

### DISPOSITION

1. Applicable permit conditions were included in the specifications.
2. ROICC confirmed.
3. Reference:
  - Appendix B.1, Section 1.3.3
  - Appendix B.2, Section 1.3.4, 1.3.5, 2.1.
  - Appendix B.3, Pages 17-21.
4. Reference Mitigation Nos. 26, 69, 70, 71.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 13

Source Document: CRM PERMIT

Page Number: 4

Project Phase: Construction

Environmental Discipline: Transportation

### MITIGATION REQUIREMENT

Condition M: Should there be a need to strengthen the existing bridge and culvert road crossings along the haul route from Tanapag Harbor to the project site in order to transport radar antenna components, the Air Force shall be responsible for undertaking this work and for repairs of any damage incurred by the transport of such components.

DISPOSITION (Same as Mitigation No. 108)

1. Work done by ITT/FEC in cooperation with CUC, DPS, DPW, Cable TV. Transport done by Sheedy Drayage, of San Francisco, California using a 48-wheel transport vehicle.
2. No damage to roads.
3. ROICC confirmed.
4. Reference: Appendix C.5, Notification of Transport.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 14

Source Document: CRM PERMIT

Page Number: 4

Project Phase: Operation

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition N: The CRM Administrator or his designee shall have the right to make reasonable inspections of the out-of-doors portions of a permitted project site at any reasonable time in order to assess compliance with the CRM Permit and its conditions.

### DISPOSITION

1. CRM was notified on 11 April 1989 of the procedures to gain access.
2. The procedure is to call the site supervisor. The site supervisor will put the CRM representative on the access list. When the CRM representative arrives at the guardhouse, he or she will be escorted by the site supervisor or his representative.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 15

Source Document: CRM PERMIT

Page Number: 5

Project Phase: Operation

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition O: The CRM Permit holder, whether it be the applicant, a successor in interest, or a real party in interest, shall be required to notify the CRM Administrator in writing if he/she has knowledge that any information in the CRM Permit application was untrue at the time of its submission or if he/she has knowledge of any unforeseen adverse environmental impacts of the permitted project. A CRM permit holder shall further have the duty to inform any successor in interest of the permit granted and conditions attached thereto, if any; and the successor in interest shall, within five (5) days thereafter, advise the CRM Office of his/her interest in writing.

### DISPOSITION

1. The CRM permit is part of the site orientation.
2. CRM will be advised of changes in advance, and the successors will inform CRM in writing within five days of a change.
3. FEC confirmed.
4. Reference: Appendix C.10.
5. Reference Mitigation No. 16.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 16

Source Document: CRM PERMIT

Page Number: 5

Project Phase: Other

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition P: The CRM Permit is valid only if the permitted project is otherwise lawful and in compliance with other necessary governmental permits.

### DISPOSITION

1. All other permits are completed.
2. Reference: Appendix C.10.
3. Reference Mitigation No. 15.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 17

Source Document: CRM PERMIT

Page Number: 5

Project Phase: Operation

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

Condition Q: Permitted physical development of the project site subject to a CRM Permit shall begin within one (1) year of the date of the issuance of the CRM Permit and be completed within three (3) years, as indicated in the application. If the project is not completed within three (3) years, this permit will be reviewed by CRM Agency Officials who will do one of the following: (1) extend or amend the permit or (2) terminate the permit. Conditions attached to the permit shall be of perpetual validity unless action is taken to amend, suspend, revoke or otherwise modify the CRM Permit.

### DISPOSITION

1. When necessary, the U.S. Air Force shall take action to amend the permit.
2. The facility was built within the time lines required.

### COMPLIANCE

In compliance.

### STATUS

Complete.

**A.2 U.S. Fish and Wildlife Service, Section 7 Requirements (#18-27)**

## MITIGATION NO. 18

Source Document: USFWS, Section 7

Page Number: 5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

No disturbance is planned to the limestone forest. Further, the construction contractor will be required to contact the Commonwealth Forester to allow for site inspection during any forest clearing operations.

### DISPOSITION

1. Boresight tower was deleted, and the tower access road will be blocked by rocks placed past the second trail marker as requested by CNMI Forester, Renee Thakali.
2. Specifications call for contractor to contact Forester seven days prior to vegetation removal.
3. Reference: Appendix B.3, Page 9, Protection of Land Areas.
4. Reference Mitigation Nos. 19, 58, 109, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 19

Source Document: USFWS, Section 7

Page Number: 5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

In forest areas, an absolute minimum amount of vegetation will be cleared.

DISPOSITION (Same as Mitigation Nos. 23, 24, 64, 109)

1. Refer to Spec. Sec. 1560. Contractor was required to minimize clearing.
2. No variation from spec.
3. Final inspection indicates that disturbance was minimal.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing Specification, Part 2 - Execution, Section 2.1.
6. Reference Mitigation Nos. 58, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 20

Source Document: USFWS, Section 7

Page Number: 5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Vegetation along cliff bases will not be removed.

### DISPOSITION

1. Vegetation was not removed beyond limits of construction for the road or beyond the clear zone at the radar site as shown on the construction drawing (Sheets C-26 and -27).
2. Rock excavation was required to construct the ditch from sta. 89+00 to 84+00 (Ref. x-sec Sheet C-45).
3. ROICC confirmed.
4. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing Specification, Part 2 - Execution, Section 2.1.
5. Reference Mitigation No. 58.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 21

Source Document: USFWS, Section 7

Page Number: 5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

If any damage should occur to project areas not approved for construction clearing and grubbing, the contractor will be responsible for replanting these areas with Naria or *Pterocarpus indicus* to restore any damaged vegetation.

DISPOSITION Same as Mitigation Nos. 59, 60, 131).

1. Hulled Bermuda grass was used.
2. No trees were required to be planted.
3. ROICC confirmed.
4. Reference: Appendix B.2, Spec. Sec. 1560, Part 2, Paragraphs 2.2.1, 2.2.1.2.
5. Reference Mitigation Nos. 61, 130, 132.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 22

Source Document: USFWS, Section 7

Page Number: 6

Project Phase: Construction

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

Construction contractors will be required to insure that any equipment or supplies delivered to Saipan are free of any introduced organisms such as brown tree snakes. The contractor will provide a plan stating all methods used to accomplish this task including but not limited to quarantine activities and posting signs.

### DISPOSITION (Same as Nos. 29, 30, 37, 63)

1. Quarantine officer was assigned by Black Micro, Inc. for this project.
2. No signs placed in Guam or on cargo vessels.
3. Signs placed at quarry, work, camp, and work site (see photo, Mitigation 26).
4. ROICC confirmed.
5. Reference:
  - Appendix B.2, Sections 1.3.2, 2.2.1.4, 2.2.3.
  - Appendix B.3, Protection of Wildlife Resources, Snake Control.
6. Reference Mitigation Nos. 26, 31, 32.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 23

Source Document: USFWS, Section 7

Page Number: 6

Project Phase: Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

Contractor work limits and procedures will be specified to avoid disturbance to habitat of the Micronesian megapode and other species of wildlife.

DISPOSITION (Same as Mitigation Nos. 19, 64, 109)

1. No variation from spec.
2. Work meets requirement of mitigation.
3. ROICC confirmed.
4. Reference:
  - Spec. Sec. 1560.
  - Appendix B.1, Section 2.1.1.1.
5. Reference Mitigation Nos. 25, 58, 68, 72, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 24

Source Document: USFWS, Section 7

Page Number: 6

Project Phase: Other

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

Establishment of a habitat enhancement area is being negotiated between the Air Force and the Commonwealth's Division of Fish and Wildlife which will be located away from the project site to assist in diverting wildlife from the site and provide replacement habitat for displaced wildlife. This area may be accomplished by planting fruit trees in a Division-approved area away from the project site.

### DISPOSITION (Same as Mitigation No. 36, 65)

1. November 2, 1988 MOU establishes \$80,000 to perform this work.
2. \$40,000 already sent to CNMI. Invoices dated 8 May 1989, 12 December 1988, and 15 March 1990 (See Appendix C.1).
3. Reference Mitigation Nos. 11, 27, 135.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 25

Source Document: USFWS, Section 7

Page Number: 9

Project Phase: Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

That a qualified wildlife biologist be included in the roadway right-of-way survey team to insure that any megapode nests which may be in the vicinity of project activity be avoided.

DISPOSITION (Same as Mitigation No. 68)

1. Done at preconstruction conference by P.J. Mock, 22 October 1987.
2. A report of that investigation was prepared and provided to CNMI Fish and Wildlife (PACBAR III Radar Station Preconstruction Megapode Survey Report, November 1987).
3. Reference Mitigation No. 64, 69-71, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 26

Source Document: USFWS, Section 7

Page Number: 9

Project Phase: Operation

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

That both construction and PACBAR III facility operations personnel be advised of the critical nature of endangered species, the role of the Marpi Forest in the recovery of the three species of birds found there, and the possible impact of their actions on the welfare of the birds. Education, through such means as a poster at the entrance of the facility, for example, might warn of the danger of forest fires, and should state that harassment of any listed species (including their nests) may be in violation of, and punishable under, Federal and Commonwealth statutes. Such a poster could be developed with the assistance of the Commonwealth's Fish and Wildlife Division.

DISPOSITION (Same as Mitigation Nos. 69, 70, 71).

1. Orientation course will require employees to read CRM permit, portions of the Environmental Assessment (FONSI, Preface, Chapters 1.0, 3.0, 5.0), and other, pertinent site information (See Operations Mitigation Manual, Volume I, Appendix D).
2. Three signs about endangered species have been prepared. One will be located at site entrance outside guard shack, a second outside on a building, and a third inside of the operations building.
3. FEC confirmed.
4. Reference:
  - Appendix B.2, Sections 2.2, 2.2.3.
  - Appendix B.3, Page 10.
5. Reference Mitigation Nos. 12, 28, 67, 69-71.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.



## MITIGATION NO. 27

Source Document: USFWS, Section 7

Page Number: 9

Project Phase: Other

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

That the possible creation of a habitat enhancement area, as suggested in the Mitigation Measures section of the Draft EA, be given careful analysis. The suggestion of planting fruit trees, for example, should be followed only if the fruit will provide endangered wildlife food and/or habitat, and not encourage human use of the area. Likewise, a thorough analysis of the impact on endangered species of construction of a trailhead and scenic view parking area should be undertaken prior to such actions.

### DISPOSITION

1. Habitat enhancement requirement is repeat of Mitigation Measure No. 24.
2. Subsequent meetings with forester, CNMI Fish and Wildlife, and U.S. Fish and Wildlife established scope of trailhead and scenic overlook.
3. Reference Mitigation Nos. 11, 24, 36, 65.

### COMPLIANCE

In compliance.

### STATUS

Complete.



**OICC MARIANAS**  
 BUILDING PACIFIC SECURITY

FY87 MCAF PROJECT 12442 **PACBAR III FACILITY**

construction by  
**Black - Micro Corporation**  
 engineering by  
**Smith, Young & Hida Inc.**

<p><b>MEGALOPIDS ARE PROTECTED BY LAW</b></p>	<p><b>BENEFIT</b></p>	<p><b>HAZARDOUS WASTE</b></p>
<p><b>BE AWARE</b></p>	<p><b>UNEMPLOYED ORDNANCE</b></p>	

**Use Proper Eye Protection**

**Use Proper Eye Protection**

**A.3 U.S. Fish and Wildlife Service, Section 7 Consultation (#28-32)**

## MITIGATION NO. 28

Source Document: USFWS, Section 7 Consultation

Page Number: 2

Project Phase: Other

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

We suggest you coordinate the content, layout and construction of public information signs regarding the protected species of the Marpi Forest with the Commonwealth Forester, the biologists of the Division of Fish and Wildlife and, perhaps, Mr. Gordon Joyce of the National Park Service at the American Memorial Park in Garapan.

### DISPOSITION

1. USAF purchase order (15 October 1987) provided to DNR to "produce and erect signs to protect endangered Micronesian megapode and to educate public in accordance with the attached Activity #3 of SOW." \$1,150 was established.
2. ROICC letter of 13 March 1989 indicated that scenic overlook was completed and ready for installation of sign.
3. At meeting in April 1989, DNR and Fish and Wildlife indicated they would complete and install sign within three months.
4. Reference: Appendix C.2, Letter of 13 March 1989.
5. Signs not installed, as of June 1990.
6. Reference Mitigation Nos. 26, 33, 67, 69-71.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 29

Source Document: USFWS, Section 7 Consultation

Page Number: 2

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

The potential for the spread of the brown tree snake from Guam to other islands of the Marianas and the Pacific was stressed at a recent meeting on Guam. There have been incidents of the snake being seen and, luckily, killed on Saipan. Precautions to protect against such entry must be strictly enforced.

### DISPOSITION (Same as Mitigation Nos. 22, 37, 63)

1. Quarantine officer was assigned by Black Micro, Inc. for this project.
2. ROICC confirmed.
3. Reference:
  - Appendix B.2, Sections 1.3.2, 2.2.1.4, 2.2.3.
  - Appendix B.3, Protection of Wildlife Resources, Snake Control
  - Appendix B.4, Implementation Plan to Prevent Importation of Harmful Insects, Rodents, and Especially Brown Tree Snakes.
  - Appendix C.4, Notice of Modification to Snake Control Plan from Lt. Bergstrom, Resident Officer in Charge of Construction, dated 7 March 1988. Department of the Air Force communication dated March 20, 1989.
4. Reference Mitigation Nos. 26, 30-32.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 30

Source Document: USFWS, Section 7 Consultation

Page Number: 2

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

Department of Natural Resources "Let's Keep Our Islands Snake Free!" posters must be prominently posted and protected from the elements: a) at the cargo loading point in Guam, b) on board all cargo carrying vessels, c) at the cargo receiving point on Saipan, and d) at the cargo receiving point at the project site. These posters must be maintained throughout the construction period and at the completed project site as long as cargo from Guam is being received.

### DISPOSITION

1. No signs placed in Guam or on cargo vessels.
2. Signs placed at quarry, camp, and work site (see photo, Mitigation No. 26).
3. Reference:
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.3, Snake Control
  - Appendix B.4, Section 2.2, CNMI Emergency Snake Control Team Protocol (Appendix 4).
4. Reference Mitigation Nos. 22, 29, 31, 32, 37, 63.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 31

Source Document: USFWS, Section 7 Consultation

Page Number: 2

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

A search for stowaway snakes must be accomplished on all boats carrying cargo for the project from Guam during the construction period. This search must be done while at sea.

### DISPOSITION

1. Not done according to wording of the mitigation measure, as such procedures were not allowed by the shipping line.
2. Other, acceptable procedure was coordinated with CNMI Fish and Wildlife.
3. Reference:
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.4, Snake Control Plan, Section 2.2.
  - Appendix C.4, Department of the Air Force Communication dated 28 July 1988.
4. Reference Mitigation Nos. 22, 29, 30, 32, 37, 63.

### COMPLIANCE

In compliance.

### STATUS

Not done as originally planned. Alternative, approved method accomplished. Complete.

## MITIGATION NO. 32

Source Document: USFWS, Section 7 Consultation

Page Number: 2

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

The project manager must designate an official "snake quarantine officer" who must be onsite for the duration of the construction period. He must submit more detailed plans for carrying out of the above provisions to the Division of Fish and Wildlife and the Division of Animal Health and Industry for their approval before construction is initiated.

### DISPOSITION

1. Quarantine officer was assigned by Black Micro, Inc. for this project.
2. Reference: Contractor snake plan Spec. Sec. 1560.
3. Reference:
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.3, Snake Control.
  - Appendix B.4, Sections 1.4, 1.5, 1.6, 2.0, 2.2, 2.3.
4. Reference Mitigation Nos. 22, 29-31.

### COMPLIANCE

In compliance.

### STATUS

Complete.



**A.4 USAF/Department of Natural Resources Memorandum of Understanding (#33-38)**

## MITIGATION NO. 33

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Construction

Environmental Discipline: Aesthetics

### MITIGATION REQUIREMENT

Turnouts. Two turnouts will be included in the project as specified in the Draft Environmental Assessment. As per the request of the U.S. Fish and Wildlife (Honolulu, HI) in their letter of December 4, 1986, (the Air Force will provide one interpretative sign at each turnout. CNMI F&W will provide the text for the signs by February 1, 1987.

DISPOSITION (Same as Mitigation Nos. 73, 76, 121)

1. Reference: sheets C-35, scenic overlook and C-8, trailhead.
2. Parking areas are paved.
3. Trailhead parking moved 10 feet north to save trees - as requested by J. Culbert, CNMI forester.
4. ROICC confirmed.
5. Number of parking stalls:
  - Overlook - 9
  - Trailhead - 9
6. Reference Mitigation No. 98, 106.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 34

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Other

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

2. Abandoned Road to Boresight Tower. The Air Force will facilitate and be responsible for insuring native forest restoration in a portion of the Limestone Forest. Specifically, the unnamed trailhead to the limits of the abandoned excavation. CNMI DNR will provide Statement of Work (SOW) for this task by February 1, 1987. The restoration will involve collection of seeds, use of nursery, site preparation, planting at approximately three-meter intervals, one year of maintenance which shall consist primarily of weeding, and one time replanting if necessary. Forestry anticipates seed collection will begin about October 1987 and planting in July 1988. These actions will be performed or contracted out for performance by DNR and paid for with specified Air Force funding. However, if the burden either physical or financial is too great on either party the Air Force will contract directly and insure performance.

### DISPOSITION (Same as Mitigation No. 66)

1. USAF provided a purchase order on 15 October 1987 for \$9,210. Of that amount, \$7,000 was designated for the reforestation of the abandoned road to the boresight tower (the road is Forest Road 560). A check for the full amount was paid 4 January 1988.
2. About 70 trees were planted along Forest Road 560 by Ben Palacios of Forestry. This was completed in 1987. The July 1988 Forestry Section Monthly Report documents 627 mixed native forest species were planted at the end of FR 560.
3. The Commonwealth Forester maintains the plants by weeding as per the SOW.
4. In April 1989, the Forester requested that the last portion of the access road be blocked to prevent vehicles from destroying planted trees. This task was added to the construction contract and has been completed.
5. Reference Mitigation No. 50.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 35

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

3. Abandoned Road to Radar Site. The Air Force will provide an adequate barrier, if requested, to prevent use of the abandoned road. During road construction the CNMI Forester will assess the need for such a barrier and its form. The Forester desires a natural barrier such as rock, a berm, or trees. The Air Force will not plant any trees, other than the natural barrier, along the length of the said abandoned road.

### DISPOSITION (Same as Mitigation No. 118)

1. As requested by J. Culbert, CNMI Forester, the preliminary road was blocked with a rock berm.
2. The road has not been used since February 1988.
3. The Boresight Tower access road has been blocked at the Limestone Forest end, per Forester request, as shown on the following photograph.
4. Revegetation funds have been provided to Forester, and revegetation is in progress.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 36

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Other

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

4. Mitigation for Intrusion in the Marpi Forest. The Air Force will provide habitat enhancement for 10.5 acres (1.5 x the impacted area). Its location will be designated by CNMI F&W. This will be accomplished in a manner similar in nature to Item 2 (see Mitigation No. 34). The species mix may be different from that of the Limestone Forest. The DNR will provide for this task in the same SOW to be provided on February 1, 1987.

DISPOSITION (Same as Mitigation No. 24, 65)

1. MOU of 2 November 1988 establishes \$80,000 to perform this work.
2. \$40,000 already sent to CNMI, invoices dated 8 May 1989, 12 December 1988, and 15 March 1990.
3. Reference: Appendix C.1, Page 14 of Marianas News, dated 17 March 1989.
4. Reference Mitigation No. 27.

### COMPLIANCE

In compliance.

### STATUS

In progress.



Revegetation and boulders (indicated by arrows in left-center and middle of photo) block access to previous boresight tower access road.



## MITIGATION NO. 37

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

5. Snake Quarantine. The Air Force will adopt approved CNMI F&W inspection procedures for any equipment delivered from Guam. Equipment will be properly quarantined to prevent the introduction of the Brown Tree Snakes into Saipan. Air Force will specify in its construction contract that adherence to CNMI F&W and DNR quarantine procedures is mandatory for all contractors associated with the project.

DISPOSITION (Same as Mitigation Nos. 22, 29, 63).

1. Reference Spec. Sec. 1560.
2. Quarantine officer assigned by Black Micro, Inc. for this project.
3. ROICC confirmed.
4. Signs placed at quarry, camp, and work site (see photo, Mitigation No. 26)
5. Construction surveillance assuring compliance with Snake Prevention Plan is documented in messages and letters from ROICC and Appendix C.4.
6. Reference:
  - Appendix B.1, Part 2 - Execution, Section 2.1.3.
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.3, Snake Control.
  - Appendix B.4, Section 1.4, 1.5, 1.6, 1.8, 2.0, 2.1, 2.2.
7. Reference Mitigation Nos. 30-32.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 38

Source Document: USAF/DNR MOU

Page Number: 1

Project Phase: Other

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

6. Permit Application Complete. The above particulars and other information already provided to the DNR from the Air Force fulfill all data requirements for the DNR portion of the CRM permit process.

### DISPOSITION

1. CRM permit granted.
2. Reference: Appendix C.10.

### COMPLIANCE

In compliance.

### STATUS

Complete.



**A.5 PACBAR III Environmental Assessment (#39-99)**

## MITIGATION NO. 39

Source Document: EA

Page Number: 5-2

Project Phase: Construction

Environmental Discipline: Air Quality

### MITIGATION REQUIREMENT

1. During the site preparation and access road grading, water will be used when required for dust control. This practice typically reduces dust emissions by one-half.

### DISPOSITION (Same as Mitigation No. 142)

1. This was done from March to November, then occasionally, as needed.
2. ROICC confirmed.
3. Reference:
  - Appendix B.1, Section 2.4
  - Appendix B.2, Section 2.5
  - Appendix B.3, Page 15.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 40

Source Document: EA

Page Number: 5-2

Project Phase: Operation

Environmental Discipline: Air Quality

### MITIGATION REQUIREMENT

2. No special mitigation measures for air quality are required during operations (as provided in Section 3.1.2 of EA).

### DISPOSITION

1. None required.
2. Reference Mitigation Nos. 39, 41.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 41

Source Document: EA

Page Number: 5-2

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

1. Soil erosion will be prevented by revegetation of exposed areas, drainage diversion design, and paving the most susceptible portion of the existing road (as provided in Sections 5.2.3 and 5.2.7 of EA).

### DISPOSITION (Same as Mitigation No. 117)

1. Construction completed in compliance with design.
2. Entire road paved.
3. ROICC confirmed.
4. Reference:
  - Appendix C.2, Letter of 15 December 1988; Letter of 13 March 1989.
  - Appendices D.7-D.20.
5. Reference Mitigation Nos. 4, 41, 48, 49, 62, 105, 113, 114, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 42

Source Document: EA

Page Number: 5-2

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

1. A water-based pesticide will be used for soil treatment during construction. Application methods which minimize water quality impacts will be used.

### DISPOSITION (Same as Mitigation Nos. 110, 146)

1. Ref: Spec. Sec. 2250.
2. Material: Dursban TC Termiticide.
3. Mix: 2 gal/98 gal water.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Section 01560, Part 1.2.5.
  - Appendix C.4, Ref. No. 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 43

Source Document: EA

Page Number: 5-2

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

3. The aboveground diesel fuel tanks are located within a concrete containment berm sized to hold the contents of one tank in the event of a leak. Interconnected to the diked area is an oil/water separator tank and associated underground waste oil tank located within a double containment liner, designed in accordance with EPA regulations. The oil/water separator tank is provided to separate any diesel fuel from storm water that collects in the diked area. The diesel oil phase flows to the waste oil tank for storage and periodic pump-out by a vacuum truck for disposal.

### DISPOSITION

1. Check construction.
2. Operational procedures will close valve from containment berm. It will be opened only to release rain water.
3. FEC confirmed.
4. Reference: Appendix C.8, PACBAR Field Notes.
5. Reference Mitigation Nos. 9, 47, 101, 116.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 44

Source Document: EA

Page Number: 5-2

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

4. To provide safe storage of flammable and hazardous materials used in the operation of the facility, an EPA approved hazardous material storage building is provided. The prefabricated modular unit is an all steel unit complete with a containment sump.

### DISPOSITION

1. EPA-approved, prefabricated building is installed.
2. Reference Mitigation No. 102.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 45

Source Document: EA

Page Number: 5-2

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

5. Construction specifications and operating procedures will include a waste material spill plan, which will specify requirements and procedures for containment and cleanup of accidental fuel or chemical spills.

### DISPOSITION

1. Operations portion of this is a repeat of Mitigation No. 88.
  - FEC has a Spill Prevention, Control, and Countermeasure Plan in development.
  - FEC confirmed.
2. Construction portion reference Mitigation Nos. 81 and No. 82.
  - Refer to Spec. Sec. 1560, Environmental Protection Plan submitted by Black Micro, Inc. ROICC confirmed. Appendix B.3.
  - Refer to Contract No. N62766-84-C-0229, PACBAR III facility, Marpi Forest Reserve, Saipan, CNMI.
3. Reference Mitigation Nos. 6, 83-87, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.



## MITIGATION NO. 46

Source Document: EA

Page Number: 5-3

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

6. The sanitary sewer septic tank and leach field will be located, designed, and constructed according to procedures established by Navy specifications to assure protection of ground water. The unit will be designed to allow future expansion in accordance with CNMI requirements.

### DISPOSITION (Same as Mitigation No. 115)

1. Repeat of Mitigation Measure No. 144.
  - Reference Sheet C-19 is according to USN specifications.
  - Above references meet intent of mitigation.
  - ROICC confirmed.
2. The septic tank and leach field system was designed and constructed to USN specifications to be adequate for the facility.
3. Check future expansion capability prior to construction of any expansion.
4. Reference:
  - Appendix B.1, Section 01560, Part 2.3.2.
  - Appendix B.2, Section 01560, Part 2.4.3.
  - Appendix B.3, Pages 12-13.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 47

Source Document: EA

Page Number: 5-3

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

1. Potential contamination by diesel fuel storage or other chemical spills will be prevented using the measures discussed in Section 5.2.2 (of EA).

### DISPOSITION

1. Refers to Mitigation Nos. 42, 43, 44, 45.
  - 42 - Pesticide - complete.
  - 43 - Berm - complete.
  - 44 - EPA Storage Building - in place.
  - 45 - Spill Plan - complete for construction.
2. Reference:
  - Appendix B.1, Sections 1.4, 2.1.2.1, 2.3.4, 2.3.4.1.
  - Appendix C.8, Letter from SSD/DEV dated April 12, 1989.
3. Reference Mitigation Nos. 9, 43, 101, 116.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 48

Source Document: EA

Page Number: 5-3

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

2. The existing Matus Road and storm water drainage system is severely eroded at numerous locations, and erosion will continue to occur unless improvements are made. The primary basis of the improvements is to provide drainage facilities which are technically and economically feasible, and which will control the runoff flows and velocities from frequent heavy rainfalls to minimize the existing erosion and to avoid significant new erosion due to increased road usage. The mitigation features direct flow into: (1) natural, heavily vegetated swales, and (2) new drainage channels which are designed to resist erosion for calculated flow conditions.

### DISPOSITION (Same as Mitigation Nos. 49, 105, 114)

1. Drainage improvements were constructed as designed.
2. ROICC confirmed.
3. Confirmed by field observation.
4. Stilling basin, Ref: SHT C-50.
5. Reference:
  - Appendix C.8.
  - Appendices D.7-D.20.
6. Reference Mitigation Nos. 4, 62, 113, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 49

Source Document: EA

Page Number: 5-3

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

3. A combination of rock- and grass-lined ditches along, with road crossing culverts will be employed to control the flow of storm water runoff and reduce its velocity to control erosion. At Beach Road, an energy dissipator design using large boulders and a stilling basin will be provided to reduce the runoff velocity and reduce significantly the silt, carried over Beach Road, that currently exists. Appendix K of the EA provides supplemental descriptions on the mitigation concepts that were agreed upon with the RM agency.

### DISPOSITION (Same as Mitigation Nos. 48, 105, 114)

1. Drainage improvements were constructed as designed.
2. ROICC confirmed.
3. Confirmed by field observation.
4. Stilling basin, Ref: SHT C-50.
5. Reference:
  - Appendix C.8.
  - Appendices D.7-D.20.
6. Reference Mitigation Nos. 4, 62, 113, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 50

Source Document: EA

Page Number: 5-3

Project Phase: Other

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

4. The areas bulldozed during the initial 1985 site investigations that will not be used for final Access Road alignment will be improved in a manner to be agreed upon with appropriate island and government agencies.

### DISPOSITION

1. Repeat of Mitigation Measure Nos. 34, 66:
  - USAF provided a purchase order on 15 October 1987 for \$9,210. Of that amount, \$7,000 was designated for the reforestation of the abandoned road to boresight tower (Forest Road 560). A check for the full amount was paid 4 January 1988.
  - About 70 trees were planted along Forest Road 560 by Ben Palacios of Forestry. This was completed in 1987. The July 1988 Forestry Section Monthly Report documents 627 mixed native forest species were planted at the end of FR 560.
  - The Commonwealth Forester maintains the plants by weeding as per the SOW.
  - In April 1989, the Forester requested that the last portion of the access road be blocked to prevent vehicles from destroying planted trees. This task was added to the construction contract and will be completed by mid-May.
2. Per request of forester, the entry to the abandoned site access road was blocked. This road (Forest Road 540) will not be used. It was replaced by the new Forest Road 530 which was paved.
3. Per agreement with the forester, revegetation in the area of the limestone forest was accomplished. Also, the end of the access road (Forest Road 560) will be blocked.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 51

Source Document: EA

Page Number: 5-3

Project Phase: Construction

Environmental Discipline: Noise

### MITIGATION REQUIREMENT

1. Construction specifications will require that all equipment include engine exhaust mufflers to the extent required to meet Air Force Regulation 161-35, Occupational Noise Exposure Standards.

### DISPOSITION (Same as Mitigation Nos. 52, 139, 140)

1. Ref. Spec. 01011 (Contract Amendment 2). Specification requires conformance with 29 CFR 1910.95.
2. Exhaust silencers (mufflers), insulation, and vibration dampeners were provided.
3. ROICC confirmed.
4. Mufflers are installed.
5. Reference: Appendix C.8, Letter from SSD/DEV dated 12 April 1989.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 52

Source Document: EA

Page Number: 5-4

Project Phase: Construction

Environmental Discipline: Noise

### MITIGATION REQUIREMENT

2. The diesel generators will be supplied with exhaust silencers, soundproof insulation (specifically, on exhaust piping), and vibration dampeners in order to meet the Air Force occupational noise exposure standard.

### DISPOSITION

1. Reference Measures Nos. 51, 139, 140.
  - Refer. Spec. 01011 (Contract Amendment 2). Specification requires conformance with 29 CFR 1910.95.
  - Exhaust silencers (mufflers), insulation, and vibration dampeners were provided.
  - ROICC confirmed.
2. Mufflers are installed.
3. Check the rest with ROICC.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 53

Source Document: EA

Page Number: 5-4

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

1. As discussed in Section 3.5 (of the EA), if the antenna beam is only operated at or above the horizon, power density levels will not exceed personnel or public exposure levels (PELs) at areas of probable human access or wildlife habitat, although a small area on the northeast side of the top portion of Mt. Petosukara may exceed the criteria. However, the radar will use elevation or azimuth limit switches and stops to prevent accidental exposure to main beam radiation. Therefore, levels will not exceed the unlimited access public exposure limit.

### DISPOSITION

1. Microswitches and software stops were implemented per results of radiofrequency emissions survey.
2. FEC confirmed.
3. Reference Mitigation Nos. 10, 54, 55, 89, 100, 136.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.



## MITIGATION NO. 54

Source Document: EA

Page Number: 5-4

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

2. If it becomes desirable to operate the antenna at angles below the horizon, procedures will be used to assure that the public, facility personnel, or endangered wildlife are not exposed to levels exceeding the PELs. Elevation and azimuth limit switches will be installed to assure protection for the public. Due to the use of these switches, restricted access areas will not be necessary. The project-specific exposure footprint for the actual operating mode after initial antenna installation will be measured to insure that PELs are below the public access limit in public access areas.

### DISPOSITION

1. Antenna will not transmit at angles below the horizon.
2. Repeat of Mitigation No. 53:
  - Microswitches and software stops were implemented per results of radiofrequency emissions survey.
  - FEC confirmed.
3. Repeat of Mitigation No. 55:
  - Based on results of radiofrequency emissions survey, operational procedures may be adjusted.
  - FEC confirmed.
4. Reference Mitigation Nos. 10, 89, 100, 136.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 55

Source Document: EA

Page Number: 5-4

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

3. The height of the antenna, expected near-field radiation configuration, and the possible requirement to restrict low angle operation should keep exposure levels to onsite personnel below the PEL criteria. However, if onsite measurements show unexpected conditions, several minor actions may be required. These could include: requirements for personnel to remain in shielded areas during certain operations, providing shielding at the guardhouse or other unprotected areas, or by restricting certain critical operating angles.

### DISPOSITION

1. Based on results of periodic radiofrequency emissions surveys, operational procedures may be adjusted.
2. FEC confirmed.
3. Reference Mitigation Nos. 10, 53, 54, 89, 100, 136.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 56

Source Document: EA

Page Number: 5-5

Project Phase: Operation

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

1. The major mitigation measure to protect flora and fauna has been the Air Force decision to use alternative means to calibrate the radar antenna. That decision has led to elimination of the Boresight Tower and its Access Road. This mitigation measure has reduced the wildlife habitat disturbance to only about 0.1 acre of forest which is not already adjacent to the existing roadway. This is less than five percent of the area originally planned for disturbance to construct the Boresight Tower. Also, this change has completely eliminated project activities in limestone forest acreage.

### DISPOSITION

1. Alternative to Boresight Tower utilized.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 57

Source Document: EA

Page Number: 5-5

Project Phase: Design/Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

2. Forest areas, which are still adjacent to the project, will be marked on design drawings for use by the construction contractor. These areas will include the Radar Site and a small portion of the new Access Road. Prior to clearing in these areas, the construction contractor will be required to contact the Commonwealth Forester to allow for site inspection during clearing.

### DISPOSITION (Same as Mitigation No. 126)

1. Limits of construction were shown on design drawings.
2. On 29 January 1988, J. Culbert, Commonwealth Forester, inspected limits of construction.
3. On 19 February 1988, parking areas were again inspected.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Section 2.1.
  - Appendix B.2, Section 2.2.1.1.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 58

Source Document: EA

Page Number: 5-5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

3. In forest areas, the absolute minimum amount of vegetation will be cleared. Vegetation alongside the access road will not be removed unless required for road widening. Vegetation along cliff bases will not be removed. The construction area limits are specified on the contract drawings and will be enforced during the construction phase to assure the minimum amount of vegetation is affected.

### DISPOSITION (Same as Mitigation No. 127)

1. Contractor was required to minimize clearing.
2. ROICC confirmed.
3. Final inspection indicates that disturbance was minimal.
4. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
5. Reference Mitigation Nos. 19, 23, 64, 109, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 59

Source Document: EA

Page Number: 5-5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT (Same as Mitigation No. 130)

4. Although not expected, if any damage should occur to project areas not approved for construction clearing and grubbing, the contractor will be responsible for replanting these areas with *Naria* or *Pterocarpus indicus* to restore any damaged vegetation.

### DISPOSITION (Same as Mitigation Nos. 21, 60, 131)

1. Hulled Bermuda grass was used.
2. No trees were required to be planted.
3. ROICC confirmed.
4. Reference: Appendix B.2, Spec. Sec. 1560, Part 2, Paragraphs 2.2.1, 2.2.1.2.
5. Reference Mitigation Nos. 61, 132.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 60

Source Document: EA

Page Number: 5-5

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

5. At least two types of vegetation will be used for replanting activities. These include Common Bermuda grass and fast-growing, local trees such as Narra or *Pterocarpus indicus*. The Bermuda grass will be used in cleared areas that require low-lying vegetation, such as the Radar Site and the 30-foot clear zone. The trees will be planted in areas to be negotiated with appropriate island and government agencies. Planting trees should prevent excessive growth of undesirable weeds and grasses that would require continuous future maintenance.

### DISPOSITION (Same as Mitigation Nos. 21, 59, 131)

1. Hulled Bermuda grass was used.
2. No trees were required to be planted.
3. ROICC confirmed.
4. Reference:
  - Appendix B.2, Spec. Sec. 1560, Part 2, Paragraphs 2.2.1, 2.2.1.1, 2.2.1.2, 2.2.1.3.
  - Appendix C.1.
5. Reference Mitigation No. 61, 132.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 61

Source Document: EA

Page Number: 5-6

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

6. Replanting activities will be scheduled and implemented where possible to correspond with the start of the rainy season, which lasts from late June to early November. Planting during this time will maximize the effectiveness of these activities.

### DISPOSITION (Same as Mitigation No. 132)

1. Construction time frame did not allow specific planting times.
2. The contract requires 95 percent ground cover for acceptance (Spec. Sec. 2485) in order to meet intent of above mitigation.
3. Reference Mitigation Nos. 21, 59, 60, 61, 131.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 62

Source Document: EA

Page Number: 5-6

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

7. In compliance with CNMI earthmoving and erosion control regulations, grading, filling, and clearing operations will be specified to:
  - Preserve, match or blend with the natural contours and undulations of the land;
  - Retain trees and other native vegetation to stabilize slopes, retain moisture, reduce erosion, siltation, and nutrient runoff and preserve the natural scenic beauty;
  - Minimize scars from cuts and fills, and to limit the amount of cuts and fills required;
  - Assure all cleared slopes, cuts, and fills vulnerable to erosion are stabilized; and
  - Assure that sediment or other material deposited in the marine waters or coastline or any other public or private lands do not exceed that which would have been deposited if the land had been left in its natural state.

Also, earthmoving operations will be controlled during and immediately after inclement weather.

### DISPOSITION

1. Reference Spec. Sec. 1560. Same requirements given.
2. Reference:
  - Appendix B.1, Section 2.2.
  - Appendix B.2, Sections 2.2.1, 2.3.4.5.
  - Appendix B.3, Pages 11-12.
3. Reference Mitigation Nos. 4, 41, 48, 49, 62, 113, 114, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 63

Source Document: EA

Page Number: 5-6

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

8. Construction contractors will be required to insure that any equipment or supplies delivered to Saipan are free of any introduced organisms, such as brown tree snakes. The contractor will provide a plan stating all methods used to accomplish this task, including but not limited to quarantine activities and posting signs.

### DISPOSITION (Same as Mitigation Nos. 22, 29, 37)

1. Reference Spec. Sec. 1560.
2. Quarantine officer assigned by Black Micro, Inc. for this project.
3. ROICC confirmed (see Mitigation No. 37).
4. Signs placed at quarry, camp, and work site.
5. See Appendix B.4.
6. Reference:
  - Appendix B.1, Part 1 - General, Section 1.4, Part 2 - Execution, Section 2.1.3.
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.3, Snake Control.
7. Reference Mitigation Nos. 30-32.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 64

Source Document: EA

Page Number: 5-6

Project Phase: Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

9. In addition, contractor work limits and procedures will be specified to avoid disturbance to habitat of the Micronesian megapode and other species of wildlife.

DISPOSITION (Same as Mitigation Nos. 19, 23, 109)

1. Refer to Spec. Sec. 1560.
2. No variation from spec.
3. Work meets requirement of mitigation.
4. ROICC confirmed.
5. Reference Mitigation Nos. 25, 68, 71, 72.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 65

Source Document: EA

Page Number: 5-6,7

Project Phase: Other

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

10. A habitat enhancement area will be located away from the project site to assist in diverting wildlife from the site and provide replacement habitat for displaced wildlife. Mitigation measures involve the clearing of about 10.5 acres of Tangantangan trees within four Commonwealth Wildlife Areas and replanting with a mixture of native forest trees of high wildlife value, as directed by the DNR. These sites will consist of 68 individual plots measuring 25 x 25 meters, located in the following Commonwealth Wildlife Areas on Saipan:

- Marpi Wildlife Area
- Bird Island Wildlife Area
- Kagman Wildlife Area
- Naftan Wildlife Area

These measures comply with the USFWS Section 7 Consultation, which includes the recommendation that the planting of fruit trees for habitat enhancement will occur only if the fruit will provide endangered wildlife with food and/or habitat and not encourage human use of the area.

### DISPOSITION (Same as Mitigation Nos. 24, 36)

1. MOU of 2 November 1988 establishes \$80,000 to perform this work.
2. \$40,000 already sent to CNMI. Invoices dated 8 May 1989, 12 December 1988, and 15 March 1990 (See Appendix C.1).
3. Appendix C.1, Permit Application dated 29 October 1985.
4. Reference Mitigation Nos. 11, 27.

### COMPLIANCE

In compliance.

### STATUS

In progress.



## MITIGATION NO. 66

Source Document: EA

Page Number: 5-7

Project Phase: Other

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

11. An area of approximately two acres of native limestone forest which was cleared to provide road access to the abandoned Boresight Tower location will be restored in a manner determined by the DNR. The area, located between the proposed trailhead and the Boresight Tower site, will be replanted with a mixture of native and naturalized plant species recommended by the DNR.

### DISPOSITION (Same as Mitigation No. 34)

1. A purchase order was provided on 15 October 1987 for \$9,210. Of that amount, \$7,000 was designated for "...reforestation of limestone forest in accordance with activity #1 of attached SOW."
2. The plantings were performed by the Commonwealth Forester, and the full amount was paid by the Air Force with a check dated 4 January 1988.
3. The Commonwealth Forester maintains the plants by weeding as per the SOW.
4. In April 1989, the Forester requested that the last portion of the access road be blocked to prevent vehicles from destroying planted trees. This task has been added to the construction contract and was completed (see Mitigation No. 35).
5. Reference Mitigation No. 50.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 67

Source Document: EA

Page Number: 5-7

Project Phase: Other

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

12. Signs will be posted to protect the endangered Micronesian megapode and to educate the public. These signs are intended to minimize the possibility that increased access and human activity related to the PACBAR III facility would harm the resident population of the Micronesian megapode. There will be two permanent signs, each approximately five feet by three feet in size, to inform the public about the importance and special legal status of the Micronesian megapode and other sensitive species present in the Commonwealth Forest.

### DISPOSITION (Same as Mitigation No. 28)

1. USAF purchase order (15 October 1987) provided to DNR to "produce and erect signs to protect endangered micronesia megapode and to educate public in accordance with the attached Activity #3 of SOW." \$1,150 was established.
2. ROICC letter of 13 March 1989 indicated that scenic overlook was completed and ready for installation of sign.
3. Meeting in April 1989 with DNR and Fish and Wildlife indicate they would complete and install sign within three months.
4. Reference: Appendix C.2, Letter of March 13, 1989.
5. Signs not installed as of June 1990.
6. Reference Mitigation Nos. 26, 28, 69-71.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 68

Source Document: EA

Page Number: 5-7

Project Phase: Design/Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

That a qualified wildlife biologist be included in the roadway right-of-way survey team to insure that any megapode nests which may be in the vicinity of project activity be avoided.

DISPOSITION (Same as Mitigation No. 25)

1. Done at preconstruction conference by P.J. Mock, 22 October 1987.
2. Report of that investigation provided to CNMI Fish and Wildlife.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 69

Source Document: EA

Page Number: 5-7

Project Phase: Operation

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

That both construction and operations personnel be advised of the critical nature of endangered species, the role of the Marpi Forest in the recovery of the three referenced species of birds, and the possible impact of construction and operations activities on the welfare of the birds.

DISPOSITION (Same as Mitigation Nos. 26, 70, 71)

1. Orientation course will require employees to read CRM permit, portions of the Environmental Assessment (FONSI, Preface, Chapters 1.0, 3.0, 5.0), and other pertinent site information (See Operations Mitigation Manual, Volume I, Appendix D).
2. Three signs about endangered species have been prepared. One is located at site entrance outside guard shack, a second on the generator building, and a third inside of the operations building.
3. FEC confirmed.
4. Reference:
  - Appendix B.2, Sections 2.2, 2.2.3.
  - Appendix B.3, Page 10.
5. Reference Mitigation Nos. 12, 28, 67, 69.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 70

Source Document: EA

Page Number: 5-8

Project Phase: Operation

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

Development of appropriate educational materials for construction and operations personnel, including a poster at the entrance of the PACBAR III facility. The poster could be developed with the assistance of the Commonwealth's Fish and Wildlife Division. It should warn of the danger of forest fires and should state that harassment of any listed species (including nests) may be in violation of, and punishable under, Federal and Commonwealth statutes.

DISPOSITION (Same as Mitigation Nos. 26, 69, 70, 71)

1. Orientation course will require employees to read CRM permit, portions of the Environmental Assessment (FONSI, Preface, Chapters 1.0, 3.0, 5.0), and other pertinent site information (see Operations Mitigation Manual, Volume I, Appendix D).
2. Three signs about endangered species have been prepared. One is located at site entrance outside guard shack, a second on the generator building, and a third inside the operations building.
3. FEC confirmed.
4. Reference:
  - Appendix B.2, Sections 2.2, 2.2.3.
  - Appendix B.3, Page 10.
5. Reference Mitigation Nos. 12, 28, 67.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 71

Source Document: EA

Page Number: 5-8

Project Phase: Operation

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

Construction and operations personnel should be advised that harassment of any of the three referenced species (including nests) is prohibited under Section 9 of the Endangered Species Act of 1973.

DISPOSITION (Same as Mitigation Nos. 69, 70)

1. Orientation course will require employees to read CRM permit, portions of the Environmental Assessment (FONSI, Preface, Chapters 1.0, 3.0, 5.0), and other pertinent site information (see Operations Mitigation Manual, Volume I, Appendix D).
2. Three signs about endangered species have been prepared. One is located at site entrance outside guard shack, a second on the generator building, and a third inside the operations building.
3. FEC confirmed.
4. Reference:
  - Appendix B.2, Sections 2.2, 2.2.3.
  - Appendix B.3, Page 10.
5. Reference Mitigation Nos. 12, 28, 67.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

AIR FORCE POLICY NOTICE

Three **ENDANGERED**

Bird Species live in the Marpi Commonwealth Forest  
that surrounds this Radar Station.



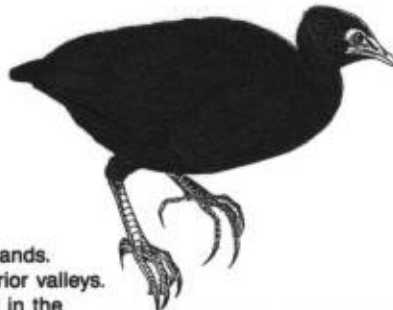
**VANIKORO  
SWIFTLET**  
**YAYAGUAK**

Found only in the Mariana Islands.  
May be seen in Saipan's interior valleys.  
Sightings have been reported in the  
Radar Station area.



**NIGHTINGALE  
REED-WARBLER**  
**GA' GA' KARISU**

Found only in Micronesia. Several  
hundred may be present in the  
Radar Station area.



**MICRONESIAN  
MEGAPODE**  
**SASNGAT**

A ground-dwelling bird found only in  
Micronesia and Palau. Several have been  
sighted in the vicinity of this Radar Station.

It is against Federal Laws and the Laws of the Commonwealth of Northern Mariana Islands to disturb these Endangered Birds or their nests. Violations are punishable by up to one year in prison and up to a \$100,000 fine (16 U.S.C. 1531 *et seq.*, 1540).

Fruit Bats, *Fanihi*, are a Protected Species (Candidate Endangered Species). They are limited to a small number in the Marianas Islands and may be present in the Radar Station area.

Please Help Protect these Endangered Birds and their Forest:

- Do Not Disturb or Harm them
- Prevent and Report Fires
- Keep Pets Out of the Area



## MITIGATION NO. 72

Source Document: EA

Page Number: 5-8

Project Phase: Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

If a megapode nest is discovered, all project-related activities in the area of the nest shall cease, pending reinitiation of the Section 7 Consultation.

DISPOSITION (Same as Mitigation No. 134)

1. Reference Spec. Sec. 1560.
2. No megapodes or nests were encountered.
3. Awareness signs were posted at work camp, quarry, and office.
4. Information card given to each worker.
5. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 73

Source Document: EA

Page Number: 5-8

Project Phase: Other

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

That there be a thorough analysis of the impact on endangered species of construction of a trailhead and scenic view parking area prior to such undertaking.

### DISPOSITION (Same as Mitigation Nos. 33, 76, 121)

1. Reference: sheets C-35, scenic overlook, and C-8, trailhead.
2. Parking areas are paved.
3. Trail head parking moved 10 feet north to save trees - as requested by J. Culbert, CNMI Forester.
4. ROICC confirmed.
5. Number of parking stalls:
  - Overlook - 9
  - Trailhead - 9
6. Reference:
  - Appendix C.2
  - Appendix C.8, Letter of 26 February 1988; Letter of 13 March 1989.
  - Appendix D.25
  - Appendix D.26

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 74

Source Document: EA

Page Number: 5-8

Project Phase: Design

Environmental Discipline: Aesthetics

### MITIGATION REQUIREMENT

2. The radar antenna will be set back from the cliff to reduce visual impact. At night, aircraft warning lights on the antenna will be on.

### DISPOSITION

1. Radar base was placed approximately 50 feet from ridge top.
2. Warning lights not in place at this date.
3. Reference:
  - Appendices D.1-D.6.
  - Appendix D.23.
  - Appendix D.24.
  - Appendix D.28.
  - Appendix D.29.
4. Reference Mitigation Nos. 75, 120.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 75

Source Document: EA

Page Number: 5-8

Project Phase: Design/Construction

Environmental Discipline: Aesthetics

### MITIGATION REQUIREMENT

3. The Radar Site buildings will be painted a color compatible with the forest background.

### DISPOSITION

1. Ref: Paint chips.
2. Gutters, down spouts, and doors: avocado.
3. Exterior walls: Light brown.
4. Ref: SHT A-14 Ext. Color Schedule.
5. For future plans, see Mitigation No. 120.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 76

Source Document: EA

Page Number: 5-8

Project Phase: Construction

Environmental Discipline: Aesthetics and Forestry

### MITIGATION REQUIREMENT

4. One scenic viewpoint and one trailhead have been located in coordination with J. Culbert, DNR Commonwealth Forester.

### DISPOSITION (Same as Mitigation Nos. 33, 106, 121)

1. Reference: sheets C-35, scenic overlook and C-8, trail head.
2. Parking areas are paved.
3. Trailhead parking moved 10 feet north to save trees - as requested by J. Culbert, CNMI Forester.
4. ROICC confirmed.
5. Number of parking stalls:
  - Overlook - 9
  - Trailhead - 9
6. Reference:
  - Appendix C.2.
  - Appendix D.25.
  - Appendix D.26.
  - Appendix C.8, Letter of 26 February 1988; Letter of 13 March 1989.
7. Reference Mitigation Nos. 73, 98.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 77

Source Document: EA

Page Number: 5-8

Project Phase: Construction

Environmental Discipline: Archaeology and History

### MITIGATION REQUIREMENT

1. Human skeletal remains found in the proposed project area have been removed from the site by the Japanese consulate.

### DISPOSITION

1. This was done - no documentation at ROICC office.
2. Documentation is in EA, Archaeological Appendix. This states that remains have been removed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 78

Source Document: EA

Page Number: 5-8

Project Phase: Construction

Environmental Discipline: Archaeology and History

### MITIGATION REQUIREMENT

2. Four 81-mm Japanese mortar projectiles identified during the site archaeological survey will be removed prior to project construction, in coordination with the Civil Defense Office on Saipan. Additional assistance from the Explosive Ordnance Unit on Guam may be used.

DISPOSITION (Same as Mitigation Nos. 90, 91, 92, 95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 79

Source Document: EA

Page Number: 5-9

Project Phase: Operation

Environmental Discipline: Archaeology and History

### MITIGATION REQUIREMENT

3. As recommended by the authors of the archaeological survey, the four ordnance storage buildings will be left undisturbed during project construction and operation.

### DISPOSITION

1. There was no disturbance during project construction.
2. A new retaining wall was built to support one of the buildings.
3. This will be included in the orientation briefings for new employees.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 80

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Archaeology and History

### MITIGATION REQUIREMENT

4. The contractor's construction schedule will be submitted to the Historic Preservation Office prior to construction activities so that possible arrangements for onsite monitoring by an archaeologist may be coordinated.

### DISPOSITION

1. Not required in construction contract.
2. Field observations indicate that the ordnance bunkers were not damaged.
3. The erosion barrier and footing at bunker STA. 93+00 was approved by Historic Preservation Office, Mr. Fleming, 14 June 1988.
4. Reference:
  - Appendix B.2, Section 2.2.4, Historical and Archaeological Resources.
  - Appendix B.3, Protection of Historical and Archaeological Resources.
  - Appendix B.3, Page 11, Contractor's Environmental Protection Plan.
  - Appendix C.8, Communication from the Resident Officer in Charge of Construction, 14 June 1988 and Communication from Mr. Pangelinan CNMI Historic Preservation Officer, 16 June 1988.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 81

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

1. In accordance with the Department of Defense general requirements for the construction of this facility, the Contractor will be required to submit a hazardous waste management plan prior to construction.

### DISPOSITION

1. Refer to Spec. Sec. 1560, Environmental Protection Plan submitted by Black Micro, Inc. Appendix B.3.
2. ROICC confirmed.
3. Refer to Contract No. N62766-84-C-0229, PACBAR III facility, Marpi Forest Reserve, Saipan, CNMI.
3. Reference Mitigation Nos. 6, 45, 82-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 82

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

An inventory of materials to be used in the construction of the facility that are hazardous to humans and/or the environment shall be specified. Criteria for this classification will include toxicity, corrosivity, reactivity, and ignitability. Materials containing compounds listed in EPA 40 CFR Part 261, Subpart D, as hazardous waste, must also be identified.

### DISPOSITION

1. Inventory items, pages 8 and 9 of Environmental Protection Plan. Appendix B.3.
  - Acids and bases
  - Battery bodies
  - Solvents
  - Pesticides
  - Kerosene
  - Paint remover
  - Brush cleaners
  - Epoxy resins
  - Adhesives
2. Reference Mitigation Nos. 6, 45, 81, 83-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 83

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

The plan will outline the proper transport and storage of new hazardous materials at the project site. This will consider a designated area with protection from the elements, properly ventilated and secured to prevent entry by unauthorized personnel. Compatibility of the various wastes will also be addressed.

### DISPOSITION

1. Ref: Pages 8 and 9 of Environmental Protection Plan. Appendix B.3.
  - Stored in labeled non-corrosive containers.
  - Notify DEQ of quantity of waste and ship to Guam.
2. No documentation was submitted by the contractor to ROICC at the time of construction.
3. Documentation of materials used and handling methods submitted to ROICC on 14 November 1989.
4. Reference: Mitigation Nos. 8, 45, 81, 82, 84-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Not done as originally planned. Alternative method accomplished. Complete.



## MITIGATION NO. 84

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Construction personnel will be instructed on the proper methods for disposal of used containers of materials that classify as hazardous waste. This will include drums or cans containing relatively small amounts of materials such as pesticides, paints, adhesives, or paint solvents.

### DISPOSITION

1. Contractor discussed safety and environmental issues at weekly construction staff meetings.
2. ROICC received meeting minutes.
3. Reference Mitigation Nos. 6, 45, 81-83, 85-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 85

Source Document: EA

Page Number: 5-9

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

There will be a mandatory requirement for waste materials to be stored in sealed containers.

### DISPOSITION

1. EPA-approved storage building and storage/transport drums are in use.
2. Drums must be appropriately labeled. Labels provided as of June 1990.
3. FEC confirmed.
4. Reference Mitigation Nos. 6, 45, 81-84, 86-88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 86

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Disposal methods will include utilizing an approved bulk storage accumulation area for the interim storage of waste materials. Area will be diked, covered, and adequately secured to a foundation to prevent overturning in the event of high wind conditions. Proper posting of the area and security will be included to prevent entry by unauthorized personnel.

### DISPOSITION

1. No bulk storage at construction site. Contractor was required to dispose of waste daily.
2. Confirmed by ROICC inspection.
3. Reference Mitigation Nos. 6, 45, 81-85, 87, 88, 137, 149

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 87

Source Document: EA

Page Number: 5-9

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Hazardous wastes will not be stored at the site for more than 90 days, in accordance with EPA regulations. The waste materials will be properly manifested by the Contractor and transported by a qualified hazardous waste hauler for proper disposal to an appropriate off-island hazardous waste landfill or treatment facility.

### DISPOSITION

1. No materials stored at site.
2. Documentation of materials used and handling methods submitted to ROICC on 14 November 1989.
3. NOTE: New hazardous waste rules for small generators over 200 miles from a licensed disposal facility may accumulate up to 6,000 kg of wastes for up to 270 days. DEQ agrees with this approach.
4. Reference Mitigation Nos. 6, 45, 81-86, 88, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 88

Source Document: EA

Page Number: 5-10

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

2. Management of hazardous waste materials during operation of the radar station will be in accordance with an approved plan. The plan will include conformance to 40 CFR Part 261 regarding the storage and disposal of hazardous waste materials. Interim storage of the materials will be in a specially designed storage unit complete with separate areas for waste compatibility and containment sumps.

### DISPOSITION

1. FEC has a hazardous waste management plan in development.
2. EPA-approved storage container in use.
3. FEC confirmed.
4. Reference Mitigation Nos. 6, 45, 81-87, 137, 149.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 89

Source Document: EA

Page Number: 5-10

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

1. A potential operational hazard associated with the facility is exposure to nonionizing radio-frequency emissions. Mitigation for this safety consideration is discussed in Section 5.2.5 of the EA.

### DISPOSITION (Same as Mitigation Nos. 53, 54, 55)

1. Microswitches and software stops were implemented per radiation survey results.
2. Antenna will not transmit at angles below the horizon.
3. Based on results of future radiofrequency emissions surveys, operational procedures may be adjusted.
4. FEC confirmed.
5. Reference Mitigation Nos. 10, 100, 136.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 90

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

2. Unexploded ordnance identified during the archaeological survey will be removed prior to project construction. In addition, contractors will implement an ordnance removal plan prepared by the Air Force. The plan will address the following procedures in the event unexploded ordnance is encountered during performance of the contract.

### DISPOSITION (Same as Mitigation Nos. 78, 91-95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 91

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Training of employees to identify ordnance items, including "don't touch" instructions.

DISPOSITION (Same as Mitigation Nos. 78, 90, 92, 95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 92

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Provisions to cease all work in the immediate vicinity of suspect (ordnance) items.

DISPOSITION (Same as Mitigation Nos. 78, 90, 91, 93-95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 93

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Plans for evacuation of the work area when suspect (ordnance) items are encountered.

DISPOSITION (Same as Mitigation Nos. 78, 90, 92, 94, 95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 94

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

A readily available and current list of agencies/personnel to be notified to effect removal (of ordnance).

DISPOSITION (Same as Mitigation Nos. 78, 90, 93, 95, 112)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 95

Source Document: EA

Page Number: 5-10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

A Memo of Agreement, Host/Tenant Agreement, or similar document, will be generated between the Air Force Space Systems Division and another appropriate agency for Explosive Ordnance Disposal.

### DISPOSITION

1. No such documentation at ROICC office.
2. Alternate method used. Refer to Mitigation Nos. 78, 90, 91, 92, 93, 94, 112:
  - Refer to Spec. Sec. 1011.
  - Contractor provided ordnance survey plan:
    - Training to identify ordnance.
    - Cease all work and evacuate area.
    - Notify ROICC.
  - ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 96

Source Document: EA

Page Number: 5-10

Project Phase: Operation

Environmental Discipline: Socioeconomics

### MITIGATION REQUIREMENT

1. The Air Force anticipates the hiring of local residents for the majority of the construction activities. It is estimated that, after a start-up period of about 12 months, operation of the radar station will provide full-time employment for 15 Micronesians with electronic/mechanical and other backgrounds.

NOTE: The language in this mitigation is superceded by the more recent wording in the CRM Permit, which refers to "local residents," rather than "Micronesians" (see Mitigation No. 2).

The U.S. Air Force agrees that "local residents" is to replace "Micronesians" in this mitigation. The intent of the mitigation is to assure benefits to the local economy by employing persons who live in Saipan, rather than Micronesians who may live off-island. Micronesians include persons who live in the Carolinians and on the Island of Truk, as well as those living in Saipan.

### DISPOSITION (Same as Mitigation No. 138)

1. More than 50% of employees are local residents as of June 1990.
2. FEC confirmed.
3. Repeat Mitigation No. 107:
  - The general contractor, Black Micro, has been established on Saipan for over 20 years.
  - ROICC confirmed.
4. Reference Mitigation No. 2.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 97

Source Document: EA

Page Number: 5-11

Project Phase: Operation

Environmental Discipline: Socioeconomics

### MITIGATION REQUIREMENT

1. The project is not expected to result in any adverse economic impacts to the area. It will provide a source of additional revenues to the island and income to the Micronesians employed at the facility. Government on-the-job training in the area of electro-mechanical skills will also be a positive contribution of the facility operation to the island community.

NOTE: The language in this mitigation is superceded by the more recent wording in the CRM Permit, which refers to "local residents," rather than "Micronesians" (see Mitigation No. 2).

The U.S. Air Force agrees that "local residents" is to replace "Micronesians" in this mitigation. The intent of the mitigation is to assure benefits to the local economy by employing persons who live in Saipan, rather than Micronesians who may live off-island. Micronesians include persons who live in the Carolinians and on the Island of Truk, as well as those living in Saipan.

### DISPOSITION

1. More than 50% of employees are local residents as of June 1990.
2. Repeat Mitigation No. 2:
  - U.S. Air Force donated over \$200,000 worth of electronic equipment and books to the college.
  - Electronics curriculum was created.
  - FEC confirmed.
  - Documentation: Letters.
3. Reference: Appendix C.7.
4. Reference Mitigation Nos. 96, 107, 138.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 98

Source Document: EA

Page Number: 5-11

Project Phase: Construction

Environmental Discipline: Land Use and Recreation

### MITIGATION REQUIREMENT

1. The improved roadway will provide improved public access to the scenic viewpoint and one trailhead which will be constructed as part of this project.

### DISPOSITION

1. This has been complied with.
2. Reference:
  - Appendix C.2.
  - Appendix D.25.
  - Appendix D.26.
  - Appendix C.8, Letter of February 26, 1988; Letter of March 13, 1989.
3. Reference Mitigation Nos. 33, 73, 76, 106, 121.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 99

Source Document: Environmental Assessment

Page Number: 6-2

Project Phase: Other

Environmental Discipline: Land Use

### MITIGATION REQUIREMENT

6. In the long term, the Radar Station may no longer be required, due to changes in mission requirements. At that time, three options will exist: (1) the facilities can be removed by the Air Force, and the Access Road can be replanted with appropriate vegetation; (2) remove all structures, but leave the Access Road for recreational access to the viewpoint, trailhead, campground, and forest; and (3) maintain one or more of the structures to complement the recreational activities.

### DISPOSITION

1. To be determined by USAF, when appropriate.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.



**A.6 Coastal Zone Management Act, Consistency Determination (#100-150)**

## MITIGATION NO. 100

Source Document: CZMA Consistency Determination

Page Number: 7

Project Phase: Operations

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

The antenna consists of three sections: a pedestal (60 tons), a yoke (65 tons), and a 30-foot diameter dish (5 tons). The bottom of the antenna will stand 22 feet above the ground and will be equipped with elevation and azimuth switches to protect personnel and the public from radio-frequency emissions.

### DISPOSITION

1. Test was performed 27 February 1990.
2. Report was provided to CRM on 6 June 1990.
3. Reference Mitigation Nos. 10, 53, 54, 55, 89, 136.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 101

Source Document: CZMA Consistency Determination

Page Number: 7

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Diesel fuel will be stored in two 15,000-gallon, steel, above-ground storage tanks. The two storage tanks will be placed in a concrete-paved berm large enough to contain more than twice the capacity of both tanks.

### DISPOSITION (Same as Mitigation Nos. 9, 116)

1. Tank volumes check.
2. Will check containment.
3. Containment area will hold 2.35 times the volume of both tanks.
4. Four-inch observation pipe is present in waste oil tank.
5. Joint sealing of concrete to be completed this week.
6. ROICC confirmed.
7. Field measure and calculate volume.
8. Reference:
  - Appendix C.8, PACBAR Field Notes, Tank Volume Calculation.
  - Appendix C.8, PACBAR Field Notes, Volume Calculations.
  - Appendix C.8, PACBAR Field Notes.
  - Appendix D.23.
9. Reference Mitigation Nos. 43, 47.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 102

Source Document: CZMA Consistency Determination

Page Number: 8

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

12. The flammable materials storage building will be a 200 square-foot, single-story concrete building used to store up to 50 drums of paint and oil. The building will be designed with a six-inch concrete curb for spill containment and will be able to withstand 155 mph winds and seismic loads of Zone 4 intensity.

### DISPOSITION

1. Concrete slab is 10 feet x 15 feet.
2. Storage building is an EPA approved, pre-fabricated structure.
3. Reference Mitigation No. 44.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 103

Source Document: CZMA Consistency Determination

Page Number: 8

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

13. The 1,000-gallon underground concrete waste oil tank will be designed according to U.S. EPA regulations for secondary containment. The tank will be placed in a trench which will be lined with a synthetic, impermeable liner and backfilled. A four-inch diameter observation pipe will be used for leak detection in the backfilled region.

### DISPOSITION (Same as Mitigation No. 148)

1. Refer to Drawing No. C-21.
2. Liner - 34 mil, CPER.
3. PVC, 4-inch diameter, observation pipe in sump.
4. Above reference meets intent of mitigation.
5. ROICC confirmed.
6. Reference:
  - Appendix C.4, Letter of 17 February 1989.
  - Appendix C.8, Letter of 30 August 1988.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 104

Source Document: CZMA Consistency Determination

Page Number: 8

Project Phase: Design/Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

14. Firefighting capability will consist of individual fire suppression units on each generator and a complete subfloor halon system for the operations building.

### DISPOSITION

1. Reference sheets M-3, 7.
2. Spec. Sec. 15-65.
3. Built as designed and specified.
4. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 105

Source Document: CZMA Consistency Determination

Page Number: 9

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

2. Drainage diversion and required culverts will be constructed for applicable portions of the road construction in order to divert flow from road shoulders and adjacent areas.

DISPOSITION (Same as Mitigation Nos. 48, 49, 114)

1. Drainage improvements were constructed as designed.
2. ROICC confirmed.
3. Confirmed by field observation.
4. Reference:
  - Appendix B.5.
  - Appendix C.2.
  - Appendix C.8.
5. Reference Mitigation Nos. 4, 41, 62, 113, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 106

Source Document: CZMA Consistency Determination

Page Number: 9

Project Phase: Design/Construction

Environmental Discipline: Aesthetics/Recreation

### MITIGATION REQUIREMENT

4. In cooperation and coordination with the Department of Natural Resources, the location of one scenic viewpoint and one trail head will be established along the access road at the approximate locations shown on Figure 3 (of the CZMA Consistency Determination). Parking for 5 to 10 vehicles will be made available at the scenic viewpoint.

### DISPOSITION (Same as Mitigation Nos. 33, 121)

1. Refer to Sheets C-8, C-35.
2. Parking areas are approximately as shown. Trail head as moved 10 feet north of location shown.
3. Spaces for 9 cars each at the trail head and scenic viewpoint.
4. ROICC confirmed.
5. Reference:
  - Appendix C.8, Letter of February 26, 1988.
  - Appendix D.25.
  - Appendix D.26.
6. Field checked.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 107

Source Document: CZMA Consistency Determination

Page Number: 9

Project Phase: Construction

Environmental Discipline: Socioeconomics

### MITIGATION REQUIREMENT

3. It is anticipated that successful contractors will use local crews and equipment to the extent possible.

### DISPOSITION

1. The general contractor, Black Micro, has been established on Saipan for more than 20 years.
2. ROICC confirmed.
3. Reference Mitigation Nos. 2, 96, 138.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 108

Source Document: CZMA Consistency Determination

Page Number: 10

Project Phase: Design/Construction

Environmental Discipline: Transportation

### MITIGATION REQUIREMENT

4. Road modifications and construction will be completed first, in order to transport materials and equipment to the site. It is not anticipated that any physical improvements will be required at the existing quay, bridge, and five culverts which are along the haul route. An engineering study will be performed by the construction contractor to determine if temporary measures such as one-time use of temporary steel plates may be used for temporary strengthening. Two areas of tree cover may have to be trimmed, and 22 sets of utility lines may have to be temporarily removed for overheight loads. Current plans are to use a multi-wheeled tank mover (heavy equipment transporter) which distributes weight sufficiently in order to avoid damage to the road, bridge or culverts.

### DISPOSITION (Same as Mitigation No. 13)

1. Work done by ITT/FEC in cooperation with CUC, DPS, DPW, Cable TV. Transport done by Sheedy Drayage, of San Francisco, California, using a 48-wheel transport vehicle.
2. No damage to roads.
3. ROICC confirmed.
4. Reference: Appendix C.5.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 109

Source Document: CZMA Consistency Determination

Page Number: 10

Project Phase: Design/Construction

Environmental Discipline: Vegetation/Hydrology

### MITIGATION REQUIREMENT

5. The construction specifications will require that site practices minimize environmental impacts. Work limits will be indicated on site drawings. Dust and erosion control will be enforced during grading operations, and exposed graded areas will be replanted with common Bermuda grass or fast-growing, local trees immediately after grading. Removed vegetation will be hauled to acceptable disposal sites in accordance with federal and local regulations. Removed vegetation will not be burned.

### DISPOSITION (Same as Mitigation Nos. 19, 23, 64)

1. Refer to Spec. Sec. 1560.
2. No variation from specification.
3. Work meets requirements of mitigation.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Section 01560, Part 1, Sections 1.2.1, 1.2.4, 1.3.3, 1.4; Part 2, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.1.2, 2.2, 2.2.1, 2.2.2, 2.2.3, 2.2.4, 2.2.4.4, 2.3.1, 2.4.
  - Appendix B.2, Amendment of Section 01560, Part 1, Sections 1.3.1, 1.3.4; Part 2, Sections 2.2, 2.2.1, 2.2.1.1, 2.2.1.2, 2.2.1.3, 2.3.1, 2.3.2, 2.3.3, 2.3.4.1, 2.3.4.4, 2.3.4.5, 2.4.1, 2.5.
  - Appendix B.3, Pages 9, 11, 12, 15.
  - Appendix C.2, Section 2102, Division 2, Site Work, Part 2, Paragraph 2.1, and Sheet C-29 of construction plans for "Limits of Construction".
  - Appendix C.8, Letter from Miriam K. Seman, DEQ to Mr. R. Navarro dated March 10, 1988.
6. Reference Mitigation Nos. 39, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 110

Source Document: CZMA Consistency Determination

Page Number: 10

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

After grading is completed and prior to pouring concrete slab, the soil will be treated with water-based pesticides to protect wooden structures from subterranean termites. The pesticides will be registered with the U.S. Environmental Protection Agency. In addition, pesticide concentrations will not exceed values specified in NAVFAC Specification No. 41-84-0229, Division 2, Section 02250. No restricted-use pesticides are planned to be used.

### DISPOSITION (Same as Mitigation Nos. 42, 146)

1. Reference: Spec. Sec. 2250.
2. Material: Dursban TC Termiticide.
3. Mix: 2 gal/98 gal water.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Section 01560, Part 1.2.5.
  - Appendix C.4, Ref. No. 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 111

Source Document: CZMA Consistency Determination

Page Number: 10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Use of explosives during construction will not be permitted, as specified in NAVFAC Specification No. 41-84-0229, Division 2, Section 02102.

### DISPOSITION

1. Refer to Spec. Sec. 2102.
2. Explosives not used.
3. ROICC confirmed.
4. Reference: Appendix C.2.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 112

Source Document: CZMA Consistency Determination

Page Number: 10

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

A special ordnance survey will not be conducted to find ordnance in addition to that found by the archaeological survey team. However, a site ordnance removal plan will be utilized by the construction contractor to assure contractor safety.

DISPOSITION (Same as Mitigation Nos. 78, 90-95)

1. Refer to Spec. Sec. 1011.
2. Contractor provided ordnance survey plan:
  - Training to identify ordnance.
  - Cease all work and evacuate area.
  - Notify ROICC.
3. ROICC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 113

Source Document: CZMA Consistency Determination

Page Number: 16

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

The proposed project includes an access road between Beach Road and the project site, which will involve improvements for about 1.9 miles of existing roadway and construction of about 0.3 mile of new road. Major drainage improvements will be provided for about 0.6 mile of Matuis Road, beginning at the Beach Road intersection, to reduce existing erosion problems and to mitigate the potential for new erosion due to increased road usage. This section of road will also be re-graded and widened where required, and the lower portion nearest Beach Road will be paved with asphalt. The other 1.3 miles of existing road will be widened with ditch improvements and culverts, where required. The 0.3 mile of new road will extend from the end of the Marpi Forest Road to the project site and will include a drainage control ditch.

### DISPOSITION

1. Entire road was paved.
2. Drainage improvements were constructed as designed.
3. ROICC confirmed.
4. Reference:
  - Appendix B.5.
  - Appendix C.2, Letters from ROICC dated 15 December 1988 and 13 March 1989.
  - Appendix C.8.
  - Appendices D.7-D.20.
5. Reference Mitigation Nos. 4, 41, 48, 62, 105, 114, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 114

Source Document: CZMA Consistency Determination

Page Number: 16

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

A major feature of both the new and improved road segments will be the engineered drainage control system, designed to maintain storm runoff flows in controlled, rock-protected ditches. This will greatly reduce erosion potential and will also reduce the velocities of high runoff flows. Hard limestone riprap from a nearby existing quarry will be used as the primary material for erosion protection because: (1) rock can be used to fit the existing terrain without excessive grading and vegetation removal, (2) riprap will tend to cause flow velocities to be reduced due to the rough surface, and (3) rock is relatively easy to maintain.

### DISPOSITION (Same as Mitigation Nos. 48, 49, 105)

1. Drainage improvements were constructed as designed.
2. ROICC confirmed.
3. Confirmed by field observation.
4. Reference:
  - Appendix B.5.
  - Appendix C.2.
  - Appendix C.8.
  - Appendix D.7-D.20.
5. Reference Mitigation Nos. 4, 41, 62, 113, 117, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 115

Source Document: CZMA Consistency Determination

Page Number: 17

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

Sewage and other discharges will be contained by an onsite septic tank and leach field which will be located, designed, and constructed according to U.S. Navy specifications and approved by the Division of Environmental Quality (DEQ). Therefore, there will be no waste discharge from the project site, thereby complying with Section (a)(10).

DISPOSITION (Same as Mitigation Measure Nos. 46, 144)

1. Reference Sheet C-19 is according to USN specifications.
2. Above reference meets intent of mitigation.
3. ROICC confirmed.
4. Reference:
  - Appendix B.1, Section 01560, Part 2.3.2.
  - Appendix B.2, Section 01560, Part 2.4.3.
  - Appendix B.3, Pages 12-13.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 116

Source Document: CZMA Consistency Determination

Page Number: 17

Project Phase: Design/Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Diesel fuel will be stored onsite for the electrical generators in two 15,000-gallon steel, aboveground tanks. The tanks will be within a concrete-paved berm sufficient to contain more than twice the capacity of both tanks. There also will be a 1,000-gallon underground tank for waste oil, designed in accordance with EPA regulations for secondary containment. The tank will be contained within a trench which will be lined with a synthetic impermeable liner and backfilled. There will be a four-inch observation pipe for leak detection.

### DISPOSITION (Same as Mitigation Nos. 9, 101)

1. Tank volumes check.
2. Will check containment.
3. Containment area will hold 2.35 times the volume of both tanks.
4. Four-inch observation pipe is present in waste oil tank.
5. Joint sealing of concrete to be completed in May 1989.
6. ROICC confirmed.
7. Reference: Appendix B.1, Section 2.1.2.1.
8. Reference Mitigation Nos. 43, 47, 147.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 117

Source Document: CZMA Consistency Determination

Page Number: 17

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

Soil erosion will be mitigated by revegetation of cleared areas, design of road alignment perpendicular to natural contours where feasible, and drainage diversion design for the access road. In addition, the access road from Beach Road to the entrance to the Marpi Commonwealth Forest will be partially paved and constructed with effective drainage diversion. This action will help solve an existing serious erosion control problem.

### DISPOSITION (Same as Mitigation No. 41)

1. Construction completed in compliance with design.
2. Entire road paved.
3. ROICC confirmed.
4. Reference:
  - Appendix C.2, Letter of 15 December 1988; Letter of 13 March 1989.
  - Appendix C.8.
5. Reference Mitigation Nos. 4, 48, 49, 62, 105, 113, 114, 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 118

Source Document: CZMA Consistency Determination

Page Number: 17

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Areas that were bulldozed during initial 1985 site investigations, but which will not be used for final access road alignment, will be improved in a manner to be agreed upon with appropriate island and government agencies.

### DISPOSITION (Same as Mitigation No. 35)

1. As requested by J. Culbert, CNMI Forester, the preliminary site access road was blocked with a rock berm.
2. The road has not been used since February 1988.
3. The Boresight Tower access road has been blocked at Limestone Forest end, per Forester request (see Mitigation No. 35).
4. Revegetation funds have been provided to Forester, and revegetation is in progress.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 119

Source Document: CZMA Consistency Determination

Page Number: 18

Project Phase: Construction

Environmental Discipline: Archaeology and History

### MITIGATION REQUIREMENT

The historic ordnance items are to be removed prior to project construction. The skeletal remains were removed from the site by CNMI archaeologists. The ordnance buildings will be left in place, as recommended by the CNMI Office of Historic Preservation.

### DISPOSITION

1. Reference EA regarding removal of skeletal remains.
2. During construction, one eight-inch long mortar projectile, five-inch diameter by 18-inch long shell with casing, and one 16-inch diameter four-foot torpedo head were found. These items were removed by CNMI civil defense agency.
3. Ordnance buildings were not disturbed.
4. ROICC confirmed.
5. Ordnance buildings were in construction zone and there was pre-coordination with CNMI archaeologists.
6. Reference letters: ROICC, 14 June 1988 and CNMI Historic Preservation Officer, 16 June 1988.
7. Reference Mitigation Nos. 77, 78, 79, 91.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 120

Source Document: CZMA Consistency Determination

Page Number: 20

Project Phase: Construction

Environmental Discipline: Aesthetics

### MITIGATION REQUIREMENT

The radar antenna must be painted white to function properly, and it will be lighted at night. The project site and associated buildings and other structures will not be visible from a distance, although the antenna will be, due to its size, configuration, and color. However, it has been recommended that other project structures be painted a color compatible with the forest environment so that they blend, to the extent practicable, with the surrounding vegetation.

### DISPOSITION

1. Reference Mitigation No. 75:
  - Ref: paint chips.
  - Gutters, down spouts, doors: avocado.
  - Exterior walls: light brown.
  - Ref: SHT A-14 Ext. Color Schedule.
2. The buildings were painted to minimize visual effect. The color, a light green, is not very noticeable from some locations (see photos, Appendix D.1-D.6).
3. After grass matures at the site, the building color will be re-evaluated. If it is determined that another color would better hide the buildings from view, arrangements will be made for the next scheduled painting to utilize that color.
4. FEC confirmed.

### COMPLIANCE

In compliance.

### STATUS

In progress.

## MITIGATION NO. 121

Source Document: CZMA Consistency Determination

Page Number: 20

Project Phase: Construction

Environmental Discipline: Aesthetics

### MITIGATION REQUIREMENT

In compliance with the provision in Section (a) (18) to encourage enhancement of scenic resources, the project includes the construction of a scenic viewpoint and a trail head to provide additional opportunity for visitors to enjoy the Marpi Commonwealth Forest and observe coastal vistas from the Mt. Petosukara area.

### DISPOSITION (Same as Mitigation Nos. 33, 106)

1. Reference: sheets C-35, scenic overlook, and C-8, trail head.
2. Parking areas are paved.
3. Trail head parking moved 10 feet north to save trees - as requested by Jim Culbert, CNMI Forester.
4. ROICC confirmed.
5. Number of parking stalls:
  - Overlook - 9
  - Trail head - 9
6. Reference:
  - Appendix C.2.
  - Appendix C.8, Letter of 26 February 1988.
  - Appendix C.8, Letter of 13 March 1989.
  - Appendix D.25.
  - Appendix D.26.
7. Reference Mitigation No. 122.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 122

Source Document: CZMA Consistency Determination

Page Number: 21

Project Phase: Construction

Environmental Discipline: Aesthetics/Recreation

### MITIGATION REQUIREMENT

In compliance with this and related policies (a)(18) and (a)(19), the project includes the provision for one public access scenic viewpoint and one trail head, plus adequate parking. Descriptive signing will also be provided, per the Mitigation Agreement. These facilities will encourage appropriate uses, within clearly identified areas.

### DISPOSITION

1. Signs to be obtained and placed by DNR.
2. USAF provided \$1,150 purchase order to DNR on 15 October 1987 to obtain and place signs.
3. Signs were not in place as of June 1990.
4. Reference meeting of 18 April 1989.
5. Reference: Appendix C.8, Letter of 13 March 1989.
6. Reference Mitigation Nos. 33, 106, 121.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 123

Source Document: CZMA Consistency Determination

Page Number: 22

Project Phase: Construction

Environmental Discipline: Utilities

### MITIGATION REQUIREMENT

There will not be a need for utility connections, as telephone service will be provided by microwave link from Guam, power will be generated onsite, and the project will have its own water supply, septic tank, and leach field.

### DISPOSITION

1. Micronesian Telephone Company laid buried communications lines on its own initiative for expanding service in anticipation of other projects. Since the service is available, it will be utilized.
2. The rest of the project infrastructure is self contained, per the mitigation.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 124

Source Document: CZMA Consistency Determination

Page Number: 23

Project Phase: Design/Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

The access road improvements will result in decreased siltation to the lagoon area west of Beach Road. This will result in an overall decrease in deposition and sedimentation to the lagoon area. Ultimately, this will have a positive effect on local fish habitat.

### DISPOSITION

1. Construction includes drainage facilities, as designed, which meet the intent of the above mitigation.
2. Reference:
  - Appendix B.2, Section 01560, Part 2, Section 2.2.2, 2.3, 2.3.4.5.
  - Appendix B.3, Page 12.
  - Appendix B.5.
  - Appendices D.7-D.20.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 125

Source Document: CZMA Consistency Determination

Page Number: 23

Project Phase: Construction

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

The major mitigation measure to protect flora and fauna has been the Air Force's decision to use alternative means to calibrate the radar antenna. That decision has led to elimination of the Boresight Tower and its access road. This mitigation measure has reduced the wildlife habitat disturbance to about 0.1 acre of forest which is not directly adjacent to the existing roadway. This is less than five percent of the area originally planned for disturbance to construct the Boresight Tower. Also, this change has completely eliminated project activities in limestone forest acreage.

### DISPOSITION

1. This is consistent with construction.
2. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing Specification, Part 2 - Execution, Section 2.1.
3. Reference Mitigation Nos. 64, 109, 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 126

Source Document: CZMA Consistency Determination

Page Number: 23

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Forest areas which are adjacent to the project will be marked on design drawings for use by the construction contractor. These areas will include the radar site and a small portion of new access road. Prior to clearing in these areas, the construction contractor will be required to contact the Commonwealth Forester to allow for site inspection during clearing.

### DISPOSITION (Same as Mitigation No. 57)

1. Limits of construction were shown on design drawings.
2. On 29 January 1988, J. Culbert, Commonwealth Forester, inspected limits of construction.
3. On 19 February 1988, parking areas were again inspected.
4. ROICC confirmed.
5. Reference: Appendix B.3, Page 9, Protection of Land Areas.
6. Reference Mitigation Nos. 127, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 127

Source Document: CZMA Consistency Determination

Page Number: 23

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

In forest areas, the absolute minimum amount of vegetation will be cleared.

### DISPOSITION (Same as Mitigation No. 58)

1. Contractor was required to minimize clearing.
2. ROICC confirmed.
3. Final inspection indicates that disturbance was minimal.
4. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing Specifications, Part 2 - Execution, Section 2.1.
5. Reference Mitigation Nos. 23, 64, 109, 125, 126, 128.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 128

Source Document: CZMA Consistency Determination

Page Number: 23

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Vegetation alongside the access road will not be removed unless required for road widening.

### DISPOSITION

1. Final inspection indicates minimal disturbance.
2. ROICC confirmed.
3. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing, Part 2 - Execution, Section 2.1.
4. Reference Mitigation Nos. 18, 19, 23, 58, 64.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 129

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Vegetation along cliff bases will not be removed.

### DISPOSITION

1. Vegetation was not removed beyond limits of construction for the road or beyond the clear zone at the radar site as shown on the construction drawing (Sheets C-26 and -27).
2. Rock excavation was required to construct the ditch from sta. 89+00 to 84+00 (Ref. x-sec Sheet C-45).
3. ROICC confirmed.
4. Reference:
  - Appendix B.1, Part 2 - Execution, Sections 2.1, 2.1.1, 2.1.1.1, 2.1.3.
  - Appendix B.2, Part 2 - Execution, Sections 2.2, 2.2.1, 2.2.1.1, 2.3.4.5(b).
  - Appendix B.3, Protection of Land Areas, Soil Erosion Control, Earthmoving Permit No. 88-024.
  - Appendix C.2, Clearing and Grubbing Specification, Part 2 - Execution, Section 2.1.
5. Reference Mitigation No. 58.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 130

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT (Same as Mitigation No. 59)

Although not expected, if any damage should occur to project areas not approved for construction clearing and grubbing, the contractor will be responsible for replanting these areas with *Naria* or *Pterocarpus indicus* to restore an damaged vegetation.

### DISPOSITION

1. The contractor did not go outside of construction limits. All clearing was as approved.
2. ROICC confirmed. No trees were required to be planted.
3. Reference Mitigation Nos. 21, 60, 131, 132.
4. Reference: Appendix B.2, Part 2, Paragraphs 2.2.1, 2.2.1.2.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 131

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

At least two types of vegetation will be used for re-planting activities. These include common Bermuda grass and fast-growing, local trees such as Naria or *Pterocarpus indicus*. The Bermuda grass will be used in cleared areas that require low-lying vegetation, such as the radar site and the 30-foot clear zone. The trees will be planted in specified areas, as negotiated with appropriate island and government agencies. Planting trees should prevent excessive growth of undesirable weeds and grasses that would require continuous future maintenance.

### DISPOSITION (Same as Nos. 21, 59, 60)

1. Hulled Bermuda grass was used.
2. No trees were required to be planted.
3. ROICC confirmed.
4. Reference: Appendix B.2, Spec. Sec. 1560, Part 2, Paragraphs 2.2.1, 2.2.1.2.
5. Reference Mitigation Nos. 61, 132.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 132

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Vegetation

### MITIGATION REQUIREMENT

Re-planting activities will be scheduled and implemented where possible to correspond with the start of the rainy season, which lasts from late June to early November. Planting during this time will maximize the effectiveness of these activities.

DISPOSITION (Same as Mitigation No. 61)

1. Construction time frame did not allow specific planting times.
2. The contract requires 95 percent ground cover for acceptance (Spec. Sec. 2485) in order to meet intent of above mitigation.
3. Reference Mitigation Nos. 21, 59, 60, 131.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 133

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Wildlife/Brown Tree Snake

### MITIGATION REQUIREMENT

Construction contractors will be required to ensure that any equipment or supplies delivered to Saipan are free of any introduced organisms, such as the brown tree snake. The contractor will provide a plan stating all methods used to accomplish this task, including but not limited to quarantine activities and posting signs.

### DISPOSITION

1. Reference Spec. Sec. 1560 (see Appendix B.1, B.2).
2. Contractor's plan: Implementation Plan to Prevent Importation of Harmful Insects, Rodents and Especially Brown Tree Snakes (see Appendix B.4 and C.4).
3. Signs placed at quarry, work camp, and work site.
4. Contractor deployed snake traps at dock and warehouse.
5. Reference:
  - Appendix B.1, Part 1 - General, Section 1.4. Part 2 - Execution, Section 2.1.3
  - Appendix B.2, Part 2 - Execution, Section 2.2.1.4.
  - Appendix B.3., Snake Control.
6. Reference Mitigation Nos. 22, 29, 63.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 134

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Construction

Environmental Discipline: Wildlife/Endangered Species

### MITIGATION REQUIREMENT

Contractor work limits and procedures will be specified to avoid disturbance to habitat of the Micronesian Megapode and other species of wildlife.

DISPOSITION (Same as Mitigation No. 72)

1. Reference Spec. Sec. 1560 (see Appendix B.1, B.2).
2. No megapodes or nests were encountered.
3. Awareness signs were posted at work camp, quarry, and office.
4. Information card given to each worker.
5. ROICC confirmed.
6. Reference:
  - Appendix B.1, Section 2.1.3.
  - Appendix B.2, Section 2.2.3.
  - Appendix B.3, Page 10.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 135

Source Document: CZMA Consistency Determination

Page Number: 24

Project Phase: Other

Environmental Discipline: Vegetation/Wildlife

### MITIGATION REQUIREMENT

Establishment of a habitat enhancement area is being negotiated between the Air Force and DNR Division of Fish and Wildlife. This may be accomplished by planting fruit trees in a DNR-approved location away from the project site. The area will be located away from the project site to assist in diverting wildlife from the site and provide replacement habitat for displaced wildlife. The Air Force has requested a recommendation from DNR Fish and Wildlife on this matter.

### DISPOSITION (Same as Mitigation No. 24)

1. MOU of 2 November 1988 establishes \$80,000 to perform this work.
2. \$40,000 already sent to CNMI. Invoices dated 8 May 1989, 12 December 1988, and 15 March 1990 (See Appendix C.1).
3. Reference Mitigation Nos. 27, 36, 65, 135.

### COMPLIANCE

In compliance.

### STATUS

In progress.

## MITIGATION NO. 136

Source Document: CZMA Consistency Determination

Page Number: 25

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

If it becomes desirable to operate the antenna at angles below the horizon, procedures will be used to assure that the public, facility personnel, or wildlife are not exposed to levels exceeding the PELs. Elevation and azimuth limit switches will be installed to assure protection for the public. Due to the use of these switches, restricted access areas will not be necessary. The project-specific exposure footprint for the actual operating mode after initial antenna installation will be measured to ensure that PELs are below the public access limit in public access areas.

### DISPOSITION

1. Repeat of Mitigation No. 54:
  - Antenna will not transmit at angles below the horizon.
2. Repeat of Mitigation No. 53:
  - Microswitches and software stops were implemented per results of radiofrequency emissions survey conducted 13 February 1990.
  - FEC confirmed.
3. Repeat of Mitigation No. 55:
  - Based on results of future radiofrequency emissions surveys, operational procedures may be adjusted.
  - FEC confirmed.
4. Reference Mitigation Nos. 10, 89, 100.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 137

Source Document: CZMA Consistency Determination

Page Number: 26

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Operating procedures will include requirements for proper handling of project hazardous wastes. Drums containing the relatively small amounts of project hazardous wastes, such as used pesticide, paint, adhesive, or paint solvent, will be transported by the contractor or local hauler to an appropriate off-island, hazardous waste landfill or treatment facility.

### DISPOSITION

1. FEC has a Hazardous Waste Management Plan in development. FEC confirmed.
2. SSD/DEV to check timing of accumulation and report to WSMC.
3. EPA Small Generator Handbook allows 270 days for less than 6,000 kg waste if over 200 miles from licensed facility. DEQ agrees to this approach.
4. Reference Mitigation Nos. 6, 45, 82-88, 149.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 138

Source Document: CZMA Consistency Determination

Page Number: 26

Project Phase: Operation

Environmental Discipline: Socioeconomics

### MITIGATION REQUIREMENT

The Air Force anticipates the hiring of local residents for the majority of construction activities. It is estimated that, after a start-up period of about 12 months, operation of the radar station will provide full-time employment for 15 Micronesians with electronic/mechanical and other backgrounds.

NOTE: The language in this mitigation is superseded by the more recent wording in the CRM Permit, which refers to "local residents," rather than "Micronesians" (see Mitigation No. 2).

The U.S. Air Force agrees that "local residents" is to replace "Micronesians" in this mitigation. The intent of the mitigation is to assure benefits to the local economy by employing persons who live in Saipan, rather than Micronesians who may live off-island. Micronesians include persons who live in the Carolinians and on the Island of Truk, as well as those living in Saipan.

### DISPOSITION (Same as Mitigation No. 96)

1. More than 50% of employees are local residents as of June 1990.
2. FEC confirmed.
  - Black Micro, established on Saipan for more than 20 years, was used as construction contractor.
3. ROICC confirmed.
4. Reference Mitigation Nos. 2, 107.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.



## MITIGATION NO. 139

Source Document: CZMA Consistency Determination

Page Number: 27

Project Phase: Construction

Environmental Discipline: Safety

### MITIGATION REQUIREMENT

Construction specifications will require that equipment include engine exhaust mufflers to the extent required to meet Air Force Regulation 161-35 regarding occupational noise exposure standards.

DISPOSITION (Same as Mitigation Nos. 51, 52, 140)

1. Ref: Spec. 01011 (Contract Amendment 2).
2. Specification requires conformance with 29 CFR 1910.95
3. Above reference meets requirement of mitigation.
4. ROICC confirmed.
5. Mufflers are installed.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 140

Source Document: CZMA Consistency Determination

Page Number: 27

Project Phase: Operation

Environmental Discipline: Safety

### MITIGATION REQUIREMENT (Repeat of No. 52)

The diesel generators will be supplied with exhaust silencers, soundproof insulation (specifically, on exhaust piping), and vibration dampeners in order to meet the Air Force occupational noise exposure standards.

### DISPOSITION (Same as Nos. 51, 52, 139)

1. Ref. Spec. 01011 (Contract Amendment 2).
2. Specification requires conformance with 29 CFR 1910.95.
3. Exhaust silencers (mufflers), insulation, and vibration dampeners were provided.
4. ROICC confirmed.
5. Mufflers are installed.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 141

Source Document: CZMA Consistency Determination

Page Number: 28

Project Phase: Operations

Environmental Discipline: Air Quality

### MITIGATION REQUIREMENT

The diesel fuel sulfur content will not exceed 2.5 weight percent, as specified by the proposed local air pollution control regulations.

### DISPOSITION

1. Generators will not use fuel with sulfur content greater than 0.5 percent by weight. The equipment will not run properly on fuel with higher sulfur content, according to FEC.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 142

Source Document: CZMA Consistency Determination

Page Number: 29

Project Phase: Construction

Environmental Discipline: Air Quality

### MITIGATION REQUIREMENT

Water spraying will be used to control the potential for dust generation during construction, if required, during grading operations, and before the access road is completed. This practice typically reduces dust emissions by one-half.

DISPOSITION (Same as Mitigation No. 39)

1. This was done from March to November, then occasionally, as needed.
2. ROICC confirmed.
3. Reference:
  - Appendix B.1, Section 2.4.
  - Appendix B.2, Section 2.5.
  - Appendix B.3, Page 15.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 143

Source Document: CZMA Consistency Determination

Page Number: 29

Project Phase: Operation

Environmental Discipline: Water Supply

### MITIGATION REQUIREMENT

Potable water will be obtained from a bottled water supplier. Other water will be obtained from rain water, treated, and stored onsite. The radar facility will have provision for storing a 30-day supply of treated rain water.

### DISPOSITION

1. This is the standard procedure according to FEC.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 144

Source Document: CZMA Consistency Determination

Page Number: 29

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

Waste water discharge will be to an underground septic tank and leach field designed and located according to U.S. Navy specifications, which are in compliance with DEQ requirements.

DISPOSITION (Same as Mitigation Nos. 46, 115)

1. Reference Sheet C-19 is according to USN specifications.
2. Above reference meets intent of mitigation.
3. ROICC confirmed.
4. Reference:
  - Appendix B.1, Section 01560, Part 2.3.2.
  - Appendix B.2, Section 01560, Part 2.4.3.
  - Appendix B.3, Pages 12-13.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 145

Source Document: CZMA Consistency Determination

Page Number: 29

Project Phase: Construction

Environmental Discipline: Geology/Soils

### MITIGATION REQUIREMENT

Soil erosion will be prevented by revegetation of exposed areas, drainage diversion design, and paving the most susceptible portion of the existing road.

### DISPOSITION

1. This was done.
2. Revegetation in progress.
3. Entire road is paved.
4. ROICC confirmed.
5. Confirmed by field observation.
6. Reference:
  - Appendix C.1.
  - Appendix C.2, Letter of 15 December 1988; Letter of 13 March 1989.
7. Reference Mitigation Nos. 4, 41, 48, 49, 62, 105, 113, 114, 117.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 146

Source Document: CZMA Consistency Determination

Page Number: 29

Project Phase: Construction

Environmental Discipline: Hydrology

### MITIGATION REQUIREMENT

A water-based pesticide will be used for soil treatment during construction. Application methods which minimize water quality impacts will be used.

DISPOSITION (Same as Mitigation Nos. 42, 110)

1. Ref: Spec. Sec. 2250.
2. Material: Dursban TC Termiticide.
3. Mix: 2 gal/98 gal water.
4. ROICC confirmed.
5. Reference:
  - Appendix B.1, Section 01560, Part 1.2.5.
  - Appendix C.4, Ref. No. 145.

### COMPLIANCE

In compliance.

### STATUS

Complete.



## MITIGATION NO. 147

Source Document: CZMA Consistency Determination

Page Number: 30

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

The above-ground diesel fuel tank installation will be constructed in accordance with Federal regulations and will be surrounded by a concrete berm for purposes of spill containment. The flammable materials storage building will also be constructed with provisions for spill containment.

### DISPOSITION

1. Ref: Sheet C-20.
2. Concrete berm is present around tanks.
3. Flammable materials have concrete pad at this time.
4. ROICC confirmed.
5. Reference:
  - Appendix C.8, PACBAR Field Notes.
  - Appendix D.23.
6. Reference Mitigation Nos. 43, 47, 101, 116.

### COMPLIANCE

In compliance.

### STATUS

Complete.

## MITIGATION NO. 148

Source Document: CZMA Consistency Determination

Page Number: 30

Project Phase: Construction

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

The underground concrete waste oil tank will be installed in accordance with EPA regulations for secondary containment. The tank will be installed in a trench lined with a synthetic liner and backfilled. A four-inch observation pipe will be installed for detecting leaks in the tank area.

### DISPOSITION

1. Refer to Drawing No. C-21.
2. Liner - 34 mil, CPER.
3. PVC, 4-inch diameter, observation pipe in sump.
4. Above reference meets intent of mitigation.
5. ROICC confirmed.
6. Reference Mitigation No. 103.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 149

Source Document: CZMA Consistency Determination

Page Number: 30

Project Phase: Operation

Environmental Discipline: Hazardous Waste

### MITIGATION REQUIREMENT

Construction specifications and operating procedures will include requirements for a spill plan which will assure immediate containment and cleanup of any accidental fuel or chemical spills.

### DISPOSITION

1. FEC has a Hazardous Waste Management Plan in development for operations.
2. A Spill Prevention, Control, and Countermeasures (SPCC) Plan (6 August 1990) has been prepared by USAF for the radar facility.
3. Reference:
  - Appendix B.2, Section 01560, Part 1, Paragraph 1.3.6.
  - Appendix B.3, Page 15.
4. Reference Mitigation Nos. 6, 45, 81-88, 137.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## MITIGATION NO. 150

Source Document: CZMA Consistency Determination

Page Number: 30

Project Phase: Operation

Environmental Discipline: Administration/Compliance

### MITIGATION REQUIREMENT

The U.S. Air Force and its representatives will continue consultation and interaction with representatives of Commonwealth and Federal agencies during final design, construction, and operations phases of the project.

### DISPOSITION

1. This has been done throughout the project.
2. This will continue to be done. The point of contact for the Saipan Tracking Station is the site supervisor.
3. FEC confirmed.

### COMPLIANCE

In compliance.

### STATUS

Ongoing.

## **APPENDIX B**

### **CONSTRUCTION PHASE ENVIRONMENTAL PROTECTION PLANS**

- B.1 Construction Contract Environmental Requirements**
- B.2 Changes to Construction Contract Environmental Requirements**
- B.3 Contractor's Environmental Protection Plan**
- B.4 Implementation Plan to Prevent Importation of Harmful Insects,  
Rodents, and Especially Brown Tree Snakes**
- B.5 Permitting Plans**
- B.6 Hazardous Waste Management**
- B.7 Department of Environmental Quality Permitting Requirements**

## B.1 Construction Contract Environmental Requirements

DEPARTMENT OF THE NAVY  
PACIFIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND

NAVFAC  
SPECIFICATION  
NO. 41-84-0229

CONSTRUCTION CONTRACT NO.  
N62766-84-C-0229

APPROPRIATION:  
MCAF

**NOTE: THIS IS AN AMERICAN PREFERENCE POLICY CONTRACT**

FY87- MCAF PROJECT 12442  
PACBAR III FACILITY

at the

MAPI FOREST RESERVE, SAIPAN  
NORTHERN MARIANA ISLANDS

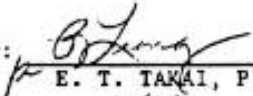
SPECIFICATION APPROVED BY:

EFD Specification

Branch Head:

  
J. H. MIHAR, P. E.

Design Director:

  
E. T. TAKAI, P. E.

For Commander, NAVFAC:

  
H. B. WHITTAKER, LCDR, CEC, USN

Date:

6/8/87





1.2.5 Chemical Waste: Includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

1.2.6 Sanitary Wastes:

1.2.6.1 Sewage: Waste characterized as domestic sanitary sewage.

1.2.6.2 Garbage: Refuse and scraps resulting from preparation cooking, dispensing, and consumption of food.

1.2.7 Oily Waste: Includes petroleum products and bituminous materials.

1.3 SUBMITALS:

1.3.1 Environmental Protection Plan: Submit four copies of the proposed Environmental Protection Plan not later than 14 days after the meeting with the Contracting Officer to discuss the development of an environmental protection plan.

1.3.2 Preconstruction Survey Report: Submit three copies of the preconstruction survey report.

1.3.3 Solid Waste Disposal Permit: Submit one copy of local permit or license which reflects such agency's approval of the disposal plan as being in compliance with their solid waste disposal regulations.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS: Provide and maintain during the life of the contract, environmental protection as defined herein. Provide environmental protective measures as required to control pollution that develops during normal construction practice. Provide also environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all federal and local regulations pertaining to water, air, and noise pollution. Develop proposals for an environmental protection plan for the project and, prior to the commencement of the work, meet with the Contracting Officer and discuss the proposed environmental protection plan. The meeting shall develop mutual understanding relative to details of environmental protection, including measures for protecting natural resources, required reports, and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Perform a preconstruction survey of the project site and take photographs as necessary to enhance the survey.

## Part 2 – EXECUTION

2.1 PROTECTION OF NATURAL RESOURCES: The natural resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their existing condition or restored to an equivalent or improved condition upon completion or restored to an equivalent or improved condition upon completion of the work. Confine construction activities to areas defined by the work schedule, drawings, and specification.

2.1.1 Land Resources: Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

2.1.1.1 Protection: Protect existing trees which are to remain and which may be injured, bruised, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

2.1.1.2 Repair or Restoration: Repair or restore to their original condition all trees or other landscape features scarred or damaged by the equipment or operations. Obtain approval of the repair or restoration from the Contracting Officer prior to its initiation.

2.1.1.3 Temporary Construction: Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, and all other vestiges of construction. Temporary roads, parking areas, and similar temporary use areas shall be graded in conformance with surrounding areas, tilled, and seeded. Include topsoil or nutriment during the seeding operation as necessary to establish a suitable stand of grass. The seeding operation shall be as specified in Section 02821, "Turf."

2.1.2 Water Resources: Perform all work in such a manner that any adverse environmental impact on water resources is reduced to a level acceptable to the Contracting Officer.

2.1.2.1 Oily Substances: Take special measures to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary earth berm of sufficient size and strength to contain the contents of the tanks on the event of content leakage or spillage.

2.1.3 Wildlife Resources: During the performance of the work take such steps as required to prevent interference or disturbance to

wildlife. Do not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to wildlife except as may be indicated or specified.

2.1.4 Historical and Archeological Resources: Carefully preserve and report immediately to the Contracting Officer all items having any apparent historical or archeological interest which are discovered in the course of any construction activities.

## 2.2 EROSION AND SEDIMENT CONTROL MEASURES:

2.2.1 Burn-off: Burn-off of ground cover is not permitted.

2.2.2 Borrow Pit Areas: Manage and control borrow pit areas to prevent sediment from entering nearby drainage areas. Restore areas, including those outside borrow pit, disturbed by borrow and haul operations. Restoration includes grading, replacement of topsoil, and establishment of permanent vegetation cover. Uniformly grade side-slopes of borrow pit to a slope of 30 degrees or less with the horizontal. Uniformly grade bottom of borrow pits to provide a flat bottom and drain by outfall ditches or other suitable means.

2.2.3 Protection of Erodible Soils: All earthwork brought to final grade shall be immediately finished as indicated or specified. Protect immediately finished as indicated or specified. Protect immediately side slopes and backslopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure.

2.2.4 Temporary Protection of Erodible Soils: Utilize the following methods to prevent erosion and control sedimentation.

2.2.4.1 Mechanical Retardation and Control of Runoff: Mechanically retard and control the rate of runoff from the construction site. This included construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses.

2.2.4.2 Sediment Basins: Trap sediment in temporary sediment basins. Select basin size to accommodate the runoff of a local 10 year storm. Pump dry and remove accumulate sediment after each storm. Use a paved weir or vertical overflow pipe for overflow. Remove collected sediment from the site. Institute effluent quality monitoring programs as required by Saipan environmental agencies.

2.2.4.3 Borrow: Not permitted in areas where suitable environmental controls are not possible.

2.2.4.4 Vegetation and Mulch: Provide temporary protection on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion.

Such protection shall be by accelerated growth of permanent vegetation, temporary vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchoring mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

2.3 CONTROL AND DISPOSAL OF SOLID, CHEMICAL AND SANITARY WASTES: Pick up solid waste and place in containers which are emptied on a regular schedule. The preparation, cooking, and disposing of food are strictly prohibited on the project site. Conduct handling and disposal of wastes to prevent contamination of the site and other areas. On completion, leave areas clean and natural looking. Obliterate signs of temporary construction and activities incidental to construction of the permanent work in place.

2.3.1 Disposal of Rubbish and Debris: Dispose of rubbish and debris in accordance with the requirements specified herein.

2.3.1.1 Removal from Government Property: Remove rubbish and debris from Government property and dispose of it on compliance with federal and local requirements.

2.3.2 Garbage Disposal: Remove garbage to a pickup point or disposal area as directed by the Contracting Officer.

2.3.3 Sewage, Odor, and Pest Control: Dispose of sewage through connection to station sanitary sewage system. Where such system is not available, use chemical toilets or comparably effective units and periodically empty wastes into municipal sanitary sewage system. Include provisions for pest control and elimination of odors.

2.3.4 Chemical Waste: Store chemical waste in corrosion resistant corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with federal and local regulations. For oil and hazardous material spills which may be large enough to violate federal, and local regulations, notify the Contracting Officer immediately.

2.3.4.1 Petroleum Products: Conduct fueling and lubricating of equipment and motor vehicles in a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting federal and local regulations.

2.3.4.2 Lead-Acid Battery Electrolyte: Electrolyte solution from lead-acid batteries shall be disposed of in such a manner as to ensure compliance with applicable federal and local regulations. The electrolyte shall not be dumped onto the ground, into storm drains or into the sanitary sewer without neutralization. One of the following alternatives shall be used for disposal of waste electrolytes.

- a. An industrial waste treatment plant, if available and approved for neutralizing and approved for neutralizing and disposal of battery-acid electrolyte.
- b. Transport the electrolyte to a local-approved hazardous waste disposal site. Method of transportation and equipment must comply with applicable Federal and local regulations.
- c. Use an approved existing tank located on station or construct a neutralized tank. The neutralization process shall be in accordance with NEPSS PS-015.

2.4 DUST CONTROL: Keep dust down at all times, including non-working hours, weekends, and holidays. Sprinkle or treat, with dust suppressors, the soil at the site, haul roads, and other areas disturbed by operations. No dry power brooming is permitted. Instead use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing is permitted only for cleaning nonparticulate debris, such as steel reinforcing bars. No sandblasting is permitted unless dust therefrom is confined. Only wet cutting of concrete blocks, concrete, and asphalt is permitted. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar, and plaster is used.

2.5 NOISE: When available, make the maximum use of "low-noise-emission products" as certified by EPA. No blasting or use of explosives is permitted without written permission of the Contracting Officer and then only during the designated times.

--END OF SECTION--

## B.2 Change to Construction Contract Environmental Requirements

N62766-84-C-0229

NAVFAC  
SPECIFICATON NO.  
41-84-0229

AMENDMENT NO. .0002

### **IMPORTANT**

THIS AMENDMENT SHOULD BE ACKNOWLEDGED WHEN YOUR BID IS SUBMITTED. FAILURE TO AKNOLEDGE THE AMENDMENT MAY CONSTITUTE GROUNDS FOR REJECTION OF THE BID.

IF YOUR BID HAS BEEN SUBMITTED PRIOR TO THE RECEIPT OF THIS AMENDMENT, ACKNOWLEDGEMENT SHOULD BE MADE BY TELEGRAM, WHICH SHOULD STATE WHETHER THE PRICE CONTAINED IN YOUR BID IS TO REMAIN UNCHANGED, IS TO BE DECREASED BY AN AMOUNT, OR IS TO BE INCREADED BY AN AMOUNT. ACKNOWLEDGEMENT MUST BE RECEIVED PRIOR TO BID OPENING TIME.

41-84-0229

AMENDMENT NO. .0002

<b>AMENDMENT OF SOLICITATION / MODIFICATION OF CONTRACT</b>				1. CONTRACT ID CODE	PAGE OF PAGES 1   20
2. AMENDMENT/CONTRACT NO. 0002		3. EFFECTIVE DATE BLOCK 16C	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (if applicable)	
6. EC BY CODE		C2742	7. ADMINISTERED BY (if other than Item 6) CODE		
Contracts Department Officer in Charge of Construction Naval Facilities Engineering Command Contracts, Marianas FPO San Francisco 96630-2200					
8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State and ZIP Code)			9A. AMENDMENT OF SOLICITATION NO. <input checked="" type="checkbox"/> N62766-84-B-0229 9B. DATED (SEE ITEM 11) 22 June 1987 10A. MODIFICATION OF CONTRACT/ORDER NO. 10B. DATED (SEE ITEM 11)		
CODE			FACILITY CODE		

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of offers  ~~is not extended~~  is not extended. **X SEE BELOW**

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:  
 (a) By completing Items 8 and 15, and returning \_\_\_\_\_ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14

A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as issuance of design office appropriation data, etc.) SET FORTH IN ITEM 14 PURSUANT TO THE AUTHORITY OF FAR 48.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority):

E. IMPORTANT: Contractor  is not,  is required to sign this document and return \_\_\_\_\_ copies to the issuing office

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

Invitation for Bids N62766-84-B-0229, FY87 MCAF Project 12442, PACBAR III Facility at the Marpi Forest Reserve, Saipan, Northern Mariana Islands

1. THE BID OPENING IS RESCHEDULED FOR 2:00 P.M. (GUAM TIME) 8 SEPTEMBER 1987.

2. Amendment No. 0002 (pages 1 through 20) to NAVTAC Specification No. 41-84-0000 including SECTION 01560 ENVIRONMENTAL PROTECTION (11 pages) and OICC Marianas (5th Ed) Labor Standards Provisions (8 pages) (Revised July 1987) attached hereto and by this reference are made part hereof.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
		GREGORY F. MILLS CONTRACTING OFFICER	
15B. CONTRACTOR/OFFEROR	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA	16C. DATE SIGNED
(Signature of person authorized to sign)		BY <i>Gregory F. Mills</i> (Signature of Contracting Officer)	8 10 87



These eight categories of controlled materials are use for the purpose of making allotments. The actual controlled materials are the forms and shapes of these eight categories listed in Schedule 1 of DMS Regulation 1. Allotments are made on specific quantities of the several categories of controlled materials and for a specified calendar quarter. Allotments may be made for subsequent quarters in order to permit the Contractor to place his orders for those controlled materials requiring long lead times. Further information concerning the Defense Materials System and Priorities can be secured from any of the U.S. Department of Commerce, Office of Industrial Resource Administration Field Offices.

SECTION 01560

ENVIRONMENTAL PROTECTION

PART 1 – GENERAL

1.1 APPLICABLE PUBLICATIONS: The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

1.1.1 Environmental Protection Agency (EPA) Regulations:

- 40 CFR 261 Regulations Identifying Hazardous Waste
- 40CFR 262 Regulations for Hazardous Waste Generators
- 40 CFR 263 Regulations for Hazardous Waste Transporters
- 40 CFR 264 Regulations for Owners and Operators of Permitted Hazardous Waste Facilities

1.1.2 U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) Regulation:

- 29 CFR 1910.94 Occupational Health and Environmental Control Subpart G

1.1.3 U.S Army Corps of Engineers (COE) Engineering Pamphlet:

- EP 1166-2 Flood Plain Regulations for Flood Plain Management, June 1976

1.1.4 Naval Environmental Protection Support Service (NEPSS) Publication:

- PS-015 Disposal of Lead-Acid Battery Electrolyte, April 18, 1980

1.1.5 Department of Transportation (DOT):

- 49 CFR 178 Regulations for Shipping Container Specifications

1.2 DEFINITIONS OF CONTAMINANTS:

1.2.1 Sediment: Soil and other debris that has been eroded and transported by runoff water.

1.2.2 Solid Waste: Rubbish, debris, garbage, and other discarded solid materials, except hazardous waste as defined in paragraph entitled “ Hazardous Waste”, resulting from industrial, commercial, and agricultural operations, and from community activities.

1.2.3 Rubbish: Combustible and noncombustible wastes such as paper, boxes, glass, crockery, metal, lumber, cans, and bones.

1.2.4 Debris: Combustible and noncombustible wastes such as ashes and waste materials from construction or maintenance and repair work, leaves, and tree trimmings.

1.2.5 Chemical Wastes: This includes salts, acids, alkalies, herbicides, pesticides, and organic chemicals.

1.2.6 Sanitary Wastes:

1.2.6.1 Sewage: Wastes characterized as domestic sanitary sewage.

1.2.6.2 Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.2.7 Hazardous Waste: Hazardous substances as defined in 40 CRF 261, or as defined by applicable local regulations.

1.2.8 Oily Waste: Petroleum products and bituminous materials.

1.3 SUBMITTALS:

1.3.1 Environmental Protection Plan: Submit four copies of the proposed Environmental Protection Plan not later than 14 days after the meeting with the Contracting Officer to discuss the development of an environmental protection plan. Included in the Environmental Protection Plan shall be a hazardous waste management plan, including the following as a minimum:

- a. An inventory of materials to be used in the construction of the facility that are hazardous to humans and/or the environment shall be specified. Criteria for this classification will include toxicity, corrosivity, reactivity and ignitability. Materials containing compounds listed in EPA 40 CFR Part 261, Subpart D, as hazardous waste, must also be identified.

- b. The plan will outline the proper transport and storage of new hazardous materials at the project site. This will consider a designated area with protection from the elements, properly ventilated and secured to prevent entry by unauthorized personnel. Compatibility of the various wastes will also be addressed.
- c. Construction personnel will be instructed on the proper methods for disposal of used containers of materials that classify as hazardous waste. This will include drums of cans pesticides, paints, adhesives, or paint solvents.
- d. There will be a mandatory requirement for hazardous waste materials to be stored in sealed containers.
- e. Disposal methods will include utilizing an approved bulk storage accumulation area for the interim storage of waste materials that is diked, covered and adequately secured to a foundation to prevent overturning in the event of high wind conditions. Proper posting of the area and security will be included to prevent entry by unauthorized personnel.
- f. Hazardous waste will not be stored at the site for more than 90 days, in accordance with EPA regulations. The waste materials will be properly manifested by the Contractor and transported by a qualified hazardous waste hauler for proper disposal to an appropriate off-island hazardous waste landfill or treatment facility.

1.3.2 PLAN TO PREVENT INTRODUCTION OF BROWN SNAKES: Submit the required number of copies to the Division of Animal Health and Industry prior to the transport of construction materials to Saipan. The plan shall be approved by the agency and submitted to the Contracting Officer for authorization of Contractor construction materials shipment to Saipan.

1.3.3 Preconstruction Survey Report: Submit three copies of the preconstruction survey report.

1.3.4 Solid Waste Disposal Permit: Submit one copy of local permit or license which reflects such agency's approval of the disposal plan as being in compliance with their solid waste disposal regulations.

1.3.5 Disposal Permit for Hazardous Waste: Submit one copy of the applicable EPA and local permits or licenses for transportation, treatment, storage, and disposal of hazardous waste by permitted facilities.

1.3.6 Waste Material Spill Plan: Submit four copies of the Waste Material Spill Plan which shall specify requirements and procedures for containment and cleanup of accidental fuel or chemical spills.

1.4 ENVIRONMENTAL PROTECTION REQUIREMENTS: Provide and maintain during the life of the contract, environmental protection as defined herein. Provide environmental protective measures as required to control pollution that develops during normal construction practice. Provide also environmental protective measures required to correct conditions that develop during the construction of permanent or temporary environmental features associated with the project. Comply with all federal and local regulations pertaining to water, air, and noise pollution. Develop an environmental protection plan for the project and prior to the commencement of the work, obtain the Contracting Officer's approval of the environmental protection plan. The plan shall specify, the methods of environmental protection, including measures for protecting natural resources, required reports, and measures to be taken should the Contractor fail to provide adequate protection in an adequate and timely manner. Contractor shall perform a preconstruction survey of the protect site and take photographs as necessary to enhance the survey. The preconstruction survey shall include as a minimum, a through inspection of all areas to be cleared to ensure all endangered species have been relocated.

## PART 2 - EXECUTION

2.1 PERMITS AND FEES: The Coastal Resources Management Office (CRM) is the lead agency coordinating permit submittals and fees for this project. The point of contact at the CRM is Robert W. Rudolph.

2.2 PROTECTION OF NATURAL RESOURCES: THIS IS AN ENCIRONMENTAL SENSITIVE AREA. The natural resources within the project boundaries and outside the limits of permanent work performed under this contact shall be preserved in their existing condition or restored to an equivalent or improved condition upon completion of the work. Confine all construction activities to areas defined by the work schedule, drawings, and specifications. All construction personnel shall be advised of the critical nature of endangered species, the role of the Marpi Forest in the recovery of the three species of birds found there, and the possible impact of construction activities on the welfare of the birds (Micronesian megapode, nightingale reed warbler, vanikoro swiftlet). Construction personnel shall be advised that harassment of ant of the three referenced species (including nests) is prohibited under Section 9 of the Endangered Species Act of 1973.

2.2.1 Land Resources: Except in areas indicated to be cleared, do not remove, cut, deface, injure, or destroy trees or shrubs without special permission from the Contracting Officer. Do not fasten or attach ropes, cables, or guys to any existing nearby trees for anchorages unless specifically authorized. Where such special emergency use is authorized, the Contractor shall be responsible for any resultant damage.

#### 2.2.1.1 Protection

- a. During Clearing: The Contractor shall notify the Contracting Officer a minimum of 7 working days in advance prior to clearing so that a site inspection can be conducted by the Commonwealth Forester and the Contracting Officer.

In forest areas, to avoid disturbance of habitat of the Micronesian megapode and other species of wildlife, an absolute minimum amount of vegetation will be cleared, as specified on contract drawings. Contractor shall include a qualified wildlife biologist in the roadway right-of-way survey team to insure that any megapode nests which may be in the vicinity of project activities are avoided.

Vegetation along cliff vases will not be removed. Vegetation along the access road will not be removed unless required for road widening.

If any damage should occur to project areas not approved for construction clearing and grubbing, the Contractor will be responsible for replanting these areas with *Naria* or *Pterocarpus indicus* to restore any damaged vegetation. Contractor shall be responsible that no taking (harm, harassment, mortality, etc.) occurs to a Micronesian megapode nest. If a megapode nest is discovered, all project-related activities in the area of the nest shall cease, and the Contractor shall notify the Contracting Officer. Also, the Contractor shall notify the Contracting Officer in the event of any mortality so any of the three species (swiftlet, warbler, or megapode) resulting from the project construction activities.

- b. During Construction: Protect existing trees which are to remain and which may be injured, bruised, defaced, or otherwise damaged by construction operations. Remove displaced rocks from uncleared areas. Protect monuments, existing structures markers, and works of art.

2.2.1.2 Repair or Restoration: Repair and restore any damage that may occur to project areas not approved for clearing or grubbing, or damaged by the equipment or operations, by replanting these areas with *Naria*, *Pterocarpus indicus* or common Bermuda grass, as directed by the Contraction Officer, at no additional cost to the Government.

2.2.1.3 Temporary Construction: Obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials, and all other vestiges of construction. Temporary roads,

parking areas, and similar temporary use areas shall be graded in conformance with surrounding areas, tilled, and seeded. Include topsoil or nutriment during the seeding operation as necessary to establish a suitable stand of grass. The seeding operation shall be as specified in Section 02485, "Turf."

2.2.1.4 Requirements to Prevent Accidental Introduction of Tree Snakes or Other Organisms: Contractor shall insure that any equipment or supplies delivered to Saipan are free of any introduced organisms such as brown tree snakes. The Contractor shall provide a plan stating all methods used to accomplish this task including, but not limited to quarantine activities and posting signs.

These provisions are for the purpose of preventing the accidental introduction of the Brown Tree Snake into Saipan. They apply to any permit holder who will be shipping materials of any type from or through Guam to Saipan or any other island in the CNMI. Adherence to the following CNMIF&W and DNR quarantine procedures are mandatory for all Contractors associated with these project:

1. Department of Natural Resources "Let's Keep Our Islands Snake Free!" posters must be protected from the elements: a) at the cargo loading point at the point in Guam. b) on board all cargo carrying vessels, c) at the cargo receiving point at the project site. These posters must be maintained throughout the construction period and at the completed project site as long as cargo from Guam is being received.
2. A search for stowaway snakes must be accomplished on all boats carrying cargo for the project from Guam during the construction period. This search must be done while at sea.
3. The Contractor shall designate an official "snake quarantine officer" who must be on site for the duration of the construction period. He must submit detailed plans for carrying out of the above provisions to the Division of Fish and Wildlife and the Division of Animal Health and Industry for their approval before construction is initiated.

2.2.2 Water Resources: Perform all work in such a manner that any adverse environmental impact on water resources is reduced to a level acceptable to the Contracting Officer.

2.2.2.1 Oily Substances: Take special measurements to prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water. Surround all temporary fuel oil, petroleum, or liquid chemical storage tanks with a temporary earth berm of sufficient

size and strength to contain the contents of the tanks in the event of content leakage or spillage. The Contractor's planned procedures for spill containment are subject to the approval of the Contracting Officer.

2.2.3 Wildlife Resources: During the performance of the work take such steps as required to prevent interference or disturbance to wildlife. Do not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to wildlife except as may be indicated or specified. As a minimum, the following steps are required:

- a. The Contractor will advise all construction personnel of the critical nature of the endangered species, the Micronesian Megapode, inhabiting the Marpi Forest, and other sensitive species present, and the role of the Marpi Forest, and other sensitive species present, and the role of the Marpi Forest in the recovery of the referenced species of birds.
- b. The Contractor shall develop educational materials for construction personnel on the endangered species present at the jobsite.
- c. The Contractor shall coordinate with the Contracting Officer before field work begins, to construct suitable locations, as directed by the Contracting Officer as described under Section 01011, warning if the danger of forest fires and shall state that the harassment if endangered species (including nests) may be in violation of, and punishable under, Federal and Commonwealth statutes.
- d. In the event that a megapode nest is discovered, all project-related activities in the areas of the nest shall cease, and the Contracting Officer shall be immediately notified.
- e. The Contractor will limit work to areas specified to avoid disturbance to habitat of the endangered species present.

2.2.4 Historical and Archeological Resources: THIS IS AN ARCHEOLOGICAL SENSITIVE AREA. Carefully preserve and report immediately to the Contracting Officer all items having any apparent historical or archeological interest which are discovered in the course of any construction activities. The four existing ordnance storage buildings shall be left undisturbed during project construction. The Contractor is advised that a CNMI archeologist will be present during construction to monitor onsite construction activities. Drawing C-39, Station 94±, there exists conflicts between limit of work and existing building. Move limit of work line on drawing to avoid building.



## 2.3 EROSION AND SEDIMENT CONTROL MEASURES:

2.3.1 Burn-off: Burn off of ground cover is not permitted.

2.3.2 Borrow Pit Areas: Manage and control borrow pit areas to prevent sediment from entering nearby drainage areas. Restore areas, including those outside borrow pit, disturbed by borrow and haul operations. Restoration includes grading, replacement of topsoil, and establishment of permanent vegetation cover. Uniformly grade side-slopes of borrow pit to a slope of 30 degrees or less with the horizontal. Uniformly grade bottom of borrow pits to provide a flat bottom and drain by outfall ditches in their suitable means. Borrow pits will not be furnished and the Contractor shall locate and obtain borrow material as needed at his own cost and expense.

2.3.3 Protection of Erodible Soils: All earthworks brought to final grade shall be immediately finished as indicated or specified. Protect immediately side slopes and backslopes upon completion of rough grading. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected soils.

Contractor shall comply with grading, filling, and clearing considerations stated on the Earthmoving and Erosion Control Regulation. Part 7 of the CNMI Public Law 3-23 as part of the Earthmoving and Erosion Control Construction Permit issued by the Department of Environmental Quality of Saipan. Plan and conduct all earthwork in such a manner as to minimize the duration of exposure of unprotected soils. Protect side slopes and backslopes immediately upon completion of rough grading.

2.3.4 Temporary Protection of Erodible Soils: Utilize the following methods to prevent erosion and control sedimentation.

2.3.4.1 Mechanical Retardation and Control of Runoff: Mechanically retard and control the rate of runoff from the construction site. This includes construction of diversion ditches, benches, and berms, to retard and divert runoff to protected drainage courses. Diversion measures shall direct flow into natural, heavy vegetated swales and new drainage channels which are designed to resist erosion for calculated flow conditions.

2.3.4.2 Sediment Basins: Trap sediment in temporary sediment basins. Select basin size to accommodate the runoff of a local 10 year storm. Pump dry and remove accumulated sediment after each storm. Use a paved weir or vertical overflow pipe for overflow. Remove collected sediment from the site. Institute effluent quality monitoring program as required by Saipan environmental agencies.

2.3.4.3 Borrow: Not permitted in areas where suitable environmental controls are not possible.

2.3.4.4Vegetation and Mulch: Provide temporary protection on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Such protection shall be by accelerated growth of permanent vegetation, mulching, or netting. Stabilize slopes by hydroseeding, anchorage mulch in place, covering with anchored netting, sodding, or such combination of these and other methods necessary for effective erosion control.

At least two types of vegetation shall be used for replanting activities. These include Common Bermuda Grass and fast-growing, local trees such as Naria or Pterocarpus indicus. The Bermuda Grass shall be used in cleared areas that require low-lying vegetation, such as the Radar Site and the 30-foot clear zone. The trees shall be planted in areas as specified by the Contracting Officer. Replanting activities shall be scheduled and implemented where possible to correspond with the start of the rainy seasons, which lasts from late June to early November.

2.3.4.5Compliance With CNMI Earthmoving and Erosion Control Regulations: The Contractor shall ensure that all erosion and sediment control measures meet the following:

- a. Preserve, match or blend with the natural contours and undulations of the land;
- b. Retain trees and other native vegetation to the maximum extent possible to stabilize slopes, retain moisture, reduce erosion, siltation and nutrient runoff;
- c. Minimize scars from cuts and fills;
- d. Assure that all cleared slopes, cuts and fills vulnerable to erosion are stabilized;
- e. Assure that sediment or other material deposited in the marine waters or coastline or any other public or private lands to not exceed that which would have been deposited if the land had been in its natural state; and
- f. Assure all necessary permits are obtained from the appropriate agencies.

2.4 CONTROL AND DISPOSAL OF SOLID, CHEMICAL AND SANITARY WASTES: Pick up solid waste and place on containers which are emptied on a regular schedule. The preparation, cooking, and disposing of food are strictly prohibited on the project site. Conduct handling and disposal of wastes to prevent contamination of the site and other areas. On completion, leave areas clean and natural looking. Obliterate signs of temporary construction and activities incidental to construction of the permanent work in place.

2.4.1 Disposal of Rubbish and Debris: Dispose of rubbish and debris in accordance with the requirements specified herein.

2.4.1.1 Removal from Government Property: Remove rubbish and debris from Government property and dispose of it on compliance with federal and local requirements.

2.4.2 Garbage Disposal: remove garbage to the Saipan Landfill located in Garapan.

2.4.3 Sewage, Odor, and Pest Control: Dispose of sewage through connection to station sanitary sewage system. Where such system is not available, use chemical toilets or comparably defective units and periodically empty wastes into municipal sanitary sewage system. Include provisions for pest control and elimination of odors. Contractor to obtain necessary permits for waste disposal.

2.4.4 Chemical Waste: Store chemical waste on corrosion resistant containers labeled to identify type of waste and date filled. Remove containers from the project site, and dispose of chemical waste in accordance with Federal and local regulations and on accordance with the approved procedures for hazardous wastes as required by paragraph 1.4 of this section. For oil and hazardous material spills which may be large enough to violate federal, and local regulations, notify the Contracting Officer immediately.

2.4.4.1 Petroleum Products: Conduct fueling and lubricating of equipment and motor vehicles on a manner that affords the maximum protection against spills and evaporation. Dispose of lubricants to be discarded and excess oil in accordance with approved procedures meeting federal and local regulations.

2.4.4.2 Lead-Acid Battery Electrolyte: Electrolyte solution from lead-acid batteries shall be disposed of in such a manner as to ensure compliance with applicable federal and local regulation. The electrolyte shall not be dumped onto the ground, into storm drains or into the sanitary sewer without neutralization. One of the following alternatives shall be used for disposal of waste electrolytes.

- a. An industrial waste treatment plant, if available and approved for neutralizing and disposal of battery-acid electrolyte.
- b. Transport the electrolyte to a local-approved hazardous waste disposal site. Method of transportation and equipment must comply with applicable Federal and Local regulations.
- c. Use an approved existing tank located on station or construct a neutralization tank. The neutralization process shall be in accordance with NEPSS PS-015.

2.5 DUST CONTROL: Keep dust down at all times, including non-working hours, weekends, and holidays. Sprinkle or treat, with dust suppressors, the soil at the site, haul roads, and other areas disturbed by operations. During site preparation and access road grading, water will be used as required for dust control. No dry power brooming is permitted. Instead use vacuuming, wet mopping, wet sweeping, or wet power brooming. Air blowing is permitted only for cleaning nonparticulate debris, such as steel reinforcing bars. No sandblasting is permitted unless dust therefrom is confined. Only wet cutting of concrete blocks, concrete, and asphalt is permitted. No unnecessary shaking of bags is permitted where bagged cement, concrete mortar, and plaster is used.

2.6 NOISE: Diesel generators and internal combustion equipment will be supplied with exhaust silencers, soundproofing insulation, specifically on exhaust piping, and vibration dampers in order to meet occupational noise exposure standards as indicated in Section 01011, "Additional General Paragraphs".

--END OF SECTION--

### B.3 Contractor's Environmental Protection Plan

**Contract No. N62766-84-C-0229  
PAC BAR III FACILITY  
Marpi Forest Reserve, Saipan CNMI>**

## **ENVIRONMENTAL PROTECTION PLAN**

**Prepared by**

**BLACK MICRO CORPORATION**

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Scope:

To provide and maintain during the life of the contract, Environmental Protection Plan, as required in compliance with laws and regulations of the Federal and CNMI environmental agencies.

APPLICABLE REGULATIONS

Federal:

- Coastal Zone Management Act
- United States Department of the Interior
- Environmental Protection Agency
- RCRA
- DOD Regulations
- OSHA
- NEPPS
- DOT

CNMI:

- Coastal Resources Management
- Community and Cultural Affairs
- Public Health and Environmental Services
- Department of Natural Resources
- Department of Public Works
- Commerce and Labor

SITE SURVEY REPORT

Following are the observations made on the major portions of the project during the initial survey and layout of the Antenna Access Road centerlines and the Antenna Site horizontal and vertical control reference lines, including the location of the antenna site fence.

To facilitate description of the survey control points and the actual condition of the immediate surroundings, photographs were taken and the locations of the shots noted herein.



The Survey Control Diagram for the Antenna Access Road from the Main Road intersection up to the Antenna Site; and the Antenna Site Plan No. 1 show the survey control points established on the ground to guide the construction crews during implementation.

Following are the numbered field photos referred to above:

Photo Number	Location and Remarks
1	Showing the intersection of the Main Road (Beach Road) and the start of the Antenna Access Road. Access is unpaved under all weather conditions.
2	Same Beach Road and Antenna Access Road viewed from the Main Road, showing the Antenna Access Road going towards the Antenna Site.
3	Antenna Access Road, near point T-C & T-D.
4	Antenna Access Road, near point T-A
5	Junction of Matuis Road (leading to the Camacho Quarry) and the Antenna Access Road turning to the right where the road becomes more narrow and poorly maintained.
6	Antenna Access Road, showing points T-K and T-L, from point T-J.
7	Antenna Access Road, points T-L and T-M.
8	Antenna Access Road, showing trail with overgrown vegetation at point T-O and T-P.
9	Antenna Access Road from T-3, where there is a left turn towards the Antenna Site.

- 10 Antenna Site pad, near T-Pali and Petosukara control points. Medium dense vegetation (grass at most areas and tangan-tangan near the ridge line) covers the site where the antenna and the support buildings and facilities will be sited.
- 11 Area near the road across from the 15,000 gal fuel storage tank, towards the ridge line.
- 12 Indicating the point where the access road centerline intersects the fence line (entry point to the antenna site).

Generally the ridge line, running North to South, marks the highest points in the area. From the antenna pad, the surrounding terrain slopes downward towards the generator building and over across the operations building and further to the roadway entrance to the site.

Protruding boulders of hard rock can be spotted at the southern portion of the site and other scattered points, including the antenna pad itself.

Grass grows up to 4 feet in some locations clear the ridge line where tangan-tangan trees grow.

The found control points are as marked on the Site Plan No. 1 and are either indicated with #4 rebar driven into the ground or otherwise with concrete and nail at the center.

Other than the problems addressed in the contract specifications, no serious environmental problem associated with the contract work is foreseen at the moment, provided diligent compliance with the Environmental Protection Plan (EPP) and close coordination with the CNMI agencies concerned is carried out.

In any case, the ROICC Saipan shall be informed immediately by BMC of any actual or potential problem impacting on the site environment which in the latter's assessment need immediate attention.

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9



10



11



12

OF BRASS DISK BEING 30.71 FEET ABOVE  
L.

WY CONDUCTED BY WES THOMAS B  
ON MAY 11, 1965 TO JUNE 16, 1965.  
GRAPHIC SURVEY CONDUCTED ON  
1 SEPT. 10, 1966 AND FEB. 21, 1967 TO MARCH 1, 1967.

Y DATA SHOWN WERE PERFORMED IN  
THE U.S.G.S. TRIANGULATION  
ARK GUAM 1963 DATUM, WITH THE COORDINATES  
STATION PETOSUKARA BEING 242,837.86 FEET  
EAST AND THE AZIMUTH TO TRIANGULAR  
T-1 BEING 201°32'07".

TO MARIANA ISLANDS DISTRICT COORDINATE  
ADJUSTMENT SHOULD BE MADE AS FOLLOWS.

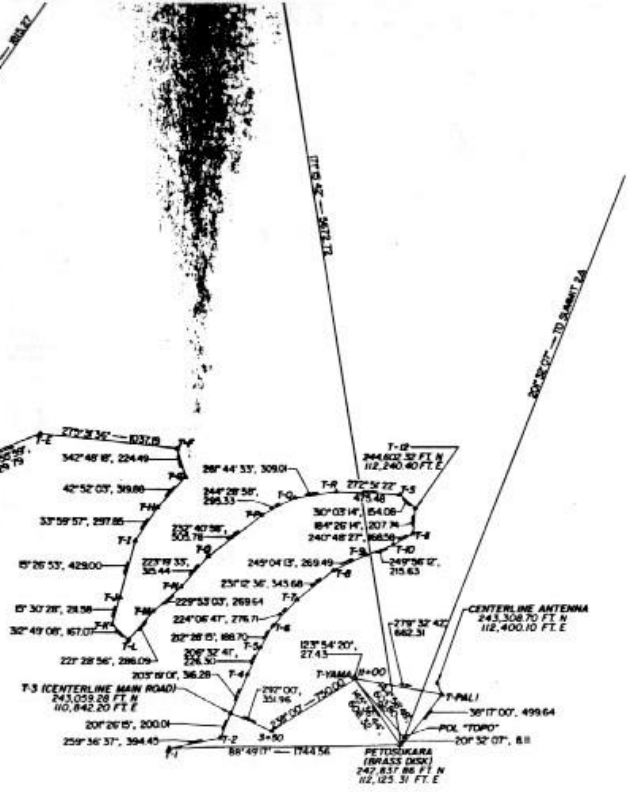
IN OF COORDINATES IN FEET  
AR STATION PETOSUKARA NORTH EAST

1 DATUM	242,837.86	112,125.31
SYSTEM OF 1966	183,630.95	184,140.85
NT	49,206.91 (+)	82,035.54

IN OF AZIMUTH  
BA TO SUMMIT 2 AZIMUTH

DATUM	201°32'07"
SYSTEM OF 1966	202°30'49"
NT	00°01'18"

DESCRIPTION	ELEVATION	STATION	DESCRIPTION	ELEVATION
1/4 INCH REBAR	91.96	T-1	1/2 INCH REBAR	
1/4 INCH REBAR	222.36	T-2	1/2 INCH REBAR	776.01
1/4 INCH REBAR	145.45	T-3	1/2 INCH REBAR	772.64
1/4 INCH REBAR	200.85	T-4	1/2 INCH REBAR	756.86
1/4 INCH REBAR	245.91	T-5	1/2 INCH REBAR	746.46
1/4 INCH REBAR	341.08	T-6	1/2 INCH REBAR	742.02
1/4 INCH REBAR	369.00	T-7	1/2 INCH REBAR	735.50
1/4 INCH REBAR		T-8	1/2 INCH REBAR	714.22
1/4 INCH REBAR		T-9	1/4 INCH REBAR	693.04
1/4 INCH REBAR		T-10	1/4 INCH REBAR	676.84
1/4 INCH REBAR	439.72	T-11	1/4 INCH REBAR	663.31
1/4 INCH REBAR	456.85	T-12	1/4 INCH REBAR	639.24
1/4 INCH REBAR	416.17	T-13	1/4 INCH REBAR	666.53
1/4 INCH REBAR	506.14	T-14	1/4 INCH REBAR	642.07
1/4 INCH REBAR	530.30	T-15	1/4 INCH REBAR	633
1/4 INCH REBAR	556.88	T-16	1/4 INCH REBAR	587.40
1/4 INCH REBAR	573.52	T-17	1/4 INCH REBAR	532.36
1/4 INCH REBAR	941.21	T-18	1/4 INCH REBAR	547.64
1/4 INCH REBAR	912.64	T-19	1/4 INCH REBAR	



**SURVEY CONTROL DIAGRAM**  
SCALE: 1" = 400'



## **PROTECTION OF LAND AREAS**

Prior to clearing and grubbing, Black Micro Corporation shall notify the contracting Officer 7 working days in advance. Vegetation shall be cleared as specified in contract drawings to absolute minimum amount. Existing vegetation along cliff bases will not be removed. Vegetation along the access road will not be removed unless required for road widening. Black Micro Corporation will take all precautions to protect and save these areas.

Project boundary shall be marked and or staked visible to construction workers. Trees or shrubs outside the limit of permanent works, assigned work, storage and access areas will not be removed, cut, injured or destroyed. Where removal, cut or trim is necessary, a written consent from the Contracting Officer will be requested. Black Micro Corporation will preserve the adjacent land area in their natural condition. If any damage should occur to reject areas not approved for construction clearing and grubbing, Black Micro Corporation will be responsible for re-planting these areas with Bermuda grass to restore any damaged vegetation. The contractor will protect existing trees which are to remain and which may be defaced or otherwise damaged by construction operations. Displaced rocks will be removed from uncleared areas. Monuments, existing structures, markers, and work of art will also be protected.

Black Micro Corporation will obliterate all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess or waste materials and all other vestiges of construction. Temporary roads, parking areas and similar temporary use areas shall be graded in conformance with surrounding areas tilled and seeded. Top soil will be included during the seeding operations as necessary to establish a suitable stand of grass.

## **PROTECTION OF WATER RESOURCES**

Black Micro Corporation shall take all due precautions to control the uses of and prevent the entry into the subsoil of all fuels, oils, bitumens, or other harmful chemicals. Their use shall be strictly limited to areas specifically designated in the specifications. Water used in on-site construction shall be generally limited to material fills processing



concrete mixing and turving. Water shall not be used or used in very limited quantities in on-site concrete clean-up. Flushing down of concrete trucks will be performed only at the nearby BMC quarry and Batching plant site in Marpi. The contractor will comply with all applicable federal and local regulations concerning the direct or indirect discharge of pollutants to the ground or the subsurface soil. All work under this contract shall be performed in such a manner that any adverse impacts to the environment will be reduced to a level that is acceptable to the Contracting Officer.

## **PROTECTION OF WILDLIFE RESOURCES**

Black Micro Corporation shall take such steps as required to minimize impact on endangered wildlife species. The contractor shall not alter water flows or otherwise significantly disturb native habitat adjacent to the project area which are critical to wildlife except as may be indicated or specified. Required steps are as follows:

1. Black Micro Corporation will advise all construction personnel of the critical nature of endangered and protected species, the Micronesian Megapode, Nightingale reed Warbler, Vanikoro Swiftlet, Fruit Bat, Coconut crab and other sensitive species, and importance of Marpi Forest in the recovery of the endangered species.
2. The contractor shall develop educational materials for construction personnel on the endangered species present at the jobsite.
3. Prior to field work, suitable signs will be constructed and placed at suitable sites and locations as directed by the Contracting Officer, warning of the danger of forest fires and shall state that the harassment of endangered species (including nests) is a violation of and punishable under, Federal and Commonwealth statutes.
4. In the event that a megapode nest is discovered, all project related activities in the areas of the nest shall cease, and the Contracting Officer shall be immediately notified.
5. Black Micro Corporation will limit work to areas specified to avoid disturbance to habitat of the endangered species.

## **PROTECTION OF HISTORICAL AND ARCHEOLOGICAL RESOURCES**

Black Micro Corporation will preserve and report immediately to the Contracting Officer all items having any apparent historical or archeological interest which are discovered in the course of any construction activities. The large ordnance buildings will not be removed or disturbed during construction activities.

## **SOIL EROSION CONTROL**

Black Micro Corporation will provide normal workmanlike temporary measures to protect erodible soils. Borrow pit areas shall be managed and controlled to prevent sedimentation. All areas disturbed by borrow and haul operations shall be restored to its original or better condition.

The rate of surface runoff, when existent, will be mechanically retarded in open earthworks. Materials generated from trench excavations will be stockpiled in the uphill side of the trench. Temporary sediment traps or siltation basins will be installed if required, to contain sedimentation and minimize pollution. Earthwork areas shall be on an as required basis. Works will be expedited and the permanent surface cover will be restored immediately. Borrow, stockpile and waste areas will be managed so as to control erosion and subsequent adverse sedimentation. Temporary protection will be provided on all side and back slopes as soon as rough grading is completed or sufficient soil is exposed to require protection to prevent erosion. Slopes will be stabilized by hydroseed, sodding or other methods necessary to effect erosion control.

In compliance with CNMI Earth moving and erosion control Regulations, Black Micro Corporation will ensure that all erosion and sediment control measures meet the following:

1. Preserve, match or blend with the natural contours and undulations of the land;
2. Retain trees and other native vegetation to the maximum extent possible to stabilize slopes, retain moisture, reduce erosion, siltation and nutrient runoff;
3. Minimize scars from cuts and fills;
4. Assure that all cleared slopes, cuts and fills vulnerable to erosion are stabilized;

5. Assure that sediment or other material deposited in the marine waters or coastline or any other public or private lands to not exceed that which would have been deposited if the land had been in its natural state; and
6. Assure all necessary permits are obtained from appropriate agencies.
  - a) Solid Waste Disposal Permit (No Permit Required per DEQ)
  - b) Hazardous Waste Disposal Permit (No Permit Required per DEQ)

## **BURNING**

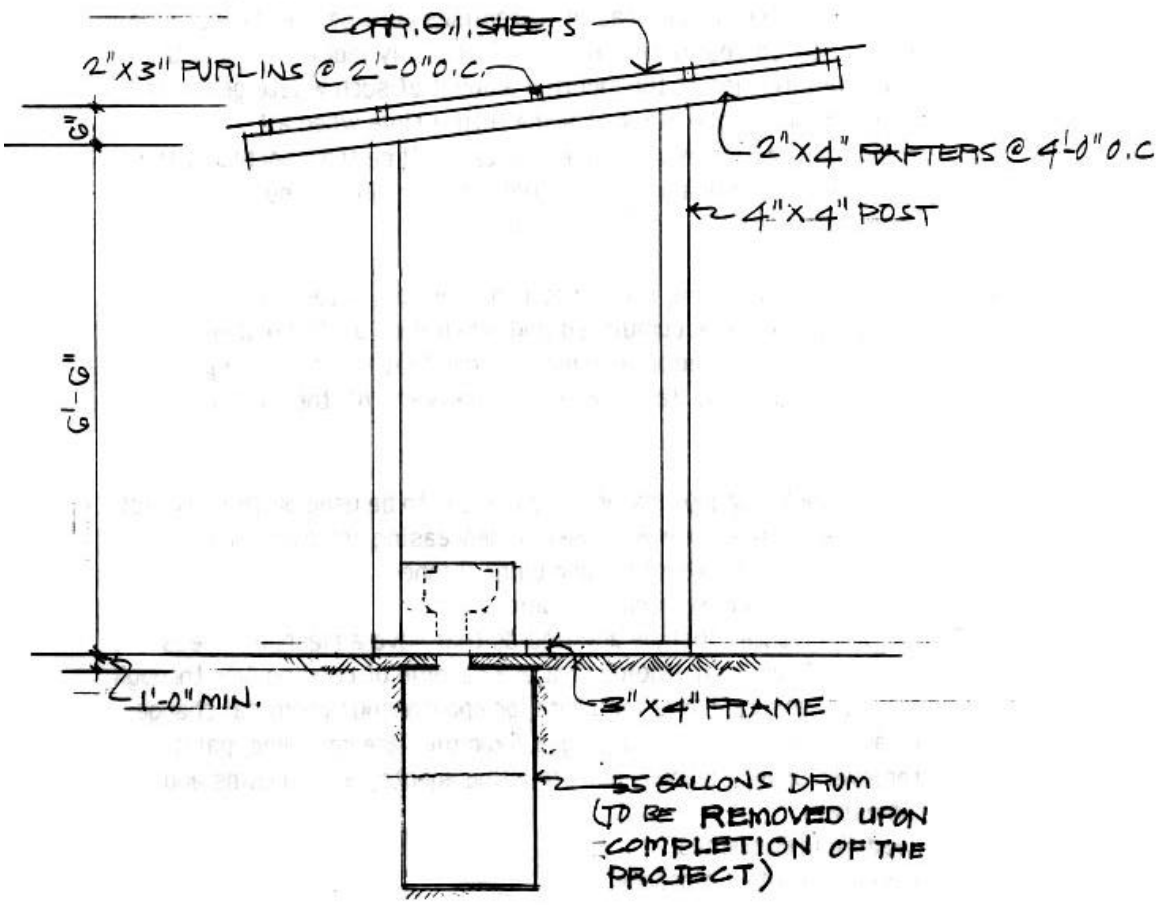
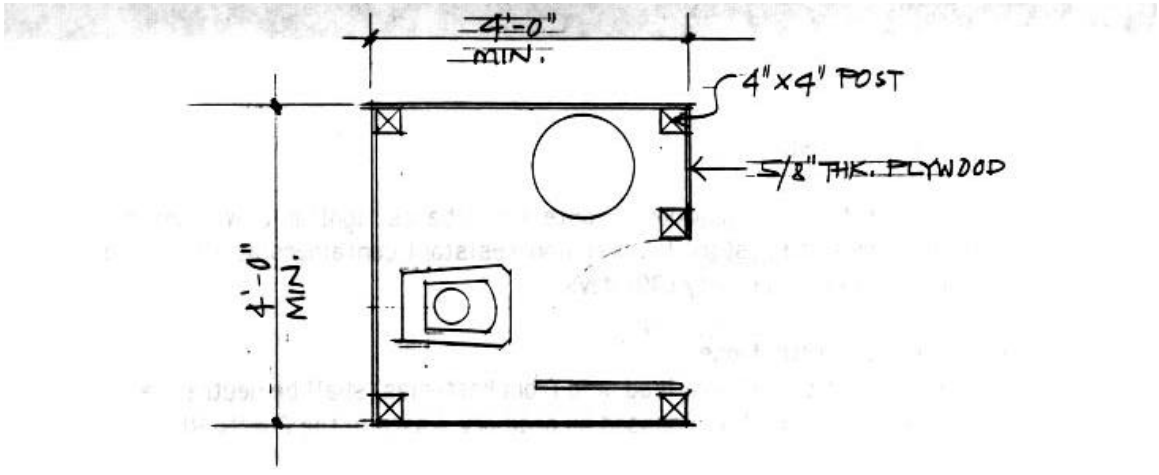
There is no burning contemplated on this contract, and none shall be performed.

## **CONSTRUCTION WASTE DISPOSAL**

Rocks, strippings, unsuitable materials and any other materials requiring removal which are generated from earthworks will be disposed off at the Government approved dumping site in Puerto Rico. Waste materials generated from general civil construction will be collected in dumpsters and other containers, as appropriate, and disposed of daily at the designated waste area. No waste material will be dumped or otherwise disposed of except in the designated waste areas.

## **SANITARY WASTE**

Black Micro Corporation shall provide an approved temporary sanitary facilities at the site. A portable type compartment shall be built with a metal container waste catchment buried underground. This facility will be kept clean by periodic inspection and cleaning. Sewage shall be treated with lime and or chemical to prevent foul odor and will be pumped out by any of the approved local sludge contractors, MTDC or Camacho Equipment. The sludge will be disposed into existing sanitary sewer system. The metal container shall be removed upon completion of the project.



**PORTABLE TYPE TOILET**

## **HAZARDOUS WASTE**

Items classified as hazardous waste (acid/bases, ignitable wastes and solvents) are to be restored in corrosion-resistant containers at site for a period not to exceed ninety (90) days.

Per DEQ, CNMI requirements:

- 1). Acid and bases (like lead acid from batteries) shall be neutralized with lime and the disposed as ordinary waste in the Puerto Rico dumpsite.
- 2). The plastic bodies of batteries shall be accumulated and sold to used battery body buyers.
- 3). Other hazardous materials generated are to be accumulated at a designated area at contractor's premises outside the project site, inside non-corrosive containers and properly labeled. The DEQ shall be informed of the monthly amount of such waste generated. Disposal shall take place at some future time when all accumulated Saipan hazardous wastes will be transported to the transfer site in Guam and eventually to the final dumpsite or treatment facility in U.S. mainland.

Note that waste lubricating oil is not considered a hazardous waste. Per DEQ, waste oil shall be accumulated and when say, a 55 gal container is filled, DEQ shall be notified in writing in order that it may arrange for the Public Works Department to receive the delivery of the waste oil for recycling.

The following are Hazardous Materials expected to be used on this project:

- 1). Solvents includes solvents used on degreasing and paint brush cleaning such as kerosene and paint thinner.
- 2). Acids/Bases like Hydrochloric acid
- 3). Ignitable wastes include any liquids that have a flashpoint less than 140F, any non-liquids that are capable of causing fire through friction, absorption of moisture, or spontaneous chemical change, or any ignitable compressed gas. Examples are kerosene, paint remover, brush cleaners and stripping agents, epoxy resins and adhesives.
- 4). Lead-Acid Batteries
- 5). Pesticides like Chlordane

## **WASTE MATERIAL SPILL**

In the event of oil and hazardous waste material spill, the contracting officer and the local environmental agency shall be notified immediately. Hazardous waste spill shall be cleaned up and treated in conformance with Environmental Protection Agency (EPA) Regulations (40 CFR parts 261 through 264). Hazardous wastes which require special handling shall be disposed by a certified local or Guam transporter and disposer with EPA ID number into an approved local hazardous disposal site or off island. Soil and its immediate surroundings affected by spill shall be removed 6" deep from the ground and shall be backfilled with approved backfill materials. Removed soil shall be treated and disposed of accordingly as hazardous waste.

## **DUST CONTROL**

The only air pollution problem anticipated from this project will be dust. Dust can be whipped up by winds during clearing and grubbing and grading. In the event that dust becomes a problem, the area will be brought to the staging site for watering activities. Black Micro Corporation will maintain all areas free from dust to such a reasonable degree so as to avoid causing a nuisance or hazard to the Using Service and others.

## **VEHICULAR AIR POLLUTION CONTROL**

Black Micro Corporation will ensure that all equipments and vehicles meet applicable emission standards approved by EPA. All engines shall be tuned-up and a periodic maintenance schedule will be followed. Leaks on exhaust system shall be corrected.

## **NOISE**

Black Micro Corporation will comply with all federal and local regulations pertaining to noise level control. All combustion engine powered equipment shall have appropriate mufflers to minimize noise. All heavy equipment and power tools will be kept in good working order to minimize noise pollution insofar as possible and consistent with food construction equipment practices. Workers will not be exposed to excessive noise level without the proper ear protection as specified in OSHA regulations. No blasting or use of explosives is contemplated.

**SNAKE CONTROL** (See BMC Implementation Plan to Prevent Importation of Harmful Insects, Rodents and Especially Tree Snakes)

**PERSONAL SAFETY** (See BMC Occupational Safety, Health Policy and Procedure Guide)

## **AGENCY SURVEILLANCE**

Black Micro Corporation shall notify the Contracting Officer prior to the start of the activities which require Agency surveillance. Identified activities are as follows:

1. Clearing and Grubbing
2. Grading
3. Excavations and Backfill
4. Drainage System Construction
5. Sewer System Construction
6. Building Constructions
7. Road Works
8. Restoration of Damaged Vegetations
9. Waste Disposal

## **PERMITS**





## Commonwealth of the Northern Mariana Islands

Department of Public Health & Environmental Services  
Division of Environmental Quality  
P.O. Box 1304  
Saipan, Mariana Islands 96950



Cable Address:  
Gov. NMI Saipan  
Tel. 234-6984/6114

January 5, 1988

Mr. Romeo S. Navarro  
Authorized Representative  
Black-Micro Corporation  
Saipan, CM 96950



Re: Earthmoving Permit No. 88-024

Dear Mr. Navarro:

The Division of Environmental Quality has reviewed your earthmoving permit application to construct the PACBAR III Facility and Installation of its antenna radar in the Marpi area (on government land). DEQ hereby grants you approval to conduct earthmoving operations with the following conditions:

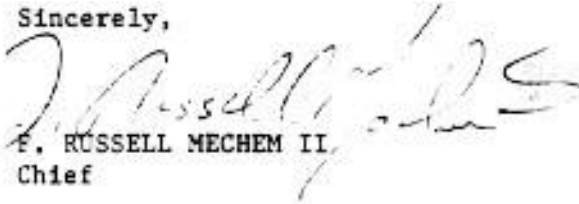
1. All earthmoving operations shall be conducted in accordance with specifications stated in your DEQ approved earthmoving application package.
2. All earthmoving operations shall be conducted in a manner that prevents accelerated land erosion.
3. The area affected by earthmoving operations at any one time during construction shall be kept to a minimum by either selective clearing, incremental phases of development or other means.
4. No earthmoving operations shall be conducted during periods of heavy rainfall.
5. All areas disturbed by earthmoving operations must be stabilized as soon as possible after final grade has been established.
6. Stormwater runoff from areas disturbed by earthmoving operations shall be collected and diverted to a temporary or permanent ponding basin.
7. You shall notify DEQ at least two (2) working days prior to commencement of earthmoving operations.
8. This permit does not relieve your company of obligations imposed by other Commonwealth or Federal laws, either statutory or otherwise.

Romeo Navarro  
January 5, 1988  
Page 2

9. This permit may be amended by DEQ so to impose mitigation conditions or may be revoked, if in the opinion of the chief, DEQ the project causes excessive erosion.

Failure to comply with the above conditions shall constitute a violation of the CNMI Earthmoving Rules and Regulations, and you could be subject to a civil penalty up to \$1000 for each day of the continuance of such failure. If you have any questions regarding the conditions of this permit, please contact Ms. Lorraine Aldan at telephone numbers 234-6114 and 234-6984.

Sincerely,



F. RUSSELL MECHEM II  
Chief

cc: Lorraine Aldan

GUAM OFFICE:  
P.O. Box 24667 G.M.F.  
Guam, M.I. 96921  
Tel.: 646-4861 Thru 646-4865  
Telex: 7216610  
Cable: "BLACKGUAM"

**BLACK-MICRO CORPORATION**  
**General Contractor**  
**SAIPAN, MARIANA ISLANDS 96950**

SAIPAN OFFICE:  
P.O. Box 545 CK  
Saipan, CM 96950  
Tel: 234-6549  
234-6800  
234-7181 (Shop)  
322-9474 (Quarry)  
Telex: 783660  
Fax: 234-8726

30 December 1987

Coastal Resources Management Office  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
Saipan, CM 96950

Attention: Mr. Robert W. Rudolph  
Administrator, CRNO

Subject: BMC Job #7323, PACBAR III Facility, Contract NO. N62766-84-C-0229; application  
for Solid Waste Disposal Permit

Gentlemen:

This has reference to the disposal of solid waste resulting from the construction operation at the jobsite of the above subject project. Our immediate plan is to make use of the government-designated dumping area at Puerto Rico.

Please refer to the attached location map. Since the proximity of the area to the coastal line is near, we were informed that this matter is within your jurisdiction and area of concern.

Also, kindly note that the solid wastes we are referring to are consisting of rubbish, debris, garbage and other discarded solid materials resulting from the construction operation.

We would appreciate if your office could advise us how to obtain the necessary permit for disposal at the government-designated area.

Sincerely,

BLACK-MICRO CORPORATION

FRANK G. MACABENTA  
Business Manager

Atch: As stated.  
xc: BCC Guam  
BMC Saipan



**B.4 Implementation Plan to Prevent Importation of Harmful Insects,  
Rodents, and Especially Brown Tree Snakes**

**IMPLEMENTATION PLAN TO PREVENT  
IMPORTATION OF HARMFUL INSECTS,  
RODENTS AND ESPECIALLY BROWN TREE SNAKES**

**Prepared by  
M.T. Riveira  
Black Micro Corporation  
P.O. Box 24667  
GMF Guam 96921**

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## **1.0 SPECIFICATION SECTION**

This plan has been prepared to comply with requirements set forth in specification section 01560 (Amendment 2) Sections 2.2.1.4 (Requirement to prevent accidental introductions of Tree Snakes and other organisms).



## 1.1 FOREWORD

If there were no government regulations for the safe transportation of hazardous materials, shippers and carriers would, of necessity, make their own. The reasons for this is the desire of shippers and carriers not only to ensure the proper and safe transportation of materials that present dangers to other cargo and persons, but also to protect themselves from liability in the event of an unfortunate incident.

It should be noted here that the absence of government regulations would make it difficult for shippers and carriers to protect themselves in civil actions for dangers to persons and property caused by products on the hazardous category. It is difficult to prove that all the care possible has been exercised to prevent damages by the hazardous materials. It is usually possible for a claimant to show that the damages would not have occurred if some further safety measure had been observed, so that a degree of negligence may be established.

With Government regulations on force, compliance tends to protect shippers and carriers from civil actions. It would be difficult to establish that there was negligence when the regulations had been observed. Thus, compliance with the safety regulations is the best protection from liability suits.

The serious nature of the injuries that can be inflicted on persons and property by certain materials that are considered to be hazardous indicates the need for appropriate regulations governing their transportation. Such regulations are necessarily complex because the shippers must first identify the many hazardous materials, classify them, name them, and then provide for their packaging, making, labeling and placarding for safe transportation.

Most of these Government regulations currently are published on various areas of the Code of Federal Regulations, such as titles 49 (surface transportation), 46 (water transportation), and 14 (air transportation). In addition, there are other regulations such as the postal regulations in title 39 and, of course, the myriad of regulations by the carriers, and other publications by foreign Governments on international traffic. Yet, the Brown Tree Snake has not been classified as a hazardous animal and, therefore, its content has not been fully established within the Government regulations governing transportation of this type of species. Further

research by Guam Government Agencies must be enforced so as to eradicate the migration in the near future.

## 1.2 INTRODUCTION

Businessmen today must be aware more than ever of their responsibilities to the public, particularly on matters of environmental health and safety. This awareness is no longer optional. In fact, many firms operate on the fringe of illegality, unknowingly but culpably, nevertheless, according to present law. Liability involves top executives as well as those performing ordinary tasks. Recent Supreme Court decisions confirm that ignorance of the statutes is no defense. Now here's the problem. How can compliance be met if those under regulation neither know the extent of such laws nor comprehend the scope of their responsibilities?

In informing people about snake infestation and hazardous material transportation requirements, a desperate need for clarification of Department of Transportation rules and regulations comes through loud and clear. In that regard, firms find themselves at a disadvantage to train their employees on handling, marking and shipping such products without adequate guidelines.

We have set out to find an outstanding authority to compile all pertinent data in a brochure for guidance purposes and to analyze the meaning of statutes and related rules. Bob Anderson, Assistant Chief of Aquatic & Wildlife Resources Division from Department of Agriculture, filled that bill and agreed to assist us on ascertaining this goal.

This plan consists of two main portions. First, section 1.4 presents a compilation of all references on the Brown Snake problem which BMC has been able to compile. Second, sections 1.5-2.2 presents specific snake prevention and control measures which will be implemented for the Pacbar project.

I'm proud to have initiated the project and thereby sponsor this brochure as a contribution to the transportation profession.

### 1.3 TERMS

A.) CARRIER:

Carrier means any who performs any function assigned by the regulations...to a carrier, and includes the owner, charterer, agent, master, pilot, driver or any person in charge of a transport vehicle or vessel and other carrier employees. Consideration of one individual as a carrier does not exclude another person from also being considered a carrier of an assigned function unless the regulations specifically provide that one party is to be responsible. (39 F.R. 3036, January 24, 1974).

B.) SHIPPER:

Shipper means any person who performs any function assigned by the regulations...to a shipper. Performance of any function by one individual as a shipper does not exclude another person from also being considered a shipper. For example, a warehouseman who presents hazardous materials to a carrier may be subject to the regulations as a shipper or as the agent of a shipper and the person who packed, marked, classified and labeled the shipment initially may also be considered a shipper (39 F.R.3037, January 24, 1974).

The Hazardous Materials Transportation (HMTA), 49 U.S.C. 1801 et. Seq. (see Chapter 22), does not define "shipper" as a term for use in the hazardous materials regulatory field. This lack of a definition is a conscious effort to implement what might be called a functional definition of this person, i.e., defining the shipper by his acts rather than by any name tag that led to great confusion and ambiguity in the application of these regulations for years. For a time, many thought that if one person was a shipper, then all others performing some aspect of the shipper's role were not shippers. So, it seemed a broad range of intermediate persons such as freight forwarders, contract packagers, etc., were falling through the regulatory cracks and many people on this range believed they had no obligations under the DOT regulations.

To disabuse this segment of industry if this idea, the general counsel of DOT prepared an interpretation of the word shipper, which was proposed but not adopted as a definition in rule making Docket No. HM-112.

- C.) CARGO: Goods, wares, materials, merchandise or any other object that is or is to be transported.
- D.) BREAKBULK CARGO: Means cargo which is not classified as unitized or containerized.
- E.) CONTAINERS: Shall mean rigid, re-usable, dry cargo, insulated, refrigerated, flat tank, liquid tank or open top cargo container capable of being readily mounted onto or dismounted from wheels, chassis or flat bed trailer. The container shall be 8 feet wide, 20 feet, 24 feet, 35 feet, 40 feet or 45 feet long and 4 feet to 13 feet high. Except for dimensions which are given above, it shall be constructed in conformity with the specification for freight containers adopted by the International Organization for Standardization (ISO) and the American Organization for Standardization (ASO). The container will have top and bottom corner castings conforming to ISO/ASO specifications.
- F.) CONTAINERIZED CARGO: Shall mean cargo in a container conforming to the above definition and is within the container.
- G.) CFS: Container Freight Station.

#### **1.4 EQUIPMENT GUAM TO SAIPAN (HIGH RISK)**

Black Construction Corporation (BCC) and its subsidiary, Black Micro Corporation (BMC), have been a long established firm in Guam and Saipan for the past sixty years, thus, much of the required equipment for this Pacbar III project are already established in Saipan readily available for active use at any given time. Nonetheless in the event that we do need to transfer other special High Risk equipment from Guam to Saipan, the following guidelines for preventative snake infestation shall be adhered to fully without fail.

- A.) Any and all equipment being shipped from Guam to Saipan for the PACBAR III project whether by air or sea, shall be thoroughly cleaned by high pressure water blaster to remove all foreign materials, such as dirt, grease, grass, weeds, insects and snakes.
- B.) Equipment, prior to being loaded onto a low boy or low truck at the Tumon Yard for movement to the Port of Guam for export shall be visually inspected by the duly appointed quarantine officer of BCC, Mr. Michael T. Riviera.
- C.) Upon discharging the cargo at the Commercial Port on Guam, all pertinent documents shall be surrounded to the assigned carrier for exportation and compliance.
- D.) Notification of BMC, Saipan, shall be done simultaneously as the shipments takes place.
- E.) All preliminary inspections shall be carried out by the duly appointed BMC Quarantine Officer, Mr. Nards Formanes prior to notification of the CNMI Snake Control Team in the event of a snake sighting or upon the request to the resident officers in charge of construction in Saipan PACBAR project Contract No. N62766-84-C-0229.
- F.) List of Equipment on Saipan (Attached)

## **1.5 MATERIALS GUAM TO SAIPAN (HIGH RISK)**

Approximately Ninety percent (90%) of the required materials for this PACBAR III project will be shipped directly to Saipan via PM & O vessel from SFO. Nonetheless, we must not construe the fact that other unforeseeable requirements of materials may be needed from Guam on short notice from time to time. For this reason, the following guidelines have been established to avoid infestation of High Risk material being shipped to Saipan from Guam.

- A.) All high risk cargo such as lumber, pipes; PVC, cast iron and ductile, hollow blocks, crates, boxed, rebars, structural steel, forms of wood, etc., where a snake can take refuge, shall be visually inspected by the duly appointed Quarantine Officer of BCC, M.T. Riviera.
- B.) BCC Quarantine Officer shall notify BMC, Saipan Quarantine Officer Mr. Nards Formanes of forthcoming shipment, within 24 hours of departure from Guam.
- C.) Upon discharging the exporting cargo at the Commercial Port of Guam, all pertinent documents shall be surrounded to the assigned carrier for shipment (breakbulk).
- D.) All cargo scheduled for CFS shipment shall be inspected visually before being loaded on truck to the forwarding agents for consolidation and after discharging from truck to place of consolidation.
- E.) BCC quarantine officer shall, upon release of cargo, submit Snake Free Declaration to the carrier or agent.

## **1.6 MODES OF SHIPMENT FROM GUAM**

Monitoring of cargo movement from Guam to Saipan shall bin four basic areas of concern:

- 1.) Surface Cargo from San Francisco being transshipped thru Guam via freight forwarder.
- 2.) Air Cargo from San Francisco on transshipped thru Guam via air freight forwarder.
- 3.) Surface Cargo originating in Guam for export to Saipan.
- 4.) Air Freight Cargo originating in Guam for export to Saipan.

As stated in Section 1.6 and 1.7 much of the bulk materials required for the PACBAR Project will be transshipped direct to Saipan via Sherrie Lee or M.V. They're excluding shipments and cargo originating in Guam. The duly appointed BCC Quarantine Officer, Mr. Michael T. Riveira, shall, upon identifying cargo to be exported from Guam or upon notification of incoming transshipment, will notify the BMC Quarantine Officer, Mr. Nards Formanes, of the scheduled arrivals and departures of said cargo within 24 hours of entry into Saipan.



## **1.7 CARGO TRANSSHIPPED THRU GUAM**

Long Beach and Oakland, California will be the departure points in which all of the overseas containerized cargoes will originate. Most of this cargo will be transshipped through Guam to Saipan via one of several local shipping agencies. BCC will not only monitor these containers bound for Guam, but also notify the contracting officer upon arrival. One of the foreseen problems is the consigned C.I.F. cargoes in which case transshipment are handled direct from supplier to agent, therefore eliminating our jurisdiction on direct handling of said cargo. Guam Freight Forwarders will handle most, if not all, of the transshipments on Guam wherein we will be steadfast to do visual inspection before they transship the cargo via container or CFS to Saipan. The Contracting Officer shall be notified in advance of any additional equipment requirements for Saipan within Seventy-Two (72) hours preceding loading and departure from the Guam Port (Ref: Sec. 1.4 Procedures). Notification shall be done by the duly appointed BMC Project Engineer, Conrado M. Yabult, in writing, stating the specific nature of the equipment and the non-availability of the same in Saipan.

## **1.8 SNAKE CONTROL IN GUAM PORT**

The perennial snake problems throughout the island of Guam has plagued us for many years, as far back as the 1950's. To date, the Government of Guam has not established a final plan to eradicate this problem or even minimize its impact on Guam. The most concerned area of infestation which should be given the greatest is the Commercial Port of Guam and the Port of Saipan, where the snakes may seek refuge in cargo bound for exportation to all the other islands. This, with the many empty containers, crates, flat racks, equipment and masses of cargo being loaded and unloaded on a daily basis, only increases the chances of snake infestation and migration. It is at times impractical for a contractor to take all the necessary precautions for snake-free cargo when the loading dock, ships, equipment and other means at these ports are infested with snakes. Nonetheless, we, in the best interest of Saipan, will follow and adhere to all the proposed guidelines and recommendations set forth herein. As contractors, we leave the responsibility of the shipments to our carriers, whom we rely on the port, thus, a more firm foundation must be established within the Port Authority of Guam to ensure that customers' cargoes are snake-free.

## **2.0 PORT OF SAIPAN**

Upon entry to the Port of Saipan, BMC shall visually inspect all consigned cargoes for the PACBAR III project so as to ensure that all the cargo are snake-free. BMC does not have jurisdiction over the cargo consigned to them until all the Bill of Ladings are present and the carrier transfers all of the cargo to the said parties, this is done by signing over all cargoes and documents thereof, we then have the responsibilities of the actual physical inspection, monitoring and notification of all parties involved, such as the CNMI Snake Task Force. If necessary, it shall be the responsibility of the contractor/consignee to submit a checklist for the inspection done on the cargoes, this checklist, a shippers declaration, shall be done by the assigned Saipan Contractors Quarantine control Officer, Nards Formanes. A record of such checklist shall be kept on a file at the job site to substantiate non-existence of snake infestation within the port of Saipan and the cargo received within it.

The Saipan port quarantine officer or the port representative shall be present to witness the inspection of all the cargo for the PACBAR project at the port of Saipan to the consignees. Representative, Mr. Nards Formanes, or in his absence, Mr. Romeo Navarro, visual inspections must take place with both parties present to ensure proper transfers of goods via delivery receipts and confirmation of inspection.

In the event of a snake sighting, the BMC Quarantine Officer shall immediately contact the CNMI Snake Control Team and advise them of such snake sighting, furthermore, he shall also support this finding in writing to both the CNMI Snake Control Team and the Department of Aquatic and Wildlife Division in Saipan (and the ROICC Saipan). Information shall include when sighting took place, where, how and last area seen, to further this, a firm description of what was seen shall also be included, size, length, color, etc. It shall be the responsibility of the CNMI Snake Control Team to capture, detain, and subdue reported snake infestation within the port of Saipan as well as the surrounding environment Saipan.

**2.1 BLACK MICRO CORPORATION CAMP & JOBSITE CONTROL  
PASSABLE CONTROL**

After the cargo is checked, received and inspected, it will be hauled to the project for installation where again other measures will be undertaken to ensure that snakes have not been in storage within the cargo:

- A.) All crates shall be knocked down and dismantled.
- B.) All wood pallets, both top and bottom shall be checked and inspected.
- C.) Pipe ends have to be reopened and cleared.
- D.) Equipment is to be reinspected visually.
- E.) Traps are to be laid in areas most commonly frequented by snakes, such as grassy bushes, near lumber, near pipe stackage, around equipment yards and within the camp compounds, near excess lumber, trash and other debris.

After these steps have been taken, then all received materials and equipment shall be free to engage on the work activities as required.

## 2.2 OTHER PROPOSED CONTROL METHODS

As stated on the previous section 1.5 thru 2.1, all the necessary steps in snake control prevention shall be undertaken by both BCC in Guam and BMC on Saipan, excluding both the Port of Guam and the Port of Saipan of which BCC and BMC has no jurisdiction over. The snake prevention ordinances of visual inspection by the designated quarantine Officer in Guam, Michael T. Riveira, and for BMC, Nards Formanes. They are to ensure that all compliances have been met for safe transfer of high risk goods from the Port of Guam to the Port of Saipan, including transshipment from Oakland and Long Beach. By one of the many routes, also making sure that all sealing of pipe ends are done as well as strapping lumber into tight bundles, high, pressure spraying of equipment and fumigation, if it is necessary, setting up traps, sealing of hollow blocks pallets with 6 mil polyethylene, inspecting of CFS cargo from forwarding agents, checking all voids for eggs, and cleaning of all cylinders and tanks being exported and notifying the proper agencies as required, to facilitate full cooperation and awareness. Snake free posters shall be provided by the contractor in various locations.

Special note on inspection of cargo for snakes while at sea: BMC specifically requests a waiver of the specification requirement that cargo be inspected on board ships at sea. BMC feels that this requirement is impractical and unreasonable because:

- Shippers will not allow BMC personnel to accompany cargo at sea.
- Shippers are not equipped to carry out such inspections at sea with their own personnel.
- Even if inspectors could be made available the storage configuration of cargo vessels makes it physically impossible to inspect most cargo while it is onboard at sea.

BMC feel that the only practical way to mitigate the problem of snake infestation at sea or in the Port of Guam is close inspection of cargo as soon as possible after it is stevedored in Saipan as described in 2.0 of this Plan.

### **2.3 MONTHLY STATUS REPORT**

BMC shall submit a snake control status report to OICC Saipan every month or as required by the Contracting Officer. The report shall include the dates and types of shipment, name of carrier, voyage number, port of origin, and other related data for shipping equipment and materials intended to be used on this project.

The report shall also include inspection resulting in snake sightings which will give full information on the number of snakes found, snakes' descriptions and action taken by BMC Quarantine Officers and CNMI Snake Control Team.

ROICC Saipan will be notified immediately of any incoming shipment not listed on the past monthly report. A special report will be submitted to the Contracting Officer for record. A sample format of monthly status report and incoming shipment are shown on pages 18 and 19.







**APPENDIX I**

**3.0 THE ECOLOGICAL & ECONOMICAL IMPACT OF  
THE BROWN TREE SNAKE ON GUAM  
AND ITS THREAT TO OTHER ISLANDS**

**PREPARED BY:**

**DIVISION OF AQUATIC & WILDLIFE RESOURCES  
P.O. BOX 2950  
AGANA, GUAM 96910**

### **Arrival of the Brown Tree Snake on Guam**

The first sighting of the brown tree snake, *Boiga irregularis*, on Guam was recorded in the Village of Santa Rita near Apra Harbor in the early 1950's. It is unclear how the snake first arrived in Guam. It may have been arrived accidentally in military cargo or been intentionally introduced to control rodents. By 1970, this snake was well established in the southern areas of the island and continued to expand its range northward. At the present time, it is found throughout the island.

### **Biology of the Brown Tree Snake**

The brown tree snake is native to parts of Australia, New Guinea, and the Solomon islands. It is rear-fanged and kills its prey by both injecting venom and constriction. Although most brown tree snakes are less than 8 feet in length, one was recorded at 11 feet on Guam. The majority of snakes are in the 3-4 foot range. Brown tree snakes are excellent climbers and can support most of their body weight with their tail, enabling them to stretch both vertically and horizontally. Although they are primarily found in shrubs and trees, they are also observed foraging on the ground. The snake is very adaptable, and on Guam, it occurs not only in forest and scrub habitat, but also in urban areas. Snakes have been found in homes, vehicles, and almost every imaginable hiding place, including the emergency room of Guam Memorial Hospital.

Brown tree snakes are generalist feeders and consume a variety of animals. In both its native range and on Guam, the snake subsists primarily on small mammals (rats, shrews, and mice), lizards and their eggs, and birds and bird eggs. However, the snake is adaptable and has even been seen eating dog food. One snake examined at the Guam Division of Aquatic and Wildlife Resources contained 3 spareribs.

Data from the Guam Division of Aquatic and Wildlife Resources and from herpetologists who have visited Guam indicate very high densities of brown

tree snakes on the island. This may be due in part to the lack of diseases and predators of the snake on Guam. Other than humans, snakes are occasionally killed by feral pigs, monitor lizards, cats and dogs.

Much remains to be learned about reproduction in the snake. Preliminary studies at the Guam Division of Aquatic and Wildlife Resources indicate brown tree snakes may reproduce year-round, though there may be a breeding peak in the rainy season. Few clutches have been found in the wild, but it appears that snakes may lay up to 12 eggs. Cool, dark locations such as crevices, tree cavities and the crowns of coconut trees are used for next locations.

## **The Impact of the Snake on Guam**

### **Native Birds**

Research conducted by the Guam Division of Aquatic and Wildlife Resources has found the brown tree snake responsible for the declines and extinction of Guam's forest birds. Historical records and interviews with local resident shave documented a close correlation between the range expansion of the brown tree snake on Guam and the range contraction of Guam's forest birds. Birds and bird eggs comprise almost a third of the snake's diet on Guam.

As the snake population increases in the southern part of the island, the bird population of that part of the island declined drastically. Until the late 1970's and early 1980's, the northern limestone forest was the only area that supported native birds. However, with the expansion of the snake's range into the northern areas of the island, the bird population also declined. Seven of the ten native birds were placed on the U.S. Endangered Species List in 1984. The Guam Broadbill (Chuguanguang), found nowhere else in the world, has not been observed since 1984.

Because the number of native birds in the wild is so low, two of them, the Guam Rail (Koko) and the Micronesian Kingfisher (Sihek) are being captive bred in mainland zoos. The Koko is also being successfully bred on Guam by the Division staff. However, before the rails and kingfishers can be reintroduced to Guam, the brown tree snakes will need to be controlled.

### **Bats**

There is evidence that the snake may be impacting the fruit bat colony in Guam. A young fruit bat which appeared to have been killed by a snake was found by a staff biologist. An unconfirmed report of a local resident finding three young fruit bats in the stomach of the snake had previously been brought to the attention of staff biologists. Research has also revealed a dramatic decrease in the proportion of young fruit bats in the main colony on Guam, suggesting that snakes may be preying in the young bats at roosts.

### **Small Mammals**

Trapping data indicate that small mammals (rats, mice, shrews) also show a pattern of decline similar to Guam's birds and are now rare in forest and scrub habitats.

### **Lizards and Geckos**

Snakes may be impacting certain lizard populations. At least one species of gecko, once commonly found on limestone habitat, appears to be less common and difficult to find.

### **Native Forest**

There may be more subtle secondary effects from the loss of Guam's native animals. For instance, plants have been evolved to depend on Guam's forest birds and fruit bats for pollination or seed dispersal may eventually become rare, thereby changing the composition of the island's forests. Birds have also been shown to help keep certain insect populations in check, and some potentially harmful insect species could possibly increase now that most of Guam's birds are extinct.

### **Domestic Animals**

Brown tree snakes are also a problem for domestic animals. Many people on Guam have given up raising pigeons because of snake problems. The Guam Division of Aquatic and Wildlife Resources has received numerous complaints of snakes consuming valuable pet birds, young chickens and chicken eggs, and there are reports of snakes also killing puppies, rabbits and even a young goat.

### **Human Beings**

Human encounters with snakes frequently occur because snakes are often found in urban areas where foods such as rats and chicken eggs are readily available. Although the venom is not known to be dangerous to humans, there are several instances of snakes biting young children and adults while they are sleeping. The Division has received reports of at least four infants (one only 2 months old) being bitten on the face, fingers, or legs while in their cribs. One woman was awakened by her baby's cries and found a snake with three of the baby's fingers in its mouth. Recently a snake was found wrapped around the body of a sleeping child. Adults have also awakened to find snakes in their beds, and there several reports of snake attempting to bite the eyelids of sleeping people.

In Australia, the brown tree snake is commonly called the "night tiger" and as this name suggests, it can be very aggressive when defending itself. It will repeatedly strike and will try to bite when cornered, and many residents of Guam have had uncomfortable or frightening encounters. One woman was driving her vehicle with her young daughter when a snake crawled out of the air conditioner vent. An encounter such as this could easily result in an accident.

### **Economy**

Besides affecting wildlife, domestic animals and humans, the brown tree snake has also had a major economic impact on Guam. The most obvious impact has been on the island's electrical system. Snakes climb on electrical transmission lines and short circuit wires that results in power outages. Guam Power Authority recognizes the snake-caused power outages as one of their major problems. Costs are estimated in the millions and include: 1) damage to the electrical distribution equipment; 2) increased maintenance and costs for emergency repair crews during the night; 3) loss of revenues during outages; 4) damage to equipment of electrical consumers due to voltage drops, surges, and repeated outages; 5) increased need for backup generators and transformers to protect against surges and for other duplicate supply routes; and 6) loss of goods and business by consumers during outages. Recently, a snake caused an island-wide power outage resulting in loss of power for over 12 hours as well as loss of water in some areas for up to a week.

Lastly, although not as obvious as power outages, snakes adversely affect Guam's tourist industry. Tourists expect to see birds when visiting beautiful tropical island and many express disappointment at the paucity of birds on Guam. Encounters with this aggressive snake and any loss

comfort due to snake-caused power outages, undoubtedly impact a negative aspect to the tourist experience.

### **Threat to Other Islands**

Because Guam is an important military base, has a major port, and is a hub for air and ocean traffic in the western Pacific, there is a very real danger of transportation snakes in military and commercial air and sea cargo to other locations in the Pacific. A half-dozen brown tree snakes were recently found in the cargo hold of a ship loaded with scrap automobiles destined for Korea. There are several instances of brown tree snakes being found on Navy aircraft at Naval Air Station, Guam. At least two brown tree snakes have already been found in airports on Oahu, Hawaii. There is a high probability of snakes being transported to other islands in the Marianas by the military. Tinian is especially at risk because of its use by the military for training exercises and the repeated importation of equipment and other materials from various locations, including Guam and Okinawa. A venomous snake, the habu, is frequently found on military bases in Okinawa and could also be introduced to Tinian or Guam.

There are several other factors besides the large volume of air and sea traffic originating in Guam that contribute to the high probability of snakes being transported off of the island. First, snakes have reached exceptionally high densities on Guam. Secondly, snakes have invaded urban and commercial areas on search of food. As they move into these areas, they are forced to seek day retreats in warehouses or among equipment, construction materials, crates and vehicles that could be sent to other islands. Third, this snake is very slender and can squeeze into small cracks and hiding places. Fourth, snakes can survive for long periods without eating, making it possible for them to live in cargo for several weeks or longer. Finally, this snake is secretive and nocturnal making detection particularly difficult.

The introduction of brown tree snakes to other islands would be devastating. Bird populations would undoubtedly be severely impacted. Endemic birds are found on most islands in Micronesia. Hawaii's native birds are already endangered and the introduction of the snake might result in the complete demise of the birds. Additionally, because of the lack of electrical backup systems on most Micronesian islands, the impact of the snake on their power supplies would be far worse than in Guam.

## **Potential Control Measures**

Various methods have been employed to control snake populations on a small scale in other parts of the world and some of these methods may be applicable to Guam. Herpetologists from the U.S. Fish and Wildlife Service have initiated studies, but adequate funding has been difficult to obtain. Possible mechanisms to control snake populations include trapping by hand or through use of attractants, repellents, and chemical or biological control using a specific disease or parasite. There is no quick and easy solution. All potential control techniques will require considerable testing, both in the lab and field.

A primary aim should be to develop methods to prevent brown tree snakes from invading other islands in the Pacific. Inspection and control methods for high risk cargos and cargo holding areas need to be developed. There must be stringent inspection by customs and quarantine officers on other islands of all cargo, aircraft and ships originating in Guam or transiting through Guam. The U.S. Navy, U.S. Air Force, Guam Port Authority, Guam Airport Authority and Guam Division of Customs and Quarantine should develop effective measures to screen all outbound cargo, aircraft and ships on Guam to prevent the accidental exportation of snakes. Containerized cargo could possibly be fumigated on Guam prior to shipment. To monitor for snake entry, regular searches of trees and underbrush adjacent to cargo areas on other islands should be conducted at night for snakes and during the day for shed snake skins by wildlife officials, customs and quarantine officers and/or port security officers.

## **Actions to be Taken**

Because the brown tree snake is a regional problem, government agencies at both the local and federal level and regional organizations must firmly commit themselves to its control. The U.S. Fish and Wildlife Service must continue research on methods for either eradicating snakes on Guam or reducing their population to a level where it will be of minimal impact to the community and develop strategies to prevent or minimize the introduction of the snake to other islands in the Pacific. The Guam Power Authority should support research on techniques applicable to a general reduction in snake populations as well as specific measures for protecting their electrical equipment. Both the military (U.S. Navy and Air Force) and the agriculture quarantine inspection agencies on Guam and on other Pacific Islands should develop measures to prevent the spread of the brown tree snake. Regional organizations such as the South Pacific Commission,

Pacific basin Development Council, and Association of Pacific Island Legislatures should be made aware of the snake problem on Guam and the threats to other islands. These organizations should support efforts to control the snake on Guam and prevent its spread. A task force should be appointed by the Governor of Guam to ensure that snake control is a priority issue. Members of the task force should include the following: 1) Government of Guam: Department of Agriculture (Division of Aquatic and Wildlife Resources), Guam Power Authority, Department of Commerce (Customs and Quarantine), Guam Port Authority, Guam Airport Authority, Bureau of Planning and University of Guam (College of Agriculture & Life Sciences, Cooperative Extension Service); 2) U.S. Federal Government: U.S. Navy, U.S. Air Force; and 3) Commonwealth of the Northern Mariana Islands: Department of Natural Resources (Division of Fish and Wildlife).

It is probably unrealistic to hope for total eradication of the snake on Guam. With adequate funding it should be possible to develop a means of protecting the island's power supply, and it may be possible to reduce the snake population enough to allow reintroduction of some of the native birds and to at least minimize the impact of the snake on domestic animals and reduce human encounters. With a reduction of snakes on Guam and proper screening procedures, the chances of introducing this menace to other islands will be minimized. Once control methods are developed, close cooperation will be needed between the Government of Guam, the military and the governments of the various islands in the Pacific.

#### **FURTHER READING**

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## APPENDIX 2

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### MOVEMENTS OF SNAKES VIA CARGO IN THE PACIFIC REGION

The Brown Tree Snake (*Boiga irregularis*) from the Papua New Guinea and northern Melanesian region of the Pacific has reached high population levels and become a harmful introduction pest species on Guam since the early 1950's. On Guam the snakes have virtually eliminated the native bird fauna, invaded urban and natural habitats, and caused frequent power outages by shorting high voltage electrical lines.

The possibility that the Brown Tree Snake will ultimately colonize other Pacific Islands just as it has Guam is related to a variety of factors. Among these are: the high populations of the snake in Guam; the occurrence of snakes in urban areas, military installations, cargo dispatchers, aircraft maintenance areas, and maritime port facilities; the volume of air and ship traffic from Guam to other islands lacking snakes but with comparable climates; and the complexity of communicating the risk to the large numbers of people shipping, handling, inspecting and receiving materials from Guam.

Although no exhaustive search for records of snakes moving in cargo from Guam or other tropical areas has been possible, several incidents are known that point to the high probability that snakes will disperse from Guam to other islands where the Brown Tree Snake could produce damages similar to those known in Guam.

The Brown Tree Snake is a good colonizer with the help of man. As a nocturnal, it hides during the day in nearly any structure that affords protection from bright sunlight and high daytime temperatures and can be carried onto ships and airplanes as a passive stowaway in cargo. It is capable of surviving long periods without food and thrives in disturbed and urban habitats not tolerated by many snake species. The following examples illustrate the tendency of the Brown Tree Snake and other snakes to arrive on islands as a result of civilian and military traffic between islands.

Guam--The Brown Tree Snake was first reported in Guam in the early 1950s (Savidgo, J.A. In press. Ecology) and probably arrived in military ship cargo. Transportation of surplus government property to Guam from the Papua New Guinea area where the snake is native was common for several years after World War II.

Wake Island-- A Brown Tree Snake was discovered near a naval facility on Wake Island in post

war years (Bryan, E.H., Jr. 1959, Atoll Research Bulletin 66:1-22). Ship traffic supplies the Wake Island military facilities at that time, and the snake was likely in materials from a ship returning from the South Pacific.

Pohnpei Island, Federated States of Micronesia--In August or September 1986, a snake ultimately identified as *Lycodon auliculus*, rear-fanged colubrid snake, was killed and preserved after being discovered in a shipment of lumber delivered to Pohnpei by ship. The lumber had originated in the Philippine Islands but was transshipped via Guam where it was held for at least three weeks. Although the possibility existed that this snake entered the lumber in Guam, the identification of it as a species native to the Philippine Islands strongly suggests that the snake originated from the point where the lumber was shipped in the Philippines and remained in the cargo while it was on land in Guam.

Saipan, Commonwealth of the Northern Mariana Islands (CNMI)--An unidentified snake was observed at night in the commercial dock (Charlie Dock) in June 1986. The snake was seen near a stack of used wooden utility poles recently off-loaded from the ship *Tumon*, which hauls small cargo from Guam to the CNMI. The snake eluded capture despite an extensive search of the area and adjacent warehouse facility.

Diego Garcia, Indian Ocean--A report exists of a Brown Tree Snake being discovered onboard a supply ship as it came to anchor off the Island of Diego Garcia. Diego Garcia is an important military base in the Indian Ocean area, and a possibility exists of transshipment of the snake in Naval cargo from Guam.

Submarine Tender *Protous* in transit between Guam and the Philippine Islands--A snake tentatively identified as a Habu (*Trimeresurus*) was discovered in the machine shop on board ship on 17 February 1986. This venomous genus is unknown on Guam but is extremely common in Okinawa. Although other species of the genus occur in forested areas of the Philippines, the specimen in question is much more likely to have originated in Okinawa.

### Records of Snakes in Hawaii

The State of Hawaii, Department of Agriculture, Plant Quarantine Branch is responsible for inspecting for snakes and investigating reports of snakes arriving or discovered in the state. Hawaii has no native snakes,

and has strict regulations and active programs to prevent the arrival of snakes. During a visit to Dr. Stan Higa's office in Honolulu, Ernest Kosaka and I discussed recent snake sightings with Dr. Higa and other plant quarantine personnel, examined several specimens of interest, and recorded information on selected snakes which appeared to be associated with military or civilian transportation facilities. Examples exist of venomous snakes arriving in Hawaii and, in at least two cases, the snakes were identified as the Brown Tree Snake which may be particularly suited for colonizing other Pacific Islands. Among the records and specimens examined were the following:

*Boiga irregularis* (Brown Tree Snake)--This snake was found on Hickam AFB by a stream in back of Building 3242 (Transit Maintenance) by Mr. Mato, Entomology Shop, and 15th CES Hickam AFB on 5 May 1986. Since flights arrive from Guam nearly daily and Guam represents the only island having both an Air Force Base and Brown Tree Snakes, a high probability exists that this specimen arrived from Guam in a military aircraft.

*Boiga irregularis* (Brown Tree Snake)--This juvenile specimen was found in the customs area of Honolulu Airport in April 1981. It was originally labeled as *Boiga kraepelini* but the specimen is indistinguishable from specimens of the Brown Tree Snake found in Guam.

*Salerosophis diadema* (no common name)--This nonvenomous colubrid snake native to India was found dead on 15 July 1986 at Manson Container Yard (Matson Navigation Co.) by A. Damaso, an employee, on Sand Island P-51. It was originally labeled as *Boiga irregularis* by the Honolulu Zoo, but I was able to correctly identify the specimen after borrowing it for detailed examination.

*Boa constrictor* (Common Boa Constrictor)--This juvenile specimen was found in a wheel well of an aircraft in Hickam AFB in 6 March 1979. The plane was reported to have arrived from Acapulco, Mexico.

*Python molurus* (Indian python)--The snake was on air cargo on 10 October 1976 and probably originated in Bangkok, Thailand.

*Bungarus fasciatus* (Banded Krait)--This venomous snake was in the cargo pit of aircraft, date unknown. The presence of a Banded Krait in extralimital situations is important because of the seriousness of the bite to humans.

## Conclusions

The tendency for snakes to successfully hide in cargo, survive transport over long distances, and be discovered on extralimital islands is illustrated by examples from the Pacific region. In comparison to many Pacific Island governments, the State of Hawaii is better prepared to prevent the successful colonization of its islands by exotic snakes. Hawaii has a law specifically prohibiting the importation or possession of snakes without permit, and has designated the Plant Quarantine Branch of the Department of Agriculture to inspect for snakes and respond to sightings. However, there is a need for commercial and military transportation personnel, cargo handlers and the general public to be aware of the threats posed by exotic animals to Pacific Island environments and life styles. Better methods of detecting and capturing snakes in areas where they already occur are needed to prevent their entrance into cargo and transportation facilities from which they could establish additional extralimital populations.

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National Ecology Center  
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## HAS GRANTS AND SCHOLARSHIPS AWARDED

The Hawaii Audubon Society annually awards a natural history undergraduate scholarship and several research grants. The \$1,000 Tuition Scholarship is provided to lend financial assistance to outstanding undergraduate students majoring in natural science, especially those interested in Hawaiian natural history. Research grants are awarded to aid research projects on Hawaiian or Pacific natural history. Grants are aimed at small scale projects or projects on Hawaiian or Pacific natural history. Grants are aimed at small scale projects or projects that receive funding from sources other than the Society; these grants generally do not exceed \$500.

The recipient of the undergraduate scholarship for the 1987 spring term is Carl McIntosh, a senior at the University of Hawaii Manoa campus. Over the last several years Mr. McIntosh has contributed much time and effort to various research and conservation projects, and he came highly recommended as a recipient of the scholarship.

## APPENDIX 3

### STRATEGIES FOR REDUCING SNAKE INTRODUCTIONS TO OTHER PACIFIC ISLANDS FROM GUAM

Prepared by: T.M. Fritts, U.S. Fish and Wildlife Service

The Brown Tree Snake poses a threat to the ecology, economy, and general quality of island life on Guam and is likely to cause similar problems on a variety of other islands in the Pacific Region if the snake becomes established through intentional introductions or passive dispersal. The most likely mode of future dispersal will be snakes arriving to new islands as stowaways in cargo. Numerous examples of this snake being carried to islands in military and civilian cargo exist and illustrate the importance of a program to reduce these incidents. The task of preventing snakes from being carried from Guam to other Pacific Islands is a complex one involving several elements and a diversity of governmental agencies and private companies. The success of any effort to minimize the chance of dispersal will involve active programs on Guam as well as on the islands judged most likely to receive the snake.

A 100% effective effort to prevent snakes from leaving Guam and arriving onto other islands may not be feasible, but any success in reducing the number of incidents could be important in preventing the establishment of additional populations. The chances of new populations being established depends upon the existence of a sufficiently large number of snakes to constitute a propagule (reproductive population). The minimal number of snakes that could constitute a propagule would be a single female carrying fertilized eggs or carrying sufficient sperm to fertilize a yet to be produced clutch of eggs. Such a propagule could eventually result in a small number of juvenile snakes all closely related and incapable of reproducing until they became sexually mature. The chances of sufficient number of the young living to adulthood, finding other individuals of the corresponding sex to allow reproduction, and tolerating the genetic inbreeding if mating with individuals with the same mother and father (siblings) are relatively low. A more likely scenario for a successful propagule would be the arrival of several individuals including both adults and juveniles over a period of time with some individuals dispersing away from the others and others dying due to chance events, but the successful founders in habitats close to the point of arrival experiencing high survival. Every individual snake does not constitute a potential propagule, but each individual contributes to the overall probability of the successful establishments of an introduced population. Thus patterns of repeated occurrence in specific types of cargo and multiple incidents of snakes arriving to the same port or cargo destination are extremely important to preventing the spread of the Brown Tree Snake problem. The discovery and capture of a single is an important preliminary step in the process, but more importantly should heighten awareness and continued vigilance for others arriving in the same or similar ways. Search for patterns in arrivals will be the key to identifying the highest risk factors for the snakes arriving onto a new island. Early detection of newly established populations is critical to any attempt to eradicate or control this snake. Recently arrived snakes will be in the immediate vicinity whereas dispersal into more isolated habitats will occur as time passes.

Activities on Guam could reduce the numbers and likelihood of snakes leaving Guam in cargo or baggage destined for high risk islands. Activities on other islands will require vigilance to detect, capture and eradicate any snakes that might arrive and therefore reduce the probability of a self-propagating population becoming established.

The possibility of snakes dispersing from Guam to other islands is greater than the danger of the snakes dispersing from the island on which it is native because high population exist in Guam. Apparently the absence of effective population controls on Guam have allowed the snakes to survive even in urban areas where snakes have greater access to air and ship cargo. Snakes have invaded and are likely to continue to move into urban, suburban, commercial and military facilities in search of prey, especially the introduced birds, rodents and lizards that thrive in disturbed and developed habitats. Once in developed areas, the snakes are forced to seek daytime retreats in equipment, materials, warehouses, and vehicles. A wide range of food sources and hiding places could exist in maritime ports and airports, and a resident population of snakes constitutes a source for snakes to be dispersed off island as passive stowaways.

Informing the widest possible community of people on Guam of the potential problems will be the first step toward reducing this threat. Increased awareness of the advantages to preventing the spread of the brown tree snake will contribute to the effort to detect, capture and exclude snakes from export cargo and from the cargo dispatch areas. By pooling the experience of the diverse community of people and organization involved in transportation and cargo movements from Guam, the effort to exclude snakes can be focused on those transportation elements that pose the greatest risk of involving snakes. The organization of training for military and civilian personnel, preparation of technical information summaries and the establishment of protocols for detecting and reporting potential problems are needed. At present no procedures exist for responding to the discovery of snakes in cargo destined for other Pacific Islands, and any detection could be a fortuitous event equally likely to generate an inadequate or overzealous response, while other incidents occur without notice.

Activities on other islands will be no less important to preventing colonization of those islands. The first priority will be informing appropriate governmental agencies and the development of cooperation and communication between the diverse organizations involved in transportation, inspection, and distribution of cargo from off-island. Because most island residents will be unfamiliar with snakes, training of personnel in detecting snakes and threat to any island will depend upon the type of cargo and traffic from Guam, the frequency of such shipments, and the specific conditions at the point of disembarkation. Initially contacts should be made with at least five islands or island groups. These are: Commonwealth of the Northern Mariana Islands (Saipan, Rota, and Tinian), Belau, State of Hawaii, Nauru and the Federated States of Micronesia (Yap, Pohnpei, and Truk). These islands are judged to be at higher risk than other islands in the Pacific based on a preliminary assessment of the amount of traffic to them from Guam and their likelihood of having habitats capable of supporting brown tree snakes. Sightings of brown tree snakes exist for several islands with varying amounts of military traffic from Guam: Kwajalein, Wake Oahu, and Diego Garcia. Tinian may be at special risk because of past and future military use of the North Field area under lease to the Navy.

Traffic from Guam to Okinawa, other Japanese Islands, and the Philippines is judged to involve considerably less risk because these areas support native snake faunas reducing the chances of successful colonizations by the Brown Tree Snake and increasing the probability that native birds of Guam and other small oceanic islands.

The risk posed by military traffic will require especially close coordination of the diverse military units involved in the transportation of equipment, supplies, and personnel from or through Guam. For security reasons and because the number, magnitude, and complexity of military transportation routes worldwide are so great, the detection and eradication of snakes in military potentially under the control of the Military Customs. The already conspicuous pattern of brown tree snake being carried to new islands as a result of military traffic justifies a conscientious and thorough approach to this problem by all military commands.

Procedural steps for preventing the dispersal on snakes to other islands.

1. Review of snake and determination of most probable sources of dispersing snakes.
  - A. Passive dispersal in maritime and air traffic.
  - B. Deliberate introductions by man for profit, pets, vandalism.
2. Develop information materials to inform the following groups of people:
  - A. Residents of Guam
  - B. All military personnel assigned on Guam.
  - C. Personnel of all agencies involved in inspection of cargo
  - D. and luggages arriving from Guam to high risk islands (examples include customs, agricultural, health, and security agencies).
  - E. Stevedores and airport workers most likely to discover stowaways during loading and unloading.
  - F. Wildlife and Natural Resources personnel most likely to receive reports of snakes discovered on high risk islands.
  - G. Employees of companies involved in packing, storing, and moving civilian and military household effects.
  - H. Military personnel involved in packing storing, inspecting and shipping equipment, supplies, and vehicles
  - I. Military Customs.
  - J. Military personnel assigned to missions that require frequent travel to other Pacific Islands.
3. Reduce density of snakes in and around cargo dispatch areas and other transportation facilities on Guam.
4. Develop methods of detection and capture in cargo areas.
5. Develop procedure for reporting sightings, identifying snakes responding to reports and analyzing patterns of occurrences.
6. Use data from 5 to focus control efforts and maximize effectiveness of program.
7. Identify islands most likely to receive snakes from Guam, criteria to include:
  - A. Number of persons traveling to island from Guam.
  - B. Amount of cargo shipped to island from Guam.
  - C. Likelihood of snake being successful in island.
  - D. Extent of damage that might occur if snakes do become established.

- E. Number of household moves to island from or through Guam
  - F. Number of maritime and air arrivals from Guam, amount of time spent there, and opportunities for snakes to actively or passively disembark.
8. Inherent in this a need for analyzing major traffic patterns from Guam and attempting to identify high risk islands on which most activities will be focused.

Examples of questions that might need to be addressed:

How close must a snake be to a cargo or transportation center to be of concern?

To whom should occurrences be reported?

Who is responsible for making decisions about actions needed to reduce or control snakes at each transportation or cargo facility?

When a snake is discovered in cargo destined for off island, should a search be made for others, if so for how long, and who makes the decision to ship, delay, or reprocess the shipment?

What office has central responsibility for receiving information on the occurrence of snakes in cargo and vessels? What records are kept of preventative measures taken?

What can be done about vegetation, exposure of cargo to boonie situations, and rat or mouse infestations that might attract snakes?

How do operational personnel resolve the potential conflict between the need to process shipments on schedule and the risk that snakes will be shipped with it?

On what schedule should a facility be evaluated for snake, risks, who should be involved in this process, and how are the other employees and operational personnel informed and offered input into the preventative program?

APPENDIX 4

CNMI Emergency Snake Control Team Protocol

Purpose: To provide all persons who handle or inspect cargo with an immediate notification procedure in the event of a snake sighting, and to maintain the ability to respond quickly and effectively to minimize the chance of snake colonization of the C.N.M.I.

SAIPAN Team Leader -- Arnold Palacios, Chief Division of Fish and Wildlife

SAIPAN SEARCH LEADER -- Phil Glass, Biologist Division of Fish and Wildlife

Name to call -- Day or night, in posters at all cargo entry points, with instructions to call in order until the named person is reached.

Arnold Palacios (Chief Division of Fish and Wildlife) Day- 322-9095 or 9729 Night-234-5642

Phil Glass (Biologist Division of Fish and Wild life) Day-322-9095 or 9729 Night-322-3575

Dr. Jack Tenorio (Chief Plant Industry and Quarantine) Day-322-9868 or 234-3317 Night-234-8340

Nicholas M. Leon Guerrero (Director Department of Natural Resources) Day-3229830 or 9834 Night 322-9584.

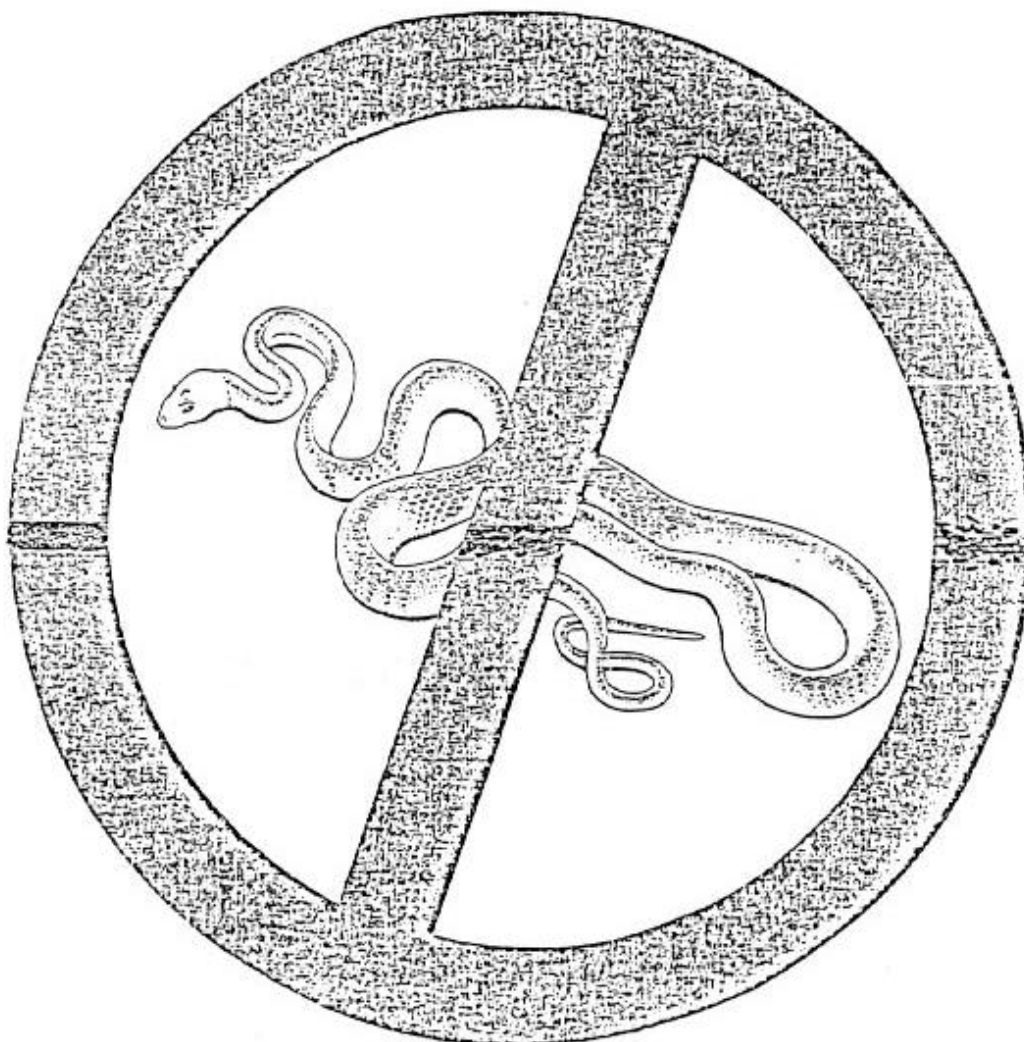
Procedure -- The Team Leader, upon receiving a report of a possible snake entry, will immediately call a search by Division of Fish and Wildlife biologists. If it should appear that more help is needed for the search to be successful, he will, at his discretion, notify each member of the Snake Control Search Team to report at a specific time.

Member agencies and organizations – Each Agency Chief is responsible for providing the Team Leader with a (continually updated) list of 1 employee and 1 alternate. These employees (Search Team Members) will, at the discretion of the Team Leader, serve a 48-hour tour of duty, probably divided into 4-8 hour shifts. Each employee should keep ready and bring a flashlight and adequately supply of fresh batteries.

Member agency or organization	Chief
Animal Health and Industry	Dr. Ignacio T. Dela Cruz
Ports Authority	Mr. Jose Diaz
Plant Industry and Quarantine	Mr. Jack Tonorio
Coastal Resources Management	Mr. Bob Rudolph
Dept. of Environmental Quality	Mr. Russell Meacham
Saipan Stevedore, Inc.	Mr. Jose Tomokane
Division of Fish and Wildlife	Mr. Arnold Palacios

The Chief, Quarantine Division, in lieu of providing two employees for the search list, will be responsible for posting personnel at the exit portal (s) to thoroughly inspect all cargo and vehicles leaving the area of the snake sighting for 5 full days after the sighting, including lunch breaks, after duty hours, night time, etc. if cargo is allowed to leave during these times. Quarantine personnel will be instructed to arrange for on-site inspections of unsealed crates which cannot be thoroughly inspected at the exit portal.

# THE BROWN TREE SNAKE-



A HARMFUL PEST SPECIES !



THREE FAVORITE SNAKE RECEIPES  
DIVISION OF AQUATIC & WILDLIFE RESOURCES

FRIED SNAKE

- 1 Pound of skinned Snake cut in inch pieces
- 1 Cup Sherry
- ½ Teaspoon Black Pepper
- ½ Teaspoon Season-All
- ¼ Cup Lemon Juice
- ½ Cup Italian Salad Dressing
- Flour

Marinate pieces of snake in the mixture of sherry, pepper, season-all, lemon juice and Italian dressing for 2 hours. Drain and dredge with flour. Fry pieces for about 15 minutes turning often until brown. Drain and serve hot.

\*\*\*\*\*

SNAKE GUAM STYLE (COCONUT MILK)

- 1 Pound of skinned Snake cut in 1 inch pieces
- Coconut Milk from 2 grated coconuts
- Salt to taste
- 3 Cloves Tumeric (grated)
- 1 Whole Onion sliced thin

Cook snake in 1 cup water for about 30 minutes or until tender. Add mixture of coconut milk, salt, tumeric and onion and cook on low heat for 5 minutes. (Do not boil coconut milk mixture). Serve hot.

\*\*\*\*\*

SNAKE ADOBO

- 1 Pound skinned Snake cut in 1 inch pieces
- 1 Tablespoon Vinegar or Lemon Juice
- ½ Teaspoon Sugar
- ½ Cup Soy Sauce
- ¼ Teaspoon Black Pepper or to taste
- 2 Cloves Garlic

Boil snake pieces for 30 minutes. Drain snake pieces and brown in pan. Add mixture of vinegar, sugar, garlic, soy sauce and pepper. Cook for 30 minutes.

APPENDIX 5  
RECOMMENDATIONS FOR THE CONTAINMENT OF THE BROWN  
TREE SNAKE TO THE ISLAND OF GUAM.  
Prepared by Dale Rush

1. Exclusion of the Brown Tree Snake from maritime and air cargo would be a complex and labor intensive project. It would require the long term commitment and cooperation of:

- a. Regulatory agencies in the snake free islands
- b. And on Guam

- 1. Federal and Territorial Agencies
- 2. Military
- 3. Civilian Business Community

2. Any exclusion program must take into account ALL avenues of dispersal from Guam and respond accordingly. In other words, don't regulate military cargo and ignore civilian cargo shipments.

3. Exclusion Program – What is needed?

- a. Ideally, the governments of each snake free island that is threatened by the Brown Tree Snake should state its position on exclusion, by regulation if possible. For instance, does cargo leaving Guam for a snake free island require:

- 1. Inspection ?
- 2. Certification ?
- 3. Fumigation or other treatment ?

- b. A Brown Tree Snake Exclusion Program should be developed which utilizes available resources against those modes of transmission which present the greatest risk of dispersing the Brown Tree Snake. ie:

- 1. Activities – military mobility exercises
- 2. Types of Conveyances – aircraft, ships
- 3. Types of Cargo – construction equipment, machinery, vehicles, etc.

- c. Recognize that the snake free islands are threatened with the introduction of the Brown Tree Snake in different ways:

- 1. Tinian – primarily military cargo and conveyances
- 2. Saipan – maritime barge and container traffic and air cargo (civilian)
- 3. Hawaii – both civilian and military traffic
- 4. F.S.M – primarily civilian cargo (maritime)

- d. Exclusion should be accomplished using the most effective technology and procedures available. Possible actions would include:

- 1. Air Cargo
  - a. Detection trapping in warehouse areas
  - b. Inspections of cargo prior to loading on aircraft
- 2. Equipment, and POV'S
  - a. Inspection, cleaning

3. Containerized maritime cargo
  - a. Inspection of cargo prior to loading and/or
  - b. Treatment using baits or fumigants
- e. Other than visual inspections, there are few tools available for the control/eradication/ exclusion of the Brown Tree Snake. Aggressive research is needed to develop Traps/ Baits/ Fumigants.
  1. Traps: should be
    - a. Lightweight and compact
    - b. Easily transportable
    - c. Cheaply made and in large numbers
    - d. Possibly disposable

\*\*\* Traps now available do not meet the above criteria
  2. Baits/Fumigants
    - a. Numerous toxins are on the market for pest control. However, none are currently approved by the E.P.A. for use against target organism such as the Brown Tree Snake.
    - b. The Government of Guam should immediately seek assistance from the Animal Damage Control Program of the Animal & Plant Health Inspection Service of the U.S. Department of Agriculture for the development of appropriate traps/toxicants for the control of the Brown Tree Snake and obtain Experimental Use Permits from E.P.A. for their use in this application.
- f. Exclusion Protocol – Once an exclusion protocol is drafted and approved, then the following agencies/organizations should be required to respond in writing detailing what specific actions they are taking under the protocol to prevent the dispersal of the Brown Tree Snake.
  1. Guam Airport Authority
  2. Guam Port Authority
  3. Commercial Airlines and Air Cargo Firms
  4. Trucking Companies
  5. Maritime Shipping Lines/Agents
  6. Military
  7. Private/ D Public marinas

\*\*\* A GovGuam Agency should be designated to periodically monitor compliance to the Exclusion Protocol.

## APPENDIX 6

### INSTRUCTIONS FOR MAKING SCREEN-WIRE SNAKE TRAPS

The capture of snakes around houses, poultry sheds, and other areas where snakes cause problems can be accomplished using an inexpensive and easily constructed trap made of ordinary aluminum-window screening. The trap works like a fish trap by luring snakes into the trap interior from which they cannot find an exit. In the event that snakes frequent areas around your home, poultry roosts, or other specific areas, you may want to construct one or more traps to capture snakes and merely check the traps daily to remove any captures. The directions for construction and use of the traps are provided below.

Construction of a Simple Snake Snake Trap. The materials needed for two traps include: aluminum screen wire 30 inch wide x 62 in long, a standard office stapler, staples, scissors to cut screen wire, and gloves to protect your hands during the construction.

- Step One: Cut a piece of screen wire 30 in x 23 in and fold the edges together to form a teardrop-shaped tube 30 in long (see Fig. 2-1A). Hold the edges together and staple at 1 in intervals along entire length except for 6 in segment near the middle; leave the ends open.
- Step Two: Fold the stapled edge over twice and round the tube into a cylinder (Fig. 2-1B). Note, the 6 in area left unstapled can be unfolded as a means of opening the trap to remove captures.
- Step Three: Using a string 7.5 inch in length draw two circles 15 inch in diameter on the remaining wire, cut them out, and cut them into half circles (Fig. 2-1C).
- Step Four: Each half circle should be folded so that the straight edge is folded into itself and stapled at 1 inch intervals along the edge. Again, fold over the stapled edge to completely close it and flatten the fold to create a coneshaped piece of screen (Fig. 2-1D).
- Step Five: Cut the tip off of the cone with scissors to create a hole about 1 to 2 in diameter. A hole which will accommodate two fingers is ideal (Fig. 2-1E).

- Step Six: Insert point of cone into cylinder previously constructed and staple round edge of cone to end of cylinder at close intervals (Fig. 2-1F).
- Step Seven: Insert another cone in opposite end of cylinder and staple as in Step Six. Note, snakes push on the base of the cone in an attempt to escape, so it is important to have the staples close together with no open spaces remaining.
- Step Eight: Complete second trap with remaining materials.

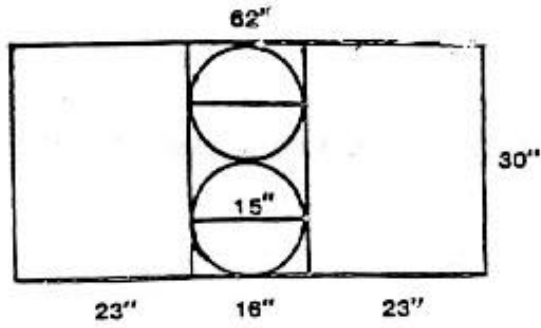
The traps are now complete and can be placed on trees, on top of cages, or in other places where snakes are likely to be found. The traps should be baited with bird odors and the most effective odor to date has been bird droppings (i.e., manure), nest material used by chickens, or chicken feathers. The amount of the bait is not important but a handful of feathers or nest material of 2-4 tablespoons of chicken manure should be adequate for a 1-2 week period. If the trap will be exposed to hard rains it may be necessary to cover the middle section of the trap with a piece of plastic (i.e., a piece of a garbage bag) in order to keep the bait from washing away. The plastic can be loosely stapled around the middle section of the trap (Fig. 2-1G).

The trap should be placed horizontally and can be suspended with string or wire from a tree branch or other appropriate structures.

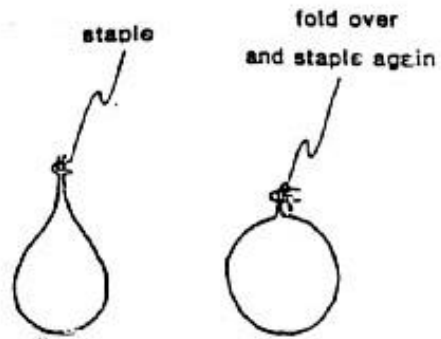
Once installed, traps should be checked at 1-2 day intervals. Most captures will be at night so checking your traps in the morning will reduce the chances that any snakes will escape. The snakes can be removed by unfolding the area left unstapled in the middle of the cylinder and inserting a gloved hand. The trap opening should be closed carefully by refolding the wire at the opening. Occasionally, large snakes are able to force the staples at the ends of the trap and escape. Thus, the ends of the trap should be inspected periodically and reinforced when needed.

Figure 2-1. Diagram of construction of a simple snake trap.

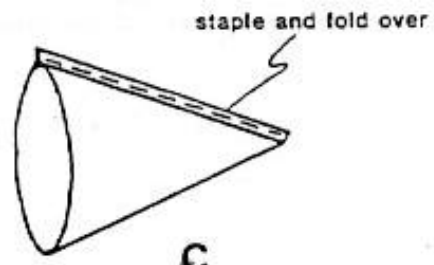
- A. Cuts on a 30 in x 62 in piece of aluminum window screen sufficient to make two traps.
- B. Double staple the seam on the wire cylinder, leaving a 6 in unstapled strip in the middle for access to the snakes.
- C. Method of forming funnels from sem-circles of wire.
- D. Cut off the tip of the funnel to make a 1-2 in entry hole.
- E. Method of stapling funnel to cylinder.
- F. Cover part of trap with plastic sheeting if necessary to protect the bait.



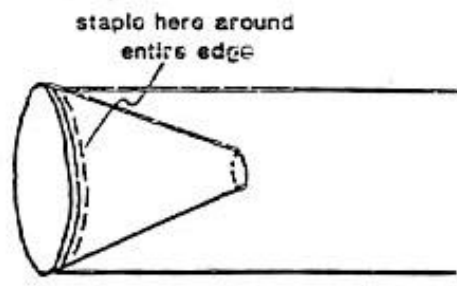
A



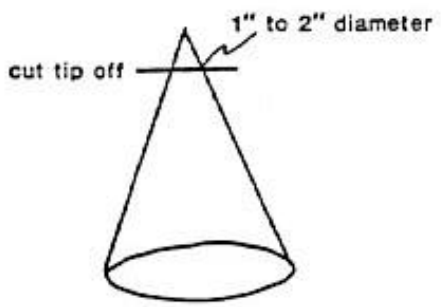
B



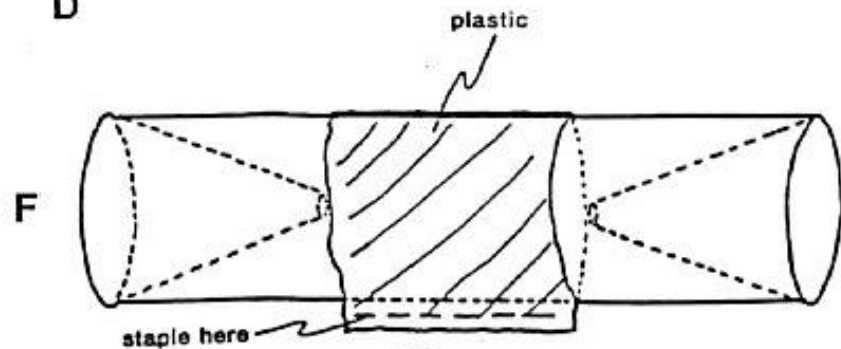
C



E



D



F

APPENDIX 7

**BLACK CONSTRUCTION CORPORATION**

DATE: November 9, 1987

FROM: Michael T. Riviera

To: All Concerned

SUBJ: SNAKE EXPORT DECLARATION

RE: JOB 7323 PAC BAR III

Due to the non-existent Government document providing guidelines for a snake export prevention plan, Black Construction Corporation is hereby submitting in place of the aforementioned declaration a verification check list of all actions we have taken to prevent the infestation of our high risk cargo and equipment, from the Brown Tree Snake (*Boiga-Irregulars*).

This declaration applies to all high risk cargos origination in Guam destined for one or all of the following ports:

- The Common Wealth of the Northern Marianas*
- The Federated States of Micronesia*
- The Republic of Belau*
- The Republic of the Marshall Islands*

CHECK LIST:

	YES	NO		YES	NO
1. Visual Inspection	___	___	9. Structural Steel Cleaned	___	___
2. Fumigation	___	___	10. Elect. Components Sealed	___	___
3. All Voids Filled	___	___	11. EQ-High Pressured Cleaned	___	___
4. Lumber Tightly Strapped	___	___	12. Pesticide Treatment	___	___
5. Hollow Blocks Sealed	___	___	13. Traps Attached	___	___
6. All Pipe End Sealed	___	___	14. Cylinder Strapped Tight	___	___
7. Wood Pallets Cleaned	___	___	15. Drums Sealed	___	___
8. Boxes and Crates Sealed	___	___	16. CG Containers Sealed Applies to 20' & 40'	___	___

The attached cargo is said to be snake free.

VERIFIED BY: BCC/BMC QUARANTINE OFFICER \_\_\_\_\_



## APPENDIX 8

1					
2					
3					
4	BLACK MICRO CORPORATION				
5					
6	EQUIP BY EQUIP NO AS OF 11/13/87				
7					
8	EQP NO SEQ NO		DESCRIPTION		AOQ DT
9					
10	02006	EK006 YAP	WAAB LOWBOY W/TRACTO		00/00
11					
12	02011	EK011 YAP	BACKHOE LOADER PU E		07/85
13					
14	02012	EK012 YAP	WAAB CONTAINER CHAS1		07/85
15					
16	02013	EK013 YAP	FORKLIFT 52T		07/85
17					
18	02014	EK014 “	FORKLIFT W/RB LIFT		07/85
19					
20	02015	EK015 “	FORKLIFT 15T		07/85
21					
22	02016	EK016 “	JUSMAN DUMP TRUCK		07/85
23					
24	02017	EK017 “	PUEC TRUCK TRACTOR		07/85
25					
26	02018	EK018 “	TRAILER		07/85
27					
28	02019	EK019 “	WAAB WELDING MACHINE		07/85
29					
30	02021	EK021 “	YDT CAT GRADER		08/85
31					
32	02022	EK022 PMI	NISSAN DUMP TRK		08/85
33					
34	02023	EK023 PMI	NISSAN DUMP TRK		08/85
35					
36	02036	EK036 YAP	WAAB CHASSIS FLATBA		00/00
37					
38	02039	EK039	TIRE ROLLER KR-30		00/00
39					
40	02070	AL207 SPM	P&H CRANE 50T		07/68
41					
42	02090	AS209 SPM	CHAMP FRKLIFT 3T		05/67
43					
44	02170	A0217 SPM	HOUGH 2CY 70H		09/63
45					
46	02310	A0231 SPM	INTL DOZER 50C		11/71
47					
48	02350	A0235 SPM	INTL TD25 W/ RIPPER		01/66
49					
50	02450	A0246	VIBRO PAD 10T		10/63
51					
52	02610	AV261	CLEV TRNOHR 157 6CY		12/68
53					
54	02910	AE291	COMPRESSOR 365 CEM		10/68
55					
56	02930	AE293	COMPRESSOR 125 CEM		08/64
57					
58	02990	HN293	SEC UNIV CRUISER		12/68

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4	BLACK MICRO CORPORATION			
5				
6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	03002	AE002	PORTABLE AIR COMPRESS	03/87
11				
12	03003	AW003	DENYA GEN. 1.5	03/87
13				
14	03005	AW005	1.5 KW ELECT. GEN	03/87
15				
16	03006	AG006	750 SWING CONCRETE P	03/87
17				
18	03007	BV007	MC KERNAN PILE HAMME	04/87
19				
20	03008	BH008	MAZDA PICK UP	04/87
21				
22	03009	BH009	MAZDA PICK UP	04/87
23				
24	03011	BH011	MAZDA PICK UP	04/87
25				
26	03012	BH012	MAZDA PICK UP	04/87
27				
28	03013	AE013	5 HP AIR COMPRESSOR	04/87
29				
30	03015		AIR COMPRESSOR	04/87
31				
32	03017	ST017	WACKER JUMPING JACK	00/00
33				
34	03018	AW018	ELEC. GENERATOR	05/87
35				
36	03019	OK019	1 ½ WATER PUMP	07/87
37				
38	03050	AG305	MORTAR MIXER 1 BAG	08/87
39				
40	03090	AG309	BATCH PLANT 4 CY	01/69
41				
42	03210	BF321	INTL PAYSCRAPR 1BCY	03/69
43				
44	03300	BR330	TAR POT	09/68
45				
46	03560	BB356	INTL BKHOE LDR 3800	02/85
47				
48	03720	BT372	TRAILER LOWBOY 20T	08/70
49				
50	03780	BT378	TRAILER 20T	10/70
51				
52	03860	AC386	SHEEPFOOT ROLLER	10/64
53				
54	04060	AO406	INTL ID30 W/ RIPPER	12/63
55				
56	04120	AO412	CAT D9G W/ RIPPER	12/72
57				
58	04150	HO415	WELDER 400 AMPS MILL	02/85
59				
60	04170	CM417	WELDER 400 AMP	06/73

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4	BLACK MICRO CORPORATION			
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6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	04210	BM421	WELDER 400 AMP	02/71
11				
12	04540	BX454	AUGER TRUCK	08/71
13				
14	04850	CR485	GORMAN 2 IN WTR PMP	10/73
15				
16	04920	CE492	INTL FB 2T W/WLUR	08/72
17				
18	04950	BR495	IH LUB TRK 5T W/AIR	04/82
19				
20	05020	HD502	INTL FLTBD 2 ½T	08/64
21				
22	05160	BO516	P&H BACKHOE/CRAWLER	10/75
23				
24	05220	BB522	I.R.COMPACTOR SP56	02/85
25				
26	05300	OK530	ELECTRIC PUMP	01/76
27				
28	05320	HO532	P&H BACKHOE/CRAWLER	01/76
29				
30	05400	BO540	EXTRACTOR 4 197	07/76
31				
32	05420	BH542	INTL BACKHOE 3500	11/76
33				
34	05570	BH557	DATSUN PICK-UP ½T	06/77
35				
36	05620	BH562	INTL PICK-UP ½T	06/77
37				
38	05680	BZ568	DMP TRK 12CY	09/77
39				
40	05770	AE577	AIR COMPR 175 CEM	11/77
41				
42	05840	BZ584	INTL DMPTRK 12CY	11/77
43				
44	05650	AY585	CAT GRADER	11/77
45				
46	05860	AL585	P&H CRANE 35T	11/77
47				
48	05870	BL587	AUTOCAR TRK TRC 12T	11/77
49				
50	05890	BL589	BAR BENDER	11/77
51				
52	05900	BL590	LATHE – MECH SHOP	11/77
53				
54	05940	CC294	OSHKSH DMP TRK 22CY	11/77
55				
56	05970	BH597	INTL PICK-UP ½ T	12/77
57				
58	05990	DE599	INTL FLIBD 2 ½ T	12/77
59				
60	06030	AE603	AIR COMPR 500CEM	02/78

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4	BLACK MICRO CORPORATION			
5				
6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	06040	HO604	HO-RAM ROCK BREAKER	64/78
11				
12	06210	CE621	FORD FLT BUILT	09/78
13				
14	06350	BB635	GRAD ALL	12/78
15				
16	06460	BP646	OLDS TORONADO	03/79
17				
18	06870	AU687	LOADER CAT 980	11/79
19				
20	06970	CK697	GORMAN RUPP PMP 61N	09/80
21				
22	07020	CK702	GORMAN RUPP PMP 61N	09/80
23				
24	07170	BR717	WATER BLASTER	10/82
25				
26	07190	OK719	2 IN. WATER PUMP	00/00
27				
28	07210	HO721	DUMP TRUCK	10/84
29				
30	07270	IG727	GMC WATER TRUCK	08/83
31				
32	07300	AF730	AIR COMPRESSOR 175 C	12/83
33				
34	07320	HO732	ROCK BREAKER NPK H10	02/85
35				
36	07370	BB737	TOYOTA PICKUP TRK HI	05/85
37				
38	07530	BO753	PILE DR. HAMMER & LE	05/86
39				
40	07540	AA754	INT'L BUS	05/86
41				
42	09010	HO901	SUBMERSIBLE PUMP S2A	12/82
43				
44	09030	HO903	SUBMERSIBLE PUMP S2A	12/82
45				
46	09070	AU907	CAT LOADER 2CV 950	09/77
47				
48	09130	HN913	PRIM.ESEC. CRUSHER	09/77
49				
50	09140	AG914	BATCH PLANT & SILO	09/77
51				
52	09150	BH915	INTL SCOUT 11 4WD	10/77
53				
54	09160	BO916	PURTA PUGG MILL	07/83
55				
56	09180	CK918	4 WATER PUMP	00/00
57				
58	09190	AG919	CONC MIXER 5 BAG	06/78
59				
60	09200	CK920	2 WATER PUMP	02/84

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4	BLACK MICRO CORPORATION			
5				
6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	09230	AW923	PORT. GEN STOW 225 KW	03/84
11				
12	09240	BD924	JUMPING JACK – STOW	03/84
13				
14	09250	CA925	RED TRANSIT MXR 8CY	06/79
15				
16	09260	CA926	RED TRANSIT MXR 8CY	06/79
17				
18	09280	BH928	INTL SCOUT 4WD ½ T	09/79
19				
20	09290	BN929	HAMMER MILL	10/79
21				
22	09300	CA930	FORD TRANS MXER 8CY	12/79
23				
24	09310	CA931	FORD TRANS MXER 8CY	08/80
25				
26	09320	BH932	IH SCOUT TRAVL TP.5T	08/80
27				
28	09330	BF933	SCRAPER 14CY	08/80
29				
30	09340	HI934	TRLR-END DUMP 24CY	10/80
31				
32	09350	AC935	COMPACTOR SP-42	10/80
33				
34	09360	AC936	RAYGO COMPACTOR-600	01/81
35				
36	09370	BG937	IH FUEL TRK 1800GAL	01/81
37				
38	09380	HO938	HOUGH PAYLOADER 70H	01/81
39				
40	09390	BH939	DODGE PICKUP ½ T	01/81
41				
42	09400	AF940	COMPR IR 175CEM	01/81
43				
44	09420	HO942	2 BAGGER MIXER	07/84
45				
46	09430	AG943	CONCRETE MIXER 1 BAG	03/81
47				
48	09480	BX943	WAGON JOY DRILL	05/81
49				
50	09490	HO949	LOADER BACKHOE	02/82
51				
52	09500	BH950	IH SCOUT PICK-UP	02/82
53				
54	09510	AE951	IR COMPRESSOR	02/82
55				
56	09520	HO952	CAT GENERATOR 30 KW	02/82
57				
58	09530	HO953	BS MUD MIXER	02/82
59				
60				

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4	BLACK MICRO CORPORATION			
5				
6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	09550	BH955	SCOUT IH	04/82
11				
12	09560	BD956	HO-RAM	04/82
13				
14	09570	BK957	WATER PUMP 3 IN 8HP	04/82
15				
16	09610	BH961	INTL SCOUT PICK-UP	10/82
17				
18	09630	HO963	PICK-UP CHEVY	04/82
19				
20	09650	BO965	WTR BUFFALO 300 GAL	04/82
21				
22	09670	HO967	COMPRESSOR 600 CFM	04/82
23				
24	09680	HO968	WELDING TRUCK FORD	04/82
25				
26	09690	AI969	AUSTIN WESTERN	04/82
27				
28	09700	HO970	GRADALL	04/82
29				
30	09710	BO971	HO-RAM AIR	04/82
31				
32	09730	HO973	WATER PUMP 1 1/2 IN	04/82
33				
34	09750	HO975	INTL FLATBED	07/82
35				
36	09770	BH977	SCOUT PICK-UP	07/82
37				
38	09780	AS978	FORKLIFT	11/77
39				
40	09790	AE979	ELECTRIC COMPRESSOR	12/82
41				
42	09800	AE980	AIR COMPRESSOR	12/82
43				
44	09820	IG982	WATER TRUCK IH 3000	11/82
45				
46	09830	AS983	I.H. FORKLIFT	12/82
47				
48	09840	CE984	I.H. WELDING TRUCK	12/82
49				
50	09860	BH986	CHEVY PICK-UP	11/82
51				
52	09870	BX987	AIR TRACK DRILL	11/82
53				
54	09880	BH988	TOYOTA PICK-UP 1974	03/84
55				
56	09890	BZ989	IHC DUMP TRUCK	11/82
57				
58	09900	BZ990	IHC DUMP TRUCK	11/82
59				
60	09920	BH992	CHEVY PICKUP	11/82

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4	BLACK MICRO CORPORATION			
5				
6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	74246	BZ120	DUMP TRUCK MACH 1973	00/00
11				
12	74282	BZ282	MACK DUMP TRUCK 120Y	06/84
13				
14	74283	BZ283	MACH DUMP TRUCK 1974	06/84
15				
16	80951	AE095	STATIONARY AIR COMPR	03/85
17				
18	82306	AW306	GENERATOR GE 100KW	02/87
19				
20	84056	HO050	JAEGER WATER PUMP 4	02/85
21				
22	84510	CK110	W.PUMP MULTI-QUP 4	00/00
23				
24	84511	CK120	W.PUMP MULTI-QUP 4	04/84
25				
26	84512	CK512	HOMELITE WATERPUMP 3	06/84
27				
28	86550	CM550	WELDER MILLER D-4	06/84
29				
30	88888	BD888	EXCEPTION EQUIPMENT	00/00
31				
32	90102	BD102	PAVOR KNOX TF1	06/84
33				
34	90105	BD105	OIL DISTRIBUTOR ETNU	03/86
35				
36	90202	AC202	TWO DRUM VIBRATOR	06/84
37				
38	90401	AC401	HYSTER TANDEM ROLLER	06/84
39				
40	90706	BD706	ASPHALT PLANT CMI OD	06/84
41				
42	95171	BD171	TRACTOR BROOM SWEEPE	06/84
43				
44	95205	HO050	JUMPING JACK WACKER	09/84
45				
46	95207	HO207	WACKER JUMPING JACK	07/80
47				
48	95208	HO055	JUMPING JACK WACKER	09/84
49				
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4	BLACK MICRO CORPORATION			
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6	EQUIP BY EQUIP NO AS OF 11/13/87			
7				
8	EQP NO	SEQ NO	DESCRIPTION	AOQ DT
9				
10	09940	DK994	4 IN. WATER PUMP	11/82
11				
12	09950	AC995	BOMAG TRENCH ROLLER	11/82
13				
14	09960	AD996	IHC TD25B TRACTOR	11/82
15				
16	09980	AW998	KATO 10KW GEN. SET	11/82
17				
18	09990	AC999	BOMAG GROUND POUNDER	00/00
19				
20	10221	AG221	1 BAGGER MIXER	07/87
21				
22	12691	BL691	REBAR BENDER/CUTTER	07/87
23				
24	19391	AC391	2 BAGGER MIXER	07/87
25				
26	21023	AA023	I.H. BUS 25 PASSENGER	02/85
27				
28	21025	BH025	DODGE 4X4 POWER WAGO	10/84
29				
30	21033	BD033	HO-RAM	06/84
31				
32	21034	HO034	SCREEN 2 DECK 3X6 FT	06/84
33				
34	22468	AI468	P&H CENTERMOUNT CRAN	06/84
35				
36	35991	HO991	INCLINE SCREEN	06/84
37				
38	40008	AS008	FORKLIFT LION LIFTAL	02/84
39				
40	41004	AY004	CAT GRADER 120G 1979	02/85
41				
42	42206	AU205	WHEEL LOADER CAT 920	06/84
43				
44	42207	HO207	CAT WHEEL LOADER 966	02/85
45				
46	62622	HO622	CREW BOAT WELLCRAFT	06/84
47				
48	73210	BR210	FLATBED W/HYD BOOM 1	06/84
49				
50	73390	IA110	CEMENT MIXER FORD LT	00/00
51				
52	73417	HO017	DUMP TRUCK MACK 1972	06/84
53				
54	73418	BZ418	MACK DUMP TRUCK 120Y	06/84
55				
56	73927	DE927	FORD FLATBED F350 19	06/84
57				
58	74206	HO206	WATER TRUCK MACK 196	06/84
59				
60	74247	BZ247	MACK DUMP TRUCK 1973	06/84



## B.5 Permitting Plans

**PERMITTING PLANS**  
**ACCESS ROAD DRAINAGE**  
**AND**  
**EROSION CONTROL SYSTEM**

**PACBAR III RADAR STATION**  
**SAIPAN, CNMI**

PREPARED FOR:

DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION  
DIRECTORATE OF ACQUISITION CIVIL ENGINEERING

PREPARED BY:

ENVIRONMENTAL SOLUTIONS, INC.  
MAY, 1987



## B.7 Department of Environmental Quality Permitting Requirements



**Commonwealth of the Northern Mariana Islands**

Department of Public Health & Environmental Services  
Division of Environmental Quality  
P.O. Box 1304  
Saipan, Mariana Islands 96950



Cable Address:  
Gov. NMI Saipan  
Tel. 234-6984/6114

February 24, 1987

John R. Edwards  
SD/DEV  
P.O. Box 92960  
Worldway Postal Center  
Los Angeles, CA 90009

RE: DEQ permitting requirements for PACBAR III Facility

Dear Mr. Edwards:

I am enclosing for your review and consideration copies of the following regulations and permit application requirements:

- (1) DEQ Earthmoving and Erosion Control Regulations and application package;
- (2) DEQ Individual Wastewater Disposal System (IWDS) regulations.

The final submittals for the CRM permitting of the PACBAR III facility must conform to the standards set forth in these regulations. In addition, DEQ reserves the right to apply more stringent requirements as appropriate. This authority is described within the attached regulations.

Should you have additional questions, please do not hesitate to contact me.

Sincerely yours,

F. RUSSELL MECHEM II  
Chief, DEQ

Enclosures

PUBLIC NOTICE

NOTICE OF ADOPTION OF  
FINAL INDIVIDUAL WASTEWATER DISPOSAL SYSTEM REGULATIONS  
FOR PUBLIC LAW 3-23  
DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENTAL SERVICES

Proposed regulations were published in the Commonwealth Register on April 16, 1986. Certain changes and modifications were made in response to comments received on the proposed regulations. The significant changes were as follows:

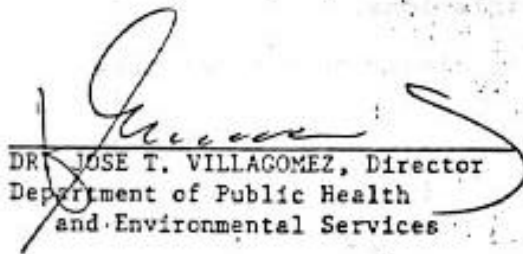
SECTION IV: Changes were made to clarify when a building may be connected to a septic tank. Under the final regulations no new building, other than single family residences and duplexes, can be connected to a septic tank without written permission from the Division of Environmental Quality.

SECTION V: The section was added to clarify how and when the regulations apply to existing septic tank systems. Under the final regulations all existing septic tank systems. Under the final regulations all existing septic tanks must meet the design criteria in the regulations, except that septic systems serving single family residences and duplexes are exempted for five years, unless they pose a threat to public health and safety.

SECTION XVII: Changes were made to clarify that a Certification for Use must be issued by DEQ prior to using a new septic tank system.

SECTION XXIII: The final regulations contain enforcement provisions which were clarified in order to be consistent with the provisions of P.L. 3-23.

A complete copy of the final regulations is published herewith and additional copies are available from the Department of Public Health and Environmental Services, Division of Environmental Quality, Dr. Torres Hospital, Saipan, CM 96950 (Telephone (670) 234-6114/6984).

  
DR. JOSE T. VILLAGOMEZ, Director  
Department of Public Health  
and Environmental Services

Date: 5/14/86

## APPENDIX C

### ADDITIONAL MITIGATION MEASURES DOCUMENTATION

- C.1 Forest Enhancement
- C.2 Road Drainage System Design and Construction
- C.3 Fire Control
- C.4 Environmental Protection
- C.5 Notification of Radar Transport
- C.6 Telephone Contacts
- C.7 Public Education
- C.8 Design/Construction – Reviews and Modifications
- C.9 BOD and Transfer of Facility Contract
- C.10 Permits and Correspondence

## C.1 Forest Enhancement





# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

100 ALA MOANA BOULEVARD  
P. O. BOX 50167  
HONOLULU, HAWAII 96850

Mr. John Edwards  
Headquarters Space Division  
Los Angeles Air Force Station  
P. O. Box 92960  
Los Angeles, California 90009-2960

DEC 4 1986

Dear Mr. Edwards:

This follows up on our conversation Tuesday regarding the PACBAR III Radar Station Project on Saipan, Commonwealth of the Northern Mariana Islands, and its possible impact on endangered species. Specifically, we discussed the mitigations suggested in the Draft Environmental Assessment (Assessment), the conservation measures recommended in our September 9, 1986 biological opinion (our reference number 1-2-86-F-091), and other planned actions pertinent to those species.

1. One of our concerns in our previous review of the Assessment was that the construction of a scenic pull-off and a parking area for a trail head along the access roadway would both destroy vegetation through clearing and encourage poaching in the Marpi Forest.

-The scale of such clearing is smaller than we first believed, and we were pleased that parking areas would be constructed close to the access road, not far back into the forest area. As such, the amount of vegetation lost would be minimal.

-Parking areas would not necessarily increase human intrusion, as roads already exist in this area, and ample room to park cars is currently available. A concern has been that the project roadways and parking would ease access for poachers. However, as poachers already have access, the creation of higher quality roads and parking would be expected to cause an increase in visitation by legitimate hikers, tourists, and others who may, in fact, act to discourage poaching. Also, as we discussed, the 24-hour staffing at the radar site might actually aid in discouraging poaching in the project area.

2. We were pleased to learn that you intend to work closely with the Commonwealth Forester in developing re-vegetation plans for areas which may need to be temporarily cleared and in investigation possibilities for the development of plots for planting species which may benefit native wildlife. Likewise, as suggested in both the Assessment and our biological opinion, your plans to cooperate with the Division of Fish and Wildlife biologist in surveying the road right-of-way and other impacted areas for the presence of endangered species prior to actual construction is encouraging.



3. We suggest you coordinate the content, layout and construction of public information signs regarding the protected species of the Marpi Forest with the Commonwealth Forester, the biologists of the Division of Fish and Wildlife, and, perhaps, Mr. Gordon Joyce of the National Park Service at the American Memorial Park in Garapan.

4. The potential for the spread of the brown tree snake from Guam to other islands of the Marianas and the Pacific was stressed at a recent meeting on Guam. There have been incidents of the snake being seen, and, luckily, killed, in Saipan. Precautions to protect against such entry must be strictly enforced.

Thank you for visiting us on your way through to Saipan. We hope that you continue to keep us informed of your progress and that you will let us know of any changes in the project design or implementation which may affect listed species in ways not previously addressed.

Sincerely yours,



William R. Kramer  
Deputy Project Leader  
Office of Environmental Services

cc: AFWE, FWS, Portland, OR (Attn: Swanson)

# **AFFORESTATION OF ERODED ACIDEC SOILS**

## **IN SOUTHERN GUAM**

By Leonard A. Newell

Pacific Islands Forester, USDA Forest Service  
and Carlos L.T. Noquez, Territorial Forester, Guam  
Presented at the

III International Soil Management Workshop

Republic of Palau

February 2-6, 1987

### **ABSTRACT**

The acidic soils of southern Guam, amounting to about 23% of the island, have for many decades been dominated by a grass type which is unproductive as well as fire and erosion prone. Incendiarism, which accounts for an estimated 90% of all wildfires in Guam, makes Guam's fire occurrence by far the highest statistically in the United States. After much experimentation and many failures, Guam's Division of Forestry and Soil Resources found acceptable nitrogen-fixing tree species and methods for afforestation of the harsh soil of the area. The work has been proven on a production basis in the Conservation Reserves of Guam. Costs and benefits are considerable, and the indicated rate of return is positive. Work is proceeding to obtain federal cost-sharing for similar work on private lands in southern Guam.

### **INTRODUCTION**

The island of Guam, southern-most of the Marianas Islands in the tropical western Pacific Ocean, is a territory of the United States. It has an area of 546 square kilometers and a high point of 407 meters above sea level (Gov. of Guam, 1983). Southern Guam is characterized by very old volcanic soils with acidity as low as 4.7 (Noquez, 1987), and an average of about 5.7 (Perry, 1987). Topography is steep and broken, and the soils in most areas are highly unstable. The dominant vegetation cover is composed of two species of grass, the perennial native Miscanthus floridulus, called swordgrass, and the introduced annual Pennisetum polystachyon or foxtail, which appears to be out-competing the swordgrass in recent years.

These grasses are not palatable in their mature form to grazing or browsing animals such as cattle, carabao or the introduced Sambar deer (Cervus unicolor). It is furthermore difficult-to-impossible for a person to walk through mature swordgrass, due to its knife-sharp edges, height to 3 meters and general density. Thus hunters and other would-be users of land in southern Guam have for many years made a practice of intentionally burning the grasses. The practice is so prevalent that Guam has by far the highest statistical fire incidence in the entire United States. In the period 1965-72, Guam had 6 times the number of fires per million acres protected as the next highest state (Massachusetts), and 6 times the acres burned per million acres protected as the next highest state, Oklahoma. (Ruppelt, 1979). Because most of the interior of southern Guam is inaccessible, these fires often burn until they run out of fuel or until the weather changes.

The combination of steep topography, unstable soils and repeated burning, combined with annual rainfall of 2,032-2,540 mm (Bureau of Reclamation, 1985)

Afforestation of Eroded Acidic Soils  
in Southern Guam  
LITERATURE CITED

Forestry and Soil Resources Division, Department of Agriculture, Government of Guam: Annual Reports for the years 1976-1986 inclusive.

Forestry and Soil Resources Division, Department of Agriculture, Government of Guam: Guam Wildland Fire Protection Plan, 1985 (compiled by D. Limtiaco). 70pp.

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Newell, Leonard A.: Combined Micronesian Trip Reports for the periods Feb. 9-March 4 and May 28-June 29, 1985; Honolulu Hawaii, 1985. On file at USDA Forest Service, Pacific Island Forester's Office, Honolulu, Hawaii. 11pp.

Noquez, Carlos L.T. Personal Communication, 1987.

Null, William A, Personal Communication, 1987.

Perry, Joan B., District Conservationist, Guam: Personal Communication, 1987.

Randall, Richard H. and Charles Birkeland: Guam's Reefs and Beaches, Part II, Sedimentation Studies at Fouha Bay and Ylig Bay; University of Guam Marine Laboratory, Tech. Report No. 47, August, 1978. 77pp.

Ruppelt, James M.: Cooperative Fire Protection Assistance Trip Report, 1979. On file at USDA Forest Service, Pacific Island Forester's Office, Honolulu, Hawaii. 15pp plus map, chart and cover memo.

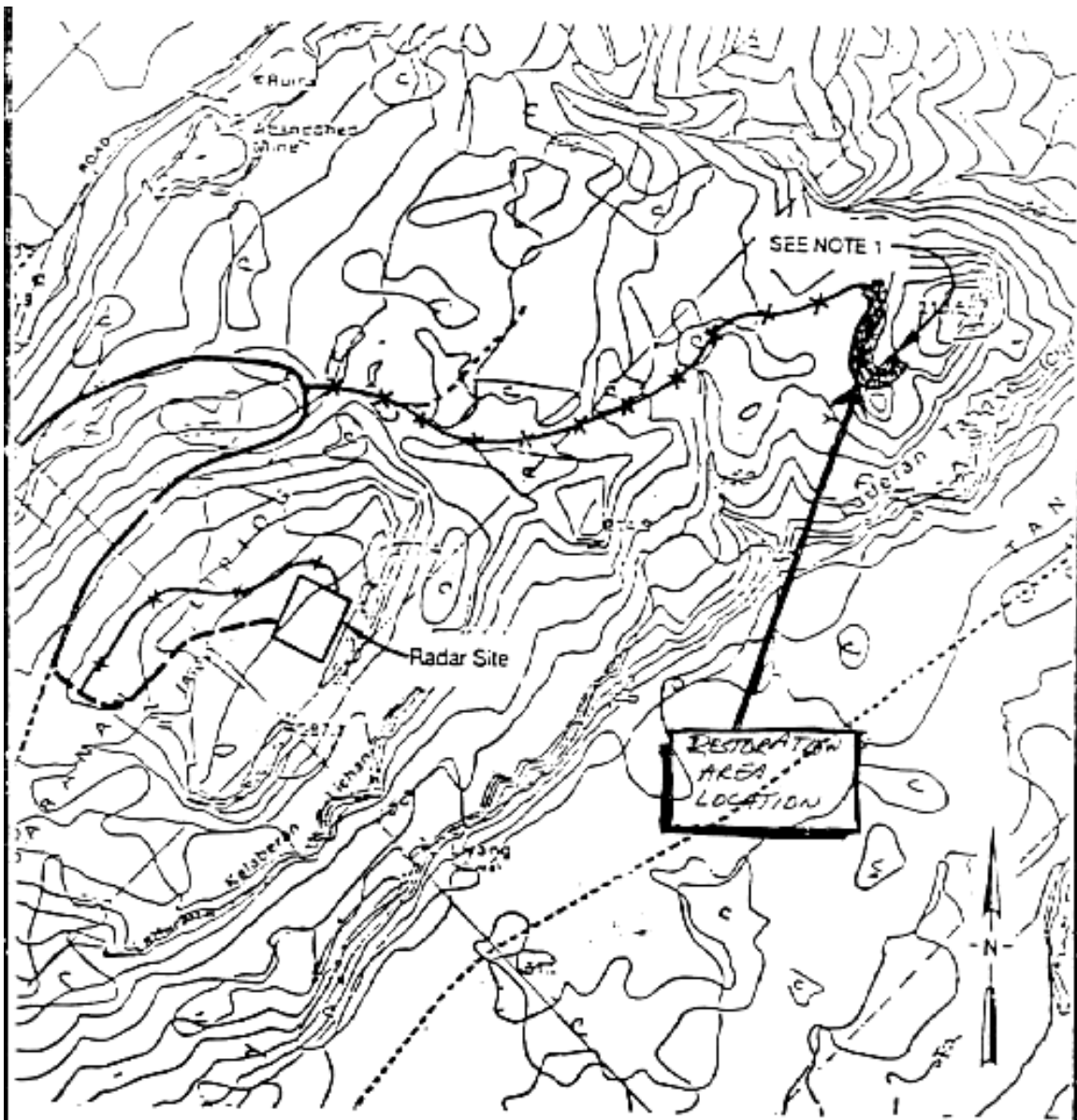
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Whitesell, Craig D.: Sixth Progress Report, Study of Species Introduction Plantings on U.S. Naval Lands on Guam; Honolulu, Hawaii, USDA Forest Service, PSW Station, 1973. 5pp.

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Wood, E.J. Ferguson and R.E. Johannes: Tropical Marine Pollution; on Elsevier Oceanography Series, #12; New York, Elsevier Scientific Publishing Co., 1975. 192 pp.



**LEGEND**

- EXISTING UNPAVED ROAD
- - - PROPOSED ROAD TO BE CONSTRUCTED
- X — BULLDOZER PATHWAY CLEARED IN 1965, TO BE ABANDONED AND REPLANTED AS NECESSARY

NOTE 1: This site was the location of the Borelight Tower before it was eliminated from the project design in June 1986.

SOURCE: DNR 1985b

SEE NOTE 1

RESTORATION AREA LOCATION

SCALE



**PACBAR III**  
**ENVIRONMENTAL ASSESSMENT**  
**ROAD ALIGNMENT**  
**ALTERNATIVES**

FIGURE 4.7

# MEMORANDUM OF UNDERSTANDING

1/21/88

THIS IS THE UNDERSTANDING entered into by the CNMI Department of Natural Resources (DNR), the Commonwealth Forester (CF), the Commonwealth Fish and Wildlife (CF&W) Division, and the United States Air Force Space Division (AFSD) as the result of joint meetings concerning environmental mitigation measures for the PACBAR III radar project in the Marpi Forest. The Understanding is as follows:

1. Mitigation Responsibility. The AFSD has a responsibility to mitigate use of a portion of the Marpi Forest for Pacbar III Radar since the area was set aside to preserve natural habitat for wildlife. The mitigation includes enhancement of other areas equal to one and one-half times the area of the proposed radar site. The enhancement means to improve forest areas as habitat for wildlife. This approach was reviewed and agreed to by the U.S. Fish & Wildlife (USF&W), CF&W, DNR, and CF. Precise areas to be enhanced and methods and timing have been worked out in meetings between the AFSD and the above named Commonwealth agencies. This MOU does not change any of those agreements.

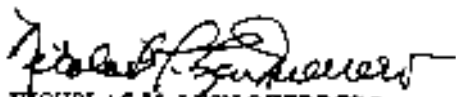
2. Oversight Responsibility. The DNR, CF and CF&W all have oversight responsibilities for the Forest Enhancement. Generally, a project proponent performs the action and the cognizant agency reviews the work for adequacy. AFSD requested that DNR perform and inspect the work for the following reasons:


- 1) Commonwealth agencies are the best qualified to do the work according to the USF&W, who stated that such work in these islands required detailed knowledge of local conditions, and experience with the unusual weather.
- 2) Commonwealth agencies are located on Saipan and would have more positive control of a small contractor doing work in Saipan than if the communication route required going through Los Angeles AFSD.
- 3) Commonwealth agencies have a professional interest in the project success.

3. Implementation. We are confident that the commonwealth agencies will do all in their power to make the program an effective enhancement of the wildlife areas. Recognizing that such enhancement is not easy and that there are very few people who are knowledgeable enough to carry out the mitigation successfully, some enhancement plots may fall through natural or unpredictable causes. If this occurs, re-enhancement efforts will be instituted as per our mutual agreements. The responsibility for mitigation still rests with the AFSD. However, we will all work together to enhance the forest areas for the wildlife. The performance management and inspection for the project will increase the work load of the agencies. AFSD will provide funds to accomplish the work and the oversight of the program. Commonwealth agencies will use the funds to provide for administrative oversight personnel and/or field people to accomplish the work and equipment. Alternatively, some AFSD funds may be used by the Commonwealth agencies to hire a contractor to accomplish certain portions of the work, at their own discretion.

For Department of Natural Resources:

For USAF Space Division:

  
NICHOLAS M. LEÓN GUERRERO  
Director Department of Natural Resources  
Commonwealth of Northern Mariana

  
JOHN R. EDWARDS, GS-13  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering



Commonwealth of the Northern Mariana Islands

Department of Natural Resources

Forestry Section

P.O. Box 221, CGEB

Saipan, MP 96950

Telephone (670) 322-9868/3317



April 25, 1988

88-246

Mr. John R. Edwards  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering  
Department of the Air Force  
Headquarters Space Division (AFSC)  
P.O. Box 92960  
Los Angeles, CA 90009-2960

Dear John:

I received your letter with the aerial photographs of the PACBAR III Radar Site taken in January, 1988. These photos are quite good, and I have posted some of them in the office. Thank you for offering them to us. The USDA Forest Service's Pacific Islands Forester, Len Newell, who I think you have met, was here recently and expressed interest in them. I gave three of the set to him for his use in Honolulu.

I have not heard anything yet about the release of a contract from the Department of Natural Resources to cover the wildlife habitat enhancement plots that are to be established. We have the trees ready to go, and have just finished the site preparation for our native forest restoration planting as will. I have been told by some people that our plan to directly restore native limestone forest has not been tried before in the Western Pacific, meaning that a successful project could be a "showcase" for other Pacific Island groups. It might be worthwhile to play this up at some future time.

Again, thanks for all of your assistance and cooperation.

Sincerely,

A handwritten signature in cursive script that reads "James H. Culbert".

James H. Culbert  
Commonwealth Forester

cc. Director of Natural Resources



**MEMORANDUM**

**TO** : Acting Chief of Plant Industry

7/28/88

**FROM** : Commonwealth Forester

**SUBJ** : Forester Section Monthly Report- July, 1988

**BUDGET AND FINANCE**

Account 2853 (Saipan)- Est. current balance- \$ 3,875.00

Finance is now insisting, for the first time in four years, that all expense accounts within each financial account show a positive balance. I had to reprogram this account so that money is transferred around to show all expense accounts as being positive and projected all remaining expenses out to the end of the budget period on 9/30 while keeping all expense accounts positive. This was done (88-339), and must also be done at some point with Account 2862. The solution to this understandable but extremely complicated request is to initially set up all accounts so that there is only one expense account in the all others category, that of General Budget Expense (4201). This should be done with all future forestry accounts.

Account 2860 (LWCF-Rota)- Current balance- \$ 3,072.43

Account 2862 (Saipan)- Beginning balance- \$ 60,780.00

Account 2863 (Rota)- Beginning balance- \$ 4,220.00

Account 2864 (Fire Mgmt.)- Beginning balance- \$ 12,000.00

FY1987 Grant- I wrote a letter on 5/11 (88-273) to Tom Fulk, USFS, asking that the grant ending date be extended from June 30 to Sept. 30 so that we have more overlap between this money and our new award. I have not yet seen the response. Fortunately, Finance has not yet realized that technically this grant has expired because we continue to be able to draw upon the remaining amount in Account 2853.

**COMMONWEALTH FORESTS**

Luta Forest- No agricultural or grazing permit applications have yet been received from MPLC.

Native Forest Restoration- 9 man-days were needed by the field crew to complete this project this month. A total of 627 mixed native forest species have been planted. This differs from the 900 trees planned due to the large amount of tangantangan and kolaskas saplings on the two acre site that we elected to retain during site preparation.

Sabanan I Etdot- Since 7/12, 1070 auri (Guam Source) have been planted by the field crew so far on 2-3 acres using 9 man-days plus one Kagman Station employee. Stan also assisted in the initial planting and fertilizing.

## ROTA FORESTRY ADMINISTRATION

No report.

## STAND IMPROVEMENT & REPORT

1984 Tangantangan Diversification (4.2 Ac.)- No activity.

1985 Tangantangan Diversification (1.6 Ac.)- No activity.

1987 Tangantangan Diversification (3.4 Ac.)- No activity.

1985 Grassland Reforestation (1.5 Ac.)- No activity.

1986 Grassland Reforestation (1.5 Ac.)- Two hours of mowing by the Equipment Services Section was completed within the plantation and in maintaining the fuel breaks.

1987 Grassland Reforestation (Rota) (1.5 Ac.)- No activity.

Ifil/Mohagony Plantation (0.9 Ac.)- No activity.

Native Forest Restoration (2.0 Ac.)- One man-day of weeding was completed by the field crew at the end of the planting.

Roadside Beautification (Saipan)- The field crew performed 1.1 man-days of maintenance to the trees along FR 560. Ben reports that these trees are doing well, but that the trees along FR 300 were mostly burned this past dry season.

Sabanan I Etdot (4.0 Ac.)- Ben and I discussed plans to erect wooden TREES PLANTED, DO NOT BURN protection signs on site before the dry season begins. Some early prescribed burning in December or January should also help on the external boundaries.

Sabanan Peace Memorial (0.25 Ac.)- No activity.

## VEHICLES

Saipan Double-Cab Pickup- Another vehicle inspection was



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION PO BOX 92960  
LOS ANGELES CA 90009 2960

Mr. Arnold Palacios  
1988

12 September

Commonwealth of the Northern Marianas  
Department of Natural Resources  
Fish and Wildlife Division  
Saipan, CNMI 96950

Dear Arnold:

At our meeting in August at the Department of Natural Resources office I promised you a synopsis to place in the local newspaper. Here is the synopsis for a Request for Proposal that you could place in the local newspapers. This synopsis is geared to the Commerce Business Daily where we advertise. You may need to tailor the announcement to the way it is normally done in Saipan. Our contracting people inform me that the actual Request for Proposal that you provide to interested parties should include the statement of work and elements of the contract that you will be issuing. You already have the statement of work, so the RFP should be assembled by your contracting branch to suit their particular contract elements. Since the original statement of work assumes that planting begins in July 1988, and all other dates are dependent on that start date, it should be modified to reflect the delay.

“CNMI-Fish and Wildlife Division, P.O. Box \_\_\_\_\_, Saipan 96950.

**Forest enhancement planting, maintenance.**

Solicitation number \_\_\_\_\_ . Contract start date approximately \_\_\_\_\_ 1988.  
Contact Mr./Ms. \_\_\_\_\_ 670/322-9095. Clear 68 designated plots 25 by 25 meters and plant various supplied species of plants. Total area is approximately 10.5 acres. Maintain plants by watering, weeding, replanting as necessary. Contract time for item 1 is one year and item 2 for two years.”

Since our initial planting date of July 1988 was not met, forest enhancement efforts may be delayed for one year. At our meeting you noted that some people were approached about doing the contract work, but that they had changed their minds or were

Undecided about whether to do the forest enhancement. If you can document any efforts made so far to obtain contractors, e.g. verbal requests, etc., I would appreciate receiving copies of the documentation.

I have a possible new solution to our problem of finding a contractor. I was favorably impressed on my August trip, by the work that the Forestry section has done on reforestation of the Boresight Tower access road. Ben Palacios took me to the areas that were cleared, planted and maintained. After realizing that the Forestry Division has already done the same type of work we want to accomplish, I talked to Jim Culbert about the possibility of doing the planting and maintenance. He said that they may be able to do the plantings, but would prefer a different way of planting --less square plots, and more random dispersion of plants. The square plots were designed by your office (Phil Glass). If Phil Glass and Jim Culbert can work out a planting scheme that is acceptable to Mr. Glass from the enhancement point of view, and to Mr. Culbert from the implementation point of view, the forestry section could be used to do this work. The funds were sent to DNR, which includes the Forestry section. You have permission to shift the funds to Forestry for implementation if they will accept, and if you so desire.

Please let me know what you think about this proposal. If you have any questions or items to discuss on our mitigation work, please contact me.

Sincerely,



JOHN R. EDWARDS  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

Cy to:SD/CNSC  
ROICC  
CRM  
Forestry



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 32960  
LOS ANGELES, CA 90009-2960

Mr. Arnold Palacios  
Commonwealth of the Northern Marianas  
Department of Natural Resources  
Fish and Wildlife Division  
Saipan, CNMI 96950

23 September 1988

Dear Arnold:

While preparing to send you the synopsis to advertise for the Forest Enhancement Planting and Maintenance contract, I checked the Commerce Business Daily to look for similar contract announcements. I found one for planting by the forest service so I called them and asked for a copy of their Request for Proposal (RFP). I am enclosing the example RFP for planting they sent me for your use in case arrangements for forest enhancement do not develop with the Saipan and Northern Island Soil and Water Conservation District or the Forestry Division.

Yesterday I talked to Charles Frear of the U.S. Soil Conservation Service who said that he will meet with the Saipan and Northern Island Soil and Water Conservation District to see if they are interested in taking on the forest enhancement project. If they are willing, I will be working with them to determine a schedule and to work out arrangements with the Forestry Division to provide the plants this year and next year as needed. Since Jim Culbert is being replaced at the end of October, and his replacement will be on Island at that time I am tentatively planning for a meeting with all concerned parties around the 27<sup>th</sup> of October.

If you have any further questions, or I can be of any assistance, please let me know.

Sincerely,

JOHN R. EDWARDS  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

Cy to:SD/CNSC  
ROICC  
CRM  
Forestry

MEMORANDUM OF UNDERSTANDING  
2 November 1988

THIS IS THE UNDERSTANDING entering into by the CNMI Department of Natural Resources (DNR), the Commonwealth Forester (CF), the commonwealth Fish and Wildlife (CF&W) Division, the Saipan and Northern Islands Soil and Water Conservation District (SWCD), and the United States Air Force Space Division (AFSD) as the result of joint meetings concerning environmental mitigation measures for the PACBAR III Radar project in the Marpi Forest. The Understanding is as follows:

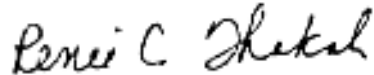
1. IN 1987 AFSD provided two purchase orders to DNR for a total of \$40,000, to fulfill the requirements for Forest Enhancement. Lack of private sector response to DNR's efforts to obtain a contractor for this work necessitates a new approach.
2. SWCD are proposing to accomplish the work in order to enhance the forest, and to further their own goals including...
3. The SWCD proposal to do the work, used a partially different approach to forest enhancement than the previous Statements Of Work (SOW) required. Rather than emphasis on replanting as plants die, this proposal entails the use of more plants in the planting phase, and longer maintenance (5 years proposed, 4 years agreed upon) to insure better plant survival. The changes to the original SOWs and additional SOWs required to achieve the new approach are attached. These SOWs reflect the concurrence of all agencies whose representatives have signed below.
4. AFSD agrees to fund the additional \$40,000 required to accomplish the forest enhancement. The entire \$80,000 total for this work will be directed to the SWCD who is defined as the prime contractor. Of this, SWCD will set aside \$1,250 for use by the Commonwealth Forester to provide plants for the forest enhancement program. AFSD will also help obtain surplus equipment from the Navy DRMO, but this work is not contingent upon obtaining any such equipment. Surplus equipment obtained from DRMO will require appropriate adjustments to the funding for this program.



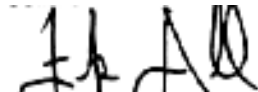
NICHOLAS M. LEON GURERRERO  
Director Department of Natural Resources  
Commonwealth of Northern Marianas



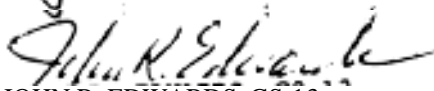
ARNOLD PALACIOS  
Chief CNMI Fish and Wildlife Division  
Commonwealth of Northern Marianas



RENEE THAKALI  
Commonwealth Forester  
Commonwealth of Northern Marianas



FRANK ALDAN  
Project Manager, Saipan and Northern Islands  
Soil and Water Conservation District



JOHN R. EDWARDS, GS-13  
Environmental Engineer  
Directorate of Acquisition Civil Engineering



Saipan Northern Islands Soil and Water Conservation District  
Department of Natural Resources  
Commonwealth of the Northern Mariana Islands



Capitol Hill  
Saipan, MP 96950

Cable Address:  
Gov. NMI Saipan  
Telephone 322-9830/9834/3415

December 12, 1988

John R. Edwards, GS-13  
Environmental Engineer  
Directorate of Acquisition Civil Engineering  
P.O. Box 92960  
Los Angeles, CA 90009-2960

Dear Mr. Edwards:

We are herewithin submitting an invoice for mobilization cost for Pacbar III Forest Enhancement Project. I appreciate your assistance in processing this at your earliest convenience so we may begin work in the project.

Sincerely,

Sincerely,

Francisco DLG. Alban  
Project Manager/Treasurer, SANISWCD



Saipan Northern Islands Soil and Water Conservation District  
Department of Natural Resources  
Commonwealth of the Northern Mariana Islands



Capitol Hill  
Saipan, MP 96950

Cable Address:  
Gov. NMI Saipan  
Telephone 322-9830/9834/3415

December 12, 1988

INVOICE

The sum of Sixteen Thousand (\$16,000.00) Dollars is requested for Mobilization of Saipan Wildlife Enhancement Project, as delineated in the November 2, 1988 of Memorandum of Understanding Statement of work, Exhibit "A", entitled "Pacbar III Forest Enhancement mobilization".

Sincerely,

Francisco DLG. Alban  
Project Manager/Treasurer, S&NISMCD



# Forest Enhancement Planned

A four-year forest enhancement program that would replace some of the islands tangang bushes with different varieties of trees is scheduled to begin soon, District Conservationist Charles Frear said.

The project will help supply the environmental mitigation measures required by Coastal Resources Management for the construction of the U.S. Air Force radar site on Mt. Peiosakara.

A total of 10.5 acres will be replanted on four sites

designated by the Fish and Wildlife Department. A total of 1,132 trees are scheduled to be planted in 68 plots measuring approximately 25 X 25 meters each.

The trees, being supplied by the Forestry Section of the Department of Natural Resources, include Manzanita and several local varieties. Plans call for the planting of 200 Fago trees, 150 Manzanita trees, 150 Talisai trees, and 120 Breadfruit trees.

The four plots involved in the program are one in the

Naftan wildlife area near the airport, one in the Kagman wildlife area, and two in the Bird Island wildlife area (on the land above Bird Island).

According to Frear, the start of the project is being delayed until a person is hired to head the program.

The U.S. Air Force has provided the Soil and Conservation District with a grant to hire an employee to begin the work and to purchase supplies and equipment.

Frear says the employee, called a Soil Conservation

Technician, will be local.

The tangantangan will only be cleared by hand (no mechanical methods will be used), and clearing will be in stages, instead of all at one time, according to Frear. "As the trees grow, we will clear

more," he said.

The District hopes to hire ten students to assist in the planning during their summer break.

Planting should be finished by the end of September, Frear said.

Somewhere somebody needs help.

Please help your local chapter.

Forest Enhancement Tree List

April 1989

<b>SPECIES</b>	<b>TREES NEEDED</b>	<b>TREES ON HAND</b>
Ficus tinctoria	70	60
Hernandia sonora	60	62 +
Neirosperma oppositifolia	200	59
Terminalia catappa	150	150
Cocos nucifera	72	72
Mutinga calabura	150	0
Intsia bijuga	60	60 +
Tabebuia pentaphylla	60	60
Pandanus dubius	60	60
Artocarpus altilis	120	21
Ceiba pentandra	40	10
Melanolepis multiglandulosa	60	63 +
Pithecellobium dulce	30	30
<b>TOTAL</b>	<b>1132</b>	<b>707 = 425</b>

NOTE: List of trees available for substitutes are as follows;

1. Cocos nucifera	-150
2. Hernandia Sonora	-80
3. Intsia bijuga	-30
4. Java plums	-72
5. African tulip	-10
6. Calophyllum inophyllum	-30
7. Cynometra ramiflora	-50
8. Acacia auriculiformis	-50
9. Heritiera longipetiolata	-3

---

**TOTAL** 475



Saipan Northern Islands Soil and Water Conservation District  
 Department of Natural Resources  
 Commonwealth of the Northern Mariana Islands  
 Capitol Hill  
 Saipan, MP 96950



Cable Address:  
 Gov. NMI Saipan  
 Telephone 322-9830/9834/3415

May 08, 1989

John R. Edwards, GS-13  
 Environmental Engineer  
 Directorate of Acquisition Civil Engineering  
 P.O. Box 92960  
 Los Angeles, CA 90009-2960

Dear Mr. Edwards:

We are herewithin submitting an invoice for Planting and Maintenance costs for Pacbar III Forest Enhancement Project for CY 1989. I appreciate your assistance in processing this.

Sincerely,

Francisco LG. Aldan  
 Project Manager/Treasurer, SNISWCD

FLA:mas



0000

Saipan Northern Islands Soil and Water Conservation District  
Department of Natural Resources  
Commonwealth of the Northern Mariana Islands

Capitol Hill  
Saipan, MP 96950



Cable Address:  
Gov. NMI Saipan  
Telephone 322-9830/9834/3415

May 08, 1989

INVOICE

The sum of Twenty Thousand (\$20,000.00) Dollars is requested for Planting and Maintenance of Saipan Wildlife Enhancement Project, as delineated on the November 2, 1988 of Memorandum of Understanding. The sum of \$4,000.00 is requested from Contract Number F04701-88-M-0038 and the sum of \$16,000.00 is requested from Contract Number F04701-88-M-0037 both dated 88 Feb. 19.

Francisco LG. Aldan  
Project Manager/Treasurer, SNISWCD

xc: File

I CERTIFY THAT THE SERVICES COVERED BY  
THIS INVOICE HAVE BEEN RENDERED IN  
ACCORDANCE WITH THE TERMS OF THE CONTRACT



## DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PD BOX 92963  
LOS ANGELES, CA 90099-2960

REPLY TO

ATTN OF: DEV

18 Oct 89

SUBJECT: Subject: Trip Report to Saipan Tracking Station

TO: SSD/CNSE

1. I traveled to Saipan and was on island from 5-10 September 89. The purpose of the TDY was to backcheck punchlist items on erosion system, check progress of work on forest enhancement contract, obtain input for Spill Prevention Control and Countermeasures Plan, and assist SPO on awards to people who helped with the forest enhancement.

2. Punchlist items were checked and a new list was provided to FEC (Mr. Dan Sanders). During a heavy rain I observed the erosion control drainage system in operation and took photographs documenting the effectiveness of the system to the lagoon. The system works well at preventing sediments from being entrained and washed across Beach Road. However, since some areas near the intersection of Matuis Road and Beach road have not been adequately covered with vegetation by the contractor, some sediments were washed across the road giving the appearance that the system is not completely effective. I recommended that this area be given high priority for remedial action by the contractor. Another area that needs immediate attention is the area above the outlet of Culbert III. I observed serious erosion here during a rain storm, and reported it in the list given to FEC. I also provided FEC with data on a new type of erosion control mat that could be used there. I checked on the placement of barrier rocks on the abandoned Boresight Tower road with the Commonwealth Forester, Ms. Rene Thakali, who was satisfied that they were placed where she wanted them to barricade the reforestation area we paid to plant. I also checked the ditch leading into that road and it was regarded so that cars can now pass to the trail head.

3. Dan Sanders of FEC requested clarification regarding DEQ rules for hazardous waste management plans and for a review of the FEC plan. I talked to the DEQ director, Mr. Russ Mechem and determined that the DEQ rules were only proposed and not yet binding upon us. I provided review comments on the FEC Hazardous Waste Management Plan and delivered them to Mr. Sanders. Mr. Sanders provided input to the SPCC plan. Note: I received your comments to the plan and the environmental contractor provided a revised plan which I am now reviewing. I will give the contractor revised comments by this Friday, and we will receive the final plan by the end of next week.

4. I was given a tour of all of the Forest Enhancement Plots by Rodney Camacho and John L. Mattao. We walked through every plot and a list of my observations are included as attachment 1. In summary, of 34 Plots inspected, 33 Plots were cleared, 1 was not cleared, 24 need weeding, 22 were planted, 12 were not planted. This represents about one-half of the 68 plots that were originally planned to be cleared and planted. The reason for the reduced number of plots is because the plots were clear-cut rather than partially cut as originally envisioned, because of inclement weather, and because of inability to secure some plots because the Marianas Public

Land Corporation had leased out land for grazing that was supposed to be set aside for forests. Because of this, additional planting will be required next year. We negotiated an add-on of \$5,000 for the additional work through summer hires for next summer. This will bring the contract total with the Soil Conservation District to \$85,000. (We have already received the additional \$5K at SSD/DEP). The Commonwealth Forester has agreed to provide the plants for this program. I will issue a new PO for the additional work within the next two months. The Soil Conservation District will provide us with an interim report in October 1989. The Soil Conservation District will send invoices for their work approximately every six months. We therefore request that you budget two TDYs per year for one person from this office to inspect work progress. During that trip we will also attempt to provide any other environmental assistance needed to the station and track other mitigation measures. It would be useful to know in advance any major events you have going on there so we may be able to coordinate trips.

5. I obtained a list of names of the various CNMI and Soil Conservation District people involved in the Forest Enhancement Activities for the awards that were handed out. These included:

**Soil Conservation Service;** Charles B. Frear, Noel T. Cabrera

**Saipan & Northern Islands Soil & Water Conservation District;** Isidoro T. Cabrera (Chairman), Frank Aldan (Chairman AF Project), Rodney Camacho, John L. Mattao

**Summer Hires;** Oscar N. Hanry, Jay R. Kazuma, Vincent S. Kaipat, Emery L. Kaipat, Brian S. Kaipat, Victor S. Romolar Jr., Jeffery C. Pangelianan, John S. Salas, Joseph L. Takai

**Department of Natural Resources;** Nicholas L. Guerrero (Director)

**Division of Fish and Wildlife;** Arnold Palacios (Director), Jim Reichel, Cliff Rice

**Commonwealth Forester;** Rene Thakali (Director)

6. Upon return to SSD I learned that some tests are being performed with the radar turned on. Our permit and Environmental Assessment require that we perform and provide results of an Electromagnetic Radiation (EMR) survey prior to operation of the radar. There may have been some confusion about what constituted operation since the facility is not fully operational. However, the intent of the CRM permit and EA were that before people and the environment could be exposed to EMR, the survey should be completed and results given to the CRM. The OPR for testing EMR for this facility is SSD/DEG, the Bioenvironmental office (formerly SSD/SGX). I have asked them to put together a survey plan and schedule, a fax of which is attached. Based upon this plan, we will require TDY funds or orders issued by your office for early December, eg leave in the 4<sup>th</sup> for three people.

7. Photographs of the site and environs requested by Capt Abboushi are also attached. Viewgraphs were delivered previously.



JOHN R. EDWARDS, GS-13  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

3 Atch: 1. Plot Survey  
2. EMR Survey Plan  
3. Photos

## ATTACHMENT 1 PLOT SURVEY

<b>Plot</b>	<b>Location</b>	<b>Cleared</b>	<b>Planted</b>	<b>Notes</b>
1	Bird Island	Yes	Yes	
2	Bird Island	Yes	Yes	
3	Bird Island	Yes	Yes	
4	Bird Island	Yes	Yes	
5	Bird Island	Yes-H Weeds	Yes-Coconut	No stakes in
6	Bird Island	Yes-H Weeds	Yes	No stakes in
7 (TV news)	Bird Island	Yes-H Weeds	Yes	No stakes in
8	Bird Island	Yes-H Weeds	No	
9	Bird Island	Yes-Weeds	No-On site	
10 (Danger)	Bird Island	Yes-Weeds	Yes-Flisai	Ylw Jackets
11	Bird Island	Yes-Weeds	Yes-BrdFruit	
12	Bird Island	Yes-H Weeds	Yes-Kapok	No stakes in
13	Bird Island	Yes-H Weeds	Yes	No stakes in
14	Bird Island	Yes-H Weeds	Yes	No stakes in
15	Bird Island	Yes-H Weeds	Yes	No stakes in
16	Bird Island	Yes-H Weeds	Yes	No stakes in
17	Bird Island	Yes-Weeds	Yes	No stakes in
18	Bird Island	Yes-H Weeds	No	No stakes in
19	Bird Island	Yes-H Weeds	Yes	No stakes in
20	Bird Island	Yes-H Weeds	Yes	
21	Kagman	Yes-Weeds	No-On site	Fused w/22
22	Kagman	Yes-H Weeds	No-On site	Fused w/21
23	Kagman	Yes-Weeds	Yes-4 specis	Fused w/24
24	Kagman	Yes-Weeds	Yes-4 specis	Fused w/23
25	Kagman	Yes-Weeds	Yes-4 specis	Bags on site
26	Kagman	Yes	Yes-4 specis	
27(endemic)	Kagman	Yes	No-Halem in	Baged Acacia
28	Kagman	Yes	No-from 27	to go here
29	Kagman	Yes-Weeds	No-On site	
30	Kagman	Yes	No	
31	Marpi	Yes-H Weeds	No	
32	Marpi	Yes-H Weeds	No	
33(we plant)	Bird Island	Yes	Yes	We planted
34	Bird Island	No	No	To be done

Notes: H Weeds mean heavy weeds. Stakes are being installed so that the forest enhancement plants can be found in the dense weeds that grow so fast in the clear-cut plots. In plot number 27, Halem, one of the plants we are planting was already growing. Tangen-tangen was cut around it and the endemic stand was left in place. The Acacia that was to be planted there will be planted on plot 28.



Saipan Northern Islands Soil and Water Conservation District  
Department of Natural Resources  
Commonwealth of the Northern Mariana Islands

Capitol Hill  
Saipan, MP 96950



Cable Address:  
Gov. NMI Saipan  
Telephone 322-9830/9834/3415

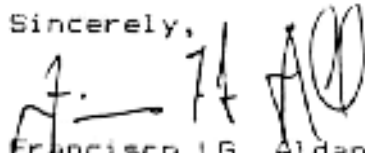
March 15, 1990

John R, Edwards, GS-13  
Environmental Engineer  
Directorate of Acquisition Civil Engineering  
P.O. Box 92960  
Los Angeles, CA 90009-2960

Dear Mr. Edwards:

We are herewithin submitting an invoice for Planting and Maintenance costs for Pacbar III Forest Enhancement Project for CY 1990. I appreciate your assistance in processing this.

Sincerely,



Francisco LG. Aldan  
Project Manager/Treasurer, SNISWCD

FLA/mas





Saipan Northern Islands Soil and Water Conservation District  
 Department of Natural Resources  
 Commonwealth of the Northern Mariana Islands



Capitol Hill  
 Saipan, MP 96950

Cable Address:  
 Gov. NMI Saipan  
 Telephone 322-9830/9834/3415

March 15, 1990

INVOICE

The sum of Twenty-Four Thousand (\$24,000.00) Dollars is requested for Planting and Maintenance of Saipan Wildlife Enhancement Project, as delineated on the November 2, 1988 of Memorandum of Understanding. The sum of \$4,000.00 is requested from Contract Number F04701-88-M-0037, dated February 19, 1988, and the sum of \$20,000.00 is requested from Contract Number F04701-89-M-0025 dated January 23, 1989.

*F. H. Aldan*  
 Francisco LG. Aldan  
 Project Manager/Treasurer, SNISWCD  
 cc: File

*John P. Edwards*

CERTIFY THAT THE SERVICES COVERED BY THIS INVOICE HAVE BEEN RENDERED IN ACCORDANCE WITH THE TERMS OF THE CONTRACT

## C.2 Road Drainage System Design and Construction

4300  
Ser RS/1194  
15 DEC 88

Coastal Resources Management  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
Attn: Mr. D. Rudolph  
Saipan, Mp 96950

Gentlemen:

This is in regards to our USAF PACBAR III Facility construction in the Marpi Forest Reserve. We recently obtained additional funds and have negotiated with our contractor to completely pave our access road up to the facility site. The road width will be 24 feet up to the intersection of Matuis and Marpi Roads with a 20 foot width continuing up to the site, Funds are currently not available to pave the scenic overlook and trailhead parking areas. We will attempt to pave the parking areas with future available funds.

If you have any questions please contact me at 322-7025.

Sincerely,

JOHN T. BERGSTROM  
LT, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Copy to:  
Mr. R. Mechem, Department of Environmental Quality  
Ms. R. Thakali, Commonwealth Forester

Blind Copy to:  
Capt. T. Abboushi, USAF, SD



DEPARTMENT OF THE NAVY  
RESIDENT OFFICER IN CHARGE OF CONSTRUCTION  
SAIPAN  
P.O. BOX 2150  
SAIPAN, CNMI 96950

IN REPLY REFER TO:

4300  
Ser RS/1255  
13 MAR 89

Coastal Resources Management  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
Saipan, MP 96950

Gentlemen:

This is in regards to our USAF PACBAR Facility construction in the Marpi Forest Reserve. We recently completed negotiations to include the paving of our scenic overlook and trailhead parking areas. Paving operations were completed last week for all the parking lots and the access road.

By copy of this letter, the Department of Natural Resources is informed that the two parking lots are prepared for the installation of the two environmental awareness signs. Please contact our office at 322-7025 for coordinating the installation of the signs.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Bergstrom".

JOHN T. BERGSTROM  
LT, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Copy to:  
Mr. R. Mechem, Department of Environmental Quality  
Mr. N. Guerrero, Department of Natural Resources  
Ms. R. Thakali, Commonwealth Forester  
Capt. T. Abboushi, Air Force Space Division

DIVISION 2. SITE  
SECTION 02102  
CLEARING AND GRUBBING

PART 1- GENERAL

1.1 PROTECTION:

1.1.1 Roads: Keep roads free of dirt and debris at all times.

1.1.2 Utility Lines: Protect from damage all existing utility lines that are known or visible. Notify the Contracting Officer immediately of any damage to or encounter with an unknown existing utility line. The Contractor shall be responsible for the repair of any damage to existing utility lines that are indicated or made known to the Contractor prior to start of clearing and grubbing operations.

1.1.3 Blasting: The use of explosives will not be permitted.

PART 2 – EXECUTION

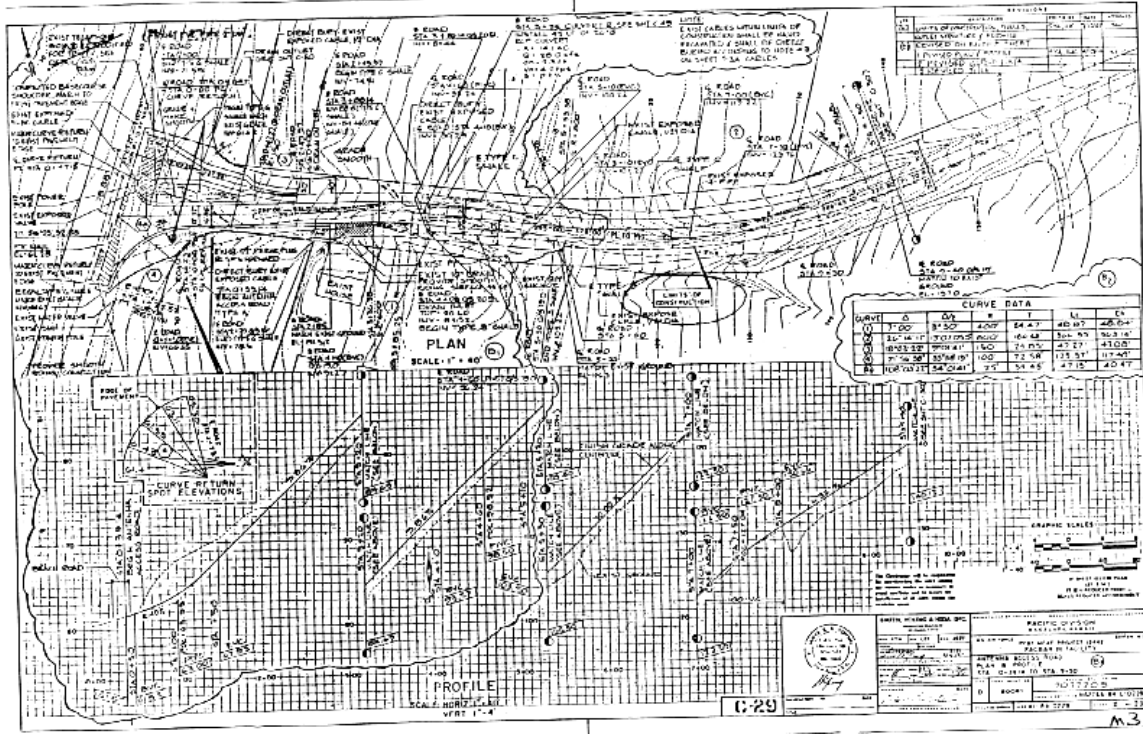
2.1 CLEARING: Clearing shall consist of the felling, trimming, and cutting of trees into sections and the satisfactory disposal of the trees and other vegetation designated for removal, including downed timber, snags, brush, and rubbish occurring within the areas to be cleared. Cut off flush with or below the original ground surface trees, stumps, roots, brush, and other vegetation in areas to be cleared. “The absolute minimum amount of vegetation will be cleared and vegetation along the access road will not be removed unless required for road widening. Prior to clearing the Radar Site and access road, the Contractor shall notify the Contracting Officer a minimum of 7 working days in advance, so that a site inspection can be conducted by Commonwealth Forester and the Contracting Officer” requirements specified in Section 02200, “Earthwork,” to make the new surface conform with the existing adjacent surface of the ground.

2.3 DISPOSAL OF CLEARED AND GRUBBED MATERIALS:

2.3.1 Remove from the project site and dispose in compliance with local requirements. Burning will not be permitted.

--END OF SECTION--

41-84-0229  
02102-1



C-29

M-3

# ENVIRONMENTAL SOLUTIONS, INC.

## MEMORANDUM

TO: File  
1990

*KKP*

June 6,

FROM: Kerry K. Parkinson, P.E.

Project No. 90-133

### **Impact of Other Projects on the Saipan Tracking Station Erosion Control System**

Access roads to land adjacent to Matuis Road have been constructed at locations shown in Figure 1 (attached).

Location A – The coral fill slopes upward to the south from the shoulder of Matuis Road. A culvert was not placed at the base of the fill along the flowline of the existing drainage course and the fill is not crowned or cross sloped to provide lateral drainage.

The potential exists for erosion of the fill material with deposition onto Matuis road and into the erosion control system.

A culvert should be placed at the base of the fill and the fill should be crowned or sloped to prevent sediment transport onto Matuis Road.

Location B- Fill was placed across the existing drainage course. Two 12-inch diameter popes were placed at the base of the fill.

The culverts do not have the capacity to pass the run-off from large storms, which means the fill will be eroded and transported by the storm run-off.

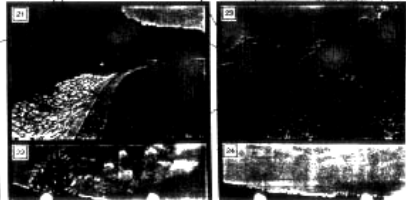
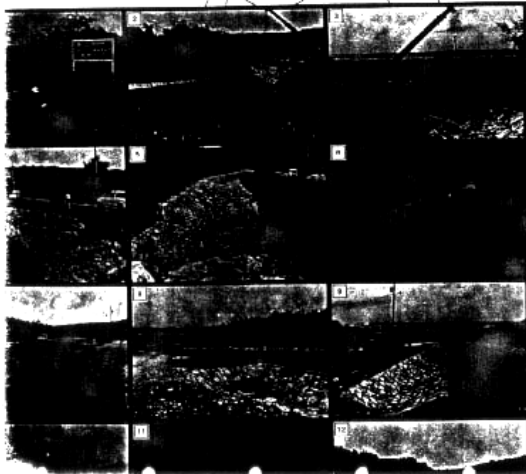
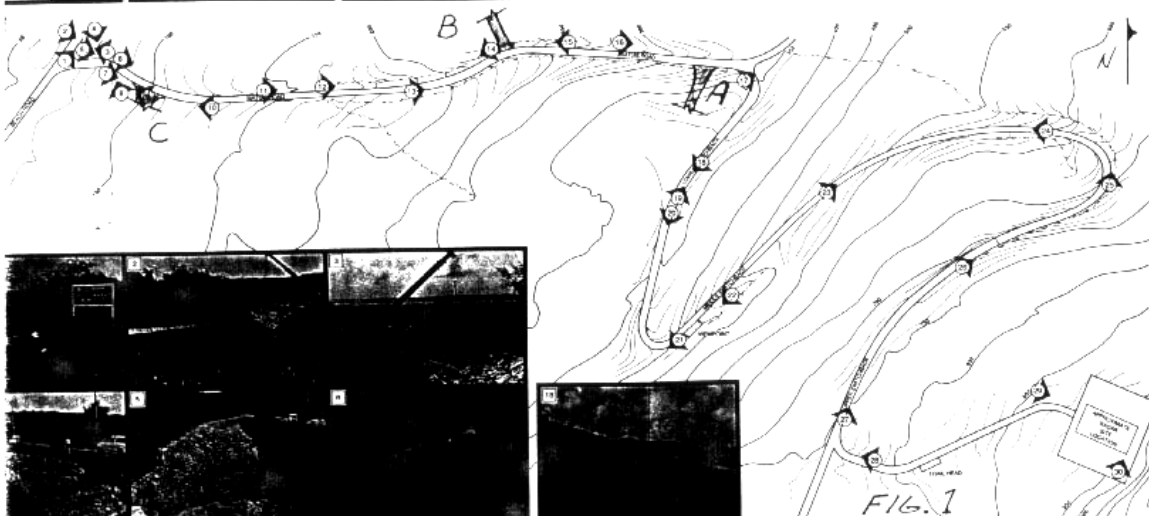
Suggested improvements are to grade or remove the fill to an elevation lower than Matuis Road and pave the surface and downstream slope with asphalt concrete or grouted rock.

Location C- Fill has been placed from the edge of Matuis Road onto the adjacent land.

In the event of storm run-off, the flow would be diverted onto Matuis Road. Sediment would be deposited on the road and into the erosion control system. If left as is, the road shoulder would eventually be eroded.

A broad ditch should be built to match existing grade at the upgradient and downgradient limits of the fill.

KKP:mh  
Attachment







DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE SYSTEMS DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 9296  
LOS ANGELES CA 90009-2960

REPLY TO

ATTN OF: CNSE

20 Aug 90

SUBJECT: Erosion Control System built for the Saipan Radar System

TO: DEV

1. This serves to document the conversation between Mr. William R. Conception, Executive Director of the Marianas Public Land Corporation; Col. Thomas Scanlan, Space Surveillance & Tracking System Program Director; Maj. Dale Madison, Det 5 Commander; and Capt. Jeff Witko, Saipan Radar Program Manager concerning the land development project along the road to the radar site.
2. On 11 June 1990 in a meeting in Mr. Conception's office, he agreed that the erosion control system the Air Force developed along the road worked and that the land development project under his control could impact that system. He stated that they were trying to minimize any impacts and had discussed this with Mr. John Edwards, the AF Environmental Engineer for this program (SSD/DEV).
3. Please refer any questions concerning this to me at (213) 643-1988.

  
JEFFREY A. WITKO, Capt, USAF  
Saipan Radar Program Manager

## C.4 Environmental Protection



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

300 ALA MOANA BOULEVARD  
P O BOX 50167  
HONOLULU, HAWAII 96850

IN REPLY REFER TO:

AUG 14 1986

Mr. John E. Maddox  
Deputy Director of Acquisition  
Civil Engineering  
Headquarters Space Division  
Los Angeles Air Force Station  
P. O. Box 92960  
Los Angeles, California 90009-2960

Dear Mr. Maddox:

This acknowledges receipt of your letter of July 28, 1986 which requested initiation of formal consultation pursuant to Section 7 of the Endangered Species Act. We will review the information you have provided concerning your construction and operation of the PACBAR III Radar Station (Saipan, Commonwealth of the Northern Mariana Islands) and related structures, and will respond to you within 90 days with a biological opinion discussing possible impacts to the following endangered species:

Micronesian megapode  
Vanikoro swiftlet  
Nightingale reed warbler

Your request was received here in August 2, 1986 and has been designated as case 1-2-86-F-091. Please refer to this case number in any future correspondence concerning this consultation. Please refer any comments, additional information, or questions concerning this consultation to me at the letterhead address or by telephone on (808) 541-2749.

Sincerely yours,

William R. Kramer  
Acting Project Leader  
Office of Environmental Services

cc: Chief, SE, AFA, FWS, Portland, OR (Attn: Swanson)



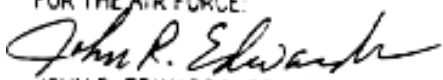
# AGREEMENT


DECEMBER 1986

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THIS IS THE AGREEMENT entered into by the CNMI Department of Natural Resources (DNR), the Commonwealth Forester, the Fish and Wildlife (F&W) Division, and the United States Air Force as the result of the joint meeting concerning environmental mitigation measures for the PACBAR III radar project in the Marpi Forest. The agreement is as follows.

1. Turnouts. Two turnouts will be included in the project as specified in the Draft Environmental Assessment. As per the request of the U.S. Fish and Wildlife (Honolulu, HI) in their letter of 4 December 19859 (atch 1), the Air Force will provide one interpretative sign at each turnout. CNMI F&W will provide the text for the signs by 1 February 1987.
2. Abandoned Road to Boresight Tower. The Air Force will facilitate and be responsible for insuring native forest restoration in a portion of the Limestone Forest Specifically, the unnamed trailhead to the limits of the abandoned excavation (approximate location given on map, atch 2). CNMI DNR will provide Statement of Work (SOW) for this task by 1 February 1987. The restoration will involve collection of seeds, use of nursery, site preparation, planting at approximately three meter intervals, one year of maintenance which shall consist primarily of weeding, and one time replanting if necessary. Forestry anticipates seed collection will begin about October 1987 and planting in July 1988. These actions will be performed or contracted out for performance by DNR and paid for with specified Air Force will contract directly and insure performance.
3. Abandoned Road to Radar Site. The Air Force will provide an adequate barrier, if requested, to prevent use of the abandoned road. During road construction the CNMI Forester will assess the need for such a barrier around form. The Forester desires a natural barrier such as rock, a berm, or trees. The Air Force will not plant any trees, other than the natural barrier, along the length of the said abandoned road.
4. Mitigation for Intrusion in the Marpi Forest. The Air Force will provide habitat enhancement fro 10.5 acres (1.5 X the impacted area). Its location will be designated by CNMI F&W. This will be accomplished in a manner similar in nature to item 2 above. The species mix may be different from that of the Limestone Forest. The DNR will provide for this task in the same SOW to be provided on 1 February 1987.
5. Snake Quarantine. The Air Force will adopt approved CNMI F&W inspection procedures (Attachment 3) for any equipment delivered from Guam. Equipment will be properly quarantined to prevent the introduction of the Brown Tree Snakes into Saipan. Air Force will specify in its construction contract that adherence to CNMI F&W and DNR quarantine procedures are mandatory on all contractors associated with the project.
6. Permit Application Complete. The above particulars and other information already provided to the DMF from the Air Force fulfill all data requirements for the DNR portion of the CRM permit process.

FOR THE AIR FORCE:  
  
JOHN R. EDWARDS, GS-13  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering  
US Air Force Space Division

FOR CNMI DEPARTMENT OF NATURAL RESOURCES  
  
NICOLAS M. LEON GUERRERO  
Director, Department of Natural Resources  
Commonwealth of the Northern Mariana Islands

# ENVIRONMENTAL SOLUTIONS, INC.

March 3, 1987

Project No.: 84-026A

Captain Morgan Deane Jr.  
Project Manager  
United States Air Force  
HQ SD/DEEP  
Post Office Box 92960  
Worldway Postal Center  
Los Angeles, California 90009-2960

## **PACBAR III Flammable Materials**

### Storage Container System Specification Data

Dear Captain Deane:

Please find enclosed a sample specification and vendor literature for a hazardous waste storage container system. This is being forwarded in response to an action item identified during the PACBAR Final Design Review Conference at Honolulu on February 27, 1987. The specification was prepared by Environmental Solutions, Inc. for the Beryllium Propellant Facility Project at Edwards Air Force Base.

Our recommendations, in regards to the storage container system specification, would include having the A/E review the applicable fire codes to assure the ventilation and fire suppression requirements are complied with for the storage of flammable drummed materials. The sample specification enclosed does not specify these provisions because no flammable liquid materials were to be stored in the unit.

If you have any questions, please don't hesitate to give me a call.

Sincerely,



Michael J. Wolters, P.E.  
Project Manager

MJW:jc  
Enclosures

cc: J. Edwards



# SAFETY STORAGE INC.

18900 Stevens Creek Blvd  
Cupertino, CA 95014  
408/252-2750

FEB 5

February 1987

Dear Chemical User:

Thank you for your inquiry regarding our line of Safety Storage chemical containers. They represent cost effective solutions to the problems of handling drummed or packaged chemicals while meeting regulatory requirements for secondary containment, security, and safety.

Please note that they are constructed of rugged 10 and 12 gauge steel with security locks, hazard labeling, and chemical-resistant epoxy coating with the larger units coming standard with a sprinkler system and explosion relief.

In addition, optional features include:

- ❖ Explosion-Proof Lighting and Ventilation
- ❖ Dry Chemical Fire Protection System
- ❖ Temperature Control
- ❖ Storage Shelves and Internal Separation Wall(s)

If you have any further question, please call me at 1-800/621-0854 Ext. 926, and I will be glad to discuss your specific application.

*Mike -  
John Edwards asked  
me to send this information  
to you for your consideration.*

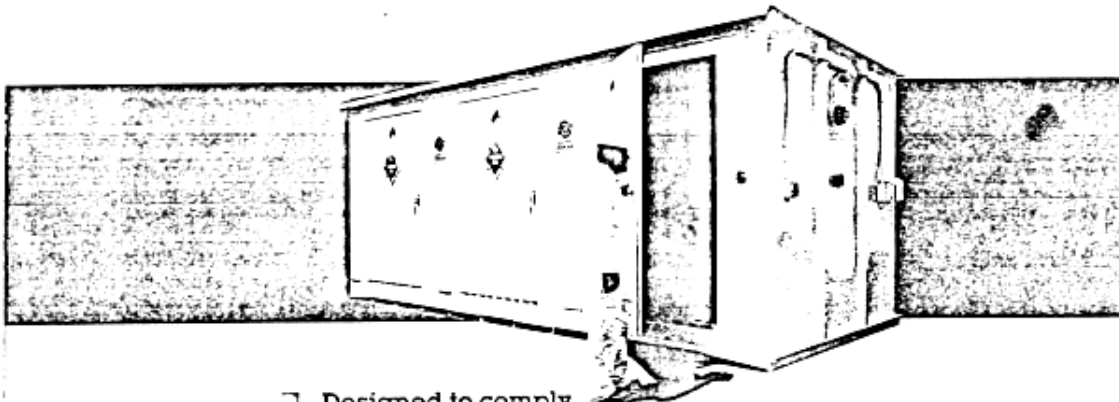
Sincerely,

*Bob Carlson*

Robert Carlson  
Regional Marketing Manager

# Safety Storage Containers

for packaged chemicals  
and hazardous materials



- Designed to comply with regulatory standards for storing hazardous materials
- Factory-built to user requirements
- Four model sizes
- Readily available
- Relocatable



**SAFETY  
STORAGE  
INC.**

**Bob Carlson**  
Regional Marketing Manager

18900 Stevens Creek Blvd  
Cupertino, CA 95014  
408/252-2750  
1-800-991-9955 Ext. 226

## Safety Storage Spill Containment Fire Protection Security

Safety Storage chemical and hazardous material containers are readily available for delivery throughout the United States. Four different size models can be used immediately upon delivery. They are turn-key units which require a minimum of site preparation. These high-quality units meet government standards and regulations for hazardous-materials storage. You can gain in many ways when you order:

- More economical than comparable block or concrete structures.
- Can be tailored to fit your requirements.
- Avoid costly delays characteristic of on-site construction.
- Combine spill containment, security, fire protection and worker safety.
- Can be relocated on- or off-site.
- You pay only for the features you need.

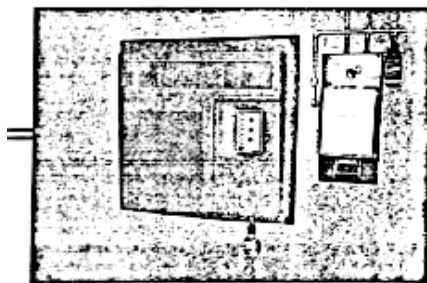
### Safety Storage container construction

Safety Storage containers are made of welded 10- and 12-gauge steel with supporting structural steel sections. Four models are available, the largest of which is the Model 22 with outside dimensions of 22'8" X 9' x 8'7". Three doors, each with three-point locking systems, provide

access and security. The 500-gallon secondary spill-containment reservoir, the walls and the ceiling, all are covered with two coats of chemical-resistant epoxy. Making storage capacity is 10 tons of chemicals and hazardous materials (drums, boxes and cans). For example thirty 55-gallon drums can be conveniently accommodated. Loading can be by forklift or by hand. Standard floors are 1 1/8" thick, epoxy-coated, fire-resistant plywood.

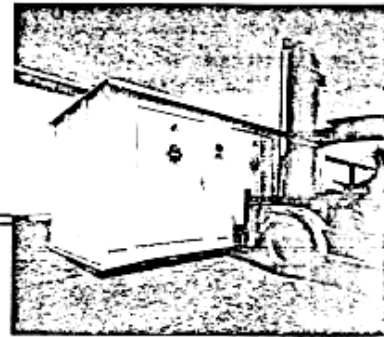
Safety features in this carefully engineered unit include a spill-containment sub-floor to prevent escape of continuously welded 10-gauge steel which is epoxy coated to resist chemical attack. Blow-out panels are provided for pressure relief under explosive conditions. A static grounding connection helps to protect flammable materials from ignition by electrical discharge. And fire protection is supplied by three water sprinkler heads with a 2" NPT fitting located outside the container for sprinkler system hookup.

Permanent placards and NFC 704M rating signs are provided for flammable materials, corrosives, oxidizers, poisons and other hazardous materials stored within.



Optional temperature-control system for temperature-sensitive chemicals.

Non-sparking exhaust fan and protective aluminum shield (shown without louvered cover)



Forklift moving a Safety Storage chemical container to a new location.



## Equipped to meet your needs

Optional features are determined by your specific storage requirements. For example: If you are going to store flammable liquids, we offer a dry chemical system to supplement or replace the standard sprinkler system. If you plan to store incompatible materials, we can install suitable separation walls. And, if you require shelf space for small containers, we can provide sturdy, epoxy-coated shelves of 15 ¼" depth.

Corrosives?...We offer a polypropylene spill-containment reservoir liner and fiberglass floor grating for additional protection. Do you want to monitor liquid spills continuously? Another option is a liquid level detector that can either tie into your plant security system or an exterior audible alarm.

Worker safety?...We have selected only UL-approved equipment for lighting and explosion-proof electrical wiring systems-which also meet NEC, NFPA and NEMA requirements. The forced ventilation system is designed to provide one air change per minute and is powered by a Class I, Division O, totally enclosed explosion-proof motor. The fan has non-static aluminum blades, and the ductwork is epoxy-coated steel.

Safety Storage containers can be equipped with heating/cooling units to provide a moderated

environment for stored chemicals. Double-wall insulated construction is also available.

Emergency eye/face wash units are still other worker-safety options.

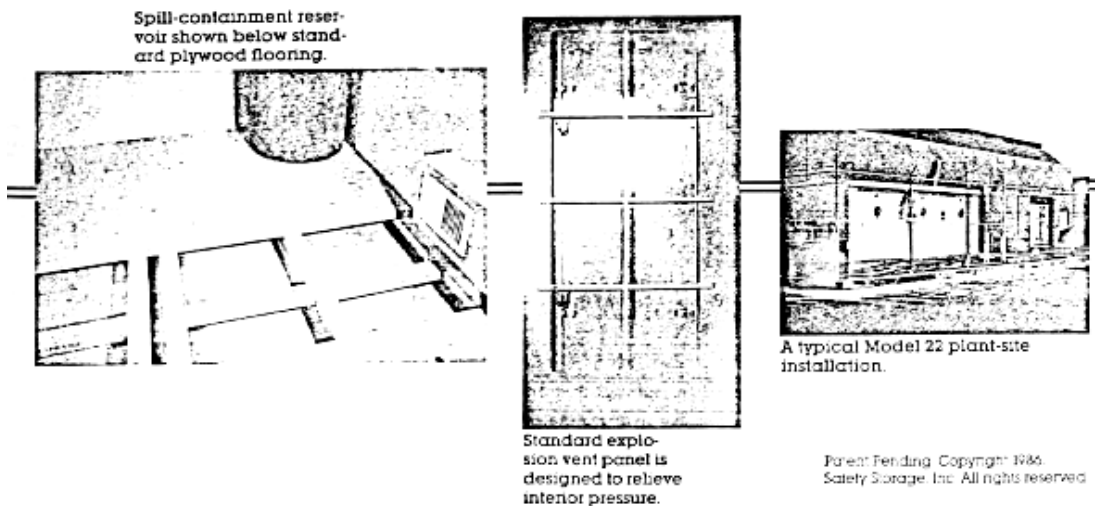
## How you can benefit from installing Safety Storage containers

Regardless of how you equip your new Safety Storage chemical containers, you benefit in many ways:

Spill containment. Soil and ground-water pollution from chemical leaks is of major concern throughout industry. Your company's possibility of liability can be reduced by using easily monitored Safety Storage containers with secondary containment for leaks and spills. We believe you will find them to be a safe, efficient solution to this potential environmental problem.

Fire protection. The risk of fire and/or explosion is always present when storing hazardous and flammable materials. Safety Storage design engineers have incorporated suggestions and recommendations from fire-protection specialists across the country to meet or exceed design and regulatory standards.

Security. Accountability and security are closely linked. It is essential in today's business climate to be

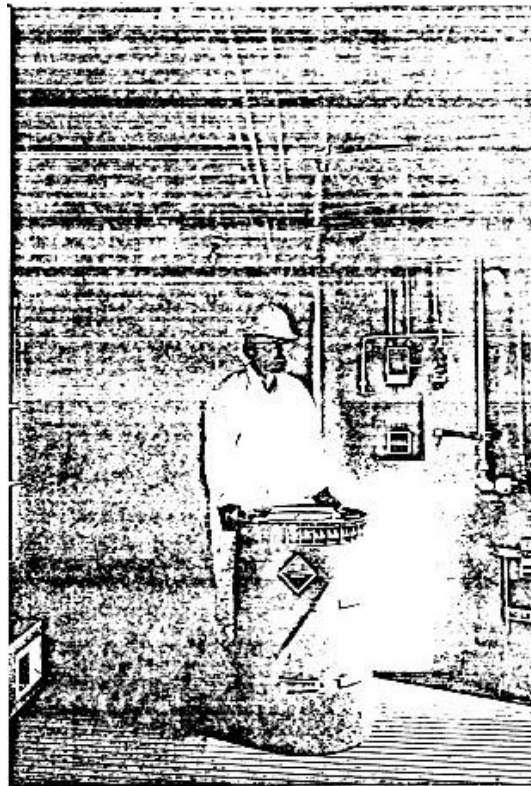


able to document and account for the receipt, storage, handling, use and disposal of chemicals and hazardous materials. This includes tight control over access to Safety Storage containers with their three point locking doors. Security is another Safety Storage cornerstone.

**Worker Safety:** You can be assured that every effort has been made in the design and manufacture of these chemical storage containers to protect the safety of personnel. Safety features include warning placards, static grounding, alarms, security locks, fire and explosion protection, emergency washing facilities, ventilation, temperature control, exterior switches and sprinkler system hook-ups.

### Ordering information

Features for containers manufactured by Safety Storage, Inc., can vary widely for each individual application. Therefore, design specifications are custom written to fit each model and usage. In addition, a leasing option is available to help serve your chemical-storage needs now, while conserving you capital.



### Safety Storage Sales Representatives

Safety Storage sales representatives, located in most U.S. industrial communities, are trained to help you attain your safe chemical storage objectives. They will assess your chemical storage needs, prepare detailed storage-unit sketches and specifications, and provide written price quotations. Our manufacturing plants are strategically located to reduce delivery costs and shorten delivery times.

Models and basic statistics

Model	Outside Dimensions			Inside Dimensions			Weight (Lbs.)	Door Openings		Designed Storage Capacity			Sump Capacity (Gallons)
	Length	Width	Height	Length	Width	Height		Height	Width	Weight (Lbs.)	Sq. Ft.	Drums	
22	22'8"	9'0"	8'7 1/2"	21'11 3/4"	8'0 3/8"	7'0 1/2"	8,600	6'9 3/4"	4'6"	20,000	176	24-40	570
15	15'3 3/4"	9'0"	8'7 1/2"	14'7 1/2"	8'0 3/8"	7'0 1/2"	6,000	6'9 3/4"	4'6"	14,000	117	16-28	380
7	8'0 1/4"	9'0"	8'7 1/2"	7'3 1/2"	8'0 3/8"	7'0 1/2"	3,400	6'9 3/4"	4'6"	7,000	58	8-12	190
4	6'0"	6'4 1/2"	6'4 1/2"	5'8 1/2"	5'9"	4'11"	1,500	4'10"	4'7"	4,000	32 1/2	4	85

The contents of this brochure outline the general capabilities of Safety Storage, Inc., containers, and should be used only as guidelines for capabilities and applicability. No warranty is implied or intended by the contents of this brochure. Individual warranties are written for each customer's specifications.



**SAFETY STORAGE, INC.**

18900 Stevens Creek Blvd.  
Cupertino, CA 95014  
408/252-2750  
1-800-621-0854 Ext. 926

## SAFETY STORAGE CONTAINER PRICE LIST

8/25/86

<u>MODEL NO:</u>	22	15	7	4
Base Price	\$13,700	\$9,800	\$6,100	\$2,300

### STRUCTURAL REQUIREMENTS:

Chemical Separation Wall – 2 Hr. Fire Rated	\$1,000	\$1,000	N/A	N/A
Chemical Separation Wall – Metal	\$650	\$650	N/A	N/A
Corrosive Fiberglass Floor Grating (Comp)(Gray)\$1,200	\$1,200	\$1,200	\$1,200	\$875
Corrosive Fiberglass Floor Grating (Container)	\$3,600	\$2,400	\$1,200	\$875
Standard Fiberglass Floor Grating (Comp)(Yellow) \$925	\$925	\$925	\$925	\$675
Standard Fiberglass Floor Grating (Container)	\$2,775	\$1,850	\$925	\$675
Polypropylene Sump Liner (Comp)	\$600	\$600	\$600	\$500
Polypropylene Sump Liner (Container)	\$1,800	\$1,200	\$600	\$500
Holdown Assembly (4)	\$300	\$300	\$300	\$200
Shelving 15" deep (per lineal foot)	\$22	\$22	\$22	\$22

### FIRE PROTECTION REQUIREMENTS:

Dry Chemical Fire Suppression System	\$3,150	\$3,000	\$1,900	N/A
Fire Dept. Hookup 2 ½ NHT Fittings	\$75	\$75	\$75	\$75

### ELECTRICAL REQUIREMENTS: EXPLOSION PROOF

Light (1)	\$750	\$750	\$750	N/A
Light (2)	\$1,250	\$1,250	N/A	N/A
Light (3)	\$1,650	N/A	N/A	N/A
Light (Exterior)	\$800	\$800	\$800	N/A
Ventilation System 1260 CFM	\$1,800	\$1,800	N/A	N/A
Ventilation System 450 CFM (per ea. comp)	\$1,025	\$1,025	\$1,025	N/A
Liquid Level Alarm (Compartment)	\$750	\$750	\$750	N/A

### MISCELLANEOUS REQUIREMENTS:

Automatic Dialing Alarm System	QOR	QOR	QOR	N/A
Emergency Eye/Face Wash (permanent)	\$275	\$275	\$275	\$275
Emergency Eye/Face Wash (portable)	\$750	\$750	\$750	\$750
Loading Ramp	\$750	\$750	\$750	N/A
Special Outside Paint	\$400	\$350	\$300	\$200
Corrosive Environment Outside Paint	\$800	\$700	4600	\$400

### PAYMENT TERMS:

Customer will include 10% (of net order) down payment with purchase order. Safety Storage, Inc. will invoice the balance, which will be due upon delivery of the order.

CAD  
REF no. 22

ROUTINE

PTA 00173

348 11 03:59

RTTUZYUW RUHGS1/243 3471031-UUUU-ROOJERA.  
ZNR UUUUU  
R 14 0037 UEC H7 7YB  
FN DICC GO  
TO ROOJERA/SU LOS ANGELES AFB CO//DFP/CNS//  
RUHVPAC/HO PACAE HICKAM AFB HI//DF//  
INFO RHHMBRA/PAONAVFACENGCOM PEARL HARBOR FI  
ROWTNOA/HO AFSPACECOM PETERSON AFB CO//DEF/XPN//  
RUENGET/GO ARSC ANDREWS AFB MD//DEE//

RT

UNCLASS //N11000//

SOPJ: CONSTRUCTION STATUS REPORT FYA 7 MCAF PROJECT 12442, PACBAR

III SAIPAN CNMI

A. PACBAR III PRECONSTRUCTION CONFERENCE ON 21 OCTOBER 87

1. TAW REF A INFO FOLLOWS FOR SUBJECT PROJECT IN FOLLOWING FORMAT:

- A. PERCENT COMPLETE- SCHEDULED VS ACTUAL
- B. CURRENT ESTIMATED USABLE COMPLETION DATE
- C. CURRENT CONTRACT AMT
- D. FUNDS AVAILABLE
- E. PENDING MODIFICATIONS
- F. SIGNIFICANT PROBLEMS
- G. PHOTO GRAPHS/SLIDES DEPICTING PROJECT PROGRESS

PAGE 02 RUHGSGG1243 UNCLAS

H. EVALUATION OF CONTRACTOR PERFORMANCE

I. MITIGATION MEASURES IMPLEMENTATION

2. A4-C-0229: PACBAR III RADAR. SAIPAN:

- A. 0 PCT- 0 PCT
- B. MARCH 1989
- C. 4,409,800.00 DLS
- D. 272,000.00 DLS
- E. DRAINAGE PREDESIGN, PROPOSED CHANGE NO. 1
- F. NONE
- G. NONE
- H. SLOW IN SUBMITTING NECESSARY PLANS AND SCHEDULES
- I. ENVIRONMENTAL PROTECTION PLAN SUBMITTAL EXPECTED BY 24 DEC 87
- J. BROWN TREE SNAKE PREVENTION PLAN SUBMITTED EXPECTED BE 24 DEC 87
- K. AWAITING CONSTRUCTION SCHEDULE AND QUALITY CONTROL PLAN.  
INFORMED CONTRACTOR ALL PLANS MUST BE SUBMITTED AND APPROVED  
PRIOR TO BEGINNING WORK.  
-ANTICIPATE P/C 1 NEGOTIATION DURING WEEK OF 21 DEC 87.  
-EARLIEST START ESTIMATED LATE JAN 1988.

RT

#1243

NNNN

ROUTINE

PAGE 1

SO/DE

SYSTEM CR

ROUTINE

PTA 00293

00 4 10 21:22

RTTUZYUW RUHGSGG2448 0040950-UUUU—RUWJERA.  
ZNR UUUUU  
R 040023Z JAN 88 ZYB  
FM OICC GO  
TO RUWJEB/SO LOS ANGELES AFS CA//DEE/CNS//  
RUHVPAC/HQ PACAF HICKAM AFB HI//DE//  
INFO RHHMBRA/PACNAVFACENCOM PEARL HARBOR HI  
RUWTNOA/HQ AFSPACECOM PETERSON AFB CO//DEE/XPD//  
RUEOGET/HQ AFSC ANDREWS AFB NO//DEE//

BT

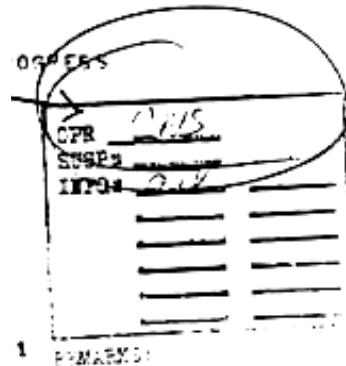
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SUBJ: CONSTRUCTION STATUS REPORT FY87 MCAF PROJECT 12442, PACBAR  
III SAIPAN CNMI

- A. PACBAR III PRECONSTRUCTION CONFERENCE ON 21 OCTOBER 87
- 1. IAW REF A INFO FOLLOWS FOR SUBJECT PROJECT IN FOLLOWING FORMAT:
  - A. PERCENT COMPLETE – SCHEDULED VS ACTUAL
  - B. CURRENT ESTIMATED USABLE COMPLETION DATE
  - C. CURRENT CONTRACT AMT
  - D. FUNDS AVAILABLE
  - E. PENDING MODIFICATIONS
  - F. SIGNIFICANT PROBLEMS
  - G. PHOTOGRAPHS/SLIDES DEPICTING PROJECT PROGRESS

PAGE 02 RUHGSGG2448 UNCLAS

- H. EVALUATION OF CONTRACTOR PERFORMANCE
- I. MITIGATION MEASURES IMPLEMENTATION
- J. SNAKE REPORT
- K. TOPICS OF INTEREST/SIGNIFICANT EVENTS
- 2. 84-C-0229: PACBAR III RADAR, SAIPAN:
  - A. 0 PCT – 0 PCT
  - B. MARCH 1989
  - C. \$4,409,800.00
  - D. \$272,000.00
  - E. DRAINAGE REDESIGN, PROPOSED CHANGE NO. 1
  - F. NONE
  - G. NONE
  - H. SUBMITTALS COMING IN. CONTRACTOR IS EXPENDING GREATER EFFORT
  - I. ENVIRONMENTAL PROTECTION PLAN REVIEWED AND RETURNED FOR REVISIONS. NEXT SUBMITTAL WILL BE FORWARDED TO CNMI AGENCIES FOR REVIEW AND APPROVAL. EXPECT NEXT SUBMISSION BY 15 JAN 88.
  - J. SECOND SUBMISSION OF SNAKE PREVENTION PLAN RECEIVED 30 DEC 87 AND RETURNED FOR REVISION. NEXT SUBMITTAL WILL BE FORWARDED TO CNMI AGENCIES FOR REVIEW AND APPROVAL. EXPECT NEXT SUBMISSION BY 15 JAN 88.



ROUTINE

PAGE 1

UNITED STATES AIR FORCE SYSTEMS COMMAND (AFSC) SPACE DIVISION  
World way Postal Center Box 92960  
Los Angeles, California 90009

1/21/88

Reply to  
Attention of: SD/DEV

Subject: Transmittal of Pacbar III Environmental Plans

To: CNMI Agencies

1. Part of the Air Force Space Division efforts to insure that the Pacbar III project minimize adverse environmental impacts was to include mitigation measures in the design package for the construction contractor. The contractor was required to provide plans for implementing the mitigation measures set forth in the design specifications. The plans provide a mechanism for the contractor to incorporate environmental concerns into his operations, and also affords CNMI agencies a view of how implementation will occur to facilitate agency oversight.

2. Enclosed herewith are copies of the Pacbar III Environmental Protection Plan (EPP) and Implementation Plan to Prevent Importation of Harmful Insects, Rodents and Especially Brown Tree Snakes (SP) as specified below. As per previous agreements, you have up to seven (7) calendar days to review the plans and provide comments.

<u>AGENCY</u>	<u>EPP</u>	<u>SP</u>
CRM	X	X
DEQ	X	
DNR (F&W) (CF)	X	XX
HPO	Section	



JOHN R. EDWARDS, GS-13  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

ROUTINE

PTA 00206

03 5 12 55:45

30/DE  
SYSTEMS  
CN

RTTUZYUW RUHGS GG 4620 0351015-UUUU-RUWJEAH.

ZNR UUUUU

R 04 00 037 FEH 88ZYB

FM OICC GO

TO RUWJE8H/SO LOS ANGELES AFS CA//DEF/CNS//

RUHVPAC/HQ PAC AF HICKAM AFB HI//DE//

INFO RHHMBRA/PACNAVFACENCOM PEARL HARBOR HI

PUWTNOA/HQ ARSPACECOM PETERSON AFB CO//DEE/XPD//

RUEOGET/HQ AFSC ANDREWS AFB MD//DEE//

BT

UNCLAS // N11 00 0//

SUBJ: CONSTRUCTION STATUS REPORT FY 87 MCAF PROJECT 12442, PACBAR III SAIPAN CNMI

- A. PACBAR III PRECONSTRUCTION CONFERENCE ON 21 OCTOBER 87
- 1. IAW REF A INFO FOLLOWS FOR SUBJECT PROJECT IN FOLLOWING FORMAT:
  - A. PERCENT COMPLETE- SCHEDULED VS ACTUAL
  - B. CURRENT ESTIMATED USABLE COMPLETION DATE
  - C. CURRENT CONTRACT AMY
  - D. FUNDS AVAILABLE
  - E. PENDING MODIFICATIONS
  - F. SIGNIFICANT PROBLEMS
  - G. PHOTOGRAPHS/SLIDES DEPICTING PROJECT PROGRESS

PAGE 02 RUHGSGG4620 UNCLAS

- H. EVALUATION OF CONTRACTOR PERFORMANCE
- I. MITIGATION MEASURES IMPLEMENTATION
- J. SNAKE REPORT
- K. TOPICS OF INTEREST/SIGNIFICANT EVENTS
- 2. 84-C-0229: PACBAR III RADAR, SAIPAN:
  - A. 0 PCT - 0 PCT
  - B. MARCH 1989
  - C. \$420,391.00
  - D. \$261,409.00
  - E. P/C NO. 1 WAS NEGOTIATED ON 7 AND 8 JAN 88 FOR A COST OF COMMENTS DURING THE PRECONSTRUCTION CONFERENCE INCLUDES MINOR ELECTRICAL BREAKER CHANGES AND REDUCING FINISHED ROADWAY SLOPES TO A 10 PCT MAXIMUM. A/E IS FINISHING DRAWING/SPECIFICATION CHANGES AND GOVERNMENT ESTIMATE FOR P/C NO. 2. ONCE RECEIVED, WE WILL FORWARD TO CONTRACTOR AND REQUEST HIS PROPOSAL.
  - F. NONE
  - G. PRECONSTRUCTION ROADWAY PHOTOS AND AFRIAL PHOTOS TAKEN THE WEEK OF 25 JAN 88. PHOTOS BEING DEVELOPED AND WILL BE SENT BY SEPARATE CORRESPONDENCE ONCE RECEIVED.

PAGE 03 RUHGSGG4620 UNCLAS

- H. GOOD, INCORPORATING FINAL REVIEW OF QUALITY CONTROL

ROUTINE

PAGE 1

ROUTINE

PLAN AND CONSTRUCTION SCHEDULE.

- I. ENVIRONMENTAL PROTECTION PLAN PROVIDED TO CNMI AGENCIES ON 21 JAN 88. REVIEW AND COMMENT MEETINGS WERE HELD WITH THE AGENCIES THE WEEK OF 25 JAN 88. COMMENTS FORWARDED TO CONTRACTOR. EXPECT FINAL PLAN BY 10 FEB 88.
- J. SNAKE CONTROL PLAN REVIEWED BY CNMI AGENCIES SAME AS ENVIRONMENTAL PROTECTION PLAN. EXPECT FINAL PLAN BY 10 FEB 88.
- K. EXPECT ABOVE PLANS FOR APPROVAL FROM THE CONTRACTOR DURING THE WEEK OF 8 FEB 88. ONCE APPROVED, CONSTRUCTION WILL BEGIN IMMEDIATELY. EXPECT CLEARING AND GRUBBING TO BEGIN EITHER THE WEEK OF 8 OR 15 FEB 88.

BT  
#4620  
NNNN

ROUTINE

PAGE 2



ROUTINE

PTA 00395

06 3 14 32:40

RTTUZYRW RUHGSGG 73 0631028-UUUU-RUHJERH.

7NR UUUUU

R 0300037 MAR 88 7 YR

FM 01CC 60

TO RUWJEBH/SO LOS ANGELES AFS CA//DEE/CNS//

RUHVPAC/HQ PACAF HICKAM AFB HI//DE//

INFO RHHMBRA/PACNAVFACENCOM PEARL HARBOR HI

RUWTNOA/HQ AFSPACECOM PETERSON AFB CO//DEE/XPD//

RUEOGET/HW AFSC ANDREWS AFB MD//DFE//

BT

UNCLAS //N11000//

SUBJ: CONSTRUCTION STATUS REPORT FY 87 MCAF PROJECT 12442, PACBAR  
III SAIPAN CNMI

A. PACBAR III PRECONSTRUCTION CONFERENCE ON 21 OCTOBER 87

1. IAW FFF A INFO FOLLOWS FOR SUBJECT PROJECT IN FOLLOWING FORMAT:

- A. PERCENT COMPLETE – SCHEDULED VS ACTUAL
- B. CURRENT ESTIMATED USABLE COMPLETION DATE
- C. CURRENT CONTRACT ACT
- D. FUNDS AVAILABLE
- E. PENDING MODIFICATIONS
- F. SIGNIFICANT PROBLEMS
- G. PHOTOGRAPHS/SLIDES DEPICTING PROJECT PROGRESS

PAGE 02 RUHGSGG7946 UNCLAS

- H. EVALUATION OF CONTRACTOR PERFORMANCE
- I. MITIGATION MEASURES IMPLEMENTATION
- J. SNAKE REPORT
- K. TOPICS OF INTEREST/SIGNIFICANT EVENTS

2. 84-C-0229: PACBAR III RADAR, SAIPAN:

- A. 3 PCT ACTUAL COMPLETION. WILL CALCULATE SCHEDULED COMPLETION PERCENTAGES THIS MONTH.
- B. MARCH 1989
- C. \$4,420,391.00
- D. \$210,000.00
- E. P/C NO. P REQUEST FOR PROPOSAL SENT TO CONTRACTOR ON 3 MARCH 88. ANTICIPATE NEGOTIATION LATE MARCH.
- F. NONE
- G. PRECONSTRUCTION SLIDES GIVEN TO CART HOFFR 26 FEB 88. END OF FEB SLIDES BEING DEVELOPED. WILL FORWARD ONCE RECEIVED.
- H. CONTRACTOR MAKING GOOD PROGRESS. EFFECTIVE SAFETY CONTROLS AND ADHERENCE TO ENVIRONMENTAL AND SNAKE CONTROL PLANS.
- I. FINAL ENVIRONMENTAL PROTECTION PLAN APPROVED. COPIES PROVIDED TO CNMI AGENCIES AND AIR FORCE SPACE DIVISION (MR. J. EDWARDS).  
PAGE 03 PURGSGG7046 UNCLAS
- J. FINAL SNAKE CONTROL PLAN APPROVED. COPIES PROVIDED TO CNMI

ROUTINE

PAGE 1

ROUTINE

AGENCIES AND AIR FORCE SPACE DIVISION (MR. J. EDWARDS). EXPECT FIRST MONTHLY SHIPMENT SCHEDULE SHORTLY.

K. CONSTRUCTION BEGAN 12 FEB 88. ACCESS ROAD EXTENSION AND FACILITY SITE CLEARLY ENTIRELY CLEARED. GROUNDBREAKING CEREMONY CONDUCTED 25 FEB 1988.

PT

NNNN

- 3-14-88 Called Dan Patterson OICC -
- INSTRUCTED by Forester to keep fire kindling useable material away from road.
  - Told NOT to fight fires outside limits of construction.
  - Haven't seen agencies much.
  - Did find one bomb in area shown to Lt Brystrom.

ROUTINE

PAGE 2

4300  
Ser RS/1042  
07 MAR 88

From: Resident officer in Charge of Construction, Saipan

Subj: NOTICE IF MODIFICATION TO PACBAR III SNAKE CONTROL PLAN

Our Snake Control Plan originally stated that reports of anticipated incoming shipments would be submitted monthly. The shipment schedules are highly unpredictable using monthly estimates. Therefore, Black-Micro will submit weekly schedules of incoming shipments rather than monthly. Black-Micro will continue to submit monthly reports of shipment inspections of cargo received.

This modification will provide more accurate reporting and better control of our construction shipments. Please contact our office if you have any questions.

Sincerely,

JOHN T. BERGSTROM  
LTJG, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Distribution:  
Mr. B. Rudolph, Coastal Resources Management  
Mr. P. Glass, Department of Fish & Wildlife

## FY 89 DOD Environmental Quality R&amp;D Program Review and research needs

AFESC/RD (Lt Col Walker)

1. In response to your letter request for input to subject program review we have no current R&D efforts.
2. Representatives of your office were here earlier this year asking about R&D needs and they noted that they had biological research capability. We discussed several potential needs including an environmental problem involving the Brown Tree Snake in Guam. I became aware of the problem while working on the Environmental Impact Analysis Process for the Pacbar III Radar in Saipan. The major concern of the agencies with our project was the possible introduction of this snake via cargo containers transshipped from Guam. In Guam the snake has become a major pest. It is eradicating the bird populations, knocks down power lines and telephone lines and is becoming so numerous that they invade home and have been found in baby's cribs.
3. Two questions come to mind about the snake: How can it be controlled or eradicated from Guam, and how to prevent its introduction into other islands in the area. In order to do these some basic research on the habits and physiology of the snake may be useful. There is limited ongoing research on the snake, but I think most people in the field believe a great deal should be investigated. The questions above are of major environmental significance for the area, since there are endangered species of birds in Saipan which would undoubtedly be eradicated if the snake were introduced.
4. This research will probably not be completed in time to aid the construction phase of the Pacbar Radar, which is underway now, but it may be useful for any shipments sent during operations. There are no other Air Force projects slated for Saipan, but there may be future ones in Tinian. The Navy now has a radar project there and there are DOD exercises on Tinian. The Governor of the Northern Marianas Islands threatened to close Tinian for DOD use unless there were stricter control of snakes.

5. I am enclosing a copy of the construction contractor plan to prevent introduction of snakes for the Pacbar III Radar construction. We have more information about the matter if you are interested in performing the research. Please contact me at AV 833-0934.

JOHN R. EDWARDS  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

4300  
Ser  
RS/1236  
17 FEB  
8

Department of Environmental Quality  
Executive Director  
Attn: Mr. Russell Mechem  
Commonwealth of the Northern Marianas  
Saipan, MP 96950

Gentlemen:

As requested by your office, the enclosed Notification for Underground Storage Tanks resubmitted. The noted tank has been constructed and is expected to be in use within a month. Subsequent submissions will be handled by the U.S. Air Force or the facility operations contractor, ITT/Federal Electric Corporation.

If you have any questions or require additional information, please contact us at 322-7025.

Sincerely,

JOHN T. BERGSTROM  
LT, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Blind copy to:  
Capt. T. Abboushi, AFSD

# Notification for Underground Storage Tanks

FORM APPROVED  
OMB NO. 2000-0019  
APPROVAL EXPIRES 6-30-88

LD Number \_\_\_\_\_ STATE USE ONLY  
Date Received \_\_\_\_\_

## GENERAL INFORMATION

Notification is required by Federal law for all underground tanks that have been used to store regulated substances since January 1, 1974, that are in the ground as of May 8, 1986, or that are brought into use after May 8, 1986. The information requested is required by Section 9007 of the Resource Conservation and Recovery Act (RCRA), as amended.

The primary purpose of this notification program is to locate and evaluate underground tanks that store or have stored petroleum or hazardous substances. It is expected that the information you provide will be based on reasonably available records, or, in the absence of such records, your knowledge, belief, or recollection.

**Who Must Notify?** Section 9002 of RCRA, as amended, requires that, unless exempted, owners of underground tanks that store regulated substances must notify designated State or local agencies of the existence of their tanks. Owner means—  
(a) in the case of an underground storage tank in use on November 8, 1984, or brought into use after that date, any person who owns an underground storage tank used for the storage, use, or disposing of regulated substances; and  
(b) in the case of any underground storage tank in use before November 8, 1984, but no longer in use on that date, any person who owned such tank immediately before the discontinuation of its use.

**What Tanks Are Included?** Underground storage tank is defined as any one or combination of tanks that (1) is used to contain an accumulation of regulated substances, and (2) whose volume (including connected underground piping) is 10% or more beneath the ground. Some examples are underground tanks storing: 1. gasoline, used oil, or diesel fuel; and 2. industrial solvents, pesticides, herbicides, or fumigants.

**What Tanks Are Excluded?** Tanks removed from the ground are not subject to notification. Other tanks excluded from notification are:  
1. farm or residential tanks of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes;  
2. tanks used for storing heating oil for consumption on the premises where stored;  
3. septic tanks;

4. pipeline facilities (including gathering lines) regulated under the Natural Gas Pipeline Safety Act of 1968, or the Hazardous Liquid Pipeline Safety Act of 1979, or which is an intrastate pipeline facility regulated under State laws;
5. surface impoundments, pits, ponds, or lagoons;
6. storm water or waste water collection systems;
7. flow-through process tanks;
8. liquid traps or associated gathering lines directly related to oil or gas production and gathering operations;
9. storage tanks situated in an underground area (such as a basement, cellar, mine-working, drill, shaft, or tunnel) if the storage tank is situated upon or above the surface of the floor.

**What Substances Are Covered?** The notification requirements apply to underground storage tanks that contain regulated substances. This includes any substance defined as hazardous in section 101 (14) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA), with the exception of those substances regulated as hazardous waste under Subtitle C of RCRA. It also includes petroleum, e.g., crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (50 degrees Fahrenheit and 14.7 pounds per square inch absolute).

**Where To Notify?** Completed notification forms should be sent to the address given at the top of this page.

**When To Notify?** 1. Owners of underground storage tanks in use or that have been taken out of operation after January 1, 1974, but still in the ground, must notify by May 8, 1986. 2. Owners who bring underground storage tanks into use after May 8, 1986, must notify within 30 days of bringing the tanks into use.

**Penalties:** Any owner who knowingly fails to notify or submits false information shall be subject to a civil penalty not to exceed \$10,000 for each tank for which notification is not given or for which false information is submitted.

## INSTRUCTIONS

Please type or print in ink all items except "signature" in Section V. This form must be completed for each location containing underground storage tanks. If more than 5 tanks are owned at this location, photocopy the reverse side, and staple continuation sheets to this form.

Indicate number of continuation sheets attached

## I. OWNERSHIP OF TANK(S)

Owner Name (Corporation, Individual, Public Agency, or Other Entity)  
U. S. Air Force

Street Address \_\_\_\_\_

County \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_  
Saipan, MP 95950

Area Code \_\_\_\_\_ Phone Number \_\_\_\_\_

Type of Owner (Mark all that apply )

<input type="checkbox"/> Current	<input type="checkbox"/> State or Local Gov't	<input type="checkbox"/> Private or Corporate
<input type="checkbox"/> Former	<input checked="" type="checkbox"/> Federal Gov't (GSA facility I.D. no. _____)	<input type="checkbox"/> Ownership uncertain

## II. LOCATION OF TANK(S)

(If same as Section I, mark box here )

Facility Name or Company Site Identifier, as applicable \_\_\_\_\_

Street Address or State Road, as applicable \_\_\_\_\_

County \_\_\_\_\_

City (nearest) \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_

Indicate number of tanks at this location

Mark box here if tank(s) are located on land within an Indian reservation or on other Indian trust lands

## III. CONTACT PERSON AT TANK LOCATION

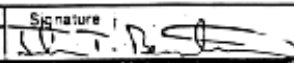
Name (If same as Section I, mark box here ) Job Title Area Code Phone Number  
LTJG J. T. Bergstrom, ROICC Saipan (temporary) - (670) 322-7025

## IV. TYPE OF NOTIFICATION

Mark box here only if this is an amended or subsequent notification for this location.

## V. CERTIFICATION (Read and sign after completing Section VI.)

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Name and official title of owner or owner's authorized representative Signature Date Signed  
JOHN T. BERGSTROM, ROICC SAIPAN  17 FEB 89

CONTINUE ON REVERSE SIDE

DESCRIPTION OF UNDERGROUND STORAGE TANKS (Complete for each tank in this location.)					
Tank Identification No. (e.g., ABC-123), or Arbitrarily Assigned Sequential Number (e.g., 1,2,3...)	Tank No. 1	Tank No.	Tank No.	Tank No.	Tank No.
1. Status of Tank (Mark all that apply) <input type="checkbox"/> Currently in Use <input type="checkbox"/> Temporarily Out of Use <input type="checkbox"/> Permanently Out of Use <input type="checkbox"/> Brought into Use after 5/8/86	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2. Estimated Age (Years)	New				
3. Estimated Total Capacity (Gallons)	1000				
4. Material of Construction (Mark one) <input type="checkbox"/> Steel <input checked="" type="checkbox"/> Concrete <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5. Internal Protection (Mark all that apply) <input type="checkbox"/> Cathodic Protection <input checked="" type="checkbox"/> Interior Lining (e.g., epoxy resins) <input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6. External Protection (Mark all that apply) <input type="checkbox"/> Cathodic Protection <input type="checkbox"/> Painted (e.g., asphaltic) <input type="checkbox"/> Fiberglass Reinforced Plastic Coated <input type="checkbox"/> None <input type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7. Piping (Mark all that apply) <input type="checkbox"/> Bare Steel <input type="checkbox"/> Galvanized Steel <input type="checkbox"/> Fiberglass Reinforced Plastic <input type="checkbox"/> Cathodically Protected <input type="checkbox"/> Unknown <input type="checkbox"/> Other, Please Specify	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
8. Substance Currently or Last Stored in Greatest Quantity by Volume (Mark all that apply) <input type="checkbox"/> a. Empty <input type="checkbox"/> b. Petroleum <input type="checkbox"/> Diesel <input type="checkbox"/> Kerosene <input type="checkbox"/> Gasoline (including alcohol blends) <input type="checkbox"/> Used Oil <input type="checkbox"/> Other, Please Specify <input type="checkbox"/> c. Hazardous Substance Please indicate Name of Principal CERCLA Substance OR Chemical Abstract Service (CAS) No. Mark box <input type="checkbox"/> if tank stores a mixture of substances <input type="checkbox"/> d. Unknown	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
9. Additional Information (for tanks permanently taken out of service) a. Estimated date last used (m/yr) b. Estimated quantity of substance remaining (gal.) c. Mark box <input type="checkbox"/> if tank was filled with inert material (e.g., sand, concrete)	  <input type="checkbox"/>	  <input type="checkbox"/>	  <input type="checkbox"/>	  <input type="checkbox"/>	  <input type="checkbox"/>





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION PO BOX 92000  
LOS ANGELES CA 90009-2000

REPLY TO  
ATTN OF: CNSC

20 March 1989

SUBJECT: US Air Force Saipan Tracking Station Snake Inspection Results

TO: CNMI Fish & Wildlife (F&W)

1. As proposed by your agency, snake/rodent inspections have been conducted on all AF radar equipment coming into Saipan. All Air Force cargo originated at Cape Canaveral Air Force Station in Florida. All containers were sprayed with liquid nitrogen and environmentally sealed and protected. The results of these inspections are listed below.

2. The list of inspections at various times included:

a) Capt Tarek Abboushi	Space Systems Division, Los Angeles AFB, CA
b) Capt Debbie Ferree	AF Space Command, Peterson AFB, CO
c) Mr. Ray Hirst, GS-13	Eastern Space Center, Patrick AFB, FL
d) Mr. Dave Rentschler, GS-13	Western Test Range, Vandenberg AFB, CA
e) Mr. Dan Sanders	ITT/Federal Elec. Corp. Saipan Tracking Station
f) Mr. Dick Brown	Computer Science/Raytheon Patrick AFB, FL
g) Mr. Tom Carter	Computer Science/Raytheon Patrick AFB, FL
h) Mr. Larry Dittmer	Computer Science/Raytheon Patrick AFB, FL
i) Mr. Dick Waybright	ITT/Federal Elec. Corp. Saipan Tracking Station

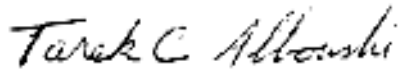
3. The first shipment arrived in Saipan on 27 Nov 1988 aboard the MV Green Wave. This shipment did not go through Guam. It consisted of breakbulk items (Antenna, Yoke, Pedestal, Air Conditioner) and 4 containers. All items were offloaded at Charlie dock between 1100-1600 hours on 27 Nov 1988. All breakbulk items were inspected as they were offloaded on Charlie Dock by: a, b, c, d, e, f, g and a Customs Inspector. No snakes/rodents were found. The 4 containers were taken to the Army Reserve Lot where they were opened and inspected on 18 Nov 1988 by: a, d, e, f, g and 2 Customs Inspectors. No snakes/rodents were found.

4. The next shipment to arrive on Saipan came by barge (Francisca-T) via Guam. This shipment included 11 containers plus 1 flatrack (2 heat exchangers). It was offloaded at Charlie Dock on 3 Mar 1989. As this cargo was offloaded, it was inspected by 2a, e, and h for any holes or openings. None were found. Also, the flatrack was inspected thoroughly once it was on the dock and no snakes were found. All containers plus flatrack were then stacked at the ocean-end of Charlie Dock. On 4 Mar 1989 the cargo was opened and an inspection was conducted between 0930-1130 hours. Present for this inspection were: 2a, e, h, I, 1 Customs Inspector, 1 Quarantine Inspector and 1 F&W Official. No snakes/rodents were found.

5. On 11 Mar 1989 a third shipment consisting of 1 flatrack (Air Conditioner) arrived on Saipan via barge (Francisca-T) from Guam. This was offloaded on Charlie Dock at approximately 1000 hours. Present for this inspection were 2e, h and 1 Customs Inspector. No snakes/rodents were found. Then on 12 Mar 1989 at 0900 hours, the flatrack was removed from Charlie Dock to the stevedores' lot.

6. This letter documents the results of the aforementioned snake/rodent inspections for our project. We appreciate your concern for this potential problem and will do our utmost to insure our compliance with all inspection procedures.

7. Should you require any further assistance or have any particular questions, please feel free to contact our site supervisor, Mr. Dan Sanders, ITT/FEC, 322-5612.



TAREK C. ABBOUSHI, Capt, USAF  
Program Manager,  
Saipan Tracking Station

cc: DEV  
WTR/SFI  
AFSPACECOM/XPDD  
ROICC-Saipan  
ITT/FEC  
CRM

## C.5 Notification of Radar Transport



**DEPARTMENT OF THE AIR FORCE**

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 12962  
LOS ANGELES, CA 90009-2962

REPLY TO  
ATTN OF SFIO

23 Mar 87

SUBJECT Access Road Design Criteria for PACBAR III Site

TO SD/DEED

1. The following criteria are recommended for consideration in the design of the access road for the PACBAR III site.

a. Weight per wheel is a maximum of 6,800 lbs.

(7350 IS ADEQUATE  
AS DESIGNED WITH 12 SF)

b. The turning width of the road is 28 feet.

c. The side to side clearance is 35 feet.

2. If the turning width of the road is kept at 20 feet, it is probable that a crane moving behind the tractor low-boy would be able to maneuver the low boy around the turns.

3. A maximum of six days will be required to move the three large pieces of the antenna over the road to the site.

FRANCIS D. O'NEILL  
WTR/SFIO  
WTR/PACBAR III Project Director

1 Atch  
PEC Ltr and Report

UNITED STATES AIR FORCE



SEPTEMBER 18, 1947

77 □ □ □ □ □ □ □

**Federal Electric Corporation**

Western Test Range Division  
P.O. Box 5728  
Vandenberg AFB, Calif, 93437  
IS300-029-87

Headquarters  
Department of the Air Force  
Western Space and Missile Center (AFSC)  
Vandenberg Air Force Base, California 93437

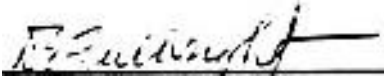
16 March 1987

Attention: F. O'Neill (WTR/SFIO)

Subject: Contract F04703-86-C-0618  
Saipan Radar: Transportation of  
Radar Antenna/Pedestal

1. Attached is information relating to the transportation of the antenna/pedestal on Saipan and recommendation regarding design of the proposed antenna access road.
2. If there are further questions, please call Richard Stalder at PH: 6-7281.

FEDERAL ELECTRIC CORPORATION



D. E. Fulbright, Manager  
Facilities Engineering & Maintenance Department

DEF:RLS:jt

□

## SAIPAN RADAR

### TRANSPORTATION OF RADAR ANTENNA/PEDESTAL

#### 1.0 PURPOSE

The purpose of this document is to discuss the proposed method of transporting the radar antenna/pedestal from Charlie Dock, Tanapag Harbor to the antenna site; thereby, helping to establish access road design parameters.

#### 2.0 SAIPAN RADAR FACILITY

The antenna site is located on Mount Petosukara, Saipan. The site is located approximately 2 miles west of San Roque, 4 miles west of Tanapag, and 15 miles north of the Saipan International Airport (Isle/Field).

#### 3.0 ANTENNA ACCESS ROAD

The antenna access road (i.e., the road/route that will be used to transport the antenna/pedestal from Charlie Dock to the antenna site) is shown in the 90% submittal construction/contract drawings prepared by Smith, Young & Hida, Inc., dated 29 January 1987. (The road route, geometric design, and typical X-sections are shown on sheets T-3, C-7 thru C-21, and C-38 thru C-40 of the 90% submittal drawings). The drawings indicate that the proposed antenna access road will be 24' wide from Station 0+00 (located at junction with Beach Road) to Station 36+00, and 12' wide from Station 34+50 to Station 112+61.4 (located at the antenna site). Also, the drawings indicate approximately six (6) sharp curves in the antenna access road, (Station 34+50 to Station 112+61.4) with a radius of curvature from 85' – 200'. Drawings indicate 10.96% grade at Station 78+00 to Station 80+00). (Note: information concerning the road from Charlie Dock to Station 0+00 on the antenna access road is not available; therefore, no comment can be made concerning adequacy of that portion of the road).

#### 4.0 METHOD OF ANTENNA/PEDESTAL AND ROAD DESIGN PARAMETERS

It is proposed to transport the radar in three (3) sections, as follows:

<u>Section</u>	<u>Weight</u>
Reflector	6 tons
Yoke	65 tons
Pedestal	55 tons

It is recommended that a “low-boy” type trailer with a bed width of 11 ft. be used to haul the components. Based on a tractor weight of 34,000 lbs, the weight per wheel would equal a maximum 6,800 lbs. when the Yoke is being transported. The overall length of the tractor-trailer combination would be 75 ft. This length of tractor-trailer combination might require that the road be more than 20’ wide at the curves. In addition, the reflector dimensions (30’ in diameter) and about 12 ft. above the trailer bed might require additional clearance, (removal of embankments, brush, etc.) on either side of the access road and clearing of overhead obstructions.

#### 5.0 RECOMMENDATIONS

It is recommended that the A-E design the access road considering the parameters discussed above.



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 12163  
LOS ANGELES, CA 90009-0163

REPLY TO

ATTN OF DEES (Mr. Loudon, AUTOVON 692-5376)

22 MAR 1985

SUBJECT PACBAR III (Central)

TO WSMC/ROPA (Major Tom Anderson, PSM)

1. Attached please find tech data on the Army's Heavy Equipment Transporter (HET). This unit, comprised of the M911 Tractor and M747 Trailer, is a strong contender for the task of transporting our "C" band hardware from the quay. Prot of Saipan, to our completed project site (Mount Petosukara). According to Fort Carson, CO personnel the tractor-trailer combination has a load carrying capacity of 70 tons (140,000 LBS) using a tire pressure of 90 psig and transporting loads over paved surface. The HET is routinely used to transport the Abrams tank which approaches 70 tons with fuel and equipment complements.

2. Since WSMC has the responsibility of transporting the radar hardware to the site, recommend copies of TM 9-2320-270-10 and TM 9-2330-294-14 be obtained through your publications channel. This will give you dimensions of the M747 bed and knowing the weights and dimensions of the three major components (pedestal, yoke, dish) you can adapt the loads to the transporter.

3. The 25<sup>th</sup> Infantry Division, Scofield Barracks, Hawaii, has several HETs within their TDE. The Army is receptive to USAF utilizing one of their units with crew in the movement of PACBAR hardware. This can easily develop into a training exercise for 25<sup>th</sup> Div, Transportation Battalion. POC at Scofield barracks is Capt Gaidelis, 80/438-9305.

4. The merchant ship moving the radar hardware from ETR to Saipan can stop at the island of Oahu for on-loading of the HET. Recommend coordination with the 25<sup>th</sup> at least 12 months prior to the accrual need date.

  
JAMES D. PERRYMAN  
Chief, Facilities Sys Support

3 Atch

1. TM 9-2320-270-10, pp 1-20, 1-21
2. TM 9-2330-294-14, p 1-7
3. Radar Weights and Dimensions

cc: WSMC/DEC  
SD/YNCC  
ESMC/RSN

PO BOX 5728

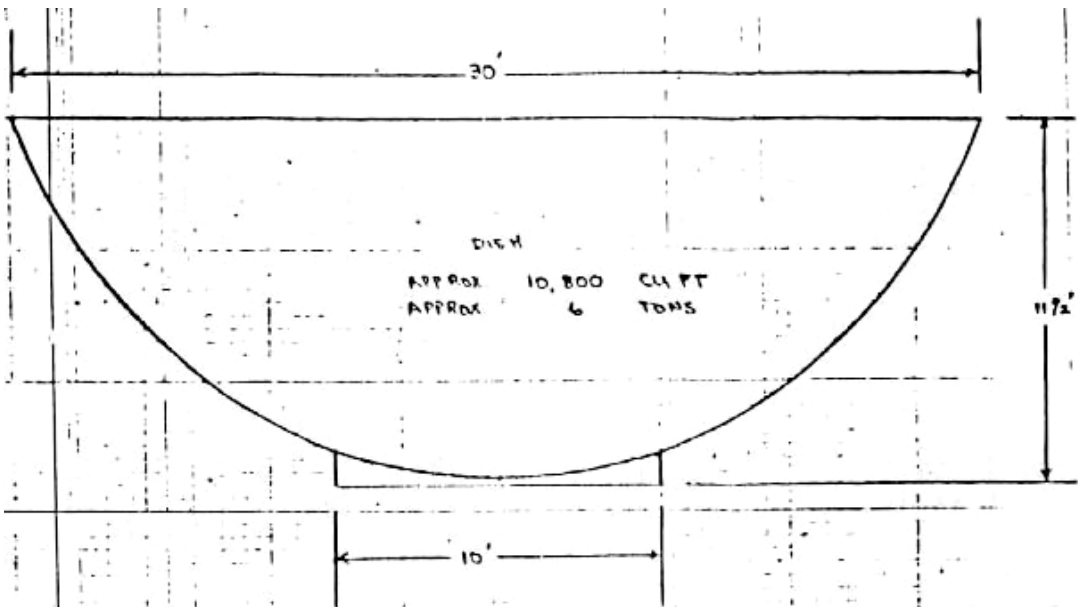
UAFB

37

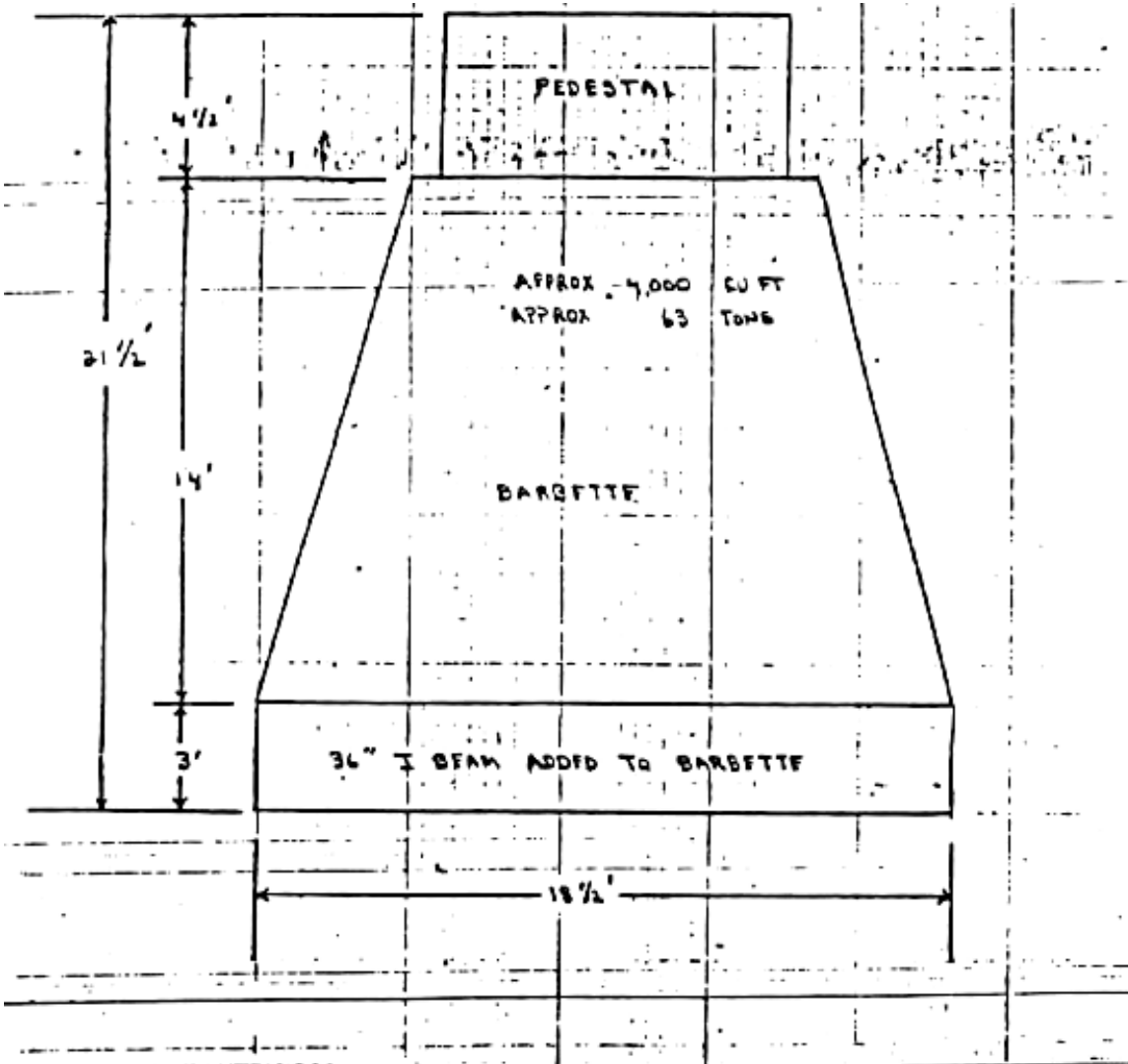
11/23/85-15300

GUARDIANS OF THE HIGH FRONTIER





FACDAR III RADAR DISH  
OUTLINE AND APPROXIMATE DIMENSIONS

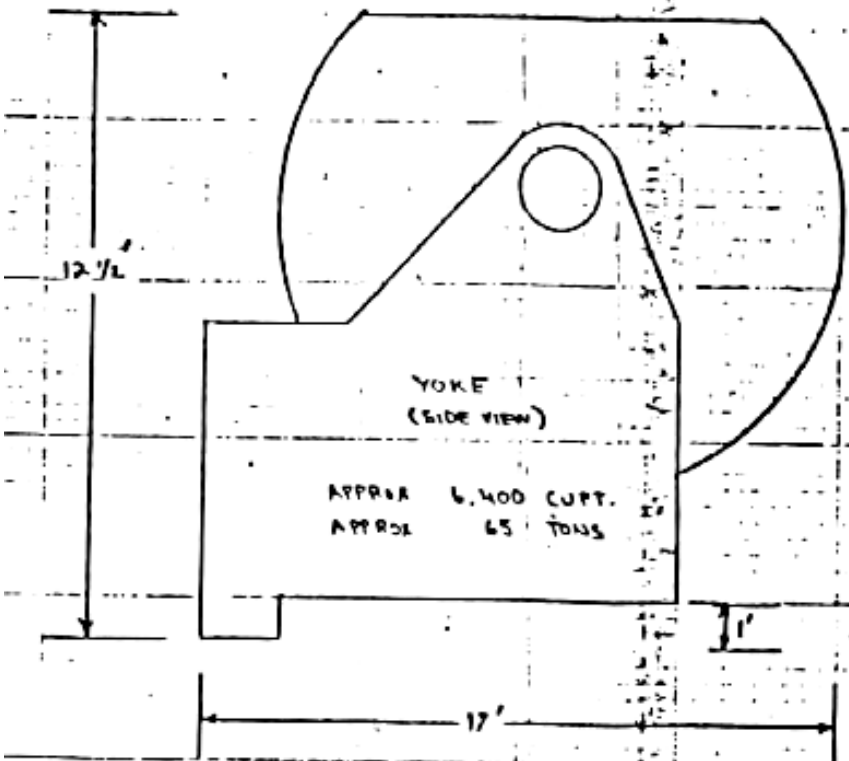


FALCON III RADAR BARBETTE AND PEDESTAL  
 OUTLINE AND APPROXIMATE DIMENSIONS

ATTACHMENT 3-2

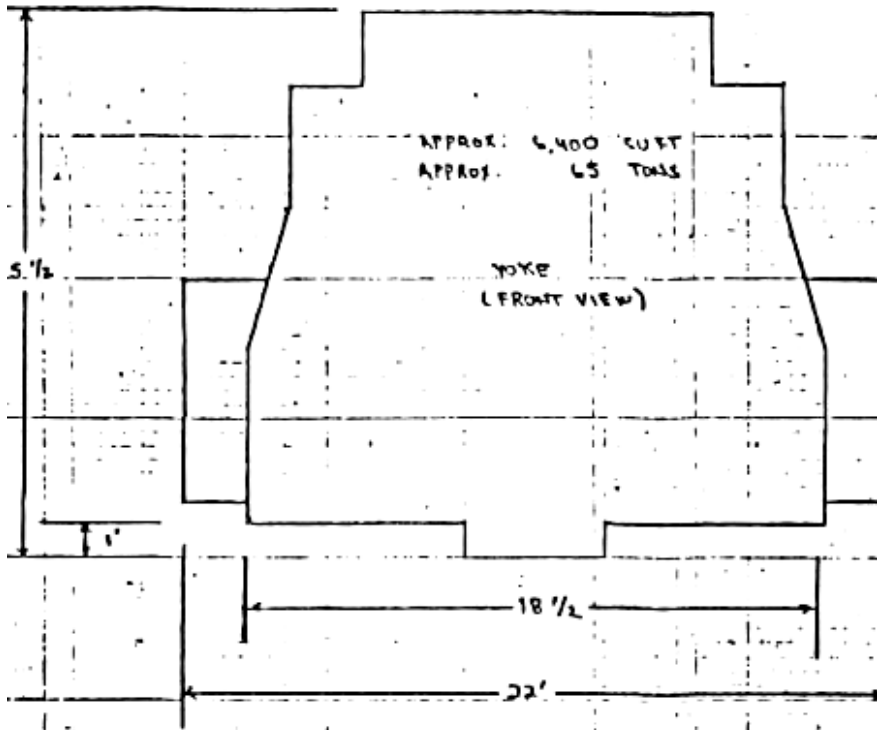
ATTACHMENT 3-4

FACBAR III RADAR YOKE  
OUTLINE ADD APPROXIMATE DIMENS!  
(SIDE VIEW)



ATTACHMENT 3-3

PALMER III RADAR YOKE  
OUTLINE AND APPROXIMATE DIMENSIONS  
(FRONT VIEW)





IN REPLY REFER TO:

26 Oct 88

Coastal Resources Management  
Office of the Governor  
Nauru Building, 6<sup>th</sup> floor  
Commonwealth of the Northern Mariana Islands  
Saipan, MP 96950

Attention: Mr. Bob Rudolph  
Acting Administrator

Attached are copies of letters notifying the appropriate CNMI agencies of our PACBAR radar arrival and subsequent move from Charlie Dock to our Marpi site.

The radar shipment is scheduled to arrive on November 23, 1988. If you have any questions please contact me or Mr. Daniel Sanders, our Federal Electric Corporation representative on Saipan.

*Tarek C. Abboushi*

TAREK C. ABBOUSHI, Capt, USAF  
PACBAR III Program Manager  
HQ Space Division  
P.O. Box 92960  
Los Angeles, CA 90009-2960  
Tel. No. (213) 643-0773

6 Atch:

1. CUC Ltr (24 Oct 88)
2. DPQ " " " "
3. DPS " " " "
4. CPA " " " "
5. Saipan Cable " "
6. Nikko Hotel " "

cc: ROICC-Saipan

## C.6 Telephone Contacts

ENVIRONMENTAL SOLUTIONS, INC.

RECORD OF PERSONAL COMMUNICATION

Source Contacted PACBAR III PROJECT PUBLIC HEARING
Source Telephone San Roque Elementary School 7 p.m.
Source Address
Name of Person Interviewed Sign-in Sheet went around (did not get a copy)
Title of Person Interviewed
Name of Person
Doing the Interviewing Edwards/Crisologo

Subject

General

- (1) The purpose of this hearing is for the CRM Permit
(2) The hearing was chaired by Mr. John Day, Assistant Attorney General
for the CNMI. Ms. Tami Grove was off-island.
(3) Mr. Day stated that the PACBAR project is considered a
"major sitting" and thus requires a public hearing as part of the permit process
(4) A copy of the transcript of this hearing will be available.

Opening Statements

Major Tom Anderson stated that the sole purpose of the project is to
catalog, track and maintain space objects. It is not a "Star Wars"
project, despite what local papers have printed. Discussed other
radar station projects worldwide, etc. He also stated that the
project will have "Open House" at the radar station once or twice a
year depending on contractor personnel. (good P.R.)

MAY 21 1986

Continue on Reverse Side

ACTION REQUIRED



DEPARTMENT OF THE AIR FORCE

HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION PO BOX 92960  
LOS ANGELES CA 90009 2960

REPLY TO

ATTN OF: DEV

26 Sept 88

SUBJECT: Pacbar III Telephone contacts

TO: SD/CNSC

1. Today I contacted several people in Saipan regarding Pacbar III radar. The following is a summary of the conversations.

2. I called Charles Frear of the U.S. Soil Conservation Service who met with the Saipan Soil Conservation District to discuss the possibility of them taking on the forest enhancement effort for the Saipan Fish and Wildlife Division. The District is in favor of doing the work provided several changes are made in the scope of work. These include more planting at the beginning of the project, but without replanting later on; that there be a longer maintenance period; and that some of the plots not be clear cut. Charles talked to both Arnold Palacios of F&W and Jim Culbert of the Forestry Division, and both agree to the approach. The Soil District will put together a proposal for the Air Force with an info copy to the F&W. He said they were so far thinking of hiring one employee, buying a 2WD truck, having a summer planting program with students, and then maintenance. I emphasized the need to keep within our budget. We should get a copy by mid-October. We set a meeting date for 26 October at DNR for SCS, F&W, and the Forester.

3. I called Bob Rudolph of the Saipan Coastal Resources Management and informed him of the above. I asked if we could change our permit if necessary in order to make the changes in the forest enhancement approach. He saw no problem in this if it was agreed to by the DNR, F&W and Forester. I asked about the hotel proposed downgradient of our site, near Paupau beach. He said he received an EIA last Friday and would proceed with a public hearing in several weeks if there were no problems with the EIA. I mentioned that I would be there in late October and requested that if possible it be held the last week in October. He said that the contact for the EIA was Cindy Camacho at (670) 234-3179.



4. I called Cindy Camacho at the above number and was given another number 234-7604 (home). I requested that she give a copy of the EIA to the ROICC in Saipan, so that they could send it to me. She requested information on the erosion control assumptions and calculations. I referred her to the DEQ and Russ Mitchum who has the Erosion Control Design Narrative. She stated that she thought our project was very environmentally sound, but that they just recently had a one or two year storm, and that water had built up in the excavation for the stilling basin at the intersection of Beach and Matuis Roads, and that water was sheet flowing onto their site. She said she was very concerned with our drainage system which accelerates water up to 2140 cubic feet per second onto her site. I mentioned that the runoff was there before our project, that we were constrained as to where we could put the runoff, and that we had energy dissipaters in the system (e.g. curves and rough surface). She mentioned that along Matuis Road there was public land which may be cleared, and that in a big rain may cause a mud slide along our road to her site and our construction site.

5. I called F&W and the Commonwealth Forester, but had no answer.



JOHN R. EDWARDS  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

## C.7 Public Education

DEV Copy

STAFF SUMMARY SHEET							
	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	CN	Coord	<i>[Signature]</i>	6			
2	CSD	Proc	<i>[Signature]</i> Sgt, 15 Oct 88	7			
3	CS	Coord		8			
4	CV	Sign	<i>[Signature]</i> 14 Oct	9			
5	PA	Coord	<i>[Signature]</i> 14 Oct 88	10			
SURNAME OF ACTION OFFICER AND GRADE			SYMBOL		PHONE		TYPIST'S INITIALS
Capt Abboushi			XCNSC		x30773		tca
SUSPENSE DATE							14 Oct 88
SUBJECT							DATE
Saipan Radar Electronics Equipment Donations							7 Oct 88
SUMMARY							
<p>1. The Saipan Radar (PACBAR III) Program concerns the implementation of a space surveillance sensor to fill a low altitude coverage gap in the Western Pacific. This radar is being installed in the US Commonwealth of Saipan. Negotiations for our site permit took almost 5 years to complete. One of the conditions of the site permit states that the Air Force must work with the Northern Marianas College in suggesting a curriculum whereby local Saipanese can develop technical backgrounds. This will help the AF meet the permit requirement of hiring at least 50% local residents at the radar site within one year of IOC.</p> <p>2. Space Division has arranged for excess equipment and books to be delivered to the college to help in setting up their electronics curriculum this fiscal year. The attached letter formally donates these items.</p> <p>RECOMMENDATION</p> <p>3. CV sign the attached letter. <span style="float: right;">1 Tab CV Letter</span></p> <p style="text-align: center;"><i>[Signature]</i></p> <p>CHARLES F. STIRLING, Lt Col, USAF Program Manager, Space Surveillance and Tracking System Program Office</p>							

13 OCT 1988



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 92960  
LOS ANGELES, CA 90009 2960

14 Oct 88

Ms Agnes M. McPhetres, President  
Northern Marianas College  
Post Office Box 1250  
Saipan, MP 96950

Dear Ms McPhetres

It is my pleasure to inform you that 167 pieces of electronics equipment and one box of technical books were delivered to the Northern Marianas College in August. This amounts to almost \$200,000 worth of donated material by HQ Space Division at Los Angeles Air Force Base, California. This donation is in addition to the one you received from Major General Clark of HQ AF Space Command at Peterson Air Force Base, Colorado. These donations will no doubt help to defray the costs of starting up your electronics curriculum this fiscal year.

The significant increase in technical job opportunities on Saipan is certainly important and it is understandable that you and your staff are excited about adding this important field of study to your overall curriculum. We are pleased to have been able to contribute to your efforts.

These donations by HQ Space Division and HQ AF Space Command show our support of this activity. Your achievements in this technical area will go a long way towards building a solid base of local technical expertise that will benefit the Northern Mariana Islands.

I wish you the best of luck in this exciting new endeavor.

Sincerely

A handwritten signature in black ink, appearing to read "Robert R. Rankine, Jr." with a stylized flourish at the end.

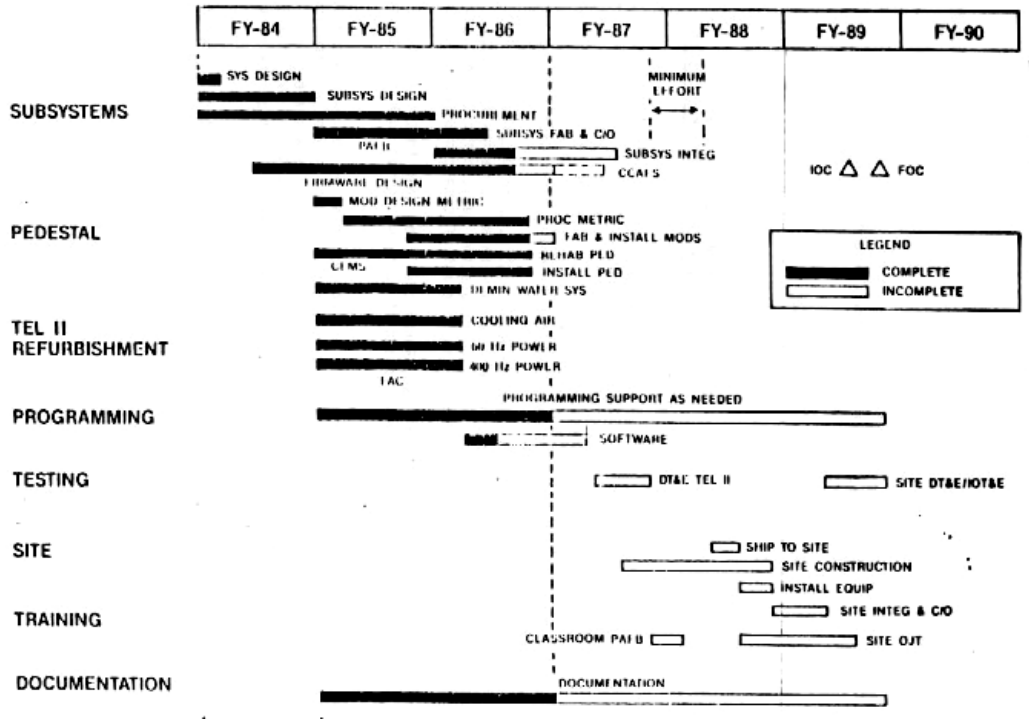
ROBERT R. RANKINE, JR  
Major General, USAF  
Vice Commander

## C.8 Design/Construction – Reviews and Modifications

1 October 1986

*8 Oct 86  
Col Spring  
SAI*

# SUMMARY SCHEDULE SAIPAN RADAR



**SMITH, YOUNG & HIDA, INC.**  
**CONSULTING ENGINEERS**

677 ALA MOANA, SUITE 1000  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 533-1705

James S. S. Young, P.E.  
Harvey K. Hida, P.E.

December 19, 1986

Commander, Pacific Division  
Naval Facilities Engineering Command  
Pearl Harbor, Hawaii 96860

Attention: Mr. Stanley Sugai

Dear Sir:

SUBJECT: PACBAR III FACILITY  
Contract N62742-84-C-0099  
Drainage & Erosion Control System

Received the subject Drainage & Erosion Control System report prepared by Environmental Solutions, Inc. on December 18, 1986. Reviewed the report. Our initial response was that Culverts I, II, III, V and VI could be eliminated and Ditch "G" need not extend more than 50 feet instead of 500 feet. Matius Road should also be paved the entire length to Culvert IV which would be a box culvert with grating top.

Fred Loudon called at about 1:30 p.m. on December 19, 1986, with Richard Ellison on a conference call with me to review the study. (Fred informed me he was not trying to bypass the Navy, but could not get hold of Stanley Sugai so in the interest of time contacted me directly).

Of special interest, Richard Ellison said that the Intensity-Duration Frequency Curves, Island of Guam, was given to him as being applicable for Saipan.

Mr. Ellison felt that his concept must be followed as based on field observations. In discussing the possibility of eliminating Culvert I, he was positive that it was needed, otherwise a swale of our over 200 feet would be needed to direct Ditch "A" flow South. We finally agreed that upon additional topo, the need for the culvert can be more accurately determined.

Any changes to the concept plan based on additional topo should be reported back to Fred.

SMITH, YOUNG & HIDA, INC.

Commander, Pacific Division  
Attention: Mr. Stanley Sugai  
December 19, 1986  
Page 2

Culver II is required to reduce to Matius Road.

Culvert III is required to reduce runoff to the upper portions of Matius Road as well as being in a low area. Told him we could still grade the ditch to flow to Culvert IV, but Mr. Ellison felt the cost for the culvert is less than the area is at a low spot and is always wet, so a culvert should be installed.

Culverts V and VI were deemed required to channel runoff to the North side of Matius Road.

The stilling Basin must be located more or less as shown on the concept plan because that is on Public Lands. There is no room for a stilling basin on the South side, hence the need for Culverts V and VI.

Could not get a clear picture of what the stilling basin would look like as visualized by Richard Ellison. Need to work out some sketches and confer with him.

Mr. Richard Ellison said he can be contracted at (714) 472-9490. Mr. Fred Loudon suggested that we work out the details together.

Mr. Fred Loudon wondered if a turnaround time of 2 weeks would be possible for checking the implementation of the concept drainage and erosion control system. Told him I would have to work things out with Stanley Sugai and see what topo would be required before I could even implement any of the concepts. As a guess, which Fred said he would not hold me to, I told him at least 30 days and possible 60 days would be required to obtain the additional topo and do the design and cost estimate work. He felt that with the elimination of the full asphalt concrete pavement for the entire length of Matius Road, there would be sufficient funds for the implementation of the concept system.




SMITH, YOUNG & HIDA, INC.

Commander, Pacific Division  
Attention: Mr. Stanley Sugai  
December 19, 1986  
Page 3

Topo for the implementation will be time consuming. We also will need some right-of-way maps to define the Public Lands. Culvert III may require a long reach to daylight, going into private (?) lands. Rock lined ditches may be easier to define than construct. Entire new runoff map and quantities will have to be prepared and evaluated. Need to define and agree with the Navy on work scope to implement the concept system before initiating concept work.

Very truly yours,

SMITH, YOUNG & HIDA, INC.



James S. S. Young, P.E.  
President

JSSY/lm

Cc: Mr. Fred Loudon  
Mr. Richard Ellison



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 92960  
LOS ANGELES, CA 90009 2960

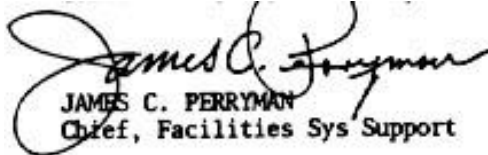
REPLY TO

ATTN OF DEES

SUBJECT Proposed Architect-Engineer (A-E) Design Change, PACBAR III Saipan NMI, ZZZZ860002

TO AFRCE-PACAF/DEEE (Mr. Hirano)

1. The PACBAR III technical team met with Saipan NMI Department of Natural Resources personnel the week of 8 Dec 86 and researched site access road problems. Environmental Solutions representatives, Mr. Dick Ellison, analyzed road and drainage needs from the radar site to Beach Road, and prepared an overlay and Conceptual Design (Atch 1) of required drainage and erosion control measures. This information was transmitted to Mr. Bay of Coastal Resources Management and Mr. Russel Meachem of the Division of Environmental Quality.
2. The concept was analyzed by Mr. Jimmy Young of Smith, Young, and Hida and then discussed between Mr. Ellison, Mr. Loudon (HQ AFSPACECOM/DEES), and Mr. Young (telecon 19 Dec 86). Mr. Young essentially agrees with the approach with one exception; i.e., Culvert I at the outflow of ditch "A" may not be required. The topography in that area may dictate run-off from ditch "A" be diverted to the south without crossing the upper switchback.
3. Mr. Young has agreed to gather additional topographic data and make the necessary design changes; however, official direction must come from the project officer at PACNAVFACENGCOM (Mr. Stan Sugai). Request the A-E be directed to make the changes coordinated with AFSPACECOM and Environmental Solutions, Inc. The A-E anticipates a minimum of 30 days additional design time will be required to affect the changes.
4. Mr. Young and Mr. Ellison both understand that construction cost cannot exceed \$5.6M and that adjustments will be made to Environmental Solutions proposal as required to control cost. Culverts II and III are possible candidates for deletion, if necessary, to bring CWE within \$5.6M.
5. POC at HQ AFSPACECOM/DEES is Fred J. Loudon, GS-12, Project Engineer, Commercial (303) 554-5376, AUTOVON 692-5376.

  
JAMES C. PERRYMAN  
Chief, Facilities Sys Support

1 Atch  
Conceptual Design, Environmental  
Solutions, Inc

cc: PACNAVFACENGCOM w/ Atch  
SD/YNCC/DEE/DEV w/o Atch  
WSMC/SFIO w/o Atch  
ESMC/DVP w/o Atch  
Environmental Solutions, Inc w/o atch

**SMITH, YOUNG & HIDA, INC.**  
**CONSULTING ENGINEERS**

677 ALA MOANA, SUITE 1000  
HONOLULU, HAWAII 96813  
TELEPHONE (808) 533-1705

James S. S. Young, P.E.  
Harvey K. Hida, P.E.

January 5, 1986

Environmental Solutions, Inc.  
15520 Rockfield Boulevard  
Suite E  
Irvine, California 92718

Attention: Mr. Richard D. Ellison

Gentlemen:

**SUBJECT:       PACBAR III FACILITY**  
**DRAINAGE RUNOFF**

Your assistance is respectfully requested in reviewing and establishing the runoff quantities based on your "Conceptual Design, Drainage and Erosion Control System" dated December 16, 1986.

Enclosed is our proposed off-roadway runoff map to establish the runoff quantities to design the ditches and culverts. We are not too sure on your conceptual design drainage tributary areas. Your thoughts and comments on what we think your concepts are would be appreciated. As we see it, the tributary areas and our comments follow:

<b>Area</b>	<b><u>Color</u></b>	<b>Acres</b>	<b><u>Runoff (Q)</u></b>	<b><u>Comments</u></b>
<b>1</b>	Blue	6.71	19 cfs	Runoff to Culvert I
<b>2</b>	Yellow	19.81	55 cfs	Runoff to Culvert II
<b>3</b>	Yellow	9.33	30 cfs	Runoff to Culvert III
<b>4</b>	Green	50.32	130 cfs	Runoff to Culvert IV
<b>5</b>	Blue	40.30	106 cfs	Outlet to existing gulch Partial runoff to Culvert V. Total runoff from Areas 3 & 5
<b>6</b>	Yellow	36.20	86 cfs	Partial runoff for Ditch "J". Total runoff from Areas 3, 4, 5 & 6.

SMITH, YOUNG & HIDA, INC.

Environmental Solutions, Inc.  
Attention: Mr. Richard D. Ellison  
January 5, 1987  
Page 2

<b>Area</b>	<b>Color</b>	<b>Acres</b>	<b>Runoff (Q)</b>	<b>Comments</b>
7	Green	12.30	33 cfs	Runoff to Culvert VI
8	Blue	15.37	48 cfs	Runoff to existing swale
9	Red	19.58	66 cfs	Partial runoff to existing swale. Total runoff from Areas 2, 8 & 9.

Further comments follow:

<b>Ditch</b>	<b>Comments</b>
A	Maximum capacity same as Culvert I.
B	Maximum capacity same as Culvert II.
C	Maximum capacity to be only for that part of Area of 4 that is uphill of the Upper Switchback.
Existing Swales	Capacity of the existing swales to be checked for runoff from Areas 2, 8, & 9 as appropriate.
D	Maximum capacity to be same as Culvert III.
E	Maximum capacity to be only part of Area 3, North-East side of Culvert III.
F	Maximum capacity to be only part of Area 4, the uphill Portion of the Lower Switchback within Area 4.
G	Maximum capacity to be that portion of Area 4 uphill of Matus Road between Culvert IV and the North boundary of Area 4.
H	Capacity will be only for the runoff from 1/2 the roadway. We intend to provide a grating top for Culvert IV to intercept runoff from the road surface of Matus Road uphill of the culvert.

SMITH, YOUNG & HIDA, INC.

Environmental Solutions, Inc.  
Attention: Mr. Richard D. Ellison  
January 5, 1987  
Page 3

I	Capacity will be only for the runoff from ½ the surface of Matuis Road.
J	Capacity will be only for the total runoff from Areas 3 & 5, 4 & 6 and Ditches H, I and the natural swale along the South side of Matuis Road.
K	Capacity for the portion uphill from Culvert VI will be the same as Ditch "J" and the lower portion will be the total of Ditch "J", Ditch "L" and Culvert VI.
L	Capacity will be only for the runoff from ½ the roadway surface between Culverts V & VI.
Stilling Basin	The total runoff will be from Areas 3, 4, 5, 6 and 7 for a total of 385 cfs.

Also enclosed for your reference are our computation sheets and references.

Sincerely yours,

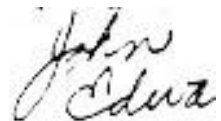


James S. S. Young, P.E.

JSSY/lm

Enclosures

cc: Mr. Stanley Sugai, PACNAVFACENGCOM  
Pearl Harbor, Hawaii 96860  
Mr. Fred Loudon, Air Force Space Command, DEES  
Peterson AFB, CO 80914



January 6, 1987

Project No. 84-026A

Mr. James S.S. Young, P.E.  
President  
Smith, Young & Hida, Inc.  
677 Ala Moana, Suite 1000  
Honolulu, Hawaii 96813

**PACBAR III**  
**Drainage and Erosion Control**

Dear Mr. Young:

1. The following data respond to several of the items noted in your December 19, 1986 letter to Commander, Pacific Division, Naval Facilities Engineering Command, Attention: Mr. Stanley Sugai.
2. Enclosed are prints of the following plot maps which show private lands adjacent to the access Road to the PACBAR III radar site:
  - DLS Check No. 010 A00 with meets and bounds for the Private Tract No. 010-A-01 at the northeast corner of the Beach Road/Access Road intersection.
  - DLS Check No. 010-A-00 with meets and bounds for Private Tract No. 011-A-01, which apparently is the only private tract along the south side of the access road. This map also shows that the southeast corner tract is public lands. That should be helpful for maintaining all or a portion of the existing bend in the road at the intersection so that there is room for a "stilling basin" system on the north side of the road.
  - DLS Check No. 035-A-00 which shows:
    - Private Tract No. 035-A-01 on the north side of the access road immediately to the east of Tract No. 010-A-01. Reportedly, this private tract was recently transferred from Public Lands to Private ownership in a land trade.
    - Public land Tracts Nos. 035-A-02 and 035-A-03 on the south side of the road, approximately across from Tract No. 035-A-01.
    - The beginning of Public Land to the east of the above tracts (on both sides of the road), which reportedly continue for its entire length to beyond the intersection with the Marpi Forest Road.

These maps were obtained from the Division of Lands and Surveys on Saipan, as the only maps which show Private Land along the access road. Your surveyor should check this situation by contacting the Division. Or, possibly you have even more data from your previous design work on the road.

2. Reference the fourth paragraph in your letter. I did not intend to be "positive" about the need for Culvert I. Instead, I meant to say that your suggestion for a 200-foot long swale to the south was reasonable and the best solution from a trade-off study (including agency approval) should be selected.
3. Reference first complete paragraph on second page in your letter. I intended to say that the cost of Culvert III may be close to a break even tradeoff with grading of ditch to Culvert IV. However, a secondary benefit of reducing flow into the main access road system might be a more significant benefit. On balance (probable cost and field observations) it seems that Culvert III is appropriate.
4. Reference Page 3 of your letter:
  - The enclosed maps should help on the right-of-way situation.
  - Based on my and Fred's discussions at the Division of Lands and Surveys, Culvert III should not have a Private Lands conflict. This can be checked with a call to the Division.
  - My observations of field conditions indicate that the use of rock is much better than paved ditches to suit existing conditions and to control velocities which cause erosion and maintenance problems. We can discuss these impressions via phone or a meeting if necessary.
  - In estimating runoff, your prior calculations seemed to add peak flows from different individual watersheds. Wouldn't it be more appropriate to look at each point individually and calculate a time of concentration for the combined watershed to that point? We have made a runoff map and calculated the estimated flows to conceptually evaluate the concepts in attachment A to my December 16 letter. We could also discuss those data if appropriate.
5. Please feel free to call me at any time if additional discussion will be useful to your design efforts on this matter. A conference call with Fred Loudon would be particularly useful because he also participated extensively in the field observations. Also, I would like to have your schedules for developing the final design concept to assist in my discussions with the DEQ personnel.

Very truly yours,

Richard D. Ellison, Ph.D., P.E.  
President

RDE: sg  
Enclosures

cc: Tarak Abboushi  
John Edwards  
Fred Loudon  
Capt. Rusty Dean SD/DEE



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 92960  
LOS ANGELES, CA 90009 2960

SPI

10 March 1987

Trip Report (PACBAR III Design Review), 25-28 February 1987

SP  
SU  
IN TURN

1. PURPOSE: To attend the final 90% design review of PACBAR III.
2. TRAVELER: TSgt M.D. Toelle, WSMC/SPI, supporting WTR/SFIO.
3. ITINERARY: Makalapa Naval Station, Pearl Harbor, HI, 26-27 Feb 87.
4. KEY PERSONNEL VISITED: Capt M.R. Deane, SD/DEE, Program Manger.
5. DISCUSSION:

a. The purpose of this two day meeting was to review all comments made be WTR, WSMC, ESMC, SD, and AF SPACECOM to the physical design of PACBAR III radar site, located on Saipan in the Marianna Island U.S. Trust Territories. This 90% design review was intended to incorporate all comments for the final structural design package.

b. Originally, the physical security and TEMPEST design criteria included full TEMPEST shielding for Room 103 in the Operations Building, full site perimeter lighting, internal area lighting, a guard house to support a 24 hour security service, and a turnstile as a personnel entry point capable of being electronically activated. Additionally, conduit runs were incorporated to support dedicated security cable runs throughout the site for future security hardware installation such as card readers, alarm systems, CCTV, and the like. Currently, this site will be designated Priority C under AFR 207-1, USAF Physical Security Program Regulation. All of these design criterion were agreed to, and encouraged by AF SPACECOM/SPI, who had been providing security design oversight for the project under the assumption they would take over ownership of the site once it became operational.

c. Shortly after the 60% design review, held several months ago, key management at AF SPACECOM and SD determined that several design cuts must be made in order to drastically reduce MCP costs. As a result, the TEMPEST shielding, perimeter lighting, guard house, and turnstile were delected from the design package, along with numerous non-security related items. These security cuts were not agreed to by WTR and WSMC/SP. So, Mr. Frank O'Neill, WTR/SFIO communicated to AF SPACECOM/SPI that they should assume primary responsibility for security design to avoid any future conflict. They readily agreed, but have retained the services of WSMC/SP because they do not have the experience or corporate knowledge needed to carry out the project at this point.



d. The key security issue I voiced concern over during the 90% design review was in the site's ability to protect transmitted and discussed classified information once the site becomes operational. The naval Contracting Office, responsible for letting and administering the construction contract stated that the policy in that region was to allow competition to foreign companies. I told all parties present that this policy increased the security risk over and vulnerability to the operation in that hostile intelligence could implant mechanisms in the structure which would not be detected later, and which would allow monitoring of operational activities. Foreign companies could not be subjected to the security checks that U.S. cleared facilities were, thus, the U.S. government could not establish security trust and reliability of the company or its employees through the investigation process. I took an action item to research the feasibility of restricting bid competition to only those companies possessing a facility clearance and cleared personnel under the Industrial Security Program.

#### 6. CONCLUSIONS/RECOMMENDATIONS:

a. Although ideally the U.S. government would realize a better assurance of security, and this, accept a lesser hostile intelligence risk if bid restrictions were imposed, the following reasons prevent competitive limitations:

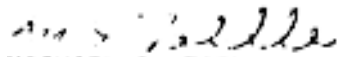
(1) Although the prime contractor may be a U.S. cleared facility, the company would be required to hire sub-contractors and "unskilled" labor from the local area work pool, not all of whom are U.S. citizens. These companies and people could not be subjected to background investigations.

(2) Workers would have to be very closely scrutinized through all phases of construction to detect an attempt to place intelligence gathering devices. This would be impossible because of work conditions and the lack of personnel trained in this type of surveillance.

(3) A non-duty hours security force would have to be employed to prevent surreptitious site access. This is cost prohibitive.

b. Final assessment – Accept the increased hostile intelligence risk, and study ways to reduce this risk after site construction is completed.

c. A copy of this trip report will be sent to AF SPACECOM/SPI for their information.



MICHAEL D. TOELLE, TSgt, USAF  
Information Security Supervisor

cc: WTR/SFIO (Mr. O'Neill)  
AF SPACECOM/SPI



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 92960  
LOS ANGELES, CA 90009-2960

REPLY TO

ATTN OF: DVP

MAR 30 1987

SUBJECT: Tel II Total Electric Load – PACBAR III (Saipan Radar Project)

To: HQ AFSPACECOM/XPDD (Maj. Ferree)  
Mail Stop 7  
Peterson AFB CO 80914-5001

Per your request, the total measured electrical load at Tel II, CCAFS is 365 KVA. Recording of the electric power consumption will continue over the next few weeks with the recorder's "hard copies" being made available at the next quarterly Technical Interchange Meeting (TIM) to be held at SD, LAAFS on 29-30 April 1987.

A handwritten signature in cursive script, reading "Charles D. Miller".

CHARLES D. MILLER  
Director of Project Management

cc: SD/CNSC (1Lt. Abboushi)  
AFSPACECOM/DEES (Mr. Loudon)  
WTR/SFIO (Mr. O'Neill)  
PanAm/PAES

*Memo*

From The Office Of The

DCS/PLANS

TO XP *sup* DATE 8 JUN 1987

Re Saipan Radar Briefing Follow-up

- Several questions raised during the 1 May 87 Space Division briefing on the Saipan program slip required further review and clarification.
- The attached point paper provides additional information on the 11 month slip and the near term permit/contractual schedules.

*VR*  
*Rettig P. Benedict Jr.*

RETTIG P. BENEDICT, JR., Col, USAF  
Director, Space Defense &  
Surveillance, DCS/Plans

1 Atch  
PP on  
Saipan  
Radar  
Schedule  
w/atchs

*mailed to  
HQ PACAF/XP  
HICKAM AFB, HI  
96853*



*Memo*

From The Office Of The

DCS/PLANS

TO PACAF/XP (B/a Cherry) DATE 11 Jun 87

Dan,

Attached papers provided FYI.

Whatever you can do with Navy  
to keep program on track would  
be appreciated.

Warm regards,

Wes Clark



POINT PAPER  
ON  
SAIPAN RADAR SCHEDULE

PURPOSE

- Provide Maj. Gen Clark information on the Saipan Radar program slip and near term schedule.

BACKGROUND

- Space Division provided a briefing on the program slip on 1 May 87. An eleven month slip in program IOC was identified (Jun 89 to May 90).
- Briefing identified three major factors which contributed to the program slip: the road drainage/erosion control (RD/EC) design, political problems and the Navy vs. Air Force construction schedule. Sufficient detail was not provided to verify that the total schedule impact from these issues is 11 months.
- Relationship of the permit process and Navy contractual activities was not addressed in the briefing.

DISCUSSION

- The road drainage/erosion control requirement was first identified during an Apr 86 trip to Saipan. Navy was directed to incorporate the RD/EC requirement in Jun 86. Sep 86 political problems on the island delayed an engineering team trip to Saipan to clarify design requirements (impacts 2 mos.). Incorporation of this design requirement and lack of Navy Support to maintain/accelerate schedule resulted in an additional six month slip in design completion. Additional three month slip in schedule resulted from an unanticipated three month Navy allowance for construction contractor mobilization to Saipan. Details of the schedule impacts from these issues are contained in atch 1.
- The island permit process and Navy contractual activities are essentially parallel efforts. However, bid opening cannot take place until the permit is received. Navy is taking steps to expedite their schedule where possible. The goal is to be ready to open bids as soon as the permit is approved. All information required by the Commonwealth of the Northern Mariana Islands (CNMI) Coastal Resource Management Office (CRMO) was provided on 20 May 87.

RECOMMENDATION

- None. For information only.



XPD Approved

- 2 Atch
- 1. Contributing  
Factors to  
Program Slip
- 2. Near Term  
Schedule

Contributing Factors  
To Program Slip

<b>Date</b>	<b>Event/Milestone</b>	<b>Result</b>	<b>Schedule Impact</b>
<b>Apr 86</b>	<b>Town meeting and meetings</b> with government agencies.	<b>Erosion control</b> made firm rqmt.	0
<b>Apr 86</b>	<b>60% Design Review</b>		0
<b>Jun 86</b>	<b>PACAF directed Navy to</b> Incorporate RD/EC design.	<b>90% Design Review</b> slipped from Sep to Dec 86.	+3 mos.
<b>Sep 86</b>	<b>CINPAC visit to Saipan.</b>	<b>Political problems</b> surfaced.	0
<b>Sep 86</b>	<b>Contractor visit to Saipan.</b>	<b>Design not acceptable.</b>	0
<b>Oct 86</b>	<b>SAF/MII directed AF</b> briefing team travel to Saipan to resolve political issues.	<b>SD engineering team</b> travel to resolve RD/EC rqmts. Delayed 2 mos. (Oct-Dec 86). 90% slipped from Dec 86 to Feb 87.	+2 mos.
<b>Dec 86</b>	<b>RD/EC issues resolved</b> and conceptual design approved by Department of Environmental Quality (DEQ).	<b>Navy directed to</b> incorporate conceptual design.	0
<b>Jan 87</b>	<b>Navy direction to</b> contractor to incorporate conceptual design.	<b>Navy slow in directing</b> contractor.	+1 mo.
<b>Feb 87</b>	<b>90% Facility Design</b> <b>Review.</b>	<b>Navy construction</b> schedule longer than anticipated (18 vs. 15 mos.)	+3 mos.
<b>May 87</b>	<b>90% Road Drainage/</b> Erosion Control Design Review.	<b>Two months behind</b> facility. Bid opening delayed.	+2 mos.
		<b>Total schedule impact</b>	+11 mos.

## NEAR TERM SCHEDULE

<b>Contractual</b>		<b>Permit</b>	
27 Feb	90% Design Approved (without RD/EC)	27 Feb	90% Design Approved (without RD/EC)
15 May	90% RD/EC Design		
21 May	Final facilities contract package (w/o RD/EC)	30 Apr	90% RD/EC design complete
26 May	Package forwarded to OICC Marianas	15 May	90% RE/EC Design Review
		18 May	AF team to Saipan
16 Jun	IFB issued (without RD/EC)	20 May	60 day clock started
18 Jun	Final RD/EC contract package		
25 Jun	Amend IFB for RD/EC	20 Jul	Site approved/ Disapproved*
28 Jul	Open bids*		
27 Aug	Contract award		

\* Bids can't be opened until permit received.



SPACE DIVISION  
ROAD/DRAINAGE  
CHRONOLOGY OF EVENTS

**Thursday, May 7**

Met with John Edwards and Rusty Deane of Air Force to review "90% Design" of road and erosion system provided by Smith, Young & Hida. It was determined that:

- Plans were not nearly to the 90% design level.
- Designs presented were not consistent with Agency agreements and the EA in regards to the road drainage and erosion control mitigation measures.
- Some portions of the design did not function structurally and would require further design efforts to assure the structures would withstand the design storm flow rates.
- The design ignored problems with shallow coral and property live interferences.

**Friday, May 8**

Agreed with the Air Force to prepare a set of Permitting Plans (18 drawings) which attempt to be a compromise between Agency agreements and arrangements shown in the 90% Access Road design submittal.

**Thursday, May 14**

Provided draft of revised Access Road Drainage and Erosion Control Design Narrative report suitable for initial Air Force discussions with Agencies.

**Friday, May 15**

Met with Jimmy Young and Navy at Honolulu to present draft of revised Design Narrative and for Rusty Dean to present procedure being used to satisfy the AE and environmental constraints. Three major concerns were discussed that included:

- Can the rock be washed to the bottom of the hill.
- Will vegetated swales erode at velocities between 5 and 7 fps.
- Will the hydraulic jump work in the stilling basin.

It was my understanding that a level of concurrence in the thought process was realized, but the AE had some concerns; particularly because he had not worked with riprap before.

**Sunday, May 17**

Kerry Parkinson hand-carried preliminary Permitting Plans to the Air Force in Saipan. He provided technical support to the Air Force during meetings with the agencies. Also, the existing Access Road was walked to compare the proposed design with the existing conditions.

Tuesday or Wednesday  
**May 19 or 20**

Telephone conversation with Rusty Deane to discuss Navy's desire to maintain design responsibility, but iterating concern for loose (ungROUTED) rock movement and erosion at grass-lined channel. Requested by Rusty Deane to determine if concern could be mitigated.

Wednesday-Saturday  
**May 20 to 23**

Reworked calculations with a variety of ditch configurations and concluded that grouted riprap would present higher risks because velocities (on smoother surface) would be much higher. This could cause grout to be removed and greater potential for rocks to be washed down slope or damaging erosion to occur. However, did develop an improved "compromise" design of using:

- Rock erosion cut-offs at 100-foot centers in grass-lined ditches with velocity above 6 fps, to contain extent and depth of erosion if it were to occur at a specific location.
- Provide large rock over graded riprap in channels with higher flows to provide a very large margin of safety against rocks being dislodged.

This "compromise" concept was discussed with Rusty Deane and the designs were modified accordingly.

About  
**Friday, May 29**

Telephoned Jimmy Young to indicate that package would be finished over the weekend and courier would be used to deliver it to his office. Also discussed with Mr. Young:

- The "compromise" design concepts.
- The calculation results for the stilling basin up to flows of 300 cfs.

My impression was that Mr. Young stated that both concepts sounded like good solutions to the concerns. I requested Mr. Young to call if he had any questions.

**Sunday, May 31**

Sent package to Jimmy Young via courier. Since final prints could not be completed Sunday night, the drawings were marked preliminary.

**Monday, June 1**

Sent final prints to Jimmy Young. Also called Mr. Young to discuss delivery arrangements and to determine if he had concerns. Confirmed that additional higher flow calculations were being accomplished for the stilling basin and that the hydraulic jump would stay within the basin for the higher flow condition.

Again invited Mr. Young to call at any time if he had questions or comments. It would be important to coordinate in order to finalize a plan which would: (1) satisfy his concerns, (2) satisfy the Agencies, and (3) be reasonably cost-effective.

**Monday, June 22**

Sent separate packages or stilling basin calculations which had been discussed with Mr. Young and suggested specifications for riprap placement procedures.

JUN 22 '87

GUAM OFFICE:  
P.O. Box 24667 G.M.F.  
Guam, M.I. 96921  
Tel.: 646-4861 Thru 646-4865  
Telex: 7216610  
Cable: "BLACKGUAM"

**BLACK-MICRO CORPORATION**  
**General Contractor**  
**SAIPAN, MARIANA ISLANDS 96950**

SAIPAN OFFICE:  
P.O. Box 545 CK  
Saipan, CM 96950  
Tel: 234-6549  
234-6800  
234-7181 (Shop)  
322-9474 (Quarry)  
Telex: 783660  
Fax: 234-8726

February 2, 1988

Marianas Public Lands Corporation  
Capitol Hill, Saipan  
MP 96950

Thru: J. Cabrera

SUBJECT: Dumping Excess Soil at the BMC Marpi Quarry



Gentlemen:

We would like to request for your approval for Black Micro to dump excess excavated soil material from the PACBAR III Facility project to a hillside area halfway up the quarry road, near the abandoned Camacho coral quarry.

We discussed with your office this idea on February 1, 1988.

The materials we will dump will not include cut trees and other forms of vegetation, which we will bring to the Puerto Rico dumpsite for disposal.

We will also proceed to get the permission of the Division of Environmental Quality regarding our proposal.

We will appreciate your early action on the matter.

Sincerely,

  
B. NAVARRO  
Engineering Manager

cc: ROICC/Saipan



01 02 092000Z FEB 88 RR RR UUUU

DEE 091500

HQ AFSC ANDREWS AFB MD//DEE//

SD LOS ANGELES AFB CA//DEE//

UNCLAS

QQQQ

SUBJECT: FY 87 MCP SAIPAN PACBAR III (ZZZZ860002)

1. REFERENCE: A. SD/DEE 281630Z JAN 88 MESSAGE

B. HQ PACAF/DEE 231830 NOV 87 MESSAGE

2. WE ARE IN AGREEMENT THAT PAVING THE ACCESS ROAD IS A VALID AND JUSTIFIED REQUIREMENT. WE ALSO APPRECIATE THE COMPLIANCE THAT CAN ARISE BY HOLDING OFF A DECISION UNTIL THE FIFTY PERCENT COMPLETION POINT.

3. IN ORDER TO FULLY SUPPORT THIS PROJECT THE FOLLOWING ACTIONS WILL BE TAKEN:

A. IDENTIFIED 5192K (COST MINUS MGMT RES) FROM FY 87 FUNDS FOR CONSTRUCTION OF THE ACCESS ROAD AND IF AVAILABLE, SET ASIDE FOR THIS PROJECT.

B. AN EVALUATION OF COST GROWTH AND CHANGES TO DATE WILL BE MADE AT THE THIRTY PERCENT COMPLETE POINT. IF COST GROWTH AND CHANGES ARE MINIMAL, THEN STRONG CONSIDERATION WILL BE GIVEN TO RELEASING FUNDS FOR THE ROAD AT THIS POINT, OTHERWISE A DECISION.

PAUL D. BENNETT/CAPT/DEEC/4632

UNCLASSIFIED

X/S

THOMAS L. BOZARTH, Colonel, USAF

DE READ

DEE READ

WILL BE DEFERRED TO THE FIFTY PERCENT COMPLETE POINT.

4. TO PRECLUDE ANY WASTE OF FUNDS, WE SUGGEST YOU NEGOTIATE WITH THE INITIAL CONTRACTOR TO PURCHASE AND PLACE ONLY SIX INCHES OF ROCK UNTIL A DECISION IS REACHED ON PAVING. AT THAT TIME EITHER THE PAVING IS COMPLETED OR THE TWO ADDITIONAL INCHES OF ROCK ARE PURCHASED AND PLACED.

5. POC IS CAPT PAUL D. BENNETT, HQ AFSC/DEE, AUTOVON 858-4632.

NNNN

PAUL D. BENNETT/CAPT/DEEC/4632

X

UNCLASSIFIED

THOMAS L. BOZARTH, Colonel, USAF

GUAM OFFICE:  
P.O. Box 24667 G.M.F.  
Guam, M.I. 96921  
Tel.: 646-4861 Thru 646-4865  
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Cable: "BLACKGUAM"

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322-9474 (Quarry)  
Telex: 783660  
Fax: 234-8726

February 2, 1988

Division of Environmental Quality  
San Vicente, Saipan  
MP 96950



SUBJECT: Dumping of Excess Excavated Material at the BMC  
Marpi Quarry

Gentlemen:

The Puerto Rico dumpsite appears to be almost full and we are requesting for an alternative site where we can dump topsoil mixed with some grass. The cut trunk and stumps of trees we will continue to haul to the Puerto Rico dumpsite.

We have identified a hillside on the roadway going to our leased quarry at Marpi. We believe the good quality of the excess soil material will not be harmful to the area.

We appreciate your scheduling an early inspection of the above site.

Sincerely,

  
B. NAVARRO  
Engineering Manager

cc: ROICC/Saipan

4300

Ser RS/1036  
26 FEB 88

Black-Micro Corporation  
P.O. Box 545  
Saipan, MP 96950

Gentlemen:

This is in regard to Contract N62766-84-C-0229, PACBAR III Facility at the Marpi Forest Reserve, Saipan.

Your attention is directed to sheet C-8 of the contract drawings. We request that the trailhead parking lot limit stations of 103+50 and 104+44.87 be revised to 103+60 and 104+54.87, respectively. This revision will preclude the removal of a healthy stand of mature trees.

This revision is requested with the understanding that it is minor in nature and does not require an adjustment in the contract cost and/or time for performance. Pursuant to paragraph (b) of the contract clause entitled CHANGES, should you believe that our request (or other actions on our part) constitutes a change to the contract requirements warranting equitable adjustment, we request that you notify ROICC Saipan in writing by no later than 11 March 1988. You are reminded of your contractual responsibilities to provide timely, written notice and a corresponding proposal for equitable adjustment should you believe that change exists. These contractor responsibilities are clearly set forth in paragraphs (d) and (e) of the contract clause entitled CHANGES.

Sincerely,

JOHN T. BERGSTROM  
LTJG, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan





# Commonwealth of the Northern Mariana Islands

Department of Public Health & Environmental Services  
Division of Environmental Quality  
P.O. Box 1304



Cable Address:  
Gov. NMI Saipan  
Tel. 234-6984/6114

10 March 1988

Mr. R. Navarro  
Engineering Manager  
Authorized Representative  
P.O. Box 545  
Saipan, MP 96950



RE: DEQ Review of Temporary Dump Site for Pac Bar III  
Earthmoving Project

Dear Mr. Navarro:

The Division of Environmental Quality has completed its review regarding your proposed temporary dump site for the Pac Bar III earthmoving project. Your proposed dump site in the Black Micro Corporation Marpi Quarry appears to be sufficient solely for the disposal of excess earth material excavated from the Pac Bar III project.

Should there be any deviation from your proposed plan, please contact DEQ prior to execution of such plan.

Sincerely,

MIRIAM K. SEMAN  
Acting Chief, DEQ

cc: Ike V. Cabrera

4300  
Ser RS/1232  
13 FEB 89

Coastal Resources Management  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
Saipan, MP 96950

Gentlemen:

This is in regards to our USAF PACBAR III Facility construction in the Marpi Forest Reserve. Micronesian Telecommunications Corporation (MTC) has begun installing telephone cable and a two inch conduit (for fiber optic line) along our access road. The line begins outside our guardhouse and extends down the left side of the access road to Beach Road. The line is buried in an 18 to 24 inch deep trench and includes a number of telephone boxes located along the side of the road.

MTC is installing this line as a service drop to our site and also for future customers in the area. This work is not included within our construction contract. While we have no contractual relationship, we are working with MTC to ensure conformance with our construction requirements. We are not aware of nor involved with any permitting requirements of MTC through the local agencies.

This letter is provided for your information. Please contact me at 322-7025 if you have any questions.

Sincerely,

JOHN T. BERGSTROM  
LT, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Copy to:

Mr. R. Mechem, Department of Environmental Quality  
Ms. R. Thakali, Commonwealth Forester

Blind copy to:

Capt. T. Abboushi, AFSD



**DEPARTMENT OF THE AIR FORCE**  
HEADQUARTERS SPACE SYSTEMS DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 9296  
LOS ANGELES, CA 90009-2960

4300  
Ser RS/1255  
13 MAR 89

Coastal Resources Management  
Office of the Governor  
Commonwealth of the Northern Mariana Islands  
Saipan, MP 96950

Gentlemen:

This is in regards to our USAF PACBAR Facility construction in the Marpi Forest Reserve. We recently completed negotiations to include the paving of our scenic overlook and trailhead parking areas. Paving operations were completed last week for all the parking lots and the access road.

By copy of this letter, the Department of Natural Resources is informed that the two parking lots are prepared for the installation of the two environmental awareness signs. Please contact our office at 322-7025 for coordinating the installation of the signs.

Sincerely,

A handwritten signature in black ink, appearing to read "John T. Bergstrom".

JOHN T. BERGSTROM  
LT, CEC, USNR  
Resident Officer in Charge of  
Construction, Saipan

Copy to:  
Mr. R. Mechem, Department of Environmental Quality  
Mr. N. Guerrero, Department of Natural Resources  
Ms. R. Thakali, Commonwealth Forester  
Capt. T. Abboushi, Air Force Space Division



12/17/12  
PARKING AREAS  
MT. CHARLES FRESH  
2012

12 Apr 89

From: SSD/DEV

Subj: DESIGN MODIFICATIONS FOR EROSION CONTROL AND  
FOREST MITIGATIONS

To: ROICC Saipan

1. Backcheck of mitigation measures, the constructed erosion control system, and questions raised by CNMI Coastal Resources Management revealed the need for the following modifications:
2. Barrier posts near culvert V (see Atch 1).
3. Excavate inlet to culvert IV, extend grouted rock (see Atch 1).
4. Use erosion cut-offs (type GL2) at locations indicated in Atch 3).
5. Provide barrier to abandoned boresight tower road about ½ mile down road just past trail sign & turnaround point. Barrier should prevent vehicles from passing and be compatible with surroundings (e.g. very large rocks).
6. Extend ditch beyond guard rail at trail head as indicated on Atch 4.
7. Add grouted riprap to outlet of culvert III as indicated on Atch 5.
8. Add riprap to outlet of culvert I as indicated on Atch 6.
9. Add shallow ditch from culvert I inlet across boresight road & connect to existing grass lined ditch as indicate on Atch 6.
10. Excavate ditch to the north of culvert II to the level of the top of the culvert inlet (Atch 7).
11. Per our meeting this morning, we understand the following mitigation measures have been satisfied: (A) Barrier to abandoned radar site road, (B) Sound reduction on generators (EA p. 5-4), (C) Navy standards on Sanitary Sewer System (EA p. 5-3 #6), (D) Oil water separator per EA p. 5-2 #3, (E) Replanting Bermuda Grass per EA p. 5-5.
12. Per the same meeting we understand the following mitigation measures will be satisfied under direction of SSD/CNSC. (A) Weather proof endangered species signs in site per section-7,

(B) All other equipment meets noise requirements of AFR 161-35 per EA p. 5-3), (C) evaluate whether additional containment for oil spills at oil fill pipe is required.

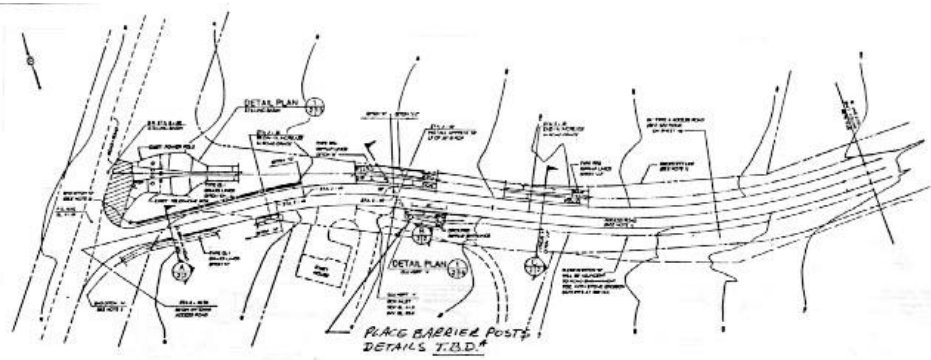


JOHN R. EDWARD, GS-13  
ENVIRONMENTAL ENGINEER  
ENVIRONMENTAL PLANNING DIVISION  
Directorate of Acquisition Civil Engineering

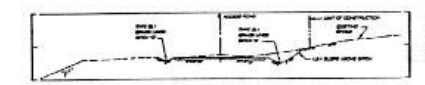
- 4 Atch: 1. Posts  
2. Culvert IV  
3. Cut-offs  
4. Trailhead  
5. Culvert IV  
6. Culvert I  
7. Culvert II

CY To: SSD/DEE/CNSC  
WTR/SFI  
ESMC/DVP  
ITT/FEC

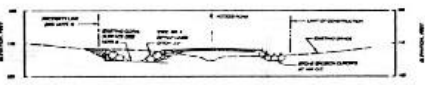
DATE: 11/14/89  
 PROJECT: PACBAR II - PERMITTING PLANS  
 SHEET: PLAN AND CROSS SECTIONS  
 STA. 0 + 10 TO STA. 3 + 50



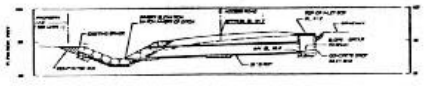
\* T.B.D. - TO BE DETERMINED BY R.O.I.C.



SECTION 110  
 SCALE: 1" = 10'



SECTION 111  
 SCALE: 1" = 10'



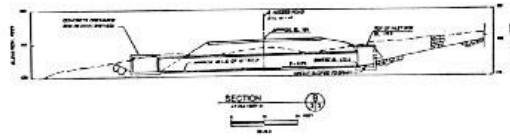
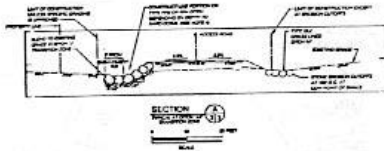
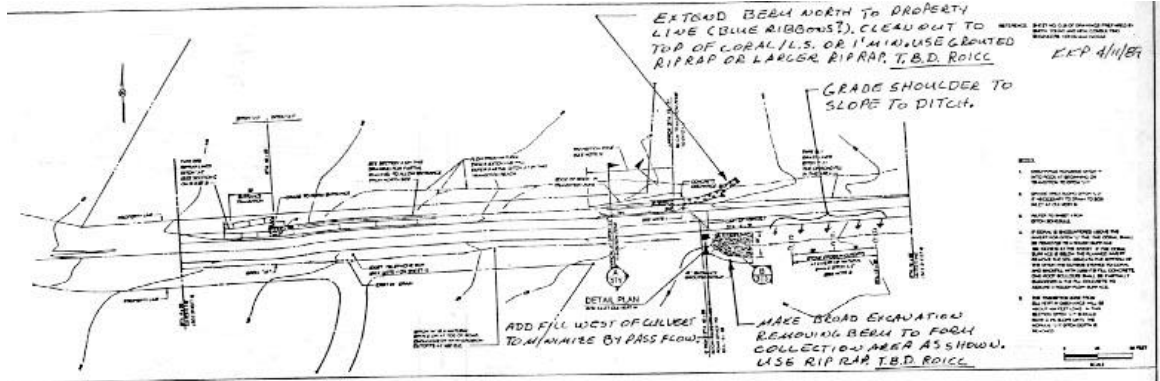
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 SCALE: 1" = 10'

REVISIONS

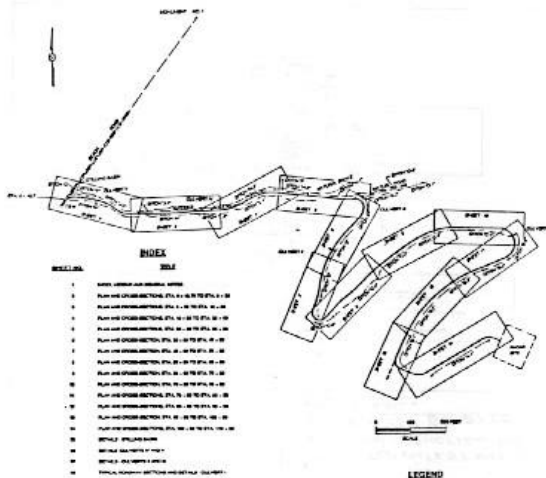
1. ISSUE FOR PERMITTING
2. REVISED PERMITTING PLANS
3. REVISED PERMITTING PLANS
4. REVISED PERMITTING PLANS
5. REVISED PERMITTING PLANS
6. REVISED PERMITTING PLANS
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8. REVISED PERMITTING PLANS
9. REVISED PERMITTING PLANS
10. REVISED PERMITTING PLANS

NO.	DATE	DESCRIPTION	BY	CHKD.
1	11/14/89	ISSUE FOR PERMITTING		
2		REVISED PERMITTING PLANS		
3		REVISED PERMITTING PLANS		
4		REVISED PERMITTING PLANS		
5		REVISED PERMITTING PLANS		
6		REVISED PERMITTING PLANS		
7		REVISED PERMITTING PLANS		
8		REVISED PERMITTING PLANS		
9		REVISED PERMITTING PLANS		
10		REVISED PERMITTING PLANS		

PACBAR II - PERMITTING PLANS  
 ACROSS PACBAR BRIDGE & ROSSER CREEK  
 PLAN AND CROSS SECTIONS  
 STA. 0 + 10 TO STA. 3 + 50  
 ENVIRONMENTAL SOLUTIONS, INC.  
 E-87154

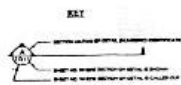


PROJECT INFORMATION	
PROJECT NO.	E-47154
DATE	10/1/00
SCALE	AS SHOWN
PACBAR'S - PERMITTING PLANS ACCESS ROAD THROUGH SENSITIVE CONTROL PLAN AND CROSS-SECTIONS STA. 9+50 TO STA. 18+00 ENVIRONMENTAL SOLUTIONS, INC.	
DESIGNED BY	E-47154
CHECKED BY	
DATE	

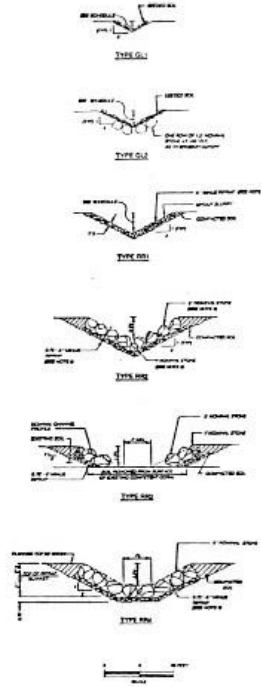
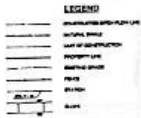


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5. SECTION 5  
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7. SECTION 7  
8. SECTION 8  
9. SECTION 9  
10. SECTION 10  
11. SECTION 11



NO.	SECTION	DATE	BY	REVISION
1	SECTION 1	10/10/10	J.M.	ISSUED FOR PERMITTING
2	SECTION 2	10/10/10	J.M.	ISSUED FOR PERMITTING
3	SECTION 3	10/10/10	J.M.	ISSUED FOR PERMITTING
4	SECTION 4	10/10/10	J.M.	ISSUED FOR PERMITTING
5	SECTION 5	10/10/10	J.M.	ISSUED FOR PERMITTING
6	SECTION 6	10/10/10	J.M.	ISSUED FOR PERMITTING
7	SECTION 7	10/10/10	J.M.	ISSUED FOR PERMITTING
8	SECTION 8	10/10/10	J.M.	ISSUED FOR PERMITTING
9	SECTION 9	10/10/10	J.M.	ISSUED FOR PERMITTING
10	SECTION 10	10/10/10	J.M.	ISSUED FOR PERMITTING
11	SECTION 11	10/10/10	J.M.	ISSUED FOR PERMITTING



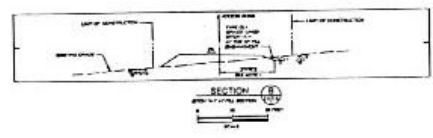
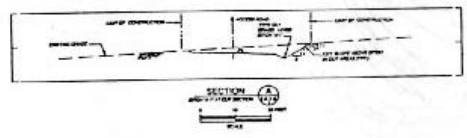
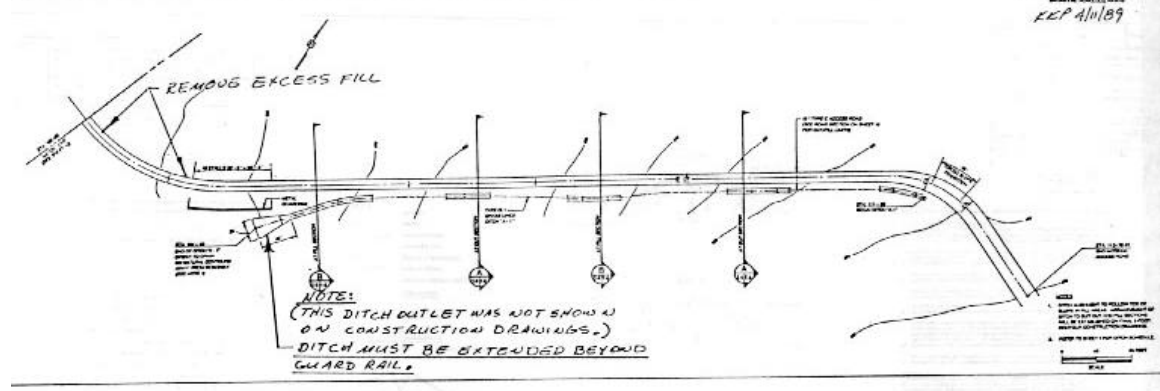
NO.	SECTION	DATE	BY	REVISION
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3	SECTION 3	10/10/10	J.M.	ISSUED FOR PERMITTING
4	SECTION 4	10/10/10	J.M.	ISSUED FOR PERMITTING
5	SECTION 5	10/10/10	J.M.	ISSUED FOR PERMITTING
6	SECTION 6	10/10/10	J.M.	ISSUED FOR PERMITTING
7	SECTION 7	10/10/10	J.M.	ISSUED FOR PERMITTING
8	SECTION 8	10/10/10	J.M.	ISSUED FOR PERMITTING
9	SECTION 9	10/10/10	J.M.	ISSUED FOR PERMITTING
10	SECTION 10	10/10/10	J.M.	ISSUED FOR PERMITTING
11	SECTION 11	10/10/10	J.M.	ISSUED FOR PERMITTING

- GENERAL NOTES**
1. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  2. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  3. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  4. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
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  7. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  8. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  9. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  10. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.
  11. THE ROADWAY SHALL BE CONSTRUCTED TO THE STANDARD CROSS SECTION SHOWN ON THE ATTACHED DRAWINGS UNLESS OTHERWISE SPECIFIED.

NO.	SECTION	DATE	BY	REVISION
1	SECTION 1	10/10/10	J.M.	ISSUED FOR PERMITTING
2	SECTION 2	10/10/10	J.M.	ISSUED FOR PERMITTING
3	SECTION 3	10/10/10	J.M.	ISSUED FOR PERMITTING
4	SECTION 4	10/10/10	J.M.	ISSUED FOR PERMITTING
5	SECTION 5	10/10/10	J.M.	ISSUED FOR PERMITTING
6	SECTION 6	10/10/10	J.M.	ISSUED FOR PERMITTING
7	SECTION 7	10/10/10	J.M.	ISSUED FOR PERMITTING
8	SECTION 8	10/10/10	J.M.	ISSUED FOR PERMITTING
9	SECTION 9	10/10/10	J.M.	ISSUED FOR PERMITTING
10	SECTION 10	10/10/10	J.M.	ISSUED FOR PERMITTING
11	SECTION 11	10/10/10	J.M.	ISSUED FOR PERMITTING

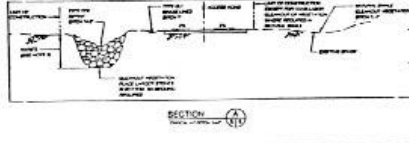
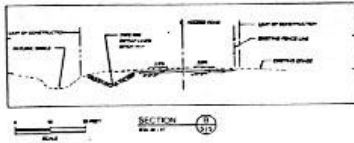
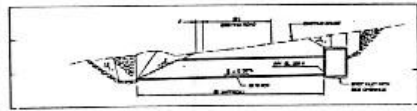
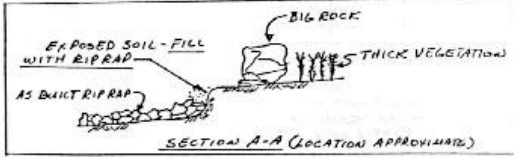
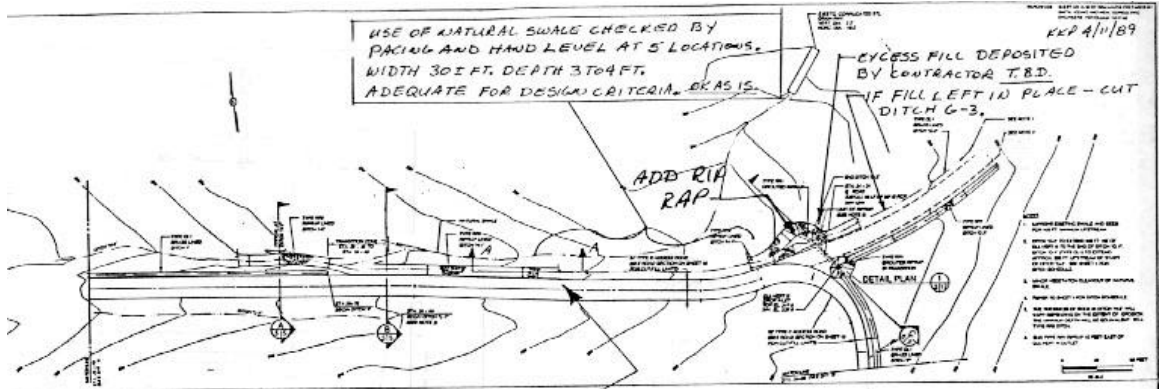
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NO.	DESCRIPTION	DATE
1	REVISIONS	
2	REVISIONS	
3	REVISIONS	
4	REVISIONS	
5	REVISIONS	
6	REVISIONS	
7	REVISIONS	
8	REVISIONS	
9	REVISIONS	
10	REVISIONS	

PROGRAM # - PERMITTING PLANS  
 HILLS ROAD DRAINAGE & EROSION CONTROL  
 PLAN AND CROSS SECTIONS  
 STA 102 + 00 TO STA 111 + 00  
 ENVIRONMENTAL SOLUTIONS, INC.  
 E-87154



PROJECT NO. E-47154

DATE: 11/18/89

SCALE: AS SHOWN

PACBAR II - PERMITTING PLANS

ACCESS ROAD DAMAGE & EROSION CONTROL

PLAN AND CROSS SECTIONS

STA. 28+00 TO STA. 36+100

ENVIRONMENTAL SOLUTIONS, INC.

E-47154

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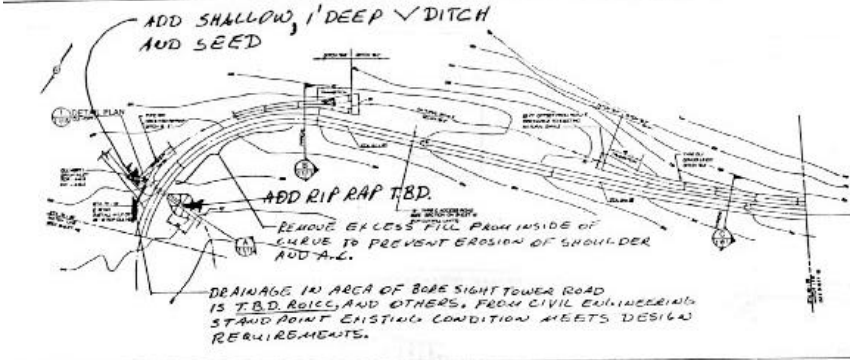
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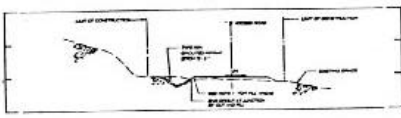
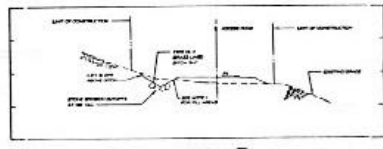
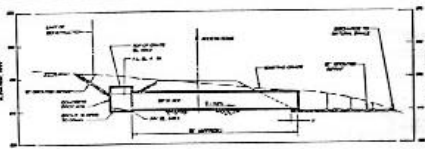
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DATE: 10/10/89  
 EEP 410189

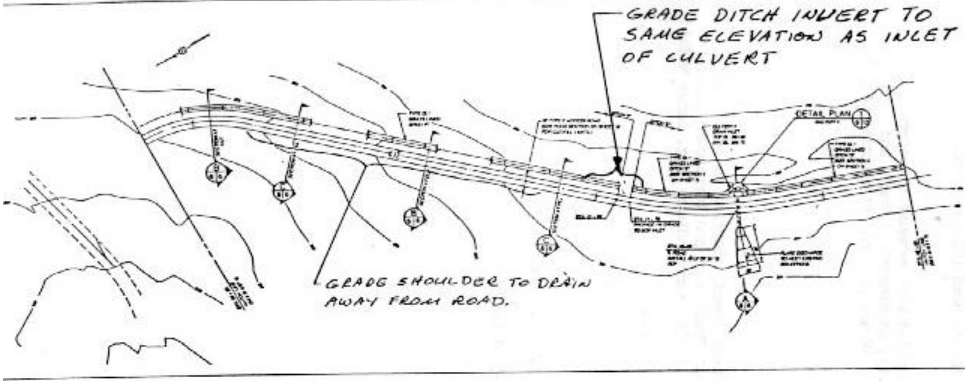


- NOTES
1. SEE PLAN FOR PROPOSED LOCATION OF RIP RAP AND SEEDING.
  2. SEE PLAN FOR PROPOSED LOCATION OF DITCH AND SEEDING.
  3. SEE PLAN FOR PROPOSED LOCATION OF SHOULDER AND A.L.



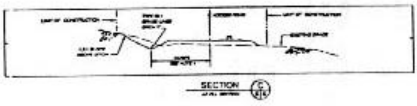
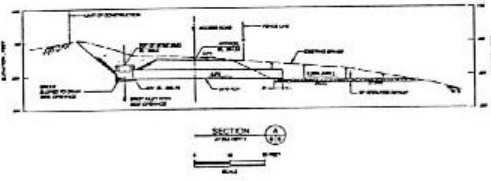
PROJECT INFORMATION

PROJECT NO.	EEP 410189
DATE	10/10/89
PROJECT NAME	PERMITTING PLANS ACCESS ROAD DAMAGE & EROSION CONTROL
PLAN AND CROSS SECTIONS	STA. 78 + 00 TO STA. 80 + 50
ENVIRONMENTAL SOLUTIONS, INC.	
DATE	10/10/89
BY	E.ETM
CHECKED BY	



REVISION SHEET NO. 1 OF 2  
 DATE: 11/10/89  
 REF: 9/10/89

- NOTES
1. VERIFICATION OF THE DESIGN SHALL BE THE RESPONSIBILITY OF THE CLIENT AND THE DESIGNER SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE WORK.
  2. WORK TO BE DONE SHALL BE AS SHOWN.



NO.	DATE	BY	CHKD.	DESCRIPTION
1	11/10/89	[Signature]	[Signature]	ISSUED FOR PERMITTING

PROJECT: ROAD GRADING & DRAINAGE CONTROL  
 PLAN AND CROSS-SECTIONS  
 STA. 36 + 00 TO STA. 45 + 00  
 ENVIRONMENTAL SOLUTIONS, INC.  
 E-87154

DESIGN CHANGES NEEDED (FROM SSD/DEV)

4-12-89

1. Weather proof case for Endangered Species sign (Section 7 permit)
2. Barrier to abandoned Radar Site Access Road (CZMA determination, MOU with DNR)
3. The diesel generators will be supplied with exhaust silencers soundproof insulation (specifically, an exhaust piping), and vibration dampers in order to meet AF occupational standards (EA p 5-4)
4. All equipment include engine exhaust mufflers to the extent required to meet AFR 161-35 occupational noise exposure standards (EA p 5-3)
5. Add erosion cutoffs
6. Barrier to abandoned Boresight Tower Road. Barrier to be located about ½ mile down road just past Trail sign and turndown point. Barrier should be permanent and fit with surroundings (e.g. Large Rock)
7. Signs for megapode coordinated with F&W
8. Sanitary sewer septic tank and leach field meet EA p 5-3 #6.
9. Oil water separator as per EA p5-2 #3
10. Containment for oil spills at oil fill pipe.
11. Replanting grasses as per p. 5-5 of EA

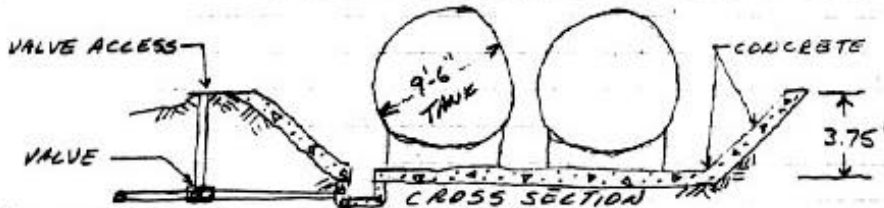
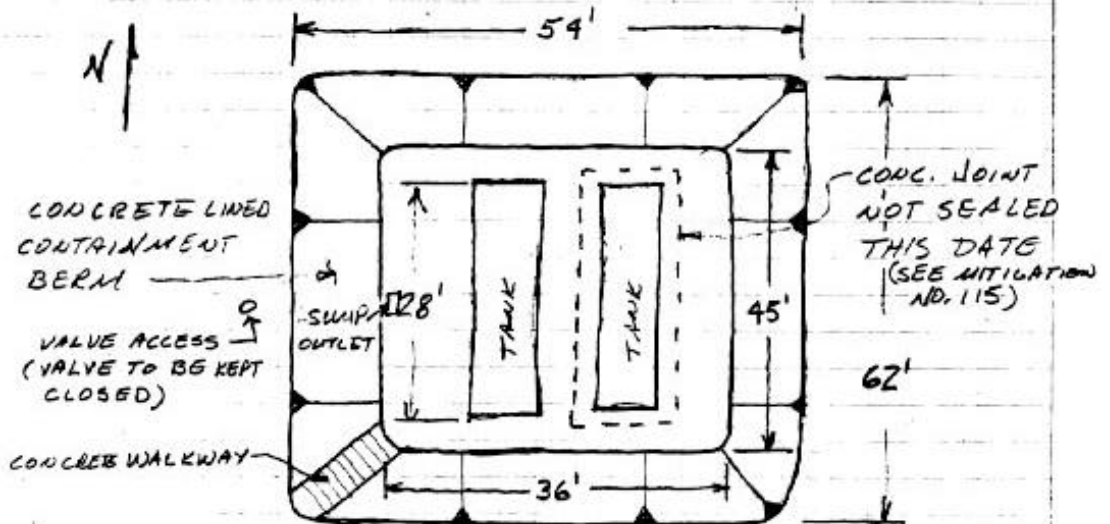
# ENVIRONMENTAL SOLUTIONS, INC.

By KKP Date 4/19/89 Subject FACBARTT FIELD Sheet No. 1 of 1  
 Chkd. By \_\_\_\_\_ Date \_\_\_\_\_ NOTES Proj. No. \_\_\_\_\_

REF # 115

DIESEL FUEL STORAGE TANK CONTAINMENT  
 AREA SPILL RETENTION VOLUME.

SKETCH:



VOLUME CALC.: N.T.S.

$$\text{VOL OF CONTAINMENT} = \frac{[(36 \times 45) + (54 \times 62)]}{2} \times 3.75' = 9,315 \text{ FT}^3 = 69,675 \text{ GAL}$$

$$\text{VOL OF TANKS} = 2 \left[ \frac{\pi}{4} (9.5)^2 \times 28 \right] = 3,969 \text{ FT}^3 = 29,700 \text{ GAL}$$

CONTAINMENT AREA WILL HOLD:  $\frac{9315}{3969} = 2.35$  TIMES THE TANK VOLUME.

## C.9 BOD and Transfer of Facility Contract



00000

**Commonwealth of the Northern Mariana Islands  
Coastal Resources Management**

**Office of the Governor  
Saipan, Mariana Islands 96950**

**CABLE ADDRESS  
GOV. MMI SAIPAN  
TELS. 224-4422/7222**

April 3, 1987

Mr. Raphael O. Roig  
Chairman, Space Division  
Environmental Protection Committee  
HQ Space Division  
P.O. Box 92960  
Los Angeles, CA 90009

Attention: Mr. John Edwards

Re: Statement of Work for Environmental Mitigation Measures,  
PACBAR III Radar Facility Project.

Dear Mr. Edwards:

Enclosed is the Statement of Work for Environmental Mitigation measures pursuant to the MOU between the Air Force and the CNMI Department of Natural Resources. Please let us know if you have any comments or questions.

Sincerely,

ROBERT W. RUDOLPH  
Acting Administrator  
Coastal Resources Management Office





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS WESTERN TEST RANGE (AFSC)  
VANDENBERG AIR FORCE BASE, CALIFORNIA 93437-6021

REPLY TO  
ATTN OF SFIO

27 Apr 87

SUBJECT: Daily Cost of Delay in JOD (Joint Occupancy Date) and BOD (Beneficial Occupancy Date) of the PACBAR III Construction Project

TO: HQ SD/DEEP  
ATTN: Capt Morgan Deane, Jr.

1. This estimate of the daily cost to WSMC of delay in the JOD and then the BOD of the PACBAR III construction is estimated in two parts because the shipment of the radar equipment is in two parts.

2. The arrival date of the first shipment is scheduled for 15 Nov 88, the date of JOD. The daily cost to WSMC of daily in this date is for the equipment and personnel necessary to move the radar pedestal, yoke and disk and the HVAC units to the site. The estimated cost a day's delay to WSMC in JOD is \$3500 per day. This includes the cost and expenses of the four persons operating the heavy equipment needed to move the radar to the site and \$1000 per day for five FEC personnel. This estimate does not include the cost of ESMC personnel, but I estimate it will be minimum of \$500 per day for a total personnel cost of \$4000 per day for each day's delay in JOD. The prorated cost of equipment rental is \$700 per day. Therefore, the total cost of each day of delay is \$4700 per day.

3. The second part of the estimate is based on a BOD of 28 Feb 89 (1 Mar 89). The arrival of the second shipment is scheduled for 15 Mar 89 and is contingent upon using the PACBAR III building as a controlled environment storage space. If this building is not available, the cost of renting a comparable space is about \$300-\$500 per month, and the WSMC personnel cost is still about \$1000 per day. I estimate the ESMC cost will be about \$1500 per day at this time. Thus the total cost of each day's delay of BOD is approximately \$3000 per day. Rental of trucks, etc. to move is estimated at \$200 per day for a total cost of \$3200 per day of delay in BOD.

FRANCIS D. O'NEILL  
PACBAR III Project Director

cc: SD/CNSC (Lt. T. Abboushi)



4 December 1987

Mr. William Kramer  
U.S. Fish and Wildlife  
Pacific Islands Office  
300 Ala Moana Blvd., Room 5302  
Honolulu, HI 96850

Dear Mr. Kramer,

In the Section 7 consultation for the U.S. Air Force Pacbar III Radar in Saipan you requested that we perform a pre-construction biological survey for the presence of Micronesian Megapodes in the project site area. Construction is due to start in January of 1988. A biological survey was conducted in October of this year. Two copies of the report, *Pacbar III Radar Station Preconstruction Megapode Survey Report, November 1987*, are enclosed. If you have any comments or questions please feel free to contact me at (213) 643-0934.

Thank you again for your cooperation and assistance on our project.

Sincerely,

JOHN R. EDWARDS  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering



DEPARTMENT OF THE NAVY  
RESIDENT OFFICER IN CHARGE OF CONSTRUCTION  
SAIPAN  
P.O. BOX 2150  
SAIPAN, CNMI 96950

IN REPLY REFER TO:

4300  
Ser RS/1266  
11 APR 89

From: Resident Officer in Charge of Construction, Saipan  
To: Headquarters, Space Division, Los Angeles Air Force Station,  
Los Angeles, CA (Attn: Capt. Abboushi)  
  
Subj: BOD AND TRANSFER OF FACILITY CONTRACT N62766-84-C-0229,  
FY87 MCAF PROJECT 12442, PACBAR III FACILITY AT THE MARPI  
FOREST RESERVE, SAIPAN, NORTHERN MARIANA ISLANDS  
  
Encl: (1) BOD Deficiency List

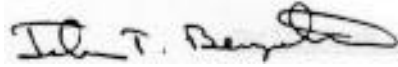
1. Final inspection of the subject contract work was conducted on 07 April 1989 with the following personnel in attendance:

Name	Organization
LT J.T. Bergstrom	ROICC Saipan
Mr. D.G. Patterson	ROICC Saipan
Mr. D.L. Sanders	ITT/FEC
Mr. R.R. Waycright	ITT/FEC
Mr. S. Cobb	ITT/FEC
Mr. R.L. Stadler	ITT/FEC
Mr. R.J. Grinstead	ITT/FEC
Mr. J.R. Brown	ESMC/ETR
Mr. L. Dittmer	ESMC/ETR
Mr. R.L. Igtanloc	Black-Micro
Mr. N.M. Tablante	Black-Micro
Mr. C.E. Fabrada	Black-Micro

2. All work on the subject contract has been completed in accordance with the provisions contained in the subject contract and to the satisfaction of the inspection party with the exception of those items listed in enclosure (1). Accordingly, the facility was transferred to the PACBAR Site Supervisor, ITT/Federal Electric Corporation, effective 07 April 1989 for final custody and maintenance.

3. The contract provides for a one year warranty commencing from the date of beneficial acceptance of the work for any defects in workmanship and/or materials. To facilitate correction of deficiencies that may develop during the warranty period, ITT/Federal Electric Corporation has been authorized to direct all requests for correction directly to the prime contractor, Black-Micro Corporation; telephone number 234-6549/6800. The contractor's responsibilities include repairing or replacing those items which were improperly installed or are found to be defective. All other work is considered to be maintenance and shall not be accomplished by the contractor under the subject contract without specific written authority from OICC Marianas. In the event the contractor fails to respond or there is disagreement concerning the warranty, OICC Marianas should be contacted to resolve the matter.

4. As-Built drawings will be provided upon completion of all work contained in the subject contained in the subject contract.



JOHN T. BERGSROM  
LT, CEC, USNR

Copy to: ITT/Federal Electric Corporation

BOD PUNCHLIST  
PACBAR III FACILITY, SAIPAN  
CONTRACT N62766-84-C-0229

<u>1. OPERATIONS BUILDING</u>	Date Corrected
a. Relabel P-14 shutdown nameplate for clarity.	-----
b. Adjust door closers for proper operation.	-----
c. Provide fire alarm control panel nameplate.	-----
d. Provide fluorescent bulb wire retainers.	-----
e. Replace panel and breaker in P9.	-----
f. Provide required door weatherstripping.	-----
g. Replace roof gutter strainers.	-----
h. Remove blue plastic around bathroom mirror.	-----
i. Correct access floor channel supports to proper height.	-----
<u>2. GENERATOR BUILDING</u>	
a. Provide louver control handles and access.	-----
b. Seal generator pad joints.	-----
c. Provide plastic mesh in control room window.	-----
d. Repair aluminum window defects.	-----
e. Repair fire horn in south wall.	-----
f. Provide fire alarm control panel nameplate.	-----
g. Repaint exterior generator exhaust.	-----
h. Provide level indicators on day tanks, and training of how they function with pump.	-----
i. Replace pyrometer switch on generator #3.	-----
j. Replace incorrect automatic voltage adjust controls on switchgear.	-----
k. Install three battery charges and test.	-----
l. Hook-up and test jacket water heaters.	-----
m. Wire generator control panel lights.	-----
n. Touch-up paint on day tanks, generators, and switchgear.	-----
o. Provide spare parts, tools, and equipment list.	-----
p. Provide insulation blanket for flexible connectors.	-----
q. Touch up paint in fuel lines.	-----
r. Provide fluorescent bulb wire retainers.	-----
s. Replace roof gutter strainers.	-----
t. Repair leak in fuel oil pumps.	-----
<u>3. GUARDHOUSE</u>	
a. Provide fire alarm cover and light.	-----
b. Sand and repaint wood counter.	-----
c. Paint electrical stub-ups.	-----
<u>4. FACILITY SITE</u>	
a. Provide maximum clearance of two inches beneath security fence.	-----
b. Complete clear zone requirements outside fence.	-----
c. Provide brass plugs and lift devices for handhold covers.	-----

Date Corrected

- d. Install remaining guard rail posts. -----
- e. Complete landscaping with conforming contours;  
removal all rocks and boulders greater than one inch. -----
- f. Seal inside of water tank. -----
- g. Provide water tank level indicator. -----
- h. Provide water tank cover. -----
- i. Repaint fuel tanks, touch up fuel lines, and paint  
tank number on collars. -----
- j. Seal fuel tank pad joints. -----
- k. Clean out all handholds. -----
- l. Provide fuel strainer in fill lines and  
Paint tank number on cover. -----
- m. Provide manual level gauge for fuel tanks. -----
- n. Provide booster pump, final testing, and operating  
Instructions. -----
- o. Repair wheels on fence gate. -----
- p. Spell out all panelbox nameplates. -----
- q. Provide bulbs for all exterior lights. -----
- r. Touch up paint and lettering on fire alarm covers. -----
- s. Provide water valve and cleanout keys and door closer  
adjustment key. -----

5. ACCESS ROAD AND SWALES

- a. Complete riprap for drain outlet, swales, and  
culvert inlets. -----
- b. Install remaining guard rail posts. -----
- c. Remove all grubbing, rocks, asphalt, basecourse,  
and sand. -----
- d. Finish parking areas and stripping. -----
- e. Complete shoulder grading. -----
- f. Remove forms and concrete at bunker. -----
- g. Provide smooth transitions for each swale change. -----
- h. Replace deficient pavement areas. -----
- i. Fully restore all disturbed areas. -----
- j. Clean out existing culvert near station 11+00. -----
- k. Complete grassed swales. -----
- l. Complete culvert outlet swales. -----

- 6. Complete work on all field adjustments and modifications. -----

## C.10 Permits and Correspondence



DEPARTMENT OF THE NAVY  
PACIFIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
(MAKALAPA, HI)  
PEARL HARBOR, HAWAII 96860-7300

1011  
Ser 241EC/6528  
26 NOV 1986

Mr. Jesus G. Villagomez  
Executive Director  
Marianas Public Land Corporation  
P. O. Box 380  
Saipan, CM 96950

Dear Mr. Villagomez:

Reference is made to your telephone discussions with Mr. E. Chock of this command on the proposed use agreement of public land in the Petosukara area of Saipan for the construction and operation of a U. S. Air Force radar tracking station. It was advised that the Air Force accepts the changes requested in your letter of June 12, 1986, except for the indemnification clause and esired to limit the Public Auditor clause to documents related ot the payment of rent under the land use agreement. Also discussed was a new requirement by the Air Forec team that recently visited Saipan for the purpose of briefing CNMI officials and the general public on the Air Forec project.

During Mr. Chock's telephone conversation of November 25, 1986 with Mr. Pete Atalig, MPLC Counsel, language acceptable to MPLC for the liability and Public Auditor clauses has been worked out. Enclosure (1), which incorporates the proposed liability and Public Auditor clauses and the changes already agreed to by the Air Force, is provided for your information and review. Air Force concurrence in the liability and Public Auditor clauses proposed by Mr. Atalig agrees that our staff appraisal may suffice as the report needed to stisfy MPLC appraisal requirements. Accordingly, two copies of our staff appraisal are provided as enclosure (2) to assist in the determination as to whether a contract appraisal is needed. In thevent a contract appraisal is to be required, it is requested that MPLC agree to use the fair market rental rate, as may be determined by the appraisal, as the rental rate for the first five-year period of the lease agreement in order to justify Air Force expedenture of additional funds.



11011  
Ser 241EC/12148  
26 NOV 1986

Mr. Chock will be with the Air Force team visiting Saipan the week of December 8, 1986 in connection with the project. He will arrange a meeting to discuss whether any other actions need to be taken to finalize the land use agreement for the project site.

Sincerely,

**J. M. KILIAN**  
**Director, Real Estate Division**

Encl:

- (1) Draft, PACBAR III Land Use Agreement
- (2) PACNAVFACENCOM Appraisal Report  
Leasing of PACBAR III Tracking  
Station Site, Air Force, Saipan  
Of 20 Dec 86 (2 copies)

Blind copy to: w/o encls  
HQ USAF (LEER) w/encl (1)  
HQ AFSC (DEP)  
AFSPACECOM (XPDD)  
SD Los Angeles AFS (YNC)  
COMNAVMARIANAS (N4)



DEPARTMENT OF THE NAVY  
PACIFIC DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
(MAKALAPA, HI)  
PEARL HARBOR, HAWAII 96860-7300

1011  
Ser 241EC/6528  
23 JUN 1986

Mr. Jesus G. Villagomez  
Executive Director  
Marianas Public Land Corporation  
P. O. Box 380  
Saipan, CM 96950

Dear Mr. Villagomez:

Reference is made to your letter of June 12, 1986, regarding the draft agreement for use of public lands in the Marpi Commonwealth forest to accommodate U.S. Air Force proposal to construct and operate a radar tracking station on Saipan. Your request that certain changes be made in the draft agreement has been forwarded to the Air Force for comment. A substantive response in this regard will be provided upon receipt of a reply from the Air Force.

Regarding your comments on U.S. land requirements in the Commonwealth of the Northern Mariana Islands under U.S. Public Law 94-241, it should be noted that Section 1003 of this statute provides that Section 806 cited in your letter will not become effective until termination of the Trusteeship Agreement. Although this event has not occurred to date, our request for use of the Marpi Commonwealth Forest lands follows the intent and spirit of Section 806.

When the United States exercised the option to lease the lands in Tinian, Saipan, and Farallon de Medinilla described in Section 802 of the Covenant, it was for contingent military purposes. Current policy is that the lands will be used as training areas for all Pacific command forces (Army, Air Force, Navy and Marine Corps). The property must also be preserved for forward military basing for all branches of the property other than as described above would have to be submitted to the Commander in Chief U.S. Pacific Command for approval.

Use of the Tinian and Saipan military lease lands was considered for the Air Force radar tracking station. However, no site within the leased areas meets all project requirements. Therefore, approval of the above mentioned military commander to use such areas has not been requested. Since the Marpi Commonwealth Forest site meets all project requirements, a lease of public land in this area has been requested of your agency.

As to the requirement that no interest in real property in the Commonwealth be acquired unless duly authorized by Congress and appropriations are available therefore, a request for funds for the tracking station has been

11011  
Ser 241EC/6528

submitted as an FY87 military construction project. Although Congressional authorization and appropriations for the project are likely, they cannot be assured until Congress acts. Accordingly, Mr. E. Chock of this command recently asked during a meeting in Saipan that the proposed land use agreement become effective January 1, 1987 or some other date subsequent to the appropriation of funds for the project. Thereafter, funds for payment of yearly rent would be provided under the annual appropriations statures for Department of Defense operations.

We trust the above adequately addresses any concerns which your agency may have with regard to the Air Force proposal to use lands in the Marpi Commonwealth Forest.

Sincerely,

J. M. KILIAN  
Director, Real Estate Division

Blind copy to:  
COMNAVMARIANAS (N4)  
HQ USAF (LEER)  
HQ AFSC (DEP)  
WSMC Vandenberg AFB (CC/ENIM)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 42963  
LOS ANGELES, CA 90099-2960

REPLY TO

ATTN OF: LEER

3 AUG 1986

SUBJECT: PACBAR III Radar land Use Agreement (Your Ltr, 20 Jun 86)

TO: Commander, Pacific Division, NAVFACENCOM, Code 24

1. We have reviewed the 12 Jun 86, Marianas Public Land Corporation (MPLC) letter and have no objection to the changes proposed for Articles 4, 5, 8, and 9(a) of the attached draft agreement.

2. The change in Article 10 is legally unacceptable. The Air Force lacks legal power to hold any party harmless without an Act of Congress specifically authorizing it. There is no such act in existence at this time. Our language in the present draft Article 10, Liability of United States, is customarily used to indicate United States acceptance of full responsibility for third party claims. Prior to your representatives' scheduled visit to Saipan, you may want to have your attorney talk to our General Counsel Office, SAF/GCN, Mrs. Dorothy Loeb, AV 225-3928, regarding this issue.

3. The proposed new article 15 should be modified to read:

“ Article 15. Public Auditor

In entering into this Lease Agreement, the Corporation is subject to Public Law 1-8, Chapter 6, Section 6. The United States agrees that it and all sublessees and assignees will provide all information and reports, and allow audit, inspection and access to its books, records, and accounts directly relating to the payments of rent under this Lease Agreement to the Public Auditor of the Commonwealth of the Northern Mariana Islands. Nothing in this Article shall be constructed so as to authorize the Public Auditor to obtain more information than privileged by law.”

4. Your subject letter, 20 Jun 86, indicates you will respond to MPLC's question on land use requirements under PL 94-241. The Air Force does not agree with the MPLC position that PL 94-241, Section 806(a) and (b) requires the United States to seek specific Congressional authorization and funding of this proposed lease transaction.

5. Copies of the executed documents should be forwarded ro HQ WSMC/CC, HQ AFSC/DEP, and this Headquarters/LEER.

FOR THE CHIEF OF STAFF

**SIGNED**

MARIO B. GINNETTI, Col, USAF  
Chief, Real Property Div  
Directorate of Engineering  
and Services

Atch  
Proposed Lease Agreement

cc: WSNC/EN (Maj. Anderson)  
wo/Atch  
WSMC/XR wo/Atch  
AFSC/DEP wo/Atch  
AFSC/DLXI wo/Atch  
SD/DE wo/Atch



**Commonwealth of the Northern Mariana Islands  
Coastal Resources Management**

**Office of the Governor  
Saipan, Mariana Islands 96950**

**CABLE ADDRESS  
GOV. NMI SAIPAN  
TELS. 334-4433/7333**

March 16, 1987

Mr. Raphael O. Roig  
HQ Space Division  
P.O. Box 92960  
Worldwide Postal Center  
Los Angeles, CA 90009

Dear Mr. Roig:

The Commonwealth of the Northern Mariana Islands Coastal Resources Management Office has reviewed the federal consistency determination submitted by the United States Air Force on February 25, 1987 for construction of the PACBAR III radar project on Saipan. The Coastal Resources Management Office finds that the proposed activity complies with the CNMI CRM Program and will be conducted in a manner consistent with such program.

Over the long period of time since the Air Force first applied for a coastal permit from this office, we have been able to meet with Air Force personnel several times and discuss the concerns of the CRM Program as regards this project in the spirit of mutual cooperation. We are confident that any final concerns can be addressed in the conditions of a coastal permit.

Thank you for the time and effort spent to prepare the consistency determination. This office hopes to have consistency guidelines formally published by year's end at which time we will forward you a copy for future reference. Should you have any further questions on this consistency determination, please feel free to contact me.

Sincerely,

**ROBERT W. RUDOLPH**  
Acting Administrator  
Coastal Resources Management

cc: Mr. John Edwards  
Mr. Marcus Kerner  
OCRM



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS WESTERN TEST RANGE (AFSC)  
VANDENBERG AIR FORCE BASE, CALIFORNIA 93437-6021

*CAB*  
*Mark F. Jaldstad*  
*Capt Woffe*  
*Info*

REPLY TO

ATTN OF: CNS

14 Jan 88

SUBJECT: PACBAR III Permit and Mitigation Requirements

To: AFSPACECOM/WPDD WTR/SFI ROICC (Saipan)

1. The signed PACBAR III Radar Site Permit (Atch 1) culminates over 4 years of negotiations between the Commonwealth of the Northern Mariana Islands (CNMI) and the Air Force. The conditions stipulated in this permit are legal and binding and represent our best efforts for compromise with the CNMI.
2. Attachment 2 is a summarized table of mitigation measures covering environmental issues, facility design and construction, and site operations for this project. These should be used to insure the requirements levied upon this project are successfully implemented. Your complete cooperation will prevent project delays of potential litigation due to non-compliance.
3. Our point of contact is Lt Tarek Abboushi, (213) 643-0773.

*Thomas M. Jones*  
THOMAS M. JONES, Lt Col, USAF  
Deputy Director  
Space Surveillance & Tracking SPO

2 Atchs  
1. PACBAR III Site Permit  
2. Mitigation Measures  
Table (5 Jan 88)

cc: DEV  
DEE  
JAM



Commonwealth of the Northern Mariana Islands  
Coastal Resources Management  
Office of the Governor  
Saipan, Mariana Islands 96950

COASTAL PERMIT DECISION  
SMS-85-X-82  
RADAR TRACKING STAION – U.S. AIR FORCE

PERMIT DECISION:

The Departments of Commerce and Labor, Public Works, and Natural Resources, the Division of Environmental Quality and the Historic Preservation Office as lead and participating agencies in the Coastal Resources Management Program, jointly approve and hereby grant with special conditions a coastal permit to the United States Air Force for the construction, installation, and operation of the PACBAR III Radar Tracking Facility to be located on Mt. Petosukara in the Marpi Commonwealth Forest, Saipan.

FINDINGS:

1. The project is located within the only designated Commonwealth Forest on Saipan. Other projects have been proposed for the Marpi Commonwealth Forest in the past. However, these projects have all been local in nature, whereas the proposed radar tracking station is considered to be in the national interest. Section 3 (6) of the Coastal Resources Management Act of 1983 states that it is the coastal resources management policy of the Commonwealth of the Northern Mariana Islands to “provide for adequate consideration of the national interest, including that involved in planning for, and in the siting of facilities which are necessary to meet requirements which are other than local in nature.”
2. A substantial portion of Saipan residents, including the CNMI House of Representatives have publicly voiced opposition to the project. At the center of the opposition is both concern for intrusions into Saipan’s only designated forest and the possible threat of making Saipan a nuclear target.
3. There still remains some question of whether or not the acquisition of land for the project is consistent with the terms of the Covenant negotiated between the United States and the Commonwealth of the Northern Mariana Islands. That decision is not to be made by the Coastal Resources Management Program, nor should the issuance of this permit be interpreted as implied consent that the government of the Northern Mariana Islands accepts that the acquisition of the Forest property is consistent with the terms of the Covenant.
4. The Coastal Resources Management Agencies have determined that the proposed project, as conditioned, is consistent with the CRM Rules and Regulations and PL 3-47.



CONDITIONS:

Inasmuch as it is the goal of the Coastal Resources Management Program to avoid direct and significant impacts on the Commonwealth's coastal resources and, whenever possible to mitigate foreseeable impacts, this permit is issued with the following conditions:

Condition A: All work shall be conducted and completed in a manner consistent with the terms of the "Memorandum of Understanding Regarding US Air Force Tracking Station within the Marpi Commonwealth Forest Between the Western Space and Missile Center and the CNMI Department of Natural Resources and Marianas Public Land Corporation", the subsequently developed Statement of Work for Environmental Impact Assessment (June 25, 1987), and the Access Road Drainage and Erosion Control Design Narrative (April, 1987) and supporting design drawings (May, 1987). To the extent that the forest access mitigation measures to be implemented by the U.S. Air Force may differ slightly between these plans, the stricter mitigation measure will slightly between these plans, the stricter mitigation measure will be the one to be implemented and which the Air Force must comply with.

Condition B: Within six months of start of construction, representatives of the U.S. Air Force will meet with representatives of the Northern Marianas college to discuss cooperative measures to increase the number of local residents with the minimum background required for technical employment positions at the radar facility. This will include a suggested curriculum of existing courses available at Northern Marianas College and suggested additions to the curriculum. Additional measures suggested by the College will be considered. During site activation, classroom by the College will be considered. During site activation, classroom space at the college will be utilized, if available, for technical training of new site personal. An attempt will be made to employ 75% local residents within 5 years of initial operation. Within one year of IOC the Air Force will insure that at least 50% of the employees at the site are local residents.

Condition C: The U.S. Air Force shall be the agency responsible for maintenance of the erosion control structures and the road used exclusively by the Air Force and its contractor(s). This consists of the new section of road from the Marpi road to the radar station.

Condition D: Any road construction to be undertaken during the rainy season (July-December) must be controlled to minimize potential damage. Enforcement of this condition will be in accordance with CRM Rules and Regulations, Section 14 A-G.

Condition E: Three complete copies of the 100% design specifications will be provided to CRM. An operating plan covering emergency evacuation, safety, maintenance of roads and erosion control structures under Air Force control, hazardous waste management, etc. will be delivered to CRMO prior to initial operations.

Condition F: The U.S. Air Force shall be responsible for the off-island transport and disposal of any hazardous material to a permitted hazardous waste disposal facility.

Condition G: In the interest of providing additional wildfire protection for the northern end of Saipan, the radar facility operator must maintain 24 hour FM radio communications with the Saipan Fire Division, and shall report any and all wildfires observed from the radar facility.

Condition H: In the interest of providing additional wildlife protection for the endangered species of the Commonwealth, the radar facility operator shall record and report to the Division of Fish and Wildlife, any observed instances of poaching or illegal gathering of threatened or endangered species, including deer, fruit bat, coconut crab, and the Marianas megapode.

Condition I: In accordance with the supporting information provided in the Environmental Impact Assessment, the above ground diesel fuel tank will be surrounded by a concrete berm of sufficient size to contain the entire contents of the tank in the event of a spill.

Condition J: The US Air Force shall provide CRMO with the results of all testes taken to determine the level of radiofrequency emissions. Power density levels will not exceed personnel or public exposure levels (PELs) at areas of human access or wildlife habitat.

Condition K: At the end if the one-year planting project for Mitigation for Intrusion into the Marpi Commonwealth Forest (see Memo entitled "PACBAR Environmental Mitigation Measures") and after any necessary replanting efforts, the Air Force shall commence and be responsible for a further one-year maintenance effort as

follows. Each of the 68 individual plots located in the Marpi Naftan, Bird Island, and Kagman Wildlife Areas shall be inspected on a monthly basis, and any vines or weedy undergrowth in the immediate vicinity of (within 1 meter) and which might inhibit growth of the planted trees shall be removed using hand tools. Estimated costs for this additional one-year plant maintenance effort would be as follows:

Labor - 70 manhrs/mo x 12 mo @\$3.67/hr	\$3,082
Transportation - Rental fees for heavy duty truck @\$75/day for 36 days	2,700
Gasoline - 150 gal @\$1.07/gal	160
Contingency fees (secretarial, administrative) - % 15	891
Profit allowance - % 15	891
<b>TOTAL</b>	<b>\$7,724</b>

Condition L: The applicant is responsible for ensuring that all contractors, subcontractors, and other persons carrying out any work related to this project shall be informed of all permit conditions prior to commencing any construction activities.

Condition M: Should there be a need to strengthen the existing bridge and culvert road crossings along the haul route from Tanapag Harbor to the project site in order to transport radar antenna components, the Air Force shall be responsible for undertaking this work and for repairs of any damage incurred by the transport of such components.

Justification A - M: It is CRM policy to plan for, manage, and mitigate to the extent practicable any use or activity with the potential for causing a direct and significant impact on coastal resources [Public Law 3-47 Section 3(4)]. Projects shall be undertaken and completed so as to maintain and where appropriate, enhance and protect the Commonwealth's inherent natural beauty and natural resources, so as to ensure the protection of the people's constitutional right to a clean and healthful environment [CRM Rules and Regulations, Section 9 (B) (vi)].

Condition N: The CRM Administrator or his designee shall have the right to make reasonable inspections of the out-of-doors portions of a permitted project site at any reasonable time in order to assess compliance with the CRM Permit and its conditions.

Condition O: The CRM Permit holder, whether it be the applicant, a successor in interest, shall be required to notify the CRM Administrator in writing if he/she has knowledge that any information in the CRM Permit application was untrue at the time of its submission or if he/she has knowledge of any unforeseen adverse environmental impacts of the permitted project. A CRM permit holder shall further have the duty to inform any successor in interest of the permit granted and conditions attached thereto, if any; and the successor in interest shall, within five (5) days thereafter, advise the CRM Office of his/her interest in writing.

Condition P: The CRM Permit is valid only if the permitted project is otherwise lawful and in compliance with other necessary governmental permits.

Condition Q: Permitted physical development of the project site subject to a CRM Permit shall begin within one (1) year of the date of the issuance of the CRM Permit and be completed within three (3) years, as indicated in the application. If the project is not completed within three (3) years, this permit will be reviewed by CRM Agency Officials who will do one of the following: (1) extend or amend the permit or (2) terminate the permit. Conditions attached to the permit shall be of perpetual validity unless action is taken to amend, suspend, revoke or otherwise modify the CRM Permit.

Justification N, O, P and Q: Mandatory conditions on all CRM permits [CRM Regulations, Section 12© (i) (ii) (iii) and (iv)].

### PERMIT LIMITATIONS

This permit does not relieve its recipient of obligations imposed by other Commonwealth or Federal laws, either statutory or otherwise, and is granted pending compliance with applicable air and water quality standards and permitting processes. Work must be performed in the precise manner and at the precise locations indicated in the subject application as it is conducted by this permit.

The project is subject to review for compliance with this permit. Substantial violation of any term or condition shall be grounds for its revocation or suspension.

Should circumstances having direct and significant impacts on coastal resources arise in the future which were unforeseen at the time of this decision, CRM Program may require that corrective action be taken to mitigate the impact of those circumstances.

Coastal Permit Decision  
SMS-85-X-82  
Page five Cont'd.

The conditions contained in this permit are binding upon and enforceable against all successors in interest to the land and project proposed, including heirs, donees, grantees, assignees, or any successors in interest whatsoever.

The CRM Office must be informed when the project will begin at least two (2) working days prior to starting the project.

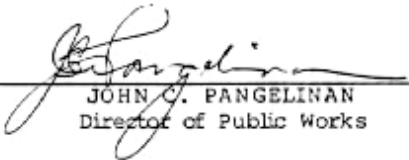
Amendments to this permit or to the application may be initiated by contacting the Coastal Resources Management Office.

#### **RIGHT IF APPEAL**

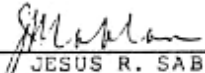
If you are aggrieved by this official decision or by the above conditions, you may appeal such a decision on the bases of material evidence to the CRM Appeals Board. A notice of appeal must be filed in writing, stating the disputed issue(s), and delivered to the Coastal Resources Management Office within thirty (30) days of the date of the receipt of this permit. Failure to exercise the right of appeal may extinguish any rights for judicial review.

AUTHORIZATION

Executed on Saipan, CNMI, pursuant to the CRMP Regulations and the Standards and Use Priorities provided therein, and the "Commonwealth Policies" for coastal resources management established by Public Law 3-47.

  
\_\_\_\_\_  
JOHN C. PANGELINAN  
Director of Public Works

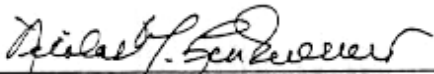
7/4/87  
Date

  
\_\_\_\_\_  
JESUS R. SABLAN  
Director of Commerce & Labor

7-07-87  
Date

  
\_\_\_\_\_  
JESUS B. PANGELINAN  
Historic Preservation Officer

7/07/87  
Date

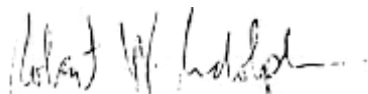
  
\_\_\_\_\_  
NICOLAS M. LEON GUERRERO  
Director, Dept. of Natural Resources

7/7/87  
Date

  
\_\_\_\_\_  
F. RUSSELL MECHEM  
Chief, Division of Environmental Quality

7/2/87  
Date

I hereby certify that the decision on Coastal Permit No. SMS-85-X-82 has been reviewed by the Coastal Resources Management Office and is found to be in substantial compliance with the Commonwealth Coastal Resources Management Program.

  
\_\_\_\_\_  
ROBERT W. RUDOLPH  
Acting Administrator, CPMO

7/7/87  
Date



**DEPARTMENT OF THE AIR FORCE**  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 92963  
LOS ANGELES, CA 90099-2960

David G. Zimmerman II  
OICC Marianas  
F.P.O. San Francisco, CA 96630

31 July 1987

Reference 1: 24 July 1987 SD/DEV Ltr (Atch 1)  
Reference 2: Minutes of 29 July 1987 Meeting (Atch 2)

Dear Mr. Zimmerman:

Reference 1 is changed due to agreements reached in recent meetings in Saipan (Ref2). The net result is that the construction contractor will not be required to perform any restoration work at either the abandoned boresight tower road or at the abandoned portion of the road to the radar facility. The contractor will not have to provide any signs at road pull-outs. All of these will be taken care of by us and the appropriate Saipan agencies.

A meeting was held with the CRMO on 30 July 1987 to amend permit conditions. Proposed changes to permit conditions that affect the construction contractor are in Conditions D and Q. CRMO indicated that the proposed changes are provisionally acceptable, but will be reviewed by the approving department heads on 5 August 1987 for a final decision. We do not except any problems in getting the changes we are asking for, nor do we expect any delays in the project as a result of the amendments.

A handwritten signature in black ink, appearing to read "John R. Edwards".

JOHN R. EDWARDS, GS-13  
Environmental Engineer  
Environmental Planning Division  
Directorate of Acquisition Civil Engineering

2 Attachments:

1. 24 July DEV Ltr
2. 31 July 87 Minutes

Copy To:

SD/DEE/CNSC

## APPENDIX D

### PHOTOGRAPHIC DOCUMENTATION

D.1-D.6	Aesthetics- Visibility of Saipan PACBAR Radar
D.7 – D.20	Erosion Protection and Drainage Control
D.21 – D.22	Blockage of Fire Road 540
D.23 – D.24	Radar Site
D.25 – D.26	Recreational Parking Areas
D.27	Historic World War II Bunker
D.28 – D.29	Radar Site Before and After Construction



D1. – D.6 Aesthetics – Visibility of Saipan (PACBAR) Radar

## AESTHETICS



D.1 Looking South from Grotto Junction  
Radar Facility in Center of Photo



D.2 Looking South from Suicide Cliff  
Radar Facility near Top of Ridge in Background

**AESTHETICS**



D.3 Looking North from Mt. Tagpochau  
Radar Facility on Ridge near Center of Photo



D.4 Looking Southeast from Golf Course  
Radar Facility atop Hill at Center of Photo

**AESTHETICS**



D.5 Looking East from Top Floor of Nikko Hotel  
Radar Facility at Top Right of Photo



D.6 Looking from Forest Road 560  
Radar Facility atop Ridge in Background

D.7 – D.20 Erosion Protection and Drainage Control

## EROSION CONTROL



D.7 Looking East toward Grass-lined Ditch at Radar Facility Gate



D.8 Looking West at Grass-lined Ditch  
near Junction of Forest Roads 500 and 530

## EROSION CONTROL



D.9 Looking North toward Erosion Protection at World War II Bunker



D.10 Looking North at Transition from Grass-lined Ditch to Riprap-lined Ditch  
Downgradient of World War II Bunker

## EROSION CONTROL



D.11 Looking South at Transition of Natural Swale to Riprap-lined Ditch Upgradient of Culvert I



D.12 Looking Northwest at Riprap-lined Ditch and Culvert I Inlet



## EROSION CONTROL



D.13 Looking North from Grass-lined Ditch Upgradient of Culvert III



D.14 Looking Northeast into Inlet to Culvert III  
(work in progress at time of photo)

## EROSION CONTROL



D.15 Looking East at Transition from Natural Swale to Riprap-lined Ditch at Outlet of Culvert IV



D.16 Looking West into Riprap-lined Ditch Downgradient of Culvert IV

## EROSION CONTROL



D.17 Looking East at Cleanout of Existing Roadside Culvert



D.18 Looking West into Riprap-lined Ditch to Culvert V Inlet

## EROSION CONTROL



D.19 Looking Southeast into Stilling Basin Riprap Placement



D.20 Looking East into Stilling Basin Riprap Placement

D.21 – D.22 Blockage of Fire Road 540

**BLOCKAGE OF FOREST ROAD 540**



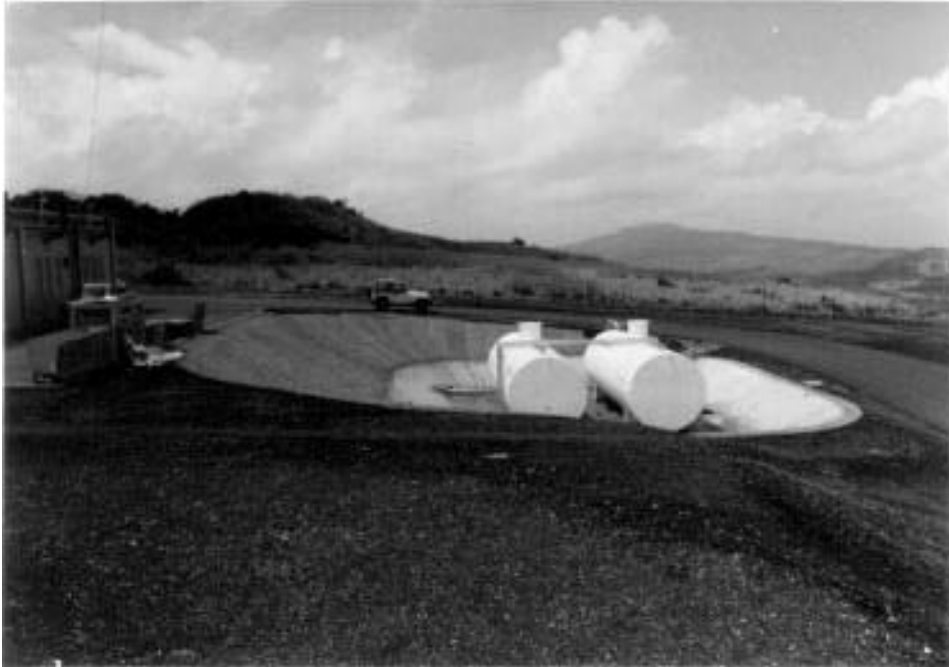
D.21 Looking West toward Blockage of Forest Road 540



D.22 Looking South at Blockage of Forest Road 540

D.23 – D.24 Radar Site

## RADAR SITE



D.23 Looking South at Fuel Storage Tanks  
with Concrete-lined Containment Berm



D.24 Oil-water Separator and Storage Tank at Radar Facility



D.25 – D.26 Recreational Parking Areas

**RECREATIONAL PARKING AREA**



D.25 Looking East at Trailhead Parking Area

**RECREATIONAL PARKING AREA**



D.26 Looking Southwest from Scenic Overlook Parking Area

## D.27 Historic World War II Bunker

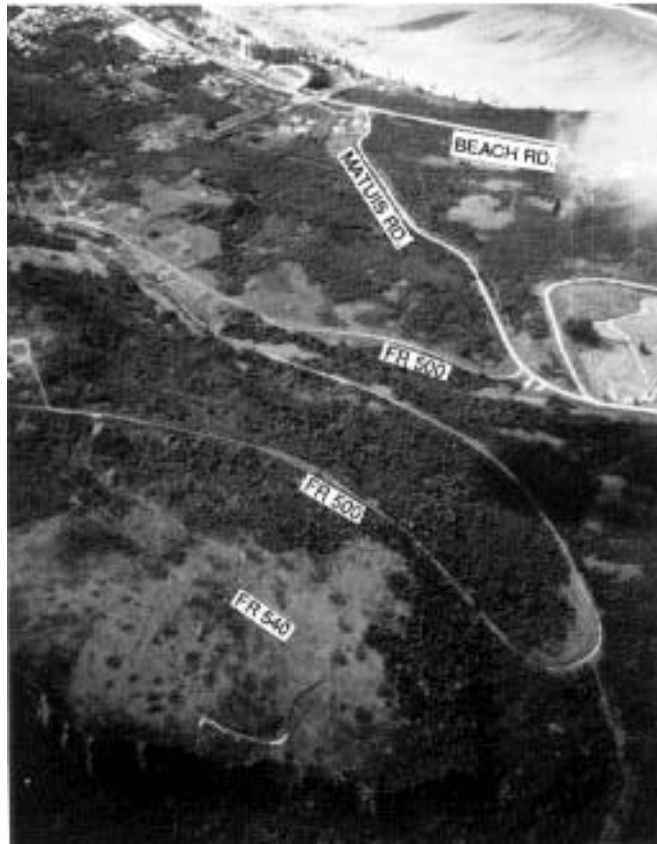
## HISTORIC BUNKER



D.27 Looking Southeast toward Preserved World War II Bunker

D.28 – D.29 Radar Site Before and After Construction

## FACILITY SITE



D.28 Looking West toward Radar Site  
Pre-construction



D.29 Looking Northwest toward Radar Site  
Post-construction

APPENDIX E  
MITIGATION MEASURES STATUS UPDATE

- E.1 Summary of Mitigations Checked and Recommendations
- E.2 Mitigation Status Reports
- E.3 Correspondence of Hazardous Waste Transportation and Disposal
- E.4 Correspondence on Reporting Wildfires by Telephone
- E.5 Radiofrequency Emissions Test Report and Correspondence
- E.6 Status Report on Wildlife Enhancement
- E.7 Chemical Storage Buildings Data Sheets
- E.8 Approved Hazardous Waste Labels



## E.1 Summary of Mitigations Checked and Recommendations

APPENDIX E.1

SUMMARY OF MITIGATIONS CHECKED  
AND RECOMMENDATIONS  
SAIPAN (PACBAR) RADAR  
JUNE 1990 SITE VISIT

MITIGATION NUMBER	MITIGATION SUBJECT	RECOMMENDATION
2	Employment, School	None.
3	Road Responsibility	Place 6- to 8-inch riprap in eroded area along northwest side of access road (Forest Road 530) between Marpi Road and the Radar Station.
6	Hazardous waste	Label all drums.
7	Wildfire	None.
8	Poaching	None.
10	Radiofrequency Emissions	Recommendations are presented in radar antenna test reports (See attached mitigation documentation).
11	Wildlife Area Planting	Remove vegetation in vicinity of trees.
15	CRM Permit	None.
16	CRM Permit	None.
24	Habitat Enhancement	None.
26	Endangered Species	None.
28	Public Information/Education Signs	DNR to erect signs.
34	Boresight Tower Road	None.
36	Habitat Enhancement	Revisit sites to check that additional clearing has been completed.
43	Fuel Tank Containment/Separator	None.
44	Hazardous Material Storage Building	None.
45	Spill Plan	None.
67	Public Information/Education Signs	DNR to erect signs.
70	Education-Forest Resources	None.
71	Education-Forest Resources	DNR to erect signs.
74	Visual Impact-Antenna	None.
79	Ordnance Storage Buildings	Include specific instructions in briefing for new employees (see Operations Mitigation Manual).

Appendix E.1  
(Continued)

MITIGATION NUMBER	MITIGATION SUBJECT	RECOMMENDATION
85	Hazardous Waste Plan	Drums and other containers should be labeled. Transport drums must have DOT/EPA-approved labels. Examples are included in attached mitigation documentation.
88	Hazardous Waste Plan	Modify plan to be site-specific.
96	Employment	None.
102	Flammable Materials Storage Building	None.
118	Boresight Tower Road Barrier	None.

## E.2 Mitigation Status Reports

**TABLE 4.5  
MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number	<u>2</u>	Date	<u>6/4/90</u>
Mitigation Subject	<u>Employment, School</u>	Time	<u></u>
Subject Update Performed by	<u>K. Parkinson</u>		

DESCRIPTION OF MITIGATION MEASURE:

Assistance in technical training and employment of 50% local residents in one year – 75% in five years.

---



---

PRIOR TO CHECK:

<u>Mitigation Compliance</u>	
In Compliance	<u>√</u>
Not In Compliance	<u>—</u>
To Be Done	<u>—</u>

<u>Mitigation Status</u>	
In Progress	<u>—</u>
Ongoing	<u>√</u>
Not Done	<u>—</u>

AFTER CHECK:

<u>Mitigation Compliance</u>	
In Compliance	<u>√</u>
Not In Compliance	<u>—</u>
Done	<u>—</u>
Not Done	<u>—</u>

<u>Mitigation Status</u>	
In Progress	<u>—</u>
Ongoing	<u>√</u>
Complete	<u>—</u>

DESCRIPTION OF STATUS UPDATE

Location: Northern Marianas college and radar site.

---

Procedures: Donation of equipment and books – employment recruiting.

---

Observations: A class in electronics has been established – over 50% of employees are local residents.

---

Recommendations: None.

---



---

SIGNATURE	<u>Kerry K. Parkinson</u>
DATE	<u>6/4/90</u>

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 3 Date 6/4/90  
 Mitigation Subject Road Responsibility Time \_\_\_\_\_  
 Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Maintenance of road from Marpi Road to the Radar Station.

PRIOR TO CHECK:

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>	<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>	In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>	Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input type="checkbox"/>	Done <input type="checkbox"/>	Complete <input type="checkbox"/>
		Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: As above.

Procedures: Cutting of vegetation, revegetation, ditch maintenance and pavement repair.

Observations: Pavement is in excellent condition. Vegetation has been cut in compliance with mitigation requirement. Some erosion is evident in the northwest ditch about 400 feet from the gate to the radar facility.

Recommendations: Place 6-to 8-inch riprap in eroded area along northwest side of road.

SIGNATURE Kerry K. Parkinson  
 DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 6 Date 6/4/90  
Mitigation Subject Hazardous Waste Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

USAF is responsible for off-island transport of hazardous waste (see Appendix E.3).

PRIOR TO CHECK:

Mitigation Compliance  
In Compliance   
Not In Compliance   
To Be Done

Mitigation Status  
In Progress   
Ongoing   
Not Done

AFTER CHECK:

Mitigation Compliance  
In Compliance   
Not In Compliance   
Done   
Not Done

Mitigation Status  
In Progress   
Ongoing   
Complete

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Containerize waste, and transport it off-island.

Observations: Contract with Unitek Environmental Services, Barrigada, Guam.

Recommendations: All drums must be labeled.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 7 Date 6/4/90  
Mitigation Subject Wildfire Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Maintain 24-hour FM radio communication with SAIPAN Fire Division – report fires.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input checked="" type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
Done <input type="checkbox"/>	Complete <input type="checkbox"/>
Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: Site.

Procedures: Communication will be by telephone (see Appendix E.4).

Observations: No fires have been observed.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90



**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 8 Date 6/4/90  
Mitigation Subject Poaching Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Report poaching to Division of Fish and Wildlife.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Guard to observe activities of motorists and hikers in the area.

Observations: No poaching or trapping has been observed.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 10 Date 6/4/90  
Mitigation Subject Radiofrequency Emissions Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

**DESCRIPTION OF MITIGATION MEASURE:**

Provide CRMO with results of radiofrequency emissions survey(s).

**PRIOR TO CHECK:**

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>---</u>	In Progress	<u>---</u>
Not In Compliance	<u>---</u>	Ongoing	<u>√</u>
To Be Done	<u>√</u>	Not Done	<u>---</u>

**AFTER CHECK:**

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>---</u>
Not In Compliance	<u>---</u>	Ongoing	<u>√</u>
Done	<u>---</u>	Complete	<u>---</u>
Not Done	<u>---</u>		

**DESCRIPTION OF STATUS UPDATE**

Location: Radar facility site – Test locations show on site plan included with and listed in test report (See Appendix E.5).

Procedures: Operation at maximum power and pulse width. The antenna is aimed directly at the Monitoring device.

Observations: Hot spots on building roofs and along the ridge immediately east of the facility.

Recommendations: Presented in test reports.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 11 Date 6/4/90  
Mitigation Subject Wildlife Area Planting Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

USAF to provide for habitat enhancement.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input checked="" type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input type="checkbox"/>
Done <input type="checkbox"/>	Complete <input type="checkbox"/>
Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: Marpi, Naftan, Bird Island, and Kagman Wildlife areas.

Procedures: Provide funding for maintenance.

Observations: Funding has been provided – maintenance is inadequate (see Appendix E.6).

Recommendations: DNR to remove vegetation in immediate vicinity of trees.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 15 Date 6/ /90  
Mitigation Subject CRM Permit Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Notification of changes. \_\_\_\_\_  
\_\_\_\_\_

PRIOR TO CHECK:

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>		<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	√	In Progress	—	In Compliance	√	In Progress	—
Not In Compliance	—	Ongoing	√	Not In Compliance	—	Ongoing	√
To Be Done	—	Not Done	—	Done	—	Complete	—
				Not Done	—		

DESCRIPTION OF STATUS UPDATE

Location: \_\_\_\_\_  
\_\_\_\_\_

Procedures: \_\_\_\_\_  
\_\_\_\_\_

Observations: \_\_\_\_\_  
\_\_\_\_\_

Recommendations: None \_\_\_\_\_  
\_\_\_\_\_

SIGNATURE Kerry K. Parkinson  
DATE 6/ /90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 16 Date 6/4/90  
Mitigation Subject CRM Permit Time \_\_\_\_\_  
Subject Update Performed by \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Compliance with Laws and Regulations

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: \_\_\_\_\_

Procedures: \_\_\_\_\_

Observations: \_\_\_\_\_

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE \_\_\_\_\_

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 24 Date 6/6/90  
Mitigation Subject Habitat Enhancement Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

USAF to provide for habitat enhancement.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: \_\_\_\_\_

Procedures: \_\_\_\_\_

Observations: \_\_\_\_\_

Recommendations: \_\_\_\_\_

SIGNATURE Kerry K. Parkinson  
DATE \_\_\_\_\_

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 26 Date 6/4/90  
Mitigation Subject Endangered Species Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Posters

PRIOR TO CHECK:

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>	<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>	In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>	Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input type="checkbox"/>	Done <input checked="" type="checkbox"/>	Complete <input type="checkbox"/>
		Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Place posters.

Observations: Posters in place at Guard House, Operations Building, and Generator Building.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 28 Date 6/4/90  
Mitigation Subject Public Information/  
Education Signs Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Endangered Species Public Signs

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Access road parking areas.

Procedures: USAF to fund and DNR to install signs.

Observations: Funding provided. Signs not erected.

Recommendations: Place signs

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90



**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 34 Date 6/6/90  
Mitigation Subject Boresight Tower Road Time \_\_\_\_\_  
Subject Update Performed by \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Revegetation  
\_\_\_\_\_  
\_\_\_\_\_

PRIOR TO CHECK:

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>	<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input checked="" type="checkbox"/>	In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input type="checkbox"/>	Not In Compliance <input type="checkbox"/>	Ongoing <input type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input type="checkbox"/>	Done <input type="checkbox"/>	Complete <input checked="" type="checkbox"/>
		Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: Abandoned boresight tower road.  
\_\_\_\_\_  
\_\_\_\_\_

Procedures: Block road at trail head – replant and maintain trees.  
\_\_\_\_\_  
\_\_\_\_\_

Observations: No vehicles have passed the rock barricade.  
\_\_\_\_\_  
\_\_\_\_\_

Recommendations: None.  
\_\_\_\_\_  
\_\_\_\_\_

SIGNATURE Kerry K. Parkinson  
DATE 6/6/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 36 Date 6/6/90  
Mitigation Subject Habitat Enhancement Time \_\_\_\_\_  
Subject Update Performed by \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

USAF to provide for habitat enhancement.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: \_\_\_\_\_

Procedures: USAF to fund DNR to perform work.

Observations: Funding provided.

Recommendations: Revisit sites for additional clearing.

SIGNATURE Kerry K. Parkinson  
DATE 6/6/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 43 Date 6/4/90  
Mitigation Subject Fuel Tank Time \_\_\_\_\_  
Subject Update Performed by Containment/Separator \_\_\_\_\_  
K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Oil Spill Containment

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>—</u>
Not In Compliance	<u>—</u>	Ongoing	<u>√</u>
To Be Done	<u>—</u>	Not Done	<u>—</u>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>—</u>
Not In Compliance	<u>—</u>	Ongoing	<u>√</u>
Done	<u>—</u>	Complete	<u>—</u>
Not Done	<u>—</u>		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Daily inspection, draining of storm water, maintain valve in closed position.

Observations: No leaks/spills have occurred. Sign is posted, "Valve Must Remain Closed."

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 44 Date 6/5/90  
Mitigation Subject Hazardous Material Time \_\_\_\_\_  
Subject Update Performed by Storage Building \_\_\_\_\_  
K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

USAF to use EPA-approved storage building.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <u>---</u>	In Progress <u>√</u>
Not In Compliance <u>√</u>	Ongoing <u>---</u>
To Be Done <u>---</u>	Not Done <u>---</u>

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <u>√</u>	In Progress <u>---</u>
Not In Compliance <u>---</u>	Ongoing <u>√</u>
Done <u>---</u>	Complete <u>---</u>
Not Done <u>---</u>	

DESCRIPTION OF STATUS UPDATE

Location: Radar site.

Procedures: Provide EPA-approved storage building.

Observations: Building is in place and in use (see Appendix E.7).

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 45 Date 6/4/90  
Mitigation Subject Spill Plan Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

USAF to prepare and implement waste material spill plan (Spill Prevention, Control, and Countermeasure Plan).

PRIOR TO CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
To Be Done <input type="checkbox"/>	Not Done <input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>	<u>Mitigation Status</u>
In Compliance <input checked="" type="checkbox"/>	In Progress <input type="checkbox"/>
Not In Compliance <input type="checkbox"/>	Ongoing <input checked="" type="checkbox"/>
Done <input type="checkbox"/>	Complete <input type="checkbox"/>
Not Done <input type="checkbox"/>	

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Provide SPCC plan.

Observations: Plan issued 10/31/89. Plan was distributed to employees on checklist (attached).

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90



**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 67 Date 6/5/90  
Mitigation Subject Public Information/ Time \_\_\_\_\_  
Subject Update Performed by Education Signs \_\_\_\_\_  
K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Endangered Species Signs

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PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>√</u>
Not In Compliance	<u>—</u>	Ongoing	<u>—</u>
To Be Done	<u>—</u>	Not Done	<u>—</u>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>—</u>
Not In Compliance	<u>—</u>	Ongoing	<u>√</u>
Done	<u>—</u>	Complete	<u>—</u>
Not Done	<u>—</u>		

DESCRIPTION OF STATUS UPDATE

Location: Access road parking areas.

---

---

Procedures: USAF to fund DNR to install signs.

---

---

Observations: Funds provided. Signs not erected.

---

---

Recommendations: Place signs.

---

---

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 70 Date 6/4/90  
Mitigation Subject Education-Forest Resources Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Endangered Species Signs

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Post three signs.

Observations: Three signs posted – outside Guard House, inside Operations Building at sign-in book, inside Generator Building by office.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90



**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 67,70,71 Date 6/5/90  
Mitigation Subject Education-Forest Resources Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Endangered Species

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>---</u>	In Progress	<u>√</u>
Not In Compliance	<u>√</u>	Ongoing	<u>---</u>
To Be Done	<u>---</u>	Not Done	<u>---</u>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>---</u>
Not In Compliance	<u>---</u>	Ongoing	<u>√</u>
Done	<u>---</u>	Complete	<u>---</u>
Not Done	<u>---</u>		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site and access road parking areas.

Procedures: Post signs.

Observations: Signs in place at site - not in place at parking areas.

Recommendations: DNR to erect signs.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 74 Date 6/5/90  
Mitigation Subject Visual Impact - Antenna Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Antenna Warning Lights

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	—	In Progress	√
Not In Compliance	—	Ongoing	—
To Be Done	√	Not Done	—

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	√	In Progress	—
Not In Compliance	—	Ongoing	—
Done	—	Complete	√
Not Done	—		

DESCRIPTION OF STATUS UPDATE

Location: Radar antenna.

Procedures: Place lights.

Observations: Lights in place.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 79 Date 6/4/90  
Mitigation Subject Ordnance Storage Buildings Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Ordnance storage buildings to be undisturbed.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Site access road.

Procedures: Orientation of new employees includes reading the EA.

Observations: No evidence of recent disturbance.

Recommendations: Include specific instructions in new employee briefing.

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 85 Date 6/4/90  
Mitigation Subject Hazardous Waste Plan Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Waste materials to be stored in sealed containers.

PRIOR TO CHECK:

Mitigation Compliance  
In Compliance ---  
Not In Compliance ---  
To Be Done √

Mitigation Status  
In Progress √  
Ongoing ---  
Not Done ---

AFTER CHECK:

Mitigation Compliance  
In Compliance √  
Not In Compliance ---  
Done ---  
Not Done ---

Mitigation Status  
In Progress ---  
Ongoing √  
Complete ---

DESCRIPTION OF STATUS UPDATE

Location: Radar site hazardous materials storage building.

Procedures: Waste materials are placed in EPA-approved storage and transport drums.

Observations: An inventory of the building contents is included – accumulation and transport drums are not labeled.

Recommendations: Drums and other containers should be labeled. Transport drums must have D.O.T./EPA-approved labels (see examples in Appendix E.8).

SIGNATURE Kerry K. Parkinson  
DATE 6/4/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number	<u>85 (Continued)</u>	Date	<u>6/4/90</u>
Mitigation Subject	<u>Hazardous Waste Plan</u>	Time	<u></u>
Status Update Performed by	<u>K. Parkinson</u>		

Drums contain:

- Used oil filters
- Empty chemical cans and bottles
- Used absorbent material

55 gallon drums – 5  
Unlabeled pressurized gas acetone canister – 10 gallons  
~80 gallon recovery drum – 1

Insulating oil elec. – 1 gallon cans – 11 each  
Acetone – 2 gallons  
Grease – 4 to 6 gallon cans – 4 empty to ½ full  
Paint – 6 gallons plus or minus  
Propane – 5 gallons  
Gasoline – 2 gallon can ¼ full  
Alcohol – 1 gallon  
Trichloroethane – 1 gallon  
Paint thinner – 1 gallon  
Paint primer - <1 gallon  
Paint stripper - <1 gallon  
PVC primer and cement - <1 gallon  
Painting supplies  
Partially full to empty miscellaneous cans and buckets – 12-15  
Eye Goggles – 5  
Oily rags - <5

Generator Building:

Pig® Mat – oil absorbent mat – 600 ft<sup>2</sup>  
Cat litter – 25 lb bag ½ full  
Wheelbarrow, shovels  
Metal oily rag containers – 5 gallons – 3 each

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 88 Date 6/4/90  
Mitigation Subject Hazardous Waste Plan Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Hazardous Waste Management Plan to be prepared and implemented.

PRIOR TO CHECK:

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>		<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	—	In Progress	√	In Compliance	√	In Progress	—
Not In Compliance	—	Ongoing	—	Not In Compliance	—	Ongoing	√
To Be Done	√	Not Done	—	Done	—	Complete	—
				Not Done	—		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site – hazardous materials storage building and management plan.

Procedures: EPA – approved storage building to be used. A written hazardous waste management plan is in effect.

Observations: See Mitigation No. 85 – Also, the plan is broad in scope.

Recommendations: Modify plan to be site specific.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 96 Date 6/5/90  
Mitigation Subject Employment Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Local residents to be employed at radar facility.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input checked="" type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Radar facility site.

Procedures: Employ local residents.

Observations: Over 50% of the employees are local residents.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90

**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 102 Date 6/4/90  
Mitigation Subject Flammable Materials Time \_\_\_\_\_  
Subject Update Performed by Storage Building \_\_\_\_\_  
K. Parkinson \_\_\_\_\_

DESCRIPTION OF MITIGATION MEASURE:

Storage building criteria.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>—</u>	In Progress	<u>√</u>
Not In Compliance	<u>—</u>	Ongoing	<u>—</u>
To Be Done	<u>√</u>	Not Done	<u>—</u>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<u>√</u>	In Progress	<u>—</u>
Not In Compliance	<u>—</u>	Ongoing	<u>—</u>
Done	<u>—</u>	Complete	<u>√</u>
Not Done	<u>—</u>		

DESCRIPTION OF STATUS UPDATE

Location: Radar site.

Procedures: Obtain and install EPA-approved building.

Observations: The building is a prefabricated structure. Specifications are included under Mitigation 44. The structure is bolted to slab, has a 150-gallon sump, vent fan, and light.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/5/90



**TABLE 4.5**

**MITIGATION MEASURE  
STATUS UPDATE**

Mitigation Number 118 Date 6/6/90  
Mitigation Subject Boresight Tower Road Barrier Time \_\_\_\_\_  
Subject Update Performed by K. Parkinson

DESCRIPTION OF MITIGATION MEASURE:

Road to be blocked.

PRIOR TO CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input checked="" type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
To Be Done	<input type="checkbox"/>	Not Done	<input type="checkbox"/>

AFTER CHECK:

<u>Mitigation Compliance</u>		<u>Mitigation Status</u>	
In Compliance	<input checked="" type="checkbox"/>	In Progress	<input type="checkbox"/>
Not In Compliance	<input type="checkbox"/>	Ongoing	<input type="checkbox"/>
Done	<input type="checkbox"/>	Complete	<input checked="" type="checkbox"/>
Not Done	<input type="checkbox"/>		

DESCRIPTION OF STATUS UPDATE

Location: Limestone Forest and preconstruction site access road.

Procedures: Block with boulders and revegetate as agreed

Observations: No boulders have been displaced, and there is no evidence of vehicle traffic.  
The vegetation is well established.

Recommendations: None.

SIGNATURE Kerry K. Parkinson  
DATE 6/6/90

### E.3 Correspondence on Hazardous Waste Transportation and Disposal

December 22, 1989

Mr. Dick Waybright  
Senior Engineer  
Saipan Tracking Station  
PO Box 2150  
Saipan, MP 96950

Dear Mr. Waybright,

Unitek Environmental Services, Inc. is pleased to present for your consideration this proposal for the transportation and disposal of the following types of waste that the Saipan Tracking Station may generate as per your itemized list.

Our service encompasses the following items:

Specially trained and qualified environmental specialists proficient in hazardous waste management.

Waste profiling and/or analytical fingerprinting to comply with acceptance criteria of the Unitek hazardous waste storage facility and the eventual EPA-approved facility(ies) that will treat, recycle, or dispose the waste addressed in this proposal.

Temporary storage at Unitek's hazardous waste storage facility operating under the authority of the EPA, and in accordance with applicable federal, state, and local regulations.

Shipping containers, labels, and placards meeting U.S. Department of Transportation specifications.

Uniform Hazardous Waste Manifest completed in accordance with Guam Environmental Protection Agency and U.S. Department of Transportation requirements.

Mr. Dick Waybright  
December 22, 1989  
Page 2

Arrangements with ocean, highway, and/or rail carriers to transport the waste addressed in this proposal from Guam to EPA-approved hazardous waste treatment, recycling, or disposal facility(ies).

U.S. Customs clearance in the U.S. mainland.

Arrangements with EPA-approved hazardous waste treatment, recycling, or disposal facility(ies) to accept the waste addressed in this proposal for disposition.

Work performed in strict compliance with applicable federal, state, and local regulations.

The pricing is as follows:

<u>TYPE OF WASTE</u>	<u>PRICE PER 55 GALLON DRUM</u>
Used Diesel Generator Air Filters	\$395
Used Diesel Generator Lube Oil Filters	\$395
Used Diesel Generator Fuel Oil Filters (Must Not contain Free Oil)	\$395
Used Oil Absorbent Pads	\$925
Used Transmitter Water Filters	\$395
Oily rags	\$925
Empty Diesel Generator Coolant Containers	\$395
Empty Diesel Generator Coolant Conditioner Containers	\$395

Mr. Dick Waybright  
December 22, 1989  
Page 3

Empty Aerosol Paint Cans	\$395
Empty Aerosol Solvent/Cleaner Cans	\$395
Empty Paint Cans (Enamel and Water Base)	\$395
Empty Solvent/Cleaner Containers	\$395
Empty Copy Machine Toner Bottles	\$395
Used Fax Machine Toner Cartridges	\$395
Empty Solder Flux Cans	\$395
Empty Freon Containers	\$395

The copper Braid Solder Wick with Tin/Lead Solder will be \$395 per 5 gallon drum.

All transportation from the Saipan facility to the Port of Guam can be provided by Unitek on a Time & Materials basis, or be the responsibility of the Tracking Station. Once the shipment reaches the Port of Guam, Unitek will assist U.S. Customs for entrance and will then take title to the waste.

Since the Tracking Station will be packaging their own waste, Unitek will furnish D.O.T containers by exchanging new empty containers for the full containers that will be periodically transported.

This quotation will remain effective for a period of one (1) year from the date of this letter.

Respectfully,

Alan D. Smithwick  
Manager, Guam Services

ADS/rck

**Unitek Environmental Services, Inc.**

P.O. Box 24607 (MPO)  
Barrigada, Guam 96921

Telephone: (671) 477-4996  
Fax Phone: (671) 477-3708  
24 Hr. Call: (671) 632-7423

**FAX TRANSMISSION  
PAGE 1 OF 1**

**January 5, 1990**

**TO: Dick Waybright**  
**FROM: Alan Smithwick**  
**RE: Saipan Tracking Station Waste Consolidation**

From the listing I FAXed you yesterday, all types of waste that are priced \$395 per 55 gallon drum can be consolidated together into the same drums.

Please call if you have any more questions.

9 77 □

ITT/Federal Electric Corporation  
P.O. Box 5728  
Vandenberg AFB, CA 93437

19 January 1990

MA480-S9-020

Alan D. Smithwick  
Manager, Guam Services  
Unitek Environmental Services, Inc.  
P.O. Box 24607 (MPO)  
Barrigada, Guam 96921

Dear Mr. Smithwick,

I have been asked by Dick Way bright to help our purchasing staff develop a statement of work for a hazardous waste transportation contract for the Saipan Tracking Station. In reviewing the fax communications between yourself and Mr. Waybright, I have developed a number of questions:

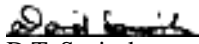
1. What type of EPA permit(s) does your company hold? What are their numbers?
2. What type of insurance does you company carry? What is the value of the coverage? Who issued your company the policy and what is the policy number?
3. What are the qualifications and training of the staff that will be assisting the Saipan Tracking Station label and fill out the manifests?
4. What are estimates for the time and material requirements to ship the hazardous waste from the Saipan Tracking Station to your facilities on Guam?
5. ITT/FEC would like a listing of the hazardous waste treatment, disposal and recycling facilities where Saipan Tracking Station hazardous waste will be going. What types of waste will be going to each facility? Can ITT/FEC specify what facilities to use or not to use?
6. How are the hazardous wastes from the Saipan Tracking Station going to be shipped? Where are the points of entry for the hazardous waste?
7. What are the costs for disposing of 30 gallon drums instead of 55 gallon drums?
8. What will your company charge ITT/FEC for new drums?

9. If an analytical fingerprinting is done on a drum of hazardous waste, who will be doing the testing? What type of turn around time can ITT/FEC expect? What are the expected cost for analysis?

I can be reached at the following numbers and address:

ITT/Federal Electric Corporation  
P.O. Box 5728  
Vandenberg AFB, CA 93437  
Phone number (805) 866-4666.  
Fax number (805) 734-3873.

I look forward to hearing from you.



D.T. Savinsky  
Environmental Health Coordinator

cc: Saipan Tracking Station (D. Sanders)  
ITT/FEC (J. Pilson)



#### E.4 Correspondence on Reporting Wildfires by Telephone

## PACBAR III Radar Site Request for Frequency Use

Edward Manibusan, ESQ  
Director, Department of Public Safety  
Commonwealth of the Northern Mariana Islands  
Saipan, CM 96950

1. As discussed with you on 22 Feb 88, our agency needs written concurrence to use your civil- band frequency. This request supports one of the radar site permit requirements to maintain 24 hour radio contact for fire reporting. As your fire/police net is overcrowded our site personnel will be directed to use the Civil Defense channel only when telephone services are not working.
2. Accordingly, please reply with a letter that documents your agreement with our shared usage on this radio net; also, please specify the principal function or title of the net, and its specific operating frequency. If you could also attach a copy of your license or other authority to use that same specific radio frequency, it would help us register our operation with CINCPAC and the Air Force.
3. If you have any questions, please call Karol Rogers, 805-866-7757.

SIGNED

THOMAS W. FREY  
Chief, Data Transfer Support Branch

cc: WTR/SFI  
SD/CNSC



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE SYSTEMS DIVISION (AFSC)  
LOS ANGELES AIR FORCE BASE, PO BOX 92866  
LOS ANGELES, CA 90009-2866

REPLY TO

ATTN OF: CNSE

11 Jul 89

SUBJECT: Saipan (PACBAR) Tracking Station

TO: Coastal Resource Management Office

1. Reference: Coastal Permit Decision SMS-85-X-82, Radar Tracking Station – US Air Force.

2. Condition G of referenced permit requires our facility operator to maintain 24 hour FM radio communications with the Saipan Fire Division in order to “report any and all wildfires observed from the radar facility.” To meet this condition, frequency authority must be obtained from the Saipan Fire Division – Department of Public Safety (DPS) in writing along with a copy of their radio frequency license.

3. A letter (Atch) requesting use of the DPS radio frequency was sent to DPS on 14 Mar 89. Also, subsequent meetings and telecons which included an October 1988 meeting between Mr. Manibusen, Director DPS and Mr. Cobb, FEC Shift Supervisor were held to discuss this matter. The DPS has stated that there frequency net for monitoring forest fires and poachers.

4. Our site operations procedures call for immediate telephone contact with DPS if wildfires or poachers are seen. We believe this to be sufficient. Therefore, we request relief from Condition G of the above referenced Coastal Permit Decision for 24 hour FM radio communications with SFD.

5. Please direct questions to Capt Jeff Witko, (213) 643-1988 or Mr. Dan Sanders, ITT/FEC, 322-0570

TAREK C. ABBOUSHI, Capt, USAF  
Saipan Tracking Station Program Manager

Atch  
WTR/SFDS Ltr

cc: DEV  
WTR/SFI/SFS  
WSMC/END  
FEC

September 19, 1989

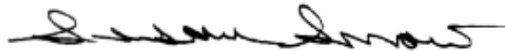
Tarek C. Abboushi, Captain, USAF  
Saipan Tracking Station Program Manager  
Department of the Air Force  
Headquarters Space Systems Division (AFSC)  
Los Angeles Air Force Base, PO Box 92960  
Los Angeles, CA 90009-2960

Dear Captain Abboushi,

In response to your letter of July 11, 1989 and your visit to our office I am writing to inform you that Condition G of your coastal permit SMS-85X-82 is hereby waived. I spoke with Renee Thakali, CNMI Forester regarding this condition and she agreed that adequate communication exists between the radar station and the Fire Department/Public Safety.

Thank you for your cooperation in this issue. Please feel free to contact our office should you have further concerns regarding your permit.

Sincerely,



SUSAN A. SNOW  
Acting Administrator  
Coastal Resources Management Office

Cc: Mr. Dan Sanders, ITT/FEC

## E.5 Radiofrequency Emissions Test Report and Correspondence

## TEST REPORT

**LOCATION:** Saipan Tracking Station, Saipan, Marianas Islands

**SUBJECT:** Personnel and Surrounding Public Access Areas Non-Ionizing Radiation  
Hazard Measurement

**RFML JOB NO:** 40127

**RANGE ORDER:** CH210

**DATE:** 27 February 1990

**PREPARED BY:** C.J. Sinderhan

**ASSISTED BY:** J. Murry

**APPROVED BY:** D. D. Howe  
D.D. HOWE, Project Team Leader  
Field Test Branch  
R.F. Measurements Laboratory

Prepared by:

ITT Federal Electric Corp.  
WTR Division  
P.O. Box 5728  
Vandenberg Air Force Base, CA 93437

Prepared for:

United States Air Force  
Western Space & Missile Center (AFSC)  
Technical Services Division (SFS)  
Vandenberg Air Force Base, CA 93437

27 February 1990

1. **IDENTIFICATION OF TEST:**

The RF Measurements Laboratory (RFML) conducted the initial Non-Ionizing Radiation Hazard Survey of the Saipan Tracking Station, Saipan, Mariana Islands, on 13 February 1990.

2. **PURPOSE OF TEST:**

Evaluation.

3. **TEST OBJECTIVE:**

Determination if the restricted areas normally occupied by the site personnel during operational and maintenance support requirements are within the Maximum Permissible Exposure Limits (PEL'S) of 10 mW/cm<sup>2</sup> per AFOSH STD. 161-9, dated 12 Feb 1987. Also the unrestricted public access area surrounding the site was checked for Maximum PEL'S of 5 mW/cm<sup>2</sup> per AFOSH 161-9.

4. **DESCRIPTION OF UNIT UNDER TEST:**

The Saipan Tracking Station has two transmitters that operate alternately at a 160 PRF with a peak output power of 3840 watts each, which feeds a 30 ft. diameter parabolic antenna. Antenna gain is 52.5 dB and has a half power beam width of 0.4°. The radar operates in the 5.4 to 5.65 GHz frequency range, with assigned frequency of 5.55 GHz.

The testing was conducted with both transmitter outputting maximum power and at a maximum pulse width.

5. **TEST RESULT SUMMARY:**

a. Measurements were performed at the following areas:

- (1) Along top of ridge to east of site.
- (2) On top of Mt. Tagpochau
- (3) Operators console.
- (4) Transmitters room.
- (5) Top of operations building.
- (6) Microwave oven.

b. Test results.

- (1) See figure 1.
- (2) See figure 2.

- (3) With antenna pointed over the top operator console only 0.1 mW/cm<sup>2</sup> was measured.
- (4) No measurable labels were noted at the transmitter cabinets and waveguide area.
- (5) The top of the operational building measured 10 mW/cm<sup>2</sup> at 2° EL and 222° AZ. Note the operations building is the tallest building on site.
- (6) The microwave oven did not register any leakage.

c. Recommendations/Summary.

It is recommend that the radiation limits be placed into computer using figure 1 as a hide for were the hot spots are for unrestricted and 10 cW/cm<sup>2</sup> for restricted areas).

Note the is site located on the second highest mountain on the island and only the ridge and Mt. Tagpochau are higher.

**6. TEST FACILITY AND TEST PROCEDURES:**

- a. Testing was conducted at Saipan Tracking Station, Saipan, Mariana Islands.
- b. Site contact was Dan Sanders, IS232, Redball 85-77.

**7. TEST CONFIGURATION:**

See figure 1.

**8. TEST EQUIPMENT:**

<u>Description</u>	<u>Mfg.</u>	<u>Model</u>	<u>Serial #</u>	<u>Cal. Due</u>
Monitor, Electromag- Radiation	Narda	8316A	15013	Jun 91
Probe, Isotropic	Narda	8323B	13081	Jun 91

**9. TEST RECORDING AND LOGS:**

Not applicable.

**10. ENVIRONMENTAL:**

The weather was sunny some high clouds, temperature in the low 80's and a strong breeze.

**11. TEST ANALYSIS:**

Not applicable.

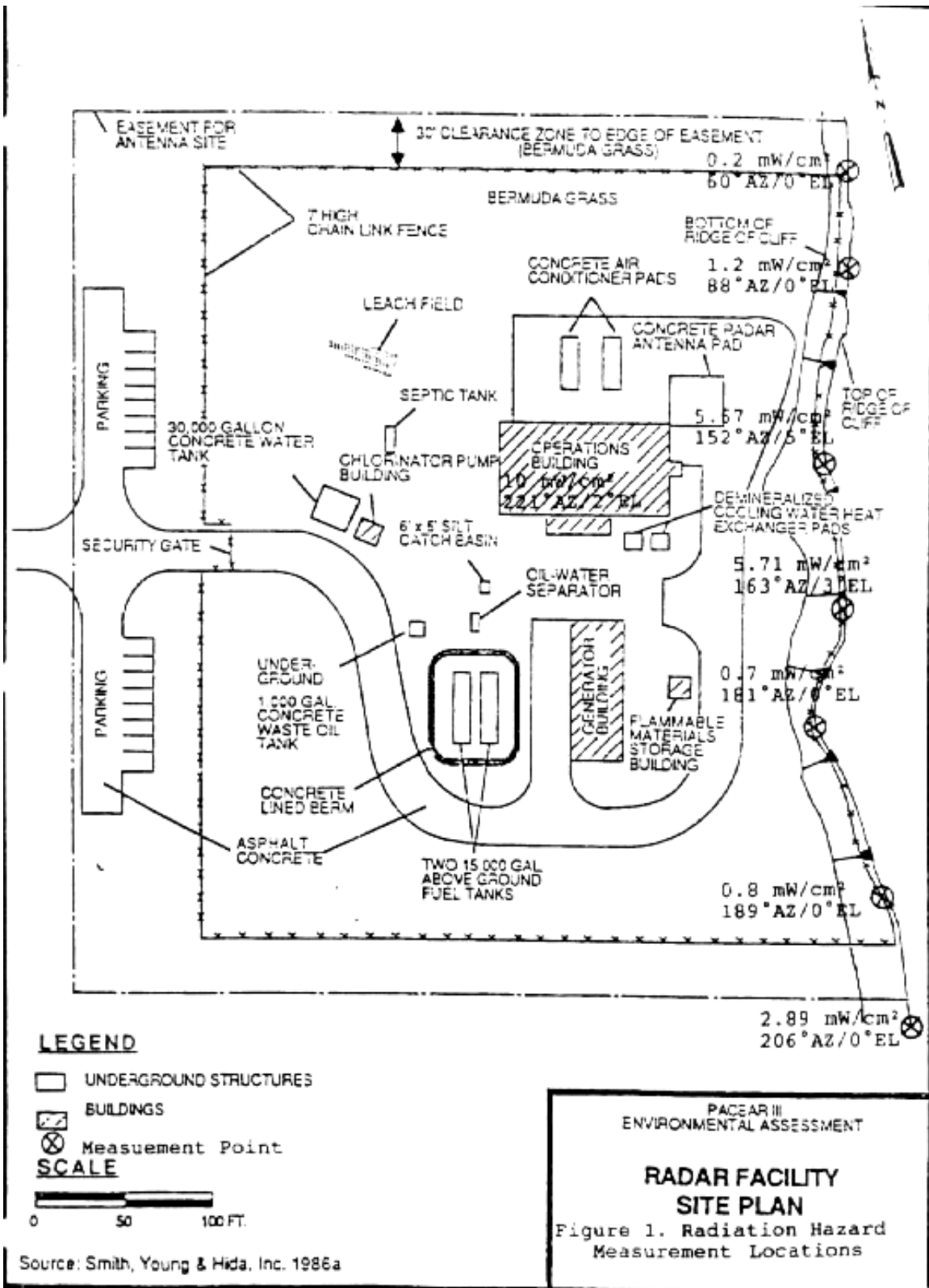


**12. CERTIFICATION:**

Test results are authentic, accurate, Current, and in accordance with related specifications and test plans as applicable.

Although QA did not witness the test, the Test Engineer verifies that the QA function(s) involve in the test was accomplished.

  
**TEST ENGINEER, C. J. SNIDERHAN**



EASEMENT FOR ANTENNA SITE

30' CLEARANCE ZONE TO EDGE OF EASEMENT (BERMUDA GRASS)

0.2 mW/cm<sup>2</sup>  
60°AZ/0°EL

7' HIGH CHAIN LINK FENCE

BERMUDA GRASS

BOTTOM OF RIDGE OF CLIFF

CONCRETE AIR CONDITIONER PADS

1.2 mW/cm<sup>2</sup>  
88°AZ/0°EL

PARKING

30,000 GALLON CONCRETE WATER TANK

LEACH FIELD

SEPTIC TANK

CONCRETE RADAR ANTENNA PAD

5.67 mW/cm<sup>2</sup>  
152°AZ/5°EL

TOP OF RIDGE OF CLIFF

OPERATIONS BUILDING

CHLORINATOR PUMP BUILDING

DEMINERALIZED COOLING WATER HEAT EXCHANGER PADS

SECURITY GATE

6' x 6' SILT CATCH BASIN

OIL-WATER SEPARATOR

5.71 mW/cm<sup>2</sup>  
163°AZ/3°EL

PARKING

UNDERGROUND 1,500 GAL CONCRETE WASTE OIL TANK

GENERATOR BUILDING

FLAMMABLE MATERIALS STORAGE BUILDING

0.7 mW/cm<sup>2</sup>  
181°AZ/0°EL

CONCRETE LINED BERM

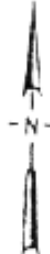
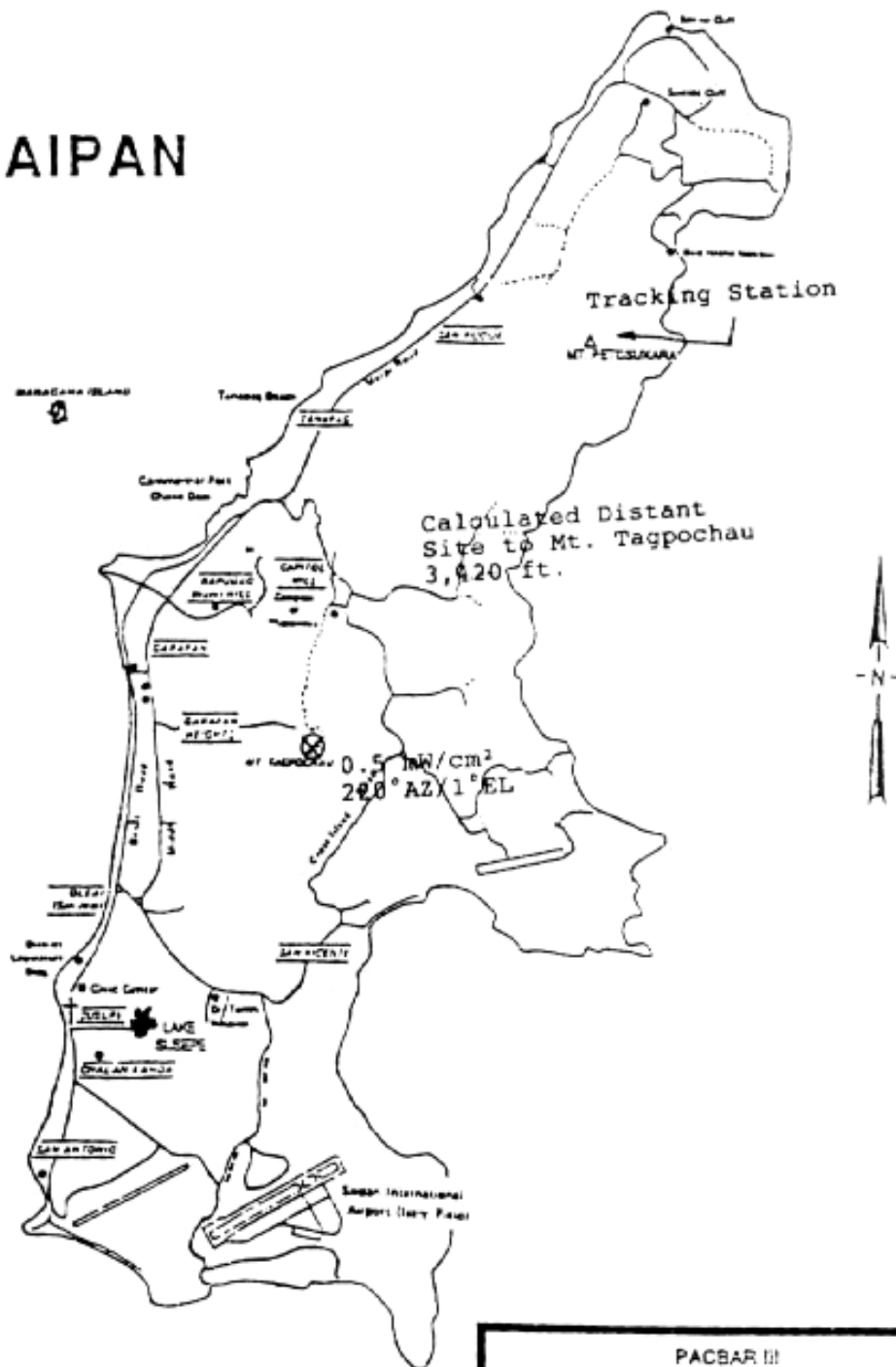
ASPHALT CONCRETE

TWO 15,000 GAL ABOVE GROUND FUEL TANKS

0.8 mW/cm<sup>2</sup>  
189°AZ/0°EL

2.89 mW/cm<sup>2</sup>  
206°AZ/0°EL

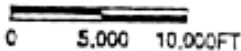
# SAIPAN



† CNMI Capital

SOURCE: Marianas 1978

SCALE



PACBAR III  
ENVIRONMENTAL ASSESSMENT

## PROJECT LOCATION

Figure 2. RAD HAZ MEASUREMENT  
To Mt. TAGPOCHAU



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS SPACE DIVISION (AFSC)  
LOS ANGELES AIR FORCE STATION, PO BOX 92960  
LOS ANGELES, CA 90009 2960

REPLY TO

ATTN OF: ESMG/SGO (Capt Martin, 494-5981)

2 April 1990

SUBJECT: Trip Report for Surveillance of Saipan Tracking Facility

TO: ESMC/SG

1. Purpose and Background: The purpose of the trip was to provide radio frequency and ionizing radiation surveillance of the internal spaces of the newly constructed Saipan Tracking Facility, Saipan, CNMI. The unit previously operated at Cape Canaveral Air Force Station as the PACBAR III radar under use authorization C-RS-10010 and Eastern Test Range Operating Instruction 45-22-00-00. The unit is currently pre-operational, scheduled for operation later this year. Testing of the radar dish was accomplished by another organization. Support of the site is being negotiated with Anderson Air Force Base, Guam.

2. Traveler: Capt. David L. Martin, ESMC Radiation Protection Officer.

3. Itinerary: 26 - 28 FEB : Melbourne, FL - Saipan, CNMI  
01 - 05 MAR : Saipan, CNMI  
05 - 06 MAR : Saipan, CNMI - Melbourne, FL

4. Key Personnel Contacted: Maj D. Madison Site Commander  
Dan Sanders Federal Electric Corp  
Dick Wayright Lead Engineer, FEC

5. The instrumentation data are forwarded as attachment 1.

6. The facility sketch and survey results and recommended actions are forwarded as attachment 2.

7. Please refer any questions to me at 494-5981.

David L. Martin, Capt, USAF, BSC  
Health Physicist  
ESMC Radiation Protection Officer

2 Atch

1. Info data
2. Sketch & survey

Cc: Saipan Track. Fac. w Atch  
ESMC/DVP w Atch  
WTR/SFI w Atch

## INSTRUMENTATION

### 1. IONIZING RADIATION

- a. Victoreen 471 Serial 756  
PBEL/E #44311 ID #621827  
Calibration: 06 OCT 89 Due: 04 APR 90
- b. Victoreen 440 RF/C Serial 3399  
PMEL/E #42267 ID# A615357  
Calibration: 30 OCT 89 Due: 25 OCT 90

### 2. RADIOFREQUENCY RADIATION

- a. NARDA Model 8611 Serial 02155  
PMEL/E #36746 ID# A622392  
Calibration: AUG 89 Due: AUG 90

## SURVEILLANCE RESULTS

### 1. System operating parameters are as follows:

- a. Power (Peak) – 800 kWatts
  - b. Power (Average) – 7.68 kWatts (at 320 pulses per sec)
  - c. Tube Voltage – 82 kVolts
  - d. Effective Tube Voltage – 27.3 kVolts
  - e. Frequency – 5500 MHz
  - f. Permissible Exposure Limit (RF) – 5.0 mwatts/cmB2
  - g. Permissible Exposure (ionizing radiation) – 500 mrem/yr
- Note: This is the limit for non-radiation workers

### 2. Survey results:

#### a. Ionizing Radiation

(1) All high voltage equipment inside the transmitter room was surveyed for hazardous emissions of X-rays. The interlocks were all tested and found to be working properly. Particular attention was paid to seals and gaskets around the Klystron to check for leakage.

(2) The highest dose rates seen were 0.2 mrem per hour taken with the doors/covers on the cabinets, interlocks functional. This dose rate was seen at the locations shown on the sketch provided as the last page of this attachment. These measurements were taken in contact with the door, and dropped to background at approximately 6 inches from the surface. This dose rate is not in excess of that permitted by Air Force Regulations or Federal Law. At this rate, if a person spent a full year's working time at this location, he/she would receive approximately 400 mrem exposure.

(3) With the equipment energized, doors open or covers off, interlocks defeated, the maximum levels seen were 0.25 mrem/hour at the face of the equipment. This level is not considered excessive but does necessitate the placing of an X-ray warning sign on the inside of the doors. Theoretically, a person remaining in this location could receive a dose equal to the limit for the general public over the course of a year. This is highly unlikely.

(4) Recommendations: Place X-ray warning signs on the inside of any cabinet door/panel which contains high voltage, and could be operated with the interlocks defeated.

#### b. Non-ionizing Radiation

(1) All sources of non-ionizing radiation inside of the transmitter room, along the wave guides and inside of the radar turret were surveyed for radiofrequency radiation leakage. Particular attention was given to the connectors of the wave guides, dummy loads and seals and gaskets in the vicinity of the klystrons. The maximum reading at any point in the transmitter room and inside of the radar turret was 0.11 mwatts/cmE2. At the 3<sup>rd</sup> wave guide connector (fixed wave guide) after leaving the transmitter room, leakage of approximately 1.0 mwatt/cmE2 was noted (both wave guides connectors at that location). This level is not in excess of the Permissible Exposure Limit, and from a health and safety standpoint, no remedial action is required.

(2) It was noted that a Radiofrequency Radiation warning sign is missing from the turret ladder nearest the building. All external warning lights were observed to be working properly.

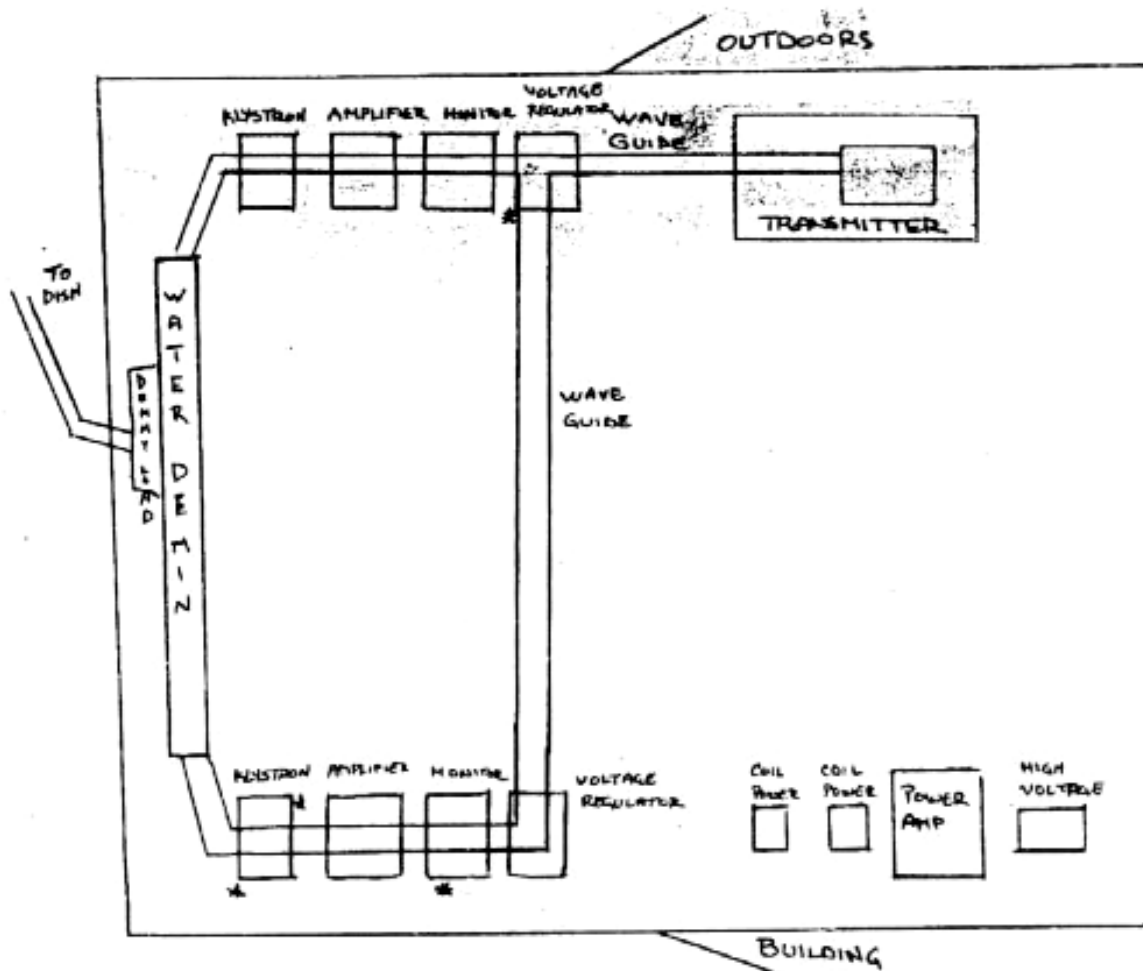
(3) Recommendations: Put an RF warning sign on the turret ladder nearest the building. Investigate whether or not the connections to the wave guides (3<sup>rd</sup> connectors after leaving the building) should be repaired. As stated in paragraph (1) above, action is not required from a health and safety aspect, but could possibly be indicated from an engineering standpoint.

c. General observations:

(1) I have been told the Anderson AFB, Guam will be providing BioEnvironmental Engineering support to the site, and that the particulars of this support are being worked out now. I would be interested in whether or not this support will include radiation monitoring if necessary (both ionizing and nonionizing radiation).

(2) The diesel generator facility seems to be awfully loud (inside the building). I am sure that the levels are in excess of 84 dBA. In addition, the large amounts of fuel that are required to run the generators would make a major spill a major undertaking. (I am not trying to tell BioEnvironmental Engineering their job, I am just making an observation).

3. I would like to express my thanks to all site personnel for their kind assistance. They made my job much easier.



TRANSMITTER ROOM (NOT TO SCALE)

\* POINT OF HIGHEST DOSE RATES



## E.6 Status Report on Wildlife Enhancement



10000

Saipan Northern Islands Soil and Water Conservation District  
Department of Natural Resources  
Commonwealth of the Northern Mariana Islands  
Capitol Hill  
Saipan, MP 96950



Cable Address:  
Gov. NMIS Saipan  
Telephone 322-9830/9834/3415

MEMORANDUM

DATE : June 05, 1990  
TO : US Air Force  
FROM : Chairman, Saipan & Northern Islands  
Soil & Water Conservation District  
SUBJ. : Wildlife Enhancement Project Status Report

The Memorandum of Understanding initiating the Wildlife Enhancement Project was signed on November 2, 1988. Mobilization proceeded through May 08, 1989 when Rodney T. Camacho was hired as the Soil and Water Conservation Technician to oversee the project. A total of 10 Summer Trainees were hired on June 26, 1989. Two trainees worked for 7 weeks while the remaining 8 worked for 9 weeks. During the summer a total of 32 plots were cleared and planted. The remaining the 2 plots were cleared after the summer program was completed by Rodney T. Camacho and John Mettao, a summer trainee that was extended to full time. Personnel problems surfaced in of November, 1989. It was brought to our attention by the Department of Natural Resources that on April 24, 1989 a memorandum was issued from the Acting CNMI Personnel Officer prohibiting Commonwealth employees from being supervised by non CNMI employees. It was our understanding and agreement, since the beginning of this project, to utilize the USDA Soil Conservation Service (SCS) Office for day-to-day supervision of these employees.

With the loss of SCS supervision, we have had increasing difficulty in supervising field work and numerous spot checks of the field work by SCS reported little work being accomplished. On February 23, 1990, the District requested SCS to provide "daily technical assistance" in monitoring the Air Force Wildlife Plots. The SCS reposed occasions when the employees were not on site and work not being accomplish as agreed. On March 6, 1990, the District wrote to Mr. Rodney T. Camacho reprimanding him from the poor work being done. This was precipitated by a February 28, 1990, memorandum from the Chief, Fish and Wildlife expressing their dissatisfaction of the project maintenance.

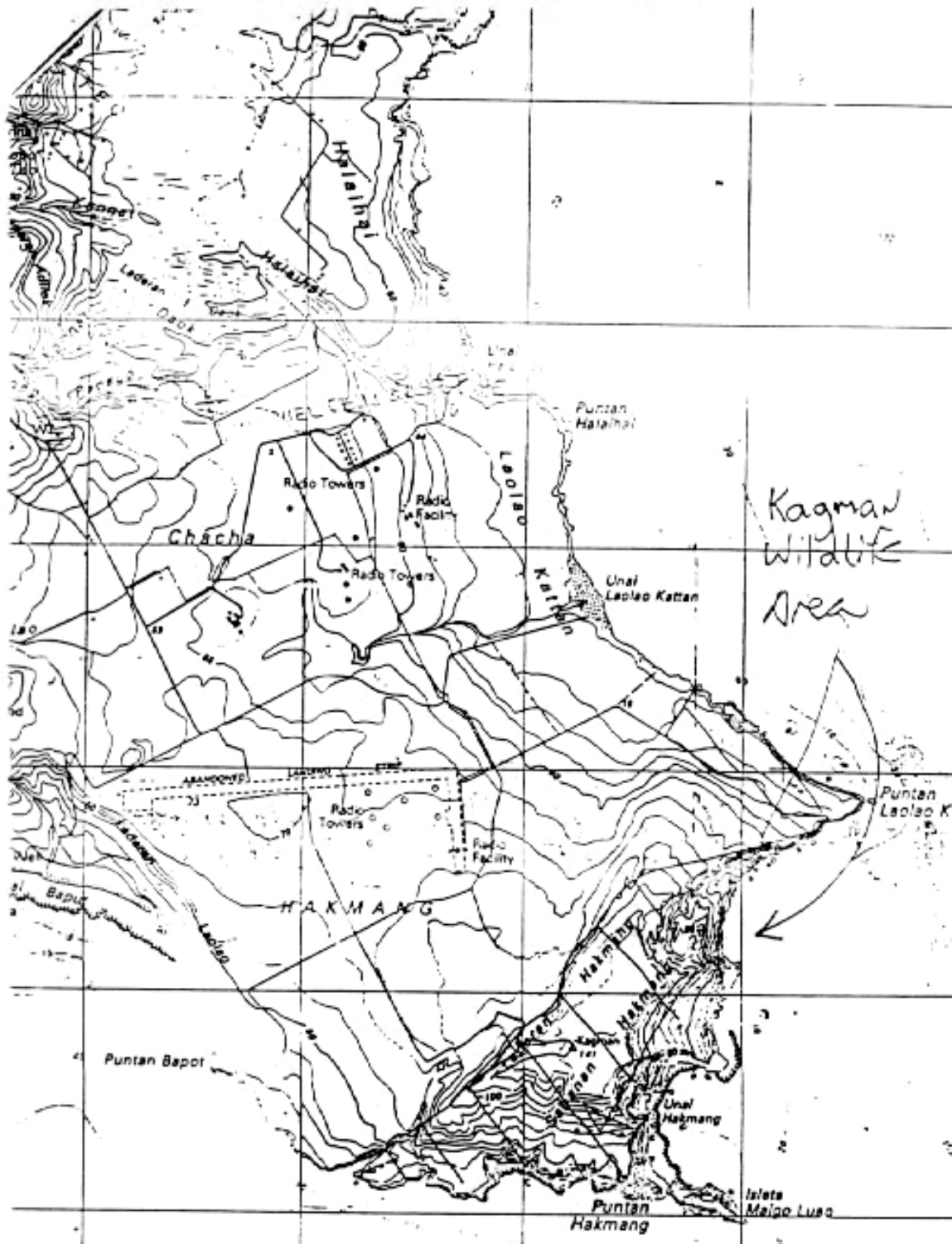
Although the District has tried and tried, the inability of the SCS to provide direct supervision to the employees has resulted in a most difficult situation as they were the only people capable of day-to-day knowledge of the field work. On May 4, 1990, Rodney T. Camacho as not renewed on his limited term appointment because of the dissatisfactory work performance. Mr. John Mettao was left to continue the work by himself.

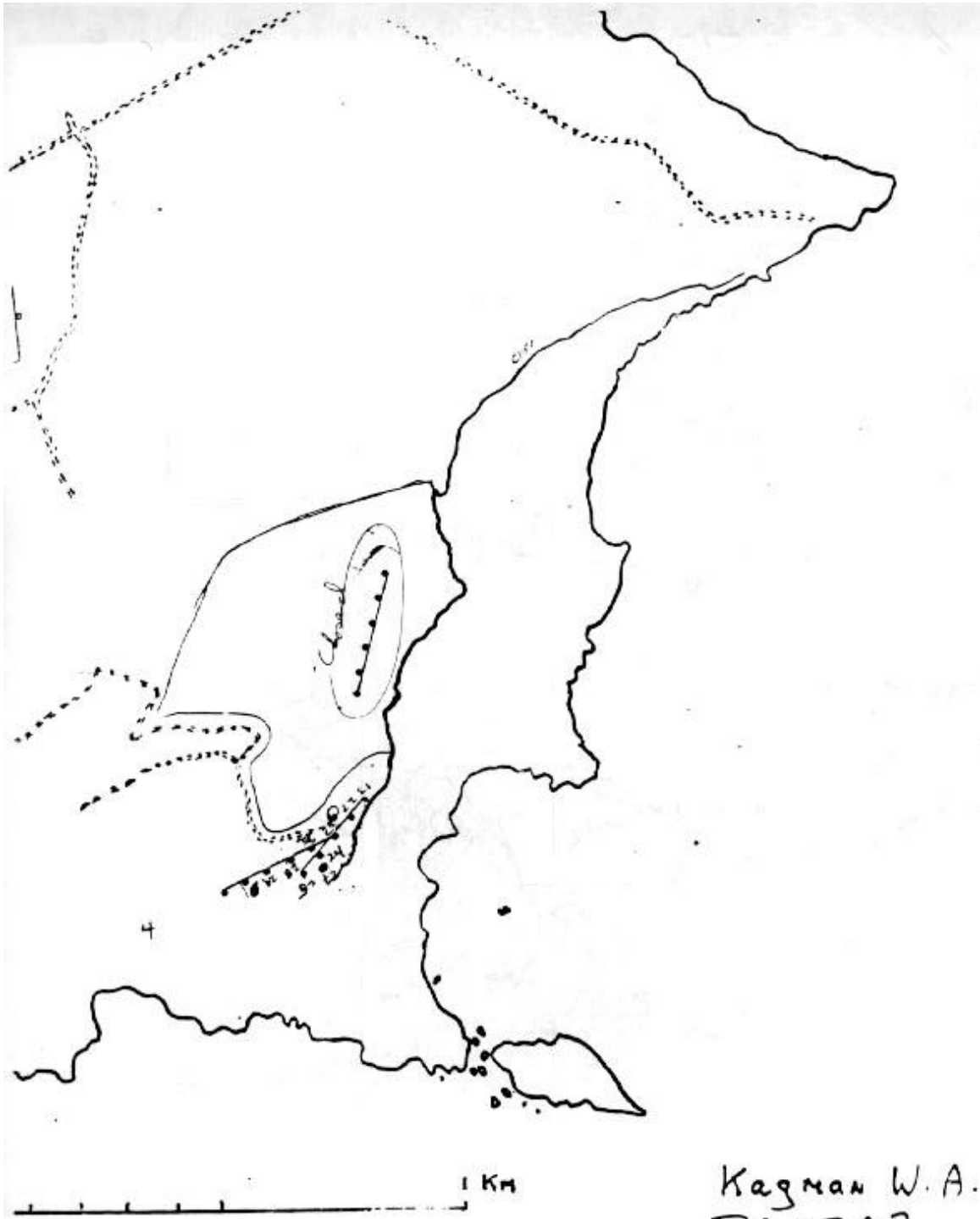
The current status of the plots is as follows; of eh original 540 trees planted, 33 trees have been lost. Only one plot has substantial losses that will require replanting this season. Twenty five plots have been cleared in the past 4 months. We are now finalizing the clearing of the remaining 9 plots and have initiated an herbicide spraying program to maintain all the original 34 plots.

A meeting was held in January with Fish and Wildlife, Forestry and SCS to determine the location of the remaining 34 plots. It was agreed that there will be 10 plots developed in Bird Island, 8 plots in Kalabera, 8 plots in Naftan and 8 plots near the Last Command Post.

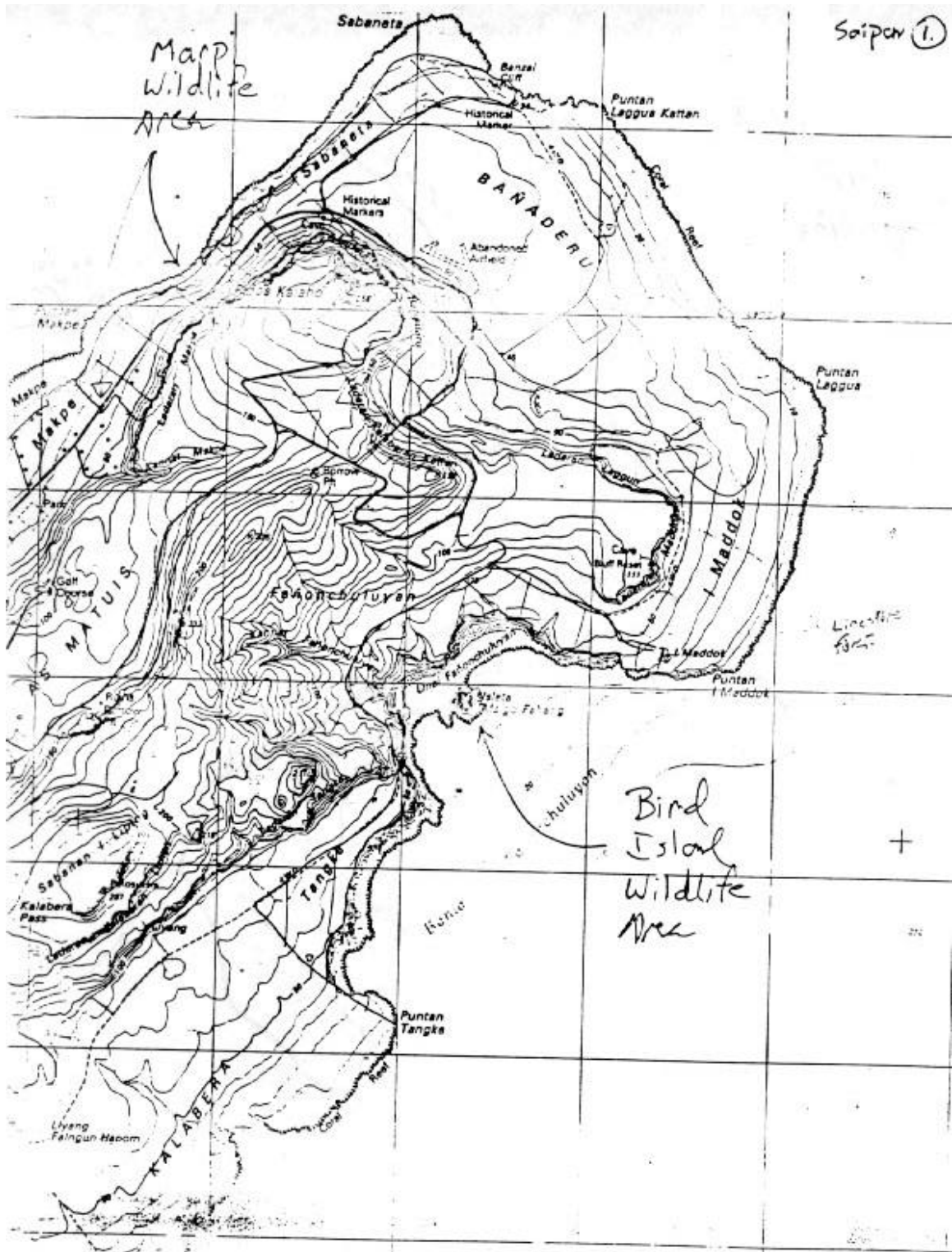
On March 15, 1990, an additional increment of \$24,000 was requested to continue the program. To date this money has not been received and all preparation for the summer program has been discontinued. We have not been able to buy the herbicide, tools, etc. for the program and in fact no longer have funds to pay the trainees, was projected to begin on June 18, 1990 for a period of 10 weeks. However, due to the non-arrival of funds, this program has not been developed.

  
Isidoro T. Cabrera  
Chairman

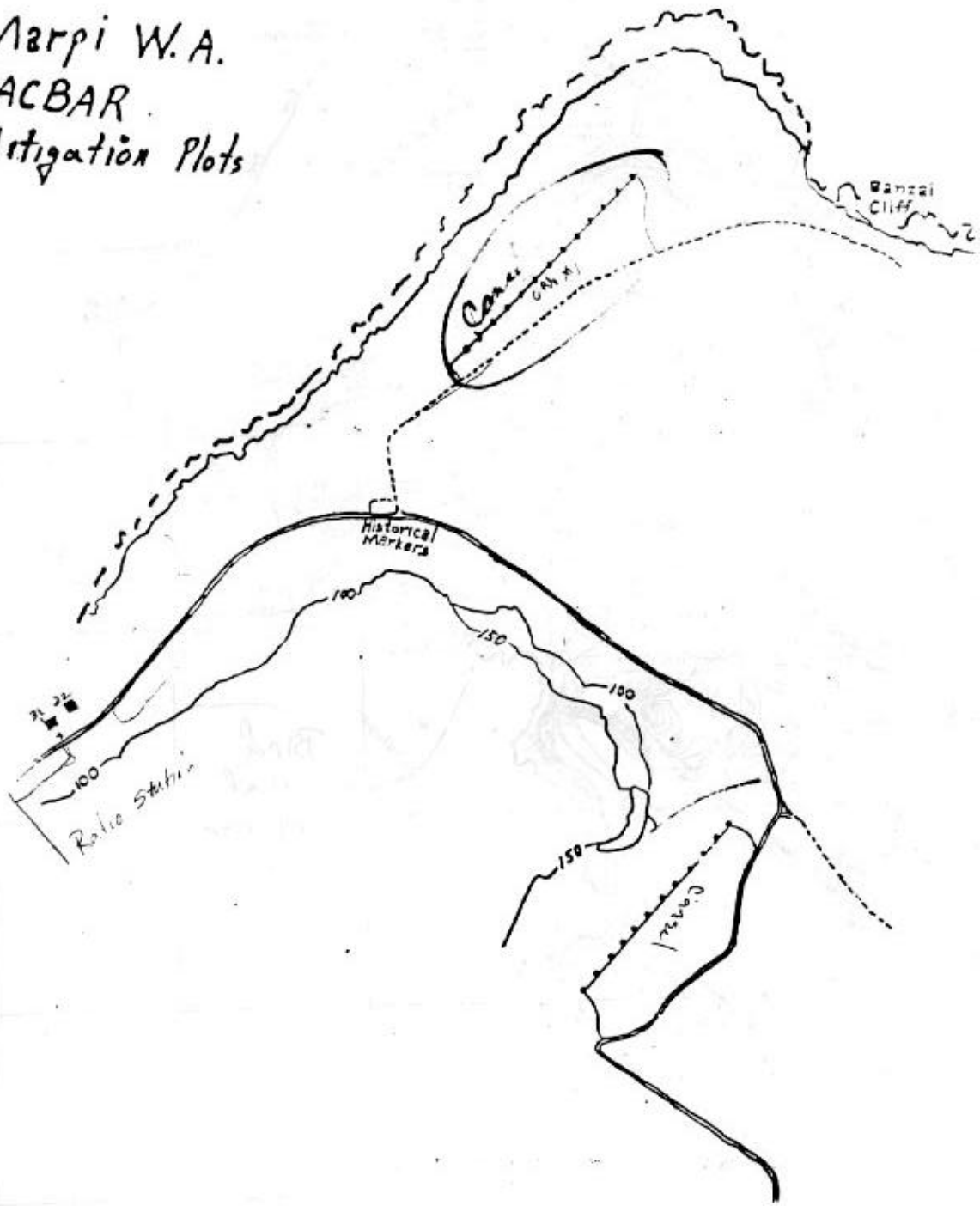


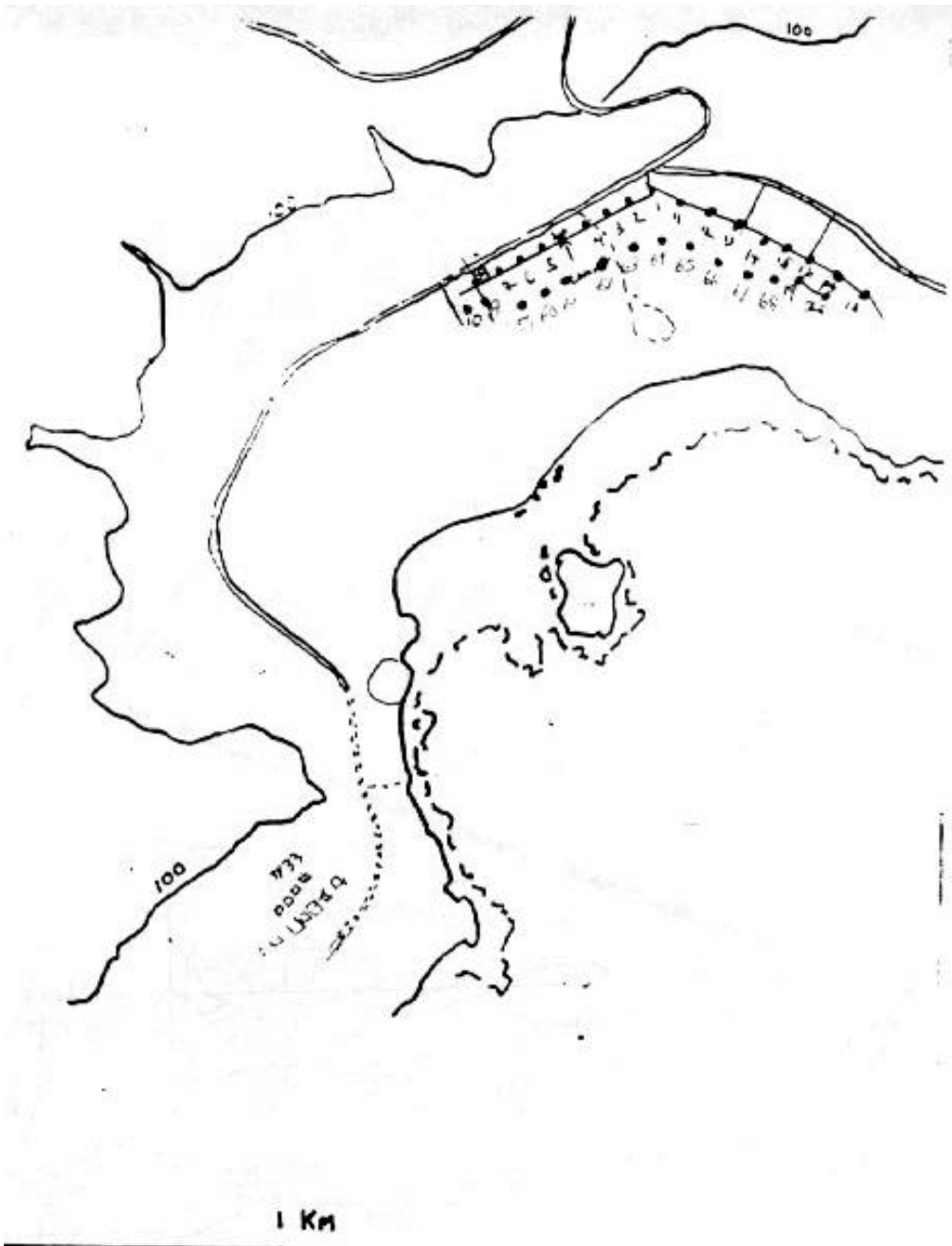


Kagman W.A.  
PACBAR  
Mitigation



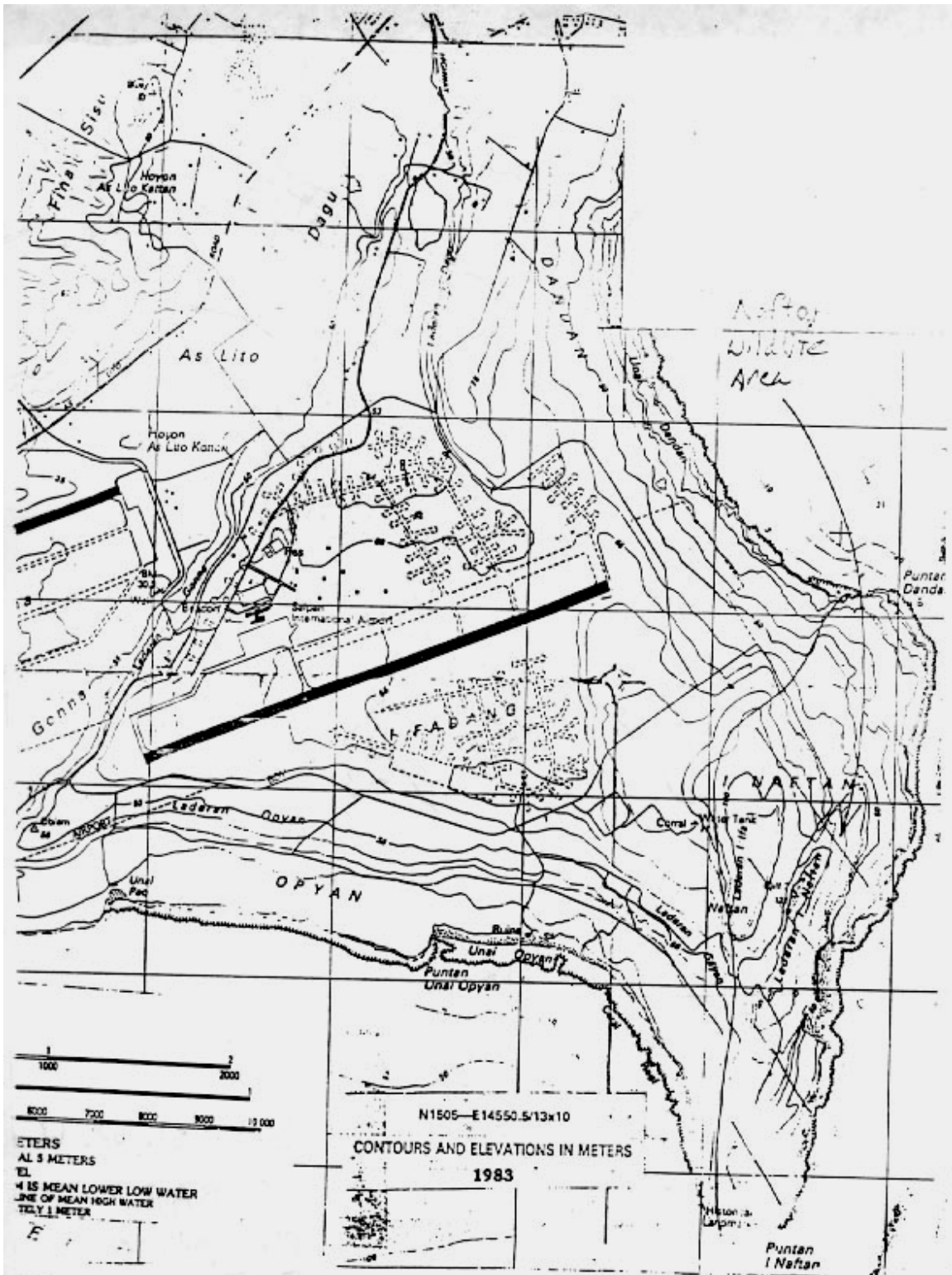
Arpi W.A.  
'ACBAR  
Irrigation Plots



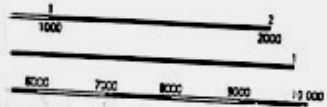


Bird Island W.  
PACBAR  
Mitigation  
Plan





Nafay  
WILDLIFE  
AREA

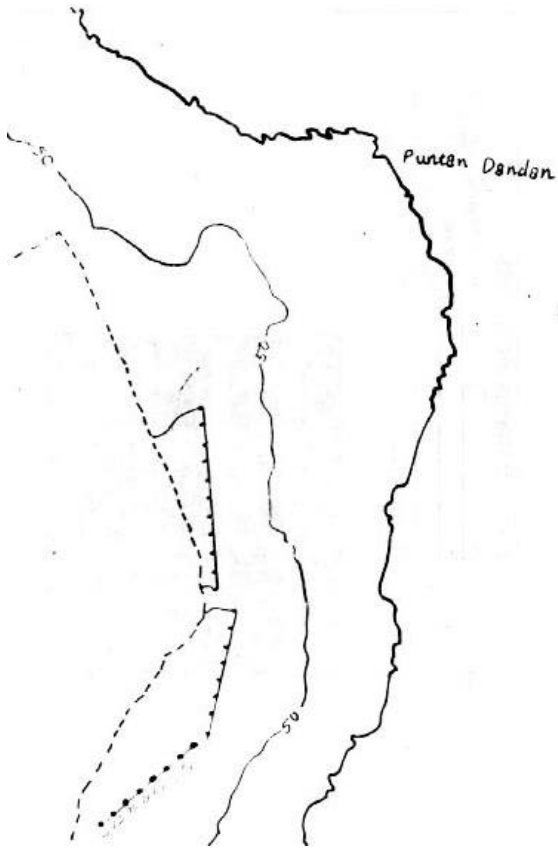


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PACBAR  
Mitigation Plan

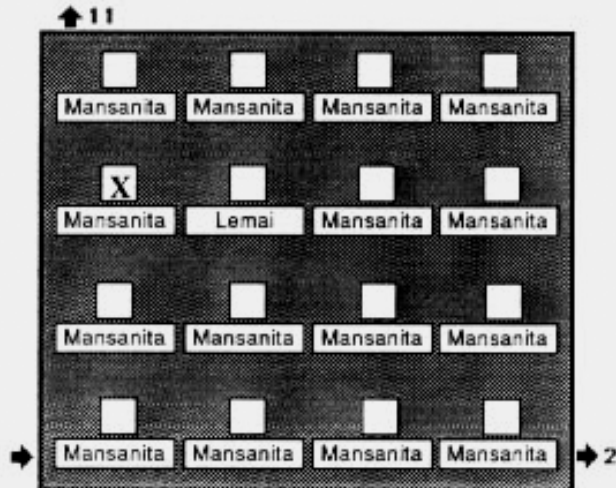


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

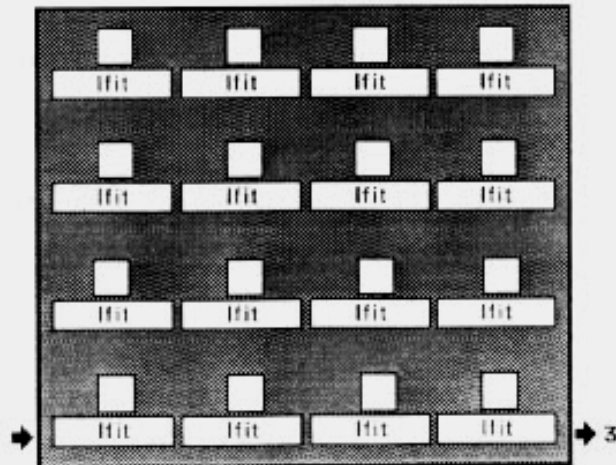


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

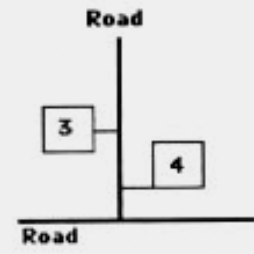
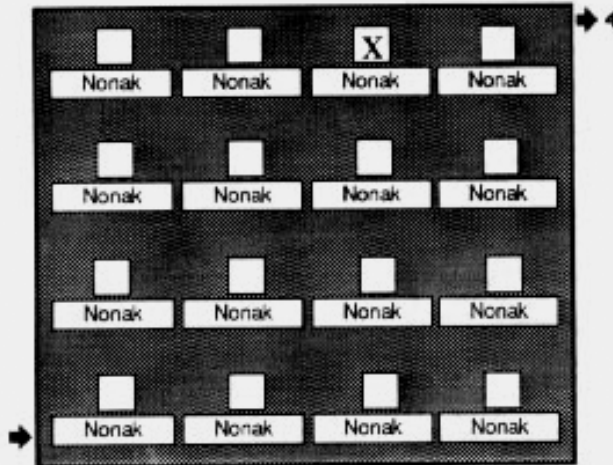


## Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**   X  
**Staked:**   
**Date Checked:**   
**Notes:**

**Map:**

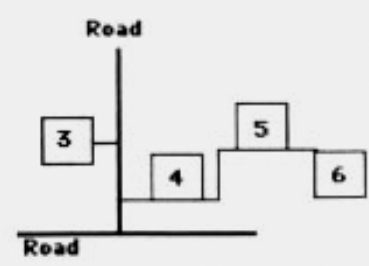
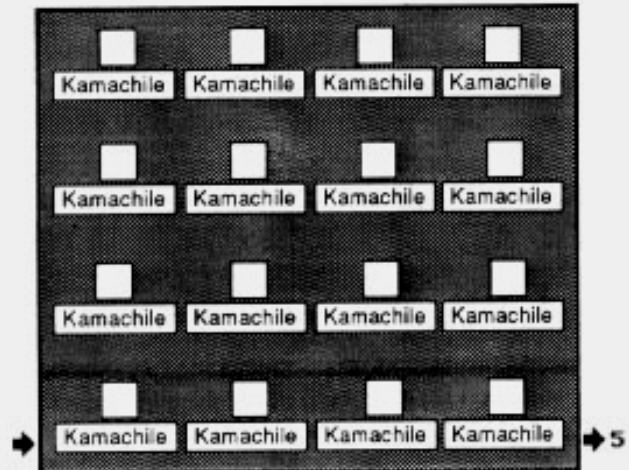


## Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**   X  
**Staked:**   
**Date Checked:**   
**Notes:**

**Map:**

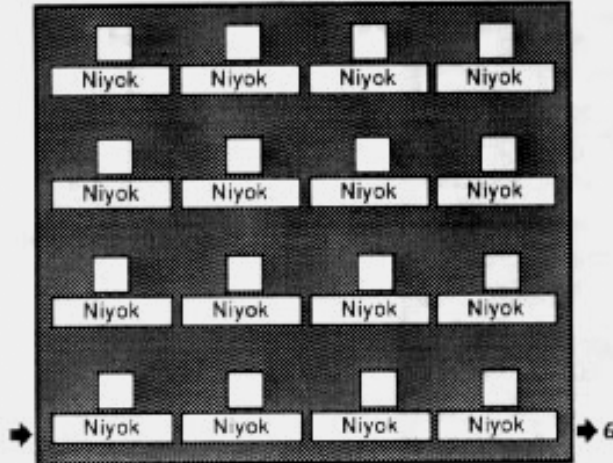


## Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

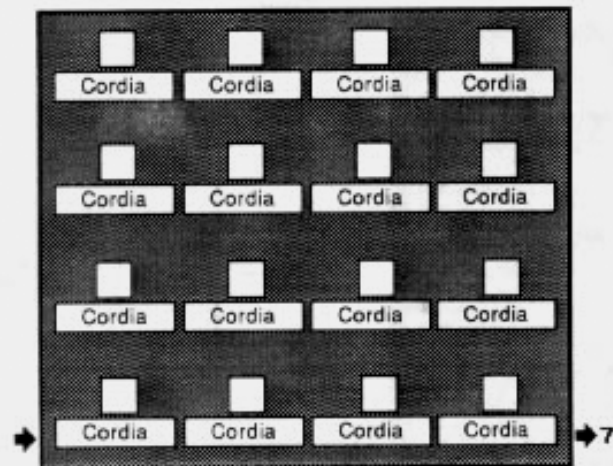


## Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

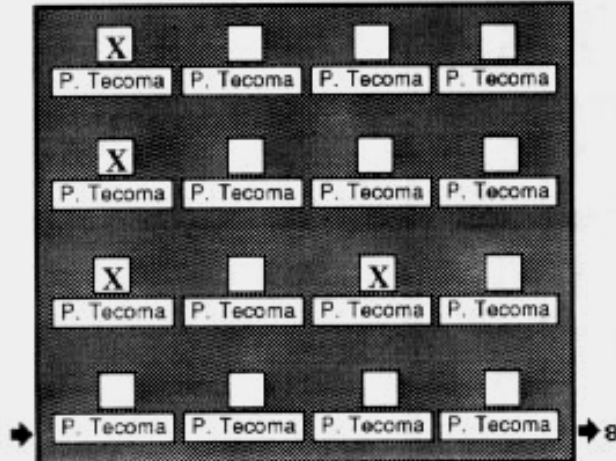


## Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**    
**Staked:**   
**Date Checked:**   
**Notes:**

Map:

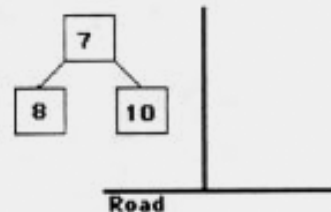
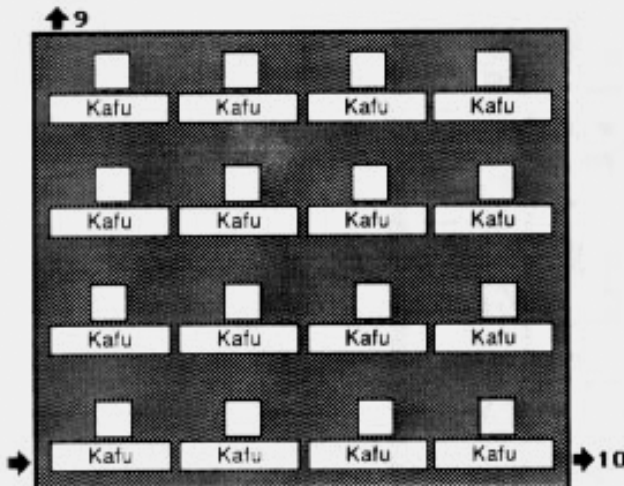


## Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**    
**Staked:**   
**Date Checked:**   
**Notes:**

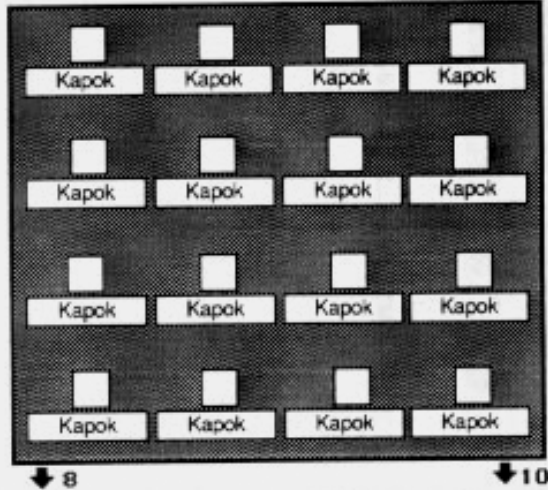
Map:



### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

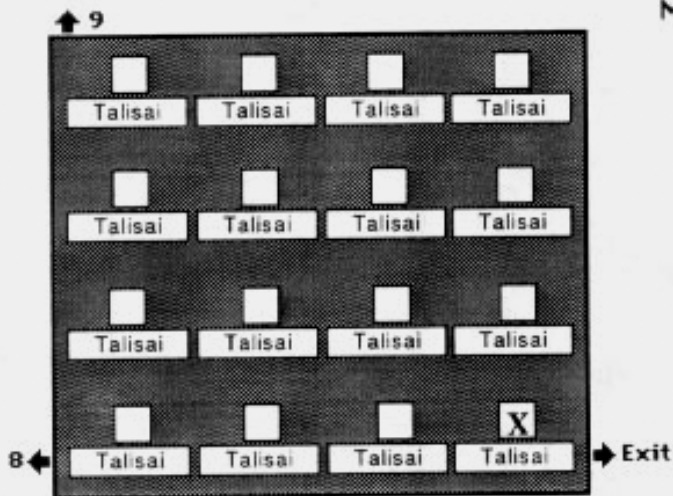
Dead Plants:   X  
Staked:   
Date Checked:   
Notes:   
Map:



### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:   
Map:

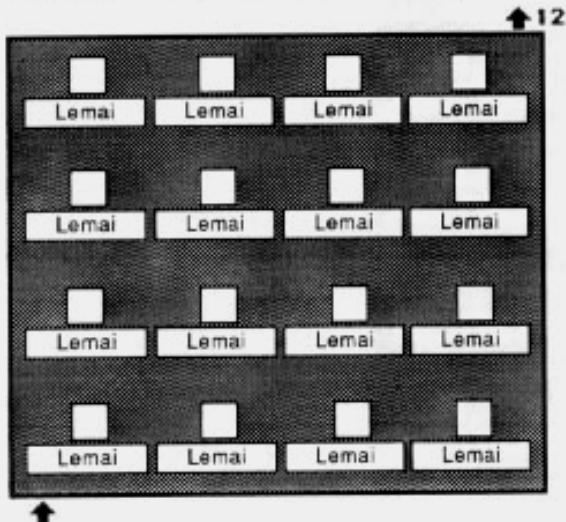


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

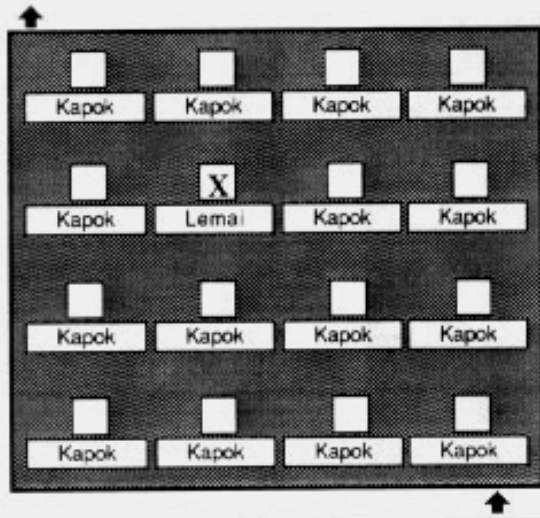


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:



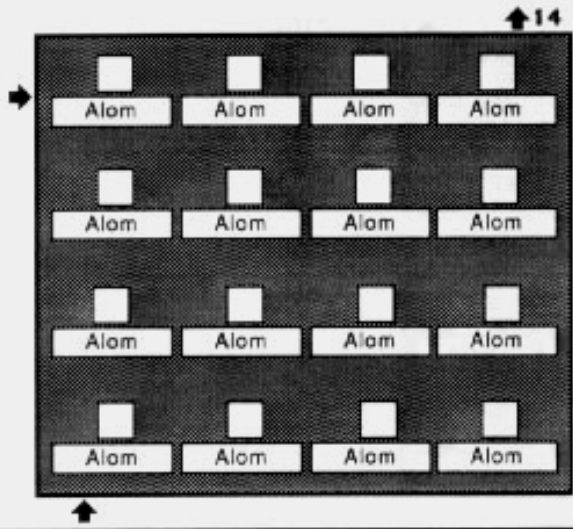


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

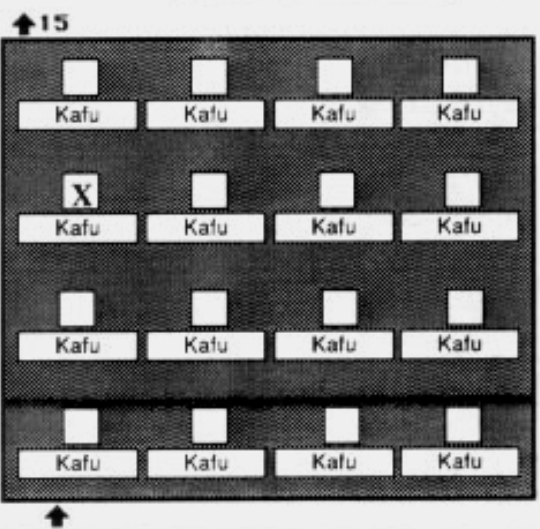


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

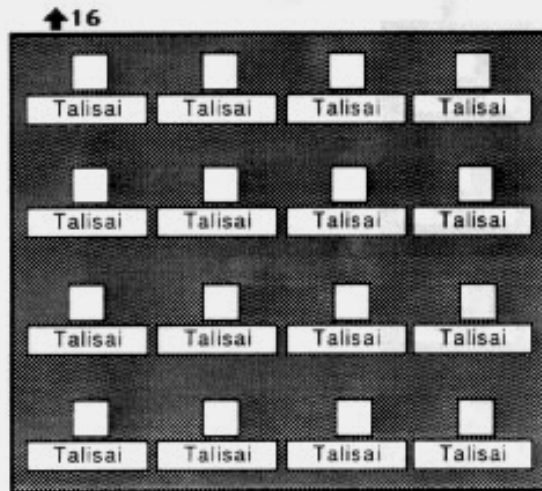


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:   X  
 Staked:   
 Date Checked:   
 Notes:

Map:

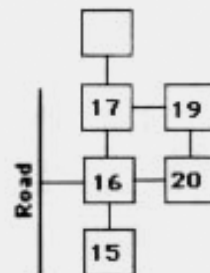
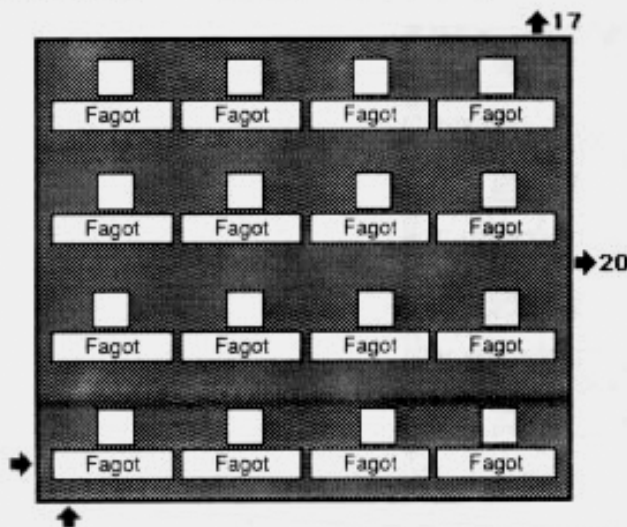


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:   X  
 Staked:   
 Date Checked:   
 Notes:

Map:

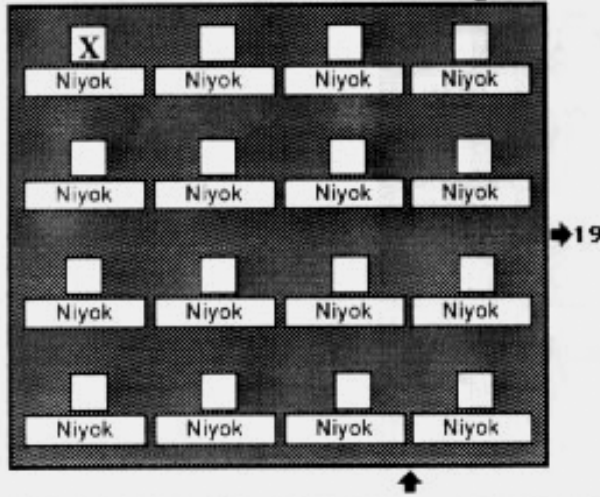


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

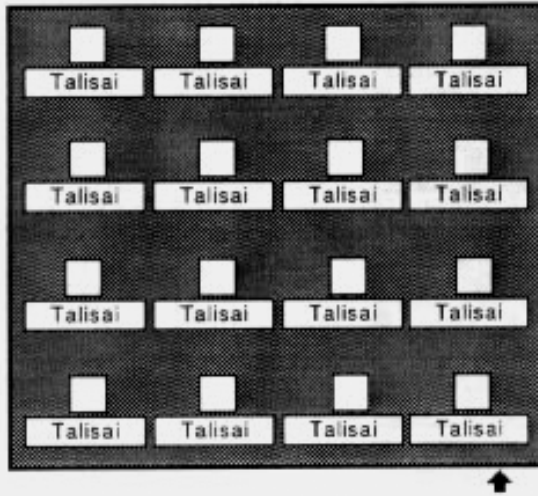


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

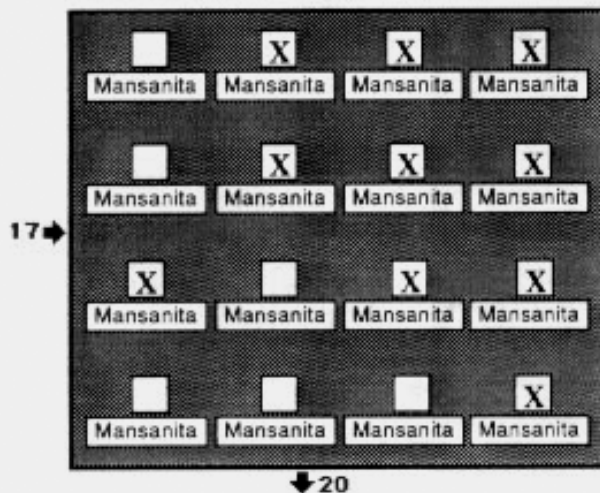


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:    
 Staked:   
 Date Checked:   
 Notes:

Map:

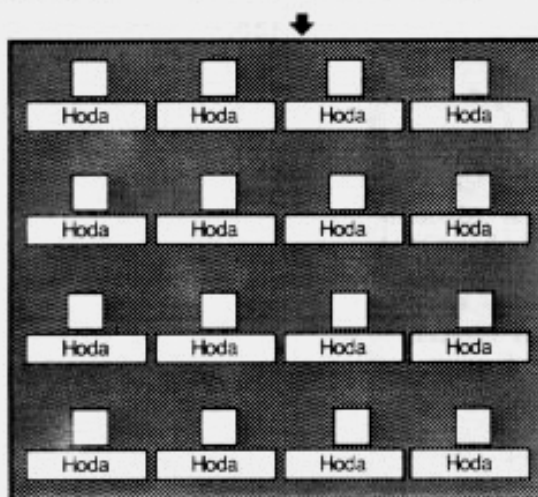


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:    
 Staked:   
 Date Checked:   
 Notes:

Map:

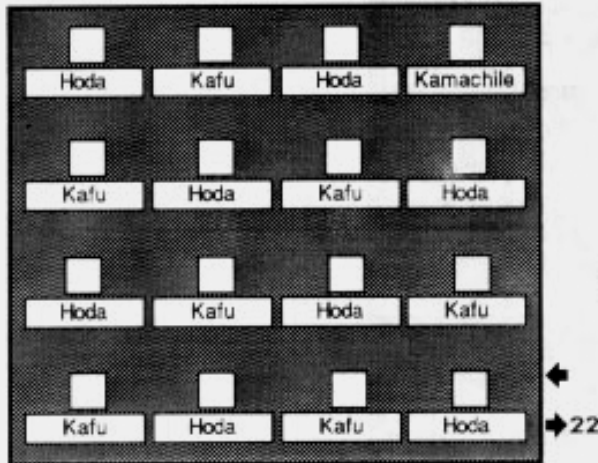


## Forest Enhancement Plots

**Plot Number:** 21  
**Name of Plant:** Kafu, Hoda, Kamachile  
**Number of Plants:** 16  
**Location:** Kagman  
**Date Planted:** 21 September 1989

**Dead Plants:** 0  X  
**Staked:** Yes  
**Date Checked:**  
**Notes:** Attached to plot 22

Map:

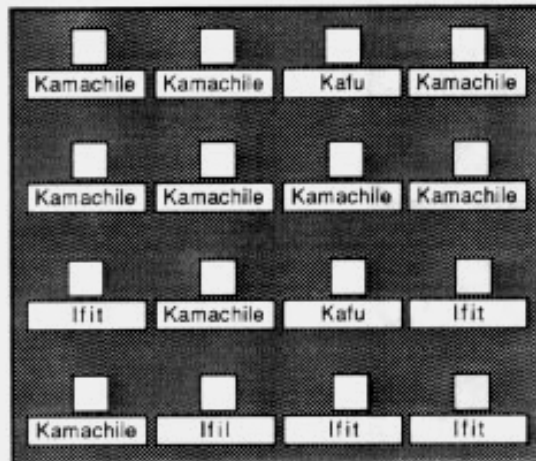


## Forest Enhancement Plots

**Plot Number:** 22  
**Name of Plant:** Kamachile, Ifit, Kafu  
**Number of Plants:** 16  
**Location:** Kagman  
**Date Planted:** 21 September 1989

**Dead Plants:** 0  X  
**Staked:**  
**Date Checked:**  
**Notes:** Attached to plot 21

Map:

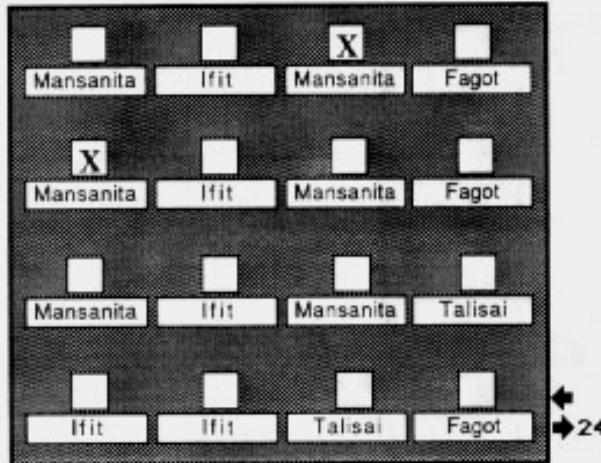


### Forest Enhancement Plots

**Plot Number:** 23  
**Name of Plant:** Mansanita, Talisai, Fagot, Ifit  
**Number of Plants:** 16  
**Location:** Kagman  
**Date Planted:** 16 August 1989

**Dead Plants:** 2   
**Staked:**   
**Date Checked:**   
**Notes:** Attached to plot 24

Map:

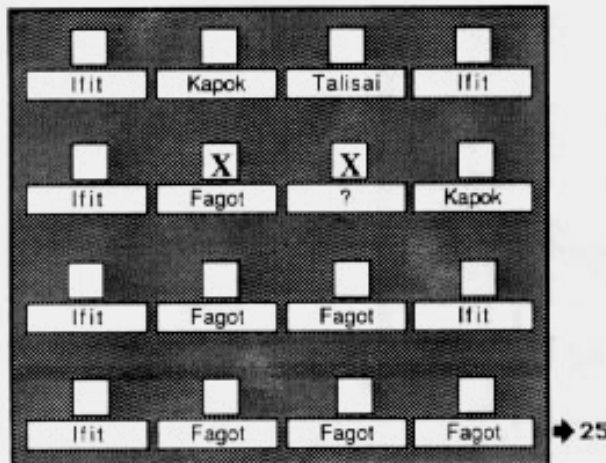


### Forest Enhancement Plots

**Plot Number:** 24  
**Name of Plant:** Fagot, Kapok, Talisai, Ifit  
**Number of Plants:** 16  
**Location:** Kagman  
**Date Planted:** 16 August 1989

**Dead Plants:** 2   
**Staked:**   
**Date Checked:**   
**Notes:** Attached to plot 23

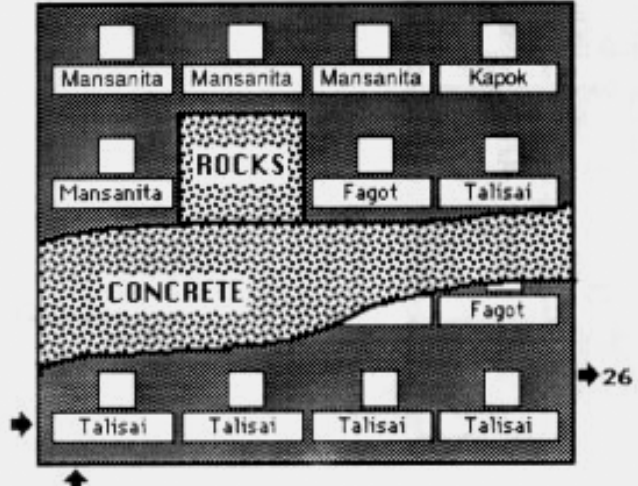
Map:



### Forest Enhancement Plots

**Plot Number:** 25  
**Name of Plant:** Mansanita, Kapok, Talisai, Fagot  
**Number of Plants:** 12  
**Location:** Kagman  
**Date Planted:** 8 August 1989

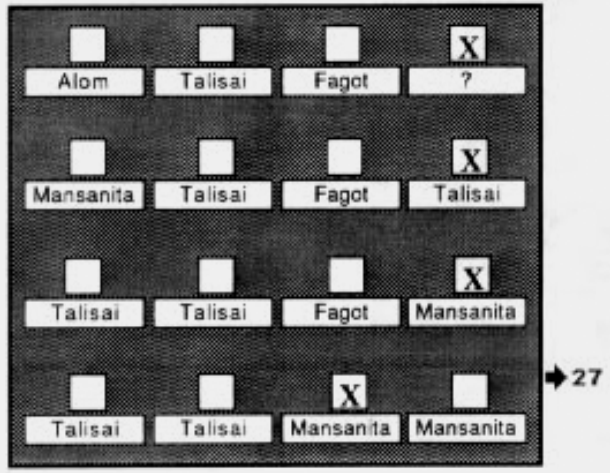
**Dead Plants:** 0  X  
**Staked:**   
**Date Checked:**   
**Notes:**   
**Map:**



### Forest Enhancement Plots

**Plot Number:** 26  
**Name of Plant:** Alom, Talisai, Mansanita, Fagot  
**Number of Plants:** 16  
**Location:** Kagman  
**Date Planted:** 8 August 1989

**Dead Plants:** 4  X  
**Staked:**   
**Date Checked:**   
**Notes:**   
**Map:**

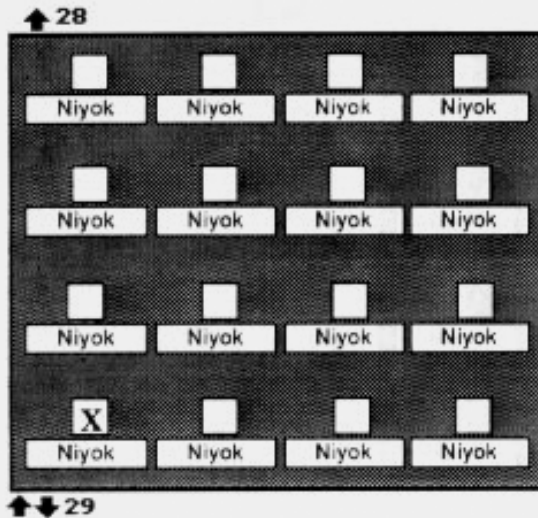


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:   X  
 Staked:   
 Date Checked:   
 Notes:

Map:

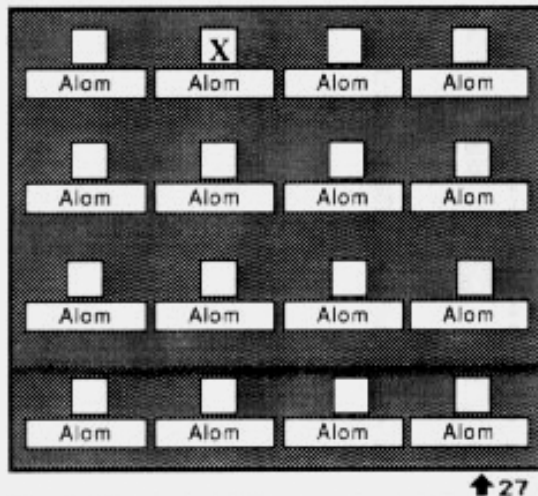


### Forest Enhancement Plots

Plot Number:   
 Name of Plant:   
 Number of Plants:   
 Location:   
 Date Planted:

Dead Plants:   X  
 Staked:   
 Date Checked:   
 Notes:

Map:



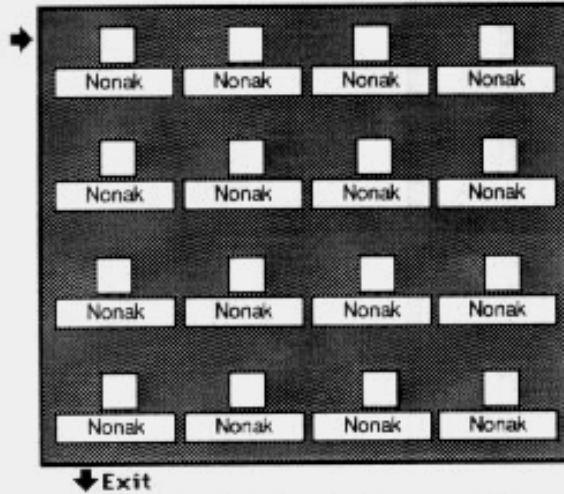


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

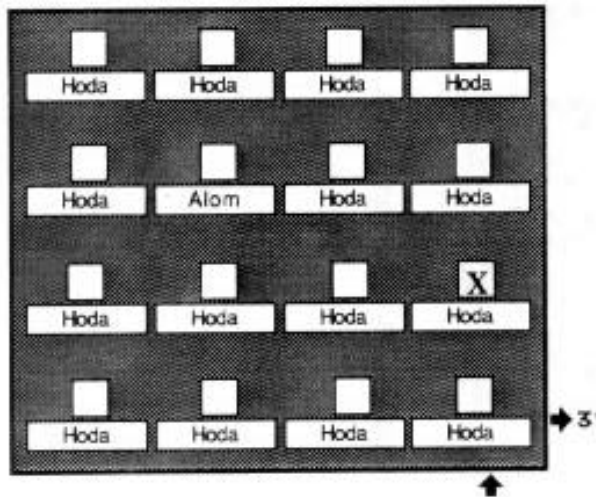


### Forest Enhancement Plots

Plot Number:   
Name of Plant:   
Number of Plants:   
Location:   
Date Planted:

Dead Plants:   X  
Staked:   
Date Checked:   
Notes:

Map:

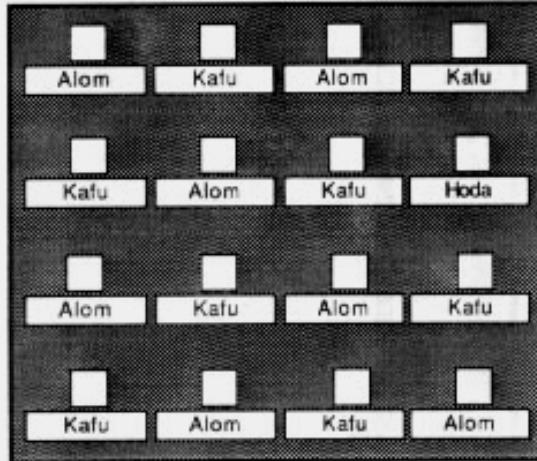


### Forest Enhancement Plots

**Plot Number:** 31  
**Name of Plant:** Kafu, Hoda, Alom  
**Number of Plants:** 16  
**Location:** Last Command Post  
**Date Planted:** 29 September 1989

**Dead Plants:** 0  X  
**Staked:**   
**Date Checked:**   
**Notes:**

Map:

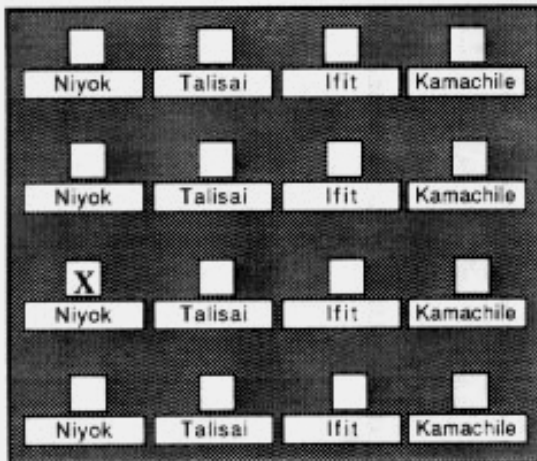


### Forest Enhancement Plots

**Plot Number:** 32  
**Name of Plant:** Kamachile, Ifit, Talisai, Niyok  
**Number of Plants:** 16  
**Location:** Calabera Cave  
**Date Planted:** 7 September 1989

**Dead Plants:** 1  X  
**Staked:**   
**Date Checked:**   
**Notes:**

Map:

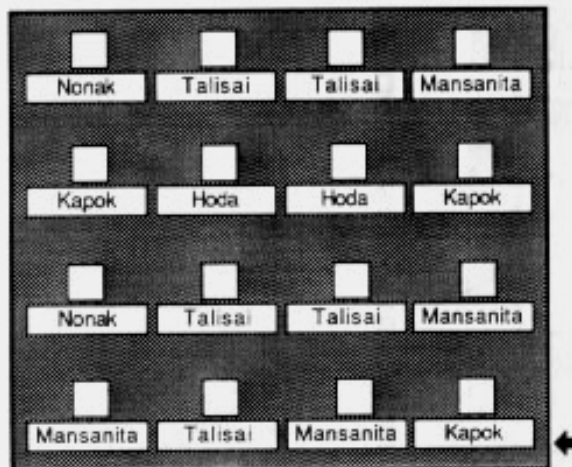


### Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**   X  
**Staked:**   
**Date Checked:**   
**Notes:**

**Map:**

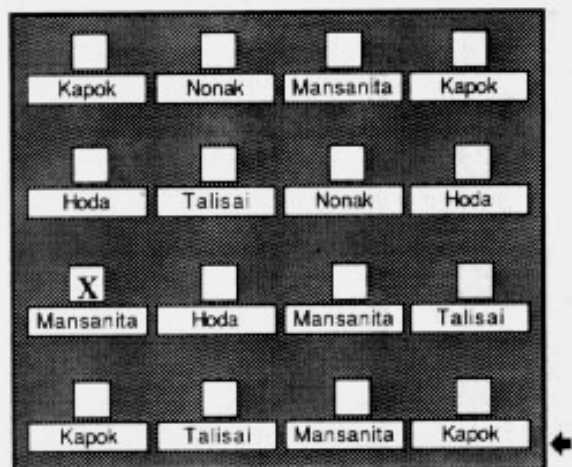


### Forest Enhancement Plots

**Plot Number:**   
**Name of Plant:**   
**Number of Plants:**   
**Location:**   
**Date Planted:**

**Dead Plants:**   X  
**Staked:**   
**Date Checked:**   
**Notes:**

**Map:**



8/28/90

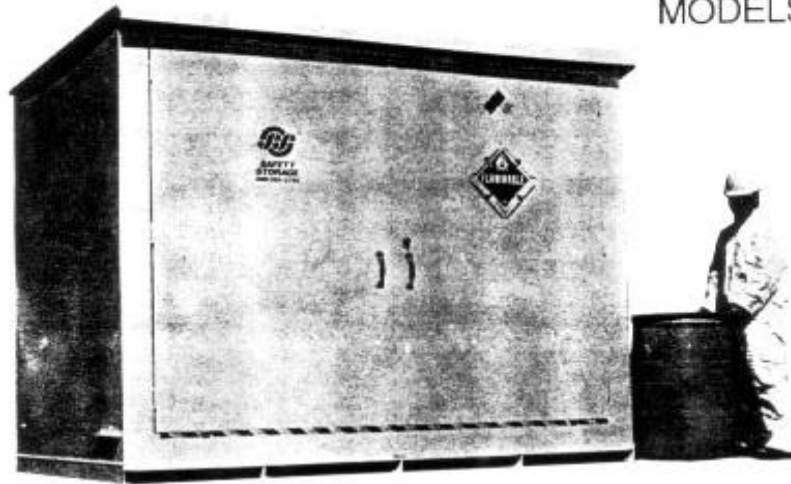
<u>Plot No.</u>	<u>Plant Name</u>	<u>Location</u>	<u>Date Planted</u>	<u>Dead Plants</u>
1	Mansanita, Lemai	Bird Island	3 July 1989	1
2	Ifit	Bird Island	3 July 1989	0
3	Nonak	Bird Island	3 July 1989	1
4	Kamachile	Bird Island	5 July 1989	0
5	Niyok	Bird Island	5 July 1989	0
6	Cordia	Bird Island	5 July 1989	0
7	Pink Tecoma	Bird Island	12 July 1989	4
8	Kafu	Bird Island	12 July 1989	0
9	Kapok	Bird Island	18 July 1989	0
10	Talisai	Bird Island	31 August 1989	1
11	Lemai	Bird Island	18 July 1989	0
12	Kapok, Lemai	Bird Island	20 July 1989	1
13	Alom	Bird Island	20 July 1989	0
14	Kafu	Bird Island	25 July 1989	1
15	Talisai	Bird Island	25 July 1989	0
16	Fagot	Bird Island	27 July 1989	0
17	Niyok	Bird Island	28 July 1989	1
18	Talisai	Bird Island	11 October 1989	0
19	Mansanita	Bird Island	31 July 1989	10
20	Hoda,?	Bird Island	31 July 1989	0
21	Kafu, Hoda, Kamachile	Kagman	21 September 1989	0
22	Kamachile, Ifit, Kafu	Kagman	21 September 1989	0
23	Mansanita, Talisai, Fagot, Ifit	Kagman	16 August 1989	2
24	Fagot, Kapok, Talisai, Ifit	Kagman	16 August 1989	2
25	Mansanita, Kapok, Talisai, Fagot	Kagman	8 August 1989	0
26	Alom, Talisai, Mansanita, Fagot	Kagman	8 August 1989	4
27	Niyok	Kagman	26 September 1989	1
28	Alom	Kagman	20 September 1989	1
29	Nonak	Kagman	21 September 1989	0
30	Hoda, Alom	Last Command Post	29 September 1989	1
31	Kafu, Hoda, Alom	Last Command Post	29 September 1989	0

<u>Plot No.</u>	<u>Plant Name</u>	<u>Location</u>	<u>Date Planted</u>	<u>Dead Plants</u>
32	Kamachile, Ifit, Talisai, Niyok	Calabera Cave	7 September 1989	1
33	Kapok, Talisai, Hoda, Mansanita, Nonak	Marpi	11 October 1989	0
34	Kapok, Hoda, Talisai, Mansanita, Nonak	Calabera Cave	11 October 1989	1

## **E.7 Chemical Storage Buildings Data Sheets**

# CHEMICAL STORAGE BUILDINGS

MODELS 10, 6 & 4



Patent Pending

## SAFETY STORAGE™ BUILDINGS comply with new regulations...

Safety Storage buildings have been carefully designed and constructed to comply with current environmental regulations. They also meet regulatory agency requirements for storing hazardous waste in a secured enclosure. Our buildings' high quality design standards are consistent with local Hazardous Material Storage Ordinances requiring hazardous chemicals to be stored in secondary containment structures to prevent spills or leaks from contaminating groundwater.

## SAFETY STORAGE BUILDINGS

### Construction Features:

#### STANDARD DESIGNS

- Safety Storage Buildings are specifically designed for hazardous material storage and handling
- These sturdy units are constructed of 10 and 12 gauge ASTM-A569 steel to provide structural strength and security
- Storage units are designed with a 6" sump providing secondary spill containment
- Chemicals can be conveniently stored inside each unit in

drums, boxes, on pallets, in 5-gallon cans or other sizes

- Storage units can be loaded/unloaded using a forklift or by manual means
- All interior surfaces are coated with a chemical-resistant paint
- Standard floors are corrosive resistant fiberglass gratings. The flooring is designed with removable sections to permit visual inspection for leaks or spills. Standard floor loading is 250 psf
- A static grounding connection is provided on each unit to protect flammable/combustible liquids from ignition by electrical discharge
- Forklift pockets
- Building hold-down brackets
- Hazard placards and labeling
- Door security: Single point locking mechanism with inside safety release
- One year warranty

#### OPTIONAL FEATURES

- Safety eye/face wash units can be installed where supply water hookup is available. Self-contained pressurized units can also be provided for remote locations
- Floor loading up to 833 psf
- A spill containment sump liner constructed of polypropylene can be installed for additional corrosive protection
- Storage shelves constructed of heavy gauge coated steel can be installed for convenient storage of small chemical containers
- Explosion proof lighting
- Explosion proof ventilation system



For further product information  
please contact:

ROBERT CARLSON

CHEMTROL

20026 Sea Gull Way, Saratoga, CA 95070  
(408) 253-6166

## E.8 Approved Hazardous Waste Labels





D.O.T. PROPER SHIPPING NAME AND I.D. NUMBER  
**HAZARDOUS WASTE, LIQUID, N.O.S.**  
 ( \_\_\_\_\_ )  
UNIT WEIGHT (LBS.)  
 NA9189

**ORM-E**

**HAZARDOUS WASTE**  
 FEDERAL LAW PROHIBITS IMPROPER DISPOSAL  
 IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY  
 AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION  
 NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ PHONE \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 EPA / MANIFEST  
 ID NO. / DOCUMENT NO. \_\_\_\_\_ / \_\_\_\_\_  
 ACCUMULATION  
 START DATE \_\_\_\_\_ EPA  
 WASTE NO. \_\_\_\_\_

**HANDLE WITH CARE!**  
STYLE 9982

FORM BY LABELMASTER, Div. of AMERICAN LABELING CO., CHICAGO, IL 60642

**HAZARDOUS WASTE**  
 FEDERAL LAW PROHIBITS IMPROPER DISPOSAL  
 IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY  
 AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

GENERATOR INFORMATION  
 NAME \_\_\_\_\_  
 ADDRESS \_\_\_\_\_ PHONE \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_  
 EPA / MANIFEST  
 ID NO. / DOCUMENT NO. \_\_\_\_\_ / \_\_\_\_\_  
 ACCUMULATION  
 START DATE \_\_\_\_\_ EPA  
 WASTE NO. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

D.O.T. PROPER SHIPPING NAME AND UN OR NA NO. WITH PREFIX

**HANDLE WITH CARE!**  
STYLE 9982

FORM BY LABELMASTER, Div. of AMERICAN LABELING CO., CHICAGO, IL 60642