

Draft Environmental Assessment for Installation and Operation of a New Air Route Surveillance Radar

Mount Petosukara, As Matuis
Saipan, CNMI



Prepared for:

Lead Agency: Federal Aviation Administration, NAS Defense Program

Cooperating Agency: U.S. Air Force, Pacific Air Forces

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COVER PAGE

Proposed Action: The Federal Aviation Administration (FAA) proposes to install and operate a new long-range Air Route Surveillance Radar (ARSR) facility atop Mount Petosukara on the island of Saipan. The proposed new ARSR facility would be located on approximately 1.4 acres of public land at the site of the existing abandoned Pacific Barrier III (PACBAR III) radar facility located in Tangke near the village of As Matuis. Construction of the new ARSR facility would require demolition of the existing PACBAR III radar array and associated operations building currently located at the site. The Proposed Action also includes FAA funding to support an upgrade to the existing electrical distribution system along the approximately 1.6-mile corridor that follows the existing access road to the radar site. The electrical upgrade would convert the existing single-phase power distribution system to a three-phase system to provide reliable power to the new ARSR facility.

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Abstract: The FAA prepared this Environmental Assessment (EA) to evaluate the potential environmental impacts associated with installation and operation of a new long-range ARSR facility on the island of Saipan in the Commonwealth of the Northern Mariana Islands (CNMI). The proposed project site is located atop Mount Petosukara at the location of the existing abandoned Pacific Barrier III (PACBAR III) radar facility in the Tangke area near the village of As Matuis. Implementation of

the Proposed Action would require demolition and removal of the existing PACBAR III radar array and associated operations building prior to construction of the new ARSR facility. The Proposed Action also includes FAA funding to support an upgrade to the existing electrical power distribution system along an approximately 1.6-mile corridor that follows the existing access road to the radar site. The upgrade would convert the existing single-phase power distribution system to a three-phase system to support operation of the new radar facility. The Proposed Action is needed to address a gap in north-facing long-range radar coverage in the CNMI that limits the FAA's ability to efficiently manage air traffic and support national defense requirements. Establishing a new ARSR facility on Saipan, along with associated resilient infrastructure, would improve radar coverage, operational reliability, and long-term system performance. The Mount Petosukara location provides the elevation and unobstructed line-of-sight necessary for effective long-range radar surveillance coverage of the surrounding airspace. This EA evaluates the Proposed Action and the No Action Alternative.

This Environmental Assessment becomes a federal document when evaluated, signed, and dated by the Responsible FAA official

Responsible FAA Official

Date

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EXECUTIVE SUMMARY

The Federal Aviation Administration (FAA), in cooperation with the United States Air Force (USAF), proposes to install and operate a new long-range Air Route Surveillance Radar (ARSR) facility on Saipan in the Commonwealth of the Northern Mariana Islands (CNMI). The proposed radar facility would be located atop Mount Petosukara at the site of the former USAF Pacific Barrier III (PACBAR III) radar installation in the Tangke area near the village of As Matuis on the northern portion of the island (Figure ES-1).

The Proposed Action would establish a modern long-range air surveillance capability designed to improve radar coverage, operational reliability, and long-term system performance within the region. The Mount Petosukara location provides the elevation and unobstructed line-of-sight necessary for effective long-range radar surveillance of surrounding airspace.

Implementation of the Proposed Action would include construction and operation of a new ARSR facility and associated supporting infrastructure. Project components would include construction of an approximately 55-foot-tall radar operations building supporting a weather-protective radome enclosing the radar antenna on the roof. The operations building would also house radar equipment, electrical systems, and associated support spaces. The project also includes associated improvements for site access and security. A mobile ARSR unit may be temporarily installed to maintain radar capability during the transition period prior to installation of the permanent radar system.

To support operation of the new radar facility, the FAA would fund upgrades to the existing electrical distribution system along an approximately 1.6-mile corridor that follows the existing radar access road. The upgrade would convert the existing overhead electrical service from single-phase to three-phase power. Additional electrical improvements would include installation of approximately 145 feet of concrete-encased duct bank, a step-down transformer, and shared electrical service infrastructure.

Because the proposed facility would occupy the location of the former PACBAR III radar installation, implementation of the Proposed Action would require removal of remaining derelict structures at the site, including the existing abandoned PACBAR III radar array and former operations building.

The project is needed to address a gap in north-facing long-range radar coverage in the CNMI that currently limits the FAA's ability to efficiently manage air traffic and support national defense requirements. Establishment of a new ARSR facility on Saipan would restore reliable radar surveillance capability for the region.

This Environmental Assessment (EA) was prepared in accordance with the National Environmental Policy Act (NEPA; 42 United States Code [U.S.C.] § 4371) and FAA Order 1050.1G, *Environmental Impacts, Policies, and Procedures* (FAA 2025). A detailed review was conducted to characterize existing environmental conditions using the best available data to identify environmental resources and conditions in and around the project site. This EA describes baseline conditions for resources that could be affected by the Proposed Action and the No Action alternatives and evaluates potential environmental impacts associated with each alternative. Resource areas analyzed in this EA include air quality, biological resources, coastal resources, hazardous materials, solid

waste, and pollution, historic architectural archaeological and cultural resources, land use, natural resources and energy supply, noise and noise-compatible land use, visual effects, and water resources.

The potential environmental impacts of the Proposed Action are summarized in Table ES-1 below.

Table ES-1. Summary of Environmental Impacts

ENVIRONMENTAL RESOURCE	SUMMARY OF IMPACTS
Air Quality	No significant impacts. Construction emissions would be temporary and localized.
Biological Resources	The FAA submitted a Biological Assessment to the U.S. Fish and Wildlife Service on April 13, 2026, initiating formal consultation pursuant to Section 7 of the Endangered Species Act. Formal consultation is ongoing and will be completed prior to issuance of the final NEPA decision.
Hazardous Materials	No significant impacts. Potential contaminated materials would be managed in accordance with applicable regulations.
Historic and Cultural Resources	The FAA completed consultation with the CNMI Historic Preservation Office pursuant to Section 106 of the National Historic Preservation Act. By letter dated June 16, 2026, the Historic Preservation Office concurred with the FAA's determination of No Adverse Effect, subject to implementation of archaeological monitoring, inadvertent discovery procedures, and other commitments identified during construction.
Noise	Temporary construction noise may occur but would not result in significant impacts.
Visual Resources	The new radar facility would be visible from limited surrounding areas but would not substantially alter the existing visual environment.
Water Resources	The FAA completed Federal Consistency review under Section 307(c) of the Coastal Zone Management Act. On May 29, 2026, the CNMI Division of Coastal Resources Management concurred with the FAA's Federal Consistency Determination, concluding that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Management Program. No impacts to surface waters or wetlands are expected. Standard best management practices would be implemented during construction.

Preparation of this EA included review of existing environmental information, site reconnaissance, coordination with relevant federal and CNMI agencies, and evaluation of previously completed environmental studies and regulatory requirements applicable to the project area.

Based on the analysis presented in this EA, implementation of the Proposed Action would not result in significant impacts as defined by FAA significance criteria in FAA Order 1050.1G and the associated FAA Desk Reference.

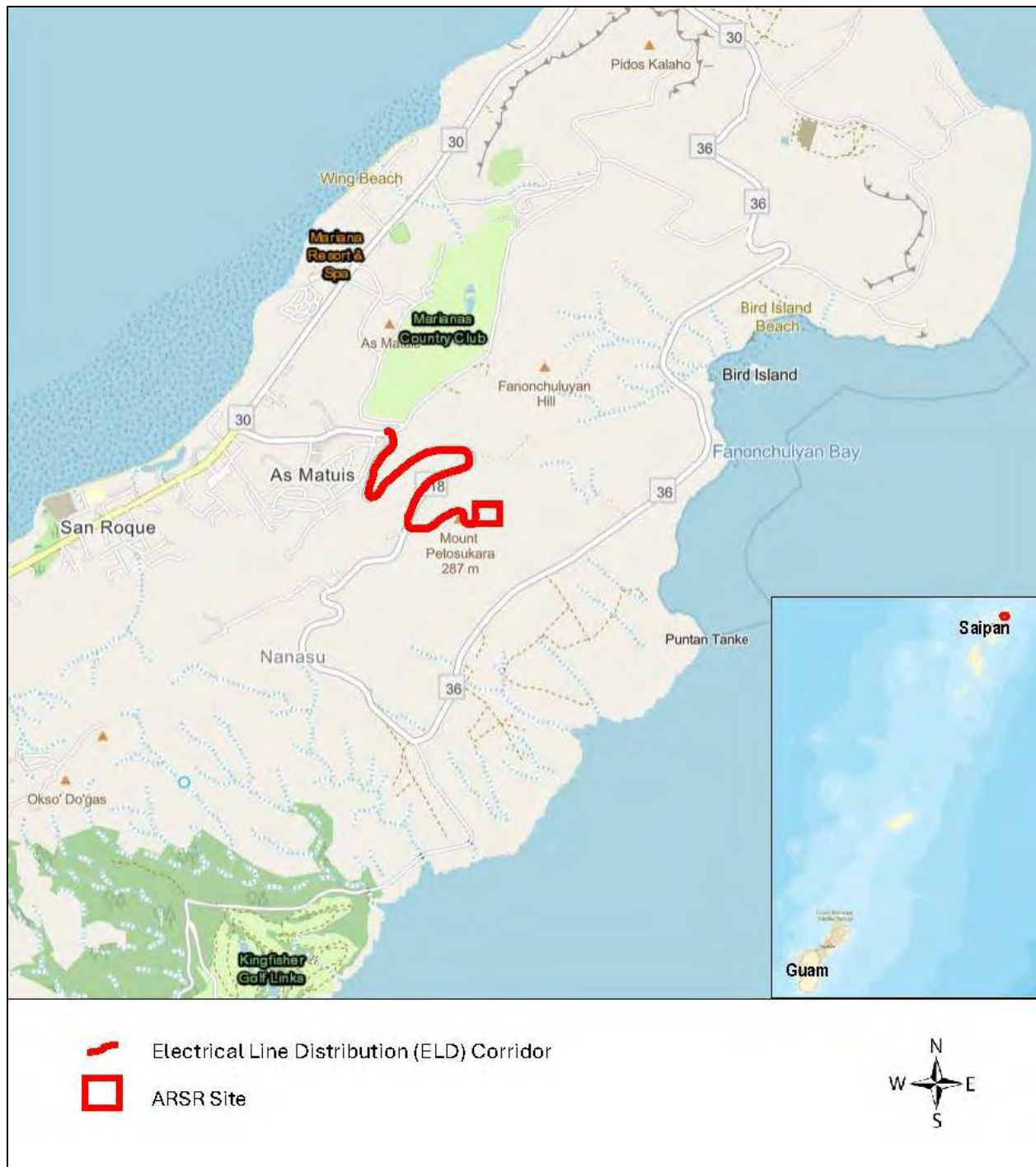


Figure ES 1 Regional project location map showing the location of the proposed ARSR facility on Mount Petosukara and the associated ELD upgrade corridor in northern Saipan, CNMI.

1.0 PURPOSE AND NEED

1.1 Introduction

To meet modern operational requirements and address identified gaps in long-range radar coverage, the Federal Aviation Administration (FAA), in coordination with the U.S. Air Force (USAF), proposes to construct a new long-range Air Route Surveillance Radar (ARSR) facility on Saipan, Commonwealth of the Northern Mariana Islands (CNMI). The project would be located at the site of the former Pacific Barrier III (PACBAR III) radar facility on Mount Petosukara, near the village of As Matuis. As part of the Proposed Action, the abandoned PACBAR III radar array and associated operations building would be demolished and removed. The modern ARSR facility would provide dual-use capabilities, supporting both FAA civilian air traffic management and U.S. Department of Defense (DoD) operational requirements.

To support operation of the new radar system, the Proposed Action also includes upgrading the existing electrical service to the site. The site is currently served by a single-phase electrical distribution line that extends approximately 1.6 miles from Chalan Pale Arnold Road (Route 30) up Chalan Matuis (Route 320) and terminates at the existing PACBAR III site atop Mount Petosukara. To meet project power requirements, the FAA would fund and provide materials for the upgrade of the existing electrical distribution line to three-phase power. Construction of the upgraded electrical line, including replacement of existing 40 wooden poles with 49 typhoon-resistant concrete poles along the existing utility corridor, would be performed by the local electrical utility. Once constructed, the local electrical utility would own, operate and maintain the upgraded three-phase electrical distribution line.

This Environmental Assessment (EA) has been prepared in accordance with FAA Order 1050.1G, *Environmental Impacts: Policies and Procedures* (FAA 2025). FAA Order 1050.1G, Paragraph 1.5.c(6) states that establishment or relocation of facilities such as ARSRs normally requires an EA. FAA is the lead federal agency for the Proposed Action; the USAF is a cooperating agency. The FAA and USAF would jointly coordinate funding and implementation of the Proposed Action.

For projects requiring a major federal action, such as funding or approval, an evaluation of the projects' environmental impacts must be prepared pursuant to the requirements under the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [USC] § 4321, Congressional Declaration of Purpose). An EA is a concise document used to fulfill this requirement. The purpose of an EA under NEPA is to provide sufficient evidence and analysis for determining whether to prepare a Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS) or for a project. An EA must discuss the purpose of and need for the Proposed Action and alternatives, as well as their environmental impacts.

1.2 Location

The Proposed Action would occur on approximately 1.4 acres at the abandoned USAF PACBAR III radar station located atop Mount Petosukara near the village of As Matuis at an elevation of approximately 920 feet above sea level (Figure 1-1). The site is situated

between the As Matuis and Kalabera watersheds and overlooks the Tanapag Lagoon and Philippine Sea to the west and the Pacific Ocean to the east. The Village of Marpi lies to the north of the site, while the villages of San Roque and Achugao are located to the south.

Access to the site is provided via Chalan Pale Arnold Road through the village of As Matuis to Route 320, followed by Panglao Place, which leads to the proposed ARSR site.

Table 1-1: Site Location

ARSR Site	Approximately 1.4 acres	15.249158°N	145.796059°E
Electrical Line Distribution (ELD)	Approximately 1.6 miles	Start: 15.253940°N	Start: 145.790831°E
		End: 15.249158°N	End: 145.796059°E

The proposed ARSR parcel would encompass approximately 1.4-acres once recorded. The electrical line distribution (ELD) serving the site would extend approximately 1.6 miles from Chalan Pale Arnold (Route 30) up Chalan Matuis (Route 320) and terminate at the ARSR facility atop Mount Petosukara.

1.3 Purpose and Need

The purpose of the Proposed Action is to enable the FAA to meet its statutory responsibility to provide for the safe and efficient use of the National Airspace System, consistent with 49 U.S.C. § 40103, while also supporting U.S. national defense requirements. Improved long-range radar coverage in the CNMI is necessary to fulfill these responsibilities and to support ongoing modernization of communications, navigation, and surveillance infrastructure.

The need for the Proposed Action arises from a gap in north-facing long-range radar coverage in the region. The existing long-range radar facility on Guam, located approximately 130 miles south of Saipan, is obstructed by Mount Tapochau, the highest point on Saipan, and cannot provide adequate radar coverage to the north. This limitation restricts the FAA's ability to effectively manage air traffic in the northern sector and constrains the DoD in meeting operational requirements.

Establishing a new ARSR facility on the northern end of Saipan would address this coverage deficiency. Associated infrastructure upgrades, including improvements to the electrical distribution system designed to withstand typhoon conditions, are also necessary to ensure long-term operational reliability and reduce vulnerability to storm-related disruptions.



Figure 1-1 Location of Proposed ARSR Site on Mount Petosukara, Saipan, CNMI. Source: Adapted from CNMI BECQ, CNMI DCRM Public Permitting App.

2.0 PROPOSED FEDERAL ACTION AND ALTERNATIVES

2.1 Proposed Action

The Proposed Action consists of installing and operating a new ARSR, associated radar service building, and upgraded electrical service at the site of the former PACBAR III radar facility on Mount Petosukara. As part of the Proposed Action, the abandoned PACBAR III radar array and associated operations building would be demolished and removed. The existing 1.6-mile ELD would be upgraded from single-phase power to three-phase power using new typhoon resistant concrete poles placed along the same utility corridor along the radar access road.

2.2 Alternatives Carried Forward for Analysis

Alternatives were identified and screened to determine if they were reasonable and met the purpose and need identified in Section 1.0 and either eliminated from further consideration or carried forward for environmental analysis. Both “action” and “no action” alternatives were considered. While a “no action” alternative may not address an identified need, evaluation of the “no action” alternative is required per FAA Order 1050.1G and serves as a basis of comparison against other alternatives retained for environmental analysis. This section identifies and evaluates the alternatives considered in detail. Alternatives to the Proposed Action were identified by reviewing advanced planning efforts completed by FAA and USAF for the project.

To meet the purpose and need for the Proposed Action, two alternatives are analyzed in this EA: the Proposed Action and the No Action Alternative.

2.3 Proposed Action – Install and Operate a New ARSR (Preferred Alternative)

Under the Proposed Action, the FAA would install and operate a new ARSR atop Mount Petosukara at the site of the abandoned PACBAR III radar facility. A new radar support building would be constructed adjacent to the new ARSR array, and the existing single-phase ELD that supplies power to the site would be upgraded to three-phase power with new typhoon-resistant concrete power poles. Existing derelict infrastructure atop Mount Petosukara, including the PACBAR III radar array and associated operations building, would be demolished (Figure 2-1 and Figure 2-2). Alternative locations were considered during early planning; however Mount Petosukara provides the elevation and line-of-sight necessary for effective radar coverage and is the site of an existing abandoned radar installation. No other sites on Saipan meet operational requirements.

2.3.1.1 Construction Activities

Construction activities associated with the installation of the new ARSR facility include:

- Demolition of the PACBAR III radar array and operations building (Figure 2-3).
- Installation and operation of a temporary mobile ARSR unit until commissioning of the permanent ARSR facility (Figure 2-1).
- Construction of an approximately 55-foot-tall concrete radar operations building.

- Installation of the permanent radar antenna within a weather-protective radome mounted on the roof of the operations building.
 - o The operations building would house radar equipment, electrical systems, mechanical equipment, and support spaces for operation of the facility.
 - o The total installed height of the radar assembly atop the operations building will be approximately 80 feet above the ground surface.
- Construction of a radar service building (size will be determined in final design).
- Installation of approximately 145 feet of concrete-encased duct bank, a step-down transformer, and electrical service entrance.
- Rehabilitation of 0.5 acres of the existing paved parking area.
- Environmentally compliant waste disposal and site remediation.

Construction activities associated with upgrade of the ELD include:

- FAA funding and approval of a utility-performed upgrade of the existing power distribution system from single-phase to three-phase within the existing utility corridor (Figure 2-4).
- Removal of 40 wooden power poles and installation of 49 typhoon resistant concrete power poles.

The FAA's role with respect to the ELD upgrade is limited to funding and approving the utility upgrade necessary to support FAA radar equipment. The FAA would not own, operate, or maintain the upgraded ELD. All ELD improvements would occur within the existing utility corridor/right-of-way and would not require expansion of the FAA leased area or acquisition of additional permanent land interests. Upon completion, long term ownership, operation, and maintenance of the upgraded ELD would be the responsibility of the local electrical utility.

2.3.1.2 Operation of the ARSR

The proposed radar system is anticipated to be a TPY-4 long-range ground-based air surveillance radar, or a functionally similar system, capable of supporting both civilian air traffic surveillance and national defense missions. The TPY-4 radar is a modern solid-state radar designed to detect and track aircraft at long ranges and across a wide range of altitudes.

The radar will operate in the L-band portion of the radio frequency spectrum, typically within the frequency range of approximately 1,200 to 1,400 megahertz (MHz). L-band radar systems are widely used for long-range air surveillance radars because they provide reliable detection performance under a wide range of atmospheric conditions.

The radar antenna would be installed within a weather-protective radome mounted directly on the roof of the approximately 55-foot-tall radar operations building (Figures 2-5). During operation, the radar antenna rotates continuously to provide 360-degree coverage of surrounding airspace. The radar transmits short pulses of radio frequency energy and receives reflected signals from aircraft and other objects. These reflected

signals are processed to determine the range, direction, and movement of aircraft within the radar's surveillance volume (Figure 2-6).

Because the radar antenna rotates continuously, the transmitted radar beam sweeps across the surrounding environment rather than remaining fixed in one location. As a result, objects within the beam path experience only brief and intermittent exposure as the beam passes during each antenna rotation.

The radome enclosing the antenna protects the radar equipment from weather while allowing radio frequency signals to pass with minimal attenuation. The radar facility would operate continuously to support air traffic surveillance and national defense requirements.

2.3.1.3 No Action Alternative

The No Action Alternative represents the scenario in which the FAA does not implement the Proposed Action. Under this alternative, no demolition, construction, or infrastructure upgrades would occur, and existing conditions would remain unchanged. As a result, the No Action Alternative would maintain baseline conditions for all environmental resource categories evaluated in this EA.

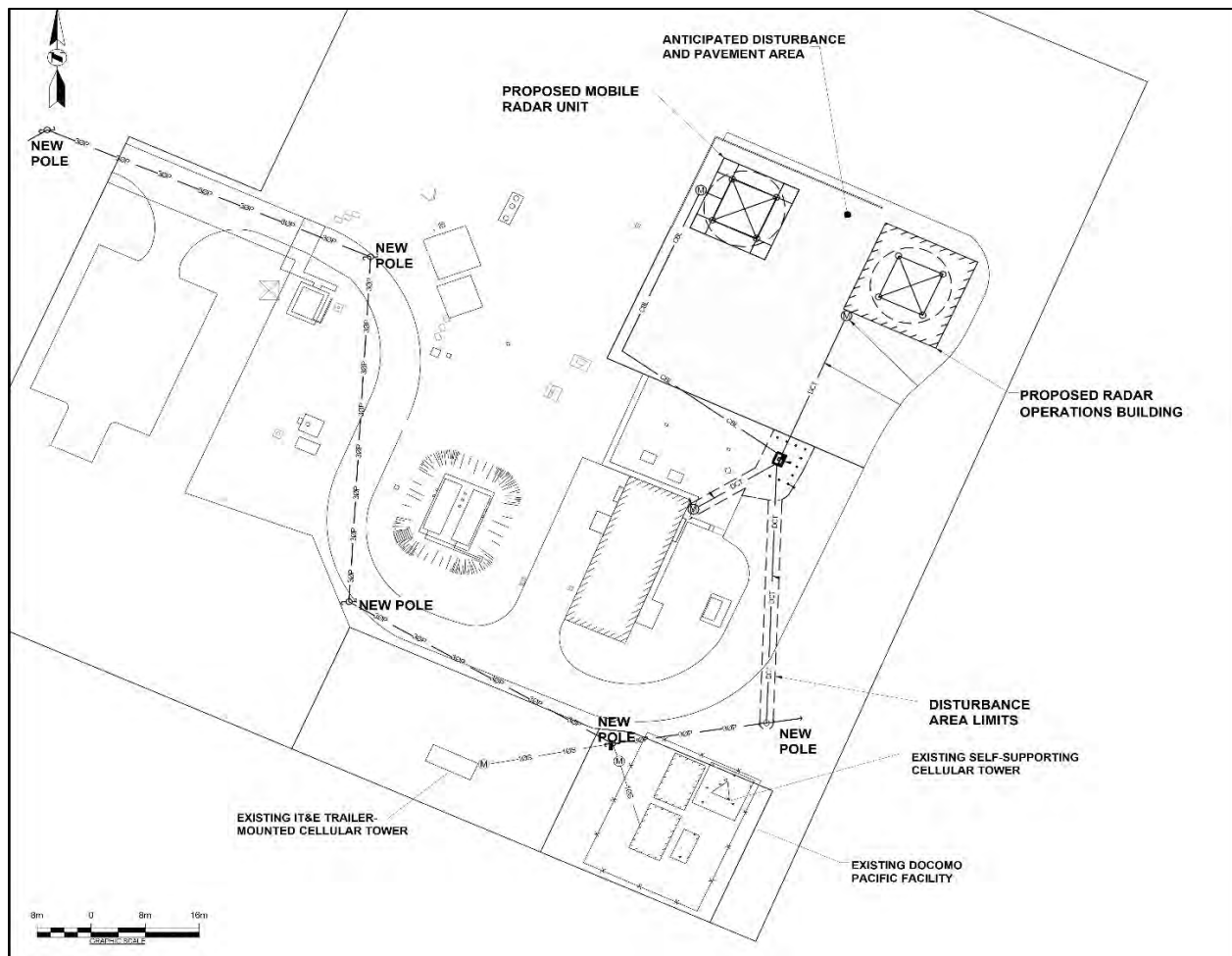


Figure 2-1 Site Development Plan. Adapted from Construction Drawings, Cusa Consulting. 4/4/2025



Figure 2-2 Aerial image showing the proposed electrical line distribution (ELD) upgrade along the existing utility corridor, including the locations of proposed typhoon-resistant concrete power poles. Construction Drawings, CUSA Consulting. 4/4/2025.



Figure 2-3 Existing PACBAR III Radar Array and Operations Building at the Mount Petosukara summit on Saipan.



Figure 2-4 Existing single-phase electrical distribution line (ELD) along the radar access road.



Figure 2-5 Representative FAA Air Route Surveillance Radar (ARSR) facility showing the radome mounted directly on the roof of the radar operations building.

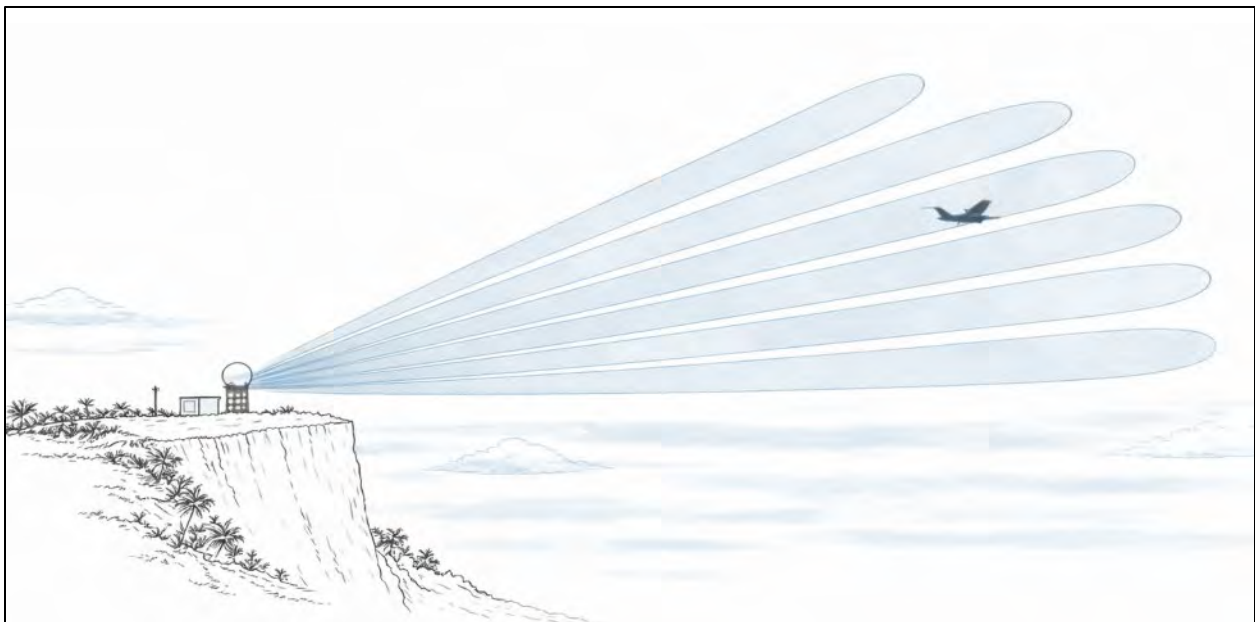


Figure 2-6 Conceptual illustration of long-range radar detection.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

To fulfill the goals and requirements of NEPA as well as the policies and procedures contained in FAA Order 1050.1G, this EA presents an analysis of the regulatory context, affected environment, potential environmental consequences, and proposed mitigation measures associated with the Proposed Action. This EA also includes consideration of the No Action Alternative. The analysis evaluates current environmental conditions, the local and regional context, and the nature and intensity of the Proposed Action to determine the significance of potential impacts, consistent with the criteria outlined in FAA Order 1050.1G.

This chapter describes the environmental resources and baseline conditions that could be affected by implementation of the Proposed Action and evaluates the potential impacts associated with the alternatives.

Environmental resource categories were initially considered based on the characteristics of the Proposed Action, the environmental setting of the project area, and the applicable regulatory requirements. Based on this review, the following resource categories are evaluated in detail in this EA: Air Quality, Biological Resources, Coastal Resources, Hazardous Materials, Solid Waste, and Pollution Prevention, Historical, Architectural, Archaeological, and Cultural Resources, Land Use, Natural Resources and Energy Supply, Noise and Noise-compatible Land Use, Visual Effects, and Water Resources.

The following resource categories were considered but are not evaluated in detail because the Proposed Action would not affect these resources or they are not present in the project area:

- **Farmlands:** The Farmland Protection Policy Act (FPPA 7 U.S.C. §4201-4209) is intended to minimize the conversion of prime farmland, unique farmland, and farmland of statewide or local importance to nonagricultural uses as a result of federal actions. The Proposed Action is located on Mount Petosukara in northern Saipan within a previously disturbed upland area historically used for military and government infrastructure. The project area does not contain active agricultural operations, irrigated cropland, or soils designated as prime or unique farmland, nor is it used for agricultural production. Based on existing land use and site conditions, the Proposed Action would not result in conversion of farmland as defined under the FPPA; therefore, Farmlands is not evaluated further in this EA.
- **Department of Transportation Section 4(f):** Section 4(f) of the U.S. Department of Transportation Act applies to the use of publicly owned parks, recreation areas, wildlife or waterfowl refuges, and historic sites listed in or eligible for the National Register of Historic Places. The Proposed Action would occur on land managed by the CNMI Department of Public Lands that is not designated or managed as a public park, recreation area, or wildlife refuge. The only potential Section 4(f) resources associated with the Proposed Action are historic properties identified through the Section 106 process. Accordingly, Section 4(f), as it pertains to historic resources, is discussed in Section 3.5 following the Historic Resources analysis.

- **Socioeconomics and Children's Health and Safety Risks:** The Proposed Action would not result in changes to population, housing availability, employment, or public services, nor would it induce growth or development. In addition, the Proposed Action would not introduce environmental health or safety risks to children due to its remote location and restricted access to the ARSR facility. At the site of the Proposed Action, there are no nearby residences, schools, or other locations where children are present. Accordingly, socioeconomics and children's environmental health and safety are not applicable to the Proposed Action and are not evaluated further in this EA.

3.1 Air Quality

3.1.1 Regulatory Setting

Air quality within the project area is regulated under federal and Commonwealth laws and regulations, including the following:

STATUTE	CITATION	REGULATION	AGENCY
Clean Air Act (CAA)	42 USC §§7401-7671q	40 CFR parts 6,9 50-53, 60, 61, 63,66,67,81,82, and 93	Environmental Protection Agency (EPA)
Summary	The CAA regulates air pollutant emissions from stationary and mobile sources and authorizes the EPA to establish National Ambient Air Quality Standards (NAAQS) for criteria pollutants and standards for hazardous air pollutants.		
Commonwealth Environmental Protection Act	CNMI Public Law 3-23, 2 Commonwealth Code (CMC) §§3101-3135	Air Pollution Control Regulations, Northern Mariana Islands Administrative Code (NMIAC) 65-10	Bureau of Environmental and Coastal Quality (BECQ)-Division of Environmental Quality (DEQ)
Summary	Aims to balance environmental protection with responsible development by establishing environmental standards that preserve marine resources, uninhabited islands, air, land, and water quality		

The FAA Desk Reference 1050.1 defines air quality as the measure of the condition of the air expressed in terms of ambient pollutant concentrations and their temporal and spatial distribution. Air quality regulations in the United States are based on concerns that high concentrations of air pollutants can harm human health, especially for children, the elderly, and people with compromised health conditions; as well as adversely affect public welfare by damaging crops, vegetation, buildings, and other property (FAA 2023).

Clean Air Act and NAAQS

The Clean Air Act (CAA) of 1970, as amended (42 USC § 7401 et seq.), requires federal agencies to consider the potential impacts of proposed federal actions on air quality. The U.S. Environmental Protection Agency (EPA) has developed National Ambient Air Quality Standards (NAAQS) for six major pollutants of concern, called "criteria pollutants:" carbon monoxide (CO); sulfur dioxide (SO₂); nitrogen dioxide (NO₂); ozone (O₃); total suspended particulate matter less than or equal to 10 (PM₁₀) and 2.5 (PM_{2.5}) micrometers in aerodynamic diameter; and lead (Pb; EPA 2023). These standards are intended to protect

public health and welfare. The following table (Table 3.1) provides the primary and secondary NAAQS for the criteria pollutants.

Table 3-1 National Ambient Air Quality Standards

Pollutant				
Carbon Monoxide (CO)	Primary	8-hour	9 ppm (10 mg/m³)	
		1-hour	35 ppm (40 mg/m³)	
Nitrogen Dioxide (NO₂)	Primary	1-hour	100 ppb (188 µg/m³)	
	Primary and Secondary	Annual	53 ppb (100 µg/m³)	
Ozone (O₃)	Primary and Secondary	8-hour	0.070 ppm (137 µg/m³)	
Particulate Pollution	PM₂.₅	Primary	Annual	9 µg/m³
		Secondary	Annual	15 µg/m³
		Primary and Secondary	24-hour	35 µg/m³
	PM₁₀	Primary and Secondary	24-hour	150 µg/m³
Sulfur Dioxide (SO₂)	Primary	1-hour	75 ppb (105 µg/m³)	
	Secondary	3-hour	0.5 ppm (1,300 µg/m³)	
Lead (Pb)	Primary and Secondary	Rolling 3-month average	0.15 µg/m³	

Notes: For definitions, refer to the Acronyms and Abbreviations section. Source: EPA 2026.

EPA establishes two types of NAAQS: primary standards, which protect public health including sensitive populations such as children, the elderly; and individuals with respiratory illness; and secondary standards, which protect public welfare including visibility, vegetation and crops, damage to animals, and property (EPA 2023).

Under the CAA, EPA designates areas as attainment, nonattainment, or maintenance based on whether monitored air pollutant concentrations meet the NAAQS. The CNMI is currently designated as attainment or unclassifiable for all criteria pollutants (40 CFR § 81.354; EPA 2023).

The CAA requires states and territories to develop air quality implementation plans describing how the NAAQS will be attained and maintained. EPA maintains the approved air quality implementation plan for CNMI under 40 CFR Part 52 (EPA 2018). Because CNMI is currently designated as attainment for all criteria pollutants, the General Conformity requirements of Section 176(c) of the CAA do not apply to the Proposed Action.

Permits

The Proposed Action includes installation of a stationary backup generator installed as part of the ARSR facility's essential power system. Under CNMI regulations (Northern Mariana Islands Administrative Code [NMIAC] Title 65: Division of Environmental Quality [DEQ] Part 300), backup generators exceeding 200 horsepower are required to obtain a Minor Source Permit prior to construction.

The exemption under CNMI § 65-10-303 Permit Requirements (e)(8) applies only to diesel-fired portable industrial equipment less than 200 horsepower used intermittently

for maintenance or power outages. Because the anticipated backup generator for the ARSR facility is expected to exceed this threshold, a Minor Source Permit would be obtained prior to construction of the facility.

3.1.2 Affected Environment

Air quality in the CNMI is considered good due to low levels of industrial activity and prevailing northeast winds that tend to disperse localized pollutants. The Saipan Municipality is designated “Unclassifiable/Attainment” for the NAAQS under 40 C.F.R. § 81.354, indicating ambient concentrations of criteria pollutants meet or are treated as meeting EPA’s NAAQS thresholds¹.

The project site is located in a remote, upland location in northern Saipan. Surrounding land uses consist primarily of forested public land, and commercial quarry operators. There are no sensitive receptors such as schools, hospitals, or residential neighborhoods located in close proximity to the site.

3.1.3 Environmental Consequences

Significance Threshold

The FAA defines the significance threshold for air quality impacts as an action that would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the CAA, for the time periods analyzed, or to increase the frequency or severity of any such existing violations.

3.1.3.1 Proposed Action

Construction Emissions

Demolition and construction activities associated with the Proposed Action would result in a temporary increase in NAAQS emissions from diesel powered equipment and vehicles. Fugitive dust would also be generated during earth-disturbing activities related to the ELD upgrade especially during dry, windy conditions. Short-term indirect emissions would result from construction-related traffic along Route 30 and Route 320 and the site access road. These impacts would cease once construction is completed.

Consistent with FAA guidance, a qualitative air quality assessment is appropriate for this action. Construction related emissions would be temporary, localized, and limited in duration, occurring in a remote upland area with good existing air quality, prevailing winds that promote dispersion, and no nearby sensitive receptors. Based on these factors, and the short-term nature of construction activities, a quantitative emissions inventory or dispersion modeling is not warranted because emissions would clearly remain below levels that could affect NAAQS.

Operational Emissions

Operational air emissions associated with the Proposed Action would be minimal. The ARSR facility would primarily receive power from the Commonwealth Utilities Corporation

¹ The Saipan Municipality is designated attainment/unclassifiable for all criteria pollutants. Because the Proposed Action would occur in an attainment area, the action is not subject to a Clean Air Act General Conformity determination pursuant to 40 CFR Part 93.

(CUC)'s electrical grid. Backup generator use would be limited to short-term operation during power disruptions and would meet or exceed applicable EPA emissions standards.

FAA actions involving the replacement or upgrade of navigational aids and the short-term use of emergency or backup generators are included on FAA's list of Federal actions presumed to conform under the CAA². Accordingly, operational emissions would not require quantification and would not result in air quality impacts.

Air emissions associated with construction would be temporary and localized, and operational emissions would be minimal. Pollutant concentrations would not approach or exceed any NAAQS. Therefore, consistent with FAA Order 1050.1G, the Proposed Action would not result in significant impacts to air quality.

3.1.3.2 No Action Alternative

Under the No Action Alternative, no construction or operational changes would occur. Existing air quality conditions would remain unchanged, and no impacts to air quality would result.

3.1.4 Environmental Commitments

To minimize potential adverse impacts to air quality during construction, standard best management practices (BMPs) would be implemented. All diesel-powered equipment used at the site will meet U.S. EPA Tier IV standards to reduce emissions. Prior to commencement and for the duration of earthmoving activities, appropriate BMPs will be in place to control fugitive dust emissions. Construction activities will also be limited to regular working hours in accordance with local regulatory requirements to minimize potential nuisance to neighboring communities. No additional air quality impacts are anticipated, as local wind conditions provide effective means to disperse pollutants in emissions.

² FAA. 2007. "Federal Actions Presumed to Conform to State Implementation Plans." Federal Register Vol. 72 No. 145): 41565-41580 (July 30, 2007).

3.2 Biological Resources

3.2.1 Regulatory Setting

Biological resources within the project area are regulated under federal and Commonwealth laws intended to conserve wildlife species and their habitats.

STATUTE	CITATION	REGULATION	AGENCY
Endangered Species Act (ESA)	16 U.S.C. §§ 1531-1544	50 CFR parts 17 and 402	U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS)
Summary	The ESA requires federal agencies to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of designated critical habitat.		
Fish and Wildlife Coordination Act	16 U.S.C. §§ 661-667d	N/A	USFWS
Summary	Requires consultation with USFWS and appropriate state or territorial wildlife agencies when actions may result in the modification of water bodies or affect wildlife resources.		
Migratory Bird Treaty Act	16 U.S.C. § 703 et seq.	50 CFR part 600	NMFS, USFWS
Summary	Prohibits the intentional take, possession, or destruction of birds, nests, or eggs, except as authorized by regulation.		
Fish, Game, and Endangered Species Act	PL 1-08	NMIAC 85-30	CNMI Department of Fish and Wildlife (DFW)
Summary	Establishes the CNMI Division of Fish and Wildlife and provides the authority for the conservation and management of fish, wildlife, and endangered species within the Commonwealth.		

3.2.2 Affected Environment

The project area is located on Mount Petosukara in northern Saipan within a landscape that has been extensively modified by historical land use, military activity, and infrastructure development. The ARSR site occupies the footprint of the former PACBAR III radar facility, which includes previously cleared, graded, and developed areas associated with radar operations, access roads, utilities, and maintenance activities. As a result, the immediate project footprint does not represent undisturbed native habitat (USAF 1987).

In addition to the summit site, the project includes improvements along an approximately 1.6-mile ELD corridor that follows the existing radar access road. This corridor consists primarily of previously disturbed roadside vegetation associated with the existing utility line and access road; however, portions of the corridor occur adjacent to more continuous areas of secondary forest and upland habitat.

Vegetation and Habitat

Vegetation in the project area and surrounding uplands consists of a mix of vegetation communities including approximately 20 percent native forest, 30 percent mixed

secondary forest, 30 percent grassland/shrubland, and 20 percent tangan-tangan dominated vegetation. These vegetation communities provide habitat for a variety of native birds and other wildlife species that occur throughout northern Saipan. (CNMI DFW Post-Survey Report 2025). These communities reflect post-World War II disturbance, reforestation efforts, and natural regeneration following historical clearing. While intact native limestone forest is limited within the immediate project footprint, more contiguous areas of secondary upland landscape occur in the surrounding landscape, including areas adjacent to portions of the ELD corridor (USAF 1987, CNMI DLNR 2020, CNMI DLNR DFW 2022).

Wildlife Resources

Wildlife species present in the area are typical of northern Saipan upland environments and include native and endemic birds, bats, invertebrates, and terrestrial mollusks associated with limestone forest and secondary vegetation. The ARSR site does not contain caves, wetlands, perennial surface waters, or other specialized habitat features such as nesting caves or breeding wetlands. The ARSR site itself provides limited habitat value due to prior disturbance associated with the former PACBAR III installation. However, adjacent forested areas and portions of the existing ELD corridor may provide foraging or transient habitat for forest-associated species.

Recent surveys conducted by the CNMI DFW in February 2025 documented a variety of native and endemic bird species within the project area and surrounding habitat. Survey observations included several forest-associated species typical of northern Saipan, including bridled white-eye (*Zosterops conspicillatus*), golden white-eye (*Cleptornis marchei*), Micronesian myzomela (*Myzomela rubratra*), rufous fantail (*Rhipidura rufifrons*), Mariana fruit dove (*Ptilinopus roseicapilla*), white-throated ground dove (*Pampusanna kubaryi*), collared kingfisher (*Todiramphus chloris*), Micronesian starling (*Aplonis opaca*), black noddy (*Anous minutus*), white tern (*Gygis alba*), white-tailed tropicbird (*Phaethon lepturus*), yellow bittern (*Ixobrychus sinensis*; CNMI DFW Post-Survey Report 2025).

Federally Listed Species

The Endangered Species Act (ESA) of 1973, as amended, provides for the conservation of species listed as endangered or threatened and the ecosystems upon which they depend. The U.S. Fish and Wildlife Service (USFWS) maintains a list of federally listed species that may occur within a given geographic area.

The FAA requested an official species list from the USFWS Information for Planning and Consultation (IPaC) system to identify federally listed species that may occur within the vicinity of the project area. Based on information provided by USFWS and coordination with the CNMI Division of Fish and Wildlife (DFW), nine threatened, endangered, or candidate species may occur within the broader project vicinity.

These species include one mammal, three bird species, one snail species, one insect species, and three plant species. Habitat for some of these species may occur within portions of the project area or surrounding landscape.

Federally listed species with the greatest potential to occur within or near the project area include the Mariana fruit bat (*Pteropus mariannus*), the Mariana gray swiftlet (*Aerodramus*

bartschi), the Micronesian megapode (*Megapodius laperouse*), and the Nightingale reed warbler (*Acrocephalus luscini*a). These species are known to occur on Saipan and suitable habitat occurs within portions of the surrounding upland and forested habitats.

The Mariana fruit bat is an endangered species that roosts colonially in forested habitats and forages widely at night on fruit, nectar, and leaves. Known colonies occur within the Marpi conservation area north of the project site. Individuals may travel across the Mount Petosukara ridgeline while moving between roosting and foraging areas.

The Mariana gray swiftlet is an endangered bird species that nests in caves and forages aerially for insects over a variety of habitats, including forested areas and open landscapes. Although no known roost caves occur within the immediate project disturbance area, swiftlets may forage within the broader project vicinity.

The Micronesian megapode is a federally endangered ground nesting bird that occurs in limestone forest, scrub, and other vegetated upland habitats. The species forages for seeds, insects, and invertebrates and nests in soil incubation mounds on the ground. Micronesian megapodes occur in northern Saipan and have been detected in the vicinity of the project disturbance area and suitable habitat for this species occurs in vegetated areas along the ELD corridor.

The Nightingale reed warbler is an endangered passerine bird species that occurs in a variety of habitats on Saipan, including native forest, secondary vegetation, and shrub habitats. Suitable habitat for this species may occur within portions of the project area, particularly within vegetated areas along the ELD corridor.

No designated critical habitat for federally listed species occurs within the project footprint.

Potential effects of the Proposed Action on federally listed species are evaluated in Section 3.2.3, Environmental Consequences. Additional detail regarding the effects analysis is provided in the Biological Assessment included in Appendix A.

Saipan Upland Mitigation Bank Area (SUMBA)

The project area occurs within the boundaries of the Saipan Upland Mitigation Bank Area (SUMBA), a CNMI-managed conservation and mitigation area established to conserve upland limestone forest habitats and to support recovery and conservation of native and endangered species, including forest-dependent birds (Figure 3-1). SUMBA encompasses a broad area of upland habitat that includes a range of vegetation conditions, from relatively intact secondary forest to areas that have been historically disturbed by roads, utilities, and former military infrastructure. The existing PACBAR III radar facility and associated access routes were constructed prior to establishment of the mitigation bank and represent pre-existing infrastructure within the SUMBA landscape. As a result, portions of the project area reflect historical operations, access, roads, and utility corridors that pre-date the mitigation bank designation (CNMI DLNR n.d., CNMI DLNR 2020). Management of SUMBA focuses on long-term conservation and restoration of upland habitats across the broader landscape while recognizing the presence of existing infrastructure and previously disturbed areas within the mitigation bank boundary. Activities occurring within these previously developed areas are managed to minimize impacts on surrounding habitats and to maintain the conservation objectives of the mitigation bank (CNMI DLNR 2020).

Within the Proposed Action footprint, vegetation clearing would be limited and would occur primarily within previously disturbed areas of the former PACBAR III radar site and along the existing ELD corridor. While the project is located within SUMBA, the affected areas represent a small portion of the overall mitigation bank and are characterized by reduced habitat quality relative to surrounding upland forests. Baseline biological conditions therefore reflect a combination of secondary vegetation, historical disturbance, and proximity to larger areas of conserved upland habitat within the SUMBA landscape (USAF 1987, CNMI DLNR 2020).

Agency Coordination and Impact Analysis Methods

The FAA coordinated with the CNMI DFW regarding potential wildlife resources within the project area. DFW staff conducted a site review and identified protected species and suitable habitat within portions of the project area. Following coordination with the FAA, DFW issued a Clearance Letter indicating that the Proposed Action could proceed provided that specific avoidance and minimization measures are implemented. These measures include advanced notification, pre-construction surveys, delineation and flagging of areas where vegetation clearing is not permitted, and implementation of avoidance measures during construction.

Separately, the FAA consulted with the USFWS to evaluate potential effects of the Proposed Action on federally listed species that may occur in the project area.

Based on coordination with CNMI DFW, USFWS, and evaluation of potential habitat disturbance along portions of the ELD corridor, the FAA initially determined that the Proposed Action may affect and is likely to adversely affect the Nightingale reed warbler and the Micronesian megapode. The FAA submitted a Biological Assessment (BA) to the USFWS on April 13, 2026, requesting initiation of formal consultation under Section 7 of the ESA. Following submittal of the BA, FAA continued coordination with USFWS regarding the proposed avoidance and minimization measures. In correspondence dated July 17, 2026, USFWS recommended revising the effects determination for the Micronesian megapode from may affect, likely to adversely affect to may affect, not likely to adversely affect. The recommendation was based on the absence of megapode detections during CNMI DFW's 2025 site assessment and FAA's commitment to conduct pre-construction vegetation and playback surveys before vegetation clearing. Accordingly, FAA revised its effects determination for the Micronesian megapode to may affect, not likely to adversely affect. The Nightingale reed warbler remains may affect, likely to adversely affect. The BA and subsequent consultation correspondence are included in Appendix A. Formal consultation with USFWS is ongoing and will be completed prior to issuance of the final NEPA decision.

The species-specific impact analysis presented below is based on CNMI DFW field review, USFWS species list information, existing literature, site reconnaissance, and application of avoidance and minimization measures required by CNMI DFW.

3.2.3 Environmental Consequences

Potential impacts to biological resources were evaluated based on existing literature, agency correspondence, site reconnaissance, and coordination with CNMI DFW and USFWS. The analysis assumes that vegetation clearing will be minimized, construction

activities will follow applicable BMPs, and project activities would occur primarily within the existing PACBAR III facility footprint and along the existing single-phase ELD alignment and radar access road. The ELD upgrade would occur within a narrow utility right-of-way along the approximately 1.6-mile corridor. While clearing would vary depending on site conditions, a conservative estimate assumes vegetation removal of up to 10 feet in width along portions of the corridor where necessary for installation and maintenance.

Significance thresholds

Under FAA Order 1050.1G, a significant impact to biological resources would occur if an action is likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat. This includes:

- A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large project area.
- Adverse impacts to special status species or their habitats.
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations.
- Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population level required for population maintenance.

3.2.3.1 Proposed Action

Construction Impacts

Construction activities associated with the Proposed Action would result in limited vegetation clearing and ground disturbance within previously disturbed portions of the former PACBAR III radar site and along the existing ELD corridor. Vegetation clearing and ground disturbance were estimated using conservative design assumptions to evaluate potential habitat impacts. Project disturbance consists of two primary components:

- **Upper Radar Site:** Construction of the new ARSR facility would occur within the previously developed PACBAR III radar facility footprint. Approximately 0.5 acres of ground disturbance would occur within this area for demolition, foundation work, and facility construction. This area is currently characterized by paved surfaces, existing structures, and previously disturbed soils, and does not contain high-quality native habitat. Because the area is already heavily disturbed and lacks suitable habitat features for most listed species, impacts to wildlife habitat at the upper site are expected to be minimal.
- **Electrical Distribution Line (ELD) Corridor:** The project includes replacement of approximately 40 existing wooden utility poles with 49 new typhoon-resistant concrete poles along a 1.6-mile electrical distribution corridor that follows the existing radar access road. For impact analysis purposes, vegetation clearing was conservatively assumed to be up to 10 feet in width along portions of the utility

corridor. This equates to approximately 1.9 acres (0.77 hectares) of temporary vegetation disturbance. Vegetation clearing would occur primarily in secondary forest and disturbed roadside vegetation communities. Implementation of BMPs and CNMI DFW avoidance measures would minimize disturbance to surrounding habitat. Areas temporarily cleared of vegetation for installation of the ELD are expected to naturally revegetate quickly following construction.

Saipan Upland Mitigation Bank Area (SUMBA) Impacts

The project area occurs within the SUMBA conservation area. Although the Proposed Action would occur within the SUMBA boundary, project activities would be limited primarily to previously disturbed areas at the former PACBAR III radar site and along the existing ELD alignment that follows the radar access road.

Construction of the new ARSR facility would occur within the existing radar site footprint, which consists largely of previously cleared and developed surfaces. Vegetation clearing associated with the utility upgrade would occur within a narrow roadside corridor characterized by secondary vegetation and disturbed habitats.

Because project activities would be confined to previously disturbed areas and limited roadside corridor, the Proposed Action would not substantially affect the overall conservation function or habitat value of the broader SUMBA conservation area and would not measurably reduce the functional habitat value or conservation objectives of the mitigation bank. Potential habitat impacts to federally listed species are addressed through the ESA Section 7 consultation process and implementation of avoidance, minimization, and mitigation measures.

Operational Impacts

Operation of the proposed ARSR system would involve the transmission of radiofrequency energy in the form of short pulses emitted from a rotating antenna. The radar operates in the L-band portion of the electromagnetic spectrum and provides 360-degree airspace surveillance by continuously rotating the antenna and sweeping a narrow radar beam across the surrounding environment.

Radar systems emit energy in short pulses rather than continuous radiation. Because the antenna rotates continuously, the radar beam is not directed toward any specific point in space for more than a fraction of a second during each rotation cycle. Objects moving through the radar beam path would therefore experience only brief and intermittent exposure as the beam passes across the surrounding landscape (Missile Defense Agency [MDA] 2005; Bruderer and Joss 1969).

Potential biological effects of electromagnetic radiation (EMR) from radar systems have been evaluated in numerous studies conducted by the MDA, and other research institutions (Ballistic Missile Defense Organization [BMDO] 2000; MDA 2005). These studies generally identify two categories of potential effects: thermal effects associated with heating of tissues and non-thermal effects associated with behavioral or physiological responses to electromagnetic fields.

Thermal effects occur when electromagnetic energy is absorbed by biological tissues and converted to heat. The magnitude of potential heating depends on several factors, including electromagnetic frequency, exposure duration, distance from the source, and

the orientation and size of the organism relative to the wavelength of the emitted energy. Radar systems used for air surveillance emit pulsed energy that sweeps rapidly across the surrounding environment, which greatly limits the duration of exposure for wildlife moving through the radar beam.

Previous environmental analyses conducted for Department of Defense radar systems have concluded that birds and bats would be unlikely to remain within the radar beam for a sufficient period of time to experience harmful thermal effects. In surveillance mode, the radar beam typically remains directed toward any single point in space for only a very small fraction of a second during each antenna rotation. Because birds and bats are moving while flying, the probability that an individual would remain aligned with the beam path long enough to experience harmful exposure levels is extremely low (BMDO 2000; MDA 2005).

Some studies have suggested that wildlife may exhibit localized avoidance behavior near radar installations, potentially due to electromagnetic fields or associated infrastructure. For example, observations near air traffic control radar stations have documented reduced bat activity in some areas, possibly reflecting behavioral avoidance. However, these responses are generally limited in spatial extent and do not indicate physiological harm or population-level effects (Nicholls and Racey 2007).

Overall, available research indicates that wildlife exposure to radar electromagnetic emissions is typically brief and intermittent and is unlikely to result in tissue damage or other adverse physiological effects. The most likely response of birds or bats encountering radar emissions would be minor avoidance behavior or short-term alteration of flight paths.

Because the proposed radar operates as a continuously rotating antenna and would direct its beam primarily above the surrounding terrain, wildlife in the area would only be exposed to the radar beam momentarily while flying through the beam path. Wildlife on the ground or within forest vegetation would generally not be within the primary radar beam because the antenna is elevated and oriented above the surrounding landscape.

Based on the transient nature of potential exposure and the operational characteristics of surveillance radar systems, the potential for adverse effects to birds or bats from radar electromagnetic emissions is considered extremely low.

Species-Specific Effects

Mariana fruit bat (*Pteropus mariannus*)

The Mariana fruit bat is a federally endangered species that roosts colonially during the day primarily in native primary and secondary limestone forests and range widely at night while foraging for nectar, fruit, and leaves (Wiles and Fujita 1992, Worthington and Taisacan 1996, Wiles and Johnson 2004).

Coordination with CNMI DFW indicates that the Marpi area and SUMBA conservation area provide important foraging habitat for the species and support a known colony. The Marpi colony of bats is located approximately 0.6 miles north of the proposed ARSR site, with the closest point of the radar access road/ELD upgrade occurring approximately 0.5 miles from the colony. Monthly monitoring conducted by CNMI DFW during the past year recorded colony counts of up to 32 bats. Cliff bands along the northern Saipan ridgeline,

including those present at Mount Petosukara, may function as flight pathways between roost sites and foraging areas (Figure 3-2). Mariana fruit bats are strong fliers capable of traveling long distances and regularly move throughout the Mariana archipelago (Wiles and Glass 1990, USFWS 2009).

Potential effects associated with the Proposed Action are primarily related to operation of the ARSR facility. The radar antenna would be mounted on top of the 55-foot tall radar operations building and enclosed within a radome. The radar emits pulsed radiofrequency energy in the L-band portion of the electromagnetic spectrum through a rotating antenna that sweeps a narrow beam across the surrounding landscape during operation. The radar beam is narrow and continuously rotates, resulting in very brief exposure durations for objects moving through the beam path (MDA 2005). Electromagnetic energy emitted by radar systems decreases rapidly with distance from the antenna due to geometric spreading and atmospheric attenuation. As a result, the highest energy levels occur in the immediate vicinity of the radar antenna and decrease substantially at greater distances from the source.

Vegetation surrounding the ARSR site consists primarily of secondary forest and shrub vegetation with canopy heights generally ranging from approximately 30 to 60 feet. Mariana fruit bats typically fly at or above the forest canopy when transiting between roosting and foraging areas, generally ranging from 65 to 165 feet (20-50 meters) above the ground. Because bats move rapidly through the landscape and the radar beam rotates continuously rather than operating in a fixed position, bats would only intersect the radar beam for very short durations while transiting the area (BMDO, 2000; MDA, 2005). Based on these factors, any interaction between bats and the radar beam would be brief and intermittent and would most likely effects, if any, would be temporary behavioral avoidance rather than physiological.

Based on available research and the transient nature of potential exposure, any response by bats would most likely consist of minor avoidance behavior or short-term alteration of flight direction, which would not be expected to affect survival, reproduction, or roosting behavior. Furthermore, given that bats roost during daylight hours and forage at night, and construction activities will occur during daytime hours and the nearest known colony is approximately 0.6 miles from the project area, construction noise and activity is not likely to disturb roosting bats.

Therefore, the FAA has determined that the Proposed Action may affect, but is not likely to adversely affect the Mariana fruit bat.

Mariana Gray Swiftlet (*Aerodramus bartschi*)

The Mariana gray swiftlet is a small dark gray-brown bird and is a federally endangered species. Swiftlets forage over a wide variety of terrain and vegetation including grasslands, limestone forests, ravine forests, and coconut groves. This species roosts exclusively in caves and there is no distinct breeding season and may nest year-round. Swiftlets capture small insects while flying, and do not typically perch or alight on trees away from their roost caves. Although no known swiftlet roost caves occur in the project disturbance area, coordination with the CNMI DFW indicates that swiftlets use habitat surrounding the ARSR site and the ELD corridor for foraging.

DFW noted that the Marpi and Kalabera area, including the proposed site for the ARSR and the ELD corridor, are used by swiftlets during foraging activities. Observations of large numbers of swiftlets in the Marpi and Kalabera area during early morning hours suggest the presence of an unknown roost cave likely located within several miles of the project site. Mariana gray swiftlets were detected by CNMI DFW biologists within the project area during February 2025 project surveys (Figure 3-2).

During construction of the Proposed Action, potential effects to Mariana gray swiftlets could include temporary disturbance associated with vegetation clearing during replacement of power poles along the ELD corridor and during demolition and construction of the ARSR facility. These activities would occur within previously disturbed areas and would be temporary in duration.

Operation of the ARSR was also evaluated as a potential source of effects. Mariana gray swiftlets forage widely and move rapidly across the landscape while feeding. This flight behavior reduces the likelihood that individuals would remain within the area of influence of the rotating L-band radar beam for more than brief periods while transiting the area.

Because radar exposure would be brief and intermittent and construction disturbance would be temporary and limited to previously disturbed areas, the FAA has determined that the Proposed Action may affect, but is not likely to adversely affect the Mariana gray swiftlet.

Micronesian Megapode (*Megapodius laperouse*)

The Micronesian megapode is a federally endangered, ground-nesting bird that inhabits limestone forests and scrub habitats. Megapodes forage on the ground surface, feeding on seeds and insects. Nesting for this species may occur year-round with no distinct nesting season. Megapodes construct incubation mounds in soil and leaf litter where eggs are buried and incubated using geothermal or solar heat. The species is considered cryptic and has a low detection probability during surveys.

Coordination with the CNMI DFW indicates that megapode occupancy is highest in the Marpi and Kalabera area in northern Saipan. Megapodes are known to use habitat surrounding the Mount Petosukara project area, and the species has been detected in past surveys within 550 feet (Figure 3-2; CNMI DFW 2022). Because megapodes can be difficult to detect and may nest within vegetated areas, CNMI DFW indicated that additional surveys would be necessary to rule out the presence of nesting habitat within areas proposed for vegetation clearing.

Potential impacts to Micronesian megapodes are associated primarily with vegetation clearing along the ELD corridor where approximately 1.9 acres (0.77 hectares) of roadside vegetation and secondary forest along approximately 8,300 linear feet of the radar access road corridor.

Because megapodes may nest in vegetated areas using soil incubation mounds that are difficult to detect, vegetation clearing could result in disturbance to nesting habitat or destruction of incubation mounds if present. Although the disturbance footprint is limited and occurs primarily within previously disturbed roadside vegetation, megapodes are known to occur in the surrounding landscape and have been detected in proximity to the project area.

Prior to vegetation clearing, qualified biologists will conduct vegetation and playback surveys within and adjacent to areas proposed for clearing to determine whether Micronesian megapodes, nesting mounds, or other evidence of active use are present. Survey methods and timing will be coordinated with CNMI DFW and USFWS. Areas containing nesting mounds or evidence of active megapode use will be delineated and avoided, and no vegetation clearing will occur within those areas unless additional coordination with CNMI DFW and USFWS has been completed.

Micronesian megapodes were not detected during CNMI DFW's 2025 site assessment. Although suitable habitat occurs in the surrounding landscape and the species has previously been documented near the project area, vegetation disturbance would be limited primarily to previously disturbed roadside vegetation within the existing ELD corridor. With implementation of pre-construction vegetation and playback surveys and avoidance of any identified nesting mounds or active-use areas, the Proposed Action is not expected to result in injury, mortality, destruction of nesting mounds, or other adverse effects to the species.

Based on these avoidance and minimization measures and subsequent coordination with USFWS, FAA has determined that the Proposed Action may affect, but is not likely to adversely affect the Micronesian megapode. USFWS's July 17, 2026, recommendation regarding the revised determination is included in Appendix A.

Nightingale Reed Warbler (*Acrocephalus luscini*)

The Nightingale reed warbler is a federally endangered species that inhabits dense vegetation including tangan-tangan (*Leucaena leucocephala*) forest, bamboo thickets, tall elephant grass, or a mixture of these environments. These habitat types occur in portions of the project area, particularly along the ELD corridor where secondary forest and shrub vegetation are present. Reed warblers are known to occur in the project area.

Recent wildlife surveys conducted by CNMI DFW in February 2025 documented the presence of Nightingale reed warblers within the project area during two of three survey visits (Figure 3-2). These observations confirm that the species occurs within the project area and surrounding vegetation communities (CNMI DFW Post-Survey Report 2025).

Vegetation clearing associated with replacement of existing utility poles along the ELD corridor would result in disturbance of approximately 83,000 square feet (approximately 1.9 acres or 0.77 hectares) of vegetation along approximately 8,300 linear feet of the corridor. Vegetation removal would occur primarily within previously disturbed roadside vegetation and secondary forest dominated by tangan-tangan and shrub species.

Because these vegetation communities may provide suitable habitat for the Nightingale Reed Warbler, vegetation clearing associated with the Proposed Action could remove or degrade habitat used by the species.

To offset habitat impacts associated with the project, the FAA anticipates purchasing SUMBA conservation credits, consistent with the outcome of the formal Section 7 consultation. The proposed compensatory mitigation is intended to address impacts to Nightingale reed warbler habitat. The final mitigation requirements, including number of credits, will be established through the USFWS Biological Opinion.

Because the Proposed Action would result in removal of vegetation that may provide habitat for the Nightingale Reed Warbler, the FAA has determined that the Proposed Action may affect and is likely to adversely affect the Nightingale Reed Warbler.

Humped Tree-Snail (*Partula gibba*)

The humped tree snail is a federally endangered terrestrial mollusk that inhabits moist native forest environments with dense canopy cover and broad-leaved tree species. Suitable habitat for this species typically occurs within relatively intact native limestone forest communities.

The project disturbance footprint is limited to previously disturbed areas within the former PACBAR III site and roadside vegetation along the existing ELD corridor. These areas are dominated by secondary vegetation and tangan-tangan stands and do not provide suitable habitat for the humped tree snail. Based on habitat conditions and the limited extent of disturbance, the FAA has determined that the Proposed Action will have no effect on this species.

Mariana Eight-spot Butterfly (*Hypolimnys octocula marianensis*)

The Mariana eight-spot butterfly is a federally endangered species typically associated with native limestone forest and undeveloped karst terrain, particularly along cliff edges and intact forested limestone plateaus.

The Proposed Action would occur within previously disturbed portions of the former PACBAR III facility and along the existing ELD corridor where habitat is dominated by secondary vegetation and roadside disturbance. Suitable limestone forest habitat for this species was not observed within the project footprint. Therefore, the FAA has determined that the Proposed Action will have no effect on the *Hypolimnys octocula marianensis*.

Listed Plant Species: *Dendrobium guamense*, *Solanum guamense*, and *Heritiera longipetiolata*

These species occur in native limestone forests. The Proposed Action will require minimal vegetation clearing. Prior coordination will be sought from DFW as required by their conditions. Therefore, no effect is anticipated on these listed plant species.

Biological Resources Impact Summary

Table 3-2 ESA Species Specific Findings of Effect Summary

Species	Determination
Mariana fruit bat	NLAA
Mariana gray swiftlet	NLAA
Micronesian megapode	NLAA
Nightingale reed warbler	LAA
Humped tree snail	No effect
Mariana eight-spot butterfly	No effect
Listed plants	No effect

NLAA: Not likely to adversely affect
LAA Likely to adversely affect

Based on the analysis above, the Proposed Action would result in limited and localized vegetation disturbance within previously disturbed areas of the former PACBAR III site and along the existing ELD corridor. Approximately 0.5 acres of disturbance would occur at the radar site and approximately 1.9 acres (0.77 hectares) of vegetation clearing would occur along the ELD corridor within secondary forest and roadside vegetation communities.

The FAA determined that the Proposed Action may affect, but is not likely to adversely affect the Mariana fruit bat and Mariana gray swiftlet due to the limited extent of habitat disturbance, absence of roosting habitat within the project footprint, and the brief and intermittent nature of potential exposure to the rotating radar beam during operation. The Proposed Action may affect, but is not likely to adversely affect, the Micronesian megapode. Although suitable megapode habitat occurs in the surrounding landscape, no megapodes were detected during CNMI DFW's 2025 site assessment, and FAA will conduct pre-construction vegetation and playback surveys and avoid any identified nesting mounds or active-use areas.

The Proposed Action may affect and is likely to adversely affect the Nightingale reed warbler due to vegetation clearing within habitat used by these species. These impacts are limited in extent and would occur primarily within previously disturbed areas. Habitat impacts to the Nightingale reed warbler will be offset through purchase of conservation credits within the SUMBA as determined through the ESA Section 7 consultation process.

The Proposed Action would have no effect on the humped tree snail, Mariana eight-spot butterfly, or federally listed plant species because suitable habitat for these species is not present within the project disturbance footprint.

With implementation of avoidance measures, BMPs, and completion of ESA Section 7 consultation, the Proposed Action would not result in impacts that meet FAA Order 1050.1G significance thresholds for biological resources. Documentation supporting ESA Section 7 consultation, including the Biological Assessment and coordination with the CNMI DFW, will be included in Appendix A.

3.2.3.2 No Action Alternative

Under the No Action Alternative, the FAA would not construct a new ARSR facility or upgrade the ELD. The existing PACBAR III infrastructure would not be demolished. No vegetation clearing, ground disturbance, or construction activities would occur within the former PACBAR III site, the existing ELD corridor, or within the SUMBA.

Biological conditions within the project area would remain unchanged and would continue to reflect existing conditions associated with historical disturbance, abandoned infrastructure, and secondary vegetation communities. Wildlife species currently using the area would continue to experience existing habitat conditions, including the presence of degraded forest, grassland vegetation, and existing utility corridors.

Because the No Action Alternative would not introduce new ground disturbance, vegetation removal, or operational changes, it would result in no direct or indirect impacts to biological resources, including federally listed or CNMI-protected species. No avoidance, minimization, or mitigation measures would be required under the No Action Alternative.

3.2.4 Environmental Commitments

Under the Proposed Action, the FAA would implement the following mitigation measures consistent with the commitments incorporated into the Proposed Action and coordination with DFW and USFWS:

- o **Pre-Construction Coordination:** At least one week prior to initiating vegetation clearing or earthmoving activities, the FAA or its contractor will notify DFW and coordinate the timing and methods for pre-construction biological surveys. Qualified biologists will conduct surveys, as appropriate for the species of concern, to identify listed species, active nests, nesting mounds, occupied habitat, or other sensitive biological resources within and adjacent to areas proposed work areas. Survey methods may include visual and playback surveys, as appropriate. No vegetation clearing activities will occur until surveys have been completed and areas requiring avoidance have been delineated and clearly flagged.
- o **Habitat Protection:** Vegetation clearing will be minimized and restricted to the construction footprint and previously disturbed areas to the greatest extent practicable. Sensitive habitat features identified during pre-construction surveys, including active nests, nesting mounds, occupied habitat, or other protected biological resources, will be avoided where practicable. If avoidance is not feasible, the FAA will coordinate with DFW and USFWS, as appropriate, before proceeding with activities that could affect listed species or designated avoidance areas. Flagged avoidance areas will remain protected throughout construction.
- o **Construction Controls:** Construction activities would occur during normal working hours and BMPs would be implemented to minimize noise, dust, and disturbance. To minimize disturbance to nesting Nightingale-reed warblers and other native bird species, construction activities involving heavy equipment or other noise-generating activities greater than 60 decibels would be restricted to non-peak breeding seasons (April – June and October – December), consistent with recommendations provided by DFW.
- o **Monitoring:** If listed species or other sensitive biological resources are observed during construction, work in the immediate vicinity would cease and DFW and USFWS would be notified to determine appropriate actions. Construction personnel will receive environmental awareness training to identify protected species and understand the required avoidance and reporting procedures.

With implementation of these mitigation measures, the Proposed Action is consistent with ESA requirements and DFW clearance conditions.

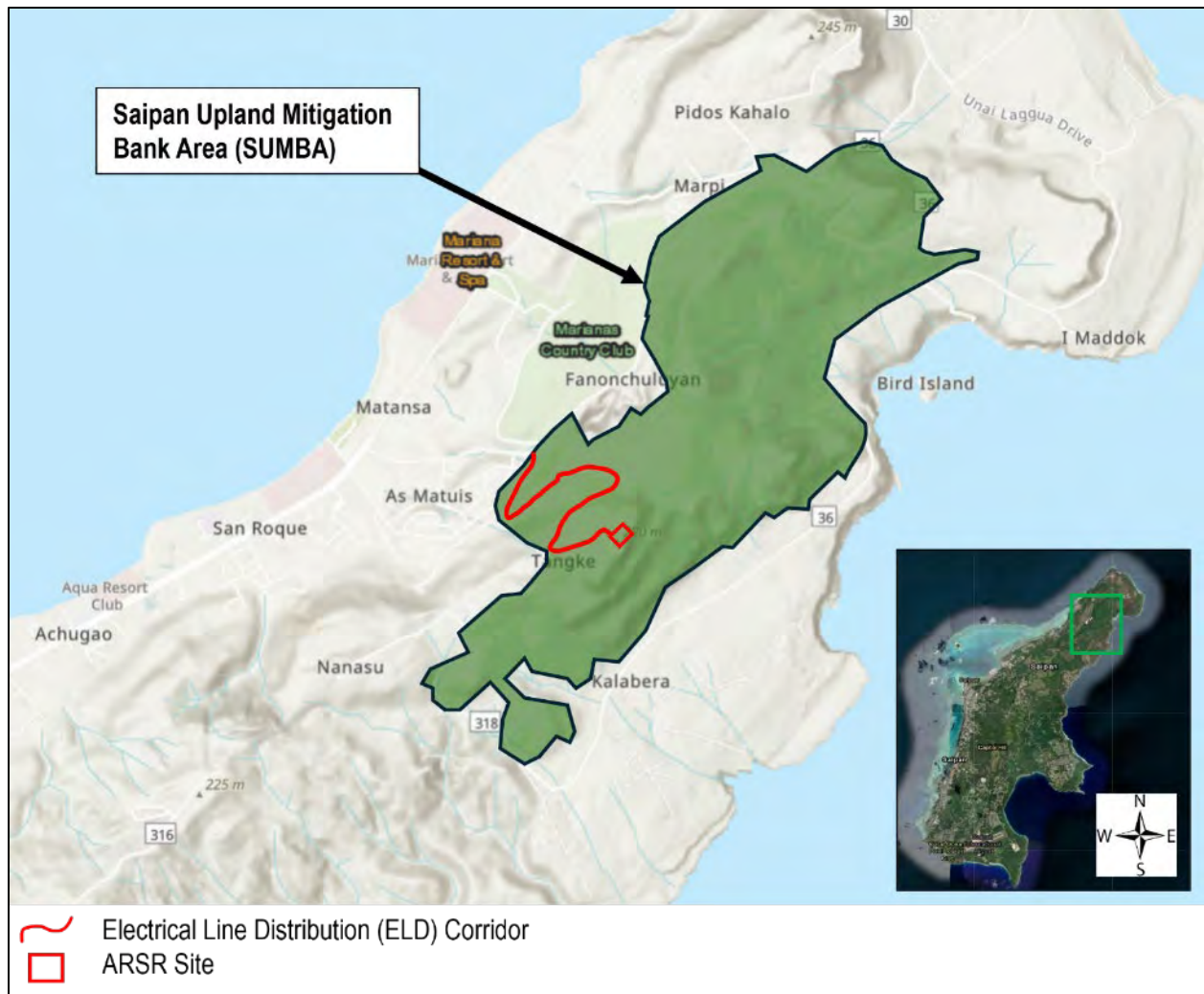


Figure 3-1 ARSR Site and ELD Corridor within the Saipan Upland Mitigation Bank Area (SUMBA), Northern Saipan.

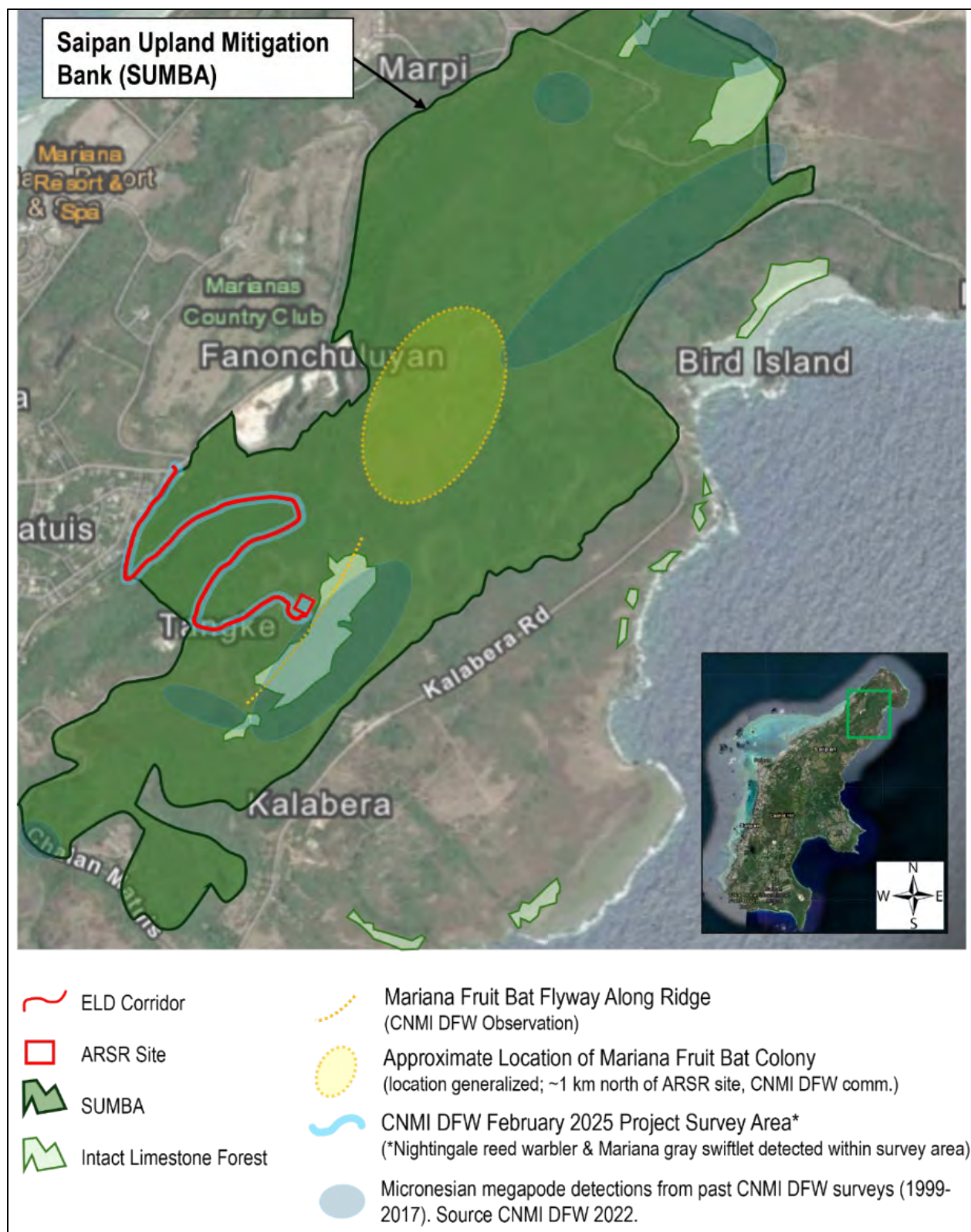


Figure 3-2 ESA Species Observations and Wildlife Survey Area near the Proposed Action.

3.3 Coastal Resources

3.3.1 Regulatory Setting

Federal and Commonwealth coastal resources are regulated under the Coastal Zone Management Act (CZMA) and the CNMI Coastal Resources Management Act, which require federal actions with reasonably foreseeable effects on coastal uses or resources to be consistent, to the maximum extent practicable, with approved coastal management programs.

Under the CZMA, federal agencies must ensure that activities they conduct, fund, or authorize are consistent with the enforceable policies of the CNMI Coastal Management Program (CMP). In the CNMI, the CMP is administered by the CNMI Division of Coastal Resources Management (DCRM) within the Bureau of Environmental and Coastal Quality (BECQ), with oversight from the National Oceanic and Atmospheric Administration (NOAA).

STATUTE	CITATION	REGULATION	AGENCY
Coastal Zone Management Act (CZMA)	16 U.S.C. §§ 1451-1466	15 CFR parts 923 and 930	National Oceanic and Atmospheric Administration (NOAA)
Summary	It includes requirements for ensuring that activities conducted or authorized by federal agencies are consistent with approved state coastal zone management programs through four different consistency consultation processes		
Coastal Resources Management Act	PL 3-47	NMIAC 15-10	BECQ-DCRM
Summary	For NEPA purposes, federal actions with reasonably foreseeable effects on the CNMI coastal zone, whether occurring inside or outside it, must undergo a federal consistency review to ensure alignment with these policies. This process is overseen by the Division of Coastal Resources Management (DCRM) and is essential for evaluating environmental impacts under NEPA.		

3.3.2 Affected Environment

The CZMA is administered in CNMI by the Coastal Resource Management Office. The coastal zone within the Commonwealth includes all non-federal lands on the island, as well as offshore islands and non-federal submerged lands and waters extending seaward for 3 nautical miles. Each island within the CNMI, in their respective entirety, is designated as the coastal zone.

The Proposed Action is located on Mount Petosukara in northern Saipan at an elevation of approximately 920 feet above mean sea level. The ARSR site is inland and well removed from coastal shorelines, tidal waters, wetlands, coral reef ecosystems, estuaries, or other coastal-dependent resources. The project area is located within an upland interior portion of Saipan and is not adjacent to coastal shorelines, tidal waters, wetlands, coral reef ecosystems, estuaries, or other coastal-dependent resources.

Existing land uses in the project area consist of abandoned military infrastructure, access roads, and utility corridors associated with the former PACBAR III radar facility. No coastal

access points, marine facilities, or shoreline modifications occur within or adjacent to the project footprint.

3.3.3 Environmental Consequences

Significance Thresholds

FAA Order 1050.1G does not establish specific numeric significance thresholds for coastal resources. Instead, impacts are evaluated based on whether a Proposed Action would be inconsistent with an approved coastal zone management program or would result in adverse effects to coastal uses or resources that cannot be avoided or adequately mitigated.

Factors considered include whether the action would:

- Be inconsistent with the relevant state coastal zone management plan(s).
- Impact a coastal barrier resources system unit (and the degree to which the resource would be impacted).
- Pose an impact to coral reef ecosystems (and the degree to which the ecosystem would be affected).
- Cause an unacceptable risk to human safety or property.
- Cause adverse impacts to the coastal environment that cannot be satisfactorily mitigated.

Federal consistency applies to proposed actions that occur within and outside the coastal zone and is subject to CZMA requirements. Certain federal actions affecting CNMI's coastal uses or resources are required to be consistent to the maximum extent practicable with the enforceable policies outlined in the CNMI's approved Coastal Management Plan.

3.3.3.1 Proposed Action

The Proposed Action would occur entirely within an upland interior portion of Saipan and would not directly affect coastal waters, shorelines, wetlands, coral reefs, or other coastal-dependent resources. No new access routes to coastal areas would be created, and the project would not alter coastal land uses or public access.

Construction activities would involve limited ground disturbance associated with installation of the new ARSR and electrical infrastructure and demolition of existing infrastructure. Standard construction BMPs including erosion and sediment control measures, would be implemented to prevent offsite transport of sediment or pollutants. Because the project site is located in an upland interior portion of Saipan and does not drain directly to coastal waters or coastal habitats, construction activities would not result in impacts to coastal uses or resources. The Proposed Action would result in no net increase in impervious surface area and is anticipated to reduce existing impervious surfaces to current conditions.

The Proposed Action was evaluated for consistency with the CNMI CMP. The FAA determined that the Proposed Action would be consistent, to the maximum extent practicable, with the enforceable policies of the CNMI CMP and would not result in significant effects to CNMI coastal uses or resources.

Pursuant to Section 307(c) of the CZMA, the FAA submitted a Federal Consistency Determination to the CNMI DCRM. On May 29, 2026, DCRM concurred with the FAA's determination that the Proposed Action is consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Management Program. DCRM noted that temporary construction-related soil disturbance, soil runoff, and visual changes would be appropriately addressed through implementation of BMPs.

3.3.3.2 No Action Alternative

Under the No Action Alternative, no demolition, construction, or infrastructure upgrades would occur. Existing conditions associated with abandoned PACBAR III infrastructure and existing access routes would remain unchanged. Because no new activities would occur, the No Action Alternative would result in no direct or indirect effects on coastal uses or resources and would maintain baseline coastal conditions.

3.3.4 Environmental Commitments

BMPs implemented during construction would focus on avoidance and minimization of indirect effects, including implementation of erosion and sediment control BMPs, proper handling and disposal of construction materials, and compliance and applicable CNMI environmental requirements.

The FAA shall implement the erosion and sediment control measures and other construction BMPs described in the Federal Consistency Determination and acknowledged by the CNMI DCRM in its May 29, 2026 concurrence letter. Construction activities shall be conducted in a manner consistent with the enforceable policies of the CNMI CMP.

3.4 Hazardous Materials, Solid Waste, and Pollution Prevention

3.4.1 Regulatory Setting

Hazardous materials, solid waste, and pollution prevention are regulated under a combination of federal and CNMI statutes and regulations. These requirements govern the identification, handling, storage, treatment, and disposal of hazardous materials and solid waste, as well as pollution prevention practices. Applicable regulations are consistent with those identified in Exhibit 7-1 of the FAA Desk Reference.

STATUTE	CITATION	REGULATION	AGENCY
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)	42 U.S.C. §§ 9601-9675	40 CFR parts 300, 311, 355, 370, and 373	EPA
Summary	CERCLA establishes joint and several liability for releases of hazardous substances, authorizes EPA to prioritize contaminated sites, and requires federal agencies to identify and remediate hazardous substances on federal lands prior to sale, lease, or transfer.		
Pollution Prevention Act	42 U.S.C. §§ 13101-13109	National Environmental Policy Act, 58 Federal Register 6478 (January 12, 1993)	EPA
Summary	The Pollution Prevention Act guidance require federal agencies to reduce waste generation at the source and minimize environmental impacts during project planning and implementation.		
Resource Conservation and Recovery Act (RCRA)	42 U.S.C. §§ 6901-6992k	40 CFR parts 240-299	EPA
Summary	RCRA governs the generation, storage, treatment, and disposal of hazardous and non-hazardous solid waste.		
Commonwealth Solid Waste Management Act	PL 6-30 2 CMC §§ 3511-3521	Solid Waste Management Regulations NMIAC 65-80	DEQ
Summary	Establishes CNMI requirements for solid waste management to protect human health and the environment.		

3.4.2 Affected Environment

The project site consist of a previously developed radar installation that has been abandoned for several decades and contains derelict infrastructure associated with historical military use.

Phase I and Phase II Environmental Site Assessments (ESAs) were completed for the former PACBAR III Radar Site to evaluate the presence of hazardous materials and environmental contamination associated with historical site activities (APEC 2014, APEC 2025).

The 2014 and 2025 Phase I ESAs identified several Recognized Environmental Conditions (RECs) associated with past site use and abandonment. These include evidence of illegal dumping within the current 1.4-acre footprint of the proposed project

footprint and the presence of historical infrastructure associated with the former PACBAR III radar installation

Within the broader PACBAR III facility footprint, which is currently under the control of CNMI Department of Fire and Emergency Management Services (DFEMS) and DPL, an unsecured 3,000-gallon underground storage tank (UST) and oil-water separator (OWS) containing petroleum was identified. In addition, building materials associated with the former operations structures may contain lead-based paint, polychlorinated biphenyl's (PCBs), and asbestos containing materials typical of structures constructed during the operational period of the facility (APEC, 2014 and APEC, 2025).

During the 2014 investigation, twenty-six 55-gallon drums were discovered abandoned within the former operations building. These drums were later identified as containing used hydraulic fluid. No evidence of a release associated with the drums was observed at the time of discovery. The identified RECs and non-scope items warranted the completion of a Phase II ESA.

A Phase II ESA was conducted to further evaluate potential environmental contamination. The Phase II included sampling of shallow soils (less than three feet below ground surface), stormwater, and building materials to evaluate the presence or absence of various chemicals of potential concern (COPCs) that could pose a risk to human health or the environment. COPCs are regulated under various federal and CNMI regulations. COPCs evaluated in water and soil included metals (arsenic, cadmium, chromium and lead), volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs), dioxins, PCBs and total petroleum hydrocarbons (TPH). Building materials were sampled for lead, asbestos, and PCBs (Phase II ESA 2025).

Sampling results indicated that no COPCs in shallow soils exceeded CNMI or U.S. EPA established screening levels for commercial/industrial land use in areas where groundwater is not a drinking water source. Sampling of the site's septic tank identified VOCs, SVOCs, lead, and TPH in the water collected from the tank. TPH was also detected in stormwater collected from trenches adjacent to the former operations building and S-band antenna.

The CNMI DFEMS has used portions of the site for training activities, including burning of material such as old furniture, which has contributed to the accumulation of waste material and is suspected to have influenced surface water conditions at the site. The VOC and SVOC contamination detected in stormwater is suspected to have resulted from formation of Polycyclic Aromatic Hydrocarbons (PAHs) associated with the burning of solid waste during DFEMS training activities. The presence of TPH in the trenches and septic tank, which are located near areas used for burning, is also suspected to be associated with the use of fuel as an accelerant during these training exercises.

Building material sampling confirmed the presence of asbestos-containing materials and lead-based paint in the former operations building and the S-band antenna and mount.

3.4.3 Environmental Consequences

Significance Threshold

FAA Order 1050.1G does not define any specific significance thresholds for hazardous materials, solid waste, and pollution. Consistent with the FAA Desk Reference, this

assessment considers the following factors regarding whether the Proposed Action or No Action Alternative would have the potential to:

- Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management.
- Involve a contaminated site with unmitigated adverse effects.
- Produce an appreciably different quantity or type of hazardous waste.
- Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity.
- Adversely affect human health and the environment.

3.4.3.1 Proposed Action

Implementation of the Proposed Action would involve construction of a new ARSR facility and associated electrical infrastructure and demolition of the abandoned PACBAR III radar structures. Demolition activities may encounter building materials or infrastructure associated with the former radar facility that could contain regulated materials typical of aging structures, such as ACM, LBP, or PCBs. If such materials are encountered during demolition or renovation activities, they would be identified, characterized, and managed in accordance with applicable federal and Commonwealth regulations, including requirements under RCRA and CNMI solid waste management regulations.

Historical site investigations identified several RECs associated with the former PACBAR III facility, including evidence of illegal dumping and the presence of legacy infrastructure such as a UST and OWS within the broader facility footprint. Prior environmental site assessments conducted at the site provide baseline information regarding potential chemicals of potential concern in soils or building materials. If previously unidentified contamination is encountered during demolition or construction activities, work in the affected area would be halted and appropriate investigation, characterization, and management procedures would be implemented in accordance with applicable regulatory requirements.

Removal of derelict PACBAR III infrastructure would also eliminate abandoned materials currently present at the site and improve overall environmental conditions within the former radar facility footprint.

Construction activities associated with the Proposed Action would require the temporary use of fuels, lubricants, and other materials typical of construction operations. These materials would be stored, handled, and used in accordance with standard environmental protection practices and spill prevention measures to minimize the potential for accidental releases. Construction wastes, including demolition debris, would be managed and disposed of in accordance with applicable federal and CNMI solid waste regulations.

Operation of the proposed ARSR facility would involve limited quantities of fuels, lubricants, and maintenance materials associated with routine equipment servicing and facility operations. These materials would be stored and managed in accordance with applicable federal and Commonwealth regulations and FAA environmental management practices. Pollution prevention measures would be implemented during construction and

operation to minimize waste generation and reduce the potential for environmental contamination.

With implementation of standard environmental protection measures and compliance with applicable regulatory requirements, the Proposed Action would not result in significant impacts related to hazardous materials, solid waste management, or pollution prevention under FAA Order 1050.1G.

3.4.3.2 No Action Alternative

Under the No Action Alternative, construction of the new ARSR facility and demolition of the existing PACBAR III radar infrastructure would not occur. Existing abandoned structures and legacy infrastructure associated with the former radar facility would remain in place.

No new construction-related hazardous materials would be introduced, and no changes to current conditions related to hazardous materials management or solid waste generation would occur. Existing environmental conditions associated with the abandoned PACBAR III facility, including the presence of derelict infrastructure and previously identified RECs, would remain unchanged.

Because no new activities would occur under the No Action Alternative, the alternative would not result in direct or indirect impacts related to hazardous materials, solid waste, or pollution prevention.

3.4.4 Environmental Commitments

Because potential impacts related to hazardous materials, solid waste, and pollution prevention would be minimized through compliance with applicable federal and Commonwealth regulations and standard environmental management practices, no additional mitigation measures are required. However, the following environmental protection measures would be implemented during demolition and construction activities associated with the Proposed Action to ensure proper management of hazardous materials and wastes.

- **Demolition materials management:** If regulated materials such as ACM, LBP, or PCBs are encountered during demolition of the former PACBAR III radar structures, these materials would be identified, characterized, and properly managed in accordance with applicable federal and CNMI regulations.
- **Hazardous materials handling and spill prevention:** Fuels, lubricants, and other materials used during construction would be stored, handled, and used in accordance with standard environmental protection practices to minimize the potential for accidental releases. Spill prevention and response procedures would be implemented to address any accidental releases that may occur during construction.
- **Discovery of previously unidentified contamination:** If previously unidentified contaminated soils or hazardous materials are encountered during excavation or demolition activities, work in the affected area would be halted and appropriate investigation and management procedures would be implemented in accordance with applicable regulatory requirements.

Through implementation of these measures and compliance with applicable environmental regulations, potential impacts associated with hazardous materials, solid waste, and pollution prevention would be minimized.

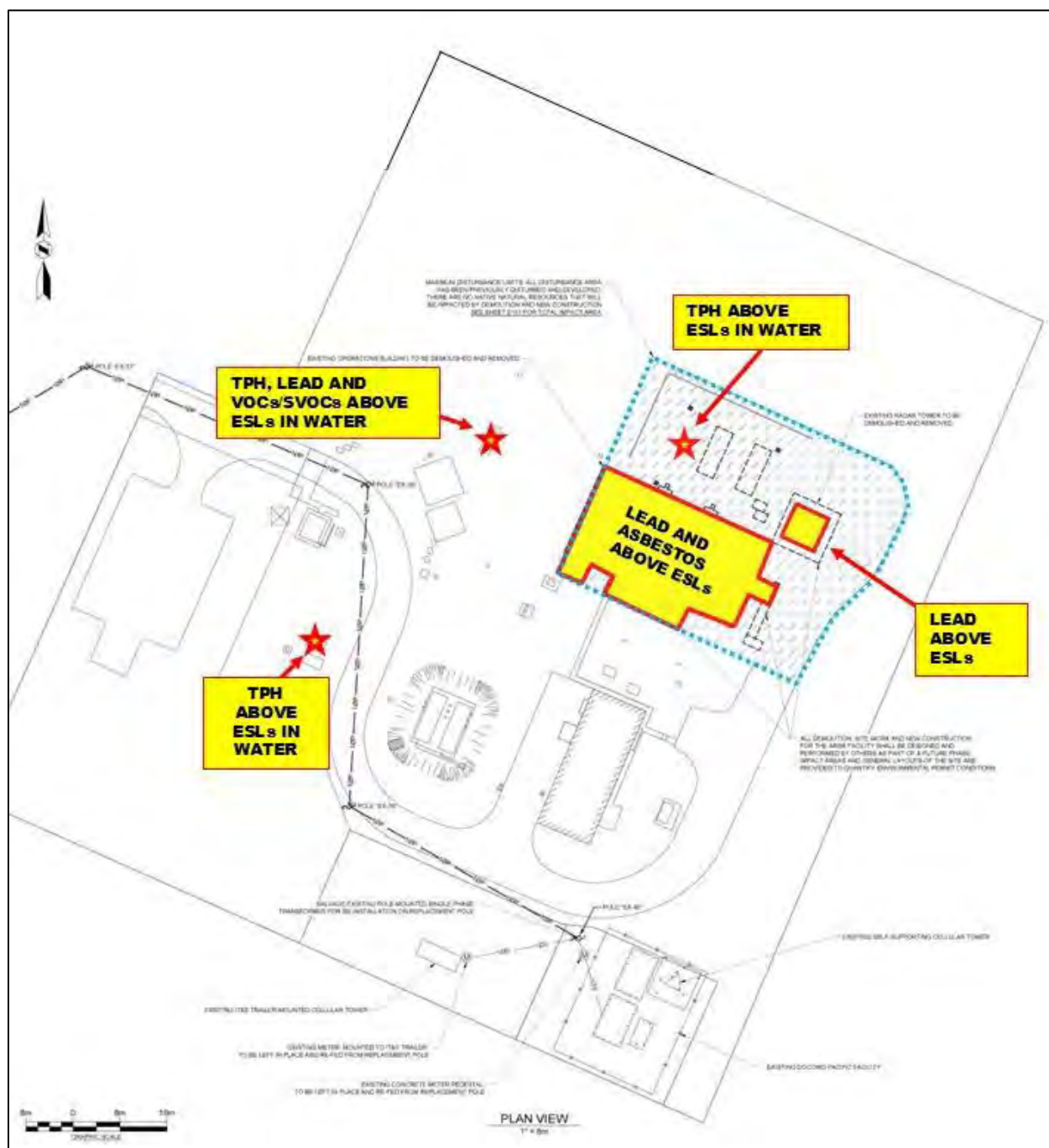


Figure 3-3 Phase II Environmental Site Assessment – Summary of Sampling Results. Source: APEC, Phase II ESA, August 2025

3.5 Historical, Architectural, Archaeological, and Cultural Resources

3.5.1 Regulatory Setting

Historical, architectural, archaeological, and cultural resources are protected under federal and Commonwealth laws intended to ensure that effects to important cultural resources are considered during federal decision-making.

In accordance with FAA Order 1050.1G, the FAA coordinates its responsibilities under NEPA with the Section 106 process to ensure that cultural resources are appropriately considered during project planning and environmental review.

STATUTE	CITATION	REGULATION	AGENCY
National Historic Preservation Act	54 U.S.C. § 300101 et seq.	36 CFR 800 Section 106 Process	NPS, SHPO
Summary	Section 106 of NHPA requires federal agencies to consider the effects of their undertaking on properties listed in or eligible for listing in the NRHP.		
Commonwealth Historic Preservation Act	PL 3-39 1 CMC § 2381-2382	NMIAC 55-10	DCCA-HPO
Summary	Mandates HPO to protect the islands' historical and cultural heritage and prohibits the removal of historic properties and artifacts.		

3.5.2 Affected Environment

As defined in 36 CFR § 800.16(d), the Area of Potential Effects (APE) is the geographic area within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties. For the Proposed Action, the FAA defined the APE to include:

- The proposed ARSR facility footprint at the former PACBAR III site atop Mount Petosukara; and
- The ELD corridor, extending approximately 1.6 miles along As Matuis Road and Panglao Place from Route 30 to the radar facility.

The former PACBAR-III radar facility represents a Cold-War-era air defense radar installation. Although the structure is no longer operational, the facility represents part of the historic radar infrastructure constructed during the Cold War period on Saipan.

The ELD corridor follows the existing radar access road that connects Route 30 to the former PACBAR III radar facility. Portions of this roadway and surrounding landscape were historically used during World War II and subsequent military activities on Saipan. As a result, remnants of wartime infrastructure, including Quonset huts and defensive features, are present within the broader corridor.

The APE includes areas of direct ground disturbance associated with construction, demolition, and utility installation, as well as adjacent areas where indirect effects could occur.

Identification of Cultural Resources

The FAA commissioned an Archaeological Inventory Survey (AIS) and Monitoring Planning Document for the Proposed Action in 2025. Field investigations were conducted between July 13 and July 17, 2025, and an End-of-Fieldwork letter was submitted to the CNMI Historic Preservation Office (HPO) on August 4, 2025. The HPO concurred with the fieldwork methodologies and in subsequent correspondence acknowledged completion of the field investigation and indicated no objections to proceeding with consultation provided that the recommendation in the End-of-Fieldwork letter are followed.

The AIS included a pedestrian survey, documentation of standing structures, and evaluation of previously recorded sites. For purposes of the field investigation, the APE was subdivided into discrete areas reflecting prior disturbance, land use, and construction activities. These areas are identified as Area 1 through Area 5, as shown in Figure 3-4. Areas recommended for archaeological monitoring during construction are shown in Figure 3-5.

The survey coverage consisted of:

- The ELD corridor, surveyed along both sides of the roadway in transects extending up to 10 meters from the road shoulder, where terrain permitted; and
- The ARSR facility APE, encompassing approximately 6,100 square meters, including previously developed areas (approximately 3,000 square meters) and adjacent secondary tangan-tangan forest (3,100 square meters).
- All accessible portions of the APE were surveyed, and standing structures associated with the PACBAR III facility were documented through mapping and photographic recordation.

National Register Criteria for Evaluation

Properties are evaluated for eligibility for listing in the National Register of Historic Places (NRHP) in accordance with the criteria established in 36 CFR 60.4. Under these criteria, a property may be eligible for listing in the NRHP if it meets one or more of the following:

- o **Criterion A:** Association with events that have made a significant contribution to the broad patterns of history.
- o **Criterion B:** Association with the lives of persons significant in the past.
- o **Criterion C:** Embodiment of distinctive characteristics of a type, period, or method of construction; representation of the work of a master; possession of high artistic values; or representation of a significant and distinguishable entity whose components may lack individual distinction.
- o **Criterion D:** The property has yielded, or may be likely to yield, information important in prehistory or history.

Properties must also retain sufficient integrity of location, design, setting, materials, workmanship, feeling, and association to convey their historical significance. These criteria were applied during the AIS to evaluate previously recorded and newly identified cultural resources within the APE.

Identified Cultural Resources

The AIS identified previously recorded and newly evaluated cultural resources within or adjacent to the APE (Figure 3-4). These resources were documented and evaluated for NRHP eligibility in consultation with the CNMI HPO. The findings are summarized below by survey area:

- o **Area 1:** No historic properties or cultural resources were identified within Area 1.
- o **Area 2:** A modern concrete block feature of limited age and integrity was observed. Based on its characteristics, it is interpreted as a remnant of a relatively recent structure that does not meet NRHP eligibility criteria.
- o **Area 3:** Three previously recorded World War II-era Quonset huts were identified within the 10-meter survey corridor along the ELD route. These structures correspond to TS-1, TS-2, and TS-3 and are associated with wartime ordnance storage activities. A fourth Quonset structure (TS-4) was previously recorded upslope outside of the current APE and was not reexamined during this survey.
 - o Based on prior evaluations, TS-1 through TS-4 have been determined eligible for listing in the NRHP under Criteria A and D due to their association with World War II military activities and their potential to yield information important to history.
- o **Area 4:** A possible defensive feature (foxhole), designated TS-5, was identified within the broader APE but located outside the anticipated construction footprint. TS-5 has been evaluated as not eligible for listing in the NRHP, though it may be eligible for listing in the CNMI Register.
- o **PACBAR III Facility:** The Cold War-era PACBAR III radar facility and associated buildings were documented as part of the AIS. Based on the evaluation conducted during the survey, the facility does not meet the criteria for listing in the NRHP due to its age, condition, and lack of integrity. However, the CNMI HPO requested that HPO Site/Feature Forms be completed for the historic properties documented during the survey, including the PACBAR III radar facility, prior to demolition. Documentation will be completed consistent with HPO guidance and submitted to CNMI HPO for inclusion in the cultural resources inventory.

In addition, earlier investigations documented the presence of wartime materials in the general area, including ordnance and defensive features; however, no unexploded ordnance or human remains were encountered during the 2025 fieldwork.

The FAA initiated consultation with the CNMI Historic Preservation office on April 2, 2026, pursuant to Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108) and its implementing regulations at 36 CFR Part 800. The FAA requested concurrence with its Area of Potential Effects determination and Finding of No Adverse Effect. By letter dated June 16, 2026, the HPO concurred with the FAA's determination of No Adverse Effect, subject to implementation of archaeological monitoring, documentation of the PACBAR III facility using CNMI HPO Site/Feature Forms prior to demolition, and implementation of the Archaeological Treatment and Monitoring Plan, including inadvertent discovery procedures.

3.5.3 Environmental Consequences

Significance Thresholds

The FAA has not established a significance threshold for historical, architectural, archaeological, and cultural resources. Instead, significance is evaluated through the Section 106 process based on whether an undertaking would result in an adverse effect to a historic property.

An adverse effect occurs when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion in the NRHP, in a manner that would diminish its integrity of location, design, setting, materials, workmanship, or association.

Historic properties may include archaeological artifacts or features, and historic standing structures more than 50 years old.

Under the Proposed Action, construction of the ARSR facility and installation of the ELD would occur within areas that include or are adjacent to previously identified cultural resources. The FAA completed consultation with the CNMI HPO pursuant to Section 106 of the National Historic Preservation Act (NHPA) and received concurrence with its Finding of No Adverse Effect on June 16, 2026. Documentation supporting the Section 106 consultation process, including Archeological Inventory Survey, consultation correspondence, and HPO concurrence, is provided in Appendix B.

The Proposed Action would not directly disturb the eligible WWII-era Quonset huts (TS-1 through TS-4), as the ELD alignment is located on the opposite side of the roadway. The possible defensive feature (TS-5) is also located outside the construction footprint. The PACBAR III facility, while not NRHP-eligible, would be subject to documentation prior to demolition.

Ground-disturbing activities associated with utility installation and demolition have the potential to encounter previously unidentified subsurface cultural materials. Therefore, archaeological monitoring and protective measures are required.

Based on the completed identification efforts, avoidance of National Register eligible historic properties, implementation of archaeological monitoring and treatment measures, and the HPO's concurrence, the Proposed Action would not result in adverse effects to historic properties under Section 106 of the NHPA.

3.5.3.1 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented, and no new ground disturbance or demolition would occur. Existing conditions at the PACBAR III site and along the ELD corridor would remain unchanged. As a result, there would be no effects to historic, archaeological, or cultural resources.

3.5.4 Environmental Commitments

To avoid or minimize potential effects to cultural resources, the FAA will implement the following measures, consistent with the recommendations of the Archaeological Inventory Survey and Monitoring Plan prepared by ArchaeoNMI and in coordination with the CNMI HPO:

Historic Property Documentation: Prior to demolition, the FAA shall complete CNMI HPO Site/Feature Forms documenting the PACBAR III facility and any additional identified historic properties within the APE. The completed documentation shall be provided to the CNMI HPO for inclusion in the CNMI cultural resources inventory.

Archaeological Monitoring: A qualified archaeologist shall monitor all ground disturbing work in the vicinity of TS-1 through TS-5 and during the demolition of the PACBAR III radar and operations building. The following table lists the sites with preliminary significance determinations, and Figure 7 shows the location of areas that are recommended for archaeological monitoring during the construction phase of the project.

- Monitoring will include observation of ground surfaces and excavation areas until culturally sterile soil or bedrock is encountered, at which point monitoring may cease.
- Construction personnel will be briefed prior to ground disturbance regarding the types of cultural materials that may be encountered and procedures to follow if discoveries occur.

Table 3-3: NRHP Eligibility Determinations and Recommendations. Courtesy of ArchaeoNMI.

Site #	Site Function	Age	Condition	Criteria	Recommendation
TS-1	Ordnance Storage	WWII	Fair	A, D	Monitoring
TS-2	Ordnance Storage	WWII	Fair	A, D	Monitoring
TS-3	Ordnance Storage	WWII	Fair	A, D	Monitoring
TS-4	Ordnance Storage	WWII	Fair	A, D	N/A
TS-5	Defensive Position	WWII	Fair	Not Eligible	Monitoring
PACBAR III	Radar Coverage	Cold War	Fair	Not Eligible	Monitoring and Documentation

Inadvertent Discovery Procedures: If previously unidentified cultural materials are encountered during construction, work in the immediate vicinity would cease and the FAA would consult with the CNMI Historic Preservation Office (HPO) to determine appropriate evaluation and treatment measures. If human remains are discovered, all work in the vicinity would stop immediately and procedures outlined in the CNMI Procedures for the Treatment of Human Remains would be followed, in coordination with the CNMI HPO and other appropriate authorities.

Documentation of PACBAR III Facility: Prior to demolition of the PACBAR III radar facility, the FAA will complete CNMI HPO Site/Feature Forms documenting the facility and other historic properties identified within the APE. Documentation will be provided to the CNMI HPO for inclusion in the CNMI cultural resources inventory.

Based on the results of the archaeological survey and the implementation of monitoring and avoidance measures, the FAA has determined that the Proposed Action would result in No Adverse Effect to historic properties, pursuant to 36 CFR § 800.5(b).

3.5.5 Department of Transportation Act Section 4(f)

Section 4(f) of the U.S. Department of Transportation Act protects publicly owned parks, recreation areas, wildlife and waterfowl refuges, and historic sites listed in or eligible for listing in the NRHP from use by transportation projects unless the requirements of 4(f) are satisfied.

As discussed above, the Proposed Action would not affect any publicly owned parks, recreation areas, or wildlife or waterfowl refuges. The only potential Section 4(f) resources associated with the Proposed Action are the World War II-era Quonset huts (TS-1 through TS-4, which were determined eligible for listing in the NRHP, and therefore constitute historic sites protected under Section 4(f). The PACBAR III radar facility was evaluated and determined not eligible for listing in the NRHP.

The FAA completed consultation with the CNMI HPO pursuant to Section 106 of the NHPA. By letter dated June 16, 2026, the CNMI HPO concurred with the FAA's finding of No Adverse Effect, subject to implementation of archaeological monitoring, documentation, and other agreed-upon measures. The Proposed Action avoids NRHP-eligible Quonset huts, and construction activities will occur outside these historic properties.

Based on the completed Section 106 consultation, avoidance of the historic properties, implementation of the identified commitments, and the CNMI HPO's concurrence with the FAA's finding of No Adverse Effect, the FAA has determined the Proposed Action would not result in a direct use, temporary occupancy, or constructive use of a Section 4(f) property. Therefore, no further Section 4(f) evaluation is required.



Figure 3-4: Aerial imagery showing Areas 1-4 and the PACBAR III survey area evaluated as part of the pedestrian archaeological survey. Courtesy of ArchaeoNMI, August 2025.



Figure 3-5: Aerial imagery showing TS-1 through TS-5 and PACBAR III site as areas recommended for archaeological monitoring. Courtesy of ArchaeoNMI, August 2025.

3.6 Land Use

3.6.1 Regulatory Setting

Land use planning and administration in the CNMI are governed through a combination of statutes, planning documents, and administrative authorities. The DPL is responsible for managing and administering public lands on behalf of the Commonwealth, including leasing, permitting, and oversight of public land use for government and public purposes (DPL 2020).

The CNMI Comprehensive Public Land Use Plan provides long-range guidance for the management and use of public lands and identifies public facilities, infrastructure, and government operations as appropriate and necessary uses of public land. The plan emphasizes coordination among agencies and the use of public lands to support essential services and public needs (DPL 2019).

Land use and development activities in the CNMI are also administered through the Commonwealth Zoning Code, implemented by the Zoning Board and Zoning Office. The zoning program establishes procedures for reviewing proposed development to ensure compatibility with surrounding land uses and protection of public health, safety, and welfare.

Together, these planning and regulatory mechanisms guide land use decision-making and coordination for projects occurring on public lands within the CNMI.

STATUTE	CITATION	REGULATION	AGENCY
Comprehensive Land Use Plan	N/A	N/A	Department of Public Lands (DPL)
Summary	Identifies current land uses, opportunities, and needs related to public lands, guiding DPL's decision-making and policy development.		
Comprehensive Sustainable Development Plan	PL 20-20		Office of Planning and Development (OPD)
Summary	This is the long-term plan for development in the CNMI. It focuses on economic, infrastructure, and development that emphasizes principles of smart, safe growth.		
Zoning Code of the Commonwealth of the Northern Mariana Islands	PL 6-32 2 CMC § 7201	NMIAC 165-30.1	Saipan Zoning Board
Summary	The zoning code established the Zoning Board to prepare and review a land use and zoning system for the Commonwealth.		
Public Lands Act of 2006	PL 15-02	NMIAC 145	Department of Public Lands
Summary	DPL was established to manage and administer the Commonwealth's public lands under the provisions of Article XI of the Constitution.		

3.6.2 Affected Environment

The Proposed Action is located on Mount Petosukara in northern Saipan within land managed by the CNMI DPL. The site has historically been used for military and government infrastructure, including the former PACBAR III radar installation constructed during the Cold War era. Existing conditions within the project area consist of previously disturbed land associated with the former radar facility, access roads, and secondary vegetation. Surrounding land uses in the vicinity of the project area consist primarily of undeveloped upland forest and former military lands.

The project area encompasses approximately 1.4 acres and includes an abandoned radar array, associated operations building, and other built structures. The surrounding area consists primarily of public lands used for infrastructure, utilities, and government-related purposes, with nearby residential villages including As Matuis, San Roque, and Achugao.

The CNMI Comprehensive Public Land Use Plan identifies public lands as appropriate for infrastructure, utilities, and government facilities that support public services and safety. Consistent with this framework, the subject parcel has long been used for radar and communications functions and remains suitable for similar public infrastructure use.

3.6.3 Environmental Consequences

Significance Threshold

FAA Order 1050.1G does not establish a numerical significance threshold for land use impacts, nor has the FAA provided specific factors to consider in making a significance determination for land use in Desk Reference 1050.1. Instead, potential land use impacts are evaluated in relation to other environmental impact categories, such as noise, socioeconomic effects, or relocation, where applicable. Consistent with FAA guidance, land use considerations are addressed by evaluating whether the Proposed Action would result in impacts under those related resource categories.

3.6.3.1 Proposed Action

Under the Proposed Action, the FAA would construct and operate a new ARSR facility at the former PACBAR III site. The project would include installation and operation of new radar infrastructure, upgrades to the ELD serving the site, and demolition of the existing PACBAR III array operations building. The FAA would obtain authorization to lease approximately 1.4 acres from the CNMI DPL for operation of the ARSR facility. The subject property is located within the Commonwealth Zoning Office's Public Resource (PR) zoning district. The PR designation is intended to accommodate public and governmental uses, including infrastructure and facilities that support public services and national objectives.

Coordination with the Zoning Office would occur to confirm applicable procedural requirements, such as zoning clearance for demolition or construction activities, as appropriate. Federal actions on public lands may be addressed through coordination rather than traditional local permitting, and the FAA would coordinate with CNMI agencies to ensure consistency with applicable land use requirements.

CNMI Zoning Office processes generally apply to commercial development; however, federal actions may be addressed through different procedural mechanisms. Once the FAA assumes formal designation of Public Land Tract 009 C 13, the project may not be subject to the local zoning requirements, consistent with past FAA-funded projects in the CNMI. Coordination with CNMI agencies would occur as appropriate, including through the completed Federal Consistency review process administered by the CNMI DCRM. The FAA received DCRM concurrence on May 29, 2026. As discussed previously, the FAA has determined that the Proposed Action will be conducted in a manner that is consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Resources Management Program.

The Proposed Action represents a continuation of an established public and government land use. The redevelopment of the site for radar operations is consistent with the CNMI Comprehensive Public Land Use Plan, which supports the use of public lands for infrastructure and government functions. The project would not introduce a new or incompatible land use and would not alter surrounding land use patterns. Because the Proposed Action would maintain existing public/institutional land use and would not conflict with adopted land use plans or zoning designations, no adverse land use impacts are anticipated.

The proposed upgrade to the ELD would occur entirely within an existing utility corridor and would not require expansion of the corridor or acquisition of additional land. Ownership, operation, and maintenance of the upgraded line would remain with the local electrical utility.

Because the Proposed Action would maintain an existing public/institutional land use, is consistent with applicable land use plans and zoning designations, and would not result in changes to surrounding land use patterns, no significant impacts related to land use or zoning compatibility are anticipated.

3.6.3.2 No Action Alternative

Under the No Action Alternative, the FAA would not construct a new ARSR facility or demolish the existing PACBAR III array and operations building. Existing site conditions and land uses would remain unchanged. The No Action Alternative would not affect zoning or land use designations but would not meet the purpose and need for improved radar coverage.

3.6.4 Environmental Commitments

No mitigation is required because the Proposed Action would not result in adverse impacts to zoning or land use. The FAA would continue to coordinate with the CNMI DPL, Zoning Office, and other relevant agencies to ensure consistency with applicable land use policies and procedures prior to and during project implementation.



Figure 3-6 Aerial view of the Mount Petosukara summit showing the existing radar installation site and remaining infrastructure associated with the former PACBAR III radar facility. The proposed ARSR facility would be constructed within this previously developed footprint. Source: Google Earth Imagery accessed March 2026.

3.7 Natural Resources and Energy Supply

3.7.1 Regulatory Setting

Federal agencies are required under the Energy Independence and Security Act, the Energy Act of 2020, and related federal sustainability directives to promote efficient use of energy and responsible management of natural resources in the planning, construction and operation of federal facilities. FAA policy encourages incorporation of energy efficiency and conservation measures where practicable in accordance with these requirements.

The CNMI Strategic Energy Plan (2023) identifies reliability, efficiency, and resilience of energy infrastructure as key objectives, and emphasizes continued coordination between infrastructure projects and utility providers to ensure system stability and long-term sustainability (CNMI 2023).

STATUTE	CITATION	REGULATION	AGENCY
Energy Act of 2020	Public Law 116-260, codified in scattered sections within Title 42 of the U.S. Code.	N/A	Department of Energy
Summary	Updates previous energy requirements and requires federal agencies to prioritize energy management. The Act includes provisions to increase use of performance contracting and updates EISA Section 432 covered facility requirements.		
Commonwealth Utilities Corporation (CUC) Act of 2008	PL 4-47 4 CMC § 8111-	NMIAC 50-10	Commonwealth Utilities Corporation (CUC)
Summary	CUC is a state government corporation. The Commonwealth Utilities Corporation (CUC) operates the electric power, water and wastewater services on the three main islands of the Commonwealth of the Northern Mariana Islands (CNMI) -- Saipan, Tinian, and Rota.		

3.7.2 Affected Environment

At the local level, electric power and water services on Saipan are provided by CUC pursuant to Commonwealth law. CUC operates and maintains the island's electrical generation, transmission, and distribution systems. CNMI remains largely dependent on imported fossil fuels for electricity generation, which has historically made energy supply sensitive to fuel price volatility and supply constraints (CNMI 2023).

The project site would be served by existing utility infrastructure operated by CUC. Electrical service in the area is provided through the CUC centralized generation and distribution system. Water is also available through CUC, however as currently proposed the ARSR facility would not require a continuous supply of potable water due to the unstaffed nature of the facility.

The project would include upgrades to the ELD serving the site. These upgrades would occur within existing utility corridors and would not require expansion of service areas or

new rights-of-way. Backup power would be provided by an on-site diesel generator to support operations during utility outages

The Proposed Action involves construction of a steel and concrete ARSR facility and associated infrastructure. Construction materials would include standard building materials such as concrete, steel, and aggregate. Similar to other FAA installations, the project would rely on durable construction materials designed to ensure resilience to tropical typhoons. Locally sourced materials would be used where possible to reduce transportation requirements.

3.7.3 Environmental Consequences

Significance Threshold

FAA Order 1050.1G does not establish quantitative significance thresholds for impacts related to natural resources and energy supply. Instead, significance is evaluated qualitatively based on whether a proposed action would substantially increase demand for energy or natural resources, exceed the capacity of existing utilities or suppliers, or result in inefficient or wasteful use of resources. The analysis below evaluates the Proposed Action and No Action Alternative in accordance with these considerations.

3.7.3.1 Proposed Action

Under the Proposed Action, the FAA would construct and operate a new ARSR facility, including demolition of existing structures, installation of new radar infrastructure, and upgrades to the ELD serving the site. The project would require the use of construction materials such as concrete, steel, and aggregate, and would involve short-term energy use during construction activities. These materials are commonly used in infrastructure projects on Saipan and are available through established regional and national supply chains; therefore, their use would not result in unusual demand on natural resources.

Electrical power for operation of the ARSR facility would be provided by the CUC, which operates the island's centralized power system. The facility would represent a relatively small electrical load compared to overall island power demand and would not measurably affect system capacity. Backup power would be provided by an on-site diesel generator, which would be operated only intermittently during utility outages or for testing purposes. As a result, fuel consumption and associated emissions would be minimal.

The proposed ELD upgrade would occur within an existing utility corridor and would not require expansion of infrastructure or acquisition of additional land. Coordination with CUC would occur to ensure that electrical connections and system upgrades are compatible with existing infrastructure and operational capacity.

Consistent with federal policy encouraging energy efficiency and responsible resource use, the FAA would incorporate energy-efficient design features where practicable and coordinate with local utility providers during project implementation. These measures are consistent with broader CNMI energy planning objectives to maintain reliable and resilient energy systems while managing demand and fuel dependence.

Overall, the Proposed Action would result in only a minor increase in energy consumption and limited use of construction materials. It would not substantially affect the availability of natural resources or the capacity of local energy infrastructure. Therefore,

implementation of the Proposed Action would not result in significant impacts to natural resources or energy supply.

3.7.3.2 No Action Alternative

Under the No Action Alternative, the FAA would not construct the new ARSR facility, and the existing radar infrastructure would remain in its current condition. No demolition or new construction would occur, and there would be no changes to the ELD or utility connections.

Energy consumption under the No Action Alternative would remain at existing levels, and no additional demand would be placed on the CNMI electrical grid or other natural resource supplies. Similarly, no construction materials would be required, and no temporary construction-related resource use would occur.

While the No Action Alternative would avoid any incremental increase in energy use associated with the Proposed Action, it would not support modernization or replacement of aging infrastructure and would not advance federal objectives related to resilient, efficient facility design. Nonetheless, from a natural resources and energy supply perspective, the No Action Alternative would also result in no significant impacts.

3.7.4 Environmental Commitments

No mitigation is required because impacts to natural resources and energy supply would be minimal. The FAA would nonetheless implement the following standard best practices, including:

- Coordination with CUC regarding electrical service upgrades and load requirements.
- Incorporation of energy efficient design measures to the extent practicable.
- Use of established supply chains and proper materials management during construction.
- Proper operation and maintenance of backup power systems.

With these measures in place, the Proposed Action would not result in significant impacts to natural resources or energy supply.

3.8 Noise and Noise-Compatible Land Use

3.8.1 Regulatory Setting

FAA Order 1050.1G provides guidance for evaluating noise impacts under NEPA, including definitions of noise-sensitive land uses, analytical methods, and criteria for determining significance. Noise-sensitive land uses generally include residences, schools, hospitals, places of worship, parks, and similar uses where noise may interfere with normal activities.

Local government may adopt noise ordinances applicable to construction or stationary equipment; however, regulation of aircraft noise is federally preempted. Local standards may be considered for context but are not used to determine significance under NEPA. The Saipan Zoning Law establishes zoning districts and allowable land uses, including

the PR district in which the project site is located, but it does not establish quantitative community noise thresholds applicable to aircraft or federally operated facilities.

STATUTE	CITATION	REGULATION	AGENCY
Noise Control Act	42 U.S.C. §§ 4901-4918	40 CFR part 209	EPA
Summary	Add consideration of the protection of public health and welfare and to add the EPA to the rulemaking process for aircraft noise and sonic boom standards.		

3.8.2 Affected Environment

Noise-sensitive receptors, as defined in FAA Order 1050.1G, include residential areas, schools, medical facilities, places of worship, and recreational areas. In northern Saipan, these sensitive areas would be concentrated in the neighboring villages of Achugao, As Matuis, Tanapag, San Roque, and Marpi.

The proposed project site is located in a remote area on Mount Petosukara. The surrounding properties are limestone forest, quarry operations, and other utility-related uses. The site itself does not contain residences or other noise-sensitive receptors. Existing ambient noise levels are generally low and consist of natural background sounds and occasional human activity. The existing PACBAR III facility does not generate routine operational noise. Any noise currently present at the site occurs when DFEMS conducts training, which is infrequent.

3.8.3 Environmental Consequences

Significance Threshold

FAA Order 1050.1G defines significance thresholds for aircraft-related noise using Day-Night Average Sound Level (DNL) metrics. These thresholds apply to projects involving aircraft operations or changes in air traffic patterns. Because the Proposed Action does not involve aircraft operations, DNL-based thresholds are not applicable in this case.

For non-aircraft noise sources, such as construction equipment or stationary support equipment, significance is evaluated qualitatively based on whether noise would be substantial, prolonged, or would adversely affect nearby noise-sensitive receptors.

3.8.3.1 Proposed Action

Construction Related Noise

Under the Proposed Action, noise would be generated primarily during construction activities associated with demolition, earthwork, and installation of the new concrete ELD poles and the new ARSR facility. Construction equipment such as backhoes, excavators, trucks, and generators would generate noise levels ranging from approximately 80–90 dBA at the source. These activities would occur intermittently and during daytime hours. Noise from construction would attenuate rapidly with distance and intervening terrain.

The project site is located in a remote area characterized by limestone forest and existing utility or quarry related uses, and it does not contain residences or other noise-sensitive receptors. As a result, construction related noise would not be expected to result in noticeable or disruptive noise exposure at nearby villages or other sensitive land uses.

Operational Noise

Prior to completion of the permanent ARSR, a temporary mobile radar unit would be installed and operated using an on-site generator. Operation of the generator would result in temporary, continuous noise during the period of use.

Once construction is complete, operation of the ARSR facility would generate minimal noise. Radar system operation does not produce audible noise beyond the immediate equipment enclosure. Routine operations will be limited to low-level equipment noise such as air conditioning units and occasional maintenance activities. A backup diesel generator would be installed to provide emergency power during outages or for periodic testing. The generator would operate infrequently and for short durations. Noise during these infrequent operations would be reduced because FAA specifications require generators to be equipped with manufacturer-installed silencers and spark arresters.

Traffic-Related Noise

Temporary increases in traffic noise may occur during the construction period from construction workers, delivery vehicles, and equipment travel to and from the project site. These increases would be limited in duration and would occur during daytime hours. Traffic would use existing roadways that already accommodate vehicle movement associated with local activities.

Traffic related noise increases would be short-term, intermittent, and minor in magnitude. They would not substantially alter existing ambient noise conditions or result in long-term changes in noise exposure for nearby communities.

The Proposed Action would not involve aircraft operations and would not result in changes to aircraft noise exposure. Noise generated during construction, operation, and associated traffic would be temporary, localized, and limited in intensity. No noise-sensitive receptors are located at or immediately adjacent to the project site. Accordingly, the Proposed Action would not result in significant noise or noise-compatible land use impacts.

3.8.3.2 No Action Alternative

Under the No Action Alternative, the FAA would not construct the new ARSR facility, and no demolition or construction would occur. Existing site conditions would remain unchanged, and no new noise sources would be introduced.

Ambient noise levels would continue to reflect existing background conditions, and no impact to noise-sensitive receptors would occur. Therefore, the No Action Alternative would result in no noise impacts.

3.8.4 Environmental Commitments

Because no significant noise impacts are anticipated, mitigation is not required. However, the FAA would implement standard best management practices to minimize temporary construction noise, including:

- Implement standard construction practices to minimize noise, such as maintaining equipment in good working order with appropriate exhaust controls.
- Schedule construction activities during normal daytime hours where practicable.

- Coordinate construction logistics to minimize unnecessary vehicle idling or equipment operation.

With these measures, the Proposed Action would not result in significant noise or noise-compatible land use impacts.

3.9 Visual Effects

3.9.1 Regulatory Setting

There are no federal statutes or regulations that establish specific significance thresholds for visual effects. FAA Order 1050.1G provides guidance for evaluating visual effects which include consideration of light emissions and visual resources and visual character.

Visual effects may overlap with other environmental resource areas, including historic properties, biological resources, and coastal resources. Where applicable, those topics are addressed in their respective sections of this EA and are referenced here to avoid duplication. No separate permits or consultations are required specifically for visual effects.

STATUTE	CITATION	REGULATION	AGENCY	SUMMARY
-	-	-	-	No special purpose laws or requirements for visual effects

3.9.2 Affected Environment

The proposed ARSR facility would be located on Mount Petosukara in northern Saipan at the site of the former PACBAR III radar installation. The site contains abandoned infrastructure associated with the former facility, including deteriorated concrete pads, foundations, buildings, and remaining structural elements (Figure 3-2). These features are in poor condition, exhibiting deterioration, vandalism, graffiti, and accumulated debris. As a result, the site currently exhibits a degraded visual character.

Although no longer operational, the site remains accessible via an existing public roadway. Informal access has contributed to its visibility and occasional visitation; however, the site is not designated for recreation, interpretation, or public use, and no managed visitor facilities are present.

Surrounding land uses include nearby active quarry operations, limestone forest, and public lands managed by the CNMI DFEMS and Forestry. The broader visual setting reflects a mixture of previously disturbed land and intact natural forest cover, characteristic of this portion of northern Saipan. There are no designated parks, scenic overlooks, scenic byways, or Section 4(f) recreational resources within the immediate viewshed of the project site.

Historic features identified in the archeological inventory survey are discussed in Section 3.5 of this EA. While historic features are present within the broader project area, none represent visually prominent landmarks that define the scenic character of the landscape.

Ambient nighttime lighting in the area is generally low and consists primarily of roadway lighting and obstruction lighting associated with nearby telecommunications towers.

Because the former radar facility is abandoned and unlit, background light levels in the immediate project area are currently minimal.

3.9.3 Environmental Consequences

Significance Thresholds

Consistent with FAA Order 1050.1G, potential visual effects are evaluated under two categories:

- light emissions
- visual resources and visual character.

A significant visual impact would occur if a proposed action would substantially alter the visual character of the landscape or introduce lighting that creates substantial off-site glare or sky glow.

3.9.3.1 Proposed Action

Under the Proposed Action, the FAA would construct and operate a new ARSR facility on Mount Petosukara. The project would include demolition of remaining structures associated with the former PACBAR III radar installation followed by construction of a modern radar facility consisting of a radome mounted on top of the 55-foot-tall radar operations building, associated support structures, and upgraded electrical infrastructure.

Removal of the abandoned radar infrastructure would eliminate visually degraded structures currently present at the site. The new ARSR facility would introduce a prominent radar radome; however, the installation would occur at a location that has historically supported radar infrastructure and would remain consistent with existing telecommunications and utility character of the surrounding ridgeline.

The project would also include replacement and upgrade of the existing electrical distribution line serving the site. New concrete utility poles would replace existing wooden poles and would generally follow the current alignment along the existing access road. The new utility poles would be somewhat taller than the existing poles, and would include approximately nine additional poles to meet current typhoon-resistant engineering and safety standards.

Temporary lighting used during construction would be localized and short-term. Lighting would be directed toward work areas and managed to minimize off-site glare.

Following construction, operational lighting associated with the new ARSR facility would be limited to safety and security lighting and would include motion-activated LED fixtures, shielded and directed downward where practicable, and oriented to minimize offsite visibility. Obstruction lighting atop the radome will be installed as required by FAA air navigation safety regulations. Although the light would be visible from a distance, similar obstruction and facility lighting already exists in the surrounding area on nearby telecommunications towers. The project site is located in a remote area with no nearby residences or other light-sensitive receptors. As a result, light emissions would not be expected to create glare or interfere with normal activities.

The Proposed Action would replace the abandoned infrastructure with a new facility and support building composed of steel and concrete. These structures will significantly

improve visual aesthetics. The radar operations building and radome would be visible elements on the ridgeline; however, radar and communications infrastructure are consistent with both the historic and existing functional use of the site and surrounding area. The dome is designed as a functional element similar to other FAA facilities in the Pacific region. Removal of deteriorated infrastructure and debris, combined with construction of a maintained facility, would improve site organization and overall visual quality of the project area. The upgraded ELD, while slightly taller and more robust, would remain consistent with utility infrastructure commonly present in similar settings.

The Proposed Action would not obstruct scenic viewpoints or affect designated scenic, recreational, or Section 4(f) resources.

Therefore, the Proposed Action would not result in significant visual effects.

3.9.3.2 No Action Alternative

Under the No Action Alternative, the ARSR facility would not be constructed and the existing abandoned infrastructure would remain in place. The deteriorated structures associated with the former radar facility would continue to degrade visual condition of the site. The site would continue to exhibit visible deterioration, vandalism, graffiti, and debris, and no improvements to visual quality or site organization would occur. The ELD infrastructure would remain in its existing condition, and no upgrades or modifications would occur.

Although no new visual features would be introduced, the No Action Alternative would not improve existing visual conditions or remove deteriorating infrastructure.

The overall visual character of the site would remain that of a disturbed and unmanaged area within an otherwise largely undeveloped landscape.

3.9.4 Environmental Commitments

No mitigation measures are required because the Proposed Action would not result in significant visual impacts.

As part of the standard design and construction practices, the FAA would incorporate measures to reduce potential impacts from light emissions and to visual resources. These measures would include the following:

- **Light emissions:** Angular adjustments will be made to reduce visibility offsite. Exterior lighting will be directed downward, shielded and motion activated to minimize glare. Selected light spectrum for bulbs will reduce potential impacts to wildlife.
- **Visual Resources:** Facility design will incorporate features that are similar to FAA installations across the region. Site improvements and landscaping will improve aesthetics when compared to the dilapidated current conditions.

These measures represent standard design considerations rather than mitigation for significant impacts. With their implementation, the Proposed Action would not result in adverse visual effects.

3.10 Water Resources

10.1 Regulatory Setting

STATUTE	CITATION	REGULATION	AGENCY
Clean Water Act	33 U.S.C. §§ 1251-1387	33 CFR parts 320-332 40 CFR parts 230-233	USACE and EPA
Summary	CWA establishes basic structure for regulating discharge of pollutants into waters of the U.S. which include wetlands.		
Fish and Wildlife Coordination Act	16 U.S.C. § 661-67d		USFWS
Summary	Requires federal agencies to consult with the USFWS, NMFS (for some instances) and appropriate state fish and wildlife agencies regarding the conservation of wildlife resources when proposed federal or applicants' projects may result in control or modification of the water of any stream or other water body.		
Executive Order 11990, Protection of Wetlands	42 Federal Register 26961, (May 24 1977)		Department of Transportation (DOT)
Summary	The stated purpose of this Executive Order is to "minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands.		
DOT Order 5660.1A, Preservation of the Nation's Wetlands	N/A		DOT
Summary	Transportation facilities, should be planned, constructed, and operated in order to assure the protection and enhancement of wetlands to the fullest extent practicable.		
Coastal Resources Management Act	PL 3-47 NMIAC 15-10-330		BECQ-DCRM
Summary	Any project proposed for location within the wetland or mangrove APC shall be evaluated to determine its compatibility with applicable criterion.		

3.10.1 Affected Environment

The project area is located within the As Matuis and Kalabera watersheds (Figure 3-7). Drainage from this region generally flows west toward Tanapag Lagoon and east toward the Pacific Ocean. The proposed ARSR facility and the proposed upgrade to the ELD would occur on upland terrain underlain by limestone typical of northern Saipan.

Wetlands and Floodplains

Review of available data, including the USFWS National Wetlands Inventory, BECQ information, and prior environmental investigations, indicates that there are no wetlands, mangroves, or mapped floodplains that occur within the proposed ARR site or along the ELD corridor (Figure 3-7). The project area is located on elevated terrain and is outside FEMA-designated flood hazard areas.

Surface Waters

No perennial streams, rivers, or other jurisdictional surface waters occur within the ARSR site or along the ELD corridor. The site is located on a ridgeline and does not contain defined drainage channels. During heavy rainfall events, minor ephemeral drainage may occur downslope consistent with the limestone geology and steep topography of the area.

Localized areas where stormwater may temporarily collect have been observed near existing infrastructure; however, these do not constitute surface waters and are associated with historical site conditions rather than natural hydrologic features.

Groundwater

Saipan is underlain by a regional limestone aquifer that serves as the island's primary groundwater resource. The project site overlies this aquifer; however, there are no drinking water wells located within or immediately adjacent to the project area, and groundwater beneath the site is not currently used for potable water supply.

The project area is located within a Class I Groundwater Management Zone (GMZ) as designated by the CNMI DEQ under the Commonwealth Groundwater Management and Protection Act (Figure 3-7). Class I GMZs represent groundwater resources considered vital for current and future water supplies and are therefore managed to minimize potential contamination or degradation (CNMI DEQ 2015).

Phase I and Phase II Environmental Site Assessments conducted at the proposed ARSR site evaluated potential subsurface conditions related to historical site use, including former fuel storage and associated infrastructure (APEC 2014, APEC 2025). These investigations provide baseline information on site conditions and inform project planning but do not indicate the presence of surface waters or wetlands within the project footprint.

Due to the steep terrain surrounding Mount Petosukara, the primary water-related consideration for the Proposed Action is the potential for stormwater runoff and localized erosion during construction activities, particularly along the ELD corridor.

3.10.2 Environmental Consequences

Significance Threshold

Under FAA Order 1050.1G, a significant impact to water resources would occur if a proposed action would:

- Contaminate an aquifer that is used for a public water supply, such that public health would be adversely affected.
- Such contamination would Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values.
- Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated.
- Present difficulties based on water quality impacts when obtaining a permit or authorization.

3.10.2.1 Proposed Action

Construction of the new ARSR facility and associated infrastructure would involve localized ground disturbance associated with demolition of existing structures, site grading, foundation construction, utility installation, and replacement of power poles along the ELD corridor.

No wetlands, floodplains, surface waters, groundwater resources, or jurisdictional waters occur within the project area; therefore, the Proposed Action would not result in direct impacts to these resources.

Short-term, localized increases in erosion or sediment transport could occur during construction, particularly along sloped areas of the ELD corridor. These effects would be temporary, confined to the construction period, and managed through use of industry standard BMPs.

Construction and operation of the ARSR facility and the ELD upgrade would not alter regional drainage patterns, surface water flows, or groundwater recharge characteristics. Based on available environmental data, the Proposed Action would not result in contamination of groundwater or surface waters at levels that would adversely affect beneficial uses (APEC 2014, APEC 2025). The Proposed Action would not involve groundwater withdrawal, wastewater discharge, or other activities that could adversely affect groundwater quality or recharge.

Removal of existing derelict infrastructure during site preparation may improve overall site conditions by reducing potential sources of debris or runoff associated with deteriorating materials.

Therefore, the Proposed Action would not result in significant impacts to water resources.

3.10.2.2 No Action Alternative

Under the No Action Alternative, the new ARSR facility would not be constructed and the site would remain in its existing condition. Deteriorated infrastructure, legacy materials, and exposed surfaces would remain in place, and no improvements to drainage or site conditions would occur.

While no new ground disturbance would occur under the No Action Alternative, localized erosion and runoff associated with existing site conditions could continue during storm events. The No Action Alternative would not provide opportunities to improve site conditions or address existing sources of minor runoff or degradation.

3.10.3 Environmental Commitments

No mitigation measures are required because the Proposed Action would not result in significant impacts to water resources.

As part of standard construction practice, to minimize anticipated erosion impacts, the following best management practices would be implemented to minimize the potential for erosion or pollutant transport:

- Use of temporary erosion and sediment control BMPs during ground-disturbing activities.

- Spill prevention and response equipment shall be readily available in the event of accidental spills to protect the surrounding environment.
- Waste from site preparation shall be properly managed and disposed of in accordance with applicable laws and regulations.

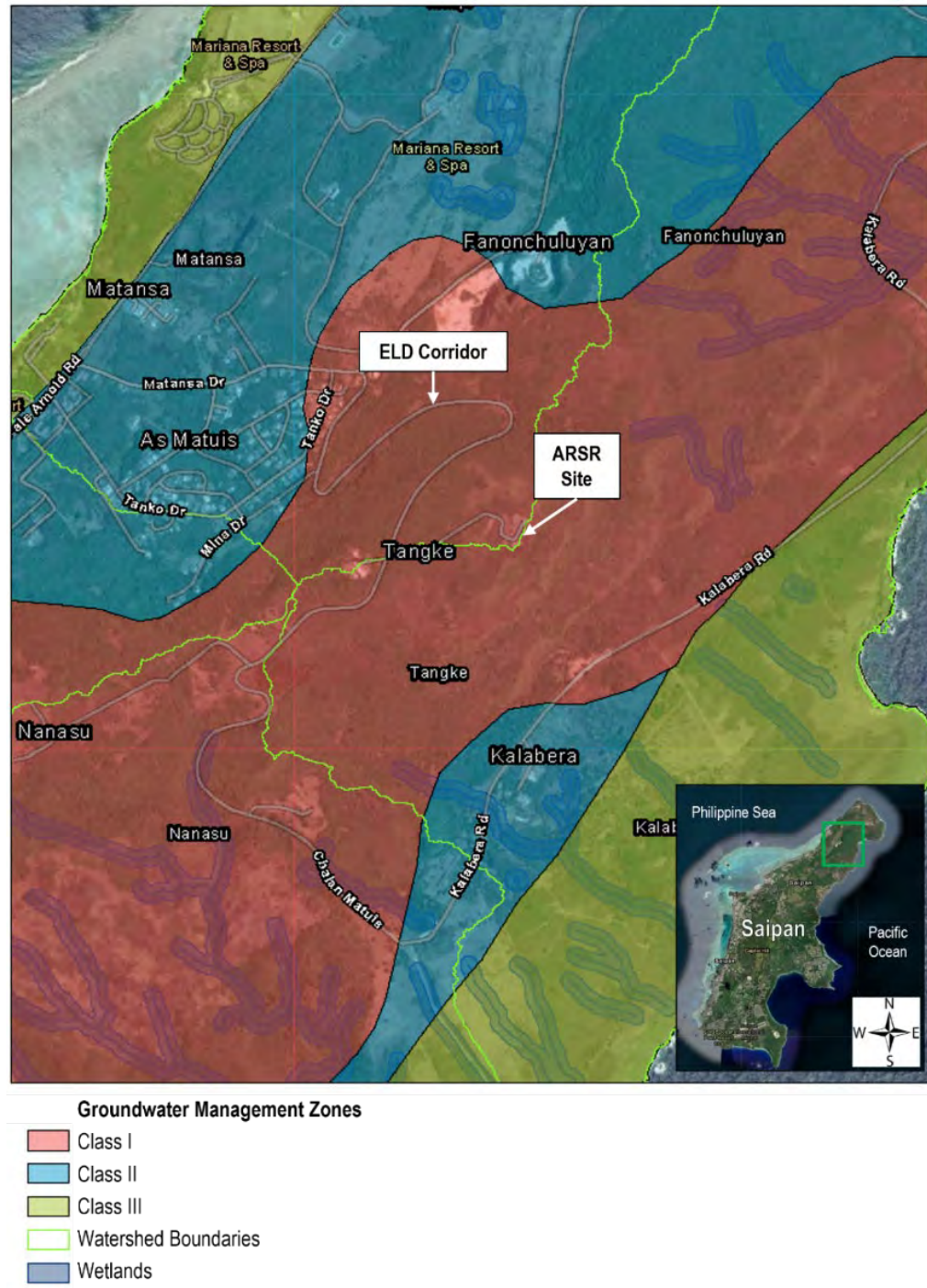


Figure 3-7 Water Resources in the vicinity of the Proposed ARSR Facility and ELD Corridor.
Source: Adapted from CNMI BECQ, CNMI DCRM Public Permitting App.

4.0 SUMMARY OF ENVIRONMENTAL COMMITMENTS AND MITIGATIONS

To avoid or minimize potential environmental impacts associated with implementation of the Proposed Action, the Federal Aviation Administration (FAA) will implement the environmental commitments identified in Table 4-1. These commitments are incorporated into the Proposed Action and will be implemented during construction and operation, as applicable. Additional commitments resulting from the ongoing Section 7 consultation will be incorporated into the Final EA and FONSI, as appropriate.

Table 4-1 Environmental Commitments and Mitigations

ENVIRONMENTAL IMPACT CATEGORY	COMMITMENT / MITIGATION
Biological Resources The FAA will implement mitigation measures identified through consultation with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act (ESA).	• The FAA shall implement all conservation measures identified in the Final Biological Opinion issued by USFWS pursuant to Section 7 of the ESA. • The FAA shall purchase credits from the Saipan Upland Mitigation Bank (SUMBA), as required by the Final Biological Opinion to offset impacts to federally listed species and designated habitat. • The FAA shall implement all applicable Reasonable and Prudent Measures, Terms and Conditions, and any additional conservation measures identified in the Final Biological Opinion.
Cultural / Historic Resources The FAA will implement measures developed through consultation with the CNMI Historic Preservation Office (HPO) under Section 106 of the National Historic Preservation Act.	• The FAA shall implement the commitments identified in the June 16, 2026, concurrence letter from the CNMI Historic Preservation Office pursuant to Section 106 of the National Historic Preservation Act. • A Secretary of the Interior-qualified archaeologist shall monitor all ground-disturbing activities identified in the Archaeological Treatment and Monitoring Plan. • Prior to demolition, the FAA shall document the PACBAR III radar facility using CNMI Historic Preservation Office Site/Feature Forms and submit the documentation to the CNMI Historic Preservation Office. • If previously unidentified archaeological deposits, historic properties, or human remains are encountered during construction, work shall cease in the immediate vicinity of the discovery until the discovery has been evaluated and appropriate coordination has been completed in accordance with the Archaeological Treatment and Monitoring Plan and applicable federal and CNMI requirements.
Water Resources	• The FAA shall implement all erosion and sediment control measures and BMPs identified in the Federal Consistency Determination and incorporated into the CNMI DCRM concurrence. • Construction activities shall comply with the conditions identified by the CNMI DCRM during Federal Consistency review.

Construction BMPs The FAA and its contractors will implement standard BMPs to minimize temporary environmental impacts.	• Disturbance shall be limited to the minimum area necessary to complete construction. • Existing roads, previously disturbed areas, and existing utility corridors shall be used to the maximum extent practicable. • Appropriate erosion and sediment control BMPs shall be implemented prior to and throughout construction. • Construction equipment shall be properly maintained to minimize emissions and prevent leaks of fuels, oils, or other hazardous materials. • Construction-generated waste shall be managed and disposed of in accordance with applicable federal and CNMI requirements. • Erosion and sediment control measures will be implemented to prevent offsite transport of sediment and protect surrounding resources.
--	---

The commitments identified in Table 4-1 are incorporated into the Proposed Action and form part of the environmental commitments supporting the FAA's NEPA decision.

5.0 CONSULTATION WITH FEDERAL, TERRITORIAL, AND LOCAL AGENCIES

Table 5-1 Agencies and Persons Consulted / Coordinated With

Federal
U.S. Fish and Wildlife Service (USFWS) Pacific Islands Fish and Wildlife Office
CNMI Territorial / Local Agencies
CNMI Division of Fish and Wildlife (DFW) Department of Lands and Natural Resources
CNMI Historic Preservation Office (HPO) Department of Community and Cultural Affairs
CNMI Bureau of Environmental and Coastal Quality (BECQ) Division of Coastal Resources Management (DCRM) Division of Environmental Quality (DEQ)
CNMI Department of Fire and Emergency Medical Services (DFEMS)
CNMI Zoning Office
Commonwealth Utilities Corporation (CUC)

6.0 LIST OF PREPARERS

Table 6-1 List of Preparers

NAME	AFFILIATION	POSITION
Andrew Gray	CUSA Consulting, LLC	Civil Engineer and Special Projects Manager
Joshua Gray	Allied Pacific Environmental Consulting, Inc	Saipan Office Manager
David Radich	Allied Pacific Environmental Consulting, Inc	Project Manager
Richard Salas	Allied Pacific Environmental Consulting, Inc	Project Manager and Technical Writer
Erin Derrington	EcoMD Services	Principal Consultant & Managing Director
Jamie Groves	FAA, ATO Engineering Services	Environmental Engineer
Blake Hoffer	FAA, NAS Defense Programs	Mechanical Engineer and Project Manager

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-

APPENDIX A: ENDANGERED SPECIES ACT SECTION 7 DOCUMENTATION

Appendix A1: Biological Assessment and Formal Consultation Initiation Letter



U.S. Department
of Transportation
**Federal Aviation
Administration**

Air Traffic Organization
Western Service Area
Engineering Services

222 W. 7th Avenue, 3rd Floor
Anchorage, AK 99513

April 13, 2026

Jacqueline Flores
Island Team Manager – Mariana Islands
U.S. Fish and Wildlife Service – Ecological Services
Pacific Islands Fish and Wildlife Office
108 Hernan Cortez Avenue, Suite 131
Hagatna, Guam 96910

Subject: Request for Formal Section 7 Consultation for the Proposed Installation and Operation of a New Air Route Surveillance Radar (ARSR), Mount Petosukara, Saipan, CNMI

Submitted via e-mail to: pifwo_admin@fws.gov

To Jacqueline Flores:

The Federal Aviation Administration (FAA), in coordination with the U.S. Air Force Pacific Air Forces (PACAF), is requesting formal consultation with the U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1536), for the proposed installation and operation of a new Air Route Surveillance Radar (ARSR) facility at Mount Petosukara, Saipan, Commonwealth of the Northern Mariana Islands (CNMI).

The FAA has prepared the attached Biological Assessment (BA) to evaluate the potential effects of the Proposed Action on federally listed species under USFWS jurisdiction. The Proposed Action includes installation and operation of a new ARSR facility at the summit of Mount Petosukara, demolition of the former PACBAR III radar facility, and associated upgrades to the existing electrical line distribution (ELD) system along the existing access corridor.

As background, the FAA previously submitted an informal consultation package on May 8, 2025, and has continued coordination with USFWS and CNMI Division of Fish and Wildlife (DFW) since that time. Following that initial submittal and subsequent coordination, the FAA further refined the project description, species analysis, conservation measures, and effects determinations. The attached BA is intended to serve as the FAA's follow-on and updated

consultation package in support of formal consultation. Based on the analysis presented in the attached BA, the FAA has made the following effect determinations for listed species:

Species	Determination
Micronesian Megapode (<i>Megapodius laperouse</i>)	May affect, likely to adversely affect
Nightingale Reed-Warbler (<i>Acrocephalus luscini</i>)	May affect, likely to adversely affect
Mariana Fruit Bat (<i>Pteropus mariannus mariannus</i>)	May affect, not likely to adversely affect
Mariana Swiftlet (<i>Aerodramus bartschi</i>)	May affect, not likely to adversely affect
Humped Tree Snail (<i>Partula gibba</i>)	No effect
Mariana Eight-Spot Butterfly (<i>Hypolimnas octocula marianensis</i>)	No effect
Flowering Plants: • Berenghenas halom tãno' (<i>Solanum guamense</i>) • <i>Dendrobium guamense</i> • Ufa halom tãno' (<i>Heritiera longipetiolata</i>)	No effect

No designated critical habitat under USFWS jurisdiction occurs within the Action Area.

The FAA respectfully requests that USFWS initiate formal consultation upon receipt of this letter and the attached BA. The FAA recognizes the Service's workload and appreciates your continued coordination on this project. At the same time, project schedule and review timing are important considerations for the FAA and cooperating agencies, and timely completion of ESA consultation is important to support ongoing environmental review, project planning, and implementation milestones. We would appreciate any effort USFWS can make to support an efficient review schedule and early identification of any issues or information needs that could affect consultation timing.

Please contact me at jamie.l.groves@faa.gov if you have any questions or would like to discuss this request further. Thank you for your continued coordination and assistance.

Respectfully,



Jamie L. Groves
Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration

Attachments:

1. Biological Assessment

Biological Assessment of Federally Listed Species under U.S. Fish and Wildlife Jurisdiction for the Proposed Installation and Operation of a New Air Route Surveillance Radar

Mount Petosukara, As Matuis
Saipan, CNMI

Prepared for

Federal Aviation Administration, NAS Defense Program



Prepared by

Federal Aviation Administration
Air Traffic Organization (ATO) Technical Operations
Western Service Area (WSA) Engineering Services AJW-2W16E
222 W 7th Ave # 14 Anchorage, AK 99513

Contact Person: Jamie L. Groves
Contact Email: jamie.l.groves@faa.gov

April 2026

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ACRONYMS AND ABBREVIATIONS

ARSR	Air Route Surveillance Radar
BA	Biological Assessment
BECQ	Bureau of Environmental and Coastal Quality
BMPs	Best Management Practices
BO	Biological Opinion
CFR	Code of Federal Regulations
CNMI	Commonwealth of the Northern Mariana Islands
DFW	Division of Fish and Wildlife
EIAMD	Enhanced Integrated Air and Missile Defense System
EIS	Environmental Impact Statement
ELD	Electrical Line Distribution
EME	Electromagnetic Energy
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FR	Federal Register
IEEE	Institute of Electrical and Electronics Engineers
MDA	Missile Defense Agency
MPE	Maximum Permissible Exposure
NAS	National Airspace System
NAVFAC	Naval Facilities Engineering Systems Command
NEPA	National Environmental Policy Act
PACAF	Pacific Air Forces
PACBAR III	Pacific Barrier III
SUMBA	Saipan Upland Mitigation Bank Area
U.S.C.	United States Code
USAF	United States Air Force
USASMDC	U.S. Army Space and Strategic Defense Command
USFWS	U.S. Fish and Wildlife Service

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1 INTRODUCTION

The Federal Aviation Administration (FAA) in cooperation with the United States Air Force (USAF) Pacific Air Forces (PACAF), proposes to install and operate a new long-range Air Route Surveillance Radar (ARSR) facility on Saipan in the Commonwealth of the Northern Mariana Islands (CNMI). The proposed radar facility would be located atop Mount Petosukara at the site of the former USAF Pacific Barrier III (PACBAR III) radar installation in the Tangke area near the village of As Matuis on the northern portion of the island (Figure 1).

This Biological Assessment (BA) evaluates the potential effects of the Proposed Action¹ on federally listed species under U.S. Fish and Wildlife Service (USFWS) jurisdiction and supports compliance with Section 7 of the Endangered Species Act (ESA).

The purpose of this BA is to review the proposed installation and operation of a new ARSR facility atop Mount Petosukara in sufficient detail to determine to what extent the Proposed Action may affect threatened and endangered species and their critical habitats. Species evaluated in this BA are listed in Table 1. This BA has been prepared in accordance with requirements set forth under Section 7 of the ESA (16 U.S.C. § 1536 (c)), and it follows the guidelines for environmental analysis established in FAA Order 1050.1G, *Environmental Impacts: Policies and Procedures*.

Table 1. Species Considered in this Biological Assessment

Common Name	Federal Status	Designated Critical Habitat	Determination
Mariana Fruit Bat (<i>Pteropus mariannus mariannus</i>)	Threatened	Yes, but not within the Action Area	May affect, not likely to adversely affect
Mariana Swiftlet (<i>Aerodramus bartschi</i>)	Endangered	No	May affect, not likely to adversely affect
Micronesian Megapode (<i>Megapodius laperouse</i>)	Endangered	No	May affect, likely to adversely affect
Nightingale Reed-Warbler (<i>Acrocephalus luscinia</i>)	Endangered	No	May affect, likely to adversely affect
Humped Tree Snail (<i>Partula gibba</i>)	Endangered	No	No effect
Mariana Eight-spot Butterfly (<i>Hypolimnas octocula marianensis</i>)	Endangered	No	No effect
Berenghenas halom tãno' (<i>Solanum guamense</i>)	Endangered	No	No effect
Dendrobium guamense	Threatened	No	No effect
Ufa halom tãno' (<i>Heritiera longipetiolata</i>)	Endangered	No	No effect

¹ The FAA is preparing an Environmental Assessment (EA) in accordance with the National Environmental Policy Act (NEPA; 42 U.S.C. § 4371) and FAA Order 1050.1G, *FAA NEPA Implementing Procedures* (FAA 2025) for the proposed installation and operation of a new ARSR atop Mount Petosukara, Saipan, CNMI. This is referred to as the Proposed Action in this BA.

The Proposed Action would establish a modern long-range air surveillance capability designed to improve radar coverage, operational reliability, and long-term system performance within the region. The Mount Petosukara location provides the elevation and unobstructed line-of-sight necessary for effective long-range radar surveillance of surrounding airspace.

Implementation of the Proposed Action would include construction and operation of a new ARSR facility and associated supporting infrastructure. Project components would include installation of a radar service building, radar equipment with radome mounted on an elevated platform, and associated improvements for site access and security. A mobile ARSR unit may be temporarily installed to maintain radar capability during the transition period prior to installation of the permanent radar system.

To support operation of the new radar facility, the FAA would fund upgrades to the existing electrical line distribution (ELD) system along an approximately 1.6-mile corridor that follows the existing radar access road. The upgrade would convert the existing overhead electrical service from single-phase to three-phase power. Additional electrical improvements would include installation of approximately 145 feet of concrete-encased duct bank, a step-down transformer, and shared electrical service infrastructure.

Because the proposed facility would occupy the location of the former PACBAR III radar installation, implementation of the Proposed Action would require removal of remaining derelict structures at the site, including the existing abandoned PACBAR III radar array and former operations building.

The project is needed to address a gap in north-facing long-range radar coverage in the CNMI that currently limits the FAA's ability to efficiently manage air traffic and support national defense requirements. Establishment of a new ARSR facility on Saipan would restore reliable radar surveillance capability for the region.

ESA consultation is warranted because the Proposed Action would occur in an area that supports habitat for federally listed species and includes activities such as vegetation clearing and construction that may result in direct or indirect effects to those species or their habitat. Although the project is largely confined to previously disturbed areas within an existing access corridor, implementation of the Proposed Action has the potential to affect listed species and is therefore subject to review under Section 7 of the ESA.

This BA has been prepared by the FAA for species under management authority of the USFWS in accordance with Section 7 of the ESA. 16 U.S.C. § 1536. Coordination with the CNMI Division of Fish and Wildlife (DFW) has also been conducted to inform this analysis.

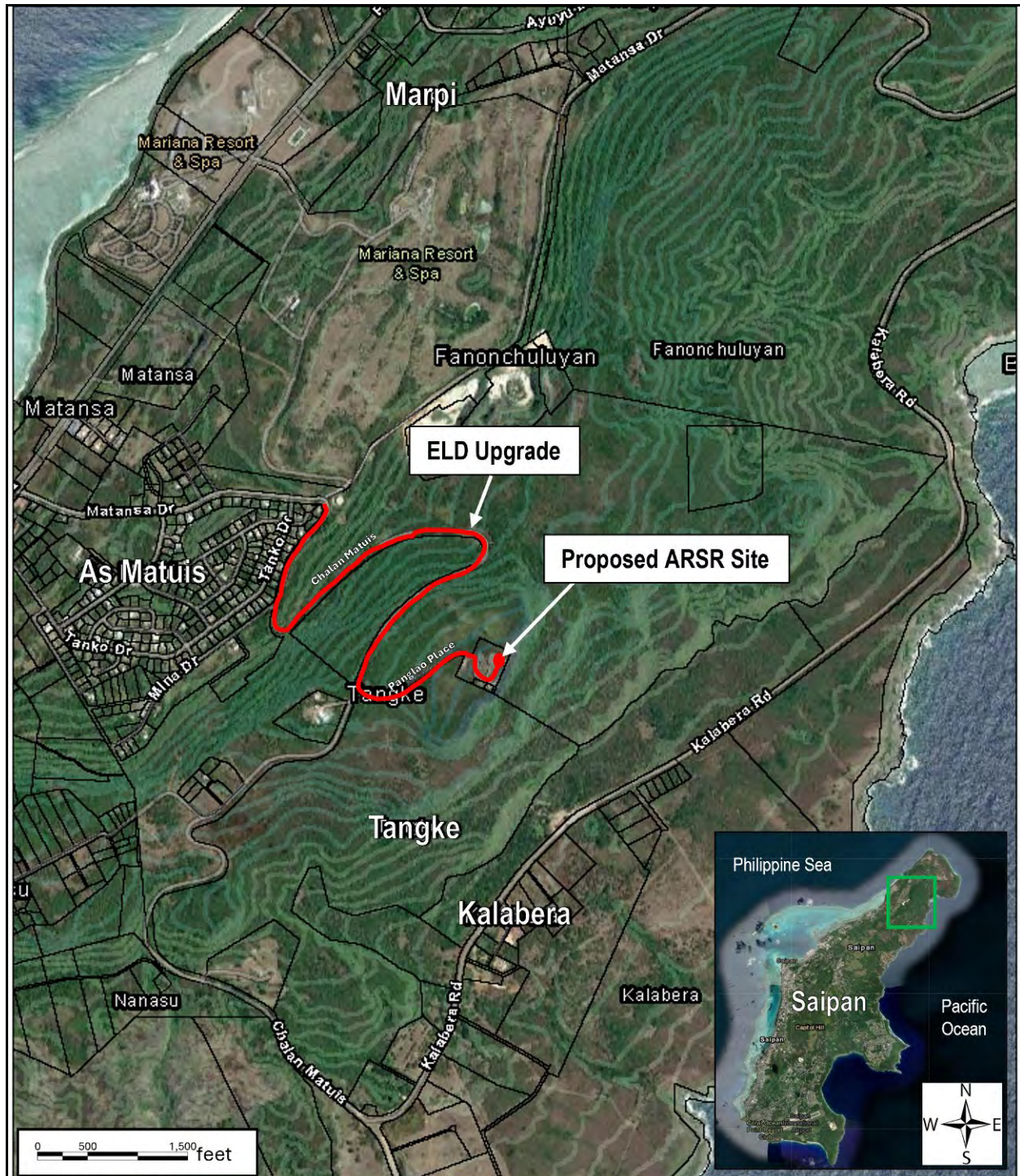


Figure 1 Project Area Map. Imagery Source: CNMI Bureau of Environmental and Coastal Quality (BECQ) Open Data Portal.

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2 DESCRIPTION OF THE PROPOSED ACTION

The Federal Aviation Administration (FAA) proposes to construct and operate a new Air Route Surveillance Radar (ARSR) facility at the summit of Mount Petosukara on Saipan, Commonwealth of the Northern Mariana Islands (CNMI), and to upgrade the existing electrical line distribution (ELD) that provides power to the site. The Proposed Action would occur within the Saipan Upland Mitigation Bank (SUMBA), which supports habitat for federally listed species.

2.1 Construction

2.1.1 Summit ARSR Facility

Construction of the ARSR facility would occur within the previously developed footprint of the former Pacific Barrier III (PACBAR III) radar installation at the summit of Mount Petosukara (approximately 1.4 acres [0.56 hectares]). Activities at the summit would include demolition and removal of existing infrastructure, site preparation, installation of the radar tower and radome, construction of a radar service building, and installation of associated electrical and communications infrastructure (Figure 2 and 3).

The radar system would be mounted on an elevated platform approximately 55 feet in height, with a total installed height of approximately 80 feet above ground surface. Construction would also include installation of approximately 145 feet of concrete-encased duct bank, a step-down transformer, and electrical service connections. Minor improvements to existing infrastructure would include rehabilitation of approximately 0.5 acres (0.2 hectares) of existing paved parking area.

All work at the summit would be confined to the existing developed footprint to the maximum extent practicable. No substantial vegetation clearing would be required at the summit site.

2.1.2 Electrical Line Distribution (ELD) Upgrades

Upgrades to the ELD would occur along an existing access road corridor extending approximately 1.6 miles (2.57 kilometers) between the summit and lower elevations. The project includes replacement of approximately 40 existing wooden utility poles and single-phase electrical lines with approximately 49 typhoon-resistant concrete poles and upgraded three-phase electrical infrastructure (Figure 2 and 4).

Construction activities within the ELD corridor would include removal of existing infrastructure, installation of new poles and lines, limited ground disturbance, and vegetation clearing necessary to maintain safe access and electrical clearances. Vegetation clearing would occur within a narrow utility right-of-way along the existing corridor and is conservatively estimated to affect approximately 1.9 acres (0.77 hectares) of roadside and secondary vegetation. Clearing width would vary by location but is expected to be up to approximately 10 feet in width where necessary.

2.1.3 General Construction Activities

Construction would involve the use of heavy equipment, vehicles, and personnel within designated work areas. Temporary staging, equipment laydown, and access would be limited to the summit site, existing access road, and ELD corridor. No new access roads would be constructed. Construction traffic would occur primarily during daytime hours, except for limited nighttime work associated with radome installation or system checkout.

Limited nighttime construction may be required during a phase of radome installation that must be completed continuously within a single work period. Temporary safety lighting may also be used during certain nighttime construction and radar checkout activities. Any temporary lighting used during nighttime work would be shielded to the maximum extent practicable and directed downward and away from adjacent vegetated areas to minimize unnecessary light spill into surrounding habitat.

Construction activities would also include handling and disposal of demolition debris and other project-related waste in accordance with applicable environmental requirements, as well as site cleanup and restoration, as appropriate, following completion of work.

2.2 Operation and Maintenance of the ARSR Facility

Following construction, the ARSR facility would operate continuously to support air traffic control and National Airspace System (NAS) functions. The radar system would consist of a rotating antenna enclosed within a radome mounted on an elevated platform at the summit site.

The radar operates in the L-band portion of the electromagnetic spectrum and emits pulsed radiofrequency energy through a narrow, directional beam that rotates continuously to provide 360-degree surveillance coverage. Because the antenna rotates continuously, the radar beam is not directed toward any single point in space for more than a fraction of a second during each rotation cycle. As a result, any object moving through the beam path would be exposed only briefly and intermittently as the beam sweeps across the surrounding airspace.

Radar systems function by transmitting and receiving electromagnetic energy (EME) in the form of radiofrequency waves to detect and track objects based on reflected signals. The energy is emitted in short-duration pulses and focused into a narrow beam, with energy intensity greatest within the main beam and decreasing rapidly outside of it and with increasing distance from the radar source. Similar to other surveillance radar systems, the emitted energy consists of extremely short pulses (on the order of milliseconds) that are continuously redirected as the antenna rotates, such that energy is not persistently focused on any single location.

The radar beam would be oriented above the surrounding terrain and directed toward the horizon to detect airborne objects. The main beam is not directed toward the ground or surrounding vegetation, as ground returns would interfere with radar performance. As a result, terrestrial habitats would not be subject to sustained exposure to the main beam. In addition, vegetation and ground features are typically excluded from radar processing through system design and filtering, further limiting interaction with terrestrial environments.

The radar emits non-ionizing radiation, which lacks sufficient energy to ionize atoms or molecules. Exposure to EME from radar systems is commonly evaluated using established safety standards, including those developed by the Institute of Electrical and Electronics Engineers (IEEE). The IEEE Standard C95.1 defines maximum permissible exposure (MPE) limits for electromagnetic fields, representing levels below which adverse biological effects are not expected, even under continuous exposure conditions (IEEE 2019).

Although these standards are developed for human health and safety, they provide a useful benchmark for understanding relative exposure levels associated with radar systems. Due to the pulsed nature of the radar signal, continuous movement of the beam, and rapid attenuation of energy outside of the main beam, potential exposure of wildlife would be expected to be brief, intermittent, and substantially below levels associated with adverse effects. Exposure would occur only if an organism were present within the narrow beam path at the moment it passes, resulting in extremely short-duration and infrequent interactions.

Operation of the ARSR facility would not result in additional ground disturbance beyond the developed summit footprint. Routine operation would include periodic maintenance activities, including vehicle access along the existing road and ELD corridor, inspection, and equipment servicing. These activities would occur intermittently and would not substantially increase human presence beyond existing conditions. The ARSR facility will be an unmanned site.

Lighting at the summit facility would be limited to that required for safety and maintenance and would be shielded and directed downward to the extent practicable. No substantial increase in nighttime lighting is anticipated.

Potential effects associated with radar operation are addressed separately in the Effects Analysis (Section 6.2) and are distinct from temporary disturbance effects associated with construction activities.

Table 2. Summary of Proposed Action Components and Potential Biological Stressors

Project Component	Primary Activities	Approximate Disturbance/Scope	Potential Biological Stressors
Mount Petosukara Summit ARSR Facility	Demolition, construction, equipment installation	Previously disturbed, ~1.4 acre footprint	Temporary noise, human presence, lighting, localized disturbance
Existing Access Road Corridor ELD Upgrade	Pole replacement, line upgrades, limited vegetation clearing	~1.6 miles; ~1.9 acres of vegetation clearing	Vegetation removal, temporary disturbance, equipment traffic
Operation and Maintenance	Radar operation, periodic access, inspections	Ongoing but intermittent	Radar exposure (brief/intermittent), maintenance traffic, limited lighting

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Figure 2 Proposed ELD upgrade along the existing access corridor, including approximate locations of replacement concrete poles. Source: CUSA Consulting Issued for Construction Drawings (April 4, 2025).

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Figure 3 Existing PACBAR III Facility atop Mount Petosukara. The facility is no longer operational and would be removed as part of the Proposed Action.

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Figure 4 Existing single-phase ELD along the radar access road. The Proposed Action would upgrade this system to three-phase power with concrete poles to support operation of the new ARSR facility.

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3 BEST MANAGEMENT PRACTICES, AVOIDANCE AND MINIMIZATION MEASURES, AND CONSERVATION MEASURES

The following best management practices (BMPs), avoidance and minimization measures, and conservation measures will be implemented as part of the Proposed Action to avoid and minimize effects to federally listed species and their habitats within the Action Area. These measures are incorporated into the Proposed Action and will be implemented during project planning, construction, and, where applicable, operation of the ARSR facility and associated ELD upgrades. The measures below are incorporated into the Proposed Action for purposes of this BA. Additional species-specific avoidance, minimization, or mitigation measures may be refined during consultation in coordination with USFWS, CNMI DFW, FAA, and PACAF, as appropriate. Where appropriate, conservation measures will be implemented using an adaptive management approach. BMPs will be used to minimize impacts to listed species during construction.

Potential conservation measures and BMPs for the Saipan ARSR project include the following:

1. **Environmental training for personnel:** Prior to the start of ground-disturbing or vegetation-clearing activities, all construction personnel, inspectors, and subcontractors will receive environmental awareness training from a qualified biologist or other qualified environmental professional. The training will address listed species with potential to occur in the project area, including the Mariana Fruit Bat, Mariana swiftlet, Micronesian megapode, and Nightingale Reed-Warbler; species identification; applicable avoidance buffers; reporting procedures; work restrictions; and prohibitions on harassment, collection, feeding, or harm to wildlife.
2. **Clearly marked limits of disturbance:** Prior to construction, the limits of disturbance, access routes, staging areas, and all approved vegetation-clearing boundaries will be clearly identified, flagged or otherwise marked in the field. Construction activities, vehicle parking, equipment laydown, spoil storage, and material stockpiling will be confined to these designated areas. No clearing, grading, dumping, or equipment access will occur outside marked disturbance limits.
3. **Use of existing disturbed areas and access routes:** Construction access will be limited to the existing summit site, the existing access road, and the established ELD corridor. New access roads will not be created. Work at the summit will be confined to the previously developed PACBAR III footprint.
4. **Pre-construction surveys for sensitive habitat features:** Prior to vegetation clearing along the ELD corridor, the FAA will coordinate with CNMI DFW and, as appropriate, USFWS regarding pre-construction surveys or site review to identify sensitive habitat features, including Micronesian megapode nesting mounds, active use areas, Nightingale Reed-Warbler nests if detected, and any other listed-species resources requiring avoidance.

5. **Avoidance buffers for wildlife observations during construction:** If a Mariana Fruit Bat, Micronesian megapode, active megapode mound, active bird nest, or other listed wildlife resource is observed within or immediately adjacent to the work area, the contractor will stop work in the immediate vicinity and notify the FAA environmental lead. An avoidance buffer will be established in coordination with CNMI DFW and/or USFWS, as appropriate to the species and circumstance, and work will not resume in that area until the animal has left on its own or the agencies have provided direction.
6. **Vegetation clearing minimization:** Vegetation clearing will be limited to the minimum area necessary for safe construction, pole replacement, line upgrades, and access within the established ELD corridor. Clearing will be selective where practicable and will avoid unnecessary removal of adjacent vegetation. No broad-scale clearing will occur at the summit beyond what is necessary within the previously disturbed facility footprint.
7. **Minimization of temporary construction disturbance:** Construction activities will be conducted in a manner that minimizes noise, repeated disturbance, and unnecessary human presence in adjacent habitat. Equipment idling will be minimized to the extent practicable, and crews will avoid lingering in vegetated areas outside active work zones.
8. **Lighting controls:** If temporary lighting is required for safety or limited work activities, lights will be shielded and directed downward and away from surrounding vegetation to the maximum extent practicable. Lighting will be used only when necessary and for the minimum duration needed.
9. **Waste, food, and predator-attractant control:** The contractor will maintain a litter-control program for the duration of construction. Food scraps, containers, wrappers, and other refuse will be stored in covered containers and removed regularly from the site. Personnel will not feed wildlife.
10. **No pets, no wildlife harassment, no poaching:** No pets will be permitted at the project site. Project personnel will be prohibited from hunting, harassing, capturing, injuring, or otherwise disturbing wildlife.
11. **Erosion, sediment, and spill prevention:** Standard erosion-control, stormwater, and spill-prevention BMPs will be implemented during construction. Equipment fueling and maintenance will occur in designated areas, spill-response materials will be available onsite, and disturbed areas will be stabilized as soon as practicable following completion of work.
12. **Habitat compensation / mitigation bank credits:** To offset habitat impacts associated with vegetation clearing affecting suitable Nightingale Reed-Warbler habitat, the FAA will purchase SUMBA conservation credits.

13. **Agency coordination and adaptive response:** If pre-construction surveys or construction monitoring identify listed species, nests, megapode mounds, or other sensitive biological resources not previously documented, the FAA will coordinate with CNMI DFW and USFWS to determine appropriate avoidance, minimization, and any additional conservation measures before resuming work in the affected area.
14. **Construction monitoring and reporting:** The FAA or its designated environmental representative will document implementation of biological BMPs and conservation measures during construction. If listed species observations, nest discoveries, or avoidance actions occur, those observations and responsive measures will be documented and retained in the project record and shared with USFWS/CNMI DFW as appropriate.

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4 ACTION AREA

The Action Area is defined under 50 Code of Federal Regulations (CFR) § 402.02 as all areas to be affected directly or indirectly by the Proposed Action and not merely the immediate area involved.

For this project, the Action Area includes not only areas of direct disturbance, but also adjacent habitat where listed species may be affected by indirect effects of construction and operation. These indirect effects may include temporary disturbance from construction noise, increased human presence, vehicle and equipment activity, limited vegetation clearing along the ELD corridor, and other temporary project-related disturbances. The Action Area occurs within the SUMBA, which encompasses upland habitat managed for mitigation and conservation of listed species.

Consistent with recent USFWS consultations in the Mariana Islands, a 150-meter (492-foot) disturbance buffer was applied to account for indirect effects associated with construction noise, human activity, and temporary habitat disturbance. This buffer is also consistent with USFWS recognition that Mariana Fruit Bats may exhibit behavioral responses to human activity within approximately 150 meters (492 feet) of their location (USFWS 2024b; USFWS 2025c).

Accordingly, the Action Area for the Proposed Action includes all areas within 150 meters (492 feet) of the outermost limits of ground disturbance associated with construction and operation (Figure 5). The Action Area encompasses approximately 178 acres (72 hectares) and represents a conservative indirect effects envelope, rather than the area of direct habitat disturbance.

Within the Action Area, the existing access road and associated cleared roadway prism extend approximately 1.6 miles and occupy roughly 4.9 to 5.8 acres (2.0 to 2.4 hectares) based on an estimated cleared width of 25 to 30 feet. Additional vegetation clearing associated with the ELD upgrade is conservatively estimated at approximately 1.9 acres (0.8 hectares), assuming an average clearing width of 10 feet along the road alignment. Work at the summit would occur primarily within an approximately 2.5 acre (~1-hectare) previously disturbed former radar and telecommunications site, and approximately 20 acres (8 hectares) of the Action Area at the lower elevation of the radar access road consist of existing residential or otherwise developed land uses.

Accordingly, the portion of the Action Area expected to experience meaningful habitat disturbance is substantially smaller than the full buffered Action Area and is concentrated within existing disturbed areas, narrow linear corridor segments, and edge-affected habitat.

The Action Area therefore encompasses:

- The summit site (approximately 1.4 acres), including all activities associated with demolition, construction, and operation of the ARSR facility.
- The full extent of the ELD corridor (approximately 1.6 miles), including all areas subject to vegetation clearing, pole replacement, equipment access, and temporary disturbance.

- Adjacent habitat within 150 meters (492 feet) of these areas where listed species may experience indirect effects such as temporary noise disturbance, increased human presence, and minor vegetation removal.

Although the 150-meter buffer is applied as a conservative bounding distance, the extent of actual indirect effects is expected to be more limited and concentrated within the previously disturbed summit site and existing access and utility corridor.

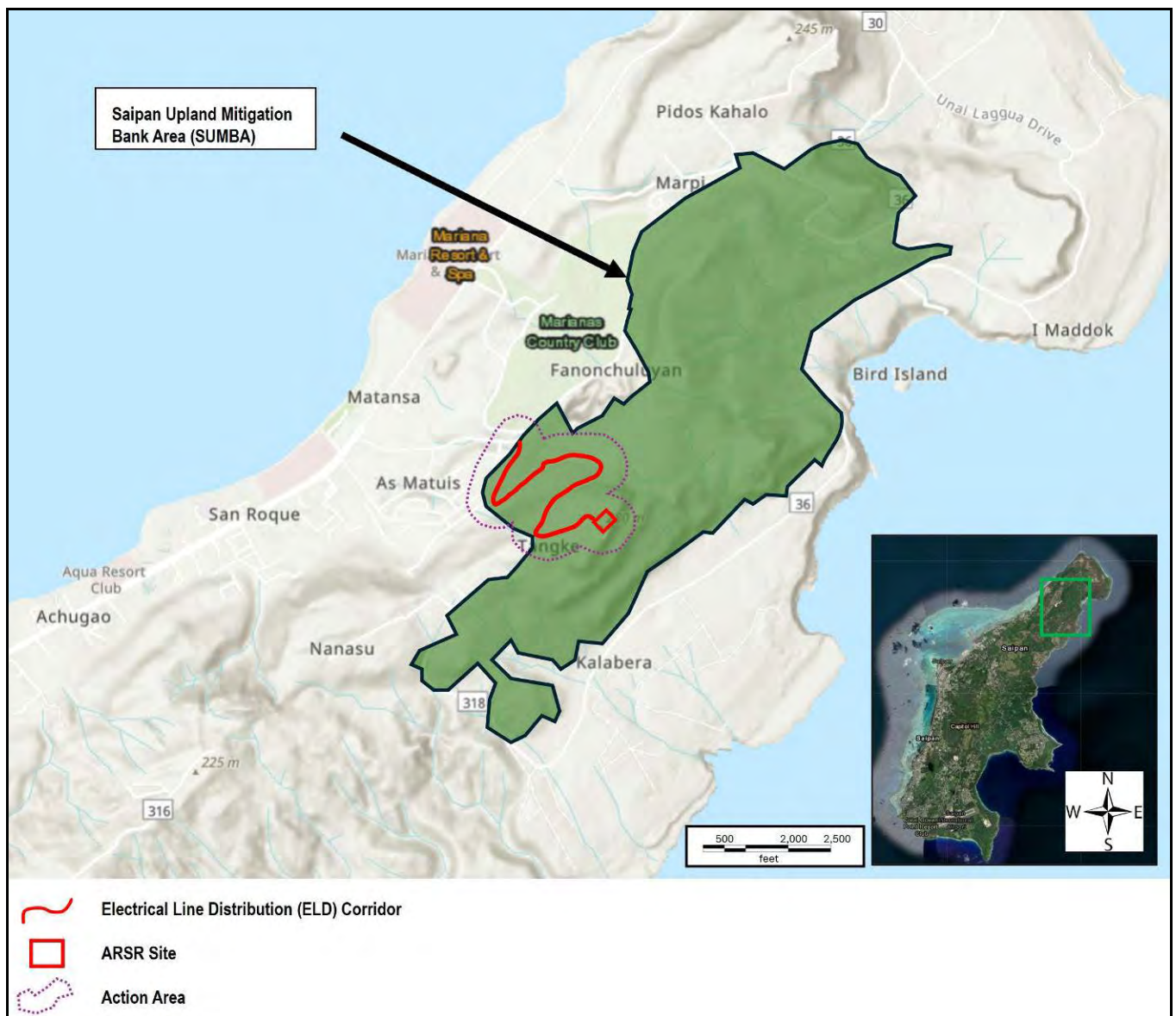


Figure 5 Action Area. Imagery Source: CNMI BECQ Open Data Portal.

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5 SPECIES/CRITICAL HABITAT CONSIDERED

5.1 Species

Federally listed species considered in this BA were identified based on the project location, habitat conditions within and adjacent to the Action Area, available agency resource information, and coordination with the USFWS and CNMI DFW, as applicable.

Based on the location of the Proposed Action at Mount Petosukara, the nature of the work, and the habitats present within the Action Area, the FAA considered federally listed terrestrial wildlife and plant species with known or potential occurrence in northern Saipan. Species were evaluated to determine whether they may occur within the Action Area and whether the Proposed Action has the potential to affect them.

Species carried forward for detailed analysis in this BA include the Mariana Fruit Bat, Mariana swiftlet, Micronesian megapode, and Nightingale Reed-Warbler, due to their known or potential occurrence in or near the Action Area and the potential for direct or indirect effects from construction or operation of the Proposed Action.

The Humped Tree Snail, Mariana Eight-spot Butterfly, Berenghenas halom tãno', *Dendrobium guamense*, and Ufa halom tãno' were also considered due to their listed status and regional occurrence; however, based on available habitat information, project design, and the nature of the proposed disturbance, these species are not expected to occur within the disturbance footprint or be affected by the Proposed Action.

Table 3. Species-Specific Exposure Pathways and Basis for Effects Analysis

Species	Potential to Occur in the Action Area	Relevant Habitat Use	Primary Potential Effects Pathway
Mariana Fruit Bat (<i>Pteropus mariannus mariannus</i>)	Yes	Movement / foraging habitat	Temporary disturbance; possible brief radar exposure
Mariana Swiftlet (<i>Aerodramus bartschi</i>)	Potential / nearby use	Aerial foraging / commuting	Temporary disturbance; possible brief radar exposure
Micronesian Megapode (<i>Megapodius laperouse</i>)	Yes	Ground nesting / roadside habitat	Vegetation clearing, disturbance, possible mound impacts
Nightingale Reed-Warbler (<i>Acrocephalus luscini</i>)	Yes	Dense roadside and secondary vegetation	Habitat removal, disturbance
Humped Tree Snail (<i>Partula gibba</i>)	Low / no suitable disturbance footprint	Moist native vegetation / host plants	None expected
Mariana Eight-spot Butterfly (<i>Hypolimnas octocula marianensis</i>)	Low / no suitable disturbance footprint	Host plant-dependent habitat	None expected
Berenghenas halom tãno' (<i>Solanum guamense</i>), <i>Dendrobium guamense</i> , ufa halom tãno' (<i>Heritiera longipetiolata</i>)	Low / not expected in disturbance footprint	Site-specific occurrence not documented	None expected

5.2 Critical Habitat

No designated critical habitat for federally listed species under USFWS jurisdiction occurs within the Action Area.

Although no designated critical habitat is present, the Proposed Action occurs within the SUMBA, which was established to provide compensatory mitigation and habitat conservation for federally listed species, particularly the Nightingale Reed-Warbler. SUMBA is not designated critical habitat under the ESA; however, its presence is relevant to this BA because the project occurs within habitat managed for conservation purposes and habitat impacts to listed species may be addressed through mitigation bank credits.

Accordingly, while no critical habitat analysis is required for this project, the conservation function of SUMBA is considered in the effects analysis and proposed mitigation discussion.

5.3 Regional Ecological Setting and General Threats

The environmental baseline for the Proposed Action includes the current condition of listed species and their habitats within the Action Area, as influenced by past and ongoing natural and human-caused stressors. In the Mariana Islands, listed terrestrial species persist within landscapes that have been extensively altered by historic land clearing, military activity, agriculture, wildfire, invasive species, typhoons, and modern development. On Saipan, much of the native vegetation has been modified by past agricultural conversion, military use during World War II, post-war revegetation with nonnative species such as tangantangan (*Leucaena leucocephala*), and subsequent urban and infrastructure development (Ohba 1994; Mueller-Dombois and Fosberg 1998; Berger et al. 2005; Spies et al. 2019).

Although native forest, secondary forest, shrubland, and other vegetated habitats remain on Saipan, these habitats are fragmented and in many places degraded by invasive plants, invasive animals, human disturbance, and recurring wildfire (Berger et al. 2005; Willsey et al. 2019). As a result, listed species on Saipan often occur in landscapes that are already subject to ecological stressors independent of the Proposed Action. These background conditions are relevant to understanding the current status of listed species and the context in which project-related effects would occur.

Habitat loss and degradation remain among the primary threats to listed terrestrial species in the Mariana Islands. Native habitats have been reduced and altered by clearing for residential, commercial, military, transportation, and agricultural uses, as well as by historical wartime disturbance (Ohba 1994; Berger et al. 2005; Spies et al. 2019). For species dependent on native or semi-native forest, including the Mariana Fruit Bat, Mariana swiftlet, Nightingale Reed-Warbler, and Micronesian megapode, the continued loss or simplification of forest structure can reduce available nesting, roosting, sheltering, and foraging habitat.

Invasive species are also a major and ongoing stressor across the Mariana Islands. Introduced ungulates such as deer, pigs, and goats can degrade habitat through browsing, trampling, and suppression of native plant regeneration, which can in turn increase erosion and facilitate the spread of invasive plant species (Stone et al. 1992; Leopold and Hess 2017; Gawel et al. 2018).

Rodents, invasive ants, and other nonnative invertebrates may also affect listed species directly through predation or indirectly by altering habitat condition, plant recruitment, pollination, and food-web dynamics (Cuddihy and Stone 1990; Shiels et al. 2014; Farmer 2017; Plentovich et al. 2017).

Of particular concern in the CNMI is the continued risk of introduction of the brown treesnake (*Boiga irregularis*), which has caused severe ecological impacts on Guam and remains a major regional biosecurity concern. The snake has caused the loss or severe decline of numerous native vertebrate species on Guam and has disrupted ecological functions such as seed dispersal and forest regeneration (Savidge 1987; Fritts and Rodda 1998; Rodda and Savidge 2007; Rogers et al. 2017). Although the brown treesnake is not established on Saipan, prevention of its introduction remains important to the long-term persistence of native forest ecosystems and listed species in the CNMI.

Wildfire is another important regional stressor, particularly in disturbed or fire-prone landscapes where invasive grasses and altered vegetation communities can perpetuate repeated burning. Fire can remove native vegetation, degrade understory and edge habitat, reduce cover, and facilitate conversion of forest and shrubland to more simplified nonnative vegetation communities (Minton 2006; Trauernicht and Kunz 2019; Trauernicht and Chimera 2020). On Saipan and elsewhere in the Mariana Islands, repeated wildfire can reduce habitat quality for listed species and impair natural regeneration.

Typhoons are a recurring natural disturbance throughout the Mariana Islands and can substantially affect listed species and their habitats. High winds, salt spray, and storm damage can defoliate forest, break canopy structure, and increase vulnerability to invasive species and post-storm habitat degradation (Marler 2001; Willsey et al. 2019; Polhemus and Richardson 2019). Although many native Mariana plant communities are adapted to periodic typhoon disturbance, severe storms can still reduce habitat quality and alter vegetation structure for extended periods.

In combination, these existing environmental stressors form the baseline condition within which the proposed ARSR and ELD improvements would occur. The Proposed Action would be implemented within a landscape that has already experienced substantial historic disturbance and ongoing ecological pressure. Species-specific status and habitat conditions relevant to the Action Area are discussed in the sections below.

5.4 Consultation to Date

The FAA has coordinated with the USFWS and the CNMI DFW during development of this BA and in support of Section 7 consultation for the Proposed Action.

Initial coordination occurred in August 2024, when FAA discussed the project with CNMI DFW on Saipan. Based on that coordination, CNMI DFW identified the Nightingale Reed-Warbler as a primary species of concern for the project area.

Additional coordination occurred in late 2024 and early 2025, including discussions with USFWS and CNMI DFW regarding the project description, species review, and anticipated

biological concerns. During that coordination, CNMI DFW indicated that a site assessment application should be submitted to support agency review and species record screening and identified expected project considerations for the Nightingale Reed-Warbler and potential impacts to the Micronesian Megapode.

FAA subsequently submitted a CNMI DFW site assessment application, which supported agency review of potential project effects on listed and unlisted species and informed subsequent biological analysis for the Proposed Action.

FAA later provided project information to USFWS in support of informal Section 7 consultation in May 2025. Following that submittal, FAA engaged in additional coordination with USFWS regarding agency review status and species-specific questions and concerns associated with the Proposed Action.

During subsequent coordination in January 2026, USFWS identified primary concerns related to the Nightingale Reed-Warbler, Micronesian Megapode, and potential operational effects of the radar on the Mariana Fruit Bat and indicated that the Proposed Action would more appropriately proceed under formal consultation based on the anticipated effects analysis. USFWS also discussed compensatory mitigation considerations associated with Nightingale Reed-Warbler habitat impacts, including potential use of SUMBA credits.

Following that coordination, FAA conducted additional follow-up with CNMI DFW regarding species occurrence information relevant to the BA. This BA serves as a revised and updated follow-on consultation document that incorporates prior agency coordination, updated project information, and refined species-specific analysis.

5.5 Species Descriptions and Distribution

5.5.1 Mariana Fruit Bat

The Mariana Fruit Bat, or fanihi (*Pteropus mariannus mariannus*), is a large fruit bat endemic to the Mariana Archipelago, including Guam and the CNMI. The species was federally listed as endangered in 1984 and was later reclassified as threatened throughout its range in 2005 after recognition that populations across the Mariana Islands comprise a single endemic subspecies (70 Federal Register [FR] 1190; January 6, 2005).

The Mariana Fruit Bat is among the largest native terrestrial mammals in the Mariana Islands. Adults generally have a wingspan of approximately 34 to 43 inches (86 to 109 centimeters) and weigh between approximately 0.73 and 1.27 pounds (330 and 577 grams). They have dark brown to black wings and body fur, with a golden-brown mantle around the neck and shoulders. Unlike insectivorous bats, Mariana Fruit Bats do not echolocate and instead rely primarily on vision and smell to navigate and locate food resources.

Mariana Fruit Bats are highly mobile, strong-flying bats that forage primarily at night on fruit, nectar, pollen, and leaves from a wide variety of native and nonnative plant species (USFWS 2009a). They may travel substantial distances between roosting and foraging areas and are capable of moving between islands. During the day, Mariana Fruit Bats roost in trees, either singly, in small groups, or in larger colonies depending on habitat conditions, food availability, and disturbance levels. Roosting and foraging habitat includes native limestone forest, ravine forest, secondary forest, coconut groves, and other wooded habitats with suitable canopy structure and food resources. Mariana Fruit Bats are also known to show fidelity to suitable roosting areas and may repeatedly use the same general roosting and foraging landscapes over time where habitat remains intact and disturbance is limited. (Glass and Taisacan 1988; Worthington et al. 2001; Wiles and Johnson 2004).

Across the Mariana Archipelago, Mariana Fruit Bat populations have declined due to a combination of habitat loss and degradation, hunting, and other anthropogenic and natural stressors. Although the species remains distributed across much of the archipelago, the largest populations are generally associated with the northern islands, while populations on Saipan and other southern islands are smaller and more variable over time. The USFWS recovery plan notes that small populations on islands such as Saipan may be especially vulnerable to localized disturbance and other stressors because of their relatively limited numbers and patchy distribution (USFWS 2009a).

On Saipan, Mariana Fruit Bats are known to occur in forested habitats, including limestone forest and secondary vegetation. Individuals or small groups may use a broad range of habitat types for foraging and movement across the island. Because Mariana Fruit Bats are highly mobile and may move in response to food availability or disturbance, their presence in a given area may be intermittent and variable. In northern Saipan, forested uplands, cliff-line habitats, and adjacent vegetated ridgelines provide suitable movement and foraging habitat and may support transient or commuting individuals moving between roosting and foraging areas.

5.5.2 Mariana Swiftlet

The Mariana swiftlet (*Aerodramus bartschi*) is a small cave-roosting bird endemic to the Mariana Islands and was federally listed as endangered in 1984 (49 FR 33881–33885; USFWS 1984). No critical habitat has been designated for the species.

The Mariana swiftlet is a small, dark grayish-brown swift and the only resident swift in the Mariana Islands. Adults are dark sooty brown above and somewhat paler below, with a wingspan of approximately 9.2 inches (233 millimeters) and a body mass generally ranging from approximately 6.4 to 9 grams. Like other members of the genus *Aerodramus*, the species uses echolocation to navigate in dark cave interiors, an unusual trait among birds. Echolocation is used for cave navigation rather than prey detection; the species forages visually during daylight on small aerial insects captured in flight (USFWS 1991; Morton and Amidon 1996; USFWS 2025d).

The Mariana swiftlet is highly colonial and closely associated with natural limestone caves used for roosting and nesting. Occupied caves are typically characterized by entrances of sufficient size, dark interior chambers, and adequate airflow. Swiftlets generally leave their caves around sunrise to forage and return around sunset, although individuals may return to caves periodically during the day. Outside of caves, the species is highly aerial and has not been observed perching regularly in vegetation or on other structures (USFWS 1991; Morton and Amidon 1996).

Mariana swiftlets forage over a variety of habitats, including ridge crests, forest edges, emergent trees, open grassy areas, and near streams. Available information indicates they may forage from near ground level to well above the forest canopy, though little species-specific information is available regarding typical foraging height or how far individuals routinely travel from occupied caves. Studies from Saipan and Aguiguan indicate that flying ants, parasitic wasps, beetles, and aphids are among their prey, suggesting the species may exploit localized pulses of aerial insect abundance (Kessler 2007; Cruz et al. 2008).

The species has relatively low reproductive output. Nests are cup-shaped and composed of plant material and saliva, attached to cave walls or ceilings in high, dark, and relatively inaccessible portions of cave interiors. A single egg is typically laid per nesting attempt, and the nesting cycle is prolonged, contributing to a relatively low intrinsic rate of population growth. Nesting on Saipan has been reported year-round, with peak activity generally occurring from approximately May through September (USFWS 1991; Reichel et al. 2007).

Historically, the Mariana swiftlet occurred on Guam, Rota, Aguiguan, Tinian, and Saipan, but the species has declined substantially across its range and is now considered extirpated from Rota and Tinian (Cruz et al. 2008; USFWS 1991; USFWS 2025d). Current populations are known from Guam, Aguiguan, and Saipan. The most recent minimum range-wide estimate reported by USFWS is approximately 4,479 individuals, including approximately 3,293 birds in nine colonies on Saipan, 338 birds in three colonies on Aguiguan, and 848 birds in three colonies on Guam. Saipan currently supports the largest known population in the Mariana Islands (USFWS 2025d; CNMI DFW 2022a).

Threats to the Mariana swiftlet include disturbance at occupied caves, predation by introduced predators, nest damage by introduced insects, degradation or loss of foraging habitat, and

stochastic events such as severe storms (USFWS 1991; USFWS 2025d; Cruz et al. 2008). Human disturbance in and around occupied caves is a particularly well-recognized threat and has been documented to cause birds to flush from caves, interrupt roosting and nesting behavior, and potentially increase the risk of injury or nest failure. On Saipan, loss or degradation of foraging habitat near occupied caves is also recognized as a concern because it may increase the distance and energetic cost associated with provisioning nests and daily foraging movements (USFWS 1991; Johnson et al. 2018).

5.5.3 Micronesian Megapode

The Micronesian megapode (*Megapodius laperouse laperouse*), known locally as sasangat in Chamorro and sasangal in Carolinian, is a ground-dwelling bird endemic to the Mariana Islands. The species was federally listed as endangered in 1970 and remains listed due to its restricted distribution, fragmented island populations, and ongoing threats including habitat loss and degradation, introduced predators, human disturbance, and stochastic natural events such as typhoons and volcanic activity (35 FR 8491–8498; USFWS 1970; USFWS 1998a; USFWS 2025a).

The Micronesian megapode is a pigeon-sized bird of the forest floor. Adults are generally dark gray-brown to black, with a slightly crested ash-gray head, short, rounded wings, a short tail, and stout yellowish legs and feet adapted for scratching and digging in leaf litter and soil. Bare reddish skin is visible around the eye, ear, and throat. The species is generally terrestrial, secretive, and difficult to detect, particularly in dense forest or shrub cover (USFWS 1998a; USFWS 2025a).

Micronesian megapodes are generally solitary or occur in pairs and are believed to maintain year-round territories, at least on Saipan, where territories have been estimated at approximately one hectare in suitable habitat (USFWS 1998a). The species is an omnivorous forager that feeds on seeds, insects, and other invertebrates, typically by scratching and digging through leaf litter, ferns, and other forest-floor substrates. Although primarily terrestrial, birds have occasionally been observed using low vegetation and other elevated substrates while foraging or moving through habitat (USFWS 1998a).

Unlike most birds, Micronesian megapodes do not incubate eggs using body heat. Instead, they rely on external heat sources, including sun-warmed soils, geothermal heat, microbial decomposition, and warm organic substrates. Across the Mariana Islands, nesting has been documented in sun-heated cinder fields, geothermal soils, rotting logs, root masses, and other friable soils with elevated temperatures. On Saipan, nesting ecology is less well understood and appears to be relatively cryptic and opportunistic compared to some northern islands where communal nesting grounds are more evident (USFWS 1998a).

Historically, the Micronesian megapode occurred throughout much of the Mariana Archipelago, but the species was extirpated from several southern islands and now persists in a fragmented distribution across the CNMI. Earlier recovery documents described the Saipan population as very small and vulnerable, and more recent range-wide analyses continue to recognize the species as endangered despite broader archipelago-wide persistence because several island populations, including Saipan, remain small and susceptible to localized impacts (USFWS 1998a; USFWS 2025a).

On Saipan, the Micronesian megapode is associated primarily with native limestone forest and adjoining edge habitat, but it may also use secondary forest and tangantangan vegetation to some extent, particularly where those habitats occur adjacent to native forest (USFWS 1998a; USFWS 2025a). The best available information indicates that the species remains most strongly associated with vegetated uplands and remnant forest habitat in northern Saipan, including the broader Marpi area (USFWS 1998a; USFWS 2025a).

Primary threats to the species include habitat loss and degradation, overgrazing and disturbance by feral ungulates, predation by introduced predators (including rats, cats, dogs, pigs, and monitor lizards), potential brown treesnake establishment, human disturbance, and stochastic events such as typhoons and drought (USFWS 1998a; USFWS 2025a). On Saipan, where habitat is more fragmented and human presence is greater than on many northern islands, localized disturbance to occupied or suitable habitat remains an important concern (USFWS 2025a).

5.5.4 Nightingale Reed-Warbler

The Nightingale Reed-Warbler (*Acrocephalus luscini*a), locally known as ga'ga' karisu, is a small, insectivorous passerine endemic to the Mariana Islands. The species was federally listed as endangered in 1970 and remains listed due to its restricted range, population declines, and ongoing threats (35 FR 8491–8498; USFWS 1998b; USFWS 2023e).

The species has olive-brown to brown upperparts, pale underparts, a relatively long tail, and a slender bill adapted for gleaning insects and other small prey. Individuals are often more readily detected by vocalizations than by sight, as they typically remain concealed within dense vegetation (USFWS 1998b).

Nightingale Reed-Warblers occupy a variety of dense vegetative habitats, including secondary forest, shrublands, forest edge, reed marshes, tangantangan stands, and mixed upland vegetation communities (USFWS 1998b; CNMI DFW 2022a, CNMI DFW 2022b). These habitats provide the dense vertical and horizontal structure required for nesting, cover, and foraging. The species is generally absent from mature native forest and sparsely vegetated areas (USFWS 1998b).

The species is territorial, with individuals or pairs occupying defined territories that vary in size depending on habitat type. Studies on Saipan indicate that territories may range from approximately 2 to 4 hectares in upland habitats, with smaller core-use areas used for nesting and feeding (Mosher 2006; USFWS 1998b). Nesting occurs in dense vegetation, typically above ground level, and may occur throughout much of the year, with peaks in breeding activity influenced by seasonal conditions and disturbance (USFWS 1998b).

Historically, the Nightingale Reed-Warbler occurred on multiple islands across the Mariana Archipelago, including Guam, Saipan, Tinian, Aguiguan, Alamagan, and Pagan. The species has been extirpated from Guam and several other islands and is now known to occur only on Saipan and Alamagan (USFWS 2023e).

On Saipan, the species remains broadly distributed in suitable habitat, particularly in upland and transitional vegetation communities, including secondary forest, shrubland, and tangantangan

stands. However, long-term monitoring indicates that populations have declined over time, with trends influenced by habitat loss, typhoons, invasive species, and human disturbance (CNMI DFW 2022a; CNMI DFW 2022b; USFWS 2023e).

Primary threats to the Nightingale Reed-Warbler include habitat loss and fragmentation from development, predation by introduced species (e.g., rats, cats), habitat degradation from invasive plants, typhoons and stochastic events, and human disturbance (USFWS 1998b; USFWS 2023e).

Because the species depends on dense vegetative structure and maintains defined territories, localized habitat disturbance can directly affect territory occupancy, nesting success, and reproductive output (USFWS 1998b).

The SUMBA was established in part to conserve upland habitats supporting the Nightingale Reed-Warbler and is used as a compensatory mitigation mechanism for impacts to habitat and territories associated with development (USFWS 2008).

5.5.5 Humped Tree Snail

The Humped Tree Snail (*Partula gibba*), also known as akaleha', is a small arboreal land snail in the family Partulidae that is endemic to the Mariana Islands. Adults have a translucent, ovate-conical shell with approximately four and one-half whorls, a pointed apex, and shell coloration ranging from white to orange, brown, or purple, often with longitudinal striping. Adult shells are generally about 14 to 18 millimeters in length and 10 to 14 millimeters in width (USFWS 2023a; USFWS 2024a).

The species is associated with cool, shaded forest habitat characterized by high humidity, reduced air movement, and relatively stable microclimatic conditions that reduce moisture loss and support survival. *Partula gibba* typically occurs on the undersides of large leaves and has been documented on a variety of native and nonnative trees, shrubs, herbaceous plants, and ferns. Reported associated vegetation includes *Piper guamensis*, *Microsorium punctatum*, *Barringtonia asiatica*, *Mammea odorata*, *Hernandia sonora*, *Ochrosia oppositifolia*, and *Cocos nucifera*. No obligate host plant relationship has been identified, and the species is understood to feed on fungi and microalgae associated with vegetation surfaces (USFWS 2023a; USFWS 2024a).

Historically, the Humped Tree Snail was known from Guam, Aguiguan, Tinian, Saipan, Anatahan, Sarigan, Alamagan, and Pagan, and older records also attributed occurrences to Rota; however, populations on Rota are now considered to represent a different species (*Partula lutaensis*) rather than *Partula gibba*. The species remains distributed across multiple islands in the Mariana Archipelago, but populations have undergone substantial decline and fragmentation, and current viability is considered low due to restricted gene flow, habitat loss, and invasive predation (USFWS 2023a; USFWS 2023b). No critical habitat has been designated for the species at this time.

5.5.6 Mariana Eight-Spot Butterfly

The Mariana Eight-spot Butterfly (*Hypolimnys octocula marianensis*), also known as abbabang in Chamorro and libweibwogh in Carolinian, is a butterfly in the family Nymphalidae (brush-footed butterflies) endemic to the Mariana Islands. The subspecies was described in 1912 and is

considered a narrow endemic associated with native limestone forest ecosystems, particularly where larval host plants occur on rocky or karst substrates (USFWS 2023c; USFWS 2021). Available information indicates the subspecies is known from Guam and possibly Saipan, although its current status on Saipan remains uncertain and it may be extirpated there (USFWS 2023c; USFWS 2021).

Adult Mariana Eight-spot Butterflies are medium-sized and exhibit the orange-and-black coloration typical of many nymphalid butterflies. Males are generally smaller and darker, with vertically oriented orange bands on each wing, whereas females are larger and somewhat duller in appearance, with broader orange markings and darker apical banding. The underside of the wings is comparatively dull and leaf-like in appearance, which likely provides camouflage when the wings are folded. Larvae are black with reddish-orange spines and feed exclusively on host vegetation during development (USFWS 2021).

The Mariana Eight-spot Butterfly is closely tied to the presence and condition of its larval host plants, *Procris pedunculata* and *Elatostema calcareum*, both native herbaceous species in the family Urticaceae. These host plants occur on rocky limestone and karst substrates within native limestone forest and are often associated with cliffs, pinnacles, boulders, and shaded karst features. Adult butterflies are generally observed in close proximity to host plants, and eggs and larvae are similarly associated with occupied host plant patches (USFWS 2021; USFWS 2023c). The subspecies has experienced substantial habitat loss and degradation across its historical range, and important threats include host plant suppression by feral ungulates, nonnative plants, and direct mortality from ants and parasitoid wasps (USFWS 2023c; USFWS 2023d).

5.5.7 Flowering Plants

5.5.7.1 BERENGHENAS HALOM TÂNO'

Solanum guamense (Berenghenas halom tâno') is a short-lived perennial herb or medium-sized shrub in the family Solanaceae (nightshade family) endemic to the Mariana Islands. Historically, the species likely occurred on Guam, Rota, Saipan, Tinian, Asuncion, Guguan, and Maug; however, in recent decades it has only been documented from Guam, and all known populations may now be extirpated. The last known individual on Guam was observed in 1994, although suitable habitat may still persist on multiple islands and the species could remain undetected due to limited survey effort (USFWS 2023f; USFWS 2024c). Threats include habitat degradation from development, invasive species, ungulates, and broader ecosystem disruption. Due to the scarcity of records and lack of known extant populations, the species is considered extremely vulnerable (USFWS 2023f; USFWS 2024c).

5.5.7.2 DENDROBIUM GUAMENSE

Dendrobium guamense is a short-lived perennial epiphytic orchid in the family Orchidaceae endemic to the Mariana Islands. The species grows on the trunks and branches of trees, including small twigs in the upper canopy, and is dependent on forest ecosystems that provide suitable host trees, microclimatic conditions, and ecological connectivity. Flowers are small and white, typically occur in groups of two, and last only one day. Seeds are small and wind-dispersed and require a mycorrhizal fungi to germinate, which contributes to the species' dependence on connected forest habitat and suitable host trees (USFWS 2023g; USFWS 2024d).

The species is known from Guam, Rota, Saipan, Tinian, Aguiguan, and Agrihan, and is believed to have been historically widespread across these islands, although current populations are fragmented and vulnerable to habitat loss and degradation. Threats include introduced animals, wildfire, typhoons, development, and other factors that reduce forest connectivity and habitat quality (USFWS 2023g; USFWS 2024d).

5.5.7.3 UFA HALOM TÂNO'

Heritiera longipetiolata, also known as ufa halom tâno', or looking glass tree, is a medium to large tree in the hibiscus family (Malvaceae) endemic to the Mariana Archipelago. The species occurs in limestone forest habitat and is one of several native tree species associated with the native upland forest communities of the Mariana Islands. It was first recorded in 1932 and is currently listed as endangered under the ESA. The species has experienced long-term declines due to habitat degradation, invasive species, development, and climate-related stressors. Additional threats include herbivory, invasive leaf miners, plant pathogens, and loss of pollinators associated with ecosystem disruption (USFWS 2023h; USFWS 2024e). Although the number of known individuals has increased in recent years through improved survey and management efforts, the species remains vulnerable due to ongoing habitat degradation and fragmentation (USFWS 2023h; USFWS 2024e).

Heritiera longipetiolata is known from Guam, Tinian, Saipan, and Rota. When listed in 2015, the species was known from a relatively small number of populations and individuals, although additional populations have since been documented. Despite these discoveries, the species remains geographically limited and dependent on remaining limestone forest habitat within the Mariana Islands. No critical habitat has been designated for this species.

5.6 Species Status in the Action Area

5.6.1 Mariana Fruit Bat

The Mariana Fruit Bat is known to occur in northern Saipan and within the broader Marpi–Mount Petosukara landscape. Suitable habitat for the species is present in the vicinity of the Proposed Action, including forested uplands, secondary vegetation, and ridgeline habitat that may be used for foraging or movement between roosting and feeding areas.

The Action Area does not contain known roost trees or an established roost colony. However, information provided by the CNMI DFW indicates that a known colony occurs in the Marpi area approximately 1 kilometer north of the ARSR summit site and approximately 750 meters north of the northernmost extent of the radar access road (Figure 5; Fandel 2026, pers. comm.). Marpi and the SUMBA provide important foraging habitat and support known colony use by the species (Figure 6).

Although site-specific survey data for bats in transit near the project area are limited, DFW has indicated that cliff bands and ridgelines, such as those present along Mount Petosukara, can function as movement corridors (flyways) between roosting and foraging areas (Fandel 2026, pers. comm.). Consistent with this, biological opinions and assessments for projects in northern Saipan indicate that Mariana Fruit Bats may occur in project areas as transient individuals moving through suitable habitat, even where roosts are not present (USFWS 2009b).

Within the Action Area, habitat conditions vary. The ARSR summit site consists of a previously disturbed and developed footprint and is expected to provide limited habitat value for roosting or foraging. In contrast, portions of the Action Area associated with the ELD corridor and adjacent forested slopes include vegetation that may provide suitable foraging habitat or serve as movement pathways. As described in the Marpi UXO Biological Opinion (BO), individual bats may enter or leave an area on a daily basis and do not necessarily exhibit site fidelity outside of established roost locations (USFWS 2009b).

Given the species' high mobility and use of a variety of forested habitats, the Mariana Fruit Bat is considered present or reasonably likely to occur within the Action Area, primarily as transient individuals or small groups moving through or foraging within adjacent habitat. Use of the Action Area is expected to be intermittent and variable over time, depending on resource availability and movement patterns across the broader landscape.

5.6.2 Mariana Swiftlet

The Mariana swiftlet is known to occur on Saipan and is considered present or reasonably likely to occur within the Action Area as a foraging or transiting aerial species. The Action Area does not contain known limestone cave roosting or nesting habitat for the species, and no occupied cave sites are known from the project footprint. Accordingly, the Action Area is not expected to support breeding or roosting use by Mariana swiftlets, but it may be used by individuals moving through or foraging over the broader Marpi/Mount Petosukara landscape.

Mariana swiftlets are known to forage over a broad range of habitat types away from occupied caves, including ridge crests, forest edges, cleared areas, and open grassy habitats. Previous biological assessments and survey summaries for Saipan have noted that swiftlets are regularly observed foraging in areas where no cave habitat is known to occur and that they may be detected well beyond the immediate vicinity of occupied caves (Figures 7 and 8; USFWS 2008; USFWS 1991). Although available information remains limited regarding the full extent of daily foraging movements, the species' strong aerial mobility and broad foraging behavior indicate that swiftlets may occur over the project area even in the absence of nearby cave habitat.

Project-specific survey information supports the presence of the species in the Action Area. The CNMI DFW post-survey report for the project documented Mariana swiftlets during two of three surveys, with 14 individuals recorded on February 13, 2025 and 15 individuals recorded on February 14, 2025 within or adjacent to the project area. These observations indicate that Mariana swiftlets use the broader project vicinity, likely as flyover or foraging habitat (CNMI DFW 2025).

Within the Action Area, suitable swiftlet use is expected to be associated primarily with open airspace above the access road, ELD corridor, summit ridgeline, and adjacent upland habitat, rather than with any ground-level or cave-associated feature. The existing access corridor, edge habitat, and ridgeline topography may provide conditions suitable for aerial insect foraging and commuting. However, because the Action Area does not contain known occupied caves or cave-like roosting habitat, the area is not expected to serve a critical nesting or roosting function for the species.

Accordingly, the Mariana swiftlet is considered present within the Action Area as a transient and foraging species, but the Action Area is not known or expected to contain occupied nesting or roosting habitat.

5.6.3 Micronesian Megapode

The Micronesian megapode is considered reasonably likely to occur within the Action Area, particularly in vegetated upland habitat associated with the ELD corridor, adjacent forest edge, and surrounding secondary and mixed forest habitats on Mount Petosukara.

The Action Area contains a mosaic of secondary forest, shrubland, grassland, tangantangan, and edge habitat, some of which may provide suitable cover and foraging habitat for the species. Although the previously disturbed summit site itself provides comparatively limited habitat value, vegetated portions of the ELD corridor and adjacent upland habitat are more suitable for movement, foraging, and potentially nesting.

The species was not detected during the February 2025 CNMI DFW project surveys. However, Micronesian megapodes are cryptic, terrestrial, and difficult to detect, and non-detection during limited survey effort does not rule out occupancy or use of the Action Area. Available agency information and prior consultation documents indicate that megapodes occur in the broader Marpi and northern Saipan landscape and have been associated with both native limestone forest and some secondary or tangantangan habitats in the vicinity of past projects (Figure 8; CNMI DFW 2022b; USFWS 1998a; USFWS 2009b).

Nesting ecology on Saipan remains imperfectly understood, and active nesting or incubation areas may be difficult to identify in the absence of obvious mounds or repeated observations. Because the species may use friable soils, forest-floor substrates, and vegetated uplands for nesting, the potential for nesting habitat within vegetated portions of the Action Area cannot be fully excluded.

Accordingly, the Micronesian megapode is considered present or reasonably likely to occur within the Action Area, particularly within vegetated portions of the ELD corridor and adjacent upland habitat where suitable cover and forest-floor conditions remain.

5.6.4 Nightingale Reed-Warbler

The Nightingale Reed-Warbler is present within the Action Area. Suitable habitat for the species occurs within portions of the Action Area, particularly along the ELD corridor and adjacent upland areas, where dense secondary vegetation, shrub cover, and tangantangan stands are present. CNMI DFW characterized the project area as containing approximately 20 percent native forest, 30 percent mixed secondary forest, 30 percent grassland/shrubland, and 20 percent tangantangan, all of which can contribute to habitat structure used by Nightingale Reed-Warblers on Saipan.

CNMI DFW surveys conducted February 12–14, 2025 documented the species within the project area, with one Nightingale Reed-Warbler observed during each of two survey visits. Based on these observations and habitat conditions, CNMI DFW concluded that the project area supports at least one territory and that project activities have the potential to affect that territory (Figure 8).

This finding is consistent with broader monitoring data indicating that the species occurs across Saipan in suitable vegetation, including in the Marpi and upland mitigation bank areas, where it remains a focal species for conservation and monitoring (CNMI DFW 2022a; CNMI DFW 2022b).

Because the species was directly detected during project surveys and suitable habitat occurs within the Action Area, the Nightingale Reed-Warbler is considered present within the Action Area and likely occupies at least one territory within or adjacent to the project footprint.

5.6.5 Humped Tree Snail

Focused surveys were not conducted for the Humped Tree Snail; however, available habitat information, agency coordination, and biological review conducted for the project did not identify the species or habitat conditions typically associated with the species within the disturbance footprint.

The Humped Tree Snail is associated with moist, shaded forest environments that maintain relatively stable humidity, reduced air movement, and intact vegetative structure. In contrast, the summit ARSR site consists of a previously disturbed former installation footprint, and the ELD corridor follows an existing roadside and utility alignment characterized by edge habitat, secondary growth, maintained vegetation, disturbed shrubland, and tangantangan stands rather than the cool, sheltered forest microclimate typically associated with the species.

Although portions of the broader surrounding landscape may include vegetated habitat, the areas proposed for disturbance do not appear to provide the high-quality moist forest conditions most commonly associated with *Partula gibba*. Based on currently available information, the species is not expected to occur within the project disturbance footprint.

5.6.6 Mariana Eight-Spot Butterfly

Focused surveys were not conducted for the Mariana Eight-spot Butterfly or its larval host plants; however, available habitat information, agency coordination, and biological review conducted for the project did not identify the species or habitat conditions typically associated with the species within the disturbance footprint.

The Mariana Eight-spot Butterfly is associated with native limestone forest habitat and the occurrence of its larval host plants, particularly in rocky or karst terrain. In contrast, the summit ARSR site consists of a previously disturbed former installation footprint, and the ELD corridor follows an existing access road and utility alignment characterized by roadside vegetation, secondary growth, disturbed shrubland, tangantangan stands, and edge habitat rather than intact native limestone forest with known occupied host plant habitat.

Although portions of the broader northern Saipan landscape contain limestone terrain and native vegetation in places, no known host plant occurrences, occupied host plant patches, or butterfly observations were identified within the project disturbance footprint during project review. Based on currently available information, the Mariana Eight-spot Butterfly is not expected to occur within the disturbance footprint.

5.6.7 Flowering Plants

5.6.7.1 BERENGHENAS HALOM TÂNO'

Solanum guamense is not known to occur within the Action Area. The species is poorly known, has not been observed in recent decades, and currently has no confirmed extant populations. Historically, the species was reported from several islands in the Mariana archipelago, including Saipan, but there are currently no known extant individuals and no known occurrences within the project area. No known occurrences of *Berenghenas halom tâno'* are documented within the disturbance footprint, and based on available information the species is not expected to occur within the Action Area.

5.6.7.2 DENDROBIUM GUAMENSE

Dendrobium guamense is not known to occur within the Action Area. The species is an epiphytic orchid associated with forest ecosystems and dependent on suitable host trees and relatively intact forest structure. Although the species is known from Saipan, no individuals were identified during project review and the portions of the Action Area proposed for disturbance are largely associated with previously disturbed summit habitat and roadside/edge vegetation rather than intact native forest supporting known occurrences. No known occurrences of *Dendrobium guamense* are documented within the disturbance footprint. Based on available information, the species is not expected to occur within the Action Area.

5.6.7.3 Ufa halom tâno'

Heritiera longipetiolata is not known to occur within the Action Area. The species is associated with limestone forest habitat and is known from Saipan. The Action Area is characterized primarily by previously disturbed summit conditions and roadside vegetation associated with the existing access road and utility corridor. Although portions of the broader surrounding landscape include upland forest vegetation, no known occurrences or specific habitat features indicating presence of this species were identified within the Action Area. Accordingly, *Heritiera longipetiolata* is not expected to occur within the Action Area.

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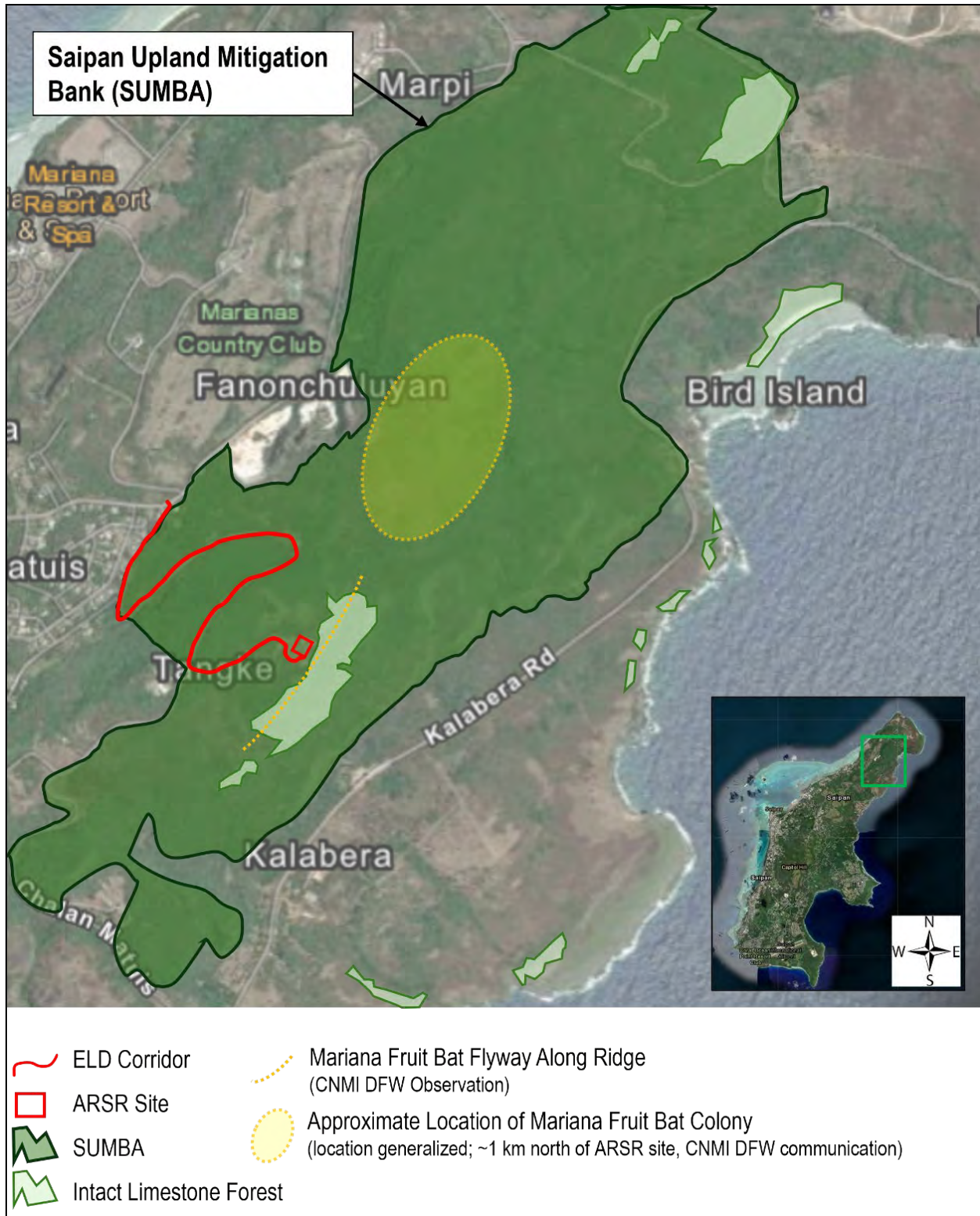


Figure 6 Approximate location of known Mariana Fruit Bat Colony and Observed Flyway in Relation to the Action Area. Imagery Source: CNMI BECQ Open Data Portal.

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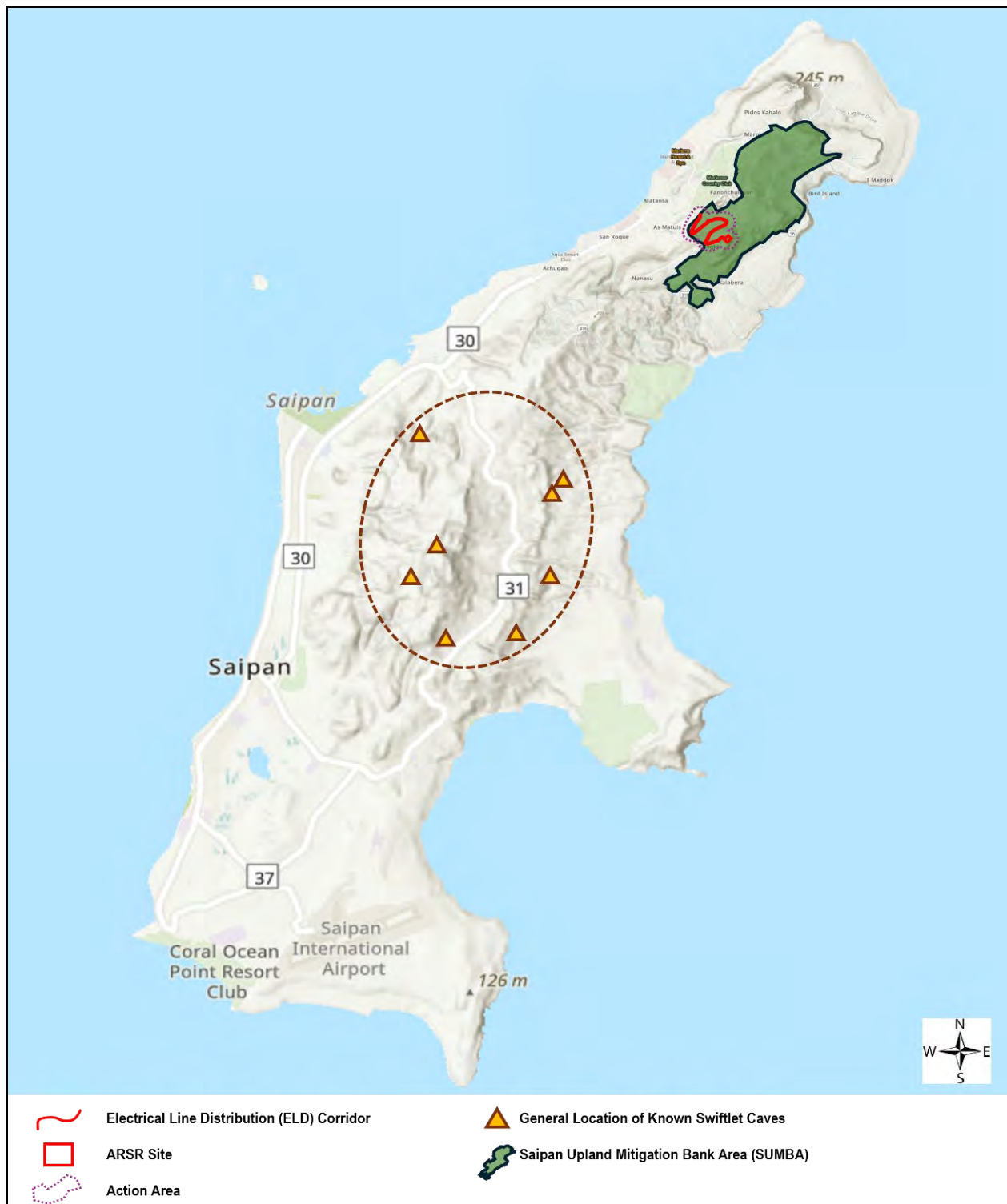


Figure 7 General Location of Known Mariana Swiftlet Caves in Relation to Action Area:
Imagery Source: CNMI BECQ Open Data Portal; Data: (Cruz et al. 2008)

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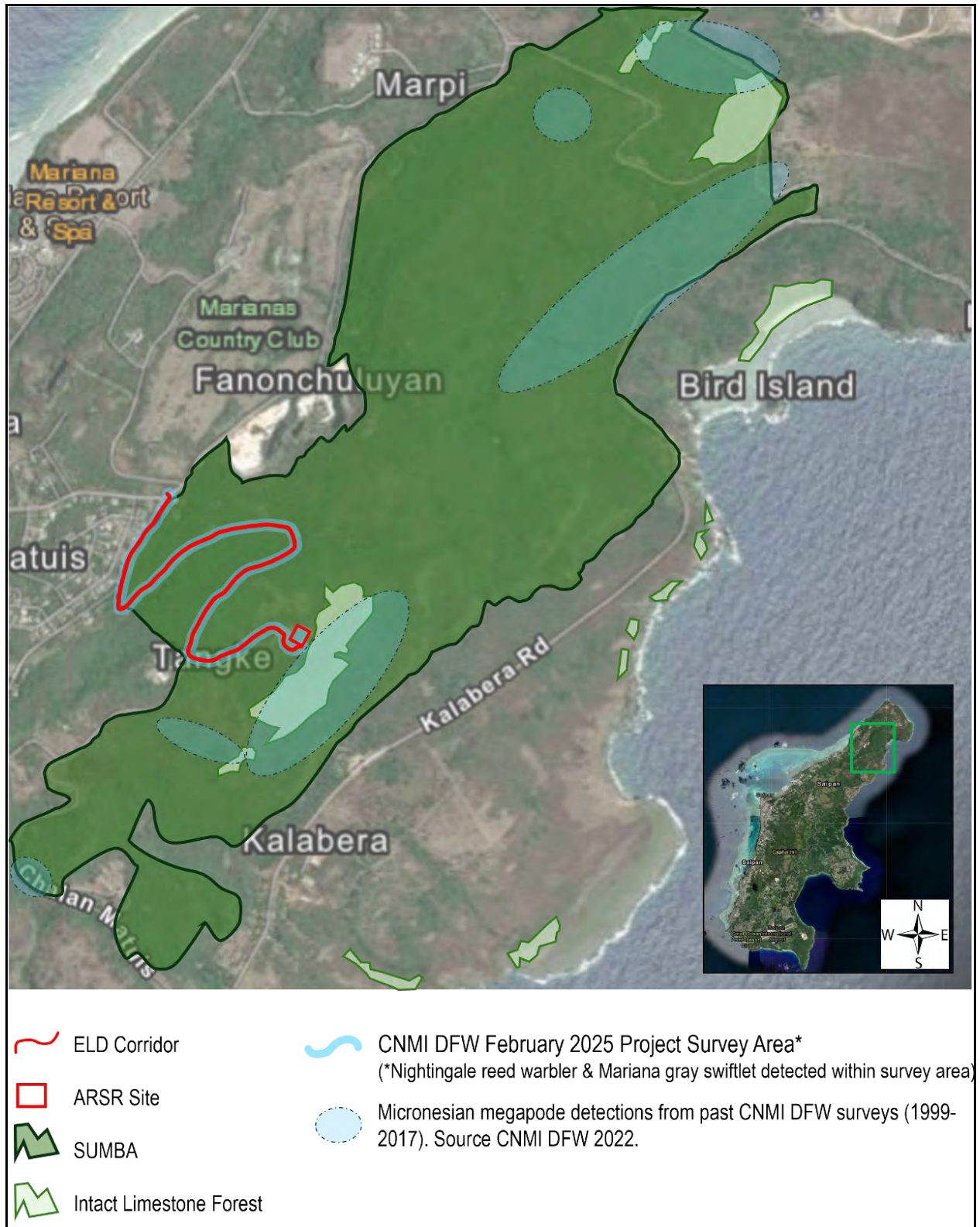


Figure 8 Listed Bird Species Detections in Relation to Action Area. Imagery Source: CNMI BECQ Open Data Portal.

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6 EFFECTS ANALYSIS

The Proposed Action has the potential to affect listed species through both construction-related and operational pathways.

6.1 Construction and General Effects Pathways

Potential construction-related stressors include vegetation clearing, demolition, ground disturbance, vehicle and equipment use, temporary increases in human presence, construction noise, dust, and temporary lighting associated with limited nighttime work. Potential operational stressors include intermittent maintenance access, limited maintenance lighting, and operation of the ARSR.

Construction-related effects would be temporary but may occur repeatedly over the duration of the construction period, particularly along the summit site and ELD corridor. Potential effects to listed wildlife from construction may include temporary displacement from localized areas, interruption of foraging or movement behavior, increased vigilance, altered flight or movement patterns, and short-term avoidance of active work areas. These types of behavioral responses are commonly recognized by the USFWS as potential indirect effects of noise and human disturbance where listed species occur near active work areas (USFWS 2024b; USFWS 2025c).

Construction-related habitat effects would be limited primarily to vegetation clearing and disturbance associated with improvements to the existing ELD corridor and activities at the summit site. These effects are expected to be most relevant for species that use adjacent forested or shrubby habitats for foraging, movement, cover, or nesting. Habitat alteration would be localized and would occur largely within an existing roadside and utility corridor or within the previously disturbed summit footprint.

As described in Section 4, although the Action Area encompasses approximately 72 hectares, actual disturbance is expected to be concentrated within a narrow existing access/utility corridor, an approximately 1-hectare previously disturbed summit site, and limited additional vegetation clearing along the existing radar access road.

Following construction, the ARSR facility would operate as a largely unmanned site with only periodic maintenance access. As a result, long-term operational disturbance from human presence, vehicle access, and maintenance activities would be substantially lower than during construction. Operational lighting would be limited to that required for safety and maintenance and would be shielded and directed downward to the extent practicable.

6.2 Radar Operation and Potential Exposure Pathways

Operation of the proposed ARSR would introduce one operational pathway not typically associated with standard infrastructure projects: exposure to EME generated during radar operation.

The ARSR would emit non-ionizing radiofrequency energy in the L-band through a narrow beam that rotates continuously to provide 360-degree surveillance coverage. The radar beam would be elevated above surrounding terrain and oriented toward the horizon rather than directed toward the ground or surrounding vegetation. Because the antenna rotates continuously and emits energy in short pulses, any wildlife moving through the beam path would be exposed only briefly and intermittently rather than continuously. EME is concentrated within the main beam and decreases rapidly outside of it and with increasing distance from the radar source. These operating characteristics are consistent with how USFWS and other agencies have described similar surveillance and defense radar systems in recent consultations and environmental documents (USFWS 2024b; NAVFAC 2025).

Exposure to radiofrequency energy is commonly evaluated using engineering and safety standards, including the IEEE Standard C95.1, which identifies maximum MPE limits for electromagnetic fields. Although these standards were developed for human health and safety rather than listed wildlife, they provide a useful technical benchmark for understanding the relative intensity and duration of exposure associated with radar operations (IEEE 2019).

Available technical analyses and recent USFWS consultations for radar systems indicate that any potential wildlife exposure to radar emissions would be most relevant for volant species moving through the airspace intersected by the beam and would generally be limited by the short pulse duration, continuous movement of the beam, and the lack of persistent focus on any single location (MDA 2003; MDA 2007; USASMD 1993; USFWS 2024b). The Guam Enhanced Integrated Air and Missile Defense System (EIAMD) Environmental Impact Statement (EIS) similarly notes that the radar main beam would not be directed toward the ground or nearby trees and that wildlife flying through the relevant airspace would be unlikely to remain within the beam long enough to exceed effect thresholds because of short pulse duration, continuous beam movement, and the flight speed of airborne wildlife (NAVFAC 2025).

Accordingly, the potential for direct exposure to radar-related EME would be greatest for flying wildlife moving through the airspace intersected by the rotating beam. In contrast, species occupying ground-level or vegetated habitats outside the primary beam path would be expected to have little or no direct exposure during routine operation. Under these operating conditions, any exposure to flying wildlife would be expected to be brief and intermittent, and the most likely response, if any, would be localized avoidance or minor short-term behavioral alteration rather than injury or physiological harm (Nicholls and Racey 2007; USFWS 2024b). The relevance of these pathways to each listed species is discussed below.

6.3 Mariana Fruit Bat

The Mariana Fruit Bat is known from northern Saipan and may use the broader Action Area for transient movement, commuting, or foraging. Although no known roost trees or roost colonies occur within the project footprint, the surrounding upland landscape and ridgeline habitat may be used by individuals moving between roosting and foraging areas. Based on coordination with the CNMI DFW, a known colony occurs north of the project area, and bats have been observed transiting along the surrounding ridgeline landscape.

6.3.1 Construction Effects

Potential construction-related effects to the Mariana Fruit Bat would consist primarily of temporary disturbance associated with increased human presence, vegetation clearing, construction noise, vehicle traffic, and equipment operation.

Mariana Fruit Bats are known to be sensitive to human disturbance, with documented responses including flushing from roosts, interruption of feeding, altered commuting behavior, and temporary displacement from affected areas (USFWS 2009a; Wiles and Johnson 2004). USFWS has also recognized that Mariana Fruit Bats may respond to human activity within approximately 150 meters (492 feet) through short-term behavioral responses such as avoidance or altered flight behavior (USFWS 2024b; USFWS 2025c).

For this project, disturbance would occur primarily along the existing access road and ELD corridor and at the previously disturbed summit site. No known roost trees or colonies occur within the Action Area, and construction would not result in removal or degradation of known roosting habitat. Vegetation clearing would be limited to a narrow linear corridor and would not substantially reduce available foraging habitat within the broader northern Saipan landscape.

Construction-related disturbance may result in temporary avoidance of localized areas, minor alterations in flight paths, or brief interruption of foraging behavior by individual bats. However, these effects would be intermittent, localized, and temporary, and suitable habitat would remain available in adjacent areas. Because no roost sites would be affected, disturbance would not be expected to result in roost abandonment or reproductive impacts.

Construction-related effects to the Mariana Fruit Bat would be limited to temporary and localized behavioral disturbance, without injury, mortality, or measurable effects on survival or reproduction.

6.3.2 Operational Effects

Operational effects to the Mariana Fruit Bat are associated primarily with radar operation and limited ongoing maintenance activity. Following construction, the ARSR facility would operate as an unmanned site, with only periodic vehicle access for maintenance and inspection. Any required obstruction or safety lighting would be limited to standard aviation or maintenance needs, would be shielded to the extent practicable, and would not represent a substantial new nighttime light source within the broader landscape. Operational lighting is therefore not expected to measurably affect Mariana Fruit Bat movement or foraging behavior. Accordingly, long-term human presence at the summit and along the access corridor would be infrequent and substantially lower than during construction. Operational disturbance from maintenance traffic, occasional personnel access, and limited maintenance lighting would therefore be minor and intermittent.

Potential operational effects to the Mariana Fruit Bat are associated primarily with radar operation. As described above, the proposed ARSR would emit non-ionizing radiofrequency energy in the L-band through a narrow, continuously rotating beam elevated above the surrounding terrain. Because the beam rotates continuously and is oriented toward the horizon rather than toward the ground or adjacent vegetation, any Mariana Fruit Bat moving through the

area would be exposed only briefly and intermittently while in flight. Roosting or grounded bats would generally not be expected to occur within the primary beam path.

Mariana Fruit Bats may occasionally transit through the airspace surrounding the summit and could theoretically pass through the rotating beam while in flight. However, any such exposure would be brief and intermittent, and meaningful exposure would require sustained presence within the highest-energy portion of the beam, which is not expected given the species' mobility and flight. Under these conditions, the most plausible response would be localized avoidance or minor short-term alteration of flight behavior, rather than injury or physiological harm (Missile Defense Agency [MDA] 2003; MDA 2007; U.S. Army and Space Missile Defense Command [USASMDC] 1993; Nicholls and Racey 2007; USFWS 2024b).

USFWS and supporting technical analyses used in recent radar consultations have concluded that wildlife exposure to radar emissions is most relevant for airborne animals that enter the narrow beam path and remain there long enough to experience meaningful exposure. The Guam Missile Defense BO and EIAMD EIS both note that adverse exposure would generally require an animal to remain within the highest-energy portion of the beam for a sustained period, and that this is unlikely for fast-moving airborne wildlife because of the short pulse duration, continuous beam movement, and the orientation of the radar above surrounding habitat (MDA 2003; MDA 2007; USASMDC 1993; USFWS 2024b; NAVFAC 2025). The Guam BO further notes that because no bat roost habitat occurred within the radar keep-out area, it was extremely unlikely that a Mariana Fruit Bat would remain within the highest exposure area for the duration needed to incur harm (USFWS 2024b).

For the proposed ARSR on Saipan, a similar exposure pathway would apply. The radar beam would be elevated above the tree line and not directed into terrestrial habitat. While individual bats may occasionally pass through the airspace intersected by the rotating beam, any such exposure would be expected to be brief, intermittent, and infrequent. The most plausible response, if any, would be short-term behavioral avoidance or minor alteration of flight behavior rather than physiological harm. No roost habitat occurs within the developed summit footprint or within the area most likely to intersect the main beam.

Accordingly, operational effects to the Mariana Fruit Bat are expected to be minimal and limited to brief, intermittent behavioral responses, without injury, mortality, or effects on roosting, reproduction, or population viability.

6.4 Mariana Swiftlet

6.4.1 Construction Effects

Potential construction-related effects to the Mariana swiftlet would consist primarily of temporary disturbance associated with construction noise, human presence, vegetation clearing, and equipment operation.

The Mariana swiftlet is an aerial insectivore that forages over a wide range of habitats and may occur within the Action Area as a transient or foraging species, as confirmed by CNMI DFW post-survey observations (CNMI DFW 2025). Individuals may occasionally forage or transit

through the airspace above the access road, ELD corridor, and summit ridgeline during construction. Construction activities may result in temporary avoidance of localized airspace, minor alterations in flight paths, or brief interruption of foraging behavior. However, these effects would be short-term and intermittent, and suitable foraging habitat would remain widely available in the surrounding landscape.

Human disturbance is a well-documented threat to the Mariana swiftlet, particularly in and around occupied caves where disturbance can disrupt nesting and cause birds to flush (USFWS 1991; USFWS 2025d; USFWS 2026). However, the Action Area does not contain known cave habitat, and construction would not affect nesting or roosting sites.

Construction-related effects to the Mariana swiftlet are expected to be limited to temporary and localized behavioral disturbance of individual birds using the Action Area as flyover or foraging habitat and are not expected to result in injury, mortality, nest loss, reproductive effects, or measurable reduction in habitat function.

6.4.2 Operational Effects

Following construction, the ARSR facility would operate as a largely unmanned site, with only periodic vehicle access for maintenance and inspection. Long-term operational disturbance from human presence, maintenance traffic, and lighting would therefore be minor and intermittent.

Operational effects to the Mariana swiftlet are associated primarily with radar operation, as the species is highly aerial and may occasionally occupy the airspace intersected by the rotating beam. The proposed ARSR would emit non-ionizing radiofrequency energy in the L-band through a narrow, continuously rotating beam elevated above surrounding terrain and oriented toward the horizon rather than toward the ground or surrounding vegetation.

Because the beam rotates continuously and emits energy in short pulses, any Mariana swiftlet moving through the beam path would be exposed only briefly and intermittently while in flight. Mariana swiftlets could occasionally occupy the general airspace intersected by the beam while foraging or transiting. However, exposure would occur only if an individual bird happened to pass through the narrow beam path at the time of transmission and would be of very short duration due to the continuous movement of the beam and the bird. Given the short duration of exposure and the continuous movement of the beam, the most likely response would be minor behavioral avoidance or short-term alteration of flight behavior, rather than physiological harm (Nicholls and Racey 2007; USFWS 2024b).

Available technical analyses and recent USFWS consultations indicate that any potential wildlife exposure to radar emissions would be most relevant for volant species moving through the airspace intersected by the beam and would generally be limited by the short duration, continuous movement of the beam, and the lack of persistent focus on any single location (MDA 2003; MDA 2007; USASMD 1993; NAVFAC 2025; USFWS 2024b).

Operational lighting at the summit facility would also be limited. Any required safety or maintenance lighting would be shielded and used only as necessary. No substantial or continuous nighttime lighting source is proposed. Because Mariana swiftlets are primarily diurnal and return

to caves at dusk, operational lighting is not expected to measurably affect roosting, nesting, or foraging behavior.

The project would not create a barrier to movement or sustained disturbance across the landscape. Operational human activity would be minimal, and lighting would be limited and shielded. Because the Action Area does not contain nesting or roosting habitat, operational effects would not affect reproductive or roosting behavior.

Accordingly, operational effects to the Mariana swiftlet are expected to be limited to the potential for brief, intermittent exposure to radar emissions or minor short-term behavioral responses during flight, without injury, mortality, or measurable effect on movement, foraging success, or reproduction.

6.5 Micronesian Megapode

6.5.1 Construction Effects

Potential effects to the Micronesian megapode are associated primarily with construction-related vegetation clearing, ground disturbance, repeated human presence, equipment operation, and noise within suitable or potentially suitable habitat along the ELD corridor.

The summit site itself is previously disturbed and provides comparatively limited habitat value for the species. However, portions of the ELD corridor pass through or adjacent to vegetated upland and edge habitat that may be used by Micronesian megapodes for movement, cover, foraging, and potentially nesting. Because the species is ground-dwelling and relies on forest-floor and soil substrates, construction activities that disturb vegetation, soils, root masses, or loose substrate may affect habitat features important to the species.

Construction-related activities could result in temporary or prolonged displacement of individuals from otherwise suitable habitat, disturbance or degradation of foraging habitat, removal or disturbance of potential nesting substrate, and interruption of normal movement or habitat use in occupied areas.

The species was not detected during the February 2025 CNMI DFW project surveys; however, that survey result does not eliminate the potential for use of the Action Area because the species is difficult to detect and may occur at low densities in vegetated upland habitat. Likewise, the absence of documented nests does not eliminate the possibility that suitable nesting habitat may occur within or adjacent to areas proposed for disturbance.

Unlike the Mariana Fruit Bat or Mariana swiftlet, for which effects are expected to be primarily behavioral and transient, effects to the Micronesian megapode are more directly tied to physical disturbance of habitat. Although the overall construction footprint is limited and occurs largely within an existing corridor, the project would still result in vegetation clearing and ground disturbance within habitat that may be used by the species, and adverse effects cannot be fully discounted (USFWS 1998a; USFWS 2009b).

Accordingly, construction of the Proposed Action may adversely affect the Micronesian megapode through localized habitat disturbance, temporary displacement, and possible disturbance of nesting or foraging habitat if present.

6.5.2 Operational Effects

Operational and maintenance effects to the Micronesian megapode are expected to be minor and substantially less than construction-related effects.

Following construction, the ARSR facility would operate as a largely unmanned site with only periodic maintenance visits, vehicle access, and occasional human activity along the access road and summit facility. Because the Micronesian megapode is a ground-dwelling forest species, it would not be expected to experience direct exposure to the primary radar beam during routine operation. The primary radar exposure pathway is most relevant to volant species moving through the airspace intersected by the rotating beam and is not expected to be a meaningful operational pathway for Micronesian megapodes.

Operational effects to the species would therefore be limited primarily to intermittent human presence, occasional vehicle access, and minor recurring disturbance associated with routine maintenance. These operational activities could contribute to low-level disturbance in adjacent habitat, but are not expected to result in substantial additional habitat loss, chronic disturbance, or direct mortality.

Accordingly, operational effects to the Micronesian megapode are expected to be minor, and the primary basis for potential adverse effect is construction-related habitat disturbance, not long-term operation of the ARSR facility.

6.6 Nightingale Reed-Warbler

6.6.1 Construction Effects

Potential effects to the Nightingale Reed-Warbler are associated primarily with vegetation clearing, habitat modification, construction noise, and repeated human activity along the ELD corridor.

While the summit ARSR site is largely previously disturbed and of relatively low habitat value, portions of the ELD corridor and adjacent uplands provide suitable habitat for cover, foraging, and nesting, including dense shrub and secondary vegetation communities.

Because the species is territorial and dependent on dense vegetation structure, construction activities may result in removal or degradation of habitat within an occupied territory, temporary or permanent displacement of individuals, alteration of territory boundaries, and potential reduction in reproductive success if disturbance occurs during nesting (USFWS 1998b).

CNMI DFW determined that the Proposed Action has the potential to affect at least one Nightingale Reed-Warbler territory, which is consistent with the species' territorial behavior and documented presence during surveys.

If active nests are present during construction, disturbance could result in interruption of nesting behavior, reduced incubation or feeding, increased predation risk, or nest abandonment (USFWS 1998b; USFWS 2009b).

Studies summarized in USFWS consultations indicate that habitat loss and fragmentation can lead to increased competition for territories, reduced pairing success, increased predation, and lower reproductive success in displaced individuals (USFWS 2009b).

Although the disturbance footprint is limited and occurs largely within an existing corridor, direct habitat disturbance within an occupied territory cannot be avoided entirely, and effects may extend beyond the immediate footprint due to behavioral responses and territorial dynamics.

6.6.2 Operational Effects

Operational effects are expected to be minimal. Following construction, the ARSR facility would operate as a largely unmanned site with infrequent maintenance visits. Ongoing disturbance would be limited to periodic vehicle access and maintenance activity.

The species is not expected to be meaningfully affected by radar operation. The radar beam is elevated and not directed toward vegetation, exposure would be brief and intermittent, and radar-related EME exposure pathways are most relevant to volant species in the air column, not birds occupying vegetation. Lighting would be minimal and shielded, and no sustained increase in nighttime disturbance is expected.

Accordingly, operational effects are expected to be limited to minor, intermittent disturbance and would not result in measurable effects to habitat, survival, or reproduction.

6.7 Humped Tree Snail

The Proposed Action would involve construction within a previously disturbed summit footprint and along an existing roadside/utility corridor. Because the project footprint does not contain the habitat features typically associated with the Humped Tree Snail, the Proposed Action is not expected to affect the species.

Potential impacts to *Partula gibba*, if the species were present, would most likely be associated with disturbance to occupied vegetation or localized changes in shaded microhabitat conditions. However, the disturbed and edge-dominated character of the project footprint does not reflect the moist, sheltered forest conditions generally associated with the species, and no habitat or occurrence information reviewed for the project identified the species within the disturbance area. Accordingly, the Proposed Action would not remove or modify habitat used by the Humped Tree Snail, and the species is not expected to be affected.

6.8 Mariana Eight-Spot Butterfly

The Proposed Action would involve construction within a previously disturbed summit footprint and along an existing roadside/utility corridor. Because the project footprint does not contain

known occupied host plant habitat or habitat conditions typically associated with the Mariana Eight-spot Butterfly, the Proposed Action is not expected to affect the species.

Potential impacts to the Mariana Eight-spot Butterfly, if the species were present, would most likely be associated with disturbance or loss of larval host plants or localized alteration of the forest structure and microhabitat conditions that support breeding and larval development. However, the disturbed and edge-dominated character of the project footprint does not reflect the intact native limestone forest and host plant habitat typically associated with the species, and no habitat or occurrence information reviewed for the project identified the species within the disturbance area. Accordingly, the Proposed Action would not remove or modify habitat used by the Mariana Eight-spot Butterfly, and the species is not expected to be affected.

6.9 Flowering Plants

6.9.1.1 BERENGHENAS HALOM TÂNO'

Berenghenas halom tâno' (*Solanum guamense*) is not known to occur within the Action Area. The species is poorly known, has not been observed in recent decades, and currently has no confirmed extant populations. Although historically reported from Saipan, there are no known current occurrences within the project area or disturbance footprint. Because no individuals or occupied habitat were identified within the disturbance footprint, the Proposed Action is not expected to affect *Solanum guamense*.

6.9.1.2 DENDROBIUM GUAMENSE

Dendrobium guamense is not known to occur within the Action Area. The species is an epiphytic orchid associated with forest ecosystems and dependent on suitable host trees and relatively intact forest structure. Although the species is known from Saipan, no individuals were identified during project review, and the portions of the Action Area proposed for disturbance are primarily previously disturbed summit habitat and roadside/edge vegetation rather than intact forest supporting known occurrences. Because no individuals or occupied habitat were identified within the disturbance footprint, the Proposed Action is not expected to affect *Dendrobium guamense*.

6.9.1.3 UFA HALOM TÂNO'

Ufa halom tâno' (*Heritiera longipetiolata*) is not known to occur within the Action Area. Although portions of the broader surrounding landscape include upland forest vegetation and limestone forest habitat, the disturbance footprint is primarily associated with previously disturbed summit conditions and roadside vegetation along an existing corridor. Because no individuals or occupied habitat were identified within the disturbance footprint, the Proposed Action is not expected to affect *Heritiera longipetiolata*.

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7 CUMULATIVE EFFECTS

For purposes of the ESA, cumulative effects include the effects of future state, territorial, local, tribal, and private actions that are reasonably certain to occur within the Action Area. Future federal actions unrelated to the Proposed Action are not considered because such actions would be subject to separate review under Section 7 of the ESA.

No specific non-federal actions are currently known to be reasonably certain to occur within the Action Area that would measurably increase effects to listed species or listed plants beyond existing and ongoing disturbance patterns. Existing and ongoing non-federal activities in the broader northern Saipan/Marpi area include roadway use, utility and communications infrastructure maintenance, emergency response access, recreational use, and other intermittent human activity. These activities contribute to the environmental baseline and existing level of disturbance within portions of the Action Area, particularly along the access road corridor and near developed summit facilities.

The Action Area also overlaps substantially with the SUMBA, which is managed to support conservation of listed forest-associated species and habitat on Saipan. Habitat management and conservation efforts associated with the SUMBA provide a beneficial conservation context within much of the surrounding landscape.

Based on currently available information, reasonably foreseeable non-federal cumulative effects within the Action Area are expected to consist primarily of continuation of existing low-level disturbance associated with access, maintenance, and adjacent land use. When considered together with these cumulative effects, the Proposed Action is not expected to appreciably increase adverse effects to the Mariana Fruit Bat, Mariana swiftlet, Micronesian Megapode, Nightingale Reed-Warbler, Mariana Eight-spot Butterfly, Humped Tree Snail, Berenghenas halom tãno', *Dendrobium guamense*, or ufa halom tãno' within the Action Area.

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8 CONCLUSION AND DETERMINATION

The FAA evaluated the potential effects of the Proposed Action on federally listed species that may occur in the Action Area in accordance with Section 7 of the ESA. Determinations were made based on the nature of the Proposed Action, species occurrence and habitat use within the Action Area, the type and duration of anticipated stressors, and the conservation measures incorporated into the Proposed Action.

The FAA's effect determinations for listed species considered in this BA are provided below.

8.1 No Effect Determinations

The following listed species would have no effect from the Proposed Action because they are not present within the Action Area, suitable habitat is absent, or the Proposed Action would not affect the species or habitat either directly or indirectly:

- Humped Tree Snail (*Partula gibba*)
- Mariana Eight-spot Butterfly (*Hypolimnys octocula marianensis*)
- Berenghenas halom tãno' (*Solanum guamense*)
- *Dendrobium guamense*
- Ufa halom tãno' (*Heritiera longipetiolata*)

Project activities would occur within previously disturbed areas at the summit site and along an existing roadside utility corridor. These areas do not contain the intact native limestone forest, moist microclimate conditions, host plants, or occupied habitat features required by these species. Because no habitat suitable to support these species occurs within the area of potential effect, and no individuals were identified during surveys or agency coordination, the Proposed Action would have no effect on these species.

8.2 May Affect, Not Likely to Adversely Affect

8.2.1 Mariana Fruit Bat

The Proposed Action may affect the Mariana Fruit Bat due to the potential for temporary disturbance associated with construction activity and the presence of radar operations within the broader landscape. However, no roosting habitat occurs within the project footprint, and construction would occur within previously disturbed areas and along an existing corridor.

Operational exposure to radar emissions would be brief and intermittent due to the rotating antenna and elevated beam orientation. The best available information indicates that such exposure is unlikely to result in physiological effects and may result, at most, in minor localized avoidance behavior.

Any disturbance effects would be temporary, localized, and would not affect survival, reproduction, or roosting behavior. Therefore, the Proposed Action may affect, but is not likely to adversely affect the Mariana Fruit Bat.

8.2.2 Mariana Swiftlet

The Proposed Action may affect the Mariana swiftlet because the species is present within the Action Area and uses the area for foraging. Construction activities may result in temporary disturbance due to noise and human activity, and operation of the radar system may result in brief interaction with the rotating radar beam.

However, no nesting or roosting habitat (caves) occurs within the disturbance footprint, and vegetation removal would be limited to previously disturbed and edge habitats. The species is highly mobile and forages over a wide range of habitats, and any disturbance would be temporary and localized.

Operational exposure to radar emissions would be brief and intermittent and are not expected to result in physiological effects. Accordingly, the Proposed Action may affect, but is not likely to adversely affect the Mariana swiftlet.

8.3 May Affect, Likely to Adversely Affect

8.3.1 Micronesian Megapode

The Proposed Action may affect and is likely to adversely affect the Micronesian Megapode due to vegetation clearing, ground disturbance, and construction activity within habitat that may be used by the species.

Although the summit site is previously disturbed, portions of the ELD corridor include vegetated roadside and adjacent upland habitat that may be used for foraging, shelter, and potentially nesting. Because megapodes are ground-dwelling and may nest in soil incubation mounds that are difficult to detect, vegetation clearing and ground disturbance could affect nesting habitat if present.

Given the presence of suitable habitat within the disturbance footprint and the potential for disturbance to nesting or occupied habitat, adverse effects to the species cannot be discounted. Therefore, the Proposed Action may affect and is likely to adversely affect the Micronesian Megapode.

8.3.2 Nightingale Reed-Warbler

The Proposed Action may affect and is likely to adversely affect the Nightingale Reed-Warbler. The species was documented within the Action Area during CNMI DFW surveys, and the project area supports at least one territory.

Vegetation clearing associated with the ELD corridor would remove or modify habitat used by the species for cover, foraging, and nesting. Construction-related disturbance, including noise, equipment operation, and human activity, may also affect individuals and could disrupt nesting behavior if active nests are present.

Although the disturbance footprint is limited and occurs primarily within an existing corridor, habitat loss and disturbance would occur within occupied habitat. CNMI DFW has indicated that

the project may affect at least one territory and recommended compensatory mitigation through the SUMBA.

Accordingly, the Proposed Action may affect and is likely to adversely affect the Nightingale Reed-Warbler.

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USFWS. 2024c. 5-Year Review Short Form Summary Species Reviewed: *Solanum guamense* (Berenghenas halomtano). Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

USFWS. 2024d. 5-Year Review Short Form Summary Species Reviewed: *Dendrobium guamense* (no common name). Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

USFWS. 2024e. 5-YEAR REVIEW Short Form Summary Species Reviewed: *Heritiera longipetiolata*; ufa halumtanu (Chamorro name); ufa halom hano (Carolinian name). Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

USFWS. 2025a. 5-Year Review: Short Form Summary for Micronesian Megapode or Sasangat (*Megapodius laperouse laperouse*). Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

USFWS. 2025c. Biological Opinion for the Route 103 Road Improvement Project, Dugi, Rota, Commonwealth of the Northern Mariana Islands. Pacific Islands Fish and Wildlife Office, Honolulu, Hawai‘i.

USFWS. 2025d. 5-YEAR REVIEW: Short Form Summary. Species Reviewed: yayaguak, chachaguak (Mariana swiftlet, *Aerodramus bartschi*). Pacific Islands Fish and Wildlife Office, Honolulu, Hawai'i.

USFWS. 2026. Species Profile for Mariana swiftlet (*Aerodramus bartschi*). Environmental Conservation Online System (ECOS). Accessed March 2026.

Wiles, G.J., and N.C. Johnson. 2004. Population Size and Natural History of Mariana Fruit Bats (Chiroptera: Pteropodidae) on Sarigan, Mariana Islands. *Pacific Science* 58:585–96.

Willsey, T., J. Kwon, M.K. Reeves, and F. Amidon. 2019. Forest Habitats of the Mariana Islands. In *Encyclopedia of the World's Biomes*. 2020. M.I. Goldstein and D.A. DellaSala (Eds.). Elsevier. <https://doi.org/10.1016/B978-0-12-409548-9.11950-5>

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Appendix A2: Supporting Coordination and Survey Documentation

- CNMI Division of Fish and Wildlife (DFW) Listed Species Notification
 - CNMI DFW Post Survey Report
 - CNMI DFW Clearance Letter
 - Agency Coordination and Correspondence
-



Commonwealth of the Northern Mariana Islands
Division of Fish & Wildlife
Department of Lands and Natural Resources
Lower Base, P.O. Box 10007
Saipan, MP 96950



Telephone: 670-664-6000
Fax: 670-664-6060

February 18th, 2025

Federal Aviation Administration
800 Independence Avenue SW, Room #300 East
Washington, DC 20591

Subject: **Listed Species Notification** - DFW Permit No. 25S-088N: In reference to BECQ Permit N/A

Dear Andrew J. Grey, P.E,

The Division of Fish and Wildlife has conducted three wildlife surveys and has detected the presence of the endangered Nightingale Reed-warbler. Proposed project activities have the potential to impact this species.

The application is for the Saipan (GSN0 Long Range Radar Site(ARSR) and Power System Upgrade on Lot No. 009 C 06, containing an area of 2113 m, more or less, located in Tangke, Saipan. Please be advised that we are placing your application **ON HOLD** and no land clearing activity is allowed at this time.

If you would like to proceed with your project, please contact Yanghongfan Wang, Threatened and Endangered Species Biologist, or Frances G. Sablan, Assistant Wildlife Biologist, at (670) 664-6016 to schedule a meeting to discuss possible mitigation options.

In the meantime, this permit application is still active but will be put on file for further review and discussion with United States Fish and Wildlife Service (USFWS).

Respectfully,

Rosemary Camacho
Acting Director, DFW

Cc: Tyler Willsey, USFWS-Ecological Service Biologist
Henry Fandel, Wildlife Section Supervisor



COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS
Department of Lands & Natural Resources
Division of Fish and Wildlife

Caller Box 10007
Saipan, Northern Mariana Islands 96950
Telephone: (670) 664-6000
Fax: (670) 664-6005

POST-SURVEY REPORT

To: Rosemary C. Camacho, Acting Director, DFW
From: Technical Guidance Program, DFW
Date: 02/20/2025
Subject: Application for Project Review for DFW #25S-088N

1. Applicant's Information:

Applicant name: Federal Aviation Administration (FAA, Jonathan Salter)
Email: jonathan.salter@faa.gov / (rep) agray@cusaconsulting.com / john.e.gourley@gmail.com
Address: National Defense Program, AJW-B710, 800 Independence Avenue SW, Room #300 East Washington, DC 20591 / (re
Telephone: Cell: (202) 744-1408 / (rep) (O): (603) 296-5895, (C): (907) 301-6007 / John Gourley: 483-4000
Authorized Representative: Andrew J. Gray, P.E. / John Gourley

2. Project Description (including earthmoving and/or vegetation clearing):

Demolition, soil testing, for construction of the Saipan (GSN) long range radar site (ARSR) and power system upgrade.

3. Property Description:

Village: Marpi
Parcel Number(s): 009 C 06
Lot Area: 17,107 m²
Proposed Project Area: 2113 m²
Actual Project Area: 46774 m²

Other relevant details: N/A

4. Survey Effort:

Surveys: 3
Dates of Surveys: 2025-02-12, 2025-02-13, 2025-02-14

5. Listed Species Detected:

Yes/No: Yes: Nightingale Reed-warbler, Mariana Swiftlet

Comments: Survey 1: Listed species detected. Survey 2: Listed species detected. Survey3: No listed species detected.

7. Photos:



8. Site Inspection Findings:

Survey No.	1	2	3
Site Inspected By	Chicko Arurang	Chicko Arurang	Chicko Arurang
Additional Inspector	JKR	JKR	JKR
Inspection Date	2025-02-12	2025-02-13	2025-02-14
Inspection Start Time	14:46	07:42	07:38
Inspection End Time	15:27	08:13	08:17
Nightingale Reed-warbler	1.0	1.0	-
Mariana Swiftlet	-	14.0	15.0
Bridled White-eye	45.0	34.0	12.0
Golden White-eye	8.0	6.0	3.0
Micronesian Myzomela	10.0	8.0	2.0
Rufous Fantail	6	6	8
Mariana Fruit Dove	-	-	2.0
White-throated Ground Dove	3.0	3.0	3.0
Collared Kingfisher	4.0	11.0	12.0
Micronesian Starling	13.0	11.0	9.0
Black Noddy	9.0	8.0	4.0
Eurasian Tree Sparrow	12.0	5.0	11.0
Island Collared Dove	8.0	5.0	5.0
Orange-cheeked Waxbill	12.0	12.0	8.0
White Tern	13.0	5.0	6.0
White-tailed Tropicbird	7.0	5.0	11.0
Yellow Bittern	3.0	3.0	3.0
Flyover	WHITE TERN BLACK NODDY, RED TAILED TROPIC BIRD	WHITE TERN, BLACK NODDY	WHITETERN,BLAC NODDY
Playback	FALSE	FALSE	TRUE

	% of Lot
Native Forest	20.0
Mixed Secondary Forest	30.0
Agricultural Forest	0.0
Grassland/Shrubland	30.0
Wetland	0.0
Developed/Existing Building	0.0
Bare Ground	0.0
Tangan-tangan	20.0

9. Relevant Findings:

Listed species:

Nightingale Reed-warbler, Mariana Swiftlet

List other native and endemic species:

Bridled White-eye, Golden White-eye, Micronesian Myzomela, Rufous Fantail, Mariana Fruit Dove, White-throated Ground Dove, Collared Kingfisher, Micronesian Starling, Black Noddy, White Tern, White-tailed Tropicbird, Yellow Bittern

Describe habitat and/or plant species within the proposed project area:

tangantangan, kalaskas, sakati, grass, papaya, permna, coconut, mango, citurs, guamia, ramiflora, melenolepis, noni, pisonia,

Describe suitable habitat present, if applicable:

N/A

10. Effects:

Direct effects:

Proposed project activities will contribute to the reduction and fragmentation of habitat that supports NIRW and other native birds.

Indirect effects:

Activities will disturb NIRW and other native birds in the vicinity.

Cumulative effects:

Proposed project activities have the potential to impact at least 1 NIRW territories and other native birds species, by reducing fragments habitat in this section of Saipan.

11. Conservation Recommendations (e.g., strategies to avoid and/or mitigate impacts, or enhance benefits)

Proposed project activities will adversely affect at least 1 Nightingale Reed-warbler territory. Based on our findings, avoidance and minimization efforts are not suitable options to offset take of NIRW. Therefore, the following recommendations may be considered: 1. The applicant may coordinate with DFW to purchase credits in the Saipan Upland Mitigation Bank (SUMB) to offset potential take of NIRW. 2. After finalization of SUMB credit purchase, the applicant may begin proposed project activities provided that the following conditions are met: a. Land clearing activities and the use of noisy (greater than 60 decibels A-weighted), heavy equipment are to be restricted to non-peak breeding seasons (April through June & October through December). b. Prior to land clearing activity, a biologist experienced in locating Nightingale Reed-warbler nests will search the footprint of the project area and the adjacent areas for active nests. DFW must be notified of the results of the nest search a minimum of 14 days prior to the onset of project activities. The applicant will report all nest detections on and adjacent to the property to DFW. c. If there are any active nest detected, proposed activities within 50 meters of each nest will be postponed and Wildlife staff will monitor the nest for 45 days. DFW will notify the applicant that project activities may commence when DFW has determined that the nest has been voluntarily abandoned or chicks have actively fledged. d. Where possible, retain large trees. Trees provide canopy used by several native bird species. Maintaining trees can also shade the land (moderate temperature) and prevent erosion. e. If at any time during the proposed work any Threatened or Endangered species are detected at the project site, the applicant must cease activities immediately and notify DFW for further consultation. f. If work needs to be altered or new activities are required for any reason, DFW must be informed and an additional amendment to the permit must be obtained. g. In the event that land is cleared and not developed, the applicant must reforest the site to prevent the establishment of invasive plants. The applicant should consult DFW for guidance.



Commonwealth of the Northern Mariana Islands

Division of Fish & Wildlife

Department of Lands and Natural Resources

Lower Base, P.O. Box 10007
Saipan, MP 96950



Telephone: 670-664-6000
Fax: 670-664-6060

February 26th, 2025

Federal Aviation Administration
800 Independence Avenue SW, Room #300 East
Washington, DC 20591

Subject: DFW review of #25S-088N

Dear Andrew J. Gray, P.E.,

As the authorized representative, the Division of Fish and Wildlife has reviewed the DFW application #25S-088N for the proposed Saipan Long Range Radar Site and Power System Upgrade on Lot No. 009 C 06 located in Tangke, Saipan. Based on our meeting and the proposed scope of work, we have concluded that the project footprint may affect, but will not adversely affect listed species within the vicinity of the project scope. The project may proceed with the following stipulation to minimize impact on listed species:

- A week prior to commencing any project activities, DFW staff must be informed. DFW staff will coordinate with the applicant to mark off the areas where no vegetation removal or land clearing is allowed and show the applicant areas where no vegetation removal is allowed.

If work needs to be altered or new activities are required for any reason, DFW must be informed and an amendment to the DFW clearance may be required. If at any time during the proposed work any threatened or endangered species are detected at the project site, the applicant must cease activities immediately and notify DFW for further consultation. If you have any questions regarding our determination, please give us a call at (670) 664-6016 for assistance.

Yanghongfan Wang, Threatened and Endangered Species Biologist

cc: Rosemary Camacho, Acting Director, DFW
Henry Fandel, Wildlife Section Supervisor
Frances Sablan, Assistant Wildlife Biologist

Groves, Jamie L (FAA)

From: Groves, Jamie L (FAA)
Sent: Tuesday, July 21, 2026 12:36 PM
To: 'Curry, Robert (Bronson)'
Cc: Salter, Jonathan (FAA); Andrew Gray; Willsey, Tyler P
Subject: RE: FAA Long Range Radar Mt. Petosukara Section 7 Coordination – Additional Info

Hi Bronson,

Thank you for the follow-up and for your recommendations.

FAA confirms that the proposed project has an anticipated 30-year operational service life.

We also agree with your recommendation regarding the Micronesian megapode. Based on the results of DFW's 2025 site assessment and the incorporation of the conservation measures, including pre-construction surveys and other avoidance and minimization measures, we will revise the effects determination for the Micronesian megapode from Likely to Adversely Affect (LAA) to Not Likely to Adversely Affect (NLAA).

**I'd also like to note that I received your separate email regarding BO sequencing and SUMB implementation. I appreciate the additional clarification and will follow up on that message shortly.

Thank you for your coordination and assistance throughout this consultation.

Respectfully,



Jamie L. Groves
Environmental Engineer – AJW 2W16E
WSA EOSH Support Center
Facilities & Engineering Services
Federal Aviation Administration
U.S. Department of Transportation
(907) 841-9235
Jamie.L.Groves@faa.gov

From: Curry, Robert (Bronson) <robert_curry@fws.gov>
Sent: Friday, July 17, 2026 12:30 PM
To: Groves, Jamie L (FAA) <Jamie.L.Groves@faa.gov>
Cc: Salter, Jonathan (FAA) <Jonathan.Salter@faa.gov>; Andrew Gray <agray@cusaconsulting.com>; Willsey, Tyler P <tyler_willsey@fws.gov>
Subject: FAA Long Range Radar Mt. Petosukara Section 7 Coordination – Additional Info

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Good afternoon Jamie,

I'm reaching out to follow up on a couple of details about the Saipan ARSR-4 Radar project.

During our last meeting, I mentioned that we would need to specify the number of years of operational lifetime of the facility that this BO will cover. I believe we talked about something like 20 years, but even 30 years or more might be appropriate given the nature of the facility and the expected maintenance needs. It's up to you; the only thing to keep in mind would be to ensure that any expected maintenance needs that could affect listed species (which, in this case, I think would mostly involve maintenance or upgrades requiring construction work along the ELD corridor) are addressed in the BA. I believe the operation of the radar beam itself has already been adequately addressed. We just need to specify the length of operational time, and if any additional considerations arise as a result of that, they can be addressed through an addendum.

The other question I had is more of a suggestion: since megapodes were not detected during DFW's 2025 site assessment, and since you're incorporating avoidance and minimization measures that include pre-construction surveys, I think it would be appropriate to change your effects determination for the Micronesian megapode to NLAA. If that's acceptable to you, you can just indicate as such in reply; or, feel free to let me know if you'd like to discuss it further.

Thanks again for your continuing coordination with us. Please let me know if you have any questions or would like to discuss either of those points further.

Respectfully,

Bronson Curry
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
Saipan, Commonwealth of the Northern Mariana Islands
Email: robert_curry@fws.gov
Cell: (670) 588-7223
Website: <https://www.fws.gov/office/pacific-islands-fish-and-wildlife>

Groves, Jamie L (FAA)

From: Henry Fandel <hfandel.cnmi.dfw@gmail.com>
Sent: Tuesday, July 14, 2026 2:42 PM
To: Groves, Jamie L (FAA)
Cc: Bronson Curry; Technical Guidance; Yanghongfan Wang; Salter, Jonathan (FAA); Andrew Gray; Curry, Robert (Bronson); Willsey, Tyler P
Subject: Re: Follow-up RE: FAA - Mount Petosukara Long Range Radar Project Update and Coordination on Biological Commitments

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Jamie,

DFW is not in the practice of recommending environmental consultants. Micronesian Environmental Services (MES) and John Fury and Associates are the two we work with most often, with MES conducting the vast majority of BAs received by our office.

My best,

On Wed, Jul 15, 2026 at 3:01 AM Groves, Jamie L (FAA) <Jamie.L.Groves@faa.gov> wrote:

Good morning Henry,

Thank you for getting back to me, and I completely understand the delay. I'm sorry to hear about the impacts on Rota, and I hope everyone at DFW is doing well as recovery efforts continue.

I appreciate you clarifying that DFW will not be conducting the pre-construction biological surveys and for providing the recommended survey methodology and the Micronesian Megapode Avoidance and Minimization Measures. The information is very helpful as we continue working through the Section 7 consultation process.

The FAA will coordinate with our consultant to retain a qualified biologist to complete the required pre-construction surveys consistent with the methodology you described, including the point counts, playback surveys, and targeted nest searches where appropriate.

One question I did have—does DFW have any recommendations for qualified biologists or firms on Saipan that are familiar with conducting these surveys for Micronesian Megapode and Nightingale Reed-Warbler? If there are individuals or firms that regularly perform this type of work in the CNMI, we'd appreciate any recommendations.

Thank you again for your continued coordination and assistance. We look forward to continuing to work with DFW as the project moves forward.

Respectfully,

Jamie L. Groves *Environmental Engineer*

ATO Tech Ops, WSA Engineering Services AJW-2W16E

FEDERAL AVIATION ADMINISTRATION

222 W 7th Ave # 14 Anchorage, AK 99513

C 907.841.9235 | E jamie.l.groves@faa.gov



FAA
Air Traffic Organization

From: Henry Fandel <hfandel.cnmi.dfw@gmail.com>

Sent: Monday, July 13, 2026 6:07 PM

To: Groves, Jamie L (FAA) <Jamie.L.Groves@faa.gov>; Bronson Curry <curry.dfw@gmail.com>

Cc: Technical Guidance <wildlifetechnicalguidance.dfw@gmail.com>; Yanghongfan Wang <billwang.cnmi.dfw@gmail.com>; Salter, Jonathan (FAA) <Jonathan.Salter@faa.gov>; Andrew Gray <agray@cusaconsulting.com>; Curry, Robert (Bronson) <robert_curry@fws.gov>; Willsey, Tyler P <tyler_willsey@fws.gov>

Subject: Re: Follow-up RE: FAA - Mount Petosukara Long Range Radar Project Update and Coordination on Biological Commitments

CAUTION: This email originated from outside of the Federal Aviation Administration (FAA). Do not click on links or open attachments unless you recognize the sender and know the content is safe.

Hi Jamie,

Thanks for following up and apologies for the delayed reply. We had another super typhoon on July 6th followed by a week of admin leave. Thankfully this storm spared Saipan and Tinian for the most part, but

Rota was unfortunately devastated. Despite escaping a direct hit on Saipan we are still deep in typhoon response activity on Rota.

DFW will not be able to conduct pre-construction surveys for your project. Surveys involve conducting a minimum of three point counts (birds and bats) that cover the area of the proposed activities; two surveys should be passive and one should involve playback for each megapode and reed-warbler. Playback calls are played for 10 seconds followed by 5 minutes of passive listening. Any megapode detections within or adjacent to the project area should be followed by targeted nest search for nesting mounds. This involves walking transects in the area of the detection and using megapode behavior to locate nests. AMMS for megapode are attached below for your reference.

Mitigation for reed warbler is done through the purchase of SUMB credits. We issued the attached listed species notification in February 2025 and can issue a SUMB authorization letter after the additional pre-construction surveys are completed by the project's environmental rep.

[@Bronson Curry](#) , if there is any coordination that needs to occur between our offices for this project, please reach out.

My best,

On Tue, Jun 30, 2026 at 2:44 AM Groves, Jamie L (FAA) <Jamie.L.Groves@faa.gov> wrote:

Good morning Henry,

I hope you and the DFW team are continuing to recover well following the recent typhoon.

I wanted to follow up on my email from June 17 regarding the FAA's proposed Mt. Petosukara Long Range Radar project and the biological survey coordination. As we continue working through the Section 7 consultation process with USFWS, we'd appreciate any thoughts you have regarding:

- Coordination on the pre-construction biological surveys;
- Any recommendations for survey timing or methodology; and
- The proposed mitigation approach through the Saipan Upland Mitigation Bank.

Thank you again for your continued coordination and assistance. I look forward to hearing from you when you have an opportunity.

Respectfully,

Jamie L. Groves *Environmental Engineer*

ATO Tech Ops, WSA Engineering Services AJW-2W16E

FEDERAL AVIATION ADMINISTRATION

222 W 7th Ave # 14 Anchorage, AK 99513

C 907.841.9235 | E jamie.l.groves@faa.gov



FAA
Air Traffic Organization

From: Groves, Jamie L (FAA)
Sent: Wednesday, June 17, 2026 3:31 PM
To: Henry Fandel <hfandel.cnmi.dfw@gmail.com>
Cc: Technical Guidance <wildlifetechnicalguidance.dfw@gmail.com>; Yanghongfan Wang <billwang.cnmi.dfw@gmail.com>; Salter, Jonathan (FAA) <Jonathan.Salter@faa.gov>; Andrew Gray <agray@cusaconsulting.com>; Willsey, Tyler P <tyler_willsey@fws.gov>; Curry, Robert (Bronson) <robert_curry@fws.gov>
Subject: FAA - Mount Petosukara Long Range Radar Project Update and Coordination on Biological Commitments

Hafa adai Henry,

I hope you are doing well. I know the recent typhoon had a significant impact across the CNMI and I hope you, your family, and the DFW team are safe and recovering well.

I wanted to provide CNMI DFW with an update regarding the FAA's proposed Long Range Radar installation and operation project at Mount Petosukara and request your continued coordination as we move toward completion of the environmental review process.

The FAA submitted a Biological Assessment and formal Section 7 consultation request to the U.S. Fish and Wildlife Service in April 2026. The Biological Assessment concludes that the Proposed Action may affect and is likely to adversely affect the Micronesian Megapode and Nightingale Reed-Warbler, while other listed species are either not likely to be adversely affected or would experience no effect. The FAA understands that additional avoidance and minimization measures, including pre-construction surveys and playback surveys for Micronesian Megapode, may inform the final effects determination for that species.

The FAA is currently working with USFWS to finalize formal consultation and incorporate biological commitments into the project. As part of this process, the FAA intends to commit to pre-construction biological surveys along the ELD corridor prior to vegetation clearing, including playback surveys for Micronesian Megapode and surveys for other sensitive biological resources as appropriate. We understand that CNMI DFW may be able to perform these surveys, and we would appreciate the opportunity to coordinate with your office regarding survey methods, timing, and any additional recommendations.

We also acknowledge the findings in DFW's February 2025 post-survey report, which concluded that the project would adversely affect at least one Nightingale Reed-Warbler territory and recommended compensatory mitigation through the Saipan Upland Mitigation Bank (SUMB). The FAA intends to offset habitat impacts associated with approximately 0.77 hectares (1.9 acres) of vegetation clearing through the purchase of SUMB mitigation credits and requests CNMI DFW's assistance in coordinating the mitigation bank process and any associated requirements.

We understand that coordination between CNMI DFW and USFWS may also be needed as these mitigation commitments are finalized, and we appreciate your continued assistance throughout this process.

For your reference, I have attached the FAA Biological Assessment and Formal Section 7 Consultation Request package.

Please let me know if you would like to discuss the project further or if there are additional steps the FAA should take to facilitate survey coordination or mitigation bank participation.

Thank you again for your continued assistance and coordination.

Respectfully,

Jamie L. Groves *Environmental Engineer*

ATO Tech Ops, WSA Engineering Services AJW-2W16E

FEDERAL AVIATION ADMINISTRATION

222 W 7th Ave # 14 Anchorage, AK 99513

C 907.841.9235 | E jamie.l.groves@faa.gov



FAA
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Henry J. Fandel
Wildlife Section Supervisor
Division of Fish and Wildlife
Department of Lands & Natural Resources
Commonwealth of the Northern Mariana Islands

Saipan, MP 96950
(670) 664-6017

hfandel.cnmi.dfw@gmail.com

--

Henry J. Fandel
Wildlife Section Supervisor
Division of Fish and Wildlife
Department of Lands & Natural Resources
Commonwealth of the Northern Mariana Islands
Saipan, MP 96950

(670) 664-6017

hfandel.cnmi.dfw@gmail.com

Appendix A3: Biological Opinion (Pending)

**APPENDIX B: NATIONAL HISTORIC PRESERVATION ACT
SECTION 106 DOCUMENTATION**

**Appendix B1: FAA Section 106 Consultation Letter to CNMI Historic
Preservation Office (HPO)**



U.S. Department
of Transportation
**Federal Aviation
Administration**

Air Traffic Organization
Western Service Area
Engineering Services

222 W 7th Avenue, 3rd Floor
Anchorage, AK 99513

April 02, 2026

Mertie Kani, Historic Preservation Officer
Department of Community and Cultural Affairs
Division of Historic Preservation Office
Caller Box 10007 Capitol Hill
Saipan, MP 96950

**RE: Section 106 Consultation – Initiation and Determination of No Adverse Effect
for the Installation and Operation of a New Air Route Surveillance Radar
(ARSR) atop Mount Petosukara, As Matuis, Saipan, Commonwealth of the
Northern Mariana Islands (CNMI)**

Dear Ms. Kani:

The Federal Aviation Administration (FAA) is initiating consultation with the Commonwealth of the Northern Mariana Islands (CNMI) Historic Preservation Office (HPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 306108) and 36 CFR Part 800, to consider the potential effects of the proposed installation and operation of a new Air Route Surveillance Radar (ARSR) atop Mount Petosukara in As Matuis, Saipan, CNMI.

The undertaking includes construction of the new ARSR facility and associated infrastructure, upgrades to the existing electrical line distribution (ELD) corridor, and demolition of the existing Pacific Barrier III (PACBAR III) radar facility as a connected action necessary to accommodate the new installation. The FAA and the U.S. Air Force (USAF) will jointly coordinate funding and implementation of the Proposed Undertaking. As the lead federal agency, the FAA is carrying out its responsibilities under Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800, subpart B.

The FAA has conducted a reasonable and good faith effort to identify historic properties within the Area of Potential Effects (APE) and is providing this letter to document the results of that effort and request HPO concurrence with the FAA's determination of effect.

Description of the Proposed Undertaking

The FAA proposes to install and operate a new ARSR facility atop Mount Petosukara in As Matuis, Saipan, CNMI. The new ARSR facility would support modernization of long-range air surveillance capabilities in the region.

The undertaking also includes demolition and removal of the abandoned Pacific Barrier III (PACBAR III) radar array and associated operations building, which currently occupy the proposed new ARSR facility footprint. The PACBAR III facility is no longer operational and will be removed to accommodate construction of the new ARSR facility.

Additional project components include:

- Construction of a 55-foot-tall radar platform, radome, and associated support facilities;
- Installation of supporting electrical infrastructure; and
- Upgrades of the existing ELD system from single-phase to three-phase service along approximately 1.6 miles of existing roadway corridor.

All work would occur within previously developed areas at the summit radar facility or within the existing access road corridor. No staging or borrow areas have been identified at this time; if additional areas are later proposed, the FAA will coordinate with HPO prior to ground disturbance. This project is a Federal undertaking under 36 CFR § 800.16(y).

Site Setting

The project would occur on approximately 1.4-acres at the abandoned USAF PACBAR III radar facility located atop Mount Petosukara near the village of As Matuis at an elevation of approximately 920 feet above mean sea level. The site overlooks the Tanapag Lagoon and Philippine Sea to the west and the Pacific Ocean to the east. The Village of Marpi lies to the north of the site, while the villages of San Roque and Achugao are located to the south.

Access to the site is provided via Chalan Pale Arnold Road through the village of As Matuis to Route 320, followed by Panglao Place, which leads to the proposed ARSR site.

Area of Potential Effect (APE)

The APE (Figures in Attachment A), as defined at 36 CFR § 800.16(d), is the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of any historic properties. The APE for the Proposed Undertaking includes:

- Direct APE: approximately 1.5 acres surrounding the existing PACBAR III facility.
- Linear APE: approximately 1.6 miles by 10 meters width following the current ELD corridor along the existing access road (Route 320/Chalan Matuis).

Identification of Historic Properties

The FAA conducted a reasonable and good faith identification effort pursuant to 36 CFR § 800.4(b). The FAA relied on the Archaeological Inventory Survey and Monitoring Plan (AIS/MP) prepared by ArchaeoNMI (June 2025) as the primary identification effort. The AIS/MP included background research, literature review, pedestrian survey, evaluation of previously recorded sites, and documentation of standing structures encompassing the full APE.

ArchaeoNMI conducted pedestrian surveys and limited subsurface testing throughout the APE. No intact archaeological deposits or human remains were identified during the survey; surface observations consisted primarily of disturbed soils, fill, and concrete remnants from prior USAF construction.

The AIS documented the standing structures comprising the PACBAR III facility, including the operations building, radar tower foundation, and associated support pads, constructed circa 1989–1991 as part of a late Cold War-era radar installation. The facility is located within a previously graded and heavily disturbed military footprint and exhibits substantial physical deterioration. Based on the information documented in the AIS and the FAA’s review of the facility’s age, context, significance, and integrity, the FAA determined that the PACBAR III

facility is less than 50 years old, does not demonstrate exceptional importance, is not associated with significant historic events or persons, does not embody distinctive architectural or engineering characteristics, and lacks sufficient integrity to convey significance. The facility lacks integrity of design, materials, workmanship, feeling, and association due to replacement components, deterioration, and its location within a previously disturbed setting. Accordingly, the FAA has determined that the PACBAR III facility is not eligible for listing in the National Register of Historic Places (NRHP).

Given documented World War II-era activity in the broader vicinity, including previously recorded ordnance-related features, the AIS recommends archaeological monitoring during ground-disturbing construction as a precautionary measure. The FAA will ensure archaeological monitoring is conducted consistent with the accepted AIS/MP. In the event of post-review discoveries, the FAA will follow the procedures set forth at 36 CFR § 800.13(b).

By letter dated June 24, 2025 (Serial No. 37525), the CNMI HPO reviewed and accepted the AIS/MP and its proposed monitoring measures, confirming that the identification effort and recommended procedures are sufficient to address the archaeologically sensitive context of the project area.

Assessment of Effects

The AIS documented several cultural resources within the broader APE, including three World War II-era Quonset huts (TS-1 through TS-3) within the ELD corridor and a fourth structure (TS-4) located upslope outside of the corridor. These structures have previously been determined eligible for listing in the NRHP under Criteria A and D due to their association with World War II military activities. The proposed ELD alignment is located on the opposite side of the roadway from these resources and will not involve ground disturbance within the boundaries of the structures or associated features. Therefore, the undertaking would not directly or indirectly affect these historic properties.

The survey also documented a possible defensive feature (TS-5) and the Cold-War-era PACBAR III radar facility. Both resources were evaluated as not eligible for listing in the NRHP.

Based on the results of the identification effort and the avoidance of NRHP-eligible resources, the FAA has determined that the undertaking will result in a Finding of No Adverse Effect pursuant to 36 CFR § 800.5(b). Should additional work areas be identified or design modifications proposed that extend beyond the defined APE, the FAA will reinstate consultation with the CNMI HPO, as appropriate.

Documentation Commitment

The CNMI HPO requested that the facility be documented using the CNMI HPO Site/Feature Form prior to demolition. In response, the FAA will complete the appropriate HPO Site/Feature Form documentation for the PACBAR III facility and other identified historic properties within the APE, consistent with HPO guidance. This documentation will be provided to the CNMI HPO for inclusion in the cultural resources inventory.

Request for Comment and Concurrence

The FAA respectfully requests HPO concurrence with this determination of APE and Finding of No Adverse Effect pursuant to 36 CFR § 800.5(b). The FAA remains committed to ensuring meaningful consultation and welcomes any comments or recommendations your office may have

regarding this project. The FAA welcomes any recommendations from the CNMI HPO regarding additional consulting parties who may have an interest in this undertaking pursuant to 36 CFR §800.3 (f). We respectfully request a response within 30 days, if possible, to assist in maintaining our project timeline. Should you have any questions or require additional information, please contact me via e-mail at Jamie.L.Groves@faa.gov. Thank you for your review and comments.

Respectfully,

A handwritten signature in black ink, appearing to read "Jamie L. Groves", with a long horizontal flourish extending to the right.

Jamie L. Groves
Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration

Attachments:

- A. Project Location and APE Figures
- B. Project Drawings (select pages)
- C. Archaeological Inventory Survey and Monitoring Plan Documents (ArchaeoNMI 2025) with HPO Acceptance Letter (Serial No. 37525, June 2025)

Attachment 1: Project Location and APE Figures

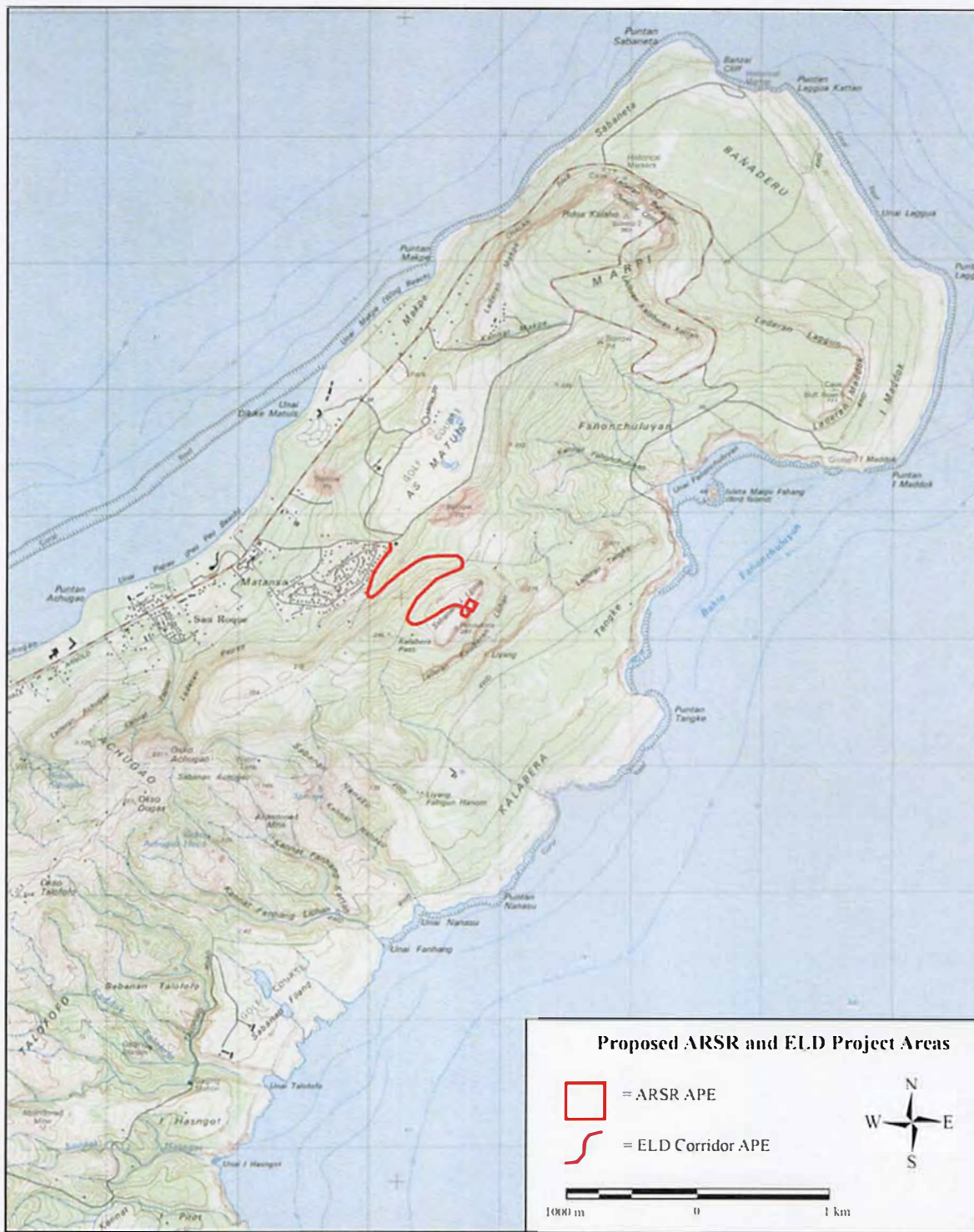


Figure 1: Portion of USGS map showing location of the ELD corridor and radar site.



Figure 2: Aerial image showing location of the ELD corridor and radar site (Google Earth, 2024).



Figure 3: Aerial image showing location of the proposed radar location (Courtesy of CUSA).

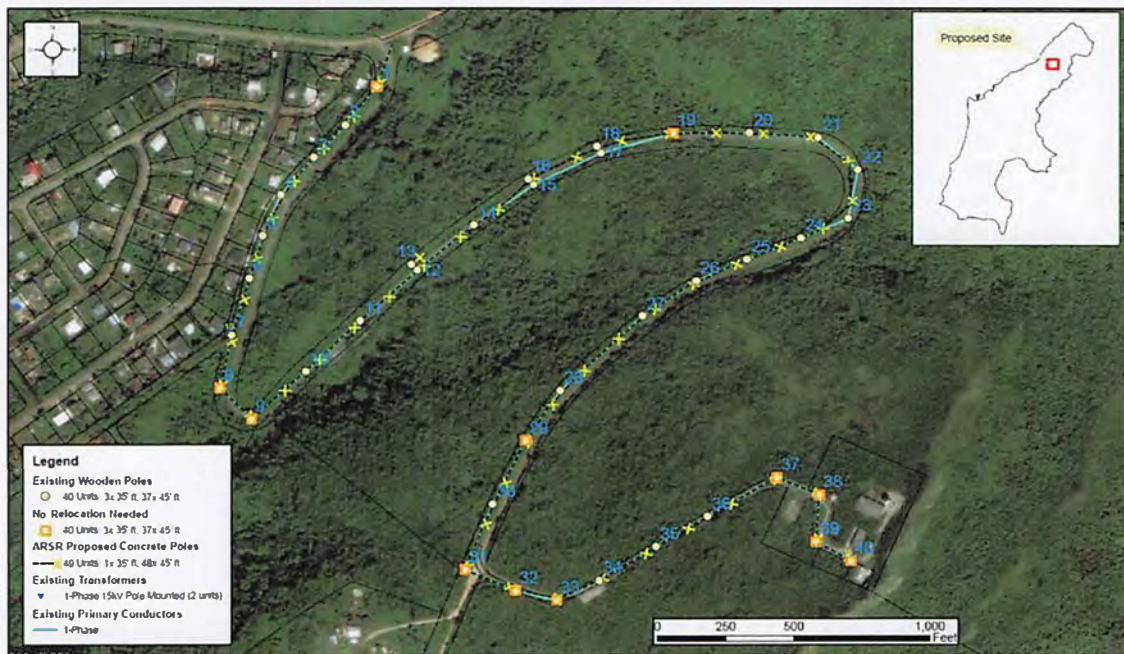
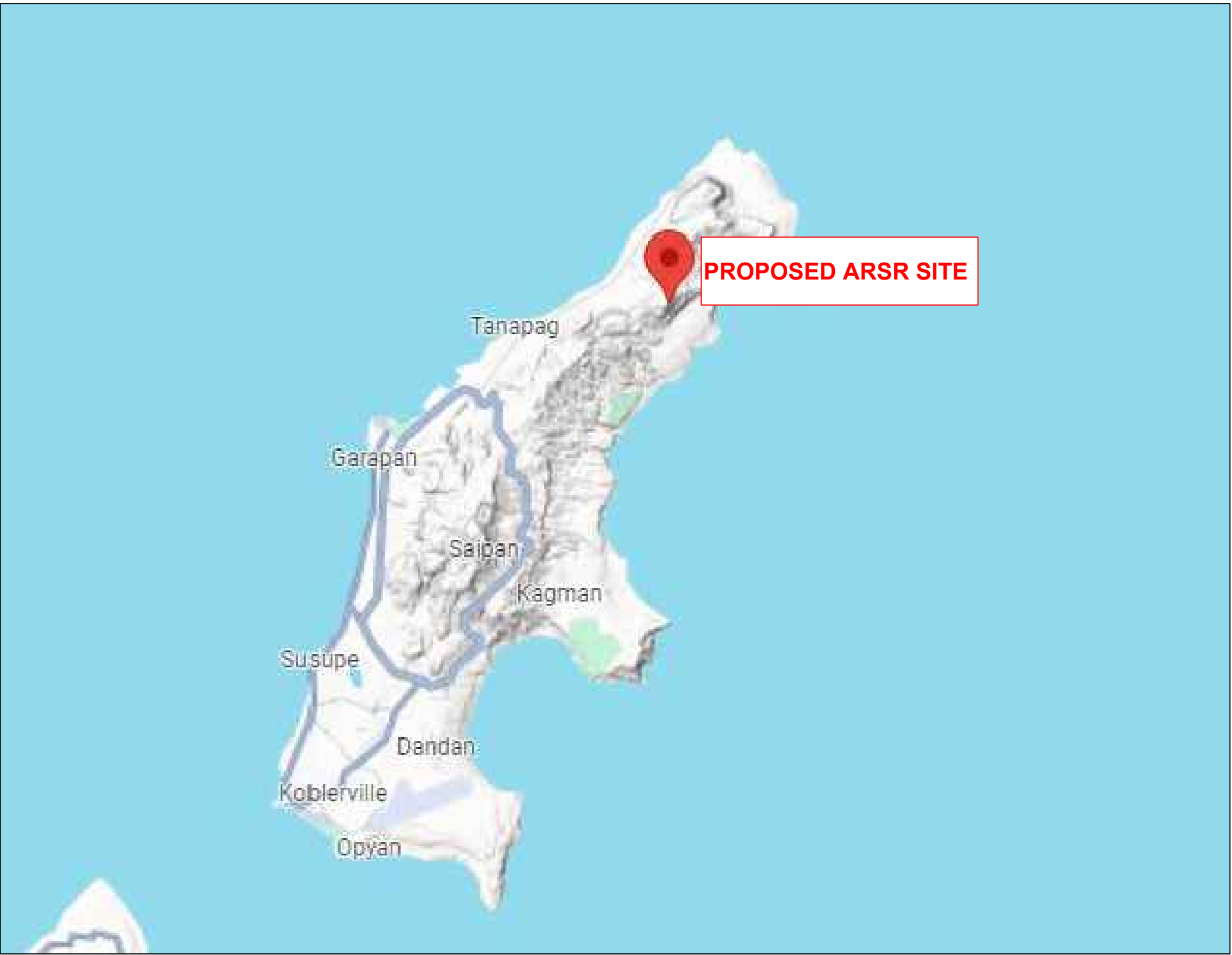


Figure 4: Proposed location of the 49 proposed ELD power poles (Courtesy of CUSA).

Attachment 2: Project Drawings (select pages)



VICINITY MAP:
N.T.S.

SAIPAN (GSN) ARSR SITE

SAIPAN, CNMI

3-PHASE POWER SERVICE ESTABLISHMENT

ISSUED FOR CONSTRUCTION DRAWINGS



SITE ADDRESS:
PANGLAO PL, SAN ROQUE, SAIPAN, CNMI, 96950

FOR OFFICIAL USE ONLY:
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

FAA DESIGNED BY:						
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 926-5895 WWW.CUSACONSULTING.COM	REV	APPROVED	DESCRIPTION	JCN	DATE	APVD
USA	DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA					
	SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 COVER SHEET					
NO P.E. SEAL REQUIRED FOR THIS PROJECT	SAIPAN			GSN		CNMI
	REVIEWED BY:		SUBMITTED BY:		APPROVED BY:	
			PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
	DESIGNED: A.J.G./C.U.C.		ISSUED BY:		DATE:	JCN:
	DRAWN: A.J.G.				DRAWING NUMBER: GSN-D-ARSR-ELD-G001	
CHECKED: J.G.P.				REV		

INDEX OF SHEETS

SHEET #:	SHEET TITLE:
GSN-D-ARSR-ELD-G001	COVER SHEET
GSN-D-ARSR-ELD-G002	INDEX OF SHEETS, LEGEND AND ABBREVIATIONS
GSN-D-ARSR-ELD-G003	PROJECT GENERAL SPECIFICATIONS
GSN-D-ARSR-ELD-G004	CIVIL/STRUCTURAL SPECIFICATIONS
GSN-D-ARSR-ELD-G005	ELECTRICAL SPECIFICATIONS
GSN-D-ARSR-ELD-D100	OVERHEAD DEMOLITION PLAN
GSN-D-ARSR-ELD-D101	SITE DEMOLITION PLAN
GSN-D-ARSR-ELD-E100	OVERHEAD INSTALLATION PLAN
GSN-D-ARSR-ELD-E101	SITE INSTALLATION PLAN
GSN-D-ARSR-ELD-E200	PROJECT ELEVATION PROFILE
GSN-D-ARSR-ELD-E500	PROJECT DETAILS, 1 OF 5
GSN-D-ARSR-ELD-E501	PROJECT DETAILS, 2 OF 5
GSN-D-ARSR-ELD-E502	PROJECT DETAILS, 3 OF 5
GSN-D-ARSR-ELD-E503	PROJECT DETAILS, 4 OF 5
GSN-D-ARSR-ELD-E504	PROJECT DETAILS, 5 OF 5
GSN-D-ARSR-ELD-E600	PROJECT ONE-LINE DIAGRAM

SHEET DESIGNATION/NUMBERING KEY

PER THE NATIONAL CAD STANDARD 1.3.3, THE FOLLOWING KEY IS PROVIDED FOR THE NUMBERING OF THESE PLANS:

- XXX-D-XXX-X__ DISCIPLINE DESIGNATOR

- .. G - GENERAL
- .. D - DEMOLITION
- .. C - CIVIL
- .. E - ELECTRICAL
- .. M - MECHANICAL
- .. V - SURVEY

- XXX-D-XXX-X0 GENERAL NOTES, LEGENDS, REQUIREMENTS, SPECIFICATIONS
- XXX-D-XXX-X1 PLAN VIEWS
- XXX-D-XXX-X2 ELEVATION OR PROFILE VIEWS
- XXX-D-XXX-X3 SECTION VIEWS
- XXX-D-XXX-X5 DETAILS
- XXX-D-XXX-X6 SCHEDULES AND DIAGRAMS

SITE LEGEND:

EXISTING (TO REMAIN)	EXISTING (TO BE DEMOLISHED)	NEW OR TEMPORARY	
_____	_____	_____	GENERAL LINEWORK CONVENTION
_____	N/A	N/A	PROPERTY LINE
_____	N/A	N/A	ROADWAY OR RUNWAY CENTERLINE
_____ ILS _____	N/A	N/A	INSTRUMENT LANDING SYSTEM CRITICAL AREA
_____ ROFA _____	N/A	N/A	RUNWAY OBJECT-FREE AREA
_____ RSA _____	N/A	N/A	RUNWAY SAFETY AREA
_____ TOFA _____	N/A	N/A	TAXIWAY OBJECT-FREE AREA
_____ TSA _____	N/A	N/A	TAXIWAY SAFETY AREA
_____ GAS _____	N/A	N/A	GAS MAIN OR SERVICE LINE
_____ W _____	N/A	N/A	WATER MAIN OR SERVICE LINE
_____ UGE _____	_____ UGE _____	N/A	UNDERGROUND ELECTRIC FEED, TYPE UNKNOWN
_____ UTIL _____	_____ UTIL _____	N/A	UNDERGROUND UTILITY, TYPE UNKNOWN
_____ CBL _____	_____ CBL _____	_____ CBL _____	ABOVE GROUND CABLE
_____ CDT _____	_____ CDT _____	_____ CDT _____	ABOVE GROUND ELECTRICAL CONDUIT
_____ AGF _____	_____ AGF _____	_____ AGF _____	ABOVE GROUND FUEL LINE
_____ DCT _____	_____ DCT _____	_____ DCT _____	BURIED CONDUIT OR DUCT BANK
_____ BUS _____	_____ BUS _____	_____ BUS _____	BUS DUCT
_____ X _____	_____ X _____	_____ X _____	CHAIN LINK FENCE
_____ DEB _____	_____ DEB _____	_____ DEB _____	DIRECT EARTH BURIED CABLE
_____ EES _____	_____ EES _____	_____ EES _____	EARTH ELECTRODE SYSTEM
_____ 1ØP _____	_____ 1ØP _____	_____ 1ØP _____	OVERHEAD SINGLE-PHASE PRIMARY
_____ 1ØS _____	_____ 1ØS _____	_____ 1ØS _____	OVERHEAD SINGLE PHASE SECONDARY
_____ 3ØP _____	_____ 3ØP _____	_____ 3ØP _____	OVERHEAD THREE-PHASE PRIMARY
_____ 3ØS _____	_____ 3ØS _____	_____ 3ØS _____	OVERHEAD THREE PHASE SECONDARY
_____ UGF _____	_____ UGF _____	_____ UGF _____	UNDERGROUND FUEL LINE
N/A	N/A	_____ BORE _____	DIRECTIONAL BORE

			GENERAL OBJECT CONVENTION
			BUILDING
			CONCRETE
			GRAVEL
			SAND
			ASPHALT PAVEMENT
			EARTH
			GRASS
	N/A	N/A	ILS CRITICAL AREA
	N/A	N/A	SWAMP

ELECTRICAL ONE-LINE DIAGRAM LEGEND:

FUSE

BREAKER

FUSED DISCONNECT SWITCH

STANDARD METER

STANDARD METER W/ INTEGRAL BREAKER

CT METER

PAD-MOUNTED STEP-DOWN TRANSFORMER

POLE

GROUND

ABBREVIATIONS

Ø	ELECTRICAL PHASE OR DIAMETER	KWH	KILOWATT-HOUR
A	AMPERE	LRA	LOCKED ROTOR AMPERE
AA	AIR COOLED	LTG	LIGHTING
AC	ALTERNATING CURRENT	LV	LOW-VOLTAGE
AF	AMPERE FRAME	M	METER
AFF	ABOVE FINISHED FLOOR	MBJ	MAIN BONDING JUMPER
AIC	AMPERE INTERRUPTING CAPACITY	MCB	MAIN CIRCUIT BREAKER
AMM	AMMETER	MCC	MOTOR CONTROL CENTER
AT	AMPERE TRIP	MCP	MOTOR CIRCUIT PROTECTOR
ATS	AUTOMATIC TRANSFER SWITCH	MDP	MAIN DISTRIBUTION PANEL
AWG	AMERICAN WIRE GAUGE	MDS	MAIN DISCONNECT SWITCH
BC	BARE COPPER	MH	MANHOLE
BAT CHGR	BATTERY CHARGER	MLO	MAIN LUGS ONLY
CB	CIRCUIT BREAKER	MV	MEDIUM-VOLTAGE
CDT	CONDUIT	N	NEUTRAL
CKT	CIRCUIT	OH	OVERHEAD
COMM	COMMUNICATIONS	P	POLE
CTRL	CONTROLS	PF	POWER FACTOR
COR	CONTRACTOR OFFICER REPRESENTATIVE	PH	PHASE
CPU	CENTRAL PROCESSING UNIT	PNL	PANEL
CR	CONTROL RELAY	PME,PMH	S&C PAD-MOUNTED SWITCHGEAR
CT	CURRENT TRANSFORMER	PMJ	PRE-MOLDED JOINT
DC	DIRECT CURRENT	REC	RCEPTACLE
DEB	DIRECT EARTH BURIAL	RFI	RADIO FREQUENCY INTERFACE
DISC	DISCONNECT	RGS	RIGID GALVANIZED STEEL
DIST PNL	DISTRIBUTION PANEL	ROFA	RUNWAY OBJECT-FREE AREA
DM	DEMAND METER	RMS	ROOT MEAN SQUARE
DPDT	DOUBLE POLE DOUBLE THROW	RSA	RUNWAY SAFETY AREA
DPST	DOUBLE POLE SINGLE THROW	SBJ	SYSTEM BONDING JUMPER
DS	DISCONNECT SWITCH	SCP	SYSTEM CONTROL PANEL
DT	DOUBLE THROW	SD	STEP-DOWN TRANSFORMER
ECP	ENGINE CONTROL PANEL	SP	SINGLE-POLE OR SWITCHPAD
EES	EARTH ELECTRODE SYSTEM	SPD	SURGE PROTECTIVE DEVICE
E/G	ENGINE GENERATOR	SRG	SIGNAL REFERENCE GRID
EH	ELECTRIC HEATER OR HUMIDIFIER	S/S	START-STOP
EHC	ELECTRIC HEATING COIL	SSC	SYSTEM SUPPORT CENTER
EMRG	EMERGENCY	SU	STEP-UP TRANSFORMER
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EQUIP	EQUIPMENT	SWBD	SWITCHBOARD
ERMS	ENVIRONMENTAL REMOTE MONITORING SYSTEM	SWGR	SWITCHGEAR
ET	ELECTRIC HEAT TRACE	T	TRANSFORMER
FC	FAN-COOLED	TB	TERMINAL BOX OR TERMINAL BOARD
FDR	FEEDER	TC	TRIP COIL
FHH	FOTS HAND HOLE	TD	TIME DELAY
FLA	FULL LOAD AMPERES	TERM	TERMINAL
FLUOR	FLUORESCENT	TOFA	TAXIWAY OBJECT-FREE AREA
FOTS	FIBER OPTIC TRANSMISSION SYSTEM	TSA	TAXIWAY SAFETY AREA
GEC	GROUNDING ELECTRODE CONDUCTOR	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
GND	GROUND	UON	UNLESS OTHERWISE NOTED
HH	HANDHOLE	V	VOLT OR VOLTAGE
HID	HIGH INTENSITY DISCHARGE	VA	VOLT-AMPERE
HOA	HANDS-OFF AUTOMATIC	VAV	VARIABLE AIR VOLUME
HZ	HERTZ	VM	VOLTMETER
JB	JUNCTION BOX	W	WATT
KA	KILOAMPERES	WM	WATTMETER
KCMIL	THOUSAND CIRCULAR MILS	XFR	TRANSFER
KV	KILOVOLT	XFMR	TRANSFORMER
KVA	KILOVOLT AMPERES	Y	WYE
KVAR	KILOVOLT AMPERES-REACTIVE	Y-D	WYE-DELTA
KW	KILOWATT	Z	IMPEDANCE

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FAA DESIGNED BY:						
<u>CUSA CONSULTING LLC</u> 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 926-5895 WWW.CUSACONSULTING.COM		REV	APPROVED	DESCRIPTION	JCN	DATE
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS				
		WESTERN SERVICE AREA				
		SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 <u>INDEX OF SHEET, LEGEND AND ABBREVIATIONS</u>				
		SAIPAN		GSN		CNM
REVIEWED BY:		SUBMITTED BY:			APPROVED BY:	
		PROJECT ENGINEER			MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.			ISSUED BY:	
		DRAWN: A.J.G.			DATE:	
		CHECKED: J.G.P.			JCN:	
					DRAWING NUMBER: GSN-D-ARSR-ELD-G002	
					RE:	

M:\Current Jobs - ELD Projects\GSN ARSR - ELD (Saipan ARSR, CNMI)\CUSA Drawings\Issued For Construction\GSN-D-ELD IFC.dwg
4/4/2025 6:45 AM ANDREW GRAY

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00 71 00 CONTRACTING DEFINITIONS OWNER: THE LEGAL OWNER OF THE SITE OR A REPRESENTATIVE OF THE OWNER, SPECIFICALLY AUTHORIZED TO REPRESENT THE OWNER IN MATTERS PERTAINING TO THIS PROJECT. FAA IS USED INTERCHANGEABLY OWNER. LOCAL SSC: STAFF FROM THE FAA SYSTEM SUPPORT CENTER IN WHOSE JURISDICTION THE PROJECT IS LOCATED. CONTRACTING OFFICER: THE FAA OFFICER ENGAGED TO ISSUE CONTRACTS, PAYMENTS AND CHANGE ORDERS FOR THE PROJECT. PROJECT ENGINEER: THE FAA REPRESENTATIVE FROM ENGINEERING SERVICES, APPOINTED TO OVERSEE, REVIEW AND APPROVE TECHNICAL MATTERS ON THE PROJECT. RESIDENT ENGINEER: THE FAA REPRESENTATIVE, SPECIFICALLY AUTHORIZED AND APPOINTED TO PHYSICALLY REPRESENT THE FAA ON-SITE DURING THE PROJECT. CONTRACTOR: THE ENTITY, CORPORATION, OR PERSON AUTHORIZED TO PERFORM THE WORK SET FORTH IN THE DRAWINGS AND SCOPE OF WORK. CONTRACTOR IS ALSO USED INTERCHANGEABLY WITH THE CONTRACTOR'S EMPLOYEE SPECIFICALLY AUTHORIZED AND APPOINTED TO REPRESENT THE CONTRACTOR ON SITE DURING PRODUCTION OF THE PROJECT. CONTRACTOR IS ALSO USED INTERCHANGEABLY WITH SUBCONTRACTORS, WORKING UNDER THE DIRECT AUTHORIZATION AND SUPERVISION OF THE CONTRACTOR'S PROJECT MANAGER TO PERFORM WORK SPECIFIC TO THIS PROJECT. ALL REQUIREMENTS AND RESTRICTIONS APPLICABLE TO THE CONTRACTOR ARE ALSO APPLICABLE TO ALL SUBCONTRACTORS. PROGRAM OFFICE: THE FAA POWER SERVICES SUBGROUP WHO IS AUTHORIZING, DIRECTING AND FUNDING THE PROJECT. PROJECT: THE WORK LAID OUT IN THE DRAWINGS AND SCOPE OF WORK. QUALIFIED FAA PERSONNEL: EITHER THE LOCAL FAA SSC PERSONNEL OR THE RESIDENT ENGINEER, IF THEY ARE SUITABLY TRAINED AND QUALIFIED TO PERFORM IDENTIFIED TASKS.									01 41 00 REGULATORY REQUIREMENTS THE FOLLOWING CODES SHALL GOVERN THE DESIGN AND EXECUTION OF THIS PROJECT: - LATEST EDITION OF <u>ASCE 7 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-22)</u>. - LATEST EDITION OF <u>ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY (ACI 318-19, REAPPROVED 2022)</u>. - LATEST EDITION OF <u>NFPA 70 NATIONAL ELECTRIC CODE (NEC 2023)</u>. - LATEST EDITION OF <u>IEEE NATIONAL ELECTRICAL SAFETY CODE (NESC 2023)</u>. - LATEST EDITION OF <u>NFPA 780 STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS (NFPA 780 2023)</u>. - LATEST EDITION OF <u>FAA SPECIFICATION 1217 ELECTRICAL WORK, PREMISES WIRING (FAA-C-1217H CHANGE #1)</u>. - LATEST EDITION OF <u>FAA SPECIFICATION 1391 INSTALLATION, TERMINATION, SPLICING, AND TRANSIENT/SURGE PROTECTION OF UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEM POWER CABLES (FAA-C-1391F)</u>. - LATEST EDITION OF <u>FAA STANDARD 19 LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT (FAA-STD-19G)</u>. IN THE EVENT OF A DISCREPANCY OR CONTRADICTION BETWEEN ANY OF THE ABOVE-MENTIONED CODES, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED. CONTRACTOR SHALL PROCURE ALL AIRPORT-SPECIFIC OR LOCALITY-SPECIFIC PERMITS REQUIRED FOR THIS PROJECT. SEE SECTION 01 35 43 ENVIRONMENTAL PROCEDURES FOR LIST OF REQUIRED ENVIRONMENTAL PERMITS TO BE SOUGHT FOR THIS PROJECT. BUILD AMERICA, BUY AMERICA ACT: - ALL IRON AND STEEL USED IN THE PROJECT - INCLUDING MANUFACTURING PROCESSES FROM THE INITIAL MELTING STATE THROUGH THE APPLICATION OF COATINGS - SHALL BE PRODUCED IN THE UNITED STATES. - ALL MANUFACTURED PRODUCTS USED IN THE PROJECT SHALL BE PRODUCED IN THE UNITED STATES. THIS MEANS THE MANUFACTURED PRODUCT ITSELF WAS BUILT IN THE UNITED STATES, AND THE COST OF THE COMPONENTS OF THE MANUFACTURED PRODUCT MINED, PRODUCED, OR MANUFACTURED IN THE UNITED STATES IS GREATER THAN 55 PERCENT OF THE TOTAL COST OF ALL COMPONENTS OF THE MANUFACTURED PRODUCT. (NOTE: IN SOME INSTANCES, OTHER LAWS OR REGULATIONS THAT DETERMINE MINIMUM DOMESTIC CONTENT APPLY.) - ALL CONSTRUCTION MATERIALS SHALL BE MANUFACTURED IN THE UNITED STATES. THIS MEANS THAT ALL MANUFACTURING PROCESSES FOR THE CONSTRUCTION MATERIAL OCCURRED IN THE UNITED STATES. - WAIVERS MAY BE REQUESTED FOR NON-AVAILABILITY, UNREASONABLE COST OR INCONSISTENCY WITH PUBLIC INTEREST.									01 35 43 ENVIRONMENTAL PROCEDURES AND PERMITTING THIS PLAN SET IS INTENDED TO PRIMARILY DEPICT THE WORK TO PROVIDE A NEW 3-PHASE POWER SERVICE TO A PROPOSED FAA ARSR FACILITY. THE ARSR FACILITY IS NOT YET DESIGNED. TO ALLOW FOR COMPREHENSIVE EVALUATION OF THE REQUIRED ENVIRONMENTAL PERMITS NEEDED TO INITIATE CONSTRUCTION OF THE POWER FEED, SUFFICIENT DETAIL HAS BEEN GATHERED AS TO THE IMPACTS OF THE ARSR SITE CONSTRUCTION AS WELL. THE FOLLOWING FEDERAL FILINGS WILL BE INITIATED DURING THE CONTINUING DESIGN/PLANNING PROCESS OF THE POWER PORTION: <u>SECTION 7 WILDLIFE CONSULTATION</u> FOR ALL PHASES OF THE PROJECT. <u>SECTION 106 HISTORICAL CONSULTATION</u> FOR ALL PHASES OF THE PROJECT. <u>CNMI DCRM FEDERAL CONSISTENCY REVIEW</u> FOR ALL PHASES OF THE PROJECT. AFTER REVIEW AND APPROVAL OF THESE CONSULTATIONS, A TASK ORDER WILL BE ISSUED TO BEGIN CONSTRUCTION OF THE POWER FEED. PRIOR TO INITIATING ANY GROUND-DISTURBING ACTIVITIES, THE ELD INSTALLATION CONTRACTOR SHALL FILE: <u>BEQC ONESTART EARTHMOVING PERMIT</u>, LIMITED TO THE POWER INSTALLATION PORTION ONLY. THERE ARE ISSUES OF KNOWN AND SUSPECTED CONTAMINANTS FOR THE ARSR FACILITY SITE. DURING THE DESIGN AND ANALYSIS PHASE OF THE ARSR FACILITY, THE FAA SHALL PERFORM THE FOLLOWING: - UPDATE THE <u>ENVIRONMENTAL PHASE I SITE ASSESSMENT</u> OF THE PROPERTY <u>ENVIRONMENTAL PHASE II SITE INVESTIGATION</u> OF SOIL, WATER AND STRUCTURES SLATED FOR DEMOLITION TO CONSTRUCT THE ARSR FACILITY. <u>HISTORICAL STUDY</u> OF THE PACIFIC BARRIER RADAR ANTENNA. <u>NEPA ENVIRONMENTAL ASSESSMENT</u> REPORT. THESE STUDIES WILL PROVIDE THE NECESSARY DATA TO PLAN FOR MITIGATION AND REMEDIATION OF ANY CONTAMINANTS RELATING TO THE ARSR CONSTRUCTION. THIS DATA WILL BE USED TO PREPARE AND FILE A BEQC ONESTART EARTHMOVING PERMIT SPECIFICALLY FOR THE ARSR CONSTRUCTION.									02 00 00 EXISTING CONDITIONS THE CONTRACTOR AND RESIDENT ENGINEER SHALL DOCUMENT ALL RELEVANT EXISTING CONDITIONS PRIOR TO BEGINNING ANY WORK ON THE PROJECT. CONTRACTOR AND RESIDENT ENGINEER SHALL IMMEDIATELY RECORD ANY DISCREPANCY FOUND IN THE DRAWINGS, OR ANY DIFFERING SITE CONDITIONS THAT WILL AFFECT THE PERFORMANCE OF THE WORK, OR THE FINAL AS-BUILT RECORDS. THE CONTRACTOR SHALL RESTORE ALL STRUCTURES, SURFACES AND FINISHES TO THEIR ORIGINAL CONDITIONS.																																																																																																								
00 73 83 DISPUTE RESOLUTION IN THE EVENT OF A DISCREPANCY, THE FOLLOWING SHALL BE THE ORDER OF PRECEDENCE, UNLESS MUTUALLY AGREED UPON: - ADDENDA OR CHANGE ORDERS SHALL TAKE PRECEDENCE OVER THE SPECIFICATIONS, - THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THE DRAWINGS, - LISTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS, - DETAIL DRAWINGS SHALL TAKE PRECEDENCE OVER LAYOUT DRAWINGS, - SCHEDULES SHALL TAKE PRECEDENCE OVER OTHER DATA ON THE PLANS. THE ENGINEER OF RECORD THAT PRODUCED THE PROJECT DRAWINGS HAS THE FIRST RIGHT OF INTERPRETATION OVER ANY DISCREPANCY, AMBIGUITY, OMISSION OR CONTRADICTION IN THE PROJECT DRAWINGS OR SPECIFICATIONS.									01 64 00 OWNER-FURNISHED PRODUCTS THIS PROJECT DOES NOT INCLUDE ANY GOVERNMENT FURNISHED MATERIAL (GFM). THIS PROJECT INCLUDES MATERIAL THAT SHALL BE PURCHASED, FURNISHED, INSTALLED AND OWNED BY THE UTILITY (COMMONWEALTH UTILITY CORPORATION, <u>C.U.C.</u>). THE UTILITY SHALL ORDER ADDITIONAL POLES FOR DESTRUCTIVE TESTING, AS REQUIRED BY THEIR SPECIFICATIONS. CONTACT INFORMATION FOR C.U.C. ELECTRICAL ENGINEERS: JONATHAN CAMACHO <u>JONATHAN.CAMACHO@CUCGOV.ORG</u> REY DARAG <u>REY.DARAG@CUCGOV.ORG</u>									01 78 00 CLOSEOUT SUBMITTALS THE CONTRACTOR SHALL GENERATE THREE (3) COPIES OF REDLINED DRAWINGS DURING CONSTRUCTION AND TURN THEM OVER AS FOLLOWS: - ONE COPY FOR THE CONTRACTOR TO RETAIN, - ONE COPY FOR THE RESIDENT ENGINEER TO TURNOVER TO FAA ENGINEERING SERVICES, - ONE COPY THAT SHALL BE LEFT ON-SITE FOR REFERENCE BY THE LOCAL SSC TECHNICIANS. OR - THE CONTRACTOR MAY ELECT TO CREATE DIGITAL REDLINES IN PDF FORMAT AND DISTRIBUTE THE REDLINED DRAWINGS IN THIS FORMAT, BUT STILL MUST LEAVE A PRINTED COPY OF THE DIGITAL PRINTS OR A REDLINED SET OF THE DESIGN PRINTS ON-SITE. IF THE ENGINEER IS ALSO THE CONTRACTOR, THEN THE CONTRACTOR SHALL PRODUCE AS-BUILT DRAWINGS AND SUBMIT THEM TO THE PROJECT ENGINEER WITHIN 30 DAYS OF ALL PUNCHLIST ITEMS BEING COMPLETE. AS-BUILT DRAWINGS SHALL BE DELIVERED IN PDF FORMAT AND AUTOCAD DWG, 2010 FILE FORMAT. THE RESIDENT ENGINEER SHALL PROVIDE THE CONTRACT ACCEPTANCE INSPECTION (CAI) FORM AND FILL IT OUT PRIOR TO THE DATE OF THE CAI WALKTHROUGH. ANY REMAINING PUNCHLIST ITEMS SHALL BE WRITTEN ON THE CAI FORM OR A CAI FORM EXTENSION AND PROVIDED TO THE CONTRACTOR IMMEDIATELY. THE RESIDENT ENGINEER SHALL SIGN THE CAI FORM, EVEN IF THERE ARE OUTSTANDING PUNCHLIST ITEMS. THE CAI CAN BE PERFORMED CONCURRENTLY WITH THE JOB ACCEPTANCE INSPECTION (JAI). IF THE JAI CANNOT BE SCHEDULED FOR THE SAME DAY AS THE CAI, IT SHALL NOT DELAY THE PERFORMANCE OF THE CAI WITH THE RESIDENT ENGINEER AND THE CONTRACTOR.									01 25 00 SUBSTITUTION PROCEDURES THE CONTRACTOR MAY PROPOSE SUBSTITUTIONS OF MATERIAL DUE TO AVAILABILITY OF LOCAL SUPPLIERS OR ISSUES WITH LEAD TIME. PROPOSED MATERIAL SUBSTITUTIONS MUST BE EQUIVALENT IN PERFORMANCE AND VALUE OF THE ORIGINAL MATERIAL SPECIFIED IN THE DRAWINGS. THE CONTRACTOR MAY ALSO PROPOSE ALTERNATIVE MATERIALS OR METHODS PRESCRIPTIVELY APPROVED BY FAA STANDARDS AND SPECIFICATIONS. THE PROJECT ENGINEER AND CONTRACTING OFFICER ARE UNDER NO OBLIGATION TO APPROVE MATERIAL SUBSTITUTION REQUESTS. ANY SUBSTITUTION REQUEST MUST INCLUDE DETAILED CUT-SHEETS FROM THE MANUFACTURER OF THE MATERIAL FOR REVIEW BY THE PROJECT ENGINEER.									01 26 00 CHANGE ORDERS CHANGE ORDERS SHALL BE SUBMITTED WHEN: - DIFFERING OR UNFORESEEN SITE CONDITIONS NOT DESCRIBED IN THE DRAWINGS ARE DISCOVERED, - UPON MUTUAL AGREEMENT OF THE CONTRACTOR, RESIDENT ENGINEER AND FAA CONTRACTING OFFICER, ADDITIONAL ITEMS ARE ADDED, REMOVED OR MODIFIED FROM THE SCOPE OF WORK. FOR ALL CHANGE ORDERS, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AT THE FIRST PRACTICABLE OPPORTUNITY IF A CHANGE ORDER IS NEEDED. IF THE RESIDENT ENGINEER AGREES THAT A CHANGE ORDER IS NEEDED, THE RESIDENT ENGINEER SHALL NOTIFY THE PROJECT ENGINEER AND CONTRACTING OFFICER IN WRITING AT THE FIRST PRACTICABLE OPPORTUNITY. THE CONTRACTOR SHALL PREPARE A CHANGE ORDER SUBMITTAL DESCRIBING THE MATERIALS, LABOR AND/OR SERVICES REQUIRED TO COMPLETE THE WORK. THE CHANGE ORDER SUBMITTAL SHALL CLEARLY IDENTIFY THE DIFFERENCE IN MATERIAL COST, LABOR COST AND THIRD-PARTY/SERVICE COST FOR THE CHANGE IN SCOPE. THE CONTRACTOR SHALL ALSO REVISE AND RESUBMIT THE PROJECT SCHEDULE AND SUBMIT IT TO THE RESIDENT ENGINEER AND PROJECT ENGINEER AS SOON AS PRACTICABLE. THE PROJECT ENGINEER SHALL AUTHORIZE THE CHANGE ORDER WORK IN WRITING AND PROVIDE NOTICE OF ACCEPTANCE OR REJECTION TO THE RESIDENT ENGINEER AND CONTRACTOR.									01 32 16 CONSTRUCTION PROGRESS SCHEDULE PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL DEVELOP AND SUBMIT A CRITICAL PATH METHOD SCHEDULE FOR THE PROJECT, IDENTIFYING THE ANTICIPATED START DATE, ALL MAJOR CONSTRUCTION ACTIVITIES, MAJOR MILESTONES AND THE ANTICIPATED COMPLETION DATE. THE SCHEDULE SHALL BE ONLY UPDATED AND RESUBMITTED DUE TO MAJOR DELAYS, CHANGE ORDERS OR REVISIONS OF MAJOR MILESTONES SUCH AS CUTOVERS. THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL DEVELOP A TWO-WEEK LOOK AHEAD SCHEDULE AND DISTRIBUTE IT TO THE RESIDENT ENGINEER AND PROJECT ENGINEER. THE TWO-WEEK LOOK-AHEAD SCHEDULE SHALL BE UPDATED AND SUBMITTED WEEKLY, BEFORE THE START OF WORK EACH MONDAY.									FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552 <table><tr><td colspan="2">FAA DESIGNED BY:</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR, UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSA CONSULTING.COM</td><td>REV</td><td>APPROVED</td><td>DESCRIPTION</td><td>JCN</td><td>DATE</td></tr><tr><td colspan="2" rowspan="2"></td><td colspan="5">DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA</td></tr><tr><td colspan="5">SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 GENERAL PROJECT SPECIFICATIONS</td></tr><tr><td colspan="2" rowspan="4"></td><td colspan="2">SAIPAN</td><td colspan="2">GSN</td><td>CNMI</td></tr><tr><td colspan="2">REVIEWED BY:</td><td colspan="2">SUBMITTED BY:</td><td>APPROVED BY:</td></tr><tr><td colspan="2"></td><td colspan="2">PROJECT ENGINEER</td><td>MANAGER, INFRASTRUCTURE CENTER</td></tr><tr><td colspan="2"></td><td>DESIGNED: <u>A.J.G./C.U.C.</u></td><td colspan="2">ISSUED BY:</td></tr><tr><td colspan="2"></td><td colspan="2"></td><td>DRAWN: <u>A.J.G.</u></td><td>DATE:</td><td>JCN:</td></tr><tr><td colspan="2"></td><td colspan="2"></td><td>CHECKED: <u>J.G.P.</u></td><td colspan="2">DRAWING NUMBER: GSN-D-ARSR-ELD-G003</td></tr><tr><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td>REV</td></tr></table>									FAA DESIGNED BY:							CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR, UNIT 6 HAMPTON, NH 03842 T. 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01 89 00 SITE CONSTRUCTION PERFORMANCE REQUIREMENTS

FACILITY RISK CATEGORY:	IV
DESIGN WIND SPEED:	220 MPH
WIND-BORNE DEBRIS REGION:	YES
FEMA FLOOD ZONE:	NONE, ABOVE THE 500-YEAR FLOOD ELEVATION
0.2S SEISMIC DESIGN VALUE (S _{DS}):	1.38
1.0S SEISMIC DESIGN VALUE (S _D):	0.41
SEISMIC DESIGN CATEGORY:	D
BUILDING CODE FROST DEPTH:	N/A
COLD REGION:	NO
ARID OR SEMI-ARID REGION:	NO
TROPICAL/COSTAL REGION:	YES

03 30 00 CAST-IN-PLACE CONCRETE

SUMMARY: THIS SECTION COVERS ALL CAST-IN-PLACE CONCRETE PRODUCTS TO BE FURNISHED AND INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR CAST-IN-PLACE CONCRETE SHALL BE PER CUBIC YARD.

1.2. FORMBOARDS, TIE WIRE, WATER, PREP WORK, CONCRETE DELIVERY, CURING AND FINISHING SHALL BE INCIDENTAL TO THIS PAY ITEM.

2. MATERIALS:

2.1. ALL NORMAL STRENGTH (2500-5000PSI) CONCRETE MIXES SHALL HAVE THE FOLLOWING MIX CHARACTERISTICS:

2.1.1. WATER/CEMENT RATIO:	0.40-0.45
2.1.2. AIR CONTENT, WITHOUT AIR ENTRAINMENT:	2.0% - 5.0%
2.1.3. SLUMP:	4" +/- 1"

2.2. "SIDEWALK CONCRETE" SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

2.3. "DUCT BANK CONCRETE" SHALL MEET THE FOLLOWING SPECIFICATIONS:

2.3.1. THE COMPRESSIVE STRENGTH OF MAY BE AS LOW AS 2000PSI.

2.3.2. SLUMP MAY BE AS HIGH AS 9".

2.3.3. THE MAXIMUM AGGREGATE SIZE SHALL BE 3/4".

2.4. CONCRETE BACKFILL:

2.4.1. CONCRETE BACKFILL MAY BE USED TO FILL VOIDS OR ROAD CROSSINGS WHERE COMPACTION WOULD OTHERWISE BE IMPRACTICABLE. A MIX CERTIFIED BY THE STATE DOT IN THE PROJECT LOCALITY SHALL BE SELECTED. CONCRETE BACKFILL MAY BE CALLED "CONTROLLED LOW STRENGTH MATERIAL," "FLOWABLE FILL," "CEMENT SLURRY" OR OTHER TRADE NAMES.

2.4.2. THE MAXIMUM COMPRESSIVE STRENGTH OF CONCRETE BACKFILL SHALL BE 150 PSI. THIS IS THE TOP LIMIT WHERE IT IS CONSIDERED AN "EXCAVATABLE" PRODUCT.

3. EXECUTION:

3.1. CONCRETE:

3.1.1. THE CHUTE SHALL BE POSITIONED AS LOW AS PRACTICABLE TO PREVENT MOVEMENT OR FLOTATION OF FORMWORK, REINFORCEMENT OR DUCTS.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. CONTRACTOR SHALL PROVIDE THE PLANT DOCUMENTATION FOR EACH CONCRETE MIX TO BE USED, PRIOR TO ORDERING ANY FOR THE PROJECT. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER OR PROJECT ENGINEER IF REQUESTED.

4.2. CONTRACTOR SHALL RETAIN A COPY OF EACH BATCH TICKET FROM EACH LOAD OF CONCRETE DELIVERED TO THE SITE. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER IF REQUESTED.

4.3. NO TESTS FOR BREAKING STRENGTH, TEMPERATURE, ENTRAINED AIR, SLUMP OR OTHER FIELD CHECKED ITEMS ARE REQUIRED FOR THIS PROJECT.

26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

SUMMARY: THIS SECTION COVERS BURIED ELECTRICAL CONDUITS AND DUCT BANKS TO BE INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR BURIED ELECTRICAL DUCTS SHALL BE PER LINEAR FOOT.

1.2. EXCAVATION, CONCRETE FOR DUCT BANKS, GUARD WIRE INSTALLATION, SPOILS HAUL-OFF AND RESTORATION IS COVERED UNDER OTHER PAY ITEM SECTIONS.

1.3. INSTALLATION OF DETECTABLE WARNING TAPE SHALL BE INCIDENTAL TO THIS SECTION AND INCLUDED IN THE PER LINEAR FOOT PRICE OF BURIED CONDUIT. THE MATERIAL SHALL BE QUANTIFIED SEPARATELY SINCE ONE SECTION OF TAPE MAY PROVIDE COVERAGE FOR MULTIPLE CONDUITS.

2. MATERIALS:

2.1. CONDUIT SIZES, TYPES AND RATINGS ARE CALLED OUT IN THE DRAWINGS. NOMINAL PIPE SIZES AND COMMON TRADE NAMES ARE USED IN THE DRAWINGS.

2.2. ALL BURIED CONDUIT MUST BE EITHER SCH-80 PVC OR PVC-COATED RIGID GALVANIZED STEEL (RGS) OR CONCRETE ENCASED SCH-40 PVC.

2.3. CONCRETE ENCASED DUCTS SHALL BE PROVIDED WITH INTERLOCK SPACERS EVERY FIVE (5) FEET, MAXIMUM. IF FLOTATION OF DUCTS IS AN ISSUE, REBAR HOLD-DOWNS SHALL BE INSTALLED PRIOR TO CONCRETE POURING.

2.4. ALL CONDUITS MUST HAVE A MINIMUM SOIL COVER OF 24 INCHES.

2.5. CONDUITS TERMINATED IN VAULTS MUST HAVE PROTECTIVE "END-BELL" FITTINGS INSTALLED TO PROTECT THE CABLE DURING PULLING.

2.6. MAGNETICALLY DETECTABLE WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12" ABOVE THE CONDUIT OR DUCT BANK CONCRETE.

3. EXECUTION:

3.1. PVC CONDUITS SHALL BE GLUED TOGETHER PRIOR TO BACKFILLING.

3.2. PVC-COATED RGS CONDUITS SHALL UTILIZE THREADED COUPLINGS, TIGHTENED WITH A STRAP WRENCH UNTIL REFUSAL. PVC-COATED RGS CONDUIT SWEEPS OF 30 DEGREES OR MORE SHALL UTILIZE FACTORY COATED ELBOWS. FIELD BENDING OF PVC-COATED RGS IS ONLY PERMITTED FOR SMALL FIELD ROUTING BENDS. FIELD BENDING IS NOT PERMITTED FOR CONDUITS TWO (2) INCHES IN DIAMETER OR LARGER.

3.3. TRENCHES SHALL BE EXCAVATED, BACKFILLED, COMPACTED AND RESTORED IN ACCORDANCE WITH SECTION 31 23 00 EXCAVATION AND FILL.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. NO SUBMITTALS ARE REQUIRED UNLESS A SUBSTITUTION OR CHANGE ORDER IS REQUESTED.

31 05 16 AGGREGATES FOR EARTHWORK

SUMMARY: THIS SECTION COVERS ALL IMPORTED AGGREGATES FOR EARTHWORK TO BE PLACED UNDERNEATH STRUCTURES AND ROADWAYS.

1. MEASUREMENT AND PAYMENT:

1.1. THE PAY UNIT OF AGGREGATES SHALL BE PER CUBIC YARDS. CONTRACTOR MUST INDEPENDENTLY ESTIMATE THE AMOUNT AGGREGATES NEEDED. DELIVERY, STOCKPILING, COMPACTION AND HAUL-OFF SHALL BE INCLUDED IN THE PER CUBIC YARD PRICE OF ALL AGGREGATES.

2. MATERIALS:

2.1. "BASE COURSE" SHALL CONSIST OF CRUSHED GRAVEL AGGREGATES THAT MEET THE FAA GRADATION OF FAA P-209. OTHER PRODUCTS APPROVED BY THE STATE DOT AS "TOP COURSE," "STRUCTURAL FILL," "DENSE GRADED AGGREGATE," "CRUSH AND RUN" OR OTHER TERMS FOR CRUSHED STONE MIXTURES MAY BE USED SUBJECT TO APPROVAL. THE PREFERRED GRADATION IS LISTED BELOW.

2.1.1. SIEVE DESIGNATION:	% PASSING
2 INCH (50 MM)	100
1-1/2 INCH (37.5MM)	95-100
1 INCH (25 MM)	70-95
3/4 INCH (19 MM)	55-85
NO. 4 (4.75MM)	30-60
NO. 40 (425 MM)	10-30
NO 200 (75 MM)	0-10

2.2. IN COLD REGIONS (AIR FREEZING INDEX ABOVE 1500 FOR THE 100-YEAR RETURN PERIOD), ALL AGGREGATES SHALL CONTAIN NO MORE THAN 6% PASSING THE NO. 200 SIEVE. LISTED "NON-FROST SUSCEPTIBLE" PRODUCTS MUST BE USED.

3. EXECUTION:

3.1. ALL IMPORTED AGGREGATES MUST BE SPREAD IN VERTICAL LIFTS AND COMPACTED THOROUGHLY. EACH LIFT OF SUB-BASE OR BASE COURSE MUST BE SUBJECT TO AT LEAST 4 PASSES OF THE COMPACTION EQUIPMENT.

3.2. FOR AGGREGATES UNDER LOAD-BEARING STRUCTURES:

3.2.1. IF USING HAND-HELD COMPACTION EQUIPMENT SUCH AS A PLATE COMPACTOR OR "JUMPING JACK," LIFT HEIGHT SHALL NOT EXCEED 4 INCHES.

3.2.2. IF USING SELF-PROPELLED COMPACTION EQUIPMENT WITH A GROSS WEIGHT EXCEEDING OF 3000 LBS, LIFT HEIGHT SHALL NOT EXCEED 8 INCHES.

3.2.3. IF WATER IS USED TO AID IN COMPACTION, IT SHALL BE CONSTRAINED SO THAT WATER DOES NOT PUDDLE ON THE SURFACE OR PUMP OUT OF THE AGGREGATE LIFT DURING COMPACTION.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. NO DENSITY TESTING OF IN-SITU SOILS OR IMPORTED AGGREGATES SHALL BE REQUIRED OR PERFORMED.

4.2. CONTRACTOR SHALL RETAIN A BATCH TICKET COPY FROM EVERY LOAD OF AGGREGATES DELIVERED TO THE SITE. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER IF REQUESTED.

4.3. IF A DIFFERING MIX OTHER THAN THE LISTED FAA GRADATIONS SHALL BE USED, THE PRODUCT GRADATIONS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER AND PROJECT ENGINEER FOR REFERENCE.

31 05 19.13 GEOTEXTILES FOR EARTHWORK

SUMMARY: THIS SECTION COVERS ALL GEOTEXTILES TO BE INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

M:\Current Jobs - ELD Projects\GSN-ELD (Saipan ARSR, CNMI)\CUSA Drawings\Issued For Construction\GSN-D-ELD IFC.dwg
4/4/2025 6:46 AM ANDREW GRAY

26 05 00 COMMON WORK RESULTS FOR ELECTRICAL																																																																																																																		
ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ADOPTED STANDARDS REFERENCED IN 01 41 00 REGULATORY REQUIREMENTS.																																																																																																																		
ALL ELECTRICAL WORK SHALL BE PERFORMED BY LICENSED JOURNEYMAN ELECTRICIANS OR BY LICENSED APPRENTICE ELECTRICIANS UNDER THE DIRECT SUPERVISION OF A LICENSED JOURNEYMAN ELECTRICIAN. STATE-SPECIFIC JOURNEYMAN LICENSURE IS NOT REQUIRED FOR THIS PROJECT DUE TO THE FEDERAL SUPREMACY CLAUSE.																																																																																																																		
CONDUIT ROUTES AND EQUIPMENT LOCATIONS ARE DIAGRAMMATIC AND SUBJECT TO FIELD ADJUSTMENT BASED ON SITE CONDITIONS AND OBSTRUCTIONS. CONTRACTOR SHALL ABIDE BY ALL NEC AND NESC REQUIREMENTS WHEN ADJUSTING THE LOCATIONS OF CONDUITS AND ELECTRICAL EQUIPMENT.																																																																																																																		
ALL ELECTRICAL WORK SHALL BE PERFORMED IN A NEAT AND PROFESSIONAL MANNER. CONDUITS AND EQUIPMENT SHALL BE INSTALLED LEVEL, PLUMB AND PARALLEL TO WALLS AND ADJACENT SURFACES. CONDUITS AND EQUIPMENT SHALL BE PROTECTED FROM DAMAGE AND MARRING DURING INSTALLATION.																																																																																																																		
ALL EQUIPMENT SHALL BE MOUNTED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS FOR SEISMIC INSTALLATION, UNLESS THE PROJECT LOCATION IS SEISMIC DESIGN CATEGORY A.																																																																																																																		
THE CONTRACTOR SHALL PROVIDE LOCKOUT/TAGOUT PROCEDURES TO THE RESIDENT ENGINEER AND THE LOCAL SSC TECHNICIANS AT THE END OF THIS PROJECT.																																																																																																																		
CONTRACTOR SHALL USE SURVEYOR'S GRADE GPS TO RECORD THE LOCATION OF ALL NEW EXTERIOR ITEMS OF ELECTRICAL EQUIPMENT, NOT AFFIXED TO A BUILDING. THIS INCLUDES;																																																																																																																		
MANHOLES, HANDHOLES AND SPLICE CANS, ELECTRICAL EQUIPMENT RACKS AND JUNCTION BOXES, TRANSFORMERS, SWITCHGEAR, PRIMARY TERMINATION ENCLOSURES AND PRIMARY METERS, UTILITY POLES.																																																																																																																		
THE CONTRACTOR SHALL PURCHASE AND PROVIDE STANLEY BEST LOCK BODIES WITH FAA LOGO, PART NUMBER 21B77ZLPS1175 FOR ALL NEW ELECTRICAL EQUIPMENT WITH LOCKING MEANS. THE CONTRACTOR SHALL PURCHASE LOCK BODIES WITHOUT CORES. THE LOCAL SSC SHALL PURCHASE AND INSTALL THE CORES. CUTOVER PLANS: ALL CUTOVERS TO CUSTOMERS SHALL BE COORDINATED AND PERFORMED BY THE UTILITY (C.U.C.). THE FAA CONTRACTOR SHALL COORDINATE WITH C.U.C. TO ENERGIZE THE FAA PORTION OF WORK AFTER INSPECTION AND COMPLETION.																																																																																																																		
26 05 13 MEDIUM-VOLTAGE CABLES																																																																																																																		
SUMMARY: THIS SECTION COVERS ALL CABLES, RATED AT 601V - 25KV, TO BE FURNISHED AND INSTALLED FOR THIS PROJECT.																																																																																																																		
1. MEASUREMENT AND PAYMENT:																																																																																																																		
1.1. MEASUREMENT AND PAYMENT FOR THIS PAY ITEM SHALL BE PER LINEAR FOOT.																																																																																																																		
1.2. TESTING AND INSTALLATION OF GROUNDING ITEMS SHALL BE INCIDENTAL TO THIS PAY ITEM. CABLES THAT FAIL TESTING SHALL BE REPLACED AT NO COST TO THE FAA.																																																																																																																		
2. MATERIALS:																																																																																																																		
2.1. MEDIUM-VOLTAGE CABLES ARE ITEMIZED IN THE DRAWINGS (E-SHEETS, 600 SERIES).																																																																																																																		
2.2. ALL NEW CABLE RUNS ARE TO BE INSTALLED AS A SINGLE, CONTINUOUS SECTION OF CABLE WITHOUT SPLICING, UNLESS ABSOLUTELY NECESSARY.																																																																																																																		
3. EXECUTION:																																																																																																																		
3.1. CABLE PULLING LUBRICANT SHALL BE USED FOR ALL CABLE PULLING THROUGH UNDERGROUND DUCTS.																																																																																																																		
4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:																																																																																																																		
4.1. TESTING:																																																																																																																		
4.1.1. VERY LOW-FREQUENCY (VLF) TESTING MAY BE PERFORMED AFTER INSULATION RESISTANCE TESTING OF A CABLE INDICATES THE CABLE IS IN RELATIVELY GOOD CONDITION AND CAN BE FURTHER TESTED BY VLF METHODS TO PROVIDE ADDITIONAL CABLE RELIABILITY INFORMATION.																																																																																																																		
4.1.2. INSULATION TESTING AND VLF TESTING MUST COMPLY WITH APPLICABLE SAFETY REGULATIONS. SEE SECTION 01 41 00 REGULATORY REQUIREMENTS.																																																																																																																		
4.1.3. ALL MEDIUM VOLTAGE TESTING MUST BE PERFORMED BY TWO INDIVIDUALS. ALL TESTING SHALL BE WITNESSED BY THE RESIDENT ENGINEER.																																																																																																																		
4.1.4. BEFORE, DURING, AND AFTER TESTING, CONTRACTOR SHALL ENSURE ALL APPLICABLE SAFETY RULES ARE FOLLOWED, INCLUDING USE OF PROPER PERSONAL PROTECTIVE EQUIPMENT (PPE), LOCK-OUT TAG-OUT OF ALL ASSOCIATED ELECTRICAL ENERGY SOURCES, TESTING OF CABLES FOR POSSIBLE "BACK-FEED" FROM UNKNOWN ELECTRICAL SOURCES AND DISCHARGE OF RESIDUAL CAPACITIVE CHARGES ON CABLES TO BE TESTED.																																																																																																																		
4.1.5. USE ONLY THE APPROVED HIGH VOLTAGE POWER TEST INSTRUMENTS TO CHECK FOR AC AND DC VOLTAGES ON ALL CABLES. DO NOT USE HAND HELD TEST INSTRUMENTS WHICH ARE ONLY RATED FOR USE IN ELECTRICAL/ELECTRONIC APPLICATIONS RATED 1000 VOLTS OR LESS.																																																																																																																		
4.1.6. BEFORE TESTING IS PERFORMED, CONTRACTOR SHALL ENSURE THAT CABLES AND ASSOCIATED TERMINATIONS ARE ISOLATED FROM ELECTRICAL APPARATUS SUCH AS POWER TRANSFORMERS, POTENTIAL TRANSFORMERS, SURGE ARRESTERS, CAPACITORS, ETC. CABLES ARE ALLOWED TO BE CONNECTED TO SWITCHES AND FUSED CUTOUTS SO LONG AS THE SWITCH ISOLATES THE CABLE AND TERMINATIONS FROM ELECTRICAL APPARATUS MENTIONED ABOVE. MAINTAIN AT LEAST SIX (6) INCHES CLEARANCE BETWEEN CABLE ENDS AND ANY GROUNDED SURFACE. IF MODULAR LOAD-BREAK ELBOW TERMINATIONS ARE USED ON THE CABLES, ENSURE THE LOAD BREAK ELBOWS ARE INSERTED IN THE ISOLATED PARKING BUSHINGS.																																																																																																																		
4.1.7. ENSURE THAT ALL CABLE SHIELDS, EQUIPMENT GROUNDING CONDUCTORS, ARMOR AND METALLIC CONDUITS ARE PROPERLY GROUNDED TO THE EARTH ELECTRODE SYSTEM AT BOTH ENDS OF THE CABLE TO BE TESTED. IF PRESENT, CHECK TO ENSURE THAT THE CABLE SHIELD, ARMOR, AND EQUIPMENT GROUNDING CONDUCTORS ARE ELECTRICALLY CONTINUOUS FROM ONE END OF THE CABLE TO THE OTHER.																																																																																																																		
4.1.8. NEW 15KV CABLES AND ASSOCIATED TERMINATIONS SHALL BE TESTED WITH A 5KV INSULATION RESISTANCE TEST (AEMC TYPE 5070 OR APPROVED EQUAL) AND A VLF TEST SET (HIGH VOLTAGE INC. TYPE VLF-34E OR APPROVED EQUAL). THIS APPLIES TO CABLES WITH BOTH 100% AND 133% INSULATION RATINGS.																																																																																																																		
4.1.9. INSULATION RESISTANCE MEASUREMENTS ON NEW 15KV CABLES, TERMINATIONS, AND JOINTS SHALL BE MADE WITH DC VOLTAGE APPLIED INCREMENTALLY UP TO 5KV FOR A DURATION NOT TO EXCEED 5 MINUTES. RECORD THE RESISTANCE AT EACH VOLTAGE LEVEL AS WELL AS THE AMBIENT TEMPERATURES AND RELATIVE HUMIDITY. PERFORM INSULATION RESISTANCE TESTING FROM EACH INSULATED CONDUCTOR TO GROUND AND BETWEEN EACH INSULATED CONDUCTOR. ANY INSULATION RESISTANCE VALUES LESS THAN 50 MEGAOHMS SHALL BE INVESTIGATED XXX. INSULATION TEST REPORT IS TO BE SUBMITTED TO THE RESIDENT ENGINEER.																																																																																																																		
4.1.10. THE VLF TEST FOR NEW 15KV CABLE SHALL BE APPLIED AT NOT TO EXCEED 28KV PEAK VOLTAGE AT 0.1 HZ FOR A DURATION OF FIFTEEN MINUTES. CONTRACTOR SHALL RECORD THE PASS OR FAIL CONDITION AT THE END OF THE TEST ALONG WITH THE AMBIENT TEMPERATURE AND RELATIVE HUMIDITY.																																																																																																																		
26 05 29 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS																																																																																																																		
SUMMARY: THIS SECTION COVERS HANGERS AND SUPPORT SYSTEMS FOR ELECTRICAL CONDUITS.																																																																																																																		
1. MEASUREMENT AND PAYMENT:																																																																																																																		
1.1. PROVISION OF ALL REQUIRED SUPPORTS SHALL BE INCIDENTAL TO CONDUIT FOR ELECTRICAL SYSTEMS.																																																																																																																		
2. MATERIALS:																																																																																																																		
2.1. SUPPORT ALL CONDUITS ON STRUT, BRACKETS, TRAPEZE HANGERS, OR AS SHOWN IN THE DRAWINGS. USE ANVIL, B-LINE, GRINNELL, UNISTRUT, OR APPROVED EQUAL.																																																																																																																		
2.2. ALL EXTERIOR STRUT, BRACKETS, FITTINGS, NUTS, BOLTS AND HARDWARE FOR CONDUIT SUPPORT SHALL BE STAINLESS STEEL, UNLESS OTHERWISE SPECIFIED IN THE DRAWINGS.																																																																																																																		
3. EXECUTION:																																																																																																																		
3.1. CONTRACTOR SHALL SECURE CONDUITS IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRIC CODE.																																																																																																																		
4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:																																																																																																																		
4.1. NO SUBMITTALS ARE REQUIRED UNLESS A SUBSTITUTION OR CHANGE ORDER IS REQUESTED.																																																																																																																		
26 05 33.13 CONDUIT FOR ELECTRICAL SYSTEMS																																																																																																																		
SUMMARY: THIS SECTION COVERS ALL ABOVE-GRADE ELECTRICAL CONDUITS TO BE FURNISHED AND INSTALLED FOR THIS PROJECT.																																																																																																																		
1. MEASUREMENT AND PAYMENT:																																																																																																																		
1.1. MEASUREMENT AND PAYMENT FOR THIS ITEM SHALL BE PER LINEAR FOOT.																																																																																																																		
1.2. ALL THREADED COUPLINGS, FITTINGS, ELBOWS, BUSHINGS, INSERTS AND GROUND CONNECTIONS SHALL BE INCIDENTAL TO THIS PAY ITEM.																																																																																																																		
2. MATERIALS:																																																																																																																		
2.1. BURIED CONDUITS AND DUCTS ARE COVERED UNDER SECTION 26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS.																																																																																																																		
2.2. ALL EXTERIOR, ABOVE-GROUND CONDUITS SHALL BE SCH-80 PVC.																																																																																																																		
2.3. CONDUIT SIZES AND TYPES AND ITEMIZED IN THE DRAWINGS.																																																																																																																		
3. EXECUTION:																																																																																																																		
3.1. CONDUIT FIELD JOINTS SHALL BE CUT SQUARE AND REAMED SMOOTH. THREADS SHALL BE CLEANLY CUT AND JOINTS DRAWN UP TIGHT. CUTTING OF CONDUITS SHALL NOT BE PERFORMED WITH RECIPROCATING SAWS.																																																																																																																		
3.2. ALL ELBOWS SHALL BE FACTORY EXTRUDED ELBOWS, NO FIELD BENDED ELBOWS SHALL BE PERMITTED.																																																																																																																		
3.3. ALL CONDUIT RUNS SHALL BE COMPLETED AND CLEANED FREE FROM FOREIGN MATTER INSIDE BEFORE CONDUCTORS ARE DRAWN IN. AFTER INSTALLATION, SPARE CONDUIT ENDS SHALL BE PLUGGED OR CAPPED TO PREVENT THE ENTRANCE OF FOREIGN MATERIALS.																																																																																																																		
3.4. PVC CONDUITS FOR GROUNDING ELECTRODES SHALL PENETRATE A MINIMUM OF 12" BELOW GRADE. PVC CONDUITS SHALL EXTEND TO 6 FEET ABOVE GRADE, OR TO WITHIN 18 INCHES OF THE ITEM TO BE GROUNDED.																																																																																																																		
4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:																																																																																																																		
4.1. NO SUBMITTALS ARE REQUIRED UNLESS A SUBSTITUTION OR CHANGE ORDER IS REQUESTED.																																																																																																																		
26 05 53 IDENTIFICATION FOR ELECTRICAL SYSTEMS																																																																																																																		
IN EVERY ACCESSIBLE LOCATION ABOVE GROUND (INTERIOR AND EXTERIOR), CABLES SHALL BE TAGGED WITH VINYL SELF-LAMINATING LABELS OR SHRINK-EMBOSSSED LABELS IDENTIFYING THE SOURCE, VOLTAGE AND PHASE, IF THREE-PHASE. IF THE CABLES ARE FED FROM A PANELBOARD, THE LABEL SHALL IDENTIFY WHICH BREAKER THE CABLES ARE FED FROM.																																																																																																																		
IN EVERY ACCESSIBLE LOCATION BELOW GROUND, CABLES SHALL BE TAGGED WITH RIGID PLASTIC LABEL PLATES IDENTIFYING THE SOURCE, VOLTAGE AND PHASE, IF THREE-PHASE.																																																																																																																		
ARC-FLASH LABELS SHALL BE PRINTED AND AFFIXED TO ANY PIECE OF ELECTRICAL EQUIPMENT THAT MAY NEED EXAMINATION, ADJUSTMENT, SERVICE OR MAINTENANCE WHILE ENERGIZED. REFER TO THE PROJECT ARC-FLASH, SHORT CIRCUIT, AND COORDINATION STUDY FOR ARC-FLASH LABEL DETAILS.																																																																																																																		
ALL PIECES OF MEDIUM-VOLTAGE EQUIPMENT (>600V) SHALL HAVE WARNING LABELS INDICATING "DANGER, HIGH VOLTAGE" AFFIXED TO THEM.																																																																																																																		
FURTHER DETAILS FOR ALL REQUIRED LABELS ARE IN THE DRAWINGS (E-SHEETS, 500 SERIES).																																																																																																																		
33 79 00 SITE GROUNDING																																																																																																																		
SUMMARY: THIS SECTION COVERS GROUNDING AND LIGHTNING PROTECTION FOR ALL EXTERIOR EQUIPMENT, DUCTS, CONDUITS AND STRUCTURES TO BE INSTALLED FOR THIS PROJECT.																																																																																																																		
1. MEASUREMENT AND PAYMENT:																																																																																																																		
1.1. MATERIALS FOR GROUNDING AND LIGHTNING PROTECTION SHALL BE PER EACH OR PER LINEAR FOOT, DEPENDING ON THE MATERIAL. LABOR TO INSTALL GROUNDING COMPONENTS SHALL BE INCIDENTAL TO OTHER PAY ITEMS OR SHALL BE ALL REQUIRED.																																																																																																																		
2. MATERIALS:																																																																																																																		
2.1. CABLE FOR CREATING EARTH ELECTRODE SYSTEMS (EES'S) AND CABLES EXTENDING CONNECTIONS TO THE EES SHALL BE 4/0, SOFT-DRAWN, 19-STRAND BARE COPPER WIRE, UNLESS OTHERWISE NOTED IN THE DRAWINGS.																																																																																																																		
2.2. GROUND RODS SHALL BE 10' LONG, 3/4" DIAMETER COPPER-CLAD STEEL, UNLESS OTHERWISE NOTED IN THE DRAWINGS.																																																																																																																		
3. EXECUTION:																																																																																																																		
3.1. ALL UNDERGROUND GROUNDING CONNECTIONS SHALL BE EXOTHERMICALLY WELDED.																																																																																																																		
3.2. ALL ABOVE GROUND CONNECTIONS TO EXTEND OR CONNECT ADDITIONAL GROUNDING ELECTRODES SHALL BE PERFORMED WITH A 12-TON CRIMPER AND UL-LISTED, IRREVERSIBLE COMPRESSION CONNECTORS.																																																																																																																		
3.3. GROUNDING CONNECTIONS BETWEEN DISSIMILAR METALS SHALL BE PROTECTED FROM CORROSION IN ACCORDANCE WITH FAA STANDARD 19G, SECTION 4.2.2 DISSIMILAR METALS.																																																																																																																		
3.4. MEDIUM-VOLTAGE EQUIPMENT:																																																																																																																		
3.4.1. ALL MEDIUM VOLTAGE EQUIPMENT VAULTS SHALL HAVE A GROUND ROD INSTALLED FOR GROUNDING CONNECTIONS. CONNECTIONS TO THE GROUND ROD SHALL BE EXOTHERMICALLY WELDED. FRAME AND PHASE GROUNDING CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.																																																																																																																		
3.4.2. FOR LOW-VOLTAGE METALLIC CONDUITS LEAVING STEP-DOWN TRANSFORMER VAULTS, THE CONTRACTOR SHALL INSTALL AN INSULATED BUSHING ON THE LOW-VOLTAGE CONDUIT TERMINATING IN THE TRANSFORMER VAULT. A GROUND BUSHING IS NOT TO BE INSTALLED ON THE LOW-VOLTAGE CONDUIT IN THE TRANSFORMER VAULT.																																																																																																																		
4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:																																																																																																																		
4.1. TERMINATION TORQUE:																																																																																																																		
4.1.1. THE TORQUE VALUES OF ALL GROUNDING LUG TERMINATIONS SHALL BE RECORDED AND PROVIDED AS PART OF THE CLOSEOUT DOCUMENTATION. TORQUE VALUES FOR GROUNDING LUGS ARE LISTED IN FAA STANDARD 19, 4.2.3.4.2 BOLTED CONNECTIONS.																																																																																																																		
4.1.2. THE TORQUE RECORD SHALL INCLUDE THE SERIAL NUMBER OF THE TORQUING TOOL AND THE LATEST CALIBRATION DATE OF THE TORQUING TOOL. THE TORQUING TOOL SHALL BE FACTORY NEW-IN-BOX OR CALIBRATED WITHIN 12 MONTHS OF USE.																																																																																																																		
FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552																																																																																																																		
<table><tr><td colspan="2">FAA</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">DESIGNED BY:</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">CUSA CONSULTING LLC</td><td>REV</td><td>APPROVED</td><td colspan="3">DESCRIPTION</td><td>JCN</td><td>DATE</td><td>APVD</td></tr><tr><td colspan="2">6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM</td><td colspan="8">DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA</td></tr><tr><td colspan="2"></td><td colspan="8">SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 ELECTRICAL SPECIFICATIONS</td></tr><tr><td colspan="2" rowspan="5"></td><td colspan="2">SAIPAN</td><td colspan="4">GSN</td><td colspan="2">CNMI</td></tr><tr><td colspan="2">REVIEWED BY:</td><td colspan="3">SUBMITTED BY:</td><td colspan="3">APPROVED BY:</td></tr><tr><td colspan="2"></td><td colspan="3">PROJECT ENGINEER</td><td colspan="3">MANAGER, INFRASTRUCTURE CENTER</td></tr><tr><td colspan="2"></td><td colspan="3">DESIGNED: A.J.G./C.U.C.</td><td colspan="2">ISSUED BY:</td><td colspan="2">DATE:</td></tr><tr><td colspan="2"></td><td colspan="3">DRAWN: A.J.G.</td><td colspan="2"></td><td colspan="2">JCN:</td></tr><tr><td colspan="2"></td><td colspan="3">CHECKED: J.G.P.</td><td colspan="3"></td><td colspan="2">DRAWING NUMBER: GSN-D-ARSR-ELD-G005</td><td>REV</td></tr></table>										FAA										DESIGNED BY:										CUSA CONSULTING LLC		REV	APPROVED	DESCRIPTION			JCN	DATE	APVD	6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA										SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 ELECTRICAL SPECIFICATIONS										SAIPAN		GSN				CNMI		REVIEWED BY:		SUBMITTED BY:			APPROVED BY:					PROJECT ENGINEER			MANAGER, INFRASTRUCTURE CENTER					DESIGNED: A.J.G./C.U.C.			ISSUED BY:		DATE:				DRAWN: A.J.G.					JCN:				CHECKED: J.G.P.						DRAWING NUMBER: GSN-D-ARSR-ELD-G005		REV
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4/4/2025 6:46 AM ANDREW GRAY



EXISTING POLES TO BE DEMOLISHED		
POLE #	LATITUDE	LONGITUDE
EX-1	N015°15'12.71"	E145°47'27.05"
EX-2	N015°15'11.25"	E145°47'25.88"
EX-3	N015°15'10.01"	E145°47'24.71"
EX-4	N015°15'08.57"	E145°47'23.49"
EX-5	N015°15'07.01"	E145°47'22.81"
EX-6	N015°15'05.38"	E145°47'22.31"
EX-7	N015°15'03.23"	E145°47'21.67"
EX-8	N015°15'01.25"	E145°47'21.23"
EX-9	N015°15'00.09"	E145°47'22.42"
EX-10	N015°15'01.90"	E145°47'24.46"
EX-11	N015°15'03.80"	E145°47'26.48"
EX-12	N015°15'05.73"	E145°47'28.62"
EX-13	N015°15'05.94"	E145°47'28.39"
EX-14	N015°15'07.45"	E145°47'30.72"
EX-15	N015°15'09.01"	E145°47'32.96"
EX-16	N015°15'09.21"	E145°47'32.75"
EX-17	N015°15'10.23"	E145°47'35.48"
EX-18	N015°15'10.48"	E145°47'35.32"
EX-19	N015°15'11.01"	E145°47'38.17"
EX-20	N015°15'11.03"	E145°47'41.04"
EX-21	N015°15'10.86"	E145°47'43.62"
EX-22	N015°15'09.63"	E145°47'45.11"
EX-23	N015°15'07.78"	E145°47'44.76"
EX-24	N015°15'07.01"	E145°47'42.99"
EX-25	N015°15'06.20"	E145°47'40.97"
EX-26	N015°15'05.37"	E145°47'39.07"
EX-27	N015°15'04.03"	E145°47'37.06"
EX-28	N015°15'01.21"	E145°47'34.00"
EX-29	N015°14'59.33"	E145°47'32.71"
EX-30	N015°14'56.89"	E145°47'31.48"
EX-31	N015°14'54.40"	E145°47'30.46"
EX-32	N015°14'53.63"	E145°47'32.35"
EX-33	N015°14'53.27"	E145°47'33.91"
EX-34	N015°14'54.02"	E145°47'35.50"
EX-35	N015°14'55.31"	E145°47'37.62"
EX-36	N015°14'56.47"	E145°47'39.54"
EX-37	N015°14'57.97"	E145°47'42.13"
EX-38	N015°14'57.31"	E145°47'43.73"
EX-39	N015°14'55.53"	E145°47'43.62"
EX-40	N015°14'54.80"	E145°47'44.93"

- NOTES:
- ALL POLES DEPICTED AS 'EX' SHALL BE DEMOLISHED AND REMOVED BY UTILITY (C.U.C.). ALL EXISTING POLES ARE SINGLE PHASE WOOD POLES.
 - ALL SINGLE PHASE OVERHEAD WIRE SHALL BE DEMOLISHED AND RECLAIMED BY C.U.C..
 - COORDINATES FOR ALL EXISTING AND PROPOSED POLES ARE PROVIDED BY C.U.C. ENGINEERING STAFF.

FAA DESIGNED BY:		FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552			
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM		REV	APPROVED	DESCRIPTION	JCN DATE APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS		WESTERN SERVICE AREA	
SAIPAN		GSN		CNMI	
REVIEWED BY:		SUBMITTED BY:		APPROVED BY:	
		PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.		DATE:	
		DRAWN: A.J.G.		JCN:	
		CHECKED: J.G.P.		DRAWING NUMBER: GSN-D-ARSR-ELD-D100	
				REV	



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4/4/2025 6:46 AM ANDREW GRAY



PROPOSED POLES			
POLE #	LATITUDE	LONGITUDE	FORMERLY:
PR-1	N015°15'12.75"	E145°47'27.06"	EX-1
PR-2	N015°15'11.45"	E145°47'26.04"	-
PR-3	N015°15'10.23"	E145°47'24.92"	-
PR-4	N015°15'08.98"	E145°47'23.83"	-
PR-5	N015°15'07.55"	E145°47'23.04"	-
PR-6	N015°15'06.00"	E145°47'22.50"	-
PR-7	N015°15'04.43"	E145°47'22.03"	-
PR-8	N015°15'02.85"	E145°47'21.59"	-
PR-9	N015°15'01.25"	E145°47'21.23"	EX-8
PR-10	N015°15'00.09"	E145°47'22.42"	EX-9
PR-11	N015°15'01.25"	E145°47'23.73"	-
PR-12	N015°15'02.43"	E145°47'25.02"	-
PR-13	N015°15'03.63"	E145°47'26.30"	-
PR-14	N015°15'04.81"	E145°47'27.59"	-
PR-15	N015°15'05.97"	E145°47'28.91"	-
PR-15A	N015°15'06.20"	E145°47'28.70"	-
PR-16	N015°15'07.08"	E145°47'30.27"	-
PR-17	N015°15'08.12"	E145°47'31.68"	-
PR-18	N015°15'09.31"	E145°47'33.01"	-
PR-19	N015°15'10.11"	E145°47'34.62"	-
PR-20	N015°15'10.71"	E145°47'36.30"	-
PR-21	N015°15'10.98"	E145°47'38.08"	EX-19
PR-22	N015°15'11.02"	E145°47'39.85"	-
PR-23	N015°15'10.99"	E145°47'41.63"	-
PR-24	N015°15'10.88"	E145°47'43.40"	-

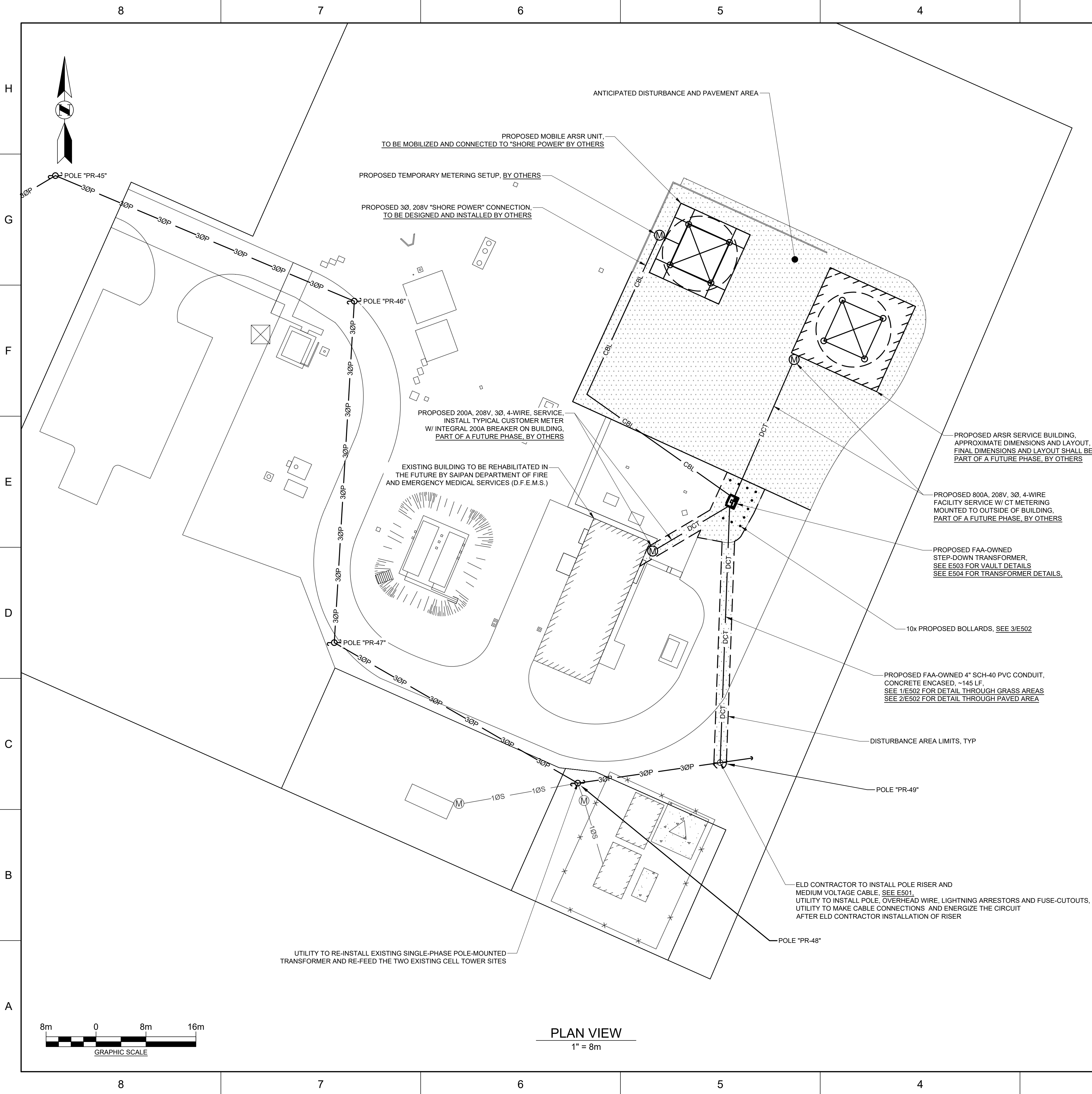
PROPOSED POLES			
POLE #	LATITUDE	LONGITUDE	FORMERLY:
PR-25	N015°15'09.88"	E145°47'44.81"	-
PR-26	N015°15'08.31"	E145°47'44.86"	-
PR-27	N015°15'07.30"	E145°47'43.65"	-
PR-28	N015°15'06.62"	E145°47'42.02"	-
PR-29	N015°15'05.94"	E145°47'40.39"	-
PR-30	N015°15'05.19"	E145°47'38.79"	-
PR-31	N015°15'04.21"	E145°47'37.33"	-
PR-32	N015°15'03.06"	E145°47'36.01"	-
PR-33	N015°15'01.87"	E145°47'34.72"	-
PR-34	N015°15'00.58"	E145°47'33.57"	-
PR-35	N015°14'59.13"	E145°47'32.61"	EX-29
PR-36	N015°14'57.58"	E145°47'31.83"	-
PR-37	N015°14'56.00"	E145°47'31.12"	-
PR-38	N015°14'54.40"	E145°47'30.46"	EX-31
PR-39	N015°14'53.69"	E145°47'32.19"	EX-32
PR-40	N015°14'53.31"	E145°47'34.01"	EX-33
PR-41	N015°14'54.14"	E145°47'35.70"	-
PR-42	N015°14'55.11"	E145°47'37.29"	-
PR-43	N015°14'56.08"	E145°47'38.89"	-
PR-44	N015°14'57.03"	E145°47'40.51"	-
PR-45	N015°14'57.97"	E145°47'42.13"	EX-37
PR-46	N015°14'57.31"	E145°47'43.73"	EX-38
PR-47	N015°14'55.53"	E145°47'43.62"	EX-39
PR-48	N015°14'54.80"	E145°47'44.93"	EX-40
PR-49	N015°14'54.91"	E145°47'45.69"	-

- NOTES:**
- POLES WITH A 'FORMERLY' DESIGNATION SHALL BE INSTALLED IN THE SAME LOCATION AS THE PREVIOUS SINGLE-PHASE POLE AFTER REMOVAL.
 - THE AVERAGE STRAIGHT-LINE DISTANCE BETWEEN POLES IS 170 LF (49 INDIVIDUAL SPANS). UTILITY TO CALCULATE THE ACTUAL LENGTH OF CABLE BASED ON THEIR STANDARD SAG FACTORS.
 - COORDINATES FOR ALL EXISTING AND PROPOSED POLES ARE PROVIDED BY C.U.C. ENGINEERING STAFF.

FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552			
FAA DESIGNED BY:			
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSA CONSULTING.COM		REV	APPROVED
		DESCRIPTION	
		JCN	DATE
		APVD	
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	
		ATC - TECHNICAL OPERATIONS	
		WESTERN SERVICE AREA	
		SAIPAN ARSR FACILITY	
		3-PHASE POWER SERVICE ESTABLISHMENT	
		ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025	
		OVERHEAD INSTALLATION PLAN	
		SAIPAN	
		GSN	
		CNMI	
		REVIEWED BY:	
		SUBMITTED BY:	
		APPROVED BY:	
		PROJECT ENGINEER	
		MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.	
		ISSUED BY:	
		DATE:	
		JCN:	
		DRAWN: A.J.G.	
		DRAWING NUMBER:	
		GSN-D-ARSR-ELD-E100	
		CHECKED: J.G.P.	
		REV	



M:\Current Jobs - ELD Projects\GNS ARSR - ELD (Saipan ARSR, CNMI)\CUSA Drawings\Issued For Construction\GNS-D-ELD IFC.dwg
4/4/2025 6:46 AM ANDREW GRAY



ENVIRONMENTAL IMPACTS SUMMARY		
	M ²	Ft ²
DISTURBED AREA FROM POLE INSTALLATION	37	400
SITE WORK, TOTAL DISTURBED AREA	2076	22346
NET INCREASE IN IMPERVIOUS AREA	0	0

- NOTES:**
- IMPACT AREA FOR NEW POLES IS ESTIMATED TO BE ONE SQUARE METER, UNLESS INSTALLED IN THE SAME LOCATION AS A PREVIOUS POLE.
 - ALL AREA TO BE DISTURBED IS CURRENTLY IMPERVIOUS SURFACES SUCH AS BUILDING ROOF OR ASPHALT PAVEMENT. FUTURE ARSR FACILITY CONSTRUCTION WILL RESULT IN EITHER NO CHANGE TO IMPERVIOUS SURFACE AREA OR A REDUCTION IN IMPERVIOUS SURFACE AREA.

FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552					
FAA DESIGNED BY:					
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM		REV	APPROVED	DESCRIPTION	JCN DATE APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		ATC - TECHNICAL OPERATIONS	
		SAIPAN ARSR FACILITY		WESTERN SERVICE AREA	
		3-PHASE POWER SERVICE ESTABLISHMENT		ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025	
		SITE INSTALLATION PLAN			
		SAIPAN		GNS	
		CNMI			
		REVIEWED BY:		SUBMITTED BY:	
		PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.		ISSUED BY:	
		DRAWN: A.J.G.		DATE:	
		CHECKED: J.G.P.		JCN:	
				DRAWING NUMBER:	
				GNS-D-ARSR-ELD-E101	
				REV	



Attachment 3: Archaeological Inventory Survey and Monitoring Plan Documents

***Draft EA Note:** Originally submitted with consultation materials, omitted to reduce page size, see Appendix B3 for AIS and MP Document.

Appendix B2: CNMI Historic Preservation Office (HPO) Response



Commonwealth of the Northern Mariana Islands
Office of State Historic Preservation Officer
Department of Community & Cultural Affairs
Capitol Hill, Chuuk Court, Bldg. 1231
Tel: (670)664-2587, Caller Box 10007
Saipan, MP 96950



June 16, 2026

Jamie L. Groves
Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration
Jamie.L.Groves@faa.gov

Serial: 38142
File: 6.7.26.50

SUBJECT: SECTION 106 REVIEW FOR THE INSTALLATION AND OPERATION OF A NEW AIR ROUTE SURVEILLANCE RADAR (ARSR) ATOP MOUNT PETOSUKARA, AS MATUIS, SAIPAN, COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS (CNMI)

Dear Mr. Groves,

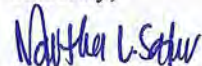
Thank you for submitting your request for Section 106 consultation with the State Historic Preservation Office (SHPO) for the proposed installation and operation of a New Air Route Surveillance Radar (ARSR) atop Mount Petosukara, in the village of As Matuis, island of Saipan, Commonwealth of the Northern Mariana Islands (CNMI). The FAA and the U.S. Air Force (USAF) will jointly coordinate funding and implementation of the Proposed Undertaking. As the lead federal agency, the FAA is carrying out its responsibilities under the Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800, subpart B.

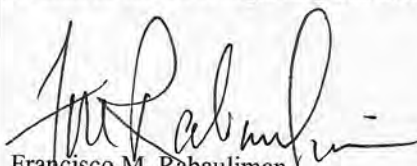
After reviewing the submitted consultation materials, the SHPO concurs with the determination of *No Adverse Effect* for the proposed undertaking. This concurrence is based on the monitoring of ground-disturbing activities by a Secretary of Interior (SOI)-qualified archaeologist; the FAA's commitment to complete and submit the appropriate HPO Site/Feature Forms for the PACBAR III facility and other identified historic properties within the Area of Potential Effect (APE) for inclusion in the HPO's cultural resources inventory; and the implementation of the monitoring and inadvertent discovery procedures outlined in the Archaeological Treatment and Monitoring Plan.

Although the SHPO hereby concurs with the determination, we still recommend that if the particulars of the project are altered, or to include other areas not yet designated or previously evaluated, or in the event of unforeseen findings of significant deposits of cultural resources, historic properties, or human remains during project activities, the project must cease immediately, and your office must notify the HPO to discuss appropriate mitigation, treatment, and preservation measures.

We appreciate your attention to this matter and your commitment to ensuring compliance with the Historic Preservation Office. Should you have any questions or concerns regarding this determination, please contact us at (670) 488-1503.

Sincerely,


Martha L. Satur
Staff Historian


Francisco M. Rabauliman
State Historic Preservation Officer



U.S. Department
of Transportation
**Federal Aviation
Administration**

Air Traffic Organization
Western Service Area
Engineering Services

222 W 7th Avenue, 3rd Floor
Anchorage, AK 99513

April 02, 2026

Mertie Kani, Historic Preservation Officer
Department of Community and Cultural Affairs
Division of Historic Preservation Office
Caller Box 10007 Capitol Hill
Saipan, MP 96950

RE: Section 106 Consultation – Initiation and Determination of No Adverse Effect for the Installation and Operation of a New Air Route Surveillance Radar (ARSR) atop Mount Petosukara, As Matuis, Saipan, Commonwealth of the Northern Mariana Islands (CNMI)

Dear Ms. Kani:

The Federal Aviation Administration (FAA) is initiating consultation with the Commonwealth of the Northern Mariana Islands (CNMI) Historic Preservation Office (HPO) pursuant to Section 106 of the National Historic Preservation Act (NHPA; 54 U.S.C. § 306108) and 36 CFR Part 800, to consider the potential effects of the proposed installation and operation of a new Air Route Surveillance Radar (ARSR) atop Mount Petosukara in As Matuis, Saipan, CNMI.

The undertaking includes construction of the new ARSR facility and associated infrastructure, upgrades to the existing electrical line distribution (ELD) corridor, and demolition of the existing Pacific Barrier III (PACBAR III) radar facility as a connected action necessary to accommodate the new installation. The FAA and the U.S. Air Force (USAF) will jointly coordinate funding and implementation of the Proposed Undertaking. As the lead federal agency, the FAA is carrying out its responsibilities under Section 106 of the NHPA and its implementing regulations at 36 CFR Part 800, subpart B.

The FAA has conducted a reasonable and good faith effort to identify historic properties within the Area of Potential Effects (APE) and is providing this letter to document the results of that effort and request HPO concurrence with the FAA's determination of effect.

Description of the Proposed Undertaking

The FAA proposes to install and operate a new ARSR facility atop Mount Petosukara in As Matuis, Saipan, CNMI. The new ARSR facility would support modernization of long-range air surveillance capabilities in the region.

The undertaking also includes demolition and removal of the abandoned Pacific Barrier III (PACBAR III) radar array and associated operations building, which currently occupy the proposed new ARSR facility footprint. The PACBAR III facility is no longer operational and will be removed to accommodate construction of the new ARSR facility.

Additional project components include:

- Construction of a 55-foot-tall radar platform, radome, and associated support facilities;
- Installation of supporting electrical infrastructure; and
- Upgrades of the existing ELD system from single-phase to three-phase service along approximately 1.6 miles of existing roadway corridor.

All work would occur within previously developed areas at the summit radar facility or within the existing access road corridor. No staging or borrow areas have been identified at this time; if additional areas are later proposed, the FAA will coordinate with HPO prior to ground disturbance. This project is a Federal undertaking under 36 CFR § 800.16(y).

Site Setting

The project would occur on approximately 1.4-acres at the abandoned USAF PACBAR III radar facility located atop Mount Petosukara near the village of As Matuis at an elevation of approximately 920 feet above mean sea level. The site overlooks the Tanapag Lagoon and Philippine Sea to the west and the Pacific Ocean to the east. The Village of Marpi lies to the north of the site, while the villages of San Roque and Achugao are located to the south.

Access to the site is provided via Chalan Pale Arnold Road through the village of As Matuis to Route 320, followed by Panglao Place, which leads to the proposed ARSR site.

Area of Potential Effect (APE)

The APE (Figures in Attachment A), as defined at 36 CFR § 800.16(d), is the geographic area or areas within which the undertaking may directly or indirectly cause alterations in the character or use of any historic properties. The APE for the Proposed Undertaking includes:

- Direct APE: approximately 1.5 acres surrounding the existing PACBAR III facility.
- Linear APE: approximately 1.6 miles by 10 meters width following the current ELD corridor along the existing access road (Route 320/Chalan Matuis).

Identification of Historic Properties

The FAA conducted a reasonable and good faith identification effort pursuant to 36 CFR § 800.4(b). The FAA relied on the Archaeological Inventory Survey and Monitoring Plan (AIS/MP) prepared by ArchaeoNMI (June 2025) as the primary identification effort. The AIS/MP included background research, literature review, pedestrian survey, evaluation of previously recorded sites, and documentation of standing structures encompassing the full APE.

ArchaeoNMI conducted pedestrian surveys and limited subsurface testing throughout the APE. No intact archaeological deposits or human remains were identified during the survey; surface observations consisted primarily of disturbed soils, fill, and concrete remnants from prior USAF construction.

The AIS documented the standing structures comprising the PACBAR III facility, including the operations building, radar tower foundation, and associated support pads, constructed circa 1989–1991 as part of a late Cold War-era radar installation. The facility is located within a previously graded and heavily disturbed military footprint and exhibits substantial physical deterioration. Based on the information documented in the AIS and the FAA's review of the facility's age, context, significance, and integrity, the FAA determined that the PACBAR III

facility is less than 50 years old, does not demonstrate exceptional importance, is not associated with significant historic events or persons, does not embody distinctive architectural or engineering characteristics, and lacks sufficient integrity to convey significance. The facility lacks integrity of design, materials, workmanship, feeling, and association due to replacement components, deterioration, and its location within a previously disturbed setting. Accordingly, the FAA has determined that the PACBAR III facility is not eligible for listing in the National Register of Historic Places (NRHP).

Given documented World War II-era activity in the broader vicinity, including previously recorded ordnance-related features, the AIS recommends archaeological monitoring during ground-disturbing construction as a precautionary measure. The FAA will ensure archaeological monitoring is conducted consistent with the accepted AIS/MP. In the event of post-review discoveries, the FAA will follow the procedures set forth at 36 CFR § 800.13(b).

By letter dated June 24, 2025 (Serial No. 37525), the CNMI HPO reviewed and accepted the AIS/MP and its proposed monitoring measures, confirming that the identification effort and recommended procedures are sufficient to address the archaeologically sensitive context of the project area.

Assessment of Effects

The AIS documented several cultural resources within the broader APE, including three World War II-era Quonset huts (TS-1 through TS-3) within the ELD corridor and a fourth structure (TS-4) located upslope outside of the corridor. These structures have previously been determined eligible for listing in the NRHP under Criteria A and D due to their association with World War II military activities. The proposed ELD alignment is located on the opposite side of the roadway from these resources and will not involve ground disturbance within the boundaries of the structures or associated features. Therefore, the undertaking would not directly or indirectly affect these historic properties.

The survey also documented a possible defensive feature (TS-5) and the Cold-War-era PACBAR III radar facility. Both resources were evaluated as not eligible for listing in the NRHP.

Based on the results of the identification effort and the avoidance of NRHP-eligible resources, the FAA has determined that the undertaking will result in a Finding of No Adverse Effect pursuant to 36 CFR § 800.5(b). Should additional work areas be identified or design modifications proposed that extend beyond the defined APE, the FAA will reinstate consultation with the CNMI HPO, as appropriate.

Documentation Commitment

The CNMI HPO requested that the facility be documented using the CNMI HPO Site/Feature Form prior to demolition. In response, the FAA will complete the appropriate HPO Site/Feature Form documentation for the PACBAR III facility and other identified historic properties within the APE, consistent with HPO guidance. This documentation will be provided to the CNMI HPO for inclusion in the cultural resources inventory.

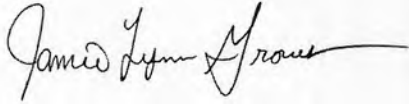
Request for Comment and Concurrence

The FAA respectfully requests HPO concurrence with this determination of APE and Finding of No Adverse Effect pursuant to 36 CFR § 800.5(b). The FAA remains committed to ensuring meaningful consultation and welcomes any comments or recommendations your office may have

April 02, 2026

regarding this project. The FAA welcomes any recommendations from the CNMI HPO regarding additional consulting parties who may have an interest in this undertaking pursuant to 36 CFR §800.3 (f). We respectfully request a response within 30 days, if possible, to assist in maintaining our project timeline. Should you have any questions or require additional information, please contact me via e-mail at Jamie.L.Groves@faa.gov. Thank you for your review and comments.

Respectfully,



Jamie L. Groves
Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration

Attachments:

- A. Project Location and APE Figures
- B. Project Drawings (select pages)
- C. Archaeological Inventory Survey and Monitoring Plan Documents (ArchaeoNMI 2025) with HPO Acceptance Letter (Serial No. 37525, June 2025)

Appendix B3: Archaeological Inventory Survey and Monitoring Plan Document

DRAFT
**Archaeological Inventory Survey and Monitoring Planning Document
for a Proposed Federal Aviation Administration ARSR Facility,
As Matuis, Saipan,
Commonwealth of the Northern Mariana Islands**

Prepared by:
David Perzinski, M.A.

June 2025

Prepared For:
**CUSA Consulting, LLC
6 Merrill Industrial Drive, Unit 6
Hampton, NH 03842**


ARCHAEONMI
ARCHAEOLOGICAL SERVICES
PO Box 520433, TINIAN, MP 96952
PHONE: (670) 785-8792

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I. INTRODUCTION

At the request of CUSA Consulting LLC, ArchaeoNMI has prepared this archaeological inventory survey and monitoring planning document for a proposed Airport Route Surveillance Radar (ARSR) and electrical line distribution (ELD) corridor in As Matuis, Saipan, Commonwealth of the Northern Mariana Islands (Figures 1-4). The area of potential effect (APE) extends from Route 320 to the existing and deactivated Pacific Barrier Radar, Station 3 (PACBAR III) on Mt. Petosukara. The project is funded by the U.S. Federal Aviation Administration (FAA) and meets the definition of an undertaking pursuant to Title 36 Code of Federal Regulations § 800.16(y). As a result, the FAA is required to comply with Section 106 of the NRHP.

The proposed project will consist of the demolition of the PACBAR III radar array, the adjacent operations building, and construction of a more modern ARSR facility, and the installation of an upgraded ELD. The APE at the proposed radar facility measures approximately 1.5 acres (0.61 hectares) and the ELD corridor extends approximately 1.5 miles (2.4 kilometers) from Route 320 up Chalan Matuis/Pale Arnold Road and terminating at the ARSR atop Mt. Petosukara.

The planning document and proposed archaeological work will adhere to the standards and requirements specified by Public Law 3-39 as amended by Public Law 10-71, the CNMI Historic Preservation Act of 1982, the current HPO Regulations as put forth in CNMI Administrative Code 55-10, HPO Procedures for the Treatment of Human Remains in the CNMI (2000), and the U.S. Secretary of the Interior's Guidelines for Archeology and Historic Preservation. This document also adheres to the Guidelines for Preparing Archaeological Research Designs in the Commonwealth of the Northern Mariana Islands (CNMI HPO n.d.). Included in this planning document is information relevant to the project area and APE including the environmental, historical, and archaeological contexts, research questions, methodology, field protocols, curation, personnel and their qualifications, and reporting timelines.

A 1985 archaeological inventory survey for the PACBAR III radar site and access road documented seven sites including ordnance buildings unexploded ordnance (UXO), and WWII era skeletal remains. It was determined that they were not eligible for inclusion in the U.S. National Register of Historic Places though the four ordnance buildings were found to be eligible for inclusion in the CNMI Register of Historic Places (Final EIS 1987; Russell and Fleming 1985). Due to these considerations, the proposed construction has been determined to have the "potential to adversely affect" historic properties and/or cultural resources. Thus, the CNMI Historic Preservation Office has determined that archaeological inventory survey and monitoring is required to mitigate any potential impacts to these historically or culturally sensitive resources.

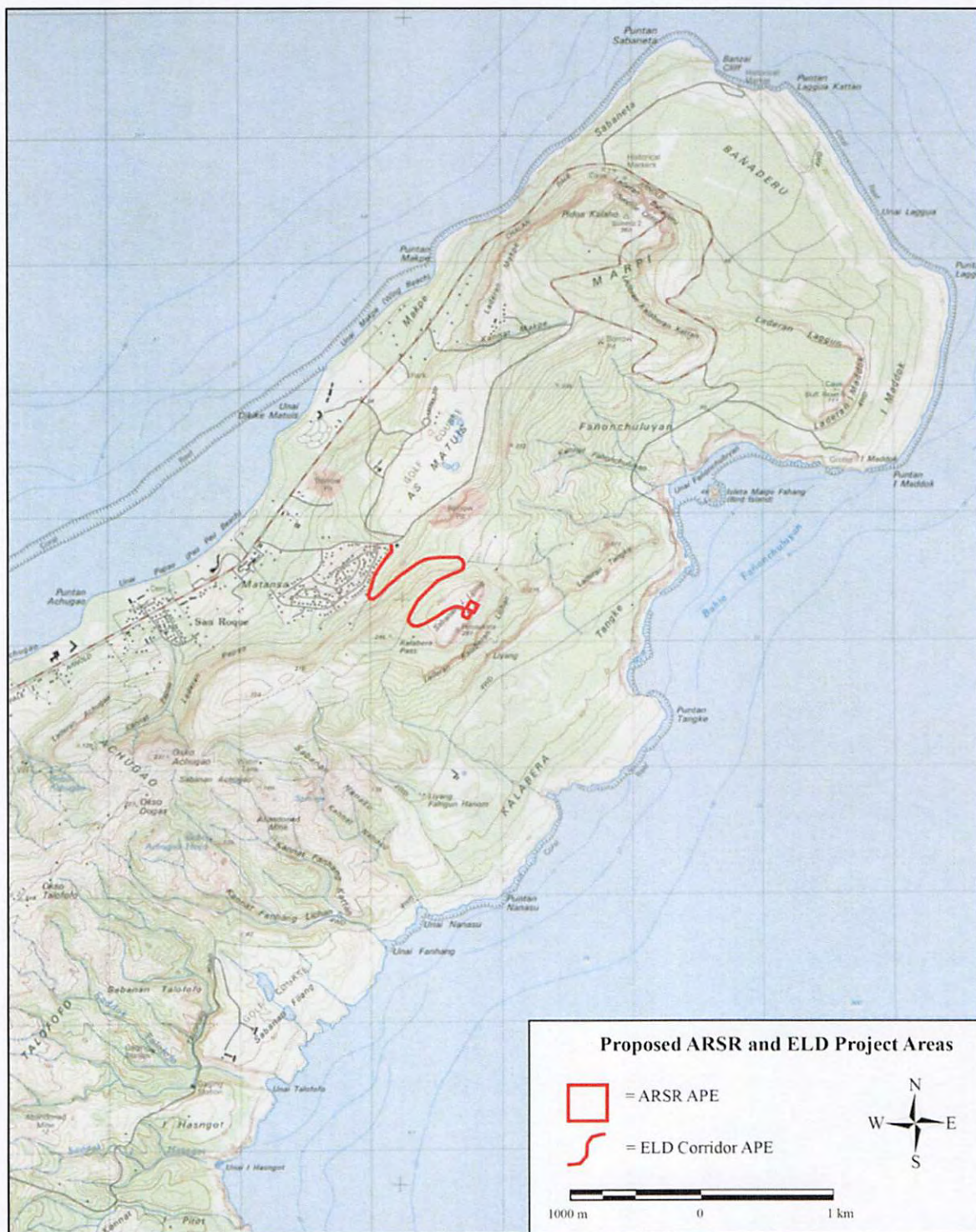


Figure 1: Portion of USGS map showing location of the ELD corridor and radar site.

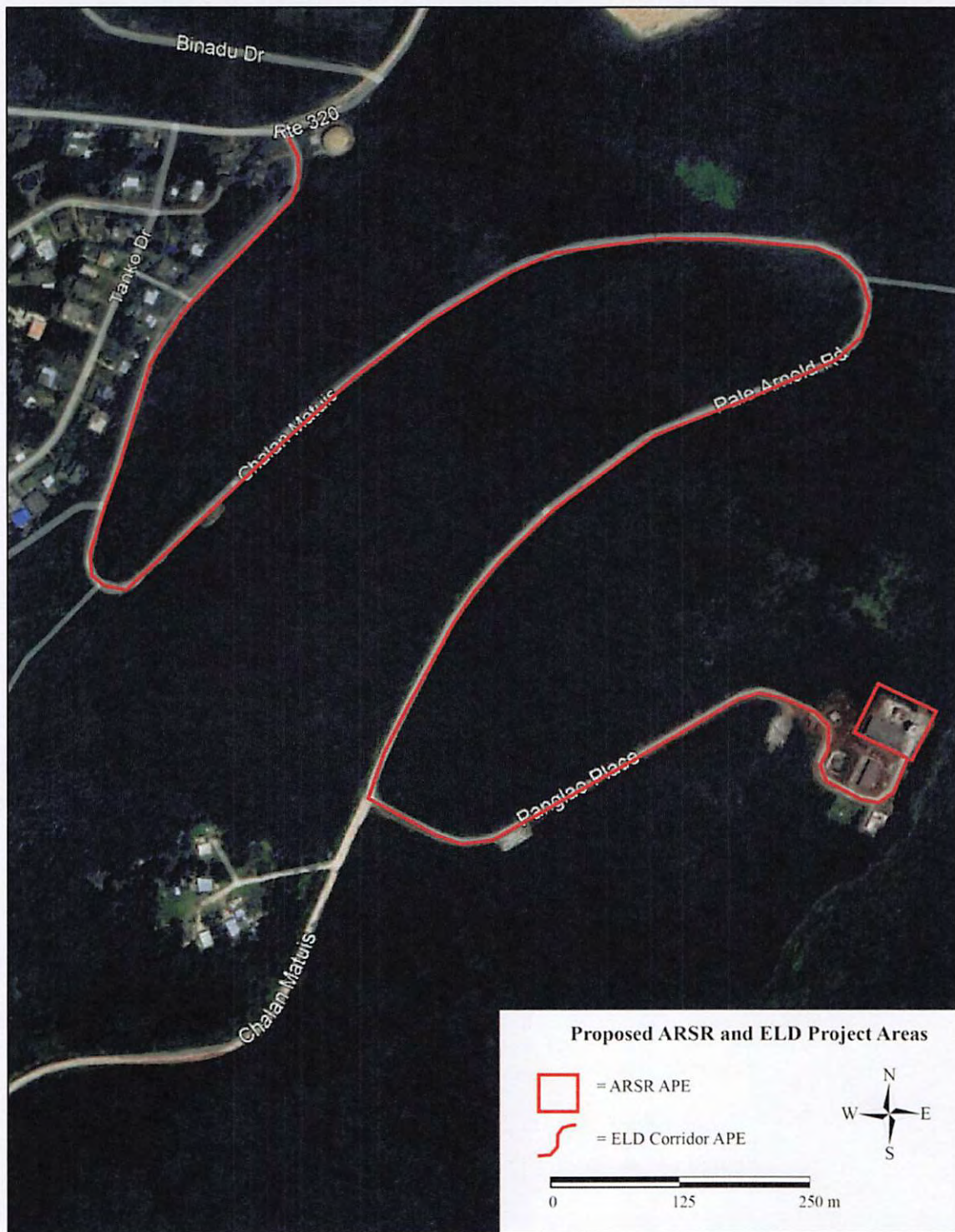


Figure 2: Aerial image showing location of the ELD corridor and radar site (Google Earth, 2024).



Figure 3: Aerial image showing location of the proposed radar location (Courtesy of CUSA).

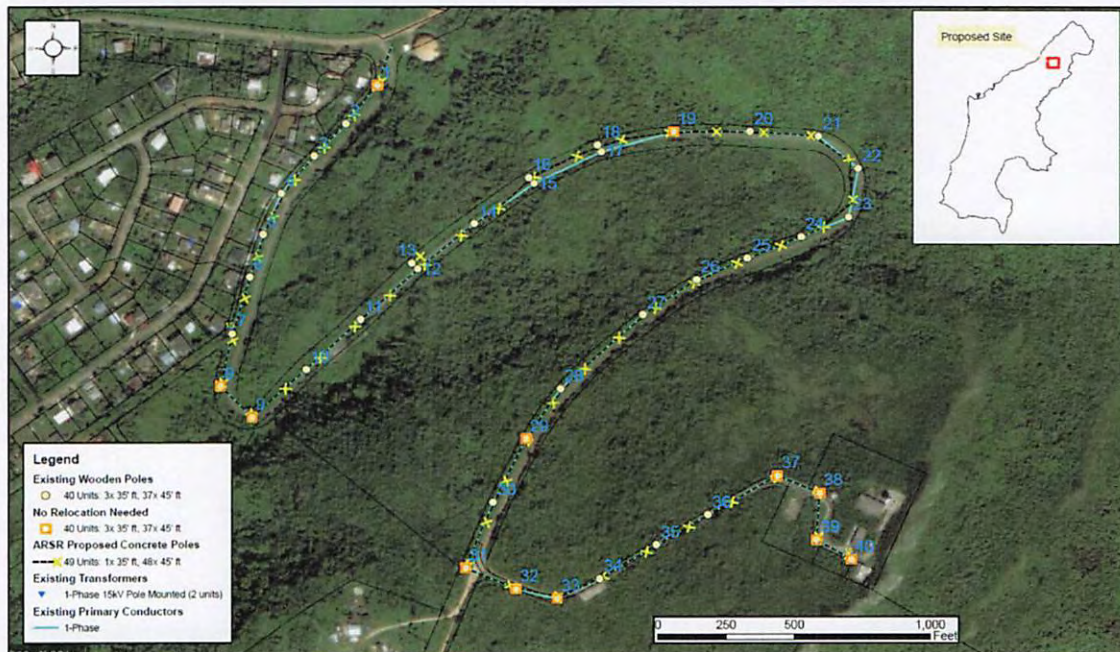


Figure 4: Proposed location of the 49 proposed ELD power poles (Courtesy of CUSA).

II. BACKGROUND

Environmental

The Northern Mariana Island archipelago is located in the western Pacific Ocean and consists of an arc of 15 islands (including Guam) that stretches 530 miles (850 km) from the southern tip of archipelago to Uracus (Farallon de Pajaros) in the north. The islands of the CNMI are situated between the northern latitudes of $20^{\circ} 33'$ and $14^{\circ} 01'$ and eastern longitudes of $144^{\circ} 50'$ to $145^{\circ} 00'$. The isolated island chain lies 1,900 km to the east of the Philippines, 2,200 km south of Japan and 2,000 km north of New Guinea. The 11,000 km deep Marianas Trench is roughly 100-160 km to the east of Saipan and parallels the archipelago. Saipan is the second largest island in the chain behind Guam measuring 19 km in length by 9 km wide with a total land area of 119 km². The island can be divided into five physiographic areas including Banaderu, the central uplands, the western coastal plain, the southern plateau and Kagman Peninsula (Carruth, 2003). The current APE is located within the north end of the central uplands (Figure 5).



Figure 5: Physiographic map of Saipan showing major land features (Carruth, 2003).

Geology

Geologically, the island of Saipan is formed from Eocene to Miocene volcanic rock with the oldest deposits consisting of andesites and dacites from the Eocene (Cloud, 1959; Reagan *et al.* 2008). The majority of Saipan is covered by the Mariana Limestone, which is also found in the northern part of Guam and Tinian that lie south of Saipan (Carruth 2003; Riegl, *et al.* 2008: 698).

On Saipan, volcanic rock is exposed in several locations, but the long axis of the island is predominately Miocene limestone with additional lower limestone terraces consisting of younger limestone deposits. The highest point on the island is Mount Tapochau which rises to a maximum height of 445 m (1,550 feet) above sea level. In lower elevations, including the APE, tiered limestone benches extend across the north, south and eastern parts of the island (Figure 6). The limestone benches are generally gently sloping and measure a few hundred to several thousand meters wide. Steep cliffs often separate one bench from the next and are dotted with sinkholes and caves from the solution of limestone.

Eustatic sea levels globally have fluctuated through time because of plate tectonics, the melting of Pleistocene glaciation, geoid deformation, thermal expansion and contraction, and isostatic rebound (Hunter-Anderson and Butler, 1995; Dickinson, 2003). Relative changes in the position of shorelines are often affected by both eustatic sea level and plate tectonics (uplift or subsidence) and the interplay between these two can often generate a rapid rise or decline in sea level relative to land elevation. The changes in sea level can be seen along the coast in the form of "sea level notches" (undercuts) that were created during times of sea level stability (Cloud *et al.* 1956:23), the most recent of which is around 1.8 m (6 feet) above the current sea level.

In the Mariana Islands, this interaction was responsible for a coastline that was much further inland at the time of settlement and played a significant role in settlement and resource exploitation, including in the coastal area west of the APE. From the time of first settlement through the mid-prehistoric period, sea level drawdown not only created a wider coastal plain but also changed the ecosystem of the reef surrounding the leeward coast, the development of sand spits, and closure of embayments and creation of brackish wetland environments.

Soils

Saipan's soils can be generalized as a textural patchwork of clays and clay loams with sandy loam and loamy sand found in a few areas along the west coast and in the southern and northern coastal areas of the island. Overall, the soils are represented by six soil orders with Mollisols, the predominate type, found atop the limestone plateaus (Deenik, 2010). Saipan's consistently warm and wet climate lends to soils that are lateritic in character and rather infertile (Cloud *et al.* 1956). The Mollisols found across much of Saipan, however, contain a high amount of organic matter and are considered very productive agriculturally. The second most dominant order is Oxisols that are developed from volcanic rock. Though found in similar geographic areas



Figure 6: View from east side of Saipan showing limestone steps and APE (photo: D. Perzinski).

as Mollisols, Oxisols are considered excessively acidic and require lime to raise the pH to suitable levels for agricultural use (Deenik, 2010, p. 28).

Three soil orders make up the APE deposits (Figure 7). On the downslope side are Chinen-Takpochau (Young 1989). The Chinen-Takpochau soils are described as “Very shallow, well drained, nearly level to strongly sloping soils; on limestone plateaus and side slopes” (ibid.:9). The soils are common across Saipan and make up 21% of the island. Much of this soil type is found in Kagman and southern Saipan, but pockets are found in the northern section of the island. Takpochau-Chinen-Rock Outcrop are found in the midslope section of the APE. The radar site at the top of the mountain is within Banaderu-Rock Outcrop that consist of “shallow, well drained, nearly level to moderately steep soils, and rock outcrop; on limestone plateaus” (Young 1989:8). These soils make up less than 1% of Saipan’s soils with the APE being within the only pocket of this soil type on the island.

Vegetation

During the Japanese plantation era, much of APE was ploughed for agriculture which destroyed the native forest and grasslands. With the onset of World War II and the Battle of Saipan, the use of defoliants and intensive bombardment spared little in the way of previously untouched forest. Following the war, the U.S. military undertook a massive rebuilding effort that included clearing and reconstructing the destroyed infrastructure and erecting immense civilian and military installations (Bowers, 1950). The vegetation in the APE is classified as “Mixed Introduced Forest” and “*Leucaena* thicket” (Hileman et al., 2020) that is comprised of secondary and tertiary growth consisting of tangantangan forest, vines, Formosa koa, breadfruit, flame trees (*Regia delonix*) and thickets of Guinea grass. The PACBAR III facility and proposed APE has been cleared and sits atop a large concrete pad, though some tangantangan forest is located on the north side of the pad (Figures 8-10).

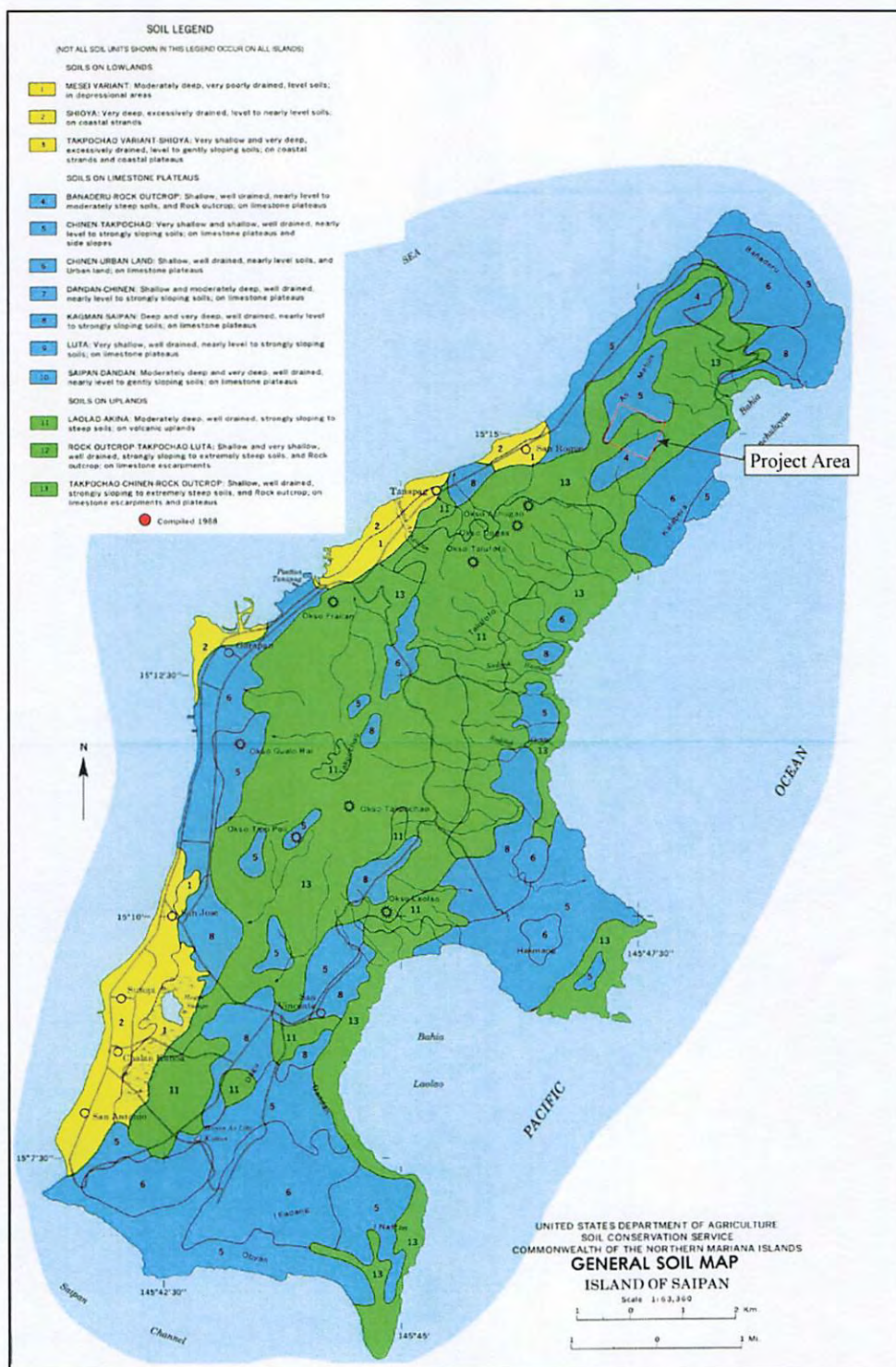


Figure 7: Soil map of Saipan showing location of the project area.

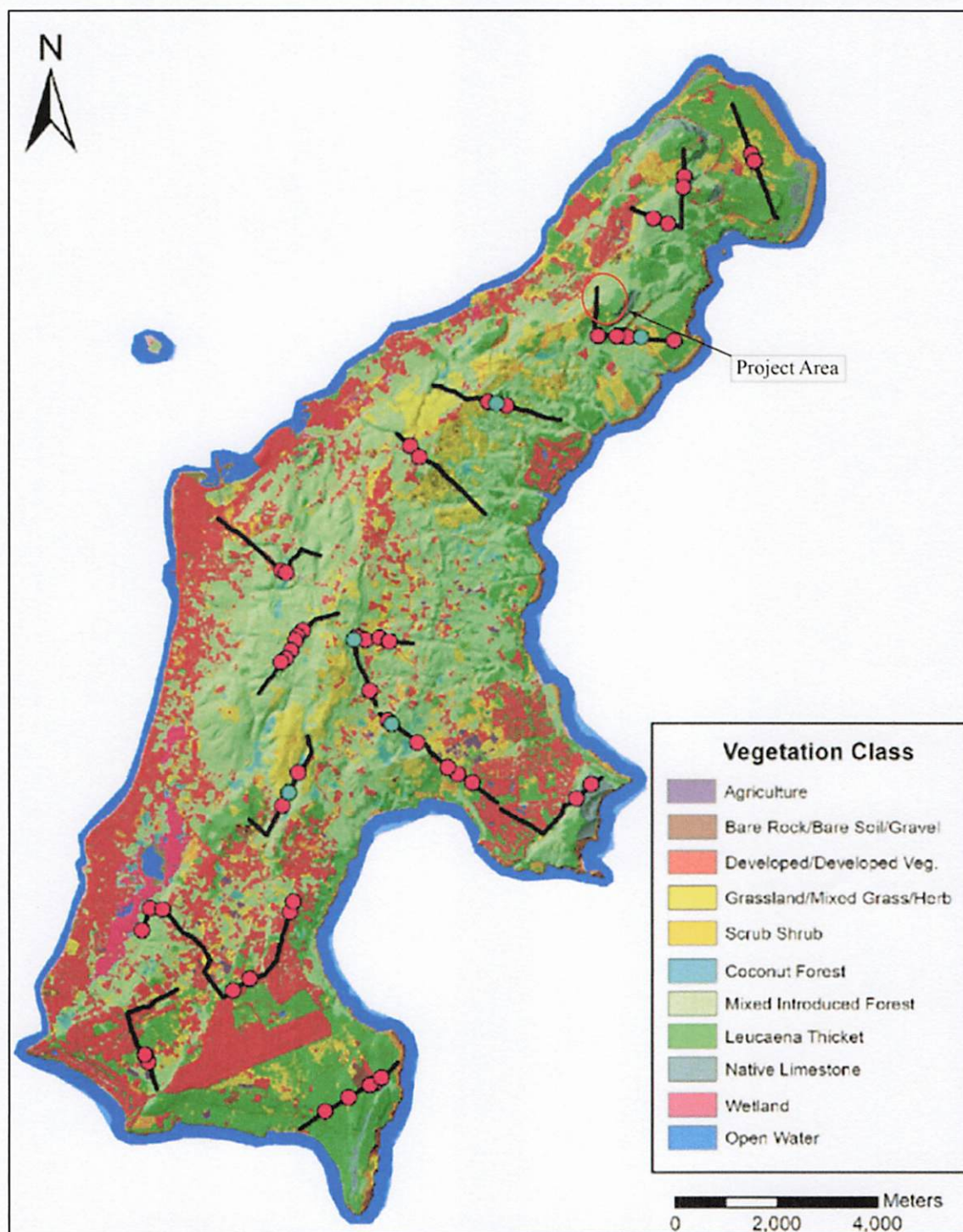


Figure 8: Vegetation map of Saipan showing APE in a "Developed Vegetation" or "Leucaena Thicket" vegetation class (Hileman et al., 2020).



Figure 9: View upslope showing vegetation growth between S-turns to summit of Mt. Petosukara.



Figure 10: View west of PACBAR III facility showing its footprint devoid of vegetation.

III. HISTORICAL AND CULTURAL CONTEXT

The prehistoric background was sourced from existing literature, ethnographic studies, and archaeological investigations that have occurred in the Mariana Islands since the mid-twentieth century. The chronology of the Mariana Islands has been based largely on changes in ceramic styles (discussed below) that have been paired with radiocarbon dates (Spoehr, 1957; Moore, 1983; Butler, 1994). Though still evolving, the current prehistoric chronology can be divided into four periods: early pre-Latte, Intermediate pre-Latte, Transitional, and Latte Period.

Prehistoric Period

Early Pre-Latte Period: 1500 to 900 B.C.

Settlement of the Mariana Islands first occurred ca. 1500 B.C. by Austronesian speaking people who originated from Island Southeast Asia (Carson, 2007). Based on mtDNA evidence, the migrations likely had their origin in Sulawesi or the Moluccas, west of Papua New Guinea and south of the Philippine Islands (Vilar et al. 2012). Settlement is believed to have taken place across the southern four islands (Guam, Rota, Tinian and Saipan) at roughly the same time, and in Saipan, deposits from this timeframe have been identified in Achugao, Chalan Piao, Laolao Bay and San Roque (McGovern-Wilson, 1989; Moore et al. 1992, Craib, 1993, Butler 1995, Carson 2008, Carson and Hung 2014).

The first settlements would have occurred at a time of higher sea level and the inhabitants would have encountered a marine ecosystem that supported a different range of resources than those found in later prehistoric times (Amesbury, 1999). The earliest sites in Saipan are found up to 500 m from today's present shoreline, with subsequent periods of settlement gradually moving seaward as the beaches prograded and usable land expanded in size (Amesbury et al. 1996; Carson, 2014). Inland settlement into the mountainous areas during the early pre-Latte Period has not been identified, but it is likely that the forest and grasslands were utilized for small garden plots or foraging as evidenced by taro, breadfruit, betel nut pollen and charcoal in sediment cores from this timeframe.

The artifact assemblage from the early pre-Latte Period is markedly different than that associated with later time periods. The early pre-Latte Period pottery is characterized by thin-walled, incised, impressed and lime-filled surface treatments. The vessels are generally smooth with a high-proportion of slipping (Moore et al. 1992; Moore and Hunter-Anderson, 1999; Hunter-Anderson and Butler 1995; Butler, 1995). In the early pre-Latte deposit in Achugao, Butler et al. (1995:178) described the "predominant vessel form (as) a small to medium-sized shouldered vessel with an in-slanting neck and an everted rim." Wall thickness tended to be thin in comparison to later Latte Period examples and were generally 4-6 mm in thickness, though could range from as thin as 1 mm to over 15 mm (Butler, 1995; Moore and Hunter-Anderson, 1999). Rim thickness in the Marianas ceramic assemblage is considered either Type A (rim is same thickness or thinner

than the body), or Type B (rim thicker than body). Though neither can be used as a diagnostic tool in dating an assemblage, Type A rims are more common in pre-Latte ceramics than Type B (Spoehr 1957).

The earliest marine invertebrate midden assemblages are often characterized by a high percentage of bivalves over gastropods, with mangrove dwelling species such as *Anadara antiquata* often found in abundance in the early pre-Latte middens. This trend may be correlated to the mangrove habitat that existed during the mid-Holocene highstand (Butler 1995).

Intermediate Period: 900 B.C. to A.D. 400

The Intermediate Period reflects a phase when the population had established itself in coastal hamlets with more permanent habitations indicated by post-holes, stone-slab paving, hearths, and refuse pits (Carson and Hung 2012). It is also during this period that some initial movement into the interior portions of the islands began (Dixon et al. 2019). As sea level had already begun to drop, the beaches experienced seaward progradation and sand spits were formed creating additional land for settlement.

Artifact assemblages from this period were similar to the preceding time period with *Conus* shell ornaments, basalt and shell adzes, shell rings and bracelets often found in associated deposits (Butler 1995; Carson and Hung 2017). Subsequent periods rarely show evidence of this type of ornamentation. Ceramic vessel form was adapted to a more roasting or frying style with flat bottoms, thicker, vertical sidewalls, and unthickened rims. This type of cooking would have suited a diet that was more reliant on a land based starchy diet including taro and breadfruit (Hunter-Anderson 1995). Midden remains from this period also indicate a continued ecological change occurring within the coastal areas. As the mangrove habitat diminished due to the drawdown of sea level, the midden record reflects a shift to invertebrates available in shallow sands that overtook the near shore reefs (Amesbury 1999).

Transitional Period: A.D. 400 to A.D. 900

The Transitional Period marks a time interval that brought a stable coastline, increased population, and settlement into the interior (Butler 1990; Dixon et al. 2011). The environmental condition at this time suggests that mangroves had disappeared from the Lake Susupe Basin in southwestern Saipan (Athens and Ward 2005), effectively destroying the preferred habitat of *Anadara antiquata*.

Settlement and population change during this period has been inferred by the ceramic and non-ceramic artifact assemblage. Moore (1983) recognized the ceramic tradition as characteristic of the succeeding Latte Period with coarse, thick-walled vessels. Both form and function of the vessels appeared to have been adapted to above ground cooking and food storage as seen in the ceramic assemblage from Chalan Piao and Achugao (Moore et al. 1992; Butler 1995; Moore et al. 1999). The transition to this type of cooking coincides with a greater focus on terrestrial based

plant food such as taro, yam, breadfruit and possibly rice, none of which were eaten raw and would require cooking prior to consumption. Though the flat-bottomed vessels were still in use at the time, it was proposed that the shift away from earth-ovens that accommodated the flat-bottomed vessels could be attributed to “the social contexts of cooking and serving food such that the ceramic vessels formerly used for this purpose became unnecessary, undesirable, or no longer available” (Moore et al. 1999:500).

Artifact assemblages from this period of occupation suggest a robust population growth and intensification of agricultural activity, inferred from vessel type, with settlements more widely distributed along the coast and into near coastal agricultural land. The establishment of inland settlements and an emphasis on new pottery forms suggest a shift from reliance on marine resources to a more diversified plant-based diet (Butler 1990; McGovern-Wilson and Quinn 1994; Dixon et al. 2011).

Latte Period: A.D. 900 – 1700

The Latte Period is marked by a progressively increasing population, stone architecture, a shift to a more terrestrial plant-based diet, intensifying agricultural practices and inland expansion. Architectural features of a Latte Period site include Latte sets that consist of a parallel set of upright stone pillars (*haligi*) with hemispherical capstones (*tasa*) that supported a wooden platform and A-framed thatched roof (Carson 2012). The latte structures could be constructed for numerous different activities including sleeping houses, cooking houses, men’s and women’s houses, canoe sheds, eating or other purposes (Russell 1998). Hornbostel’s (n.d.) survey in the early 1920s attests to the proliferation of settlement during the Latte Period and described Saipan’s archaeological landscape as “a vast graveyard, that pottery fragments are scattered over most of the surface of the ground, that ancient wells, now dry, abound, and that many monument ruins are found” (Thompson 1932:19).

The most common artifact associated with latte settlements is a ceramic style referred to as Marianas Plainware. Though ubiquitous amongst latte sites, the ceramic type “may predate by several hundred years the construction of latte structures” (Dixon et al. 2011:378). Marianas Plainware is characterized by rough thick-walled clay vessels often with a coarse volcanic sand temper with rounded bases, everted, thick lipped rims and often with plain, combed, cord-marked, or wiped surface treatment (Thompson 1977; Moore 1983; Butler 1990). These heavy, thick, and less mobile vessels suggest a more permanent settlement pattern, one where the transport of such vessels was unnecessary, and cooking activities would occur in the same area. The large size is suggestive of a shared communal use, and likely for the cooking of starches, carbohydrates and proteins that were farmed or gathered. Data suggests that the population was relying on plant-based carbohydrates such as breadfruit, taro, coconut and rice. Food processing artifacts such as mortars (*lusong*) and pestles near the latte sites further suggest a focus on plant processing, and likely the consumption of rice (Hunter-Anderson 1995; Dixon et al. 2011). Midden deposits show

a high frequency in *Strombus sp.* that often make up over 90% of the shell assemblage in coastal sites.

McGovern-Wilson and Quinn (1994) analyzed stable isotope data from ten individuals from southwestern Saipan that were radiocarbon dated to ca. A.D. 500 and compared them to six individuals from west central Saipan dated to ca. A.D. 1150 to 1350. The $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ showed little temporal variation in $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values suggesting that the dietary ratios of marine to terrestrial food was relatively consistent since the Transitional Period. Dudgeon (2016) examined 18 individuals from Garapan, Saipan dated to the mid-Latte Period that showed a “pronounced inclination to terrestrial C4 (tropical grasses-not rice) carbohydrate diet components” and “that these individuals were not strongly focused on marine resources” (Dudgeon et al. 2016:9). The results from these studies show the importance of plants in the prehistoric diet and that an expanded agricultural economy was possibly occurring earlier than is often estimated.

Historic Period

Spanish Colonial Period (1521–1898)

Numerous accounts and descriptions of the initial European contact and colonization of the Mariana Islands can be found in existing literature on the history of the Marianas (see Atienza 2013; Butler and Defant 1991; Driver 2000; Farrell 1991; Russell 1984). Below is a summary of the initial discovery and events that occurred in Saipan during the Spanish Colonial Period.

The Historic era in Saipan and the Marianas began in 1521 when the Portuguese explorer Ferdinand Magellan made landfall in what is believed to be Guam. The initial ca. 140 years of contact consisted mainly of using the Marianas for resupplying the ships and intermittent trade with Spanish sailors and local Chamorro. These limited interactions continued until 1668 when the Jesuit priest Father Diego Luis de San Vitores received permission from the Spanish crown to establish a mission in Guam (Atienza, 2013). The mission was a success until politics entered the scene and San Vitores inadvertently allied himself with the chief of Agaña (Russell and Fleming 1985).

Though the mission was based in Guam, priests in the northern islands worked amongst the locals and established outposts on both Saipan and Tinian (Moore, et al., 1998). Resistance by the local inhabitants who opposed the practice of baptism of the children and were denied the use of skulls and traditional idols revolted and the ensuing skirmishes resulted in the deaths of priests in Anatahan, Tinian and Saipan (Hezel 1982). In 1684, the feared Commander Quiroga led an expedition to Saipan and landed at Agingan to confront a Chamorro rebellion. Skirmishes ensued up the coast until an uprising in Guam forced his return.

Unnerved by this resistance, Father San Vitores accepted his Jesuit colleague’s advice that a stricter operation was required if their mission were to continue (Hezel 1982). On Tinian, warfare had broken out and the small church that was built was in danger, so with the help of his Filipino

helpers and Chamorro converts from Guam “succeeded, by threat of arms, in achieving a brittle peace” (ibid.:122). This persistent imposition of rules on the locals led to “a cycle of Chamorro violence against the Spanish followed by retaliatory raids conducted by the slowly increasing number of Spanish soldiers” (Russel and Fleming 1985: 9).

The ensuing years brought a major decline in the local population due to disease and warfare and was capped by the implementation of *reducción*, which saw the forced relocation of the local Chamorro population in the northern islands, including Saipan, to Guam. By the 1730s, the combination of these events led to the near abandonment of Saipan (Russell 1998).

Around 1815, Satawal and Elato in the Caroline Islands were devastated by powerful storms (Spoehr 1954:70), and the natives of the islands were granted permission by the Spanish to settle in what is now the Garapan area of Saipan and Tanapag. It is estimated that the new residents numbered at least 1,000 (Underwood 1973). The Spanish knew of their seafaring skill and in return for permission to settle in Saipan were required to transport messages and farm products throughout the archipelago (Hunter-Anderson and Butler 1995:19). The beginning of the Carolinian migration was roughly coincidental to the timing of the last regular galleon stopover in 1815 (Underwood 1973:22).

During the later years of the nineteenth century, and before the Spanish-American War, Spanish control of their colonial settlements was weakening. Due to uprisings in their holdings in the Americas in the early 1800s and ending with the Cuban Rebellion of 1895, Spain had effectively been ousted from all their former holdings except in the Pacific. By the time of their defeat in Manila by the Americans, Spain had lost all their former dominance in the Pacific (Driver 2000, Spennemann 2007).

German Administration (1898–1914)

Following the defeat of the Spanish in 1898, the Northern Mariana Islands was given to Germany, a move that was “largely administrative” but still influential (Farrell 1991:286). Despite this influence, remnants of the Germans’ time on the islands left little in the way of physical remains and there “were never more than 12-15 German administrators in the islands at any one time” (Bowers 1950:41).

The primary concern during the German Administration was improving the infrastructure on Saipan in the form of improved roads, water supply and agricultural activity. The island’s dependence of outside supplies led to the development of copra plantations and food crops. Though the results were mixed, immigration from the Caroline islands and resettlement by Chamorros residing in Guam led to a 30% increase in population from 1900 to 1905 (Russell, 1984).

Japanese Administration (1914-1944)

The most relevant period of influence to the landscape in Saipan and the APE occurred during the takeover of the Marianas by the Japanese. On October 14, 1914, just 3 months after the

start of World War I, German ruled Saipan was overtaken by the Japanese and placed under military authority. The few German nationals residing in Saipan survived but were expelled back to their homeland. Following the war, the League of Nations gave Japan the mandate over German Micronesia with the requirement that the Japanese did not construct military fortifications in the islands. In 1922, the South Seas Bureau replaced the Japanese naval administration, and eventually the Ministry of Overseas Affairs took over (Farrell 1991).

Japan's first attempt at large-scale sugar production in Saipan occurred in 1917, but these early attempts proved largely unsuccessful due to poor management, inexperienced field workers and a crash in sugar prices (Russell 2017). Building off the previous failures and having secured leases for the agricultural fields in Saipan, Haruji Matsue established the Nan'yō Kōhatsu Kabushiki Kaisha/Nankō (NKK) and began constructing a mill and outbuildings in Chalan Kanoa, and a narrow-gauge railroad around the island to transport the harvested cane (ibid.). In northern Saipan near As Matuis, a 1930 land use map shows the railroad extending along the coast, but the project area and ELD corridor were uncultivated and in scrub forest and grassland (Figure 11). By 1944, however, numerous farms and agricultural fields covered the hillsides and flatlands reflecting the expansion of agricultural activity in some of the less favorable areas of Saipan. The road leading to the As Matuis uplands and through the current APE was also heavily cultivated, utilizing the steeper hillsides that are now mostly forested and undeveloped (Figure 12).

With Japan's withdrawal from the League of Nations in 1934, naval surveys were completed for fleet bases and military installations. The massive military buildup required the importation of 16,000 civilians and 2,000 Japanese prisoners from Yokohama to complete the construction of airfields, bunkers for artillery, networks of tunnels, and caves for defense and refuge (Haun and Henry 1993; Mazurek et al. 1991). An airfield was also constructed in the northern Marpi area of Saipan north of the APE. West of the APE along the shoreline, Japanese defenses were constructed on the north and south ends of Pau Pau Beach on Punton Achugao and Unai Dikike Matuis. Coastal defense guns, automatic anti-artillery, search lights, a pillbox and machine gun positions were positioned to defend the beach that was designated Black Beach 1 and 2 by the U.S. military. Inland at the 100 foot contour interval there were additional machine gun positions and a searchlight. Just south of the last hairpin turn of the ELD corridor at Sabana Lipiog were two dual-purpose guns, a searchlight and an unidentified installation (Figure 13).



Figure 12: Portion of a 1944 Aerial Reconnaissance Photo Showing Location of APE amongst agricultural fields.

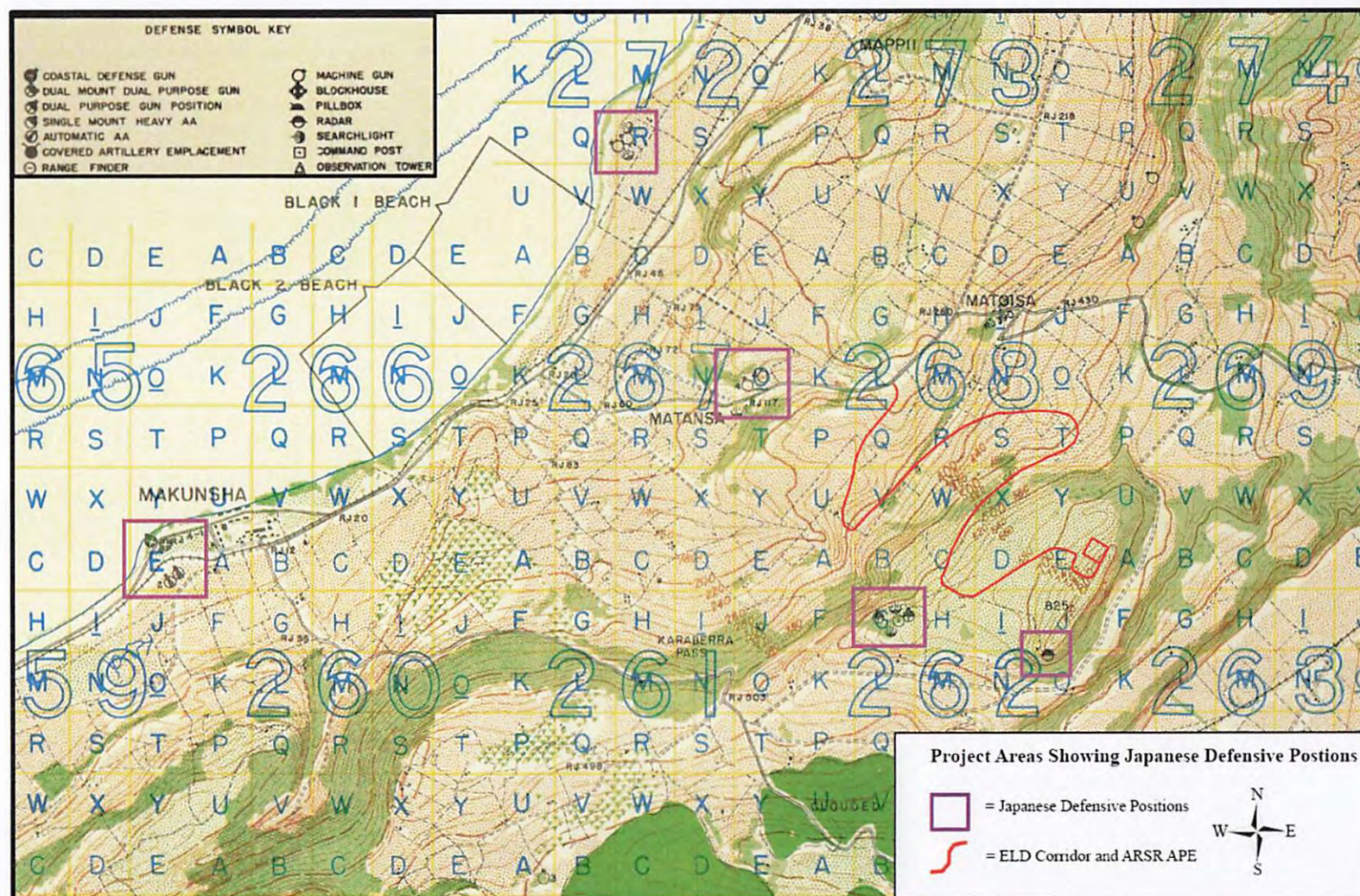


Figure 13: U.S. target map of a portion Saipan and the project area showing Japanese defensive positions prior to the invasion.

WWII

The Battle of Saipan (June 15-July 9, 1944) has been well documented and is not discussed in any detail in the present study, but the combat that occurred near the APE was some of the fiercest and most deadly and is summarized below. The assault on Saipan began on June 15, 1944, when the U.S. Marine Corps 2nd and 4th Divisions began their amphibious assault on the southwest coast of Saipan. Combat ensued for the next two days as the 4th Marines and the Army's 27th ID fought their way inland through pockets of Japanese resistance towards Aslito Airfield (Crowl, 1993). While U.S. forces were securing the airfield and Naftan Point, the Marines and the U.S. Army 27th Infantry Division were simultaneously moving into central Saipan along the flanks of Mt. Tapochau. Following the seizure of Saipan's high point on June 25th, and having finally gained control of Death Valley, the U.S. were ready to seal off the northern neck of Saipan and capture the island.

From July 1-4, the 2nd and 4th Marine Divisions and the Army's 27th ID made their way through Garapan and Tanapag making good progress towards the north despite the rough terrain (Crowl 1960). On July 5, the 2nd Division reverted to a reserve force while the 27th Army Infantry Division and the 4th Marine Division continued north, with the 4th tasked with capturing the remaining northern portion of Saipan. Mt. Petosukara was a dominant landscape feature just short of Objective O-8 to the north and battalions of the 23rd, 24th and 25th Regiments spent the day of July 6 securing the land to the east and west of Petosukara. The 25th Regiment's zone included the east side of the mountain along the eastern coastline and the limestone terraces that stretched down to the shore. The mountainous and cave riddled landscape offered abundant defensive positions for the enemy, but with the help of naval fire and 13 tanks, the Marines were able to direct artillery fire into the hideouts (Hoffman 1950). The 23rd and 24th regiments on the western side of Petosukara made good progress as well and were able to repulse and pursue the Japanese throughout the day. In the late afternoon of July 6th, the 2d battalion of the 25th Marines had reached the top of Mt. Petosukara and dug in for the night (Figure 14) (Hoffman 1950). No sleep was possibly however, as nighttime allowed groups of Japanese to slither through the battalion's lines to harass and attack the Americans. After a medical aid station was attacked, the doctors and corpsman returned fire resulting in the death of 60 to 70 of the enemy (Hoffman 1950:221). Downslope from Petosukara, a predawn raid along the exposed flank of the 24th Regiment's 3d Battalion found the enemy within five yards of the Marines' forward foxholes. The raid was another disaster for the Japanese with post combat action reports estimating that more than 200 of the enemy were killed (ibid.: 222).

The following morning brought the deadliest battle of Saipan that was fought just south of the project area between Tanapag and Matansa. In the early morning hours of July 7th, the American forces that were dug in along the coast were faced with a massive but poorly armed banzai attack from the remaining Japanese soldiers and civilian combatants. In all, it was estimated that up to 3,000 enemy were killed during the battle which included civilian combatants.

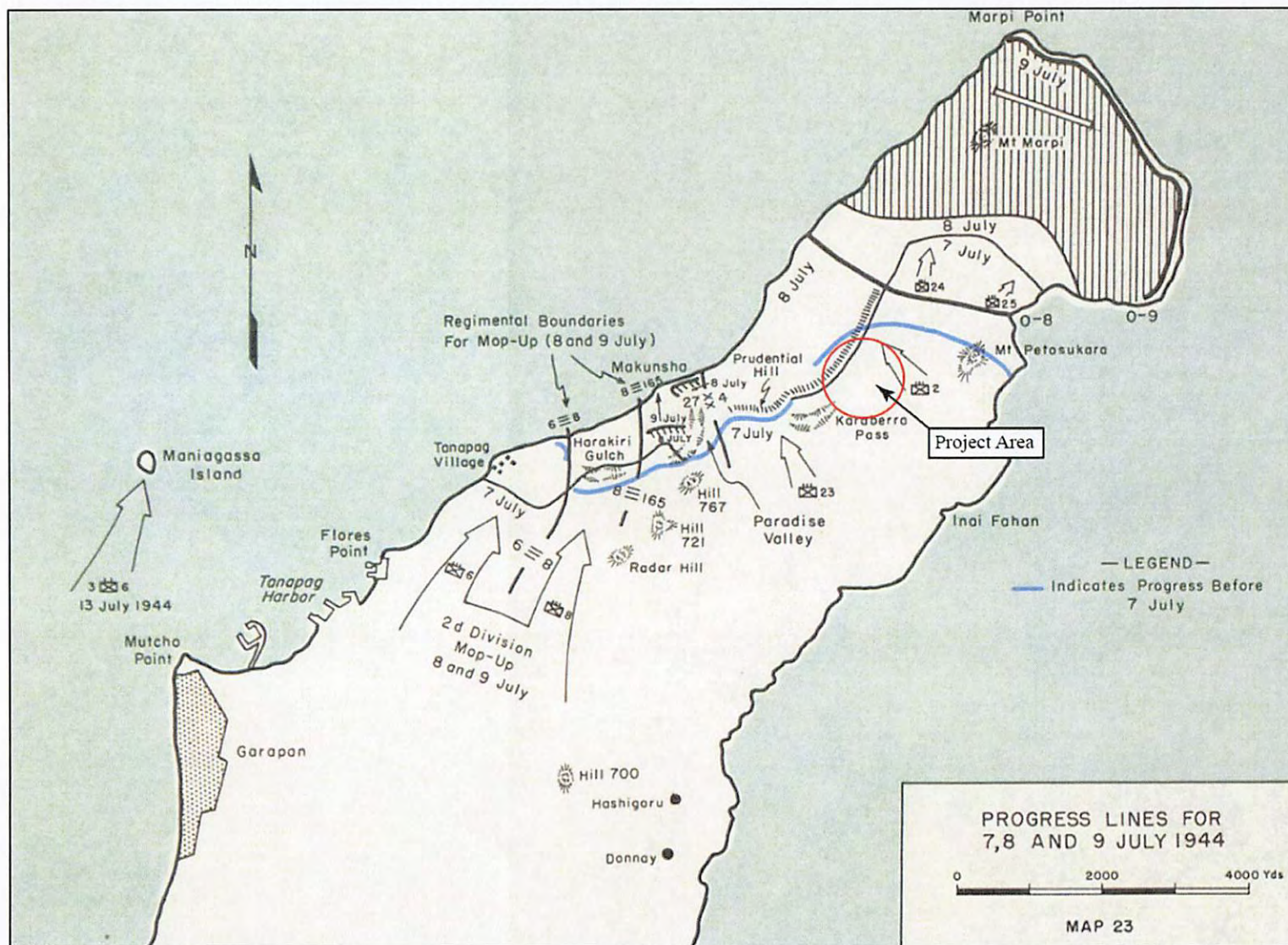


Figure 14: Troop movement in northern Saipan and the project area during the last days of battle.

Following the banzai attack and a final mop up of the northern tip of the island, Saipan was declared secured on July 9th, 1944. Leading up to and following the victory, the U.S. began a massive rebuilding effort on the island which was to be a strategic command and supply center for the remainder of the war. In the northern portion of the island and in the areas in and around the APE, aerial photos taken in 1945 show a number of roads and structures, many of which were for ordnance storage (Russell and Fleming 1985) (Figure 15). The buildings were connected with a series of coral roads which could be accessed from the main coastal road (ibid.).

Post-WWII and Modern Era

In 1951, the islands were transferred to the Department of the Interior's U.S. Trust Territory of the Pacific (TTP) until Commonwealth status was granted in 1978 and a new government came into power (Defant 2012:73). In 1953 during TTP time, large swaths of Saipan's land were requisitioned by the U.S. Naval Technical Training Unit (NTTU) (Figure 16). From San Roque north to Marpi and Banaderu, and east to Unai Nanasu, the northern sector encompassed nearly the entire northern quarter of the island. The unit was created as a front for covert CIA operations and training as part of a strategic shift to confront the growing threat of communism in the Far East. The harbor area and former NAS Tanapag was used as headquarters for operations to train "Third Force" anti-communist agents, and jungle training likely occurred in the vicinity of the APE. During this time of limited land use, much of the As Matuis area and the rural areas of Saipan as a whole, reverted back to unused agricultural land. A 1976 aerial image shows the winding road along the current ELD corridor overgrown with vegetation and the former agricultural fields unrecognizable (Figure 17).

During the 1980s and 90s, As Matuis homesteads were established and construction began within the neighborhood. In addition, the PACBAR III facility, which encompasses the APE, was developed and the radar array was installed. The radar was repurposed from the *USNS General H.H. Arnold* that was transferred from the Air Force to the Navy in 1964. The ship was reconfigured as a Missile Range Instrumentation Ship and operated first in the Atlantic and later in the North Pacific in the 1970s (Figures 18 and 19). The ship was decommissioned in the early 1980s, but the 30-foot radar dish was salvaged and used at the PACBAR III site. During this time the road to the facility was cleared and the facility site developed for the radar and operations building.



Figure 15: 1945 Aerial photo showing location of project area. Note the massive U.S. installations downslope from Mt. Petosukara.

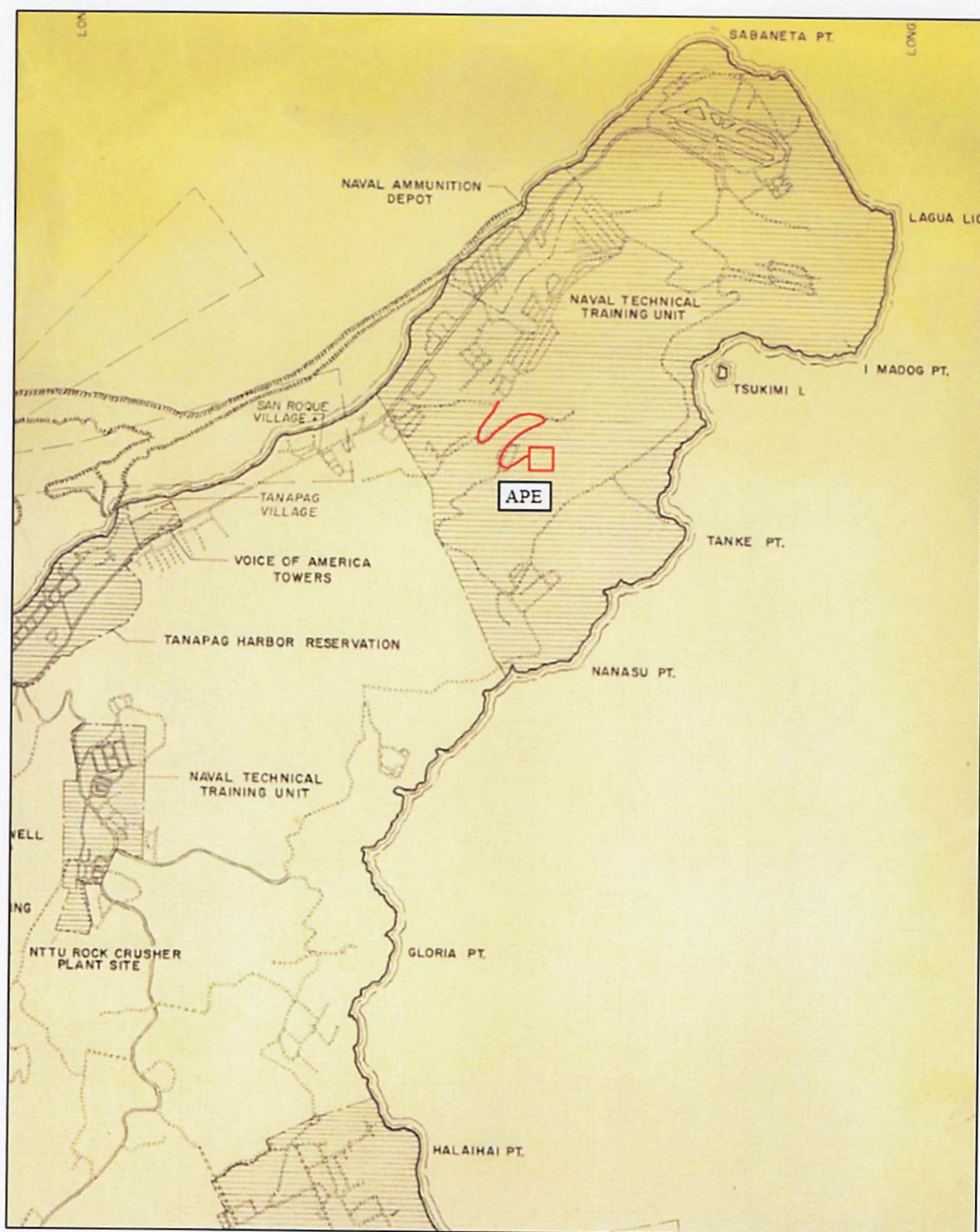


Figure 16: Map of NTTU land in northern Saipan (Russell 2011:43)



Figure 17: 1976 Aerial photo showing the APE and surroundings completely overgrown and undeveloped.



Figure 18: View of General H. H. Arnold pulling into port. PACBAR III utilized the forward dish.



Figure 19: View of General H. H. Arnold underway at an undisclosed location. PACBAR III utilized the forward dish.

IV. PREVIOUS ARCHAEOLOGICAL RESEARCH

Previous archaeological research in the uplands of As Matuis and the APE is limited but provides some general information on prehistoric and historic use of the land in the area of the APE. Four studies are discussed below that provide information on sites and deposits that have been found near the APE. Three additional studies provide information on prehistoric coastal settlement downslope from the APE. (Figure 20).

A literature search at the CNMI HPO identified three studies that were undertaken in or within 500 m of the project area and studies of the coastal area of As Matuis and San Roque and several coastal studies (Figure 21). The coastal studies will be discussed first to outline the prehistoric settlement in the general vicinity and then the inland studies showing that settlement expanded within or very near the current APE.

Archaeological investigations in support of the Achugao Resort were conducted by Russell and Fleming (1988). The research included shovel testing and later mechanical backhoe testing and manual excavation. The survey indicated that the surface had been previously disturbed and identified partially intact cultural deposits below, which contained both Marianas Plainware and Marianas Redware. Russell states that the "area contains a significant number of prehistoric artifacts and possibly human burials dating to both periods of prehistory" (Russell and Fleming 1988:51).

Swift and Athens (1990–1991) carried out archaeological studies along the coastal Achugao noting extensive surface modification. During backhoe trenching, prehistoric deposits and two human burials (one infant and one juvenile) were discovered. Radiocarbon dating of materials collected from these deposits indicated dates from AD 1300–1500 (Latte Period), although some pre-latte phase potsherds (redware) were also identified.

Excavations conducted by Butler from 1988 through 1990 (Butler 1995) provided data indicating that Achugao was occupied around 3470 B.P. The habitation area covered approximately 1,500 square meters in the sandy A and A-B soil horizons located behind the fossil reef. Evidence of permanent or intermittent habitation included large sherds and subsurface features such as pit features and postholes. The pottery recovered was indicative of pre-latte culture and described as having a "high technical quality" with thin vessel walls. Of the nearly 500 rim sherds described, 80 percent were red slip. Radiocarbon dating produced five dates, with the most secure in stratigraphic context being 3,470±120 B.P., representing one of the earliest examples of occupation in the Mariana Islands.

Subsequent inventory survey work near the Butler study was undertaken in 2016 (Perzinski and Dega 2016). The work included mechanical and manual subsurface testing on a 4.1 hectare coastal lot that documented six sites. Two historic sites, three human burials (left *in situ*) and a

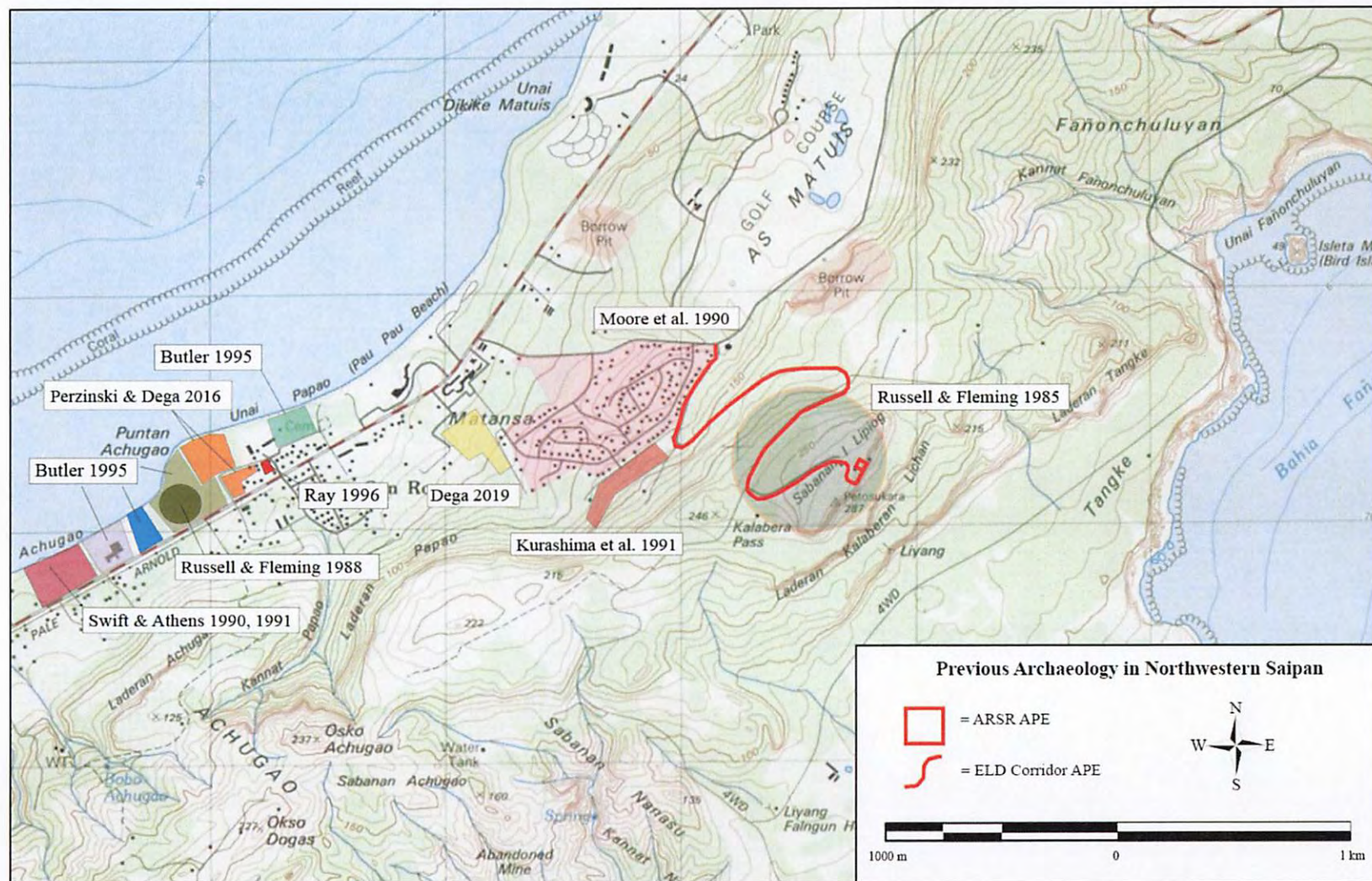


Figure 20: Portion of the Saipan USGS topographic map showing locations of previous archaeological work near the project area.

cultural layer that was radiocarbon dated to the early pre-Latte Period were found, and the pre-Latte Period site helped define the area that was occupied ca. 2,500-3,500 BP.

Inland of coastal San Roque/Achugao, Moore et al. (1990) conducted an archaeological survey on the 35.5-hectare As Matuis Homestead area. Among the 21 sites documented during the project, four were identified as prehistoric (three Latte Period sites and one possible pre-Latte Period deposit -Site 16). The prehistoric sites consisted of a bulldozed latte set, an intact latte set, and a rockshelter with a surface sherd scatter. One possible Spanish site was documented with two *metates* and a *mano* that were commingled with ceramics from the Japanese era and a sling stone. Four sites thought to be Japanese period agricultural features were found consisting of linear and rock mounds. World War II era sites were documented along the cliff faces and included defensive positions with rock walls fronting the cliffs. Two concrete slabs, one limestone rock and mortar wall, and a concrete pad were believed to originate from post-war reconstruction. Additionally, 13 Quonset huts were noted in the project area. These Quonsets were typical semi-permanent fixtures across Saipan used for military and rebuilding efforts following the capture of Saipan.

Kurashima et al. (1991) carried out an archaeological pedestrian survey for a planned condominium project on the east (upland) side of As Matuis homesteads. Eight sites were recorded, including four ordnance storage bunkers, one concrete floor, two pottery scatters, and one stone alignment. The three prehistoric sites included two pottery scatters and a stone alignment. The pottery scatters covered a large area but were diffused. The stone alignment was located in the western corner of the project area and comprised several large limestone boulders and a smaller stone alignment below the ledge of the large boulders. A scatter of Mariana Plainware (latte period), one human cranium fragment, and one Tridacna adze fragment were noted on the surface. It is suggested that the site was a temporary habitation used for inland resource procurement (Kurashima et al. 1991).

The most relevant study occurred within a portion of the current APE. Russell and Fleming (1985) conducted a survey for the current U.S. Air Force PACBAR III radar tracking station and encompassed the upland portion of the current ELD and ARSR facility APE. The survey identified seven sites along the road corridor: four (4) U.S. ordnance storage buildings (Sites 1-4), four (4) Japanese WWII era 81 mm projectiles (Sites 5 and 7), and an incomplete set of human remains from a Japanese soldier (Site 6) (Figure 21). In addition, an isolated scatter of Marianas Plainware was identified in the road cut and appeared to be disturbed. Shovel test units were excavated at the radar facility, but no cultural material was found, and the shallow soil horizon consisted of reddish clay (Russell and Fleming 1985).

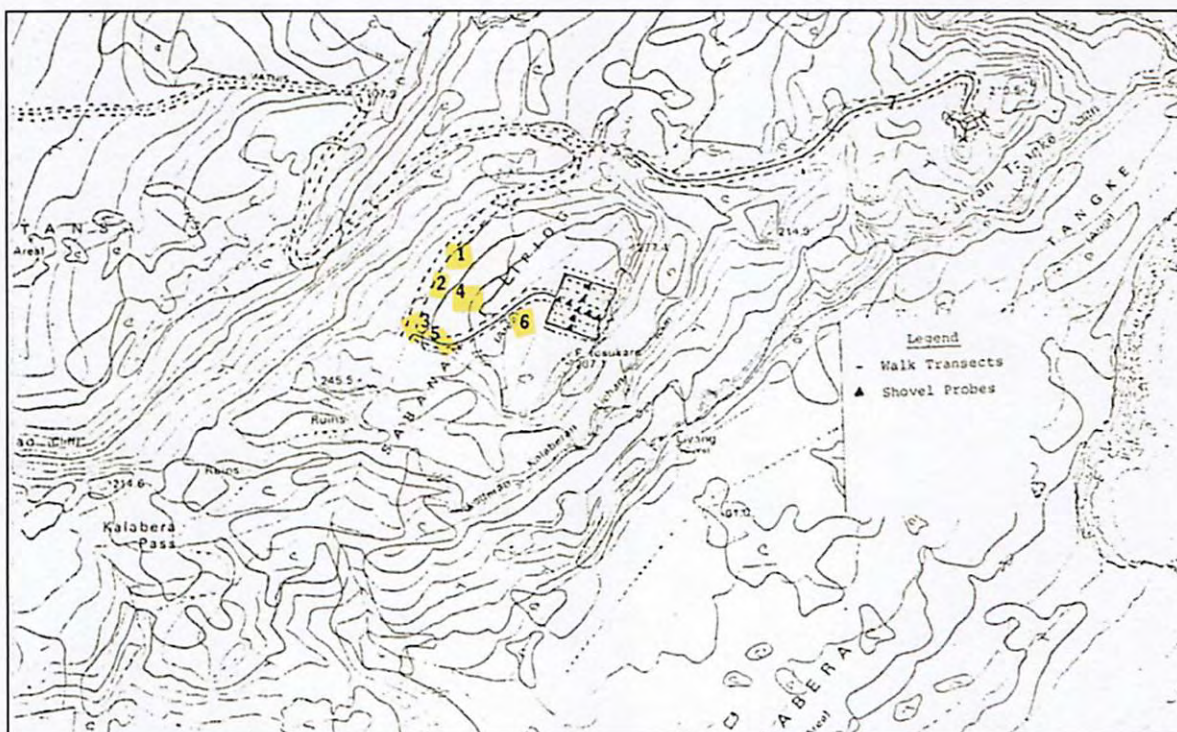


Figure 21: Portion of USGS map showing locations of sites encountered during the 1985 survey. Note: Highlighted numbers are site locations (from Russell and Fleming 1985:24).

V. LAND USE AND SITE EXPECTATIONS

Prehistoric Period

Prehistoric land use along the northwestern coast of Saipan and within the inland locales has been well documented during several archaeological studies (see Russell and Fleming 1985, Moore et al. 1990, Kurashima et al. 1991). The coastal area was clearly utilized by some of the earliest settlers of the Northern Mariana Islands with radiocarbon dates suggesting settlement by ca. 3,500 BP. The deposits were also marked by finely made and highly decorated lime-filled and impressed pottery, ornamental beads, and midden deposits that reflect an ecosystem that is quite different from today. Latte Period land use was extensive and extended into the uplands of As Matuis and likely into the current study area. A latte set was identified by Moore et al. (1990) indicating that long-term or permanent habitation occurred over 1 km inland and at elevations over 100 meters a.m.s.l.

Pre-WWII and post war activity, however, had a profound impact on the ground surface in the project area which likely disturbed or destroyed any pre-existing prehistoric sites or subsurface deposits within 50 cm of the surface. If prehistoric cultural materials are found it will likely be in a disturbed context and include ceramics, shell or stone tools (adzes, hammerstones, slingstones and scrapers) that would have been used in resource gathering and food processing.

Spanish and German Administrations

Spanish accounts of Saipan including a map showing village names in the northwestern coastal area suggest that the area was known to the Spanish. In addition, possible Spanish artifacts (a *mano* and *metate*) were found inland by Moore et al. (1990), but there is no evidence that the Spanish brought the artifacts to the site. Similarly, the German administration did not appear to have attempted any major projects within the APE and thus, any sites attributed to the Germans is highly unlikely.

Japanese Colonial Period

Japanese Period agricultural activities dominated Saipan from the early 1920s through the 1930s. A 1930 land use map shows a secondary road cutting through the APE, but the area was still described as scrub forest and grassland (Bowers 1950). In 1936, the population of Kita-Mura (North Village) numbered 3,013, 90% of whom were Japanese (Reyes, n.d.). By 1938, the northern portion of Saipan including As Matuis has several secondary roads in addition to the main road and railroad (Jordan 2015). As shown in Figure 12, the years just preceding the U.S. invasion of Saipan included the expansion of agriculture into the APE. Several homesteads were located on the hillsides and farm plots appear well tended.

Neither the ELD corridor nor the radar facility APE appear to cross into Japanese homesteads, but the area was undoubtedly used by the farmers. Sites related to Japanese agricultural activities may still exist within the APE, though these would likely be found subsurface and consist of plow zones, Japanese era glass and ceramics, or machinery parts.

WWII

Sites related to WWII and the reconstruction efforts undertaken in its aftermath have been documented within and around the project area boundaries. Moore et al. (1990) documented several WWII era Japanese defensive positions during the survey of the As Matuis homesteads that included cave positions, machine gun nests and Japanese soldier remains. On the downslope side of the ELD corridor, four U.S. ordnance storage bunkers were identified, and along the ELD corridor four additional ordnance storage sites were recorded (Russell and Fleming 1985). Combat is known to have occurred in the area in early July 1944 and the area was secured by July 7.

Based on prior findings, historical references, and maps of the area, WWII era sites are the most likely to be encountered during the inventory survey and monitoring. Expected site types would include combat areas, defensive positions and Japanese KIA. These sites would be represented by concrete slabs, sheet metal from Quonset huts, stacked limestone, UXO, rifle cartridges and human skeletal remains.

Post-War and Current Land Use

Following the exit of U.S. military administrators, the project area was within the northern sector of the Naval Technical Training Unit. The land in the area of the APE, however, does not appear to have been utilized and by 1976 it was overgrown and undeveloped. In the 1980s and the tail end of the Cold War Era, the site was developed for the PACBAR III radar facility. The grassy lands near the summit of Mt. Petosukara were cleared and graded and the radar array and operations building were constructed.

Site expectations include the radar array and operations building that are still standing (Figure 22). Previous archaeological work conducted on-site for the facility development included shovel testing in the footprint of the site, but did not yield any cultural deposits (Russell and Fleming 1985).



Figure 22: View north of the PACBAR III radar and operations building.

V. RESEARCH QUESTIONS

The archaeological work proposed in this planning document aims to identify and analyze any prehistoric or historic sites, features or deposits encountered during the inventory survey. The research questions posed for this project will be addressed following the collection and analysis of data generated from the inventory survey and monitoring.

Prehistoric Period

1) What is the timeframe of land use in the APE during the prehistoric period? What types of artifacts or deposits are extant and what types of activities do they imply? Did any habitation occur?

Some of the earliest settlement in Saipan have been documented along the northwest coast, approximately 1.8 km west of the APE. Settlement continued through the Intermediate and Latte Periods which showed changes in pottery types, artifact assemblages and diet (based on marine invertebrate midden deposits). Latte and evidence of pre-Latte land use has been found inland of the coast and near the APE.

Evidence of Latte and pre-Latte activity in the vicinity has been documented along the northwest coast (Russell and Fleming 1988, Swift and Athens 1990, Butler 1995, Perzinski and Dega 2017). Phases of prehistoric settlement are often identifiable by a variety of observable characteristics on the ceramic assemblage including rim-type, surface treatment, shape, thickness, decoration and temper. The presence of ceramics in the archaeological record is routine in the Marianas and has been found in both surface and subsurface contexts including the APE. Given the known settlement and use of the inland regions during the Latte Period, any additional information that can be recovered from the APE will aid in understanding how and to what extent the landscape was utilized in prehistoric times.

Pre-War Japanese Sites

2) Is there evidence of pre-WWII Japanese Era sites within the APE? Are any structures or deposits attributable to a homestead site?

The ELD corridor extends through former agricultural land and appears to pass a former homestead. Homesteads often had multiple structures which may not be apparent of historic maps or photos.

WWII Era

3) Are remnants of Japanese defensive sites or positions identifiable along the ELD corridor or radar site APE? Is there evidence of battle (e.g. UXO, rifle cartridges, military hardware, skeletal remains) along the corridor or radar APE?

Historic maps, photos and accounts, and previous archaeological research indicate that military installations, ordnance storage, hardware, and human skeletal remains left in the battlefields were within or very near the APE. Ammunition and ordnance storage bunkers have

been found along the ELD corridor and remains of a Japanese soldier were identified during the survey for the existing PACBAR III radar facility (Russell and Fleming 1985). Thus, one of the aims of the research will be to identify any remaining sites and correlate the sites to existing photos and maps.

Post WWII Sites and PACBAR III Facility

4) What is the history and significance of the existing PACBAR III facility? What role did it play during its 2 years of operation at the end of the Cold War?

The existing PACBAR III facility was in operation from 1989 to 1991 and consisted of the operations buildings and a 30-foot diameter parabolic radar dish. The C-band radar dish was used for surveillance of missile and satellite systems that passed through the tracking corridor (Miller and Sigler 1983). The dish dates to the 1960s and was previously deployed on the tracking ship *USNS General H. H. Arnold* that was deactivated in 1982 (Miller and Sigler 1983). Though the walls and roof of the buildings are intact, the interiors have been gutted, vandalized, and no longer retain any of their original features. Similarly, the radar has suffered from significant disrepair through rust, vandalism, and overall structural deterioration.

Though Cold War sites are often considered for listing under Criterion A (associated with events that have made a significant contribution to the broad patterns of our history), “mere association with historic events or trends is not enough, in and of itself, to qualify” (NRHP 1995:12). Due to the site’s age (less than 50 years), evaluation of the site under Criteria G would need to be used for consideration for eligibility, and to be considered eligible the site would need to convey “exceptional importance” (NRHP 1995:42). For a site to be considered under this criteria, “exceptional importance” is “applied to the extraordinary importance of an event or to an entire category of resources so fragile that survivors of any age are unusual” (NRHP 1995:42). For the radar dish, which is older than 50 years old, but was repurposed on a Cold War site that is under 50 years old, the site “must be treated under the fifty year consideration” (NRHP 1995:43).

VI. METHODOLOGY

This planning document and the methodology is for the archaeological inventory survey and monitoring phases of work. The methodology covers contextual research and literature review, field methods, laboratory analysis, curation, report preparation, and schedule.

Personnel

Archaeological field personnel involved in this project will include David Perzinski, M.A. (Principal Investigator; PI), Michael Fleming, M.A. and field technicians Lambert Reyes and David Terlaje to assist in pedestrian survey and site documentation. The PI and Mr. Fleming meet the U.S. Secretary of the Interior's standards for conducting archaeological investigations and will be on-site for all fieldwork and ground disturbing activities.

Contextual Research and Literature Review

The contextual research and literature review will focus on historical and archaeological reports and documents that are relevant to the As Matuis area, the existing PACBAR III site, and the APE. Resources from the CNMI-HPO library, historic aerial photographs from HPO and the CNMI Museum, previous archaeological reports and any pertinent research publications were used to develop a land use history of the APE and surrounding area. Cold War era documents will be reviewed to better understand the significance of the PACBAR facility.

Inventory Survey

The purpose of the inventory survey is to identify historic, cultural, and/or archaeological resources along the ELD corridor and within the radar facility site. The survey aims to evaluate the impact of the proposed project on these resources. The location, depth, context, and contents of any archaeological or historical resources in the project area will be identified and properly recorded. A pedestrian survey of the ELD locations will entail surveying a corridor that is 10-m wide from the edge of the asphalt or dirt road. The survey will assess the presence/absence of sites, structures, objects, artifacts, surface scatters and human skeletal remains on the surface. The team will consist of two archaeologists walking 3 meter transects along the corridor and will cover any area that may be disturbed by the excavations of the power pole pits, or where machinery will be used to clear an area where the pits will be excavated or drilled. Photographs and written descriptions will be used to document the existing PACBAR III facility.

Inventory Survey Protocols:

1. The pedestrian survey will involve walking approximately 3 m transects along the ELD corridor to achieve 100% coverage of the APE. All sites or features will be flagged and recorded on GPS. Once the survey is complete all sites, features, deposits, structures or scatters will be documented with photographs, scale plan view drawings, elevation drawings (if warranted), and written descriptions.

2. If surface deposits are encountered, samples will be collected for analysis. If significant cultural deposits are identified, HPO will be notified to discuss any additional mitigation needs. All sampled locations will be specified in plan view illustrations and photographs. If samples are removed for analysis, they will first be recorded *in situ*.
3. If significant cultural deposits are found, controlled manually excavated test units may be employed to determine the extent and disposition of the deposit, site or feature. Prior to conducting the additional data recovery work the archaeologist will consult with HPO on the number and location of the test units. The test units will consist of 1 m by 1 m or larger areas that will be screened through 1/4-inch or smaller mesh to ensure the complete recovery of cultural materials. The stratigraphic sequence exposed in the test units will be recorded using notes, drawings, and photography. Soils will be described following U.S. Department of Agriculture Soil Survey Manuals. Munsell color descriptions will be recorded along with reference to moisture condition (wet, moist, dry), texture, and other characterizing attributes (e.g. thickness of deposits, boundary definition, etc.).
4. Artifacts, midden, and charcoal will be collected and bagged for laboratory analysis. If a discreet charcoal sample is obtained from a prehistoric deposit, a sample may be sent to Beta-Analytic for radiocarbon dating.
5. Documentation of the existing radar dish and operations building will include multiple photographs from each elevation and corners, and videography to record a 360-degree representation of the facility. When possible, a photo board with the project, location, view and photographer's initials and date will be included. A photographic scale will be used where possible.
6. If human remains are identified, then "Procedures for the Treatment of Human Remains" adopted by the CNMI in 1999 will be followed (see Appendix A). All ground disturbing work (archaeological or construction related) will cease in the immediate vicinity of the find and the CNMI-HPO will be contacted. No human remains will be recovered unless authorized by the HPO.

Monitoring Procedures

The following monitoring procedures pertain to the excavations that will occur during the excavation for the ELD power line poles and the removal of the existing PACBAR III facility. During the excavation of the pits the following monitoring procedures will be followed:

- 1) Prior to the start of any ground disturbing construction activities, the construction crew will be briefed on the likely archaeological findings that could be encountered and the procedures that will be followed if cultural or skeletal material is encountered.
- 2) The on-site archaeologist will monitor ground disturbing activities related to the power pole excavations. This includes the ground surface where work is occurring and the excavation of the pits. Once sediment (i.e. B/C-horizon) or bedrock is encountered, monitoring may cease in that location.

- 3) If subsurface deposits or sites are encountered during monitoring, the construction crew will give the archaeologist ample time to document the findings. While documentation is underway the construction personnel may continue to work in different areas of the APE or prepare the location for excavation.
- 4) The stratigraphic sequence exposed in the pits will be recorded using notes, drawings, and photography. Soils will be described following U.S. Department of Agriculture Soil Survey Manuals. Munsell color descriptions will be recorded along with reference to moisture condition (wet, moist, dry), texture, and other characterizing attributes (e.g. thickness of deposits, boundary definition, etc.).
- 5) If intact archaeological deposits are encountered within a pit, a temporary site number will be assigned and if deemed necessary, a site number will be obtained from the HPO and will be used as a permanent reference. The on-site archaeologist may conduct limited subsurface testing to characterize and evaluate the findings.
- 6) The on-site archaeologist will inspect all the material removed from the pit and any potential cultural materials redeposited in the spoil pile will be examined and documented and/or collected in accordance with the recordation procedures outlined below.
- 7) All recovered artifacts will be logged in a field form and placed in a bag or box with pertinent provenience information. All artifacts will be photographed *in situ* if possible, and key information (e.g. description, location, direction, date, photographer, etc.) will be recorded in a photo log. Only significant museum quality artifacts, or samples from subsurface features will be recovered for laboratory analysis.
- 8) If subsurface deposits such as hearth features or earth ovens are encountered, samples of the charred organic material may be collected for radiocarbon analysis.
- 9) The locations of the pits and deposits subjected to archaeological investigation will be recorded with sufficient information to be accurately depicted on a project/site map. This may be accomplished through the recordation of site grid, tape and compass and/or GPS coordinates.
- 10) If human remains are identified, then “Procedures for the Treatment of Human Remains” adopted by the CNMI in 1999 will be followed (see Appendix A). All ground disturbing work (archaeological or construction related) will cease in the immediate vicinity of the find and the CNMI-HPO will be contacted. No human remains will be recovered unless authorized by the HPO.

Laboratory and Data Analysis

Analysis of the artifact assemblage will take place in Saipan or Tinian and ArchaeoNMI will develop an agreement with the CNMI-HPO to coordinate the transfer of the artifacts to and from Tinian if necessary. All artifacts will be assigned a specimen number during collection. The laboratory analysis will include:

1. Classification of artifact type
2. Artifact function

3. Material type
4. Condition
5. Locational data (GPS)
6. Stratigraphic context
7. Time frame (pre-latte, latte, Spanish, German, Japanese, WWII, etc.).
8. Relevant measurements (count, length, width, thickness, weight).
9. Photographs
10. Comments (evidence of use, wear, retouching, punctuation, incising, rim sherd, etc.).

Data analysis will focus on spatial relationships of any sites or deposits, stratigraphic information, midden deposits and the above-described artifact analysis. The GPS data collected during the project will be used to develop maps of the locations of the finds and extent of any relevant deposits. All GPS data will use the degree decimal system and the World Geodetic Survey (WGS 1984) datum.

Cultural materials that are collected *in situ* or through screening will be identified and classified as stated above. Marine invertebrate and non-human bone midden will be counted, weighed and analyzed, and identified to the lowest possible taxonomic unit. Any human skeletal material that is identified will adhere to guidelines outlined in *Procedures for the Treatment of Human Remains in the CNMI* (HPO n.d.) (Appendix A).

Curation

Following the artifact analysis, the samples will be repacked in archival quality packaging with all relevant project and locational data. Artifacts that require other containers or boxes will be labeled on the outside of the package as well as with labels inserted into the packaging or box. All artifacts will be stored at ArchaeoNMI's office in Tinian until the completion of the project, at which time they will be returned to Saipan and curated at the CNMI Museum of History and Culture.

Schedule of Deliverables

Following the inventory survey, an end of fieldwork letter will be produced and submitted to CNMI-HPO within 10 days of completion of the fieldwork. The letter will summarize the work that was completed and provide an overview of the findings. The EOF letter will be sent as a PDF email attachment. A draft Archaeological Inventory Survey report will be submitted to the CNMI-HPO within 60 business days of the completion of the work. The report will be submitted as a PDF email attachment for HPO review. After the report is reviewed and commented upon, an edited final report will be submitted within 30 days following the review. Upon acceptance of the report two bound copies and an electronic copy of the Final Report will be submitted for the HPO archives.

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VIII. APPENDIX A

PROCEDURES FOR THE TREATMENT OF HUMAN REMAINS IN THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

**Procedures for the Treatment of Human Remains
in the Commonwealth of the Northern Mariana Islands**

COPY

I. Policy Statement

It is the policy of the Division of Historic Preservation to ensure that human remains, regardless of ethnic affiliation, are protected from disturbance whenever practical and afforded respectful treatment under all circumstances. It is also recognized that *in situ* preservation for some classes of remains is not always possible or desirable, and that ultimate disposition will be determined based on priorities established for a particular class of remains. Finally, the Division of Historic Preservation places priority on the repatriation of indigenous human remains held in museum and private collections around the world.

II. Definition

The term "human remains" used in these procedures, refers to the complete or partial human skeletal assemblage, including dentition. Excluded from this term are purposefully-fashioned tools and implements made of human bone, such as bone spear points, needles, etc. Human bone artifacts shall be treated as artifacts rather than human remains.

III. Classes of Human Remains

The Division of Historic Preservation recognizes four classes of human remains. These are as follows:

Class I. *Ancient Chamorro*: This class encompasses remains of the indigenous people of the Northern Mariana Islands interred in archaeological sites throughout the islands.

Class II. *Pre-World War II Historic*: This class encompasses remains interred during a period starting with the resettlement of Saipan and Tinian in the early 1800s and ending at the outbreak of World War II. Human remains from this period can be expected in old cemeteries and will represent indigenous Chamorro and Carolinian populations.

Class III. *World War II*: This class encompasses the casualties of World War II. While the large majority of this class of remains will be of Japanese and Okinawan affiliation, other ethnic groups may also be involved, including but not necessarily limited to Chamorro, Carolinian, Korean and American.

Class IV. *Modern*: Human remains in this class encompass individuals who have been interred after World War II, including the remains of individuals who met sudden death through natural, accidental and criminal means.

IV. Discovery and Identification

In cases where human remains are discovered, either accidentally or through planned archaeological investigations, the first priority will be to determine to which class they should be assigned. In most instances, this will be done under the supervision of a qualified professional archaeologist with osteological training. In other cases, this determination will be made by Division of Historic Preservation staff with the guidance of the Staff Archaeologist or by forensic specialists of the Department of Public Safety and/or the Federal Bureau of Investigation. To the extent possible, initial identification as to class will be performed *in situ*. Appropriate treatment shall then follow.

V. Treatment

Class I:

(1) *In situ* preservation.

Top priority will be given to the *in situ* preservation of all Class I remains. Special efforts will be made to achieve this through the redesign of construction plans and other appropriate mitigative measures. In cases where remains are left in place, basic data will be recorded and maintained in the site files of the Division of Historic Preservation.

(2). Exhumation, analyses and reburial.

In cases where *in situ* preservation is not practical, the human remains shall be carefully and respectfully removed from the impact area under the supervision of a qualified archaeologist or Division of Historic Preservation staff. The burial will then be subjected to appropriate scientific analyses in accordance with a research design previously approved by the Division of Historic Preservation. The aim of the analyses is to expand our knowledge of and appreciation for ancient Chamorro culture. Upon completion of the analyses, human remains will be returned to the Division of Historic Preservation for reburial. Priority will be given to reburial of remains at or near to the site from which they were exhumed. In cases where remains were exhumed in advance of public or private construction projects, the Division of Historic Preservation shall require the responsible party to dedicate land within the development for reburial. They will ensure that no further disturbance to this area is allowed. In most instances, such reburial sites will be marked with appropriate memorial and interpretive devices. In cases where it proves impractical or impossible to rebury remains at or near the original burial site, another location shall be determined based on consultations between the Division of Historic Preservation and the responsible party. The expense of exhumation, analyses and reburial will be the borne by the responsible party.

Class II:

(1). *In situ* preservation.

Top priority will be given to the *in situ* preservation of all Class II remains. Special efforts will be made to achieve this through the redesign of construction plans and other appropriate mitigative measures. In cases where remains are left in place, basic data will be recorded and maintained in the site files of the Division of Historic Preservation.

(2). Exhumation, analyses and reburial

In cases where *in situ* preservation is not practical, the human remains shall be carefully and respectfully removed from the impact area under the supervision of a qualified archaeologist or Division of Historic Preservation staff. Should the remains be determined to be of Carolinian affiliation, they will be turned over to the Carolinian Affairs office for reburial at an appropriate location. Should the remains be Chamorro, arrangements will be made with the church to reinter the remains within an established cemetery. In both instances, osteological analyses will be limited to basic field observations made during the disinterment process. The expense of exhumation and reburial will be borne by the responsible party.

Class III

In cases where the remains have been determined to be those of Japanese nationals:

(1). Exhumation, temporary storage and repatriation.

Depending on the circumstances, the human remains shall either be disinterred under direction of the Division of Historic Preservation, or in cases of mass graves, with the assistance of the Japanese Ministry of Health and Welfare. Basic osteological field observation shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. Special attention shall be directed to recovering artifacts that might aid in determining the identity of the individual. In accordance with an agreement between the Ministry of Health and Welfare and the Division of Historic Preservation, Japanese World War II remains shall be temporarily stored in a shipping container located at the Division's office at the Airport area. The remains will be kept in storage until such time as they can be officially turned over to the Japanese government for cremation and repatriation to Japan.

In cases where the remains are identified as being of Carolinian or Chamorro war victims:

(1). Disinterment and Reburial

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. Should the remains be identified, the Division of Historic Preservation shall consult with surviving family members to determine an appropriate final resting spot. In other instances, the Carolinian Affairs Office and the Catholic Church will be consulted, as appropriate.

In cases where the remains are identified as being of Korean war victims:

(1). Disinterment, Temporary Storage and Repatriation

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. The remains will then be placed in temporary storage until arrangements with the Korean government can be made for repatriation.

In cases where the remains are identified as being a U.S. serviceman:

(1). Disinterment, Temporary Storage and Repatriation

The remains will be excavated as carefully and completely as possible. Special attention shall be directed to locating diagnostic artifacts that might aid in determining the identity of a particular set of remains. Basic osteological field observations shall be made. In cases where live ordnance is present, the Division of Historic Preservation shall notify the Emergency Management Office for assistance. The Division shall also contact the US Department of Defense for special forensic assistance. The remains will then be turned over to the US government for final disposition.

Class IV

(1). Identification and Reburial

Should the Division of Historic Preservation suspect that human remains fall into Class IV, it shall immediately notify the Department of Public Safety and the Department of Public Health. The Division shall then provide technical assistance to the Department of Public Safety particularly if foul play is suspected. This shall include fully documenting the remains. Should the remains be positively identified, the next of kin shall be notified to arrange for final disposition. Should the remains remain unidentified, they will be turned over to the Department of Public Health for reburial.

VI. Repatriated Human Remains

It is the priority of the Division of Historic Preservation to actively seek out and affect the repatriation of human skeleton collections that exist outside of the Commonwealth. The large majority of such collections will comprise Class I remains. Much smaller collections of Class II remains may also be encountered. Once identified, the Division of Historic Preservation shall initiate consultation with the appropriate party to effect repatriation. Special attention shall be directed at acquiring as much provenience data relating to the collections as possible, so that this information can be used when deciding upon reburial sites. The Division should also ensure that human remains are properly packaged to avoid damage during shipment. Once acquired, these remains shall be reburied on their island of origin as consistent with class treatment.

VII. Human Remains at the Division of Historic Preservation

A substantial collection of Class I human remains is currently in the possession of the Division of Historic Preservation. These comprise human remains disinterred in advance of construction projects prior to the establishment of these procedures. The Division shall take necessary steps to have these remains reburied at appropriate locations on Rota, Tinian and Saipan, as appropriate.

Appendix B4: Archaeological Survey Coordination Correspondence

- Submittal Letter for Proposed Archaeological Inventory Survey and Monitoring Planning Document - ArchaeoNMI to HPO,
 - Approval of Proposed Archaeological Inventory Survey and Monitoring Planning Document - HPO to ArchaeoNMI
 - End of Fieldwork Letter - ArchaeoNMI to HPO
 - HPO Email Acknowledging Completion of Fieldwork and No Objection to Proceeding with Consultation
-



June 5, 2025

Mrs. Mertie Kani, Historic Preservation Office
John Palacios, Historic Preservation
Martha Yiftheg, Historian
Division of Historic Preservation
Department of Community and Cultural Affairs
PO Box 500090 CK Saipan, MP 96950

Re: *Draft* Archaeological Inventory Survey and Monitoring Planning Document for a Proposed Federal Aviation Administration ARSR Facility, As Matuis, Saipan, Commonwealth of the Northern Mariana Islands

Dear Mrs. Kani, Ms. Yiftheg and Mr. Palacios:

Please see the attached archaeological planning document for the proposed Airport Route Surveillance Radar (ARSR) and electrical line distribution (ELD) corridor in As Matuis, Saipan, for your review. In consultation with your office, this planning document is for a program of archaeological inventory survey and monitoring for the development of the site and ELD corridor. The plan adheres to the Guidelines for Preparing Archaeological Research Designs in the Commonwealth of the Northern Mariana Islands and included in this planning document is information relevant to the project area and APE including the environmental, historical, and archaeological contexts, research questions, methodology, field protocols, curation, personnel and their qualifications, and reporting timelines.

Thank you for your time in reviewing this document and please feel free to contact me if you have any questions.

Kind Regards,

A handwritten signature in black ink, appearing to be 'D Perzinski', is located below the 'Kind Regards,' text.

David Perzinski, M.A.
ArchaeoNMI
PO Box 520433, Tinian, MP
Phone No. (670) 785-8792
Email: dperzinski@gmail.com



Commonwealth of the Northern Mariana Islands
Office of State Historic Preservation Officer
Department of Community & Cultural Affairs
Capitol Hill, Chuuk Court, Bldg. 1231
Tel: (670)664-2587, Caller Box 10007
Saipan, MP 96950



June 24, 2025

David Perzinski, M.A.
AchaeoNMI
PO Box 520433
Tinian, MP 96950
(670)785-8792
dperzinski@gmail.com

Serial: 37525
File: 6.7.25.52

**SUBJECT: REVIEW OF ARCHAEOLOGICAL INVENTORY SURVEY AND MONITORING
PLANNING DOCUMENT FOR A PROPOSED FEDERAL AVIATION ADMINISTRATION
ARSR FACILITY, AS MTUIS, SAIPAN, COMMONWEALTH OF THE NORTHERN MARIANA
ISLANDS**

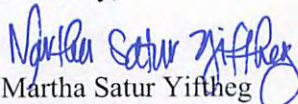
Dear Mr. Perzinski,

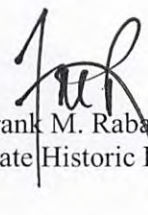
On behalf of the Historic Preservation Office (HPO), we are writing to thank you for submitting a request to review the Archaeological Inventory Survey and Monitoring Planning Document for a Proposed Federal Aviation Administration ARSR Facility located in the village of As Matuis, Saipan, Commonwealth of the Northern Mariana Islands (CNMI). Please be advised we have completed the review of the proposed planning document.

After careful review and consideration of the submission, we accept the archaeological research design and planning document as a sufficient mitigation measure for the archaeologically sensitive area of potential effect (APE).

We appreciate your cooperation and attention to this matter and your commitment to ensuring compliance with the Historic Preservation Office. Should you have any questions or concerns regarding this review, please contact us at (670)664-2120.

Sincerely,


Martha Satur Yifheg
Staff Historian


Frank M. Rabauliman
State Historic Preservation Officer

ARCHAEOLOGICAL SERVICES
PO BOX 520433, TINIAN, MP 96952
PHONE: (670) 785-8792

August 4, 2025

Mrs. Mertie Kani, Historic Preservation Office
John Palacios, Historic Preservation
Martha Yiftheg, Historian
Division of Historic Preservation
Department of Community and Cultural Affairs
PO Box 500090 CK Saipan, MP 96950

**Re: End of Fieldwork Letter: Archaeological Inventory Survey for the FAA ARSR Facility,
As Matuis, Saipan, Commonwealth of the Northern Mariana Islands**

Dear Mrs. Kani, Mr. Palacios and Ms. Yiftheg:

This letter is to notify the CNMI-HPO that ArchaeoNMI has recently completed an archaeological inventory survey for a proposed Airport Route Surveillance Radar (ARSR) and electrical line distribution (ELD) corridor in As Matuis, Saipan, Commonwealth of the Northern Mariana Islands (Figures 1-4). The area of potential effect (APE) extends from Route 320 to the existing deactivated Pacific Barrier Radar, Station 3 (PACBAR III) on Mt. Petosukara. The fieldwork took place from July 13-17, 2025, and was completed by David Perzinski, M.A. (ArchaeoNMI Principle Investigator).

This End of Fieldwork (EOF) letter discusses the project, location, methodologies utilized during the field research, a summary of fieldwork results, recommendations and a timeline for completing the report document.

Project Description

The proposed project will consist of the demolition of the PACBAR III radar array, the adjacent operations building, the construction of a more modern ARSR facility, and the installation of an upgraded ELD. The APE at the proposed radar facility measures approximately 1.5 acres (0.61 hectares) and the ELD corridor extends approximately 1.5 miles (2.4 kilometers) from Route 320 up Chalan Matuis/Pale Arnold Road and terminating at the ARSR atop Mt. Petosukara.

Methodology

Fieldwork was completed in accordance with the CNMI-HPO reviewed research design (Perzinski 2025). The pedestrian survey consisted of surveying both sides of the ELD corridor in a transect that extended up to 10 m from the road shoulder. Along certain areas the terrain ascended or dropped too steeply to survey and thus was not investigated. In these cases, the survey stopped

at the top or toe of the slope. When sites were identified they were flagged and recorded with GPS coordinates. Following the completion of the survey, the sites were recorded with a unique reference number, GPS coordinates, and annotated with information about what was being recorded. Where possible, the sites were documented with scale, plan view maps, multiple photographs, locational data and written descriptions.

Atop Mt. Petosukara, the existing PACBAR III facility was surveyed, mapped and photographed. The buildings were measured in plan view with notes made on architectural features and subsurface features. The buildings were photographed around the exteriors and when possible, in the interior compartments.

Soils and Vegetation

Three soil orders make up the APE deposits. On the downslope side are Chinen-Takpochau (Young 1989). The Chinen-Takpochau soils are described as “Very shallow, well drained, nearly level to strongly sloping soils; on limestone plateaus and side slopes” (ibid.:9). The soils are common across Saipan and make up 21% of the island. Much of this soil type is found in Kagman and southern Saipan, but pockets are found in the northern section of the island. Within the ELD corridor the soils appeared disturbed from road construction. Takpochau-Chinen-Rock Outcrop are found in the midslope section of the APE. Along the edge of the road the soils were disturbed but appeared relatively intact 5-10 m from the road shoulder. The radar site at the top of the mountain is within Banaderu-Rock Outcrop and consist of “shallow, well drained, nearly level to moderately steep soils, and rock outcrop; on limestone plateaus” (Young 1989:8). The southern developed portion of the radar site has no natural soils.

The vegetation along the power line corridor varies from grassy open areas to tangantangan to mixed limestone forest with breadfruit, *paipai*, pandanus and *alum*. Introduced trees from historic and modern homesites are present as well and include *Acacia confusa*, flame tree, curry tree, mango and citrus. The APE and built area of the current PACBAR III facility is mowed grass. To the north in the undeveloped portion of the APE is tangantangan forest with a few remaining *paipai* trees. Overall, the vegetation is indicative of a previously disturbed landscape with some native reforestation occurring along Area 3.

Pedestrian Survey

The pedestrian survey was divided into two parts: the ELD corridor and the radar facility APE. The ELD corridor has a total length of 2.4 km (1.5 miles) and extends up As Matuis Road to the current PACBAR III radar facility. The proposed ARSR facility APE covers a total area of 6,100 sq. m with approximately 3,000 sq. m being completely developed and 3,100 sq. m remaining within secondary tangantangan forest on the north side of the facility. Both areas were surveyed, and all sites were documented. In addition, the buildings and radar associated with the PACBAR III facility were recorded with plan view maps and photo documentation.

The ELD corridor will have a total of 49 poles that will replace the existing wood poles. The route extends from the one-million gallon water tank up Pale Arnold Road and Panglao Place

and the survey was conducted on both sides of the road. Pale Arnold Road forms an “S” shape as it ascends Mount Petosukara and branches off at Panglao Place near the 1 Mile marker. For description purposes, the corridor was divided into 4 areas (Figure 5).

Area 1 is on the northern and western part of the “S” on the lower section of the corridor and traverses through a residential neighborhood (Figure 6). The new power poles are slated to be on the northwest (downslope) side of the road along this stretch and will be on a level, previously graded shoulder of the road. The area is dominated by guinea grass on the downslope side and tangantangan/secondary forest on the upslope side. The entire area was negative for any historic properties.

Area 2 forms the middle portion of the “S” and is cut into a steep slope on the southwestern end of the stretch of road (Figures 7-9). The existing poles are along the upslope side on the southwestern end and are 1.5-2 m off the road shoulder. The upslope side of the corridor is along a mixed limestone forest that has breadfruit, curry tree, mango and other fruit bearing trees. A concrete block tank was observed within this area and was likely a remnant from a former house site (modern). The downslope side and the area near the bend is grass and mixed secondary forest.

Area 3 is the last stretch of Pale Arnold Road before it branches off onto Panglao Place and the radar facility. This section of ELD corridor drops steeply on the downslope (northwest) side where the power poles are aligned (Figures 10 and 11). On the northeast side of the road is a cut ditch for drainage. Above the ditch on the southeast side of the road the land drops into a natural gulch near the bend on the northeast. The southeast end, however, rises above the ditch onto a slightly sloped terrain. Along this area were three Quonset huts within the 10 m corridor and a fourth that is outside the corridor (see Site Description section below). Based on power pole placement plans, the new power line distribution will be on the opposite side of the road from the Quonsets.

Area 4 begins at the turnoff from Pale Arnold Road onto Panglao Place and the approach to the radar facility (Figures 12 and 13). One of the Quonset buildings is at the northeast corner of the intersection. The vegetation in the area is mixed with limestone forest species and non-native grasses, and based on the 1945 aerial photo, the whole area was once cleared of vegetation. The only site observed along this stretch was a possible foxhole or machine gun position that is within the APE but far enough in from the road to avoid any disturbance by power pole installation.

The existing PACBAR III facility and proposed location of the new ARSR facility is at the summit of Mount Petosukara. Figure 14 shows the layout of the existing buildings within the APE. The site has a guard house, water tank and pump house on the lower end with a concrete lined ponding basin just above. On the south side of the site within the DFEMS training area and just upslope from the ponding basin is a maintenance building. To the north of the maintenance building is an operations building, and on the northeast corner of the operations building is the existing PACBAR III radar dish structure. The area on the north side of the ops building is covered in asphalt and concrete and has several subsurface boxes or tanks that contain electrical

components and pipes. The voids were all filled with water making the function of each difficult to discern.

On the north side of the buildings and radar is an area of undeveloped tangantangan forest that is part of the APE. The area was surveyed in 5 meter transects and stayed within the existing fenced area that roughly forms the perimeter of the APE. The area has a massive earthen push pile on the south side that is at the level of the PACBAR III facility and then slopes down to the north and west. The entire area was surveyed and was devoid of any archaeological sites or deposits.

Site Descriptions

Along the ELD corridor three previously identified sites and one new site were identified and documented (Figure 15) (Table 1). Site 1-3 consists of three identical Quonsets located along Area 3 near the turnoff to the radar facility. An additional Quonset outside the APE corridor was identified behind (upslope) of TS-2 during the Fleming and Russel survey in 1985 but was not examined during the current research. TS-5 consists of a single fox hole or defensive position that is located on the south side of Panglao Place, west of the additional parking area for PACBAR III. The third site is the PACBAR III radar and associated buildings.

TS-1 through TS-4 are identical concrete slabs that support 15.5 m long by 6 m wide by 3.3 m high Quonset huts that functioned as ordnance storage units (Figures 16-24). The structures are covered with soil, presumably to limit any damage if an inadvertent detonation were to occur. Three of the structures are within the power line corridor and are spaced 80-85 m apart but are on the side of the road opposite from the proposed locations of the new power poles. On the outside of the Quonset doors are 3.7 m long by 6.0 m wide concrete slabs that appear to be the loading docks. The slabs are raised over 70 cm from the ground to allow trucks to onload or offload ordnance more safely. The Quonset huts are alike in all respects except for condition. TS-1 is partially collapsed on the road facing side, TS-2 is missing its doors, and TS 3 is missing its doors and front metal paneling. A fourth Quonset is outside the APE, to the east of TS-2.

TS-5 consists of a shallow, 2.4 m long by 1.1 m wide by 55 cm deep fox hole or other defensive position that would have been used during the Battle of Saipan (Figure 25 and 26). A disjointed ring of limestone boulders is placed around the perimeter of the site which would have provided enough cover for a single rifleman. No WWII artifacts or gear were found in or around the site. Based on the proposed locations of the power poles, it is unlikely that the site will be affected by any auguring or clearing related to the project.

In addition, the existing PACBAR III facility atop Mt. Petosukara was documented. Table 2 lists the dimensions and attributes of each structure. In all, the radar and five structures were documented with plan view drawings and elevation photographs. Figures 27-40 show elevation photos of each structure, and the complete photographic survey with individual plan views will be included in the AIS and Monitoring Report following the conclusion of the monitoring portion of the project.

Table 1: Sites Located Along Power Line Corridor.

Site	Length	Width	Height	Function	Condition	Comments
TS-1	19.2 m	6 m	3.3 m	Ordnance storage	Poor	Partially collapsed on NW side
TS-2	19.2 m	6 m	3.3 m	Ordnance storage	Fair	Front doors missing
TS-3	19.2 m	6 m	3.3 m	Ordnance storage	Fair	Front doors and paneling missing
TS-4	Outside APE					
TS-5	2.4 m	1.4 m	55 cm deep	Foxhole (defensive)	Poor	No artifacts

Table 2: Structures Related to PACBAR III Facility.

Structure #	Length	Width	Height	Function	Condition	Comments
Radar (base)	21' 0" 6.4 m	20' 6" 6.25 m	2' 06" 0.76 m	Base for radar dish	Fair	Radar interior has been gutted
1	148' 08" 48.4 m	51' 10" 15.8 m	19' 02" 5.84 m	Operations building	Exterior Good; Interior Poor	Interior has been gutted and repurposed
2	81' 04" 24.8 m	32' 05" 9.9 m	16' 02" 4.9 m	Maintenance building	Exterior Good; Interior Poor	Interior has been gutted
3	11' 04" 3.46 m	14' 08" 4.47 m	9' 06" 2.90 m	Guard shack	Exterior Good; Interior Poor	Interior has been gutted
4	13' 05" 4.09 m	13' 05" 4.09 m	9' 02" 2.79 m	Pump house	Exterior Good; Interior Poor	Interior has been gutted
5	22' 06" 6.86 m	22' 01" 6.73 m	11' 04" 3.46 m	Water tank	Good	Intact

Summary and Recommendations

An archaeological inventory survey was conducted for a proposed ARSR facility and power distribution line corridor in As Matuis, Saipan. The survey documented three previously identified WWII era American Quonset huts, a possible defensive position, and the existing Cold War Era PACBAR III radar facility. The 81-mm projectiles that were documented during the 1985 survey were not relocated during the present project. TS-1 through TS-4 have been found eligible for the NRHP, while TS-5 and the PACBAR III facility have been found ineligible for the NRHP. The ineligible sites may be eligible for the CNMI register. Archaeological monitoring is recommended for ground disturbing work in the vicinity of TS-1 through TS-5 and during the demolition of the PACBAR III radar and operations building. Table 3 lists the sites with preliminary significance determinations, and Figure 41 shows the location of areas that are recommended for archaeological monitoring during the construction phase of the project.

The Quonset huts are situated along Pale Arnold Road approximately 80-85 m apart and were previously described as ordnance storage sites (Russell and Fleming 1985). The huts are identical in size and layout but are in varying condition. The sites were formerly recommended for preservation and that recommendation is unchanged. Based on the structures' locations on the opposite side of the road from the power pole corridor, it is not likely to be affected by the proposed work. However, monitoring is recommended during the power pole installation along this stretch of Pale Arnold Road.

A possible fox hole for a single rifleman was located within the power line corridor along Panglao Place. The position had a partial ring of boulders around the perimeter but may also be a natural depression or created by land disturbance. The site has been adequately documented, though monitoring is recommended during any construction activities near the site as UXO or war related human remains may be present.

The existing PACBAR III facility is comprised of a radar dish and concrete base, two operation and support buildings, a guard house, water tank and pump house. The entire facility was constructed ca. 1989 though the radar was repurposed from a 1960s era naval vessel. Per the scope of work, the operations building and radar will be demolished while the remaining structures will be turned over to DFEMS for training. Despite the age of the buildings (<50 years) the inventory survey included plan view mapping of the entire facility as well as photo documentation. In consultation with the CNMI-HPO, monitoring is recommended during the demolition of the radar dish.

Based on the above findings, archaeological monitoring is recommended during the excavation for power poles 34-38 and 44. In addition, monitoring is recommended during the demolition of the radar dish (see Figure 41).

Table 3: NRHP Eligibility Determinations and Recommendations.

Site #	Site Function	Age	Condition	Criteria	Recommendations
TS-1	Ordnance Storage	WWII	Fair	A, D	Monitoring
TS-2	Ordnance Storage	WII	Fair	A, D	Monitoring
TS-3	Ordnance Storage	WII	Fair	A, D	Monitoring
TS-4	Ordnance Storage	WII	Fair	A, D	N/A
TS-5	Defensive Position	WII	Fair	Not Eligible*	Monitoring
PACBAR III		Cold War	Fair	Not Eligible*	Monitor demolition activities

* Eligible for CNMI Registry

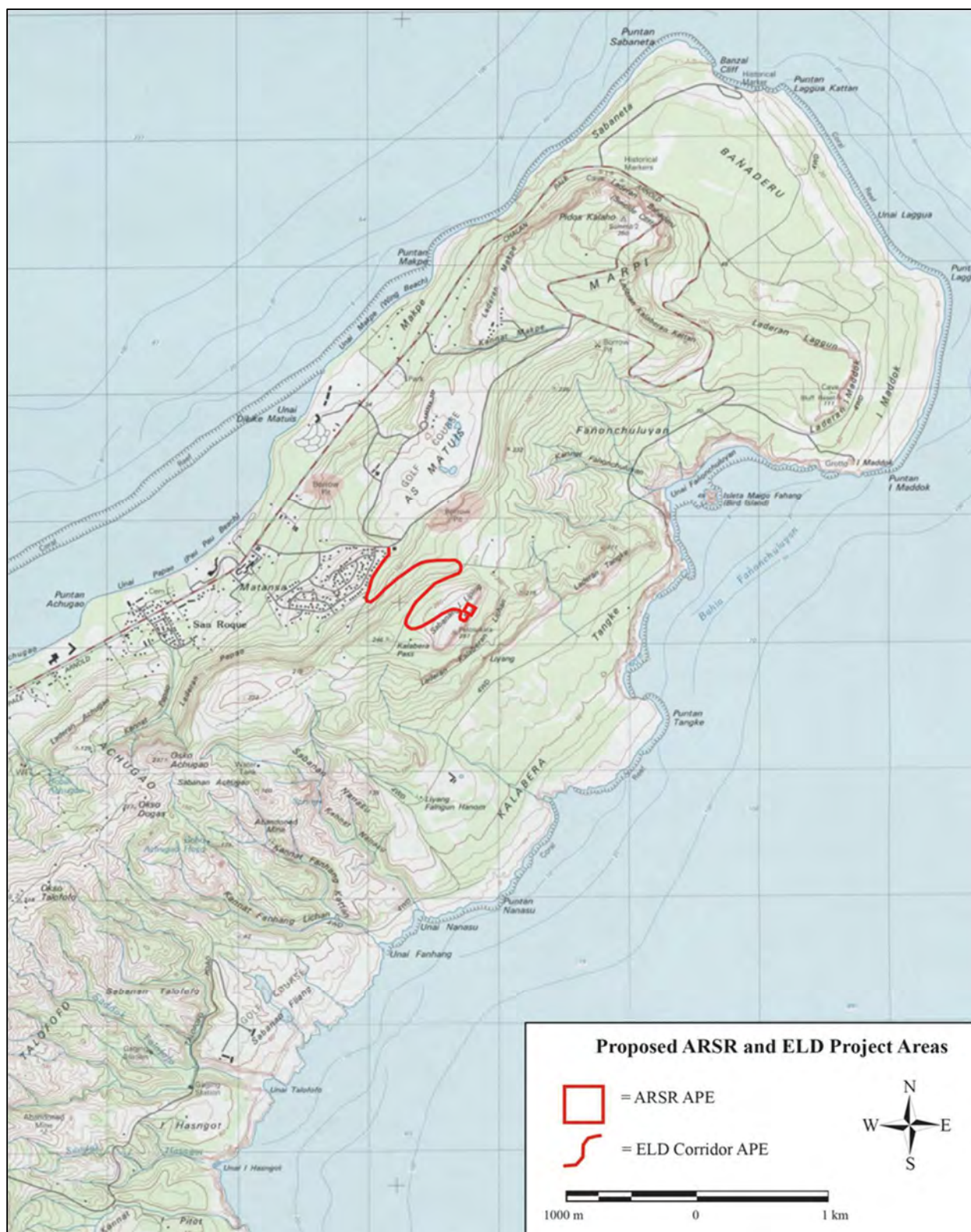




Figure 2: Aerial image showing location of the ELD corridor and radar site (Google Earth, 2024).

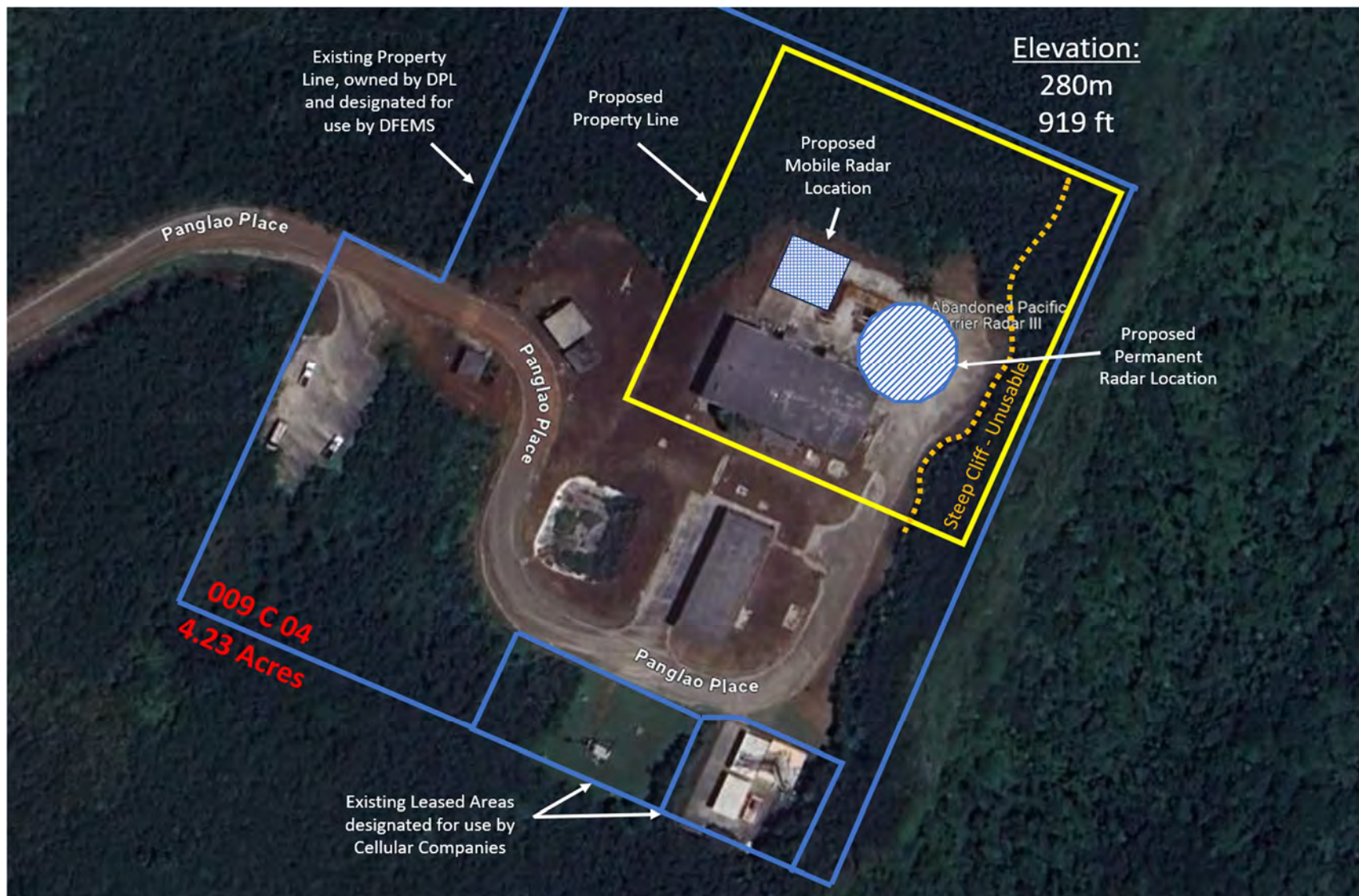


Figure 3: Aerial image showing location of the proposed radar location (Courtesy of CUSA).

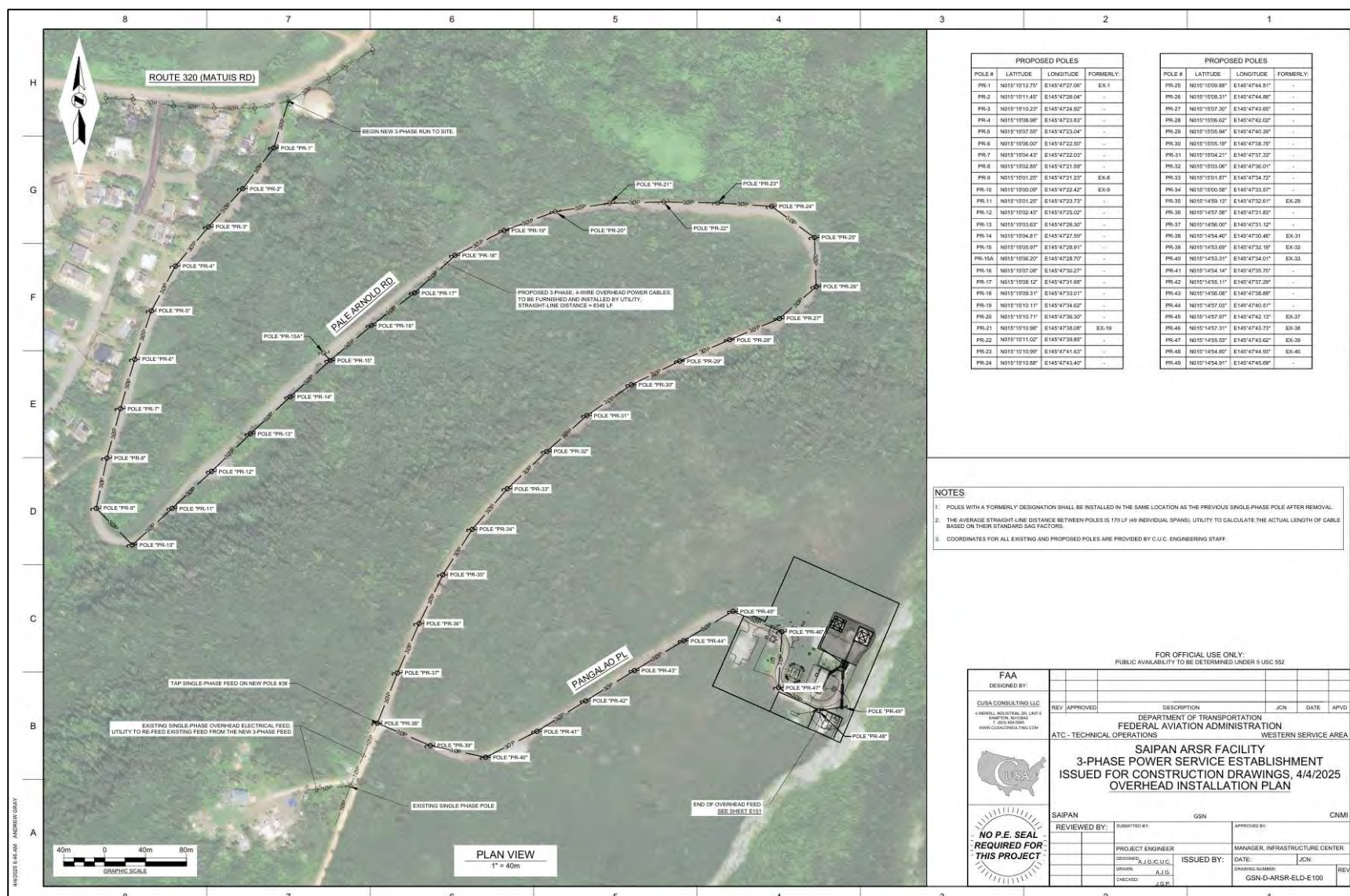


Figure 4: Proposed development plans showing location of power distribution poles and radar facility (courtesy of CUSA).



Figure 5: Aerial image showing corridor survey areas.



Figure 6: View southwest looking upslope of Area 1 corridor.



Figure 7: View northeast from bend of corridor Area 2.



Figure 8: View northeast in midsection of Area 2.



Figure 9: View northeast at bend between Area 2 and Area 3.



Figure 10: View southwest from northeast end of Area 3.



Figure 11: View southwest from southwest end of Area 3.



Figure 12: View east from southwest end of Area 4 on Panglao Place.



Figure 13: View east from east portion of straightaway of Area 4.

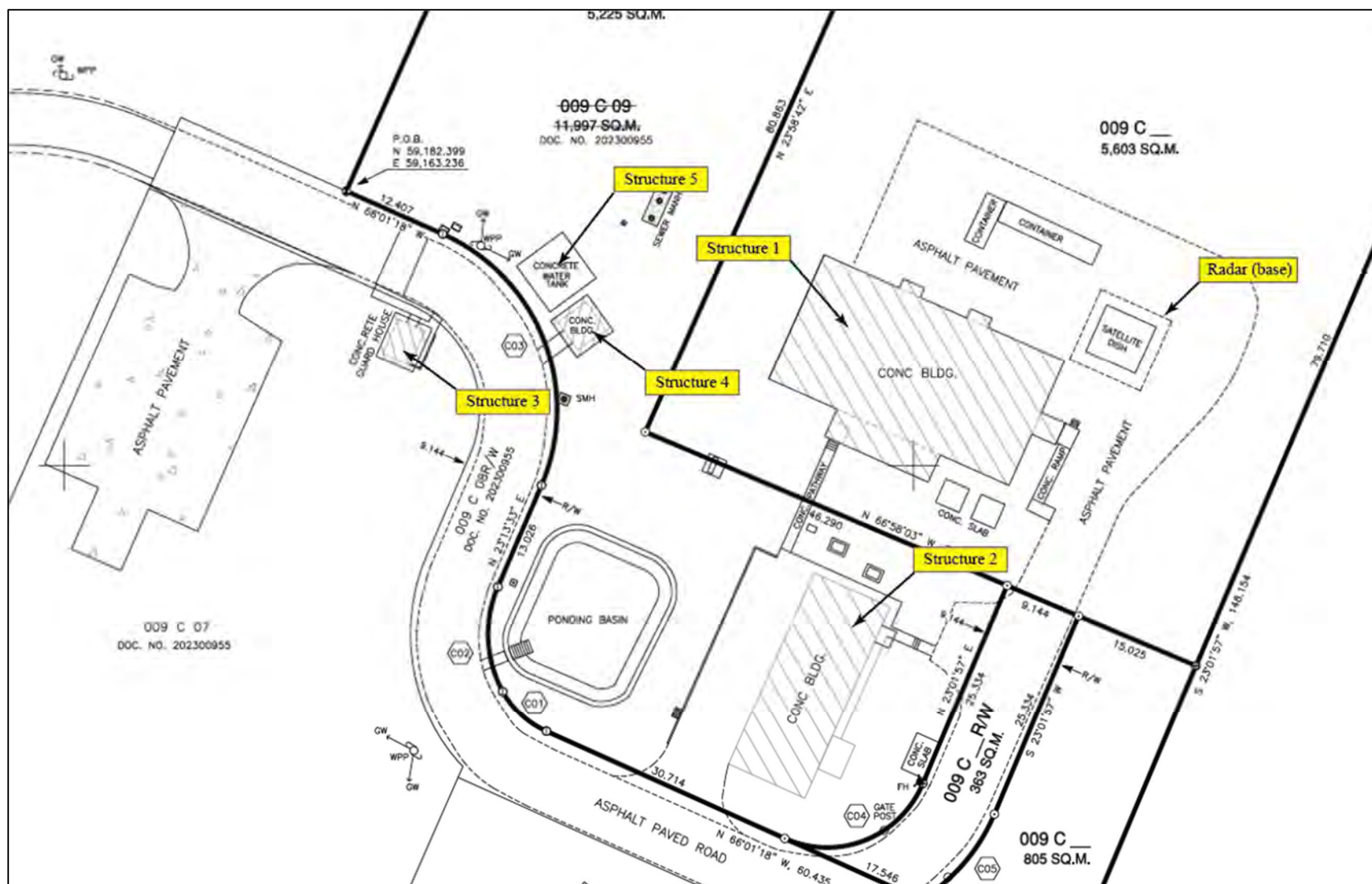


Figure 14: Plan view of PACBAR III facility with structure designations.

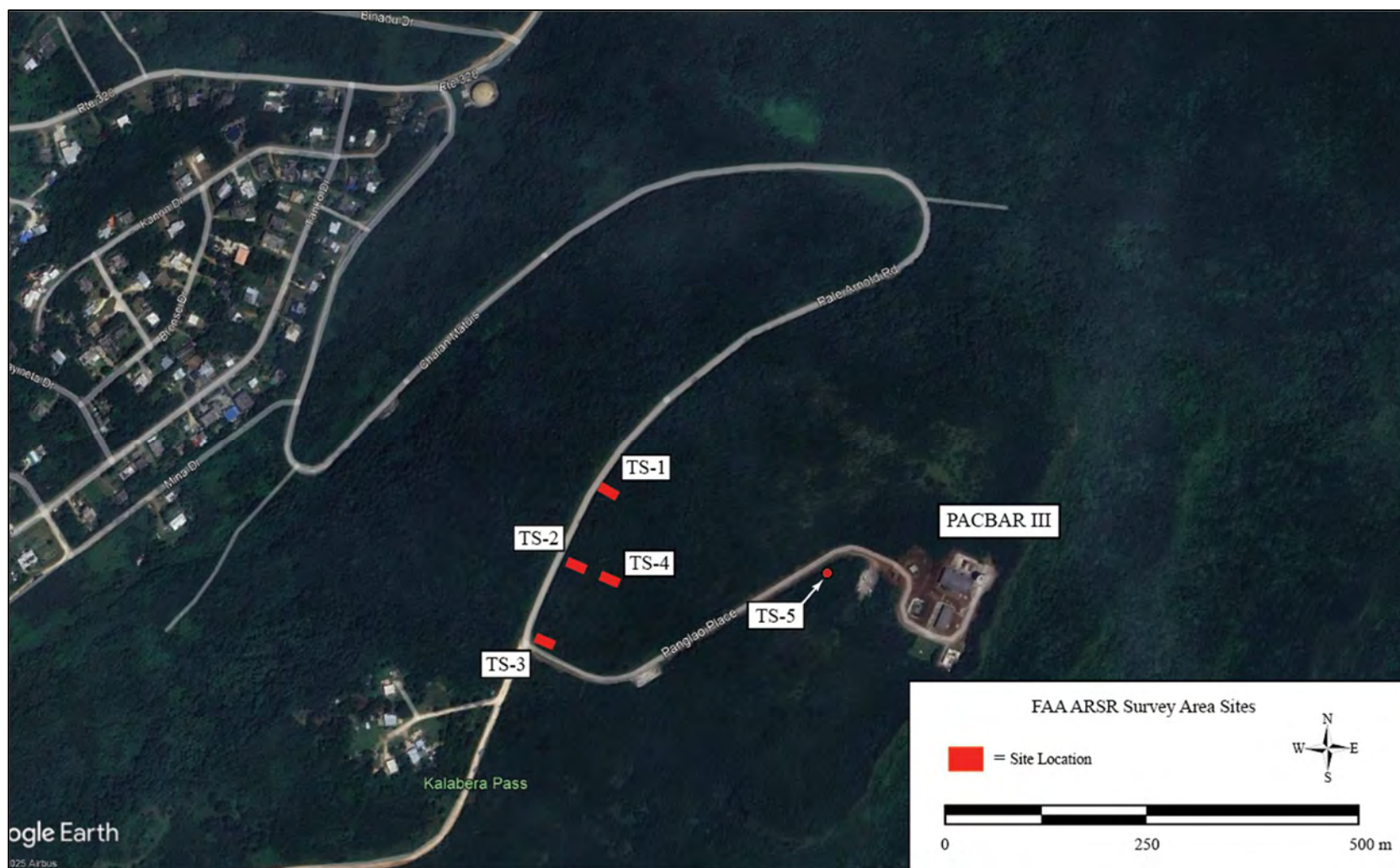


Figure 15: Aerial image showing locations of sites TS-1 through TS-5.

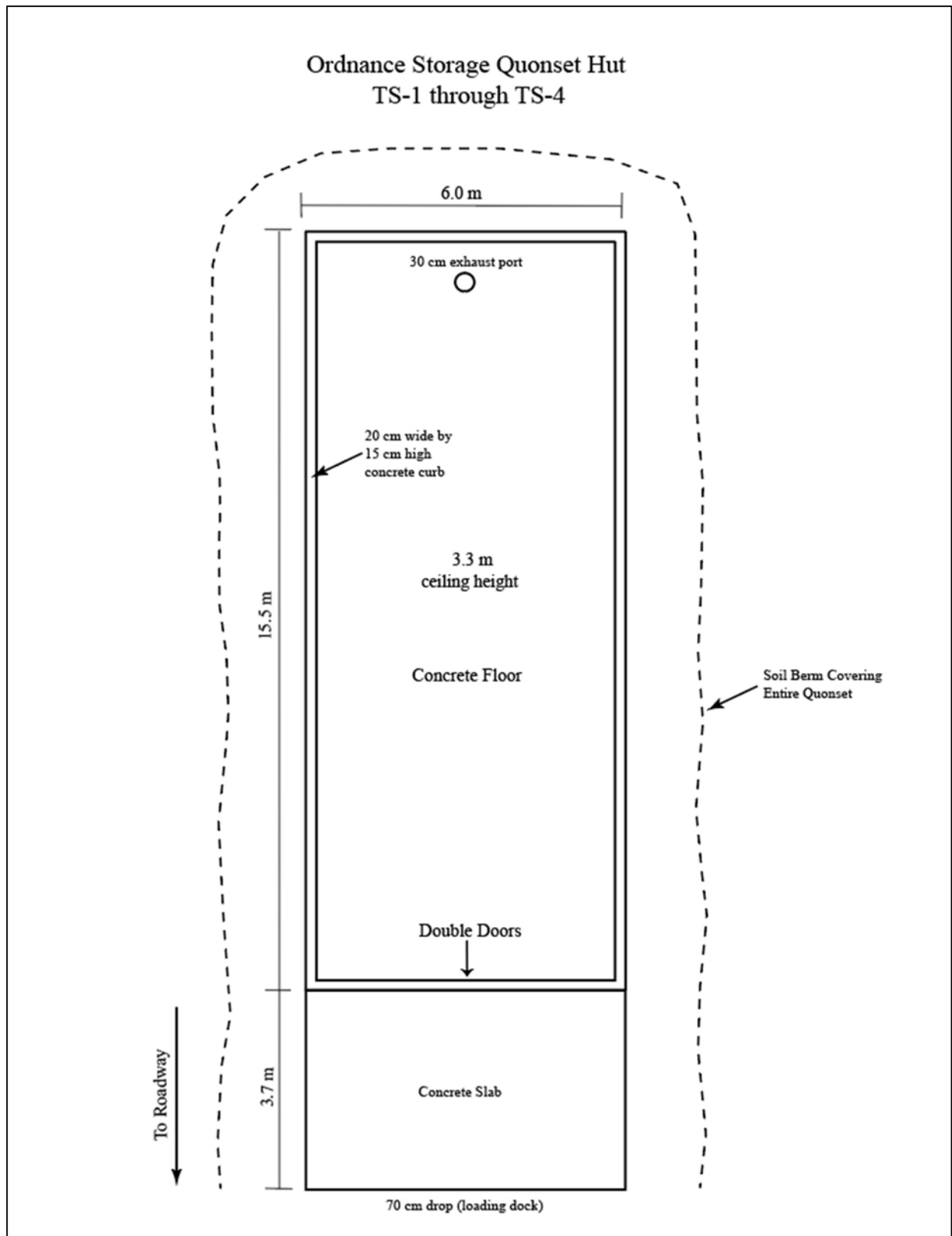


Figure 16: General plan view of ordnance storage Quonset huts (TS-1 through TS-4).

QUONSET PHOTOS



Figure 17: View east of exterior of TS-1.



Figure 18: View from interior of TS-1 showing partially collapsed Quonset.



Figure 19: View southeast of stone facing below TS-1 loading area.



Figure 20: View north of side of loading area at TS-1.



Figure 21: View southeast of front of TS-2.



Figure 22: View south of front of TS-2.



Figure 23: View northeast of front of TS-3.



Figure 24: View of interior of TS-3.

TS-5 FOX HOLE PHOTOS



Figure 25: View south of TS-5.



Figure 26: View north of TS-5.

PACBAR III PHOTOS



Figure 27: View north of radar structure and C-band dish.



Figure 28: View west of radar structure.



Figure 29: View of interior of radar - accessed through door.



Figure 30: View of interior of radar structure.



Figure 31: View west of front of Building 1 - operations.



Figure 32: View southeast of Building 1 – operations – and radar.



Figure 33: View north of Building 1.



Figure 34: View northwest of Building 1 and radar.



Figure 35: View east of Building 2 - maintenance.



Figure 36: View southeast of Building 2.



Figure 37: View west of Building 2.



Figure 38: View northeast of Building 2.



Figure 39: View southwest of Building 3 - guard house.



Figure 40: View north of Building 4 and water tank.

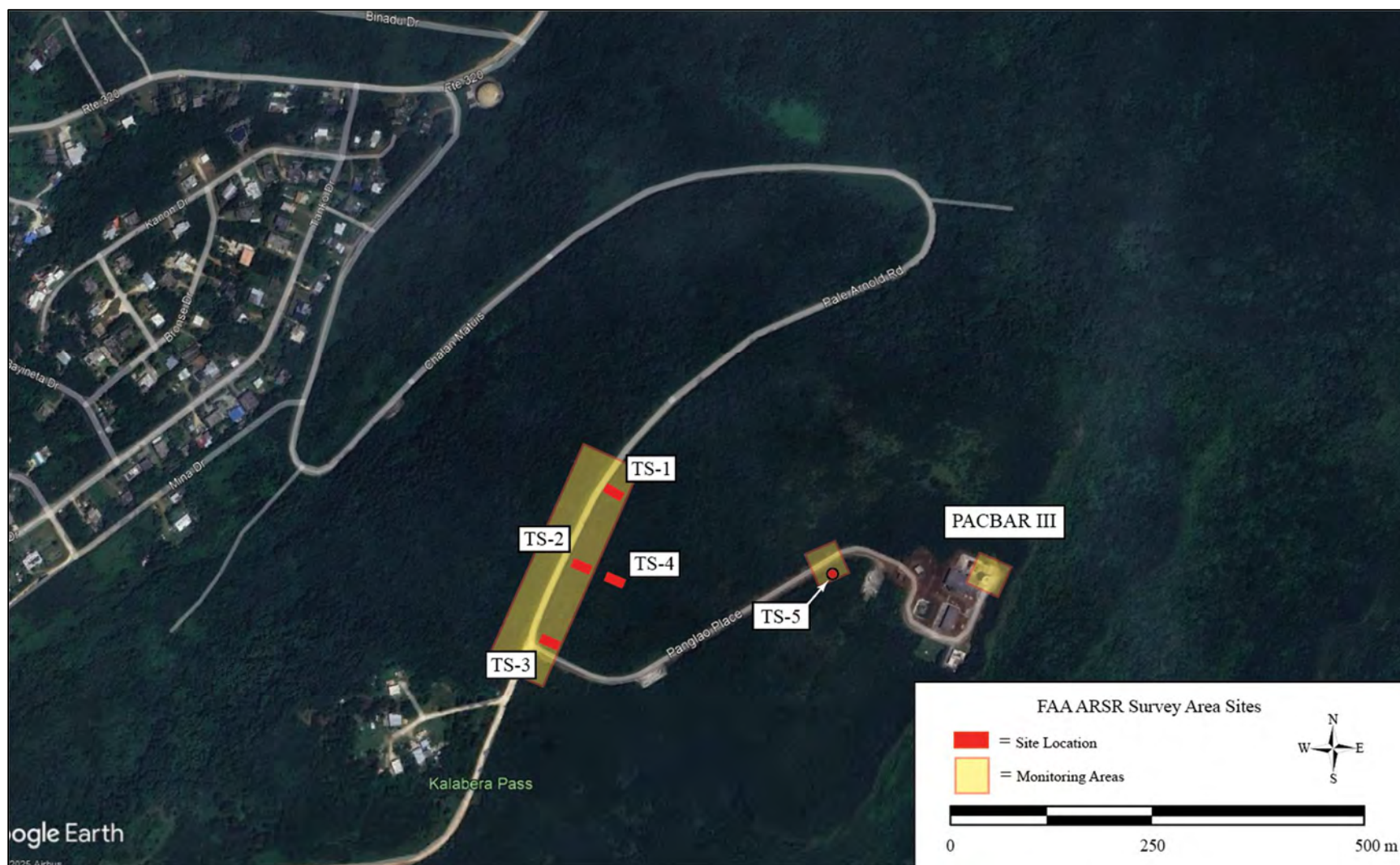


Figure 41: Aerial image showing the areas that are recommended for archaeological monitoring.

From: [Martha Satur Yiftheg](#)
To: [Dave P](#)
Cc: [Andrew Gray](#); [Frank M. Rabauliman](#); [Mertie Kani](#); [John Palacios](#); [Saipan HPO](#)
Subject: Re: FAA As Matuis End of Fieldwork Letter
Date: Tuesday, August 5, 2025 7:43:32 PM

Hafa adai yan Tirow Dave,

Thank you for submitting your End of Fieldwork (EOF) letter regarding the proposed FAA Airport Route Surveillance Radar (ARSR) and Electrical Line Distribution (ELD) project in As Matuis, Saipan, CNMI.

Regarding your client's request to begin the Section 110 consultation, we have no objection to moving forward, provided that the recommendations outlined in your EOF letter are followed. Additionally, as a mitigation measure, we request that an HPO Site Form/Feature Form be completed for the historic properties identified, including the PACBAR III radar facility, which is considered a contributing feature in the area.

As discussed, we sincerely appreciate your willingness to share GIS data with our GIS Coordinator, Paul Camacho (pccamacho8@gmail.com).

Feel free to reach out if you have any questions or need further assistance.

Ghilissou,

Martha Satur Yiftheg
Historic Preservation Historian
Historic Preservation Office
Department of Community and Cultural Affairs
(670) 488-1503

On Mon, Aug 4, 2025 at 9:36 AM Dave P <dperzinski@gmail.com> wrote:

Dear Mrs. Kani, Mr. Palacios and Mrs. Yiftheg,
Please see attached EOF letter for the proposed FAA ARSR Facility on Mt. Petosukara in As Matuis, Saipan. The letter discusses the project, location, methodologies utilized during the field research, a summary of fieldwork results, recommendations and a timeline for completing the report document. If you have any questions or concerns please feel free to contact me anytime.

Best Regards,
David Perzinski, M.A.
ArchaeoNMI

Tinian, MP 96952

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**APPENDIX C: COASTAL ZONE MANAGEMENT ACT
FEDERAL CONSISTENCY DOCUMENTATION**

**Appendix C1: Federal Consistency Determination Letter to CNMI
Division of Coastal Resources Management (DCRM)**



U.S. Department
of Transportation
**Federal Aviation
Administration**

Air Traffic Organization
Western Service Area
Engineering Services

222 W 7th Avenue, 3rd Floor
Anchorage, AK 99513

April 02, 2026

Agnes M. Sablan, Director
Division of Coastal Resources Management
3rd Floor, Gualo Rai Center
Chalan Pale Arnold
P.O. Box 501304
Saipan, MP 96950

RE: Coastal Zone Management Act (CZMA), Consistency Determination for the Proposed Federal Aviation Administration (FAA) Installation and Operation of a New Air Route Surveillance Radar (ARSR) atop Mount Petosukara, As Matuis, Saipan, Commonwealth of the Northern Mariana Islands

Dear Director Sablan:

The Federal Aviation Administration (FAA) submits this Consistency Determination under Section 307(c)(1) of the Coastal Zone Management Act (CZMA; 16 U.S.C. § 1456(c)(1)) and implementing regulations of the CZMA at 15 CFR Part 930, Subpart C, for the proposed installation and operation of a new Air Route Surveillance Radar (ARSR) facility atop Mount Petosukara, As Matuis, Saipan, Commonwealth of the Northern Mariana Islands (CNMI). This document provides the FAA's determination that the proposed federal action is consistent to the maximum extent practicable, with the enforceable policies of the CNMI Coastal Resources Management Program (CRM) pursuant to 15 CFR § 930.39.

Project Description

The FAA proposes to install and operate a new long-range ARSR facility at the site of the former Pacific Barrier III (PACBAR III) radar installation located atop Mount Petosukara in the Tangke area near the village of As Matuis. Implementation of the proposed action would include:

- Construction, installation, and operation of a new 55-foot-tall radar platform, ARSR array with radome, radar support equipment, and radar service building.
- Demolition and removal of the existing PACBAR III array and associated operations building.
- Upgrade the existing 1.6-mile electrical line distribution (ELD) that provides power to the radar site. The ELD would be upgraded from single-phase to three-phase service by replacing existing wooden utility poles with typhoon-resistant concrete poles.
- The ELD upgrade would occur along the existing radar access road and utility corridor and would not require establishment of a new cleared corridor.

- Limited vegetation clearing may occur in localized areas along the ELD corridor where necessary to install replacement utility poles and maintain required safety clearances. For analysis purposes, vegetation disturbance associated with the ELD upgrade is conservatively estimated to involve clearing of up to 10 feet in width along portions of the 1.6-mile corridor, resulting in approximately 1.9 acres of temporary disturbance.

Determination of Coastal Effects

The project occurs within CNMI's defined coastal zone and therefore qualifies for federal consistency review. Potential coastal effects are limited to temporary soil disturbance and stormwater runoff associated with construction activities, and visual changes associated with installation of the radar structure on an existing ridgeline facility.

No construction will occur within marine, shoreline, wetland, or lagoon Areas of Particular Concern (APCs). Implementation of best management practices (BMPs) will prevent erosion, sediment runoff, and waste discharge to coastal waters, allowing the project to remain consistent with Northern Mariana Islands Administrative Code (NMIAC) §15-10-305(f)-(h).

Because the Proposed Action occurs within previously disturbed areas associated with the former radar facility and along an existing roadside utility corridor, effects to coastal resources are expected to be minimal and temporary.

Consistency with the Enforceable Policies of the CNMI Coastal Management Program

The FAA has reviewed the enforceable policies of CNMI's CRM (Title 15 NMIAC) and determined that the proposed action is consistent to the maximum extent practicable with those policies. The table below summarizes the FAA's evaluation of the proposed project against the applicable enforceable policies.

Citation	Policy Topic	FAA Consistency Analysis	Consistency Finding
15-10-305(a)	Cumulative Impact	The Proposed Action involves installation and operation of a new ARSR facility at the site of the former PACBAR III radar installation on Mount Petosukara. The Action occurs within a previously developed site and existing access/utility corridors. No additional development is anticipated in the surrounding area; therefore cumulative impacts to coastal resources are expected to be negligible.	Consistent
15-10-305(b)	Compatibility with Existing Uses	The project remains within the existing developed facility site and use area. It does not introduce new land uses or incompatible development.	Consistent
15-10-305(d) & (f)	Conservation and Erosion Control	Construction activities associated with the Proposed Action would occur primarily within previously disturbed areas at the former PACBAR III radar facility and along the existing radar access road and utility corridor. The approximately 1.6 mile ELD upgrade	Consistent

Citation	Policy Topic	FAA Consistency Analysis	Consistency Finding
		would replace existing wooden utility poles with typhoon-resistant concrete poles and upgrade the existing single-phase electrical line to three-phase service. Temporary soil disturbance would be minimized and controlled using standard construction BMPs to prevent erosion and sediment transport.	
15-10-305(h)	Waste Management	All waste, including construction debris and hazardous materials, will be handled and disposed of in accordance with FAA and CNMI regulations.	Consistent
15-10-311	Areas of Particular Concern (APC)	No APCs occur within or adjacent to the project area. The site is located inland and outside of coastal hazard zones.	Consistent
15-10-345	Coastal Hazards	The radar site is elevated and outside the 100-year floodplain. Structures will be designed to meet typhoon and seismic safety standards. The 1.6-mile transmission line upgrade is outside of the 100-year floodplain. New typhoon resistant concrete poles with three-phase power will replace the existing wooden poles with single-phase power in the same (or very near) locations.	Consistent
15-10-350	Height, Density, Setback, and Coverage	The ARSR tower replaces an existing structure of comparable size and footprint. There will be no increase in density or new encroachment.	Consistent
15-10-610(e)	Mandatory Conditions	FAA will comply with any mandatory conditions or requirements identified by DCRM during its review and concurrence process.	Consistent

Supporting Federal Framework

In accordance with FAA Order 1050.1G, and consistent with the National Oceanic and Atmospheric Administration (NOAA) guidance regarding federal consistency determinations, federal agency activities that may affect coastal uses or resources must be consistent to the maximum extent practicable with approved state or territorial coastal management programs. The FAA is complying with applicable federal environmental and regulatory requirements for the proposed Saipan ARSR project. Key elements of the federal environmental review and interagency coordination are summarized below.

- **National Environmental Policy Act (NEPA):** The FAA is preparing an Environmental Assessment (EA) for the proposed action in accordance with FAA Order 1050.1G and the Council on Environmental Quality regulations implementing NEPA (40 CFR Parts 1500–1508). The EA evaluates potential environmental impacts associated with installation and

operation of the proposed ARSR facility, including demolition of the former PACBAR III radar installation and associated infrastructure improvements. The EA is currently undergoing internal agency review and no final NEPA decision has been issued. The EA evaluates potential effects to environmental resources, including those relevant to coastal uses and resources. This federal consistency determination relies on the best available information compiled to date (including the EA analysis and supporting technical studies) and will be updated if the EA identifies materially different impacts or if the project description changes.

- **Agency Roles and Coordination:** The FAA is the lead federal agency for the Proposed Action. The Department of the Air Force (PACAF) is participating as a cooperating agency in the NEPA process. The FAA will continue coordination with the CNMI DCRM, the CNMI Bureau of Environmental and Coastal Quality (BECQ), and other federal and territorial agencies, as appropriate.
- **Hazardous Materials and Contaminated Sites:** A Phase II Environmental Site Assessment conducted in 2025 for the former PACBAR III radar facility identified petroleum-related compounds, lead, and semi-volatile organic compound contamination in surface water within the existing underground storage tank and septic tank areas. Asbestos-containing materials and lead-based paint were also identified in building materials associated with existing structures. Soil samples did not exceed CNMI environmental screening levels (ESLs). As part of implementation of the proposed ARSR project, the FAA will remediate contaminated areas within the planned lease boundary to meet CNMI BECQ ESLs for industrial and commercial land use. Remediation activities will be coordinated with BECQ and conducted in accordance with applicable federal and CNMI requirements to ensure contaminants are not mobilized to nearby soils or surface waters. All demolition debris and hazardous or contaminated materials removed from the lease parcel will be properly characterized, handled, and disposed of at approved facilities. These measures will prevent adverse effects to coastal uses and resources.
- **Historic and Cultural Resources (NHPA Section 106):** The FAA is conducting consultation under Section 106 of the National Historic Preservation Act (NHPA) in accordance with 36 CFR Part 800. Identification efforts to date have included review of an Archaeological Inventory Survey within the Area of Potential Effect (APE). Consultation with the CNMI Historic Preservation Office (HPO) and other consulting parties is ongoing. Any avoidance, minimization, or mitigation measures identified through the Section 106 process will be incorporated into the project, as appropriate.
- **Endangered Species Act (ESA Section 7) and Other Resource Statutes:** The FAA evaluated potential effects of the Proposed Action on federally listed species and their habitats in coordination with the U.S. Fish and Wildlife Service (USFWS). Based on habitat conditions, site surveys, and project design, the FAA determined that the proposed action may affect and is likely to adversely affect the Nightingale reed warbler (*Acrocephalus luscini*) and the Micronesian megapode (*Megapodius laperouse*). The adverse effect determination is primarily associated with temporary vegetation removal and minor habitat disturbance along portions of the ELD corridor, which may reduce or temporarily disturb potential habitat for these species. The FAA also coordinated with the CNMI Division of Fish and Wildlife (DFW) regarding wildlife resources within the

project area. Formal consultation under Section 7 of the Endangered Species Act (ESA) with the USFWS is currently ongoing. The FAA will complete ESA consultation prior to issuance of a final NEPA decision and will incorporate any resulting conservation measures or terms and conditions into project implementation as appropriate.

- **Coastal Zone Management Act (CZMA) Consistency:** This consistency determination is submitted pursuant to Section 307(c)(1) of the CZMA and implementing regulations at 15 CFR Part 930, Subpart C. Based on the analysis conducted to date and the implementation of BMPs, the FAA has determined that installation and operation of the proposed ARSR facility, including demolition of the former PACBAR III radar installation and upgrades to the existing ELD, is consistent to the maximum extent practicable with the enforceable policies of the CNMI Coastal Resources Management Program.
- **Commitment to Update:** Upon completion of the NEPA process, the FAA will provide DCRM with the EA decision document and any environmental commitments or mitigation measures relevant to coastal resources. If new information indicates different or greater coastal effects than evaluated herein, the FAA will coordinate with DCRM and provide supplemental information as appropriate.

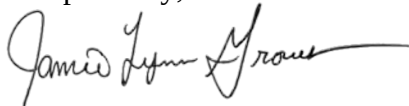
Determination

Based on the information presented above, the FAA has determined that the proposed installation and operation of a new ARSR facility on Mount Petosukara is consistent, to the maximum extent practicable, with the enforceable policies of the CNMI Coastal Management Program. Implementation of the project, including demolition of the former PACBAR III radar installation and associated infrastructure improvements, will not adversely affect coastal uses or resources when conducted in accordance with applicable regulatory requirements and standard construction BMPs.

Request for Concurrence

Pursuant to 15 CFR § 930.41, the FAA respectfully requests written concurrence from the CNMI DCRM within 60 days of receipt of this consistency determination. If you have any questions, please contact me by email at: jamie.l.groves@faa.gov.

Respectfully,



Jamie L. Groves
Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration

Attachments:

- A. Project Location Maps
- B. Project Drawings (relevant pages)
- C. Site Photos

Attachment 1: Figures



Figure 1 Location of Proposed ARSR Site on Mount Petosukara, Saipan, CNMI.
Source: Adapted from CNMI BECQ, CNMI DCRM Public Permitting App.

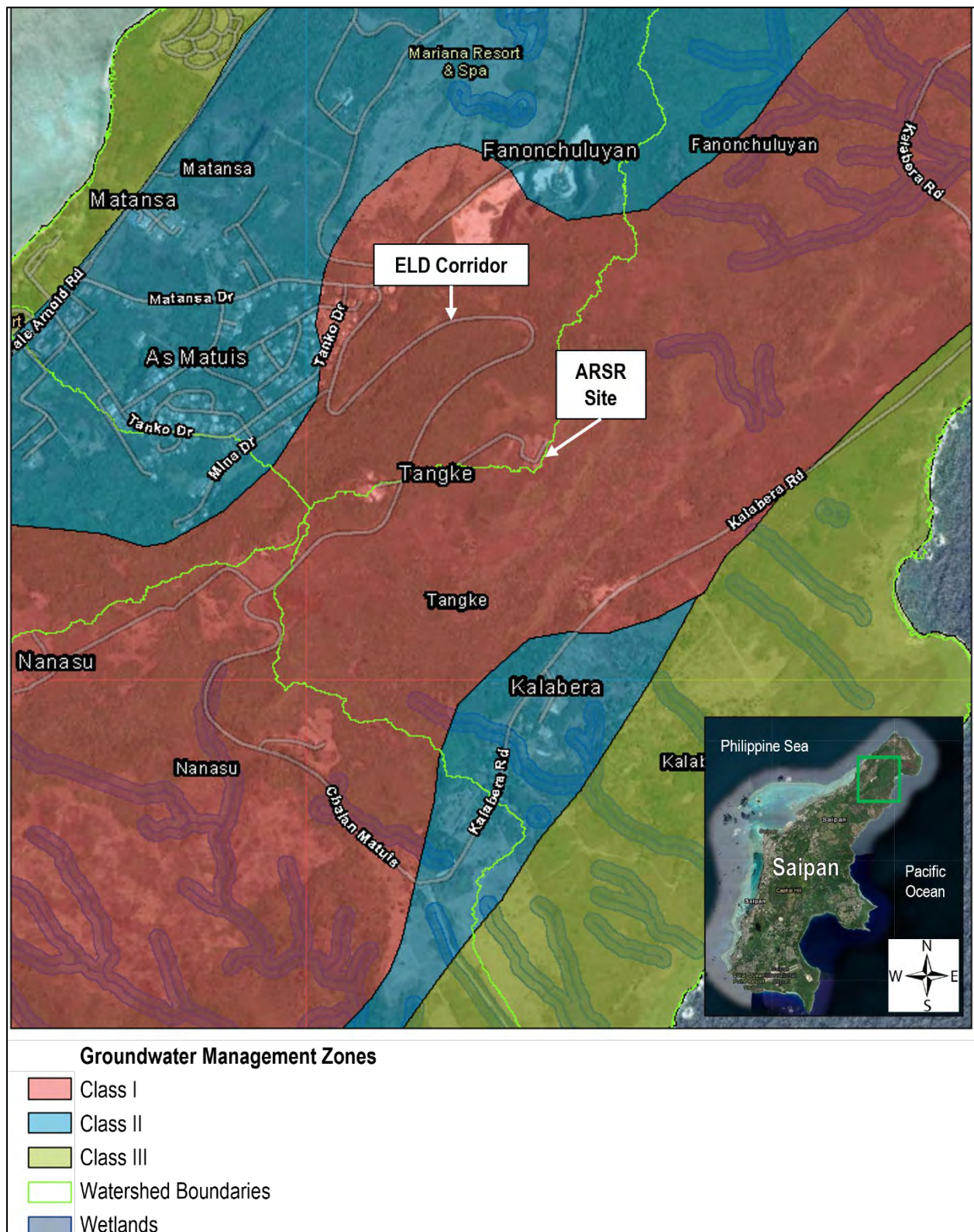
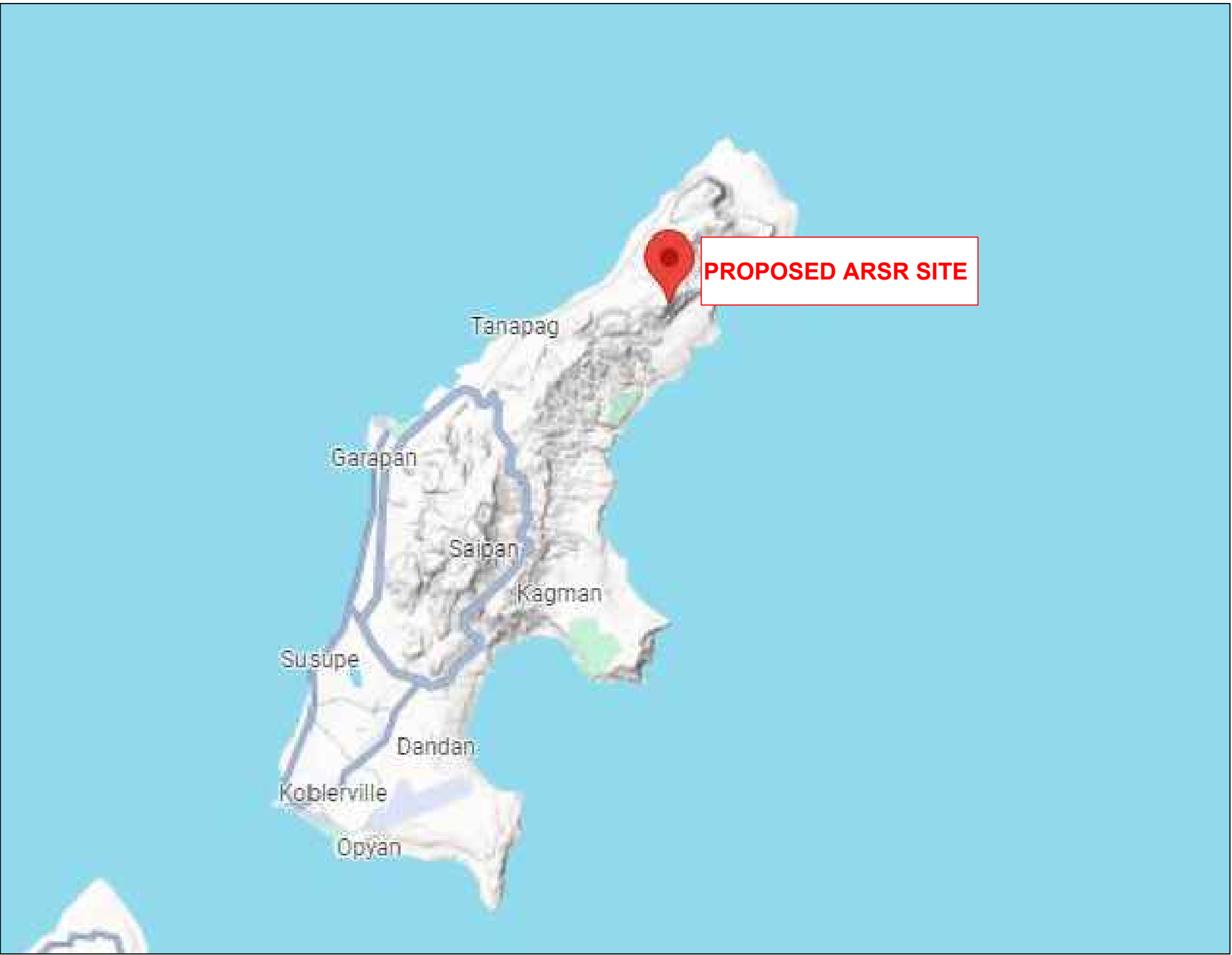


Figure 2 Water Resources in the vicinity of the Proposed ARSR Facility and ELD Corridor.
Source: Adapted from CNMI BECQ, CNMI DCRM Public Permitting App.

Attachment 2: Project Drawings (select pages)



VICINITY MAP:
N.T.S.

SAIPAN (GSN) ARSR SITE

SAIPAN, CNMI

3-PHASE POWER SERVICE ESTABLISHMENT

ISSUED FOR CONSTRUCTION DRAWINGS



SITE ADDRESS:
PANGLAO PL, SAN ROQUE, SAIPAN, CNMI, 96950

FOR OFFICIAL USE ONLY:
PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552

FAA DESIGNED BY:						
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 926-5895 WWW.CUSACONSULTING.COM	REV	APPROVED	DESCRIPTION	JCN	DATE	APVD
	DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA					
	SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 COVER SHEET					
	SAIPAN			GSN		CNMI
	REVIEWED BY:		SUBMITTED BY:		APPROVED BY:	
			PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
	DESIGNED: A.J.G./C.U.C.		ISSUED BY:		DATE:	JCN:
	DRAWN: A.J.G.				DRAWING NUMBER: GSN-D-ARSR-ELD-G001	
CHECKED: J.G.P.				REV		

M:\Current Jobs - ELD Projects\GSN ARSR - ELD (Saipan ARSR, CNMI)\CUSA Drawings\Issued For Construction\GSN-D-ELD IFC.dwg
4/4/2025 6:45 AM ANDREW GRAY

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00 71 00 CONTRACTING DEFINITIONS OWNER: THE LEGAL OWNER OF THE SITE OR A REPRESENTATIVE OF THE OWNER, SPECIFICALLY AUTHORIZED TO REPRESENT THE OWNER IN MATTERS PERTAINING TO THIS PROJECT. FAA IS USED INTERCHANGEABLY OWNER. LOCAL SSC: STAFF FROM THE FAA SYSTEM SUPPORT CENTER IN WHOSE JURISDICTION THE PROJECT IS LOCATED. CONTRACTING OFFICER: THE FAA OFFICER ENGAGED TO ISSUE CONTRACTS, PAYMENTS AND CHANGE ORDERS FOR THE PROJECT. PROJECT ENGINEER: THE FAA REPRESENTATIVE FROM ENGINEERING SERVICES, APPOINTED TO OVERSEE, REVIEW AND APPROVE TECHNICAL MATTERS ON THE PROJECT. RESIDENT ENGINEER: THE FAA REPRESENTATIVE, SPECIFICALLY AUTHORIZED AND APPOINTED TO PHYSICALLY REPRESENT THE FAA ON-SITE DURING THE PROJECT. CONTRACTOR: THE ENTITY, CORPORATION, OR PERSON AUTHORIZED TO PERFORM THE WORK SET FORTH IN THE DRAWINGS AND SCOPE OF WORK. CONTRACTOR IS ALSO USED INTERCHANGEABLY WITH THE CONTRACTOR'S EMPLOYEE SPECIFICALLY AUTHORIZED AND APPOINTED TO REPRESENT THE CONTRACTOR ON SITE DURING PRODUCTION OF THE PROJECT. CONTRACTOR IS ALSO USED INTERCHANGEABLY WITH SUBCONTRACTORS, WORKING UNDER THE DIRECT AUTHORIZATION AND SUPERVISION OF THE CONTRACTOR'S PROJECT MANAGER TO PERFORM WORK SPECIFIC TO THIS PROJECT. ALL REQUIREMENTS AND RESTRICTIONS APPLICABLE TO THE CONTRACTOR ARE ALSO APPLICABLE TO ALL SUBCONTRACTORS. PROGRAM OFFICE: THE FAA POWER SERVICES SUBGROUP WHO IS AUTHORIZING, DIRECTING AND FUNDING THE PROJECT. PROJECT: THE WORK LAID OUT IN THE DRAWINGS AND SCOPE OF WORK. QUALIFIED FAA PERSONNEL: EITHER THE LOCAL FAA SSC PERSONNEL OR THE RESIDENT ENGINEER, IF THEY ARE SUITABLY TRAINED AND QUALIFIED TO PERFORM IDENTIFIED TASKS.									01 41 00 REGULATORY REQUIREMENTS THE FOLLOWING CODES SHALL GOVERN THE DESIGN AND EXECUTION OF THIS PROJECT: - LATEST EDITION OF <u>ASCE 7 MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES (ASCE/SEI 7-22)</u>. - LATEST EDITION OF <u>ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY (ACI 318-19, REAPPROVED 2022)</u>. - LATEST EDITION OF <u>NFPA 70 NATIONAL ELECTRIC CODE (NEC 2023)</u>. - LATEST EDITION OF <u>IEEE NATIONAL ELECTRICAL SAFETY CODE (NESC 2023)</u>. - LATEST EDITION OF <u>NFPA 780 STANDARD FOR THE INSTALLATION OF LIGHTNING PROTECTION SYSTEMS (NFPA 780 2023)</u>. - LATEST EDITION OF <u>FAA SPECIFICATION 1217 ELECTRICAL WORK, PREMISES WIRING (FAA-C-1217H CHANGE #1)</u>. - LATEST EDITION OF <u>FAA SPECIFICATION 1391 INSTALLATION, TERMINATION, SPLICING, AND TRANSIENT/SURGE PROTECTION OF UNDERGROUND ELECTRICAL DISTRIBUTION SYSTEM POWER CABLES (FAA-C-1391F)</u>. - LATEST EDITION OF <u>FAA STANDARD 19 LIGHTNING AND SURGE PROTECTION, GROUNDING, BONDING, AND SHIELDING REQUIREMENTS FOR FACILITIES AND ELECTRONIC EQUIPMENT (FAA-STD-19G)</u>. IN THE EVENT OF A DISCREPANCY OR CONTRADICTION BETWEEN ANY OF THE ABOVE-MENTIONED CODES, THE MORE STRINGENT REQUIREMENT SHALL BE FOLLOWED. CONTRACTOR SHALL PROCURE ALL AIRPORT-SPECIFIC OR LOCALITY-SPECIFIC PERMITS REQUIRED FOR THIS PROJECT. SEE SECTION 01 35 43 ENVIRONMENTAL PROCEDURES FOR LIST OF REQUIRED ENVIRONMENTAL PERMITS TO BE SOUGHT FOR THIS PROJECT. BUILD AMERICA, BUY AMERICA ACT: - ALL IRON AND STEEL USED IN THE PROJECT - INCLUDING MANUFACTURING PROCESSES FROM THE INITIAL MELTING STATE THROUGH THE APPLICATION OF COATINGS - SHALL BE PRODUCED IN THE UNITED STATES. - ALL MANUFACTURED PRODUCTS USED IN THE PROJECT SHALL BE PRODUCED IN THE UNITED STATES. THIS MEANS THE MANUFACTURED PRODUCT ITSELF WAS BUILT IN THE UNITED STATES, AND THE COST OF THE COMPONENTS OF THE MANUFACTURED PRODUCT MINED, PRODUCED, OR MANUFACTURED IN THE UNITED STATES IS GREATER THAN 55 PERCENT OF THE TOTAL COST OF ALL COMPONENTS OF THE MANUFACTURED PRODUCT. (NOTE: IN SOME INSTANCES, OTHER LAWS OR REGULATIONS THAT DETERMINE MINIMUM DOMESTIC CONTENT APPLY.) - ALL CONSTRUCTION MATERIALS SHALL BE MANUFACTURED IN THE UNITED STATES. THIS MEANS THAT ALL MANUFACTURING PROCESSES FOR THE CONSTRUCTION MATERIAL OCCURRED IN THE UNITED STATES. - WAIVERS MAY BE REQUESTED FOR NON-AVAILABILITY, UNREASONABLE COST OR INCONSISTENCY WITH PUBLIC INTEREST.									01 35 43 ENVIRONMENTAL PROCEDURES AND PERMITTING THIS PLAN SET IS INTENDED TO PRIMARILY DEPICT THE WORK TO PROVIDE A NEW 3-PHASE POWER SERVICE TO A PROPOSED FAA ARSR FACILITY. THE ARSR FACILITY IS NOT YET DESIGNED. TO ALLOW FOR COMPREHENSIVE EVALUATION OF THE REQUIRED ENVIRONMENTAL PERMITS NEEDED TO INITIATE CONSTRUCTION OF THE POWER FEED, SUFFICIENT DETAIL HAS BEEN GATHERED AS TO THE IMPACTS OF THE ARSR SITE CONSTRUCTION AS WELL. THE FOLLOWING FEDERAL FILINGS WILL BE INITIATED DURING THE CONTINUING DESIGN/PLANNING PROCESS OF THE POWER PORTION: - SECTION 7 WILDLIFE CONSULTATION FOR ALL PHASES OF THE PROJECT. - SECTION 106 HISTORICAL CONSULTATION FOR ALL PHASES OF THE PROJECT. - CNMI DCRM FEDERAL CONSISTENCY REVIEW FOR ALL PHASES OF THE PROJECT. AFTER REVIEW AND APPROVAL OF THESE CONSULTATIONS, A TASK ORDER WILL BE ISSUED TO BEGIN CONSTRUCTION OF THE POWER FEED. PRIOR TO INITIATING ANY GROUND-DISTURBING ACTIVITIES, THE ELD INSTALLATION CONTRACTOR SHALL FILE: - BEQC ONESTART EARTHMOVING PERMIT, LIMITED TO THE POWER INSTALLATION PORTION ONLY. THERE ARE ISSUES OF KNOWN AND SUSPECTED CONTAMINANTS FOR THE ARSR FACILITY SITE. DURING THE DESIGN AND ANALYSIS PHASE OF THE ARSR FACILITY, THE FAA SHALL PERFORM THE FOLLOWING: - UPDATE THE ENVIRONMENTAL PHASE I SITE ASSESSMENT OF THE PROPERTY - ENVIRONMENTAL PHASE II SITE INVESTIGATION OF SOIL, WATER AND STRUCTURES SLATED FOR DEMOLITION TO CONSTRUCT THE ARSR FACILITY. - HISTORICAL STUDY OF THE PACIFIC BARRIER RADAR ANTENNA. - NEPA ENVIRONMENTAL ASSESSMENT REPORT. THESE STUDIES WILL PROVIDE THE NECESSARY DATA TO PLAN FOR MITIGATION AND REMEDIATION OF ANY CONTAMINANTS RELATING TO THE ARSR CONSTRUCTION. THIS DATA WILL BE USED TO PREPARE AND FILE A BEQC ONESTART EARTHMOVING PERMIT SPECIFICALLY FOR THE ARSR CONSTRUCTION.									02 00 00 EXISTING CONDITIONS THE CONTRACTOR AND RESIDENT ENGINEER SHALL DOCUMENT ALL RELEVANT EXISTING CONDITIONS PRIOR TO BEGINNING ANY WORK ON THE PROJECT. CONTRACTOR AND RESIDENT ENGINEER SHALL IMMEDIATELY RECORD ANY DISCREPANCY FOUND IN THE DRAWINGS, OR ANY DIFFERING SITE CONDITIONS THAT WILL AFFECT THE PERFORMANCE OF THE WORK, OR THE FINAL AS-BUILT RECORDS. THE CONTRACTOR SHALL RESTORE ALL STRUCTURES, SURFACES AND FINISHES TO THEIR ORIGINAL CONDITIONS.																																																																																																										
00 73 83 DISPUTE RESOLUTION IN THE EVENT OF A DISCREPANCY, THE FOLLOWING SHALL BE THE ORDER OF PRECEDENCE, UNLESS MUTUALLY AGREED UPON: - ADDENDA OR CHANGE ORDERS SHALL TAKE PRECEDENCE OVER THE SPECIFICATIONS, - THE SPECIFICATIONS SHALL TAKE PRECEDENCE OVER THE DRAWINGS, - LISTED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS, - DETAIL DRAWINGS SHALL TAKE PRECEDENCE OVER LAYOUT DRAWINGS, - SCHEDULES SHALL TAKE PRECEDENCE OVER OTHER DATA ON THE PLANS. THE ENGINEER OF RECORD THAT PRODUCED THE PROJECT DRAWINGS HAS THE FIRST RIGHT OF INTERPRETATION OVER ANY DISCREPANCY, AMBIGUITY, OMISSION OR CONTRADICTION IN THE PROJECT DRAWINGS OR SPECIFICATIONS.									01 64 00 OWNER-FURNISHED PRODUCTS THIS PROJECT DOES NOT INCLUDE ANY GOVERNMENT FURNISHED MATERIAL (GFM). THIS PROJECT INCLUDES MATERIAL THAT SHALL BE PURCHASED, FURNISHED, INSTALLED AND OWNED BY THE UTILITY (COMMONWEALTH UTILITY CORPORATION, C.U.C.). THE UTILITY SHALL ORDER ADDITIONAL POLES FOR DESTRUCTIVE TESTING, AS REQUIRED BY THEIR SPECIFICATIONS. CONTACT INFORMATION FOR C.U.C. ELECTRICAL ENGINEERS: JONATHAN CAMACHO JONATHAN.CAMACHO@CUCGOV.ORG REY DARAG REY.DARAG@CUCGOV.ORG									01 78 00 CLOSEOUT SUBMITTALS THE CONTRACTOR SHALL GENERATE THREE (3) COPIES OF REDLINED DRAWINGS DURING CONSTRUCTION AND TURN THEM OVER AS FOLLOWS: - ONE COPY FOR THE CONTRACTOR TO RETAIN, - ONE COPY FOR THE RESIDENT ENGINEER TO TURNOVER TO FAA ENGINEERING SERVICES, - ONE COPY THAT SHALL BE LEFT ON-SITE FOR REFERENCE BY THE LOCAL SSC TECHNICIANS. OR - THE CONTRACTOR MAY ELECT TO CREATE DIGITAL REDLINES IN PDF FORMAT AND DISTRIBUTE THE REDLINED DRAWINGS IN THIS FORMAT, BUT STILL MUST LEAVE A PRINTED COPY OF THE DIGITAL PRINTS OR A REDLINED SET OF THE DESIGN PRINTS ON-SITE. IF THE ENGINEER IS ALSO THE CONTRACTOR, THEN THE CONTRACTOR SHALL PRODUCE AS-BUILT DRAWINGS AND SUBMIT THEM TO THE PROJECT ENGINEER WITHIN 30 DAYS OF ALL PUNCHLIST ITEMS BEING COMPLETE. AS-BUILT DRAWINGS SHALL BE DELIVERED IN PDF FORMAT AND AUTOCAD DWG, 2010 FILE FORMAT. THE RESIDENT ENGINEER SHALL PROVIDE THE CONTRACT ACCEPTANCE INSPECTION (CAI) FORM AND FILL IT OUT PRIOR TO THE DATE OF THE CAI WALKTHROUGH. ANY REMAINING PUNCHLIST ITEMS SHALL BE WRITTEN ON THE CAI FORM OR A CAI FORM EXTENSION AND PROVIDED TO THE CONTRACTOR IMMEDIATELY. THE RESIDENT ENGINEER SHALL SIGN THE CAI FORM, EVEN IF THERE ARE OUTSTANDING PUNCHLIST ITEMS. THE CAI CAN BE PERFORMED CONCURRENTLY WITH THE JOB ACCEPTANCE INSPECTION (JAI). IF THE JAI CANNOT BE SCHEDULED FOR THE SAME DAY AS THE CAI, IT SHALL NOT DELAY THE PERFORMANCE OF THE CAI WITH THE RESIDENT ENGINEER AND THE CONTRACTOR.									01 25 00 SUBSTITUTION PROCEDURES THE CONTRACTOR MAY PROPOSE SUBSTITUTIONS OF MATERIAL DUE TO AVAILABILITY OF LOCAL SUPPLIERS OR ISSUES WITH LEAD TIME. PROPOSED MATERIAL SUBSTITUTIONS MUST BE EQUIVALENT IN PERFORMANCE AND VALUE OF THE ORIGINAL MATERIAL SPECIFIED IN THE DRAWINGS. THE CONTRACTOR MAY ALSO PROPOSE ALTERNATIVE MATERIALS OR METHODS PRESCRIPTIVELY APPROVED BY FAA STANDARDS AND SPECIFICATIONS. THE PROJECT ENGINEER AND CONTRACTING OFFICER ARE UNDER NO OBLIGATION TO APPROVE MATERIAL SUBSTITUTION REQUESTS. ANY SUBSTITUTION REQUEST MUST INCLUDE DETAILED CUT-SHEETS FROM THE MANUFACTURER OF THE MATERIAL FOR REVIEW BY THE PROJECT ENGINEER.									01 26 00 CHANGE ORDERS CHANGE ORDERS SHALL BE SUBMITTED WHEN: - DIFFERING OR UNFORESEEN SITE CONDITIONS NOT DESCRIBED IN THE DRAWINGS ARE DISCOVERED, - UPON MUTUAL AGREEMENT OF THE CONTRACTOR, RESIDENT ENGINEER AND FAA CONTRACTING OFFICER, ADDITIONAL ITEMS ARE ADDED, REMOVED OR MODIFIED FROM THE SCOPE OF WORK. FOR ALL CHANGE ORDERS, THE CONTRACTOR SHALL NOTIFY THE RESIDENT ENGINEER AT THE FIRST PRACTICABLE OPPORTUNITY IF A CHANGE ORDER IS NEEDED. IF THE RESIDENT ENGINEER AGREES THAT A CHANGE ORDER IS NEEDED, THE RESIDENT ENGINEER SHALL NOTIFY THE PROJECT ENGINEER AND CONTRACTING OFFICER IN WRITING AT THE FIRST PRACTICABLE OPPORTUNITY. THE CONTRACTOR SHALL PREPARE A CHANGE ORDER SUBMITTAL DESCRIBING THE MATERIALS, LABOR AND/OR SERVICES REQUIRED TO COMPLETE THE WORK. THE CHANGE ORDER SUBMITTAL SHALL CLEARLY IDENTIFY THE DIFFERENCE IN MATERIAL COST, LABOR COST AND THIRD-PARTY/SERVICE COST FOR THE CHANGE IN SCOPE. THE CONTRACTOR SHALL ALSO REVISE AND RESUBMIT THE PROJECT SCHEDULE AND SUBMIT IT TO THE RESIDENT ENGINEER AND PROJECT ENGINEER AS SOON AS PRACTICABLE. THE PROJECT ENGINEER SHALL AUTHORIZE THE CHANGE ORDER WORK IN WRITING AND PROVIDE NOTICE OF ACCEPTANCE OR REJECTION TO THE RESIDENT ENGINEER AND CONTRACTOR.									01 32 16 CONSTRUCTION PROGRESS SCHEDULE PRIOR TO THE PRE-CONSTRUCTION MEETING, THE CONTRACTOR SHALL DEVELOP AND SUBMIT A CRITICAL PATH METHOD SCHEDULE FOR THE PROJECT, IDENTIFYING THE ANTICIPATED START DATE, ALL MAJOR CONSTRUCTION ACTIVITIES, MAJOR MILESTONES AND THE ANTICIPATED COMPLETION DATE. THE SCHEDULE SHALL BE ONLY UPDATED AND RESUBMITTED DUE TO MAJOR DELAYS, CHANGE ORDERS OR REVISIONS OF MAJOR MILESTONES SUCH AS CUTOVERS. THROUGHOUT THE DURATION OF THE PROJECT, THE CONTRACTOR SHALL DEVELOP A TWO-WEEK LOOK AHEAD SCHEDULE AND DISTRIBUTE IT TO THE RESIDENT ENGINEER AND PROJECT ENGINEER. THE TWO-WEEK LOOK-AHEAD SCHEDULE SHALL BE UPDATED AND SUBMITTED WEEKLY, BEFORE THE START OF WORK EACH MONDAY.									FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552 <table><tr><td colspan="2">FAA DESIGNED BY:</td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td colspan="2">CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR, UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM</td><td>REV</td><td>APPROVED</td><td>DESCRIPTION</td><td>JCN</td><td>DATE</td><td>APVD</td></tr><tr><td colspan="2" rowspan="2"></td><td colspan="6">DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA</td></tr><tr><td colspan="6">SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 GENERAL PROJECT SPECIFICATIONS</td></tr><tr><td colspan="2" rowspan="4"></td><td colspan="2">SAIPAN</td><td colspan="2">GSN</td><td colspan="2">CNMI</td></tr><tr><td colspan="2">REVIEWED BY:</td><td colspan="2">SUBMITTED BY:</td><td colspan="2">APPROVED BY:</td></tr><tr><td colspan="2"></td><td colspan="2">PROJECT ENGINEER</td><td colspan="2">MANAGER, INFRASTRUCTURE CENTER</td></tr><tr><td colspan="2"></td><td>DESIGNED: A.J.G./C.U.C.</td><td colspan="2">ISSUED BY:</td><td>DATE:</td><td>JCN:</td></tr><tr><td colspan="2"></td><td colspan="2"></td><td>DRAWN: A.J.G.</td><td colspan="2" rowspan="2">DRAWING NUMBER: GSN-D-ARSR-ELD-G003</td><td colspan="2" rowspan="2">REV</td></tr><tr><td colspan="2"></td><td colspan="2"></td><td>CHECKED: J.G.P.</td></tr></table>									FAA DESIGNED BY:								CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR, UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM		REV	APPROVED	DESCRIPTION	JCN	DATE	APVD			DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA						SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 GENERAL PROJECT SPECIFICATIONS								SAIPAN		GSN		CNMI		REVIEWED BY:		SUBMITTED BY:		APPROVED BY:				PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER				DESIGNED: A.J.G./C.U.C.	ISSUED BY:		DATE:	JCN:					DRAWN: A.J.G.	DRAWING NUMBER: GSN-D-ARSR-ELD-G003		REV						CHECKED: J.G.P.
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01 89 00 SITE CONSTRUCTION PERFORMANCE REQUIREMENTS

FACILITY RISK CATEGORY:	IV
DESIGN WIND SPEED:	220 MPH
WIND-BORNE DEBRIS REGION:	YES
FEMA FLOOD ZONE:	NONE, ABOVE THE 500-YEAR FLOOD ELEVATION
0.2S SEISMIC DESIGN VALUE (S _{DS}):	1.38
1.0S SEISMIC DESIGN VALUE (S _D):	0.41
SEISMIC DESIGN CATEGORY:	D
BUILDING CODE FROST DEPTH:	N/A
COLD REGION:	NO
ARID OR SEMI-ARID REGION:	NO
TROPICAL/COSTAL REGION:	YES

03 30 00 CAST-IN-PLACE CONCRETE

SUMMARY: THIS SECTION COVERS ALL CAST-IN-PLACE CONCRETE PRODUCTS TO BE FURNISHED AND INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR CAST-IN-PLACE CONCRETE SHALL BE PER CUBIC YARD.

1.2. FORMBOARDS, TIE WIRE, WATER, PREP WORK, CONCRETE DELIVERY, CURING AND FINISHING SHALL BE INCIDENTAL TO THIS PAY ITEM.

2. MATERIALS:

2.1. ALL NORMAL STRENGTH (2500-5000PSI) CONCRETE MIXES SHALL HAVE THE FOLLOWING MIX CHARACTERISTICS:

2.1.1. WATER/CEMENT RATIO:

0.40-0.45

2.1.2. AIR CONTENT, WITHOUT AIR ENTRAINMENT:

2.0% - 5.0%

2.1.3. SLUMP:

4" +/- 1"

2.2. "SIDEWALK CONCRETE" SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI.

2.3. "DUCT BANK CONCRETE" SHALL MEET THE FOLLOWING SPECIFICATIONS:

2.3.1. THE COMPRESSIVE STRENGTH OF MAY BE AS LOW AS 2000PSI.

2.3.2. SLUMP MAY BE AS HIGH AS 9".

2.3.3. THE MAXIMUM AGGREGATE SIZE SHALL BE 3/4".

2.4. CONCRETE BACKFILL:

2.4.1. CONCRETE BACKFILL MAY BE USED TO FILL VOIDS OR ROAD CROSSINGS WHERE COMPACTION WOULD OTHERWISE BE IMPRACTICABLE. A MIX CERTIFIED BY THE STATE DOT IN THE PROJECT LOCALITY SHALL BE SELECTED. CONCRETE BACKFILL MAY BE CALLED "CONTROLLED LOW STRENGTH MATERIAL," "FLOWABLE FILL," "CEMENT SLURRY" OR OTHER TRADE NAMES.

2.4.2. THE MAXIMUM COMPRESSIVE STRENGTH OF CONCRETE BACKFILL SHALL BE 150 PSI. THIS IS THE TOP LIMIT WHERE IT IS CONSIDERED AN "EXCAVATABLE" PRODUCT.

3. EXECUTION:

3.1. CONCRETE:

3.1.1. THE CHUTE SHALL BE POSITIONED AS LOW AS PRACTICABLE TO PREVENT MOVEMENT OR FLOTATION OF FORMWORK, REINFORCEMENT OR DUCTS.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. CONTRACTOR SHALL PROVIDE THE PLANT DOCUMENTATION FOR EACH CONCRETE MIX TO BE USED, PRIOR TO ORDERING ANY FOR THE PROJECT. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER OR PROJECT ENGINEER IF REQUESTED.

4.2. CONTRACTOR SHALL RETAIN A COPY OF EACH BATCH TICKET FROM EACH LOAD OF CONCRETE DELIVERED TO THE SITE. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER IF REQUESTED.

4.3. NO TESTS FOR BREAKING STRENGTH, TEMPERATURE, ENTRAINED AIR, SLUMP OR OTHER FIELD CHECKED ITEMS ARE REQUIRED FOR THIS PROJECT.

26 05 43 UNDERGROUND DUCTS AND RACEWAYS FOR ELECTRICAL SYSTEMS

SUMMARY: THIS SECTION COVERS BURIED ELECTRICAL CONDUITS AND DUCT BANKS TO BE INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR BURIED ELECTRICAL DUCTS SHALL BE PER LINEAR FOOT.

1.2. EXCAVATION, CONCRETE FOR DUCT BANKS, GUARD WIRE INSTALLATION, SPOILS HAUL-OFF AND RESTORATION IS COVERED UNDER OTHER PAY ITEM SECTIONS.

1.3. INSTALLATION OF DETECTABLE WARNING TAPE SHALL BE INCIDENTAL TO THIS SECTION AND INCLUDED IN THE PER LINEAR FOOT PRICE OF BURIED CONDUIT. THE MATERIAL SHALL BE QUANTIFIED SEPARATELY SINCE ONE SECTION OF TAPE MAY PROVIDE COVERAGE FOR MULTIPLE CONDUITS.

2. MATERIALS:

2.1. CONDUIT SIZES, TYPES AND RATINGS ARE CALLED OUT IN THE DRAWINGS. NOMINAL PIPE SIZES AND COMMON TRADE NAMES ARE USED IN THE DRAWINGS.

2.2. ALL BURIED CONDUIT MUST BE EITHER SCH-80 PVC OR PVC-COATED RIGID GALVANIZED STEEL (RGS) OR CONCRETE ENCASED SCH-40 PVC.

2.3. CONCRETE ENCASED DUCTS SHALL BE PROVIDED WITH INTERLOCK SPACERS EVERY FIVE (5) FEET, MAXIMUM. IF FLOTATION OF DUCTS IS AN ISSUE, REBAR HOLD-DOWNS SHALL BE INSTALLED PRIOR TO CONCRETE POURING.

2.4. ALL CONDUITS MUST HAVE A MINIMUM SOIL COVER OF 24 INCHES.

2.5. CONDUITS TERMINATED IN VAULTS MUST HAVE PROTECTIVE "END-BELL" FITTINGS INSTALLED TO PROTECT THE CABLE DURING PULLING.

2.6. MAGNETICALLY DETECTABLE WARNING TAPE SHALL BE INSTALLED A MINIMUM OF 12" ABOVE THE CONDUIT OR DUCT BANK CONCRETE.

3. EXECUTION:

3.1. PVC CONDUITS SHALL BE GLUED TOGETHER PRIOR TO BACKFILLING.

3.2. PVC-COATED RGS CONDUITS SHALL UTILIZE THREADED COUPLINGS, TIGHTENED WITH A STRAP WRENCH UNTIL REFUSAL. PVC-COATED RGS CONDUIT SWEEPS OF 30 DEGREES OR MORE SHALL UTILIZE FACTORY COATED ELBOWS. FIELD BENDING OF PVC-COATED RGS IS ONLY PERMITTED FOR SMALL FIELD ROUTING BENDS. FIELD BENDING IS NOT PERMITTED FOR CONDUITS TWO (2) INCHES IN DIAMETER OR LARGER.

3.3. TRENCHES SHALL BE EXCAVATED, BACKFILLED, COMPACTED AND RESTORED IN ACCORDANCE WITH SECTION 31 23 00 EXCAVATION AND FILL.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. NO SUBMITTALS ARE REQUIRED UNLESS A SUBSTITUTION OR CHANGE ORDER IS REQUESTED.

31 05 16 AGGREGATES FOR EARTHWORK

SUMMARY: THIS SECTION COVERS ALL IMPORTED AGGREGATES FOR EARTHWORK TO BE PLACED UNDERNEATH STRUCTURES AND ROADWAYS.

1. MEASUREMENT AND PAYMENT:

1.1. THE PAY UNIT OF AGGREGATES SHALL BE PER CUBIC YARDS. CONTRACTOR MUST INDEPENDENTLY ESTIMATE THE AMOUNT AGGREGATES NEEDED. DELIVERY, STOCKPILING, COMPACTION AND HAUL-OFF SHALL BE INCLUDED IN THE PER CUBIC YARD PRICE OF ALL AGGREGATES.

2. MATERIALS:

2.1. "BASE COURSE" SHALL CONSIST OF CRUSHED GRAVEL AGGREGATES THAT MEET THE FAA GRADATION OF FAA P-209. OTHER PRODUCTS APPROVED BY THE STATE DOT AS "TOP COURSE," "STRUCTURAL FILL," "DENSE GRADED AGGREGATE," "CRUSH AND RUN" OR OTHER TERMS FOR CRUSHED STONE MIXTURES MAY BE USED SUBJECT TO APPROVAL. THE PREFERRED GRADATION IS LISTED BELOW.

2.1.1. SIEVE DESIGNATION:

% PASSING

2 INCH (50 MM)

100

1-1/2 INCH (37.5MM)

95-100

1 INCH (25 MM)

70-95

3/4 INCH (19 MM)

55-85

NO. 4 (4.75MM)

30-60

NO. 40 (425 MM)

10-30

NO 200 (75 MM)

0-10

2.2. IN COLD REGIONS (AIR FREEZING INDEX ABOVE 1500 FOR THE 100-YEAR RETURN PERIOD), ALL AGGREGATES SHALL CONTAIN NO MORE THAN 6% PASSING THE NO. 200 SIEVE. LISTED "NON-FROST SUSCEPTIBLE" PRODUCTS MUST BE USED.

3. EXECUTION:

3.1. ALL IMPORTED AGGREGATES MUST BE SPREAD IN VERTICAL LIFTS AND COMPACTED THOROUGHLY. EACH LIFT OF SUB-BASE OR BASE COURSE MUST BE SUBJECT TO AT LEAST 4 PASSES OF THE COMPACTION EQUIPMENT.

3.2. FOR AGGREGATES UNDER LOAD-BEARING STRUCTURES:

3.2.1. IF USING HAND-HELD COMPACTION EQUIPMENT SUCH AS A PLATE COMPACTOR OR "JUMPING JACK," LIFT HEIGHT SHALL NOT EXCEED 4 INCHES.

3.2.2. IF USING SELF-PROPELLED COMPACTION EQUIPMENT WITH A GROSS WEIGHT EXCEEDING OF 3000 LBS, LIFT HEIGHT SHALL NOT EXCEED 8 INCHES.

3.2.3. IF WATER IS USED TO AID IN COMPACTION, IT SHALL BE CONSTRAINED SO THAT WATER DOES NOT PUDDLE ON THE SURFACE OR PUMP OUT OF THE AGGREGATE LIFT DURING COMPACTION.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. NO DENSITY TESTING OF IN-SITU SOILS OR IMPORTED AGGREGATES SHALL BE REQUIRED OR PERFORMED.

4.2. CONTRACTOR SHALL RETAIN A BATCH TICKET COPY FROM EVERY LOAD OF AGGREGATES DELIVERED TO THE SITE. COPIES SHALL BE FURNISHED TO THE RESIDENT ENGINEER IF REQUESTED.

4.3. IF A DIFFERING MIX OTHER THAN THE LISTED FAA GRADATIONS SHALL BE USED, THE PRODUCT GRADATIONS SHALL BE SUBMITTED TO THE RESIDENT ENGINEER AND PROJECT ENGINEER FOR REFERENCE.

31 05 19.13 GEOTEXTILES FOR EARTHWORK

SUMMARY: THIS SECTION COVERS ALL GEOTEXTILES TO BE INSTALLED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR THIS PAY ITEM SHALL BE PER SQUARE FOOT.

2. MATERIALS:

2.1. ALL FABRIC SHALL BE INERT TO COMMONLY ENCOUNTERED CHEMICALS, HYDROCARBONS, MILDEW AND ROT RESISTANT, RESISTANT TO ULTRAVIOLET LIGHT EXPOSURE, INSECT AND RODENT RESISTANT AND FUEL RESISTANT.

2.2. "SEPARATION GRADE GEOTECHNICAL FABRIC" SHALL BE NON-WOVEN MATERIAL, INSTALLED AS SHOWN IN THE DRAWINGS. THE PREFERRED PRODUCT IS MIRAFI 140N.

3. EXECUTION:

3.1. PREPARE SUBGRADE AS SPECIFIED IN SECTION 31 23 00 EXCAVATION AND FILL.

3.2. GRADE TO A SMOOTH SURFACE, LEAVING NO SURFACE UNDULATIONS OR IRREGULARITIES THAT THE FABRIC CAN STRETCH AND "BRIDGE" OVER.

3.3. REMOVE ANY LOOSE AND ANGULAR MATERIALS, ROCKS AND STICKS THAT MAY DAMAGE THE FABRIC.

4. NOTIFICATIONS, SUBMITTALS AND DOCUMENTATION:

4.1. NO SUBMITTALS ARE REQUIRED UNLESS A SUBSTITUTION OR CHANGE ORDER IS REQUESTED.

31 23 00 EXCAVATION AND FILL

SUMMARY: THIS SECTION COVERS ALL EXCAVATION AND EARTHWORK REQUIRED FOR THIS PROJECT.

1. MEASUREMENT AND PAYMENT:

1.1. MEASUREMENT AND PAYMENT FOR THIS SECTION SHALL BE:

1.1.1. INCIDENTAL TO DEMOLITION WORK REQUIRING EXCAVATION.

1.1.2. INCIDENTAL TO INSTALLATION PAY ITEMS SUCH AS VAULTS, GROUNDING ITEMS AND OTHER STRUCTURES.

1.1.3. PER LINEAR FOOT FOR TRENCHING.

1.1.4. IF REQUIRED BY THE DRAWINGS, TOPSOIL, HAND-SEEDING AND/OR HYDROSEEDING SHALL BE MEASURED AND PAID AS ALL REQUIRED.

1.2. DELIVERY, STOCKPILING, COMPACTION AND HAUL-OFF SHALL BE INCLUDED IN THE PRICING OF EXCAVATION AND FILL.

2. MATERIALS:

2.1. FILL OR BACKFILL:

2.1.1. "FILL" REFERS TO MATERIAL USED TO FILL LOW-LYING AREAS OR ESTABLISH FINAL GRADES SURROUNDING STRUCTURES OR IMPACTED AREAS.

2.1.2. "BACKFILL" REFERS TO MATERIAL USED TO BACKFILL EXCAVATED TRENCHES OR OTHER AREAS NOT UNDER ANY LOAD BEARING STRUCTURE.

2.1

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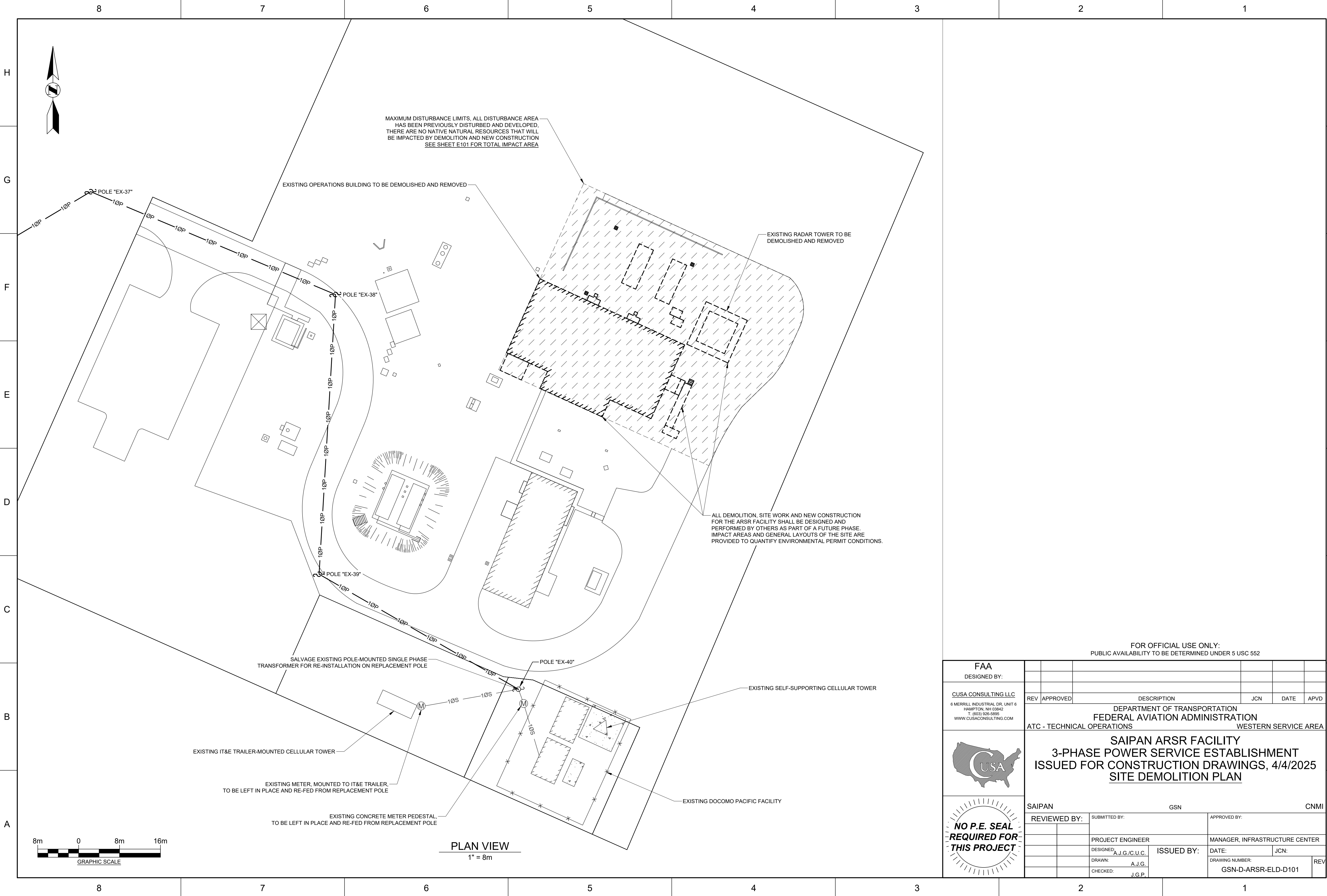
EXISTING POLES TO BE DEMOLISHED		
POLE #	LATITUDE	LONGITUDE
EX-1	N015°15'12.71"	E145°47'27.05"
EX-2	N015°15'11.25"	E145°47'25.88"
EX-3	N015°15'10.01"	E145°47'24.71"
EX-4	N015°15'08.57"	E145°47'23.49"
EX-5	N015°15'07.01"	E145°47'22.81"
EX-6	N015°15'05.38"	E145°47'22.31"
EX-7	N015°15'03.23"	E145°47'21.67"
EX-8	N015°15'01.25"	E145°47'21.23"
EX-9	N015°15'00.09"	E145°47'22.42"
EX-10	N015°15'01.90"	E145°47'24.46"
EX-11	N015°15'03.80"	E145°47'26.48"
EX-12	N015°15'05.73"	E145°47'28.62"
EX-13	N015°15'05.94"	E145°47'28.39"
EX-14	N015°15'07.45"	E145°47'30.72"
EX-15	N015°15'09.01"	E145°47'32.96"
EX-16	N015°15'09.21"	E145°47'32.75"
EX-17	N015°15'10.23"	E145°47'35.48"
EX-18	N015°15'10.48"	E145°47'35.32"
EX-19	N015°15'11.01"	E145°47'38.17"
EX-20	N015°15'11.03"	E145°47'41.04"
EX-21	N015°15'10.86"	E145°47'43.62"
EX-22	N015°15'09.63"	E145°47'45.11"
EX-23	N015°15'07.78"	E145°47'44.76"
EX-24	N015°15'07.01"	E145°47'42.99"
EX-25	N015°15'06.20"	E145°47'40.97"
EX-26	N015°15'05.37"	E145°47'39.07"
EX-27	N015°15'04.03"	E145°47'37.06"
EX-28	N015°15'01.21"	E145°47'34.00"
EX-29	N015°14'59.33"	E145°47'32.71"
EX-30	N015°14'56.89"	E145°47'31.48"
EX-31	N015°14'54.40"	E145°47'30.46"
EX-32	N015°14'53.63"	E145°47'32.35"
EX-33	N015°14'53.27"	E145°47'33.91"
EX-34	N015°14'54.02"	E145°47'35.50"
EX-35	N015°14'55.31"	E145°47'37.62"
EX-36	N015°14'56.47"	E145°47'39.54"
EX-37	N015°14'57.97"	E145°47'42.13"
EX-38	N015°14'57.31"	E145°47'43.73"
EX-39	N015°14'55.53"	E145°47'43.62"
EX-40	N015°14'54.80"	E145°47'44.93"

- NOTES:
- ALL POLES DEPICTED AS 'EX' SHALL BE DEMOLISHED AND REMOVED BY UTILITY (C.U.C.). ALL EXISTING POLES ARE SINGLE PHASE WOOD POLES.
 - ALL SINGLE PHASE OVERHEAD WIRE SHALL BE DEMOLISHED AND RECLAIMED BY C.U.C..
 - COORDINATES FOR ALL EXISTING AND PROPOSED POLES ARE PROVIDED BY C.U.C. ENGINEERING STAFF.

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		DESCRIPTION		JCN	
		DATE		APVD	
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS		WESTERN SERVICE AREA	
		SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 OVERHEAD DEMOLITION PLAN			
		SAIPAN		GSN	
		CNMI			
		REVIEWED BY:		SUBMITTED BY:	
		APPROVED BY:		MANAGER, INFRASTRUCTURE CENTER	
		PROJECT ENGINEER		DATE:	
		DESIGNED: A.J.G./C.U.C.		JCN:	
		DRAWN: A.J.G.		DRAWING NUMBER:	
		CHECKED: J.G.P.		GSN-D-ARSR-ELD-D100	
				REV	



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		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONSWESTERN SERVICE AREA SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 <u>SITE DEMOLITION PLAN</u>										
		SAIPAN		GSN			CNMI					
		REVIEWED BY:		SUBMITTED BY:			APPROVED BY:					
				PROJECT ENGINEER			MANAGER, INFRASTRUCTURE CENTER					
				DESIGNED: A.J.G./C.U.C.			ISSUED BY:		DATE:		JCN:	
				DRAWN: A.J.G.					DRAWING NUMBER:			
				CHECKED: J.G.P.					GSN-D-ARSR-ELD-D101			
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PROPOSED POLES			
POLE #	LATITUDE	LONGITUDE	FORMERLY:
PR-1	N015°15'12.75"	E145°47'27.06"	EX-1
PR-2	N015°15'11.45"	E145°47'26.04"	-
PR-3	N015°15'10.23"	E145°47'24.92"	-
PR-4	N015°15'08.98"	E145°47'23.83"	-
PR-5	N015°15'07.55"	E145°47'23.04"	-
PR-6	N015°15'06.00"	E145°47'22.50"	-
PR-7	N015°15'04.43"	E145°47'22.03"	-
PR-8	N015°15'02.85"	E145°47'21.59"	-
PR-9	N015°15'01.25"	E145°47'21.23"	EX-8
PR-10	N015°15'00.09"	E145°47'22.42"	EX-9
PR-11	N015°15'01.25"	E145°47'23.73"	-
PR-12	N015°15'02.43"	E145°47'25.02"	-
PR-13	N015°15'03.63"	E145°47'26.30"	-
PR-14	N015°15'04.81"	E145°47'27.59"	-
PR-15	N015°15'05.97"	E145°47'28.91"	-
PR-15A	N015°15'06.20"	E145°47'28.70"	-
PR-16	N015°15'07.08"	E145°47'30.27"	-
PR-17	N015°15'08.12"	E145°47'31.68"	-
PR-18	N015°15'09.31"	E145°47'33.01"	-
PR-19	N015°15'10.11"	E145°47'34.62"	-
PR-20	N015°15'10.71"	E145°47'36.30"	-
PR-21	N015°15'10.98"	E145°47'38.08"	EX-19
PR-22	N015°15'11.02"	E145°47'39.85"	-
PR-23	N015°15'10.99"	E145°47'41.63"	-
PR-24	N015°15'10.88"	E145°47'43.40"	-

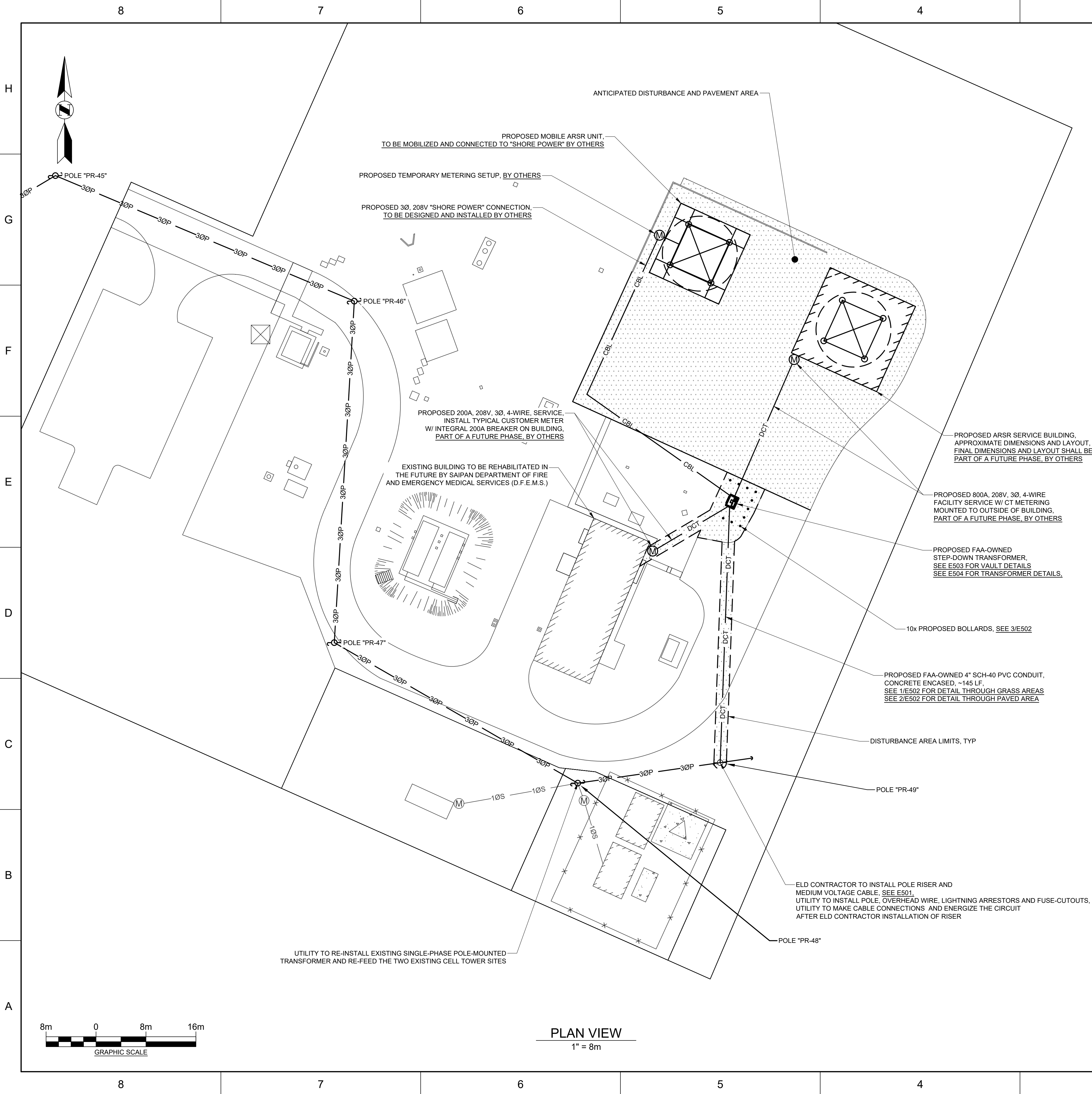
PROPOSED POLES			
POLE #	LATITUDE	LONGITUDE	FORMERLY:
PR-25	N015°15'09.88"	E145°47'44.81"	-
PR-26	N015°15'08.31"	E145°47'44.86"	-
PR-27	N015°15'07.30"	E145°47'43.65"	-
PR-28	N015°15'06.62"	E145°47'42.02"	-
PR-29	N015°15'05.94"	E145°47'40.39"	-
PR-30	N015°15'05.19"	E145°47'38.79"	-
PR-31	N015°15'04.21"	E145°47'37.33"	-
PR-32	N015°15'03.06"	E145°47'36.01"	-
PR-33	N015°15'01.87"	E145°47'34.72"	-
PR-34	N015°15'00.58"	E145°47'33.57"	-
PR-35	N015°14'59.13"	E145°47'32.61"	EX-29
PR-36	N015°14'57.58"	E145°47'31.83"	-
PR-37	N015°14'56.00"	E145°47'31.12"	-
PR-38	N015°14'54.40"	E145°47'30.46"	EX-31
PR-39	N015°14'53.69"	E145°47'32.19"	EX-32
PR-40	N015°14'53.31"	E145°47'34.01"	EX-33
PR-41	N015°14'54.14"	E145°47'35.70"	-
PR-42	N015°14'55.11"	E145°47'37.29"	-
PR-43	N015°14'56.08"	E145°47'38.89"	-
PR-44	N015°14'57.03"	E145°47'40.51"	-
PR-45	N015°14'57.97"	E145°47'42.13"	EX-37
PR-46	N015°14'57.31"	E145°47'43.73"	EX-38
PR-47	N015°14'55.53"	E145°47'43.62"	EX-39
PR-48	N015°14'54.80"	E145°47'44.93"	EX-40
PR-49	N015°14'54.91"	E145°47'45.69"	-

NOTES:

- POLES WITH A 'FORMERLY' DESIGNATION SHALL BE INSTALLED IN THE SAME LOCATION AS THE PREVIOUS SINGLE-PHASE POLE AFTER REMOVAL.
- THE AVERAGE STRAIGHT-LINE DISTANCE BETWEEN POLES IS 170 LF (49 INDIVIDUAL SPANS). UTILITY TO CALCULATE THE ACTUAL LENGTH OF CABLE BASED ON THEIR STANDARD SAG FACTORS.
- COORDINATES FOR ALL EXISTING AND PROPOSED POLES ARE PROVIDED BY C.U.C. ENGINEERING STAFF.

FAA DESIGNED BY:					
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM		REV	APPROVED	DESCRIPTION	JCN DATE APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION		ATC - TECHNICAL OPERATIONS	
		SAIPAN ARSR FACILITY 3-PHASE POWER SERVICE ESTABLISHMENT ISSUED FOR CONSTRUCTION DRAWINGS, 4/4/2025 OVERHEAD INSTALLATION PLAN		WESTERN SERVICE AREA	
		SAIPAN		GSN	CNMI
		REVIEWED BY:		SUBMITTED BY:	
		PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.		ISSUED BY:	
		DRAWN: A.J.G.		DATE:	
		CHECKED: J.G.P.		JCN:	
				DRAWING NUMBER:	
				GSN-D-ARSR-ELD-E100	
				REV	

M:\Current Jobs - ELD Projects\GNS ARSR - ELD (Saipan ARSR, CNMI)\CUSA Drawings\Issued For Construction\GNS-D-ELD IFC.dwg
4/4/2025 6:46 AM ANDREW GRAY



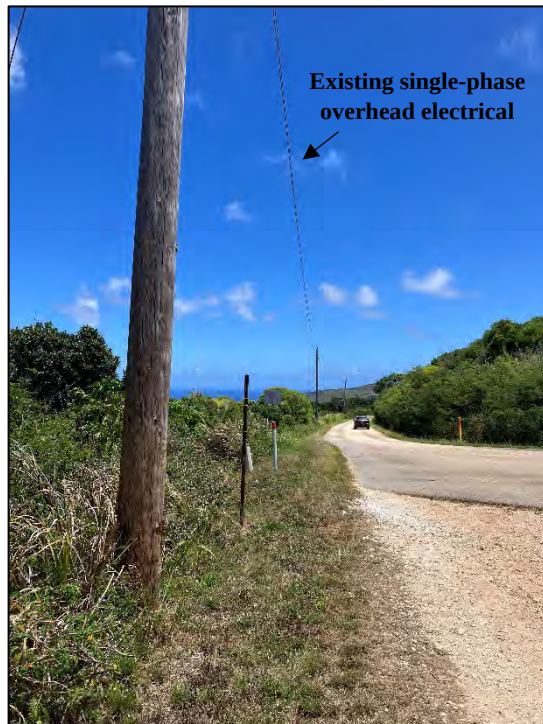
ENVIRONMENTAL IMPACTS SUMMARY		
	M ²	Ft ²
DISTURBED AREA FROM POLE INSTALLATION	37	400
SITE WORK, TOTAL DISTURBED AREA	2076	22346
NET INCREASE IN IMPERVIOUS AREA	0	0

- NOTES:**
- IMPACT AREA FOR NEW POLES IS ESTIMATED TO BE ONE SQUARE METER, UNLESS INSTALLED IN THE SAME LOCATION AS A PREVIOUS POLE.
 - ALL AREA TO BE DISTURBED IS CURRENTLY IMPERVIOUS SURFACES SUCH AS BUILDING ROOF OR ASPHALT PAVEMENT. FUTURE ARSR FACILITY CONSTRUCTION WILL RESULT IN EITHER NO CHANGE TO IMPERVIOUS SURFACE AREA OR A REDUCTION IN IMPERVIOUS SURFACE AREA.

FOR OFFICIAL USE ONLY: PUBLIC AVAILABILITY TO BE DETERMINED UNDER 5 USC 552					
FAA DESIGNED BY:					
CUSA CONSULTING LLC 6 MERRILL INDUSTRIAL DR. UNIT 6 HAMPTON, NH 03842 T. (603) 928-5895 WWW.CUSACONSULTING.COM					
REV	APPROVED	DESCRIPTION	JCN	DATE	APVD
		DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION ATC - TECHNICAL OPERATIONS WESTERN SERVICE AREA			
SAIPAN		GNS		CNMI	
REVIEWED BY:		SUBMITTED BY:		APPROVED BY:	
		PROJECT ENGINEER		MANAGER, INFRASTRUCTURE CENTER	
		DESIGNED: A.J.G./C.U.C.		DATE:	
		DRAWN: A.J.G.		JCN:	
		CHECKED: J.G.P.		DRAWING NUMBER: GNS-D-ARSR-ELD-E101	
				REV	



Attachment 3: Site Photos



Picture 1: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road.



Picture 2: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road.



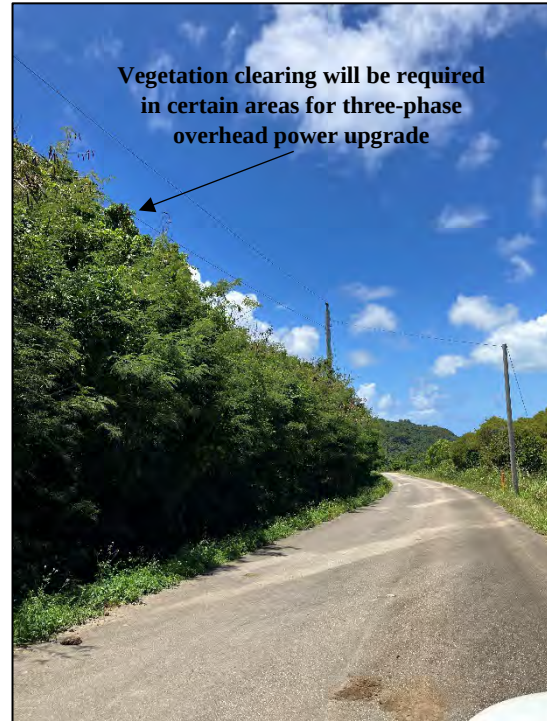
Picture 3: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road.



Picture 4: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road d.



Picture 5: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road.



Picture 6: Existing single-phase electrical line distribution (ELD) wooden poles along Pale Arnold Road.



Picture 7: PACBAR III Facility Site. Existing operational telecommunications towers shown in background.



Picture 8: Abandoned PACBAR III Radar Array and associated operations building.



Picture 9: Concrete/earthen ponding basin near southwest quadrant of PACBAR III site



Picture 30: PACBAR III Radar Array



Picture 11: Likely septic tank manholes at PACBAR III site



Picture 12: Operations building and empty shipping containers at PACBAR III site

Appendix C2: CNMI DCRM Concurrence with Federal Consistency Determination



Floyd R. Masga
Administrator

Commonwealth of the Northern Mariana Islands
OFFICE OF THE GOVERNOR
Bureau of Environmental and Coastal Quality
Division of Coastal Resources Management
P.O. Box 501304, Saipan, MP 96950
Tel: (670) 664-8300; Fax: (670) 664-8315
www.dcrm.gov.mp



Juanet Sablan
Acting Director, DCRM

May 29, 2026

Ref No: PRM26-065

Jamie L. Groves, Environmental Engineer
ATO Tech Ops, WSA Engineering Services
Federal Aviation Administration

>> sent via email to: Jamie.L.Groves@faa.gov and agray@cusaconsulting.com <<

RE: CZMA Consistency Determination for the Proposed FAA Installation and Operation of a New Air Route Surveillance Radar (ARSR) atop Mt. Petosukara, As Matuis, Saipan.

Dear Mr. Groves,

The Commonwealth of the Northern Mariana Islands (CNMI) Division of Coastal Resources Management (DCRM) has reviewed the Coastal Zone Management Act (CZMA) Consistency Determination (CD) submitted by the Federal Aviation Administration (FAA) via email on April 3, 2026. This determination regards the proposed installation and operation of a new Air Route Surveillance Radar (ARSR) atop Mt. Petosukara in As Matuis, Saipan.

The FAA's consistency determination addresses temporary soil disturbance and stormwater runoff during construction, as well as visual changes from the radar structure. As no construction is planned within DCRM's Areas of Particular Concern (APCs) and best management practices (BMPs) will be implemented to prevent erosion and waste discharge, the project remains consistent with NMIAC § 15-10-305(f)-(h). DCRM concurs with the FAA's determination that the proposed action is consistent to the maximum extent practicable with the policies outlined in your April 2, 2026, letter.

DCRM acknowledges the FAA's ongoing Section 106 Consultation with the CNMI Historic Preservation Office (HPO) and Section 7 Consultation under the Endangered Species Act (ESA) with the U.S. Fish and Wildlife Service (USFWS). We further note the FAA's commitment to continued coordination with the CNMI Division of Fish and Wildlife (DFW) to protect local wildlife resources.

If you have any questions or require further information, please contact me at fedcon@dcrm.gov.mp. Thank you for your continued coordination.

Sincerely,

JUANET SABLÁN
Acting Director
Division of Coastal Resources Management

APPENDIX D: LIST OF ACRONYMS AND ABBREVIATIONS

µg/m ³	Microgram per Cubic Meter
ACM	Asbestos Containing Material
AIS	Archaeological Inventory Survey
APEC	Allied Pacific Environmental Consulting, Inc.
APE	Area of Potential Effect
ARSR	Air Route Surveillance Radar
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
BA	Biological Assessment
BECQ	Bureau of Environmental and Coastal Quality
BMDO	Ballistic Missile Defense Organization
BMP	Best Management Practice
CAA	Clean Air Act
CATEX	Categorical Exclusion
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CMC	Commonwealth Code
CMP	Coastal Management Program
CNMI	Commonwealth of the Northern Mariana Islands
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
COPC	Constituents/Chemicals of Potential Concern
CUC	Commonwealth Utilities Corporation
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibels
DCCA	Department of Community and Cultural Affairs
DCRM	Division of Coastal Resources Management
DEQ	Division of Environmental Quality
DFEMS	Department of Fire and Emergency Management Services
DFW	Division of Fish and Wildlife
DLNR	Department of Lands and Natural Resources
DNL	Day-Night Average Sound Level
DoD	United States Department of Defense
DOI	United States Department of Interior
DOT	United States Department of Transportation
DPL	Department of Public Lands
DPS	Department of Public Safety

DPW	Department of Public Works
DRO	Diesel Range Organics
EA	Environmental Assessment
EIS	Environmental Impact Statement
ELD	Electrical Line Distribution
EMR	Electromagnetic Radiation
EO	Executive Order
ESA	Endangered Species Act
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FONSI	Finding Of No Significant Impact
GHG	Greenhouse Gas
LBP	Lead-Based Paint
HPO	Historic Preservation Office
HSEM	Homeland Security and Emergency Management
IPaC	Information for Planning and Consultation
MDA	Missile Defense Agency
mg/m ³	Milligram per Cubic Meter
MHz	Megahertz
NAAQ	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrous Dioxide
NOAA	National Oceanic and Atmospheric Administration
NMC	Northern Marianas College
NMFS	National Marine Fisheries Service
NMIAC	Northern Mariana Islands Administrative Code
NRCS	National Resources Conservation Services
NRHP	National Register of Historic Places
OWS	Oil Water Separator
O ₃	Ozone
PACBAR	Pacific Barrier Radar
PAH	Polycyclic Aromatic Hydrocarbon
Pb	Lead
PCB	Polychlorinated Biphenyl
PM	Particulate Matter
PPE	Personal Protective Equipment
PPB	Parts Per Billion
PPM	Parts Per Million
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Conditions

RRO	Residual Range Organics
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SUMBA	Saipan Upland Mitigation Bank Area
SVOC	Semi-Volatile Organic Compound
TPH	Total Petroleum Hydrocarbons
USAF	United States Air Force
USDOT	United States Department of Transportation
USC	United States Code
US EPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordinance
VOCs	Volatile Organic Compound