Final

ENVIRONMENTAL ASSESSMENT
FOR
EXPANSION OF COMBAT ARMS TRAINING AND MAINTENANCE RANGE

MOODY AFB, GEORGIA

United States Air Force
Headquarters Air Combat Command

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ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
BMP	Best Management Practice
CATM	Combat Arms Training and Maintenance
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CRMP	Cultural Resources Management Plan
CWA	Clean Water Act
EA	environmental assessment
EO	Executive Order
EOD	Explosive Ordnance Disposal
GDNR	Georgia Department of Natural Resources
GNHP	Georgia Natural Heritage Program
IRP	Installation Restoration Program
mm	millimeter
MSL	mean sea level
NEPA	National Environmental Policy Act
NRHP	National Register of Historic Places
Q/D	Quantity/Distance
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
RSO	Range Safety Officer
SDZ	Surface Danger Zone
SFG	Security Forces Group
SFS	Security Forces Squadron
SHPO	State Historic Preservation Officer
TNC	The Nature Conservancy
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

FINDING OF NO SIGNIFICANT IMPACT

ENVIRONMENTAL ASSESSMENT

EXPANSION OF THE COMBAT ARMS TRAINING AND MAINTENANCE RANGE

MOODY AIR FORCE BASE, GEORGIA

Pursuant to Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 1500-1508) implementing procedural provisions of the National Environmental Policy Act (NEPA) (Public Law 91-190, 42 U.S.C. 4321 et seq.), the U.S. Air Force gives notice that an environmental assessment (EA) has been prepared and an environmental impact statement (EIS) is not required for the expansion of the existing Combat Arms and Training Maintenance (CATM) Range at Moody Air Force Base (AFB), Georgia.

1.0 PROPOSED ACTION

The proposed action would include the following:

- construction of 28 new firing stations adjacent to and in line with the existing CATM Range, associated target supports, additional parking for 20 cars, and the extension of the existing range impact berm;
- relocation of an M203 Grenade Range that would be displaced by the proposed CATM Range expansion, including a cleared range area 60 feet wide by 1,640 feet long, a 150-foot access road, and a small parking area;
- a small increase (3.3 percent) in the rounds of ammunition fired annually at both ranges for combat arms qualification and proficiency training. Training at the expanded CATM Range would involve the use of M9 (9 mm) pistols, shotguns, M16 rifles, and three different types of machine guns. Training at the relocated Grenade Range would involve the use of M203 and similar 40 millimeter grenade launchers using inert practice grenades only.

The purpose of the proposed action is to provide an adequately sized and configured CATM Range facility at Moody AFB to accommodate the majority of combat arms training and qualifications requirements of the 820th Security Forces Group (820 SFG). The expanded range is needed to alleviate scheduling conflicts that frequently occur at the existing CATM Range, causing the 820 SFG to delay training, conduct more weekend training, and conduct basic rifle and pistol operations at Camp Blanding ranges, approximately 2 hours away. The proposed relocation of the M203 Grenade Range is needed because this training function would be displaced by the proposed CATM Range expansion.

2.0 ALTERNATIVES CONSIDERED

Potential sites for a new CATM Range were found to be severely limited due to the prominent wetlands located within base boundaries, as well as extensive use of the adjacent Grand Bay Range. Several different alternatives were evaluated based upon defined criteria. All but the proposed location were eliminated from further consideration because of encroachment on wetlands or conflicts with the Grand Bay Range safety zones. As a result of this analysis, no other alternatives to the proposed action emerged that would satisfy the identified purpose and need within acceptable limits of the search criteria. Consequently, only the proposed action and the No-Action Alternative were analyzed in the EA.

Under the No-Action Alternative, additional CATM Range capacity would not be created and the 820 SFG would continue to have limited and untimely access to combat arms qualification and proficiency training, and would continue to conduct such training under adverse and inefficient conditions.

Operational scheduling at the existing CATM Range would continue to be constrained, thereby limiting mission effectiveness and potentially impacting unit readiness. Nonetheless, CEQ guidelines stipulate that the No-Action Alternative be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented. Therefore, this alternative was carried forward for analysis in the EA.

3.0 SUMMARY OF ENVIRONMENTAL EFFECTS

NEPA, CEQ regulations, and US Air Force procedures for implementing NEPA (32 CFR 989) specify that an EA should focus only on those resource areas potentially subject to impacts. Consequently, the EA for the proposed range expansion focuses only on geological resources, water resources, biological resources, cultural resources, and safety. The following additional resource areas were not analyzed in detail in the EA, as the potential for impacts was considered to be negligible or nonexistent: land use, noise, air quality, transportation and circulation, utilities and services, visual resources, socioeconomics and environmental justice, and hazardous materials and wastes.

The proposed action would have no significant impacts on geological resources. No unique geologic features or geologic hazards are present on the installation and grading required during construction would be minimal due to the flat terrain. Soils would be disturbed during construction activities associated with the CATM Range expansion and during clearing of vegetation for the proposed M203 Range; however, with the implementation of standard construction practices to control erosion, impacts to soils would be minimized. Impacts from operation of the two ranges were evaluated, with particular focus on potential soil contamination from ammunition and lead residue. Based on soil test results in the vicinity of the existing CATM Range, which has been used for weapons firing for decades, no significant impacts from range operations are anticipated from the proposed action.

No significant impacts to water resources would result from the proposed action. No wetlands or other important water resources are located in the immediate vicinity of the proposed range sites, and water quality testing of a man-made pond near the existing range impact berm suggests that decades of range use have not impacted surface water quality in the area. There has been no indication that range use has impacted groundwater quality in the area.

Construction activities associated with the proposed expansion of the CATM Range would require vegetation removal in landscaped and previously disturbed areas where no sensitive vegetation is present. The proposed clearing of approximately 2.6 acres of vegetation for construction of the M203 grenade range would not significantly impact the surrounding managed forest stand and the clearing would be conducted in accordance with forest management practices outlined in the appropriate resource management plans and policies. Therefore, no significant impacts to vegetation would occur.

Wildlife would be temporarily displaced from otherwise suitable habitat in the immediate vicinity of the project area. Smaller, less mobile species and those seeking refuge in burrows (e.g., gophers) could inadvertently be killed during construction activities; however, long-term impacts to populations of such species would not result. Therefore, there would be no significant impacts to wildlife with implementation of the construction activities associated with the proposed action.

No special-status species are known to occur within the construction area for the proposed CATM Range expansion or M203 grenade range. Therefore, there would be no significant impacts to special-status species. Although a gopher tortoise colony is known to occur to the west of the proposed M203 grenade range, the strongly-associated indigo snake has not been observed in the colony and the area is considered poor indigo snake habitat. However, the surrounding forest area is being managed to provide gopher tortoise habitat and there is potential for indigo snakes to occur in the colony in the future. Indigo snakes

and gopher tortoises are known to react to ground vibrations caused by human activity or vehicles. However, gopher tortoise colonies are also known to occur near military artillery ranges, airfields, and other areas where ground vibrations could be high. The use of non-explosive, practice grenade rounds on a quarterly basis at the proposed M203 grenade range is unlikely to substantially alter gopher tortoise behavior, physiology, or reproduction or create sufficient ground vibration to dissuade indigo snakes from someday inhabiting the nearby colony. Therefore, implementation of the proposed action would not result in significant impacts to special-status species at Moody AFB.

No significant impacts to cultural resources would occur as a result of construction or operations associated with the proposed action. No cultural resources have been identified in the vicinity of either proposed range site. The closest recorded site is potentially eligible to the National Register of Historic Places, but is found approximately 1,300 feet north of the limits of the surface danger zone (SDZ) for the firing range expansion and approximately 1,300 feet northeast of the proposed grenade range construction and SDZ. Proposed construction would not commence until after consultation with the Georgia SHPO.

No significant impacts associated with safety would occur as a result of the proposed action. All personnel using the CATM Range and M203 Grenade Range would adhere to all applicable range safety regulations. Training exercises would be scheduled to ensure that unauthorized personnel would not be present in ranges and on terrain designated for training exercises. In addition, the area would be secured and cordoned off before use of any range area occurs, to ensure that unauthorized personnel do not enter. The SDZs for the CATM Range expansion and new M203 Grenade Range would not overlap and the two ranges would be able to operate simultaneously without creating a safety impact. The SDZs would also not encompass any structures, roads, or other land uses that would be placed at risk from range operations. The proposed action would not violate any restrictions associated with explosive safety quantity distance (Q/D) arcs around munitions storage or related facilities. All munitions associated with training operations would be stored and handled according to established procedures to minimize potential safety risks. No safety-related impacts are expected to occur from implementation of the proposed action.

4.0 CONCLUSION

The attached EA was prepared and evaluated pursuant to NEPA and in accordance with CEQ regulations and 32 CFR 989, *The Environmental Impact Analysis Process*. I have concluded that the expansion of the CATM Range and the relocation of the M203 Grenade Range as proposed does not constitute a "major Federal action significantly affecting the quality of the human environment" when considered individually or cumulatively in the context of the referenced act, including both direct and indirect impacts. Therefore, no further study is required, and a Finding of No Significant Impact is thus warranted.

Howard Short

HOWARD SHORT, Colonel, USAF

Chairperson, 347 RQW Environmental Protection Committee

18 Sep 03

Date

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EXECUTIVE SUMMARY

The U.S. Air Force proposes to expand the existing Combat Arms and Training Maintenance (CATM) Range at Moody Air Force Base (AFB), Georgia, and relocate an existing M203 Grenade Range that would be displaced by the subject range expansion. This environmental assessment (EA) evaluates potential environmental impacts associated with implementation of this proposed action and the No-Action Alternative. The EA describes existing conditions and potential impacts on environmental resources within the applicable region of influence (ROI) for each resource.

This EA has been prepared by the U.S. Air Force, Headquarters Air Combat Command in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality regulations implementing NEPA, and 32 Code of Federal Regulations (CFR) 989, *The Environmental Impact Analysis Process*.

The proposed action would include the following:

- construction of 28 new firing stations adjacent to the existing range, including associated target supports and the extension of the existing range impact berm;
- relocation of the M203 Grenade Range that would be displaced by the proposed CATM Range expansion, or including a cleared range area, access road, and parking area;
- a small increase (3.3 percent) in the rounds of ammunition fired annually at both ranges for combat arms qualification and proficiency training. Training at the expanded CATM Range would involve the use of M9 (9 millimeter) pistols, shotguns, M16 rifles, and three different types of machine guns. Training at the relocated Grenade Range would involve the use of M203 and similar 40 millimeter grenade launchers using inert practice grenades only.

The purpose of the proposed action is to provide an adequately sized and configured CATM Range facility at Moody AFB to accommodate the majority of combat arms training and qualifications requirements of the 820th Security Forces Group (820 SFG). The expanded range is needed to alleviate scheduling conflicts that frequently occur at the existing CATM Range, causing the 820 SFG to delay training, conduct more weekend training, and conduct basic rifle and pistol operations at the distant Camp Blanding ranges. The proposed relocation of the M203 Grenade Range is needed because this training function would be displaced by the proposed CATM Range expansion. The proposed range expansion would help maximize mission capability by enabling simultaneous firing of more than one type of weapon by more than one group of personnel, eliminating training delays and scheduling conflicts with other range users, supporting night firing requirements, and reducing the need to travel to distant ranges to conduct basic combat arms training (some specialized training would continue to occur as needed at Camp Blanding).

Potential impacts resulting from the proposed action and the No-Action Alternative were analyzed for geological resources, water resources, biological resources, cultural resources, and safety. No significant environmental impacts were identified.

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Final

ENVIRONMENTAL ASSESSMENT FOR EXPANSION OF COMBAT ARMS TRAINING AND MAINTENANCE RANGE AT MOODY AIR FORCE BASE, GA

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CHAPTER 1
PURPOSE AND NEED FOR PROPOSED ACTION

1.1 INTRODUCTION

This environmental assessment (EA) evaluates potential environmental impacts of a proposed expansion of the Combat Arms Training and Maintenance (CATM) Range at Moody Air Force Base (AFB), Georgia. The proposed action would include the following:

- construction of 28 new firing stations, including associated target supports and the extension of the existing range impact berm;
- relocation of the M203 Grenade Range that would be displaced by the proposed CATM Range expansion;
- a small increase in the annual use of the expanded CATM Range and M203 Grenade Range for combat arms qualification and proficiency training.

This EA has been prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations, and 32 Code of Federal Regulations (CFR) 989, *The Environmental Impact Analysis Process*.

1.2 BACKGROUND

Moody AFB is located 10 miles northeast of the City of Valdosta in Lowndes and Lanier counties in south-central Georgia. Comprising approximately 11,000 acres of federally-owned land (Figure 1-1), the installation includes the main base (5,039 acres), the adjacent Grand Bay Range (5,874 acres), and the Grassy Pond Recreational Annex (489 acres), located 25 miles southwest of the main base. Military use of this area began in early 1942 with the establishment of the Moody Field Advanced Pilot Training School. The installation was closed in 1946 but was reopened permanently in 1951 to train pilots during the Korean conflict. Moody Field gained official, permanent status as an AFB in 1954. The CATM Range was built in 1970 in a relatively undeveloped area in the south-central part of the main base (Figure 1-2).

Moody AFB is home to the 347th Rescue Wing, which includes among its four primary groups the 347th Mission Support Group. Management of the existing CATM Range is the responsibility of the 347th Security Forces Squadron (347 SFS) under the direction of the 347th Mission Support Group. The 347 SFS supports the Wing by protecting the Air Force combat capability of assigned forces both on the base and at deployed locations. The squadron is responsible for maintaining law and order on the installation and managing the base's antiterrorist, resources protection, crime prevention, and base security programs. The purpose of the CATM Range is to provide weapons qualification and proficiency training to base personnel. With only 28 current firing stations, the capacity of the existing CATM Range to support the training needs of all base personnel is severely limited and frequent scheduling conflicts occur.

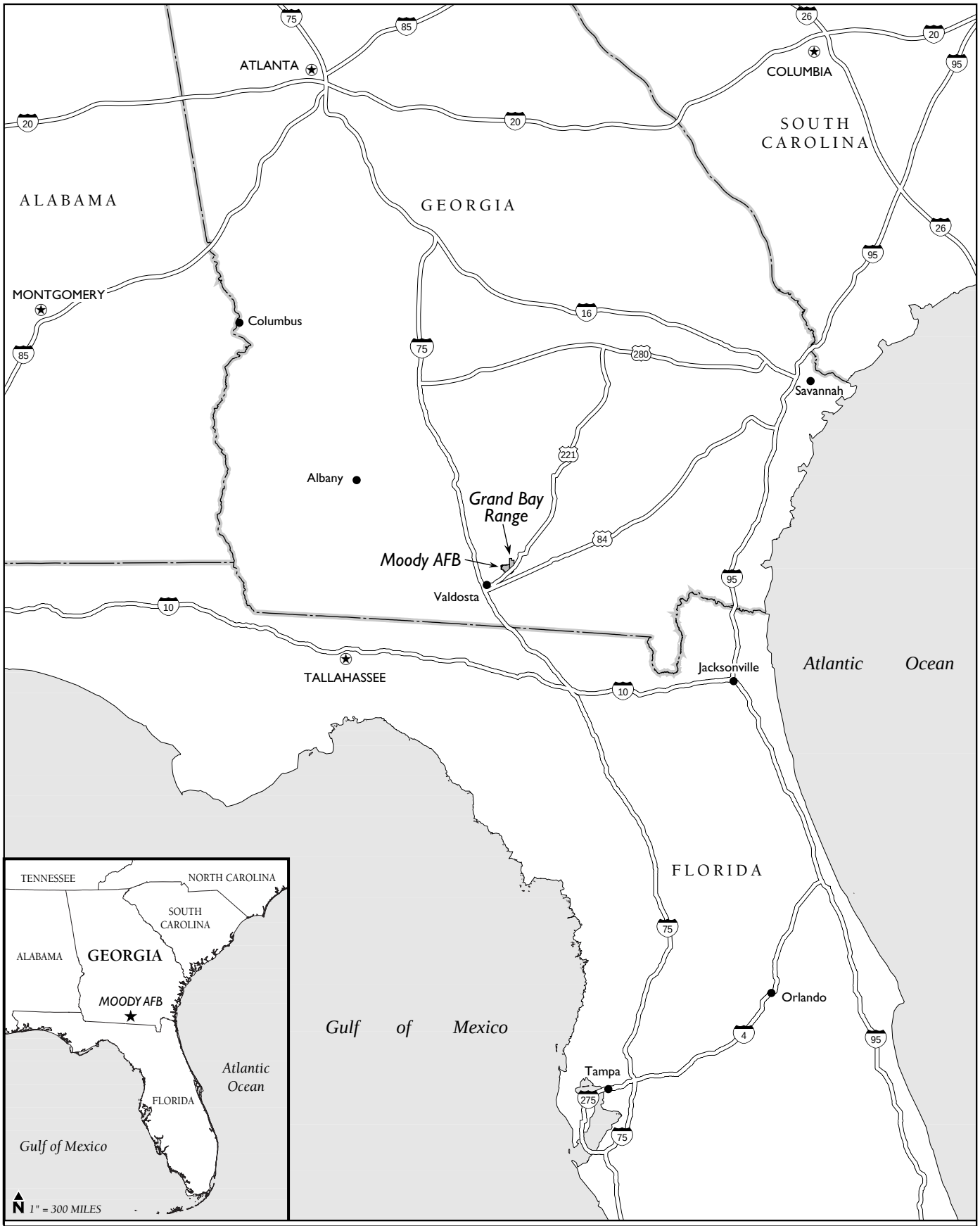

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Figure 1-1
Regional Location of
Moody AFB

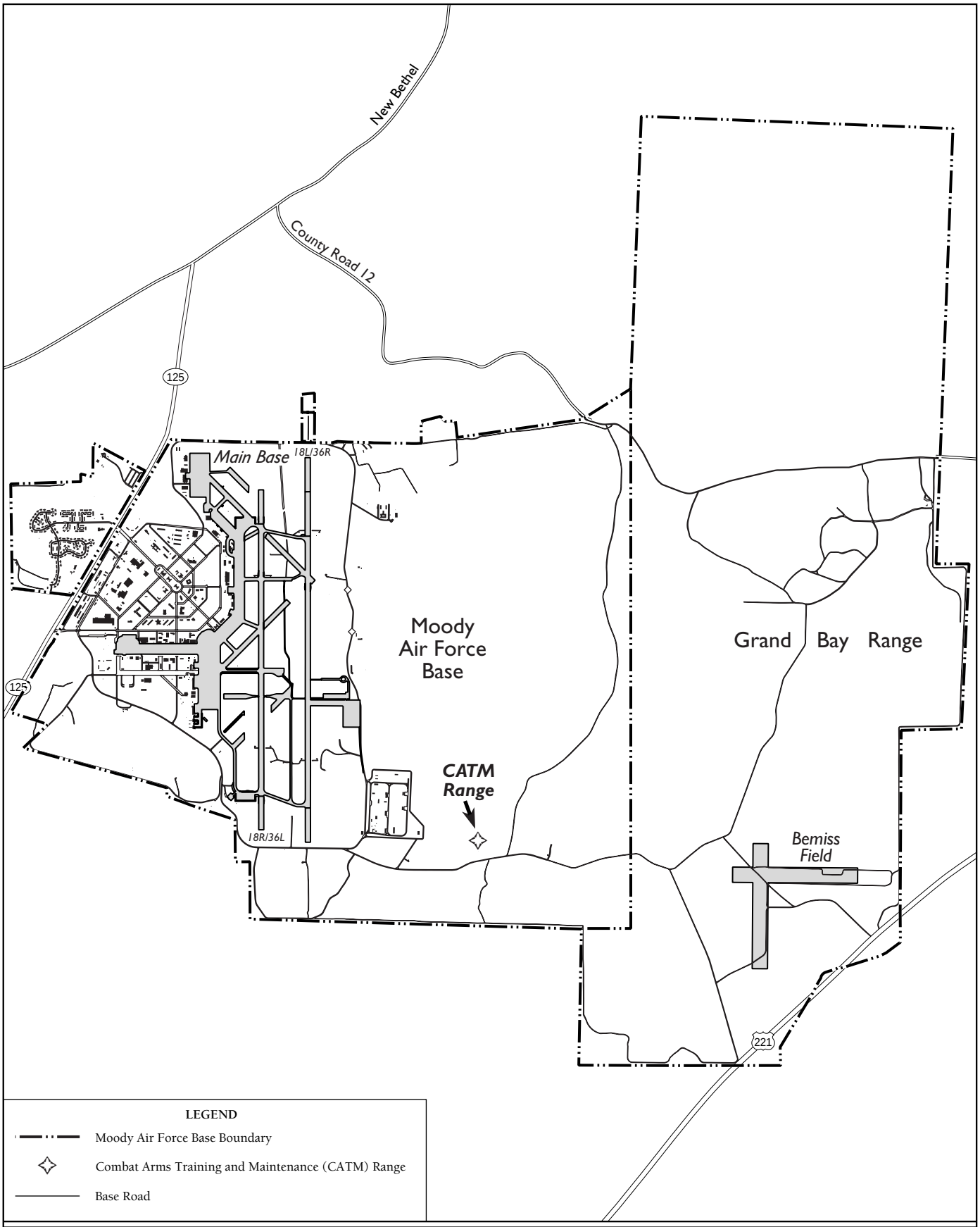

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Figure 1-2
Moody AFB and the Existing CATM Range

In March of 2001 the 820th Security Forces Group (820 SFG) moved to Moody AFB as a tenant organization. The group's mission is to provide fully integrated, highly capable and responsive force protection for Expeditionary Air Forces anywhere in the world. The 820 SFG includes 685 personnel divided into 3 squadrons, each maintaining a high operations tempo and state of readiness. The environmental consequences of the 820 SFG beddown at Moody AFB were evaluated in an EA completed in February 2000. At that time, it was acknowledged that the available capacity of the CATM Range would be insufficient to support all of the combat arms training and qualification needs of the 820 SFG, and that additional training assets would be required (Moody AFB 2000). Due to these capacity constraints, the 820 SFG has encountered frequent scheduling conflicts in their use of the CATM Range. In response to these constraints, the group has had to train at less desirable times (e.g., on weekends) and has had to conduct more of their training at Camp Blanding, Florida, approximately 2 hours away. While certain types of specialized training must occur at Camp Blanding because of the availability of unique facilities, traveling to Camp Blanding for basic pistol and rifle training is very inefficient and time consuming. In addition, Camp Blanding does not support firing at night, which is an important training requirement of the 820 SFG.

1.3 PURPOSE AND NEED

The purpose of the proposed action is to provide an adequately sized and configured CATM Range facility at Moody AFB to accommodate the majority of combat arms training and qualifications requirements of the 820 SFG. The expanded range is needed to alleviate scheduling conflicts that frequently occur at the existing CATM Range, causing the 820 SFG to delay training, conduct more weekend training, and conduct basic rifle and pistol operations at the distant Camp Blanding ranges. The proposed relocation of the M203 Grenade Range is needed because this training function would be displaced by the proposed CATM Range expansion. The proposed range expansion would help maximize mission capability by enabling simultaneous firing of more than one type of weapon by more than one group of personnel, eliminating training delays and scheduling conflicts with other range users, supporting night firing requirements, and reducing the need to travel to distant ranges to conduct basic combat arms training (some specialized training would continue to occur as needed at Camp Blanding).

1.4 REGULATORY COMPLIANCE

A variety of laws, regulations, and executive orders (EOs) apply to federal actions and form the basis of the analysis presented in this EA. NEPA requires federal agencies to consider potential environmental consequences of proposed actions and enhance the environment through well-informed federal decisions. The CEQ was established under NEPA to implement and oversee federal policy in this process. Other related federal regulations include 32 CFR 989; EO 11514, *Protection and Enhancement of Environmental Quality*; and the Endangered Species Act.

1.5 ORGANIZATION OF THE ENVIRONMENTAL ASSESSMENT

This EA assesses the impacts of the proposed action and alternatives, including the No-Action Alternative, on potentially affected environmental resources. This chapter provided background information relevant to the proposed action and discussed its purpose and need. Chapter 2.0 describes the proposed action and alternatives in greater detail. Chapter 3.0 describes baseline conditions for each of the affected resource areas, while Chapter 4.0 describes environmental impacts of the proposed action on these resources. Chapter 5.0 includes an analysis of potential cumulative impacts of the proposed action, and Chapter 6.0 describes any irreversible or irretrievable (permanent) commitment of resources. Chapter 7.0 describes the references used in the preparation of this EA and Chapter 8.0 lists the preparers.

CHAPTER 2
DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

2.1.1 Expansion of CATM Range

The Air Force proposes to expand the existing CATM Range facility at Moody AFB by constructing an additional 28 firing positions and associated targets immediately to the west of and in line with the existing range (Figure 2-1). The proposed structure encompassing the 28 firing positions would be similar in design to the existing CATM Range structure (Figure 2-2), and would include a concrete slab (approximately 18 by 150 feet), a raised observation building, and a roof structure. Three rows of 8 by 8-inch posts set in concrete would be installed for the mounting of targets. Beyond the last row of target supports, the existing earthen impact berm would be extended approximately 200 feet to cover the entire width of the expanded range. Soil to construct the berm would be acquired from a designated borrow site elsewhere on base or from an off-base source, and transported to the project site. The proposed action would also include construction of a concrete wall (7 feet high by 102 feet long) to divide the two halves of the expanded range, approximately 130 feet of new walkway, and an expansion of the existing paved parking lot to accommodate 20 additional vehicles. A shallow, man-made drainage swale that runs north-south through the proposed expansion site would be rerouted to the west of the expansion area as part of the proposed action. Any other pertinent site improvements, utilities, stormwater runoff requirements, etc., would be incorporated into the project design in compliance with all applicable engineering design standards and best management practices (BMPs).

2.1.2 Relocation of M203 Grenade Range

The site of the proposed range expansion is a grass-covered open area adjacent to the CATM Range that is currently used as a target area for M203 grenade launchers (Figure 2-2). Since the range expansion would displace this function, the proposed action includes the construction of a new M203 Range at a site near the 820 SFG headquarters complex (Figure 2-3). The proposed range would be a cleared area approximately 60 feet wide by 1,640 feet long (2.3 acres), planted with lawn and featuring one or more stationary target vehicles placed at the southern end. No structures would be constructed. The project would also require approximately 150 feet of paved access road (which would follow the path of an existing firebreak – see photo at right) and a small paved parking area at the entrance to the range (Figure 2-3). In total, approximately 2.6 acres of trees and other vegetation would require clearing. Only non-explosive, low-velocity, inert training grenades would be fired at the proposed range. Upon impact, these training grenades break open and emit a small amount of talcum powder as an aid in spotting and scoring the accuracy of each round. All expended grenades would be collected and properly disposed of after each training exercise.

View of firebreak heading east toward Proposed M203 Range Relocation Site

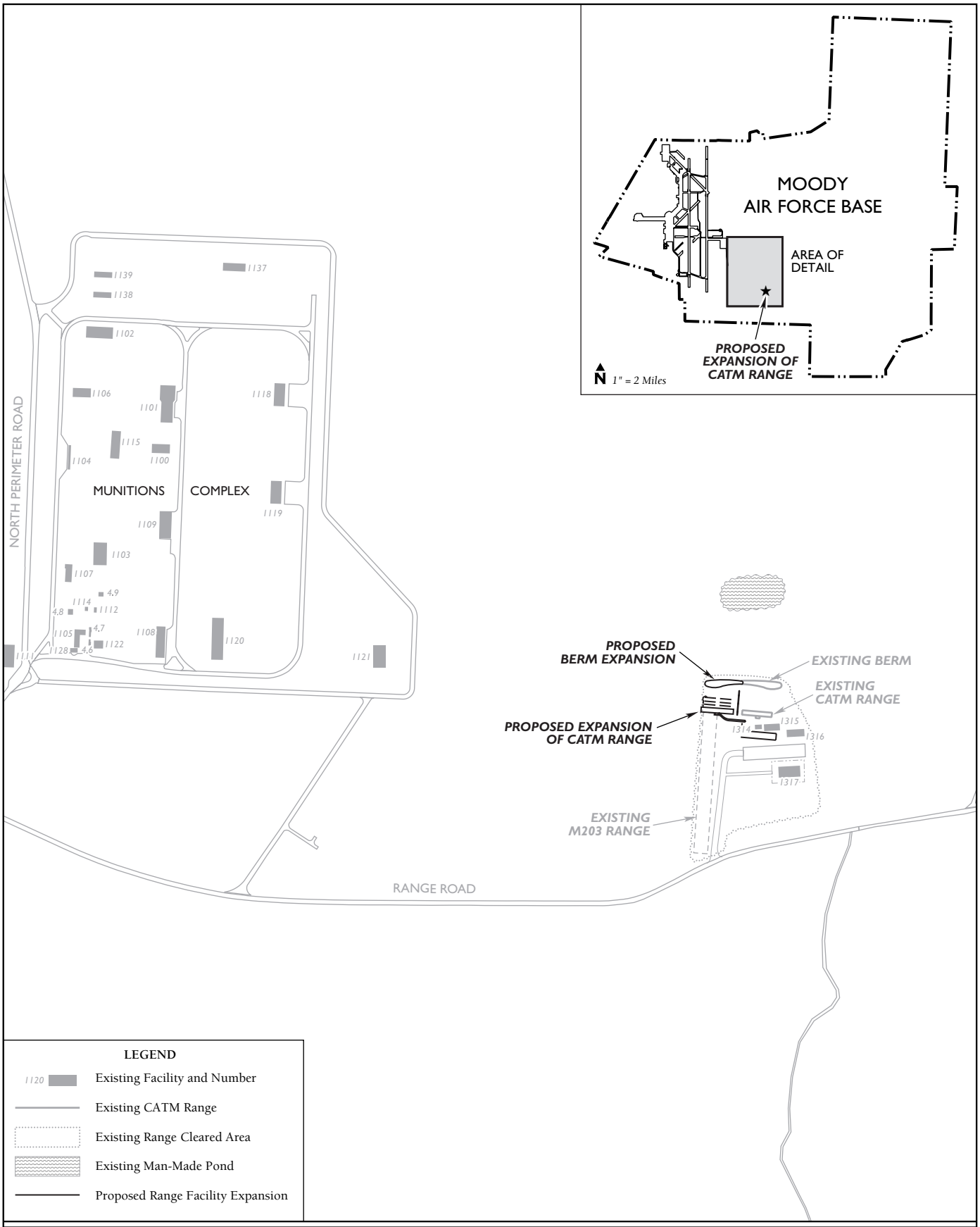

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Figure 2-1
Proposed CATM Range Expansion

View of existing CATM Range structure and target supports

Proposed site of CATM Range expansion, including existing M203 target vehicle

Figure 2-2. Views of Existing CATM Range and Proposed Expansion Site

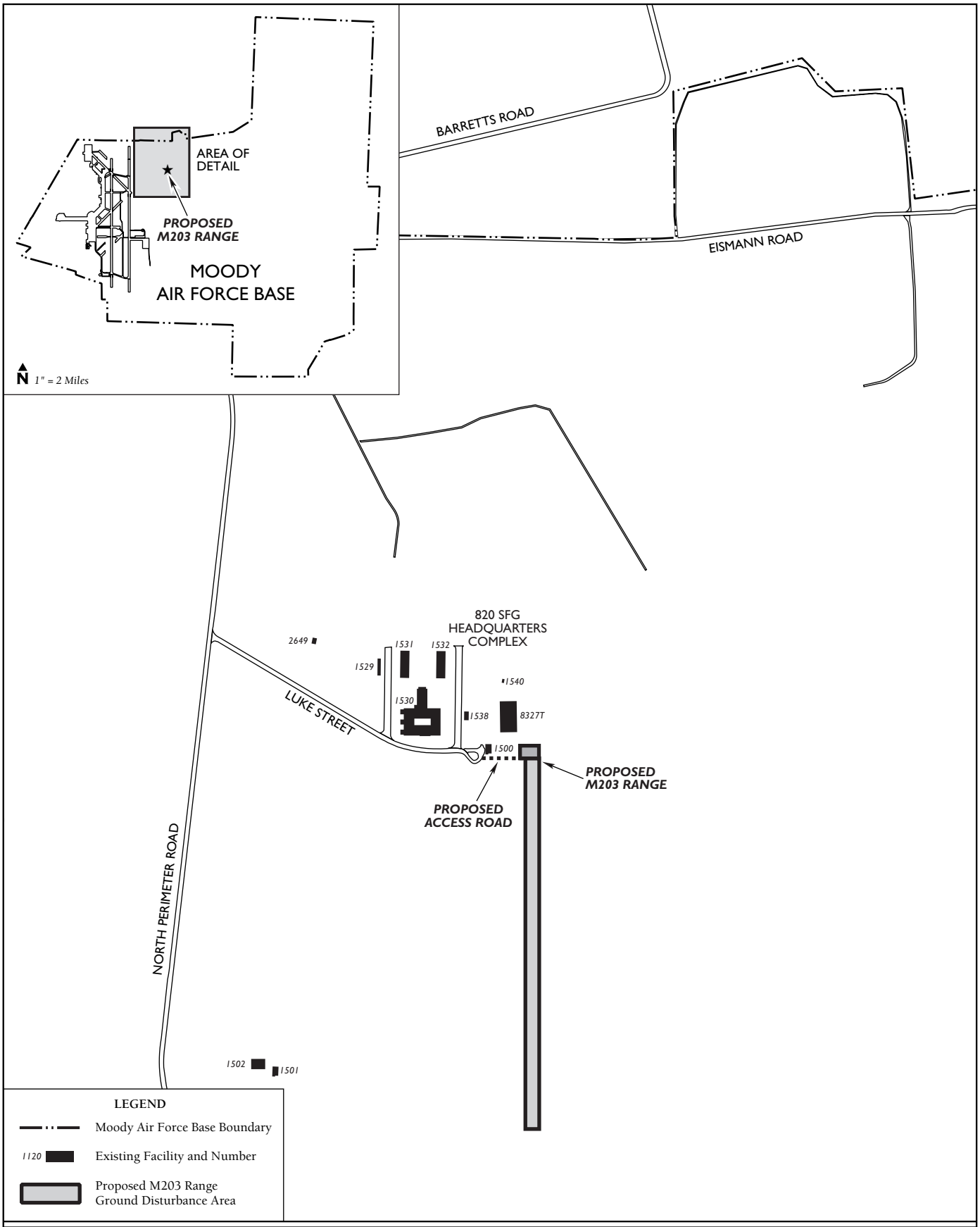

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Figure 2-3
Proposed Relocation of M203 Grenade Range

2.1.3 Range Operations

Weapons qualification and proficiency training at the CATM Range involves the use of M9 9 millimeter (mm) pistols, shotguns, M16 rifles, and three different types of machine guns. In addition, M203 grenade launchers are periodically fired at a single target (surplus vehicle) in the open grassy area adjacent to the CATM Range to the west. Under the proposed action, this open area would be used for the expansion of the CATM Range, and no further firing of M203 practice grenade rounds (currently 3,129 per year) would occur in the vicinity of the CATM Range. However, use of the other weapons at the CATM Range would increase slightly under the proposed action (Table 2-1), due to the increased range capacity and the reduced need for 820 SFG personnel to travel to Camp Blanding. All military ammunition used on the CATM Range is and would continue to be copper-jacketed, with the exception of shotgun ammunition, which are lead pellets.

Table 2-1. Proposed Annual Use of the Expanded CATM Range

Weapons[1]	*Number of Personnel* [2]	*Total Rounds*	*Change from Current Use*
M9 (9 mm) pistol	1,468	90,346	+5.2 %
Shotgun	120	1,463	+2.3 %
M16 (5.56 mm) rifle	2,911	341,687	+3.9 %
M249 (5.56 mm) machine gun	103	50,270	+2.2%
M60/M240 (7.62 mm) machine gun	101	161,728	+1.4 %

Notes: [1] Table does not reflect the annual reduction of 3,129 M203 (40mm) grenade launcher rounds fired quarterly by 103 personnel at the CATM Range. Under the proposed action, all M203 grenade rounds would be fired at the new M203 Range location.

[2] There would be one training session per person per year for each weapon type.

Source: 347 SFS 2003, 820 SFG 2003

Proposed use of the relocated M203 Grenade Range would be approximately 3,292 rounds per year fired by 101 personnel. This would represent a 5.2-percent increase over the annual number of rounds fired at the current location adjacent to the CATM Range. As with current M203 firing, operations at the new grenade range would only be conducted during a two- or three-day period each quarter, with no night firing.

2.2 ALTERNATIVES

In compliance with NEPA and 32 CFR 989, which implements the NEPA process, the Air Force must consider reasonable alternatives to the proposed action. However, only those alternatives that are able to fulfill the purpose and need for the proposed action warrant detailed analysis. As part of a thorough planning process, 347th Rescue Wing personnel have systematically evaluated siting constraints, operational issues, and many other factors to identify the set of acceptable project alternatives that would satisfy the purpose and need for this proposed action. Reasonable criteria applied in the analysis included land use compatibility, consolidation of similar functions, available building space, range safety regulations, and environmental constraints.

Potential sites for a new CATM Range were found to be severely limited due to the prominent wetlands located within base boundaries, as well as extensive use of the adjacent Grand Bay Range. Only the project components described above were able to meet all of the selection criteria. Eastward expansion of the existing CATM Range was ruled out because of the presence of wetlands and a potential violation of

operational safety restrictions associated with a nearby road. Another potential site for an entirely separate 820 SFG CATM Range was eliminated due to overlap with the safety clear zone of Grand Bay Range. Such an overlap would require that the CATM Range and the Grand Bay Range never be operated simultaneously, which would severely impact mission capabilities of both functions. Similarly, alternative locations for the relocation of the M203 Grenade Range were studied. All but the proposed location were eliminated from further consideration because of encroachment on wetlands or conflicts with the Grand Bay Range safety zones. As a result of this analysis, no other alternatives to the proposed action emerged that would satisfy the identified purpose and need within acceptable limits of the search criteria. Consequently, only the proposed action and the No-Action Alternative are analyzed in this EA.

Under the No-Action Alternative, additional CATM Range capacity would not be created and the 820 SFG would continue to have limited and untimely access to combat arms qualification and proficiency training, and would continue to conduct such training under adverse and inefficient conditions. Operational scheduling at the existing CATM Range would continue to be constrained, thereby limiting mission effectiveness and potentially impacting unit readiness. Nonetheless, CEQ guidelines stipulate that the No-Action Alternative be analyzed to assess any environmental consequences that may occur if the proposed action is not implemented. Therefore, this alternative has been carried forward for analysis in this EA.

CHAPTER 3
AFFECTED ENVIRONMENT

This section describes the existing environmental conditions for each of the resources potentially affected by the proposed action described in Chapter 2. Information presented in this chapter represents the environmental baseline against which the proposed action has been compared in Chapter 4 to identify potential impacts that may result. A region of influence (ROI) has been identified for each resource. The ROI is a geographic area in which potential environmental effects to that resource would be most likely to occur.

NEPA and CEQ regulations, as well as Air Force procedures for implementing NEPA, specify that an EA should focus only on those resource areas potentially subject to impacts. In addition, these documents stipulate that the level of analysis applied to any given resource area should be commensurate with the level of impact anticipated for that resource. Applying these guidelines to this EA, descriptions of the affected environment are provided for geological resources, water resources, biological resources, cultural resources, and safety only.

The following additional resource areas were not analyzed in this EA, as the potential for impacts was considered to be negligible or nonexistent:

- *Land Use.* The proposed projects would be designed in accordance with established land use development guidelines addressing safety, functionality, and environmental protection, and the projects would be fully consistent with the current military training uses of the base property. Accordingly, land use impacts would be negligible or nonexistent.
- *Noise*. Under the proposed action, minor, temporary increases in noise in the immediate vicinity of each project site would occur during construction and vegetation clearing. However, noise generated by required construction equipment and trucks, operating sporadically and during normal business hours for a period of only a month or two, would represent a negligible impact relative to the ambient noise levels at Moody AFB, which are dominated by aircraft noise and range operations at the nearby Grand Bay Range. Similarly, the small proposed increase in combat arms fire associated with the CATM Range and M203 Range operations would have a negligible impact on the existing noise environment in and around Moody AFB.
- *Air Quality*. Proposed expansion of the CATM Range and clearing of vegetation to create the M203 Range would have a negligible effect on air quality based on the short duration and limited nature of required construction activities, as well as the application of BMPs such as regular moistening of exposed soil to minimize fugitive dust. Air emissions from similar construction activities and from CATM Range operations were evaluated in the EA prepared for the beddown of the 820 SFG (Moody AFB 2000), and all such emissions were determined to be insignificant. The small increase in operations associated with the proposed action would have a similarly negligible effect on regional air quality.
- *Transportation and Circulation*. Implementation of the proposed action would not adversely affect transportation and circulation as there would be no short-term or long-term change in the number and/or types of vehicles in the project area or changes in vehicle circulation patterns.
- *Utilities and Services*. Implementation of the proposed action would have a negligible effect on existing utilities and services as only a very slight, marginal increase in utility demand would be generated by the expanded CATM Range and no services would be required at the new M203 Range. Existing easements or site access arrangements would be maintained or updated as

necessary to provide continued access to utility companies for repair or maintenance of any existing utility conveyance lines.

- *Visual Resources*: Implementation of the proposed action would have no impact on the visual character of the CATM Range or the overall visual setting at Moody AFB. While clearing of trees would occur as a result of the M203 Range relocation, the landscape is flat in the project area and no disruption of existing viewsheds would occur.
- *Socioeconomics and Environmental Justice*. Implementation of the proposed action would not affect socioeconomic resources and would comply fully with EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-income Populations*, and EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. The proposed action would occur within the boundaries of Moody AFB; no change in personnel levels would occur; no impacts to schools, children, or minority populations would occur; and the small scale of the proposed construction expenditures would not result in noticeable direct or indirect effects to the economy. As no permanent population centers, low-income communities, or minority communities exist near the proposed project sites, no communities would be exposed to adverse socioeconomic or environmental justice impacts.
- *Hazardous Materials and Wastes*. The use of hazardous materials and the generation and handling of hazardous wastes at the CATM Range were evaluated in the EA for the beddown of the 820 SFG (Moody AFB 2000), and no significant impacts on the environment were identified. The small increase in CATM Range operations associated with this proposed action would not result in a change in the types, amounts, or handling of hazardous materials or wastes at the CATM Range. In addition, no hazardous materials or wastes would be used or generated at the proposed M203 Range. Consequently, impacts from the proposed action associated with hazardous materials and wastes would be negligible or nonexistent.

3.1 GEOLOGICAL RESOURCES

Geological resources are defined as the geology, topography, and soils of a given area. The geology of an area includes bedrock materials, mineral deposits, and fossil remains. Topography refers to terrain, dominant landforms, and other visible features. Soils are unconsolidated materials on or near the surface and are defined by classifications and associations. A soil classification is a broad term for the general type of soil found in a larger area (i.e., hydric, alluvial, or clay soils). Soil associations are site-specific based on the particular soil type or complex found at that location. A general description of the geological resources at Moody AFB is provided below. The ROI for geological resources includes the proposed project sites and their immediate vicinity.

3.1.1 Geology

Moody AFB is located in the Coastal Terraces region of the Atlantic Coastal Plain physiographic province. Most of the sediments in the area average about 150 feet in thickness. The area is characterized by sandy clay interbedded with fine sand to coarse-grained sand, and sandy limestone (U.S. Department of Agriculture [USDA] 1979).

3.1.2 Topography

Moody AFB is in a region characterized by flat to sloping plateaus separated by shallow river valleys and broad wet depressions. The base is located on a level plateau between the Withlacoochee River on the west and the Alapaha River on the east. The area consists mainly of wetlands and hardwood forest. The eastern portion of the base is located in a low area known as the Grand Bay Swamp. Terrain elevation on the installation ranges from approximately 190 feet above mean sea level (MSL) on the eastern portion to about 240 feet above MSL near the center of the base; slopes range from 0 to 5 percent.

Moody AFB also contains karst topographical traits. Karst topography is marked by circular depressions formed from groundwater erosion of the underlying limestone. The depressions, also known as lime sinks or sinkholes, vary greatly in size and depth and are partially filled with alluvium from the surrounding uplands. Some contain large amounts of peat and are often inundated with water throughout the year (USDA 1979, Moody AFB 1999). These characteristics exist at Moody AFB due to the thinner overburden materials and higher elevations of the underlying limestone layers (Moody AFB 1994). Consequently, soil stability testing and load-bearing capacity analysis are required before implementing any construction project (USDA 1979, Moody AFB 1999).

3.1.3 Soils

Soils found within Moody AFB are associated with the Tifton Upland District of the Lower Coastal Plain. Characteristics of this region include well-drained soils and slopes generally ranging from 0 to 12 percent; slopes at Moody AFB range from 0 to 5 percent. The upland soils were formed from deep sedimentary sands and clays and lower alluvial soils were formed from eroded uplands (Moody AFB 1994).

The two most dominant soil associations on Moody AFB include the Tifton-Pelham-Fuquay and the Dasher associations. The majority of the main base consists of the Tifton-Pelham-Fuquay association containing soils with a sandy surface layer and loamy subsoil (i.e., soil composed of a mixture of sand, clay, silt, and organic matter). Tifton and Fuquay soils are generally located along the ridges, and Pelham soils are located in drainageways and periodically inundated depressions. The Dasher association covers the majority of Grand Bay Range and consists of soils in marshes, swamps, and drainageways. The soils are very poorly drained with the surface layer consisting of approximately 8 inches of mud deposits. The underlying organic material extends to a depth of 75 inches or more (Moody AFB 1994). The CATM Range area consists of Tifton loamy sand while the area where the proposed M203 Grenade Range would

be built is composed of Stilson loamy sand and Pelham loamy sand (Moody AFB 1998). Table 3-1 summarizes the characteristics of the primary soil types at Moody AFB. Soil erosion has not historically been a problem at Moody AFB due to the relatively level terrain and the current practice of keeping military vehicles (including tracked vehicles) in disturbed training areas and on existing roadways (paved and dirt).

Table 3-1. Prominent Soil Types at Moody Air Force Base

Soil Types	*Description*	*Occurrence*
Tifton	Well-drained soils that are nearly level or very gently sloping. Typically, the surface layer is brown loamy sand about 8 inches thick. The subsoil is sandy-clay loam and extends to a depth of 60 inches or more.	Around ridges
Pelham	Poorly drained and nearly level soils. Typically, the surface layer is black loamy sand about 8 inches thick. The subsurface layer is gray loamy sand about 17 inches thick. The subsoil extends to a depth of 65 inches or more.	Drainageways and intermittently ponded depressions
Fuquay	Well-drained and nearly level or very gently sloping soils. Typically the subsurface is dark grayish-brown loamy sand about 7 inches thick. The subsurface layer is light yellowish-brown loamy sand about 14 inches thick. The subsoil is dominantly sandy-clay loam and extends to a depth of 60 inches or more.	Around ridges
Dasher	The soils are very poorly drained with the surface layer consisting of approximately 8 inches of mud deposits. The underlying organic material extends to a depth of 75 inches or more.	Covers the majority of Grand Bay Range and consists of soils in marshes, swamps, and drainageways
Stilson	Typically a dry permeable soil with a sandy surface layer and loamy subsoil.	Typically found in low uplands or depressions.

Source: Moody AFB 1994, 2000.

Testing of soil samples collected in April 2003 within the CATM Range indicates that elevated lead levels are present in the first ½ inch of bare soil from the firing line out to the 25-foot line (Moody AFB 2003a). One sample exceeded the regulatory standard for lead contamination established by the Resource Conservation and Recovery Act (RCRA), while lead levels in samples collected at greater distances from the firing line and in the vicinity of the earthen berm behind the target area did not exceed the regulatory standard. The elevated lead level at a closer distance to the firing line is believed to be caused by the weapons firing process and not by the ammunition used (which is copper jacketed, except for shotgun pellets). No evidence exists to suggest that soils outside the immediate target area have been contaminated by range operations (Moody AFB 2003b). Per recommendations of the Bioenvironmental Engineering Flight Commander, bare patches of soil from the firing line to a distance of 50 feet into the target area have been reseeded to encourage grass growth, thereby helping to minimize potential re-suspension of lead from the contaminated soil and reduce potential lead exposure to personnel walking to and from the targets (Moody AFB 2003a).

3.2 WATER RESOURCES

Water resources include both surface and subsurface water. Surface water includes all lakes, ponds, rivers, streams, impoundments, and wetlands within a defined area or watershed. Wetlands are defined as areas where water saturation is the dominant factor determining the soil types, plants, and animal communities present (Moody AFB 1999). Subsurface water, commonly referred to as groundwater, is typically found in subterranean features known as aquifers. Aquifers are areas of mostly high porosity soil where water can be stored between soil particles and within soil pore spaces. Groundwater is usually recharged during rain events and is withdrawn for domestic, agricultural, and industrial purposes.

The Clean Water Act (CWA) of 1972 is the primary federal law that protects the nation's waters, including lakes, rivers, aquifers, and coastal areas. The primary objective of the CWA is to restore and maintain the integrity of the nation's waters.

Waters of the U.S. are regulated resources and are subject to federal authority under Section 404 of the CWA. The term "waters of the U.S." is broadly defined to include perennial, intermittent, and ephemeral streams, impoundments, and wetlands. Areas meeting the waters of the U.S. definition are under the jurisdiction of the U.S. Army Corps of Engineers (USACE). If "fill" is placed in waters of the U.S., a permit from the USACE may be required (USACE 2003). Waters of the U.S. are considered important to the public interest because they perform significant biological functions, such as providing nesting, breeding, foraging, and spawning environments for a wide variety of resident and migratory animal species. In addition, they help improve water quality and provide flood protection and erosion control.

Water resources discussed in this section include surface and groundwater resources on Moody AFB within the vicinity of each component of the proposed action. The affected ROI for water resources includes the proposed project sites and any surface water features nearby.

3.2.1 Surface Water

Moody AFB is located within the Suwannee River Basin, which discharges to the Gulf of Mexico. The base facilities are on a level plateau between the Withlacoochee River to the west and the Alapaha River to the east. Banks Lake is located to the northeast of Moody AFB and occupies about 13 square miles; 25 percent of this area is open water and the rest is covered by shrub or forest swamp. The northern portion of Banks Lake drains northeast into Mill Creek, a tributary of Big Creek, which discharges into the Alapaha River, and ultimately into the Suwannee River. The southern portion of Banks Lake drains south into Moody AFB. Grand Bay is located south of Moody AFB and drains to the east and northeast onto the base. Several small bays located on Moody AFB feed from Banks Lake (southern portion) and Grand Bay. All surface water on the eastern portion of Moody AFB leaves through Grand Bay Creek at the southeastern portion of the installation. Grand Bay Creek flows southeast into the Alapaha River several miles south of the base. The south-flowing Alapaha River is located about 6 miles east of Moody AFB (Air Force 1999a).

Water bodies within the main base area include Mission Lake, Quiet Pines Lake, and an unnamed, man-made pond located behind the CATM Range impact berm. Mission Lake, located southwest of the parallel runways, is approximately 30 acres in size and is the closest surface water body to the CATM Range. Quiet Pines Lake is approximately 3 acres in size and is located in the northwest corner of the base, near the golf course (Air Force 1999a). The man-made pond located behind the range impact berm is of unknown age but is thought to have originated as the soil borrow pit created when the berm was constructed, well before the construction of current range-related structures in 1970 and possibly as far back as the 1940s (Moody AFB 2003c). The only surface water feature located within the CATM Range itself is a shallow, man-made drainage swale running north-south near the west edge of the existing range

facility and at the site of the proposed expansion. This grass-covered drainage is normally dry but does collect and transport stormwater during rain events. No surface water features occur in the area proposed for the new M203 Grenade Range.

In recent water quality tests of surface water and stormwater runoff in the vicinity of the CATM Range (including the man-made pond north of the range impact berm), lead was not detected at or above the reporting limit set by the Environmental Protection Agency. In general, there has been no indication that ongoing operations at the CATM Range have contributed to degradation of surface water quality in the vicinity of the range (Moody AFB 2003c).

Moody AFB maintains a National Pollutant Discharge Elimination System permit with the Georgia Department of Natural Resources (GDNR) Environmental Division for both domestic and industrial waste discharge.

3.2.2 Jurisdictional Waters of the U.S.

The only jurisdictional Waters of the U.S. located within the ROI are wetlands. No wetlands occur specifically within the areas proposed for the CATM Range expansion or the proposed M203 range, but approximately 6,900 acres in the eastern portion of the Moody AFB property are covered by wetlands. Characteristic wetland communities on Moody AFB include emergent marshes, shrub and hardwood swamps, blackgum-cypress swamps, blackwater creek floodplains, and Carolina Bays. East of the developed portion of Moody AFB and contained within the Grand Bay Range is an association of major wetlands known as Carolina Bays, which comprise the Grand Bay/Banks Lake complex. Excluding the Okefenokee Swamp, the Grand Bay/Banks Lake wetland complex is the largest freshwater lake-swamp system in the Coastal Plain of Georgia. Wetlands in this complex are composed of several broad Carolina Bays and shallow lakes, interconnected by blackgum-cypress swamp (The Nature Conservancy [TNC] 1996, Moody AFB 2001).

3.2.3 Floodplains

EO 11988, *Floodplains Management,* directs government agencies to avoid adverse effects and incompatible development in floodplains. If construction is unavoidable, then the agencies must ensure that actions conform to applicable floodplain protection standards. The proposed project sites are located within a floodplain area (Federal Emergency Management Agency 1982).

3.2.4 Groundwater

Moody AFB is located within the Georgia Coastal Plain. This region has two major water bearing zones that provide groundwater: the surficial aquifer and the Floridan aquifer systems. The surficial aquifer consists of fine to coarse sands, gravels, silt, clayey silts, and clays. Water quality within this aquifer is generally good with groundwater yields of less than 50 gallons per minute. The Floridan aquifer is the main source of groundwater for the area and supplies water for most commercial, domestic, industrial, irrigation, and municipal uses. Water quality and groundwater yields within this aquifer are generally considered good (Moody AFB 1994). There has been no indication that ongoing operations at the CATM Range have contributed to degradation of groundwater quality in the vicinity of the range (Moody AFB 2003c).

Shallow wells from 30 to 60 feet deep into the surficial aquifer adequately supply water for domestic use in the area. During times of extreme drought, wells from 120 to 150 feet in depth have provided water for most towns in southern Lowndes County (Moody AFB 1994).

3.3 BIOLOGICAL RESOURCES

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the resources and conditions present in an area that produces occupancy of a plant or animal (Hall et al. 1997). Although the existence and preservation of biological resources are intrinsically valuable, these resources also provide aesthetic, recreational, and socioeconomic values to society. This analysis focuses on species or vegetation types that are important to the function of the ecosystem, of special societal importance, or are protected under federal or state law or statute. For purposes of the EA, these resources are divided into three major categories: vegetation, wildlife, and special-status species.

Vegetation includes all existing terrestrial plant communities with the exception of wetlands or special-status plant species. The affected environment for vegetation includes only those areas potentially subject to ground disturbance.

Wildlife includes all fish, amphibians, reptiles, birds, and mammals with the exception of those identified as special-status species.

Special-status species are defined as those plant and animal species listed as threatened, endangered, or proposed as such, by the U. S. Fish and Wildlife Service (USFWS) or state fish and wildlife agencies. The federal Endangered Species Act protects federally-listed threatened and endangered plant and animal species. Federal species of concern, formerly Category 2 candidate species, are not protected by law; however, these species could become listed and, therefore, protected at any time. Their consideration early in the planning process may avoid future conflicts that could otherwise occur. The GDNR through the Georgia Natural Heritage Program (GNHP) also protects state-listed plant and animal species through the state fish and wildlife and administrative codes.

The ROI for biological resources includes those areas on Moody AFB proposed for the expanded CATM Range and new M203 Grenade Range.

3.3.1 Vegetation

Southern Georgia is within the Outer Coastal Plain Mixed Forest province. The flat terrain of this area is dominated by slash pine (*Pinus elliottii*) forests with a shrub layer of palmetto (*Sabal minor*) and gallberry (*Ilex glabra*) (Bailey et al. 1994).

Moody AFB is located in extreme southern Georgia within the Lower Coastal Plains and Flatwoods section of the province (Bailey et al. 1994, McNab and Avers 1994). The cantonment area of Moody AFB is actively landscaped with a variety of native and non-native trees, shrubs, and grasses. Approximately 50-75 percent of the base is undeveloped and contains a wide variety of habitats including extensive areas of wetlands. Evergreen shrubs, palmetto, and pond pine (*Pinus serotina*) dominate the vegetation of the surrounding wetlands. Areas which are relatively elevated and well-drained are characterized by extensive pine flatwoods comprised of longleaf pine (*Pinus palustris*) and slash pine with palmetto, gallberry, blueberry (*Vaccinium* spp.), wax myrtle (*Myrica cerifera*), greenbriar (*Smilax* spp.), bracken fern (*Pteridium aquilinum*), and muscadine (*Vitus rotundifolia*) dominating the understory. Hardwoods and a mixture of pines are found in the higher elevation uplands and include live oak (*Quercus virginiana*), water oak (*Quercus nigra*), laurel oak (*Quercus laurifolia*), and loblolly (*Pinus taeda*) and slash pine. Stands of younger pines are primarily planted loblolly pine (Moody AFB 1995, 2001; TNC 1996).

The proposed CATM Range expansion area is cleared and landscaped with lawn. The area of the proposed M203 grenade range consists of a mature longleaf/slash pine forest that has undergone extensive forest management. To open the canopy and encourage the growth of herbaceous vegetation, this forest stand was thinned in 1998 and 2002, subjected to prescribed burns in 2001 and 2003, and had hardwoods less than 10 inches in diameter removed in 2002 (Lee 2002).

3.3.2 Wildlife

The developed portion of the base, the cantonment area, contains habitats and species more typical of rural and agricultural areas where disturbance has previously occurred. The pine flatwoods and extensive wetland areas that dominate the undeveloped areas of Moody AFB support a wide variety of fish and wildlife species. The Grand Bay Wildlife Management Area is partially located within the northern portion of the base. The Grand Bay/Banks Lake complex is the largest blackwater wetland system in Georgia outside the Okefenokee Swamp. Although not a major waterfowl overwintering area, Grand Bay does provide resting and overwintering habitat for several species of ducks including ring-necked duck (*Aythya collaris*), American wigeon (*Anas americana*), green-winged teal (*Anas crecca*), blue-winged teal (*Anas discors*), and bufflehead (*Bucephala albeola*) (Moody AFB 2001).

In addition, wetland areas support large rookeries of wading birds species including great blue heron (*Ardea herodias*), little blue heron (*Egretta caerulea*), yellow-crowned night heron (*Nycticorax violaceus*), green heron (*Butorides striatus*), snowy egret (*Egretta thula*), great egret (*Casmerodius albus*), least bittern (*Ixobrychus exilis*), and white ibis (*Eudocimus albus*). Other bird species commonly found at Moody AFB either as breeding residents or migratory visitors include turkey vulture (*Cathartes aura*), osprey (*Pandion haliatus*), red-tailed hawk (*Buteo jamaicensis*), red-shouldered hawk (*Buteo lineatus*), northern bobwhite (*Colinus virginianus*), blue jay (*Cyanocitta cristata*), Carolina wren (*Thryothorus ludovicianus*), northern mockingbird (*Mimus polyglottus*), mourning dove (*Zenaida macroura*), numerous species of sparrow, summer tanager (*Piranga rubra*), yellow warbler (*Dendroica petechia*), and several species of wood warbler (Moody AFB 1995, 2001).

Wetland areas support a diverse assemblage of amphibian species including spring peeper (*Hyla crucifer*), southern chorus frog (*Pseudacris nigrita*), eastern newt (*Notophthalmus viridescens*), and tiger salamander (*Ambystoma tigrinum*). Reptiles found on the installation include common box turtle (*Terrapene carolina*), ground skink (*Scincella lateralis*), eastern glass lizard (*Ophisaurus ventralis*), southern water snake (*Nerodia fasciata*), and rough earth snake (*Virginia striatula*). Common mammals found at Moody AFB include Virginia opossum (*Didelphis virginiana*), eastern cottontail (*Sylvilagus floridanus*), gray fox (*Urocyon cinereoargenteus*), striped skunk (*Mephitis mephitis*), white-tailed deer (*Odocoileus virginianus*), eastern gray squirrel (*Sciurus carolinensis*), and eastern woodrat (*Neotoma floridana*) (Moody AFB 1995, 2001).

3.3.3 Special-Status Species

Although no federally or state-listed plant species are known to occur on Moody AFB, a total of six special-status animal species listed by the USFWS or State of Georgia are known to occur at Moody AFB (Table 3-2). The majority of these occurrences are from the undeveloped areas to the east of the runways and primarily in the Grand Bay Range area (Moody AFB 2001). The reptiles and round-tailed muskrat (*Neofiber alleni*) are permanent residents while the bird species are all transient visitors.

Table 3-2. Sensitive Wildlife Species Known to Occur at Moody AFB, Georgia

Common Name	*Scientific Name*	*Status*	
		Federal	*State*
Reptiles			
Alligator snapping turtle	*Macroclemys temminckii*	None	T
American alligator	*Alligator mississippiensis*	T (S/A)	None
Eastern indigo snake	*Drymarchon corais couperi*	T	T
Gopher tortoise	*Gopherus polyphemus*	None	T
Birds			
Peregrine falcon	*Falco peregrinus*	None	E
Southern bald eagle	*Haliaeetus l. leucocephalus*	T	E
Wood stork	*Mycteria americana*	E	E
Mammals			
Round-tailed muskrat	*Neofiber alleni*	None	T

Notes: E = endangered; S/A = similarity of appearance; T = threatened.
Sources: Moody AFB 2001, GDNR 2003.

The American alligator (*Alligator mississippiensis*) occurs at Moody AFB in wetland areas and is federally listed as threatened due to its "similarity of appearance" to the American crocodile (*Crocodylus acutus*), which is endangered. The alligator snapping turtle (*Macroclemys temminckii*) occurs on Moody AFB in wetlands and ponds especially those with deep water. The southern bald eagle (*Haliaeetus l. leucocephalus*) and wood stork (*Mycteria americana*) may occasionally forage at Moody AFB, particularly in the northeast portion of the base. The peregrine falcon (*Falco peregrinus*), delisted by the USFWS in 1999 (USFWS 1999a) but still listed as endangered by the State of Georgia, is known only as an occasional migratory visitor. The round-tailed muskrat occurs on Moody AFB in wetlands and marshes where it feeds on aquatic grasses. None of the aforementioned species are known to occur or have the potential to occur in the vicinity of the proposed project areas.

The eastern indigo snake (*Drymarchon corais couperi*) is strongly associated with gopher tortoises and rely heavily on gopher tortoise burrows for nesting and wintering habitat. Although no tortoise burrows have been found within the vicinity of the CATM range during a recent burrow inventory on Moody AFB (Lee 2002), two historic (1991 and 2002) indigo snake sightings are approximately 1,000 feet from the range (Figure 3-1). Suitable indigo snake habitat does not occur within the cleared area of the CATM range. Although a large number of tortoise burrows (known as Colony 71st) are to the west of the proposed M203 grenade range (Figure 3-2), there have been no observations of indigo snakes in the vicinity of the proposed grenade range during recent base-wide surveys for indigo snakes nor is there suitable indigo snake habitat within Colony 71st (BHE Environmental, Inc. 2002).

A recent inventory of gopher tortoise burrows on Moody AFB identified eight distinct gopher tortoise populations or colonies on Moody AFB. One colony (Colony 71st) is immediately west of the proposed M203 grenade range (Figure 3-2). The colony consists of 119 burrows with an estimated population of 55 gopher tortoises. The mature longleaf/slash pine forest to the east of the colony has been undergoing extensive forest management (see previous discussion under *Vegetation*) to make it more suitable for gopher tortoises (Lee 2002). No tortoise burrows are known to occur within the ROI for the proposed M203 range.

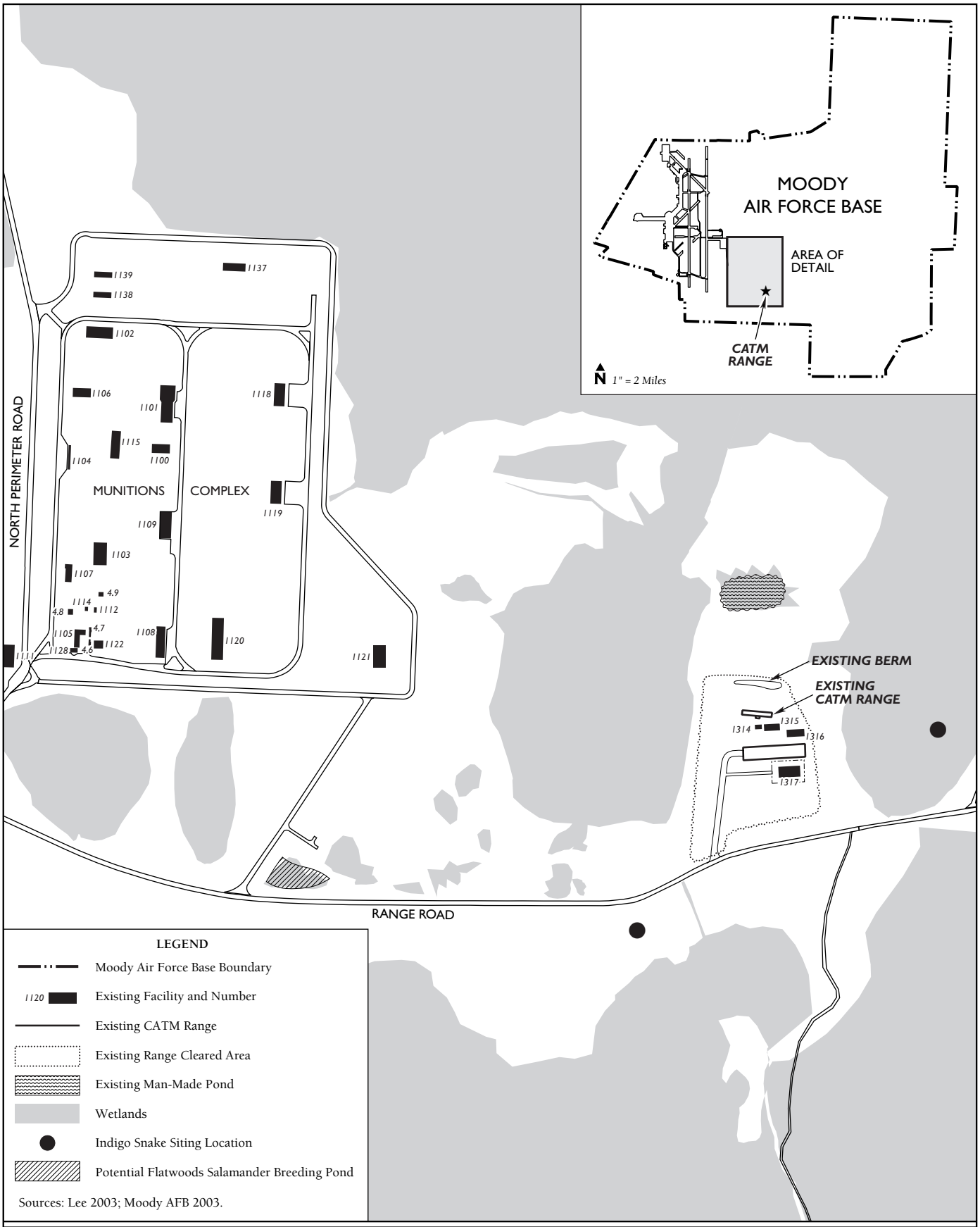

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Figure 3-1
Sensitive Biological Resoures within the Vicinity
of the Proposed CATM Range Expansion

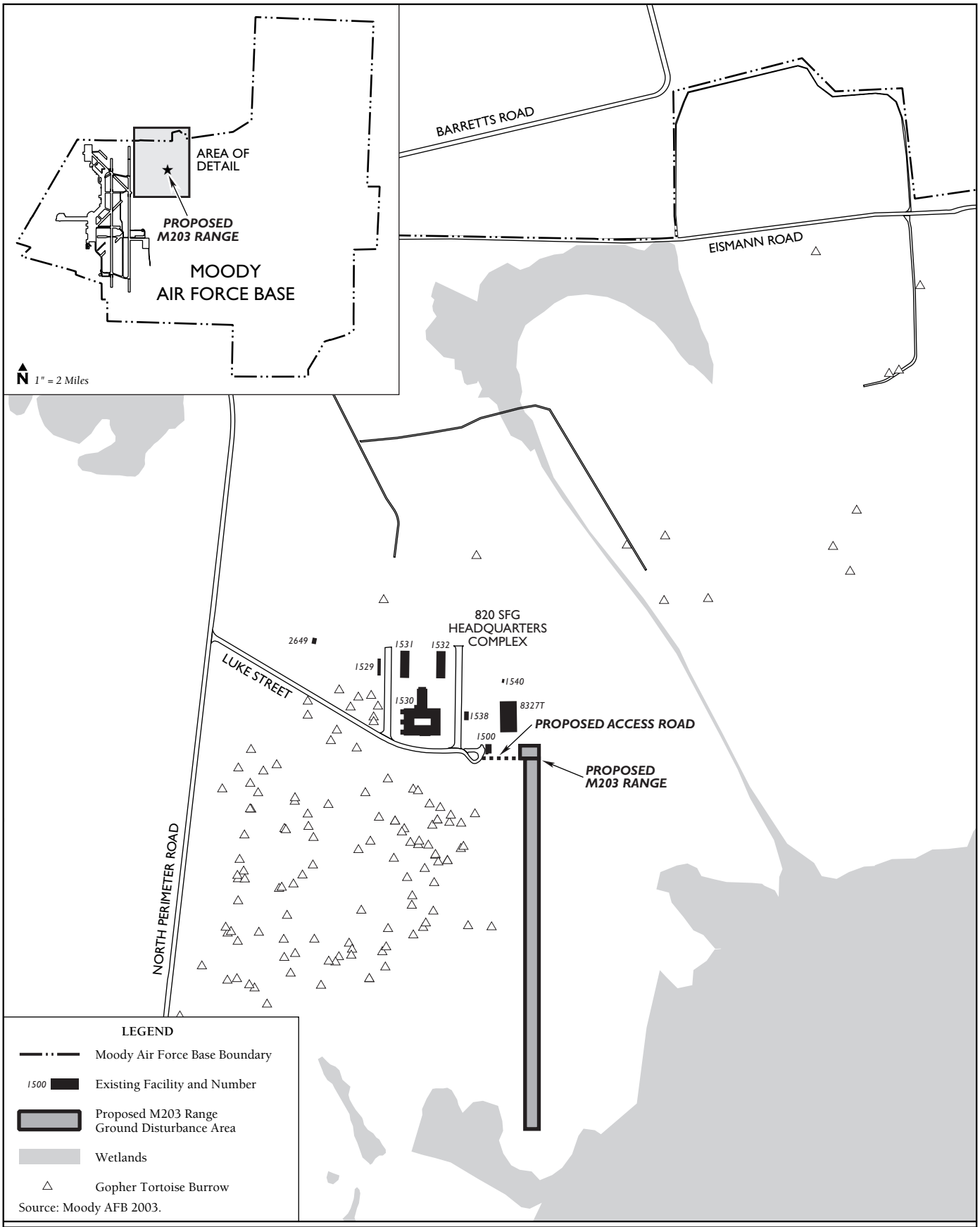

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Figure 3-2
Sensitive Biological Resources within the Vicinity of the Proposed M203 Range

The USFWS listed the flatwoods salamander (*Ambystoma cingulatum*) as threatened in 1999 (USFWS 1999b). Moody AFB is currently conducting a basewide habitat assessment and survey of potential flatwoods salamander breeding ponds. Preliminary surveys have found no salamanders, and based on the habitat assessment, it was concluded that flatwoods salamanders are unlikely to occur on Moody AFB. However, complete, USFWS-approved protocol surveys for flatwoods salamanders will be conducted within every potential breeding pond on the base; surveys are expected to be complete by 2005 (Lee 2003). A 1974 record from Okefenokee National Wildlife Refuge, approximately 40 miles to the east of Moody AFB, is the only historical occurrence of flatwoods salamander within the vicinity of the base (GNHP 1999).

3.4 CULTURAL RESOURCES

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, or any other physical evidence of human activities considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Cultural resources can be divided into three major categories: archaeological resources (prehistoric and historic), architectural resources, and traditional cultural resources.

Archaeological resources are locations where human activity measurably altered the earth or left deposits of physical remains (e.g., tools, arrowheads, or bottles). "Prehistoric" refers to resources that predate the advent of written records in a region. These resources can range from a scatter composed of a few artifacts to village sites and rock art. "Historic" refers to resources that postdate the advent of written records in a region. These resources can include campsites, roads, fences, trails, dumps, battlegrounds, mines, and a variety of other features. *Architectural resources* include standing buildings, dams, canals, bridges, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for protection under existing cultural resource laws. However, more recent structures, such as Cold War era military buildings, may warrant protection if they have the potential to gain significance in the future. Architectural resources must also possess *integrity* (its important historic features must be present and recognizable). *Traditional cultural resources* can include archaeological resources, buildings, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Americans or other groups consider essential for the continuance of traditional cultures.

Only significant cultural resources warrant consideration with regard to adverse impacts resulting from a proposed action. To be considered significant, archaeological or architectural resources must meet one or more criteria as defined in 36 CFR 60.4 for inclusion in the National Register of Historic Places (NRHP).

There are no legally established criteria for assessing the importance of a traditional cultural resource. These criteria must be established primarily through consultation with Native Americans, in accordance with the requirements of the National Historic Preservation Act (1966). When applicable, consultation with other affected groups provides the means to establish the importance of their traditional resources. This can also be accomplished using 36 CFR 60.4 and Advisory Council on Historic Preservation Guidelines. The Native American Graves Protection and Repatriation Act (1990) defines the procedures for consultation and treatment of Native American burials and burial artifacts. The ROI for cultural resources includes Moody AFB and adjacent Grand Bay Range.

3.4.1 Archaeological Resources

The following information is based on the Cultural Resource Management Plan (CRMP) for Moody AFB, which summarizes recent archaeological surveys performed at the installation (Moody AFB 1997). A complete archaeological survey has been conducted at Moody AFB and the Grand Bay Range. A total of 21 sites and 39 isolated finds have been identified at the base. Of the 21 sites identified, 11 contained only prehistoric materials, 2 contained only historic materials, and 8 had evidence of both prehistoric and historic materials. Five of the sites are potentially eligible for inclusion in the NRHP. The 39 isolated artifact findings included 32 that were prehistoric in nature, 4 that were historic in nature, and 3 that were both prehistoric and historic in nature. However, none of these findings were determined eligible due to lack of cultural materials and research potential. The Georgia State Historic Preservation Officer (SHPO) has concurred with these determinations and the base currently maintains the potentially eligible sites by avoidance (Air Force 1998).

3.4.2 Architectural Resources

The majority of development at Moody AFB occurred after 1951. The installation was originally a satellite field and was not extensively developed. Few structures built during the World War II period still exist. Those that remain standing from this period have been significantly modified to accommodate mission changes (Moody AFB 1997).

An architectural reconnaissance survey of the base identified 15 structures that were at least 50 years old (Table 3-3). These structures were built in 1941 and include five buildings, three airplane hangars, two ammunition storehouses, a utility vault, two heating facility buildings, a water tower, and a water system complex. Only the water tower was recommended for historic preservation. Because of significant modifications, the remaining buildings and facilities associated with the World War II period lacked architectural characteristics that would link them to this historic era (Army 1999).

Table 3-3. Inventory of Potentially Historic Structures at Moody AFB

Facility Number	*Description*	*NRHP Potential*
609	Hangar	No
618	Water Tower	Yes
701	Hangar	No
718	Hangar	No
723	Utility Vault	No
725	Heating Facility Building	No
733	Heating Facility Building	No
912	Water System Complex	No
913	Building	No
934	Building	No
1000	Building	No
1004	Building	No
1005	Building	No
1100	Ammunition Storehouse	No
1106	Ammunition Storehouse	No

Source: Army 1999.

The CRMP also addressed Cold War era structures. An inventory was conducted of 137 structures selected on the importance of the resource to the installation, the installation's role in the Cold War, and the importance of the resource within the national context of the Cold War. No buildings or structures on Moody AFB were deemed significant to the Cold War era (Moody AFB 1997).

3.4.3 Traditional Cultural Resources

Seventeen known American Indian traditional sites are located throughout the State of Georgia. However, none of these traditional cultural sites are located near Moody AFB (Moody AFB 1997).

3.5 SAFETY

Safety-related issues commonly associated with combat arms ranges include installation security, range safety, and the handling and storage of munitions. Installation security refers to the measures taken to safeguard military personnel and assets by controlling and discouraging access to restricted areas by unauthorized persons. Such measures may include the construction of barriers (e.g., fences) to enclose the perimeter of restricted areas, the channeling of personnel and vehicle flow through designated portals to facilitate the use of personnel identification and control systems, and the deployment of security forces as appropriate. Range safety refers to measures taken to protect users of the range and the general public from exposure to potentially dangerous range operations. Such exposure may occur as a result of failure to prevent accidental or intentional trespassing by unauthorized persons in restricted areas or by failure to contain operations within restricted area boundaries. Measures intended to enhance public safety may include those described above for installation security, as well as the designation and control of range Surface Danger Zones (SDZs), which delineate the maximum area of potential exposure to range operations (e.g., from ricochets or overshooting a target). Munitions handling and storage procedures are strictly regulated to ensure public and personnel safety, including the definition of Quantity/Distance (Q/D) arcs around munitions facilities. Q/D arcs define the explosive safety distance within which certain types of developments and land uses are restricted as a safety precaution in case of an explosion.

The ROI for Safety concerns corresponds to the specific range locations plus any areas within associated SDZs and Q/D arcs.

3.5.1 Installation Security

Access to the CATM Range is controlled and installation security is provided by virtue of its centralized location well within the boundaries of Moody AFB. No additional fencing or access control points are present at the range itself; however, the facility meets all applicable Air Force security requirements.

3.5.2 Range Safety

The Air Force has developed range operating protocols that provide procedures, responsibilities, and guidance for firing range utilization (Air Force 1999b). Prior to range operation, a range flag is raised, signifying that the range is operational. All personnel are checked to make sure that they have required ear protection devices, and instructors are required to wear appropriate eye protection. Finally, personnel are briefed on safety procedures, and the range is inspected to ensure that the surrounding area is clear of unauthorized personnel. During firing range exercises, range instructors monitor personnel to make sure that they have an appropriate number of rounds, training equipment, and hearing protection. At the completion of firing exercises, all spent shell casings ("brass") are collected, all training equipment is secured, all weapons are cleaned and inspected, all ammunition and weapons are accounted for, trash is emptied, and the storage shed is locked (Air Force 1999b). By adhering to the described range safety guidelines for the firing range at Moody AFB, safety risks to military and civilian personnel are minimized. The designated SDZ for the existing CATM Range is shown in Figure 3-3.

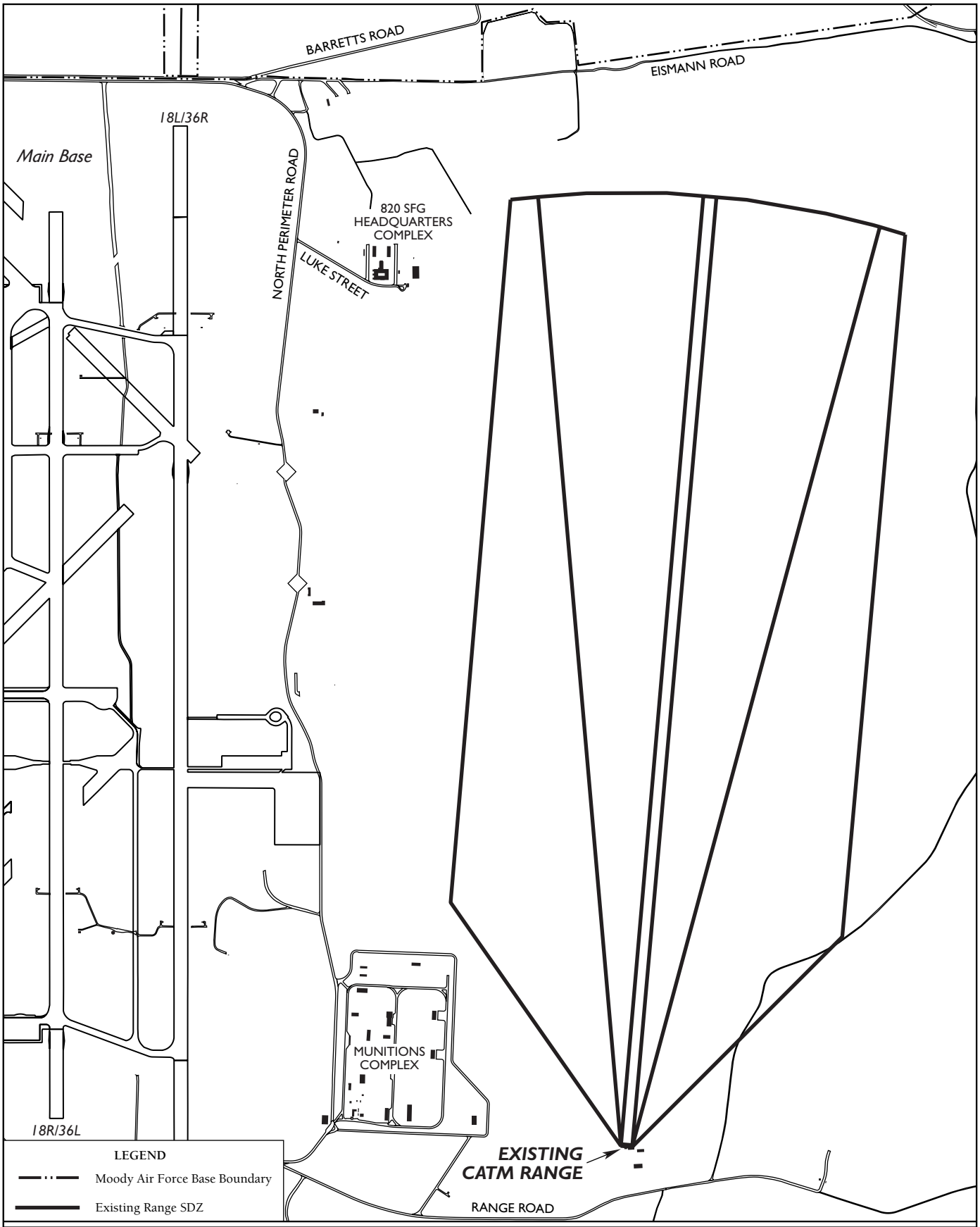

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Figure 3-3
Existing CATM Range SDZ

3.5.3 Weapons and Munitions Handling and Storage

Ammunition used at Moody AFB is stored in munitions bunkers throughout the base, the majority of which are located in the 1100-series buildings located west of the CATM Range (Air Force 1999a). These areas are separated from other buildings and populated areas of the base to decrease the possibility of injury. The required amount of separation between munitions storage facilities and other types of facilities is dependent on many factors (amount and type of explosive stored, facility design, etc.), which are considered in the definition of explosive safety Q/D arcs surrounding the munitions facilities. The current CATM Range is located just outside the nearest Q/D arc associated with the Munitions Storage Complex (Figure 3-4). However, this Q/D arc pertains to inhabited structures and the CATM Range would therefore be an allowable land use even if it were located within the arc. A separate Q/D arc which does include the CATM Range encircles an Explosive Ordnance Disposal (EOD) facility to the east of the CATM Range. The EOD facility is not used to store munitions and the CATM Range personnel are alerted whenever munitions are to be detonated at the EOD facility so that safety precautions can be implemented.

The following requirements apply to handling of ammunition used at the CATM Range: the maximum quantities of ammunition do not exceed the level established by the licensing authority; two fire extinguishers are present and available at all times; the handling area is provided with protection from moisture, high temperatures, and the direct rays of the sun; and good ventilation is provided (Air Force 1999b).

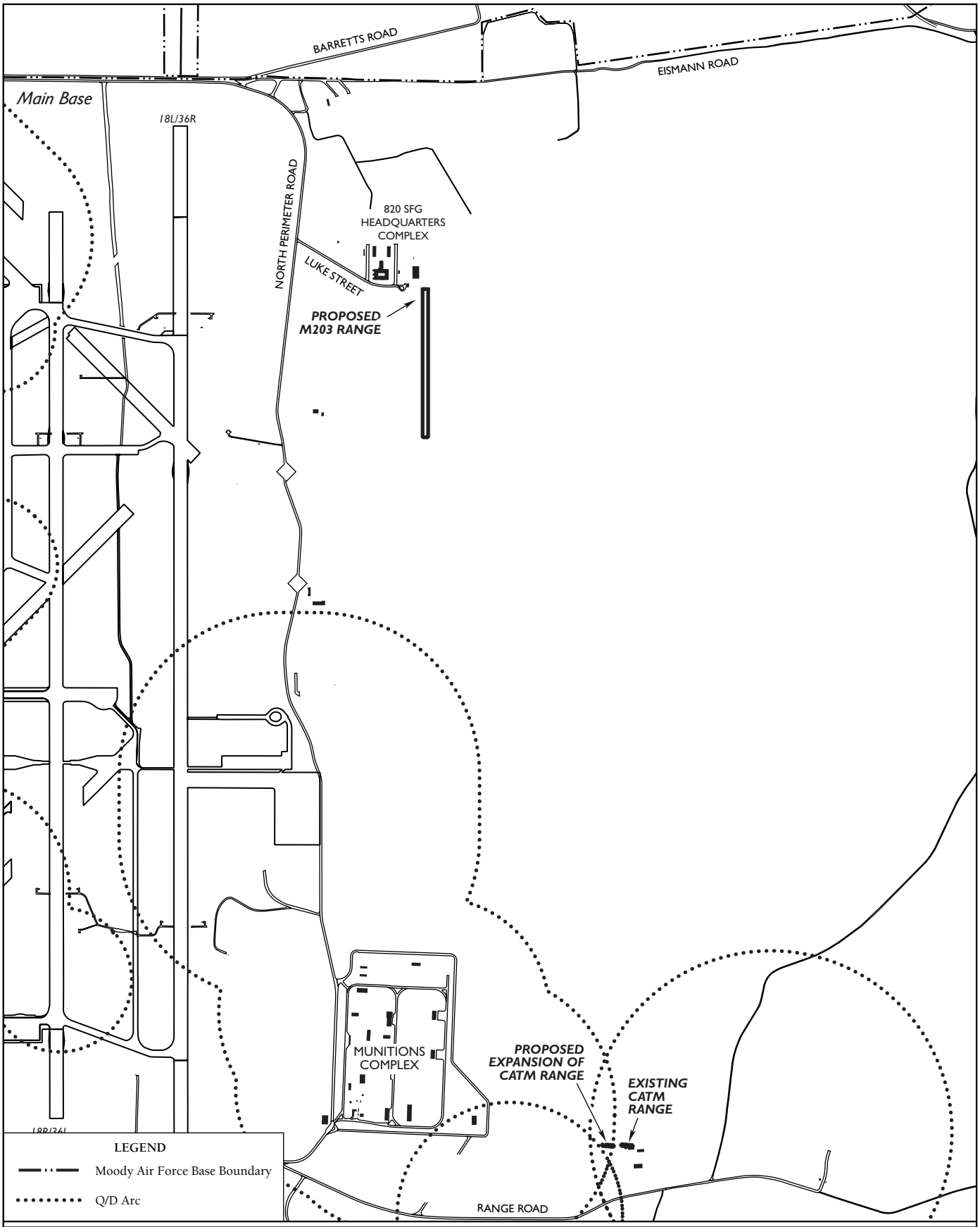

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Figure 3-4
Existing Q/D Arcs

CHAPTER 4
ENVIRONMENTAL IMPACTS

The analysis presented in this chapter represents an examination of the potential effects of the proposed action and No-Action Alternative (as described in Chapter 2) relative to the existing environmental conditions in the ROI for each resource category (as described in Chapter 3). Potential environmental consequences for each resource area as a result of the proposed action are presented in the same sequence as presented in Chapter 3.

4.1 GEOLOGICAL RESOURCES

The protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are typically considered when evaluating impacts on geological resources. Generally, such impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering measures are incorporated into project design.

4.1.1 Proposed Action

4.1.1.1 Impacts from Construction

Under the proposed action, expansion of the CATM Range and the construction of the new M203 Grenade Range would not significantly affect the geologic unit underlying Moody AFB. No unique geologic features or geologic hazards are present on the installation. Grading required for the CATM Range expansion would be minimal and would occur in a previously disturbed, flat area. Grading required for the proposed M203 Grenade Range would be minimal due to the relatively flat terrain and no recompaction would be necessary due to the fact that no structures are required. Since the installation is primarily on a level plateau, no significant topographic features would be affected by the proposed action. Therefore, no significant impacts to topography would occur as a result of implementation of the proposed action.

Soils would be disturbed during construction activities associated with the CATM Range expansion and during clearing of vegetation for the proposed M203 Range; however, with the implementation of BMPs to control erosion, impacts to soils would be minimized. In addition, because the proposed expansion of the CATM Range and the construction of the new M203 Grenade Range would occur in relatively flat areas, runoff velocities would be slow and no significant erosion impacts would occur. Therefore, potential impacts to geological resources would be minimal and no significant impacts would occur as a result of the proposed action.

4.1.1.2 Impacts from Operations

Practice grenade rounds fired at the proposed M203 Grenade Range would not land with sufficient velocity to penetrate the ground surface, and expended grenade canisters would be collected following each exercise. Post-construction soil impacts would be avoided by planting of grass species to stabilize the soil. Therefore, operations at the proposed M203 Range would have no significant impact on geological resources.

Small arms rounds fired at the expanded CATM Range would penetrate and build up within the earthen berm. Over time, elevated lead levels would also be likely to occur within the first ½ inch of soil near the firing line (as has occurred at the existing range). However, testing of the existing CATM Range area indicates that four and perhaps as many as six decades of weapons firing in the range area have not substantially affected soil resources in the vicinity of the range. In addition, the intensity of operations per unit of land area at the expanded range would be considerably reduced from current and historical

levels at the current range, since the total proposed operations (though slightly higher overall) would become distributed over a wider area (56 firing positions instead of the previous 28). In effect, while the small, localized area potentially affected by a buildup of lead residue would double in size, the intensity of use and rate of lead buildup per unit of land area would be reduced considerably. In the area of the 28 new firing stations, a much longer period of time would be required in order to reach a level of contamination approaching the RCRA standard, while in the area of existing firing stations, the rate of lead buildup would be slowed considerably. The flat terrain and minimal erosion potential at the range also suggest a strong likelihood that lead buildup would remain localized within a relatively small area. Finally, the predominant use of copper-jacketed ammunition, as opposed to extensive use of bare lead in the past, should serve to further reduce the rate of lead buildup. For these reasons, and given the apparent limited impact from historical operations at the existing range, the proposed action is not expected to result in significant impacts to soils or other geological resources.

4.1.2 No-Action Alternative

Under the No-Action Alternative, the proposed expansion of the CATM Range and relocation of the M203 Grenade Range at Moody AFB would not occur. Baseline conditions described in Section 3.1 would remain unchanged. The intensity of range operations per unit of land area would continue to be considerably higher than under the proposed action and lead buildup in the soil would occur at a faster pace. However, as evidenced by recent soil tests in the vicinity of the range, current and historical operations at the CATM Range have not seriously affected soil resources in the vicinity of the range. Therefore, no significant impacts to geological resources would occur as a result of implementation of the No-Action Alternative.

4.2 WATER RESOURCES

The analysis of potential impacts to water resources considers all surface and groundwater resources in the immediate vicinity of the two proposed project locations. Impacts to water resources would occur if the proposed action resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, endangered public health by creating or worsening health hazards, or violated established laws or regulations.

4.2.1 Proposed Action

Proposed construction and grading activities could potentially result in a temporary increase in runoff and total suspended particulate matter in surface water features in the vicinity of the ROI, particularly if precipitation occurred during the construction phase of either project. However, implementation of standard erosion control measures and incorporation of BMPs into project design and construction would minimize runoff and construction-related sediment loading of surface waters. Therefore, potential impacts to surface waters would be negligible and temporary and no significant surface water impacts would occur as a result of implementation of the proposed action.

No wetlands are present within the proposed range construction sites and no wetlands would be altered as a result of the proposed action. Consequently, a Section 404 permit from the USACE would not be required.

The addition of impervious surfaces associated with the proposed construction projects would be minimal and would have no anticipated effect on groundwater resources in the vicinity. Ground disturbance associated with proposed construction activities would not reach depths that would affect groundwater resources. Therefore, no significant impacts to groundwater resources would occur as a result of implementation of the proposed construction activities.

The CATM Range expansion would occur within a floodplain area. However, no inhabited structures are proposed and the minimal required grading would not affect site topography or otherwise disrupt the floodplain. The man-made drainage area to the west of the existing CATM range would be re-directed to collect and divert surface water drainage and ameliorate any flooding at the site. Therefore, no significant impacts related to floodplains would occur as a result of implementation of the proposed action.

Recent water quality testing indicates that current and historical operations at the CATM Range have not resulted in elevated lead levels or other water quality impacts in nearby surface waters, nor has there been any indication that groundwater resources have been affected by the potential leaching of lead from surface soils. Therefore, impacts from the proposed action would not be expected to result in significant impacts to surface or groundwater resources.

Although the location of the new M203 Grenade Range has not previously been exposed to training operations, each practice grenade round that would be fired at the new range would release only a small amount of talcum powder, and firing at the range would occur only every three months. This would not result in a significant impact to water resources.

4.2.2 No-Action Alternative

Under the No-Action Alternative, the proposed expansion of the CATM Range and relocation of the M203 Grenade Range at Moody AFB would not occur. Baseline conditions described in Section 3.2 would remain unchanged. Therefore, no significant impacts to water resources would occur as a result of implementation of the No-Action Alternative.

4.3 BIOLOGICAL RESOURCES

This section analyzes the potential for impacts to biological resources from implementation of the proposed action or alternative. The impact analysis focuses on the potential for ground-disturbing activities (i.e., construction) to affect biological resources at Moody AFB. Ongoing operations at the two ranges would have no effect on biological resources.

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) the sensitivity of the resource to proposed activities; and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas or disturbances cause reductions in population size or distribution of a species of concern.

4.3.1 Proposed Action

4.3.1.1 Vegetation

Construction of facilities associated with the proposed expansion of the existing CATM Range would require vegetation removal in landscaped and previously disturbed areas. However, due to the lack of sensitive vegetation at the CATM Range, proposed construction would not have significant impacts on vegetation.

Construction of the proposed M203 grenade range would require the removal of approximately 2.6 acres of vegetation, primarily longleaf and slash pines and the associated understory. This forest stand has undergone extensive forest management including prescribed burns, thinning, and partial clearing of hardwoods (Lee 2002). The proposed clearing of approximately 2.6 acres would not significantly impact vegetation within this managed forest stand and the clearing would be conducted in accordance with the forest management practices outlined in the INRMP (Moody AFB 2001). Therefore, there would be no significant impacts to vegetation with the construction and subsequent operation of the proposed M203 grenade range.

4.3.1.2 Wildlife

Construction activities associated with the proposed action would temporarily displace wildlife from otherwise suitable habitat in the immediate vicinity of the project area. Smaller, less mobile species and those seeking refuge in burrows (e.g., gophers) could inadvertently be killed during construction activities; however, long-term impacts to populations of such species would not result. Therefore, there would be no significant impacts to wildlife with implementation of the construction activities associated with the proposed action.

4.3.1.3 Special-Status Species

No special-status species are known to occur within the ROI of construction activities associated with the proposed CATM Range expansion or M203 grenade range. Therefore, there would be no impacts to special-status species with implementation of the construction activities associated with the proposed action.

Although indigo snakes have not been observed in the gopher tortoise colony (Colony 71st) to the west of the proposed M203 grenade range and the area is considered poor indigo snake habitat, the forest stand to the east of the colony (in which the grenade range is proposed to be located) is being managed to provide gopher tortoise habitat. Therefore, there is potential for indigo snakes to occur in the colony in the future. Indigo snakes and gopher tortoises are known to react to ground vibrations caused by human activity or

vehicles. Response to these activities by gopher tortoises may range from withdrawal into the shell to movement from aboveground into a burrow. Indirect impacts on indigo snakes could occur if ground vibrations affected gopher tortoises in such a way as to affect their physiology, behavior, or reproduction and lead to degradation or abandonment of habitat essential to indigo snakes. However, gopher tortoise colonies are known to occur near military artillery ranges, airfields, and other areas where ground vibrations could be high (USFWS 1996). Therefore, it is believed that the use of non-explosive, practice grenade rounds at the proposed M203 grenade range and periodic human activity would not significantly alter gopher tortoise behavior, physiology, or reproduction. Therefore, implementation of the proposed action and subsequent use of the M203 grenade range would not result in significant impacts to special-status species at Moody AFB.

4.3.2 No-Action Alternative

Under the No-Action Alternative, the proposed expansion of the CATM Range and relocation of the M203 Grenade Range would not occur. Baseline conditions, as described in Section 3.3, would remain unchanged. Therefore, no significant impacts to biological resources at Moody AFB would occur as a result of implementation of this alternative.

4.4 CULTURAL RESOURCES

The methodology for identifying, evaluating, and mitigating impacts to cultural resources has been established through federal laws and regulations including the National Historic Preservation Act, the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the American Indian Religious Freedom Act.

A proposed action or alternative affects a significant cultural resource when it alters the property's characteristics, including relevant features of its environment or use that qualify it as significant according to National Register criteria. Effects may include: physical destruction, damage, or alteration of all or part of the resource; alteration of the character of the surrounding environment that contributes to the resource's qualifications for the NRHP; introduction of visual, audible, or atmospheric elements that are out of character with the resource or alter its setting; and neglect of the resource resulting in its deterioration or destruction.

Potential impacts are assessed by: 1) identifying project activities that could directly or indirectly affect a significant resource; 2) identifying the known or expected significant resources in areas of potential impact; and 3) determining whether a project activity would have no effect, no adverse effect, or an adverse effect on significant resources (36 CFR 800.9). Impacts to cultural resources may occur from changes in the setting caused by visual or audible intrusion, ground-disturbing activities such as construction or the use of ordnance, or modifications to structures.

4.4.1 Proposed Action

No cultural resources have been identified in the vicinity of either construction area. The closest recorded site, 9 LW 17, is potentially eligible to the NRHP, but is found approximately 1,300 feet north of the limits of the firing and ricochet footprint for the firing range expansion and approximately 1,300 feet northeast of the proposed grenade range construction and footprint. Therefore, no significant impacts to cultural resources would occur as a result of construction or operation associated with the proposed action. Proposed construction would not commence until after consultation with the Georgia SHPO.

4.4.2 No-Action Alternative

Under the No-Action Alternative, the proposed expansion of the CATM Range and relocation of the M203 Grenade Range would not occur. Baseline conditions, as described in Section 3.4, would remain unchanged. Therefore, no significant impacts to cultural resources would occur as a result of implementation of this alternative.

4.5 SAFETY

The analysis of potential safety impacts is focused on the degree to which the proposed action or alternative would increase safety risks to base personnel and civilians.

4.5.1 Proposed Action

All personnel using the CATM Range and M203 Grenade Range would adhere to all applicable range safety regulations. The Range Safety Officer (RSO) at Moody AFB would ensure that all safety publications and range regulations are adhered to by all personnel participating in range activities. The RSO would also ensure the overall protection of weapons during the issuing and transportation of training weapons. Instructors would correct all safety infractions that could potentially occur on the CATM Range and M203 Grenade Range. Training exercises would be scheduled to ensure that unauthorized personnel would not be present in ranges and on terrain designated for training exercises. In addition, the area would be secured and cordoned off before use of any range area occurs, to ensure that unauthorized personnel do not enter. Therefore, no significant impacts associated with range safety would occur as a result of the proposed action.

The proposed SDZs for the two ranges are shown in Figure 4-1. As shown, the SDZs for the CATM Range expansion and new M203 Grenade Range would not overlap and the two ranges would be able to operate simultaneously without creating a safety impact. The SDZs would also not encompass any structures, roads, or other land uses that would be placed at risk from range operations. No significant impacts associated with SDZs and range operations would occur.

The expanded portion of the CATM Range would be situated just inside the existing Q/D arc associated with the Munitions Complex to the west (refer to Figure 3-4). However, as noted in Section 3.5, this Q/D arc applies to inhabited structures and the proposed range facility, as a Military Training Area, would be a compatible land use under existing criteria. Similarly, for the nearby EOD facility to the east, the presence of the expanded CATM Range within the Q/D arc would not violate safety regulations because of the nature of activities at the EOD facility and the coordination with the range that occurs whenever explosives are to be detonated at the EOD facility. Therefore, no significant safety impacts associated with Q/D arcs would occur as a result of the proposed action.

The average annual number of rounds for weapons qualifications and proficiency training at the proposed CATM Range and proposed M203 Grenade Range would be 648,786 rounds (refer to Table 2-1). This represents a 3.3 percent increase in total munitions use compared with existing range use. A combined increase in munitions use of 3.3 percent at the CATM Range and M203 Grenade Range would only minimally impact waste generation and disposal during range cleanup. Existing munitions storage bunkers at Moody AFB have the capacity to store the additional rounds of ammunition. All munitions associated with training operations would be stored and handled according to established procedures to minimize potential safety risks (Air Force 1999b). Therefore, no significant impacts to safety are anticipated as a result of additional munitions storage associated with the proposed action.

4.5.2 No-Action Alternative

Under the No-Action Alternative, the proposed expansion of the CATM Range and relocation of the M203 Grenade Range would not occur. Baseline conditions described in Section 3.5 would remain unchanged. Therefore, no significant impacts to safety would occur as a result of implementation of the No-Action Alternative.

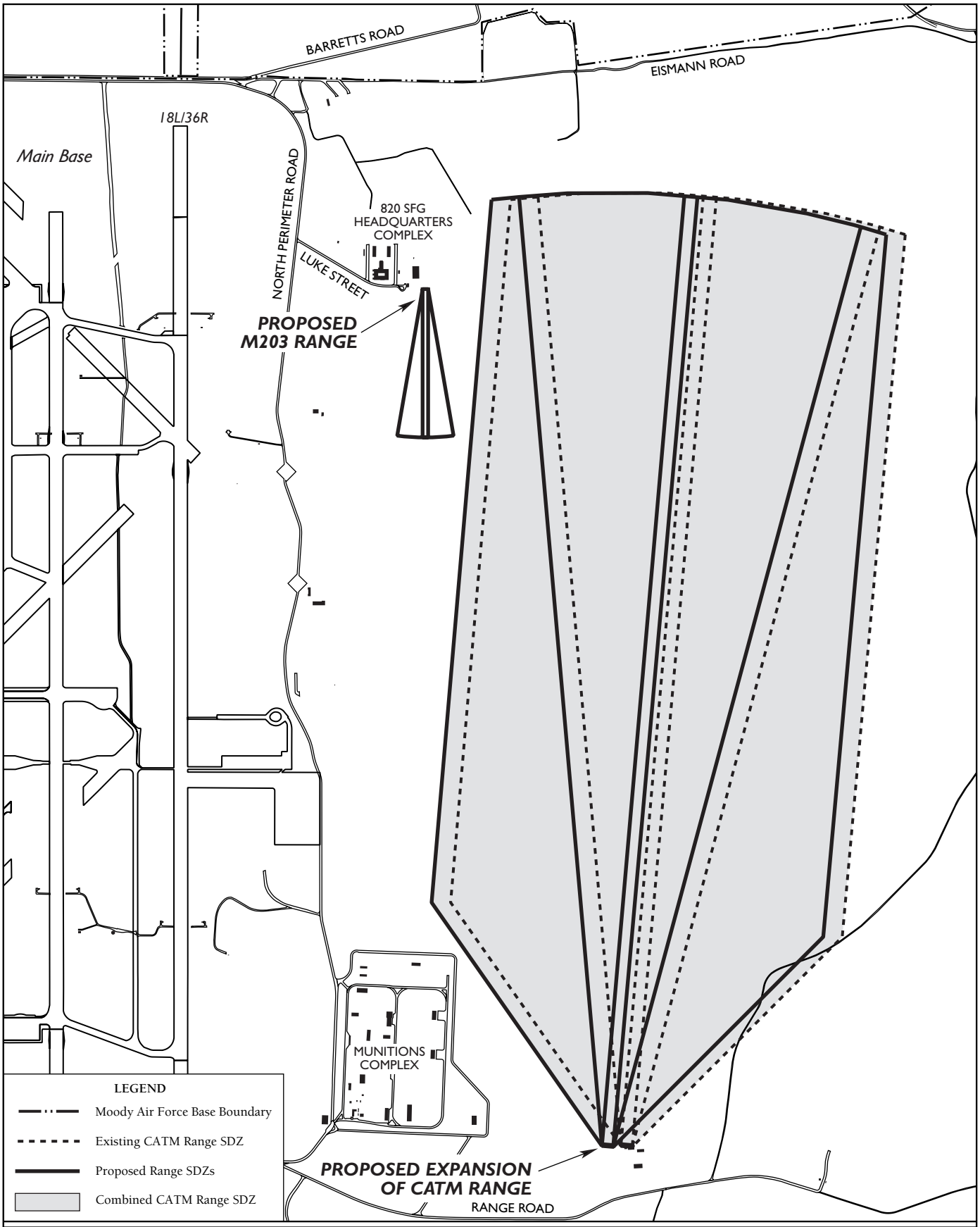

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Figure 4-1
Existing and Proposed Range SDZs

CHAPTER 5
CUMULATIVE EFFECTS

CEQ regulations stipulate that potential environmental impacts resulting from cumulative impacts should be considered within an EA. Cumulative impacts are defined as "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in Considering Cumulative Effects (CEQ 1997) affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, currently under construction, recently completed, or anticipated to be implemented in the near future is necessary.

According to 347th Rescue Wing personnel, there are no recently completed or ongoing projects that would be relevant to an analysis of cumulative effects for this action. All reasonably foreseeable future actions that have been identified by the 347th Rescue Wing are included in the proposed action analyzed in this EA. In addition, no known actions have been proposed by other agencies or persons in the vicinity of the installation. Therefore, an analysis of cumulative effects is not relevant to this proposed action.

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CHAPTER 6
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of "…any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of non-renewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., the disturbance of a cultural site).

For the proposed action, most resource commitments are neither irreversible nor irretrievable. Most impacts are short-term and temporary, or long lasting but negligible. Those limited resources that may involve a possible irreversible or irretrievable commitment under the proposed action are discussed below.

Under the proposed action, expansion of the CATM Range would require the consumption of limited amounts of materials typically associated with construction (e.g., concrete, sand, bricks, steel, wiring, windows). An undetermined amount of energy to conduct construction activities and operations of these facilities would be expended and irreversibly lost. Facilities proposed for construction do not have any cultural significance.

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CHAPTER 8
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