

FINDING OF NO SIGNIFICANT IMPACT

Replacement of the Main Gate Facility at New Boston Air Force Station, New Hampshire

The U.S Air Force (USAF) 23d Space Operations Squadron proposes to replace the Main Gate to New Boston Air Force Station (NBAFS) to comply with existing security requirements. Currently, the design of the existing entrance does not provide adequate defense against potential attack. Specific security hazards include (1) straight approach to the Main Gate facility by oncoming vehicles, (2) lack of a separate location for conducting vehicular inspections, (3) obstructed view of access road and vehicular inspection area, (4) lack of overwatch area with final barrier to prohibit the access of large vehicles, (5) inability to retrofit Building 131 with required ballistic-rated glazing and doors, and (6) proximity to priority resources.

Potential impacts to the natural and human environment associated with construction of a replacement Main Gate at NBAFS are assessed in the accompanying Environmental Assessment (EA), *Environmental Assessment for Replacement of the Main Gate at New Boston Air Force Station, New Hampshire*. The EA was prepared in accordance with specific tasks and procedures of the USAF Environmental Impact Analysis Process (EIAP; Air Force Instruction 32-7061), as it applies to the National Environmental Policy Act of 1969 (Public Law 91-190, 42 U.S.C. Sections 4321–4347). The EA evaluates the environmental consequences of two configurations of the proposed action (A and B) and the no-action alternative (i.e., continuing to use the existing Main Gate entrance). The assessment evaluates the potential for impacts to air quality, noise levels, topography, geology, soils, water resources, ecological resources (including threatened and endangered species and wetlands), cultural resources, land use, recreation, visual resources, socioeconomics, and health and safety. The general public was given a 30-day period (12 Jan 15 to 13 Feb 15) to comment on the proposed action and the EA. All comments received from the public have been addressed.

The proposed action is preferred over the no-action alternative because the no-action alternative would result in the violation of USAF security requirements. Both Configurations A and B would result in relatively small, localized impacts to the environment. Configuration A of the proposed action is the base's preferred option. The proposed project area is currently developed and thus disturbance to natural communities and wildlife species would be minimal. Anticipated environmental impacts incurred through building demolition, excavation, grading, and construction would be mostly small, localized, and of short duration because these activities would be conducted in accordance with USAF requirements using standard measures to reduce impacts to adjacent areas. An adverse effect to a contributing property to the NBAFS Cold War Historic District is mitigated through Historic American Building Survey/Historic American Engineering Record documentation.

On the basis of the assessments detailed in the EA, it has been determined that the proposed action would not have a significant effect on the human environment. Therefore, an Environmental Impact Statement will not be required, nor prepared, for replacement of the Main Gate at NBAFS.

__6 Mar 2015_____
Date

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**ENVIRONMENTAL ASSESSMENT FOR
REPLACEMENT OF THE MAIN GATE FACILITY AT
NEW BOSTON AIR FORCE STATION, NEW HAMPSHIRE**

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for**



**23 SOPS/CEI
U.S. Department of the Air Force
New Boston Air Force Station
New Hampshire**

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The following is a list of the acronyms, initialisms, and abbreviations (including units of measure) used in this document.

ACRONYMS, INITIALISMS, AND ABBREVIATIONS

AFI	Air Force Instruction
ANL	Argonne National Laboratory
CFR	Code of Federal Regulations
CO	carbon monoxide
DoD	Department of Defense
EA	environmental assessment
EPA	U.S. Environmental Protection Agency
HABS/HAER	Historic American Building Survey/Historic American Engineering Record
NAAQS	National Ambient Air Quality Standards
NBAFS	New Boston Air Force Station
NCDC	National Climatic Data Center
NHDES	New Hampshire Department of Environmental Services
NHNHB	New Hampshire Natural Heritage Bureau
NO ₂	nitrogen dioxide
NRHP	National Register of Historic Places
PA	Programmatic Agreement
PAL	Public Archaeology Laboratory, Inc.
PES	Parsons Engineering Science, Inc.
PM ₁₀	particulate matter, less than or equal to 10 µm in size
PM _{2.5}	particulate matter, less than or equal to 2.5 µm in size
O ₃	ozone
SHPO	State Historic Preservation Office(r)
SO ₂	sulfur dioxide
SOPS	Space Operations Squadron
USAF	U.S. Air Force
UXO	Unexploded Ordnance

UNITS OF MEASURE

ac	acres(s)	km	kilometer(s)
cm	centimeter(s)	L _{dn}	day-night weighted equivalent sound level
cy	cubic yard	L _{eq}	equivalent steady sound level
dBA	unit of weighted sound-pressure level	m	meter(s)
ft	foot (feet)	mi	mile(s)
ha	hectare(s)	µm	micrometer(s)
in.	inch(es)		

**ENVIRONMENTAL ASSESSMENT FOR
REPLACEMENT OF THE MAIN GATE AT
NEW BOSTON AIR FORCE STATION, NEW HAMPSHIRE**

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ABSTRACT

The U.S. Air Force (USAF) proposes to replace the Main Gate at New Boston Air Force Station (NBAFS), New Hampshire. This proposed action would involve the demolition of Building 131 and Building 102; reconfiguration of the curbing; the removal of existing pavement, and removal of a fuel tank; the construction of a new Main Gate and Building 103 addition; the realignment of pavement; and the installation of additional Building 103 parking, popup bollard, and protective landscape features. In doing so, USAF security requirements would be met and priority resources would be better protected from potential attack. The proposed action would occur in the northeastern portion of the station east of the Operations Area, from the Chestnut Hill Road entrance south to the edge of the Building 103 parking lot, north 23 m (75 ft) beyond the existing pavement, and west 345 m (1,132 ft) on Galaxy Way to Building 131. This area is developed, consisting primarily of cultivated lawn with some native landscape plantings, paved areas, and building structures and surrounded by deciduous and mixed forest habitat types. The environmental assessment evaluates the potential impacts of two configurations (A and B) of the proposed action and the no-action alternative on air quality, noise, topography, geology, soils, water resources, ecological resources, cultural resources, land use, recreation, visual resources, socioeconomics, and health and safety. Configuration A of the proposed action is the base's preferred option. Both configurations would result in relatively small, localized impacts to the environment. All construction-related activities would be conducted in accordance with USAF requirements using standard measures to reduce impacts to adjacent areas, and sensitive resource areas would be avoided to the extent possible. Anticipated impacts of the building demolition, excavation, grading, and construction of the new Main Gate facility are associated with air quality, topography, vegetation, soils, surface waters, and listed and non-listed wildlife and habitat resources. Demolition of Building 102, a contributing property to the Cold War Historic District at NBAFS, is considered an adverse effect on a historic property and requires mitigation through documentation to the Historic American Buildings Survey/Historic American Engineering Record Standard. Although the no-action alternative would have less environmental impact than the proposed action, it would not meet security requirements of the station.

1 PURPOSE OF AND NEED FOR THE PROPOSED ACTION

The proposed action evaluated in this environmental assessment (EA) is the replacement of the Main Gate facility at New Boston Air Force Station (NBAFS), New Hampshire (Figure 1). Currently, the entrance facility at NBAFS poses a risk for potential attack and unauthorized entry and does not comply with current USAF security requirements (*Military Surface Deployment and Distribution Command Transportation Engineering Agency Pamphlet 55-15, Traffic and Safety Engineering for Better Entry Control Facilities; AFI 31-101, Integrated Defense, Para 2.4.3. Installation Entry Control Points; Air Force Tactics, Techniques, and Procedures 3-31.1, Entry Control; Unified Facilities Criteria 4-022-01, Security Engineering: Entry Control Facilities/Access Control Points; Air Force Installation Entry Control Facilities Design Guide*).

Specific security hazards at the existing NBAFS entrance include (1) a straight approach to the Main Gate facility by oncoming vehicles, (2) lack of a separate location for conducting vehicle inspections, (3) obstructed view of access road and vehicle inspection area, (4) lack of overwatch area with a final barrier prohibiting the access of large vehicles, (5) inability to retrofit Building 131 with required ballistic-rated glazing and doors, and (6) proximity to priority mission assets. Such vulnerabilities would be mediated with the proposed Main Gate upgrade. The traffic pattern at the entrance would be changed to a nonlinear route, reducing the ability for a direct, high-speed approach as well as enabling the regulated access of large vehicles. The relocated Main Gate and onsite inspection area will provide personnel with unencumbered visibility to all oncoming traffic vehicle inspections. Finally, the construction of the new guard facilities will incorporate the required ballistic-rated structural features, thereby eliminating the need to remodel preexisting structures to meet security requirements.

This EA evaluates the impacts associated with construction and operation of the new Main Gate facility and was prepared in accordance with specific tasks and procedures of Air Force Instruction (AFI) 32-7061, *The Environmental Impact Analysis Process*, as it applies to the National Environmental Policy Act of 1969, Title 40, Parts 1500–1508 of the *Code of Federal Regulations* (40 CFR Parts 1500–1508), as amended.

2 DESCRIPTION OF THE PROPOSED ACTION AND THE ALTERNATIVE

2.1 PROPOSED ACTION

The proposed action is to construct a replacement Main Gate facility at NBAFS. The new facility would replace the existing Main Gate facility (Building 131) in the northeast portion of the station and would comply with current security requirements. Construction activities would include demolition of Building 131; grading; pavement; landscaping around the new Main Gate and associated roadway; and parking lot improvements. In addition, Building 102, a Cold War era historic antenna support structure, would be removed. A new Main Gate facility, equipped with the required ballistic-rated glazing and doors, would be erected to the east of Building 131. This location is closer to the point of access from Chestnut Hill Road, thereby increasing visibility of vehicular activity. Land grading, filling, and new paving would be used to redirect the traffic pattern into a nonlinear route. Additional grading, filling, and paving would occur along the western and eastern edges of the Building 103 parking lot, increasing parking capacity

to 10 slots. Force-protective features would be incorporated and would include rocks, new curbing around the Main Gate, installation of angled curbing along roadways, and popup barriers. These landscape features would be situated to the east and west of the new NBAFS entrance, as well as within the medians separating paved areas throughout the Main Gate entry system.

Two configurations for this project were considered. Configuration A is shown in Figures 2 through 4. Configuration B is presented in Figure 5. The difference between the configurations is the method used to stabilize the slope northwest of the new Main Gate. Slope stabilization under Configuration A would be achieved through the placement of rip-rap on the slope over a distance of 61 m (200 ft). Configuration A would require the clearing of 190 m² (2,000 ft²) of mixed forest which would be replaced with rip-rap. Configuration B would employ a retaining wall to stabilize this slope. The retaining wall would be 53 m (175 ft) long and approximately 2.4 m (8 ft) tall. While two configurations of the proposed action are presented, they are not different enough to be considered separate alternatives. Both configurations of the proposed action satisfy the purpose and need.

The proposed action would be conducted in strict accordance with USAF best management practices. In addition, facilities would be designed to meet recent requirements established in Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*, to address greenhouse gas emissions reductions, and Section 438 of the Energy Independence and Security Act of 2007 as described in EPA (2009). To reduce environmental impacts, all material would be removed by the contractor and disposed of at a permitted site off station grounds, maximum excavation depth would not exceed 2 m (6.5 ft), and use of vertical curbing would be minimized and angled curbing used when possible.

2.2 NO-ACTION ALTERNATIVE

No action is the only alternative to the proposed action considered in this EA. Under the no action alternative, the USAF would not replace or modify the Main Gate facility. Under this alternative, NBAFS would not be in compliance with existing USAF security requirements.

2.3 SUMMARY OF THE ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

A summary of the expected environmental impacts of the proposed action and no-action alternatives is presented in Table 1. Additional discussion of these environmental impacts is provided in Section 4.

The proposed action would result primarily in small, localized impacts to the environment associated with excavation, filling, and construction activities. Adverse impacts result from the demolition of the historically significant Building 102; however, these impacts are mitigated through documentation. Relatively minor adverse impacts are anticipated during operation of the new Main Gate facility, and these are related to the presence of new infrastructure and traffic at the new facility. Configuration A is the base's preferred option; this configuration would result in similar, minor impacts on the environment relative to Configuration B.

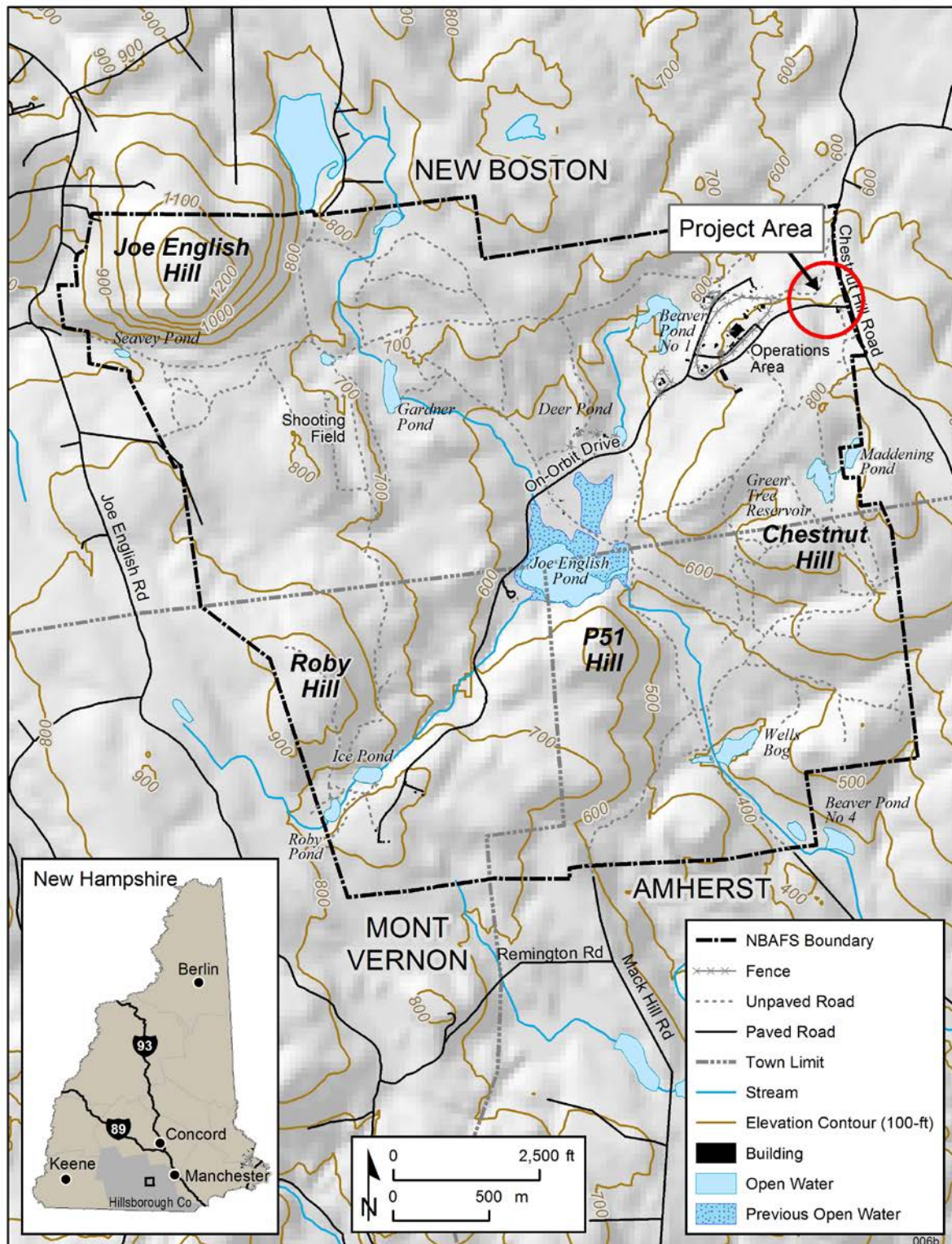


Figure 1. Location of the Proposed Main Gate Replacement Project

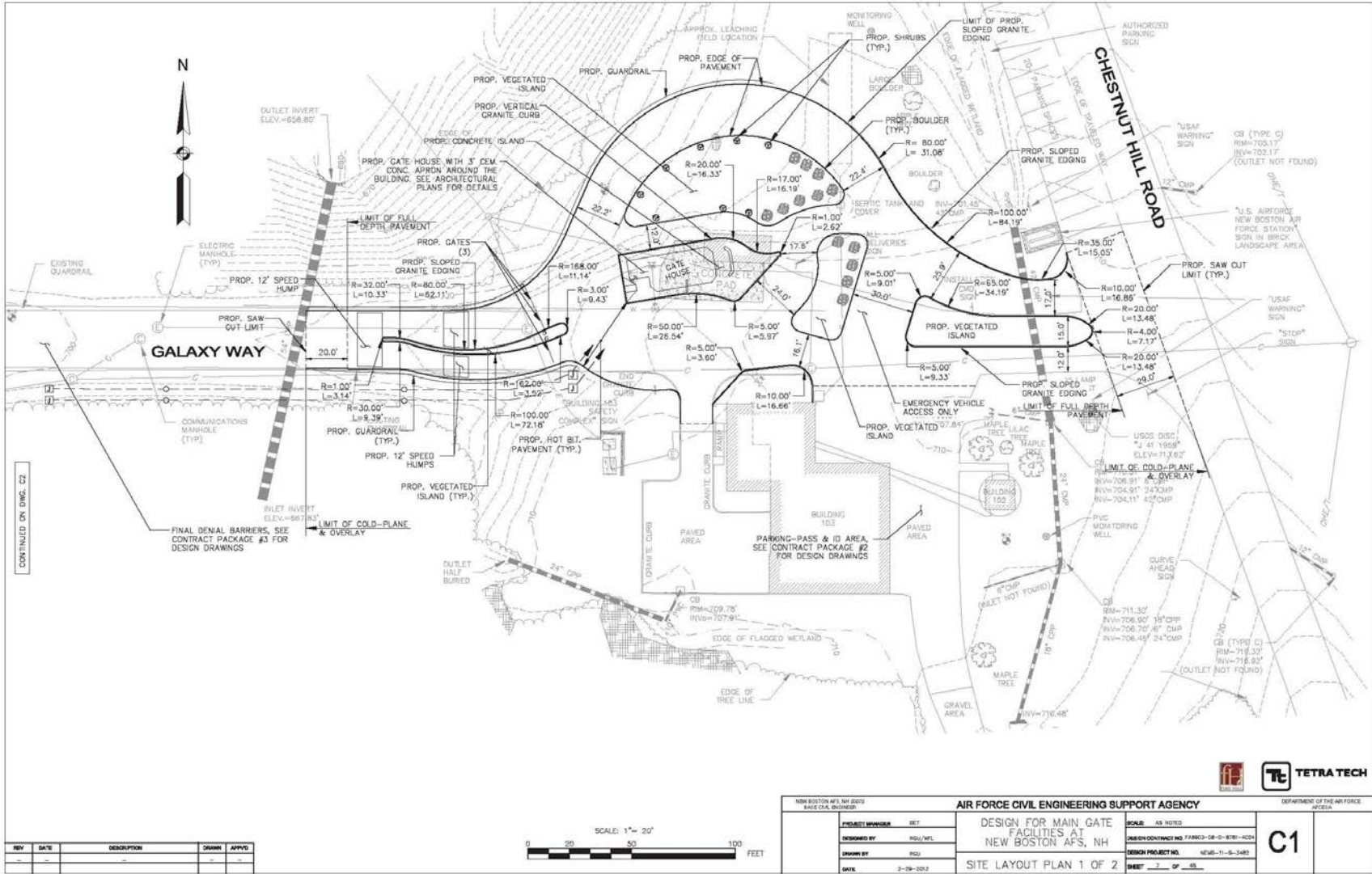


Figure 2. Detail of Configuration A for the Proposed Main Gate Replacement Project

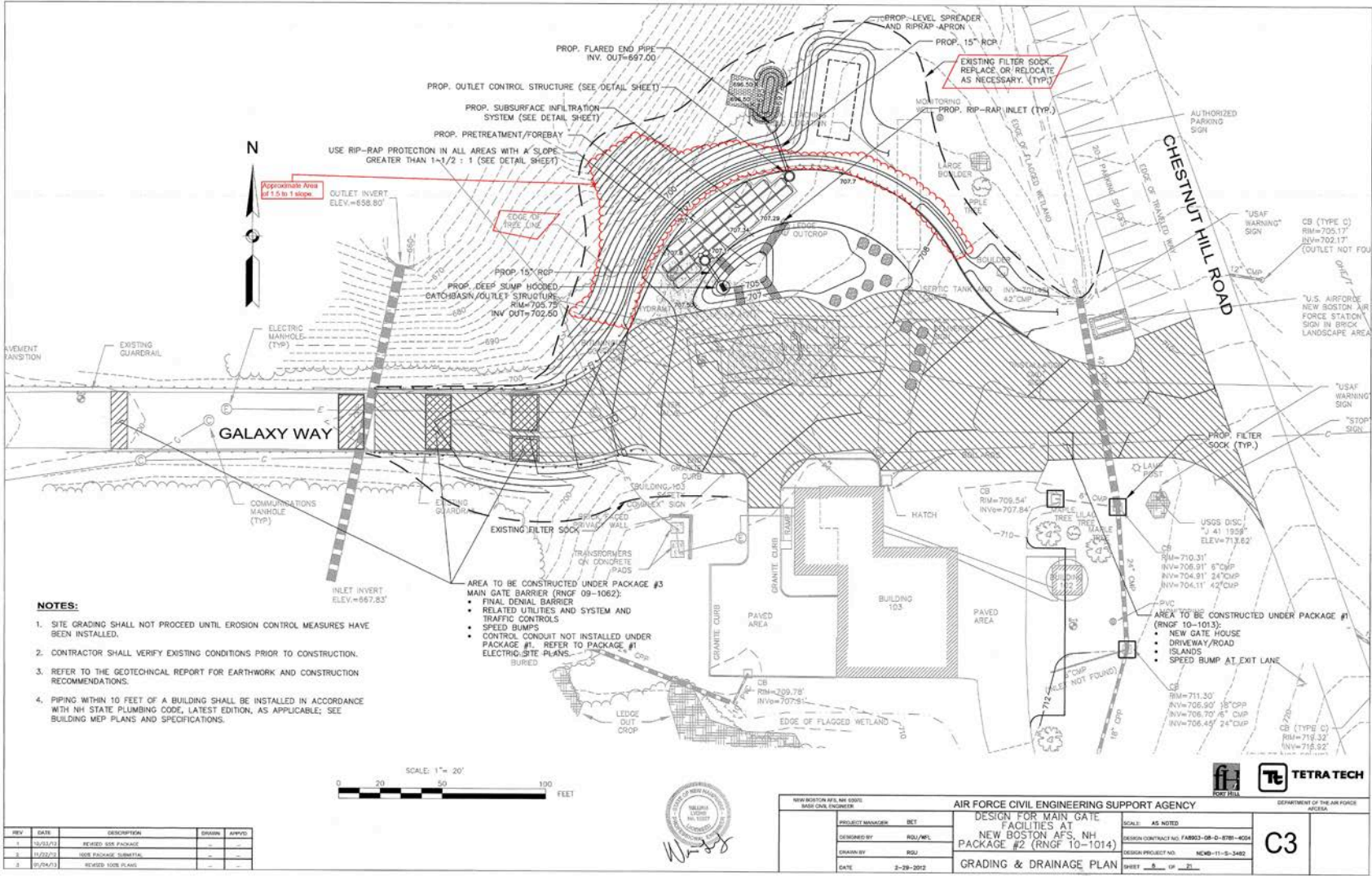


Figure 3. Detail of the Drainage for Configuration A of the Proposed Main Gate Replacement Project

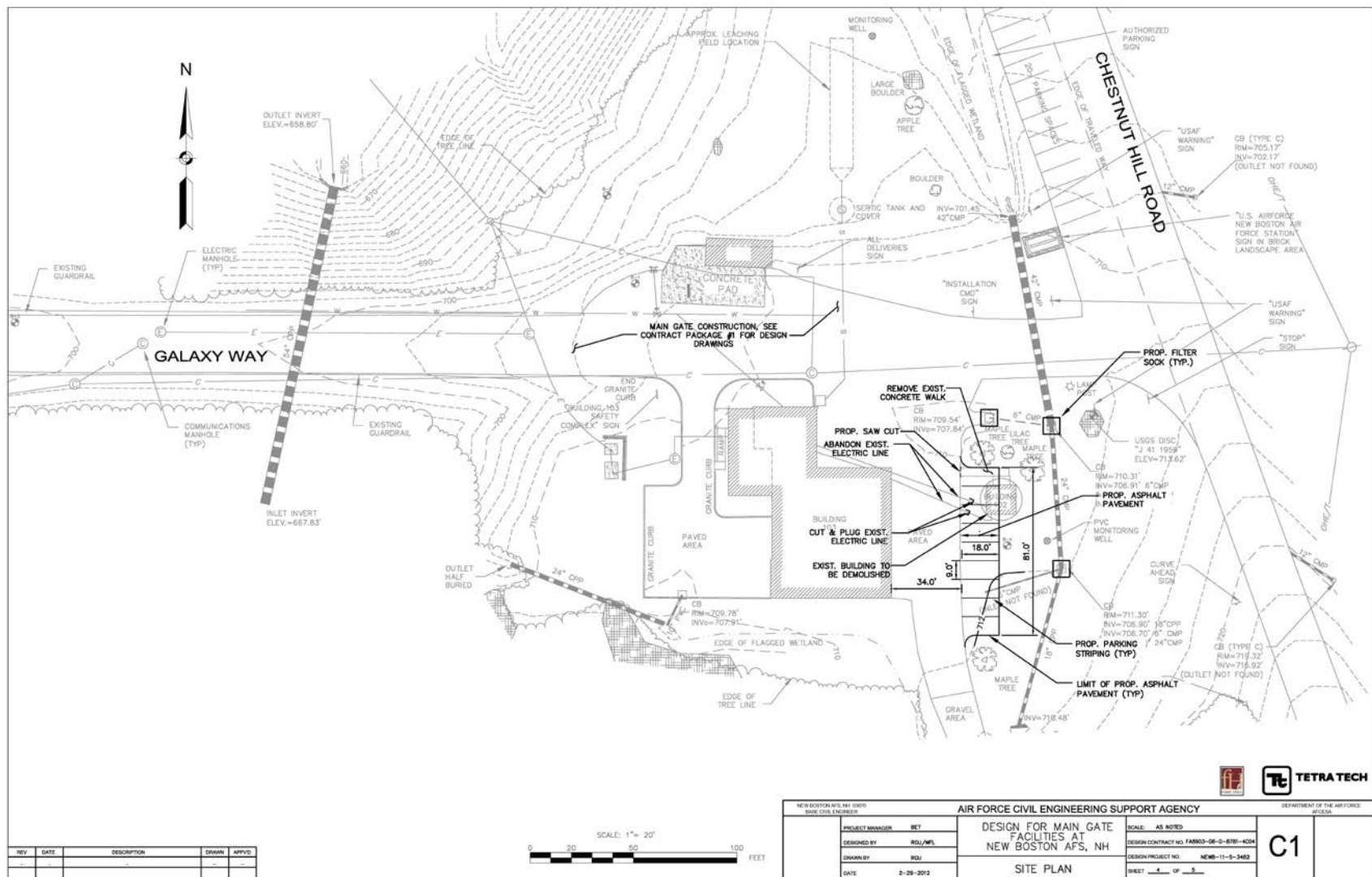


Figure 4. Detail of the New Parking Area for Configuration A

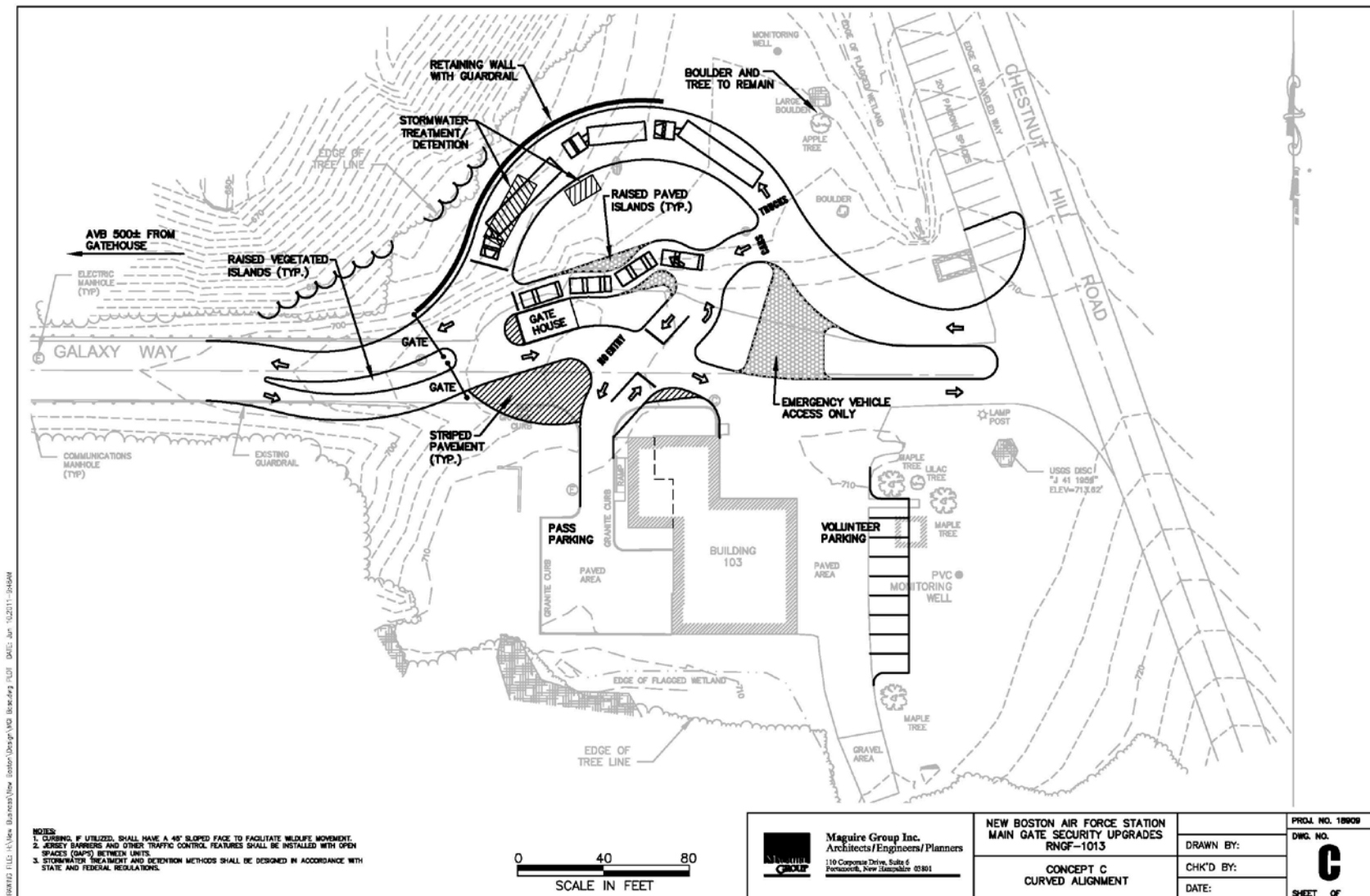


Figure 5. Detail of Configuration B for the Proposed Main Gate Replacement Project

TABLE 1. Summary of the Environmental Impacts Associated with Demolition, Construction, and Operation of a New Main Gate Facility (Proposed Action Configurations A and B) and the No-Action Alternative

Environmental Parameter	Proposed Action Configuration A	Proposed Action Configuration B	No Action
Air Quality	Minor dust and engine emissions during construction and demolition. No violations are expected of federal or state ambient air quality standards for criteria pollutants.	Same as Configuration A.	No change in existing emissions.
Noise	Short-term noise associated with equipment operation during demolition, excavation, and construction. Minor blasting could result in short-term noise issues. Application of best management practices for blasting would minimize impacts.	Same as Configuration A.	No change in existing noise levels.
Topography, Geology, and Soils	Localized compaction during excavation and construction. Limited fill of upland areas may be needed for the new roadway. Minor changes in topography due to establishment of level surfaces for facilities, roads, and parking areas. Increased short term potential for sedimentation of adjacent areas during tree removal and installation of rip-rap to stabilize the slope to the northwest of the new facility. Best management practices would reduce these impacts.	Potential for sedimentation of adjacent areas during construction of the retaining wall to the northwest of the new facility. Best management practices would reduce these impacts.	No impact to topography, geology, and soils.
Water Resources	No direct impacts on water resources during demolition, construction or operations. Minor, short-term impacts related to surface runoff and sedimentation from construction areas. Best management practices would reduce these impacts. A storm water pollution prevention plan for the project would be developed by the contractor.	Same as Configuration A.	No impact to wetlands.

TABLE 1. (Cont.)

Environmental Parameter	Proposed Action Configuration A	Proposed Action Configuration B	No Action
Ecological Resources	Removal of maintained lawn. Addition of ornamental landscape vegetation. Removal of 190 m ² (2,000 ft ²) of trees during installation of rip-rap.	Removal of maintained lawn. Addition of ornamental landscape vegetation. No clearing of trees needed for construction of retaining wall.	No impacts to vegetation or adjacent natural communities.
	Localized minor noise and visual disturbance to wildlife during demolition and construction.	Same as Configuration A.	No impacts to wildlife.
	No direct impacts on wetlands. Minor, short-term impacts related to surface runoff and sedimentation from construction areas including areas cleared of trees and rip-rapped. Best management practices would reduce these impacts.	No direct impacts on wetlands. Potential for sedimentation during construction of the retaining wall. Best management practices would reduce these impacts.	No impacts to wetlands.
	Potential for minor impacts on listed or rare species. Rip-rap would restrict but not necessarily prevent the movement of Blanding's turtles (and potentially eastern hognose snakes) up the slope northwest of the facility. Potential for slight benefit for Blanding's turtle resulting from removal of curbs.	Same as Configuration A.	No impacts to listed or rare species.
Cultural Resources	No impact expected on archaeological resources.	Same as Configuration A.	No impact to archaeological or historical resources.
	Demolition of Building 102, a historically significant Cold War era building, would be an adverse effect on a historic property. Impact would be mitigated through HABS/HAER documentation of Building 102.		

TABLE 1. (Cont.)

Environmental Parameter	Proposed Action Configuration A	Proposed Action Configuration B	No Action
Land Use, Recreation, and Visual Resources	No direct impacts on land use or recreation. Minor disruption of access.	Same as Configuration A.	No impacts to land use or recreation.
Socioeconomics	Negligible, short term benefits to the local economy during demolition, excavation, and construction. No environmental justice impacts.	Same as Configuration A.	No impacts to socioeconomics. No environmental justice impacts.
Health and Safety	Increased security from potential attack.	Same as Configuration A.	Reduced security resulting from encumbered visibility and direct oncoming traffic.

3 AFFECTED ENVIRONMENT

This section presents a general description of NBAFS and the resources that could be affected by the proposed action and the no-action alternative. The project area encompasses 1.5 ha (3.6 ac) acres in the northeastern portion of NBAFS, from the Chestnut Hill Road entrance, south to the edge of Building 103 parking, north 23 m (75 ft) beyond the existing pavement, and west 345 m (1,132 ft) on Galaxy Way to Building 131.

3.1 LOCATION, HISTORY, AND CURRENT MISSION

NBAFS is in south-central New Hampshire about 19 km (12 mi) west of Manchester. The 1,144-ha (2,826-acre) site is located within the towns of New Boston, Amherst, and Mont Vernon in Hillsborough County. On-Orbit Drive bisects the station from the southwest corner of the station to the 17.7-ha (44-acre) Operations Area in the northeastern portion of the station (Figure 1).

As part of the worldwide network of satellite command and control stations of the Air Force Satellite Control Network, the current mission of NBAFS is to serve as a remote tracking station for military and communications satellites. The Space Operations Squadron (SOPS) at NBAFS provides launch, operation, and on-orbit support for military satellites, communication satellites, and North Atlantic Treaty Organization satellites (and those of other allied nations), and, until recently, for National Aeronautics and Space Administration Space Shuttle missions (Najjar 1998).

From 1941 until 1956, NBAFS (then known as the New Boston Bombing and Gunnery Range) was used as an air-to-ground bombing and strafing range. The principal target areas were the Shooting Field and Joe English Pond (Figure 1). USAF acquired rights to the site in 1957 for use as a satellite-tracking station. In 1959, the 6594th Instrumentation Squadron was activated at NBAFS. Squadron activities began in 1960; mobile radar units were used until permanent facilities were constructed and in operation by 1964. In the early 1960s, the Operations Area was cleared of unexploded ordnance (UXO) before the permanent facilities for the satellite-tracking mission were constructed. The site was formerly under the jurisdiction of the USAF Systems Command, which transferred the mission to the USAF Space Command in 1987 (Najjar 1998). The satellite-tracking mission is conducted from the Operations Area; the remainder of NBAFS is managed for military training, natural resources management, and cultural resources protection. Management goals and projects identified in the NBAFS Integrated Natural Resources Management Plan, the principal tool for managing natural resources on NBAFS, address threatened, endangered, and rare species populations; rare natural communities; forest management (including timber harvests); control of invasive, nonnative plant species; outdoor recreation; and UXO remediation (LaGory et al. 2006).

3.2 CLIMATE, AIR QUALITY, AND NOISE

NBAFS is located in the humid continental subzone of the moist mid-latitude mild-winter climate zone. Northwesterly winds predominate, bringing cold, dry air during the winter and pleasantly cool, dry air in the summer (NCDC 2011). For the 135-year period of record at the Concord National Weather Service station, the annual average temperature was 9.3°C (48.8°F), with highest and lowest monthly average temperatures of 23.2°C (73.8°F) in July and -5.1°C (22.9°F) in January, respectively (NCDC 2011). Precipitation occurs throughout the year, with no particular wet or dry season. The annual precipitation average is about 96.26 cm (37.9 in.), with a maximum monthly average of 9.1 cm (3.6 in.) in November and a minimum monthly average of 6.0 cm (2.4 in.) in February. Annual snowfall in the area averages 162 cm (63.8 in.).

New Hampshire Ambient Air Quality Standards for six criteria air pollutants: sulfur oxides (as sulfur dioxide [SO₂]), nitrogen dioxide (NO₂), carbon monoxide (CO), ozone (O₃), particulate matter (PM₁₀ and PM_{2.5}),¹ and lead are identical to the National Ambient Air Quality Standards (NAAQS; NHDES 2004). Currently, criteria pollutants at and around the NBAFS site are not routinely monitored. Concentration levels for SO₂, NO₂, CO, and PM₁₀ are significantly below (less than 44% of) their respective primary and secondary NAAQS. However, ambient air concentrations for O₃ and PM_{2.5} are close to or higher than their respective NAAQS. This is partly because the concentrations of O₃ and PM_{2.5} are more sensitive to atmospheric conditions that promote transport, transformation, and accumulation. In 1996, New Hampshire discontinued lead monitoring because lead concentrations were well below the NAAQS and at the lowest levels of the detection limit.

Hillsborough County, which includes the NBAFS site, is currently an attainment area for all criteria pollutants except O₃ (40 CFR 81.330). Along with three neighboring counties, portions of Hillsborough County are within the Boston-Manchester-Portsmouth Designated Area, which is classified as a moderate O₃ nonattainment area for 8-hour O₃. The portion of the NBAFS site that is in the Town of Amherst is within this nonattainment area. The project area is in the Town of New Boston, and therefore is in an attainment area for all criteria pollutants.

Permitted air pollution sources at NBAFS include two large diesel fuel backup generators at the station's power plant (Najjar 2012). The A-Side antenna emergency generator is also permitted. Additional permitted generators include two for the SATCOM and one for the Remote Block Change B-Side Antenna (Melendez 2011). Other combustion sources at NBAFS include 12 fuel-oil generators and heaters; propane space heaters, including four propane heaters for antenna deicing; and a cooling tower. In addition, emissions of volatile organic compounds, hazardous air pollutants from chemical use, and ozone-depleting substances are extremely low (Najjar 1998). NBAFS is not considered a major source of air pollution (LaGory et al. 2006).

Prevention of significant deterioration (PSD) regulations (40 CFR 52.21) limit the maximum allowable incremental increases in ambient concentrations of SO₂, NO₂, and PM₁₀ above established baseline levels. The PSD regulations, which are designed to protect ambient air quality in three different classes of attainment areas, apply to major new sources and major

¹ PM₁₀ and PM_{2.5} are particulate matter with an aerodynamic diameter ≤ 10 μm and ≤ 2.5 μm, respectively.

modifications to existing sources. New Hampshire contains two Class I PSD wilderness areas (areas with pristine air quality), the Presidential Range-Dry River and the Great Gulf Wilderness Areas, which are about 142 km (88 mi) and 156 km (97 mi), respectively, north of the NBAFS site. The closest PSD Class I area is Lye Brook Wilderness Area in Vermont, located about 114 km (71 mi) west of the NBAFS site. Since the NBAFS site is not a major air emission source, PSD regulations are not applicable.

The Noise Control Act of 1972, along with its subsequent amendments (Quiet Communities Act of 1978, 42 USC 4901–4918), delegates to the states the regulation of environmental noise and directs government agencies to comply with local community noise statutes and regulations. Currently, New Hampshire does not have any state regulations for noise.

The EPA guideline recommends an L_{dn} (the day-night weighted equivalent sound level) of 55 dBA,² which is considered sufficient to protect the public from the effect of broad-band environmental noise in typically quiet outdoor and residential areas (EPA 1974). For protection against hearing loss in the general population from non-impulsive noise, the EPA guideline recommends an L_{eq} ³ of 70 dBA or less per day over a 40-year period.

Noise-sensitive locations within NBAFS are the Joe English Pond Campground (inactive for the indefinite future pending UXO remediation) in the center of the station and the Operations Area in the northeastern portion of the station (Figure 1). The closest residences outside the station are immediately adjacent to the site boundary to the northeast along Chestnut Hill Road and to the northwest along Joe English Road. No noise monitoring data are available from around the NBAFS site. The acoustic environment around the NBAFS site can be considered that of a rural location, with typical residual sound levels of approximately 30 to 35 dBA (Liebich and Cristoforo 1988). However, ambient noise levels at residences along the roads would be substantially increased at times when traffic is passing on nearby roadways.

3.3 TOPOGRAPHY, GEOLOGY, AND SOILS

NBAFS is in an area of hilly and mountainous terrain. The main physiographic features on NBAFS are P51 Hill, Roby Hill, and Joe English Hill, with Joe English Pond in the center of the station (Figure 1). Elevations on NBAFS range from 104 m (340 ft) above mean sea level (MSL) where Joe English Brook exits the southeastern corner of the station to about 389 m (1,275 ft) MSL at the summit of Joe English Hill. The steepest areas of terrain include the near-vertical slopes on the southern cliffs of Joe English Hill and the northeast aspect of P-51 Hill, located south of Joe English Pond. The sides of stream ravines in the south-central and southwestern portions of the station are also relatively steep. Small, nearly level outwash plains

² dBA is a unit of weighted sound-pressure level, measured by the use of the metering characteristics and the “A” weighting specified in the *American National Standard Specification for Sound Level Meters ANSI S1.4-1983 and Amendment S1.4A-1985* (Acoustical Society of America 1983, 1985).

³ L_{eq} is the equivalent steady sound level that, if continuous during a specific time period, would contain the same total energy as the actual time-varying sound. For example, L_{eq} (1-h) is the 1-hour equivalent sound level.

or stream valley areas occur south of Joe English Hill, near Joe English Pond, and surrounding Wells Bog (ENSR 1993).

Soils of the area are described and mapped in the *Soil Survey of Hillsborough County, New Hampshire, Eastern Part* (Bond and Handler 1981). Twenty-three soil map units occur within the limits of NBAFS. More than 90% of the soils on NBAFS were formed in glacial till; the remainder were formed in outwash plains, kame terraces, or stream valleys. Soils formed in glacial till tend to be fine-textured and dense and contain many stones. Soils covering about one-half of NBAFS are classified as stony or very stony. The erosion potentials of the soils on NBAFS are slight if protected by a vegetation cover, but moderate to extreme without cover because of their fine texture and the generally steep slopes of NBAFS. Some areas of NBAFS contain exposed bedrock (Najjar 1998).

Project area soils consist of Paxton fine sandy loam 8-15% slopes and Chatfield-Hollis-Rock outcrop complex 15-35% slope. Both soils are considered well-drained. The project area was leveled and graded during the original development of the area. The road bed for Galaxy Way was raised above the original grade.

3.4 WATER RESOURCES

There are three watersheds on NBAFS (LaGory et al. 2006). Most of NBAFS is in the Joe English Brook watershed, which flows toward the center of the station and then to the southeast. About half of the Operations Area is within the Bog Brook watershed, which flows toward the northeast. The remainder of the Operations Area is within the Joe English Brook watershed. Drainage from the northwestern portions of the station flows offsite toward the west and north in the Meadow Brook watershed. The project area is in the Bog Brook watershed.

The station contains a number of water bodies and stream segments (intermittent and perennial; Figure 1). The approximate area of the station's larger water bodies (including associated wetlands) are Joe English Pond, 8 ha (20 ac); Green Tree Reservoir, 3.0 ha (7.5 ac); Gardner Pond, 2.4 ha (6.0 ac); Ice Pond, 1.1 ha (2.8 ac); Roby Pond, 0.3 ha (0.8 ac); and Seavey Pond, 0.2 ha (0.5 ac; Najjar 1998). The ponds range between 0.3 and 7 m (1 and 23 ft) in depth. Seavey Pond is the only completely manmade impoundment on the site; the other ponds on the station have dams at their outlets (PES 1996).

In 2010, the Joe English Pond Dam was removed as part of UXO remediation operations occurring at NBAFS. With removal of the dam, Joe English Pond reverted to its original 8-ha (20-ac) size (Figure 1), which will likely result in the drying and potential reversion to upland of much of the approximately 12.1 ha (30 ac) of wetland communities that had become established in the shallow water areas of the pond (ANL 2006). Joe English Pond remains closed to recreation pending completion of UXO remediation.

About 11 km (7 mi) of streams are on NBAFS (HB&A 2004), including those that flow into Joe English Pond from the higher-elevation wetland areas of Murphy Swamp, Gardner Pond, Beaver Pond No. 1, Deer Pond, and Ice Pond. The majority of the 9.8 km² (3.8 mi²) Joe

English Pond watershed is wooded with little development, and most is contained within the NBAFS boundary. Slopes in the watershed are generally steep. Drainage from Joe English Pond flows southeast into Joe English Brook, which exits the station boundary about 1.6 km (1 mi) downstream. Joe English Brook is the largest onsite stream. It ranges from 3 to 6 m (10 to 20 ft) wide and between 0.6 and 1.5 m (2 and 5 ft) deep (PES 1995). Both Joe English Pond and Joe English Brook are designated as Class B waters and are considered suitable for swimming and other recreation, fish habitat, and, after adequate treatment, use as a water supply (PES 1995).

No Federal Emergency Management Agency data are available for floodplains within NBAFS (PES 1995). However, for a 100-year flood event, it has been predicted that Joe English Brook would rise about 2.1 m (7 ft) above its bank (PES 1995). The width of the Joe English Brook 100-year floodplain ranges between 31 m and 122 m (100 and 400 ft) from its start at Joe English Pond downstream to the vicinity of Greeley Road, located over 2.4 km (1.5 mi) southwest of the NBAFS boundary.. The 500-year floodplain does not vary appreciably in width from that of the 100-year floodplain boundary (PES 1995).

Sanitary wastewater from the Operations Area is collected by a sewer system and routed to a septic system that was installed in 2005 (ANL 2004). The septic system replaced a now-dismantled water treatment plant that processed sanitary and industrial wastewater. Industrial wastewater from the Operations Area is now collected in a large holding tank, where it is removed by a contractor for appropriate treatment and disposal. As a result of this reconfiguration of the water treatment at the station, NBAFS no longer requires a National Pollution Discharge Elimination System permit. Sewage from Building 103 is routed to a different nearby septic system that serves the Main Gate area. The leach field for this system is north of Galaxy Way just west of Chestnut Hill Road.

3.5 ECOLOGICAL RESOURCES

NBAFS has been identified as a Category I installation by both the New Hampshire Department of Fish and Game and the U.S. Fish and Wildlife Service. This classification indicates that NBAFS has habitat suitable for conserving and managing fish and wildlife. An Integrated Natural Resources Management Plan is used to guide management of the natural resources of NBAFS using an ecosystem approach (LaGory et al. 2006). The relatively high biodiversity supported on NBAFS has been attributed to the presence of generally undisturbed lands on much of the site and to the types of low-impact activities that occur on the station (LaGory et al. 1997). Numerous surveys have been conducted to determine the habitats and biotic composition of NBAFS including wetland delineations (PES 1996), a biodiversity survey (LaGory et al. 1997), a bat survey (LaGory et al. 2002), an eastern hognose snake survey (LaGory et al. 2008), and a rare and natural communities survey (LaGory et al 2011), .

Much of the area surrounding NBAFS is rural with interspersed forests and residential areas. Land cover on the station is consistent with the surrounding area, and much of the habitat present on the station is represented elsewhere in the county and region. However, residential development of surrounding lands has increased within the past decade, resulting in an increase in the ecological importance of the undeveloped land on the station grounds. Land cover types

occurring on NBAFS include coniferous forest (288 ha [710 ac]), deciduous forest (219 ha [540 ac]), mixed forest (527 ha [1,300 ac]), oldfield (20 ha [49 ac]), parkland (19 ha [47 ac]), wetlands (80 ha [198 ac]), open water (18 ha [43 ac]), disturbed land (15 ha [37 ac]), and developed land (18 ha [44 ac]) (LaGory et al 2006). The land cover in the project area is primarily disturbed land surrounded by mixed forest.

Most of the developed land at NBAFS (buildings, roads, and parking lots interspersed with mowed lawns and landscaped plantings) is limited to the Operations Area. The herbaceous cover in these areas is either cultivated lawn grass in level areas or a variety of planted grasses and forbs on slopes (Najjar 1998). In addition to grass, the Operations Area includes landscape plantings of native tree and shrub species (e.g., white pine, maples, dogwood, and junipers; Najjar 1998). The landscaped lawns in the Operations Area provide low-value habitat for wildlife. Deciduous and mixed forests are the primary undeveloped habitats adjacent to the Operations Area. The project area is covered by cultivated lawn grass and asphalt paving.

A total of 57 wetland areas that total nearly 23 ha (57 acres), ranging in size from 0.03 to 10.4 acres (0.01 to 4.2 ha; PES 1996), occur in the northeastern portion of NBAFS where the project would be located. Northwest of the project area is a small wetland colloquially referred to as “Firehouse Pond” (Figure 6). This wetland is the result of beaver activity along an intermittently flowing stream and is about 0.8 ha (2 ac) in size. The wetland drains to the north. A grassy causeway leading to a substation north of NBAFS bisects the wetland. Another wetland approximately 0.2 ha (0.5 ac) in size is located southwest of Building 103. An intermittent stream flows from Chestnut Hill through this wetland, and runs under Galaxy Way through a culvert to Firehouse Pond. Both wetlands near the project area are categorized as palustrine emergent wetlands.

Nine locations (seven wetlands and two woodlands) support five rare natural community types on NBAFS (LaGory et al. 2011). Community types identified include: (1) black gum-red maple basin swamp (five locations); (2) a complex of two community types (highbush blueberry-mountain holly wooded fen and large cranberry short sedge moss lawn) found in two locations; (3) a red oak-black birch wooded talus community, one location; and (4) an Appalachian oak-pine rocky ridge community, one location. None of these rare natural communities occur in the project area vicinity.

Many of the wildlife species on the station are typical for the region. The most common bird species on the station included Canada goose (*Branta canadensis*), broad-winged hawk (*Buteo platypterus*), tree swallow (*Tachycineta bicolor*), black-capped chickadee (*Poecile atricapillus*), blue jay (*Cyanocitta cristata*), American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), cedar waxwing (*Bombycilla cedrorum*), dark-eyed junco (*Junco hyemalis*), and common grackle (*Quiscalus quiscula*). The largest numbers of bird species have been observed in wetlands, parkland, mature mixed forest, and mature deciduous forest; more than 80 species have been observed in each of these habitats. The fewest species were observed in developed, disturbed, and young coniferous forest; fewer than 50 species have been observed in each of these habitats (LaGory et al. 1997).

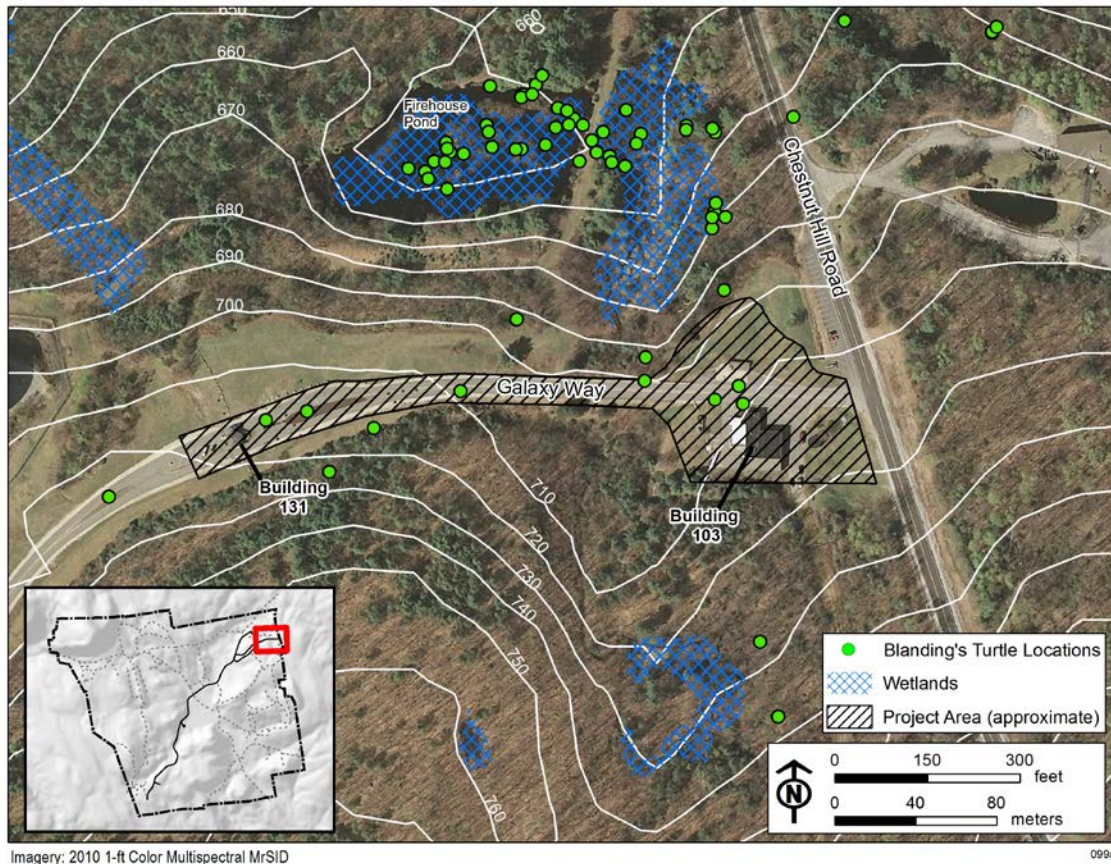


Figure 6. Wetlands and Blanding's Turtle Locations Near the Project Source for wetland information: PES (1996)

Common mammal species on NBAFS include the eastern chipmunk (*Tamias striatus*), red squirrel (*Tamiasciurus hudsonicus*), coyote (*Canis latrans*), white-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), red-backed vole (*Clethrionomys gapperi*), porcupine (*Erethizon dorsatum*), red fox (*Vulpes fulva*), and fisher (*Martes pennanti*).

Common amphibians and reptiles on NBAFS include red-spotted newt (*Notophthalmus viridescens*), spring peeper (*Pseudacris crucifer*), wood frog (*Rana sylvatica*), pickerel frog (*Rana palustris*), painted turtle (*Chrysemys picta*), and garter snake (*Thamnophis sirtalis*; LaGory et al. 1997).

Most of the wildlife species near the project area are typical for the station and region. Common species include pickerel frog, garter snake, mourning dove (*Zenaida macroura*), blue jay, black-capped chickadee, American robin, eastern towhee (*Pipilo erythrophthalmus*), dark-eyed junco, house finch (*Carpodacus mexicanus*), raccoon (*Procyon lotor*), coyote, eastern chipmunk, woodchuck, red squirrel, red-backed vole, and white-tailed deer (LaGory et al. 1997).

No federally listed plant or animal species are known to occur on NBAFS, and no critical habitat for federally listed threatened or endangered species has been designated on NBAFS. However, several state-listed birds (bald eagle [*Haliaeetus leucocephalus*], pied-billed grebe [*Podilymbus podiceps*], osprey [*Pandion haliaetus*], northern harrier [*Circus cyaneus*], and whip-poor-will [*Caprimulgus vociferous*]), a state-listed snake (eastern hognose snake), three state-listed turtles (spotted turtle [*Clemmys guttata*], wood turtle [*Glyptemys insculpta*], and Blanding's turtle), and two state-listed bats (small-footed bat [*Myotis leibii*] and tricolored bat [*Perimyotis subflavus*]) have been observed on NBAFS (LaGory et al. 2006). In addition, several animal species that are listed by the New Hampshire Natural Heritage Inventory as rare have been observed (LaGory et al. 2006). Only the Blanding's turtle, American bittern (*Botaurus lentiginosus*, considered rare in the state), whip-poor-will, and tricolored bat have been recorded in the northeastern portion of the station where the proposed Main Gate facility would be located. Blanding's turtles are typically found in wetland habitats (DeGraaf and Rudis 1986) and have been found regularly in the northeastern portion of the station (Figure 5). The whip-poor-will prefers to nest in open, dry woodland often near openings (LaGory et al. 2006). The tricolored bat roosts in deciduous forest habitat and forages in open areas (LaGory et al. 2006). The eastern hognose snake is known to occur in open forests and old field habitats on sandy substrates in the central and southern portions of NBAFS (LaGory et al. 2008). This species is not known to occur in the project area in the northeastern portion of NBAFS, but it could occur there.

3.6 CULTURAL RESOURCES

NBAFS is in the Merrimack River Valley, specifically within the Souhegan River drainage, a western tributary to the Merrimack River. Archaeological investigations within the Merrimack River system have documented prehistoric sites dating from the Early Archaic period (8000 to 6000 BC), with very limited evidence for sites dating from the earlier Paleo-Indian period (10500 to 8000 BC; Starbuck 2006). The streams and wetlands present at NBAFS and its high natural resources potential made it a suitable location for both temporary single-purpose foraging locations and possible multicomponent campsites (i.e., sites containing evidence of several occupational periods). Two prehistoric sites and four isolated finds were recorded at NBAFS during subsurface testing (PAL 1993). Protection and management of cultural resources at NBAFS are guided by an Integrated Cultural Resources Management Plan (Whetsell and McLeod 2000). The Plan identifies measures that should be taken to protect cultural resources of the station.

Cultural resources at NBAFS include both prehistoric and historic archaeological sites, as well as several Cold War era structures. Prehistoric resources include three sites (remnants of temporary campsites that were used by small groups) and one isolated find. Historic resources include 67 sites, of which 24 are classified as homesteads or farmsteads, three as rural industrial, and one related to civic functions (Whetsell and McLeod 2000). Four prehistoric sites and 67 of the historic sites are eligible for inclusion in the National Register of Historic Places (NRHP).

NBAFS is one of the original seven satellite-tracking and communications stations established for the military space program. All activities associated with the satellite-tracking

mission of the station take place within the Operations Area. This area contains 17 structures. The State Historic Preservation Office (SHPO) within the New Hampshire Division of Historical Resources has indicated that five buildings (Buildings 100, 102, 108/109, 142/143, and the Bore Site Tower) are potentially eligible for listing on the NRHP (Muller 1998). Although all of the buildings are less than 50 years old, they played an important role during the Cold War (PES 1998).⁴

Building 102 in the project area is slated for demolition as part of the project. It is the remaining pedestal for a previously functioning, but subsequently dismantled, antenna erected in 1960 as part of the original suite of equipment for the base. The Building 102 antenna was an angle tracker used to determine the angle at which a satellite was passing overhead (this function eventually became incorporated into all antennas). The antenna was operated from a control room located in Building 103. The antenna and its controls were removed in 1965. All that remains is the concrete pedestal for the antenna (Figure 7). The pedestal was faced with red brick in the last 20 years, and the building now serves as storage.

In recognition of the importance of the Cold War era facilities found at the station, NBAFS, in consultation with the New Hampshire SHPO, developed a Programmatic Agreement (PA) that establishes the guidelines and procedures for the management of NRHP-eligible properties at the station (NBAFS 2002). The PA stipulates that these facilities are scientific and technical in nature and would require routine upgrades or equipment replacements. These activities are deemed to have no effect on the historic significance of the properties because they are eligible under Criterion D for their potential to provide additional information about the Cold War, rather than under Criterion C for their architectural merit. The PA also states that prior to demolition of any eligible property within the proposed Operations Area historic district, the property would receive documentation under the Historic American Building Survey/Historic American Engineering Record (HABS/HAER) programs.

An NBAFS Archaeological District nomination was developed and submitted to the New Hampshire SHPO for concurrence (Whetsell 2004). The nomination was approved by USAF and concurred with by the New Hampshire SHPO in 2006 but was not submitted to the U.S. National Park Service, which maintains the NRHP. The district contains 47 contributing properties including 33 prehistoric and historic archaeological sites, a dam, one road, one granite slab bridge, and two groupings of linear structures composed of stone walls and pre-1956 roadways. Also included in the district are shooting fields, a rocket range, two observation towers, a large strafing range, and two aircraft crash sites from the World War II era.

⁴ The National Historic Preservation Act of 1966, as amended, typically applies to properties older than 50 years; however, if a property is determined to be of exceptional importance under the eligibility criteria for listing on the NRHP (36 CFR 60.4), it is also protected under this act.



Figure 7. Building 102

3.7 LAND USE, RECREATION, AND VISUAL RESOURCES

Facilities that support the satellite-tracking operations at NBAFS are all found in the Operations Area which occupies about 17.7 ha (44 ac) of the 1,144-ha (2,826-ac) site (LaGory et al. 1997). Facilities located within the Operations Area (Figure 1) include three enclosed satellite dish antennae, satellite-control buildings, and satellite-tracking and communications buildings. Support facilities include maintenance and administration buildings, a fire station, and storage facilities. Over the years, NBAFS has been restoring the remainder of the land on the station to a natural state, while maintaining the recreational and military training uses of the station. The unimproved portions of NBAFS are not used to actively support mission operations (ANL 1999).

Recreational use of NBAFS is restricted primarily to active Department of Defense (DoD) staff and their families and eligible DoD retirees. Numerous active and passive outdoor recreational opportunities have been made available at NBAFS, including nature watching, fishing, swimming, camping, hiking, rock climbing, hunting, archery, boating, cross-country skiing, ice fishing, ice skating, sledding, and snowmobiling (ANL 1990; Najjar 1998). Recreational activities have been restricted over the past several years for security reasons and because of the presence of UXO in some areas. The nearest recreational facilities to the project area are adjacent to Deer Pond where picnicking, boating, and baseball facilities are available. The Community Center is also located near Deer Pond.

The land immediately surrounding NBAFS is heavily wooded, representing some of the least developed and most rural portions of the towns of New Boston, Amherst, and Mont Vernon. The area is primarily designated for low-density residential use (USAF 2001). Single-family homes on parcels typically over one acre, undeveloped lands, and several active farms (particularly along Chestnut Hill Road and Joe English Road) occur in the immediate vicinity of NBAFS. A computer software company is opposite the main entrance to the station (ANL 1999).

Radomes associated with NBAFS antennas constitute the primary obstructions to views on the station. However, most of NBAFS provides a natural setting (e.g., forests, hills, wetlands, and ponds), and visual resources are considered excellent, with scenic vistas evident from the station's higher elevations.

3.8 SOCIOECONOMICS

NBAFS employs approximately 150 people (consisting of military, DoD civilian, or civilian contract employees; USAF 2001). In 2011 there were eight active military, 41 DoD civilian, and 82 civilian contract employees at NBAFS (Melendez 2011). Although rural in character, the three communities of New Boston, Amherst, and Mont Vernon that surround NBAFS have experienced population growth and are in one of the most rapidly expanding residential areas of New England. Accordingly, residential development is expected to continue in the area surrounding NBAFS. The communities that surround NBAFS represent three of the most affluent communities of the state (all three are ranked in the top 25 of 234 communities in terms of median household income; USAF 2001).

4 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVES

Impacts of the proposed action (replacement of the Main Gate facility) and the no-action alternative are presented in this section. Consideration is given to impacts to air quality and noise; topography, geology, and soils; water resources; ecology; cultural resources; land use, recreation, and visual resources; socioeconomics; and health and safety. Direct effects (caused by the action and occurring at the same time and place) and indirect effects (caused by the action, that occur later in time or at a distance) are considered in this section. Adverse impacts that cannot be avoided if the project is implemented, irreversible and irretrievable commitment of resources, and the relationship between short-term use and long-term productivity are discussed in Sections 4.4, 4.5, and 4.6, respectively. Cumulative impacts are presented in Section 4.5.

4.1 ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

As described in Section 2, the proposed action consists of replacement of the Main Gate facility at NBAFS. This new entrance facility would enable compliance with current security requirements mandated by the USAF to be met as well as greatly improve the protection of priority resources. Two configurations under the proposed action and the no-action alternative were considered in the environmental assessment for the project. The difference between the two configurations is the method employed to stabilize the slope northwest of the new Main Gate. Configuration A would use rip-rap to stabilize the slope while Configuration B would use a retaining wall. For many of the resources examined, there is no difference between the configurations in terms of impact. On the basis of the assessments provided in the following sections, the proposed action under either configuration would have relatively minor adverse impacts on the environment.

4.1.1 Air Quality and Noise

Localized, short-term air quality impacts that could occur during project activities include the generation of fugitive dust and engine exhaust emissions. The potential impacts of these emissions on ambient air quality in the vicinity of NBAFS would be minor and limited to the duration of demolition and construction activities (6 to 8 months). No violations of applicable federal and state ambient air quality standards are expected. No air impacts are expected from operation of the new facility.

Noise impacts would occur from the use of machinery and vehicles during excavation, grading, demolition, and construction. Some minor blasting could occur during the project for utility installation. The nearest noise receptors are a software firm located on the east side of Chestnut Hill Road as well as residences found along Chestnut Hill Road. Blasting mats could be employed to mitigate noise effects. Construction would occur mostly during weekday daytime hours, thus much of the noise would be masked by background noises. No operational noises are expected. Noise impacts associated with project-related activities would be minor and of short duration.

NBAFS demolition and construction specifications would minimize air and noise impacts. Dust barriers would be used to prevent the spread of fugitive dust beyond the work area. Water also could be used for dust suppression. No burning of materials or debris would be permitted. All vehicles would be required to function properly (e.g., exhaust systems with no leaks). Low-noise-emission equipment, as certified by the U.S. Environmental Protection Agency, would be used to the maximum extent practicable. Section 176 of the Clean Air Act requires federal agencies to ensure that their actions conform to applicable implementation plans for achieving and maintaining the NAAQS for criteria pollutants. Although general air conformity analysis has been required for projects in some portions of NBAFS due to regional ozone noncompliance, no conformity study is necessary for this project because it would be located in the Town of New Boston, which is an attainment area.

4.1.2 Topography, Geology, and Soils

The proposed action would have relatively minor effects on the topography of the project area. Such impacts would result from the establishment of level surfaces for facilities, roads, and parking areas. The scale of grading, filling, and excavation (≤ 3 m (9.8 ft) change in elevation) activities required to attain terrain requirements would be low as the current site conditions are already relatively flat. Configuration A would require that 190 m² (2,000 ft²) of mixed forest be removed and replaced with rip-rap on the slope northwest of the new Main Gate. Under Configuration B the slope along the northwest corner of the project area would be stabilized by a retaining wall. Approximately 8,000 yd³ (6,116 m³) of clean fill may be needed under both configurations for leveling the roadways (Najjar 2012).

Impacts to soils (e.g., erosion and soil compaction) would result from excavation, filling, construction, and demolition. The contractor selected to undertake the project would be required to develop a Stormwater Pollution Prevention Plan, which would detail the required mitigation measures to be employed for the project (Najjar 2012). Erosion would be controlled through mandatory mitigation measures that include the use of filter socks, silt fencing, and hay bales surrounding excavation and construction areas. The potential for erosion during construction would increase under both configurations. Clearing of the hillside under Configuration A could briefly increase sediment runoff to adjacent areas. Under Configuration B, excavation would be needed to install the retaining wall, and sediment runoff to adjacent areas would briefly increase until vegetation cover could be established in cleared areas. Once the rip-rap or retaining wall was in place, and cleared areas stabilized, the potential for erosion would be the same under both configurations.

Excavation under either configuration would not exceed 3 m (9.8 ft) in depth. Some fill may be needed for leveling in the project area. Any fill needed would be brought in from an offsite location. All demolition materials from Building 102 and Building 131 would be hauled offsite for disposal. Following completion of construction, all unpaved disturbed areas would be covered with topsoil and seeded with lawn grass or other landscape elements to stabilize soils. Rip-rap would be used along the forebay north of the new Main Gate to encourage drainage and on the slope above the wetland. No soil impacts are expected from operation of the new facility under either configuration.

Construction staging areas would be located on paved or graveled surfaces. By refueling construction equipment in these areas, the potential for impacts from fuel-handling spills would be minimized. Vehicles and other equipment would be required to be clean and properly operating (e.g., no fuel or hydraulic leaks and motors reasonably clean of excess grease) to prevent leaks. Fuel-oil and petroleum storage tanks would be surrounded by appropriately sized containment systems to contain any spills or leaks. In the event of a spill or leak, response would be in accordance with established USAF and state regulations.

4.1.3 Water Resources

Minor increases in turbidity and sedimentation of surface waters in the project vicinity could occur during excavation and construction. There is a potential for sediment runoff to adjacent waterbodies during construction under both configurations. Sediment runoff would result from erosion of exposed soil, particularly during inclement weather, but required erosion-control practices (e.g., silt fencing, hay bales, filter socks, and revegetation) would prevent significant impacts. As mentioned in the previous section, the contractor would be required to prepare a Stormwater Pollution Prevention Plan and would also complete a Notice of Intent form in accordance with the requirements of the state's general permit for stormwater discharges from construction sites. The nearest surface water is the Firehouse Pond wetland located north of the project area and the small wetland located south of Building 103 (Figure 6).

Construction is not expected to significantly affect groundwater resources (e.g., change the depth to groundwater, alter groundwater flow direction, affect groundwater recharge, or impact groundwater quality). No flows to a surface water body are expected. The design includes a forebay (a small detention pond for surface runoff) adjacent to the new Main Gate. The forebay is designed to completely drain within 24 hours of a rain event and should drain within 42 hours of a major event (Najjar 2012). Rip-rap placed at points around the forebay would allow drainage. The forebay would be connected via underground piping to an underground detention basin located under the road (see Figure 3). The detention basin would drain to the north to a level spreader, which would allow the collected water to percolate through the soil. Effects on groundwater quality would be expected to be minimal because surface runoff to the detention basin would not be contaminated. The potential for spills from fuel handling would be minimized through preventative actions and approved spill response procedures. Stormwater runoff during operation would be controlled by curbing, which would channel the runoff to collection areas such as the forebay. No surface- or groundwater impacts are expected from operations.

4.1.4 Ecological Resources

Direct impacts on ecological resources would be limited to excavation and construction areas — the area along Galaxy Way between Chestnut Hill Road and approximately 345 m (1,132 ft) west of Building 131. Most of the area to be affected was previously disturbed during the original development of the Main Gate area. A larger area would be affected during construction. Construction under Configuration A would result in the disturbance of 190 m² (2,000 ft²) of the slope northwest of the new Main Gate during tree removal and placement of rip-rap to stabilize the slope. Configuration B would require excavation for construction of the retaining wall. Impacts of construction activities on ecological resources under both configurations are expected to be relatively minor. The noise and activity associated with construction could cause short distance movements of wildlife, disrupt nesting behavior, or otherwise disrupt normal wildlife activities. These disturbances would be temporary and their impacts are expected to be negligible.

Plants in the immediate project area would be trampled or removed during grading and other construction activities. Under Configuration A, 190 m² (2,000 ft²) of mixed forest would be removed and replaced with rip-rap on the slope northwest of the new Main Gate. Soil and vegetation would be disturbed during construction under Configuration B due to the excavation needed to construct the retaining wall. Dust and other particulates would be released during construction under either configuration, but dust-control measures would minimize any associated impacts. Construction activities would be over a short period of time (6 to 8 months), and impacts would occur in a limited area. Following construction, the flat portions of the project area would be graded and planted with lawn grasses, ornamental shrubs, and trees while slopes would be stabilized by either rip-rap or a retaining wall. While impacts of either configuration on vegetation are considered minor, Configuration A would result in more vegetation removal than Configuration B.

Wildlife in the immediate project vicinity would be disturbed during demolition and construction by noise and visual disturbances from equipment, blasting, and construction personnel. These disturbances could cause short distance movements of wildlife, disrupt nesting behavior, or otherwise disrupt normal wildlife activities. The rip-rapped slope of Configuration A, and retaining wall under Configuration B would represent long-term losses of habitat for wildlife in the project area.

Some of the listed and rare wildlife species and neotropical migrant bird species (afforded protection under the Migratory Bird Treaty Act) are distributed widely across the station and could occur in the project area (ANL 1999). The Blanding's turtle (state-listed as endangered), whip-poor-will (a state species of special concern), American bittern (considered rare in the state), and tricolored bat (a state species of special concern) are the only rare or listed species that have been reported from the vicinity of the project area. Blanding's turtles have been reported moving through the northeastern portion of NBAFS during the nesting season (Walston and LaGory 2010). The eastern hognose snake is not known to occur in the project area, but it could occur there based on habitat in the area.

Individuals of the above mentioned species in the immediate project area could be disturbed temporarily during project construction, and displaced over the long-term from currently occupied habitat in construction areas. Both configurations could affect the movement patterns of Blanding's turtles attempting to move up the slope during the nesting season. Both the rip-rapped slope of Configuration A and retaining wall of Configuration B would form a permanent barrier to Blanding's turtles as well as eastern hognose snake movements. Construction personnel would be notified of the potential occurrence of listed and rare species and would be required to notify NBAFS Natural Resources staff if any individuals of these species were observed in the project area. A design consideration for these species on the new roadways being constructed is the use of angled curbs which would allow species such as the Blanding's turtle to pass through the area (Walston and LaGory 2010). These curbs would be put along each of the lanes approaching the new Main Gate.

Wetlands that are in the vicinity of the project area are the Firehouse Pond and the unnamed wetland south of Building 103. These wetlands have a total surface area of 1 ha (2.7 ac). Potential disturbance of these wetlands would be minimized by avoiding direct impact

(e.g., trampling, placing excavated materials or equipment in wetlands) and placing silt fences, hay bales, and sock filters between the wetland and disturbance areas during construction to prevent runoff and sedimentation of wetlands. Regrading and stabilizing soils shortly after construction is complete would minimize erosion from the project areas. During operations stormwater runoff would be controlled through the forebay and storm sewers. No impacts to wetlands are anticipated from operation of the new facility.

4.1.5 Cultural Resources

The only cultural resource found within the project area is Building 102, a historically significant Cold War era building at NBAFS. No archaeological sites have been found within the project area or are unlikely to occur there since the area was disturbed during original construction of the station entrance. The demolition of Building 102 is considered an adverse effect by the USAF and the New Hampshire SHPO (Wilson 2010). In order to mitigate the adverse effect, the USAF has agreed to document Building 102 using the standards established in the HABS/HAER program of the National Park Service. Through consultation with the National Park Service it was determined that a short form documentation is appropriate for Building 102 (Turton 2010). This documentation includes a report describing the building and its history and photo documentation. The final documentation package will be submitted to the New Hampshire SHPO upon completion. Operation of the new facility would have no effects on known cultural resources.

4.1.6 Land Use, Recreation, and Visual Resources

The proposed action would not result in any significant adverse impact to the station's natural resources (Sections 4.1.2–4.1.4) and would not conflict with any plans or goals for natural resource management at NBAFS. The proposed action is consistent with other land use within the Operations Area and is considered important for continued operation of the station. The proposed action would be located in the northeastern portion of the station where little recreational use occurs. The use of the new Main Gate should not have any effect on recreation at NBAFS.

There would be short-term impacts to visual resources during the excavation and construction phases of the Main Gate replacement project. However, upon the completion of the upgrade, the new site design and the incorporation of landscape elements would result in an improved aesthetic quality to the station entrance and the Operations Area as a whole.

4.1.7 Socioeconomics

The proposed action would have a negligible effect on the local economy. Construction activities would be confined to NBAFS. The proposed action would not result in any significant beneficial or adverse socioeconomic impacts to the local population, labor force, or economy.

Construction of the new Main Gate is expected to require six to eight months. Operation of the new Main Gate would not have any socioeconomic effects on the region.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. No environmental justice impacts would be expected to either minority or low-income populations.

4.1.8 Health and Safety

There is the potential for Building 102 to contain some lead-based paint. However, a U.S. Army study indicated that whole-building debris can be characterized as non-hazardous provided that no other potential contaminants are present, metal components such as piping or duct work are removed as scrap, and all remaining materials are disposed of all together (U.S. Army 1993). All of the materials from the demolition would be disposed as a single project. The contractor would be required to comply with existing state, USAF, and other federal requirements for hazardous materials handling and disposal. No other potential health and safety issues are anticipated with the proposed action. Because the proposed action would require excavation and ground disturbance but is outside of the area of concern for UXO, no UXO survey would be required before any activities begin.

The potential for serious injuries or fatalities to workers during demolition, excavation and construction activities are considered small. The contractor would be responsible for complying with all Occupational Safety and Health Administration requirements and for instructing employees on accident prevention and safety.

4.2 ENVIRONMENTAL IMPACTS OF THE NO-ACTION ALTERNATIVE

In the event that the station did not replace or modify the Main Gate facility, no environmental impacts would be expected, and existing conditions on the site would be expected to continue unchanged. However, under the no-action alternative, NBAFS would not be in compliance with existing USAF security requirements.

4.3 COMPARISON OF ALTERNATIVES

No significant impacts are anticipated from either Configuration A or B of the proposed action (see Table 1). Both configurations satisfy the purpose and need. Both methods proposed for stabilizing the slope northwest of the new Main Gate could affect two state listed species, the Blanding's turtle and eastern hognose snake. Movement of Blanding's turtles and hognose snakes up slope would be restricted through the project area due to the rip-rap on the slope or due to the retaining wall. The no-action alternative would place NBAFS out of compliance with USAF safety requirements.

4.4 ADVERSE EFFECTS THAT CANNOT BE AVOIDED IF THE PROJECT IS IMPLEMENTED

Although no significant air quality impacts are anticipated if the project is implemented, fugitive dust and engine exhaust emissions would be released during demolition and construction activities. Noise would also be produced by these activities. Air quality impacts and noise impacts associated with demolition and construction would be short-lived (6 to 8 months) and limited to the immediate project surroundings. Operational noise impacts would be minor and have no effect outside of the station boundary. Implementation of Configuration A would require the removal of 190 m² (2,000 ft²) of mixed forest, which represents the loss of habitat for some resident wildlife.

Despite the implementation of control measures, some unavoidable increases in soil erosion would result from demolition and construction activities, especially during heavy rains. Turbidity and suspended solids in nearby surface water bodies could temporarily increase, but these are minimized with the implementation of best management practices.

The loss of the historically significant Building 102 is an adverse effect; however, the mitigation through HABS/HAER documentation will create a permanent record of the structure. The majority of the Cold War district at NBAFS will remain.

4.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Resources that would be committed irreversibly or irretrievably during implementation of the proposed action would include materials that could not be recovered or recycled and materials or resources that would be consumed or reduced to irrecoverable forms. Use of fuel, oil, concrete, steel, chemicals, and other materials during demolition and construction would constitute an irreversible and irretrievable commitment of those resources. The land occupied by the new Main Gate would be unavailable for use (and thus committed) throughout the life of the project. Approximately 1.1 ha (2.7 ac) of grass and pavement would be disturbed by the project. Configuration A would require the removal of 190 m² (2,000 ft²) of mixed forest.

4.6 RELATIONSHIP BETWEEN SHORT-TERM USES AND LONG-TERM PRODUCTIVITY

Most adverse impacts to the environment associated with the proposed action would be temporary (e.g., a slight increase in air emissions and erosion during demolition and construction). Under both configurations the movement of state-listed Blanding's turtles and eastern hognose snakes up the slope from the area north of Galaxy Way would be restricted in the project area during the life of the facility. The new Main Gate could be removed at the end of its useful life, and the affected area could be reclaimed to a natural state.

4.7 CUMULATIVE IMPACTS

Cumulative impacts are those impacts to the environment that result from the incremental effect of the proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. No significant cumulative effects are anticipated from the proposed action.

Cumulative impacts to soil and water resources (e.g., soil erosion or loss and contamination) at NBAFS have primarily been minor and have occurred from bombing and strafing, UXO removal, military troop training, recreational use (particularly climbing), timber management, road construction, past fires and fire-suppression activities, and construction of the existing NBAFS facilities. The construction of the new Main Gate facility would not contribute significantly to soil and water cumulative impacts.

The potential impact on ambient air quality from excavation, demolition, and construction emissions (e.g., fugitive dust and engine exhaust emissions) would be a negligible short-term increase in emissions from NBAFS and within Hillsborough County. However, emissions associated with the proposed action would be mostly confined to the immediate project area because most emissions would be released near ground level. Emission rates would be low; thus, potential for cumulative impacts to ambient air quality would be minor.

Only about 150 people are employed at NBAFS, and they make only a minor contribution to the socioeconomic conditions of the region. The residential communities near NBAFS are relatively affluent, and are expected to continue to be so into the future. The proposed action would not contribute significantly to cumulative socioeconomic impacts.

Evidence of looting, erosion, and other damaging activities associated with either military or recreational activities have been reported at several of the cultural sites potentially eligible for listing on the National Register of Historic Places at NBAFS (PAL 1993; Loflin and Grumet 1996). The loss of Building 102 is an adverse effect for the historic resources at NBAFS and represents a loss of cultural heritage for the region. The majority of the equipment associated with the antenna was removed 30 years ago and the basic building was all that remained. Other facilities that retain significantly more integrity will remain.

No significant cumulative impacts to health and safety are associated with activities that occur on NBAFS. All potential health and safety issues associated with the proposed action are temporary and will diminish once the project is complete. The security of the base will be enhanced once the project is complete. The project is not expected have a cumulative effect on NBAFS resources or those in the region.

5 REFERENCES

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Kirk E. LaGory	Ph.D. Zoology; 37 years of experience in ecological research; 26 years of experience in environmental assessment	Project Manager
Leroy J. Walston, Jr.	M.S. Biology, B.S. Zoology; over 7 years ecological and environmental science experience	GIS, Biology

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APPENDIX A COORESPONDENCE



DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)

24 MAY 10

MEMORANDUM FOR NEW HAMPSHIRE FISH AND GAME DEPARTMENT
ATTN: MR. GLENN NORMANDEAU
EXECUTIVE DIRECTOR
11 HAZEN DRIVE
CONCORD NH 03301

FROM: 23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03070-5125

SUBJECT: Preparation of an Environmental Assessment (EA) for the Upgrade of the Entrance Gate at New Boston Air Force Station (NBAFS), New Hampshire

1. I am requesting information from your office regarding state-listed threatened and endangered plant and animal species that may occur on or in the vicinity of NBAFS.
2. The U.S. Air Force (USAF), 23d Space Operations Squadron, proposes to upgrade the Main Gate to NBAFS to comply with existing security requirements. Improvements would include (a) demolition of the existing main gate and realignment of the pavement, (b) demolition of Building 102, (c) construction of a parking area near Building 103, (d) construction of a new main gate, and (e) realignment of the entry.
3. The project area (Atch) is located in a developed area and minimal disturbance of natural communities is anticipated. Proposed construction activities would be conducted in accordance with USAF requirements using standard measures to reduce impacts to adjacent areas.
4. The USAF has determined that the project requires preparation of an EA. Based on the information presented above, the USAF does not expect the proposed action to have any significant impact on state-listed species or their habitats. However, please forward any information or concerns you may have regarding impacts on any such species or other ecological resources. The USAF will use the information you provide in preparing the EA.
5. If you have any questions, please contact my Natural Resources Planner, Mr. Stephen Najjar, at (603) 471-2346.

A handwritten signature in black ink, appearing to read "Clark H. Risner".

CLARK H. RISNER, Lt Col, USAF
Commander

Attachment:
Location of NBAFS and Project Area



DEPARTMENT OF THE AIR FORCE
80TH SPACE WING (AFSPC)

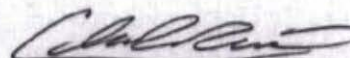
24 MAY 10

MEMORANDUM FOR NEW HAMPSHIRE NATURAL HERITAGE BUREAU
ATTN: MS. SARA J. CAIRNS, BIOLOGIST
172 PEMBROKE ROAD
P.O. BOX 1856
CONCORD NH 03301-1856

FROM: 23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03070-5125

SUBJECT: Preparation of an Environmental Assessment (EA) for the Upgrade of the Entrance Gate at New Boston Air Force Station (NBAFS), New Hampshire

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3. The project area (Atch) is located in a developed area and minimal disturbance of natural communities is anticipated. Proposed construction activities would be conducted in accordance with USAF requirements using standard measures to reduce impacts to adjacent areas.
4. The USAF has determined that the project requires preparation of an EA. Based on the information presented above, the USAF does not expect the proposed action to have any significant impact on federally listed, state-listed, or rare species or their habitats. However, please forward any information or concerns you may have regarding impacts on any such species or other ecological resources. The USAF will use the information you provide in preparing the EA.
5. If you have any questions, please contact my Natural Resources Planner, Mr. Stephen Najjar, at (603) 471-2346.


CLARK H. RISNER, Lt Col, USAF
Commander

Attachment:
Location of NBAFS and Project Area



DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)

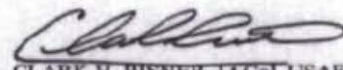
24 MAY 10

MEMORANDUM FOR U.S. FISH AND WILDLIFE SERVICE
ATTN: MR. TOM CHAPMAN, SUPERVISOR
NEW ENGLAND FIELD OFFICE
70 COMMERCIAL STREET, SUITE 300
CONCORD NH 03301

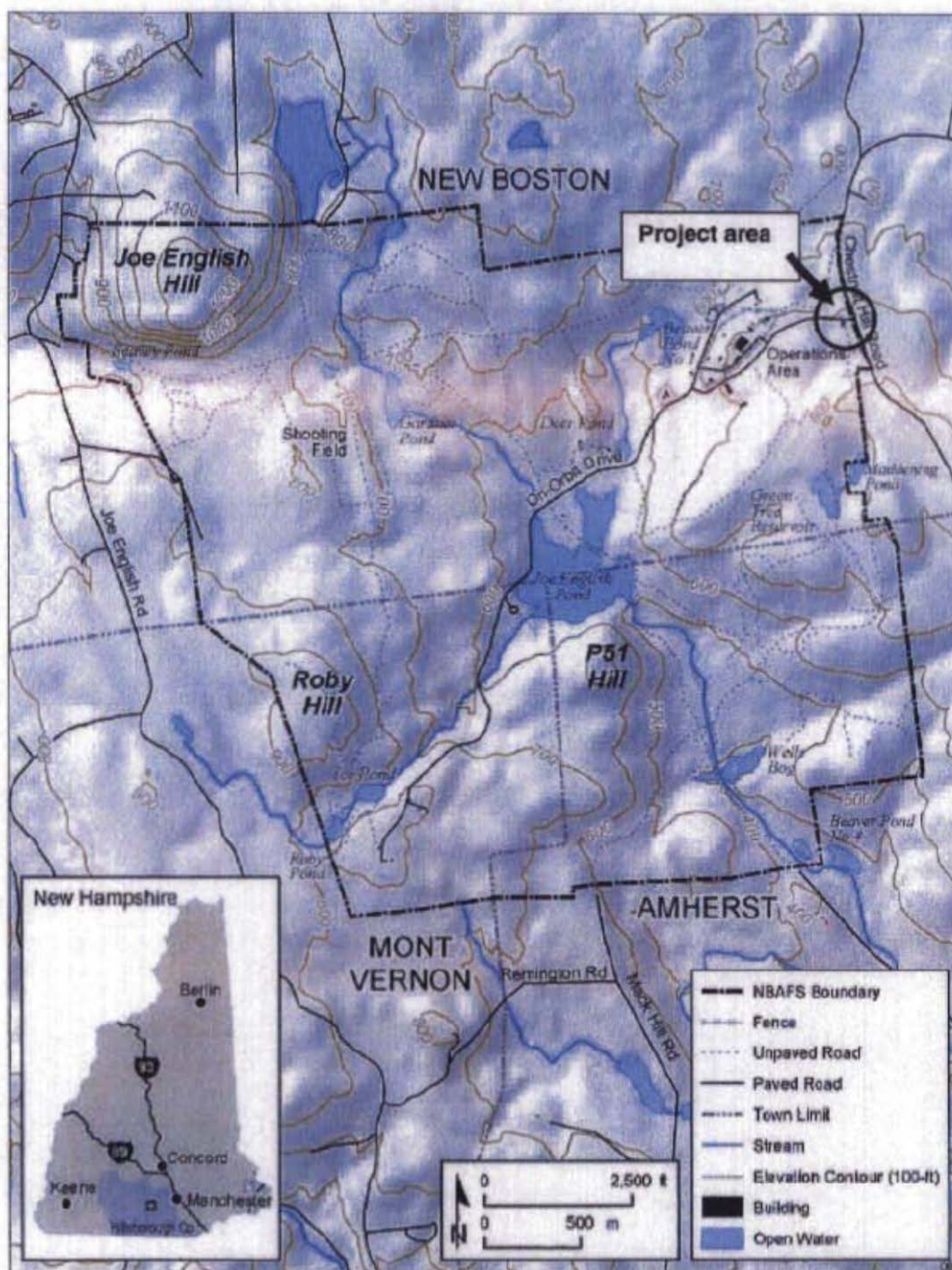
FROM: 23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03070-5125

SUBJECT: Preparation of an Environmental Assessment (EA) for the Upgrade of the Entrance Gate at New Boston Air Force Station (NBAFS), New Hampshire

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3. The project area (Atch) is located in a developed area and minimal disturbance of natural communities is anticipated. Proposed construction activities would be conducted in accordance with USAF requirements using standard measures to reduce impacts to adjacent areas.
4. The USAF has determined that the project requires preparation of an EA. Based on the information presented above, the USAF does not expect the proposed action to have any significant impact on federally listed, proposed, or candidate species or their habitats. However, please forward any information or concerns you may have regarding impacts on any such species or other ecological resources. The USAF will use the information you provide in preparing the EA.
5. If you have any questions, please contact my Natural Resources Planner, Mr. Stephen Najjar, at (603) 471-2346.


CLARK H. RISNER, LT Col, USAF
Commander

Attachment:
Location of NBAFS and Project Area



Location of New Boston Air Force Station and Entrance Gate Project Area



DEPARTMENT OF THE AIR FORCE

50TH SPACE WING (AFSPC)

24 MAY 10

MEMORANDUM FOR NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES
ATTN: MS. ELIZABETH H. MUZZEY
STATE HISTORIC PRESERVATION OFFICER
19 PILLSBURY STREET
P.O. BOX 2043
CONCORD NH 03302-2043

FROM: 23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03070-5125

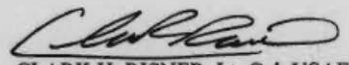
SUBJECT: Reconfiguration of the Main Entrance at New Boston Air Force Station (NBAFS), New Hampshire

1. Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, we are informing your office of the U.S. Air Force (USAF) proposal to reconfigure the main entrance at NBAFS in Hillsborough County, New Hampshire (Atch 1). The new entrance gate would be placed at the intersection of Galaxy Way and Chestnut Hill Road (Atch 2). The new configuration will require the demolition of a contributing structure, Building 102, to the Cold War Historic District.

2. The proposed action is the reconfiguration of the main entrance to NBAFS and the construction of a new Entry Control Facility (Atch 3). Also included with the project is an expansion of the parking lot near the new entrance. As part of the reconfiguration, Building 102 would be removed. Building 102 is a concrete structure that was the pedestal for an antenna. The building was erected in 1960 when NBAFS began its satellite control mission. The antenna was removed previously, and the building is now used for storage. It was determined to be a contributing property to the Cold War Historic District at NBAFS in 1999.

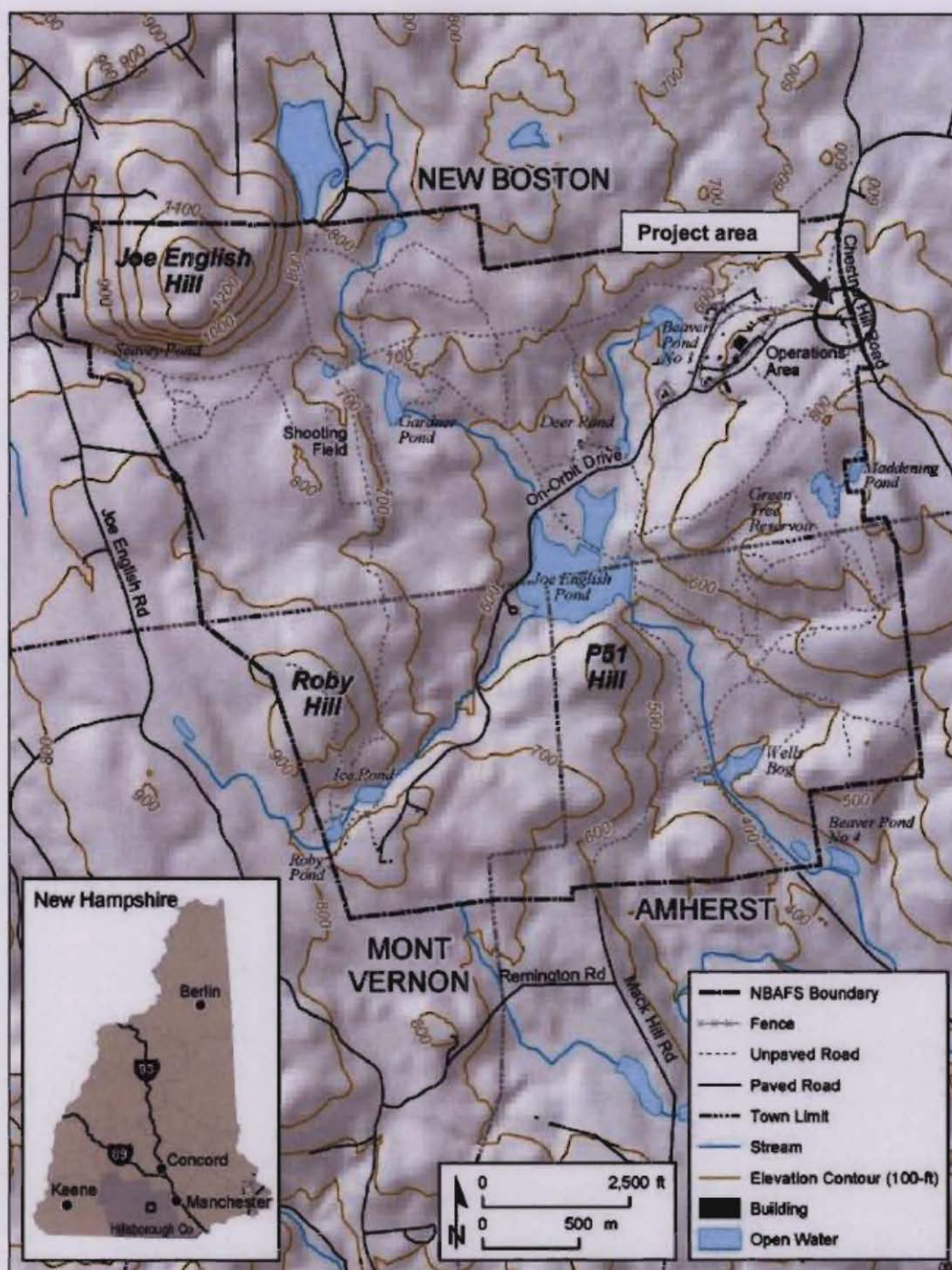
3. NBAFS determined that the demolition of Building 102 constitutes an adverse effect on a historic property. NBAFS proposes to document Building 102 to the New Hampshire Historic American Buildings Survey/Historic American Engineering Record Standards. The specifics of the documentation would be identified in a Memorandum of Agreement between the USAF, your office, and the Advisory Council on Historic Preservation, if they choose to be a signatory to the agreement.

4. If you have any questions, please contact my Natural Resources Planner, Mr. Stephen Najjar, at (603) 471-2346.

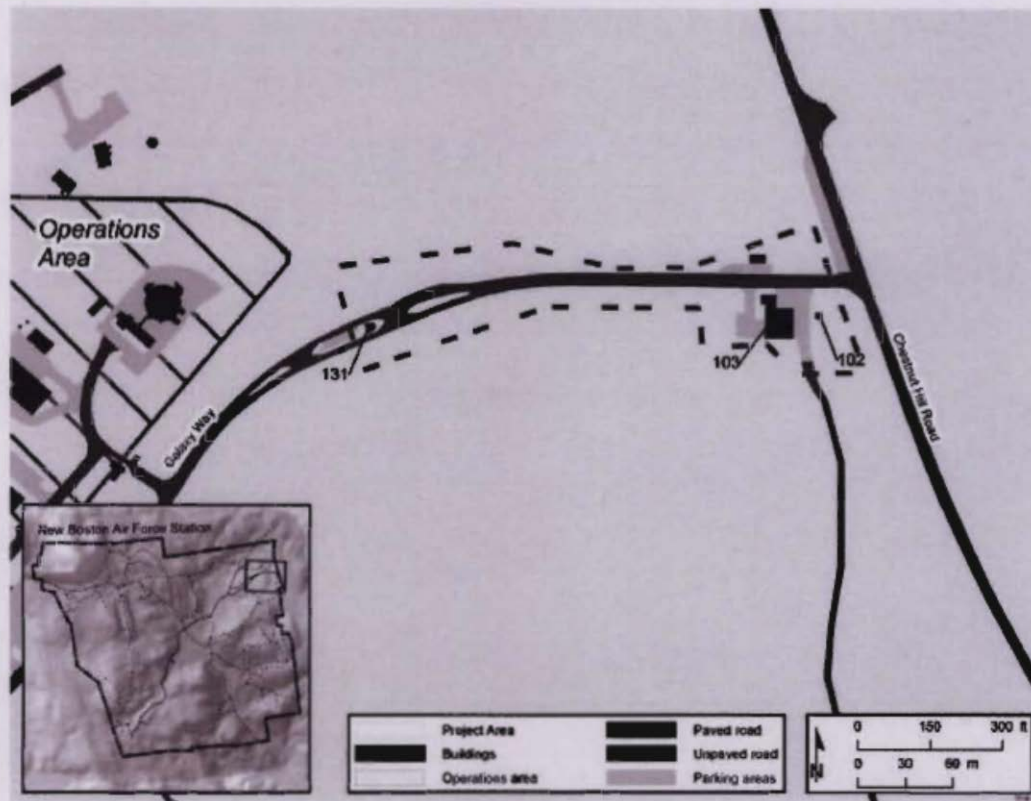

CLARK H. RISNER, Lt. Col, USAF
Commander

3 Attachments:

1. Locator Map for Main Gate Reconfiguration Project
2. Project Area for Main Gate Reconfiguration
3. Configuration of New Entrance



Attachment 1 Locator Map for Main Gate Reconfiguration Project



Attachment 2 Project Area for Main Gate Reconfiguration



Attachment 3 Configuration of New Entrance



United States Department of the Interior

FISH AND WILDLIFE SERVICE

New England Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5087
<http://www.fws.gov/newengland>



REF: EA, Main gate upgrade
New Boston Air Force Station, NH

June 21, 2010

Clark H. Risner, Lt. Col., USAF
23 SOPS/CC
317 Chestnut Hill Road
New Boston Air Force Station, NH 03070-5125

Dear Lt. Col. Risner:

We received your letter (enclosed) requesting an endangered species review in regard to the proposed project identified above.

The New England Field Office has developed measures to streamline the endangered species consultation process and other requests for technical assistance. The information you have requested is available on our website at:

<http://www.fws.gov/newengland/endangeredspec-consultation.htm>

Please review these streamlining measures. We are confident they will adequately address your request. For assistance in navigating the website, please contact Anthony Tur at 603-223-2541.

Sincerely yours,

Thomas R. Chapman
Supervisor
New England Field Office

Enclosure



IN REPLY REFER TO:

H40(4506)

September 7, 2010

United States Department of the Interior

NATIONAL PARK SERVICE
Northeast Region
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106-2878

Mr. Jonathan F. Ruhan, Archaeologist
Department of the Air Force
New Boston Air Force Station
317 Chestnut Hill Road
New Boston, NH 03072

Dear Mr. Ruhan:

Thank you for your inquiry to the National Park Service (NPS) concerning the level of Historic American Engineering Record (HAER) documentation required for the New Boston Air Force Station and Building 108/109, Building 102 and the Bore Site Tower; **NPS project #1751**. To expedite our review, please refer to this name and **NPS project number** in all correspondence.

The documentation on the enclosed list will be sufficient for compliance with the Memorandum of Agreement between the New Hampshire State Historic Preservation Officer and the Department of the Air Force, and accepted by the Advisory Council on Historic Preservation. This documentation must be prepared in accordance with Historic American Engineering Record (HAER) guidelines, copies of which are enclosed. We have enclosed the Heritage Documentation Programs Guidelines (April 2008) which include an explanation of the new outline formats for HAER, the Northeast Area Office HAER Guidelines (April 1995) which include examples of formatted pages, and the Northeast Field Area Photo Guidelines (December 1996) for your use as our regional office HAER guidelines have not yet been updated to reflect the new outline format reports. When the documentation is completed, it must be submitted to this office for review. Incomplete or incorrect reports will be returned for revision.

You had provided drafts of the documentation for the B-Side Antenna and the Boresight Tower and we have provided review comments on the formatting of these drafts. The sample pages in the Northeast Area Office HAER guidelines should help you in understanding what the final pages should look like. We have also enclosed four cover sheets – one for the overview and one for each individual structure.

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When the documentation is accepted, we will transmit the material to the Library of Congress for inclusion in the HABS/HAER collection. Please contact this office at (215) 597-6484, if you have any questions.

Sincerely,


for Catherine Turton
HABS/HAER Coordinator

Enclosures

cc:
NH SHPO
HABS/HAER, WASO
Advisory Council on Historic Preservation

SCHEDULE OF DOCUMENTATION
FOR THE RECORDING OF
New Boston Air Force Station
New Boston, New Hampshire
NPS Project # 1751

I. WRITTEN DOCUMENTATION:

A concise HAER "Narrative Format" summary of the overall complex, as named above, is required as an introductory chapter. This should stress engineering, architectural and historical significance at the appropriate local, state or national level. This can be extracted from existing documents, to set the above-cited features in context. The instructions for the narrative format are found on page 10 of the HAER guidelines prepared by the Northeast Area Office.

This narrative is followed by separate reports on each feature as follows:

B-Side Antenna	Outline Format for civil engineering structures
Boresight Tower	Outline Format for civil engineering structures
Building 102	Short Format

The instructions for the above two formats are found in the HAER guidelines prepared by the Heritage Documentation Programs.

II. GRAPHIC DOCUMENTATION

A. For the overview:

A chronological series of 8½" x 11" site plans (**copyright-free**), showing key historic periods in the evolution of the complex, is required. This should include a current plan, showing the layout of the complex and each documented feature within it. The source and date of the plans must be noted on each plan.

B. For each individually documented feature:

8½" x 11" sketch plans/floor plans (**copyright-free**) of each feature are required only if plans are not photographed (see Photographic Documentation III.F below). These need not be to scale but should include overall exterior dimensions. The source and date of the plans must be noted on each plan.

C. All graphics have one-inch margins on all sides, with headers in the upper right-hand corner, also within the margins. Pagination continues from the written documentation.

III. PHOTOGRAPHIC DOCUMENTATION

A. Index and Key to Photographs for the overview and each individually documented feature (see pages 16 - 18 of the photographic documentation guidelines [December 1996] and page 14 of the HAER guidelines prepared by the Northeast Area Office).

B. Views for the overview:

Exterior views to show spatial relationships between major features of the entire complex, including landscape characteristics. More than one feature should be shown in each view.

C. Exterior views for each individually documented feature:

1. General views of feature within setting, including significant landscape characteristics related to the function of the structure.
2. Perspective views. More than one elevation may be shown at a time.
3. Engineering details to show function of structure.

D. Interior views for each individually documented feature:

1. Typical overall spaces, including structural systems and materials.
2. Engineering details, including existing machinery, that show the function of the structure and spaces.

E. Historic views:

A thorough search should be undertaken, and photographic copies made of historic photographs of the overall complex and of individual features, **if they are copyright-free**. A source and approximate date should be given for each original photograph in the captions in the Index to Photographs. If a collection of historic photos appears in a safe archive, please consult with NPS regarding the size of the sample. **Historic photographs existing in a safe archive need not be copied.** [As part of this project you may ensure that these photos are placed in a safe archive and eliminate the need for photographically copying them for this documentation.] In such a case, a reference to the collection need only be cited in the bibliography. If historical views cannot be found, please list in the bibliography all repositories searched.

Each set of historic views follow the contemporary views of the corresponding overall complex or each individually documented feature.

F. For each individually documented feature (as applicable):

Original or historic construction plans/floor plans, if available **and if copyright-free**, photographically reduced to 4"x5", 5"x7" or 8"x10" format; the drawings must be legible and the format chosen to enable this. The source and date of each plan must be noted in the

Index to Photographs. If a sizable collection exists in a safe archive, please consult with the NPS regarding the size of the sample. **Original drawings in a safe archive need not be reproduced.** [As part of this project you may ensure that these drawings are placed in a safe archive and eliminate the need for photographically copying them for this documentation.] In such a case, a reference to the collection need only be cited in the bibliography. If original drawings cannot be found, please list in the bibliography all the repositories searched.

IV. PACKAGING REQUIREMENTS

A. The HAER number for this project is HAER No. NH-51. This number must be used on all written and photographic materials which relate to the overall complex.

The HAER number for the B-Side Antenna is HAER No. NH-51-A.

The HAER number for the Boresight Tower is HAER No. NH-51-B.

The HAER number for Building 102 is HAER No. NH-51-C.

These numbers must appear on all written and photographic materials which relate to each individually documented features.

B. All material submitted as documentation must follow the requirements outlined in the guidelines provided. Please call our office with specific questions.

C. When the number of photographic views is known, please call our office to request preprinted photo mount cards for presentation (see page 11 of the "Guide to Preparing HABS/HAER Photographic Documentation.")

06/18/2010 14:39 6034712213

NBAFS

PAGE 01/01

CC: CEA
(NAJNR)

NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES

State of New Hampshire, Department of Cultural Resources
19 Pillsbury Street, Concord, NH 03301-3570
TDD Access: Relay NH 1-800-735-2964
www.nh.gov/nhdhr

603-271-3483
603-271-3558
FAX 603-271-3433
preservation@dcr.nh.gov

June 8, 2010

Clark H. Risner, Lt. Col, USAF
Commander
Department of the Air Force
23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03302-2043

Re: Reconfiguration of the Main Entrance at New Boston Air Force Station (NBAFS), NH

Dear Commander:

In accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470), and with federal Advisory Council on Historic Preservation regulations, *Protection of Historic Properties* (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office has reviewed information related to the undertaking listed above. The project involves the demolition of a contributing resource, Building 102, to the Cold War Historic District.

Edna Feighner, Archaeologist and Review and Compliance Manager, has reviewed the materials and concurs that no archaeological survey is necessary.

The DHR concurs that the removal of this feature will constitute an "*Adverse Effect*" under 36 C.F.R. Part 800.5(a)(1) and agrees that State level documentation is appropriate. The DHR recommends the Air Force request the federal Advisory Council on Historic Preservation (ACHP) to join the consultation, in accordance with 36 CFR Part 800.6(b)(1)(v).

We look forward to working with the Air Force in the development of a Memorandum of Agreement to mitigate the effect that this project will have to the Cold War Historic District.

Sincerely,

Linda Ray Wilson
Deputy State Historic Preservation Officer

L.RW:nmp





**DEPARTMENT OF THE AIR FORCE
50TH SPACE WING (AFSPC)**

14 OCT 2014

**MEMORANDUM FOR KATHERINE KERR
ADVISORY COUNCIL ON HISTORIC PRESERVATION
401 F STREET NW, SUITE 308
WASHINGTON DC 20001-2637**

**FROM: 23 SOPS/CC
317 Chestnut Hill Road
New Boston AFS NH 03070-5125**

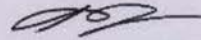
SUBJECT: Reconfiguration of the Main Entrance at New Boston Air Force Station, New Hampshire

1. Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, we are informing your office of the U.S. Air Force proposal to reconfigure the main entrance at the New Boston Air Force Station (NBAFS) in Hillsborough County, New Hampshire (Attachment 1). The new entrance gate would be placed at the intersection of Galaxy Way and Chestnut Hill Road (Attachment 2). The new configuration will require the demolition of a contributing structure (Building 102) to the Cold War Historic District.
2. The proposed action and Area of Potential Effect (APE) is along the main entrance to NBAFS and the construction of a new Entry Control Facility (Attachment 3). Also included with the project is an expansion of the parking lot near the new entrance. As part of the reconfiguration Building 102 would be removed. Building 102 is a concrete structure that was the pedestal for an antenna. The building was erected in 1960 when NBAFS began its satellite control mission. The antenna was removed previously, and the building is now used for storage. It was determined to be a contributing property to the Cold War Historic District at NBAFS in 1999.
3. NBAFS determined that the demolition of Building 102 constitutes an adverse effect on a historic property. NBAFS proposes to document Building 102 to the New Hampshire Historic American Buildings Survey/Historic American Engineering Record Standards. The specifics of the documentation would be identified in a Memorandum of Agreement (draft MOA attachment 6) between the U.S. Air Force, NH Division of Historic Resources (NHDHR), and the Advisory Council on Historic Preservation, if your agency chooses to be a signatory to the agreement.
4. The USAF has consulted with NHDHR (attachment 4) regarding the finding and to develop the appropriate mitigation. They have concurred (attachment 5) with our finding and have reviewed the draft MOA (attachment 10). Additionally the USAF has consulted with the National Park Service (NPS) regarding the appropriate level of

MASTER OF SPACE

documentation for Building 102 (attachment 7) and completed a HAER which was accepted by NPS (attachment 8 and attachment 9).

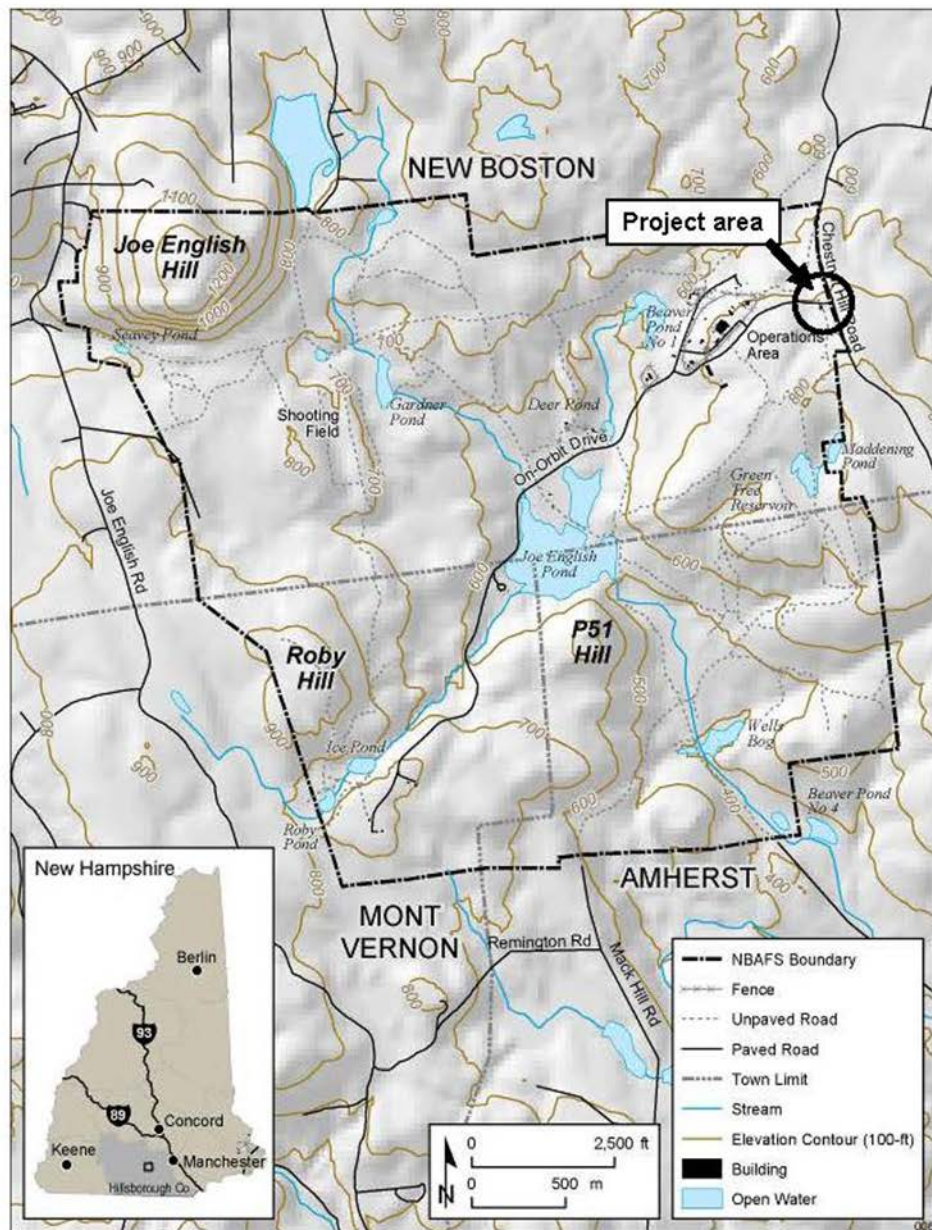
5. If you have any questions, please contact my Natural Resources Planner, Mr. Stephen Najjar, at (603) 471-2346.



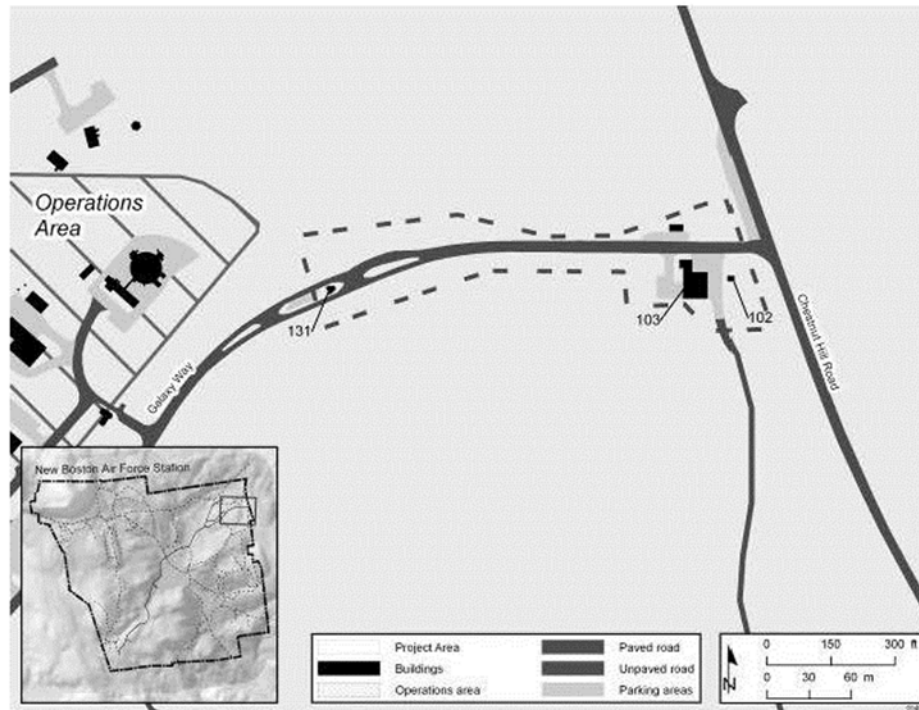
SARAH E. JACKSON, Lt Col, USAF
Commander

Attachments:

1. Locator map
2. Project area map (APE)
3. Configuration of new entrance
4. Correspondence with NHDHR
5. Email from NHDHR
6. MOA
7. Correspondence with NPS
8. Acceptance by NPS
9. Building 102 HAER
10. Email NHDHR regarding MOA



Attachment 1 Locator Map for Main Gate Reconfiguration Project.



Attachment 2 Project Area for Main Gate Reconfiguration.



Attachment 3 Configuration of new entrance.

Attachment 4

Main Gate Environmental Assessment

A-16

March 2012

06/10/2010 14:39 6634712213

NBAFS

PAGE 01/01

CC: CEA
(NBAFS)

June 8, 2010

Clark H. Rister, Lt. Col, USAF
Commander
Department of the Air Force
33 SOPS/CC
317 Chestnut Hill Road
New Boston AFB NH 03302-2043

Re: Reconfiguration of the Main Entrance at New Boston Air Force Station (NBAFS), NH

Dear Commander:

In accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470), and with federal Advisory Council on Historic Preservation regulations, *Protection of Historic Properties* (36 CFR Part 800), the New Hampshire Division of Historical Resources/State Historic Preservation Office has reviewed information related to the undertaking listed above. The project involves the demolition of a contributing resource, Building 102, to the Cold War Historic District.

Edna Feighner, Archaeologist and Review and Compliance Manager, has reviewed the materials and concurs that no archaeological survey is necessary.

The DHR concurs that the removal of this feature will constitute an "Adverse Effect" under 36 C.F.R. Part 800.5(a)(1) and agrees that State level documentation is appropriate. The DHR recommends the Air Force request the federal Advisory Council on Historic Preservation (ACHP) to join the consultation, in accordance with 36 CFR Part 800.6(b)(1)(v).

We look forward to working with the Air Force in the development of a Memorandum of Agreement to mitigate the effect that this project will have to the Cold War Historic District.

Sincerely,

Linda Ray Wilson
Deputy State Historic Preservation Officer

LRW:nmp



From: [O'Rourke, Daniel J.](#)
To: [NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA](#)
Subject: FW: New Boston Air Force Station Main Entrance Reconfiguration
Date: Wednesday, April 09, 2014 4:33:26 PM

Steve,

Below is the email from Edna.

I did get a response out of the Park Service about the HAER. They wanted one page revised in the report. I made the revision and sent the information to them this week. Hopefully we will get the final letter from them soon.

Dan

From: Feighner, Edna [<mailto:Edna.Feighner@der.nh.gov>]
Sent: Wednesday, March 05, 2014 12:27 PM
To: O'Rourke, Daniel J.
Cc: Stephen Najjar (Stephen.Najjar@us.af.mil); Peterson, Nadine
Subject: RE: New Boston Air Force Station Main Entrance Reconfiguration

Hi Dan,

Sorry that this has slipped by but wanted to follow-up to let you know that we have no concerns so if you want to finalize this we will have it signed.

Edna

Edna Feighner

Review and Compliance Coordinator/Historical Archaeologist

NH Division of Historical Resources

19 Pillsbury Street, Second Floor

Concord, NH 03301

603-271-2813

Attachment 5

About the New Hampshire Division of Historical Resources:

The New Hampshire Division of Historical Resources was established in 1974 as the "State Historic Preservation Office." The historical, archaeological, architectural and cultural resources of New Hampshire are among its most important environmental assets. Historic preservation promotes the use, understanding and conservation of such resources for the education, inspiration, pleasure and enrichment of New Hampshire's citizens. For more information, visit us online at www.nh.gov/nhdhr <<http://www.nh.gov/nhdhr>> or by calling (603)271-3483.

From: O'Rourke, Daniel J. [<mailto:danorourke@anl.gov>]
Sent: Tuesday, February 04, 2014 6:14 PM
To: Feighner, Edna
Cc: Stephen Najjar (Stephen.Najjar@us.af.mil)
Subject: New Boston Air Force Station Main Entrance Reconfiguration

Edna,

New Boston Air Force Station (NBAFS) contacted your office in May 2010 concerning a project for reconfiguring the main entrance to the base. The project would require the demolition of Building 102 a contributing property to the NBAFS Cold War District. Both the Air Force and your office concurred that demolition of Building 102 is an adverse effect and that mitigation would be required. Your last correspondence suggested that a Memorandum of Agreement should be developed to establishing the necessary mitigation for the adverse effect.

Since 2010 the project has been put on hold several times and its future implementation is still unknown. NBAFS developed an Environmental Assessment for the project and is attempting to complete the document. As part of the project NBAFS was in consultation with the National Park Service concerning the demolition of Building 102. NPS requested that the Building be documented to the short form format of HAER documentation (letter attached). Building 102 retains minimal integrity as the antenna and all its associated equipment were removed over 30 years ago. The completed documentation is currently being reviewed by NPS.

NBAFS would like to complete a MOA for this project with your office. A draft MOA is included with this email. Please review the attached MOA and let me know if you have any comments. If it appears satisfactory please let me know and we will begin the steps to getting the MOA signed by the Air Force.

Thank you for your time,

Dan O'Rourke

Daniel J. O'Rourke, R.P.A.
Environmental Science Division
Argonne National Laboratory

Building 240
9700 South Cass Avenue
Argonne, Illinois 60439
Phone: (630) 252-7422
Fax: (630) 252-6090
Email: djorourke@anl.gov <<mailto:djorourke@anl.gov>>
~~~~~

DRAFT

MEMORANDUM OF AGREEMENT  
BETWEEN THE U.S. AIR FORCE, 23d SPACE OPERATIONS SQUADRON AND  
THE NEW HAMPSHIRE HISTORIC PRESERVATION OFFICER  
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION  
PURSUANT TO 36 CFR 800.6 (c)  
REGARDING RECONFIGURATION OF THE MAIN ENTRANCE  
AT NEW BOSTON AIR FORCE STATION, NEW HAMPSHIRE

WHEREAS the U.S. Air Force has plans to reconfigure the northeastern entrance at New Boston Air Force Station (NBAFS) which will require the removal of a historic property, Building 102; and

WHEREAS the U.S. Air Force has established that the area of potential effects for the main gate reconfiguration project, as defined at 36 Code of Federal Regulations (CFR) 800.16 (d), is the northeastern entrance to the station (Attachment 1); and

WHEREAS the U.S. Air Force has determined that removal of Building 102 will have an adverse affect on this property, which is eligible for inclusion in the National Register of Historic Places as a contributing property to the NBAFS Cold War Historic District; and

NOW THEREFORE, the U.S. Air Force and the New Hampshire State Historic Preservation Officer (SHPO) agree that upon acceptance of this Memorandum of Agreement (MOA) by the Advisory Council on Historic Preservation (Council), and upon the U.S. Air Force decision to proceed with the reconfiguration of the northeastern entrance at NBAFS, the U.S. Air Force shall ensure that the following stipulations are implemented in order to take into account the effects of the reconfiguration of the northeastern entrance to NBAFS on historic properties.

STIPULATIONS

The U.S. Air Force will ensure that the following measures are carried out:

I. As part of the northeastern entrance reconfiguration project, the U.S. Air Force shall mitigate any adverse effects to Building 102 in the manner stipulated below.

A. Building 102 will be documented to the Historic American Building Survey/Historic American Engineering Record Short Form.

B. The completed short form documentation, photographs and negatives of Building 102 will be provided to the U.S. Park Service Northeastern Region. A hard copy of the HAER documentation along with original photographs of the documentation will be submitted to the New Hampshire SHPO.

II. Procedures for unexpected discoveries identified in Appendix H of the NBAFS Integrated Cultural Resources Management Plan would be followed in the event that unanticipated human remains or cultural items are encountered during the project.

III. All actions set forth in this MOA requiring expenditure of NBAFS funds in the future are expressly subject to the availability of appropriations and requirements of the Anti-Deficiency Act (31 USC Section 1341). If sufficient funds are not made available to fully execute the agreement, the installation commander shall consult with the signatories to either terminate or amend this agreement in accordance with the termination and amendment procedures set forth in the agreement.

IV. In the event a party to this MOA determines that the terms of the MOA cannot be met or that a change is necessary to meet the requirements of the law, that party will immediately request that the other parties to this MOA consider an amendment or addendum. Any necessary amendment or addendum will be executed in accordance with 36 CFR Part 800.6 (c)(7).

V. Any party to this MOA may terminate it by providing thirty (30) days written notice to the other parties, provided that the parties consult during the period prior to termination to seek agreement on amendments or other actions that will avoid termination. In the event of termination, NBAFS, in consultation with the SHPO and the Council, will determine how to carry out the U.S. Air Force's responsibilities under Section 106 in a manner consistent with applicable provisions of 36 CFR Part 800.

VI. If the terms of this agreement have not been carried out within three (3) years from execution of this agreement, the parties to this agreement shall review the agreement to determine if revisions are needed. If revisions are needed, the parties will consult in accordance with 36 CFR Part 800 to make such revisions. This agreement expires nine (9) years from date of signature.

VII. Modification of Agreement: This MOA may only be modified by the written agreement of the Parties, duly signed by their authorized representatives.

VIII. Transferability: This Agreement is not transferable except with the written consent of the Parties.

IX. Disputes: Any disputes relating to this MOA will, subject to any applicable law, Executive Order, Directive, or Instruction, be resolved by consultation between the Parties or in accordance with DoDI 4000. 19.

X. POINTS OF CONTACT: The following points of contact (POC) will be used by the Parties to communicate in the implementation of this MOA. Each Party may change its point of contact upon reasonable notice to the other Party.

XI. This agreement does not cause a personnel impact to either party.

USAF POC  
Stephen Najjar, Natural Resources Planner  
(603) 471-2346

NHSHPO  
Edna Feighner, Review and Compliance Coordinator  
(603)-271-2813

XII. Correspondence: All correspondence to be sent and notices to be given pursuant to this MOA will be addressed,

if to the USAF, to-

23 SOPS/CEI  
317 Chestnut Hill Road  
New Boston AFS, NH 03070

if to the NHDHR, to-

NHDHR  
19 Pillsbury Street - 2nd floor  
Concord, NH 03301-3570

or as may from time to time otherwise be directed by the Parties.

Execution of this MOA by the U.S. Air Force and the New Hampshire SHPO, its subsequent acceptance by the Advisory Council on Historic Preservation (Council), and implementation of its terms, shall constitute evidence that the U.S. Air Force has afforded the Council an opportunity to comment on the nature and extent of the planned demolition of Building 102 and that the U.S. Air Force has taken into account the effects of the undertaking on this historic property as required by Section 106 of the National Historic Preservation Act.

Signature sheet for the foregoing Memorandum of Agreement between the U.S. Air Force and the New Hampshire State Historic Preservation Office concerning reconfiguration of the main entrance at New Boston Air Force Station.

U.S. Air Force, New Boston Air Force Station

By: \_\_\_\_\_ Date: \_\_\_\_\_

SARAH E. JACKSON, Lt Col, USAF  
Commander, 23d Space Operations Squadron

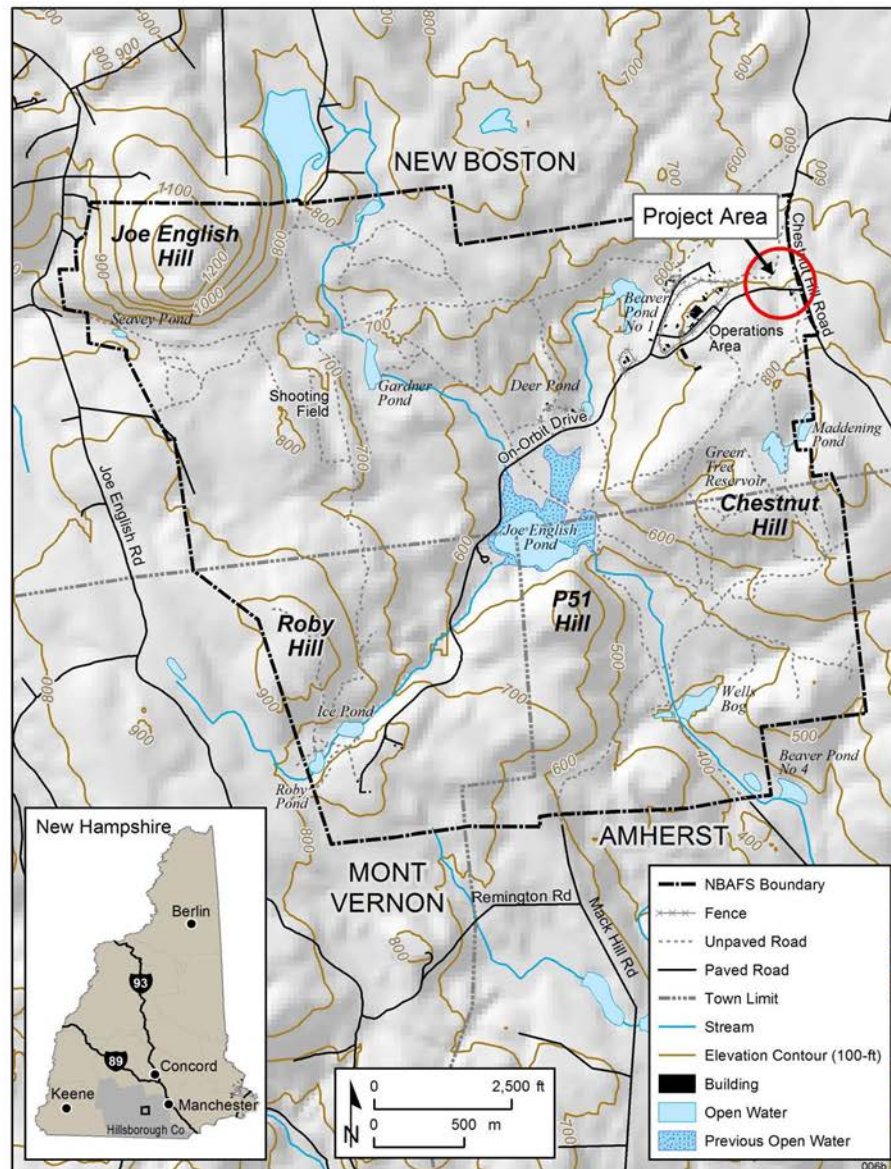
New Hampshire State Historic Preservation Officer

By: \_\_\_\_\_ Date: \_\_\_\_\_

ELIZABETH H. MUZZEY

State Historic Preservation Officer

This Memorandum of Agreement between the U.S. Air Force and the New Hampshire State Historic Preservation Officer covering reconfiguration of the main entrance at New Boston Air Force Station has been submitted to the Advisory Council on Historic Preservation.



Attachment 1. Map of New Boston Air Force Station showing project area.

Main Gate Environmental Assessment

A-11

March 2012



United States Department of the Interior

NATIONAL PARK SERVICE  
Northeast Region  
U.S. Custom House  
200 Chestnut Street  
Philadelphia, PA 19106-2878

H40(4506)

September 7, 2010

Mr. Jonathan F. Ruhan, Archaeologist  
Department of the Air Force  
New Boston Air Force Station  
317 Chestnut Hill Road  
New Boston, NH 03072

Dear Mr. Ruhan:

Thank you for your inquiry to the National Park Service (NPS) concerning the level of Historic American Engineering Record (HAER) documentation required for the New Boston Air Force Station and Building 108/109, Building 102 and the Bore Site Tower; **NPS project #1751**. To expedite our review, please refer to this name and **NPS project number** in all correspondence.

The documentation on the enclosed list will be sufficient for compliance with the Memorandum of Agreement between the New Hampshire State Historic Preservation Officer and the Department of the Air Force, and accepted by the Advisory Council on Historic Preservation. This documentation must be prepared in accordance with Historic American Engineering Record (HAER) guidelines, copies of which are enclosed. We have enclosed the Heritage Documentation Programs Guidelines (April 2008) which include an explanation of the new outline formats for HAER, the Northeast Area Office HAER Guidelines (April 1995) which include examples of formatted pages, and the Northeast Field Area Photo Guidelines (December 1996) for your use as our regional office HAER guidelines have not yet been updated to reflect the new outline format reports. When the documentation is completed, it must be submitted to this office for review. Incomplete or incorrect reports will be returned for revision.

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Attachment 7

Main Gate Environmental Assessment

A-12

March 2012

Please be advised that records in the HABS/HAER collection were created for the U.S. Government and are considered to be in the public domain. Preparers of HABS/HAER documentation, both written and photographic, are reminded that it is their responsibility to secure any necessary permissions for further desired use or reproduction of copyrighted materials included within the HABS/HAER documentation. For this reason, all preparers are required to complete and return **one copy of the enclosed "Release and Assignment" form for each repository**, which transfers and assigns to the National Park Service all rights included but not limited to copyrights in the HABS/HAER materials being submitted. Please note that should these releases not be obtained, the written and/or photographic documentation may not include this material.

When the documentation is accepted, we will transmit the material to the Library of Congress for inclusion in the HABS/HAER collection. Please contact this office at (215) 597-6484, if you have any questions.

Sincerely,

  
for Catherine Turton  
HABS/HAER Coordinator

Enclosures

cc:  
NH SHPO  
HABS/HAER, WASO  
Advisory Council on Historic Preservation



SCHEDULE OF DOCUMENTATION  
FOR THE RECORDING OF  
New Boston Air Force Station  
New Boston, New Hampshire  
**NPS Project # 1751**

I. WRITTEN DOCUMENTATION:

A concise HAER "Narrative Format" summary of the overall complex, as named above, is required as an introductory chapter. This should stress engineering, architectural and historical significance at the appropriate local, state or national level. This can be extracted from existing documents, to set the above-cited features in context. The instructions for the narrative format are found on page 10 of the HAER guidelines prepared by the Northeast Area Office.

This narrative is followed by separate reports on each feature as follows:

|                 |                                                 |
|-----------------|-------------------------------------------------|
| B-Side Antenna  | Outline Format for civil engineering structures |
| Boresight Tower | Outline Format for civil engineering structures |
| Building 102    | Short Format                                    |

The instructions for the above two formats are found in the HAER guidelines prepared by the Heritage Documentation Programs.

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C. All graphics have one-inch margins on all sides, with headers in the upper right-hand corner, also within the margins. Pagination continues from the written documentation.

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Exterior views to show spatial relationships between major features of the entire complex, including landscape characteristics. More than one feature should be shown in each view.

C. Exterior views for each individually documented feature:

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2. Perspective views. More than one elevation may be shown at a time.
3. Engineering details to show function of structure.

D. Interior views for each individually documented feature:

1. Typical overall spaces, including structural systems and materials.
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E. Historic views:

A thorough search should be undertaken, and photographic copies made of historic photographs of the overall complex and of individual features, **if they are copyright-free**. A source and approximate date should be given for each original photograph in the captions in the Index to Photographs. If a collection of historic photos appears in a safe archive, please consult with NPS regarding the size of the sample. **Historic photographs existing in a safe archive need not be copied.** [As part of this project you may ensure that these photos are placed in a safe archive and eliminate the need for photographically copying them for this documentation.] In such a case, a reference to the collection need only be cited in the bibliography. If historical views cannot be found, please list in the bibliography all repositories searched.

Each set of historic views follow the contemporary views of the corresponding overall complex or each individually documented feature.

F. For each individually documented feature (as applicable):

Original or historic construction plans/floor plans, if available **and if copyright-free**, photographically reduced to 4"x5", 5"x7" or 8"x10" format; the drawings must be legible and the format chosen to enable this. The source and date of each plan must be noted in the

Index to Photographs. If a sizable collection exists in a safe archive, please consult with the NPS regarding the size of the sample. **Original drawings in a safe archive need not be reproduced.** [As part of this project you may ensure that these drawings are placed in a safe archive and eliminate the need for photographically copying them for this documentation.] In such a case, a reference to the collection need only be cited in the bibliography. If original drawings cannot be found, please list in the bibliography all the repositories searched.

#### IV. PACKAGING REQUIREMENTS

A. The HAER number for this project is HAER No. NH-51. This number must be used on all written and photographic materials which relate to the overall complex.

The HAER number for the B-Side Antenna is HAER No. NH-51-A.

The HAER number for the Boresight Tower is HAER No. NH-51-B.

The HAER number for Building 102 is HAER No. NH-51-C.

These numbers must appear on all written and photographic materials which relate to each individually documented features.

B. All material submitted as documentation must follow the requirements outlined in the guidelines provided. Please call our office with specific questions.

C. When the number of photographic views is known, please call our office to request preprinted photo mount cards for presentation (see page 11 of the "Guide to Preparing HABS/HAER Photographic Documentation.")



IN REPLY REFER TO:  
H40(4506)

## United States Department of the Interior

NATIONAL PARK SERVICE  
Northeast Region  
U.S. Custom House  
200 Chestnut Street  
Philadelphia, PA 19106-2878

June 16, 2014

Mr. Daniel J. O'Rourke  
Environmental Science Division  
Argonne National Laboratory, Building 240  
9700 South Cass Avenue  
Argonne, IL 60439

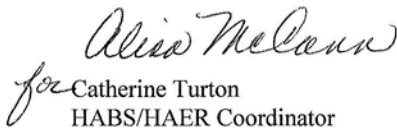
Dear Mr. O'Rourke:

The National Park Service (NPS) acknowledges the receipt of and accepts the Historic American Engineering Record documentation for New Boston Air Force Station, Angle Tracker Antenna (New Boston Air Force Station, Building 102), New Boston, New Hampshire; **NPS Project #1751** (HAER No. NH-51-B).

This documentation meets HAER standards, conforms to specifications provided by this office and complies with HAER stipulations in the Memorandum of Agreement between the New Hampshire State Historic Preservation Officer, and the Department of the Air Force. After the preparation of support materials by this office, the documentation will be transmitted to the HABS/HAER Collection of the Library of Congress. The records are in the public domain and will be accessible through the Library.

We appreciate the cooperation that we have received during the completion of this project.

Sincerely,

  
for Catherine Turton  
HABS/HAER Coordinator

cc:  
NH SHPO  
Advisory Council on Historic Preservation  
HABS/HAER, WASO

Attachment 8

**NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA**

---

**From:** Peterson, Nadine <Nadine.Peterson@dcn.nh.gov>  
**Sent:** Wednesday, October 08, 2014 1:38 PM  
**To:** NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA; Feighner, Edna  
**Cc:** O'Rourke, Daniel J. [danorourke@anl.gov]  
**Subject:** RE: Building 102 MOA

Thank you.  
Nadine

---

Nadine Peterson  
Preservation Project Reviewer  
NH Division of Historical Resources  
603-271-6628

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-----Original Message-----

From: NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA [mailto:stephen.najjar@us.af.mil]  
Sent: Wednesday, October 08, 2014 1:36 PM  
To: Peterson, Nadine; Feighner, Edna  
Cc: O'Rourke, Daniel J. [danorourke@anl.gov]  
Subject: RE: Building 102 MOA

Hi Nadine and Edna,  
Dan O'Rourke is working on putting together a hard copy of the HAER for Building 102. The only set of negatives went to NPS. I will update the MOA per your email.  
Thanks Steve

-----Original Message-----

From: Peterson, Nadine [mailto:Nadine.Peterson@dcn.nh.gov]  
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To: NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA  
Cc: Feighner, Edna  
Subject: RE: Building 102 MOA

Thank you for the opportunity to comment on the MOA.  
I echo Edna's request that the DHR receive a hard copy of the HAER documentation along with original photographs. We ask that the photographs be submitted in archival sleeves and the documentation packet in an archival folder.  
Please revise the statement in the MOA indicating that the DHR will receive an electronic version of the document and note that we will receive an original hard copy with original photographs.  
I see no other concerns with the MOA.

Sincerely,

Nadine

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-----Original Message-----

From: Feighner, Edna  
Sent: Thursday, October 02, 2014 7:31 AM  
To: NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA  
Cc: Peterson, Nadine  
Subject: RE: Building 102 MOA

One thing, when submitting the HAER document we ask for an original hard copy, Nadine can provide any more information if needed.

Edna

Edna Feighner  
Review and Compliance Coordinator/Historical Archaeologist NH Division of Historical Resources  
19 Pillsbury Street, Second Floor  
Concord, NH 03301  
603-271-2813

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From: NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA [mailto:[stephen.najjar@us.af.mil](mailto:stephen.najjar@us.af.mil)]  
Sent: Wednesday, October 01, 2014 2:50 PM  
To: Feighner, Edna  
Subject: Building 102 MOA

Hi Edna,

Could you please review the attached MOA? If everything looks good I will contact ACHP. The final electronic version of the HAER along with the acceptance letter is attached for your files.

I have been a swamped lately, still need to visit you soon with Jeff.

Thanks Steve

Stephen Najjar  
Natural Resources Planner  
23 SOPS/CEI  
317 Chestnut Hill Road  
New Boston AFS NH 03070  
(603) 471-2346  
DSN 489-2346

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
317 Chestnut Hill Road  
New Boston  
Hillsborough County  
New Hampshire

HAER No. NH-51-B

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
Northeast Region  
Philadelphia Support Office  
U.S. Custom House  
200 Chestnut Street  
Philadelphia, Pennsylvania 19106



**HISTORIC AMERICAN ENGINEERING RECORD**  
**NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA**  
**(New Boston Air Force Station, Building 102)**  
**HAER No. NH-51-B**

**Location:** 317 Chestnut Hill Road, New Boston Air Force Station,  
Hillsborough County, New Hampshire

The location is at latitude 42.947758, longitude -71.62145. Building 102 is located in the northeastern corner of the station in the town of New Boston. The building is located outside of the security perimeter for the station adjacent to Chestnut Hill Road.

**Date of  
Construction:** January 1960

**Engineer:** Philco-Ford Corporation  
Western Development Laboratories Division  
3939 Fabian Way  
Palo Alto, California 94303

**Original Owner  
and Use:** U.S. Air Force; the structure is the pedestal for an angle tracker antenna that supported the NBAFS satellite tracking mission during the 1960's.

**Present Owner  
and Use:** U.S. Air Force; storage

**Significance:** Although the station is less than 50 years old, it is strongly tied to both the Cold War and the "space race" for dominance in outer space that was waged by the United States (US) and the Soviet Union (USSR) from the end of the Second World War to the fall of the Berlin Wall in 1989. The Cold War and its attendant emphasis on space as a theater of operations had a profound impact on American military, political, diplomatic, and cultural life. These events are recognized today by historians and other scholars to have had overwhelming impacts on daily life in the United States, and to have shaped

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 2)

the lives and expectations of its citizens, despite the fact that they occurred less than 50 years ago.

Cold War historic buildings at NBAFS consists of Buildings 100, 102, 108/109, and 142/143. Building 102 is one of the remaining elements of the original satellite tracking system at NBAFS.<sup>1</sup> The building retains little integrity. The circular roof deck, which previously held the angle tracker antenna, is the only architectural feature that remains unchanged.

**Description:** Building 102 is a 14ft 4in × 14ft 4in × 14ft 6in tall reinforced concrete structure. Metal double doors are in the north wall of the structure. The roof is flat, circular in plan, and has a diameter of 20ft 4in. The roof originally served as a platform for an angle tracker antenna. The dome that covered the antenna was removed during the 1960s. Building 102 was faced with red brick during a 1980s upgrade of base facilities. The building currently serves as storage space.

Building 103 which originally held the controls for the antenna mounted on Building 102 was expanded and converted into the base fire station during the 1970s. Building 103 retains no integrity from the Cold War period and is not one of the Cold War era historic buildings at NBAFS.

**History:** Building 102 originally housed an angle tracker antenna. This type of antenna aided in determining the location of a satellite and predicting the satellite's course. Angle tracker antennas determined the location of an object by measuring the angle between a target and a bore site tower. Actual communication with the satellite required a separate type of antenna. At NBAFS, the A-Side antenna formally located in Building 105/106 would send and receive data from the satellite. An angle tracker antenna was an integral component of a Cold War era satellite tracking installation.

The antenna became operational on January 14, 1960. The antenna mounted on Building 102 was operated from the control room in Building 103. All data received by the antenna were processed in Building 103. The angle tracker antenna ceased operations in 1966 and was dismantled.

---

<sup>1</sup> New Hampshire State Historic Preservation Office (NH SHPO) 1998. Letter dated August 28, 1998, regarding Cold War Resources at New Boston Air Station and Building 117. Written by Nancy C. Muller, Director, State Historic Preservation Office. Sent to Stephen Najjar, Natural Resources Planner, New Boston Air Station.

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 3)

**Sources:**

New Boston Air Force Station, 2012, Natural Resources official file. "Historic Preservation."  
NBAFS, Natural Resources. New Boston, NH.

New Boston Air Force Station. n.d., "NBAFS Historic Documents Archive Collection I, Original Measured Architectural Drawings, 1942–89." Layout maps plans, drawings and photographs of installation and installed property. NARA, Waltham, MA. Accession No. 342-08-0025, location B25843–B25902.

New Boston Air Force Station, 1991, *Real Property Card-Building 102*, October 21.

New Boston Air Force Station, 1999, *Survey and Evaluation of Cold War Resources, New Boston Air Force Station, New Boston, New Hampshire*. Final Report. February.

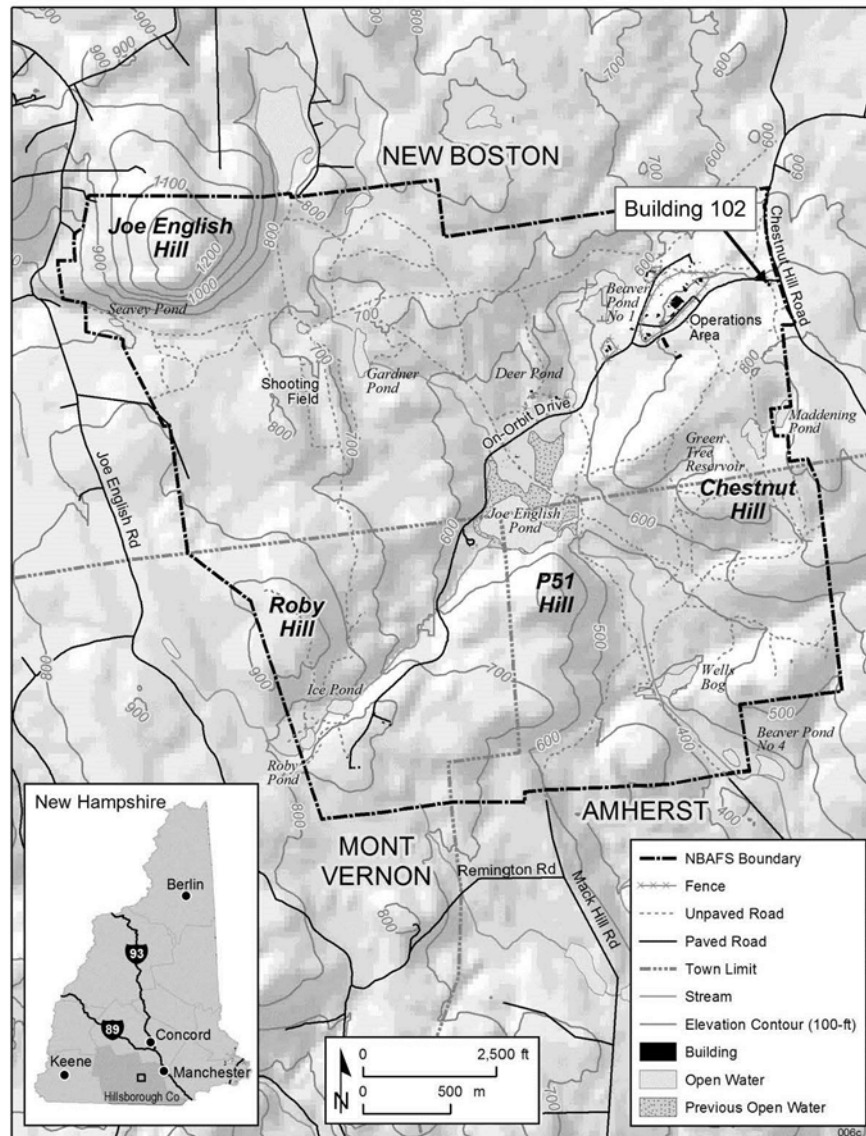
New Hampshire State Historic Preservation Office (NH SHPO). Letter dated August 28, 1998, regarding Cold War Resources at New Boston Air Station and Building 117. Written by Nancy C. Muller, Director, State Historic Preservation Office. Sent to Stephen Najjar, Natural Resources Planner, New Boston Air Station, 1998.

**Historian:** Daniel J. O'Rourke, Argonne National Laboratory, Argonne, Illinois. Fall 2011

**Project**

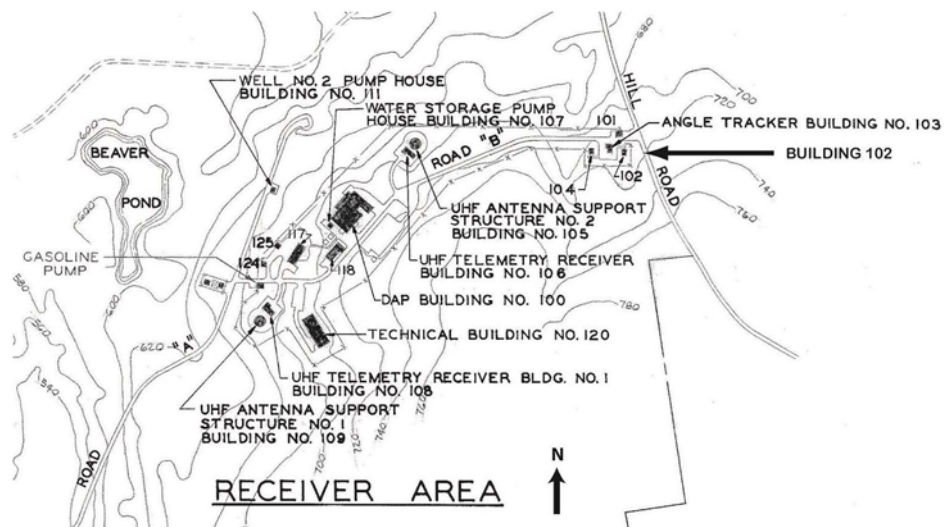
**Information:** Building 102 is being documented as a mitigative action as per the July 2002 Programmatic Agreement regarding Installation Management Activities at New Boston Air Force Station among New Boston Air Force Station, the Advisory Council on Historic Preservation, and the New Hampshire Division of Historical Resources. Building 102 is slated for demolition as part of a security upgrade of the main gate facilities at the station. The demolition of Building 102 constitutes an adverse effect on a historic property and requires mitigation.

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 4)

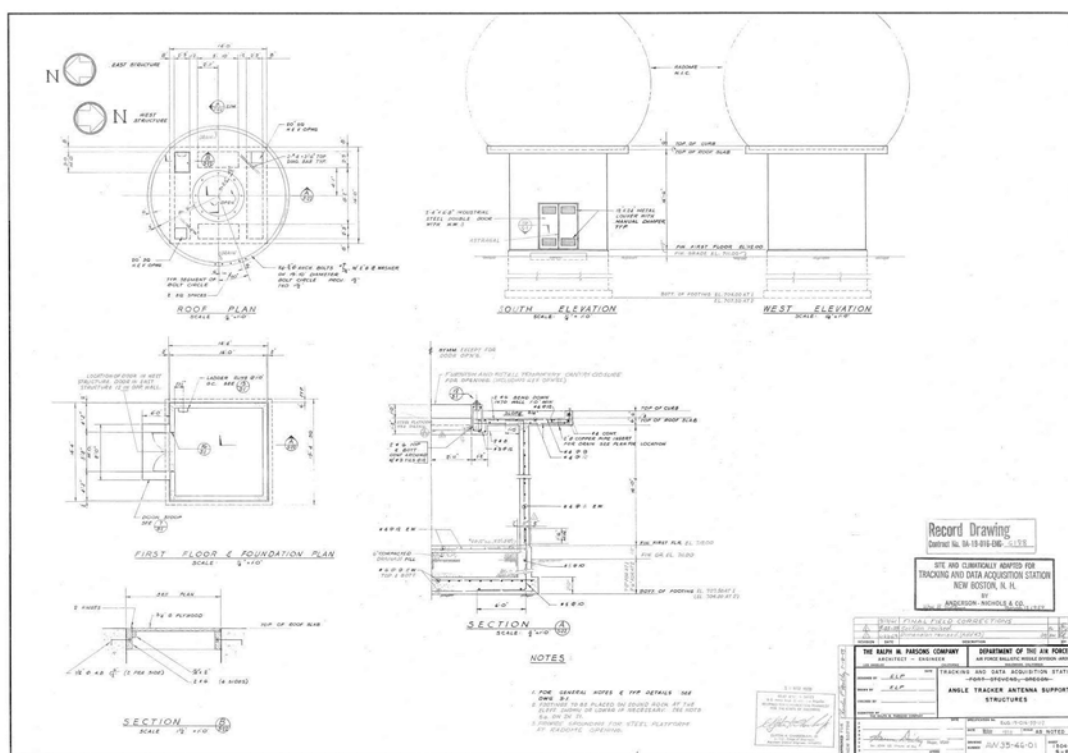


Locator Map

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 5)



1967 Base Plan Detail



### Floor Plan of Building 102

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 6)

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 7)



**Historic View of Airmen and Philco Technicians Working on Angle Tracker Antenna  
(NBAFS 1961)**



NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 8)



**Historic View of Philco Technicians Working on Angle Tracker Antenna (NBAFS 1961)**

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
HAER No. NH-51-B  
(Page 9)



Historic View of Airman Working on Angle Tracker Antenna (NBAFS 1961)

**HISTORIC AMERICAN ENGINEERING RECORD**

**INDEX TO PHOTOGRAPHS**

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
317 Chestnut Hill Road  
New Boston  
Hillsborough County  
New Hampshire

HAER No. NH-51-B

Charley Freiberg, Photographer

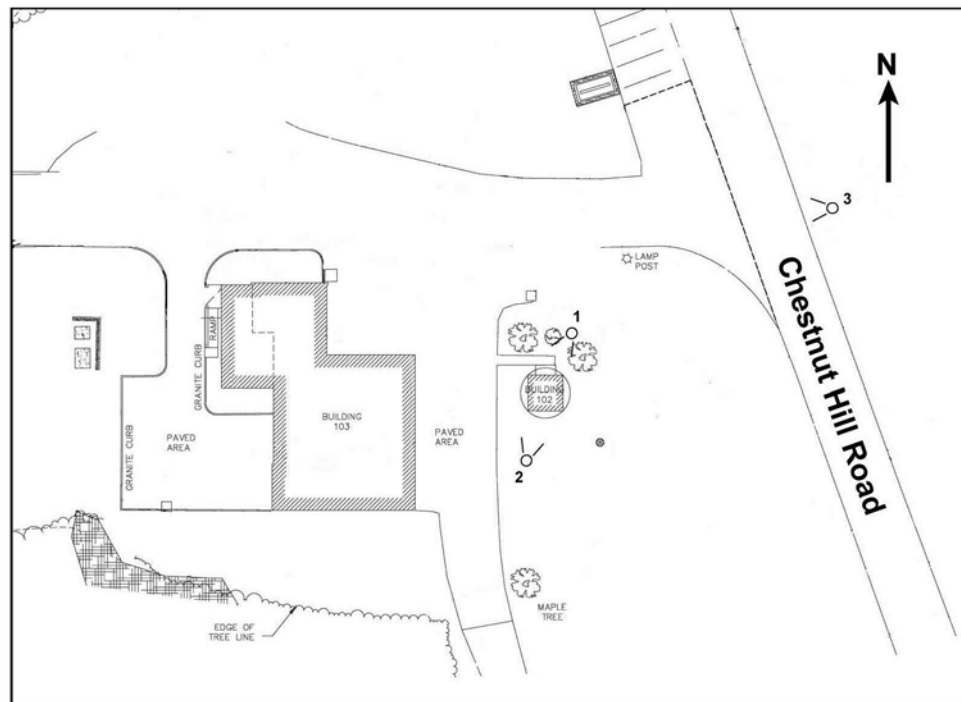
March 2010

|           |                                       |
|-----------|---------------------------------------|
| NH-51-B-1 | BUILDING 102, LOOKING SOUTHWEST.      |
| NH-51-B-2 | BUILDING 102 LOOKING NORTH NORTHEAST. |
| NH-51-B-3 | BUILDINGS 102 AND 103, LOOKING WEST.  |

**HISTORIC AMERICAN ENGINEERING RECORD****KEY TO PHOTOGRAPHS**

NEW BOSTON AIR FORCE STATION, ANGLE TRACKER ANTENNA  
(New Boston Air Force Station, Building 102)  
317 Chestnut Hill Road  
New Boston  
Hillsborough County  
New Hampshire

HAER No. NH-51-B





**NH-51-B-1      BUILDING 102, LOOKING SOUTHWEST.**



**NH-51-B-2      BUILDING 102 LOOKING NORTH NORTHEAST.**



**NH-51-B-3      BUILDINGS 102 AND 103, LOOKING WEST.**



**NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA**

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**Sent:** Wednesday, October 08, 2014 1:38 PM  
**To:** NAJJAR, STEPHEN J GS-11 USAF AFSPC 23 SOPS/CEA; Feighner, Edna  
**Cc:** O'Rourke, Daniel J. [danorourke@anl.gov]  
**Subject:** RE: Building 102 MOA

Thank you.  
Nadine

---

Nadine Peterson  
Preservation Project Reviewer  
NH Division of Historical Resources  
603-271-6628

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Thanks Steve

Stephen Najjar  
Natural Resources Planner  
23 SOPS/CEI  
317 Chestnut Hill Road  
New Boston AFS NH 03070  
(603) 471-2346  
DSN 489-2346



Preserving America's Heritage

December 17, 2014

Lieutenant Colonel Sarah E. Jackson  
Commander  
50<sup>th</sup> Space Wing  
23 SOPS/CC  
317 Chestnut Hill Road  
New Boston Air Force Station, NH 03070-5125

**Ref:    *Reconfiguration of the Main Entrance  
New Boston Air Force Station  
Hillsborough County, New Hampshire***

Dear Lt Col Jackson:

On November 6, 2014, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the adverse effects of the referenced undertaking on a property eligible for listing in the National Register of Historic Places. However, in reviewing the documentation we note that the 50<sup>th</sup> Space Wing initiated Section 106 consultation in 2010 with the New Hampshire State Historic Preservation Office (SHPO), made a finding of adverse effect, and should have notified the ACHP at that time. We would have recommended completing the Section 106 process regardless of project delays, thus when the project was implemented the 50<sup>th</sup> Space Wing would already have met its Section 106 responsibilities.

We note that an agreed to mitigation measure is the documentation of Building 102 in accordance with the Historic American Engineering Record, and that the 50<sup>th</sup> Space Wing completed this documentation in June 2014. Normally, mitigation measures are not carried out until after a Section 106 agreement document is executed. Despite these issues, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800), does not apply to this undertaking. Accordingly, we do not believe our participation in the consultation to resolve adverse effects is needed. Pursuant to 36 CFR §800.6(b)(1)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the SHPO and related documentation with the ACHP at the conclusion of the consultation process. The filing of the MOA and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Ms. Katharine R. Kerr at (202) 517-0216 or via e-mail at [kkerr@achp.gov](mailto:kkerr@achp.gov).

Sincerely,

Caroline D. Hall  
Assistant Director  
Federal Property Management Section  
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION  
401 F Street, Suite 308 • Washington, DC 20001-2637  
Phone: 202-517-0200 • Fax: 202-517-6381 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

**APPENDIX B REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS AF FORM  
813**

| REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS                                                                                                                                                                                                                                                                                                                 |                                                                                      | Report Control Symbol<br>RCS:       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------|
| INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).                                                                                                                                             |                                                                                      |                                     |
| <b>SECTION I - PROPONENT INFORMATION</b>                                                                                                                                                                                                                                                                                                                  |                                                                                      |                                     |
| 1. TO (Environmental Planning Function)                                                                                                                                                                                                                                                                                                                   | 2. FROM (Proponent organization and functional address symbol)                       | 2a. TELEPHONE NO.                   |
| 23 SOPS/CEA                                                                                                                                                                                                                                                                                                                                               | 23 SOPS/CEP                                                                          | 471-2424                            |
| 3. TITLE OF PROPOSED ACTION<br>Relocate Main Gate                                                                                                                                                                                                                                                                                                         |                                                                                      |                                     |
| 4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date)<br>The purpose of this action is to relocate the main gate approximately 800 feet east on the existing Galaxy Way. The relocated gate will meet minimum security standards. The work includes repairing the parking for building 103 and (continued on p. 2)                  |                                                                                      |                                     |
| 5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.)<br>The proposed alternative includes three components: 1 -- relocate the existing gate and include improved security features, 2 - modify the building 103 parking, and 3 -- create a landscaping buffer. (continued on p. 2) |                                                                                      |                                     |
| 6. PROPONENT APPROVAL (Name and Grade)                                                                                                                                                                                                                                                                                                                    | 6a. SIGNATURE                                                                        | 6b. DATE                            |
| Jeff Magaw, YF-02                                                                                                                                                                                                                                                                                                                                         |    | 20100408                            |
| <b>SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.</b> (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)                                                                                                                     |                                                                                      | +                                   |
| 7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)                                                                                                                                                                                                                                                          | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)                                                                                                                                                                                                                                                                            | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 9. WATER RESOURCES (Quality, quantity, source, etc.)                                                                                                                                                                                                                                                                                                      | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)                                                                                                                                                                                                       | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)                                                                                                                                                                                                                                                                                 | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)                                                                                                                                                                                                                                                                   | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)                                                                                                                                                                                                                                                                   | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)                                                                                                                                                                                                                                              | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)                                                                                                                                                                                                                                                              | <input type="checkbox"/>                                                             | <input checked="" type="checkbox"/> |
| 16. OTHER (Potential impacts not addressed above.)                                                                                                                                                                                                                                                                                                        | <input type="checkbox"/>                                                             | <input type="checkbox"/>            |
| <b>SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION</b>                                                                                                                                                                                                                                                                                                 |                                                                                      |                                     |
| 17. <input type="checkbox"/> PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR<br><input checked="" type="checkbox"/> PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.                                                                                                                    |                                                                                      |                                     |
| 18. REMARKS<br>General conformity requirements and Section 106 compliance will be addressed during the environmental assessment process.                                                                                                                                                                                                                  |                                                                                      |                                     |
| 19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade)                                                                                                                                                                                                                                                                                        | 19a. SIGNATURE                                                                       | 19b. DATE                           |
| Stephen Najjar, YD-02                                                                                                                                                                                                                                                                                                                                     |  | 20100428                            |

## AF IMT 813, SEP 99, CONTINUATION SHEET

4. (from p. 1) creating an aesthetic-only landscaping buffer adjacent to Chestnut Hill Road. Refer to the attached concept sketches.

The existing main gate does not comply with numerous security standards, such as vehicle denial and inspection, complete view of entering and exiting traffic, ballistic protection of the gate house, and proximity to critical resources.

The amount and location of the parking around building 103 is inadequate. There are not enough spaces to meet the needs of visitors and responding volunteer fire protection personnel. Also, the existing parking does not meet security standards for set-back from the facility. It is timely to make these repairs during the main gate paving project, which is scheduled to receive FY 2010 funding for both design and construction.

5. (from p. 1) Following are the alternatives for this action.

No Action - If no action is taken the entrance and parking around building 103 will remain below minimum security standards; the installation will accept the associated vulnerabilities. Also, do not create the landscaping buffer.

Alternative 1: Complete as proposed.

Alternative 2: Do not complete component 3.

Alternative 3: Do not complete component 2.





## Option A



## Option B

