

Final Environmental Assessment

Hanscom Air Force Base

Massachusetts

Demolition/Restoration of Ipswich Antenna Test Facility



U.S. AIR FORCE

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**FINDING OF NO SIGNIFICANT IMPACT AND
FINDING OF NO PRACTICABLE ALTERNATIVE
DEMOLITION/RESTORATION OF IPSWICH ANTENNA TEST FACILITY
HANSCOM AIR FORCE BASE, MASSACHUSETTS**

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), Title 40 of the Code of Federal Regulations (CFR), §§ 1500-1508; Air Force Environmental Impact Analysis Process (EIAP) regulations 32 CFR § 989 and Department of Defense Directive 6050.1, the Air Force has prepared an environmental assessment (EA) to identify and evaluate the potential impacts on the natural and human environment associated with demolition/restoration of the Ipswich Antenna Test Facility located northeast of Hanscom Air Force Base (AFB), Massachusetts.

Purpose of and Need for the Proposed Action (EA § 1.2, page 1-3)

In 2005 the Secretary of Defense approved the Base Realignment and Closure recommendations, which included the relocation of the Ipswich Antenna Test Facility activities from Hanscom AFB to Wright-Patterson AFB, Dayton, Ohio by September 2011. Since the work conducted at this site is no longer required, Hanscom AFB intends to terminate the land lease between the Proprietor of Great Neck, Inc. for the Ipswich Antenna Test Facility property located at 16 Skytop Road, Ipswich, MA. Termination of the lease requires the Air Force to remove all building structures and other improvements to the land and restore to its natural condition prior to the surrender of the premises. Once the work is completed, Hanscom AFB intends to return the property to the original landowner, the Proprietor of Great Neck, Inc.

Description of the Proposed Action and Alternatives

Proposed Action (EA § 2.1, pages 2-1 to 2-2): Under the Proposed Action, Hanscom AFB would remove all building structures and other land improvements from the Ipswich Antenna Testing Facility. Work would include complete decommissioning and proper disposal of buildings, structures (chain-link fence, roadways, foundations, manholes, catch basins and other pavement), above ground/below ground oil storage tanks, two septic systems and all utility lines (electrical, communications, and water/sewer/storm). Afterwards the area would be cleared and backfilled (approximately six acres) and a minimum of four inches of screened loam and seed would be applied to all disturbed areas.

No Action Alternative (EA § 2.2.1, page 2-3): Under the No Action Alternative, the Air Force would continue to lease and maintain the property in accordance with the lease agreement. Extra security support would be required since the site would be unoccupied to ensure unauthorized entry or vandalism. The No Action Alternative will also provide a baseline for the rest of the analyses and help determine the level of impact the Proposed Action would have on the environment.

Environmental Consequences

Environmental analyses focused on the following areas: land use, socioeconomics, utilities, transportation, noise, air quality, geology/soils, surface water/groundwater, floodplains, biological resources, cultural resources, and environmental restoration program/hazardous waste. Based on the information presented in this EA, no long-term, adverse or significant impacts were identified to the following resources: socioeconomics (EA § 4.2, pages 4-1 to 4-2) and utilities (EA § 4.3, pages 4-2 to 4-5). There would be no impacts to floodplains since the site is not located within either the 100-year or 500-year flood zone per FEMA (EA § 4.9, page 4-10). Environmental justice and protection of children were eliminated from further study (EA § 2.2, pages 2-1 to 2-2) since the site is located away from these population areas. All other findings are summarized below.

Land Use (EA § 4.1, page 4-1): There would be short-term impacts to land use during demolition and site restoration activities due to elevated noise levels, increased dust, minor interferences with roadway access, and visual effects. These impacts would be temporary and once the site restored, there would be a long-term, positive impact due to improving the safety conditions at this location. There would be no impact to land use under the No Action Alternative.

Transportation (EA § 4.4, page 4-6): There would be short-term, temporary impacts to the local roadways from increased truck traffic due to demolition activities. The affected roads include Little Neck Road, Northridge Road, Skytop Road, Plover Hill Road and Clark Road. To minimize this impact, a plan minimizing traffic interruption will be developed, coordinated with the Ipswich Police Department and provided to the local residents. There would be no impacts to traffic under the No Action Alternative.

Noise (EA § 4.5, pages 4-6 to 4-7): The Proposed Action would temporary increase noise due to demolition/restoration activities but would cease once the project was completed. There would be no noise impacts under the No Action Alternative.

Air Quality (EA § 4.6, pages 4-7 to 4-8): There would be short-term, localized air quality impacts under the Proposed Action. Fugitive dust emissions would be generated during truck loading and transfer of material as well as during grading. To control these emissions, water will be applied to the disturbed areas and the Air Force will limit the number of vehicles used at the site as well as the duration of demolition work. In addition all equipment and vehicles used at the site will be maintained in good operating condition so exhaust emissions are minimized. The Ipswich Antenna Facility is located in an attainment area for all criteria air pollutants, except for ozone. Calculations determined the total direct and indirect emissions for nitrous oxide and volatile organic compounds (precursors to ozone formation) were below the conformity threshold values; therefore, conformity determination is not required. There would be no impacts to air quality under the No Action Alternative.

Geology and Soils (EA § 4.7, pages 4-8 to 4-9): The Proposed Action would remove all buildings, structures and foundations from the site. All excavated areas would be backfilled with common fill and the disturbed areas loamed and seeded. During demolition activities, best management practices (BMPs) to control soil erosion would be implemented, which could include the use of silt fencing, hay bales, wire fencing, geo-textile fabric and/or filter stone. These controls would be left in place until vegetation has become firmly established; therefore, there are no long-term impacts associated with the Proposed Action. There are no impacts associated with geology/soil under the No Action Alternative.

Surface Water and Groundwater (EA § 4.8, pages 4-9 to 4-10): Surface water is not present at the site. Records indicate a storm drainage system is located only at North Hill. Storm drainage from these facilities goes to either grassed areas or a paved swale. The BMPs implemented to control soil erosion, will also ensure surface waters are not impacted. The Proposed Action is expected to have a long-term, positive impact to water quality because of the decrease in impervious surface area. There would be no impact to surface waters from the No Action Alternative. Both alternatives would not impact ground water.

Biological Resources (EA § 4.10, pages 4-11 to 4-13): The parcel is comprised of a vegetative community consisting of forested upland, forested wetland, scrub-shrub/wet meadow and several regularly maintained lawns. Demolition activities will be limited to the developed portions of the property and the majority of landscape plants/trees will remain in-place to minimize impacts to vegetation. To satisfy the lease termination agreement, the telephone and fiber optic lines located in a wetland resource area would be removed; therefore, short-term, negative impacts to the wetland would occur. Prior to pursuing this course of action, the 66th Air Base Group Civil Engineers (66 ABG/CE)

considered abandoning the telecommunications and fiber optic utility lines in place to avoid these impacts; however, this was not approved by the proprietor/owner. A proposed action plan must be brought before the Ipswich Conservation Commission. Once approval is given, the Conservation Commission will issue an Order of Conditions applicable to the proposed work. Workers will be required to perform BMPs during removal of the utility lines to reduce impacts to the wetland as possible. In addition the Conservation Commission may impose additional requirements such as: staking the wetland boundaries; clearing and grubbing during dry weather and in stages to allow for the stabilization of disturbed soils; soil watering and soil stockpiling for fugitive dust-control; berming along nearby water bodies to decrease the amount of potential sedimentation in adjacent water bodies; and use of soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, sediment basins and hardened stream crossings.

There are no federally or state listed threatened or endangered species at the Ipswich Antenna Test Facility Annex, nor would the Proposed Action have any long-term impacts to wildlife populations. Following restoration, it is possible the site may become more suitable for wildlife habitat because of the absence of human activity. There would be no impacts to biological resources under the No Action Alternative.

Cultural Resources (EA § 4.11, page 4-14): The Ipswich Antenna Test Facility was evaluated by the Massachusetts Historical Commission (MA MHC) for listing in the National Register of Historic Places. In October 19, 2011, the MHC evaluation concluded the site does not meet the Criteria of Eligibility (36 CFR § 60) for listing in the National Register of Historic Places.

In 2002 a pre-contact period Native American site was identified within the Ipswich Antenna Test Facility property during a Phase I archaeological survey. The survey determined site boundaries. In accordance with MHC recommendations in October 19, 2011, an Archaeological Site Protection Plan was developed to avoid and minimize ground impacts to the sensitive resource area during demolition and removal of structures on the property. Mitigation measures (EA § 7, page 7-1) will include the following:

- A professional surveyor will stake the boundaries of the archaeological site.
- All demolition will be limited to previously disturbed sections including the footprint of the buildings, the surrounding paved parking and road areas and the underground utilities.
- Ground adjacent to the demolition area will be protected utilizing plywood sheets or similar technology during demolition.
- Language will be incorporated into contract and construction documents to prevent inadvertent impacts to the sensitive resource area and other undisturbed sections of the property that may be archaeologically sensitive.
- Construction personnel will be informed of the location of the sensitive resource area verbally and in writing.
- Construction personnel will not perform or permit any tree cutting/stumping, construction, excavation, grading, filling, dumping, or storage of equipment, vehicles or supplies within the sensitive resource area.
- No unauthorized archaeological investigations will be permitted within the sensitive resource area without a state archaeological permit.

The MA MHC concurred with the Air Force Archaeological Site Protection Plan on December 5, 2011. Letter and concurrence is appended in EA § 6.9, pages 6-1 to 6-15.

Environmental Restoration Program (ERP) / Hazardous Waste (EA § 4.12, pages 4-15 to 4-16):

The impacted area is not located within or near a known ERP site. However, the demolition of the Ipswich Antenna Test Facility would create debris and waste material not suitable for reuse or recycling.

This material would be disposed of appropriately and in accordance with state and federal regulations. Any hazardous materials discovered will be handled and disposed of in accordance with Hanscom AFB policies and protocols, as well as all applicable state and federal regulations. There would be no impacts to hazardous waste under the No Action Alternative.

Cumulative Impacts (EA § 4.13, page 4-17): The Air Force does not have any future development plans for this property. It is privately owned and will be subject to all state and/or local regulations. The Archaeological Site Protection Plan encourages the property owner to consult with the MA MHC on future activities such as excavation or grading, which could affect the identified archaeological site or other sensitive archaeological areas. As a result, there are no cumulative impacts anticipated with the Proposed Action. There would be no cumulative impacts under the No Action Alternative.

Mitigations (EA § 5, pages 5-1 to 4-23)

As the proponent for demolition and restoration activities at the Ipswich Antenna Test Facility, Hanscom AFB (through 66 ABG/CE) is responsible to ensure the mitigations identified above are in place prior to taking any specific action and will oversee/verify mitigations are fully funded, in place and being carried out as identified in this Finding of No Significant Impact (FONSI) and the Mitigation and Monitoring Plan (MMP). The MMP will be developed subsequent to this FONSI and will include points of contact for oversight of the mitigation as well as the anticipated timing for mitigation completion. It is expected the mitigation monitoring will generally consist of on-the-ground inspections and any subsequent actions necessary to address deficiencies discovered during the inspections. The EA refers to the use of BMPs. For this FONSI and in compliance with Air Force regulation, BMPs will be carried forward and monitored in the MMP.

Public Review

Copies of the Draft EA/FONSI were made available for public review at the main public library in Ipswich, MA and at the Hanscom AFB Environmental Office, Building 1825, starting on November 17, 2011 and ending on December 19, 2011. A second 30-day comment period was held from June 22, 2012 to July 21, 2012. No comments were received.

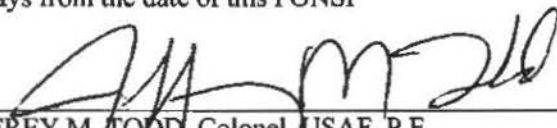
FINDING OF NO PRACTICABLE ALTERNATIVE

Taking the above information into consideration, pursuant to Executive Order 11990 (*Protection of Wetlands*) and the authority delegated by Secretary of the Air Force Order 791.1, I find there is no practicable alternative to conducting the Proposed Action within the wetlands and the Proposed Action includes all practicable measures to minimize harm to the environment. This finding fulfills both the requirements of the referenced Executive Order and the Air Force EIAP regulation, 32 CFR § 989.14, for a Finding of No Practicable Alternative.

FINDING OF NO SIGNIFICANT IMPACT

Based upon my review of the facts and analyses contained in the attached EA and as summarized above, I find the Proposed Action to allow demolition and restoration activities at the Ipswich Antenna Test Facility will not have significant impact on the natural or human environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirement of NEPA, the President's Council on Environmental Quality 40 CFR §§ 1500-1508 and the Air Force EIAP regulations 32 CFR § 989.

A MMP will be developed and implemented prior to the start of construction activities, but no later than 90-days from the date of this FONSI



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8 August 2012
Date

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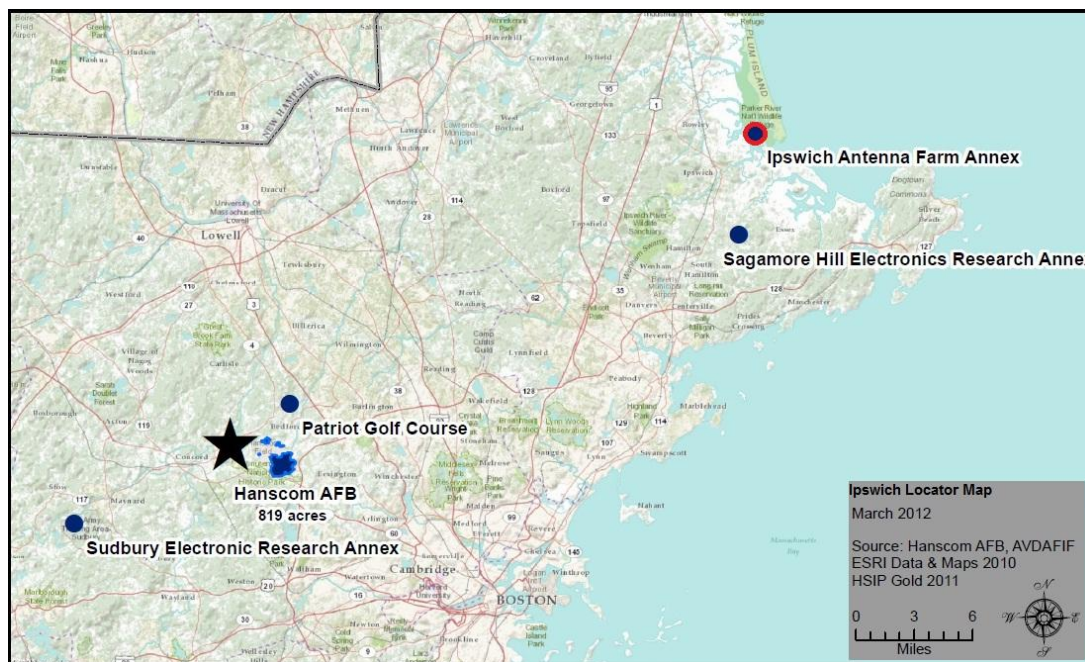
ABG	Air Base Group	JFHQ	Joint Force Headquarters
AFB	Air Force Base	kV	Kilovolt
AFI	Air Force Instruction	kWh	Kilowatt-hour
AFRL	Air Force Research Lab	LEED	Leadership in Energy and Environmental Design
AT/FP	Antiterrorism/Force Protection	MAARNG	Massachusetts Army National Guard
BMP	Best Management Practice	MAANG	Massachusetts Air National Guard
CEQ	Council on Environmental Quality	MASHPO	Massachusetts State Historic Preservation Officer
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	MassDEP	Massachusetts Department of Environmental Protection
CFR	Code of Federal Regulations	Massport	Massachusetts Port Authority
CO	Carbon Monoxide	MCF	Million cubic feet
DoD	Department of Defense	MCP	Massachusetts Contingency Plan
DoDEA	Department of Defense Education Activity	mgd	Million gallons per day
EA	Environmental Assessment	MHC	Massachusetts Historic Commission
EMCS	Energy Management Control System	MWRA	Massachusetts Water Resource Authority
ESC	Electronic Systems Center	NEPA	National Environmental Policy Act
FEMA	Federal Emergency Management Agency	NHESP	Natural Heritage and Endangered Species Program
FIRM	Federal Insurance Rate Map	NOx	Nitrous Oxide
gpm	Gallons per minute	Pb	Lead
HARM	Hazard Assessment Rating Methodology	PM	Particulate Matter
ICP	Integrated Contingency Plan	POV	Personal Occupancy Vehicle
IRP	Installation Restoration Program		

RACT	Reasonably Available Control Technology	SO ₂	Sulfur dioxide
RFTA	Reserve Forces Training Area	US EPA	United States Environmental Protection Agency
SAPS	Satellite Accumulation Points	USGBC	United States Green Building Council
SF	Square feet		
SIP	State Implementation Plan	VOC	Volatile Organic Carbons

Section 1. Purpose of and Need for the Proposed Action

1.1. Introduction

The Ipswich Antenna Test Facility encompasses 65 acres located in the Great Neck area of the Town of Ipswich, Massachusetts. The property overlooks Ipswich Bay and Plum Island and includes two hills, one on the north and one on the south sides of the property. The hills are of similar elevation separated by a low lying valley. The valley contains wooded areas but is primarily wetlands and/or salt water marsh. The facility was first developed by the Massachusetts Institute of Technology (MIT) in the 1940's before being leased to the Air Force at the end of World War II. Currently the property contains six buildings and several towers. The northern hill contains the Main Building and four smaller outer buildings. The southern hill contains the Transmitter Shack and a metal/wood tower. Below is a site map showing both the locations of the Ipswich Antenna Test Facility and Hanscom AFB.



In 1941, Hanscom Air Force Base (AFB) made and entered a land lease between the Proprietor of Great Neck, Inc. for the property described above. Termination of the lease requires all building structures and other improvements to the land to be removed, and the land be restored to

its natural condition prior to the surrender of the premises. Hanscom AFB proposes to return the Ipswich Antenna Test Facility in Ipswich, MA to the original landowner, and to remove all on-site buildings, structures, site pavements, and utilities; and return the site to a vegetated state.

This Environmental Assessment (EA) addresses the Proposed Action and the No-Action Alternative in accordance with the National Environmental Policy Act (NEPA) (42 United States Code [USC] 4321-4347), Council on Environmental Quality (CEQ, 1978) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] §§ 1500-1508), and 32 CFR 989 et seq., *Environmental Impact Analysis Process* (formerly known as Air Force Instruction [AFI] 32-7061). NEPA procedures were established to ensure environmental information is available to public officials and citizens before decisions are made and before actions are taken.

According to these instructions, the environmental assessment is a written analysis which serves to (1) provide analysis sufficient to determine whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI); and (2) aid federal agencies in complying with NEPA when no EIS is required.

If this EA were to determine the proposed action would significantly degrade the environment, significantly threaten public health or safety, or generate significant public controversy, then an EIS would be completed. An EIS involves a comprehensive assessment of project impacts and alternatives, including a high degree of public input. Alternatively, if this EA results in a FONSI, then the action would not be the subject of an EIS. The EA is not intended to be a scientific document. The level and extent of detail and analysis in the EA is commensurate with the importance of the environmental issues involved and with the information needs of both the decision-makers and the general public.

This EA addresses the site-specific impacts of the restoration/turn-over of the Ipswich Antenna Test Facility, and the associated demolition of existing structures. This EA evaluates the

consequences of the proposed action and alternatives on the natural and man-made environments.

1.2. Purpose of and Need for the Proposed Action

In 2005 the Base Realignment & Closure (BRAC) recommendations were approved by the Secretary of Defense. These recommendations included the relocation of the Ipswich Antenna Test Facility activities to Wright Patterson AFB, Dayton, Ohio by September 2011. The Air Force currently leases the property from the owner, the Proprietor of Great Neck, Inc. Based on the BRAC decision, the Air Force has determined that the lease is no longer required and proposes to terminate the agreement.

In June of 2009, the Town of Ipswich reviewed the property and agreed with the Proprietors of Great Neck, Inc., that termination of the lease would require that all buildings, structures and other improvements to the land be removed by the Air Force, and that the land must be restored to its natural condition prior to the surrender of the premises. The Town also agreed with the owner that all utilities now servicing the site should be capped at the edge of the public way. The agreement was to ensure that the lease termination requirements were understood by all parties. The Air Force, in addition to lease termination requirements, must come to agreements with the Massachusetts Historical Commission and the Ipswich Conservation Commission with regards to the protection of cultural and natural resources prior to proceeding with the proposed action.

The property is no longer needed to support the Air Force mission. The Air Force, therefore, will need to fulfill the requirements to terminate the lease. Leaving the abandoned buildings/structures vacant and the utilities in place, including underground/aboveground fuel storage tanks/piping, water lines, electric lines, telephone lines and fiber optic lines pose both environmental and safety risks. Groundwater recharge would not be optimal because of the remaining impervious surfaces, and safety issues may arise because of unauthorized entry.

1.3. Applicable Federal and State Laws and Regulations

- Archaeological Resources Protection Act
- Clean Air Act
- Clean Water Act
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
- Endangered Species Act
- Executive Order (EO) 11990 (Protection of Wetlands)
- EO 11988 (Floodplain Management)
- EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations)
- EO 13514 (Federal Leadership in Environmental, Energy, and Economic Performance)
- Massachusetts Asbestos Removal Regulations (453 CMR 6.00)
- Massachusetts River Protection Act
- Massachusetts Regulated and Hazardous Waste Regulations (310 CMR 30.000)
- Massachusetts Wetlands Protection Act
- National Historic Preservation Act
- Occupational Safety and Health Administration (OSHA) Regulations
- Pollution Prevention Act
- Resource Conservation and Recovery Act (RCRA)
- Rivers and Harbors Act
- Toxic Substances Control Act (TSCA)

1.4. Required Federal, State, and Local Permits

- (NPDES) General Permit for Stormwater Discharges from Construction Activities
- Order of Conditions from Ipswich Conservation Commission
- MassDEP BWP AQ 06 – Notification Prior to Construction or Demolition
- Massachusetts Asbestos Notification Form
- Hanscom Digging Permit

Section 2. Description of the Proposed Action and Alternatives

2.1. Proposed Action

The proposed action is to deconstruct/restore the Ipswich Antenna Testing Facility, located at 16 Skytop Road, Ipswich, MA in accordance with all applicable Federal, Local, State and USAF Codes and Standards. The proposed action will ensure all hazardous material is removed in accordance with the State of Massachusetts, Hanscom AFB, and Occupational Safety and Health Administration (OSHA) regulations. It also includes complete decommissioning and proper disposal of buildings, structures, utilities and oil storage tanks in accordance with the Ipswich Fire Department and Massachusetts Department of Environmental Protection MassDEP regulations. The proposed action includes restoration of the project site disturbed by demolition work.

Specific elements of the proposed action include:

- Disconnect, remove and dispose of above and below ground electrical/telephone/communications service utilities.
- Disconnect, remove and dispose of water/sewer/fire/storm service utilities.
Water/sewer/storm utilities to be cut and capped at property line.
- Disconnect, remove and dispose of communications trench and contents.
- Disconnect, remove and dispose of underground fiber optics conduit(s) and contents.
- Entirely remove and dispose of chain-link fence.
- Entirely remove and dispose of sanitary sewer leaching system(s).
- Upon confirmation that all toxic materials have been removed from structures, complete demolition activities.
- File MassDEP form BWP AQ 06 prior to demolishing buildings.
- Remove and dispose of all above ground building materials.
- Entirely remove and dispose of concrete/bituminous slabs/roadways and all materials below grade including, but not limited to, building foundations, manholes, catch basins and concrete/bituminous slabs/pavement.

- Remove and dispose of prior demolition debris including; but, not limited to: concrete, rebar, shingles, wiring, masonry, metal and lumber.
- Clear and grub developed areas of the site,(approximately 6 acres).
- Backfill and compact excavated areas with common fill.
- Apply a minimum of four (4”) inches of screened loam and seed to all disturbed areas.

The proposed action will be in accordance with the lease termination, local conservation commission, Massachusetts Historic Commission (MHC), and the Town of Ipswich agreements.

Site and utility maps are included on Figures 3, 4 and 5 in Section 11.

2.2. Alternatives

Hanscom AFB is evaluating two options to deconstruct/restore the Ipswich Antenna Testing Facility: 1) Deconstruct/restore the Ipswich Antenna Testing Facility; and 2) take no further action and thereby leaving the abandoned above/below ground structures in place.

Options analyzed in detail in this EA include:

- Option 1 is the Proposed Action described above and is evaluated in this EA.
- Option 2 is the No-action Alternative and is described in more detail below.

The following table is meant to present the environmental impacts of the Proposed Action and the No-Action Alternative in comparative form. This chart is only a summary of the impacts; please see Section 3 for a description of the affected environment and Section 4 for detailed explanations of the environmental consequences of each alternative.

	ENVIRONMENTAL CONSEQUENCES	
	Proposed Action	No Action Alternative
Land Use	Positive Impact	No Impact
Socioeconomic Conditions	Short Term Positive	No Impact
Utilities	No Impact	No Impact
Transportation	Short Term Negative	No Impact
Noise	Short Term Negative	No Impact
Air quality	Short Term Negative	No Impact
Geology and Soils	Minimal Negative	No Impact
Surface Water and Groundwater	Positive Impact	No Impact
Floodplains	No Impact	No Impact
Biological Resources	Short Term Negative Long Term Positive	No Impact
Cultural Resources	No Impact	No Impact
ERP/Hazardous Waste	No Impact	No Impact
Cumulative Impacts	No Impact	No Impact

2.2.1. No-Action Alternative

The No-Action Alternative would result in potential environmental and safety impacts to the property. Groundwater recharge would not be optimal because of the remaining impervious surfaces. Safety issues may arise because of unauthorized entry. This alternative assumes the Air Force continues to lease and maintain the property. The property is currently vacant and the Air Force will still be responsible to maintain the property in accordance with the lease agreement. Extra security support would be required because the site would be unoccupied and could result in unauthorized entry or vandalism. The no-action alternative does not support the Air Force mission. The no-action alternative is analyzed in this EA to provide a baseline to determine the impacts that the proposed action will have on the environment.

Section 3. Affected Environment

3.1. Land Use

The Ipswich facility is a 65-acre antenna range located on Great Neck, a glacial drumlin overlooking the Parker River estuary and Plum Island. The site is exceptionally significant for its role as a support facility and laboratory where advanced radar and antenna research products could be tested and refined for AFRL, DoD, and private defense contractors.

The MIT Radiation Laboratory opened the Electromagnetic Measurements Facility as the Ipswich Antenna Station in 1943 for radar antenna research, after continued antenna research on MIT premises in Cambridge became impractical due to the reflections of adjacent buildings and the inadequate (too short) transmission paths available. The Ipswich site was selected for its topographical characteristics, which were ideal for sending and receiving electromagnetic waves without reflection. The site's two hills are of similar elevation and separated by a deep, half mile-long gully. The site was also isolated, easy to secure, and lacked electromagnetic interference. The site is designated for Research and Development (R&D) use.

The following structures are located on the property:

North Hill Area – East Side (Main Area)

- Building S-3 (Antenna Test Facility – Main Building)
- Building T-2 (Barracks)
- Building S-5 (Quonset hut)
- Metal Shed
- Garage Building
- Emergency Generator Building
- Hydrant Enclosure
- Antenna Towers

North Hill Area – West Side (“Round Building” area)

- Former Building T-8 (Volir Building)
- Former Building S-13 Reflection Measurement Building)
- Wood Shed
- Tower
- Former Transformer Areas

South Hill Area (Plover Hill)

- Building S-15 (Transmitter Shack)
- Antenna Tower

(See Section 11 for Site Maps and Section 12 for Images of the structures)

3.2.Socioeconomic Conditions

Hanscom AFB serves primarily as the Headquarters of the U.S. Air Force Electronics Systems Center (ESC), which manages the development and acquisition of electronic command and control systems. The host unit on Hanscom AFB is the 66th Air Base Group (66 ABG), which is part of ESC. The 66 ABG provides services to all the active-duty, Reserve, and National Guard military personnel; as well as Department of Defense (DoD) civilians and contractors who work and live at Hanscom AFB. Additionally, the 66 ABG supports over 100,000 retired military personnel, annuitants, and spouses living in the seven-state area of New England and New York. Hanscom AFB is also home to a number of "associate" units separate from ESC; the largest of these are the Sensors and Space Vehicles directorates of the Air Force Research Laboratory (AFRL), which perform research and development services (HAFB, 2009). In 2011, AFRL relocated to Kirkland AFB and Wright-Patterson AFB. As of September 2011, all of the approximately 10 full-time employees at the Ipswich facility were relocated.

The following table presents a summary of population data concerning the off base community of Ipswich Massachusetts.

All Data from 2010 Census, unless otherwise noted

*From 2006-2010 American Community Survey

	Massachusetts	Essex County	Town of Ipswich
Population			
Land Area (Sq mi)	7,840	501	33
Total Persons	6,547,629	743,159	13,175
Percent of Persons Below Poverty Level*	10%	10%	4.6%
Population under Age 18	22%	23%	21%
Race Percentages			
White	80.4%	81.9%	95.9%
Black	6.6%	3.8%	0.5%
American Indian	3.0%	0.4%	0.2%
Asia/Pacific Islander	5.3%	3.2%	1.4%
Total Minority (Non-White)	19.6%	18.1%	4.1%
Ethnicity Percentages (Independent of Race)			
Hispanic or Latino	9.6%	16.5%	1.8%

3.2.1. Population

The Town of Ipswich, whose boundaries include the Air Force's Ipswich Antenna Site, had a population of 13,175 in 2010. The town has a lower percentage of persons living below the poverty level as compared to Essex County or the State of Massachusetts. Ipswich also has a lower percentage of minorities (4.1%) as compared to Essex County (18.1%) or Massachusetts (19.6%) (U.S. Census Bureau, 2012).

3.2.2. Employment

In September 2011, the Ipswich Antenna Test Facilities were relocated to Wright Patterson AFB in Dayton, Ohio. As a result, the Ipswich Antenna site is now vacant, and therefore has no relevant employment data.

3.3. Utilities

(See Section 11: Figures 3-5 for Site and Utility Maps)

3.3.1. Water Supply

Domestic water service is present at the North Hill site only. Water service enters the site via a 6-inch cast iron line originating from North Ridge Road. This 6-inch line enters the site near the entry road and connects to a “T” near a hydrant located at the corner of the entry road and the entry gate (approximately 70-feet – northeast of the main building, S-3). A sheet metal hydrant enclosure protects the hydrant. From the “T”, a 6-inch cast iron pipe connects to the main building for both domestic and fire protection services. From main building, a 1x1/2-inch domestic service feeds the Building T-2. Record plans indicate that the main building has two additional domestic water connections. One service is listed as a 2-inch service that is teed off the 6-inch cast iron line under the entry road and the other water line is listed as abandoned and no size is given (KLEINFELDER/SEA, 2010).

Record plans indicate that a second 1x1/2-inch domestic water service is teed off the 1x1/2-inch service located between Buildings T-2 and S-3. Approximately 625-feet of abandoned 1x1/2-inch water line runs west to the former Building T-8 (KLEINFELDER/SEA, 2010).

3.3.2. Wastewater

Sanitary sewer services are present at the North Hill site only at Buildings T-2 and the main building, S-3. Record plans indicate that Building T-2 had two separate septic systems. A record plan dated October 1955 indicates that a new septic system was installed to replace the original septic tank which may be present beneath Skytop Road. It is presumed that this septic tank was removed or abandoned sometime in 1955. The 1955 plan indicates that a new septic system was designed. Plans show that a 4-inch cast iron sewer pipe, a 1,000-gallon septic tank, a distribution box, and 200-feet of 4-inch leaching duct were installed for Building T-2, to replace the old septic tank. The 1955 plan details indicate that tar paper cover was placed over the leaching ducts and it is suspected that the tar paper cover may contain asbestos (KLEINFELDER/SEA, 2010).

Building S-3 is connected to an interior sewer manhole located inside the garage area via a 4-inch cast iron pipe. The interior sewer manhole has a “T” for future expansion to a municipal sewer system in the event a municipal sewer system was installed in the future. From the interior sewer manhole, the 4-inch line is routed to an exterior sewer manhole east of the building and then is routed to a septic tank south of the building. The septic tank was also used for the former Building S-1 (KLEINFELDER/SEA, 2010).

3.3.3. Solid Waste

Solid waste is picked up weekly by Waste Management Inc, a commercial waste hauler. Solid waste generated is contained in a single 10 yard container. Additional materials diverted from the waste stream include: wood waste (pallets, packaging), metals, general recyclables, and computers/electronics (KLEINFELDER/SEA, 2010).

3.3.4. Electricity

Electric services are present both overhead and underground at the site. At the South Hill portion of the site, electric service is fed to Building S-15 via overhead lines from a pole mounted transformer on Plover Hill Road. At the North Hill portion of the site, electric service is fed to a concrete pad mounted transformer via underground concrete encased duct bank from a utility pole located at the corner of the site entry road and Skytop Road (KLEINFELDER/SEA, 2010).

Record plans show that from the transformer, underground cables and conduits are routed to various locations throughout the site with the majority of on-site electric lines being direct bury with select areas under pavement in fiber duct conduit. An emergency generator building is located adjacent to the transformer and more underground electric lines are routed to various locations of the site from the generator building (KLEINFELDER/SEA, 2010).

All of the buildings on the North portion of the site are powered from the generator building with the exception of Building T-2. Record plans show that Building T-2 is powered via underground cable originating from Building S-3. Currently there is no electric service to Building T-2 (KLEINFELDER/SEA, 2010).

3.3.5. Telecommunications

Communications services are present as direct bury cables with select sections in underground conduits at the site. At the South Hill portion of the site, overhead wires were formerly routed between the North and South Hills on utility poles. The utility poles remain, however, the overhead wires have been removed. An overhead communications line exists at the South Hill site between Building S-15 and the 25-foot tower (KLEINFELDER/SEA, 2010).

Record plans indicate that approximately 2,640-feet of direct bury communication cable is located between North and South Hills connecting Building S-15 to Building S-3. All direct bury communication cable is shown on the record plan details to be 24-inches deep with a 1"x8" untreated wood plank placed over the cables, with the exception of select sections under paved areas where the communication cable is inside a 4-inch diameter conduit (presumed to be fiber duct). The section of direct bury communication cable located within the abandoned cart path is 24-inches deep with no wood plank. It was reported that the fiber optic cable was installed in the late 1990s and it is located inside 3-inch PVC conduit approximately 2 or 3-feet deep. The routing of the cable is reported to be southeast from Building S-3 on the North Hill, parallels Clark Road inside the property boundary, then continues to the west towards Building S-15. There are no plans available showing the routing of this underground fiber optic cable. According to the MassGIS search, wetland areas and ACEC listings are located on the site and the underground fiber optic cable may be located within the wetlands (KLEINFELDER/SEA, 2010).

At the North Hill portion of the site, telephone service is fed to a telephone manhole via underground conduit from a utility pole located at the corner of the site entry road and Skytop

Road. A record plan (35-46-04 Sheet 1 of 1) dated October 1955 shows that approximately 270-feet of concrete encased 3/0 fiber duct bank provided conduits for both electric and telephone lines to the site from Skytop Road. The fiber ducts are suspected to contain asbestos and it is assumed that the concrete encased fiber duct bank has been abandoned in place and remains on site. A different record plan (70-05-03 Sheet 2 of 2) dated August 1962 shows that approximately 120-feet of conduit for telephone service exist between Skytop Road and the on-site telephone manhole. A 100-foot section of telephone conduit is shown between the on-site manhole and former Building S-1. Details for the telephone conduits are not shown on the plans and it is assumed the conduits are fiber ducts and are suspected to contain asbestos materials (KLEINFELDER/SEA, 2010).

Record plans show that the on-site telephone manhole is located adjacent to the utility pole and the conduit routing continues southwest to a second telephone manhole located where the conduits split towards Building T-2 (KLEINFELDER/SEA, 2010).

Underground utility trenches are present at the North Hill site. The utility trench is constructed of reinforced concrete and is 24-inches wide and is approximately 24 to 30- inches deep and varies with surface grade. The utility trenches have open tops with removable cast iron extra-heavy duty covers. Approximately 180-feet of utility trench are located east of Building S-3 between the antennae tower and Building S-3. Approximately 70-feet of utility trench is located west of Building S-3 between the mobile track tower and Building S-3. Record plans show that approximately 640-feet of underground communication cable were abandoned between the Building S-3 and the former Building T-8. Record plans also show that approximately 460-feet of underground communication cable were abandoned between the former T-8 Building and the former Building S-13. The details on scanned plans show that the majority of the communication lines in these areas are direct bury cables approximately 2-feet deep with a 1"x8" untreated wood plank placed over the direct bury cables. Select sections of the electric cables located under paved areas are shown to be placed inside a 4-inch diameter conduit (presumed to be fiber duct). Most sections of abandoned communication cable are located in heavily wooded/vegetated areas. (KLEINFELDER/SEA, 2010).

3.3.6. Natural Gas

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site.

3.3.7. Steam

The Ipswich Antenna Test Facility is not serviced by municipal or commercial steam providers. There are no steam lines or other steam system appurtenances on the site.

3.4. Transportation

The property is located at 16 Skytop Road in Ipswich, Essex County Massachusetts. The property is accessed via public roads, there is no public transportation servicing the site. The property is located in a residential area where traffic demand is low. There are no other commercial or similar facilities in the area that generate traffic.

During the demolition phase there will be a temporary increase in truck traffic. A plan for minimizing the impact of traffic interruption to adjacent landowners during the demolition phase will be developed and coordinated with the Town of Ipswich Police Department.

3.5. Noise

There are no significant noise generating activities at the Ipswich Antenna Facility, while some noise is generated by the activities such as lawn care equipment, local traffic movement, and the ambient noise environment is similar to a typical residential area.

During the demolition phase the contractor will use controlled demolition techniques to reduce noise generation. These techniques will be modified if additional noise abatement measures are required.

3.6. Air Quality

The Ipswich Antenna Facility is located in an attainment/unclassifiable area for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), and particulate matter (PM₁₀ and PM_{2.5}). However, the entire state of Massachusetts is designated by the US EPA as non-attainment for ozone (MassDEP, 2007). Ozone results from photochemical reactions in the atmosphere involving precursor pollutants such as Volatile Organic Compounds (VOCs) and nitrogen oxides (NO_x). In 1997, the US EPA established a stricter ozone standard of 0.08 ppm averaged over an 8-hour period, but implementation was delayed due to legal challenges to the standard. The US EPA designated Massachusetts as “moderate nonattainment” for the 8-hour standard effective June 2004. The Massachusetts Department of Environmental Protection (MassDEP) is developing an 8-hour Ozone State Implementation Plan (SIP) which includes strategies for achieving an attainment status for the 8-hour ozone standard by 2010. Currently the US EPA has proposed to lower the 8-hour Ozone standard to between 0.06 and 0.07 ppm averaged over an 8-hour period. Although there have been numerous legal challenges to this proposed change, the US EPA expects to promulgate a final regulation for ground level Ozone some time in 2011. Should these new standards be implemented, most of Massachusetts will likely be reclassified as severe non-attainment, requiring a revised SIP by MassDEP.

3.7. Geology and Soils

3.7.1. Geology

The northern and southern portions of the parcel are the highpoints of the parcel, as they are glacial drumlins. The central portion of the parcel is a low-lying area that has glacial lake features. The buildings and associated antennas are located along the northern and southern drumlins.

The subsurface geology of the area containing the site is tectonically a part of the Proterzoic Southeast New England Platform. The lowland areas along the seaboard compose part of the fringe area of a submerged peneplain surface, a type shaped by atmospheric conditions when it was an exposed surface, resulting in a low, gently rolling plain. The bedrock formations contain primarily biotite granites and hornblende gneiss (Parsons, 2002).

3.7.2. Soils

A variety of soils cover the site and are divided between those formed in glacial till and those formed in marine or lacustrine sediments. The glacial till derived soils are moderately well- to well-drained sandy loam and loamy sand, and are found in the upland settings of the property. The marine or lacustrine derived soils include poorly drained Scitico Series and the moderately well-drained Boxford series. These soils are found in the low-lying valley and wetlands at the site (Parsons, 2002).

3.8. Surface Water and Groundwater

3.8.1. Surface Water

There is no surface water present at the site. Record plans indicate that storm drain systems are located at the North Hill site only. Building T-2 has a basement sump drainage system and Building S-3 has a roof drainage system. A plan dated 1959 indicates that 112-feet of 6-inch perforated drain pipe was installed from Building T-2 to a catch basin structure located near the corner of Skytop Road and the entry road. From the catch basin, approximately 156-feet of 8-inch concrete drain pipe runs along eastward Skytop Road to another catch basin structure, which is connected to the Town's drainage system. The on-site catch basin was observed during

the site visit on November 3, 2010. The catch basin is located within a grassed area and the 6-inch pipe and 8-inch pipes were observed within the catch basin (KLEINFELDER/SEA, 2010).

Building S-3 has a roof drain system connected to a flared end outfall located approximately 70-feet south of the building. The storm drain pipe is an 8-inch line and the flared end section was visible during the site visit. Additionally, the paved areas around Building S-3 are pitched to shed surface drainage towards the grassed areas and paved drainage swale located at the southwestern corner of the paved areas sends a majority of the surface drainage down a grassed slope (KLEINFELDER/SEA, 2010).

3.8.2. Groundwater

Boring logs from within the site indicate that groundwater was not encountered 40-feet below ground surface near Building S-3. The estimated direction of groundwater flow is east towards Clark Pond. Regional groundwater quality problems and regional impairments to water quality are not known at this time (KLEINFELDER/SEA, 2010).

3.9.Floodplains

According to FEMA, the subject site is not located within the 100-year flood zone, nor within a 500- year flood zone (KLEINFELDER/SEA, 2010).

3.10. Biological Resources

3.10.1. Vegetation

The hammer-shaped Annex encompasses approximately 45 acres of mixed open and forested land. The parcel is comprised of vegetated communities including forested uplands, a forested wetland, a scrub-shrub/wet meadow, and several maintained fields. Portions of these vegetated communities are regularly managed; including the areas adjacent to the buildings, the fields, and

the scrub-shrub/wet meadow. Vegetation management is required between the buildings to maintain constant, clear communication between the antennas (LEC, 2008)

3.10.2. Wetlands

(See Section 11: Figure 2 for Site Plan showing Wetlands)

There are known estuarine and marine wetland and freshwater forested/shrub wetland areas within the site's property boundary. The Town of Ipswich Wetlands Protection Bylaw and Rules and Regulations enforce a 15-foot no build zone along all wetlands and an additional 25 to 50-foot no disturbance zone extending landward from the 15-foot no build zone. Additionally, the 100 to 150-foot buffer zones to the wetlands are protected as wetland resources. The Bylaw and Rules and Regulations also impose a 1.5 to 1 ratio for all mitigation (LEC, 2008).

There are five protectable inland freshwater Wetland Resource Areas including Bank, Bordering Land Subject to Flooding (BLSF), Bordering vegetated Wetland (BVW), Isolated Land Subject to Flooding (ILSF), and Land Under Water (LUW). Two of the five inland freshwater Wetland Resource Areas are present on the parcel; BVW and Bank (LEC, 2008).

The term "wetland," as it applies to this report, includes a broad range of specific, physical ecosystems (i.e., resource areas) that have been designated by state regulatory authorities with their buffer zones. These areas are all commonly referred to as wetlands. However, these areas are not always known to be wet, per se. For example, ILSF and BLSF are, for the most part, seasonally dry resource areas. They potentially experience occasional saturation or inundation during storm events or seasonally high water, depending on the magnitude. Other resource areas are more routinely saturated on a daily or seasonal basis (i.e., Banks and BVW) while LUW is inundated permanently. These Wetland Resource Areas are protectable at various levels. For example, Banks are more strictly protected than ILSF areas due to the water quality and wildlife habitat dependence upon the Bank. Two probable protectable Wetland Resource Areas, BVW and Bank, are located within Ipswich Antenna Test Facility Annex; although these wetlands were not demarcated in the field. These areas are all characterized as a forested wetland and a scrub-shrub/wet meadow. The forested wetland is a narrow strip of vegetation located within a forested upland and is located along the northern, western, and eastern portions of the parcel,

proximal to Goldfinch Way and Skytop Road. The scrub-shrub/wet meadow is a low-lying area located within the central portion of the parcel (LEC, 2008).

3.10.3. Wildlife

The Ipswich Antenna Test Facility Annex contains two Wetland Resource Areas. These areas provide important wildlife habitat including food, shelter, nesting, migratory, overwintering, and breeding areas throughout the parcel. Although the testing area to monitor communication transmissions is regularly maintained and is daily occupied by USAF personnel, the Ipswich Antenna Test Facility Annex is somewhat isolated. The parcel is also surrounded by Plum Island Bay, which supports diverse wildlife populations. The Great Neck Conservation Area is located west of the parcel and is comprised of at least six types of natural plant communities, which supports a number of birds, mammals, amphibians, and reptile species (LEC, 2008).

The avian species observed and/or vocally identified within the Annex or in flight included red-tailed hawk (*Buteo jamaicensis*), snowy egret (*Egretta thula*), belted kingfisher (*Ceryle alcyon*), common grackle (*Quiscalus quiscula*), European starling (*Sturnus vulgaris*), blue jay (*Cyanocitta cristata*), tree swallow (*Tachycineta bicolor*), brown-headed cowbird (*Molothrus ater*), northern cardinal (*Cardinalis cardinalis*), common yellow throat (*Geothlypis trichas*), American robin (*Turdus migratorius*), northern mockingbird (*Mimus polyglottos*), gray catbird (*Dumetella carolinensis*), cedar waxwing (*Bombycilla cedrorum*), yellow warbler (*Dendroica petechia*), black capped chickadees (*Parus atricapillus*), red-winged blackbird (*Agelaius phoeniceus*), American crows (*Corvus brachyrhynchos*), hairy woodpecker (*Picoides villosus*), tufted titmouse (*Parus bicolor*), various sparrows [*Emberizidae* fam.], and herring gull (*Larus argentatus*) (LEC, 2008).

Mammalian use of the site was determined by field observations and interpretation of signs including tracks, fecal material, nests, burrows and grazing evidence. White-tailed deer (*Odocoileus virginianus*) and their tracks and scat were observed at several locations within the parcel. A groundhog (*Marmota monax*) was also observed within the field area adjacent to the

southern building, while gray squirrel (*Sciurus carolinensis*) nests were observed in the overstory within forested uplands. The adjacent Great Neck Conservation Area has also observed additional mammalian species, including raccoons, foxes, and other species of small mammals (LEC, 2008).

Amphibians and reptiles are an integral component of a diverse ecosystem. These poikilotherms (having a body temperature that varies with the external environment) emerge from hibernation in the spring and persist throughout the county until mid to late fall. Many species are dependent upon specific wetland types for their life cycle. According to *Amphibians of Essex County*, published by the Essex County Greenbelt Association, there are 19 amphibians found in Essex County. These amphibians include nine salamander species, two tree frog species, three toad species, and five frog species (LEC, 2008).

3.10.4. Threatened or Endangered Species

According to the Ipswich Quadrangle of the 12th edition of the Massachusetts Natural Heritage Atlas (valid from October 1, 2006) and the 2007 MassGIS datalayer, no areas of Estimated Habitat for Rare Wildlife or Certified Vernal Pools exist on or adjacent to the parcel (LEC, 2008).

In February 2010, the US Fish & Wildlife Service (USFWS) concurred with Hanscom AFB's Integrated Natural Resources Management Plan. The plan stated that "No threatened, endangered, or species of special concern are known to occur in association with the Ipswich Antenna Test Facility Annex" (HAFB 2011a). USFWS also reviewed and concurred on the annual update of the plan on 10 May, 2011. The status of Ipswich Antenna Test Facility Annex was not changed in the updated plan (HAFB 2011a).

3.11. Cultural Resources

In 2002, a Phase I archaeological survey was conducted by Parsons Engineering Science, Inc. under contract with Hanscom AFB. This investigation was required in order to comply with Section 110 of the National Historic Preservation Act. The survey noted that the lack of

historical references to an occupation or structure, along with low numbers of artifacts and lack of diversity suggests that the artifacts were a secondary deposit. The survey concluded that based on the lack of potential to contribute significantly to the knowledge of local or regional prehistory or history, no further work was warranted.

In 2010, the Public Archaeology Laboratory (PAL), under contract with Hanscom AFB completed an architectural survey and a National Register of Historic Places eligibility evaluation of historic resources. The Ipswich Antenna Station is highly significant for its association with Cold War defense research and development programs. AFRL Ipswich was recommended as eligible for the National Register of Historic Places under Criteria A and C at the national level, as adapted by the USAF to meet the needs of Cold War Studies (USAF 1993). The period of significance for the area extends from 1943 to 2005, when the most recent antenna tower structures were constructed. In June of 2010 this survey was sent to the Massachusetts Historical Commission (MHC) requesting their review, concurrence of these evaluations and filing of the Inventory Forms in the Historical and Archaeological Assets of the Commonwealth.

The 2010 architectural resources survey was completed as part of base wide Section 110 National Register of Historic Places eligibility evaluation effort. The evaluation followed an intensive architectural resources survey completed in 2003. Both phases were conducted to fulfill NHPA Section 110 stewardship obligations. On 22 April 2011, the MHC was informed that the Air Force intends to initiate an undertaking that consists of the termination of the lease and subsequent demolition of potentially eligible properties that may constitute an adverse effect. The area of potential effects is the 65 acre site and appropriate consulting parties will include: the Massachusetts State Historic Preservation Officer (MASHPO), the Proprietors of Great Neck, Inc., the Town of Ipswich, the public and the Air Force. The MHC responded on 25 May 2011, requesting that a site examination archaeological survey be conducted and additional information for the property's potential eligibility for listing in the National Register of Historic Places. The additional information on the potential eligibility was sent to the MHC on 9 August, 2011.

On 29 July, 2011 the Hanscom AFB Civil Engineer met, in Ipswich, with property abutters, Ipswich residents, Ipswich town officials, a Congressional staffer and a State Representative. All these parties are concerned about the site safety implications and are particularly concerned about the condition of the former Barracks, Building T-2. The consensus of the 29 July meeting was that Hanscom should make all efforts to remove the former Barracks, Building T-2 as a priority project due to local safety and security concerns. The Base Civil Engineer agreed to accelerate the demolition schedule for this one structure pending completion of MHC coordination initiated in August 2011.

On 19 October, 2011, the MHC notified Hanscom AFB that, in their opinion, the Ipswich Test Facility and the individual structures within the property do not meet the Criteria of Eligibility (36 CFR 60) for listing in the National Register of Historic Places. The MHC did recommend that the Air Force develop a plan, in consultation with the MHC, to avoid and minimize ground impacts to the property, particularly around the boundaries of archaeological site 19-ES-744. The Air Force sent the Archaeological Site Protection Plan for archaeological site 19-ES-744 to the MASHPO on November 23, 2011. The Archaeological Site Protection Plan, Site 19-ES-744 would be incorporated into the demolition contract to ensure that any potential impacts are avoided and constitutes a “no adverse effect” determination (36 CFR 800.5(b)). The MASHPO concurred with the Archaeological Protection Plan and the Air Force proposed action on December 5, 2011. The letter and Concurrence is appended Section 6.9, and copy of the Plan narrative and map is appended in Section 7.

In September 2010 a preliminary evaluation of documents related to the Ipswich Antenna Station was completed by the Hanscom AFB Historian, Dr. Richard Wolf as part of Section 110 compliance. These items were located at the Ipswich site and consisted of approximately 8.5 cubic feet of materials (blueprints, maps, reports, photographs). In March of 2011, Dr. Wolf collected these materials and brought them to Hanscom AFB for cataloging. Once the History Office has completed their processing, the documents will be shipped to the Air Force Research Laboratory History Office at Wright Patterson AFB, OH for final curation.

3.12. Environmental Restoration Program / Hazardous Waste

3.12.1. Environmental Restoration Program

In 1984, environmental studies investigated the Ipswich Antenna Test Facility for environmental contamination resulting from past activities. The study concluded that the site did not show any potential for significant environmental contamination and that as a research facility should not create future environmental problems. These conclusions were based on field inspections, a review of records and files, an evaluation of the environmental setting and interviews with base personnel, past employees and State, local and Federal officials (JRB, 1984). In November of 2011 the Hanscom AFB Environmental Office conducted a record search of Air Force and MADEP files. None of these files contain any information indicating that there is contamination present at the site.

3.12.2. Hazardous Waste

Hazardous waste generated on the base comes from the normal operation and maintenance activities of the 66 ABG organizations, as well as from the research and development operations at the MIT Lincoln Laboratory and the Air Force Research Library (AFRL). Hazardous wastes, including adhesives, sealants, greases, waste paint and thinners, solvents, and corrosive cleaning compounds are accumulated at initial accumulation points (IAPs), transferred to the 90-day accumulation site, with final disposal off-base. Hanscom AFB has both a Hazardous Waste Management Plan and a Pollution Prevention Plan which are targeted at reducing the purchases of industrial toxic substances, eliminating the purchase of ozone depleting chemicals, and reducing the amount of hazardous waste disposed. No IAPs are present at the Ipswich Antenna Test Facility. Due to the age of facilities at Ipswich Antenna Test Facility, asbestos-containing materials (ACM), lead based paint (LBP), polychlorinated biphenyl (PCB) materials, thermostats, fluorescent light bulbs may be present in the buildings.

Section 4. Environmental Consequences

4.1. Land Use

4.1.1. No-Action Alternative

The no-action alternative will leave the facilities at Ipswich Antenna Test Facility in-place. The existing site would not need to be altered and land use would not be impacted during the implementation of the no-action alternative.

4.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

Short-term impacts associated with the demolition of the facilities at Ipswich Antenna Test Facility would include temporary minor disruption of adjacent land uses due to elevated noise levels, increased dust, interference with roadway access, and visual effects.

Implementation of the proposed preferred alternative can be expected to have a positive impact because of improvements to site safety conditions which the local community is currently concerned about. The land use of the area will continue to be designated as research and development.

4.2. Socioeconomic Conditions

4.2.1. No-Action Alternative

The no-action alternative will leave the facilities at Ipswich Antenna Test Facility in-place. The no-action alternative would result in no change to the facilities at Ipswich Antenna Test Facility. Environmental justice populations would not be impacted, and there would be no increase in economic activity in the region.

4.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

Positive short-term employment benefits will accrue to the construction/demolition industry during the demolition period as a result of the preferred alternative. A short-term increase in the revenue generated in the surrounding area may also occur due to site demolition employees utilizing local businesses for supplies and personal use.

Under its instructions for the Environmental Impact Analysis Process (32 CFR Part 989), the Air Force must demonstrate compliance with Executive Order (EO) 12898, entitled *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, to determine the effects of federal programs, policies, and activities on minority and low income populations. As described in Section 3.2.1, the town where the Ipswich Antenna Site is located does not have unique populations with respect to poverty or ethnicity.

4.3. Utilities

(See Section 11: Figures 3-5 for Site and Utility Maps)

4.3.1. Water Supply

4.3.1.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to the usage level of existing site's water supply.

4.3.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The preferred alternative would not result in an increase in the demand for water. There would be no impact to the water supply system of the Ipswich Antenna Test Facility. Domestic service feeds to the site would be removed and capped at the property line.

4.3.2. Wastewater

4.3.2.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to the wastewater discharge level of existing site utilities. The existing septic system will remain in-place.

4.3.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

No short-term impacts related to wastewater are anticipated during the demolition of the facilities. The site has two septic systems, one for Building T-2 and one for Building S-3. Both of these systems and all their appurtenances will be removed.

The Barracks system includes a 4-inch cast iron sewer pipe, a 1,000-gallon septic tank, a distribution box, and 200-feet of 4-inch leaching duct. Building S-3 is connected to an interior sewer manhole located inside the garage area via a 4-inch cast iron pipe. From the interior sewer manhole, the 4-inch line is routed to an exterior sewer manhole east of the building and then is routed to a septic tank south of the building. No leach field is indicated on the plans, however, discussion with site personnel indicates that a leach field is present.

Portable toilets will be available for the demolition/construction workers, and waste will be transported to a treatment facility. Implementation of preferred alternative would result in no change to the wastewater discharge level of existing site utilities.

4.3.3. Solid Waste

4.3.3.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would not change solid waste generation rates.

4.3.3.2. *Alternative 1 - Preferred Alternative – Demolition/Restoration*

In the short-term, the preferred alternative would generate solid waste, primarily associated with building materials. Waste material that is not suitable for reuse or recycling would be disposed of appropriately. All solid waste would be handled in accordance with standard Hanscom AFB procedures. Any hazardous materials would be disposed of in accordance with state and federal regulations. The preferred alternative would not increase solid waste generation in the long term.

4.3.4. *Electricity***4.3.4.1. *No-Action Alternative***

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would result in no change to electricity generation rates.

4.3.4.2. *Alternative 1 - Preferred Alternative – Demolition/Restoration*

The preferred alternative would disconnect and remove all above and below ground electrical utilities. The preferred alternative would not result in any long term impacts.

4.3.5. *Telecommunications***4.3.5.1. *No-Action Alternative***

The no-action alternative would leave the facilities at Ipswich Antenna Test Site in-place. Implementation of the no-action alternative would result in no change in telecommunications service utilities.

4.3.5.2. *Alternative 1 - Preferred Alternative – Demolition/Restoration*

The preferred alternative would disconnect and permanently remove all above and below ground telecommunication service utilities. No disruption of telephone/communication service in the immediate area is expected.

4.3.6. Natural Gas

4.3.6.1. No-Action Alternative

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site. The no-action alternative would not change natural gas usage.

4.3.6.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The Ipswich Antenna Test Facility is not serviced by municipal or commercial natural gas providers. There are no gas lines or other gas appurtenances on the site. The preferred alternative would not change natural gas usage.

4.4. Transportation

4.4.1.1. No-Action Alternative

The no-action alternative would not impact transportation.

4.4.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

There would be a short-term increase in commercial vehicles related to demolition of the facilities. During the demolition phase there will be a temporary increase in truck traffic. A plan for minimizing the impact of traffic interruption to adjacent landowners during the demolition phase will be developed and coordinated with the Town of Ipswich Police Department. The image below was from <http://maps.google.com/>. Major roads that will be travelled include Little Neck Road, Northridge Road, Skytop Road, Plover Hill Road, and Clark Road. The demolition schedule and vehicle routes must be established and provided to residents in the area and the Ipswich Police Department to ensure the safety of residents and commuters, especially the roads that are densely populated.



A short-term increase in vehicle emissions, dust, and noise would be anticipated due to the increase in vehicle travel. Overall, the preferred action would result in no significant impact in transportation.

4.5. Noise

4.5.1.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Noise levels would not be impacted during implementation of the no-action alternative.

4.5.1.2. *Alternative 1 - Preferred Alternative – Demolition/Restoration*

The preferred alternative would create a temporary increase in noise due to construction activities and equipment. Activities include excavation, grading, paving, boring, and other associated activities with equipment such as bulldozers, pavers, graders, generators, cranes, and other noise generating heavy equipment. Temporary noise generation during the demolition will be coordinated to reduce or eliminate negative noise impacts to the nearby community. In the long term, the preferred alternative would not impact noise levels.

4.6. *Air Quality***4.6.1.1. *No-Action Alternative***

The no-action alternative would continue operations of the Ipswich Antenna Test Facility. Air Quality at the existing facility would remain constant as those associated with vehicular traffic and the minimal stationary source emissions from the building. Air quality would not be impacted during implementation of the no-action alternative.

4.6.1.2. *Alternative 1 - Preferred Alternative – Demolition/Restoration*

The preferred alternative may result in short-term localized air quality impacts. All demolition/construction vehicles and some equipment would produce emissions that could temporarily affect air quality. The demolition activities have the potential to generate fugitive dust. Material loading, transfer (gravel and topsoil), and grading also have the potential to generate fugitive dust. Dust would be controlled onsite by using water to wet down disturbed areas. Moreover, the number of vehicles and the duration of demolition required to perform the work would be limited by the Statement of Work prepared by the Air Force. The physical demolition work would occur during a 90 day time period during the weekday hours of 7:30 to 4:15. There are also mitigation clauses in the statement of work that would minimize disruption to adjacent land owners and will require the scheduling and coordination of any work that may create significant fumes, noise or dust 10 days in advance.

A General Conformity – Record of Non-Applicability for the preferred alternative was completed and general conformity under the Clean Air Act, Section 176(c), was evaluated for the preferred alternative according to the requirements of 40 CFR 93, Subpart B (see Section 8 for Record of Non-Applicability). The requirements of this rule are not applicable to the preferred alternative because the total direct and indirect emissions in tons per year (tpy) for the applicable pollutants of concern (i.e., NO_x and VOC) are estimated to be below the conformity threshold values established in 40 CFR 93.153(b).

In addition, the preferred alternative is not considered regionally significant under 40 CFR 93.153(i), as the estimated emissions, using reasonable and conservative assumptions, are significantly less than 10% of the regional emissions. Therefore, a conformity determination is not required.

4.7. Geology and Soils

4.7.1. Geology

4.7.1.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Test Site. There would be no geology impacts in the vicinity of the proposed site due to facility demolition. Geology would not be impacted during implementation of the no-action alternative.

4.7.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The preferred alternative would remove all buildings, foundations, roads and above/below ground utilities. All excavated areas would be backfilled with common fill, and all disturbed areas would be loamed and seeded. The preferred alternative's impact to surface topography and geology would be generally minimal because the proposed site has been previously disturbed.

4.7.2. Soils

4.7.2.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Test Facility. There would be no soil impacts due to facility demolition. Soil would not be impacted during implementation of the no-action alternative.

4.7.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The preferred alternative would require sub-surface excavation. All activities would follow BMPs regarding minimizing sedimentation and erosion during storm events. BMPs must follow the Hanscom AFB dig permit process and may use materials including, but not be limited to silt fence, hay bales, wire fence, geotextile fabric, and filter Stone. Controls would be left in place until vegetation has become established on disturbed soil, minimizing the impacts on soils. Soils would be minimally impacted during implementation of the preferred alternative because the soils were previously disturbed during the original construction.

4.8. Surface Water and Groundwater

4.8.1. Surface Water

4.8.1.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Facility. There would be no surface water impacts due to demolition. Surface water would not be impacted during implementation of the no-action alternative.

4.8.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The removal of all building and roads would result in a decrease in impervious surface. It is anticipated, therefore, that the implementation of the preferred alternative would result in a positive long-term impact to surface water. The decrease in impervious surface will result in a decrease of runoff.

4.8.2. Groundwater

4.8.2.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Facility. There would be no groundwater impacts due to facility demolition. Groundwater would not be impacted during implementation of the no-action alternative.

4.8.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

Given the low groundwater at the preferred alternative's site, there is a low likelihood that subsurface excavations will encounter groundwater. The preferred alternative would result in a net decrease in runoff and an increase in detention and/or groundwater recharge because of the decrease in impervious surface. This would result in a positive impact to groundwater at the site.

4.9. Floodplains

4.9.1.1. No-Action Alternative

There are no floodplain issues if the no-action alternative were taken.

4.9.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

According to FEMA, the subject site is not located within the 100-year flood zone or within the 500-year flood zone. Based on this information, the preferred alternative site would have no impacts on floodplains.

4.10. Biological Resources

4.10.1. Vegetation

4.10.1.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Facility. There would be no modification to the existing site, so vegetation would not be impacted during implementation of the no-action alternative.

4.10.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The hammer-shaped Annex encompasses approximately 65 acres of mixed open and forested land. The parcel is comprised of vegetated communities including forested uplands, a forested wetland, a scrub-shrub/wet meadow, and several maintained fields. Portions of these vegetated communities are regularly managed, including the areas adjacent to the buildings, the fields, and the scrub-shrub/wet meadow.

Demolition work activities will be limited to developed portions of the property. Existing vegetation is likely to be disturbed by track-mounted construction equipment. The short-term loss of some vegetation is not anticipated to substantially impact the biological community on, or in the vicinity of, the preferred alternative site. Once the preferred alternative is completed, the disturbed areas will be stabilized with soil and grass seed.

4.10.2. Wetlands

(See Section 11: Figure 2 for Site Map showing Wetlands)

4.10.2.1. No-Action Alternative

The no-action alternative would continue operations of the Ipswich Antenna Facility. There would be no wetlands impacts due to demolition. Wetlands would not be impacted during implementation of the no-action alternative.

4.10.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

There are known estuarine and marine wetland and freshwater forested/shrub wetland areas within the site's property boundary. The Town of Ipswich Wetlands Protection Bylaw and Rules and Regulations enforce a 15-foot no build zone along all wetlands and an additional 25 to 50-foot no disturbance zone extending landward from the 15-foot no build zone. Additionally, the 100 to 150-foot buffer zones to the wetlands are protected as wetland resources. Two probable protectable Wetland Resource Areas, BVW and Bank, are located within Ipswich Antenna Test Facility Annex; although these wetlands were not demarcated in the field. These areas are all characterized as a forested wetland and a scrub-shrub/wet meadow.

To satisfy the lease termination agreement, the telephone and fiber optic lines located in a wetland resource area must be removed, thus there would be a short-term impact to wetlands. The proposed action must be brought before the Ipswich Conservation Commission and they will issue an Order of Conditions applicable to the proposed work once approved. Pending approval of the Ipswich Conservation Commission, following the Order of Conditions and Hanscom AFB Best Management Practices (BMP) will greatly reduce any impact to wetlands.

Other mitigation strategies that could be employed through the Order of Conditions include: staking the wetland boundaries; clearing and grubbing during dry weather and in stages to allow for the stabilization of disturbed soils; soil watering and soil stockpiling for fugitive dust-control; berming along nearby water bodies to decrease the amount of potential sedimentation in adjacent water bodies; and use of soil erosion-control mats, silt fences, straw bales, diversion ditches, riprap channels, water bars, water spreaders, sediment basins and hardened stream crossings.

4.10.3. Wildlife

4.10.3.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. There would be no modification to the buildings or surrounding area at the existing site, so wildlife would not be impacted during implementation of the no-action alternative.

4.10.3.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The Ipswich Antenna Test Facility Annex contains two areas that provide important wildlife habitat; including food, shelter, nesting, migratory, overwintering, and breeding areas throughout the parcel. Although the testing area is regularly maintained, the Ipswich Antenna Test Facility Annex is somewhat isolated. While some brief displacement of small individual mammals, reptiles, and birds may occur, demolition activities are not expected to substantially affect any extant wildlife populations, which likely are accustomed to periodic intrusions. Following the restoration, it is possible that in the absence of human activity, the site may become more suitable wildlife habitat as it is allowed to revert to a more undeveloped state. Thus, a slight increase in wildlife diversity and/or abundance may be achieved, but no significant changes in wildlife population dynamics would be expected.

4.10.4. Threatened or Endangered Species

4.10.4.1. No-Action Alternative

The no-action alternative would leave the Ipswich Antenna Test Facility in-place. The no-action alternative would not impact threatened or endangered species.

4.10.4.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

There are no federally or state listed or proposed threatened or endangered species at the Ipswich Antenna Test Facility (HAFB 2011a). The preferred alternative would not impact threatened or endangered species.

4.11. Cultural Resources

4.11.1.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. Implementation of the no-action alternative would retain the Air Force as lessor of the property, with ongoing NHPA Section 110 responsibilities for archaeological site 19-ES-744.

4.11.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

On 19 October, 2011, the MHC notified Hanscom AFB that, in their opinion, the Ipswich Test Facility and the individual structures within the property do not meet the Criteria of Eligibility (36 CFR 60) for listing in the National Register of Historic Places. The preferred alternative would require the implementation of cultural resources site protection measures. Under Massachusetts waste ban laws the contractor will be required to separate demolition materials to be reused, recycled, treated, or disposed of in a special landfill, depending of the type of material. These materials include asphalt, concrete, brick, and wood. Only demolition debris/waste material not regulated by state waste-ban or federal hazardous waste restrictions can be disposed of in an existing commercial landfill. The Air Force sent the Archaeological Site Protection Plan for archaeological site 19-ES-744 to the Massachusetts MASHPO on November 23, 2011. The Archaeological Site Protection Plan, Site 19-ES-744 will be incorporated into the demolition contract to ensure that any potential impacts are avoided and constitutes a “no adverse effect” determination (36 CFR 800.5(b)). The MASHPO concurred with the Archaeological Protection Plan and the Air Force proposed action on December 5, 2011. Letter and Concurrence is appended Section 6.9, and a copy of the Plan narrative and map has been appended in Section 7.

4.12. Environmental Restoration Program / Hazardous Waste

4.12.1. Environmental Restoration Program (ERP)

4.12.1.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place. No sites listed in the ERP for Hanscom AFB are located on or near the site. The no-action alternative would not directly impact nor impede monitoring of any active ERP sites.

4.12.1.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

No sites listed in the ERP for Hanscom AFB are located on or near the existing site. The preferred alternative would not directly impact nor impede monitoring of any active ERP sites.

4.12.2. Hazardous Waste

4.12.2.1. No-Action Alternative

The no-action alternative would leave the facilities at Ipswich Antenna Test Facility in-place, and would not result in any impacts related to hazardous waste.

4.12.2.2. Alternative 1 - Preferred Alternative – Demolition/Restoration

The preferred alternative is not located in the vicinity or down gradient from any known hazardous waste sites. During demolition, hazardous materials and waste would likely be used and generated: equipment fuel, engine oil, hydraulic oil, grease, and other equipment operation and maintenance material. Any hazardous materials used during construction would be used, stored, transported, and disposed in accordance with base, military, state, and federal regulations.

Any demolition debris will be segregated from hazardous materials requiring special disposal in accordance with federal and state regulations, as well as Hanscom AFB policies. No adverse impacts resulting from demolition are anticipated.

Any Lead Based Paint (LBP) containing materials would be properly removed and disposed of. A Lead Based Paint Disposal Plan (LBPD) would be provided by the contractor, and no demolition activity that will disrupt LBP may occur until proper notifications have been processed in accordance with Commonwealth of Massachusetts regulations and all applicable codes.

Polychlorinated Biphenyl (PCB) containing materials would be properly removed and disposed. Polychlorinated Biphenyl Testing and Disposal Plan (PCBD) would be provided by the contractor, and no demolition activity that will disrupt PCB may occur until proper notifications have been processed in accordance with Commonwealth of Massachusetts regulations and all applicable codes.

Miscellaneous hazardous materials include, but are not limited to: white goods (i.e. refrigerator & air conditioner), HVAC equipment, thermostats, fire extinguishers, fluorescent light bulbs, electrical switches and ballasts, floor drains and sumps. These materials would be disposed of in accordance with Massachusetts Hazardous Waste regulations and Hanscom AFB policies. Any appliances or HVAC equipment containing refrigerant shall be reclaimed and disposed of in accordance with all applicable federal, local, state and USAF regulations.

Removal of asbestos containing material (ACM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos contractor must comply with all state and federal regulations. Overall, the following of all local, state, and federal regulations would result in no adverse impact in regards to hazardous wastes at the Ipswich Antenna Test Facility.

4.13. Cumulative Impacts

Cumulative impacts are those changes to the physical, biological, and socioeconomic environments that would result from the combination of construction, operation, and associated impacts of the preferred alternative when added to other past, present, and reasonably foreseeable actions.

Hanscom AFB proposes to return the Ipswich Antenna Test Facility to the original land owner and to remove all on-site buildings, structures, pavements, and utilities. This effort will result in the 65 acre site returning, as close as is reasonably possible to the site's pre-1941 development condition. This action (the proposed action) represents the first major development on the site in over 30 years. The most recently completed action to occur on this site was the construction of building S-003 in 1981. Given that the land will be returned to a private owner, it will be impossible for the Air Force to track any future actions and resulting impacts with any certainty. The Air Force has no future development plans on the property. It is private property that will be available under local and/or state bylaws/laws to be developed by the private property owner once the Air Force terminates the current lease. The Archaeological Site Protection Plan, Site 19-ES-744, Site Protection Measures encourages the property owner to consult with the MHC on future activities such as excavation or grading that could affect the identified archaeological site and other areas of the property that are archaeologically sensitive. As a result, there are no cumulative impacts anticipated when the preferred alternative is combined with the past, present, and reasonably foreseeable actions.

Section 5. Measures To Reduce Potential For Impact

While some impacts to the natural and human environment may occur during completion of the preferred alternative these impacts are minor and are not atypical compared with other routine demolition projects. Commonly applied Best Management Practices and other measures identified below further reduce the likelihood that these activities would have a significant impact on the environment.

Parameter:	BMP or Other Measure to Reduce Impact:
Transportation	Transportation of heavy trucks would only be allowed during normal business hours to avoid the disturbance of surrounding residential areas.
Utilities	Existing utility alignments will be identified through markings (similar to “Dig Safe”) prior to any excavation to prevent damage to existing infrastructure.
Solid Waste	Solid waste management would be in compliance with Hanscom AFB recycling policies to minimize the amount of solid waste generated.
Air Quality	All equipment and vehicles used during construction would be maintained in good operating condition so that exhaust emissions are minimized. Dust will be controlled on-site by using water to wet down disturbed areas.
Surface Water	Implement proper sediment and erosion control measures.
Wetlands	Comply with the Massachusetts Wetlands Protection Act
Vegetation	Identify and protect landscape trees and shrubs that will not be removed. Seed disturbed soil areas to stabilize them.
Cultural Resources	The Archaeological Site Protection Plan, Site 19-ES-744 must be incorporated into the demolition contract. See Section 7.
Hazardous Waste	All hazardous materials used or encountered during construction, demolition, or operation would be handled and disposed in accordance with Hanscom AFB policies and protocols and all applicable state and federal regulations. Removal of asbestos containing building materials (ACBM) must be done by a licensed asbestos contractor. Additionally, full containment and a licensed project monitor may be required. The asbestos abatement contractor must comply with all state and federal regulations.

Section 6. Consultation

6.1. Property Owner's Lawyer's Letter to Hansom AFB, July 23 2009

DONALD M. GREENOUGH, ATTORNEY
Commercial Law and Estate Planning

57 South Main Street
P.O. Box 790
Ipswich, MA 01938
Phone 978-356-1040
Fax 978-356-1042
GreenoughLaw@verizon.net

July 23rd, 2009

Mr. Dennis Cronin
Facility Management Specialist
Hanscom Air Force Base
66 MSG/CECO
120 Grenier Street
Hanscom AFB, MA 01731-1910

Re: Land Lease #DACA33-1-91-19
Great Neck, Ipswich, MA

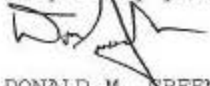
Dear Dennis:

The Town of Ipswich has completed its review of the Ipswich property that is the subject of the above Lease. I have enclosed a copy of the Town's letter regarding its continued interest in acquiring the property prior to the termination of the Lease.

The Town agrees with my clients, The Proprietors of Great Neck, Inc., that if it is the owner of the property at the time of the termination of the Lease, it would require that all buildings, structures and other improvements to the land be removed by the tenant and that the land be restored to its natural condition prior to the surrender of the premises. All utilities now servicing the site should be capped at the edge of the public way.

I hope that the agreement between the Town and my client will simplify your planning and budget process as you prepare for the closure date of September 15, 2011.

Very truly yours,



DONALD M. GREENOUGH

amc
Enc.
File:8675A
cc: Client



TOWN OF IPSWICH
IPSWICH, MASSACHUSETTS 01938

TOWN HALL
25 GREEN STREET

OPEN SPACE PROGRAM

(978) 356-6607 OFFICE
(978) 356-6682 FAX

COPY

June 16, 2009

Attorney Donald M. Greenough
P.O. Box 790
57 South Main Street
Ipswich, MA 01938-0790

Dear Don:

At an executive session meeting of the Board on Monday night, the Selectmen voted to express the Town of Ipswich's continued interest in acquiring the Proprietors' parcel on Great Neck (Map 15D Lot 80), and also to state that the Town has no specific interest in retaining any of the current buildings or utilities on the property.

Additionally, the Board voted to approve funding to hire a consultant to complete a limited restricted appraisal of the development value of the Proprietors' property, in order to assist with the Town's planning efforts for this potential acquisition. I will be in touch with Mr. Balch and Mr. Mulholland to request permission for the appraisal to proceed over the summer.

On behalf of the Board of Selectmen and the Open Space Committee, I look forward to working with the Proprietors to move this project forward.

Sincerely,

Kristen C. Grubbs
Open Space Program Manager

6.2. Hanscom AFB Letter to MHC, 22 April 2011**DEPARTMENT OF THE AIR FORCE**
HEADQUARTERS 66th AIR BASE GROUP (AFMC)
HANSCOM AIR FORCE BASE MASSACHUSETTS

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

22 April 2011

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

The Ipswich Antenna Test Facility encompasses 65 acres located in the Great Neck area of the Town of Ipswich, Massachusetts. The property overlooks Ipswich Bay and Plum Island and includes two hills, one each on the north and south sides of the property. The hills are of similar elevation separated by a low lying valley. The valley contains wooded areas but is primarily wetlands and/or salt water marsh.

The facility was first developed by M.I.T. in the 1940's before being leased to the Air Force at the end of World War II. The entire parcel (attach 1) contains seven buildings and five structures, most of which are contained in the operations area. Two of the buildings and one of the structures are temporary. The site is accessed from the north by Skytop Road, and is surrounded by residential properties.

The facility was surveyed and evaluated for National Register eligibility in 2010 by the Public Archeology Laboratory. This evaluation, which is on file in your office, determined that the Ipswich Antenna Test Facility is eligible for listing on the National Register. Although the structures were built by the Air Force the entire site is leased (attach 2) from the Proprietors of Great Neck, Inc.

In 2005 the Base Realignment & Closure recommendations were approved by the Secretary of Defense. These recommendations included the relocation of the Ipswich Antenna Test Facility activities to Wright Patterson AFB, Dayton, Ohio by September 2011. Once the relocation is complete the Air Force will terminate the lease. Based on the conditions of the lease and the express desire of the owner (attach 3); all the structures on the property are to be removed (demolished) and the site restored to the condition it was in at the time the lease was originally executed.

(PRIVACY ACT OF 1974 APPLIES)

This undertaking, the termination of the lease and subsequent demolition of potentially eligible properties, may constitute an adverse effect. The area of potential effects is the 65 acre site as depicted on attachment 1. Appropriate consulting parties will include: the Massachusetts SHPO, the Proprietors of Great Neck, Inc., the Town of Ipswich, the public and the Air Force.

With your concurrence, the Air Force wishes to initiate the consultation process with the appropriate consulting parties. The consultation will discuss and consider their views, in regards to this undertaking.

Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

Sincerely,



DONALD C. MORRIS, PE
Cultural Resources Manager

Attachments:

1. Site Plan
2. Land Lease
3. Donald M. Greenough, Memo

6.3. MHC Letter to Hanscom AFB, May 25 2011



The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

May 25, 2011

Donald C. Morris
Cultural Resources Manager
Hanscom Air Force Base
66 Air Base Group/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

RE: Ipswich Test Facility (Eagle Hill Antenna Facility) Closure and Relocation Project, Ipswich, MA.
MHC #RC.29616.

Dear Mr. Morris:

Staff of the Massachusetts Historical Commission (MHC), office of the State Historic Preservation Officer, have reviewed the initial notification for the project referenced above and the MHC's files.

An archaeological locational survey was conducted at the facility and reported in *Phase I Archaeological Survey, Sagamore Hill Antenna Complex, Hamilton, MA, and Eagle Hill Antenna Facility, Ipswich, MA*, prepared by Parsons Engineering Science, Inc. in 2002, and received by the MHC on March 10, 2011.

The MHC's review of the 2002 report indicates that the wide sampling interval and the generally shallow testing may not have been a sufficient methodology to locate and identify expected archaeological resources within the boundaries of the facility. One ancient period archaeological site 19-ES-744 was identified during the survey. The site includes a deposit of a variety of rhyolite lithic debitage and possibly shell. The preliminary data suggests that the site has the potential to be a significant archaeological site.

The MHC requests that a site examination archaeological survey (950 CMR 70) be conducted for the identified site. Supplemental archaeological testing should be conducted also to sample archaeologically sensitive areas within the facility at a narrower interval and with deeper excavation. The survey should be conducted by a qualified and regionally experienced consulting archaeological firm under a State Archaeologist's permit, which will also allow the MHC to review and comment on the scope (36 CFR 800.4) and to comment on the results.

If National Register-eligible archaeological sites are identified, further consultation should occur to develop and implement an archaeological site protection plan.

The MHC requires additional information in order to review this property's potential eligibility for listing in the National Register of Historic Places. Please submit a photograph of Transmitter Building S-15, any information available regarding the architect(s), designers(s) or firm(s) involved in the design and construction of the complex over time, as well as any information available regarding the general contractors that may have been involved.

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800) and MGL c. 9, ss. 26-27C (950 CMR 70). Please contact Edward L. Bell, Senior Archaeologist, or Brandee Loughlin, Preservation Planner, if you have any questions or need more information at this time.

Sincerely,



Brana Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Proprietors of Great Neck Inc.
Ipswich Historical Commission

6.4. Hanscom AFB Letter to MHC, 9 August 2011

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66th AIR BASE GROUP (AFMC)
HANSCOM AIR FORCE BASE MASSACHUSETTS

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

9 August 2011

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

Your office recently requested additional information concerning the Ipswich Test Facility Transmitter Building S-15. I am providing photographs and construction drawings of S-15 to assist in your review of this property's potential eligibility for listing in the National Register of Historic Places.

I have requested additional information from the Hanscom AFB History Office and other sources, as more information becomes available I will provide it to you.

Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Donald C. Morris".

DONALD C. MORRIS, PE
Cultural Resources Manager

Attachment: S-15 drawings (7) & S-15 Photographs (4)

6.5. Hanscom AFB Letter to MHC, 30 August 2011**DEPARTMENT OF THE AIR FORCE**HEADQUARTERS 66th AIR BASE GROUP (AFMC)
HANSCOM AIR FORCE BASE MASSACHUSETTS

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

30 August 2011

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

The Ipswich Antenna Test Facility encompasses 65 acres located in the Great Neck area of the Town of Ipswich, Massachusetts. In 2005 the Base Realignment & Closure recommendations were approved by the Secretary of Defense. These recommendations included the relocation of the Ipswich Antenna Test Facility activities to Wright Patterson AFB, Dayton, Ohio by September 2011.

The facility was surveyed and evaluated for National Register eligibility in 2010 by the Public Archeology Laboratory. This evaluation, which is on file in your office, determined that the Ipswich Antenna Test Facility is eligible for listing on the National Register. Although the structures were built by the Air Force the entire site is leased from the Proprietors of Great Neck, Inc.

Once the relocation is complete the Air Force will terminate the lease. Based on the conditions of the lease and the express desire of the owner all the structures on the property are to be removed (demolished) and the site restored to the condition it was in at the time the lease was originally executed.

In April, of this year, I requested your review of the proposed undertaking, the termination of the lease and subsequent demolition of potentially eligible properties that may constitute an adverse effect. The area of potential effects is the 65 acre site and appropriate consulting parties will include: the Massachusetts SHPO, the Proprietors of Great Neck, Inc., the Town of Ipswich, the public and the Air Force.

On 29 July, 2011 the Hanscom AFB Civil Engineer met, in Ipswich, with property abutters, Ipswich residents, Ipswich town officials, a Congressional staffer and a State Representative. All these parties are concerned about the site safety implications and are particularly concerned

(PRIVACY ACT OF 1974 APPLIES)

about the condition of the former Barracks, Building #T-2, which the local residents see as an attractive nuisance. This is a 1½-story, front gable, rectangular building located, outside the perimeter fence. It is a typical military barracks building that has been reclad with plywood and fitted with replacement windows.

The consensus of the 29 July meeting was that Hanscom should make all efforts to remove the former Barracks, Building#T2 as a priority project due to local safety and security concerns. The Base Civil Engineer agreed to accelerate the demolition schedule for this one structure pending completion of SHPO coordination.

Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

Sincerely,

A handwritten signature in dark ink, appearing to read "Donald C. Morris". The signature is fluid and cursive, with the first name "Donald" being the most prominent.

DONALD C. MORRIS, PE
Cultural Resources Manager

6.6. MHC Letter to Hanscom AFB, 12 September 2011**The Commonwealth of Massachusetts**

William Francis Galvin, Secretary of the Commonwealth

September 12, 2011 Massachusetts Historical Commission

Donald C. Morris
Cultural Resources Manager
Hanscom Air Force Base
66 Air Base Group/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

RE: Ipswich Test Facility (Eagle Hill Antenna Facility) Closure and Relocation Project, Ipswich, MA.
MHC #RC.29616.

Dear Mr. Morris:

Thank you for your submission regarding the above referenced project, received August 12, 2011.

The MHC is in receipt of photographs and construction drawings of S-15 to aid in our evaluation of the property's potential eligibility for listing in the National Register of Historic Places. The MHC understands that you are awaiting additional information from the Hanscom AFB History Office.

The MHC looks forward to receipt of the additional information requested in our May 25, 2011 letter (enclosed).

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800) and MGL c. 9, ss. 26-27C (950 CMR 70). Please contact Edward L. Bell, Senior Archaeologist, or Brandee Loughlin, Preservation Planner, if you have any questions or need more information at this time.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brona Simon".

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

Enclosure: MHC May 25, 2011 Comments

xc w/out enclosure:
Proprietors of Great Neck Inc.
Ipswich Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

6.7. Hanscom AFB Letter to MHC, 16 September 2011**DEPARTMENT OF THE AIR FORCE**HEADQUARTERS 66th AIR BASE GROUP (AFMC)
HANSCOM AIR FORCE BASE MASSACHUSETTS

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

16 September 2011

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

We acknowledge your letter dated 12 September 2011 in response to our 9 August 2011 submittal of photos and drawings for the Ipswich Test Facility. The Hanscom AFB History Office has no additional information. We have received the last of the additional information concerning the Ipswich Test Facility Transmitter Building S-15 from Ms. Virginia H. Adams, Senior Architectural Historian, PAL. Her report and references are below in italics:

The architectural history of the Ipswich Electromagnetic Measurement Facility may be summarized as an evolution from World War II-era temporary construction to permanent facilities constructed in service of Cold War-era research. Within all construction periods, the design emphasis has been on providing efficient, purpose-built laboratory space for highly technical and specialized research programs.

The Massachusetts Institute of Technology's (MIT) Radiation Laboratory oversaw construction of the first buildings and structures (10 total) at the facility between 1943 and 1945. PAL was able to locate original plans for only two of these, both of which were authored by McCreery & Theriault Building Construction: the Model Plane Control Tower (building number unknown) (McCreery & Theriault 1945) and the Barracks (Building T-2) (McCreery & Theriault 1944). PAL identified later, Air Force-era plans for an additional three MIT-era properties: the Laboratory Building, (Building T-1) (Hammond 1951); Reflection Measurement Building (Building T-13) (Marshall 1953); and the Reflection Measurement Building, (Building S-13) (Marshall 1953), all of which may also have been designed by McCreery & Theriault. This architectural and engineering firm from Boston, Massachusetts also designed the Radiation Laboratory's celebrated Building 20 (18 Vassar Street) on MIT's main campus in Cambridge, which was demolished in 1998 (Heywood 1998). Construction work on the Building 20 project was concurrent with that at Ipswich. Plans for the MIT buildings at Ipswich show that the structures were of a uniformly temporary nature and designed for expedient construction and for the efficient accommodation of necessary technical and scientific equipment. Given the highly technical and secret nature of these World War II-era facilities, it is likely that MIT personnel contributed substantially to the design of these buildings. They typically were constructed with flat or shed roofs sheathed in tar paper, wood balloon frame structural systems clad in asbestos shingles or tar paper, and concrete block or concrete frame foundations. Only the Barracks survive from this period of construction.

(PRIVACY ACT OF 1974 APPLIES)

Following the Air Force's takeover of the facility in 1946, there has been a consistent and ongoing conversion of the original temporary buildings to permanent construction. As with the World War II-era buildings, PAL's research could not identify architects or engineers for all of the buildings and structures constructed during Air Force control. Available plans indicate that the Air did utilize a variety of private architectural and engineering firms to design new permanent facilities at Ipswich, although it is not known whether this use of outside design services was universally applied for the existing buildings and structures. For example, The Laboratory Building (Building T-1) was replaced with the new Air Force Research and Technology Station (Building S-3), in 1981. The new permanent facility was designed in the late 1970s by Schoenfeld Associates, Incorporated of Boston, Massachusetts, a combined architectural, engineering, and environmental firm who also designed the VOLOIR Control Building (Building T-8) at the same time (Schoenfeld Associates, Incorporated 1978a, 1978b). PAL has not been able to locate any information on the historical activities or significance of Schoenfeld Associates.

The history of the Transmitter Building (Building T-3) is consistent with general pattern outlined above. The earliest available plans for the building, which date to 1953, show that this building utilized typical temporary construction techniques for the time. One unique aspect of the building's architectural treatment was the use of a treated canvas scrim in place of wall cladding along the north elevation of the transmitter array. This provided shelter for the transmitters but also provided a signal-transparent material appropriate to the building's purpose (Anonymous 1953). The new Transmitter Building (Building S-15), completed in 1956, was built with design services from Congdon, Gurney & Towle, Incorporated of Boston (Congdon, Gurney & Towle 1955). This Boston, Massachusetts engineering consulting firm was active beginning in the 1950s and acquired by Vanasse, Hangen & Brustlin (VHB) in 1985 (Boston Globe 1989; Salem News 2009). Like other Air Force-era construction projects, in this building more permanent and robust masonry construction supplanted the earlier temporary wood construction. PAL has not been able to locate any additional information on the history or significance of Congdon, Gurney & Towle.

References

Anonymous.

1953 Transmitter Building T-3. Ipswich Antenna Station, Ipswich, Mass. Record Drawing. February. Department of the Air Force, Air Force Cambridge Research Center, Cambridge, MA.

Boston Globe

1989 Harold Gurney, 83, Ex-President of Boston Firm. Boston Globe April 9:80

Congdon, Gurney & Towle, Incorporated

1955 New Transmitter Building, Elevations & Sections, Ipswich Antenna Station, Ipswich, Mass. Drawing No. 35-19-01. September 8. Congdon, Gurney & Towle, Incorporated, Boston, MA for the Department of the Air Force, Air Force Cambridge Research Center.

Hammond, William I.

1951 Laboratory Bldg. T-1. First Floor Plan, Ipswich, Mass. File No. IAS-9. April 2. Air Installations Office, United States Air Force, Cambridge Research Laboratories, Cambridge, MA.

Haywood, Nancy

1998 Celebrating Building 20: History. Electronic document, available on line at

<http://libraries.mit.edu/archives/mithistory/building20/history.html>

<<http://libraries.mit.edu/archives/mithistory/building20/history.html>>. MIT Institute Archives and Special Collections.

Marshall, D.R.

1953 Reflection Measurement Building, Ipswich, Massachusetts. Project No. CA3-34. June 8. Department of the Air Force, Air Force Cambridge Research Center, Cambridge, MA.

McCreery & Theriault

1944 *Women's Dormitory and Eating Facilities. Expansion of Ipswich Field Station, Radiation Laboratory –MIT, Cambridge, Mass. Plan No. 4. August 3. McCreery & Theriault, Boston, MA.*

1945 *Model Plane Control Tower, Ipswich Field Station, Radiation laboratory, Massachusetts Institute of Technology, Cambridge, MA. Plan No. 4. July 16. McCreery & Theriault, Boston, MA.*

Salem News

2009 *Louis S. Cerullo, 70. Salem News January 28.*

Schoenfeld Associates, Incorporated

1978a *Architectural – First Floor Plan, Ipswich, Massachusetts. Hanscom Air Force Base, Antenna Test Facility – Ipswich Site. File No. 7698-457. September 1. Schoenfeld Associates, Inc., Boston, MA for the Department of the Army, New York District, Corps of Engineers, New York, NY.*

1978b *Architectural, VOLOIR Control Building. Hanscom Air Force Base, Antenna Test Facility-Ipswich Site. File No. 7698-477. September 1. Schoenfeld Associates, Incorporated, Architects – Engineers, Boston, MA for the Department of the Army, New York District, Corps of Engineers, New York, NY.*

As you know from previous correspondence, the Air Force is required to remove all buildings and infrastructure from this leased site as soon as possible. We respectfully request your timely evaluation of the information and concur with our plans to return the site to its condition prior to the Air Force use. Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

Sincerely,



DONALD C. MORRIS, PE
Cultural Resources Manager

6.8. MHC Letter to Hanscom AFB, 19 October 2011

October 19, 2011 **The Commonwealth of Massachusetts**
William Francis Galvin, Secretary of the Commonwealth
Donald C. Morris Massachusetts Historical Commission
Cultural Resources Manager
Hanscom Air Force Base
66 Air Base Group/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

RE: Ipswich Test Facility (Eagle Hill Antenna Facility) Demolition of Barracks Building #T-2 Ipswich, MA.
MHC #RC.29616.

Dear Mr. Morris:

Thank you for your submission regarding the above referenced project, received September 2 and 20, 2011. Your letter indicates that demolition of Barracks Building #T-2 is now proposed on an accelerated schedule.

After review of the information that you submitted, it is the opinion of the MHC that the Ipswich Test Facility a/k/a/ Eagle Hill Antenna Facility, historically known as the Ipswich Electromagnetics Measurement Facility, and the individual structures within the property, do not meet the Criteria of Eligibility (36 CFR 60) for listing in the National Register of Historic Places.

In your discussion with the MHC's staff, the MHC understands that it may not be feasible to conduct archaeological investigations of the leased property prior to the closure of the facilities. The MHC recommends that a plan be developed by the USAF in consultation with the MHC to avoid and minimize ground impacts to the property during the demolition activities. For example, the boundaries of the ancient period archaeological site 19-ES-744 (see *Phase I Archaeological Survey, Sagamore Hill Antenna Complex, Hamilton, MA, and Eagle Hill Antenna Facility, Ipswich, MA*, Parsons Engineering Science, Inc. 2002, page 6-9) could be shown on the project plans as a "sensitive resource area," with a note to a plan for ground protection. The ground area around the structures proposed for removal could be protected from impact by using used plywood sheets, etc. during the demolition. The MHC encourages the Proprietors of Great Neck Inc., to consult with the MHC regarding future activities such as excavation or grading that could affect the identified archaeological site and other areas of the property that are archaeologically sensitive.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966 as amended (36 CFR 800) and MGL c. 9, ss. 26-27C. Please contact Brandee Loughlin or Edward L. Bell if you have any questions.

Sincerely,

A handwritten signature in cursive script, reading "Brona Simon".

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc:
Proprietors of Great Neck Inc.
Ipswich Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

6.9. Hanscom AFB Letter to MHC and MHC Concurrence, 5 December 2011

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 66th AIR BASE GROUP (AFMG)
HANSCOM AIR FORCE BASE MASSACHUSETTS

RECEIVED

NOV 25 2011

MASS. HIST. COMM

29616

23 November 2011

Mr. Donald C. Morris, PE
66 ABG/CEV
120 Grenier Street
Hanscom AFB, MA 01731-1910

Ms. Brona Simon
Commonwealth of Massachusetts
Executive Director
Massachusetts Historical Commission
220 Morrissey Boulevard
Boston, MA 02125

Dear Ms. Simon

In response to your letter dated 19 October 2011 I am providing the Archaeological Protection Plan w/notes that was recommended we develop in consultation with you. This plan will ensure that ground impacts to archaeological site 19-ES-744 are avoided and minimized. Following your concurrence, the plan will be incorporated into the demolition contract.

As you know from previous correspondence, the Air Force is required to remove all buildings and infrastructure from this leased site as soon as possible. We respectfully request your timely evaluation of the information and concur with our plans to return the site to its condition prior to the Air Force use. Please contact me at 781-377-2475 or at donald.morris@hanscom.af.mil if you require additional information.

CONCURRENCE: *Brona Simon*
12/5/11
BRONA SIMON
STATE HISTORIC
PRESERVATION OFFICER
MASSACHUSETTS
HISTORICAL COMMISSION

Sincerely,

DONALD C. MORRIS, PE
Cultural Resources Manager

cc:

Ms. Virginia Adams, Public Archaeology Laboratory w/o attach

(PRIVACY ACT OF 1974 APPLIES)

Section 7. Archaeological Protection Plan

Archaeological Site Protection Plan

Site 19-ES-744

Ipswich Antenna Test Facility Property Restoration

Ipswich, Massachusetts

As requested by the Massachusetts Historical Commission (MHC) to assist in the United States Air Force (USAF) compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and Massachusetts General Laws Chapter 9, Sections 26-27C (950 CMR 70-71), this protection plan has been developed for the archaeological site 19-ES-744 located on the Ipswich Antenna Test Facility (a/k/a Eagle Hill Antenna Facility) in Ipswich, Massachusetts. The Ipswich Antenna Test Facility is located on property that is currently leased from the Proprietors of Great Neck, Inc. The facility's activities are being transferred to Wright Patterson AFB in Dayton, Ohio and once the relocation is complete the lease in Ipswich will be terminated. As part of this lease termination, all of the structures on the property are to be removed (demolished) and the grounds restored to their condition at the time the lease was originally executed.

In 2002 a pre-contact period Native American Site (MHC Inventory #19-ES-744) was identified within the Ipswich Antenna Test Facility property during a Phase I archaeological survey conducted by Parson Engineering Science, Inc. The survey determined site boundaries, and in May 2011 the MHC commented that preliminary survey data suggests that the site has the potential to be a significant archaeological site. The MHC requested that a site examination archaeological survey (950 CMR 70) be conducted to recover archaeological data that would be used to determine the site's eligibility for listing on the National Register of Historic Places in accordance with the Criteria of Eligibility (36 CFR 60). The MHC understands, however, that

additional archaeological investigations of the site on leased property prior to the closure of the facility are not feasible. The Archaeological Site Protection Plan will be implemented to avoid and minimize ground impacts to the property during the demolition and removal of buildings and associated structures.

The following site protection measures shall be implemented within the boundaries of the archaeological site “sensitive resource area” and shall be implemented prior to and during contractor construction work for the demolition and removal of all buildings, paved parking lots and roads, fences, underground utilities, etc.

1. A qualified professional surveyor will stake the boundaries of the archaeological site “sensitive resource area” with wooden surveyor stakes with blaze orange spray-paint tops and flagging tape. The boundaries will be staked in accordance with the “sensitive resource area” depicted on the USAF Sensitive Resource Area Plan dated November 9, 2011, see attached.
2. The demolition will be limited to the footprint of the buildings, the surrounding paved parking and road areas, and the underground utilities. All demolition activity will be limited to these previously disturbed areas. The ground area adjacent to the previously disturbed areas shall be protected using plywood sheets (or similar) during demolition.
3. Suitable language will be included in contract and construction documents to prevent inadvertent impacts to the ground surface outside of the previously disturbed areas within the designated “sensitive resource area” and to other undisturbed areas of the property that may be archaeologically sensitive.
 - a. Construction personnel and contractors will be informed verbally and in writing that the staked area is a “sensitive resource area” where the ground surfaces around the structures proposed for removal are to be protected as indicated above.
 - b. Construction personnel and contractors will neither perform nor permit any tree cutting or tree stumping, construction, excavation, grading, filling, dumping, or the storage or staging of equipment, vehicles, or supplies within the “sensitive resource area” on unpaved, undisturbed ground surfaces within the staked “sensitive resource area.”

4. No unauthorized artifact collecting or archaeological investigations will be permitted within the staked “sensitive resource area” or in other areas of the property without a state archaeological permit (950 CMT 70) issued by the Massachusetts State Archaeologist/MHC.
5. Following demolition and removal activities, the site will be restored to the condition it was in at the time the lease was originally executed. The Proprietors of Great Neck Inc. are encouraged to consult with the MHC on future activities such as excavation or grading that could affect the identified archaeological site and other areas of the property that are archaeologically sensitive.
6. The site boundary stakes should be removed upon completion of the project.

The USAF is responsible for ensuring that the above specifications for site protection are carried out by the project construction personnel and contractors.



Section 8. General Conformity- Record of Non-Applicability

GENERAL CONFORMITY - RECORD OF NON-APPLICABILITY

Project / Action Name:	Demolition/Restoration of the Ipswich Antenna Test Facility
Begin Date: 8/2012	End Date: 2/2013

General Conformity under the Clean Air Act, Section 176(c), has been evaluated for the project described above according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to this proposed project/action because the total direct and indirect emissions in tons per year (tpy) for the applicable pollutants of concern (i.e., NO_x and VOC) for the year showing the highest emissions have been estimated to be:

2012 Emission Summary	VOC (tpy)	NO _x (tpy)
Construction Phase	0.232	1.122
Operational Phase	0.002	0.053
TOTAL	0.234	1.175

These emission rates are below the conformity threshold values established in 40 CFR 93.153(b) of:

Conformity Threshold Rate:	
VOC	50 tpy
NO _x	100 tpy

In addition, the project/action is not considered regionally significant under 40 CFR 93.153(i), as the estimated emissions, using reasonable and conservative assumptions, are significantly less than 10% of the regional emissions. Therefore, a conformity determination is not required.

Supporting documentation and emissions estimates for the project/action (i.e., construction/renovation and operational phases are attached and included in the NEPA documentation).

Signed:



Date:

17 MAY 2012

SUPPORTING DOCUMENTATION

Description of Project / Action:

The proposed action is to deconstruct/restore the Ipswich Antenna Testing Facility, located at 16 Skytop Road, Ipswich, MA in accordance with all applicable Federal, Local, State and USAF Codes and Standards. The proposed action will ensure all hazardous material is removed in accordance with the State of Massachusetts, Hanscom AFB, and Occupational Safety and Health Administration (OSHA) regulations. It also includes complete decommissioning and proper disposal of buildings, structures, utilities and oil storage tanks. The proposed action includes the demolition of six buildings and small sheds/enclosures totaling less than 13,000 SF with the entire project area totaling 65-acres.

The proposed action is to demolish the following buildings and structures: Building S-3 (Antenna Test Facility – Main Building, 7,000 SF); Building T-2 (Barracks 2,569 SF); Building S-5 (Quonset hut, 995 SF); Metal Shed, 80 SF; Garage Building, 950 SF; Emergency Generator Building, 130 SF; Hydrant Enclosure, 30 SF; Antenna Towers; Wood Shed 49 SF; and Building S-15 (Transmitter Shack, 720 SF).

Restoration activities include removal of subsurface utilities, removal of existing sidewalks and foundations, and the application of screened loam and seed to all disturbed areas. Former building and structure locations are intended to be maintained in the future as grassed areas.

Methodology:

The General Conformity Applicability Analysis was conducted using the methodology outlined in the appropriate Department of Defense general conformity guidance documents (USAF, 2003). A record of Non-Applicability (RONA) was prepared since the NO_x and VOC emissions are less than the General Conformity *de minimus* thresholds and are not considered to be regionally significant.

Calculations were performed using an excel spreadsheet that used EPA approved emission factors. The spreadsheet quantified emissions from site demolition, grading, heavy equipment used for all related demolition activities, and POVs used to transport workers to/from the site for the estimated duration of the project. Since this project involves demolition of existing structures with no future structures planned, no stationary emission sources are anticipated for post demolition conditions. Emissions from previous stationary sources were quantified by using fuel oil consumption from the last full year of use (CY 2010). Buildings S-3, S-5, and S-15 were heated by #2 fuel oil fired boilers and pre demolition emissions are estimated based on CY2010 fuel usage records. Emissions from the 100 kW emergency generator were calculated based on fuel throughput using Ultra low sulfur diesel fuel. This was performed by using an Excel spreadsheet utilizing information from EPA's AP42 emission factor document (USEPA, 1995).

Since it is unclear what staffing levels for these buildings was in the recent past, no emissions reductions are claimed from discontinuing commuter trips of former workers.

Emission reductions from former stationary sources (boilers at Building S-3, S-5, and S-15) will continue beyond the project period.

Input Parameters and Assumptions:

Project-specific parameters were used or assumed for the proposed project. Although the exact means and methods of demolition would be the responsibility of the contractor, it was necessary to make certain assumptions, such as the quantity and type of vehicles, to estimate emissions. When possible, conservative assumptions were made.

Construction Activities:

The entire project area would be approximately 65 acres including the area currently occupied by Building S-3, Building S-5, Building S-15, Building T-2, the Metal Shed, the Garage Building, the Emergency Generator Building, the Hydrant Enclosure, the Wood Shed, and the Antenna Towers. This demolition project, including removal of subsurface utilities, hazardous material abatement and site restoration, was assumed to be 180 days in duration. Other parameters and assumptions were made for the following related activities:

Heavy Construction Equipment

This includes emissions from heavy construction equipment involved in demolition, utility removal and site restoration activities, excavation, foundation removal soil movement, and debris hauling. Although estimation is required, estimates of type and number of equipment is conservative based on footprint of the overall project and relatively routine demolition activities, not requiring phasing or temporary facilities. Equipment was conservatively assumed to run for 8 hours per day for the full 126 working days of the project.

Construction Employee Travel

It was estimated that an average of 16 contractors would be required to be on-site every day, five days a week for the full project duration of 180 days. No overtime or off shift work was assumed so 21 working days per month for six months (126 total working days) was assumed. Although the employees may not be the same throughout the project (i.e. hazardous material abatement contractors will not be the same employees used during demolition or site restoration activities) little to no overlap was assumed. The assumption of 16 employees on site at any given time is a reasonably expected level of activity. To obtain worst case emissions, no carpooling or public transportation was assumed (i.e., every contractor drove individual POV). It was assumed that half of the contractors drove gasoline engine passenger vehicles, while the other half drove gasoline engine trucks (GVW > 6,000 lbs).

Operational Activities:**Stationary Emission Sources**

All existing stationary emission sources (i.e. heating units) will be removed during demolition activities. To obtain worst case pre-demolition emissions, no low NO_x controls were assumed. Calculated emission reductions from Buildings S-3, S-5, and S-15 are based on actual fuel oil usage from 2010. Building S-3 used 3,123 gallons, Building S-5 used 303 gallons, and Building S-5 used 385 gallons in 2010.

Results:

Estimated Calculations Based on the estimated VOC and NO_x emissions, using conservative and reasonable assumptions, the total project emissions are well below the regulatory thresholds of 50 tpy and 100 tpy, respectively.

Year	Phase	Emissions				
		VOC	NO _x	CO	SO ₂	PM
2012	Construction	0.232	1.122	3.627	0.729	0.579
	Operational (net)	0.002	0.053	0.013	0.272	0.005
	Total 2012 Emissions	0.234	1.175	3.639	1.001	0.584
2013	Construction	0.111	0.554	1.726	0.229	0.149
	Operational (net)	-0.002	-0.053	-0.013	-0.272	-0.005
	Total 2013 Emissions	0.107	0.501	1.714	-0.041	0.144
2014	Construction	0.000	0.000	0.000	0.000	0.000
	Operational (net)	-0.002	-0.053	-0.013	-0.272	-0.005
	Total 2014 Emissions	-0.002	-0.053	-0.013	-0.272	-0.005

Emissions will be highest during calendar year 2012; therefore, those emissions were reported in the Record of Non-Applicability and compared to the general conformity annual thresholds.

Regional Significance

An action is regionally significant if the total direct and indirect emissions of an individual pollutant amount to 10 percent or more of the non-attainment area emissions of that pollutant. Table E1-1 of the Commonwealth of Massachusetts State Implementation Plan (SIP) for the ozone non-attainment area (MADEP, 2008) shows the total area-wide emissions to be as follows:

VOC 540.3 tons/day

NO_x 475.2 tons/day

The total emissions from the project were estimated to be significantly less than 10 percent of the area-wide emissions as described in the applicable SIP.

References:

Massachusetts Department of Environmental Protection (MADEP). Final Massachusetts State Implementation Plan to Demonstrate Attainment of the National Ambient Air Quality Standard for Ozone. Jan 31 2008.

U.S. Air Force (USAF). IERA Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installation, May 1999, Revised December 2003, Section 4.

USAF. Memorandum for ALMAJCOM/CEVs, HQ USAFA/CEV, 11th WG/CEV. Subject: Air Conformity Guide. 26 August. 2003.

USEPA. AP 42, Fifth Edition. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources*. Section 1.3, January 1995. <http://www.epa.gov/ttn/chief/ap42/>

Section 9. List of Preparers

The Environmental Office (66ABG/CEV) prepared this document to fulfill the requirements of the National Environmental Policy Act (NEPA) for the proposed action to demolish and restore the Ipswich Antenna Facility. The following persons authored and provided direct oversight for the preparation of this environmental assessment:

MANAGEMENT

Donald C. Morris, P.E., 66 ABG/CE. B.S. in Civil Engineering; As the Environmental Director, provided technical review and oversight for preparation of this environmental assessment.

TASK LEADER

Maravelias, James. Portage, Inc. B.S. in Business Administration; As a Senior Project Scientist with broad experience in the management and regulation of hazardous waste and the U.S. Air Force Environmental Impact Analysis Process (EIAP), managed the preparation and was the primary author of this environmental assessment.

QAULITY ASSURANCE LEADER

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Picariello, Wynnell. Portage, Inc. B.S. in Biology; As a Project Specialist, provided technical review of this environmental assessment.

Spelfogel, Robert. 66 ABG/CE. M.S. in Environmental Engineering; As the Environmental Compliance Program Manager, assisted in review of various environmental protocols for this environmental assessment.

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Section 11. Figures



SCALE IN FEET
SCALE: 1"=2000'

FIGURE 1

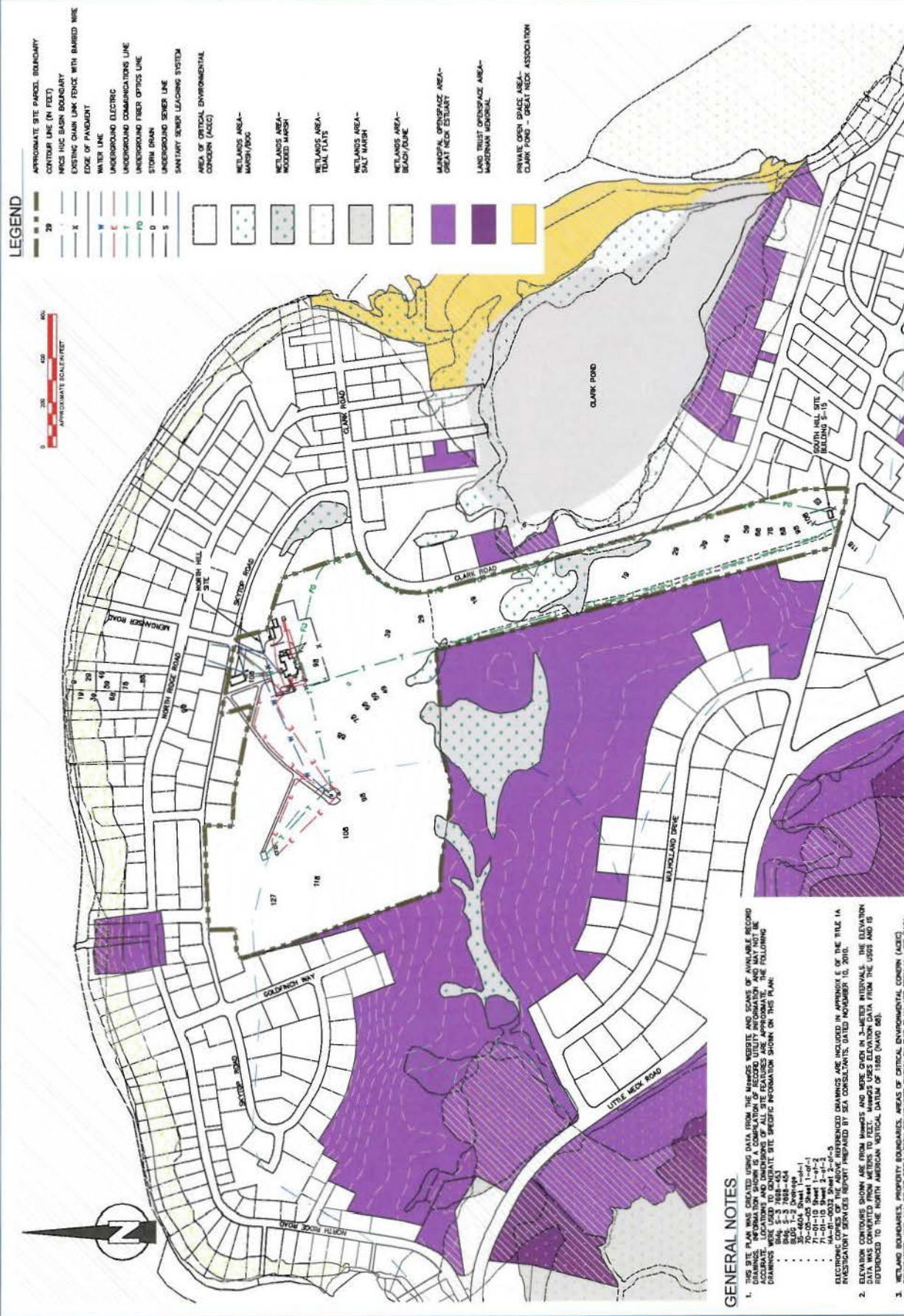
SITE LOCUS
IPSWICH ANTENNA SITE
IPSWICH, MASSACHUSETTS



KLEINFELDER
Bright People. Right Solutions.

S E A

S E A CONSULTANTS INC.



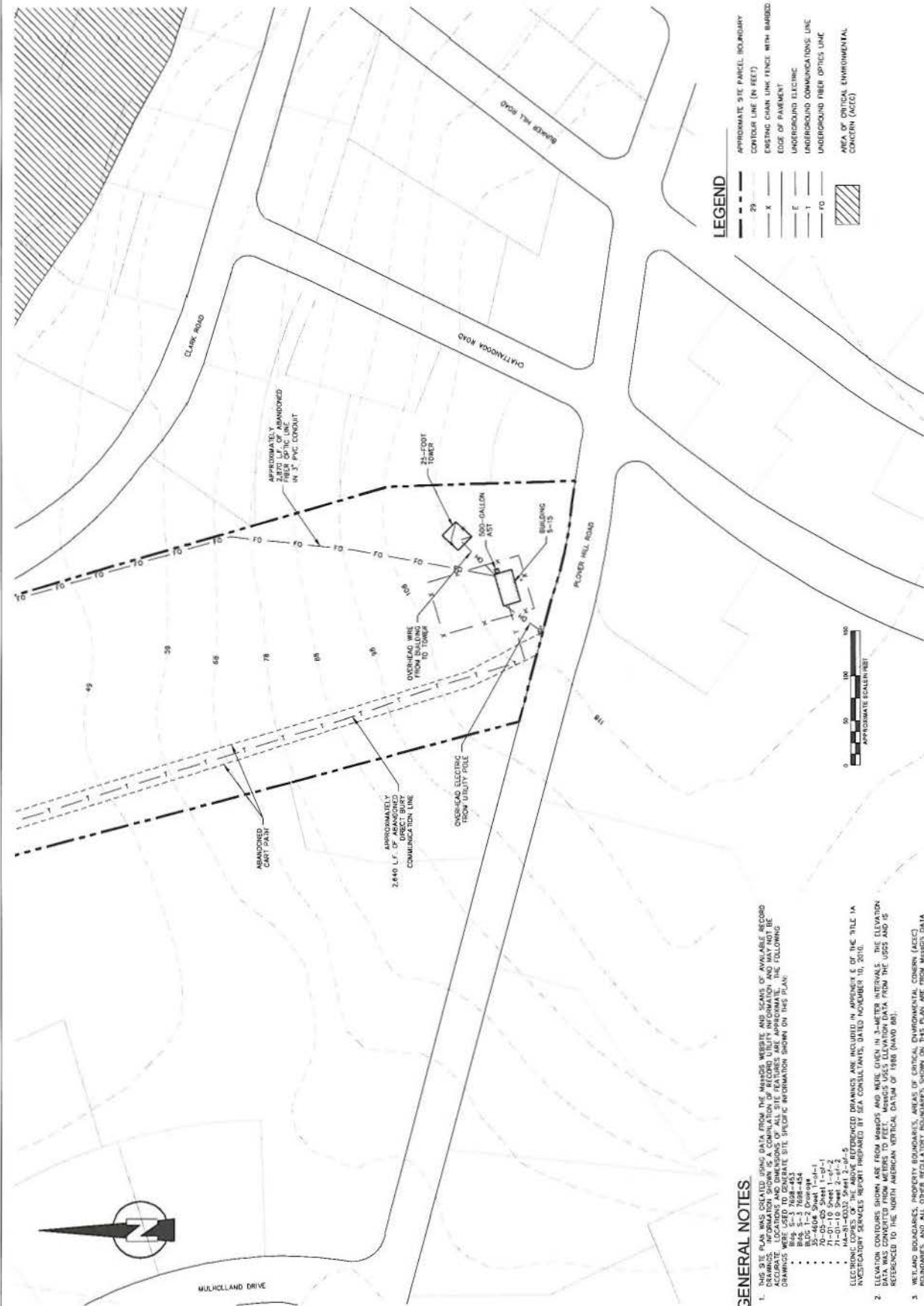
GENERAL NOTES

- [illegible]

Description			Qty

HANSCOM AIR FORCE BASE CIVIL
 ENGINEERING
 TITLE 1 A INVESTIGATORY SERVICES
 IP SWICH ANTENNA TEST FACILITY
 SITE PLAN - SOUTH HILL AREA

FIGURE 4



GENERAL NOTES

- [illegible]

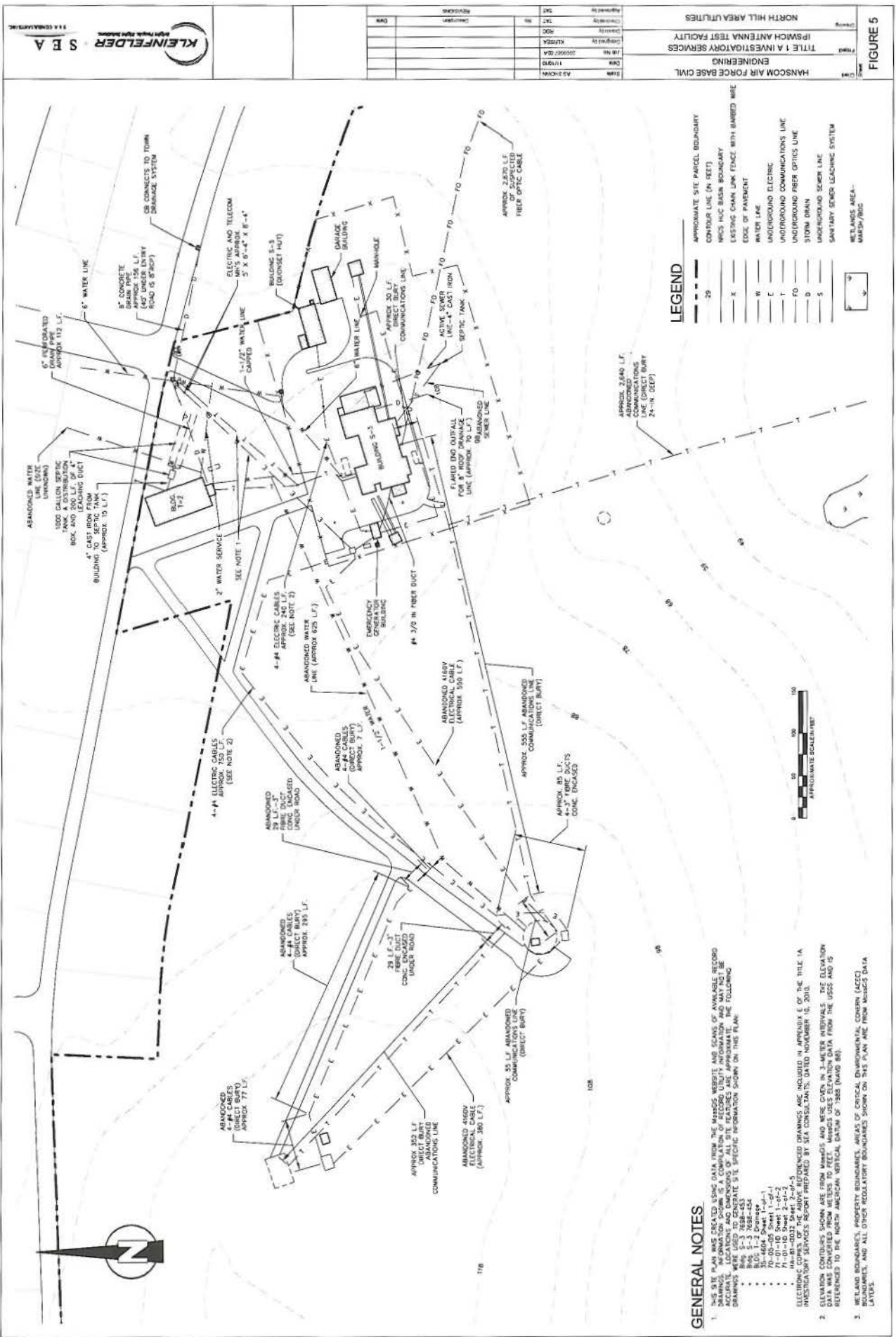
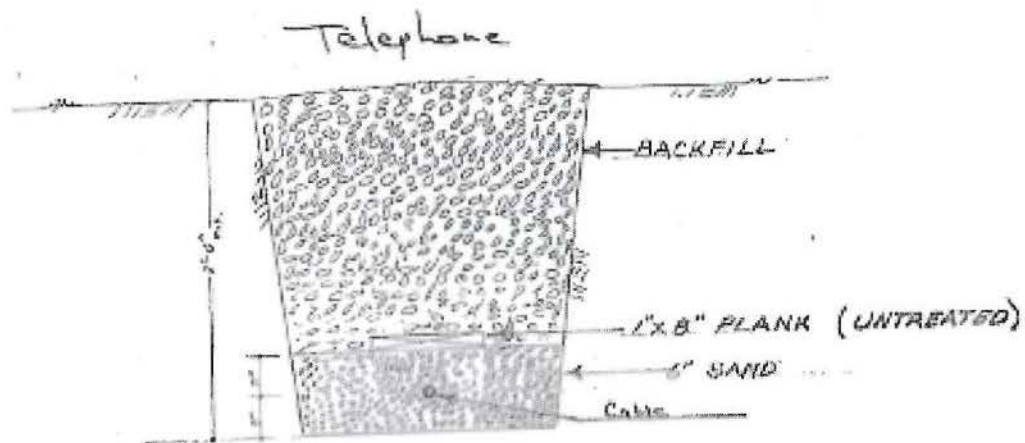
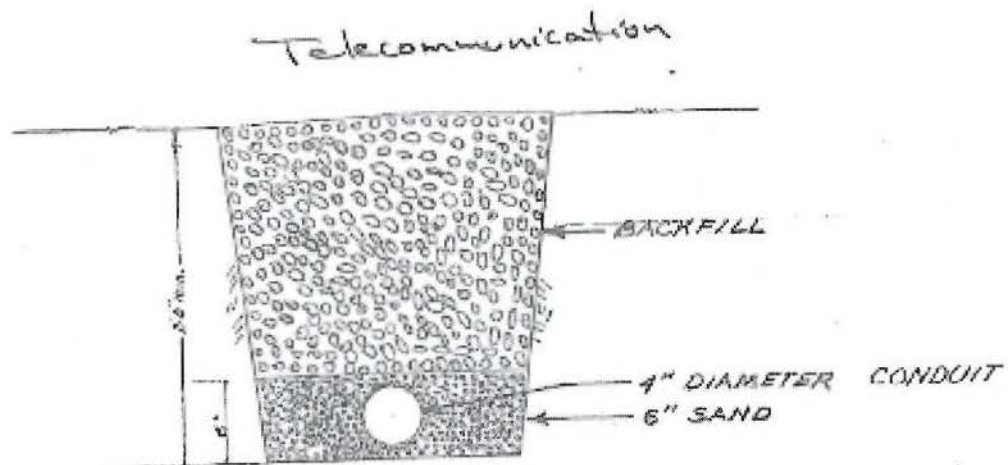


Figure 6



SECTION A-A
SCALE 1" = 10"



SECTION B-B
SCALE 1\" = 10"

Ipswich Antenna Test Site
UG Utility Typical Cross Section

Section 12. Images



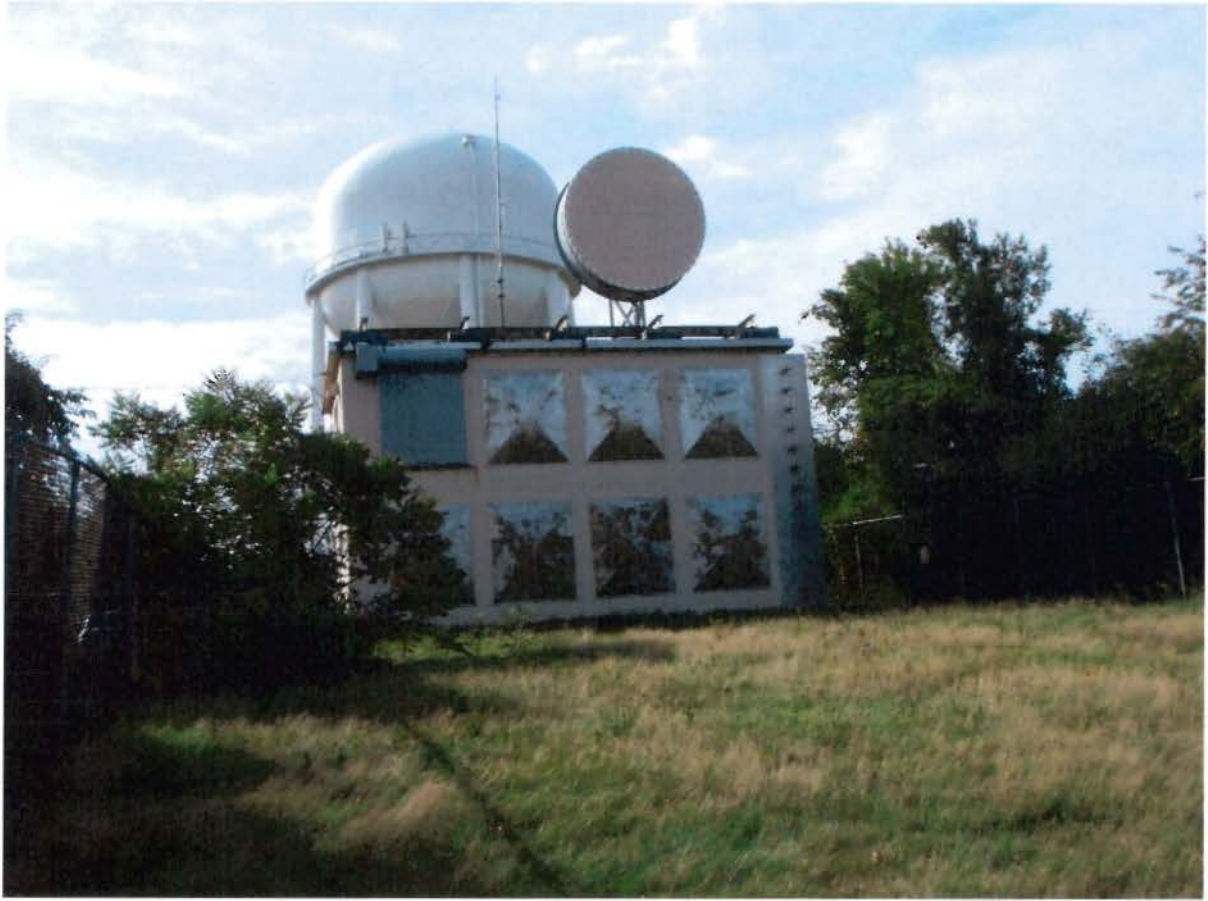
**SITE ENTRY ROAD
VIEW FROM SKYTOP ROAD**



BUILDING S-3



BUILDING T-2



BUILDING S-15



**BUILDING S-5
(QUONSET HUT)**



GARAGE BUILDING



**METAL SHED
(NEXT TO QUONSET HUT)**



EMERGENCY GENERATOR BUILDING



HYDRANT ENCLOSURE



**TRANSFORMER FOR BUILDING S-3
(NORTH HILL SITE)**



TOWER FOR BUILDING S-3



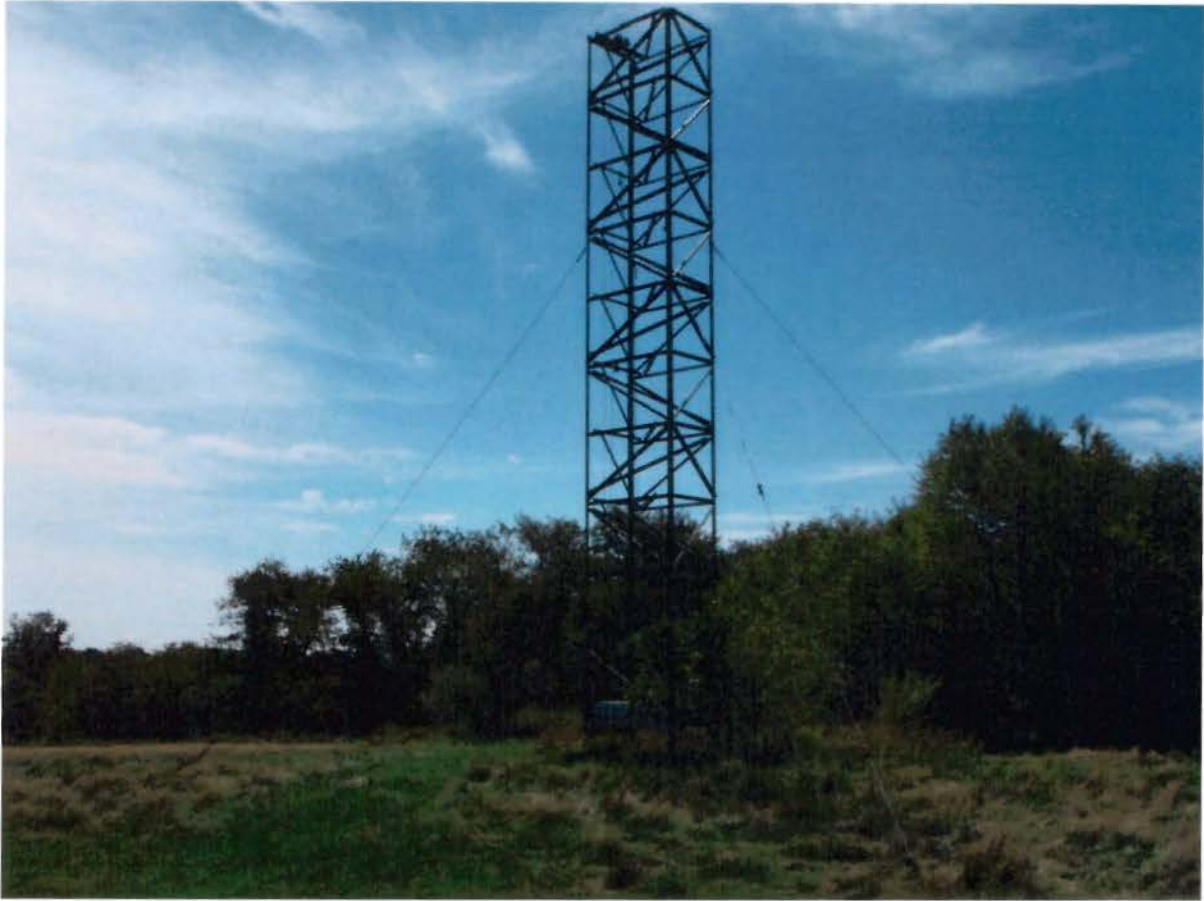
**WOOD SHED
(LOCATED AT FORMER BUILDING T-8 FOUNDATION)**



**FORMER TRANSFORMER AREA
(FENCED IN AREA)**



FORMER BUILDING S-13 FOUNDATION SLAB



**STEEL TOWER
(NEAR FORMER BUILDING S-13)**



**ON-SITE CATCH BASIN AND UTILITY POLES
AT CORNER OF SKYTOP ROAD AND ENTRY ROAD**



**TELEPHONE AND ELECTRIC MANHOLES NEAR UTILITY POLES
AT CORNER OF SKYTOP ROAD AND ENTRY ROAD**



**ELECTRIC HAND HOLE
ALONG SERVICE ROAD "E"**



BUILDING T-2
SUMP PIT