



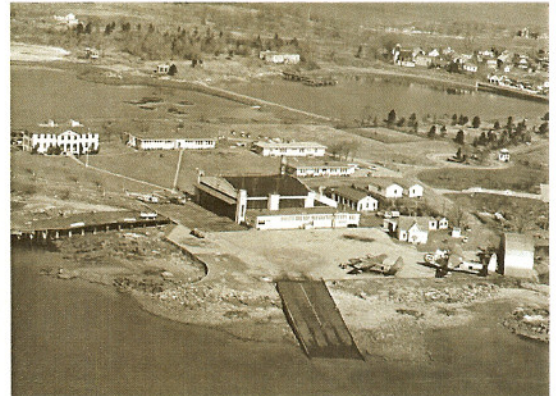
Winter Island Barracks Building Re-Use Feasibility Study

SALEM, MASSACHUSETTS

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Acknowledgements

The U.S. Coast Guard Barracks Building Re-Use Feasibility Study was prepared for the City of Salem with funding provided by the Massachusetts Historic Commission under its Survey and Planning Grant Program, a federally funded matching grant program used to support historic preservation planning activities in communities throughout the state, and City of Salem Community Development Block Grant funds.

The report is an assessment of the historical significance of the Barracks Building and its architectural elements with recommendations for two phases of repair: one that stabilizes the structure to prevent further deterioration caused by weather and vandalism and another that improves the building to a leasable condition. The report also contains optional floor layouts, universal accessibility requirements and preliminary cost estimates for outline specifications and baseline drawings as well as a pro forma analysis of building renovation and re-use.

Any permanent construction work to be undertaken on the Barracks Building should be in compliance with the Secretary of the Interior's Standards for the Treatment of Historic Properties Rehabilitation Standards, the Massachusetts State Building Code and the Americans with Disabilities Act in consultation with the State Historic Preservation Office. This report is on file with the City of Salem Department of Planning and Development.

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Executive Summary

The City-owned U.S. Coast Guard Barracks Building (hereinafter referred to as the “Barracks Building”) was part of a former Coast Guard station that operated on a portion of Winter Island from 1935 to 1970. The Winter Island Station played an important role in the country’s defense during World War II and therefore, the Barracks Building and its associated site is considered worthy of historic preservation and restoration. The Winter Island Historic and Archaeological District was listed in the National Register of Historic Places on April 14, 1994 consisting of 36 properties.

The City of Salem would like to rehabilitate the Barracks Building for adaptive re-use. However, the building has suffered from years of neglect and is in need of major repairs to become usable. Additionally, potential uses are restricted to those of a public nature due to use restrictions imposed through various property transfers over the past hundred years. Public uses would also complement the existing uses that occur in the City-owned Winter Island Park where the structure is located. An assessment of necessary repairs and associated cost estimates were developed along with an evaluation of potential uses for the building as part of this study.

Based on visual inspections of the building, historical details on the building architecture and discussions with persons knowledgeable about the structure, preliminary cost estimates were developed for two different levels of repair/restoration as follows:

- Stabilization/Emergency repairs required to stabilize the structure and address safety code issues, prevent winter weather related deterioration, and vandalism.
- Long Term improvements to improve the building to a level suitable for leasing and tenant fit out with restoration of the buildings; more important exterior architectural details.

Phase 1 Stabilization	\$ 165,000
Phase 2 Long Term	\$ 695,000

A separate cost estimate, (included in the report) was developed for the installation of a catering kitchen, tables, and chairs should the City decide to create a function hall in the building.

Potential uses were identified based on public input and interviews with various interested parties. Uses considered in the Study include a function hall, a community boating program, common office and meeting room space for public organizations, and other uses.

The Study recommends that the City move forward with securing grant monies to restore the building to a level that would allow leasing to one or more suitable users under a long term agreement with the City retaining title to the property and in a manner that rehabilitates the more important architectural exterior features of the building.

1.0 INTRODUCTION

1.1 Study Scope and Process

Vine Associates, Inc. was retained by the City of Salem in the fall of 2006 to prepare a re-use feasibility study of the Barracks Building located on City-owned land on Winter Island. The purpose of the feasibility study was to:

- determine the condition and historical significance of the building
- make recommendations and develop guidelines to ensure the preservation of character-defining elements and areas
- develop rough costs estimates to repair and/or renovate the facility
- identify potential feasible uses for the building

The interior and exterior of the building were surveyed by an architect and historic preservation planner as well as the local Building Inspector. Original but poorly reproduced building drawings were obtained from the National Archives in Washington D.C. from which base drawings were developed (see Attachment 1). Photographic documentation of the interior and exterior of the building and its environs was also undertaken (see Attachment 1).

Historic information on the Barracks Building was collected from a variety of sources including the U.S. National Archives, the U.S. Coast Guard web site, the Salem Room at the Salem Public Library, the Phillips Library at the Peabody Essex Museum and files, plans at the City Engineering and Planning offices, and City staff. Doug Sabin, a local resident and former National Park Service employee who has gathered information on the U.S. Coast Guard base and the adjacent Fort Pickering walked the site with the consultants and provided valuable information and insight including a list of servicemen who lost their lives while stationed at the base (see Attachment 2).

Public input on preferred uses for the building was solicited at a meeting in February of 2007 and through public outreach to community neighborhood associations and personal interviews. Preferred uses expressed during this process included the following:

- community boating program including classroom space
- facilities for veterans council including offices, meeting space and function hall
- military museum
- offices for Salem Coastwatch
- coastal interpretive center
- bed and breakfast
- boutique inn
- restaurant
- observatory
- classroom for Mass Maritime Academy

Because the uses on Winter Island are restricted to those that are “public”, uses such as the bed and breakfast and inn were dropped from further consideration. Interviews were then held with the representatives of remaining user groups to determine what type of program they are seeking and how that program might be incorporated into the building re-use. Potential sources of funding to undertake the building restoration were also identified. The list of uses was further refined and narrowed to three potential use groups based on the building layout, existing use restrictions on the property, the unique conditions of the building, and the site context. Conceptual floor layout plans were then developed for the three use scenarios and are included in Chapter 5. A second public meeting was held in May 2007 to review the potential uses, building cost estimates and pro formas and following the public meeting the final document was produced. Another use suggested at this meeting, was indoor recreational space for youth groups that use the facilities on Winter Island.

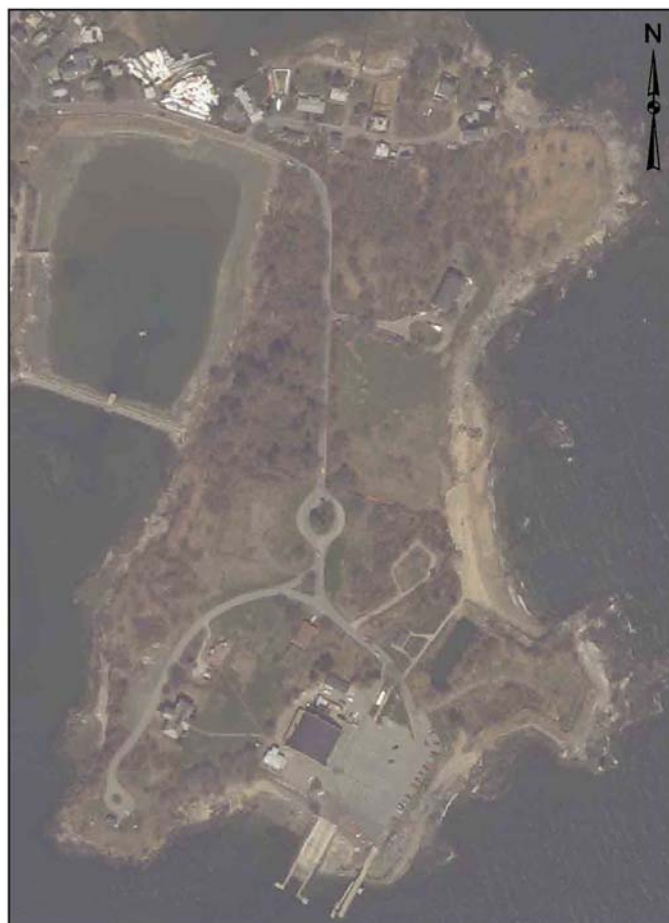
1.2 Community Setting and Surrounding Neighborhood

Winter Island is a 38 acre, approximately $\frac{1}{2}$ mile long, $\frac{1}{4}$ mile wide island located on the western side of Salem Harbor about 2 miles from the downtown. The Island includes a small residential neighborhood on Winter Island Road; the Plummer Home for Boys which is a residential facility for youth located on a large 18 acre site, and Winter Island Park which is a city-owned 27 acre public park.

Surrounding land uses include the Salem Willows neighborhood and park to the north, Fort Lee to the west, Winter Island Yacht Yard across the Causeway, the Cat Cove Aquaculture facility across Cat Cove, the Southeast Essex Sewerage District Facility, and the Dominion Power Company on the south side of Fort Avenue.

Access to the island is provided via Winter Island Road which intersects with the common roadway that is shared by the City and the Plummer Home for Boys. Winter Island Road is narrow and has a steep curve where it intersects with the common roadway. The common roadway is also narrow, but straight and leads straight to the gate house marking the entrance to Winter Island Park. Both residents and visitors pay to use the park.

Once in the park, there is an internal road system which provides access to two different portions of the Island. One road leads southwest from the gate house and



Aerial View of Winter Island

provides access to a tot-lot, the Barracks Building, and the Harbormaster's Building at the top of the hill. There is a small turn-around in front of the Harbormaster's Building. The other road veers to the southeast from the gate house and provides access to campgrounds, Fort Pickering, boating facilities, the Hangar, and a small function hall.

There are also internal paths that lead to and from the parking areas, the City Harbormaster's Office, a pergola and shade structure, the Barracks Building, and Waikiki Beach.

1.3 Current Uses and Programming at Winter Island

Winter Island has stunning views of the Salem Harbor and has been developed as a public park providing various recreational opportunities for Salem residents as well as non-residents. The island contains 14 tent camping sites along the northerly side of the island near the bathhouse and gate house and 28 Recreational Vehicle (R/V) spaces in the main parking lot adjacent to the small function hall along the slope to the west of the gate house. There are also seven group area sites, 12 Tent/RV sites, five Pop Up sites and three picnic areas.



View from Barracks Building towards Salem Harbor

The island contains three beach areas: Waikiki Beach, which is a long sandy beach located on the northeast side of the island is heavily used during the summer months for swimming and sunbathing activities, a cobble beach which is located on the easterly side of the island between the Pickering Lighthouse and the Public Pier, and a sandy/cobble beach located just south of the Hangar and west of the State Boat Ramp. The Coast Guard igloo area is used as a place to gather and play cards. There is large concrete state-owned double width Public Boat Ramp as well as a City-owned pile supported Public Pier and transient floating dock system used for short term passenger loading and drop off located along the south side of the Island.

The Harbormaster Office is at the southwesterly tip of the island south of the Barracks Building. The Harbormaster keeps its boat(s) docked at the docking system in the summer. There is also a small 1,670sqft single story function hall that is rented for events, as well as an outdoor covered shelter area that is also rented for functions and concerts. Fort Pickering, which is located on the northeasterly side of the island and is in a state of disrepair, was placed on the National Register of Historic Places in 1973.

2.0 PROPERTY HISTORY

2.1 Winter Island Site History

As noted, the Barracks Building is located on a Winter Island, a location that has always played an important role in Salem's history. Native Americans were attracted to Winter Island and Salem Neck for many of the same reasons the early settlers were as the area offered protected coves and inlets with abundant shellfish and fish resources and ready access to the harbor.

Seventeenth, Eighteenth and Nineteenth Centuries

According to various historical records, Winter Island at the time of English settlement in the early 1600s was an island separated from the mainland, held as common land by the Proprietors and used as a fortification and for fishing activities (Perley, 1924). During the 1600s various ½ acre lots were leased to fishermen for fishing and flaking activities and later in the 1600s lots were leased for the construction of wharves. Fish Street, which remains on the site today, (adjacent to the Barracks Building) was the road used by the fishermen to haul and load fish onto vessels from other ports for export. A causeway was built in the 1660's to connect the island to the mainland.

During the 1700's the island continued to be used for fishing and fish flaking and the Essex Frigate was constructed near where the small beach area is located just south of the former Coast Guard Hangar. The old fortification which was named Fort William then renamed Fort Ann, was rebuilt around 1706 under the direction of the Royal Engineers who had originally been sent by King William III to fortify the colonies (Finch, 1998: Salem Observer 1978). In 1775, the Salem Selectmen leased land on Winter Island in the vicinity of the existing Harbormaster's Office and the remnants of an old powder house building to Richard Derby to build a wharf and warehouse. In 1794, the City of Salem ceded the fort to the federal government and a new fort was constructed in its place. In 1799 it was renamed Fort Pickering in honor of Timothy Pickering, then Secretary of State of the U.S. (Observer 1978). In 1870, the Secretary of War permitted the Trustees of the Plummer Farm School to establish their institution on Winter Island.

During the 1800's the island was used primarily for fortification and in 1864 the City again ceded the island to the federal government in support of the Civil War efforts. The lighthouse (and lighthouse keeper's house) were constructed and lit in 1871. A plan of land dated 1854 prepared by C.A. Putnam entitled "A plan of Winter Island and Salem Neck" showed Derby Wharf and Fish Street Wharf, both fairly large structures along the southwest portion of the island (Dempsey, 1994).

Twentieth Century

From the 1930's to the early 1970's, Winter Island was used by the federal government as the U.S. Coast Guard Air Station at Winter Island in Salem, MA. The Station was commissioned on February 15, 1935 and operated as a rescue patrol and law enforcement facility until November of 1941. The Coast Guard use of the island continued until the early 1970's. The facility was originally staffed with 35 men and two airplanes and at one point had over 100 men at the facility. The station was replaced by the Cape Cod Air Station and decommissioned in the fall of 1970 (Knife, 2004).

That same year (according to letters on file in the Salem City Clerk's Office) the U.S. Coast Guard informed the City that it planned on retaining 5.8 acres of the site which included the Hangar and aircraft ramp for a buoy facility. The remaining 14.7 acres would be referred to the federal General Services Administration for disposition with a notice that the U.S. Navy was interested in developing a joint Navy, Army, and Coast Guard Reserve training center on the island, the City of Salem and National Park Service were interested in use of the land as park, and the Plummer Home for Boys was also interested in the land.

According to the City Clerks records, in 1972, the City Council voted to "effect an entry" on Winter Island in order "to protect and enforce the reversionary interest of the City of Salem...". In response to local concerns, the General Services Administration issued a Declaration of Termination of Interest in 1973 and the City regained control of the island including all remaining federal buildings. In the fall of that year, the Salem Park and Recreation Commission developed a conceptual re-use plan for Winter Island that included moving the parks and recreation operations to the Barracks Building, creating an indoor recreation center with tennis courts, restoring the two Coast Guard outdoor tennis courts, reserving an area for a sailing club, and developing a marina in Cat Cove. The same year, Mayor Samuel Zoll appointed a Winter Island Study Commission to "analyze island potential for development and prepare recommendations for future use." The Commission, in association with Tufts University, published a report that considered a variety of actions and uses including fort restoration and enhancement, tourism, elderly housing, temporary camper trailer areas, condominiums, park uses, and a marina. In 1974, the New England Power Company proposed to use the island to create a large administrative complex that would require the demolition of the Barracks and Hangar buildings.

In 1980, to resolve long standing property disputes, the City of Salem and the Plummer Home for Boys entered into an Agreement which granted Plummer Home the rights to its 15 acre property (among other rights) and the City of Salem the rights to the 32 acre Winter Island Park. The Agreement also stipulated that both parties would use the roadway in common and that the City would have rights to install and maintain utilities.

Since the City assumed ownership in 1972, some of the U.S. Coast Guard and other structures such as the powder house and tennis courts have been demolished and/or removed. Other structures such as the Pickering Lighthouse were restored or stabilized. The Coast Guard Hangar Building remains on site but has been vacant for many years with the exception of a few years during the 1980's when Salem State College operated its intercollegiate varsity level sailing program renovated the Hangar for use as a boathouse for vessel maintenance, classroom space, and seasonal office space.

A master plan was developed for the island in the mid 1980's for the City, by Wallace Flloyd and other, which recommended several improvements to the park, many of which were implemented including: landscaping, picnic areas, path systems, a pergola, parking lot improvements, a new bathhouse with restroom and shower facilities, renovation of the old radio shack into the Harbormaster's headquarters, and securing of the old powder house against further damage. The City received federal and state funding to undertake several of these improvements including the construction of the existing 16 foot wide by 150 foot long fixed timber, concrete pile supported pier with aluminum gangway and floating dock system. The state constructed the concrete boat ramp in 1998.

Fort Pickering was placed on the National Register in 1973, and the Winter Island Historic District as well as the Winter Island Archeological District were both placed on the National Register in 1994. In 2000, Historic Salem, Inc., an active non-profit architectural preservation organization, added Winter Island on its "Endangered Historic Resources" list in 2001 and currently lists Winter Island as showing "Signs of Improvement" in recognition of the stabilization of the Hangar roof undertaken in 2001 and the City's initiative in authorizing the preparation of this feasibility study.

2.2 History of the Coast Guard on Winter Island

As noted, the U.S. Coast Guard Air Station at Winter Island in Salem, MA was commissioned on February 15, 1935 and operated as a rescue patrol and law enforcement facility until November of 1941. The facility was originally staffed with 35 men and two airplanes. The facility was replaced by the Cape Cod Air Station and decommissioned in the fall of 1970.

The Barracks Building was one of six original Coast Guard buildings constructed at this time. The other buildings included a gate house, ammunition shed, a Hangar that opened to a concrete apron providing access to a pile supported timber ramp in Salem Harbor, a motor pool (garage), and a radio tower. The former light keeper's house which was on the site, was also used by the Coast Guard initially for quarters. The Coast Guard complex included a softball field, tennis court, a rifle range, and retained the original Fort Pickering moat. All of the aforementioned Coast Guard structures remain on the site today. The former light keeper's house which was used by the Coast Guard before the Barracks Building was constructed was subsequently demolished by the Coast Guard. As World War II approached, the Coast Guard facility was expanded to function as an Air and Sea facility and several additional buildings including two Quonset Huts, an Infirmary, an Administration Building, and a new Gate House at the entrance to the current Winter Island Park were added to the facility. The softball field was removed to add additional paved areas for seaplane queuing and staging, and a new concrete ramp was built east of the Hangar and was used as a concrete calibration area. All of the additional structures built to support World War II including the concrete ramp were removed over the years except for the new gatehouse. See Historic Site Plans and Photographs on pages 9-11.

The Coast Guard facility was very important for the country's defense program and on October 21, 1944, the facility was officially designated as the first U.S. Air-Sea Rescue service on the eastern seaboard. According to an article written by Jamie Knife of the U.S. Coast Guard District Public Affairs Office in Boston, the air station performed 26 medevacs of troubled boaters in its first year of operation. From 1942 to 1944, the facility provided anti-submarine warfare services and patrolled the New England coast looking for German submarines. The facility housed aircrafts as well as seaplanes. Aircraft types included: Douglas RD-4 Dolphin, Grumman JRF-2 Goose, Grumman J4F-1 Widgeon, and various Sikorsky helicopters. Seaplanes which utilized the ramp included Vought VO-4, the larger General Aviation "Flying Lifeboats" of the 1930's and even larger flying boats/amphibians, including PBY Catalinas. As HH-52A Seaguard amphibious helicopters entered service, the need for flying boats declined. According to local historian Doug Sabin, 12 servicemen based at the Air Station lost their lives performing their military duties (personal interview January 5, 2007). The list of servicemen is found in Attachment 2. Air stations

that only had water-landing abilities were now being phased out by the federal government so Air Station Salem was disestablished and replaced by Air Station Cape Cod in fall 1970.

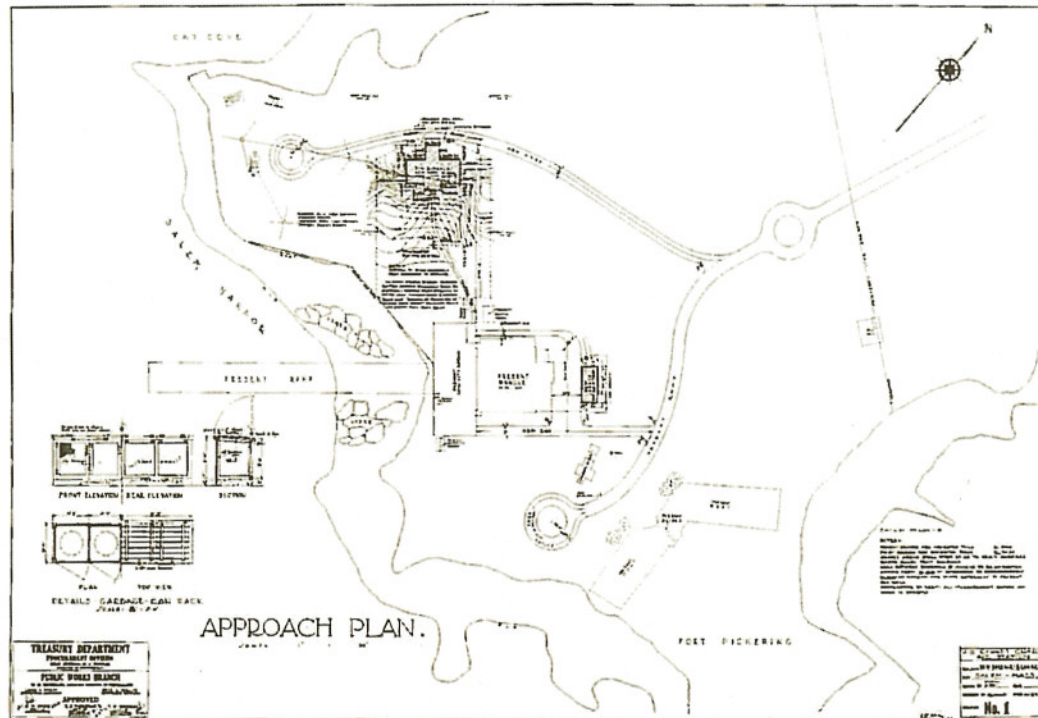
2.3 History of the Barracks Building

The Barracks Building was constructed in 1934 and housed quarters for the servicemen, a mess hall, and a small infirmary. Surviving architectural plans credit the design to Louis A. Simon, Supervising Architect. The Office of the Supervising Architect was created within the Treasury Department in 1852 in response to the enormous increase in federal building construction, primarily post offices, customs houses, and court houses. Simon, who graduated from M.I.T. in 1891, joined the supervising architects' office in 1896. He was superintendent of the office's architectural division from 1905-1933, and was the last person to hold the post of Supervising Architect, serving from 1933-1939 when the office was abolished. Noted as a conservative designer and decorous man, Simon was the first president of the Association Federal Architects, founded in 1927 as a forum for architects employed by the federal government.

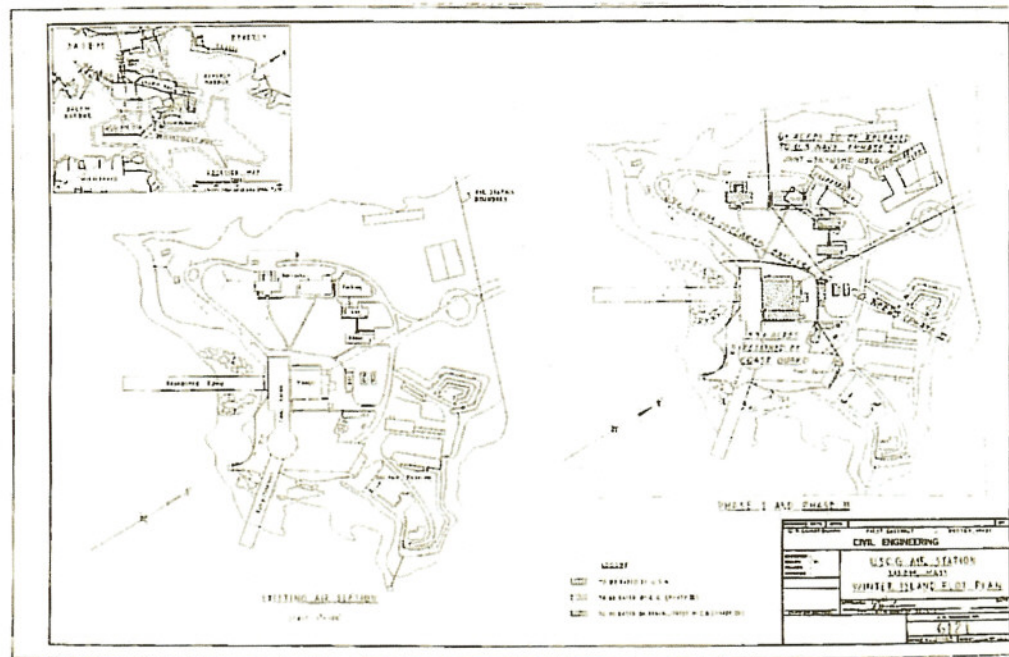
All early images including architectural drawings, site plans, and photographs show the Barracks Building's exterior essentially as it exists today. Even the white paint over the red brick walls appears to be an early if not original treatment. Originally labeled and referred to as the Barracks Building, it is presently unknown when it acquired the local designation as Administration Building. A one story Administration Building, north of the Barracks Building was one of several new buildings that were constructed in the early 1940's when the base was expanded. That building was subsequently demolished. The Barracks Building served the Coast Guard until 1970 when the Salem Air Station was decommissioned and operations moved to Cape Cod.

2.4 Timeline

The Coast Guard facility was very important for the country's defense program and on October 21, 1944, the facility was officially designated as the first U.S. Air-Sea Rescue service on the eastern seaboard. The Barracks Building has been vacant ever since it was acquired by the City in 1972. The building's condition has gradually deteriorated through vandalism and non-use. In 2000, Historic Salem Inc. placed Winter Island on its "Most Endangered Historic Resources" list. The current Historic Salem, Inc. designation is "Improved".



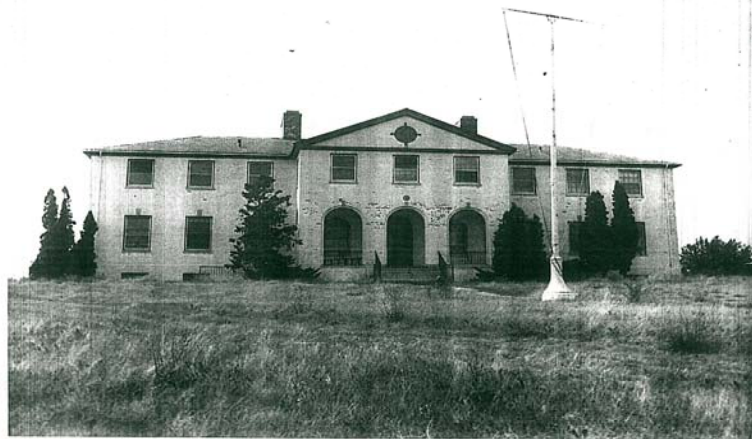
Salem Air and Sea Coast Guard Base circa 1935



Salem Air and Sea Coast Guard Base circa 1970



Views of Hangar Building and Seaplane 1940's. Photos courtesy of U.S. Coast Guard



U.S. Coast Guard Air and Sea Rescue Facility at Winter island circa 1938. Photo Courtesy of U.S. Coast Guard



Barracks Building circa 1947 with a "PBY" aircraft flying over the Administration Building. Photo courtesy of Kevin Cornacchio



U.S. Coast Guard Air and Sea Rescue Facility at Winter Island circa 1947. Photo courtesy of Kevin Cornacchio



U.S. Coast Guard Air and Sea Rescue Facility at Winter Island circa 1938. Photo Source word wide web article on Air Station Salem Armed Forces Day Crash dated May 18, 1957 http://www.check-six.com/Coast_Guard/Salem_Armed_Forces_Day_Crash.htm

The following Table presents a Timeline of the U.S. Coast Guard Barracks Building at Winter Island:

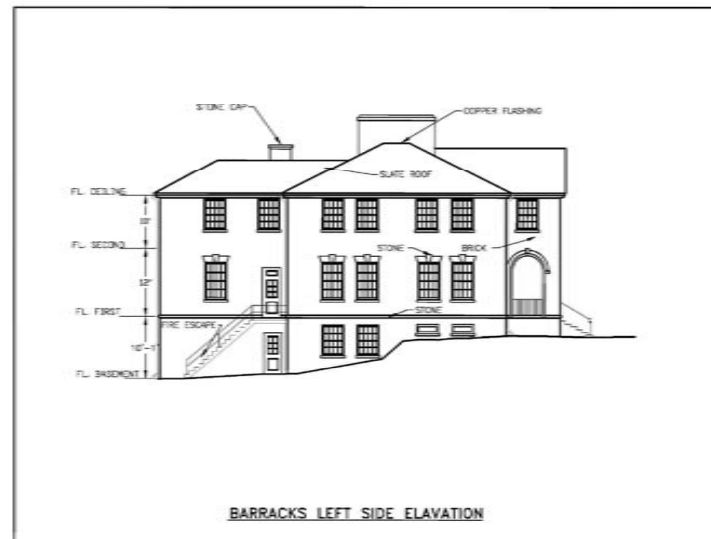
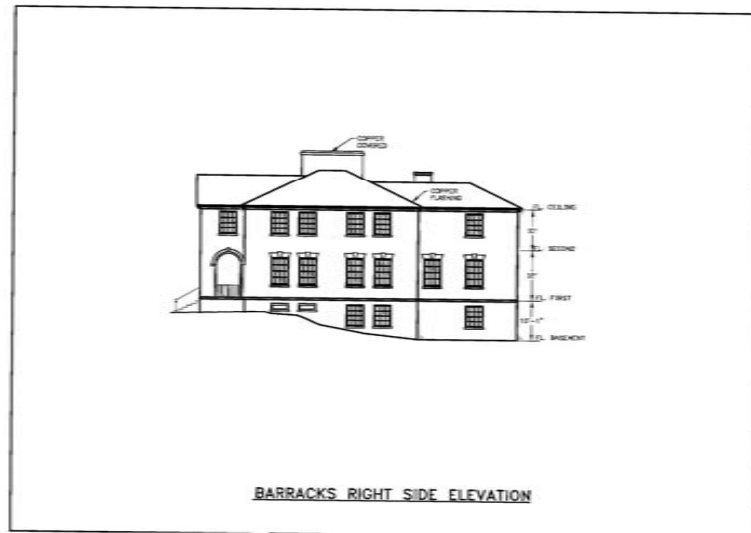
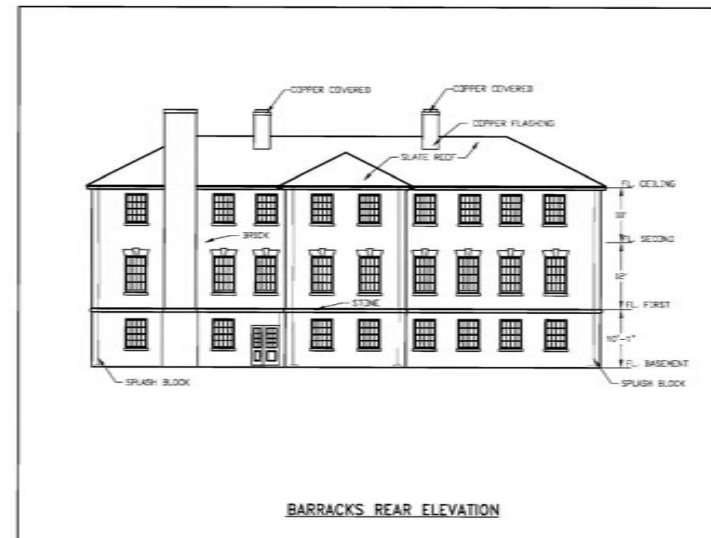
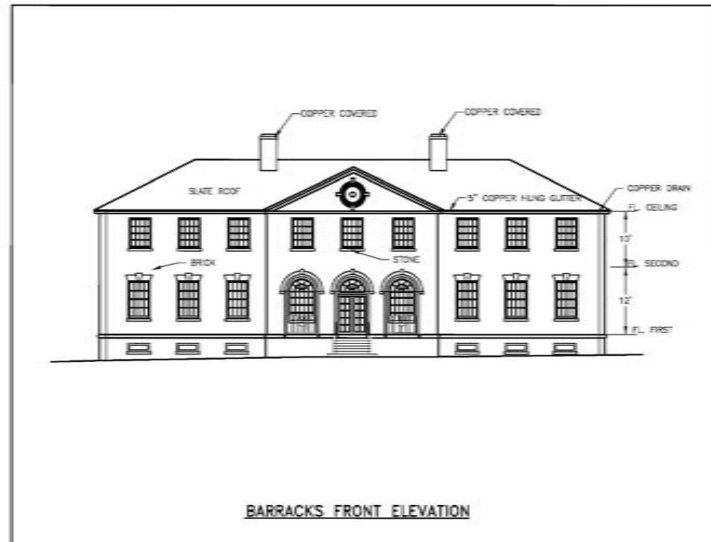
Table 1
U.S. Coast Guard Barracks Building Timeline

1934	U. S. Coast Guard Air Station constructed on Winter Island in Salem because there was no room for expansion at the existing Gloucester Air Station on Ten Pound Island. Buildings constructed at this time included the Barracks Building, gate house, ammunition shed, a large hangar, a garage, and a radio tower.
1935	U.S. Coast Guard Air Station Salem officially commissioned on February 15, 1935 (www.check-six.com/Coast_Guard/Salem_Armed_Forces_Day_Crash.htm)
1941	Salem Air Station operated as rescue patrol and law enforcement facility until November, 1941.
Early 1940s	Station expanded with two Quonset huts, an infirmary, an administration building, and a new gatehouse at the entrance to the current Winter Island Park. All of these buildings were later demolished except the gatehouse
1944	On October 21, 1944 the Salem Air Station was designated as the first U.S. Air-Sea Rescue service on the eastern seaboard.
1950	The lack of a runway at Coast Guard Air Station Salem necessitated the establishment in 1950 of Coast Guard Air Detachment Quonset Point, Rhode Island as a sub unit of Air Station Salem.
1970	With the development of the HH-52A, an amphibious helicopter, the need for a fixed-wing amphibian was passing. Air stations having only water landing capabilities, such as Salem, were becoming obsolete. In 1970, Air Station Salem, without any runways, was finally decommissioned and operations were moved to the new Coast Guard Air Station at Cape Cod.
1972	Coast Guard property turned over to City of Salem on July 20, 1972.
1972	City Park and Recreation Committee developed conceptual reuse plan for Winter Island that included moving the Parks and Recreation operations to the Barracks Building.
1973	Winter Island Study Committee appointed to analyze island potential for development and prepare recommendations for future use.
1980's	Master Plan for development of recreational uses prepared.
1990's	Basement and first story windows boarded.
1994	Winter Island Historic and Archaeological District listed in National Register of Historic Places; district consists of 36 properties.
2000	In 2000, Historic Salem, Inc., placed Winter Island on the "Most Endangered Historic Resources" list, and the organization has since been actively advocating the revitalization of the old air station. Winter Island is also listed on the National Register as a Historic District and Archeological site.
2007	Feasibility Study for Building Re-Use completed. Historic Salem Inc. lists Winter Island as "Improved".

2.5 Historical Plans and Photographs and Current Photographs

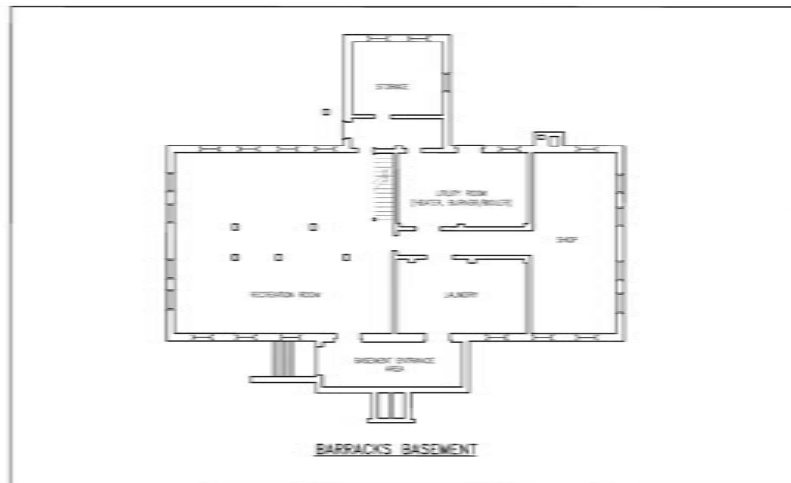
The historic appearance of the Barracks Building and site associated are documented by several early site plans and eight pages of floor plans, building elevations, and building details, both exterior and interior. There are also several early photographs of the primary east façade and a series of aerial views taken from various altitudes and directions dating primarily from the 1940's. The Historic Site Plans and Photographs are presented on the preceding pages and the historic Building floor plans, building elevations and building details are provided on the following pages.

Barracks Building Original Elevation Plans



NOTES: Drawings from U.S. Treasury Department, Procurement Division, June 9, 1925

Barracks Building Original Floor Plans



3.0 CONDITIONS ASSESSMENT AND CHARACTER-DEFINING ELEMENTS

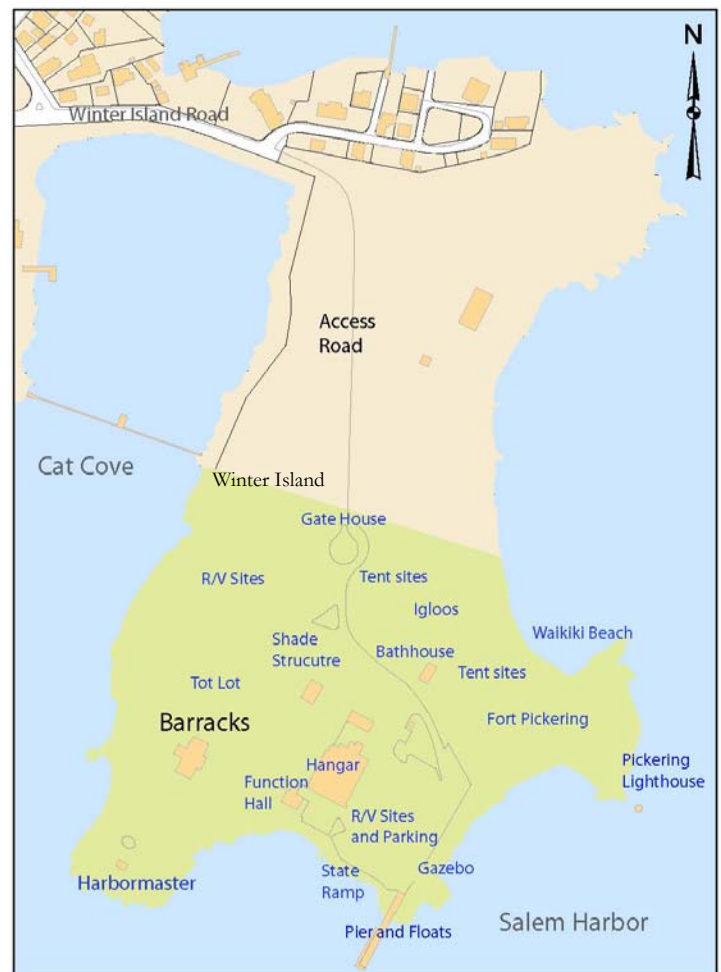
A two hour site visit was held on December 4, 2006 to view the condition of the Barracks Building and its immediate environs, and evaluate requirements for access by persons with reduced abilities. In attendance at the meeting were representatives from the City of Salem, including the Building Inspector, Thomas St. Pierre and the Project Manager, Carey Duques; and members of the Vine Associates consulting team, including Susan St. Pierre the Project Manager, Stephen Demos the architect and universal access expert, and Candace Jenkins the historic preservation planner. The exterior and interior of the building were viewed to identify the building construction methods and materials and to assess the building condition. A second building inspection was conducted on February 23, 2007 to view the structural condition of the roof and supporting member. A summary of the evaluation building and site conditions follows. Photographs of the existing conditions are found throughout this Chapter.

3.1 Site

The Barracks Building was part of the U.S. Coast Guard Air Station that operated on Winter Island from the 1930's to the early 1970's. In that context, the Barracks Building does not have a separate "site" *per se*, but today shares a campus with the various other buildings such as the Coast Guard Hangar Building, the City of Salem Harbormaster Building, a function hall, the Winter Island Manager's office and store (see map to right).

Within this campus, the Barracks Building is located on a hilltop on the southwestern, more sheltered portion of the island. On the southeastern shore of the island is the Coast Guard's former Hangar. This building with its adjacent parking lot is reached by turning left once past the guard house at Winter Island and following the main roadway.

The north side of the building faces a hill where the tot lot is located; the south side faces a lawn area that extends up a hill to the Harbormasters building; the west façade (hereinafter referred to as "the rear") faces Cat Cove; and the east façade (hereinafter referred to as "the front"), faces the Hangar some 300 feet away.



A large, sloping lawn is located in front of the Barracks Building that includes paths leading between the Barracks Building and the Hangar. The rear of the Building faces an internal roadway which continues past the Barracks Building up a hill to the Harbormasters building where it ends in a cul-de-sac. This roadway is accessed by turning right once past the guard house at Winter Island.

In general, while there are a few overgrown cedars and weed trees around the entrance to the Building, these are the only trees immediately adjacent to the building, a condition that would allow land contouring without negative consequences. While there are several large, mature trees sprinkled around the site on the east and west, there are no trees in front of the building. This gives the site an appearance of a lawn for a stately manor.

3.2 Barracks Building

As previously noted, the only original building plan that was obtainable was a poor quality copy of microfilmed plans provided by the National Archives in Washington D.C. The building plan was traced to the extent possible and put into AutoCAD format to create base drawings. These drawings are found in Chapter 2.

The Barracks Building was constructed in 1934 by the Federal Office of the Supervising Architect. The structure is designed in the Federal Revival Style, a mode that was popular for institutional buildings of the period. The historic appearance of the building and site is documented by the previously mentioned early site plans and eight pages of floor plans, building elevations, and building details, both exterior and interior. There are also several early photographs of the primary southeast façade and a series of aerial views taken from various altitudes and directions dating primarily from the 1940's. From the front, the south elevation is Palladian in composition, and in general, the building can be considered an example of the Federal Revival Style. Although it lacks corner quoins, it does have keystones in the expressed lintels over the windows on the first floor (the entrance or mid level).

The building's primary building block is approximately 93-feet long by 41-feet wide and is capped with a 7:12 hipped roof. Two massive, ornamental, brick chimneys are centered 30ft from the north and south ends of the building.

In the center of the rear façade is a three-story secondary wing, about 24-feet long by 22-feet wide. To the north of this wing, protruding from the façade is a double-flue functional chimney. An exterior staircase perhaps more properly defined as a fire escape, leads from the first level to grade running along the south side of the wing.

In the center of the front façade is a 30-foot wide by 12-foot deep portico with an enclosed second story above it. This central portico, with its three arched bays and 5:15 pediment is the feature most responsible for the Palladian feel to the facade.

The structure is 2 ½ stories high in the front (up seven risers), and three stories high in the rear, where the grade is lower and has an at-grade access to the basement for the full length of the building. The building has a slate, shallow hip roof with two massive, ornamental, central chimneys.

In the rear of the building, a single open stairway provides access from the first floor to the second floor.

3.2.1 Structural System of the Barracks Building

Framing System: The exterior walls are bearing walls of 4-whyth brick on the basement level and 3-whyth on the upper floors. The basement and first floor are divided into three bays of 17-feet, 6-feet, and 17-feet (outside face - center line - center line - outside face) running the long direction. Two parallel longitudinal beams, 6-feet on center support the middle bay. These beams are resting on 12-inch x 12-inch concrete columns, randomly spaced, with no span greater than 18-feet. The beams appear to be concrete, but could be steel encased by concrete. The columns appear to be concrete.

Floor Structure: The basement floor is slab on grade; the second and third floors are concrete (probably pre-cast) sections, arched in cross section, about two feet wide with a poured concrete topping.

Roof Structure: The roof structure is steel trusses without fireproofing, board sheathing over wood rafters, and slate shingles.

3.2.2 Building Exterior

The Barracks Building consists of a primary building block with a 22-foot x 23-foot wing centered on the rear wall and a 30ft x 10ft portico on the front. The main block is approximately 93-feet long x 40-feet wide. The structure rises two stories to a low-pitched slate hip roof with a molded wood cornice in deteriorated condition, and two non-functional, central chimneys. The sloping site exposes the full basement story on the rear elevation and partially exposes the west ends of the south and north side elevations. Exterior walls are covered with red brick laid up in common bond. Understated trim consists of a canted cast stone water table that sets off the basement story, narrow cast stone window sills, and sprayed brick lintels with cast stone keystones over the first story windows. As noted above, window sash throughout the building has been removed. Historic views show 8 over 8 double-hung sash at the first and second stories and the basement story where fully exposed.

East Elevation: Due to its classical Palladian portico and its prominence in the landscape, the view of the building from the east is the most important. From an aesthetic point of view as well as a functional point of view, the main entry to the building wants to be from this direction. Also, this façade commands ones attention when arriving at the Hangar and the main parking lot some 300-feet away. From that distance, a person can judge the proportions of the building and see all its features, including the massive chimneys.



East Elevation

The primary east façade contains nine bays. It is centered on a 10-foot wide, three bay, projecting frontispiece that serves as a vestibule for the main entrance. The first story contains three open arches on the front and one on each side, all with header brick surrounds and cast stone keystones. Three standard window openings that originally contained 8 over 8

sash are aligned above. The frontispiece rises to a boxed pediment with an oculus centered in the gable field. The center arch is approached by a flight of granite stairs with delicate iron railings. Similar railings appear in the flanking arches and on the sides of the vestibule.

Three arched openings on the building are aligned with those of the frontispiece. They contained two windows framing the primary entrance. All three elements have been removed and are now boarded up. The original architectural drawings show the appearance of both the arched windows and the entrance, which contained double doors, each with 12 glass panes over a single, square wood panel. The three bays on both sides of the frontispiece contain three windows at the basement and two upper stories. Basement windows are typically narrow.

West Elevation: Up close, the west (rear) elevation can never be viewed *in total*, however, from the bay beyond; one can get a distant view. The elevation consists of four bays on both sides of a two bay central wing. The rear wing is two bays deep and has irregular fenestration. An open concrete stair, shown on original plans, rises along the wing's south side to a first story entrance. The south end of the rear elevation contains four evenly spaced window at all three stories.

The west elevation has little architectural merit: the wing is disproportionate, the chimney off balance, and the fire escape utilitarian looking. If alterations to this side of the building are necessary, such alterations would have minor ramifications on historical or architectural character.

North Elevation and South Elevation: These facades fare a little better than the west facade. From the north, the fenestration of the wing is more composed than the south fenestration where the stairs can be seen and the doors seem disproportionate. Fortunately, the view from the south is not prominent. However, the North elevation can be seen from the entrance to the site, and hence should be treated with sensitivity. On this side of the building, historical and architectural character should be maintained.



West Elevation



North Elevation

The South elevation contains four windows arranged in groups of two at all three stories. The eastern pair of basement windows are narrow due to the higher grade. The north end is similar.

In general, the exterior surfaces might be considered more visually appealing now than they were in the 1930's and 1940's when the building was regularly maintained. This is due to the fading coat of white paint on the bricks, a condition that softens the overall sparseness of detail. From a distance, the front elevation has great potential; the other three elevations are undistinguished, but each has different viewing conditions that must be considered.



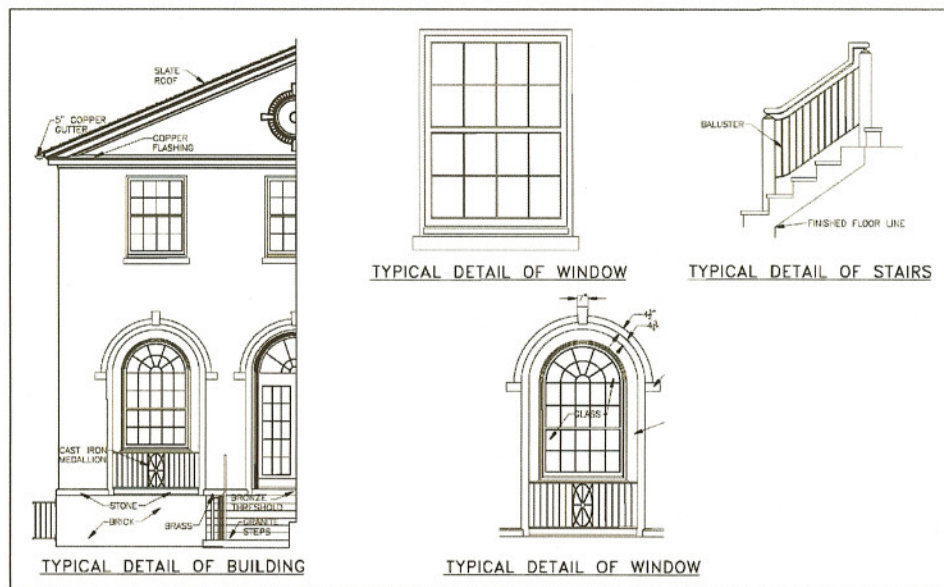
South Elevation

Windows: Essentially, the building had two window sizes: an 8 over 8, 42-inch x 64-inch, double hung window on the basement and second level; and an 8 over 8, 42-inch x 76-inch, double hung window on the first floor. There are also two, semicircular topped, 60-inch x 108-inch windows, one on each side of the entrance door; and ten awning windows on the basement level on the south, east and north facades. On the first floor, lintels with raked ends and a keystone are expressed on the façade. Today, all the windows are missing and the drawings are not sufficiently detailed to establish for certain what the window sashes and trim were like. However, enough of the brick mould exists that it could be replicated, and it is highly likely that this was a stock item still available today. Window sub-sills and lintels are concrete and looked in good condition.

Exterior Trim: The exterior trim which is predominately wood, is mostly gone, but sufficient trim exists to enable replication. A strong feature which should be replicated is the cornice. Since the building was constructed in the 1930's, most trim is probably stock. Another architectural feature is a horizontal concrete band that articulates the separation between the basement and first floor.

Roof: The building's roof design is a shallow hip (circa 7 1/2 in 12) covered with slates. Ornamental brick chimneys are positioned about 30 feet from the north and south ends.

Barracks Building Original Details



Barracks Building 2007 Roof and Trim



Roof East and Northeast



Roof Trim and Chimney Northeast



Roof South Side EL



Front Roof South Side



Roof North



Front Roof North Side



West Roof Trim



Roof North East

Character-defining Elements of the Building Exterior

In general, the character defining elements of the building exterior are as follows:

- Symmetrical organization
- Red brick walls laid up in common bond and painted white
- Regular fenestration with windows aligned vertically and horizontally
- Low-pitched hip roof with slate shingles and molded wood cornice
- Concentration of architectural detail on primary façade which faces other buildings in Coast Guard complex from low rise overlooking broad lawn area and Salem Harbor
- Façade with projecting, pedimented frontispiece with arched openings at first story
- Cast stone watertable
- Window openings with narrow cast stone sills, and splayed brick lintels with cast stone keystones at first story
- Original multi-pane sash with 8 over 8 double-hung sash were important character-defining elements until their removal sometime after 1972
- Original arched windows and center entrance were important character-defining elements until their removal sometime after 1972

3.2.3 Building Interior

The building interior was designed with an emphasis on function rather than elegance. All of the original, simple features and finishes have deteriorated to the point that preservation is not an option. They included concrete floors, plaster walls and ceilings on wire mesh, and molded wood door and window casings.

The building contains three levels: the basement with full access to the rear, the first floor up seven risers from grade, and the second floor, which is a clear-span. A single, open stairway connects the three levels, and an exterior steel stair goes from the second level to grade in the rear.

The basement level included five primary spaces: a large recreation room occupying the entire north half of the basement, a laundry room and boiler room occupying the center space, a long narrow workshop on the south side, and a storage area in the rear wing. The area under the front portico served as an entrance area with access via stairs leading down from the south.

The first floor was divided into approximately eight rooms of varying size including a separate kitchen and mess hall on north side. The quality of the remaining plans is too poor to determine the uses of the other rooms. Circulation was provided by a narrow center hall that led back from the main entrance to a cross passage that connected the east and west sides of the building. Stairs leading to the basement and second stories and an adjacent passage to the rear wing were offset to the south of the entrance hall.

The second story contained two large dormitory spaces for 14 men each flanking the stairs. The front central portion of the second story, including the space within the projecting frontispiece, housed the apartment of the commanding officer. The rear wing contained an infirmary.

The floors are described in more detail in the following paragraphs.

Basement Level: The basement level exits to grade in the rear, and is nine+/- feet floor to ceiling. There are several masonry interior walls still standing that can either be retained or removed. The south end of the building is a single room 37 ½-feet deep by 44-feet wide, punctuated by five columns; the north end is a narrow room 37 ½-feet deep and 17-feet wide. The central 1/3 of basement is used for boiler/mechanical space with bearing walls and an exterior chimney on the back wall. The whole of the basement can be opened up except for the support columns. Alternatively, the existing brick walls could be repaired and retained. A narrow windowless room under the portico, leading to an areaway to grade, can be used as a second means of egress from the basement.

Entry Level (First floor): - The entry level is up seven risers from grade and has 11 +/- feet floor to ceiling. Although currently there are a few wood and plaster partitions, the plaster on these will have to be removed. As a result, the entry level can, more or less, be divided as one wishes except for the 11 support columns. The stair to the second floor is in front of the entry, slightly off-center. The stair to the basement is located under this stair. On the west side of the wing is an exterior stair leading to grade.

2nd Floor: The second floor is 10-feet high and clear span, including a full opening to the wing and no structural impediment to the area over the portico. There are only a few inconsequential remnants of partitions comprising of wood studs and plaster.

Character-defining Elements of the Building Interior

The building interior is deteriorated throughout, with openings in the roof (north side) and standing water in the basement. There are no features or spaces of sufficient quality or condition to reinstate or preserve.

3.3 Architectural Assessment

The building has been vacant since the City took ownership in 1972 and has experienced significant vandalism over the years. As noted earlier in this report, there are no windows, no interior doors, the interior stairways are dilapidated, the interior trim and molding has been removed and there is nothing in the interior of any historic significance. Currently the upper floor windows on all sides and the first floor windows on the rear side are open to the elements and there are holes in the roof allowing water to penetrate the structure. The basement contains at least one foot of water.

3.3.1 Site

The site appears to be relatively free of encumbrances to further development. The sloping terrain lends itself to molding and the vegetation is unremarkable.

Via the roadway in the rear of the building, a person can get close to the building with a vehicle, and the area could be designed to accommodate vehicular parking. To access the front entry from this side, though, a four



View of East Lawn

foot wide sidewalk around the building from back to front would be necessary.

Major site work would be required in the front of the building to make the front door accessible. There is sufficient room, though, that through a combination of a 30-foot ramp and re-grading, the front portico can be made accessible.

3.3.2 Foundation

A quick, outside-the building, visual inspection was made of the foundation. It appeared in good condition, and only cosmetic work should be anticipated.

3.3.3 Structure

The visual inspection revealed minimal structural problems except for the roof which needs to be replaced. There are some problem areas including the timber framing supporting the ornamental chimneys which has deteriorated to the point that it presents hazard for chimney collapse. Both chimneys seem to be out of plumb, need coping stones, and could have water damage. Whether these will have to be removed and rebuilt or only repaired depends on the condition of the roof structure. Recommended approach is to remove and replace with lighter materials of the same size and appearance.

There were several places in both columns and floors where reinforcing mesh/rods were exposed. There is also pervasive cracking of the concrete pan joists under the second and first floor. Because many of the joists are not currently visible, it is recommended that the concrete be tested for calcium chloride contamination as salt was often used in times past to cure concrete which can corrode the reinforcing steel.

Not enough of the basement slab was available for inspection, but what was visible appeared in reasonable shape. An engineer's opinion on the structural integrity of these features would be required by the building official before allowing work to be undertaken.

3.3.4 Exterior Walls

The exterior brick appeared to be plumb with no out of line bricks. There are steel lintels along the windows that are corroding and causing the bricks to lift up. The lintels probably do not need to be removed and may not need to be replaced. No shear cracks were apparent, and the mortar looked pretty good. A thorough inspection should be made to ascertain where tuck pointing would be required.

It is not known at this time whether there are weep holes above the lintels and at the foundation/earth line, or whether the cavity is blocked or open. However, given the appearance of the bricks, it appears that the original construction detail suffices. The plate supporting the rafters was not in good shape which suggests that there is a possibility for some water damage at the cornice line.

3.3.5 Roofing and Drainage

The entire roof needs to be replaced. Currently water enters through the roof and freezes in the joints between the concrete floors and the walls causing damage to the structure.

Structure: Although exposed to the elements for many years, the steel trusses looked pretty good, in spite of the rust and scaling. A more detailed inspection is necessary to determine if they are sound, although they appear adequate at this time. If they are retained, they will need fire proofing to meet the code. The board sheathing and the wood rafters are in poor condition. Much of the sheathing is missing. The roof should be replaced.

Slates: The slates were in very good shape, but there appeared to be many missing. There is no reason not to expect that they can be salvaged and re-used. An as yet undetermined number are missing and have to be replaced.

Gutters and rainwater leaders: There is indication that copper gutters and rain water leaders existed at one time, and they are shown on the drawing elevations. Further historical analysis needs to be undertaken to ascertain their design.

3.3.6 Doors and Windows

All exterior windows will have to be replaced. The openings will have to be taken back to the brick at the jambs, to the concrete sub-sills at the sill, and to the lintels at the head. Likewise for the doors in the rear, one on the south side of the wing, the other on the main structure just north of the wing. This latter door, as well as the front door, will have to be custom made to get a 36-inch door in a 60-inch space. The other door and the windows can probably be stock, with the slack made up in the sills and jambs.

3.3.7 Surfaces and Interior Partitions

Floors: There are no re-usable floor surfaces. All floor surfaces should be taken down to the concrete, and new surfaces installed where desired. Levelastic would probably suffice for all repairs in the concrete topping. While no cases were detected of holes that exposed reinforcing, if such is the case, they should be addressed as structural repairs. It appears that the structural design is sufficient to carry any surface material, including stone.

Interior walls: There are not any reusable wall surfaces. All existing wood stud/plaster partitions should be taken down to the studs. Where they are retained, the brick and the clay tile/plaster walls should be individually evaluated as to whether all plaster is removed or plaster is repaired. Strapping and plaster should be removed from the interior of the exterior walls.

Ceilings: New ceilings will be required throughout the building. It appears that the structural design is sufficient to carry any surface material. On the top floor, given the design of the roof, it may be possible to increase the ceiling height to create a more dramatic space.

3.3.8 Wood Trim and Interior Woodwork

Exterior Trim: Consistent with this building type, the cornice trim is visually fairly heavy, but probably made up of stock sections. Although some of it looks in good shape, it should be assumed that all of it will need to be replicated and replaced. There may also have been some special features and trim on the pediment (it appears that the full overhang was molded) that may need to be replicated and replaced such as the circular window and medallion. (See also Doors and Windows.)

Interior Woodwork: All interior woodwork will be new, and as such there is no reason that the new trim be historically accurate. It can be as dictated by the design, although a standard detail should be established by the owner for the tenants to follow when they do their build-out.

Barracks Building 2007 Interior Walls and Ceiling



Barracks Building 2007 Interior Stair

3.4 Conceptual Design Suggestions for Restored Barracks Building

Suggested Site and Building Renovations Plans and associated cost estimates are included in Chapter 5. The suggested building improvements are generally described below. The suggested interior renovations propose a scheme which does not connect the basement and the upper two floors (to achieve the most cost effective solution). Considerable savings in the elevator costs will accrue if the elevator services only two floors, not three as the structure would be smaller and excavation below the basement to accommodate the mechanicals would not be necessary. There also would be some savings in code compliance: sprinklers on only two levels and only one new stair.

For this concept to work, all efforts must be made to encourage people to see the building as two separate entities. The basement building accessed from grade in the rear, and the Main Building, accessed from the Hangar side. For way finding, each level would have a separate address and separate signage at the entry to the campus. For the upper two floors, (the building proper), users would be directed to go to the left as they enter the campus; for the basement (with a different name) users would be directed to go to the right.

A two-stop elevator with a cab size of 68-inches by 54-inches would be required to connect the two upper levels. The elevator machine room would be in the basement.

3.4.1 Site

Parking: There is an existing parking area at the rear of the building, which could be redesigned to accommodate about 12 vehicles. There may be potential to create additional spaces across from the roadway as well. The rear parking would likely be programmed primarily for use by the basement level tenants and their visitors, although some tenants of the upper building might park there. The tenants of, and people coming to the upper two floors would likely park in the existing parking lot near the Hangar.

Path between Rear and Front: To accommodate people parking in the rear who's destination is the front door, a 5-foot wide path at a slope no greater than 5% is necessary between the rear and the front steps which could be placed around the west end of the building. Given its length and slope, a bench with some planting should be installed about half way up to accommodate universal access.

Access to the Portico: Access to the front portico would be via a ramp along the face of the north end of the east facade. In order to bring this ramp length down to 30-feet, a portion of the yard in front of the building needs to be re-graded at a 5% grade, which would eliminate the bottom step, and up at also a 5% grade 16-inches to the east. In order to fit in with the Palladian character, the elements for this ramp that are visible from the east should be horizontal. The portico level must also be raised five inches or so to be flush with the interior floor level of the first floor.

Emergency Egress from the Basement Level: While the basement level will have its major entrance/exit in the rear, a secondary exit from under the portico is required for emergency egress. This requires replacing the exterior areaway stairs from under the portico with a ramp running along the south end of the east façade. Again, in order to fit in with the Palladian character, the elements for this ramp that are visible from the east should be horizontal.

Utilities: According to record plans from 1935, the Barracks Building is serviced by a six inch cast iron water main that extends from the access road between the Hangar Building and the east side of the Barracks Building. There is also a six inch cast iron sewer pipe that extends form the northeast side of the building to a septic tank located behind the Hangar. On the 1935 plan, a no. 1/10 I.C. W and no. 6 Bare neutral in underground conduit electrical service is provided from a transporter located at the rear of the Hangar Building. The condition and functionality of these utilities were not evaluated as part of this study and will need to be reviewed as part of future design efforts.

3.4.2 Basement Level:

Major Changes from Existing Conditions: The interior stair would be removed and the last, north south interior wall on the east end would be removed. Mechanical space will be reduced.

Rental Area: The building basement essentially divides into two parts: the south end with roughly 1,600 rentable square feet, and the north end with around 900 rentable square feet. In the center is mechanical space, an elevator, and an elevator machine room. Some of this center space may become rentable as the drawings evolve. Also, these two areas could be combined to make a single rentable space.

Two Toilet Rooms are proposed in the wing on this level -- one with a water closet (WC) and urinal for men, and one with 3 WCs for women. These would meet all universal access regulations.

3.4.3 First Floor:

Major Changes from Existing Conditions: All existing partitions would be removed. A new, enclosed stair to the top floor would be added beside the existing stair to the top floor. An elevator providing access to the second floor would be installed.

Egress: An area of refuge assistance at the exterior stairs on the north side would be used to meet the accessible requirements for the second means of egress from the first floor Rental Area. The first floor also divides into two parts: the south end with roughly 1,400 rentable square feet and the north end with around 1,350 rentable square feet. In the center is the entry, the elevator, a corridor and the two stairs, the one in the existing stair space being open to the floor above. These two areas could be subdivided into smaller rentable areas, but because of the entrance functions, are not easily joined unless a prospective tenant doesn't mind going through public areas to access these spaces.

Toilets Rooms on this level are proposed in the wing -- one with a WC and urinal for men, one with 3 WCs for women. These would meet all universal access regulations.

3.4.4 Second Floor:

Major Changes from Existing Conditions: All existing partitions would be removed. A new, enclosed stair to the first floor would be added beside the existing stair. An elevator providing access to first floor would be installed.

Egress: The center hallway would be designed to be an area of refuge assistance, thereby meeting the access requirements for a second means of egress from the top floor.

Rental Area: This level divides into three parts: the south end with roughly 1,250 rentable square feet, the center with roughly 640 rentable square feet, and the north end with around 1,300 rentable square feet. In the center is the elevator, two corridors, and the two stairs, the one in the existing stair space being open to the corridor and the floor below. These three areas could be subdivided and combined into a number of configurations from a single space to 4 or five spaces.

Toilets Rooms on this level are proposed in the wing -- one with 1 WCs and 2 urinals for men, one with 3 WCs for women. These would meet all universal access regulations.

3.5 Code Requirements and Universal Access

Egress: Currently there are two interior stairs and one exterior stair. None of these meets access regulations; nor does the handrail. Stairs and handrail will have to be removed and the new ones designed to meet regulations. While the stair between the first floor and top floor can be open, all the others must be

enclosed. With the fire department's permission, the exterior stair leading from the first floor to grade in the rear could be upgraded and used as a fire egress. If this is allowed, only one new stair (enclosed) will be required; if not allowed, another enclosed interior stair will be required.

Sprinklers: Any future design should have a sprinkler system. Whether it is for the full building or only a portion depends on the design. Our proposal is that it be only for the upper two floors.

Access: Access requirements for the building and site are governed by Title II of the Americans with Disabilities Act, Public Law 101-336, known as the ADA. The regulations for Title II are found in 28 CFR Part 35. This document, in turn, incorporates the ADA Accessibility Guidelines for Buildings and Facilities (ADAAG) as its design standards. The building and site must also meet 521 CMR, the Rules and Regulations of the Massachusetts Architectural Access Board (MAAB Regs).

Built in the 1930's, the building lacks any consideration of universal access: the main level (first floor) is up seven risers from grade in the front; there is no accessible route to the top level; and there is no interior accessible route to the basement.

Further, since the accessible entrance to the building must be coincident with the entrance used by others, the front door is required to be the main entrance. This doorway originally had a pair of 30-inch leaves; however, the minimum width of an accessible door is 36 inches, which means that the new door can not be the same as the original.

On the plus side, the basement level can be accessed from grade, and the building could be configured so that the basement is a separate structure for code purposes. Under such a scheme the only required interior accessible connection would be between the first floor and top level. We are recommending that this concept be followed since an elevator that does not go to the basement level will require no excavation in the cellar.

Two exterior ramps which were previously described will be needed. A ramp enabling a person who cannot use steps is needed on the south side to get out of the basement; also needed is a ramp from grade to the first floor.

3.6 Conclusions and Recommendations

In general, the building is highly salvageable, much more than expected given its treatment over the years. The structure is sound, the code modifications (including access) are straight forward, and the rentable area can be subdivided into anywhere from one to eight tenants. Without hesitation, we recommend that investigations go to the next level.

To this end, we recommend

1. Engaging an engineer or a contractor qualified in the discipline professional to assess the condition of the steel, of the bricks, and of the concrete floors.
2. Hiring an architect or engineer to prepare contract drawings which include specifications and cost estimates for the following:
 - a) Securing the exterior of the building with plywood in the window and door openings.

- b) Demolishing all non-structural elements except the stairs and roof -- interior partitions, wall surfaces, etc. be demolished and removed from the site; and the holes for the elevator and new stairs be cut.
- c) Replacing the roof, including removal and replacement of the chimneys. Existing slates should be re-used.
- d) Engaging an Architect to prepare schematic plans based on the description contained herein which shows the minimal amount of work to be done for rental, leaving build-out to future tenants.
- e) Take three calcium chloride test for the concrete pan beams to determine potential extent of corrosion of reinforcing steel.

4.0 HISTORIC PRESERVATION GUIDELINES AND RECOMMENDATIONS

Rooted in over 120 years of preservation ethics in both Europe and America, the Secretary of the Interior's Standards for the Treatment of Historic Properties are common sense principles in non-technical language. They were developed to help protect our nation's irreplaceable cultural resources by promoting consistent preservation practices.

Preservation focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. (Protection and Stabilization have now been consolidated under this treatment.)

Rehabilitation acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.

Restoration depicts a property at a particular period of time in its history, while removing evidence of other periods.

Reconstruction re-creates vanished or non-surviving portions of a property for interpretive purposes.

The recommended treatment standard for the Barracks Building and its related site is **Rehabilitation** and the specific recommendations are found in Section 4.1 and 4.2 below.

The ten standards for rehabilitation are provided below. Greater detail is provided in the Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines for Rehabilitating Historic Buildings. See also The Secretary of the Interior's Standards for Rehabilitation are found in the web site at <http://www.cr.nps.gov/hps/TPS/tax/rehabstandards.htm>

The Standards for Rehabilitation are applied to projects in a reasonable manner, taking into consideration economic and technical feasibility. Standards 1, 2, 5, 6, and 9 have the greatest applicability to this project. It should be noted that the Building interior had no special features with possible exception of central iron stairway.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

4.1 Barracks Building

Efforts should be focused on the building exterior which retains much of its historic appearance. The building interior is in deteriorated condition throughout with openings in the roof and standing water in the basement. There are no features or spaces of sufficient quality or conditions to reinstate or preserve.

Key Elements to Maintain, Repair, or Reinstate

1. Maintain low-pitched hip roof; repair slate shingles and molded wood cornice where possible and reinstate where not using remaining elements and original architectural drawings as a guide.
2. Reinstate copper gutters and downspouts as indicated on original architectural drawings.
3. Reinstate windows and exterior doors using historic photographs and original architectural drawings as a guide.
4. Maintain symmetrical organization, especially of primary east façade.
5. Maintain red brick walls laid up in common bond; white paint appears to be an original or very early treatment.
6. Maintain primary east façade with projecting, pedimented frontispiece with arched openings at first story.
7. Maintain concrete/cast stone water table and window sills, and splayed brick lintels with cast stone keystones at first story.

4.2 Site

Maintain the character-defining site elements identified in section 4.1 to the greatest extent possible.

4.2.1 Key Elements and Spaces to Maintain

1. The unobstructed views over Salem Harbor to southeast should be maintained.
2. The open turf-covered landscape in these areas should be maintained, especially the area between the front of the Barracks Building and the Hangar.
3. Access roads and parking areas should remain at the rear of the building where they are currently located. Some enlargement of the parking area is likely to be required by most new uses. It should remain on the west side of the access road with possible expansion to the small area at the rear of the building. Uses that do not require major expansion of parking facilities should be favored.
4. Footpaths connecting the Barracks Building to the harbor and nearby buildings should follow the examples provided in early site plans and historic photographs. An example is the original walkway that still connects the Barracks Building and the Hangar. The original material was concrete.

4.2.2 Secondary Elements and Spaces

Replacement of the following features is desirable if the budget allows:

1. The flagpole base seen in historic views remains next to the walkway. The flag might be replaced if desired.
2. A few stationary cannon are seen on the east lawn in historic views. Similar items might be replaced if desired.
3. A few trees are shown on the primary east lawn. They might be replaced if desired.
4. Small shrubs are seen as foundation plantings in front of the primary east façade. The overgrown giants currently in place should be removed. Similar elements might be replaced if desired.

5.0 BUILDING REHABILITATION RECOMMENDATIONS AND COST ESTIMATES

Two different phases of building repair and related cost estimates were developed for the Barracks Building. Phase 1 covers demolition work plus the activities necessary to stabilize the building while Phase 2 repairs involve work necessary to bring the building up to code, into compliance with the Americans with Disabilities Act and to renovate the interior to a condition that is rentable, with the tenant responsible for build out. The following paragraphs describe the suggested Phase 1 and Phase 2 Outline Specifications organized by Type of Work. The recommendations are only to provide basic information. A full set of specifications should be developed with construction drawings when the Scope of Work for each phase of construction is fully developed.

Building Elevation and Floor Plans that indicate the recommended renovations are included at the end of this Chapter.

5.1 Phase 1 Stabilization Work

The following Specifications outline the Phase 1 improvements recommended to stabilize the building.

5.1.1 General Requirements

1. The Scope of the project involves the stabilization and improvements the interior and rehabilitation of the exterior of the existing building including installation of exterior ramps to the basement and an elevator servicing the first and second floor to provided universal access to the building. Site work includes removal of plantings, re-grading and installation of ramps along the south side of the building and parking to universal access.
2. All Contractors shall be licensed in the Commonwealth of Massachusetts.
3. All work shall comply with state and local codes and ordinances, and shall be done to the highest standards of craftsmanship by journeymen of the respective trades. Contractor shall provide products of acceptable manufacturers that have been in satisfactory use in similar service for three years and shall deliver, handle, and store materials in accordance with manufacturer's instructions.
4. This property is listed in the National Register of Historic Places. Certain work elements as specified will meet the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.
5. The contractor must have at least five years of experience with National Register Properties or properties eligible for listing on the National Register.
6. The contractor shall clean and restore work areas to previous condition after work.
7. The contractor shall obtain all permits and approvals required for the project.
8. The contractor shall remove and dispose of all debris (demolition, general refuse). Leave floors broom clean.
9. The contractor shall supply temporary facilities as required.

5.1.2 Site Work

1. Remove all trees and other vegetation around foundations and around building to a distance of 8-feet.

5.1.3 General Demolition

1. Remove and dispose of all exterior wood trim (exterior windows, doors, cornice, pediment) except for samples of typical sections which should be numbered and stockpiled so that their design can be replicated. Cornice should be removed under supervision of roofing contractor.
2. Remove and stockpile for future use/replication the stair railings in the front stairs and the portico railings.
3. Pump out water in basement and remove and dispose of all debris and refuse on the floors.
4. Remove and dispose of all loose and hanging metal, wood, and other debris that could pose a hazard.
5. Remove and dispose of the stairs between basement and first floor.
6. Remove and dispose of all finish on the interior of the exterior walls, bring surface back to the brick.
7. Remove and dispose of all wood and plaster partitions.
8. Remove and dispose of all other partitions where called for on the plans.
9. Remove and dispose of all ceilings.
10. Remove and dispose of flooring material down to the concrete topping or as directed by owner's representative.
11. Remove and dispose of the remnants of all mechanical, electrical, and plumbing.

5.1.4 Selective Demolition

1. Cut a rectilinear hole in the first and second floors, approximately 72 inches wide by 84 inches long. Remove and dispose of all debris from the cuts.
2. Cut a rectilinear hole in the first and second floor, approximately 60 inches wide by 17 feet long. Remove and dispose of all debris from the cut.

5.1.5 Roof Replacement

1. Supervise the removal of the cornice and stabilizing the temporary condition.
2. Selectively remove and stockpile slates from areas where sheathing must be removed.
3. Remove and dispose of board sheathing and rafters as shown on drawings or as agreed to with owner's representative.
4. Remove chimneys and dispose of all material.
5. Purchase materials for, and construct of lighter material and simulated brick new ornamental chimneys the same size and shape as existing.
6. Remove scale from and fireproof steel as required by code.
7. Purchase materials for, and replace removed rafters and sheathing.
8. Restore slate roof using salvaged and new slates as needed.
9. Purchase materials for and construct new roof for flat portion of roof including new joists, sheathing, and rubber roof.

N.b.: New gutters, new rain water leaders, and the restored cornice is not done under this contract.

5.1.16 Sealing Building

1. Purchase materials for, and install plywood closures for all windows and doors. One door in the rear, and the front door shall have a cutout plywood door that can be used for access to the building.
2. Purchase material for, and install a plywood enclosure to keep people from entering building.

5.2 Phase 2 Renovation

The following Specifications outline the Phase 2 renovations recommended to improve the building to a leasable condition suitable for tenant build out.

5.2.1 General Conditions

1. Obtain all permits and approvals required for the project.
2. Remove and dispose of all construction debris. Leave floors broom clean.
3. Conditions 2 through 9 as detailed in Phase 1.

5.2.2 Site Work

1. Re-grade in front of entrance to raise grade 7-inches +/- . Slope back at 2% until other side of new intersecting walk. From there, slope down at 4.5% until existing grade.
2. Re-grade to north of entrance stairs at a slope of 4% upward until the end of the building. Continue at 2% both directions for 8-feet. Slope to existing grade.
3. Re-grade to south of entrance stairs sloping downward at 4%. Continue at 2% both directions for 8-feet. Slope to existing grade.
4. Re-grade at south end of building from end of ramp to basement to parking for a path 60-inches wide at a 4.5% slope .
5. Provide the materials for and construct a new 5-foot wide path over old from entrance to Hangar parking, including gravel sub-surface and two layers of bituminous.
6. Provide the materials for and construct a new 5-foot wide path from ramp to portico on the north side of the entrance stairs to the exit ramp from basement on the south side of the entrance stairs.
7. Provide the materials for and construct a new 5-foot wide path from ramp on the north side of the building to the exist ramp on the south side from basement.
8. Provide the materials for and construct a new 5-foot wide, concrete ramp to the portico at a slope of 8%, including two 8-inch concrete walls, footings and brick facing on one side of the outside wall. Provide 1 ½-inch diameter double handrail each side meeting access regulations.
9. Excavate for a ramp from basement to grade on the west side of the portico. Remove from site un-needed barrow.
10. Provide the materials for and construct a new 5-foot wide, concrete ramp from grade to the basement at a slope of 8%, including two 8-inch concrete walls with footings. Provide 1 ½-inch diameter double handrail meeting access regulations on each side.
11. Provide the materials for and construct a new 5-foot wide path from exist ramp from basement to ramp to parking in rear.

5.2.3 Site Work Utilities

1. Provide the materials for and install new utility lines to the building, including storm and waste drains, water, and buried electrical and buried communications lines.
2. Provide the materials for and install four drywells for storm drainage, including drain lines to rainwater leaders.
3. Provide the materials for and install an adequately sized oil storage tank.

5.2.4 General and Selective Demolition

1. Remove and dispose of all plywood coverings of doors and windows, and all temporary work constructed during Phase 1.
2. Remove and dispose of 10 +/- square feet of 4 whyth brick wall below one basement window.
3. Remove interior walls indicated for removal and dispose of material.
4. Remove and dispose of all temporary constructions provided in the stabilization phase.

5.2.5 Exterior Construction

1. Provide the materials for, and raise the portico floor to be level with first floor.
2. Provide the materials for and install copper gutters at cornice, and rain water leaders at all corners. Provide drainage to drywells
3. Rake and tuck point mortar where indicated.
4. Provide materials for and construct with matching brick a 2-whyth wall in former door opening on wing, basement level.
5. Provide materials for and construct, including waterproofing, concrete block infill in three former window opening on east basement level.
6. Provide materials for and construct from wood two new ornamental chimneys. Face with simulated brick.

5.2.6 Exterior Doors and Windows

1. Provide and install, including brick mould, trim, and hardware, one 36-inch wide, 1/2 glazed wood door with one sidelight in 63-inch wide masonry opening in east face of basement level. Door, brick mould, and trim should replicate original design as much as possible.
2. Provide and install, including brick mould, trim, and hardware, one 36-inch wide, 1/2 glazed wood door in 42-inch masonry opening where window has been removed in north face of basement level. Door, brick mould, and trim should replicate original design as much as possible.
3. Provide and install, including brick mould, trim, and hardware, two separate 36-inch wide wood doors in two 48-inch wide masonry openings in south face of basement level.
4. Provide and install, including brick mould, trim, and hardware, one 36-inch wide, 1/2 glazed wood door in 48-inch wide masonry opening in first floor of wing. Door, brick mould, and trim should replicate original design as much as possible.
5. Provide and install, including brick mould, trim, and hardware, full glazed 36-inch wide door with two sidelights in 66-inch wide by 126-inch high arched masonry opening in south face of first floor. Door, brick mould, and trim should replicate original design as much as possible.

6. Provide and install, including brick mould and trim, two Palladian windows in two 54-inch wide by 91-inch high masonry openings in east face of first floor. Door, brick mould, and trim should replicate original design as much as possible.
7. Provide and install, including brick mould and trim, six, in-swinging hopper windows in south, east, and north face of basement level in 48-inch wide by 20-inch high masonry opening. Window, brick mould, and trim should replicate original design as much as possible.
8. Provide and install, including brick mould and trim, thirteen, double-hung windows in 48-inch wide by 66-inch high masonry opening on basement level. Window, brick mould, and trim should replicate original design as much as possible.
9. Provide and install, including brick mould and trim, twenty-six, double-hung windows in 48-inch wide by 81-inch high masonry opening on first level. Window, brick mould, and trim should replicate original design as much as possible.
10. Provide and install, including brick mould and trim, thirty-one, double-hung windows in 48-inch by 66-inch masonry opening on second level. Window, brick mould, and trim should replicate original design as much as possible.

5.2.7 Exterior and Interior Steel

1. Provide and install exterior fire escape.
2. Install 3 railings in 3 portico openings and install 2 stair railings. Re-use existing railings where possible. Where new railings required, provide and install replicas of original railings as much as possible.
3. Remove scale from, and fire proof steel roof trusses.
4. Provide materials for and install a new enclosed egress stair from second floor to first floor, including railings and rubber treads.

5.2.8 Interior Doors and Windows

1. Provide and install, including trim and hardware, seven 36-inch wide, and one pair of 36-inch wide wood doors on basement level.
2. Provide and install, including trim and hardware, five 36-inch wide fire rated wood doors on first level.
3. Provide and install, including trim and hardware, two 36-inch wide fire rated wood doors with two sidelights each on first level.
4. Provide and install, including trim and hardware, three 36-inch wide fire rated wood doors with two sidelights each on second level.
5. Provide and install, including trim and hardware, four 36-inch wide fire rated wood doors on second level.

5.2.9 Rental Areas

1. Exterior Walls: Provide the materials for and install 3-1/2 metal studs 16-inches on center and R-13 fiberglass batts.
2. Demising partitions: Provide the materials for and install 3-1/2 metal studs 16-inches on center.

3. Floors: Smooth and fill existing concrete floors suitable as sub-floor for carpet
4. Ceiling: No work

5.2.10 Common Areas

1. Exterior Walls: Provide and install 3-1/2 metal studs 16 inches on center, R-13 fiberglass batts, and 5/8-inch drywall. Finish walls including 2 coats paint.
2. Demising partitions: Provide and install 3-1/2 metal studs 16 inches on center, R-11 fiberglass batts, and 5/8-inch drywall on public side. Finish walls including 2 coats paint.
3. Floors: Smooth and fill existing concrete. Provide the materials for and install marble tile in entry foyer. Provide the materials for and install carpet in corridors.
4. Main Stairs: Provide the materials for and install one flight (12-feet floor to floor) ornamental wood stairs, including railings.
5. Ceiling: Provide the materials for and install suspended ceilings.

5.2.11 Utility Spaces

1. Demising partitions: Provide and install 3-1/2 metal studs 16-inches on center, R-11 fiberglass batts, and 5/8-inch fire-coded drywall. Finish walls, including 2 coats paint.
2. Floors: Smooth and fill existing concrete. Harden surface.
3. Ceiling: Clean and paint, 2 coats.

5.2.12 Toilet Rooms:

1. Exterior Walls: Provide and install 3-1/2 metal studs 16-inches on center, R-13 fiberglass batts.
2. Wall surfaces: Provide the materials for and install thinset ceramic tile wall surface to a height of 48 inches over cement board. Provide the materials for and install 5/8-inch drywall above tile wainscot. Finish walls including 2 coats paint.
3. Toilet partitions: Provide and install metal partitions and doors for 10 toilet stalls including 6 which meet MAAB Regulations, and miscellaneous partitions at entry and at urinals.
4. Floors: Smooth and fill existing concrete and provide the materials for and install ceramic tile floors, including 6 marble thresholds.
5. Ceiling: Provide the materials for and install suspended ceilings.
6. Provide the materials for and install counters and mirrors for 10 lavatories, all of which meet MAAB Regulations.
7. Provide the materials for and install miscellaneous towel dispensers, paper dispensers, grab bars, etc. for 6 public bathrooms.

5.2.13 Utility Closets (4 closets)

1. Wall surfaces: Provide the materials for and install thinset ceramic tile wall surface to a height of 48-inches over cement board. Provide the materials for and install 5/8-inch drywall above tile wainscot. Finish walls including 2 coats paint.
2. Floors: Smooth and fill existing concrete and provide the materials for and install ceramic tile floors, including 4 marble thresholds.
3. Ceiling: Provide the materials for and install suspended ceilings.

5.2.14 Plumbing

1. Provide the materials for and install hot and cold water service, including hot water boiler.
2. Provide the materials for and install 6 complete public toilet rooms, including 12 water closets, 4 urinals, 10 lavatories, and all the required plumbing, rough and final.
3. Provide the materials for and install 4 mop sinks, including all the required plumbing, rough and final.
4. Provide the materials for and install a complete sprinkler system for first and second floor, including all the required plumbing, rough and final and all alarm systems.

5.2.15 Electrical

1. Provide the materials for and install 220 volt, 600 amp service with 6 meters.
2. Provide the materials for and install 8satellite 200 amp load centers, one in each rental area and one common.
3. Provide the materials for and install twenty 24-inch by 48-inch drop-in florescent light fixtures in bathrooms and common areas, including switches.
4. Provide the materials for and install 4 wall sconces in entry foyer, including switches.
5. Provide the materials for and install outlets in common areas and toilets per code.
6. Provide the rough wiring for miscellaneous electrical devices installed by other trades.

5.2.16 HVAC

1. Provide the materials for and install heating all floors.
2. Provide the materials for and install ventilation system for basement and 6 toilet rooms.
3. Provide the materials for and install cooling system for first and second levels.

5.2.17 Elevator

1. Provide the materials for and install complete, 2-stop, double door, hydraulic elevator with 60-inch by 68-inch cab, including shaft walls.

5.3 Cost Estimate Summary

As noted earlier in the report, rough cost estimates were developed for two phases of repair. The cost estimates are found in Tables 2 and 3 (on the following pages). Cost estimates were derived using the RS Means Building Construction Cost Data 65th Annual Edition, 2007 and adjusted for the Boston area. An additional cost estimate was developed to create a kitchen for catered functions should the City decide to create a function hall on the top floor as shown in Table 4.

Table 2
Phase 1 Cost Estimate

Scope of Work	Quantity	Unit	Unit Cost	Amount
Site Work and Disposal				
Remove trees and vegetation	8	Each	104.81	838
Pump out basement water	1	Each	800.00	800
Debris Removal - overall	1	Each	811.72	812
Debris Removal - per floor	11,700	Square Foot	0.54	6,318
Dumpster and disposal	9	Each	800.00	7,200
Demolition				
Exterior				
Remove exterior wooden trim	333	Linear Foot	0.87	290
Remove iron railings on southern side	1	Lump Sum	500.00	500
Remove fire escape	1	Lump Sum	2,000.00	2,000
Interior				
Remove basement stairs	1	Each	1,250.00	1,250
Strip all materials from outside walls	7315	Square Foot	2.50	18,288
Remove wall partitions	326	Linear Foot	22.50	7,335
Remove ceiling	11,700	Square Foot	1.29	15,093
Roof				
Remove existing roof	4920	Square Foot	1.75	8,610
Replace broken or damaged roof joists	3600	Square Foot	2.29	8,244
Install plywood sheathing	4920	Square Foot	1.35	6,642
Slate tiles (10%)	492	Square Foot	6.00	2,952
Install slate on roof	4920	Square Foot	5.25	25,830
Install rubber on roof	325	Square Foot	2.50	813
Install aluminum flashing	63	Linear Foot	24.50	1,544
Remove ornamental chimneys	2	Each	250.00	500
Construction				
Exterior				
Plywood window openings (80% need installation)	2120	Square Foot	1.35	2,862
Install rear plywood door	1	Each	300.00	300
Interior				
Fireproof steel members	2000	Square Foot	2.25	4,500
Cut 72" x 84" shaft on first and second floor add bracing	2	Each	1,700.00	3,400
Cut 60" x 17' shaft on second floor	1	Each	2,300.00	2,300
Subtotal:				\$ 129,219
Bid Documents/Construction (12%)				\$ 15,506
Contingency (15%)				\$ 19,383
TOTAL:				\$ 164,109

Table 3
Phase 2 Cost Estimate¹

Scope of Work	Quantity	Unit	Unit Cost	Amount
Site Work				
Regrade for ramps	1	Lump Sum	2,000.00	2,000
Remove plywood from doors and windows	1	Lump Sum	1,000.00	1,000
Debris removal - overall	1	Each	811.72	812
Debris removal - per floor	5,000	Square Foot	0.54	2,700
Dumpster and Disposal	3	Each	700.00	2,100
Demolition existing stairs	1	Lump Sum	3,000.00	3,000
Calcium chloride testing	9	Each	90.00	810
Install drywell and piping	4	Each	2,000.00	8,000
Windows and Doors				
Install basement windows 48" x 20" opening	7	Each	165.00	1,155
Install basement windows 48" x 66" opening	12	Each	495.00	5,940
Install first floor windows 48" x 76" opening	26	Each	590.00	15,340
Install first floor palladian windows 54" x 91" opening	2	Each	2,530.00	5,060
Install second floor windows 48" x 66" opening	31	Each	495.00	15,345
Install basement floor entry doors	3	Each	425.00	1,275
Install basement door with sidelite	1	Each	670.00	670
Install front entry door	1	Each	1,500.00	1,500
Install rear entry door, 2nd floor	1	Each	425.00	425
Install wooden interior doors (basement)	7	Each	319.00	2,233
Install wooden fire rated interior doors	9	Each	462.00	4,158
Install wooden fire rated interior doors w/sidelights	5	Each	675.00	3,375
Roof				
Install copper gutter and downspouts	466	Linear Foot	26.35	12,279
Install ornamental brick faced chimneys	2	Each	2,200.00	4,400
Install trim and molding	333	Linear Foot	3.40	1,132
Install 18" x18" wooden cornice	333	Linear Foot	11.25	3,746
Construction				
Exterior				
Install new iron stair railings	14	Linear Foot	30.60	428
Install new porch railings	18	Linear Foot	26.46	476
Increase height of concrete deck	285	Square Foot	6.32	1,801
Install concrete ramps	407	Square Foot	4.87	1,982
Install sidewalk	2,000	Square Foot	4.87	9,740
Install footing - 10" x 20"	120	Linear Foot	18.51	2,221
Install concrete wall - 10" x 72"	120	Linear Foot	95.93	11,512
Install concrete rebar	840	Square Foot	1.61	1,352

¹ Note that the cost estimates do not include utility services exterior to the building.

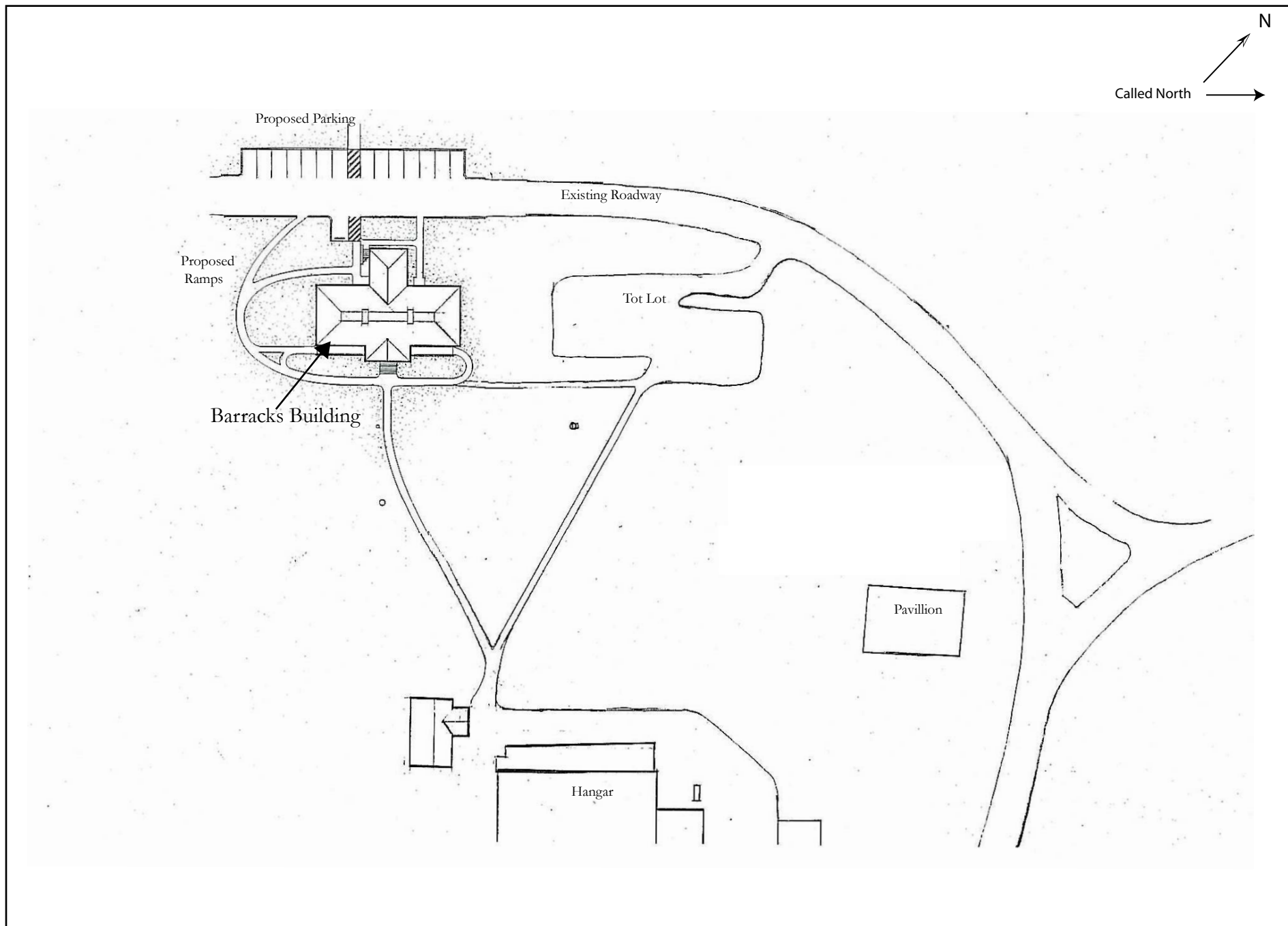
Table 3
Phase 2 Cost Estimate (Continued)

Scope of Work	Quantity	Unit	Unit Cost	Amount
Install fire escape staircase	1	Each	3,300.00	3,300
Install concrete ramp railings	120	Linear Foot	20.00	2,400
Install gravel parking lot	350	Cubic Yard	25.00	8,750
Install handicapped parking lot (base course)	115	Cubic Yard	12.87	1,480
Install hancp. parking lot (binder course)	15	Ton	69.30	1,040
Install brick face wall along ramp	240	Square Foot	13.00	3,120
Install brick wall on removed doors/windows	80	Square Foot	45.10	3,608
Install replica medallion	1	Each	1,500.00	1,500
Interior				
Install urinals	4	Each	753.50	3,014
Install toilets	6	Each	715.09	4,291
Install handicapped toilets	6	Each	715.09	4,291
Install sinks	10	Each	1,469.15	14,692
Install mop sinks	4	Each	1,180.00	4,720
Install two story elevator	1	Each	150,000.00	150,000
Install 2 x 4 metal studs	11,000	Square Foot	1.71	18,810
Install R13 insulation to exterior walls	6,973	Square Foot	0.83	5,788
Install 5/8" drywall (common area)	3,565	Square Foot	1.89	6,738
Paint common area	3,565	Square Foot	0.73	2,602
Install stairways between 1st and 2nd floors	2	Each	2,700.00	5,400
Install suspended ceiling (common area/bathroom)	1,850	Square Foot	4.92	9,102
Install marble flooring (common area)	165	Square Foot	37.50	6,188
Install carpet w/ padding (common area)	72	Square Yard	3.08	222
Install bathroom tiles	1,170	Square Foot	14.91	17,445
Install lighting 2'x4' (common area/bathroom)	20	Each	195.50	3,910
Install sprinkler system (1st and 2nd floor)	7,800	Square Foot	3.50	27,300
Install electric utilities	1	Lump Sum	8,000.00	8,000
Install 200 amp load distribution stations	8	Each	3,770.00	30,160
Install HVAC system	1	Lump Sum	15,950.00	15,950
Install plumbing system	1	Lump Sum	10,000.00	10,000
Install oil fired boiler	1	Lump Sum	39,710.00	39,710
Level concrete floors	1	Lump Sum	3,000.00	3,000
Subtotal:				\$ 544,496
Structural Assessment				\$ 1,700
Bid Documents/Construction (12%)				\$ 65,340
Contingency (15%)				\$ 81,674
TOTAL:				\$ 693,210

Table 4
Function Hall Cost Estimate

Scope of Work	Quantity	Unit	Unit Cost	Amount
Kitchen				
24" x 24" pot sink	1	Each	2,260.00	2,260
18" x 18" prep sink	1	Each	383.68	384
Commercial refrigerator	2	Each	2,696.00	5,392
Commercial stove w/ two ovens	1	Each	7,300.00	7,300
2' x 4' table	3	Each	325.00	975
Install 36" deep plastic laminate counter top	42	Linear Foot	46.57	1,956
Install toilets	4	Each	715.09	2,860
Subtotal: Contingency (15%) TOTAL:				\$ 21,127
				\$ 3,169
				\$ 24,296

Scope of Work	Quantity	Unit	Unit Cost	Amount
Dining Hall				
5' diameter round plywood folding banquet table	20	Each	160.00	3,200
Chairs (8 chairs per table)	160	Each	89.00	14,240
Subtotal: Contingency (15%) TOTAL:				\$ 17,440
				\$ 2,616
				\$ 20,056

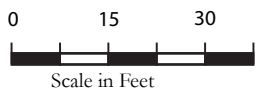
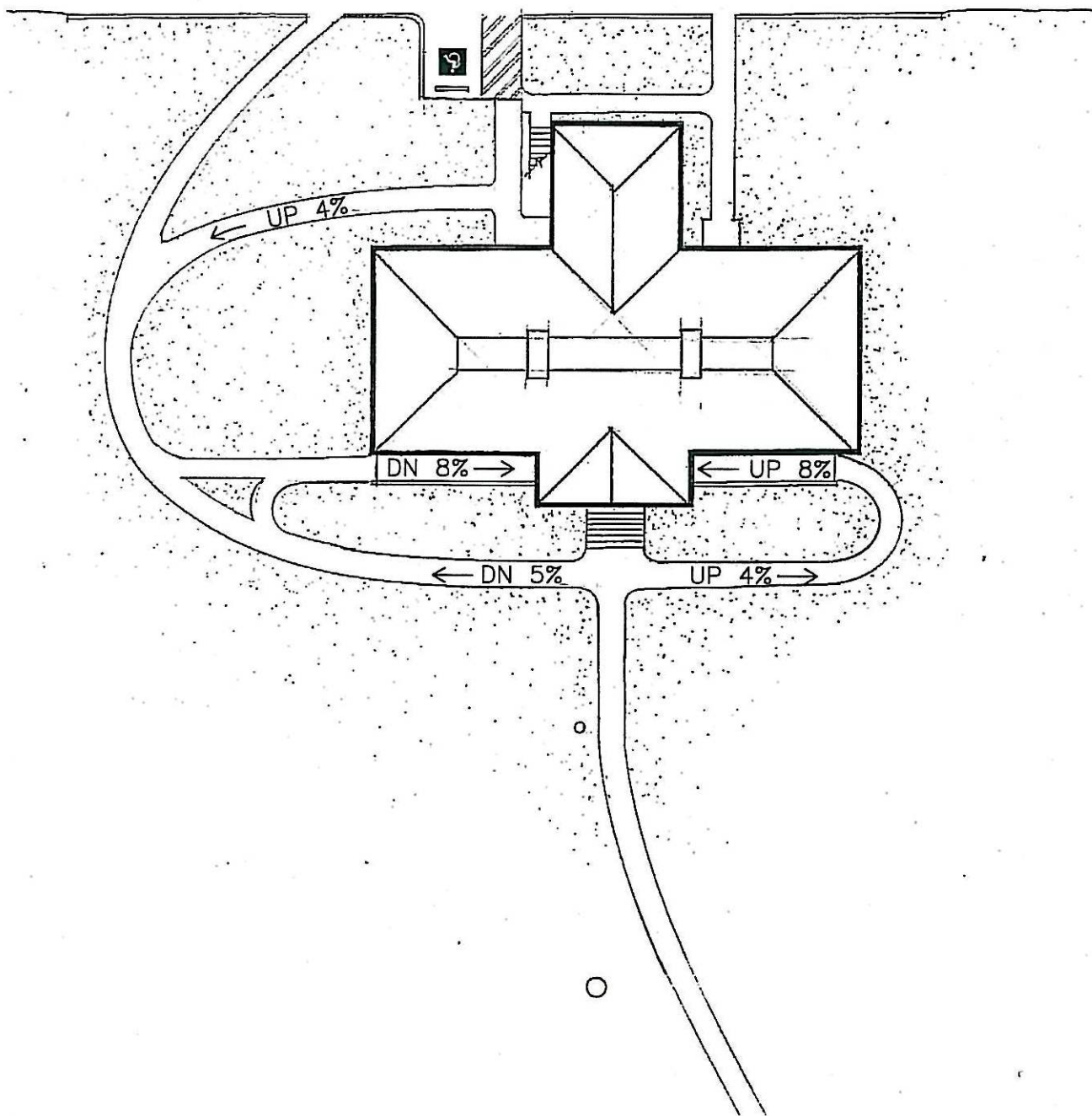
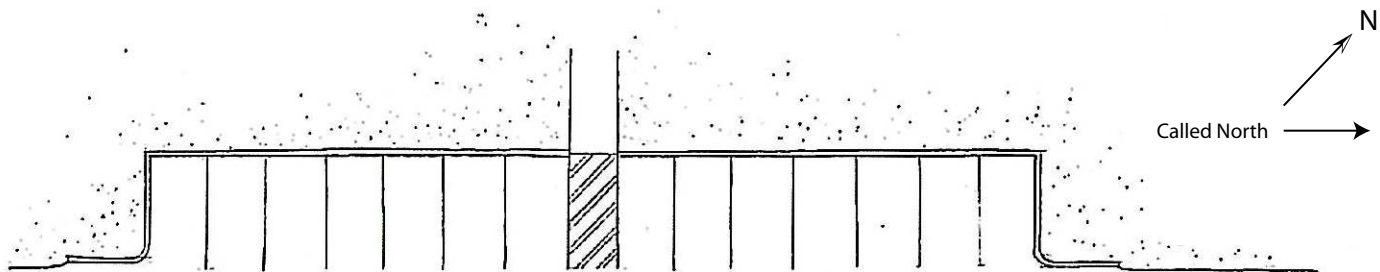


Proposed Site Plan

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Scale in Feet

U.S. Coast Guard Barracks Building Re-Use Feasibility Study Salem, MA

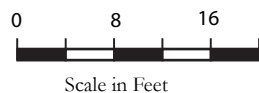
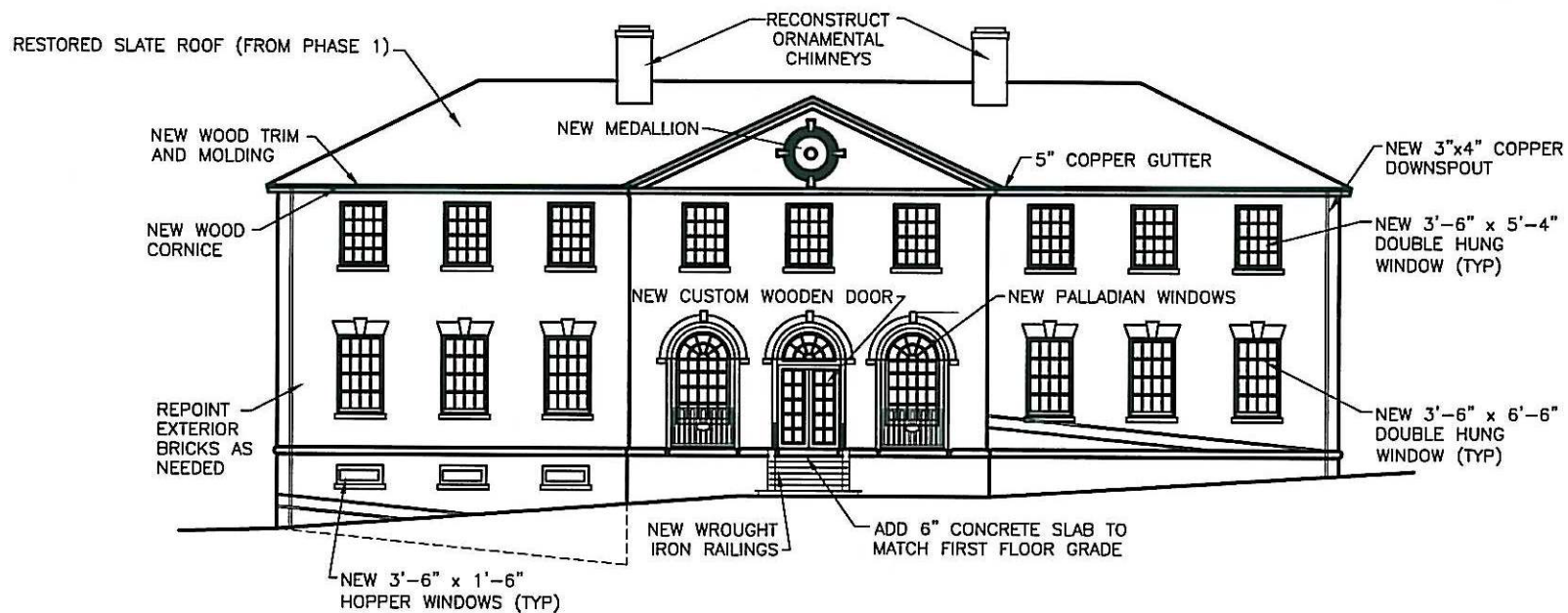
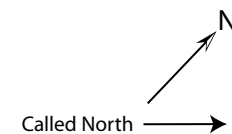
Vine Associates, Inc.
372 Merrimac Street
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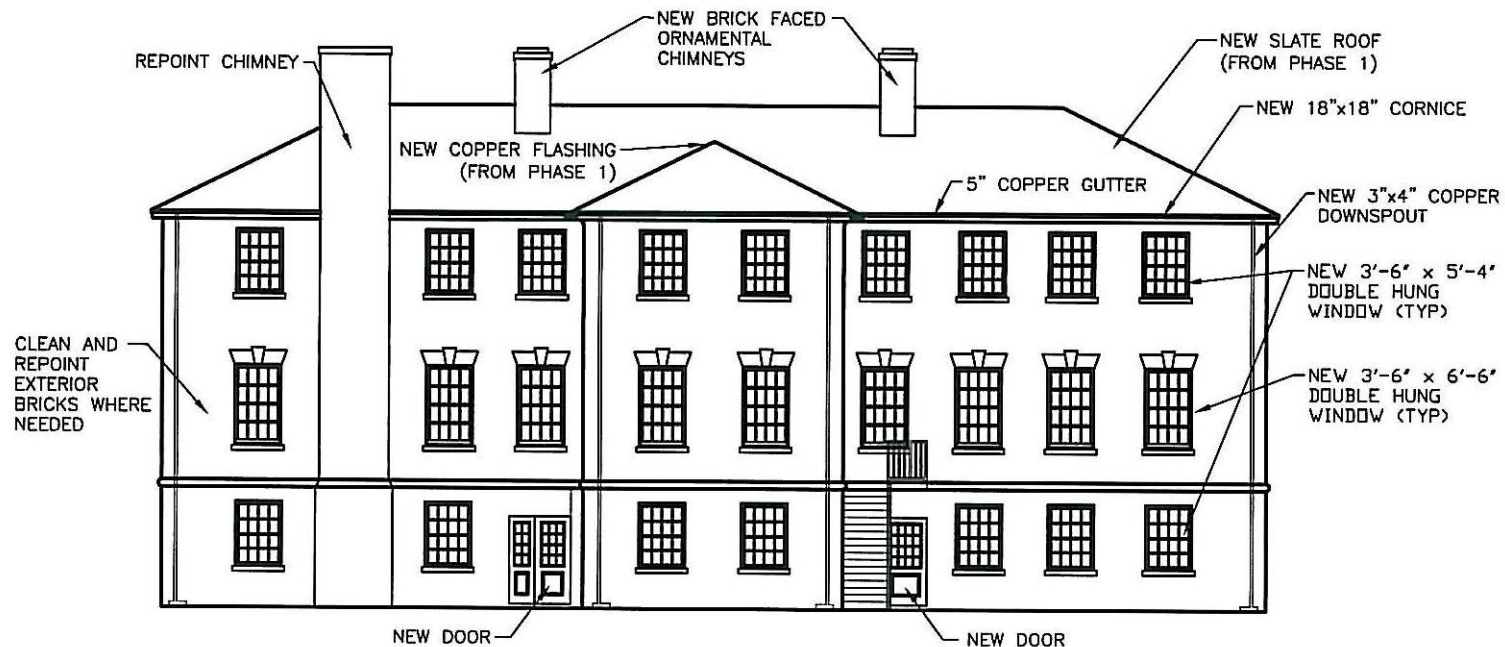
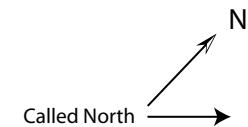
Barracks Building Site

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East Elevation

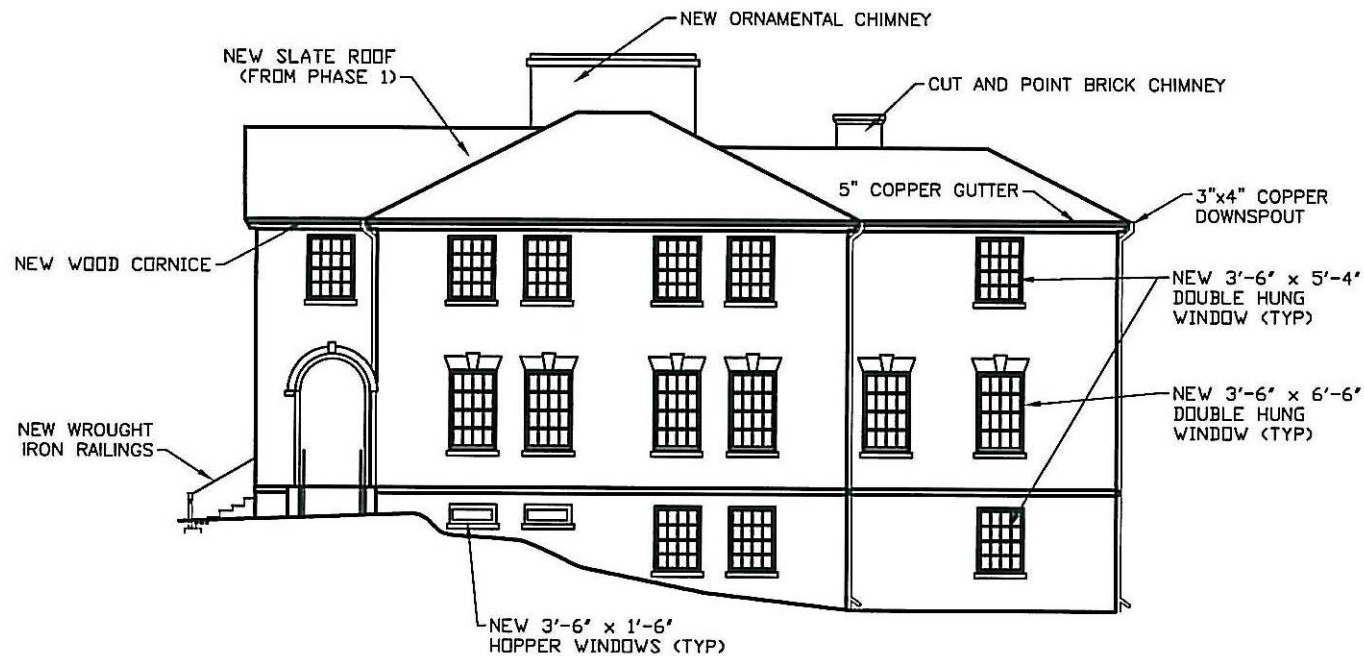
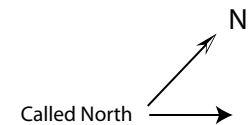


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West Elevation

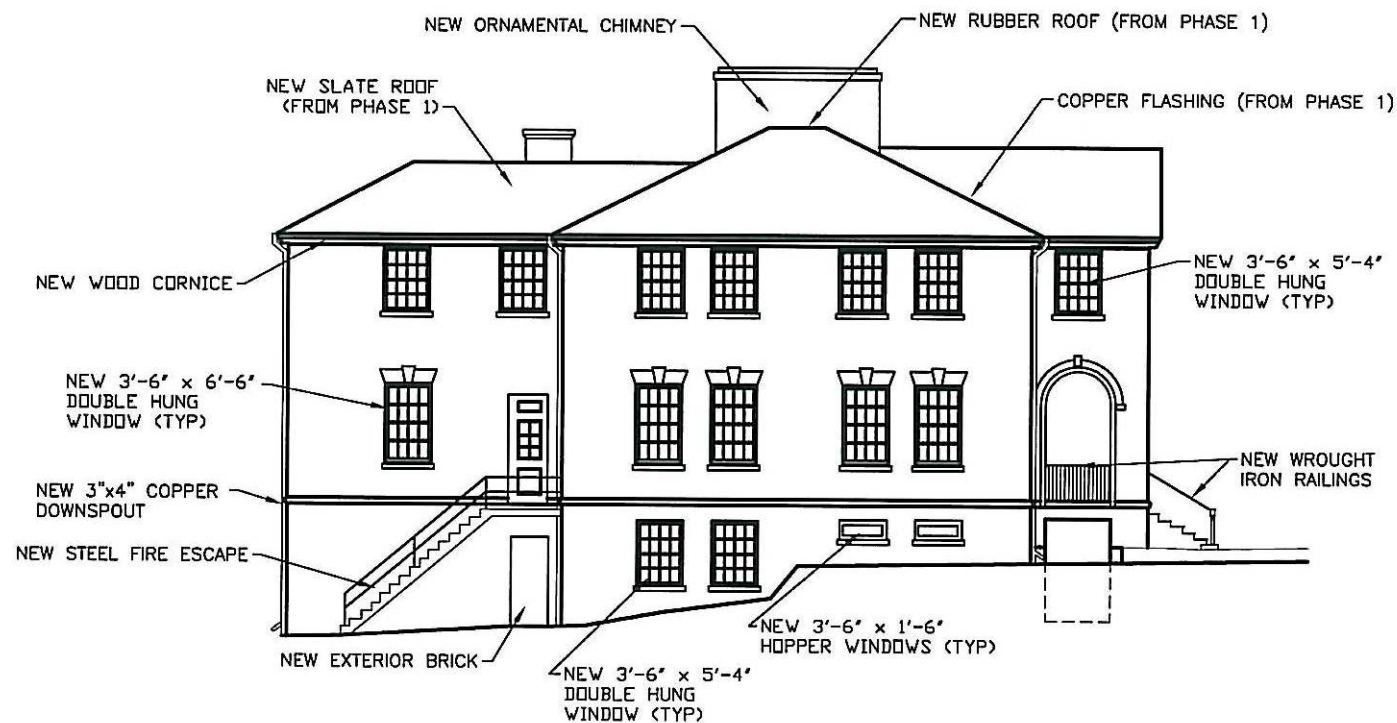
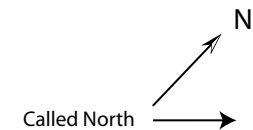
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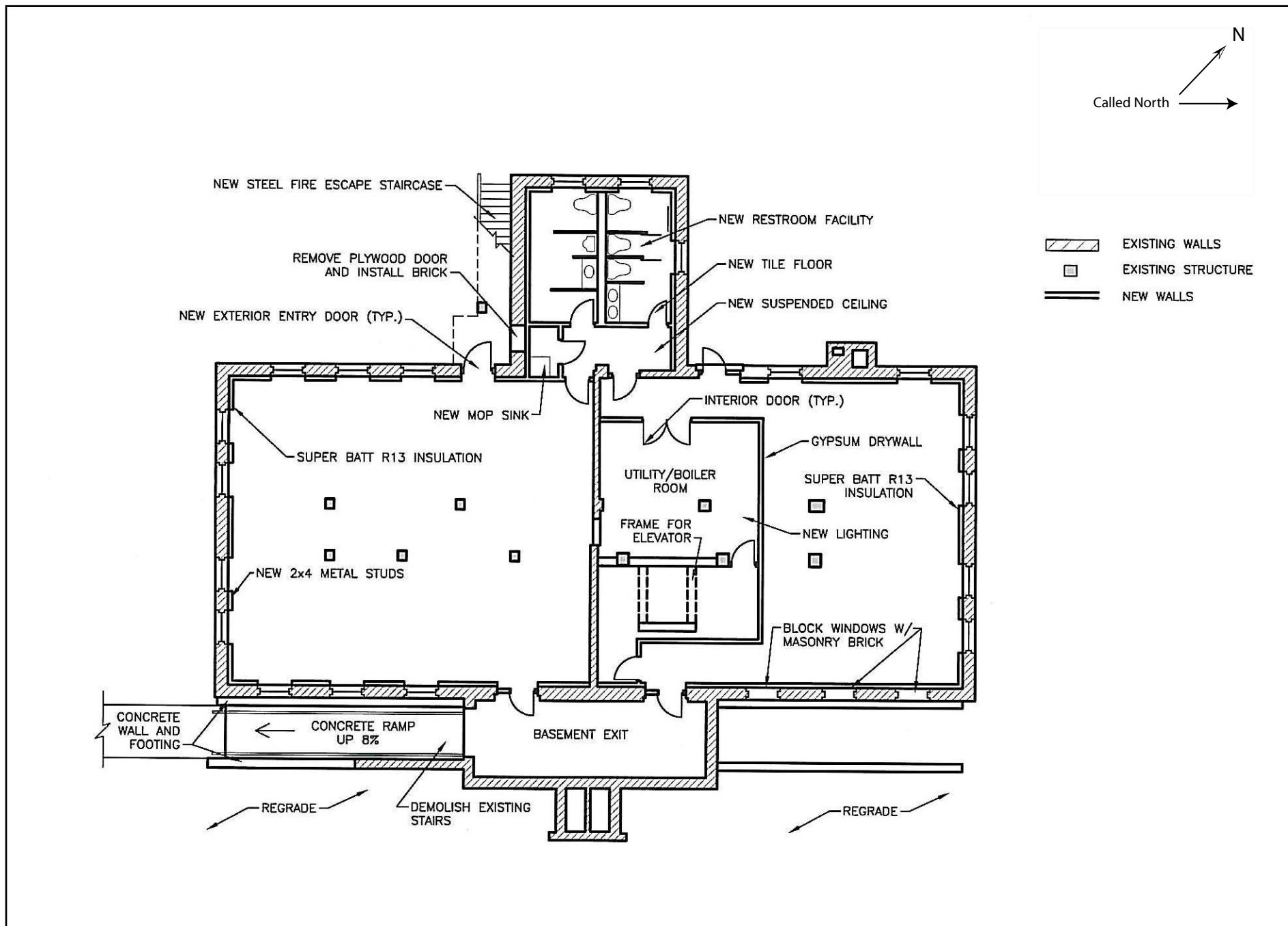
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North Elevation



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South Elevation

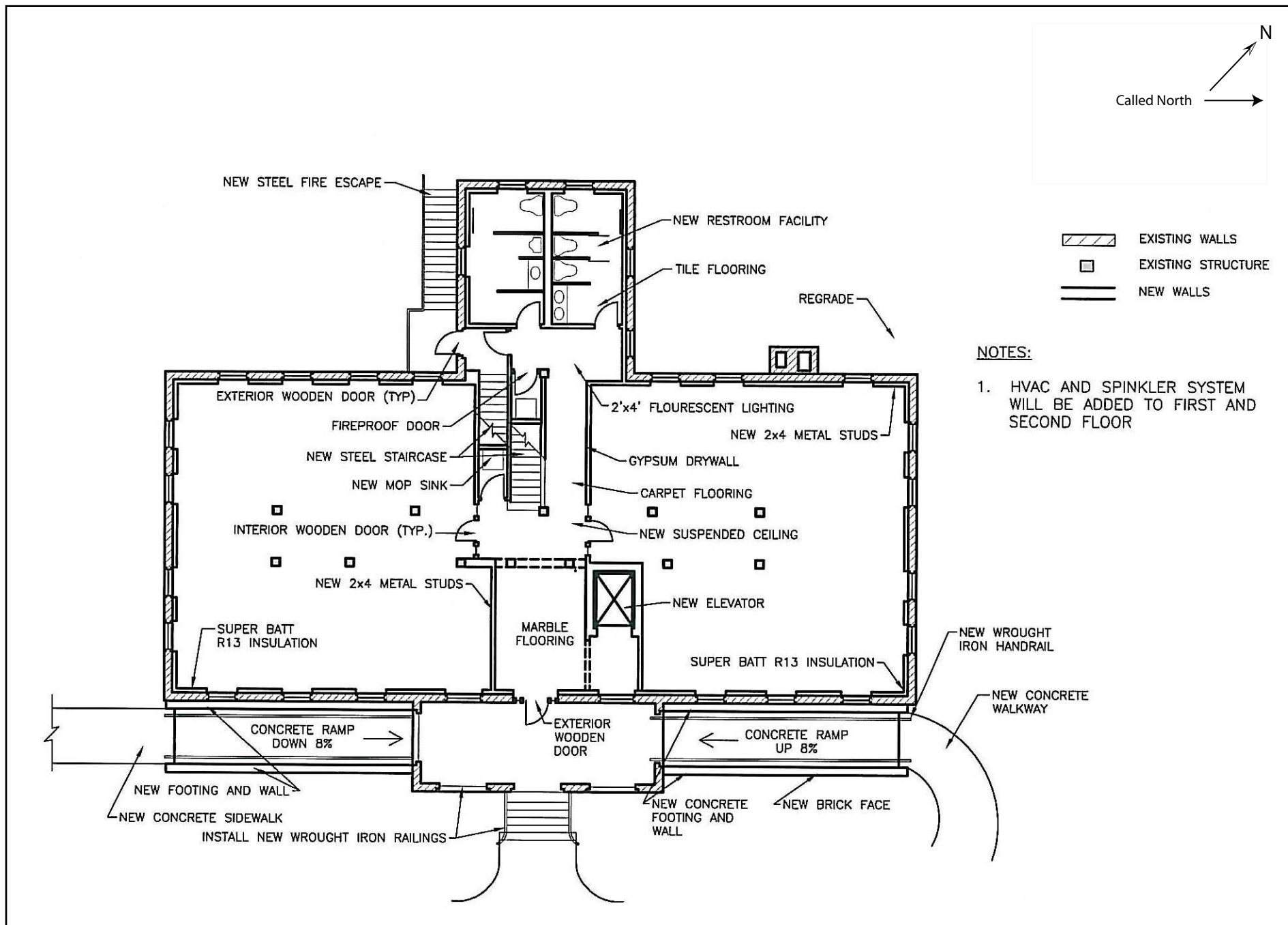


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Basement Level Renovation

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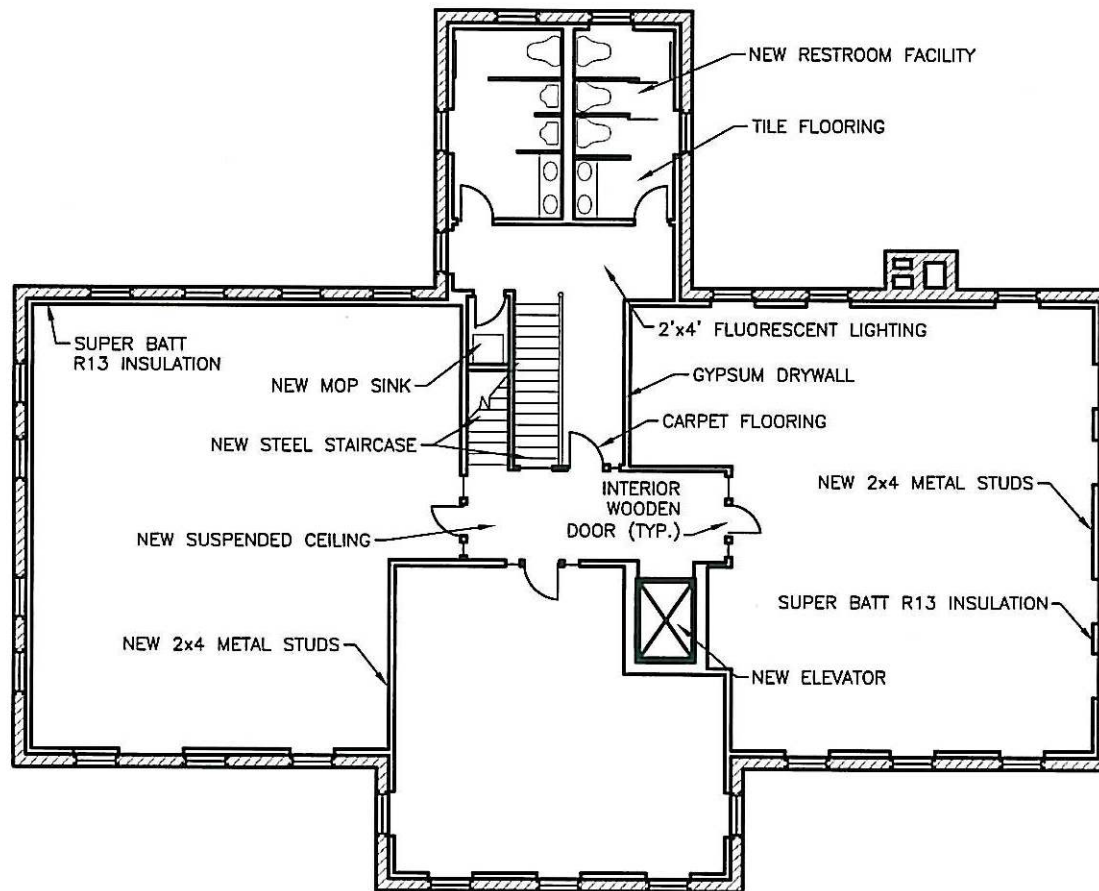
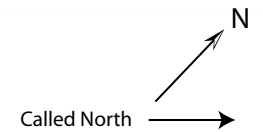
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
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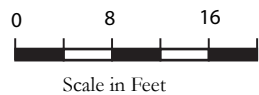
First Floor Renovation

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Newburyport, MA 01950



-  EXISTING WALLS
-  EXISTING STRUCTURE
-  NEW WALLS



Second Floor Renovation

6.0 RE-USE OPTIONS AND ANALYSIS

6.1 Market Conditions

The Request for Proposal issued by the City of Salem requested that a market assessment be undertaken to determine feasible uses for the Barracks Building. Initially, a public meeting was held to solicit public ideas on potential uses for the building and from that meeting, the following potential uses were identified:

- Community Boating program which is actively being pursued by a new non-profit organization *Sail Salem Inc.*
- City Senior Center
- Function Hall
- Facility for the local Veterans Council Organization
- Office and interpretive space for Salem Sound Coastwatch
- Observatory
- Hotel/bed and breakfast

During the course of undertaking the Study it was found that due to the terms of various property conveyances and agreements, uses allowed at Winter Island are generally restricted to public uses. In response to this restriction a series of interviews were conducted with various nonprofit organizations to determine if there might be interest in using the building. Such organizations included the adjacent Plummer Home for Boys, Salem State College, Mass Maritime Academy, the aforementioned *Sail Salem, Inc.*, the local Veterans Council, the Salem Theater Company, and the Rebel Shakespeare Company. *Sail Salem* expressed a strong desire to house a community boating program in the building that would require a classroom, storage space and three offices. The Veterans Council also requested common office space, a potential military exhibit area and is interested in being able to use a meeting room and a function hall if such facilities were provided. The Veterans Council is actively seeking space somewhere in the City and will be undertaking a fundraising campaign. Massachusetts Maritime Academy also expressed interest in housing a training facility in the building that could provide a northern site for certain MMA types of classes and training such as 100 ton and license training, small boat training, environmental compliance training, and emergency management training, programs. These discussions were preliminary and will require additional follow-up to determine MMA's resources, timing and space needs to implement these types of programs. There was some interest in occasional use of meeting, office or rehearsal space by other organizations but not a need to rent space on a regular or long-term basis.

6.2 Re-Use Options Considered

The uses identified above were further analyzed to determine feasibility in regards to use (whether or not allowed by zoning and/or deed restrictions) compatibility with adjacent land uses, identified program, ability to accommodate program within building, and revenue generation. The evaluation matrix is found in Table 4. Those uses that were found to have potential were further explored through interviews and reviews of proposed programs. It should be noted that at the point where specific uses are identified for

the building, the zoning should be analyzed to ensure that the use(s) is allowed under the City of Salem Zoning Code.

Table 5
Use Evaluation Matrix

Use	Allowed by Zoning ^(a)	Allowed by deed restriction	Compatible with Adjacent uses	Identified Program (square feet)	Building can accommodate Program	Financial Feasibility
Hotel	No	No	No	No	Not Evaluated	Not Evaluated
Bed and Breakfast	No	No	Maybe	No	Not Evaluated	Not Evaluated
Restaurant	No/Maybe	Yes (if publicly owned)	Yes (depending on size)	No	Not Evaluated	Not Evaluated
Function Hall	Yes	Yes (if publicly owned similar to existing function hall) ^(b)	Yes	Yes	Yes for up to 200 people. Require kitchen and additional bathrooms	Feasible for one floor as part of mixed use project.
Community Boating	Yes	Yes ^(b)	Yes	Yes	Yes	Requires raising substantial grants, sponsors and donations
Non Profit Office/Meeting Space	Maybe	Yes ^(b)	Yes	Yes	Yes	Requires raising substantial grants
Observatory	No	Yes	Yes	No		Not Evaluated
Classroom Space	Yes	Yes ^(b)	Yes	No	Yes	No
Salem Sound Coastwatch	Yes	Yes	Yes	No	Yes	Requires raising substantial grants
Coastal Interpretive	Yes	Yes	Yes	No	Unknown	Not Evaluated
Military Museum	Yes	Yes	Yes	No	Unknown	Not Evaluated

Notes (a) Winter Island is zoned R-1 which restricts land uses to those typically associated with single family residential. Other uses such as marinas, boatyards and recreational facilities are allowed by special permit and several uses are prohibited. Consultation with City Zoning Officer would be required to ascertain if preferred uses are allowed under City Zoning.

(b) Allowable uses must be those that are determined to be public.

6.3 Uses Retained for Evaluation

Based on the evaluation presented in Table 4 above, the list of potential uses was narrowed to the following potentially feasible uses:

- Community Boating
- Function Hall and Meeting Space with kitchen facilities that could be operated and managed by the City

- Classroom/meeting space
- Office space for lease to nonprofits

Because there was such a strong interest expressed by different groups for each of these uses and the size and layout of the building is flexible enough to accommodate most if not all of the uses, potential floor layouts for a mixed use facility were developed with some alternative floor plans. These floor layouts are found on the following pages.

Because the function hall was viewed as a use that could generate revenues for the City, an assessment of market conditions for the function hall use of the building was conducted through interviews and analysis of several other function facilities in and near Salem. A summary of these results is presented in Table 5. An estimate of rental rates that could be generated by office uses was also researched as described in the following paragraphs.

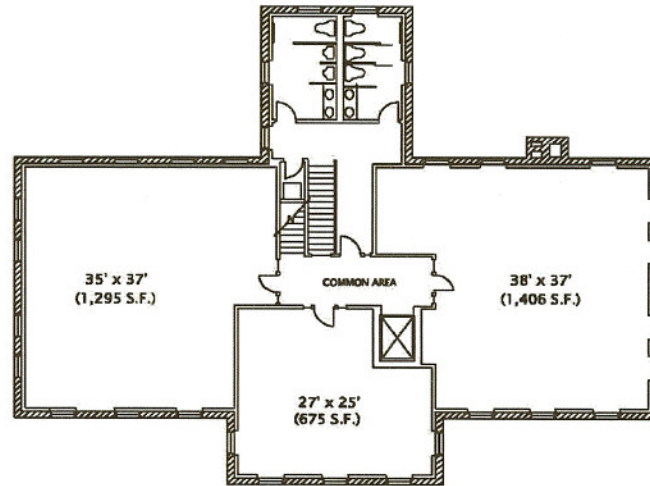
Although there are many competing function facilities serving Salem, there does appear to be excess demand that the Barracks Building can address. Most function spaces indicated that demand is strong and that they do turn down requests especially on weekends in the peak wedding months of May, June, and October. There is also strong demand in December for holiday parties. Several function spaces are already fully booked through this year. With a waterfront setting, the Barracks Building should provide an attractive site for weddings and other social events during summer months. Since most existing facilities require the use of in-house catering services, the Barracks Building could also have a competitive advantage in providing a space with kitchen facilities that would allow users to use their own selected caterer. However, this would require additional investment for a suitable kitchen. On-site parking is another advantage over the function spaces in downtown Salem. To avoid competing with the existing function hall on Winter Island, the Barracks Building would need to accommodate larger events and provide a kitchen for on-site catering.

Table 6

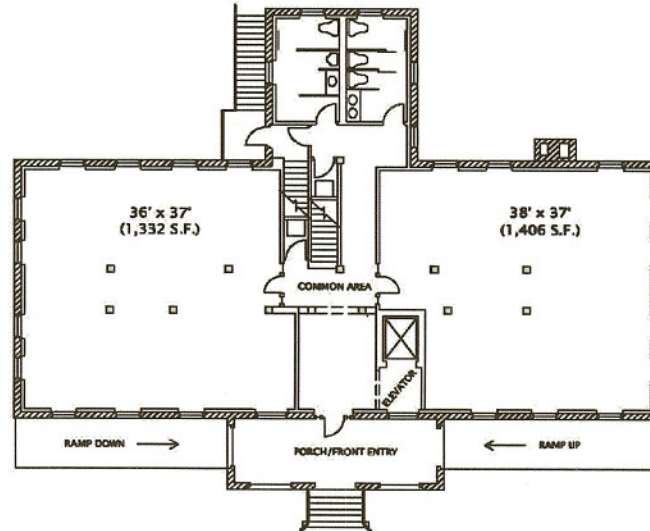
Summary Information on Selected Function Facilities

Facility	Capacity	Rental Fee	Catering	Comments
Beverly Yacht Club	60 seated inside 100 on porch	\$200	Required to use their catering	Only available to members. Active Memorial Day to Columbus Day
Hamilton Hall	160 sit-down event 300 cocktail party	\$4250--full building for 5 hours \$185 to \$285 per hour for different rooms	Choice of approved caterers	Not open July & August. Fully booked for this year.
Hawthorne Hotel	7,090 square ft in 7 rooms Up to 200 seated Up to 350 theater	Fee covered by catering. If no food, \$300 to \$500 per room.	Required to use their catering	Strong demand in peak season. Often turn people away for peak Saturday nights.
Lyceum Bar & Grill	100 sit down 120 theater style	\$300 for a wedding \$150 for 4 hours	Required to use their catering	Strong demand, booked thru Nov. Often turn people down
Waterfront Hotel	3000 sf up to 220 for sit down event 2 other smaller rooms	Minimum catering of \$7000 peak, \$4,000 off peak	Required to use their catering	Active use for social functions and business meetings
Winter Island Function Hall	60 to 80 seated	\$150/\$300 for 4/8 hours for residents \$350/\$500 for 4/8 hours for non-residents	No kitchen	Used for small parties. Strong demand for weekends May to Sept. Turn people away. Need for larger facility.

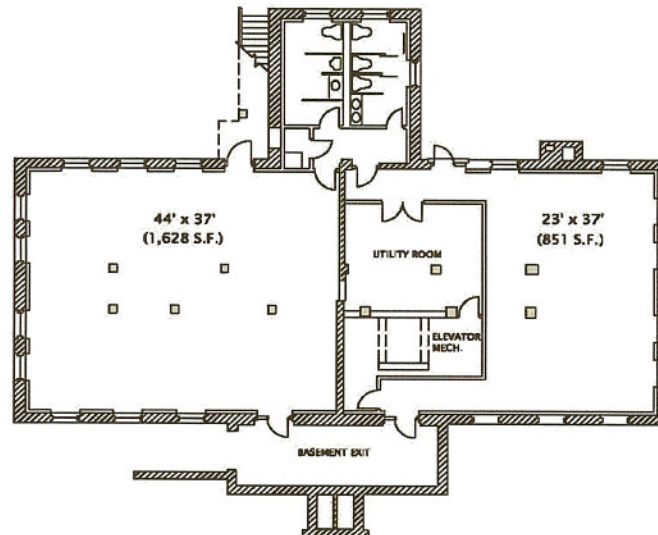
SECOND FLOOR



FIRST FLOOR



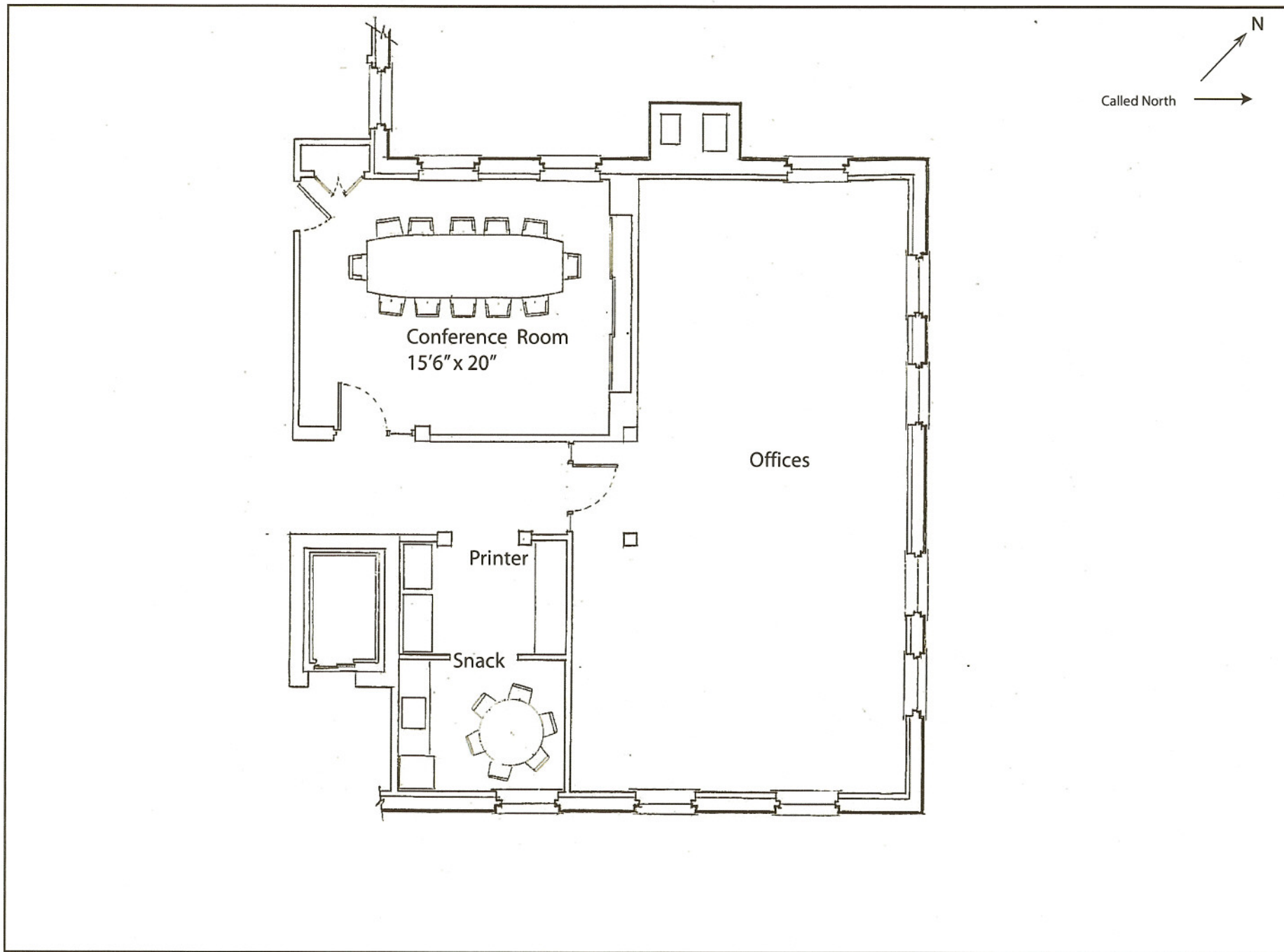
BASEMENT FLOOR



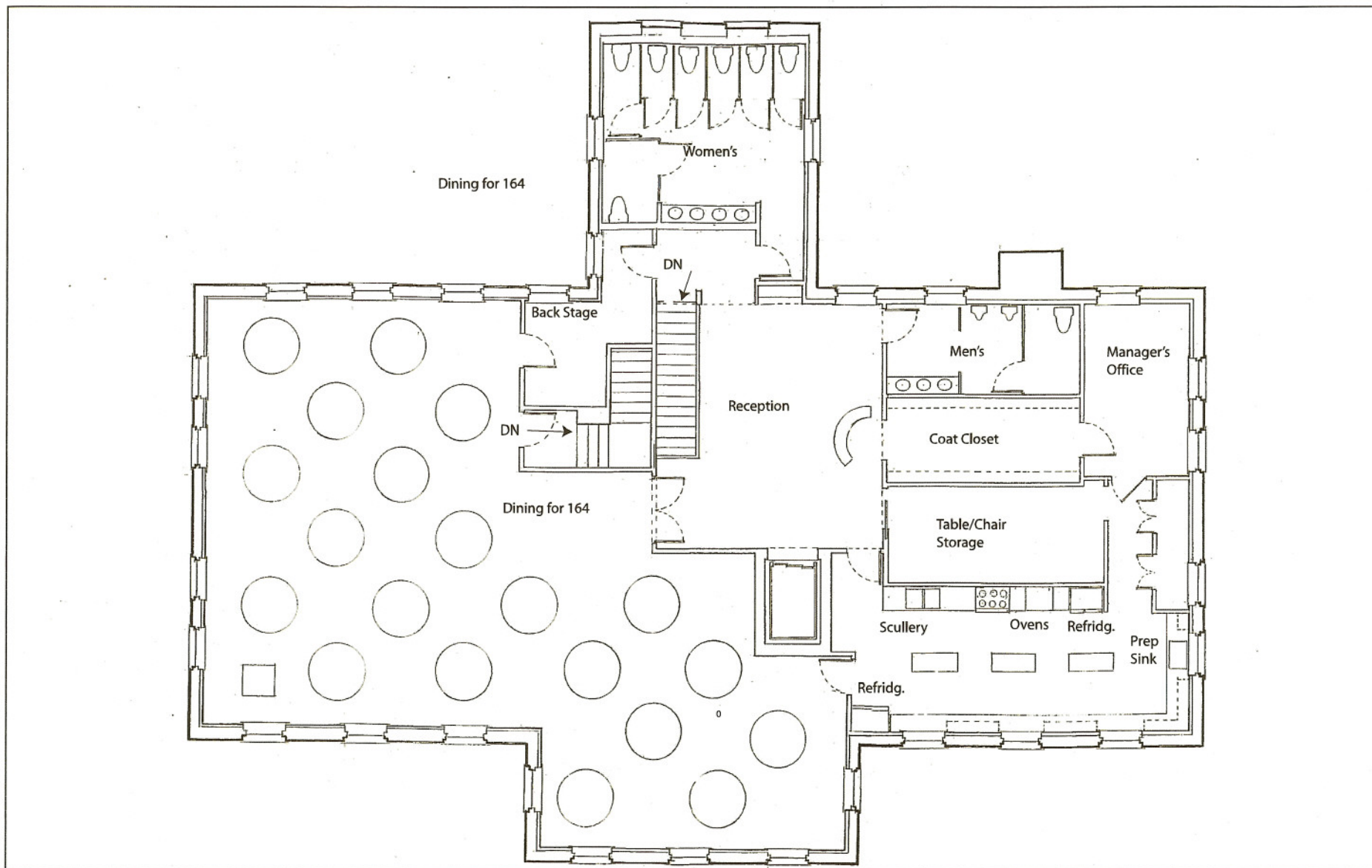
Potential Floor Layouts

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First Floor North End Alternate Layout with Conference Room

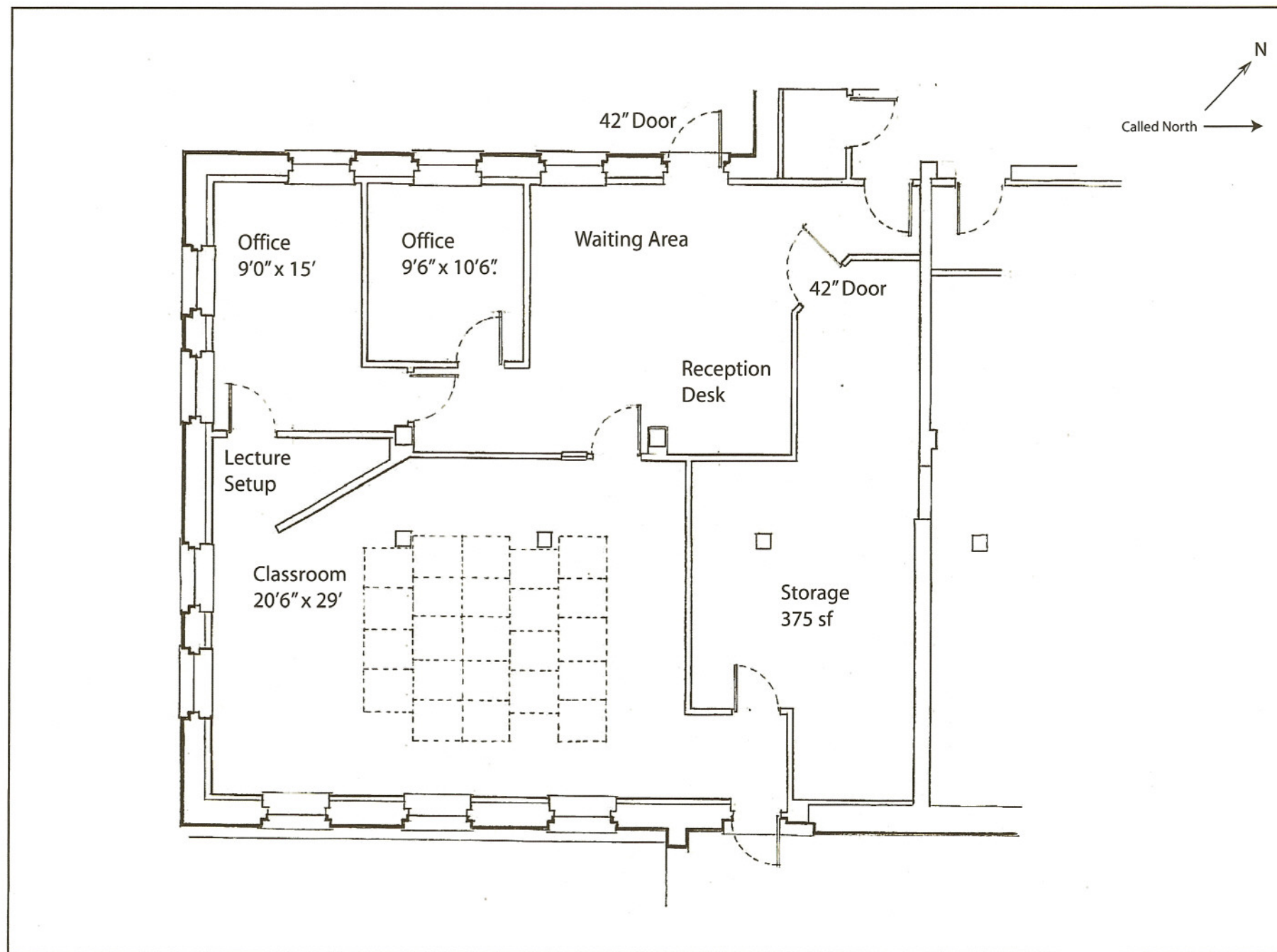


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Second Floor Alternate with Function Hall

U.S. Coast Guard Barracks Building Re-Use Feasibility Study Salem, MA

Vine Associates, Inc.
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Scale in Feet

Basement Level South End Layout for Community Boating

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6.4 Comparison to Market Rates

The most comparable types of space supplied in the private real estate market are office space and function space rental. A review of current office space listing and interviews with real estate brokers were used to determine market rate for office space. Most vacant office space in Salem is listed for rents ranging from \$12 to \$18 per square feet with the higher figure for either very small spaces or modern buildings. These rents were confirmed by brokers who indicated that \$12 to \$18 per square foot plus utilities is the typical office rents in Salem. One broker indicated that there is plenty of space currently available, including rehabbed space in former industrial buildings and there is not a market need for more office space. Winter Island would be a less competitive office location since it is neither near a major highway nor close to other business services and amenities. Consequently, a market rent at the Barracks Building would be at the low end of the market around \$12 per square foot.

All the identified tenants for the Barracks Building are non-profit organizations that may not be able to pay the full market-rent for space. Moreover, the use restrictions on the property limit the ability to lease to for-profit tenants that could pay the highest potential rent.

A market rate function hall rent is more complex to determine since most of the function facilities are not comparable to Barracks Building. Hotel and restaurant facilities gain their revenue from food services and thus charge no or a reduced rental fee. Other facilities such as Hamilton Hall are unique buildings and offer a higher level of staff services to help with planning and on-site coordination. The current Winter Island function hall is the best comparable given its location. Since a function space at the Barracks Building would be larger and provide a kitchen, it would command a higher rental rate. A reasonable conservative estimate is \$500 for a half-day rental and \$800 to \$1,000 for a full day rental.

6.5 Financial Analysis

A financial analysis was undertaken to evaluate the financial feasibility of the proposed reuse options. This analysis combines the estimated development costs to rehabilitate the Barracks Building with the expected operating revenue and expenses upon completion and occupancy to determine how much private debt and equity financing the project can support and what portion of the development costs must be funded with grants.

The reuse option used for the financial feasibility analysis is a mixed use building with the following components:

- Basement: Community Boating Program (1,590 square feet)
- 1st Floor: office and meeting space for Non-profit organizations and shared conference room (3,190 square feet).
- 2nd Floor : Function Hall with kitchen and support space (3,547 square feet)

The results of this analysis are summarized in Table 6, which presents the project costs and sources of funds. Total development costs are estimated at \$916,782. These costs include the site and building construction costs, function hall equipment, and design fees projected by Vine Associates, plus a 10%

allowance for other soft costs, such as legal and permit fees and developer overhead. A \$25,000 debt service reserve is also included to cover debt payments in the first year when rental discounts are offered to tenants.

Table 7
Barracks Building Development Budget

Use of Funds	Amount
Acquisition	\$0
Site improvements	\$20,422
Building Construction	\$524,075
Function Hall Kitchen & Equipment	\$38,567
Construction Contingency (15%)	\$87,460
Sub-Total Hard Costs	\$670,524
Architecture/Engineering Fees	\$67,040
Other Soft Costs (10%)	\$67,052
Soft Cost Contingency (15%)	\$20,114
Developer Overhead (10%)	\$67,052
Debt Service Reserve	\$25,000
Sub-total Soft Costs	\$246,259
Total Uses of Funds	\$916,782
Sources of Funds	Amount
Senior Debt	\$195,720
Subordinate Debt	\$31,162
Historic Tax Credit Equity	\$269,000
Grants	\$420,900
Total Sources	\$916,782

The first part of the analysis is a projected operating pro forma with revenue and expenses for the completed building. Revenue estimates assume part of the lower level is rented to Sail Salem, the 1st floor is rented to non-profit organizations for office and meeting space, and the top level is a function hall. Rents are assumed to be below market at \$7.5 per square foot for the basement and \$8.50 per square foot for the 1st floor plus utilities. The first year rent is reduced by 50% to help the non-profit programs get established in the new space and complete fund-raising efforts to afford the full rental income. Rents are assumed to increase by 3% to 4% annually to cover increases in building operating expenses. Function Hall rent assumes 28 full day and 27 half-day rentals per year at \$1000 and \$500, respectively. Rental fees are projected to increase by 5% every two years. Operating expenses assume the Salem Park and Recreation will be responsible for the maintenance of the building and surrounding site and can perform these functions without incurring additional costs for staff and equipment. Thus, the operating costs for the building are limited to heat and common area utilities, supplies, insurance, marketing costs, a replacement reserve and other direct expenses. These expenses were estimated based on published data

from the Institute for Real Estate Management or suburban office buildings in the Boston Metropolitan area and are projected to increase by 4% annually to account for inflation.

The resulting operating proforma is presented in Table 7. It projects stabilized revenue in year 2 of \$71,416, operating costs of \$46,860 and net cash flow of \$24,556. Based on standard private bank underwriting standards of 1.25 debt service coverage, a 20 year repayment period and an 8% interest rate, the project can afford a senior loan of \$195,720. A second subordinate loan of \$31,162 is also possible based on a 1.10 debt service, 6% interest rate and 20-year amortization. This loan might be provided by a non-profit community development lender (e.g., Boston Community Capital) or by the City of Salem with Community Development Block Grant funds.

A third funding option is to use federal and state historic tax credits to raise investment dollars from private investors. These investors make cash investments in return for tax credits. Since the Barracks Building is on the National Register of Historic Places, it qualifies for federal historic tax credits and should qualify for state credits. A for-profit limited partnership or limited liability corporation would have to have an ownership interest in the building through a long-term lease for this option to be feasible. Using an estimated tax basis of \$757,000², both federal and state tax credits could raise an additional \$269,000 from tax credit investors.

With total development cost of \$916,782 and combined debt and tax credit investment of \$495,882, the reuse scenario for the Barracks Building faces funding gap of \$420,900.

6.6 Conclusion and Next Steps

The results of the study suggest that the Barracks Building could be repaired to a usable condition for just under \$1,000,000 and that there are specific public oriented uses that could feasibly be located in the structure. For the project to be feasible, however, additional funding sources are necessary to cover the funding gap identified in Section 6.5 above.

The City of Salem should seek grant funds to cover some of the capital costs of construction. Sources of such grants include state and federal government agencies and private foundations. The following page provides a listing of information on the major grant sources that fit the project's historic and recreational objectives. Based on the consulting team's research, the following grants sources represent the most feasible funding options:

- ***Massachusetts Historic Preservation Projects Fund***. Administered by the Massachusetts Historic Commission, this fund provides reimbursable 50% matching grants of up to \$100,000
- ***National Trust for Historic Preservation's National Preservation Endowment*** offers several grant programs to assist nonprofit organizations, public agencies, for-profit companies, and individuals involved in preservation-related projects to restore historic

² The tax credit basis does not include the site costs, equipment, developers overhead and debt service reserve.

buildings and homes. Financial assistance is also available through loans and tax-credit equity investments.

- ***Save America's Treasures Grants.*** This program of the National Park Service and National Endowment for the Arts makes grants to state and local governments for the preservation of historic properties and cultural artifacts. Historic properties receiving funds must be nationally significant and be threatened, endangered, or otherwise demonstrate an urgent preservation need. Grants require a dollar-for-dollar non-Federal match. The maximum grant is \$1 million, and the minimum is \$250,000 for historic property projects.
- ***Lowe's Charitable and Educational Foundation Preservation Fund*** provides grants ranging from \$25,000 to \$100,000 to help preserve historic sites in the northeast United States.

Additionally, the City could work with the organizations that have expressed interest occupying the Barracks Building, such as *Sail Salem Inc.*, the Veterans Council, and Salem Coastwatch to determine if there are other grant sources and/or fundraising opportunities that those organizations could take advantage of. As the City moves forward with programming the second floor as a function hall, it is important that the facility be professionally managed.

Table 8
Operating Revenue and Expenses for Barracks Building Reuse

Revenue	Year 1	2	3	4	5	6	7	8	9	10
Sail Salem Rent	\$6,000	\$12,000	\$12,500	\$13,000	\$13,500	\$14,000	\$14,500	\$15,000	\$15,500	\$16,000
Non Profit Office Rent	\$10,838	\$21,675	\$22,575	\$23,475	\$24,375	\$25,275	\$26,175	\$27,075	\$27,975	\$28,875
Function Hall Rent	\$41,500	\$41,500	\$43,575	\$43,575	\$45,754	\$45,754	\$48,041	\$48,041	\$50,444	\$50,444
Vacancy Allowance (5%)	-\$2,917	-\$3,759	-\$3,933	-\$4,003	-\$4,181	-\$4,251	-\$4,436	-\$4,506	-\$4,696	-\$4,766
Total Revenue	\$55,421	\$71,416	\$74,718	\$76,048	\$79,447	\$80,777	\$84,281	\$85,611	\$89,223	\$90,553
Expenses	Year 1	2	3	4	5	6	7	8	9	10
Maintenance and repairs	\$14,520	\$15,101	\$15,705	\$16,333	\$16,986	\$17,666	\$18,372	\$19,107	\$19,872	\$20,666
Utilities	\$22,176	\$23,063	\$23,986	\$24,945	\$25,943	\$26,980	\$28,060	\$29,182	\$30,349	\$31,563
Insurance	\$2,288	\$2,380	\$2,475	\$2,574	\$2,677	\$2,784	\$2,895	\$3,011	\$3,131	\$3,257
Marketing/leasing/other admin costs	\$2,640	\$2,746	\$2,855	\$2,970	\$3,088	\$3,212	\$3,340	\$3,474	\$3,613	\$3,758
Replacement Reserve	\$2,771	\$3,571	\$3,736	\$3,802	\$3,972	\$4,039	\$4,214	\$4,281	\$4,461	\$4,528
Total Expenses	\$44,395	\$46,860	\$48,756	\$50,624	\$52,667	\$54,681	\$56,882	\$59,055	\$61,426	\$63,772
Net Cash Flow Before Debt	\$11,026	\$24,556	\$25,961	\$25,424	\$26,781	\$26,096	\$27,399	\$26,556	\$27,796	\$26,781
Senior Debt Service	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645	\$19,645
Net Cash Flow After Senior Debt	-\$8,619	\$4,911	\$6,316	\$5,779	\$7,136	\$6,451	\$7,754	\$6,911	\$8,151	\$7,136
Senior Debt Service Coverage Ratio	0.56	1.25	1.32	1.29	1.36	1.33	1.39	1.35	1.41	1.36
Total Debt Service	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632	\$22,632
Combined Debt Service Coverage Ratio	0.49	1.09	1.15	1.12	1.18	1.15	1.21	1.17	1.23	1.18
Net Cash Flow After Total Debt	-\$11,606	\$1,924	\$3,329	\$2,792	\$4,149	\$3,464	\$4,767	\$3,924	\$5,164	\$4,149

REFERENCES

Bibliography

City of Salem Open Space and Recreation Committee. Plan for Winter Island. Fall 1972. Essex Institute Winter Island Files.

City of Salem Winter island Study Committee, Excerpts from 1973 Plan for Winter Island prepared with assistance from Tufts University. Essex Institute Winter Island Files.

City of Salem. Excerpts from Master Plan for Winter Island. Prepared by Wallace Flloyd and others. Circa 1980.

Crane, Pamela, Leslie Shaw, Peter Morrison and Anne Wilder. *For the Defense of Salem Fort Lee and Fort Pickering Conditions Assessment, Cultural Resource Management Survey and Maintenance and Restoration Plan Project Final Archeological Report*. Crane & Morrison Archaeology in association with Gray Architects, Inc. December 2003

Dempsey, Claire, William Stockinger, Mary Beaudry, Betsy Friedberg and Leonard Loparto. *Winter Island Historic and Archeological District*. National Register of Historic Places Registration Form. March 1994.

Fort Lee and Fort Pickering Conditions Assessment, Cultural Resources Survey, and Maintenance and Restoration Plan prepared by City of Salem and Massachusetts Historic Commission in 2003

Felt, Joseph B. *Annals of Salem*. W. and B. Ives, Boston. Perley, Sidney. *The History of Salem, Massachusetts*. Vol. 1, 1626-1637. 1924 and Volume II, 1638-1670. 1926. and Vol. III, 1671-1716. Sidney Perley, Salem, MA.

Finch and Rose Salem Historic Preservation maintenance Plan Winter Island Park Draft, June 1998.

Phillips, James Duncan *Salem in the Seventeenth Century*. Cambridge, Houghton Mifflin Company, the Riverside Press. 1933.

Pinkham, Harold A., Jr. "Winter Island Salem: Its Use and Abuse." *Essex Institute Historical Collections* 118. 1982. pp. 189-199.

Salem Observer. *Letters from the Willows, No. 3. Juniper House, Salem Neck, Winter Island*. July 27, 1878

Streeter, G.L. The Story of Winter Island and Salem Neck. *Essex Institute Historical Collections* 33:105-7.

Welch, William, *Salem Neck and Winter Island a Story of a Walk Around Salem Neck and Winter Island Noting Points of Interest and Ancient Nomenclature of the Natural Features*. Essex Institute Historical Collections 33:82-104.

U.S. Coast Guard. *Salem Air Station*. Coast Guard Magazine April 1937, pp. 3, 30-31. (from official on-line Coast Guard Bibliography)

Coast Guard and Related Web-sites

Google: US Coast Guard Salem Air Station History

Coast Guard General History Bibliography [www. us cg.mil/ history /generalbib.html](http://www.uscg.mil/history/generalbib.html) -

Coast Guard Historian's Office Official Website [www. us cg.mil/ history /](http://www.uscg.mil/history/) -

Coast Guard Aviation History Index [www. us cg.mil/ history /AVIATIONINDEX.html](http://www.uscg.mil/history/AVIATIONINDEX.html)

Official Homepage, Coast Guard Air Station Cape Cod [/www.globalsecurity.org/military/facility/cape-cod.htm](http://www.globalsecurity.org/military/facility/cape-cod.htm)

Air Station Salem Armed Forces Day Crash, May 18, 1957 www.check-six.com/Coast_Guard/Salem_Armed_Forces_Day_Crash.htm

Coast Guard Air Station Salem: fate unknown

Naval Aviation News , May-June, 2004 by Jaimie L. Knife

http://findarticles.com/p/articles/mi_m0IAX/is_4_86/ai_117626518

Historic Plans

Original Building Plans, Elevations, and Details

Original architectural and site plans now exist only as microfilm of varying quality at the Cartographic Branch of the National Archives Records Administration. According to staff there, the original documents were destroyed after the microfilm record was made due to their large size and poor condition. The Cartographic Branch was able to provide microfilm copies of the documents listed below. In many cases the microfilm copies are very hard or impossible to read. For example, the drawing dates appear to be 6/19/25, although the buildings were constructed in 1934. The plans and content are noted below.

1. General Improvements; site plan showing Barracks Building with stairs leading to main entrance on east façade, facing east to the Hanger, Garage, Dwelling, and Soft Ball Diamond
2. Elevation drawings; #1-100 US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect (2 copies)
3. Basement and Roof Plans: #1-1 US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect
 - large recreation room takes up entire left room
 - laundry room and boiler room center spaces
 - shop?? Long narrow room along right side
 - storage, rear wing
4. First and Second Floor Plans: #1-2 US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect.
 - Impossible to read
5. Basement Plumbing, Heating, Lighting Plans: #PHL-1-450; US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect
6. Exterior Details: #1-200: US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect.
 - façade
7. Interior Details: #1-202: US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect.
 - kitchen fittings
 - steel stairs
8. Details: #326D; US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon, Supervising Architect
 - Lighting fixtures
9. Details: #M-370; US Coast Guard Air Station: Barracks Building; 6/19/25; Louis A. Simon,

Supervising Architect

- Miscellaneous standard details; specifies materials

10. illegible drawing of front façade

Historic Site Plans from City Engineer's Office

Several old plans of the Air Station are on file at the City Engineers Office which are listed below.

1. U.S. Coast Guard Air Station. Plan showing utility lines to Barracks Building prepared by Treasury Department Public Works Branch Procurements Division, Rear Admiral C. J. Peoples, Director of Procurement and dated 6-19-35.
2. U.S. Coast Guard Air Station. Plan of New Barracks and Garage Prepared by Treasury Department Public Works Branch Procurements Division Rear Admiral C. J. Peoples, Director of Procurement and dated 6-19-35.
3. U.S. Coast Guard Air Station Plan showing architectural drawings for Barracks Building prepared by Treasury Department Public Works Branch Procurements Division, W.C. Reynolds, Assistant Director of Procurement 6-17-35.
4. U.S. Coast Guard Air Station Salem, Plot Plan. Prepared by U.S. Coast Guard First District, Boston, MA Civil Engineering. C.G. Drawing 6121 and dated 1957.
5. U.S. Coast Guard Air Station Plan showing campus, no titles and dated Noted "Restricted" and dated 2-12-43.
6. Undated, unnamed topographic plan of land showing U.S. Coast Guard Airs Station Salem buildings and facilities.
7. Plan of Land in Salem, MA prepared for Plummer Home for boys December, 1980 by Essex Survey Service, Inc.

Historic Photographs

Several Historic Photographs of the Air Station Campus and the Barracks Building were located from various sources.

Historic Photographs: NARA Still Pictures Branch holdings

These are all aerial views most of which were taken at high altitude and provide less detail than the city views. None are included in the report.

1. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-367737) 6/10/1942. Aerial view of Island with Administration/Barracks Building occupying lower right corner. High altitude (8,000') provides little building detail; facing southeast.
2. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-367738) 6/10/1942. Aerial view of Island with Administration/Barracks Building occupying lower right corner. High altitude (8,000') provides little building detail; facing southeast.
3. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-367739) 6/10/1942. Aerial view of Island with Administration/Barracks Building occupying lower right corner. High altitude (8,000') provides little building detail; facing southeast.
4. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-367740) 6/10/1942.

Aerial view of Island with Administration/Barracks Building occupying lower right corner. Very high altitude (15,000') provides little building detail; facing southeast.

5. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-062797) 4/29/1943. Aerial view of Island with Administration Building/Barracks occupying upper left corner. Very high altitude provides little building detail; facing northwest.
6. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-062798) 4/29/1943. Aerial view of Island with Administration Building/Barracks occupying upper left corner. Very high altitude provides little building detail; facing northwest.
7. US Coast Guard Air and Sea Station, Winter Island, Salem, Mass. (neg. #80-G-062799) 4/29/1943. Aerial view of Island with Administration/Barracks Building occupying upper left corner. Very high altitude provides little building detail; facing northwest.

Historic Photographs: Other

1. Barracks Building circa 1943.
View of front façade with plane flying overhead. Source: local resident, Kevin Cornacchio
2. Barracks Building circa 1943.
View of front façade with portion of hangar and wind sock. Source: Kevin Cornacchio
3. U.S. Coast Guard Air and Sea Station, Winter Island, MA. Peabody Essex Museum.
Plan showing view of Air Station from the former ramp circa 1952.
4. U.S. Coast Guard Air and Sea Station, Winter Island, MA. Views of Servicemen on Ramp and near Hangar Building. Date unknown. Source U.S. Coast Guard.

ATTACHMENT 1

Historic Plans and Photographs



Figure . Winter Island and part of Salem Neck seen from the south, before 1943. Fort Pickering is located in the right foreground, Fort Lee in the left background. Note that even at this late date, the forts were clear of dense vegetation. Winter Island Marine Park, City of Salem.

Historic Photographs from U.S. Coast Guard and World Wide Web



ATTACHMENT 2

List of Servicemen Who Perished While Based at Air Station Salem

The following is a list of servicemen who lost their lives serving their country while stationed at the U.S. Coast Guard Air Station Salem. The list was provided by local resident and historian, Mr. Douglas Sabin.

<u>Name</u>	<u>Date of Death</u>
Herbert Stanley Hale	June 20, 1940
Edward T. Werner	April 3, 1942
Robert J. Lafferty	April 16, 1942
S. J. Jarapchak	April 16, 1942
W.A. Boutillier	April 16, 1942
C.R. Byrd	September 21, 1943
Joseph F. McCue	November 13, 1952
Henry J. White	November 13, 1952
John J. Kohan	June 24, 1956
Harold W. Wooley	June 24, 1956
Leo J. Richard	June 24, 1956
Albert P. Hartt, Jr.	May 18, 1957
William J. Tarker	May 18, 1957