A Design Feasibility Study for the Re-Use of the Former Police Station Building at 20 South Water St. Town of Nantucket, MA

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20 South Water Street Circa 1930

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Acknowledgements

On behalf of BLF&R and the other consultants involved, we would like to thank the Town Administration, other Town Department heads and staff as well as members of the community that contributed their time to this effort through the ad hoc "Working Group" that was brought together to help facilitate this study. All of the meetings which we had with staff and members of the public brought into the process were helpful and provided important operational insights for us and our consultant team.

Study and Final Report Methodology

As outlined in our Scope of Services dated October 28, 2010, Brown Lindquist Fenuccio & Raber Architects, Inc. (BLF&R) in conjunction with our consultants, have performed existing conditions assessments / building systems evaluations, conducted space programming needs analysis for several town departments, and prepared conceptual design studies and detailed cost estimates for the redevelopment of the former Nantucket Police Station at 20 South Water St. Nantucket, MA.

The purpose of this report is to identify existing building defects, deficiencies and areas of deterioration, provide design alternatives and provide a framework for the Town to decide how they intend to redevelop the building for re-use by other town departments.

Following Part I, the Executive Summary which contains BLF&R's conclusions and recommendations; the remainder of this report attempts to organize all of the information and graphics generated and documented during the duration of this study. The report is separated into several discrete sections which we hope will make the information easier to find and refer too.

- Part II discusses the existing conditions of the existing 20 South Water Street facility and, when appropriate, briefly describes how the condition of the other adjacent town owned and occupied structures relate to and inform the conclusions made.
- Part III discusses the design process including the work that went into identifying the space needs of the space town departments involved, and how the design options were developed and the how they were evaluated.
- Part IV includes copies of the final versions of the conceptual diagrams and schematic floor plans generated for use in estimating the project costs.
- Part V presents and the "Total Project Cost Estimates" and the construction cost estimates prepared by A. M. Fogarty & Associates, Inc., our independent cost estimator.
- Part VI includes a brief introduction and preliminary project schedule timelines for two different design options.
- Part VII, the appendix, includes full copies of the sub-consultant reports and the additional documents generated by over the course of the work.

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1. Executive Summary

Upon the conclusion of this study we offer the following summary relevant findings, conclusions and recommendations as noted and throughout this report.

<u>The existing structure at 20 South Water Street:</u>
During late 2010 and early 2011 several on-site investigations of the building and site were conducted by BLF&R Architects, BPC Architecture and our consultant/engineering team in order to visually review existing conditions, identify problem, or potential problem areas and general code compliance.

Detailed descriptions of the conditions observed are provided later and in the Appendices that accompany this report. The existing structure at 20 South Water Street has some problems, but has the potential to provide the Town with much needed flexible work space. The items below highlight the major findings of the Existing Conditions Assessment portion of the project.

1. Structure
   - Structural reinforcement and supplemental connection to meet wind and seismic code requirements
   - <Incorporate other major recommendations from A&M>

2. Emergency Egress
   - Provide fire rated enclosure at rear open stair
   - Modify/replace front non-compliant exit stair

3. Accessibility
   - Install required elevator to provide access to all floor levels

4. Site

5. Exterior Façade
   - <Insert key points from Gale report>
   - Provide new storm rated impact resistant windows with historically compatible type
   - Consider replacement of original missing cupola
   - Conduct selective masonry cutting for additional testing and inspection especially around doors and windows
   - Selective trim and flashing replacement
   - Install new gutters and downspouts for better storm water control
   - Selective replacement of steel lintels at certain exterior openings

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6. Roofing
   - Strip and completely replace the asphalt roofing shingles with heavier weight asphalt shingle and associated flashings and sealants

7. Thermal and Moisture Protection
   - Incorporate new insulation and vapor retarder assemblies to improve insulation/ thermal performance and meet current code requirements

8. Interior Materials & Finishes
   - Replace all interior finishes consistent with a public/office building as required by any new layout

9. Conveying Systems
   - Provide a code-required elevator for staff & public use

10. Mechanical-Electrical-Plumbing & Fire Protection (MEP&FP)
    - Replace all aged, low efficiency or non-functioning MEP & FP systems with new code-compliant, energy efficient systems suitable for the intended office and public use
    - Increase electrical service and transformer size

11. Solar Photovoltaic System Feasibility
    - A 41.8 KW solar photovoltaic system could feasibly be installed on the rear, south facing roof of the T&C Building and generating an annual electrical production of 52,141 KWH
    - The estimated cost is $267,520 with an estimated payback period of _____years if financed conventionally as part of the construction costs
    - A third party PPA (Power Purchase Agreement) is another option for reducing some electrical operating costs without incurring the full upfront installation cost

12. Hazardous Materials Investigation
    - A modest amount of asbestos or lead paint containing materials was encountered
    - A relatively low cost for materials removal and disposal has been estimated for any renovation program

<u>Options for Re-Design and Re-Use:</u>

BLF&R Architects and BPC Architecture also toured several other town buildings to fully understand the space needs of the town departments that would be the most probable new occupants at 20 South Water St., namely the current Finance offices at 22 Federal St. ("The Mooney Building"), the Human Resources Dept. located at the NRTA building and the Planning Department currently at 2 Fairgrounds Road. We also visited the Build, HDC, CON Com and Health departments at 37 Washington St. These additional site visits brought to light the needs

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of each department and started the discussion of potential larger design solutions that would be capable of bringing more departments back to the Downtown CORE area.

This path took the study slightly away from the original assumption of only accommodating a fixed set of program requirements, and several working meetings ensued to determine which uses and town departments could be accommodated in design options of various size and cost.

Ultimately Design Options A, B, C, D and E were prepared and reviewed over the course of several meetings with town staff and the larger "Working Group."

- "Option A" proposed a fairly simple renovation only of the existing former police station.
- "Option B" proposed the renovation plus a limited expansion that would replace the NRTA Building.
- "Option C" proposed a further expansion to provide for a physical connection between the Town & County building and the former police station.
- "Option D" being the largest of the options, proposed replacing the current Visitor's Center in addition the NRTA Building. This was the only option large enough to fully consolidate all of the town departments back in the downtown area. This Option included the renovation of 20 South Water and the replacement of both the NRTA and Visitor's Center buildings.
- Option "E" proposed the replacement of the Visitor's Center only with a direct addition/ connection to the Town & County building. Freeing up the building at 20 South Water Street for whatever use the town might wish.

The following points outline the conclusions reached during the study process which have steered the design path to the conclusions delineated in this report. Ultimately several of these options were eliminated for numerous reasons explained in more detail later.

1. The study started with the understanding that a prior Town Meeting has approved the eventual disposition of the Mooney Building at 22 Federal St. currently the home of the Finance department. As such, from the start our planning placed the highest priority on properly accommodating this department in the ultimate project.

2. Design Option C and Design Options D were dismissed largely due to cost, concerns about the ability to comfortably accommodate all the departments and the in ability to solve issues such as parking for town owned vehicles and the additional number of visitors to the town block as a whole.
3. Design Option E was also taken off the table for several reasons. This option sought to provide a direct addition to the Town and County Building in order to provide one contiguous facility for municipal administrative functions. The concept here was to allow for easy access between Finance Department functions some of which could stay

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where they are adjacent to the main public corridor of the T & C building. Thus allowing for the potential redevelopment of the 20 South Water St. building for another public or private use, whether by the town or by another separate party. Possibly establishing a source of revenue to the town, either by a disposition or lease. Ultimately the committee's members who reviewed it did not wish to give up control of the building or a portion of the town block property because it does provide some much flexibility to the town going forward.

4. The working group did not reach a clear consensus on whether "Design Option A" or "Design Option B" represented the best long term approach for the town therefore conceptual floor plans and estimates were prepared for both options.

The Proposed Solution:

Once Design Options C, D and E were removed from serious consideration, BLF&R began the task of the further developing the site plans diagrams and floor plans for both Design Options A & B. These documents served as the basis for preparation of the schematic-level construction cost estimates included herein.

We offer the following findings related to which Design Option is the most appropriate and the basis of our recommendation of "Design Option B" over "Design Option A."

1. It is BLF&Rs opinion that Design Option A will not fully meet the programmatic or special needs of the town departments under consideration for relocation. The actual quantity of "NET USABLE" space gained by only renovating the building is low. Meaning, once one incorporates everything that the building is currently missing in terms of proper accessibility, toilet rooms, mechanical and electrical rooms and an elevator; there is a significant reduction in functional floor space or workspace. Effectively this option cannot provide the Finance Dept., the Sheriff and the Nantucket Police with the spaces they need, while also accommodating for Human Resources and/or the Human and Social Services departments. Nor will it provide adequate space for safe and secure public record storage or the general storage areas requested during the space analysis work. Meeting space is also significantly lacking in the space available under this option.

2. The cost involved with renovating only 20 South Water St. as a standalone building is very high, on a unit basis (i.e. Cost per Square Foot). In part, this is due to the fact that the smallest of the proposed projects should be set up to facilitate the possibility of a later addition similar to that shown in Option B. For the purposes of estimating, we have intentionally this to be a requirement and the estimates included later reflect it.

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3. Although Design Option B has 52% more Gross Square Feet it provides an additional 88% of Net Usable Square Feet. This would allow for additional departmental uses, proper record storage and flexibility going forward.

4. Perhaps the best point about Option B is this; Not only does it replace the space of the Mooney Building, it also very effectively replaces the NRTA and provides very badly needed space in the Town and County Building. Our study did not focus at great length on the programmatic needs of the departments that were identified to remain in the Town & County Building. However these departments including; Town Administration, Town Clerk and Registry of Deeds also have space constraints which should be addressed at some point. It should also be pointed out that free space in the Town & County Building could also provide for needed space for support spaces such as a dedicated printer/copier room an accessible toilet rooms.

5. The question posed to BLF&R as to whether the more limited "Design Option A" could be developed in the near term without precluding a <u>future</u> expansion of the building as recommended and shown in "Design Option B". We have concluded that the town could pursue the lower cost "Option A" without excluding the possibility of a future expansion; however certain design and construction accommodations will be necessary to effectively deal with this condition. The "premium" cost associated with deferring the preparatory work and construction of the expansion is more thoroughly identified in the cost estimate section; but we would estimate that deferring expansion for +/- 5 will increases the overall "Hard" and "Soft" costs by approximately $500,000.

6. Cost: Included within the appendix of the report BLF&R has provided copies of the Preliminary Total Project Cost Estimates done at several milestones in the study. The most recent versions of which reflect the costs from the final independent cost estimates for each design option. The final cost of "Option A" is projected to be $4,132,795.00, and "Option B" is projected to be $6,022,465.00. At first pass this gap in cost seems to be quite large, however we have concluded that the town certainly is in need of the additional space as provided for in "Option B".

7. Furthermore, it should be considered critical that the town find solutions to provide public buildings that are functional, fully accessible to the public and also properly accommodate both the public employees and the public records they are charged with maintaining.

The following table highlights the major components as well as the basic quantitative and qualitative differences in the final two versions of "Design Option A" & "Design Option B." A more detailed description of what each of the more detailed design options accomplishes on a programmatic and space use basis is include in the body of the report.

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DESIGN OPTION		"A"	"B"
BASIC OVERVIEW		Renovation of the 20 South Water Street building only + related site work and minor alterations to the T & C building	Renovation of 20 South Water St. building with expansion and removal of the NRTA building + related site work and minor alterations to the T & C building
SIZE	Gross Building Square Footage (1)	6,325	9,622
	Net Building Square Footage (2)	5,235	8,264
	Net Assignable Square Footage (3)	2,990	5,617
DEPARTMENTS ACCOMODATED		Finance County Sheriff (lease space) Nantucket Police General Supply Storage	Finance County Sheriff (lease space) Nantucket Police Human Resources Human & Social Services File/Record Storage General Supply Storage
IMPACT ON EXISTING FACILITIES		-Allows for disposition of 22 Federal Street -Retains NRTA bldg. "as is" -Requires Sheriff to relocate to a temporary space	-Allows for disposition of 22 Federal Street -Requires relocation of NRTA staff and temporary quarters for Human Resources -Requires Sheriff to relocate to a temporary space
CONSTRUCTION PERIOD DURATION		+/- 10 Months	+/- 12 Months
COSTS	CONSTRUCTION	$3,085,570	$4,511,706
	SOFT COSTS	$1,047,225	$1,510,759
	TOTAL PROJECT COST	$4,132,795	$6,022,465
	TOTAL WITH ADDED WORK AT T & C BUILDING	$4,399,795	$6,709,465

NOTE: The soft cost amounts above include the 5% project contingency included on the budget for each of the design options.

(1) Gross Square Footage (GSF)

The total square footage for a facility measured from the outside wall surfaces of the building.

(2) Net Square Footage (NSF)

Net square footage is the total usable square footage of a facility as measured from the inside wall surface of each room. Included in this figure are non-assignable areas such as mechanical rooms, common corridors, etc.

(3) Net Assignable Square Feet (NASF)

The total assignable square footage as measured from the inside wall surface of each room. It does not include mechanical rooms, public restrooms, common corridors, etc.

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2. Existing Building Condition Assessments

I. Historical, Code Review and Architectural Issues

Historical issues
The building at 20 South Water Street, most recently the home of the Nantucket Police Department (NPD), was actually constructed in 1929 for the Nantucket Fire Department. The main volume of the original building was constructed as a clear spanned three bay apparatus garage, while the smaller rear section and second floor of the building included the most basic of building amenities.

Several major building renovations were undertaken by the NPD, the first prior to the NPD taking occupancy in 1980 and the second in 1986. Since then the building has had a number of miscellaneous smaller modifications as the NPD ultimately grew out of the facility. Most recently the building appears to have suffered from deferred maintenance and water infiltration issues mostly from the roof and several visible openings through the exterior masonry (brick) cladding.

There are items that have been lost from the original building that the town may wish to restore, including the missing cupola and altered door and window configurations.

Removal of much of the roof mounted antennas and other items such as lighting on the face of the building will also help return the building toward its historic past.

It should also be noted that the existing building, though it may contribute to the historic district, may not necessarily be protected to the level that would alleviate certain requirements for needed structural, accessibility and life safety upgrades. Although these requirements have not yet been fully designed or addressed in the conceptual design options that follow later in this report; it is BLF&R's contention that these items can be addressed without dramatic changes to the existing street front masonry facades if that should become an issue during future design and permitting. However,

Code Review Issues
As part of the existing condition assessment BLF&R has compiled a preliminary code review. Due to the age of the building, any major changes will trigger several significant Building Code Upgrades. Some of these will be rectified more easily when certain building systems are replaced in their entirety. Others changes will be required for certain "existing to remain" building elements (see the structural report for several examples of this).

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The newly adopted 8th Edition of the Massachusetts Building Code is actually made up of numerous amendments to the following; the International Building Code 2009, the International Existing Building Code 2009 and the International Energy Conservation Code 2009. These documents and the other referenced industry standard and Building Codes will all guide any renovation work as well as any potential building additions.

This extent of renovations being considered will require the designers, and ultimately the building officials who become involved, to determine the work to be what the building code refers to as a "Major Alteration." A Major Alteration is defined in several ways, however for the purpose of this potential project it should be understood that any level of upgrades required in the existing building or the change of use will require most, if not all, of the buildings systems be upgraded. This will include the structural system, the thermal envelope, and both the egress and accessibility issues with the vertical and horizontal circulation in the building. In addition to the above, the whole building will need to be brought into compliance with the American Disability Act (ADA and ADDAG) and the Massachusetts Architectural Access Board Regulations (521 CMR).

As a public building the key code upgrades required are outlined here and throughout the attached consultant reports.

- **Structure** - As noted in the structural engineer's report the existing building will need to have several key issues addressed including structural reinforcement required to meet current wind and seismic codes for renovations of the complexity being contemplated here.
- **Egress** –Currently the existing building has several issues with egress that will need to be addressed regardless of which design option is pursued. At present, there is one open stair at the rear of the building which will be required to be fully enclosed if a second enclosed exit stair is not added in the future. The existing stair adjacent to the existing garage bay facing South Water St. also has several issues which will need to be remedied in any level of renovations. Currently it has insufficient width and depth at landings, and most importantly it does not provide direct access to an Exit to the exterior.
- **Accessibility** – The entire existing building and any new additions will need to comply with all ADA and current state code requirements. This will include providing an elevator, and due to the nature of the occupancy we would recommend a 2500 LB capacity elevator be considered. This size, one size up from what is typically the minimum, but will provide for easier moving of furniture and quantities of boxed files as may often be required by some of the intended end user town departments.
- There are also ADA issues that will need to be addressed on the exterior of the building. Several of the existing issues at the building entries will likely be corrected by planned reconfigurations of the entries; all new work will need to comply. In

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addition several area of the sidewalks and paved areas outside the building will need to be altered to ensure they meet standards for accessible routes and paths outside of buildings.

- There is also several code issues related to the Mechanical and Electrical systems that will need to be addressed as soon as we start renovating those systems. These include providing proper clearances and ventilation for equipment such as the boiler to correcting the way the electrical panels are wired. Additionally the current use of the spaces that house the existing MEP systems for additional storage cannot continue. (It is the intention of the design team to replace all of the existing mechanical and electrical systems in the building due there age and inefficiencies.)

Architectural Issues

Site

Overall the site around the building is in fairly good condition. Items that will need to be addressed include proper drainage and improvements to the landscaping and hardscape including the sidewalks on the south and east sides of the site.

Currently there is little to no means of handling storm water on the site or roof run-off. Any new work will need to address this problem where it currently does not exist and correct where attempts to solve the problems have created others. For example, the roof run-off on the south side of the building spills onto the sidewalks, a previous attempt to solve this issue simple redirects the water into E. Chestnut St., making the cobblestone street even harder to negotiate in winter.

Aside from the space between the 20 South Water St. and NRTA buildings the remainder of open space on the town block looks to be well maintained. This small alley area is closed off with small sections of wood fence and is overgrown with weeds. Aside from the areas directly adjacent to the memorial at the west and of the site the remainder of courtyard between the buildings includes planting beds, lawns and a somewhat hap-hazard mix of native and planted trees of various size and shape. Many of the trees nearest to the existing 20 South Water building in the courtyard will likely need to be removed to facilitate any level of renovation. (Additional ones will need to be removed if the NRTA building were also to be removed to make way for an addition.) Some may view this negatively, however the project being considered will allow the town to replace larger trees that are dangerously close to the building and the utility services on the site with ones that are more decorative and appropriately sized.

From the start BLF&R and BPC viewed the courtyard space, which is rarely activated by people, was seen as an opportunity. This space currently lacks accessible paths and appropriate lighting that if added would provide additional outdoor public garden space which could provide a clear

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highly visible and fully handicap accessible route to the current Visitor's Center Building and the public restroom facilities located there.

Exterior Openings

The existing condition and the recommended types of repairs for the existing exterior facades are described in greater detail later in this section of the report and in the "Architectural Existing Conditions Summary" and the "Exterior Façade Evaluation and Leak Review" prepared by Gale Associates, Inc. both of which are in the appendix.

In addition to that referenced above the following items will also need to be addressed in any future project.

- The windows of the building were actually installed not that long ago, however they are not "historically" accurate nor are they rated for "wind" or "storm" protection. The current commercial building codes require new windows to have storm shutters or have 120 MPH Wind/Storm test ratings. It is BLF&Rs opinion that the town should consider replacing all of the existing windows to properly protect the investment they make in newly renovated spaces from storm related or any other type of intentional damage.
- All new entries as well any of the buildings existing entries/exits that may remain will need work to make them fully meet the standards described above for windows. Several of the existing doors, if not eliminated, will to be replaced with new work in order to meet the current performance standards.
- Assuming the details and products proposed for replacement of any, or all, of the existing doors and windows will be granted approval by the HDC, there is also an opportunity to greatly improve the energy performance of these systems.

One truly optional addition to any future project would be the replication of the original decorative cupola that was previously removed due to rot and damage. This work was previously proposed, and was reportedly not done at the time due to cost.

Roofing

BLF&R has reviewed the existing roof; the extent of asphalt shingle failure is clear from this visual review. It is clear the entire roof should be re-roofed completely. Second, over the buildings life as the home of the Nantucket Police Department, numerous roof mounted antennas of various size and type were anchored through multiple roofing layers.

We have also reviewed the available copies of construction drawings from the last major renovation project at the site, and suspect that there are significant flashing and sealant issues which exist around the roof dormers and the windows therein. Assuming the actual installations closely match the given details and given the amount of evidence showing past and recent water infiltration at the second floor (see "..Interior Leak review" by Gale Associates, Inc.), we can only recommend a complete replacement of these systems along with the roofing.

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Thermal and Moisture Protection

As noted above, the building has many issues that need to be solved to stop moisture infiltration and ongoing damage in the building.

The thermal performance of the building is something that will need to be addressed and can certainly be improved. The current building codes now require that buildings undergoing the type of renovation being contemplated be brought up to code. The exterior walls and roof will need to be redesigned to provide proper insulation values and protection from air & vapor (moisture) movement, both of which will save the Town money over time.

Currently the exterior walls have little to no insulation value. The walls that are not exposed have very little actual insulation material between the interior finish and the exterior wythes of brick masonry. Typically fiberglass batt is the material used. In this case it is a concern for several reasons:

A) The current layer is too thin and does not provide enough insulation value, to meet the new code requirement.

B) Batt insulation does not perform well in walls where it is constantly exposed to moisture. Though we did not open the walls, we fully expect that areas with damaged insulation will be found. This will likely be due to water leaking through the roof and walls, as well as water vapor simply condensing inside the walls while it tries to escape the building under the right atmospheric (pressure) conditions.

C) Because no destructive testing was done during this study, no assessment was done for mold, but we can only assume there will be concealed areas found to contain mold. Certainly, there is evidence that it does exist in some exposed areas. Batt insulation can actually hold the moisture which, when combined with gypsum board and wood framing, can produce mold.

The current "roof/ceiling insulation" system in the building is more a combination of several types of insulation located in miscellaneous ceilings, knee-walls and full height walls which separate conditioned and un-conditioned spaces. When combined, these multiple types of building assemblies are highly ineffective for thermal performance. At present there are several areas of the building where these insulation systems are exposed, it is easy to see where these layers are insufficient, damaged, disturbed or missing. Like above they are also highly susceptible to water infiltration issues.

The ability to save significant energy and the need to provide proper indoor air quality make the decision to replace the complete thermal envelope of the building a top priority.

Interior Materials and Finishes

The existing building interior is showing its age. The age, quality and condition of almost all of the existing finishes make them candidates for replacement. In fact so many of the finishes are

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either worn out or damaged there is very little keep. It is the assumption of the design team that all of the existing finishes will be removed to expose the interior of the buildings shell, thus clearing the way for a completely new building inside a new thermal envelope inside the existing to remain masonry and roof structure.

Architectural Specialties & Fixtures, Furnishings and Equipment

Due to the age of the building and its former uses, there is not much in the building that will be useful in any renovations. Much of the remaining police specialties are certainly out of date or past their useful life. *Early in the process there was discussion of reusing portions of the old jail cell installation by the Sheriff. In fact, it was determined that this is not required by the Sheriff.*

Conveying Systems

As identified previously, in the discussion of accessibility issues, there is currently no elevator or lift of any type in the building. Whether or not the town decides to add additional square footage to the building, the next renovation of the building will require an elevator.

II. Exterior Façade Evaluation and interior Leak Review

The exterior certainly has its issues, but the much of the brick is in fairly good condition for a building of this age and type. Certainly there are areas with the problems and there is quite a bit of evidence of previous re-pointing and repairs to past problems, some less successful. The following items highlight the larger items that will need to be address going forward. Some of which will require masonry cutting for inspection and testing prior to the release of the final design documents.

First, the roofing is need of complete replacement. Certainly there are several severe leaks, and there is plenty of evidence of past leaks. Because no real destructive testing was done we have assumed that some work will need to be done to internal structural elements as well, however the visual inspection that were done did not find major problems with exposed structural elements. The real victim of the continued roof leaks are the interior finishes and what is behind them. These concerns along with the need to make the building much more energy efficient suggested that it is well worth a complete demolition of the interior of the building exposing the masonry exterior throughout.

Second, the wood trim at the rakes and eaves is in a slightly less severe condition. Some replacement is needed along with all new flashings. Contributing to the roof edge condition is the lack of gutters. A proper installation of appropriate gutters and leaders to grade will also help the masonry as well.

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Lastly, some restoration of the exterior masonry shell will be required. There are several areas of the building that will need more major repairs, such as steel lintel replacement or replacement of prior repairs that did not carefully match the existing condition. Other areas will need very little or minor repairs and/or repointing only. A very detailed review of the building's exterior was conducted by Gale Associates, Inc.; a full copy of their thorough report is included in the Appendix. Please see this document for a more complete description and photographic record as well as their complete recommendations.

III. Structural Evaluation

BLF&R contracted with Allen & Major, Inc. to review the existing building structure and the code implications for the future. They visited the building to visually inspect the visible structural elements of the building. No destructive testing or removal of finishes was done in order to expose hidden conditions. Their report identifies the code issues and the building systems that will need to be addressed by any significant renovation and/or addition to the building. See the complete letter in Appendix. The highlights are as follows;

- -
- -

IV. MEP/FP - Condition, Assessment and Building Systems Evaluation

The existing Mechanical and Electrical systems in the building were reviewed by Building Engineering Resources, Inc. (BER) on December 14, 2010. The following is a summary of the findings related to MEP &FP systems. For more detail see the complete report by BER dated April 11, 2011 in Appendix #1.

In short, all of the buildings mechanical and electrical systems should be replaced as part of any extensive renovation. Even if the equipment theoretically has the capacity, much of the existing systems are older and are *now at* or *well past their* life expectancy. Others are simply not up to current code and/or efficiency standards. Some are no longer working as intended due to wear and tear, damage or having been altered or abandoned in the past. *Although not part of the consultant's report, much of the same can be said for the existing systems and condition of the NRTA Building.*

One item that is very evident, particularly on the exterior of the building, is the ad-hoc addition of new utility connections, mechanical and electrical system features added over time utilizing surface mounted conduits and piping, and various solutions for mounting MEP equipment at grade and on the face of the building. This will not be of great concern to the systems engineers going forward, as most systems will need to be removed in any renovation; it will however increase the necessary repairs to the existing to remain brick masonry walls (see Exterior Façade report).

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It is the recommendation of BLF&R and BER that most if not all of the existing Mechanical, Plumbing and Electrical systems be removed and replaced entirely. In addition a larger building on the site will require changes to the existing electrical service which feeds the four Town and County buildings on the block. The size and location of the larger building will require a service size change and a new location for the transformer which is currently very inaccessible and too close to both the existing 20 South Water St and NRTA buildings.

V. Hazardous Material Survey and Testing Results

The interior and exterior of the 20 South Water St. building was surveyed by Hygienetics Environmental Services, Inc. on January 28, 2011. Along with a thorough visual inspection, numerous samples were collected and lab tested due to the large amount of demolition anticipated with any renovation concept.

The results of the testing concluded that there is much less hazardous material present, than is usually expected for a building of this type and age. This is certainly due to the number of prior renovations and material abatement work that the building has undergone in its history.

It should be noted that the testing was done while the building was still occupied by the Nantucket Police Department. Therefore, no destructive testing was done to expose piping in chases or behind wall finishes. The complete report is included in the appendix and the key findings are highlighted below.

a. Asbestos – A limited amount of the tested materials were found to contain levels of asbestos that will require abatement and proper disposal.
b. There are several areas with Lead Paint and other miscellaneous Hazardous material containing items (such as lighting bulbs and ballasts, thermometers that may contain mercury or similar) that will need to be addressed before and during demolition operations. Proper handling and disposal will be required.

VI. Roof-Mounted Photovoltaic System for the Nantucket Town Hall

BLF&R contracted with Argo Consulting to study the possibility for inclusion of renewable energy as part of any redevelopment of the former Police Station and/or the adjacent buildings. BLF&R and the other members of the project team quickly determined the lack of feasibility of with placing any solar panels (photovoltaic or thermal/hot water) on the existing 20 South Water St. roof, because of the number of south facing gable dormers that will surely need to remain. As a result of this, and the fact that the electrical utility connections for all the town owned building on the block are interconnected and metered together, it was determined that the south facing roof of the Town and County building was the most advantageous location for such a system. Though there may be issues with locating solar panels on any roof within the core historic district of town, it was considered an important task to identify the possibilities for the future and establish how the return on investment on such a system might help offset the

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cost of the system installation. Please see the attached complete copy of the report in the appendix. The following key points of the report are included here.

a. The study assumes a system tied to the electric grid to take advantage of Net-metering, which would be used to offset other town utility accounts.
b. The design includes 190(each) 220 watt rated panels, each being 37.5" x 67.8"
c. Space would need to be found in the Town and County Building to house the inverters.
d. The "electrical generation potential" of the 41.80kW system has been calculated to be 52,141 kWh annually.
e. The system cost has been estimated, using the industry standard figure of $6.40 per kilowatt, which is intended to cover the use of prevailing wages. The total estimated cost before any grants or rebates would be $267,520.
f. Please see the full report in the appendices for the detailed discussion of SREC sales and the possibilities of Power Purchase Agreements. A PPA with a third party is the only way for the town to leverage any State or Federal Tax Credits (should they still be available in the future).

As is noted in the report by Argo Consulting, the visibility of the panels on the T&C building will be "a visual issue" due to the location in the heart of the core historic district. BLF& R agrees with the report that the south facing roof of the T&C building, in addition to being oriented very well to take advantage of the sun, is in fact one of the least visible roofs within this block of town owned buildings. Although due to its height, the surface of the roof actually is visible over some of the surrounding buildings from a distance, as shown in the following photo simulations showing matte black panels with black frames from various vantage points.

VII. Existing Conditions Plan / Survey of the Town

In addition to the original scope of services requested, the town authorized BLF&R to contract with Blackwell and Associates, Inc. to prepare a detailed survey & Existing Conditions Plan for the entire town owned block between Broad St., S. Water St., E. Chestnut and Federal St.

The addition of this scope filled a gap in the available information regarding the site, and should help the town going forward with any new work. The detailed plan includes the accurate delineation of all four Town of Nantucket owned buildings on the block, spot elevations, building floor and ridge heights, as well as numerous other site utility and topographic features.

A reduced copy of the plan and an electronic copy are also included in the Appendix for reference.

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3. Re-Designing for the Future

I. Design Approach

The original Request for Design Services Proposal outlined a general design program for a renovation only of 20 South Water Street to essentially, incorporate the relocation of the basic Finance Department and related offices. However, from the outset, Town Administration requested the preparation of a wider range of design options to

1.) Address various levels of anticipated staffing changes
2.) Consider the relocation of several town departments back into the downtown "core" district.
3.) Explore various scenarios for removal of the NRTA and/or Visitor's Center in order To understand the full "build out" potential of the 20 South Water block.
4.) Develop a wider set of design options, building layouts and "Order of Magnitude" costs.

During the course of this study, BLF&R Architects and BPC Architecture developed five alternative design concepts that offered various levels of gross building area, adjacent buildings removal, and anticipated project costs

II. Department Space Needs and Programming

The program requirements…

After Finance, Human Resources and Human & Social Services, the priority was what to do with the Planning Department, whose relocation to the former Electric Company Building some time ago was to be "temporary". If they could be accommodated downtown, then the town would be in a better position to move forward with future projects identified in the master-planning of the Fairgrounds Road site.

III. Conceptual Design Options for Building Renovations & Additions

The five design options (or Schemes) were named;

- OPTION A - "The Base Scheme"
- OPTION B - "NRTA Removal and Expansion"
- OPTION C - "NRTA Removal with New Two Story Connector"
- OPTION D - "The Full Consolidation Scheme"
- OPTION E - "The Out of the Box Scheme"

- Option A proposed a fairly simple renovation only of the existing former police station.

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- Options “B” through “D” represent the base renovation in “Option A” plus an addition of increasing size and complexity.
- Options “C” & “D” include the demolition of the NRTA Building and provide physical connections to the Town & County building as well as the former police station, while retaining the existing Visitor’s center building.
- Option “D”, the largest of the options, proposes replacing the current Visitor’s Center in addition the NRTA Building. This is the only option large enough to fully consolidate all of the town departments back into the downtown area.
- Option “E” proposes the replacement of the NRTA Building and the Visitor’s Center with a direct addition/connection to the Town & County building. This option allows the building at 20 South Water Street to be disposed of, leased, or renovated for other public or non-public uses.

An attempt at a “full consolidation” scheme had been considered by the town previously, but it was determined then that it was not feasible due to cost. One reason behind the effort to reconsider this now is the fact that the some of the other town owned and occupied buildings are also in need of repair or replacement, namely the former Electric Company building at 2 Fairgrounds and the Town Hall Annex building at 37 Washington St. which house the Planning and Building Departments respectively.

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The charts and lists below were developed to highlight the general scope and the pros and cons of each of the Conceptual Design Options, they are based on the drawings dated Jan. 28th, 200 and was used by the small committee of town staff and the larger "working group" to narrow down the focus of the project before conceptual floor plans were prepared for estimating.

TOWN OF NANTUCKET 20 SOUTH WATER STREET STUDY		DESIGN OPTION				
		OPTION A - "The Base Scheme"	OPTION B - "NRTA Removal and Expansion"	OPTION C - "NRTA Removal with New Two Story Connector"	OPTION D - "The Full Consolidation Scheme"	OPTION E - "The Out of the Box Scheme"
ISSUES	Total Project Size	6,400 GSF	9,2000 GSF	11,200 GSF	13,500 GSF	7,000 GSF
	Net Square footage captured.	5,635 approx.	8,035 approx.	9,635 approx.	10,635 approx.	6,000 approx.
	Preliminary Estimated Total Project Cost	± $3,512,000	± $5,924,000	± $6,629,400	± $8,136,900	± $5,264,000
	Preliminary Estimated Construction Cost	± $2,310,000	± $4,200,000	± $5,000,000	± $6,150,000	± $3,800,000
	Cost above includes limited dollars for minor renovations in the Town & County Bldg. to accomplish connections to new construction , etc.	$240,000	$210,000	$240,000	$200,000	$250,000
	Fully renovates the existing 20 South Water Street Building	Y	Y	Y	Y	N
	Allows for some needed expansion of the offices / departments that will remain in the T& C building	Y	Y	Y	Y	N
	Relocates all of the Finance Department from 22 Federal Street	Y	Y	Y	Y	Y
	Relocates the Planning Department from 2 Fairgrounds Road	MAYBE	N	MAYBE	Y	N
	Relocates Health, Con Com, HDC, Zoning and Building Departments from 37 Washington Street	N	N	N	Y	N
	Total projected number of staff accommodated	TBD +/-30	TBD +/- 40-50	TBD- =/- 50-60	TBD +/- 75-95	TBD +/- 35-40

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	Creates additional parking issues for Town owned vehicles and employees that cannot be addressed on site	N	N	Y	Y	Y
	Consolidates all Regulatory / Land Use departments in one location	N	N	N	Y	N
	Assumes removal of the NRTA Building	N	Y	Y	Y	Y
	Requires removal and replacement of the Visitor's Center	N	N	N	Y	Y
	Includes space that could be leased or utilized by other Non-Municipal Users (i.e. Retail, offices, etc.)	Y	Y	Y	N	N
	Offers possibility for a new HP accessible route through the site	Y	Y	Y	N	N
	Include improvements to open space between the existing buildings	Y	Y	Y	Y	N
	Provides for shared elevator use and an interior corridor connection between buildings	N	N	Y	Y	Y

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TOWN OF NANTUCKET, MA 20 SOUTH WATER STREET STUDY	DESIGN OPTION				
	OPTION A - "The Base Scheme"	OPTION B - "NRTA Removal and Expansion"	OPTION C - "NRTA Removal with New Two Story Connector"	OPTION D - "The Full Consolidation Scheme"	OPTION E - "The Out of the Box Scheme"
Existing Gross Square footage utilized by all departments affected	20,484.00	20,484.00	20,484.00	20,484.00	20,484.00
Fully renovation of existing 20 South Water Street Building	6,400	6,400	6,400	6,400	0
Proposed New Space added to 20 South Water Street adds -	0	2,800	4,800	7,100	7,000
Removal of NRTA Building	0	(1,050)	(1,050)	(1,050)	(1,050)
Relocation of the Finance Department from 22 Federal Street frees up 2,750 GSF	(4,134)	(4,134)	(4,134)	(4,134)	(4,134)
Credit for replacement of the Visitor's Center Building	0	0	0	(1,670)	(1,670)
Relocation of the Planning Department from 2 Fairgrounds Rd	0	0	0	(1,880)	0
Relocates Health, Con Com, HDC, Zoning and Building Departments from 37 Washington Street	0	0	0	(4,900)	0
Total additional square footage created for town use	2,266	4,016	6,016	(134)	146
To go further, A combined regulatory department office at 2 Fairgrounds would eliminate the need for 37 Washington St. in each scheme	(4,900)	(4,900)	(4,900)	N/A	(4,900)
Add for space use increase at 2 Fairgrounds Road not already accounted for-	2,600	2,600	2,600	N/A	2,600
By finding a new use for the property or a disposition of the 37 Washington Street the addition to the town's current space would be reduced to -	(34)	1,716	3,716		(2,154)

Total Gross SF calculation =	Town & County Building	6850	GSF **
	22 Federal Street	4134	GSF
	NRTA Building - 1 Chestnut Street	1050	GSF
	Visitor Center	1670	GSF
	37 Washington Street	4900	GSF
	2 Fairgrounds Road (partial)	1880	GSF
Grand Total of Space currently in use		**20484**	**GSF*** **

** The space use calculated for the T &C Building only includes the 1st Floor and the former Sheriff's space on the 2nd fl.

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PROS AND CONS FOR EACH OF THE CONCEPT SOLUTIONS FOR THE REUSE OF THE 20 SOUTH WATER STREET BUILDING

Conceptual Scheme "A" – Base Scheme Renovation only of the Existing 20 South Water Street Building	
PROS	**CONS**
▪ Smallest development w/lowest cost	▪ Reasonable space <u>not</u> available to relocate Planning Dept. to 20 S. Water St.
▪ Improved landscaping between buildings	▪ New elevator required
▪ Utility cross sections can remain	▪ Does not free up space in the T&C Bldg.
▪ Pedestrian circulation is viable through the site, but could wait until later.	▪ No shared conf. space in 20 S. Water St. Bldg.
▪ No significant impact on local parking or change the status quo for current staff	▪ Construction of new record storage vaults may be needed at 20 S. Water St. BUT SPACE MAY NOT BE AVAILABEL
▪ Relocation of financial departments to 20 S. Water St. allows better organization & use of space in existing town and county building	▪ Non-compliant issues are not corrected within the existing Town & Country Bldg. (i.e. HC toilets)
▪ Visitor's Center can remain as is.	▪

Conceptual Scheme "B" - Removal of NRTA Existing NRTA building to allow for expansion of 20 South Water St.	
PROS	**CONS**
▪ Relocates all Finance Dept. functions into one building, including ample space for file/records storage. Frees up 22 Federal for disposition	▪ Requires a temporary location for Sheriff and the departments within the existing NRTA building during construction
▪ Frees up significant space in town & county building	▪ Though larger than Scheme "A" there is still not enough space to relocate Planning or other Regulatory/Permitting" Depts. to the site
▪ Accessible pedestrian circulation is viable through the site	▪ New elevator required
▪ No significant impact on local parking or change the status quo for current staff	▪ Construction of new record storage vaults may be needed at 20 S. Water St.
▪ Improves access to Visitor's Center and public toilet facilities - Visitor's Center can remains as is.	▪ ADA compliance issues in town & county building may or may not be corrected
▪ Utility cross connections can remain - but will need to be altered and upgraded	▪
▪ Existing accessibility issues at T & C Building could be aided by the optional physical connection between structures	

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Scheme "C" NRTA removal with a +/- 4800 Gross SF two story addition and connection to the existing Town & County Building	
PROS	**CONS**
▪ Relocates all Finance Dept. functions into one building – frees up 22 Federal for disposition ▪ Functional efficiency gained through hard connection ▪ Frees up significant space in town & county building ▪ More unified town & County complex ▪ Visitor's Center can remain as is. ▪ Utility cross connections can remain - but will need to be altered and upgraded. ▪ Gain large conf. space for ± 39 people	▪ Loss of pedestrian path through the site ▪ Significant scale & cost of development ▪ Requires a temporary location for departments within existing NRTA building during construction ▪ ▪ Construction of new vaults ▪ Minor increase of staff on site and minor added burden to local parking demand ▪

Scheme "D" – "The Full Consolidation Scheme" Remove both the existing NRTA and Visitor's Center Buildings to allow for +/- 7100 Gross Square foot addition connecting 20 South Water St. to the Town & County Building	
PROS	**CONS**
▪ Relocates all Finance Dept. functions into one building – frees up 22 Federal for disposition ▪ Functional efficiency gained through interior corridor connection of buildings ▪ More unified Town & County complex ▪ Utility cross connections can remain - but will need to be altered and upgraded. ▪ Frees up significant space in town & county building ▪ ▪	▪ Most costly & substantial development ▪ Loss of pedestrian path through the site ▪ Construction of new vaults ▪ Requires a temporary location for all displaced departments during construction ▪ Increases staff on site and need for dedicated parking downtown ▪ Increases parking demand for townspeople conducting business at this consolidated location ▪ No space available for non-municipal uses @ 20 S. Water St.

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Conceptual Scheme "E" – "Out of the box Scheme" Forego renovation of 20 South Water St. and consider a direct 7000 Gross SF addition to the existing Town and County Building allowing for reuse of 20 South Water St. by others.	
PROS	**CONS**
▪ Disposition or lease of 20 S. Water St. may provide an immediate or long term revenue stream for the town ▪ Relocates all Finance Dept. functions into one building ▪ Gives the town a chance to solve current ADA / Accessibility issues in the Town & County building ▪ ▪ More unified town & county complex ▪ Does not require a new elevator	▪ Disposition of 20 S. Water St. may limit town use of site in the future ▪ Requires a temporary location for all displaced departments during construction ▪ Sheriff's Dept. would need to be accommodated within new addition or remain within leased 20 S. Water St. ▪ No Planning, Building, Health, HDC or Con. Comm. relocated to this location ▪ Utility cross connections on site would have to be reconfigured to some extent ▪ Loss of pedestrian path through the site

IV. Identification and Refinement of the Preferred Design Option(s)

Based upon the careful review of the Pros and Cons, the program data, the capacity (meaning the square footage yielded by each option) and the Preliminary Project Cost Estimates prepared for each of the five conceptual plan options; the members of the original committee of Town Administration and staff along with the Working Group could not reach a full consensus, but agreed that Options C, D and E did not represent the best long term site and space utilization for the departments under consideration. These concepts also far exceeded the scope and cost expectations for a project of this type.

Because of this the decision was made to further the design for both the A and B Options.

V. The final Space Utilization and Square Footage Calculations for Options A & B

BLF&R offers the following charts detailing what exactly the schematic plans used for cost estimating each Design Option will ultimately yield in terms of actual Net Square footage and more importantly Net Usable Square Footage.

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	20 South Water Street			East Chestnut St - the NRTA Building			22 Federal St. the Mooney building			Total of space affected on three sites does not include any work at town and County Building		
	GSF	NSF	Eff. Factor	GSF	NSF	Eff. Factor	GSF	NSF		GSF	NSF	Eff. Factor
EXISITNG CONDITIONS	6325	5235	82.8%	1050	800	76.2%	4134	2750	66.5%	11509	8785	76.3%
Scheme A	6325	5217	82.5%	1050	800	76.2%	0	0		7375	6017	81.6%
Scheme B	9622	8264	85.9%	0	0		0	0		9622	8264	85.9%
				Shows space lost due to demolition of exising building in Scheme B Only			Assumes disposition of building / site in both Schemes A & B					

NOTES:

1. Does not include or account for +/- 1300 Net Square Feet of space freed-up for re-use inside the existing Town & County Building by moving Finance Department staff to 20 South Watre Street.
2. Nor does it account for any other chages to the +/- 6800 NSF of space inside the T& C Building currenly in use by the Town, excluding the Courts and RMV.
3. Gross Square Footage (GSF) - The total square footage for a facility measured from the outside wall surfaces of the building.
4. Net Square Footage (NSF) - Net square footage is the total usable square footage of a facility as measured from the inside wall surface of each room. Included in this figure are non-assignable areas such as mechanical rooms, common corridors, etc.

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DESIGN OPTION "A" SPACE USE TABULATION BY DEPARTMENT/USE (EXISTING VS PROPOSED)

DEPARTMENT	EXISTING # OF EMPLOYEES	EXIST. NSF	ACCOMMODATED # OF EMPLOYEES	PROPOSED NSF
FINANCE DEPT.	9 + 1 pt.	1800*	19	2231
ASSESSORS	5 + 1 pt.	642	incl. above	incl. above
TAX COLLECTOR	3	647	incl. above	incl. above
FILE STORAGE	-	500**	-	(no space available)
SHERIFF	3	230	3	596
NANTUCKET POLICE	0	0	1 Part-Time	163
STORAGE/MECH.	-	0	-	470
SUPPORT SPACE	-	-	-	336
CIRCULATION	-	-	-	1421
(These lines not included in NASF calculation)				
TOTAL	22	NSF	23	5217 NSF
TOTAL GSF = 6325				5217/6325 = 82.5 %

The Net Assignable SF Area & Programming Efficiency for this option = 2990 SF or 47.3%

DOES NOT ACCOUNT FOR HUMAN RESOURCES DEPT. AND NRTA STAFF CURRENTLY IN "NRTA" BUILDING OR PROVIDE LARGE DEDICATED FILE STORAGE AREA TO REPLACE THE CURRENT USE OF THE BASEMENT LEVEL AT 22 FEDERAL ST.

* Approx. NSF allocated to Finance employee use at 22 Federal St. (The Mooney Building)

** Approx. NSF allocated to File Storage at the lower Level of 22 Federal St.

Gross Square Footage (GSF)

The total square footage for a facility measured from the outside wall surfaces of the building.

Net Square Footage (NSF)

Net square footage is the total usable square footage of a facility as measured from the inside wall surface of each room. Included in this figure are non-assignable areas such as mechanical rooms, common corridors, etc.

Net Assignable Square Feet (NASF)

The total assignable square footage as measured from the inside wall surface of each room. It does not include mechanical rooms, public restrooms, common corridors, etc.

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DESIGN OPTION "B" SPACE USE TABULATION BY DEPARTMENT/USE (EXISTING VS PROPOSED)

DEPARTMENT	EXISTING # OF EMPLOYEES	EXIST. NSF	ACCOMMODATED # OF EMPLOYEES	PROPOSED NSF
FINANCE DEPT.	9 + 1 pt.	1800*	27	3940
ASSESSORS	5 + 1 pt.	642	incl. above	incl. above
TAX COLLECTOR	3	647	incl. above	incl. above
HUMAN SERVICES	3	350	incl. above	incl. above
HUMAN RESOURCES	2	300	incl. above	incl. above
FILE STORAGE	-	500**	-	737
SHERIFF	0	230	3	765
NANTUCKET POLICE	0	-	1 Part-Time	175
NRTA	2	250	0	0
STORAGE/MECH.	-	-	-	371
SUPPORT SPACE	-	-	-	649
CIRCULATION	-	-	-	1627
(These lines not included in NASF calculation)				
TOTAL	29	NSF	32	8264
TOTAL GSF = 9622				8264/9622 = 85.9 %

The Net Assignable SF Area & Programming Efficiency for this option = 5617 NASF or 58.4%

INCLUDES DEDICATED FILE STORAGE SPACE WHICH CAN MNOT BE ACCOMODATED IN DESIGN OPTION A AS WELL AS HUMAN RESOURCES FORMALLY IN THE "NRTA" BUILDING & HAS ADDED POTENTIAL OF ACCOMODATING THE HUMAN & SOCIAL SERVICES DEPT. AS WELL.

* Approx. NSF allocated to Finance employee use at 22 Federal St. (The Mooney Building)

** Approx. NSF allocated to File Storage at the lower Level of 22 Federal St.

Gross Square Footage (GSF)

The total square footage for a facility measured from the outside wall surfaces of the building.

Net Square Footage (NSF)

Net square footage is the total usable square footage of a facility as measured from the inside wall surface of each room. Included in this figure are non-assignable areas such as mechanical rooms, common corridors, etc.

Net Assignable Square Feet (NASF)

The total assignable square footage as measured from the inside wall surface of each room. It does not include mechanical rooms, public restrooms, common corridors, etc.

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4. Conceptual Design Drawings

The following drawings include the final versions of the design concept diagrams and the schematic plans developed from them for “Design Option A” and “Design Option B”. The earlier versions of the 5 initial concepts are included in the Appendix.

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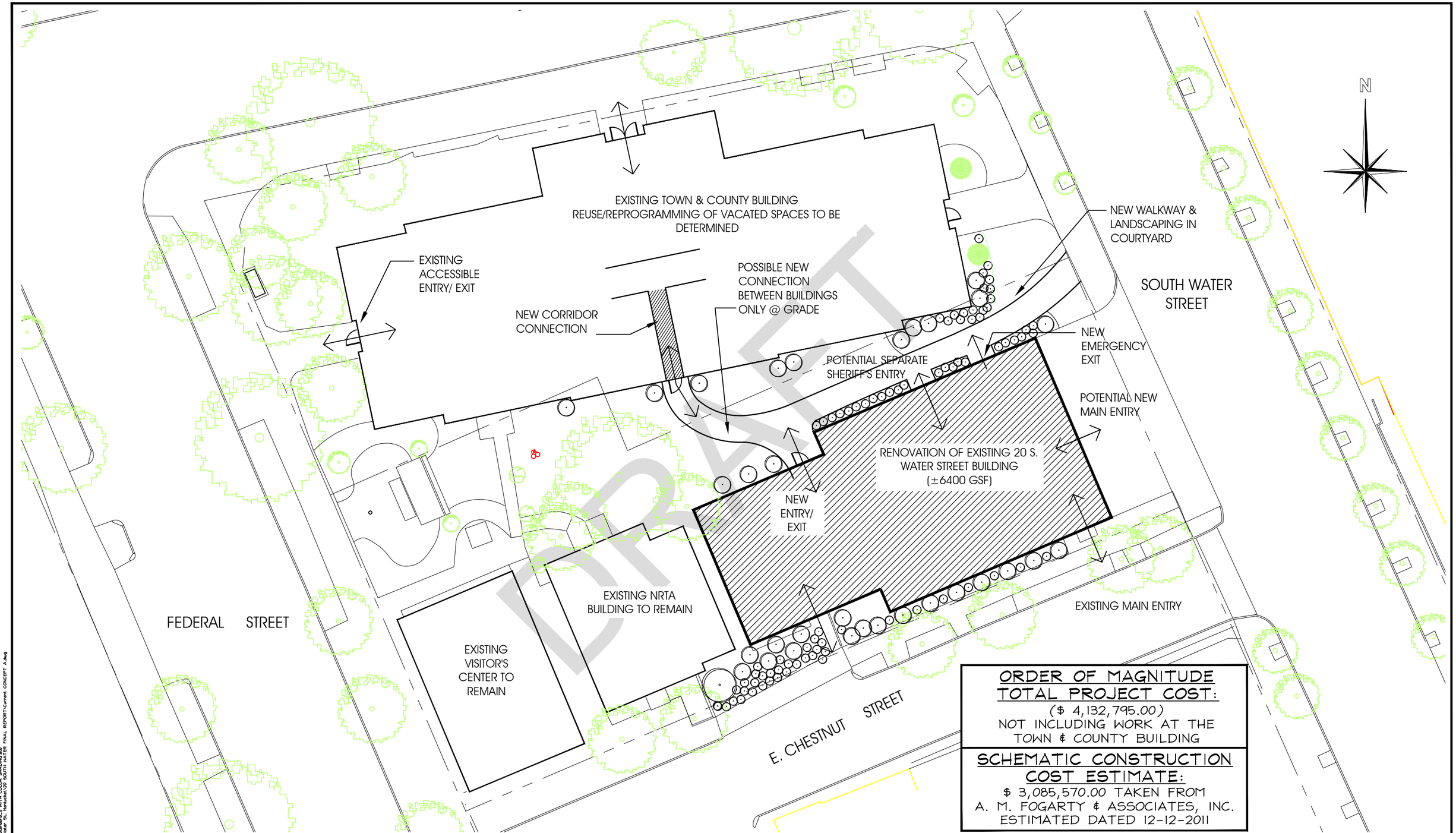


ORDER OF MAGNITUDE TOTAL PROJECT COST:
($ 4,132,795.00)
NOT INCLUDING WORK AT THE TOWN & COUNTY BUILDING

SCHEMATIC CONSTRUCTION COST ESTIMATE:
$ 3,085,570.00 TAKEN FROM A. M. FOGARTY & ASSOCIATES, INC. ESTIMATED DATED 12-12-2011

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

12 . 12 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

13 December 2011 Chris Raber AIA Standard,5 WITH COLOR SHADING.pdb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\20 SOUTH WATER FINAL REPORT\Current CONCEPT A.dwg

FIRST FLOOR

20 S. WATER STREET

FINANCE OFFICES	•	± 970 S.F.
SHERIFF	•	± 690 S.F.
POLICE	•	± 153 S.F.
SUPPORT SPACE	•	± 390 S.F.
LOBBY/ PUBLIC COUNTER	•	± 150 S.F.
BATHROOMS	•	± 240 S.F.
STORAGE/ MECH.	•	± 230 S.F.
CIRCULATION	•	± 535 S.F.

TOWN & COUNTY BUILDING

ADMIN./OFFICE SPACE	•	± 1240 S.F.
SUPPORT SPACE	•	± 580 S.F.
CIRCULATION	•	± 120 S.F.

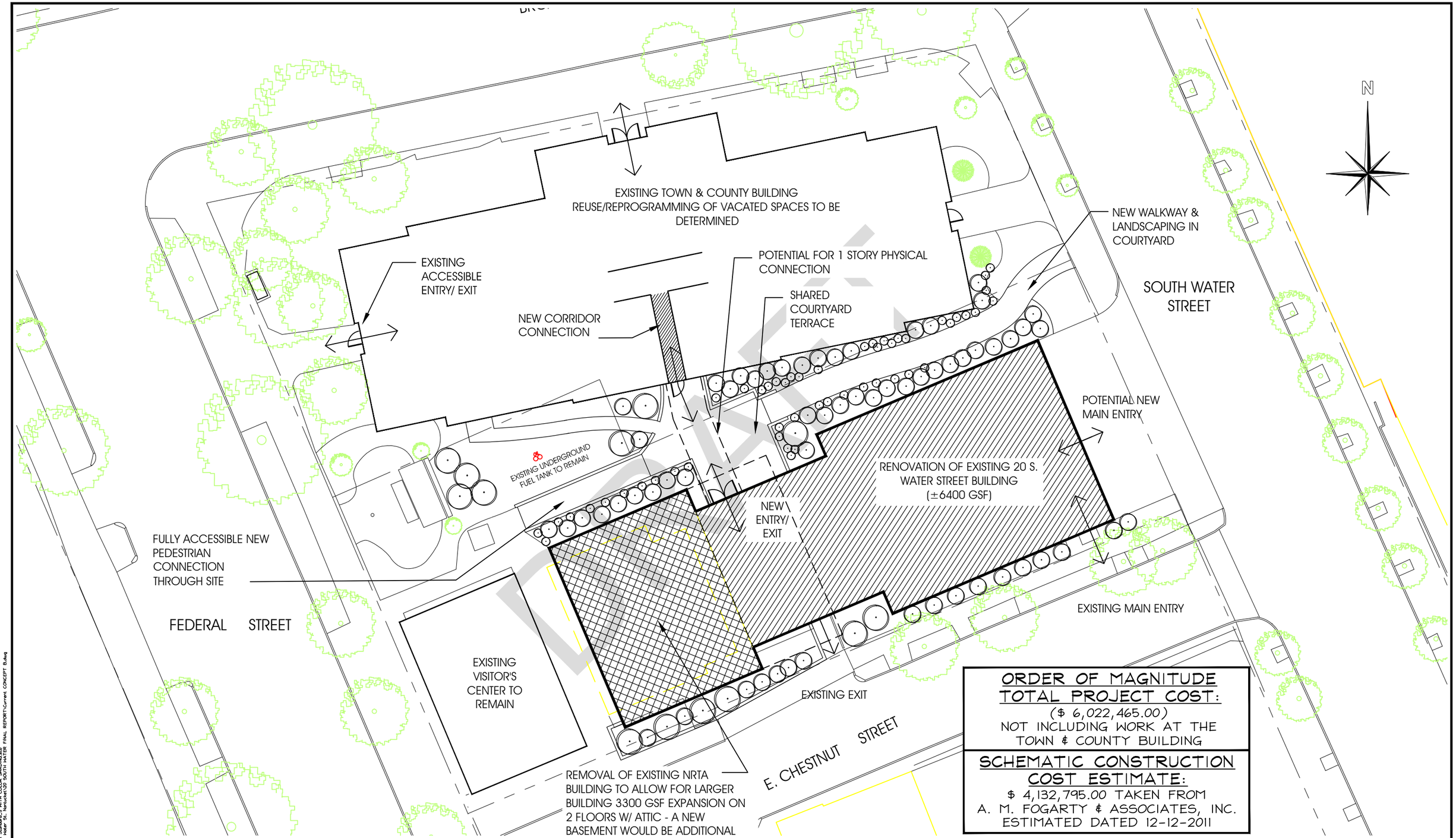
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

10 . 13 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

5 December 2011 Chris Raber AIA Standard-5 WITH COLOR SHADING.stb
E:\20 South Water\Current CONCEPT A.dwg



BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

12 .12 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

13 December 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\20 SOUTH WATER FINAL REPORT\Current CONCEPT B.dwg

FIRST FLOOR

20 S. WATER STREET

FINANCE OFFICES NEW FINANCE DEPT. OFFICES	•	± 1545 S.F.
POLICE	•	± 350 S.F.
SHERIFF	•	± 660 S.F.
FILE STORAGE	•	± 400 S.F.
STORAGE/ MECH.	•	± 320 S.F.
SUPPORT SPACE	•	± 320 S.F.
CIRCULATION	•	± 995 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE SPACES PREVIOUSLY OCCUPIED BY FINANCE DEPARTMENT STAFF TO BE RE-ASSIGNED FOR NEW TOWN ADMINISTRATION USES.	•	± 980 S.F.
SUPPORT SPACE	•	± 400 S.F.
CIRCULATION	•	± 120 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

10 .12 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

5 December 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.sib
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SECOND FLOOR

20 S. WATER STREET

FINANCE OFFICES	•	± 2090 S.F.
CIRCULATION	•	± 870 S.F.
STORAGE/MECH.	•	± 260 S.F.
FILE STORAGE	•	± 220 S.F.
SUPPORT SPACE	•	± 350 S.F.

TOWN & COUNTY BUILDING

ADMIN./OFFICE SPACE	•	± 230 S.F.
TBD	•	± 230 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

10 .12 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

5 December 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.dwg
EV20 South Water/Current CONCEPT B.dwg

SECOND FLOOR

20 S. WATER STREET

FINANCE OFFICES	•	± 1570 S.F.
STORAGE	•	± 120 S.F.
SUPPORT SPACE	•	± 300 S.F.
CIRCULATION	•	± 575 S.F.

TOWN & COUNTY BUILDING

ADMIN./TBD	•	± 230 S.F.

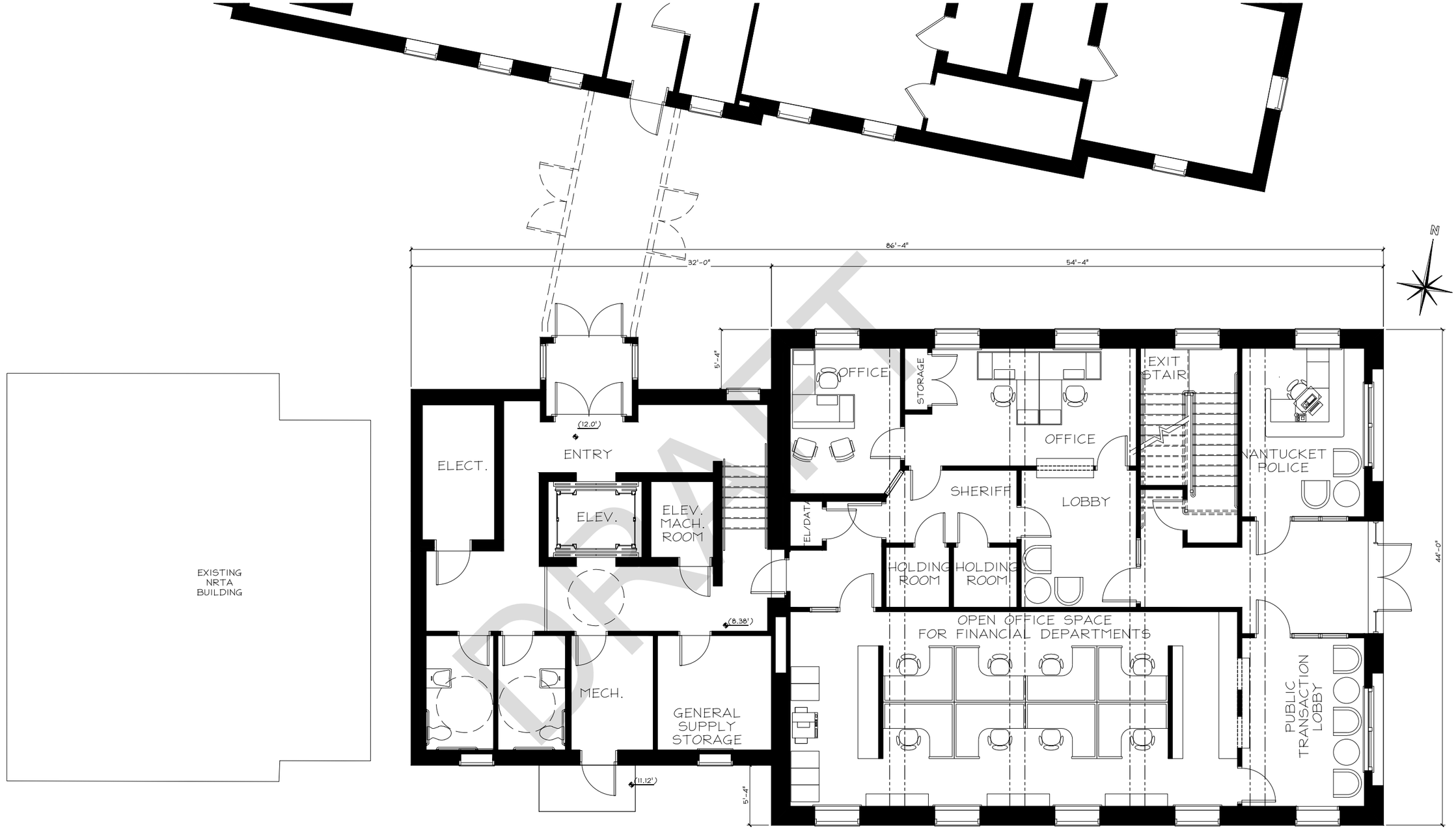
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

10 . 13 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

5 December 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
E:\20 South Water\Current CONCEPT A.dwg



1 OPTION A - FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL DESIGN OPTION "A" - 1ST FLOOR

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

7 December 2011 Chris Raber AIA Standard-5 WITH COLOR SHADING.stb
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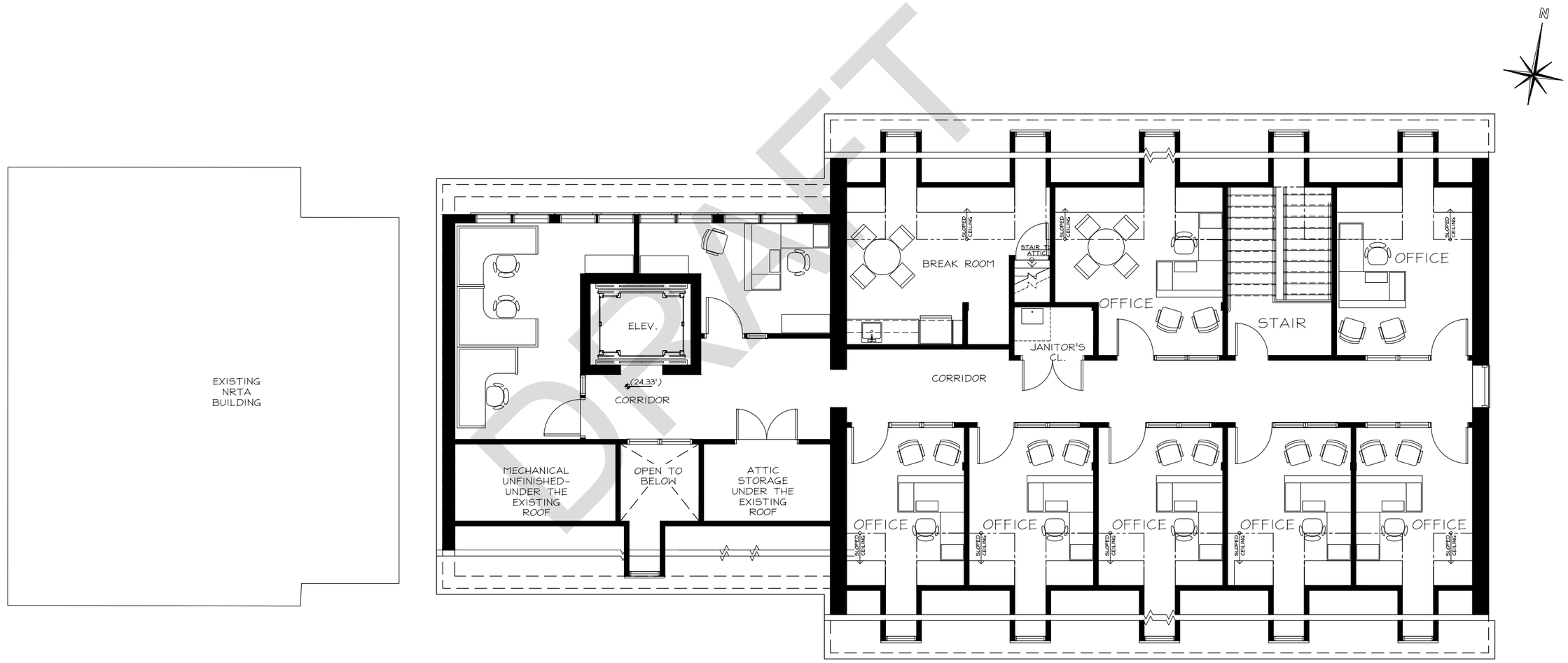

1 OPTION A - SECOND FLOOR PLAN

Scale: 1/4" = 1'-0"

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL DESIGN OPTION "A" - 2ND FLOOR

11 . 11 . 2011
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NANTUCKET, MA

13 December 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.dwg
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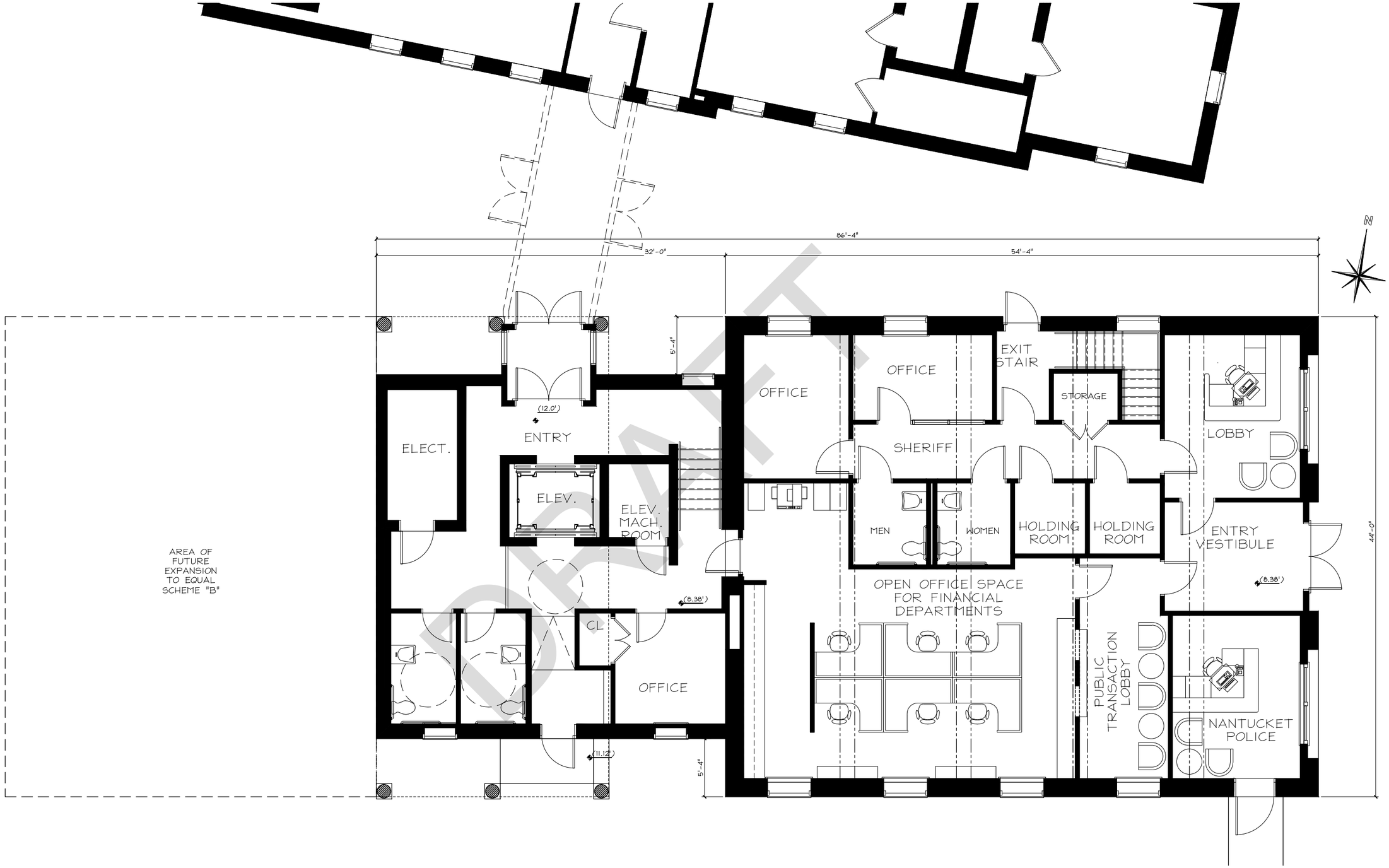

1 OPTION B - PART I ONLY - FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

7 December 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
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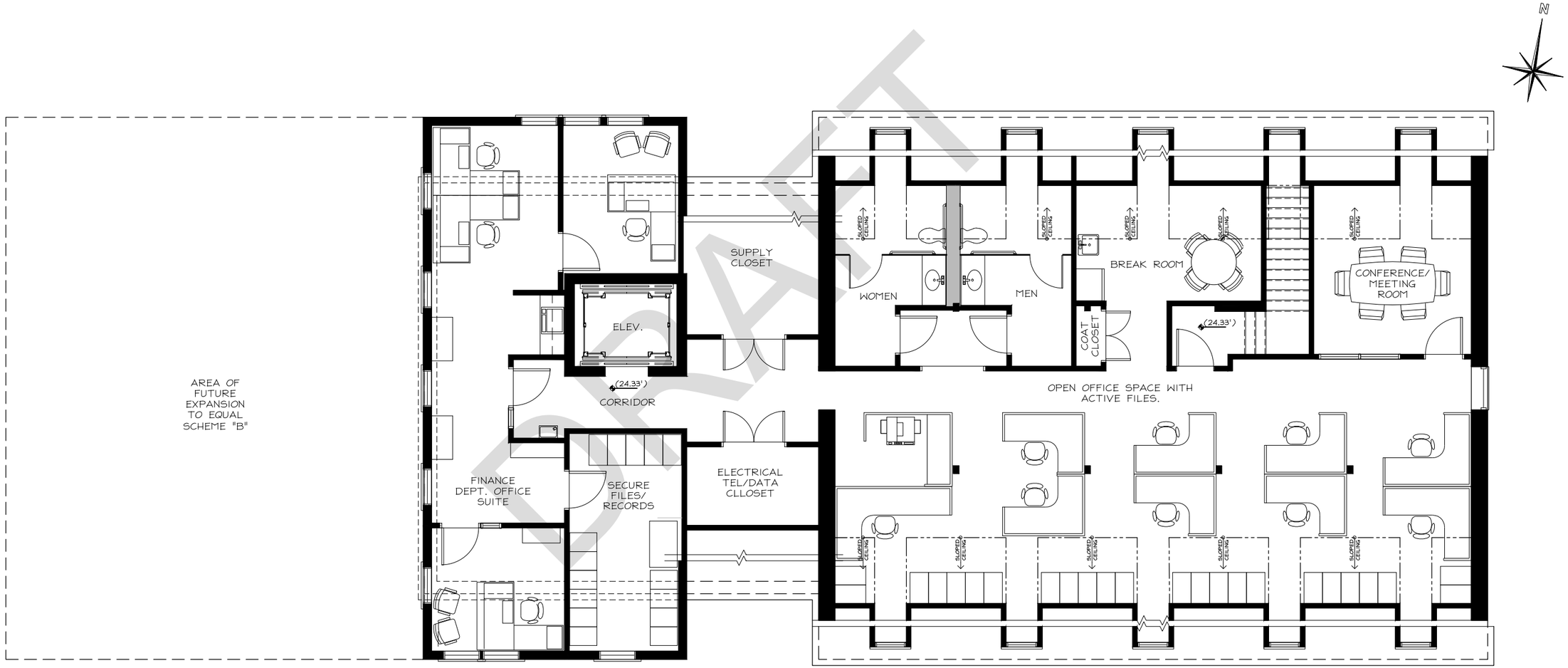
CONCEPTUAL DESIGN OPTION "B" - PART 1 - 1ST FLOOR

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA



1 SCHEME A OPTION 2 - SECOND FLOOR PLAN

Scale: 1/4" = 1'-0"

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL DESIGN OPTION "B" - PART 1 - 2ND FLOOR

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

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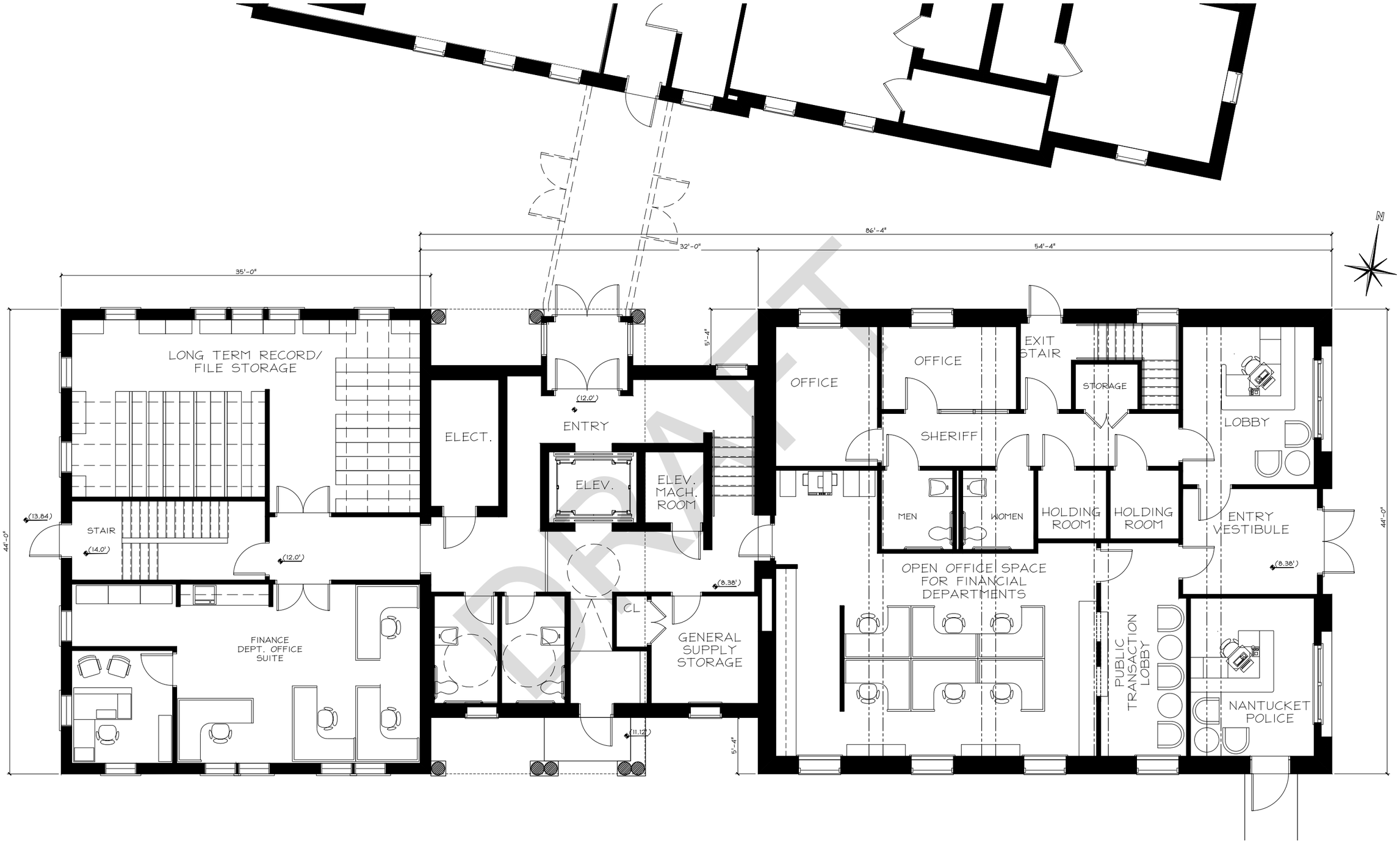

1 OPTION B - FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

BROWN LINDQUIST FENUCCIO & RABER
ARCHITECTS, INC.

BPC
ARCHITECTURE

CONCEPTUAL DESIGN OPTION "B" - PARTS 1& 2 - 1ST FLOOR

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

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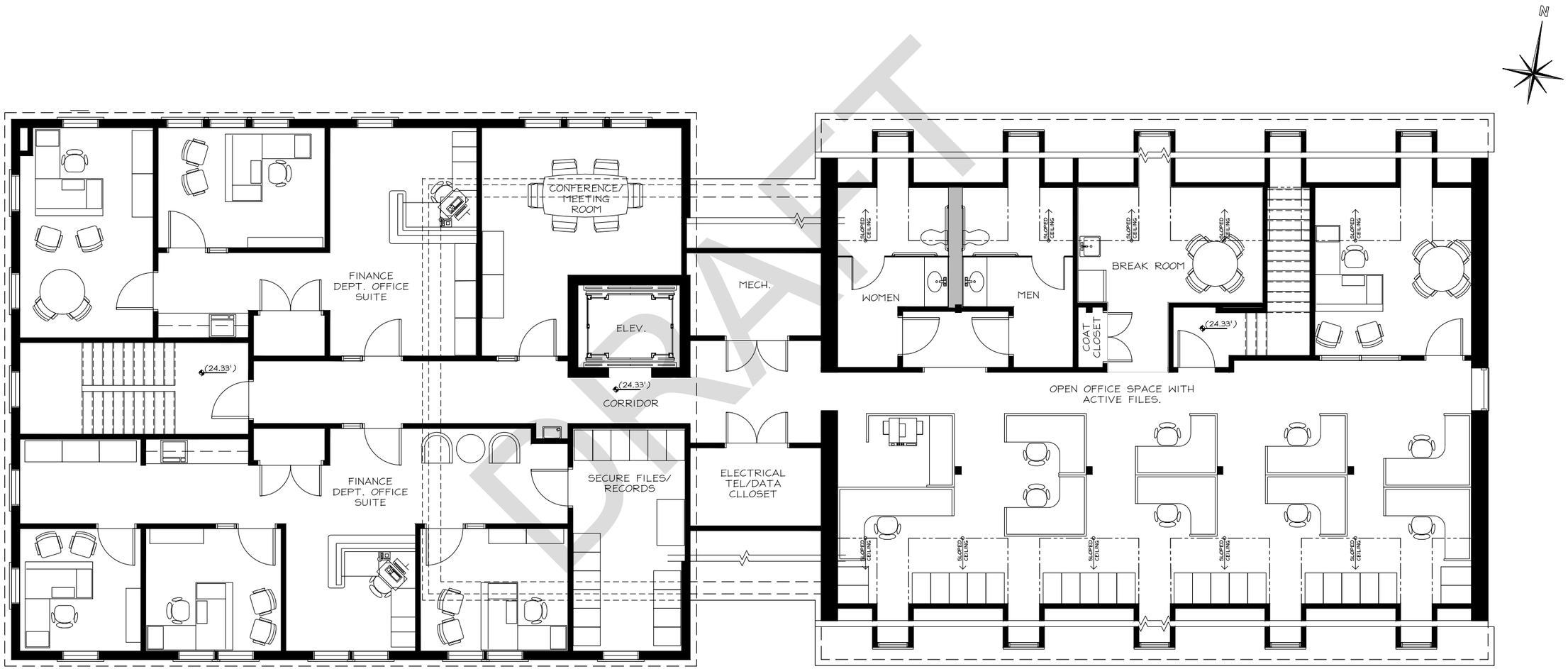

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1 OPTION B - SECOND FLOOR PLAN

Scale: 1/4" = 1'-0"

BROWN LINDQUIST FENUCCIO & RABER
ARCHITECTS, INC.

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CONCEPTUAL DESIGN OPTION "B" - PARTS 1 & 2 - 2ND FLOOR

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

7 December 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
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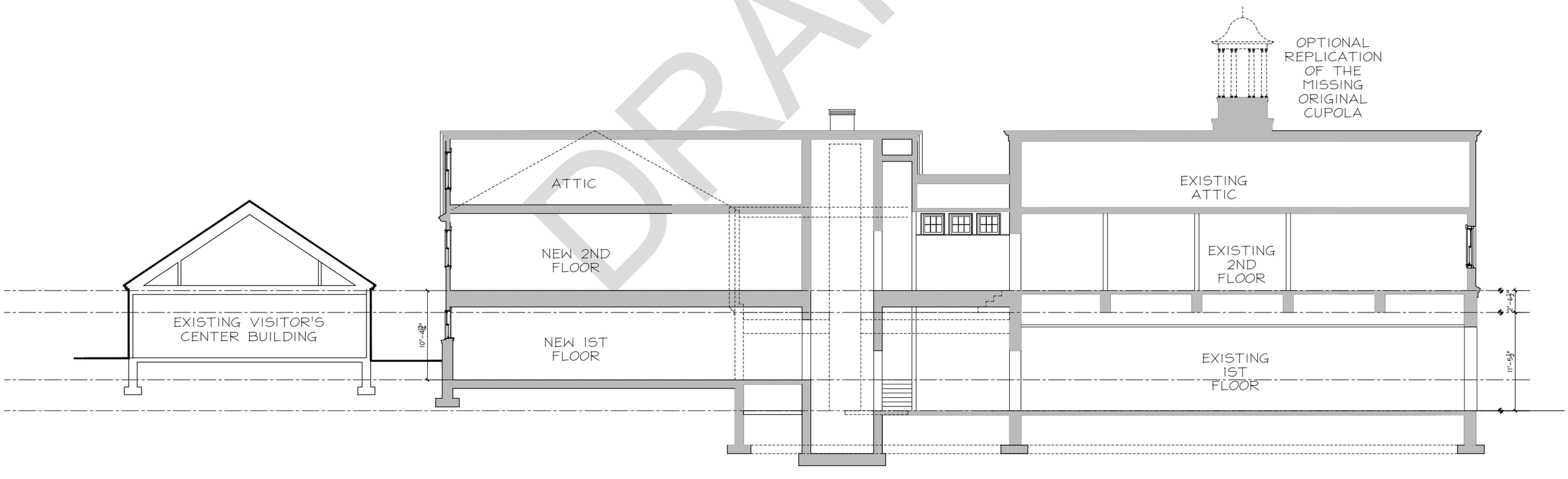

1 SCHEME "B" OPTION 2 SECTION

Scale: 3/16" = 1'-0"

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CONCEPTUAL DESIGN OPTION "B" - SECTION

11 . 11 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

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5. Cost Estimates

I. Order of Magnitude estimates for Total Project Cost for Each Design Options

Preliminary "Conceptual Construction Cost" and "Potential Soft Cost" estimates for the five conceptual design options were developed by BLF&R using somewhat conservative Square Foot allowances. These early estimates, which are included in the Appendix, were intended to provide an "Order of Magnitude" estimate for the Total Project Cost to compare and contrast each option.

These figures were used in discussions with the town staff, members of town boards and committees and several members of the public that were invited to meetings to discuss and narrow the focus of the design study. This group, termed to be the "Working Group", over several meetings determined that several of the early design options were not feasible at present. The projected cost of each option was one, if not the most important; of the Pros & Cons for each of the set aside design options.

After several meetings with the "Working Group," and due to a lack of overall consensus, the decision was made to prepare detailed cost estimates for both "Option A" and "Option B".

The following revised "Preliminary Total Project Cost Estimate" for each option; dated December 12, 2001 has been adjusted based upon the detailed cost estimates completed by A. M. Fogarty; as well as reconsiderations of each of the additional line items. For example;

- Each estimate now includes a 5% project contingency, while the 15% construction contingency previously included has been reduced to 10% and incorporated into the detailed construction estimates.
- Each line item that functions as a percentage of the construction cost as well as the other allowances have been adjusted based upon current knowledge and rates.
- Each estimate still includes an allowance for work that may or may not be occurring inside the Town & County building. This intended to include any work involved with creating the potential corridor toward the courtyard and basic renovations to spaces left unoccupied after Finance Dept. staff relocations to 20 South Water St. This is intentionally shown below the total so that we are clear about the costs directly involved with the 20 South Water St. building, with or without an addition. *This does not include a physical connection between the buildings in either design option.*

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- Similar to the item above, each estimate shows an additional line item for the inclusion of a roof mounted photovoltaic system on the Town & County Building; which the town may to pursue in any number of ways.

II. Detailed Cost Estimate for the Design Options A & B by A. M Fogarty & Assoc., Inc.

The Current Construction Cost Projection:
The complete detailed estimate from A. M. Fogarty is included at the conclusion of this section of the report. The complete estimate is made up of three parts; Estimates 1, 2 & 3.

Estimate No. 1 alone represents "Option A"; it includes the complete renovation of the existing building inclusive of an all new interior fit-up, upgrades and repairs to the buildings thermal and moisture resistant shell, new upsized utility connections and all new mechanical and electrical systems. It also includes new building entries, an elevator and new code compliant horizontal and vertical exit paths and enclosures.

The total Construction Cost, exclusive of soft costs, for Design Option A is

$3,085,569 or $528.08 per square foot.

This estimate is higher than previously projected for the following reasons:

1. The 20 South Water St. facility should be able to support an expansion at a later date.
2. New utility and service upgrades will be required for any future work, be it a renovation or an addition.
3. In addition to the code required structural improvements and an assumed amount of new wood framing, we are projecting that the cost of the demolition inside the rear wing of the, as well as the new structural foundations and raising the roof that will be required to install the elevator building will be fairly expensive, in comparison to what is typical for basic renovation or new work.

Estimates No. 2 and Estimate No. 3 together equal the cost of the "Option B", we did the estimate this way purposely to show the delta between the renovation and the cost of the building addition. Certainly if the decision were made to build a larger building right away there would be additional design options available that may change the balance of these costs, however the magnitude of the cost would be the same.

The total Construction Cost, exclusive of soft costs, for Design Option B is

$4,511,705 or $500.02 per square foot.

Estimate No. 2 is slightly larger than No. 1. It is based on a slightly larger version of "Option A". The intention with this Option is to completely update the existing building as in "Option A" while also providing a building shell that will easily accept a future expansion. As is the case in

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Estimate No. 1, this estimate includes all the building services and systems upgrades necessary to handle a delayed expansion of the building.

Estimate No. 3 only includes the additional space added to the west of the existing building, replacing the demolished NRTA building. What is not included here is any escalation for deferring this piece to a later date, or the premium involved with building an addition to a completely occupied building on a very small site.

Projecting the cost of deferring the expansion:

As noted above the cost shown in the construction estimate for the addition is valid if you build it with the remainder of the renovation. Projecting the cost for the same or a similar scope of work some years out is less of a science. We offer the following projections and observations.

- The current cost projection for the additional square footage in the proposed expansion is $1,199,504. We would expect this number to rise by a factor of 1.5 (before any adds for inflation) if this were changed to an addition to a previously renovated and occupied building. The rise would be due to the complexity of connecting to the existing structure and building systems even if the design was set up for this eventuality from the start. In addition, adding to the building will be a bit more difficult on what will become a very small site assuming some improvements will need to be made to the courtyard between the buildings as part of the initial phase. This would raise the base cost of the addition to $2,139,204 before any adds for escalation over time.
- The current differential in projected soft cost for the two options is $463,534. We project that this too will rise due to complexity and escalation. It is our expectation that the "architectural and engineering services" line items in the soft costs budget will rise directly due to the potential phasing and perhaps even more by inflation over time. While the additional "goods" the town will need to procure to furnish additional space in the building will primarily only rise due to inflation. To estimate this we expect this side of the equation to rise by a factor of 1.25 before any add are made for escalation.
- To account for escalation we would propose you add a minimum of 3% per year, compounded.

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The following figures represent the increases above and the escalation at 5 and 10 years out.

Current Construction Cost Differential	Current Soft Cost Differential	Total additional cost of Option B
$1,426,136	$463,534	$1,889,670

Projection of initial and increased construction costs over time			Projection of initial and increased soft costs over time			Total for Addition if deferred	
						Project Total Cost	Increase over current cost
Initial Increase factor	1.5	$2,139,204	Initial Increase factor	1.25	$579,418	$2,718,622	
5 years out		$2,407,693			$652,140	$3,059,832	$1,170,162
10 years out		$2,791,176			$756,008	$3,547,184	$1,657,514

NOTE: Escalations include 3% compounded yearly over the initial increases.

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NANTUCKET 20 S. WATER STREET
PRELIMINARY TOTAL PROJECT COST ESTIMATE
12/12/2011

Concept Scheme A / Base Scheme

Renovation of existing 20 South Water St. only, related sitework, and partial alterations to Town & County Building.

The following preliminary "Total Project Cost" estimate is based upon the current conceptual design drawings and other information generated by BLF&R and the other consultants, and the detailed Constriuction Cost estimate from the independent cost consultant firm, A. M. Fogarty & Associates Inc. We would recommend that the budget be updated periodically as the design and construction documents are further developed and as the town starts to consider the procurement of other items on the list below.

Construction Cost From A. M. Fogarty Estimate #1 (includes a 10% design contingency, permits, bond & escalation)		$3,085,570
Sub-Total		**$3,085,570**
Miscellaneous Project Expenses / Soft Costs		
Furnishings-Furniture-Equipment (FFE) (allowance of 5% x construction cost)	Allowance	$154,279
Architectural & Engineering Fees (12% x construction cost)		$370,268
Civil Engineering / Landscaping Design Fee	Allowance	$32,000
Owner's Project Manager (5% x construction cost)		$154,279
Interior Design Fee - Optional		n/a
Soil Borings / Geotechnical Report	Allowance	$3,000
Exterior Signage (by Owner's Vendor)	Allowance	$2,500
Security System (by Owner's Vendor)	Allowance	$10,000
Audio / Visual Systems	Allowance	$2,500
Telephone System/Computer Wiring & Hardware (by Owner's Vendor)	Allowance	$40,000
Materials Testing During Construction	Allowance	$7,500
Estimated Reimbursable Expenses (i.e. travel, shipping, misc. printing)	Allowance	$12,500
Printing of Bid Documents	Allowance	$10,000
Clerk of the Works (+/- 10 months @ $1,200/wk)	Allowance	$51,600
Sub-Total		**$850,425**
Project Contingency (5% of all Construction and Soft Costs above)		$196,800
Total Estimated Project Cost		**$4,132,795**
T & C Building Roof Mounted Photovoltaic System Cost		$267,000
Allowance for work at Town & County Building - does not include enclosed connection between buildings		$240,000
Total with added work at T & C Building		**$4,399,795**

(1) Possible project expenses not included in the estimate are:
- *Special Bonding/Financing Costs*
- *Concealed Hazardous Materials Testing or Abatement*
- *Moving or Temporary Office Facilities*

(2) Income from the disposition of any town buildings is not included

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NANTUCKET 20 S. WATER STREET
PRELIMINARY TOTAL PROJECT COST ESTIMATE
12/12/2011

Design Option "B" / 20 S. Water Expansion with NRTA Removal

Renovation of 20 South Water Street expansion with removal of NRTA Building - related site work and partial alterations to Town & County Building.

The following preliminary "Total Project Cost" estimate is based upon the current conceptual design drawings and other information generated by BLF&R and the other consultants, and the detailed Constriuction Cost estimate from the independent cost consultant firm, A. M. Fogarty & Associates Inc. We would recommend that the budget be updated periodically as the design and construction documents are further developed and as the town starts to consider the procurement of other items on the list below.

Construction Cost *Equals A. M. Fogarty Estimate #2 and Estimate #3 combined - includes design contingency, permits, bond & escalation*		**$4,511,706**
Sub-Total		**$4,511,706**
Miscellaneous Project Expenses / Soft Costs		
Furnishings-Furniture-Equipment (FFE) (allowance of 5% x construction cost)	Allowance	$225,585
Architectural & Engineering Fees (12% x construction cost)		$541,405
Civil Engineering / Landscaping Design Fee	Allowance	$32,000
Owner's Project Manager (5% x construction cost)		$225,585
Interior Design Fee - Optional	Allowance	n/a
Soil Borings / Geotechnical Report	Allowance	$5,000
Exterior Signage (by Owner's Vendor)	Allowance	$2,500
Security System (by Owner's Vendor)	Allowance	$12,000
Audio / Visual Systems	Allowance	$10,000
Telephone System/Computer Wiring & Hardware (by Owner's Vendor)	Allowance	$75,000
Materials Testing During Construction	Allowance	$7,500
Estimated Reimbursable Expenses (i.e. travel, shipping, misc. printing)	Allowance	$15,000
Printing of Bid Documents	Allowance	$10,000
Clerk of the Works (+/- 12 months @ $1,200/wk)	Allowance	$62,400
Sub-Total		**$1,223,975**
Project Contingency (5% of all Construction and Soft Costs above)		$286,784
Total Estimated Project Cost		**$6,022,465**
T & C Building Roof Mounted Photovoltaic System Cost		$267,000
Allowance for work at Town & County Building - does not include enclosed connection between buildings		$420,000
Total with added work at T & C Building		**$6,709,465**

Notes:

(1) Possible project expenses not included in the estimate are:
- *Special Bonding/Financing Costs*
- *Concealed Hazardous Materials Testing or Abatement*
- *Moving or Temporary Office Facilities*

(2) Income from the disposition of any town buildings is not included

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SCHEMATIC
COST ESTIMATE

Nantucket Police Station
Nantucket, MA

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Prepared For:

Brown Lindquist Fenuccio & Raber Architects
203 Willow Street, Ste A
Yarmouthport, MA 02675
(508) 362-8382
FAX: (508)362-2828

Prepared By:

A. M. Fogarty & Associates, Inc.
175 Derby Street - Suite 5
Hingham, MA 02043
(781) 749-7272
FAX: (781) 740-2652

12-Dec-11

A.M. Fogarty
& Assoc., Inc.
175 Derby St., Suite 5, Hingham, MA 02043
TEL: (781) 749-7272 • FAX: (781) 740-2652
ptim@amfogarty.com
"Construction Cost Consultants"

Nantucket Police Station
Nantucket, MA

12-Dec-11

ESTIMATE NO. 1 - DESIGN OPTION A	**$3,085,569**
ESTIMATE NO. 2 - DESIGN OPTION B - PART 1	**$3,312,200**
ESTIMATE NO. 2 - DESIGN OPTION B - PART 2	**$1,199,504**

GRAND SUMMARY

		EST NO. 1 DESIGN OPTION A	EST. NO. 2 DESIGN B PART 1	EST. NO. 3 DESIGN B PART2	TOTAL DESIGN OPTION B
BASE ESTIMATE		$1,767,748	$1,897,587	$687,206	$2,584,792
		---	---	---	
TOTAL DIRECT COST		$1,767,748	$1,897,587	$687,206	$2,584,792
GENERAL CONDITIONS	10%	$176,775	$189,759	$68,721	$258,479
GENERAL ADMINISTRATIVE O&P	7%	$136,117	$146,114	$52,915	$199,029
P&P BOND	1.2%	$24,968	$26,802	$9,706	$36,508
PERMIT	1.5%	$31,584	$33,904	$12,278	$46,182
DESIGN CONTINGENCY	10%	$213,719	$229,416	$83,083	$312,499
ESCALATION (FALL 2012)	5%	$117,545	$126,179	$45,695	$171,874
ISLAND FACTOR	25%	$617,114	$662,440	$239,901	$902,341
		---	---	---	
TOTAL CONSTRUCTION COST		$3,085,569	$3,312,200	$1,199,504	$4,511,705
COST PER S.F.		$528.08	$537.61	$419.11	$500.02

RENOVATION WORK AND PHOTOVOLTAICS AT TOWN HALL NOT INCLUDED - SEE TOTAL PROJECT COST ESTIMATES BY BLF&R

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PROJECT:	Nantucket Police Station								
LOCATION:	Nantucket, MA								
CLIENT:	Brown Lindquist Fenuccio & Raber Architects								
DATE:	12-Dec-11								
No.: 11120									
	SUMMARY				EST 1		EST 2		EST 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
					TOTAL		TOTAL		TOTAL
DIVISION 2 - SITEWORK					264,043		275,777		69,058
DIVISION 3 - CONCRETE					44,248		49,093		66,819
DIVISION 4 - UNIT MASONRY					131,310		131,430		29,170
DIVISION 5 - METALS					0		0		0
- MISCELLANEOUS METALS					50,228		51,023		23,431
DIVISION 6 - WOOD AND PLASTICS					206,390		245,236		139,101
DIVISION 7 - THERMAL MOISTURE PROTECTION									
- WATRPRF,DAMPRF,& CAULKING					6,048		6,207		3,111
- INSULATION					38,754		45,208		20,661
- ROOFING AND FLASHING					38,911		41,331		8,890
DIVISION 8 - DOORS AND WINDOWS					78,150		50,320		23,220
- ALUM. ENTRANCES AND STOREFRONTS					29,650		32,950		0
- ALUMINUM WINDOWS					101,875		108,500		41,875
- GLASS & GLAZING					1,000		1,000		1,000
DIVISION 9 - FINISHES									
- GYPSUM DRYWALL					144,448		148,491		48,661
- TILE					7,458		22,988		0
- ACOUSTICAL TREATMENT					16,236		17,207		8,369
- WOOD FLOORING					0		0		0
- RESILIENT FLOORING					29,020		27,875		4,252
- CARPET					13,566		16,884		12,390
- PAINTING & WALL COVERING					15,186		21,072		12,724
DIVISION 10 - SPECIALTIES					8,125		14,121		4,000
DIVISION 11 - EQUIPMENT					0		0		0
DIVISION 12 - FURNISHINGS					3,980		4,192		1,340
DIVISION 13 - SPECIAL CONSTRUCTION					0		0		0
DIVISION 14 - CONVEYING SYSTEMS					108,000		108,000		0
DIVISION 15 - MECHANICAL									
- FIRE PROTECTION					38,366		38,693		17,946
- PLUMBING					45,636		77,922		16,674
- HVAC					147,575		155,525		71,550
DIVISION 16 - ELECTRICAL					199,546		206,542		62,964
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DIRECT COST					1,767,748		1,897,587		687,206

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
DIVISION 2 - SITEWORK									
02050 DEMOLITION									
Remove NRTA Building(incl. tipping fees)		12.00	GSF					1,086	13,032
Temp shoring		7,500.00	LS	1	7,500	1	7,500	1	7,500
Demolition @ bldg connection		7,500.00	LS					1	7,500
Exterior - Remove Existing:									
Dormer siding & trim		150.00	EA	10	1,500	10	1,500		
Cupola		1,500.00	EA	1	1,500	1	1,500		
Chimney (complete)		1,200.00	LS	1	1,200	1	1,200		
Masonry wall @ vest. entry		7.00	SF	80	560	80	560		
Window		3.75	SF	681	2,554	681	2,554		
CMU backup @ cell wind		100.00	EA	5	500	5	500		
Roof structure @ addition		5.00	SF	1,336	6,680	1,336	6,680		
OH door		150.00	EA	1	150	1	150		
Door & frame - sgl		45.00	EA	2	90	2	90		
Brick - new dr. open		7.00	SF			12	84		
Misc. exterior demolition		2,500.00	LS	1	2,500	1	2,500		
*Roofing and flashing removal included in 07500									
Interior - Remove Existing:									
Plumb. fixture		36.00	EA	12	432	12	432		
Toilet rm finishes		5.00	SF	185	925	185	925		
GWB partition w/dr & frames		2.60	GSF	5,400	14,040	5,400	14,040		
Ext. wall finish		2.00	GSF	5,400	10,800	5,400	10,800		
Floor finishes		1.25	GSF	5,400	6,750	5,400	6,750		
Ceiling & lighting		1.50	GSF	5,400	8,100	5,400	8,100		
Stair - full flt		700.00	FLT	2	1,400	2	1,400		
Detention cell		4.00	GSF	719	2,876	719	2,876		
2nd Flr structure		5.00	SF	1,069	5,345	1,069	5,345		
Slab on grade - allow		3.00	SF	2,350	7,050	2,350	7,050		
Int. gut		2.50	GSF	5,400	13,500	5,400	13,500		
02080 HAZARDOUS MATERIAL ABATEMENT									

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Hazardous material abatement		29,310.00	LS	1	29,310	1	29,310		
Hazardous material abatement - NRTA Bldg		3.00	GSF					1,086	3,258
02100 SITE PREPARATION									
Construction staging area		5,000.00	LS	1	5,000	1	5,000	1	5,000
Erosion control		1,500.00	LS	1	1,500	1	1,500	1	1,500
Cut & cap utilities		2,000.00	LS	1	2,000	1	2,000		
Site - Remove Existing:									
A/C conc. pad		50.00	EA	8	400	8	400		
Concrete stoop		100.00	EA	1	100	1	100		
Concrete apron/drive		1.75	SF	1,100	1,925	1,100	1,925		
Brick paving - bld. perim		2.00	SF	750	1,500	750	1,500		
Misc. site prep		2,000.00	LS	1	2,000	1	2,000	1	2,000
02200 EARTHWORK									
Site:									
Excavation/backfill site amenities		1,000.00	LS	1	1,000	1	1,000		
6" Gravel base @ walk		24.00	CY	46	1,104	46	1,104		
Renovation:									
Excavate/fill @ entry wing		4,000.00	LS	1	4,000	1	4,000		
Excavate/backfill col. ftg - allow		250.00	EA	4	1,000	4	1,000		
Excavate/backfill elev. pit		2,000.00	LS	1	2,000	1	2,000		
Excavate/backfill found. wpg			N/A						
8" Gravel @ SOG infill - allow		32.00	CY	58	1,856	58	1,856		
Regrade bldg perim - posit. slope		3,000.00	LS	1	3,000	1	3,000		
Addition:									
Col. ftg exc/bf		225.00	EA	4	900	10	2,250	4	900
Foundation excavation		15.00	CY	16	240	16	240	110	1,650
Foundation backfill (on site matl)		8.00	CY	10	80	10	80	70	560
8" Gravel @ SOG		28.00	CY	2	56	2	56	36	1,008
NRTA basement fill			N/A						

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Misc. earthwork		2,500.00	LS	1	2,500	1	2,500	1	2,500
02500 PAVING AND CURBING									
Entry stoop		150.00	EA	1	150	3	450	1	150
Street curb replacement		40.00	LF	58	2,320	58	2,320		
Brick sidewalk to match		20.00	SF	475	9,500	475	9,500		
Brick walkway - allow		20.00	SF	2,000	40,000	2,000	40,000		
Street patch @ utilities		2,500.00	LS	1	2,500	1	2,500		
ADA ramp			NIC						
02600 SITE UTILITIES									
Water - Allow:									
Street connection		4,500.00	LS	1	4,500	1	4,500		
Fire service - 6"		90.00	LF	50	4,500	50	4,500		
Dom. service - 2"		40.00	LF	50	2,000	50	2,000		
6" Gate valve - fire		950.00	EA	1	950	1	950		
2" Gate valve - dom		700.00	EA	1	700	1	700		
Electrical Service:									
Elec. duct bank (conc. & excav)		90.00	LF	50	4,500	50	4,500		
Transformer pad		1,500.00	EA	1	1,500	1	1,500		
Emergency generator pad		2,000.00	EA	1	2,000	1	2,000		
Site drainage		5,000.00	LS	1	5,000	1	5,000		
Building drainage		2,500.00	LS	1	2,500	1	2,500	1	2,500
Sanitary:									
Manhole		3,000.00	EA	1	3,000	1	3,000		
Street connection		5,000.00	EA	1	5,000	1	5,000		
Sanitary line		70.00	LF	50	3,500	50	3,500		
02900 SITE IMPROVEMENTS									
Landscaping		1.00	LS	10,000	10,000	20,000	20,000	20,000	20,000

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Guardrail - stair /ramp			N/A						
Misc. site improvements		2,500.00	LS	1	2,500	1	2,500		
					---		---		---
					264,043		275,777		69,058
DIVISION 3 - CONCRETE									
03300 CAST IN PLACE CONCRETE									
Addition:									
Wall footing		410.00	CY	2	820	8	3,280	13	5,330
8' Found. wall		1,050.00	CY					46	48,300
Frost wall		875.00	CY	3.5	3,063	3.5	3,063		
Slab on grade		6.00	SF	48	288	48	288	1,444	8,664
Column ftg		150.00	EA	4	600	4	600	4	600
Column ftg/pier		400.00	EA			6	2,400		
Renovation:									
Col ftg - allow		250.00	EA	4	1,000	4	1,000		
Slab replacement		7.00	SF	2,242	15,694	2,242	15,694		
Elevator mat		550.00	CY	5	2,750	5	2,750		
Elevator pit wall		900.00	CY	5	4,500	5	4,500		
Vapor barrier - 15 mil		0.45	SF	2,290	1,031	2,290	1,031	1,444	650
Slab on metal deck - elev shaft		10.00	SF	85	850	85	850		
Metal pan stair fill		775.00	FLT	1	775	1	775	1	775
Lobby cast stair		65.00	LFR	28	1,820	28	1,820		
Int. wall ftg		450.00	CY	2.5	1,125	2.5	1,125		
Int. found wall		1,000.00	CY	4.5	4,500	4.5	4,500		
Concrete slab sealant		1.00	SF	133	133	118	118		
Mechanical pads		300.00	LS	1	300	1	300		
Foundation repairs		2,500.00	LS	1	2,500	1	2,500		
Misc. concrete		2,500.00	LS	1	2,500	1	2,500	1	2,500
*Excludes underpinning									
					---		---		---
					44,248		49,093		66,819

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
DIVISION 4 - UNIT MASONRY									
04100 UNIT MASONRY									
Addition:									
Cut in/repair vest. conn. wall opening		1,700.00	LOC	1	1,700	1	1,700	w/Demo	
Precast wind. sill			N/A						
Brick veneer		36.00	SF	140	5,040	140	5,040	720	25,920
Misc. masonry & flashing		750.00	LS	1	750	1	750	1	750
*Second flr addition - siding									
Modify Brick Window (Exist. Dr - New Window):									
Infill dr-wind w/brick		90.00	SF	28	2,520	16	1,440		
Cut in repair dr open		1,200.00	EA			1	1,200		
Renovation:									
Elev. shaft wall - 8" CMU		24.00	SF	900	21,600	900	21,600		
Clean & paint stl lintels - 75%		15.00	LF	65	975	65	975		
Lintel replacement - allow - 25%		245.00	LF	21	5,145	21	5,145		
Masonry cleaning 100%		1.30	SF	3,600	4,680	3,600	4,680		
Cut and point brick 100%		24.00	SF	3,600	86,400	3,600	86,400		
Misc. masonry & flashing		2,500.00	LS	1	2,500	1	2,500	1	2,500
					---		---		---
					131,310		131,430		29,170
DIVISION 5 - METALS									
05100 STRUCTURAL METAL FRAMING			N/A						
					---		---		---
					0		0		0
05500 MISCELLANEOUS METALS									
Elev. frame, pit ladder & louver		3,500.00	LS	1	3,500	1	3,500		
Lobby stair w/wall rail (7 riser)		7,000.00	FLT	1	7,000	1	7,000		

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Stair hall full flt		22,000.00	FLT	1	22,000	1	22,000	1	22,000
Lobby wall rail		120.00	LF	11	1,320	11	1,320		
Lobby guard rail		300.00	LF	6	1,800	6	1,800		
Attic stair & rail			Existing						
Seismic upgrade		2.00	GSF	5,843	11,686	6,161	12,322		
Misc. metals		0.50	GSF	5,843	2,922	6,161	3,081	2,862	1,431
					---		---		---
					50,228		51,023		23,431
DIVISION 6 - WOOD AND PLASTICS									
06100 ROUGH CARPENTRY									
Addition:									
6" Ext. wall frame		6.75	SF	750	5,063	2,000	13,500	2,500	16,875
Ext. wall sheathing		2.20	SF	750	1,650	2,000	4,400	2,500	5,500
Roof frame		18.00	SF	1,250	22,500	1,625	29,250	1,800	32,400
Roof sheathing		2.30	SF	1,250	2,875	1,625	3,738	1,800	4,140
Roof blocking		1.25	SF	1,250	1,563	1,625	2,031	1,800	2,250
Sub floor		2.00	SF	950	1,900	1,300	2,600	1,400	2,800
Frame second flr		15.00	SF	950	14,250	1,300	19,500	1,400	21,000
Renovation:									
3/4" Subfloor - 1st flr		2.45	SF	2,966	7,267	2,966	7,267		
Frame elev. flr open		1,800.00	EA	1	1,800	1	1,800		
Frame stair flr open		1,800.00	EA	1	1,800	1	1,800		
Floor infill frame - mech shafts		12.00	SF	50	600	50	600		
Reinf. exist. flr		5.00	SF	1,819	9,095	1,819	9,095		
Reinf. exist. roof		5.00	SF	3,200	16,000	3,200	16,000		
Roof sheathing replacement (25 %)		4.00		800	3,200	800	3,200		
Window/door blocking		2.75	LF	825	2,269	925	2,544	400	1,100
Misc. rough carpentry		1.00	GSF	5,843	5,843	6,161	6,161	2,862	2,862
*Partitions are included in 09250									
06200 FINISH CARPENTRY									
Interior Wood Trim:									
Coat rod w/shelf		22.00	LF	6	132	6	132	6	132
Misc. int. finish carpentry		5.00	GSF	5,843	29,215	6,161	30,805	2,862	14,310

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
*Excludes office work stations									
Exterior Wood Trim:									
Rake @ exist.		18.00	LF	152	2,736	152	2,736		
Fascia @ exist		12.00	LF	173	2,076	173	2,076		
Cupola		40,000.00	LS	1	40,000	1	40,000		
Rake		18.00	LF	25	450	50	900	140	2,520
Fascia		12.00	LF	50	600	150	1,800		
Entry clg		7.00	SF			228	1,596		
Entry cols		250.00	EA			6	1,500		
Dormer siding & trim		900.00	EA	11	9,900	10	9,000		
Siding		9.00	SF	500	4,500	1,500	13,500	1,750	15,750
Misc. trim		2,000.00	LS	1	2,000	1	2,000	1	2,000
Architectural Casework:									
Plastic Laminate Casework:									
Kitchenette base cab w/ctr		375.00	LF	7	2,625	7	2,625	24	9,000
Transaction counter		160.00	LF	13	2,080	8	1,280		
Work counter		220.00	LF	23	5,060	13	2,860		
Kitchenette wall cab		150.00	LF	10	1,500	10	1,500	24	3,600
Lav. counter		160.00	LF			8	1,280		
Misc. arch. casework		1.00	GSF	5,843	5,843	6,161	6,161	2,862	2,862
					---		---		---
					206,390		245,236		139,101
DIVISION 7 - THERMAL MOISTURE PROTECTION									
07100 WATERPROOFING, DAMPPROOFING, & CAULKING									
Elev. pit wpg		3,000.00	LS	1	3,000	1	3,000		
Joint sealants		0.50	GSF	5,843	2,922	6,161	3,081	2,862	1,431
Addition fnd dpg		1.75	SF	72	126	72	126	960	1,680
					---		---		---
					6,048		6,207		3,111

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
07200 - INSULATION									
Addition:									
2" Rigid found. insul.		2.45	SF	72	176	72	176	960	2,352
2" Rigid slab insul		2.60	SF	48	125	48	125	1,444	3,754
Ext. wall membrane		2.45	SF	750	1,838	2,000	4,900	2,500	6,125
Rigid ext. wall insul.		2.30	SF	750	1,725	2,000	4,600	2,500	5,750
Firestopping		0.15	GSF	5,843	876	6,161	924	2,862	429
Roof insul.		1.25	SF	1,250	1,563	1,625	2,031	1,800	2,250
Renovation:									
3" Rigid insul 1st flr		2.90	SF	2,966	8,601	2,966	8,601		
3 1/2" Ext. wall insul (2 lifts - 1 3/4")		2.75	SF	4,600	12,650	4,600	12,650		
Attic insul dense pack		3.50	SF	3,200	11,200	3,200	11,200		
					---		---		---
					38,754		45,208		20,661
07500 ROOFING AND FLASHING									
Remove existing asphalt shingle & flashing		0.45	SF	3,200	1,440	3,200	1,440		
Renovation:									
Asphalt shingle		3.25	SF	3,200	10,400	3,200	10,400		
Ice & water		2.40	SF	3,200	7,680	3,200	7,680		
Cut in ridge vent		16.00	LF	55.5	888	55.5	888		
Dormer flashing		300.00	EA	10	3,000	10	3,000		
Gutter		26.00	LF	110	2,860	110	2,860		
Downspout		22.00	SF	60	1,320	60	1,320		
Misc. flashing		1,500.00	LS	1	1,500	1	1,500		
Addition:									
Asphalt shingle		3.25	SF	1,250	4,063	1,625	5,281	1,800	5,850
Ice & water		2.40	SF	300	720	400	960	450	1,080
Ridge vent		12.00	LF	40	480	60	720	80	960
Step flashing		21.00	EA	40	840	42	882		
Gutter		26.00	LF	64	1,664	80	2,080		
Downspout		22.00	SF	48	1,056	60	1,320		
Misc. flashing		1,000.00	LS	1	1,000.00	1	1,000.00	1	1,000

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DESCRIPTION	UNIT COST	UNIT	QUANTITY	EST. NO. 1 DESIGN OPTION A TOTAL	QUANTITY	EST. NO. 2 DESIGN OPTION B-PART 1 TOTAL	QUANTITY	EST. NO. 3 DESIGN OPTION B-PART 2 TOTAL
				---		---		---
				38,911		41,331		8,890
DIVISION 8 - DOORS AND WINDOWS								
08250 DOOR OPENING ASSEMBLIES								
Exterior - Door, Frame, Hdw, Glass & Glazing:								
Stair hall egress - sgl	2,500.00	EA			1	2,500	1	2,500
Interior Door, Frame, Hdw, Glass & Glazing:								
Office - sgl	900.00	EA	17	15,300	9	8,100	4	3,600
Storage - dbl	1,150.00	EA	4	4,600	4	4,600	3	3,450
Attic stair hall - sgl	1,800.00	EA	1	1,800	1	1,800		
Stair hall - sgl	2,500.00	EA	2	5,000	2	5,000	2	5,000
Mech/elec - sgl	700.00	EA	3	2,100	2	1,400		
Mech/elec - dbl	1,150.00	EA			1	1,150		
Holding rm - sgl	2,500.00	EA	2	5,000	2	5,000		
Toilet rm	750.00	EA	2	1,500	6	4,500		
Corridor - sgl	1,500.00	EA	4	6,000	3	4,500	2	3,000
Corridor - dbl	300.00	EA					1	300
Interior Frame, Glass & Glazing:								
Office sidelite - 7'	70.00	SF	450	31,500	108	7,560	41	2,870
Access panels	500.00	LS	1	500	1	500	1	500
Transaction ctr grille-3'	95.00	SF	30	2,850	18	1,710		
Misc. office sidelight/wind.	2,000.00	LS	1	2,000	1	2,000	1	2,000
				---		---		---
				78,150		50,320		23,220
08400 ALUMINUM ENTRANCES AND STOREFRONTS								
Door, Frame Hdw Glass & Glazing:								
Entry - sgl	3,300.00	EA	1	3,300	2	6,600		
Entry - dbl	6,900.00	EA	2	13,800	2	13,800		
Auto opener - allow	4,000.00	LOC	1	4,000	1	4,000		
Entry storefront	75.00	SF	30	2,250	30	2,250		
Vestibule - dbl	6,300.00	EA	1	6,300	1	6,300		

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
					----------		----------		----------
					29,650		32,950		0
08500 ALUMINUM WINDOWS									
Window - new open		125.00	SF	167	20,875	305	38,125	335	41,875
Replacement window		125.00	SF	648	81,000	563	70,375		
*Hurricane rated									
					----------		----------		----------
					101,875		108,500		41,875
08800 GLASS AND GLAZING									
Misc. glass & glazing		1,000.00	LS	1	1,000	1	1,000	1	1,000
*Glass & glazing also included in 08250, 08400 & 08500									
					----------		----------		----------
					1,000		1,000		1,000
DIVISION 9 - FINISHES									
09250 GYPSUM WALLBOARD									
1 Lyr 5/8" gyp @ addition ext. wall frame		1.90	SF	750	1,425	1,500	2,850	2,000	3,800
2 1/2" Stud/1 lyr 5/8" gyp @ reno wall		6.00	SF	4,600	27,600	4,600	27,600		
Partitions:									
Stair hall part w/1 lyr 5/8" gyp 2 sides		14.50	SF	800	11,600	800	11,600	900	13,050
Typ part. w/1lyr 5/8" gyp 2 sides		8.00	SF	5,000	40,000	4,750	38,000	2,000	16,000
Chase wall w/1 lyr 5/8" gyp 1 side		6.00	SF	400	2,400	800	4,800	200	1,200
2 Hr. part - w/2 lyr 5/8" gyp 2 sides		14.50	SF	500	7,250	500	7,250		
Furr w/lyr 5/8 gyp @ new elev. CMU		6.25	SF	500	3,125	500	3,125		
Furr w/1 lyr 5/8 gyp @ exist.		6.25	SF	1,200	7,500	1,200	7,500	300	1,875
Holding rm premium		5,000.00	EA	2	10,000	2	10,000		
Mech shaft wall - allow		14.00	SF	500	7,000	500	7,000		
Tile backer board premium		1.80	SF	328	590	984	1,771		
Gyp Ceilings:									
Suspended gyp ceiling - 25%		7.00	SF	1,388	9,716	1,471	10,297	716	5,012
Mech rm 2 hr gyp ceiling		12.00	SF	213	2,556	198	2,376		
Gyp soffits - allow		2,000.00	LS	1	2,000	1	2,000	1	2,000

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Misc. GWB assemblies		2.00	GSF	5,843	11,686	6,161	12,322	2,862	5,724
*GWB wall board includes sound attenuation									
					---		---		---
					144,448		148,491		48,661
09300 TILE									
Toilet Room:									
Floor tile		14.00	SF	125	1,750	482	6,748		
Wall base		7.00	LF	62	434	226	1,582		
Wall tile - 4'		14.00	SF	248	3,472	904	12,656		
Marble threshold		50.00	EA	2	100	6	300		
Janitor Closet:									
Floor tile		14.00	SF	28	392	28	392		
Wall base		7.00	LF	20	140	20	140		
Wall tile - 4'		14.00	SF	80	1,120	80	1,120		
Marble threshold		50.00	EA	1	50	1	50		
					---		---		---
					7,458		22,988		0
09500 ACOUSTICAL TREATMENT									
2x2 ACT - 75%		3.90	SF	4,163	16,236	4,412	17,207	2,146	8,369
Acoustical wall panel			NIC						
					---		---		---
					16,236		17,207		8,369
09550 WOOD FLOORING			N/A						
					0		0		0
					---		---		---
					0		0		0
09650 RESILIENT FLOORING									
Floor prep		1.25	SF	1,841	2,301	1,600	2,000		
VCT		3.50	SF	1,841	6,444	1,600	5,600	222	777
Stair hall finish - full flt.		975.00	FLT	1	975	1	975	1	975
Lobby stair finish (7 risers)		600.00	LFR	28	16,800	28	16,800		
Resilient wall base		2,500.00	LS	1	2,500	1	2,500	1	2,500

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
					---		---		---
					29,020		27,875		4,252
09680 CARPET									
Carpet - admin.		42.00	SY	323	13,566	402	16,884	295	12,390
					---		---		---
					13,566		16,884		12,390
09900 PAINTING									
Int. painting		2.00	GSF	5,843	11,686	6,161	12,322	2,862	5,724
Ext. painting - trim & siding		3.50	SF	1,000	3,500	2,500	8,750	2,000	7,000
					---		---		---
					15,186		21,072		12,724
DIVISION 10 - SPECIALTIES									
10800 TOILET ACCESSORIES									
ADA toilet partition		1,300.00	EA			2	2,600		
Lav mirror		250.00	EA	2	500	6	1,500		
Towel disp/waste receptacle		275.00	EA	2	550	6	1,650		
Toilet tissue dispenser		48.00	EA	2	96	6	288		
Toilet grab bars		90.00	EA	4	360	12	1,080		
Soap dispenser		35.00	EA	2	70	6	210		
Coat hooks		15.00	EA	2	30	6	90		
Auto hand dryer			NIC						
10900 MISCELLANEOUS SPECIALTIES									
Janitor shelf/mop holder		150.00	EA	1	150	1	150		
Markerboards & tackboards		1,200.00	LS	1	1,200	1	1,200	1	1,200

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
Signage		0.08	GSF	5,843	467	6,161	493	2,862	229
Fire extinguishers & cabinets		320.00	EA	4	1,280	4	1,280	2	640
Aluminum louvers		500.00	LS	1	500	1	500	1	500
Misc. specialties		0.50	GSF	5,843	2,922	6,161	3,081	2,862	1,431
High density storage system			NIC						
					---		---		---
					8,125		14,121		4,000
DIVISION 11 - EQUIPMENT									
11900 EQUIPMENT									
Coffee area appliance			NIC						
Break rm kitchen appliance			NIC						
AV equipment			NIC						
Detention equipment			NIC						
					---		---		---
					0		0		0
DIVISION 12 - FURNISHINGS									
12900 FURNISHINGS									
Walk off mat		10.00	SF	72	720	72	720		
Window shade		4.00	SF	815	3,260	868	3,472	335	1,340
					---		---		---
					3,980		4,192		1,340
DIVISION 13 - SPECIAL CONSTRUCTION			N/A						
					0		0		0
					---		---		---
					0		0		0
DIVISION 14 - CONVEYING SYSTEMS									
14200 ELEVATORS AND LIFTS									
Passenger elev (2 door)		36,000.00	STOP	3	108,000	3	108,000		

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
					----------		----------		----------
					108,000		108,000		0
DIVISION 15 - MECHANICAL									
15300 FIRE PROTECTION									
Sprinkler sys - wet		4.00	GSF	5,843	23,372	6,161	24,644	2,862	11,448
Sprinkler sys - dry (attic)		4.50	GSF	3,332	14,994	3,122	14,049	1,444	6,498
					----------		----------		----------
					38,366		38,693		17,946
15400 PLUMBING									
Demolition & disconnects		1,500.00	LS	1	1,500	1	1,500		
Fixtures:									
Toilet		1,900.00	EA	2	3,800	6	11,400		
Lav		1,100.00	EA	2	2,200	6	6,600		
Mop sink		1,400.00	EA	1	1,400	1	1,400		
Kitchen sink		1,650.00	EA	1	1,650	2	3,300	3	4,950
Drinking fountain - allow		3,200.00	EA	1	3,200	1	3,200		
Fixture rough in		2,000.00	EA	7	14,000	16	32,000	3	6,000
Water heater		4,000.00	LS	1	4,000	1	4,000		
Replace water service		1,200.00	LS	1	1,200	1	1,200		
Replace sanitary service		1,000.00	LS	1	1,000	1	1,000		
Roof drainage w/07500									
Misc. plumbing		2.00	GSF	5,843	11,686	6,161	12,322	2,862	5,724
					----------		----------		----------
					45,636		77,922		16,674
15500 HVAC									
Demolition & disconnects		1,500.00	LS	1	1,500	1	1,500		
HVAC		25.00	GSF	5,843	146,075	6,161	154,025	2,862	71,550
					----------		----------		----------

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Nantucket Police Station									12/12/2011
					EST. NO. 1		EST. NO. 2		EST. NO. 3
					DESIGN OPTION A		DESIGN OPTION B-PART 1		DESIGN OPTION B-PART 2
DESCRIPTION		UNIT COST	UNIT	QUANTITY	TOTAL	QUANTITY	TOTAL	QUANTITY	TOTAL
					147,575		155,525		71,550
DIVISION 16 - ELECTRICAL									
16000 ELECTRICAL									
Demolition & disconnects		1,000.00	LS	1	1,000	1	1,000		
Electrical		22.00	GSF	5,843	128,546	6,161	135,542	2,862	62,964
Photovoltaic		0.00	LS	1	0	1	0		
Emergency generator		70,000.00	EA	1	70,000	1	70,000		
					---		---		---
					199,546		206,542		62,964

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6. Preliminary Project Schedules

The following project development schedules outline the likely project duration for both the smaller "Option A" and the larger "Option B" projects. The timeline for each assumes an orderly and closely timed series of project funding and regulatory approvals, as well as an aggressive design and construction document timeline. It is important to note that the overall project duration for either scheme is not that different. Certainly the larger scheme will take a bit longer, but we would estimate only two to three months longer if the project is done as a whole.

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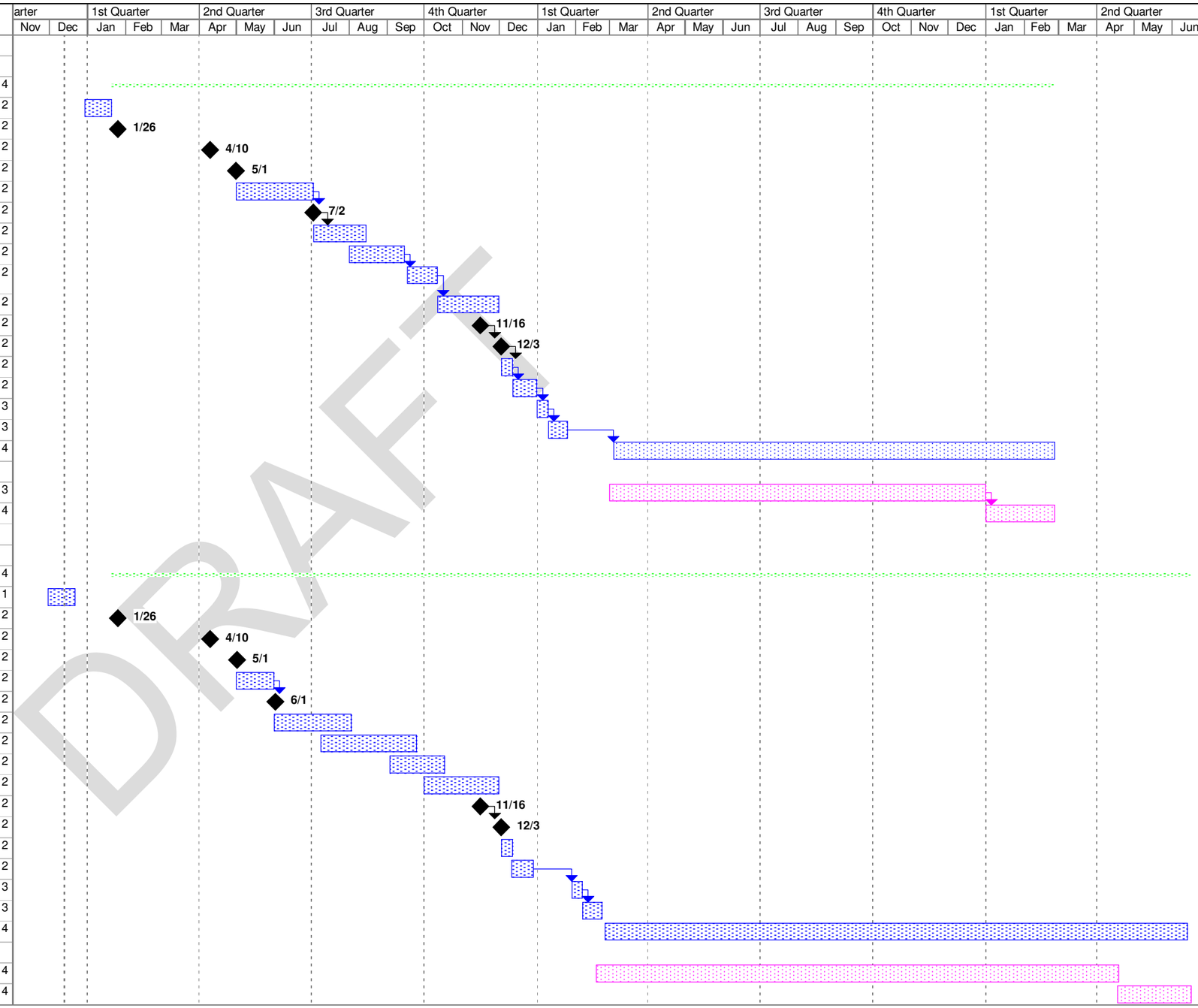
PRELIMINARY PROJECT SCHEDULE FOR THE 20 SOUTH WATER STREET RENOVATION/ADDITION

ID	Task Name	Duration	Start	Finish
1				
2				
3	**Estimated Design Option "A" project duration**	548 days	Fri 1/20/12	Tue 2/25/14
4	I. complete Design Feasilbilty Study	16 days	Fri 12/30/11	Fri 1/20/12
5	2A. Town Meeting Approvals	0 days	Thu 1/26/12	Thu 1/26/12
6	2B. Town Vote Approval	0 days	Tue 4/10/12	Tue 4/10/12
7	Execute Full Project Design Contract	0 days	Tue 5/1/12	Tue 5/1/12
8	3. Begin Schematic Design Work	45 days	Tue 5/1/12	Mon 7/2/12
9	4. Begin Local Approvals Process	0 days	Mon 7/2/12	Mon 7/2/12
10	HDC	31 days	Tue 7/3/12	Tue 8/14/12
11	Planning Board	33 days	Wed 8/1/12	Fri 9/14/12
12	5. Design Development Phase	19 days	Mon 9/17/12	Thu 10/11/12
13	6. Construction Document Phase	36 days	Fri 10/12/12	Fri 11/30/12
14	Obtain Independent Cost Estimate if required	0 days	Fri 11/16/12	Fri 11/16/12
15	7. Public Bidding Process	0 days	Mon 12/3/12	Mon 12/3/12
16	Advertise for General and Filled Sub-Bids	7 days	Mon 12/3/12	Tue 12/11/12
17	Receive and review Filed Sub-Bids	14 days	Wed 12/12/12	Mon 12/31/12
18	Receive and review General Bids	7 days	Tue 1/1/13	Wed 1/9/13
19	Award construction Contract	12 days	Thu 1/10/13	Fri 1/25/13
20	8. Construction Administarion Phase	257 days	Mon 3/4/13	Tue 2/25/14
21				
22	Construction Period (+/-10 Months)	218 days	Fri 3/1/13	Tue 12/31/13
23	Close-out and Final Occupancy	40 days	Wed 1/1/14	Tue 2/25/14
24				
25				
26	**Estimated Design Option "B" project duration**	627 days	Fri 1/20/12	Mon 6/16/14
27	I. complete Design Feasilbilty Study	16 days	Wed 11/30/11	Wed 12/21/11
28	2A. Town Meeting Approvals	0 days	Thu 1/26/12	Thu 1/26/12
29	2B. Town Vote Approval	0 days	Tue 4/10/12	Tue 4/10/12
30	Execute Full Project Design Contract	0 days	Tue 5/1/12	Tue 5/1/12
31	3. Begin Schematic Design Work	23 days	Tue 5/1/12	Thu 5/31/12
32	4. Begin Local Approvals Process	0 days	Fri 6/1/12	Fri 6/1/12
33	HDC	45 days	Fri 6/1/12	Thu 8/2/12
34	Planning Board	56 days	Mon 7/9/12	Mon 9/24/12
35	5. Design Development Phase	33 days	Mon 9/3/12	Wed 10/17/12
36	6. Construction Document Phase	45 days	Mon 10/1/12	Fri 11/30/12
37	Obtain Independent Cost Estimate if required	0 days	Fri 11/16/12	Fri 11/16/12
38	7. Public Bidding Process	0 days	Mon 12/3/12	Mon 12/3/12
39	Advertise for General and Filled Sub-Bids	7 days	Mon 12/3/12	Tue 12/11/12
40	Receive and review Filed Sub-Bids	14 days	Tue 12/11/12	Fri 12/28/12
41	Receive and review General Bids	7 days	Tue 1/29/13	Wed 2/6/13
42	Award construction Contract	12 days	Thu 2/7/13	Fri 2/22/13
43	8. Construction Administarion Phase	340 days	Mon 2/25/13	Fri 6/13/14
44				
45	Construction Period (+/-12 Months)	305 days	Mon 2/18/13	Fri 4/18/14
46	Close-out and Final Occupancy	42 days	Fri 4/18/14	Mon 6/16/14



Project: Project1
Date: Tue 12/13/11

Task | Split | Progress | Milestone | Summary | Project Summary | External Tasks | External Milestone | Deadline

7. Appendices

Appendix #1 – Architectural Existing Conditions Summary matrix,

Structural Due Diligence – Code Review letter by Allen & Major, Inc.

Condition, Assessment and Building Systems Evaluation – Existing Mechanical and Electrical systems review by Building Engineering Resources, Inc.

Appendix #2 – Detailed "Existing Conditions Plan" Survey Drawing by Blackwell and Associates, Inc. dated January 24, 2011

Appendix #3 – Exterior Façade Evaluation and interior Leak Review, Nantucket Police Station, Nantucket MA – Dated March 14 2011, by Gale Associates, Inc.

Appendix #4 – Hazardous Material Survey and Testing Results –dated February 3, 2011 by Hygienetics Environmental Services, Inc.

Appendix #5 – Roof-Mounted Photovoltaic System for the Nantucket Tow Hall – Design, Energy Production Projection, Funding Recommendations and Financial Analysis, by Argo Consulting

Appendix #6 –Earlier versions of Design Drawings with accompanying Total project Cost Estimates

Appendix #7 – Copies of the CAD generated Existing Conditions Plans, Sections and Elevations for 20 South Water Street created for the study by BLF&R, from available town records.

Appendix #8 - Electronic copies of project generated drawings and documents in PDF format.

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Appendix # I

Architectural Existing Conditions Summary (matrix format)

The following chart is organized using the "UniFormat" system of information management utilized in design and construction. This system is similar to and can be easily related to the much more material/manufacture specific CSI "Masterformat" Specification system utilized in written specifications. "UniFormat", a publication of CSI and CSC, is a method of arranging construction information based on functional elements, or parts of a facility characterized by their functions, without regard to the materials and methods used to accomplish them. These elements are often referred to as systems or assemblies

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Architectural Existing Conditions Summary (matrix format)

The following chart is organized using a simplified version of the "UniFormat" system of information management utilized in design and construction. This system is similar to, and can be easily related to the much more material/manufacture specific CSI "Masterformat" Specification system utilized in written specifications. UniFormat, a publication of CSI and CSC, is a method of arranging construction information based on functional elements, or parts of a facility characterized by their functions, without regard to the materials and methods used to accomplish them. These elements are often referred to as systems or assemblies

	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
A	SUBSTRUCTURE		
	Foundations	No exploratory digging was done as part of the study to determine the condition of the existing foundation or determine geotechnical conditions below grade or floor level. One issue that does exist with the existing foundation is the fact that the rear of the building is set into the sloping grade at the west end of the building. There is limited evidence of damage at the exterior of the wall; however on the inside you can see that the grade is quite high almost touching several window sills. There is also evidence along the wall and floor that water has been seeping in and has caused damage over time.	If it is determined an addition of any size is required west of the existing structure, a geotechnical study will be required to fully understand the exact soil and ground water conditions.
	Slab on Grade	Aside from minor damage to the existing floors in the mechanical and electrical rooms in the areas noted above, the remainder of the floor slab appears to be in good condition. Most areas are covered with finishes, and some is below a raided floor system (in the former police dispatch area). Because the larger front portion of the building was once the fire station apparatus bay we believe the slab there is probably thicker and perhaps reinforced more than might expected for a building of this age.	It would be are expectation that the existing floor slab could be reused, although it may need extensive repairs if the interior walls and under-slab plumbing are reconfigured.
	Basement	No basements or crawl spaces currently exist at 20 South	It is likely that any addition with a basement (either ½ or

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
	Construction & Excavation	Water Street. The NRTA building does have a crawl space which is not well constructed or insulated.	a full story below grade) level will require a fully waterproofed foundation and slab on grade.
	Super Structure	The existing 20 S. Water St. building has exterior brick masonry bearing s walls that directly carry the second floor and roof structure. The larger section of the building has a second floor deck that is a combination of steel beams and wood joist and decking. The steel beams, original to the building, span the entire width of the building. Above the steel beam the interior structure of the building transitions to wood and heavy timbers. There is a simple grid of posts aligned roughly at the third points of the steel beams, these posts rise up to and help support the wood framed ceiling and roof structure. The condition of the posts and the connections were not inspected for this report as no destructive testing was done.	It is important to note here that the front portion of the existing building actually has much more flexible then it might appear. Due to the clear span structure above the first floor all the interior partitions built for to properly house the Police Department can be removed. Similarly, at the second floor all the interior portions can be reworked around the existing columns. See structural report for likely scope for any degree of renovation and addition. This will include the additional anchorage details for the steel beams and wood structure where they bear on the masonry walls.
	Floor Construction	The lower level floors are all concrete slab-on-grade. The over condition of which is good. Minor surface issues are noticeable in the Mechanical Room at the rear of the building where there is evidence of past water issues. The larger section of the building has a second floor deck that is a combination of steel beams and wood joist and decking. The steel beams, original to the building, span the entire width of the building. This floor seems to be in very good condition At the rear of the building the dimensional wood framing sits above the interior brick bearing walls below. There are several different floor levels in this area. The stair hall/corridor is at one height while remaining under the roof attic spaces vary in elevation and level of finish.	Short of finding real issues not visually evident (moisture damaged/rot), a reuse of the main area of the existing second floor for office use will not be an issue. It is likely that it will not be useful for dense storage without additional reinforcement. Because any new work at the site will require that that entire second floor area be made accessible, it is BLF&R's assumption that much of the existing wood framed floor and roof at the rear section of the building will need to be removed and or reconstructed to accommodate the new work.

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
B	SHELL		
	Roof Construction	The existing roof is supported by the previously mentioned large dimensional lumber and heavy timber structure. The roof is sheathed with 1x boards. These boards to spite obvious stains form prior roof leaks appear to be in very good condition from below, however the need for some replacement should be assumed. The existing attic spaces are currently minimally insulated with various types of batt and loose fill types of insulation. The main attic above the second floor is also currently home to two HVAC units and majority of the ductwork serving the floor below. The units and the ductwork are also minimally insulated. See the MEP/FP report for more information.	Unlike the plaster walls and ceilings at the second floor below which show heavy damage from repeated wetting form roof leaks, the wood appears to be very sound. This is probably due to what must be a fairly large amount of heat loss through the attic which will certainly help dry the wood quickly. See Exterior Envelope for additional information and discussion of roof venting issues.
	Exterior Walls	The condition of the exterior walls is detailed in the Exterior Envelope report contained in the Appendix. The dormers noted above have cedar shingled sidewalls that are in worn condition.	It should be assumed that the dormers should have; • All sidewall coverings need to be replaced and raised above the surface of the roofing. • all wood trim repaired or replaced as needed • All roof valley and roof/sidewall flashings should be replaced.
	Exterior Windows	The majority of the windows in the building were replaced in the 1980 renovation of the building. The windows are simulated divided light with insulated glass, and are generally in good condition. Several sash need repairs for broken air seals or broken glazing.	
	Exterior Doors	There are two entry doors and one garage door all of which have issues that will need to be addressed if kept in any new work.	The garage door is likely to go in favor of a new entry door and window assembly or additional windows. The two man doors need hardware and other ADA upgrades.
	Roof Coverings	The existing roofs planes and dormers are capped with 3-tab asphalt shingles that are in very poor condition.	A complete re-roofing is appropriate and has additional code upgrade impacts. When a building is re-roofed it is required that the existing roof be strengthen if not already required do to other sections of the code. This

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
			will require that he all the roof framing and sheathing is fastened to meet current building code design loads for gravity, wind and seismic forces.
	Roof Openings	The roof currently has 11 dormers, one chimney, several pipe penetrations and the base of the original cupola all of which may have issues with age and or disrepair.	
C	INTERIORS		
	Interior Construction - Partitions	At the rear of the lower level, the interior walls are a mix of multi-wythe brick bearing wall and some non-bearing plaster/gypsum walls. At the larger east end of the building the interior walls are a mix of concrete block (in the holding cell areas) and framed gypsum walls. Note – None of these walls are bearing wall. Due to second floor beam spanning from side to side.	Obviously the brick bearing walls will be harder and more expensive to remove or reconfigure. However, depending on how the design work progresses it may indeed be easier to remove them instead of altering them, thus adding potential structural upgrades. Design schemes should consider the reuse of the holding cells by the Sheriff's Dept. Although removing them would allow for a new wide open space suitable for the development for any use.
	Interior Fit & Finish	In general, the interior of the building is showing its age, obvious deferred maintenance and heavy use by the former occupants who were really squeezed for space. It is also clear that the NPD had been making due for quite a while; as is evidenced by the use of exposed wiring, individual small space renovations with variations in the finishes. See Existing Conditions Plans and Photos for more comments.	It is certainly BLF&R's recommendation that most if not all interior work be removed. A complete removal will allow for complete removal and replacement of building systems (such as the wiring) all while allowing for upgrades to the thermal envelope of the building. The added cost of replacements in building renovations of this type can be quickly repaid with the money saved due to newly gained energy efficiency alone.
	Interior - Stair Construction	The interior stairs are in fairly poor condition. Especially the stair at the front (east) end of the building, where the interior plaster layers of the exterior wall have failed due to prior water infiltration issues and are literally falling in. This stair also has issues with insufficient handrails, inadequate lighting and does not meet simple dimension requirements. Worst of all it does not meet the code, in that it does not	See additional comments regarding the stairs in the Code Review Section

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
		empty directly to the exterior or a properly constructed interior exit path.	
	Interior - Stair Finishes	The interior of both stairs have basic finishes that are appropriate for their former uses. They are worn and do not lend any significant level design detail to the building.	
	Interior - Wall Finishes	Because the building has undergone a number of renovations there is a lack of continuity with all the finishes. Floor, wall and ceiling finishes and colors vary greatly from room to room and floor to floor. It should also be noted that there are numerous types and styles of millwork, interior windows, doors, hardware and other typical appurtenances that lend to this.	As noted elsewhere the lack of continuity does not suggest to us that there is a lot to salvage for reuse in a renovation. Certainly there will be some value in the material to be removed, which could be disposed of in lieu of being recycled or sent directly to a landfill site.
	Interior - Floor Finishes	There is a wide array of flooring materials and colors. The carpets are dirty and worn. The resilient and tile floors are mismatched and in various stages of disrepair. Because there are ongoing water issues throughout the 2nd floor there may be some areas of the wood framed 2nd floor deck that may have water damage	All if not most are heavy worn and should be replaced, and there are really not any that are significant enough to justify that they be protected and re-used during a complete building renovation.
	Ceiling Finishes		
D	SERVICES		
	Conveying - Elevators & Lifts	Currently the building has no elevator or lift which leaves the second floor inaccessible.	As noted in the code review section of the report a new elevator will be required when the building is renovated, no matter whether or not it includes and addition.
	Plumbing Fixtures	See MEP/FP report.	It is noted that the fixtures need to change for several reason in the Plumbing report. One of them being handicapped accessibility. In fact, not only do the fixtures need to be replaced, the entire layout of all the current toilet and locker areas needs to be changed in order to meet special requirements of the access codes.
	Domestic Water Distribution	See MEP/FP report.	

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary

	Sanitary Waste	The building is served by the municipal sewer.	See MEP/FP report.
	Rain Water Drainage	The building and the entire town block site has very limited means of handling roof runoff and storm water. Currently the subject building only has roof gutters and leaders on the south side, none whatsoever on the north side. The other buildings on the block only have their roof leaders spilling directly on to splash blocks at grade or onto sidewalks. There are a few area drains located on the overall town block site it is not clear that any of the buildings utilize any in ground drainage structures.	New complaint storm water management will be required.
	Other Plumbing Systems	See MEP/FP report.	
	HVAC - Energy Supply	See MEP/FP report.	
	Heat Generating Systems	See MEP/FP report.	It should be noted that all the town buildings on the block share a large below grade fuel oil tank in the courtyard, located directly between the NRTA and T&C buildings. No study has been done regarding this system. It is assumed it will continue to be used in the future, and any new work in the courtyard will be tailored around it.
	Cooling Generating Systems	See MEP/FP report. As note by the Engineers the building has several Ductless Split A/C Systems that were installed in various locations, primarily to cool IT room loads.	These systems have units there condenser units mounted at grade with exposed piping run exposed on the exterior of brick facades. All of these should be removed in a renovation, adding to the brick masonry repairs.
	Distribution Systems	See MEP/FP report.	
	Terminal & Package Units	See MEP/FP report.	
	Fire Protection – Sprinklers & Standpipes	See MEP/FP report.	
	Fire Protection Specialties	The building does have fire extinguishers in various locations throughout.	It is assumed a new renovation will include new fire protection specialties allowing for safe storage in the proper locations.

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
	Fire Alarm Systems	See MEP/FP report.	
	Electrical Service & Distribution	See MEP/FP report.	
	Lighting and Branch Wiring	See MEP/FP report.	It should be assumed all lighting will be replaced with are more energy efficient fixtures; that will be more decorative as well as more appropriate for office functions and other relocated uses.
	Communications & Security	Due to the prior use of the subject building by the Fire and police departments; the 20 South Water St. structures as well as the NRTA Building have the remnants of what appears to be several generations' worth of phone, data and emergency communications systems.	It is assumed very little of these existing systems will likely be useful going forward.
	Emergency Power	See MEP/FP report	Emergency power requirements for the entire site should be considered at a later phase.
E	EQUIPMENT &FURNISHINGS		
	Commercial Equipment	Because the Police department has relocated to all a building with all new equipment there are a number of remaining pieces of equipment in the building that will probably not be useful in the future. These include lockers of various type and sizes as well as office furniture and shelving.	
	Institutional Equipment	The police department has also left for potential reuse 5 jail cells.	These may be able to be reused by the Sheriff but are not required or even preferred in some instances by the Sheriff's Dept. The Sheriff could make due with several small secure holding rooms suitable for all types of individuals.
	Vehicular Equipment	No vehicular equipment is present in the existing garage bay; in fact the Police department has built additional office space inside what was once full size garage bay/sally port.	
	Other Equipment	The former dispatch area near the former public entry lobby has a raised floor system which will need to be removed.	These systems, not atypical, were often installed to give the staff seated a higher perch to oversee a lobby space while giving ample space to wire and rewire the larger

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
			number of communications systems located there. Unless the entire are of the first floor is raised in the future the existing system will cause numerous accessibility issues.
	Furnishings	There are several pieces of furniture remaining in the building, none notable.	
F	SPECIAL CONSTRUCTION & DEMOLITION		
	Special Construction		See separate solar photovoltaic report in the Appendix. As noted in that report the feasibility of capturing solar energy on the roof of the existing 20 South Water St. building is limited due to all the current roof dormers. Solar energy, photovoltaic or thermal may still be possible on an addition.
	Special Structures	Missing Cupola?	Previous renovation plans have included the replacement of the original cupola. It is understood this work was not done due to cost. This scope could be added to a new renovation if budget allows. It has been suggested that CPC funding should be sought in order to complete this work.
	Special Facilities	The second floor has the remnants of a dark room facility which should be removed.	
	Building Elements Demolition	Also see the hazardous material report.	
	Hazardous Components	See hazardous material report.	
G	BUILDING SITEWORK & DEMOLITION		
	Existing Site Conditions	The existing building is surrounded by different conditions on each side.	

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
		To the east, between the building South Water St. there is a building wide concrete driveway which is currently being used for parking by for Police and Sheriff vehicles. This driveway is good condition and could remain if needed. To the south, along East Chestnut St., the building is border by a narrow landscape area, then a combination of brick and cobblestone sidewalk interrupted by several street trees. There is a granite curb between the sidewalk and the cobblestone paved street surface. To the west, between the subject building and the NRTA building there is a narrow non-landscaped overgrown area. The grade in this area is much higher than the lower level floor at 20 S. Water St. The height of the grade here and the lack of any site drainage are contributing to the water issues inside the building. To the north of the building is the lawn area between the subject building and the Town and county Building. This area is fairly well maintained, however it does have issues that may be causing issues for the existing structure. The first of which is the grading. In areas there is not enough slope to the land to direct water away from the building. This is particularly true toward South Water St. where the building is heavily covered with dirt and organic growth caused by the roof run-off splashing back up on the building. Further into the courtyard where there is quite a number of ground mounted pieced of the HVAC system along with a propane tank, the grade is actually high enough on the building to be up against the brick masonry.	

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
	Site Preparation		
	Site Clearing	Tree removal?	Any building addition or the redevelopment of the courtyard between buildings will also require that most of the existing trees there be removed.
	Site Demolition and Relocations	Se selective demolition above for demo inside existing 20 South Water St. building. The demolition of existing site features will depend greatly on which design options are pursued. Utility relocations and the installation of new ones will require the disruption and replacement of existing cobblestone and brick and paving. As noted in the MEP/FP report, an addition to the building will require that the electrical service which serves the whole town block be relocated. If an addition to the west is required the existing NRTA building may be demolished completely.	
	Site Earthwork		Redevelopment of the courtyard will require regarding to not only handle the storm water issues, it will also need to be reworked to provide accessible site pathways to any new building entries and or the existing Public Toilets in the Visitors' Center.
	Hazardous Waste Remediation	See report by Hygienetics Environmental Services, Inc.	Due to the number of renovations the building has seen the amounts of Hazardous are relatively small; subsequently the estimated costs associated with removal are low.
	Site Improvements		
	Roadways	There are no roadways on or through the site. The roads around	
	Landscaping	The existing landscaped areas along the south side of the	

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	Building System Type	Existing Conditions Summary	BLF&R recommendations and Commentary
		building are in fair condition, and likely suffer from the lack of storm water management from the roof. There is very little other landscaping around the building.	
	Site Mechanical Utilities	See previous notes and the MEP/FP report.	
	Water Supply	The buildings water supply is not large enough to add sprinklers. See MEP/FP report	
	Sanitary Sewer	See MEP/FP report.	It should be noted if the NRTA building is replaced with an addition, reuse of the existing sewer connection there may be useful as all of the plumbing is below the existing concrete slab elevation at 20 South Water St.
	Storm Sewer		
	Heating Distribution		
	Cooling Distribution		
	Fuel Distribution	The existing buildings on the entire site are fed from a buried fuel oil storage tank in the courtyard between the buildings.	It should be noted no work was done to confirm if any issues exist related to the underground fuel storage tank located in the courtyard between all the buildings on the town owned block. Discussions with town staff leave no reason to suspect any issues exist.
	Site Electrical Utilities	See MEP/FP report.	
	Site Lighting	Very little site and security lighting is present at the center of the town block, which is another reason to redevelop it.	Building codes will require that any new building entries or exits will require emergency lighting. There should also be increased lighting for security reasons.

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BUILDING ENGINEERING RESOURCES, INC.

Conditions, Assessment and Building Systems Evaluation

20 South Water Street
Nantucket, MA

Project #10161.00

DRAFT

Prepared With:

Brown Lindquist Fenuccio & Raber Architects, Inc.
203 Willow Street, Suite A
Yarmouth Port, MA 02675

April 11, 2011

Prepared By:

Tom Wiltshire – HVAC
Doug Curry – Electrical
Paul Taylor – Plumbing/Fire Suppression

HVAC:

Police Building – Heating:

Survey:

1. Heat is provided from a residential grade oil fired boiler manufactured by Peerless, Model ETC-06 manufactured in February 1998 located in the locker room on the first floor. Pumps located in the locker room provide hot water to multiple fin-tube heating zones, unit heaters, and hot water fan coil units located above the ceilings of the first floor and in the attic.

Issues:

1. Many sections of fin-tube are badly damaged and are missing cover section. Some appeared inoperable and others appeared to have constant flow regardless of thermostat settings. Existing boiler is 14 years old and is nearing its life expectancy.

Scheme "B":

1. Although the existing boiler appears to be in good condition and operating properly, it does not have the extra capacity to accommodate the addition.

Cooling – Second Floor:

Survey:

1. Cooling is provided to the second floor by two fan coil units manufactured by First Co. Model 36MBX located in the attic. Each unit has an associated air cooled condensing unit on grade and a Space-Gard high efficiency air cleaner filter system. Each fan coil unit serves various rooms on the second floor. Computer room is cooled by two wall mounted ductless split systems manufactured by Sanyo; each unit has an associated air cooled condensing unit on grade.

Issues:

1. Cooling units appear to be in fair condition and are operating properly. Although installation date could not be confirmed, units appear to be 9 to 12 years old and are at a minimum of half life expectancy.

Scheme "B":

1. Thermostat locations and current air distribution may not be ideal for the proposed layout and some modifications of existing ductwork and thermostat locations may be required. Existing units should be tested for proper operation and repaired and/or replaced as needed. Additional split fan coil units will be required to serve the new addition.

Cooling – First Floor:

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Survey:

1. Cooling is provided to the first floor by two fan coil units; make and model could not be confirmed at time of visit. Each unit has an associated air cooled condensing unit on grade and a Space-Gard high efficiency air cleaner filter system. Each fan coil unit serves various rooms on the first floor.

Issues:

1. Cooling units appear to be in fair condition and are operating properly. Although installation date could not be confirmed, units appeared to be 9 to 12 years old and are at a minimum of half life expectancy.

Scheme "B":

1. Thermostat locations and current air distribution may not be ideal for the proposed layout and some modifications of existing ductwork and thermostat locations may be required. Existing units should be tested for proper operation and repaired and/or replaced as needed. Additional split fan coil units will be required to serve the new addition.

Exhaust Systems:

Survey:

1. Existing exhaust systems appear operational and adequate for their current functions. Fans appear to be in poor condition.

Issues:

1. Units appear to be past their life expectancy and should be replaced.

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ELECTRICAL:

Electric Service:

Survey:

1. The primary underground electric service originates on South Water Street. A primary switch enclosure is located between the buildings adjacent to the corner of the Town & County Building. The utility transformer is located at the rear of 20 South Water and the NRTA Building. The centrally located transformer provides power to all buildings on the block. A single meter is located at the transformer.

Issues:

1. The existing electrical services on the site are not individually metered.

Scheme "B" Issues:

1. The proposed Addition is in conflict with the existing transformer location. A new primary service and pad mount transformer will need to be installed. The transformer needs to be located five feet from an exterior wall, and ten feet from any windows.

2. The potential lease space cannot be metered downstream of the master meter. A check meter could be installed and billed by the Town, or un-metered to be included in the lease.

3. Utilities for the block will need to be replaced and each building re-fed with new services. Utility replacement must be the first phase of the project.

Electric Distribution:

Survey:

1. The secondary service from the pad mounted transformer enters the building on the west side of the Generator Room. An abandoned meter is located at the Service Entrance adjacent to the building's 200 amp main disconnect. The building service is 120/208 volt, 3 phase, four wire.

2. Panel "L1" and an unnamed panel in the Generator Room serve loads on the first floor. Panel "L2" is located in the second floor hall closet and serves loads on the second floor and attic.

Issues:

1. The existing electric service is capable of delivering a total of 6.5 watts per square foot. This capacity is relatively low for a commercial building.

Scheme "B" Issues:

1. The service capacity is inadequate to support a new elevator and the anticipated building loads. The service size should be increased to 400 amps.

2. The arrangement for the transfer of generator power was modified from manual to automatic some time ago. The modifications used wireways and bypassed equipment that was left in place. These items would no longer be needed if the service is upgraded. This would increase the usable space in the Electric Room.

Standby Power:

Survey:

1. The building is equipped with a 15 kW propane fired standby generator located in the Generator Room. The generator and associated automatic transfer switch feeds panel "NE-1". Panel "NE-1" feeds critical loads such as the fire alarm panel, boiler, Generator Room ventilation cell lights, general hallway lighting and UPS systems for the telephone and data equipment.

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Issues:

1. The Electric Room is used for storage, blocking code required clearances around the electrical equipment. A vending machine is located in the room.

2. The propane cylinder located outside of the building does not appear to be connected to the gas piping feeding the generator.

3. The emergency generator may only be used for standby power. Life safety egress lighting, Exit signs, etc. must be provided by emergency battery units and Exit signs with integral batteries, in order for the generator to be used for life safety, the generator, transfer switch, and emergency panels.

Scheme "B" Issues:

1. The existing generator and automatic transfer switch are 30 to 40 years old. Consideration should be given to replacing the generator with a new outdoor unit in a weatherproof enclosure. The existing equipment has reached the end of its service life, replacement parts are no longer available, and technical assistance is not longer available. Removal of this equipment will create ample room in the existing Electric Room for equipment required for Scheme "B".

2. If a new generator is installed, standby and life safety power could be provided, eliminating the need for battery powered unit equipment for Emergency and Exit sign.

Wiring Methods:

Survey:

1. The predominant wiring method is standard copper conductors in EMT conduit. Newer circuits were run in MC cable. A small amount of NM cable (romex) was located in the attic and UPS Room feeding receptacles.

Issues:

1. None.

Scheme "B' Issues:

1. None.

Lighting:

Survey:

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1. Lighting on the first floor is provided via 2x4 recessed lensed troffers in hall and office areas. The cell areas have vandal resistant wraparound fluorescents, and the cells have built-in steel enclosures with vandal proof shields. The front lobby and hall have incandescent downlights. Garage, utility and attic spaces have four foot two-lamp fluorescent strips. The second floor has four foot wraparound fluorescents in office areas.

Issues:
1. None.

Scheme "B" Issues:
1. Scheme "B" renovations will require new lighting throughout the building with exception of the Cell area lighting and controls that will remain and be re-fed.

Emergency Lighting:

Survey:
1. Emergency battery units are provided along paths of egress. Exit lights are a mix of original and replacement signs in various styles and colors. The older signs do not appear to be functioning.

Issues:
1. None.

Scheme "B" Issues:
1. The existing battery units have reached the end of their service lives and should be replaced. If a new generator is provided, normal building lighting fixtures could be used via a life safety branch.

Fire Alarm:

Survey:
1. The existing fire alarm system was manufactured by Simplex Company. The system is 4-zone, hard wired and non-addressable.

Issues:
1. The system is at the end of its service life and is no longer serviceable.

2. The system audio/visual does not meet ADA requirements.

Scheme "B" Issues:
1. A new addressable fire alarm system will be required.

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PLUMBING:

Survey:

1. BER reviewed the entire existing Police Station building. A set of 1980 plumbing drawings were available to assist with survey of existing conditions. Various plumbing systems renovation work has taken place since the 1980 renovation. It should be assumed that there is abandoned piping below slab and throughout that was original to the approximate 74 year old structure.

2. The plumbing systems in general are operable but aged beyond reuse. The buried sanitary piping should be assumed beyond its intended service life.

3. The existing 2" water service would be reviewed and flushed to determine condition. The proposed renovations may dictate a new service upgrade.

4. The existing sanitary below slab could be surveyed by camera and flushed to determine present condition.

5. It should be assumed that all above slab waste, vent, hot and cold water piping systems would be removed from site due to age and condition. All existing plumbing fixtures would be removed due to age, condition and water conservation. The existing facility is not accessible and would require new water conserving accessible plumbing fixtures throughout.

6. The existing, natural gas system that presently serves the emergency generator would be revised to accommodate new heating and domestic hot water systems equipment.

Issues:

1. The primary general issue with the existing plumbing systems is age/condition. Although they presently function with on-going repairs, they would not support the proposed renovation work scope.

Scheme B Issues:

1. A new water service with meter inside the building would be proposed. The new service would be sized based on the hydrant flow test information needed for fire suppression.

2. A new sanitary system from below the slab to accommodate the new layout. The new sanitary would require floor excavation to the exterior and assume connect to the existing on-site septic system.

3. All new hot, cold and hot water circulation piping would be required to serve all the new plumbing fixtures throughout. A new gas fired or electric domestic water heater would be included in the new work.

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4. Coordination with occupancy counts for the proposed new work and use group would be required to provide adequate new plumbing fixtures per code. All new fixtures and faucets would be water conserving and commercial grade as approved by MA Board of Plumbing.

5. New potable cold water with back flow preventer would be included to serve new mechanical equipment, irrigation and exterior wall hydrants per code.

FIRE SUPPRESSION:

Survey:
1. At this time the existing Police Station building does not have fire suppression.

Issues:
1. None.

Scheme B Issues:
1. Per MA Fire Codes, the new renovated building would require automatic fire sprinklers throughout first, second and attic floors.

2. A new wet and dry sprinkler system would be designed and installed per light hazard, NFPA 13, 2007.

3. A new hydrant flow test would be performed on Federal Street. A new 4”–6” fire service would be brought to the building. New double check valve, alarm valves, trim and Fire Department connection would all be included.

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ALLEN & MAJOR ASSOCIATES, INC.

100 Commerce Way
P.O. Box 2118
Woburn, MA 01888-0118
Tel: (781) 935-6889
Fax: (781) 935-2896

December 30, 2010

Christopher W. Raber
Brown, Lindquist, Fenuccio & Raber, Architects, Inc.
203 Willow Street - Suite A
Yarmouthport, MA 02675

Re: A&M Project # 1203-46
Structural Due Diligence
20 South Water Street
Nantucket, MA

Dear Mr. Raber:

Allen & Major Associates, Inc. (A&M) is pleased to submit this preliminary due diligence report associated with the proposed change of occupancy, alterations and improvements at the existing structure located at 20 South Water Street in Nantucket Massachusetts. The building is currently occupied by the Nantucket Police Department and is proposed to be used as office space to house town administration functions. It is understood that alterations are to include the reconfiguration of space within the existing building. Any additions will be constructed as independent structures adjacent to the existing building.

The primary goal of the report is to evaluate the structural implications of the Massachusetts State Building Code, 8th ed. (MSBC) with respect to the proposed alterations and change of occupancy described above. Chapter 34 of the MSBC for existing buildings is based upon the International Existing Building Code (IEBC) 2009.

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FIELD INVESTIGATION

A visual, walk-through observation was conducted in and around the existing building on December 14, 2010. All observations were made from the floor or ground level. The building is currently occupied and concealed with architectural finishes throughout, save for the attic level.

During the observation existing building plans dated January 1980 were made available. The plans define a previous alteration of the building from the Fire Department to the current Police Department configuration. There are no significant structural alterations shown on the plans, the work consisted primarily of interior reconfiguration and the infilling window and door openings that existed in the old Fire Department layout.

The building is a two story structure with clay masonry perimeter bearing walls and timber frame roof and floors. The multi-wythe clay masonry bearing walls are considered to be unreinforced masonry (URM) bearing walls.

STRUCTURAL EVALUATION

In accordance with MSBC Table 1604.5 the proposed structural occupancy category would be II. The proposed occupancy category is based on the building being classified as general office space.

The structural implications of the change of occupancy and reconfiguration of space have been evaluated in accordance with each of the three compliance methods in the IEBC. The project

should be evaluated based on all proposed discipline alterations (architectural, structural, and M/E/P/FP) and change of use to determine the best compliance method for the project.

Prescriptive Compliance Method

303.3: Any gravity load-carrying structural element will be required to be strengthened to meet the code for new construction where the design gravity load increases by more than 5%.

303.3.1: Where the alteration does not require increased design live loads from those existing prior to the alteration, the existing framing may be evaluated based on the approved live load that existed prior to the alteration. The floor framing is not exposed at this time, but the current use of the second floor is office space. It could reasonably be expected that the continued use as office space is acceptable.

303.4: Compliance with the code for new construction will be required for lateral loads (wind and seismic) where the alterations result in increased design lateral loads, a structural irregularity, or where the capacity of the existing lateral force resisting system is decreased. An increase in lateral loads would result from an increase in building mass or an increase in surface area exposed to wind. Increases in the demand-capacity ratio of lateral force resisting systems are permitted up to 10% without reinforcement. Reconfiguration of space with like materials and in similar density will generally not cause an increase in the building mass. A decrease in capacity of the lateral force resisting system may result from the creation of or enlargement of openings in the exterior masonry walls.

307.4: The proposed change in occupancy does not result in a classification to a higher occupancy category and therefore does not trigger compliance with current seismic requirements for new construction based on change of occupancy alone.

Work Area Compliance Method

401: The work area compliance method will likely be considered as a Level 3 alteration given that the threshold between level 2 and 3 is reconfiguration of space that exceeds 50% of the aggregate building area. In a level 3 alteration, structural requirements of level 1 & 2 must be included as applicable.

501: Substantial structural damage was not evident during the observation. If found during construction structural damage will need be evaluated on a case by case basis. The structural element that would impact rehabilitation cost most significantly is the exterior masonry wall. The visible portions of these walls did not exhibit structural damage that would be considered substantial.

606.2.1: Level 1 Alteration. Re-roof permit for more than 25% of roof area will require evaluation of wall anchors at the roof line for reduced seismic loads for new construction. Where current anchorage does not comply, reinforcements must be installed. Positive mechanical anchorage between roof rafters/beams and the top of masonry walls will likely be required. Evidence of some reinforcement on roof beams at the front gable wall was noted during the observation.

606.3.2: Level 1 Alteration. This building is located in a high wind region. Removal of roofing materials from the entire roof diaphragm or section of building will require evaluation of the entire roof framing assembly for wind loads in the code for new construction.

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Generally this would include nailing of the roof sheathing to rafters and connection of rafters to their supports to resist uplift and shear forces.

707.4: Level 2 Alteration. Existing structural framing supporting additional gravity loads as a result of the alteration are permitted to remain in service without reinforcement provided that their stress is not increased by more than 5%.

707.5: Level 2 Alteration. Demand-capacity ratio must be calculated for lateral force resisting systems affected by the alteration. Where this ratio increases by 10% or more in the altered condition, then the provisions of 807.4 apply and an engineering evaluation must be conducted.

807.4: Level 3 Alteration. Engineering evaluation of the structure is required. Where the tributary area to a framed floor or roof structural alteration is less than 30%, the building may be evaluated for reduced seismic loads for new construction.

The use of Appendix A1 is triggered when evaluation for reduced seismic loads is required. Appendix A1 applies to buildings having at least 1 URM bearing wall and permits the existing URM to be tested and evaluated for minimum strength and construction standards. Where the URM meets the minimum standards of Appendix A1 it may be reused if capable of resisting the demand loads prescribed by the MSBC. Where the existing URM does not meet the minimum standards, it must be replaced or supplemented by new materials or systems.

The MSBC for new construction does not permit the use of URM to resist seismic forces. In this case the URM walls would need to be replaced or supplemented with new systems.

907.1: A change in occupancy that results in higher uniform or concentrated loads shall have the framing tributary to the support of the occupancy comply with the gravity load provisions of the code for new construction.

907.3: The change of occupancy considered would not increase occupancy category as defined in table MSBC Table 1604.5 and therefore does not trigger seismic load requirements based on change of occupancy alone.

Performance Compliance Method

1301.4: Analysis is required to demonstrate that the building is capable of resisting the loads defined in Chapter 16 of the MSBC for new construction. Implications of this method would prohibit the continued use of the unreinforced masonry bearing walls as lateral force resisting systems. Additional lateral force resisting systems would need to be incorporated into the building to meet code requirements.

CONCLUSION

Based on my understanding of the proposed alterations at this time, the prescriptive compliance method appears to require the least amount of structural improvements assuming that the extent of alteration avoids triggers to the lateral force resisting system as defined in section 303.4.

The work area and performance compliance methods each appear to require evaluation and potential reinforcement of the exterior masonry bearing walls. Connection of framing to perimeter bearing walls, connection of rafters to resist uplift and potential reinforcement of the perimeter URM bearing walls are all likely requirements throughout the building.

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Regardless of compliance method used to evaluate the existing structure, any additions would need to be constructed to meet the code for new construction. Additions should be planned as structurally separate buildings so that the added mass and wind area of the addition does not trigger additional lateral load requirements on the existing structure. Design of immediately adjacent additions should consider any secondary effects on the existing structure such as the creation of snow drift areas on the existing roof.

I trust that the information provided in this report will serve to aid in the decision making process that defines the scope of alteration in consideration of potential structural implications. A&M would be pleased to assist you in any further structural analysis required to complete the work. Please contact the undersigned should you have any questions related to the information contained in this report.

Very truly yours,

ALLEN & MAJOR ASSOCIATES, INC.

Brian A. Walsh, P.E.
Structural Department Manager

Copy to: A&M File 1203-46

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Appendix # 2

Detailed "Existing Conditions Plan" Survey Drawing by Blackwell and Associates, Inc. dated January 24, 2011

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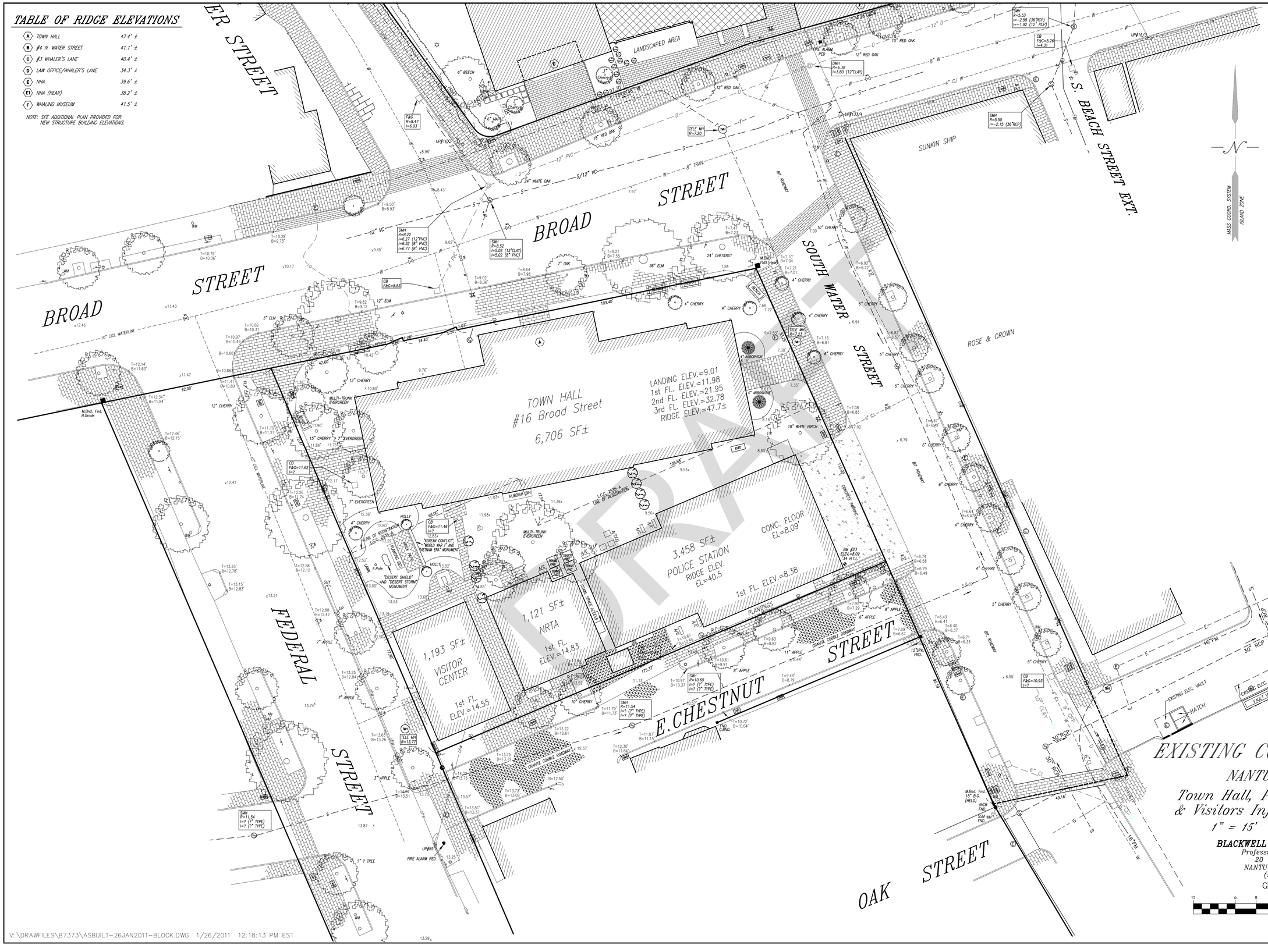
TABLE OF RIDGE ELEVATIONS

A	TOWN HALL	47.4' ±
B	#4 N. WATER STREET	41.1' ±
C	#3 WHALER'S LANE	40.4' ±
D	LAW OFFICE/WHALER'S LANE	34.3' ±
E	NHA	39.6' ±
E1	NHA (REAR)	38.2' ±
F	WHALING MUSEUM	41.5' ±

NOTE: SEE ADDITIONAL PLAN PROVIDED FOR NEW STRUCTURE BUILDING ELEVATIONS.



LEGEND

- DENOTES SEWER MANHOLE
- DENOTES DRAINAGE MANHOLE
- DENOTES ELECTRIC MANHOLE
- DENOTES TEL MANHOLE
- DENOTES CATCH BASIN
- DENOTES FIRE HYDRANT
- DENOTES WATER SHUTOFF VALVE
- DENOTES WATER METER
- DENOTES WATER GATE
- DENOTES BORING
- DENOTES FLAG POLE
- DENOTES FIRE ALARM HAND HOLD
- DENOTES CABLE TV HAND HOLD
- DENOTES ELECTRIC HAND HOLD
- DENOTES ROUND CABLE TV HAND HOLD
- DENOTES SPLIT RAIL FENCE
- DENOTES PICKET FENCE
- DENOTES FIRE ALARM BOX
- DENOTES FIRE ALARM PED
- DENOTES SHRUBS
- DENOTES DOWN SPOUT
- DENOTES OVER HEAD WIRES
- DENOTES WATER LINES
- DENOTES UNDERGROUND TELE LINES
- DENOTES UNDERGROUND ELECTRIC LINES
- DENOTES FORCE MAIN
- DENOTES CABLE & DUCTS
- DENOTES ADS DRAIN GRATE

CURRENT ZONING CLASSIFICATION:
Commercial Downtown (CDT)

MINIMUM LOT SIZE:	3750 S.F.
MINIMUM FRONTAGE:	35 FT.
FRONT YARD SETBACK:	0 FT.
REAR/SIDE SETBACK:	0/5 FT.
GROUND COVER % :	75%

EXISTING CONDITIONS PLAN

NANTUCKET, MASS.

Town Hall, Police Station, NRTA & Visitors Information Buildings

1" = 15' JANUARY 24, 2011

BLACKWELL and ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRLCE
NANTUCKET, MASS. 02554
(508) 228-9026

GRAPHIC SCALE

15 0 8 15 30 60

(IN FEET)
1 inch = 15 ft.

V:\DRAWFILES\B7373\ASBUILT-26JAN2011-BLOCK.DWG 1/26/2011 12:18:13 PM EST

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Appendix # 3

Exterior Façade Evaluation and interior Leak Review, Nantucket Police Station, Nantucket MA – Dated March 14 2011, by Gale Associates, Inc.

DRAFT

Exterior Façade Evaluation and Interior Leak Review Nantucket Police Station Nantucket, MA

March 14, 2011

Gale JN 823870

Prepared for:
Brown, Lindquist, Fenuccio & Raber Architects, Inc.
203 Willow Street, Suite A
Yarmouthport, MA 02675

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EXTERIOR FAÇADE EVALUATION AND INTERIOR LEAK REVIEW
NANTUCKET POLICE STATION
20 SOUTH WATER STREET
NANTUCKET, MA
GALE JN 823870

INTRODUCTION

Per your request, and in accordance with our contract (revision dated October 28, 2010), Gale Associates, Inc. (Gale) has performed a façade evaluation including an interior leak audit at the above referenced building. The purpose of Gale's visual evaluation was to determine the condition of the exterior masonry façade, observe current interior water infiltration locations in an attempt to determine the possible cause and origin of moisture infiltration. Based on our findings we have provided general recommendations for repair related to the exterior building envelope system.

Based upon Gale's understanding of the project, the exterior building envelope study is required in order to determine the extent of necessary building renovation as part of the feasibility study for proposed town site and facility improvements that Brown, Lindquist, Fenuccio & Raber Architects, Inc. (BLFR) is in the process of developing. As part of Gale's evaluation we performed a general interior leak audit where we reviewed the accessible, exposed portions of the building interior for evidence of water infiltration. The interior leak audit was performed with the assistance of BLFR and police officer staff escorts who assisted in identifying historical and active known leak locations. The interior leak review was followed by a ground level, visual survey of the building exterior facades.

BACKGROUND INFORMATION AND GENERAL DESCRIPTION

The main building consists of a two (2) story, multi-wythe, brick masonry façade, with an approximate building footprint of 54 ft. long x 44 ft. wide. The building was originally constructed circa 1929, at which time it reportedly served as the town's fire station. At the west end of the building, there is an attached single story; multi-wythe brick masonry with an approximate footprint of 32 ft. long x 33 ft. wide. The main building section includes a gable pitched, asphalt shingle roof with five (5) doghouse style dormers on both the north and south sides of the roof. A wood framed cupola is located at approximately the midpoint of the roof ridge line. The west end, single story building section includes a gable pitched roof with a single shed dormer located at the south side of the roof. A brick chimney is located near the center of the single story building roof. Existing grade elevations which surround the perimeter of the building slope consistently upward from the east to west end elevations of the building. Two (2) of the three (3) large openings located at the east end of the building (previous apparatus bay doors of the fire station) have been modified to accommodate window unit placement, with the center bay retained as a garage access door. The second floor areas of the main building section consist generally of staff offices, IT operations, storage areas and similar

office related rooms. The first floor below the as well as the single story section of the building include offices, mechanical room, storage, holding cells, dispatch area, apparatus bay, and similar functioning rooms.

EVALUATION METHODS AND ACCESS

In performing the interior leak audit and exterior façade evaluation, Gale used the following methods and information:

- Architectural elevation, site plan, building schematic sections and floor plans (sheet numbers EX 1.1, EX 1.2, EX 2.1, EX 2.2, EX 3.1 and EX SP) dated 12/01/2010, as prepared by Brown, Lindquist, Fenuccio & Raber Architects, Inc. of Yarmouthport, MA.
- Interior access to second and first floor building areas to view exposed surfaces of ceilings and walls for evidence of moisture intrusion. At the time of Gale's site visit, limited escorting by the police staff was available, therefore, only a general audit of more severe leak locations were included in Gale's review.
- Access to the building perimeter from ground level to observe building façade conditions. Observations using binoculars was performed to view upper wall areas where necessary.

Refer to the 24" x 36" building elevation and floor plan mark ups located in the back of this report for actual observed locations of deficiencies. Based upon the visual observations made during our initial site review, it is Gale's opinion that more in-depth evaluations with masonry test cuts are not required at this time, and engineering judgment regarding the cause of water infiltration, masonry deterioration, and steel lintel corrosion may be used in this case. Likewise, based upon our field discussions with BLFR, we understand that the entire roof system is in relatively poor condition, and BLFR has determined that the existing roof system will require replacement for each section of the building.

OBSERVATIONS

Due to the numerous observed defects in the exterior masonry walls of the building and interior leak conditions which were related to deficiencies in the building envelope, Gale segregated our observation comments into a summarized, bullet format. Please note that Gale's evaluation was limited to the building façade areas of the building, however, we include comments and recommendations regarding the interior leak issues as relative to surrounding grades and existing roof system deficiencies.

Interior Leak Observations

- Evidence of repetitive and considerable moisture infiltration was found at the second floor interior wall, ceiling and floor finishes of the east exterior wall. Extensive moisture related damage to wall and ceiling finishes is especially concentrated in the front stairwell area of the building directly adjacent to the

front (east) wall above the apparatus bay. Wall gypsum is bowed and bellied, with moisture staining. Paint and gypsum wall board is flaking, blistered, and surface scaling at much of the surface area of the front wall and ceilings. Wood flooring at the upper landing hallway area shows evidence of long term moisture staining and moisture related surface rot. The majority of wall finish damage appears to be located within a few feet above the second floor level. Exterior wall conditions at this area of the building include apparent masonry replacement.

- At the top of the east interior staircase, there exists an approximate 1 ft. x 1 ft. hole in the wall board, where the interior surface of the perimeter brick wall can be seen. Within this opening, several layers of pre-existing wall plaster, wood furring strip, wood stud, and the latest wall gypsum board could be identified. It appears that two (2) layers of plaster were placed directly upon the interior brick wall surfaces. The majority of the wall components were spalled, cracked, moisture stained and powdered, which made actual construction lay up difficult to ascertain.
- Throughout the separate offices of the main building second floor, evidence of prior water infiltration was noted via moisture staining, peeling paint, blistering and bowing wall or ceiling sheetrock, and apparent re-painting efforts. The doghouse dormer walls and surrounding ceiling sections appear to have been affected by most of the water infiltration issues.
- Within the center corridor of the main building second floor, spot locations of water staining and peeling or blistered paint has occurred in ceilings, wall-to-ceiling transitions, and around door jambs. Similar water infiltration affected damage to finishes appears in random locations throughout the second floor ceiling and wall sections, including ceiling areas above electrical light fixtures.
- Along several areas of the second floor wall surfaces, that are directly adjacent to the exterior wall, considerable moisture infiltration was evident within wall corners and wall base locations. Wood trim at the wall base has swelled and bowed, with minor rot. Wall corners have continuous peeled coatings with extensive moisture staining and bowed wall board.
- Evidence of prior re-painting and sheetrock patching appears at the ceiling finishes of the single story gable roof within the south stairwell area. Several of these repaired areas have already been affected by additional water damage, as the coatings have already started to peel, and gypsum has slightly bowed in some cases.
- At many of the HVAC vent grills in the second floor area, moisture staining and peeling paint was observed at the corners or perimeter wall areas of the grills.
- Blistering and apparent moisture related deterioration was observed in several areas of the mechanical room ceiling finishes.
- Moisture staining was noted on the first floor mechanical room concrete floor slab. Overlapping outlines of dried moisture trailing and darkened concrete was observed throughout the mechanical floor slab, however, appeared to be concentrated at slab areas adjacent to the west (rear) exterior wall. Exterior

grade located just outside the west wall is approximately 3 ft. to 4 ft. higher than the mechanical room floor. The wood stud wall construction is partially exposed at the interior of the west (rear) wall, and evidence of repetitive and long term moisture damage was observed in the wood sill plate and bases of studs. The bottom sections of wall plaster are water stained, with plaster and efflorescence leaching or discoloration noted atop the wood sill.

- At the interior brick wall surfaces of the southwest entrance foyer, coatings at the lower wall sections are peeling from the brick substrate. Efflorescence covers a portion of the lower wall brick. Mortar joints at the lower wall area appear to be in fair condition, with minor surface powdering.

Exterior Façade Observations

- In general, perimeter grade is placed against much of the brick façade. At the west (rear) elevation, grade appears to be at its highest, approximately 4 ft. above first floor slab elevation. Grade elevation reduces relatively linearly toward the east (front) elevation of the building. The west and north elevations of the building have earth abutting the building façade or top of foundation walls; the east elevation of the building has sloped pavement which transitions to the apparatus bay, and the south elevation of the building includes brick paver sidewalks and earth which directly abuts the masonry façade of the building. In some cases, the brick paver sidewalk has depressions or swales adjacent to the building walls, which appear to pitch slightly toward the building. Surrounding earth at the west and north faces of the building slightly pitch toward the building at some areas.
- A concrete transition threshold was placed at the southeast building entrance door. This concrete threshold is cracked, with minor spalling of the concrete.
- Horizontal masonry joints located along the bottom of the walls near the earth interface are continuously cracked at many areas. The mortar joints in contact with the upper layer of earth can be chipped away, as the cracked joints are delaminating from the wall substrate. Some powdery mortar surfaces were noted in these lower joints as well.
- Miscellaneous abandoned fasteners or anchors were noted at several areas in the brick façade. Likewise, holes or chipped masonry were noted from apparent prior existing fastener embedment.
- Based upon the extent of water staining throughout the second floor ceilings and walls, with concentrated leaks noted at the doghouse dormers, and the visual observations made of the current roofing conditions from ground level, it is likely that the existing roof system and flashings are one of the major causes of these leaks.
- Wood rake trim which spans continuously along the rakes of the roof systems terminate in a slightly recessed condition at the upper brick wall collar. This condition may likely add to some water infiltration and degradation of the multi-wythe brick masonry walls.

- Slightly grooved earth, with vegetation debris, loose masonry pieces and other items surround some of the building perimeter areas. Questionable roof gutter and related positive drainage performance has likely caused the grooving and pocketing conditions adjacent to the foundations. Loose debris and vegetation should be removed.
- The steel lintels at the east façade of the building (over the three large apparatus bay openings) are considerably corroded, and surrounding masonry at the lintel support ends is deteriorated. Corrosion at steel lintels was also noted at the other three building facades, via evidence of removed scaling masonry from three of the lintel support locations. Extent of corrosion ranged from moderate to severe. It is likely that the original steel lintels were not hot-dip galvanized, or otherwise protected from corrosion with a long term coating.
- Window wells at the west elevation are filled with vegetation, leaves and debris.
- At several of the fenestration openings, minor step cracking or mortar joint segregation was noted within the masonry. Minor building settlement (from years past), thermal movement and influences from steel lintel corrosion are likely the causes of this masonry distress.
- The left side brick masonry pillar, which is part of the east façade, has segregated from the building front wall. There exists a continuous vertical crack between the pillar masonry and front wall surfaces. This crack ranges in width from 1/8" to approximately 3/8", with loose mortar along the crack threshold. The brick masonry at the base of the pillar is face spalled, delaminated, cracked, and includes deteriorated mortar joints.
- Mortar joints, in general are in fair condition. Evidence of several prior re-pointing and spot masonry repairs were noted at various locations throughout the facades. The mortar was fairly hard with spot areas of the joints slightly powdery and/or delaminating. Gale noted, however, that the mortar joints are weathered, where the surface of the mortar is recessed with varying depths throughout the facades.
- The east façade brick window sills (at the two outer window infilled openings) do not appear to include extended sill flashing, sealant or weeps.
- The majority of penetrations through the masonry facades are rough cut openings into the brick, with spray foam applications inserted into the void. In some cases, there is no sealant, spray foam, or other weather sealing material noted in the penetrations. The spray foam, where used, appears to be very porous and deteriorated, and in many cases is recessed from the brick façade surfaces, causing somewhat of a "water catch" in the wall.
- Weather sealing surrounding the upper wall louver at the upper gable wall of the east elevation is questionable. The octagonal shaped louver insert appears to be very aged, distorted, and has questionable weather resistance in driving rain applications.

- Extensive vegetation growth is present on the building facades, especially concentrated on the north façade of the building. The vegetation growth includes algae, lichen, and moss. Dark staining, likely from mold and mildew was noted at many surfaces of the east and north building facades. At some locations, the moss and lichen growth appeared to be fairly established where the vegetation growth extending into the substrate of the cracked or delaminated mortar joints.
- In general, exhaust hoods, grill inserts, and other façade surface mounted items are rusted, with surrounding grout and mortar cracked or containing voids.
- In general, window perimeter sealants are poor. Older sealants are cracked, with adhesive and cohesive failure. Newer sealant applications have questionable application quality, as there are many voids and fissures in the sealant application. Sealant depth to width application ratios do not appear to conform to SWRI and manufacturer tolerances. The depth of sealant application and quality of remaining bond is questionable. In some cases, the sealant could be easily peeled from the substrate, pulling loose masonry mortar from the substrate.

GENERAL REPAIR RECOMMENDATIONS

Based upon Gale's field observations of the interior leak and exterior façade conditions, we recommend the following general repairs to the building:

- Replace the entire existing roofing system. The new roofing system should include high quality architectural, grade asphalt shingles; ice and water shield underlayment at ridge, eaves, rakes and valleys, roofing felt underlayment within field area of roof; stainless steel, copper, aluminum or lead flashings at doghouse dormers, chimneys and other penetrations; and properly extended drip edges along roof eaves. Improvements to gutters and downspouts should be included. Gale also recommends that additional evaluation and consideration be placed in abandoning the current active gable wall vent louvers, and perhaps placing a continuous roof ridge vent with vented eave flashing or soffit vents. By eliminating the current gable wall vents, considerable weather sealing of the gable walls might be accomplished. The walls could be solidly filled with matching masonry, or if the building historical aesthetic is required, a false louver cover could be installed in front of the masonry infill backup. If the gable louver feature needs to remain as functional, Gale recommends that a high performance, water resisting unit with curled louvers be placed to limit the amount of water infiltration from driving rain events. The additional evaluation regarding attic ventilation is important in order to understand which ventilation system improvement is more appropriate. Perimeter sealant to complete the louver installation is required. Gale recommends that discussions with the roofing manufacturer be included in the roof system ventilation research, as some requirements for infilling gable vents may be necessary along with installation of ridge vent and soffit or eave vent to maintain warranty.
- Due to long term roof leaks, it should be assumed that deteriorated wood roof deck replacement will be required.

- Due to the extent of weathered and deteriorated mortar joints, Gale recommends that all the façade elevations be re-pointed 100%. High pressure washing should be considered as a first step to remove mold, mildew, vegetation, and loose mortar. Re-pointing may include historically correct mortar composition, to match color, texture, hardness, joint geometry of the original installation. Petrographic examination could be included as part of the research of existing, original mortars to help identify the ingredients and condition.
- Structural pinning of the front, left (south east corner) brick pillar should be included with the brick masonry repairs. After pinning, repointing of all mortar joints and spot brick unit replacement at the lower pillar sections should be performed.
- Repointing of the mortar joints should include masonry which extends below grade level.
- Defective, deteriorated, spalled, scaling, cracked and pitted brick units should be replaced. At areas of the masonry which include prior masonry replacement or repairs some consideration to remove masonry and reset properly matching brick should be included.
- Steel lintels above each of the building fenestrations and openings should be exposed prior to other recommended façade repairs. Mildly to moderately corroded lintels should be re-evaluated by a structural engineer to determine if they may be cleaned, recoated and remain in service. Lintels with more severe corrosion should be replaced with properly designed, hot-dip galvanized steel sections and anchored as necessary. Lintel repairs and replacement work should also include flashing, sealant joints, weeps, and brick masonry repairs at support locations as applicable to each area.
- Sill flashing and/or sealant with weep installation should be considered at masonry window sill areas.
- After completing repairs to the masonry facades, and resolving penetration sealing and improvements to attached items, a high performance silane/siloxane, dual acting brick sealer should be considered to help with long term water repellency of the façade. Additional testing including petrographic examination and absorption testing of the brick and mortar may be performed to assist in the proper selection of the sealer.
- Roof rake trim should be modified, or adequate end flashing be placed where the trim transitions to the upper brick wall collars.
- In general, roof perimeter trim should be replaced, or it historically significant, be repaired, sealed, and recoated.
- Remove existing perimeter sealants at all fenestrations, and install proper backer materials and high performance building sealant. Prior to performing this work, hazardous materials testing should be completed to verify the potential presence of PCB9 or asbestos containing materials.

- Remove all abandoned fasteners and other façade attached abandoned items from the exterior masonry. Patch the masonry at these areas.
- Remove existing spray foam and similar deteriorated infill materials at exterior wall penetrations. Install non-absorptive, elastomeric, UV stable weatherproofing materials to seal the penetrations.
- Remove rusted vent shrouds and wood constructed vent shrouds from the façade. Replace with non-absorptive, corrosion resistant units, along with perimeter sealants and re-grouted substrates where required. Fasteners should be stainless steel.
- Grout and mortar surrounding pipe and conduit penetrations should be removed. Corroded pipes should be cleaned and recoated. Re-grouting of the wall substrate around the pipe or conduit should be placed, along with outer perimeter sealant.
- Exterior grade surrounding the building should be cleaned to remove all debris, vegetation, etc. Re-grading to achieve a positive slope away from the building should be included, along with lowering adjacent grades where possible to keep brick masonry above the earth line. After achieving a lower, positively pitched surrounding grade, a continuous trough of ¾" crushed stone should be laid as an apron around the perimeter of the building to assist in proper drainage and to help prevent future erosion from roof drainage.
- Deteriorated wood framing and plaster/gypsum finishes should be removed from the inner wall surfaces, so that a negative side waterproofing application may be applied at the west end, below grade side of the building. Another option would be to excavate along the exterior of the foundation to place a positive side waterproofing system. This recommendation may be considered as more of a long term repair effort, as exterior regarding with drainage improvements may reduce much of the water infiltration at this end of the building.
- Brick paver sidewalks should be repaired to pitch positively from the building, and to eliminate depressions adjacent to the building façade. Some consideration for brick sidewalk replacement should be given, as grade slope and elevation adjustments are required at the south side of the building. Free draining, granular fill with drainage composites, perimeter sealants and door threshold improvements could be a part of the new sidewalk construction.

CONSTRUCTION COST ESTIMATES

Respective of the above noted general repair recommendations to the building façade and water infiltration issues; Gale offers the following construction cost estimates:

• Staging, building access and general conditions:	$50,000.00 to $75,000.00
• Brick re-pointing and miscellaneous masonry repairs:	$150,000.00 to $175,000.00
• Steel lintel repairs and replacement (50/50):	$40,000.00 to $50,000.00
• Façade penetration repairs, unit replacement & sealer:	$20,000.00 to $25,000.00
• Flashing, trim modifications and trim repair/replace (depending on replace extent)	$25,000.00 to $65,000.00
• Fenestration perimeter sealant replacement:	$5,000.00 to $8,000.00
• Roofing system replacement w/ sheathing repairs/vent mod:	$45,000.00 to $65,000.00
• Re-pitch surrounding grade with stone trough:	$25,000.00 to $35,000.00
• West side foundation waterproofing/wall finish repair (dependent upon method):	$45,000.00 to $85,000.00
• East elevation sidewalk and surrounding grade improvement:	$125,000.00 to $150,000.00
Total estimated construction cost (order of magnitude):	$530,000.00 to $730,000.00

The engineering construction cost estimates provided above are based upon the general repair recommendations excluding engineering fees. The construction cost estimates have been compiled from various sources and may be greater or less than the actual construction costs. Gale has no control over many variables affecting the construction costs such as bid climate, contractor workload, and labor/material costs at the time of Contractor bidding. Therefore, Gale does not recommend using these estimates for sensitive budgeting purposes and cannot guarantee estimate accuracy.

We trust that this evaluation report suites your needs at this time. Please do not hesitate to contact Gale if you require additional engineering services regarding this important project.

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GALE

APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

1. Front elevation of the building (Southeast building corner).

2. Evidence of moisture infiltration is noted along several wall base areas of the second floor offices. Blistered and peeling coatings with bowing or swelled gypsum wall board and wood trim is common at the water leak affected locations.

3. At some ceiling-to-wall transitions of the second floor offices, evidence of water travel from apparent exterior envelope leaks were noted. Many of these more lightly affected areas of moisture related coating delaminations are located at interior office and hallway locations, further away from direct exterior wall or roof eave sections.

4. Considerable coating failure, blistering, peeling, etc. is common at dormer window and perimeter ceiling transitions.

5. Wall surfaces along the sides of the roof dormer locations are typically riddled with blistered and peeling coatings from moisture intrusion.

6. Several of the lower wall areas under the windows of the second floor show evidence of moisture related coating failures and bowing gypsum wall board.

7. Wall and ceiling finishes within the main center hallway of the second floor show evidence of moisture related coating failures.

8. At several of the HVAC vent louvers, Gale noted peeling coatings and moisture staining around their perimeters. Additional evaluation of the building HVAC systems should be included to verify that these leaks are not caused by issues other than roof leaks.

9. Repeated water infiltration appears evident at several of the second floor office wall and ceiling finishes, via the water staining and repeated coating failures noted at previously patched surfaces.

10. In one of the second floor offices (IT room), temporary plastic shrouding was affixed to ceiling and wall surfaces to keep water leaks from damaging the electronic equipment.

11. Evidence of repeated water leaks from the main roof areas were noted at these previously repaired ceiling surfaces.

12. Moisture infiltration through the masonry walls due to high adjacent grade likely caused the coating failures and efflorescence at the lower sections of brick exterior walls along the south elevation.

13. The lower wood sill plate within the west elevation mechanical room is rotted, with repetitive moisture staining noted in the wall and slab surfaces. Exterior grade is approximately 3 ft. to 4 ft. higher than the mechanical room slab at this elevation.

14. Considerable moisture intrusion appears to be a common and recurrent issue at the front (east) building elevation. Wall gypsum is severely bowed, with coatings failing at the front stairwell located behind the exterior brick masonry wall.

15. Ceiling finishes above the front (east) stairwell area show evidence of moisture related coating failure.

16. An existing 1 ft. x 1 ft. (approx.) opening was located in the wall gypsum finish near the top of the front (east) interior staircase. The interior surfaces of the brick exterior wall was partially visible, along with two additional layers of cementitious plaster board which appears to have been placed directly upon the brick surfaces. A wood furring strip was located interior to the double plaster board layer, along with the more recent sheetrock wall materials. Evidence of considerable moisture intrusion was noted at each layer of material.

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17. Along the south elevation of the building, towards the west end, the surrounding grade is high and covers much of the brick masonry. Grade along several portions of this elevation appears to pitch slightly towards the building façade.

18. Exterior grade which abuts the west (rear) elevation is placed approximately 3 ft. to 4 ft. above the low level slab elevation, and in contact with the brick masonry. The grade appears to pitch slightly toward the building façade at some areas.

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19. At the south side, front entrance, the brick paved sidewalk is constructed directly against the building façade masonry, and has some vertically depressed areas adjacent to the building. Note the cracked concrete topping near the door threshold.

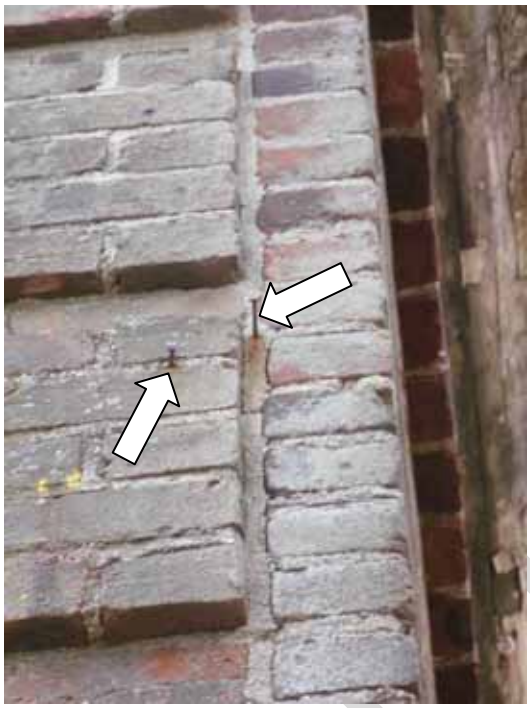
20. At the west (rear) elevation of the building, grade is placed against the brick masonry. Mortar joints along this façade are continuously cracked, with spalling mortar and open voids or cracks.

21. Grade is placed against portions of the north façade brick masonry, where varying degrees of vegetation growth and deteriorated mortar joints are noted.

22. Lower rake wood trim is typically terminated as "inset" to the brick wall upper collar. This condition may help direct water into the brick masonry wall system.

23. Steel lintels at the front (east) elevation located above the three (3) large openings are severely corroded. Brick masonry and mortar joints at each end of the steel lintel spans are typically cracked, spalling or delaminating from the wall.

24. The upper wall louver at the east elevation has questionable weather-tightness. Evidence of prior brick masonry replacement at the upper wall sections of this façade is evident via the mismatch in brick color and texture. Roof rake trim is cracked and split, with questionable weather tightness at joints.



25. Miscellaneous abandoned fasteners are located in sporadic locations of the exterior masonry. Note the condition of the brick mortar joints as considerably weathered, with inconsistent geometry and hairline cracks at the mortar to brick interfaces. (Photo at East elevation.)

26. At several penetrations through the exterior masonry wall, there is questionable weather-tightness surrounding the pipe or other items.

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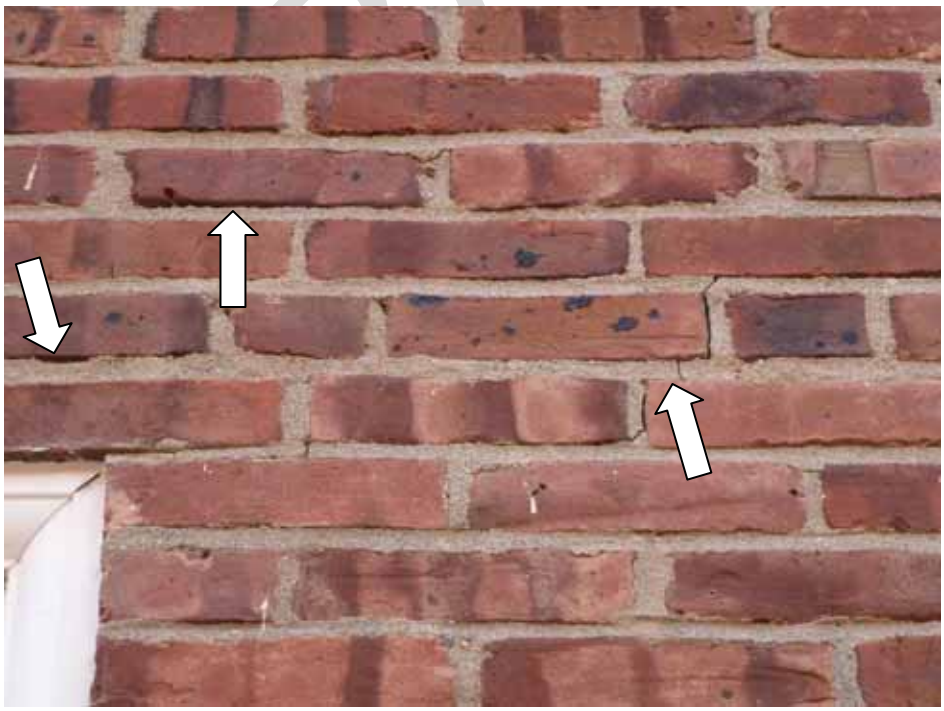
27. Brick sill construction do not appear to include extended flashing or sealants.

28. The south east brick "scab" pillar at the east (front) elevation is segregated from the main building façade, with a continuous crack along its interface. The masonry at its lower wall section is spalled and cracked, with open fissures in the pillar.

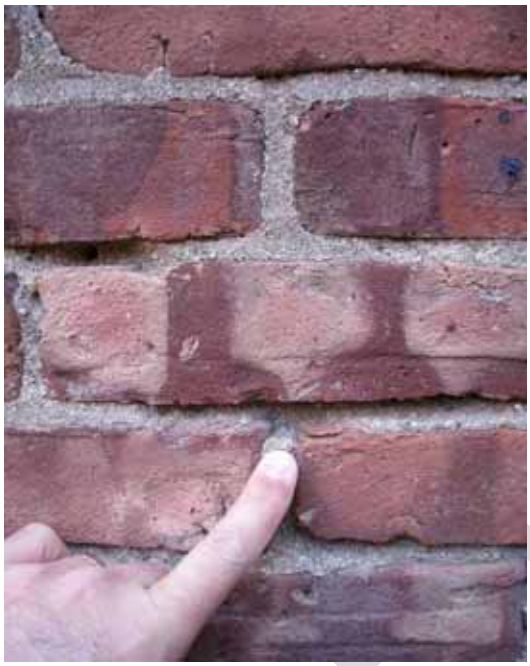
29. Upper sections of the east "scab" pillar indicate some minor segregation from the main façade.

30. The north elevation has considerable algae, moss and other vegetation growth which extends several feet up the side of the building.

31. At the north elevation, advanced or long term vegetation growth is evident. Outer, loose brick mortar was "flicked" from the surface of this joint, exposing additional vegetation growth within the open mortar joint. The surface of the mortar was slightly powdered and crumbling.



32. Minor step cracking was noted at a few of the masonry opening corners. Note the sporadically located voids in the masonry mortar joints.



33. Recessed and weathered mortar joints, holes from abandoned fastener locations, and minor spalling of prior mortar repointing efforts were noted in the exterior masonry.

34. Brick masonry and mortar joints at the upper corners of several window and door openings show evidence of scaling, spalling, cracks, and segregation from the wall substrate. These conditions are likely due to corroding steel lintels. Note gaps in poorly applied, window perimeter sealants.

35. Grout and mortar infill surrounding several wall penetration items are cracked, spalling or otherwise delaminated, with open fissures to allow further water infiltration.

36. Evidence of considerable corrosion to steel lintels was found at several openings. Brick masonry and mortar joints are spalled and cracked at these locations. Removal of loose masonry at this particular area exposed the laminar corrosion of the embedded steel lintel.

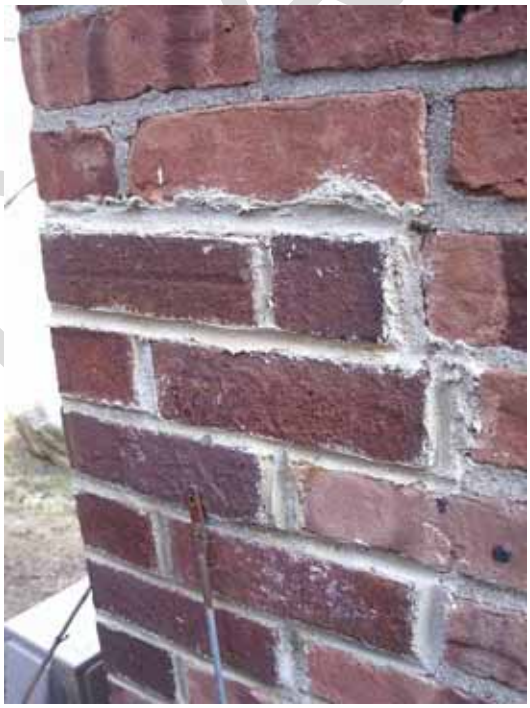
37. Efflorescence staining was noted at the head of several window openings.

38. Mostly all pipe, conduit, and related penetrations through the brick masonry walls appear to be placed through oversized and roughly cut voids, and then filled with expanding foam. The foam placement methods and extent of degradation indicate questionable efficiency for water tightness in these areas.

39. Application of window perimeter sealants do not appear to have consistent geometry, bond, tooling, or backer material placement, with obvious voids left in the finished work.

40. Several areas of window perimeter applications have cohesively and adhesively failed, where the sealant can be peeled back, pulling loose mortar from the masonry wall.

41. Many window perimeter sealants are weathered, cracked, and failing.



42. Prior masonry wall repairs have mismatched brick color, texture, and poorly tooled mortar joints.

43. Vent shrouds, such as this plywood constructed unit should be removed and replaced with a proper, non-water absorbing, non-corroding unit.

44. A few of the existing metal vent shrouds are rusted. Some minor hairline cracks in surrounding mortar was noted at its wall interface.

GALE

APPENDIX B

ELEVATION DRAWINGS AND INTERIOR LEAK PLANS

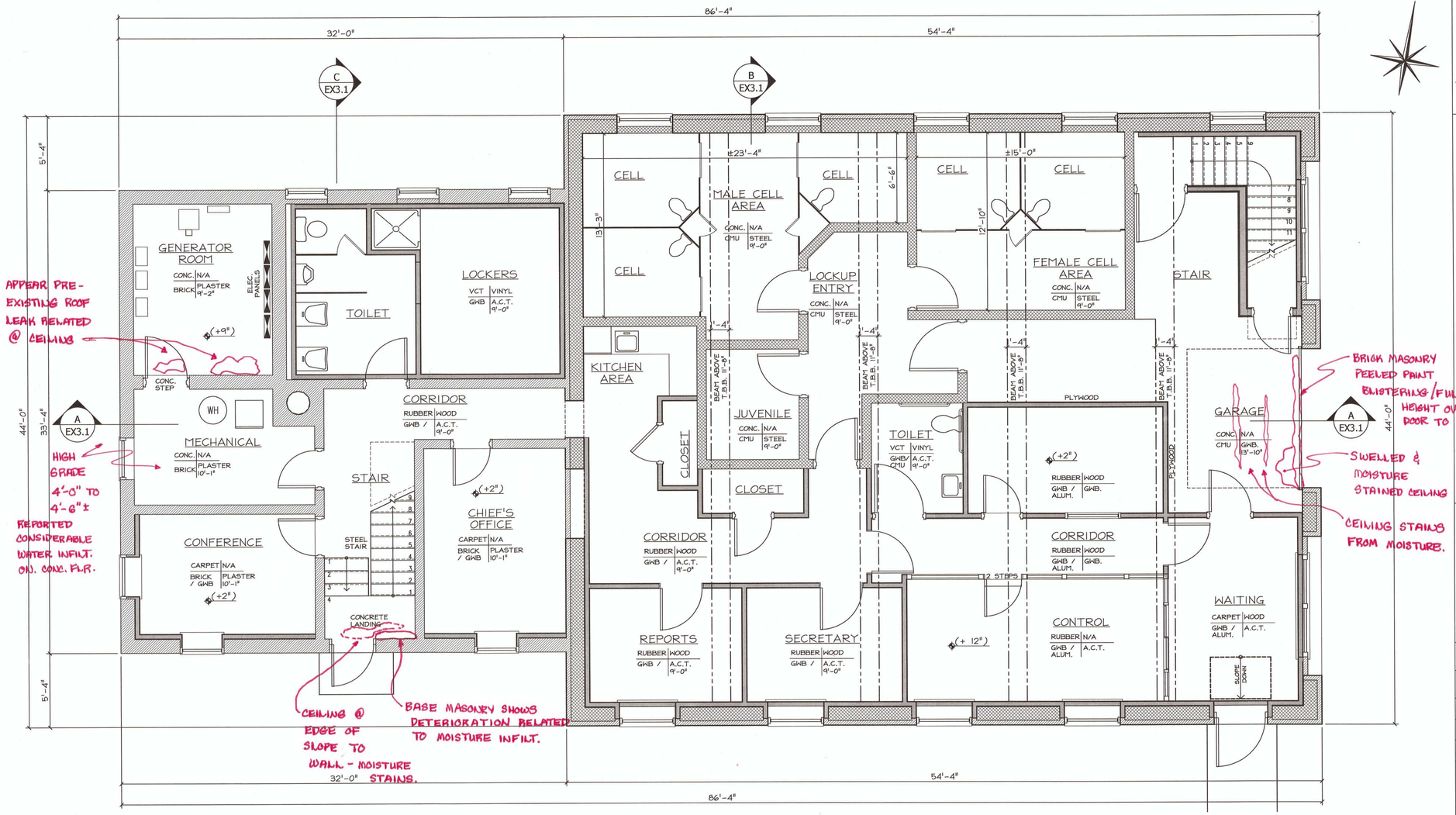
NANTUCKET POLICE STATION

INTERIOR LEAK OBSERVATIONS

SHEET NO. 4 OF 4

FIELD OBSERVATIONS : THURSDAY , FEB. 17 , 2011

GALE ASSOCIATES , INC. D.A.M. #823870



1 FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

FLOOR TO FLOOR = 11'-6" @ WEST WING

STAMP:

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.DRPARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING FIRST FLOOR PLAN
1/4" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.: EX1.1

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NANTUCKET POLICE STATION

INTERIOR LEAK OBSERVATIONS

SHEET NO. 3 OF 4

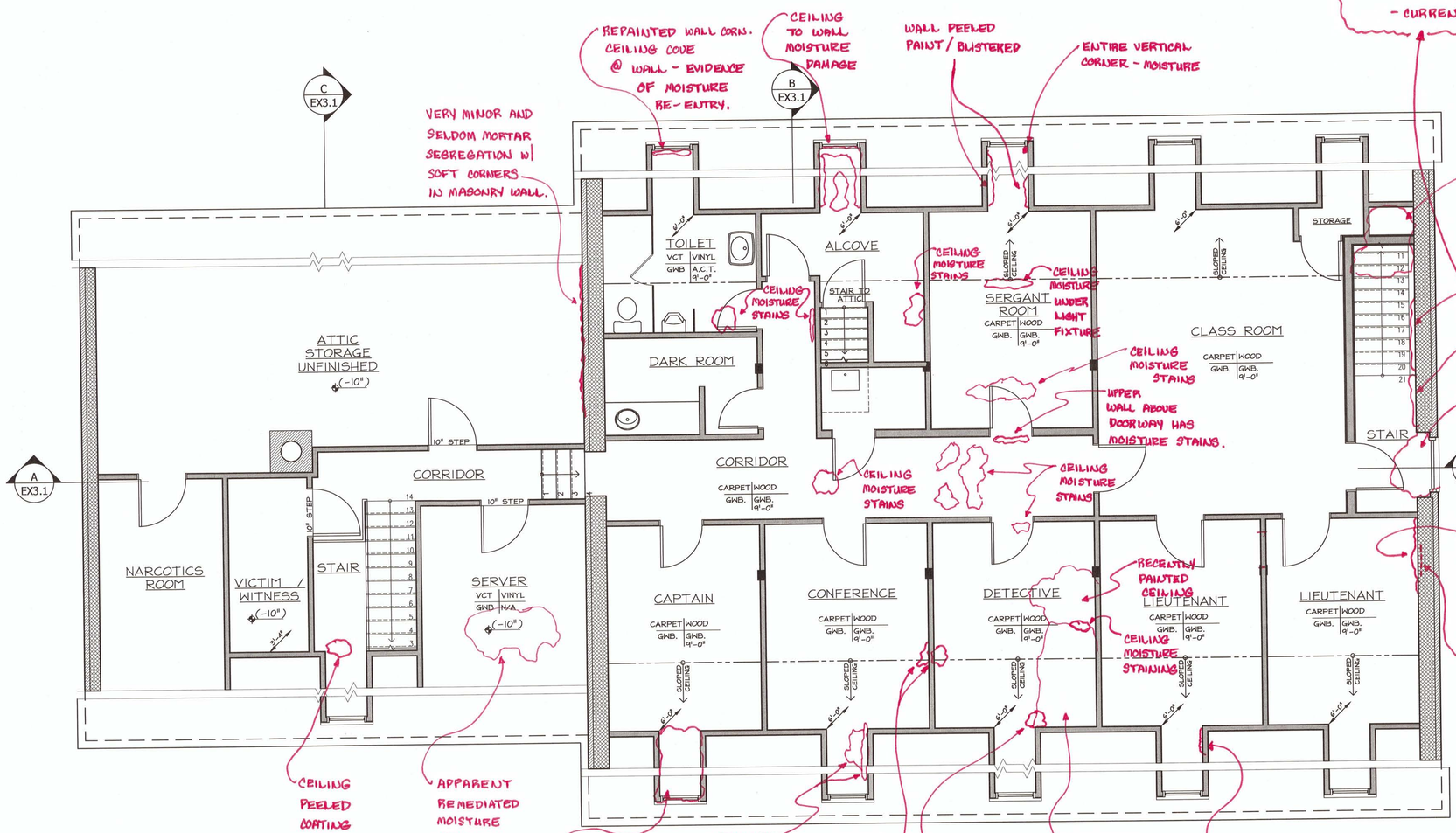
FIELD OBSERVATIONS : THURSDAY, FEB. 17, 2011

GALE ASSOCIATES, INC. D.A.M. #823870

GENERAL MATERIAL LAYERS NOTED @ EAST WALL, EXISTING HOLE

EXTERIOR

- BRICK SURFACE
- 1/2" THK. PLASTER ON BRICK (HAIR REINF.)
- 5/8" x 1 5/8" VERTICAL WOOD FURRING STRIP
- TWO (2) ADDT'NL LAYERS PLASTER ±?
- STUD 1 1/2"± x 2 1/2"
- CURRENT SHEETROCK.



1 SECOND FLOOR PLAN

Scale: 1/4" = 1'-0"

STAMP:

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
PH 508-362-8382
FAX 508-362-2828
WWW.GRARCHITECTS.COM

EXISTING CONDITION
NANTUCKET POLICE STATION
20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING SECOND FLOOR PLAN
1/4" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.:

EX1.2

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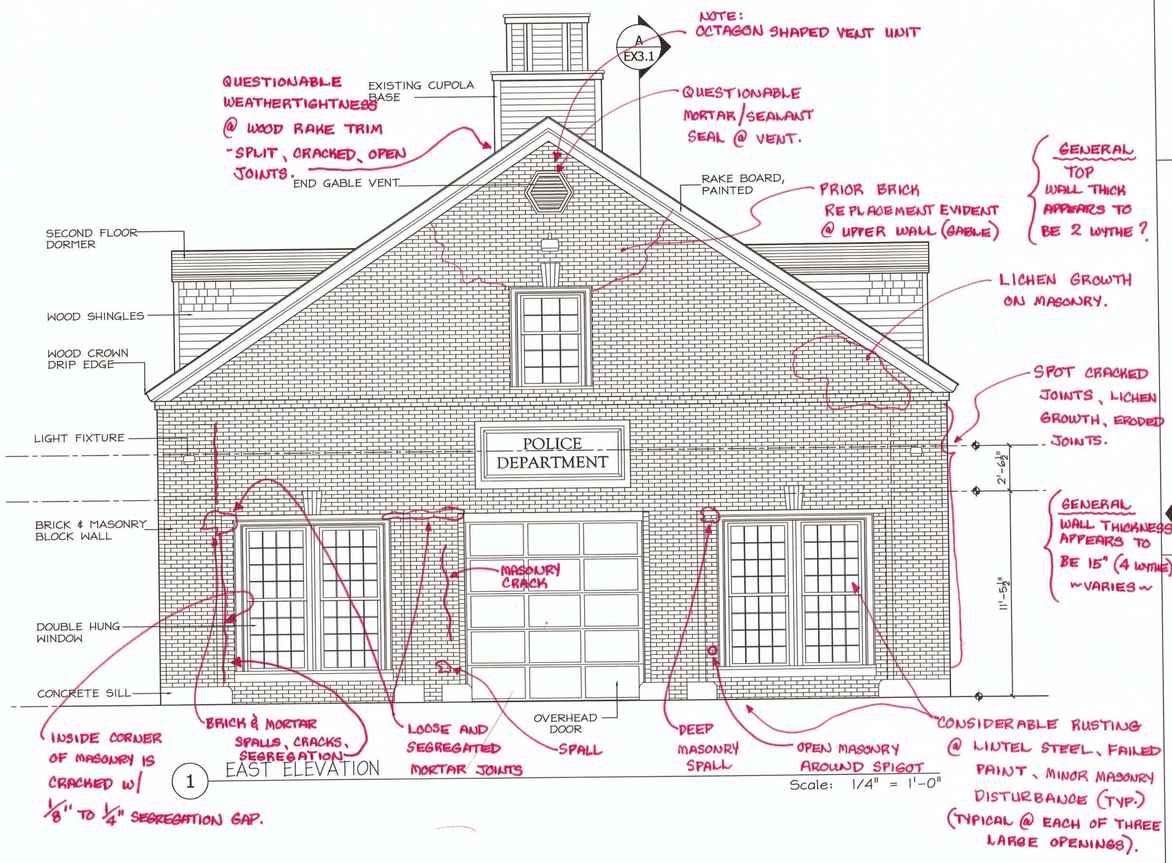
NANTUCKET POLICE STATION

EXTERIOR FACADE DEFECTING

SHEET NO. 1 OF 4

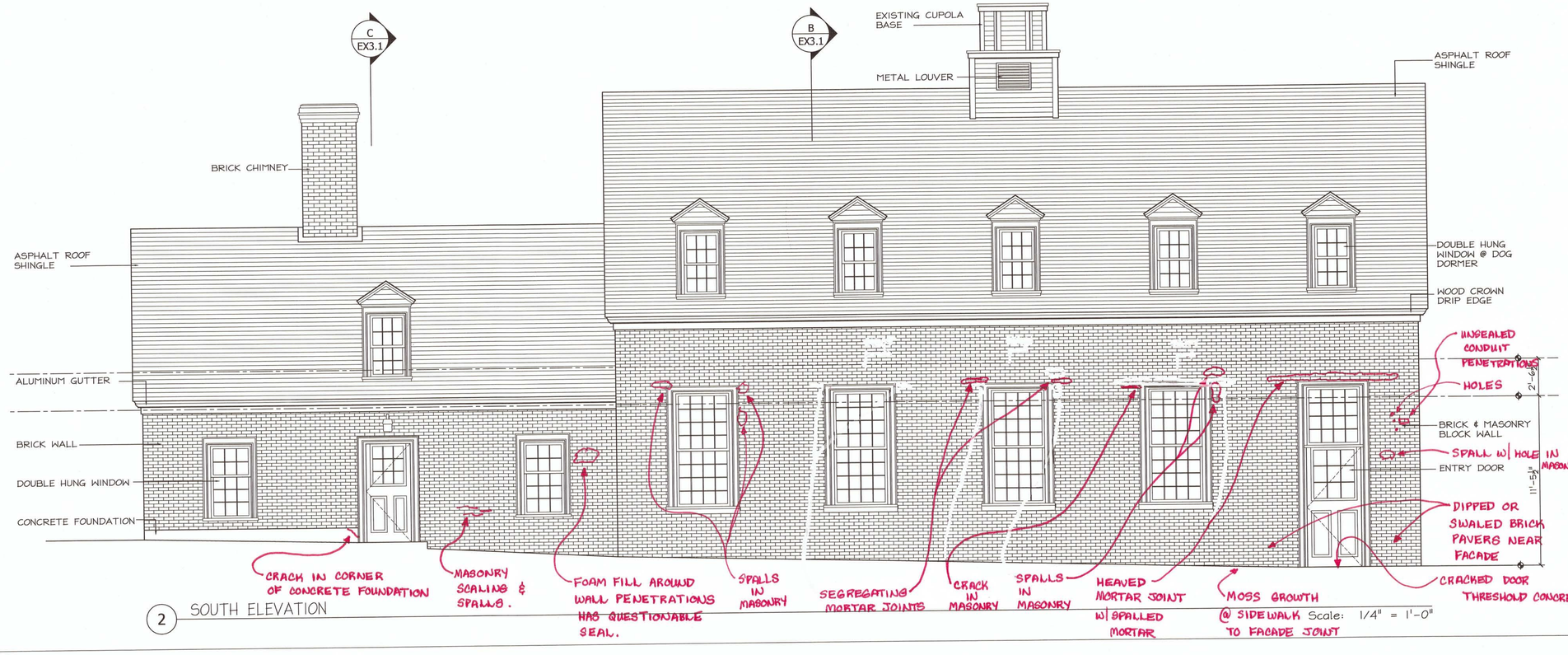
FIELD OBSERVATIONS: THURSDAY, FEB. 17, 2011

GALE ASSOCIATES, INC. D.A.M. #823870



1 EAST ELEVATION

Scale: 1/4" = 1'-0"



2 SOUTH ELEVATION

Scale: 1/4" = 1'-0"

STAMP:

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203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING BUILDING ELEVATIONS
¼" = 1'-0"

DATE ISSUED: 12.01.2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.: EX2.1

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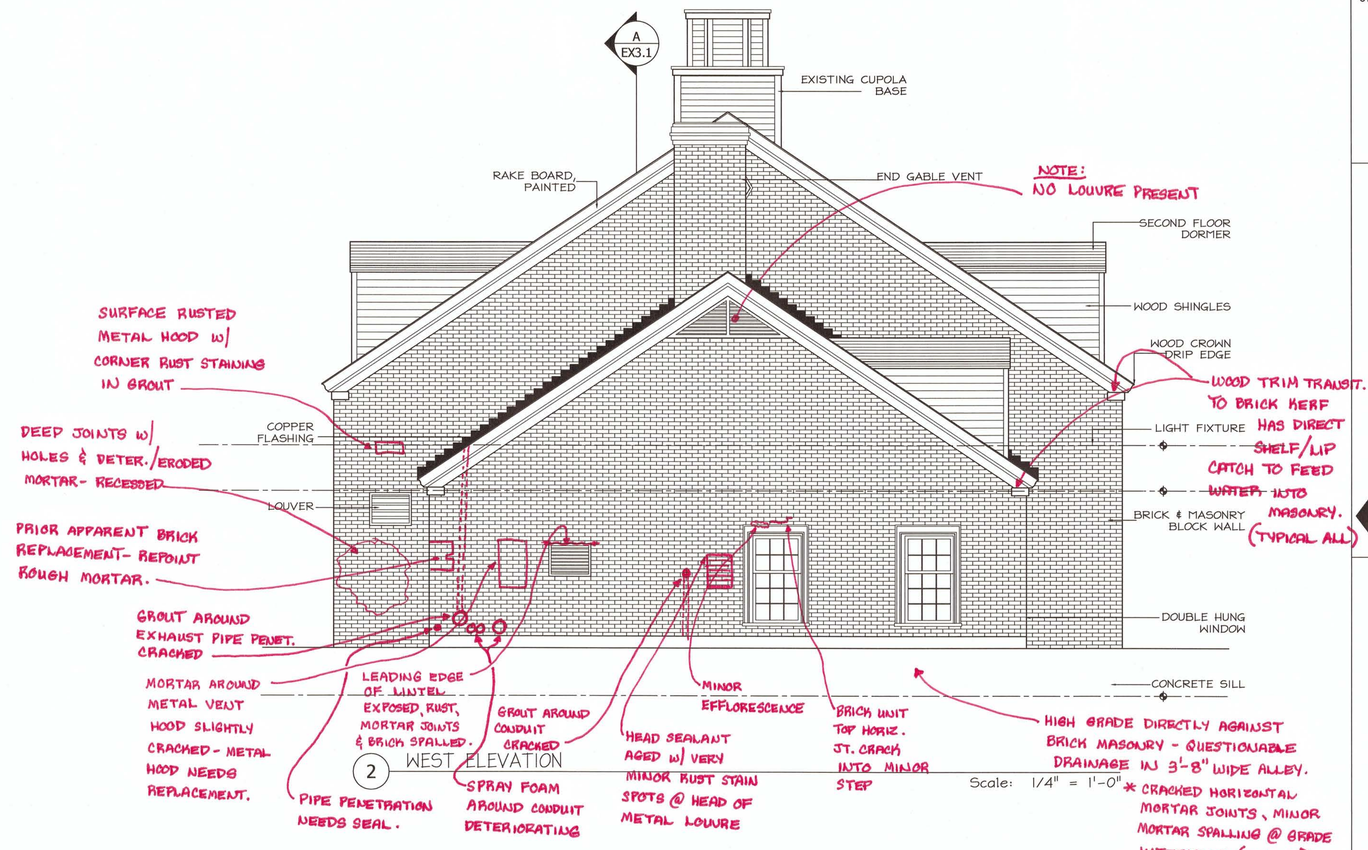
NANTUCKET POLICE STATION

EXTERIOR FACADE DEFECTING

SHEET NO. 2 OF 4

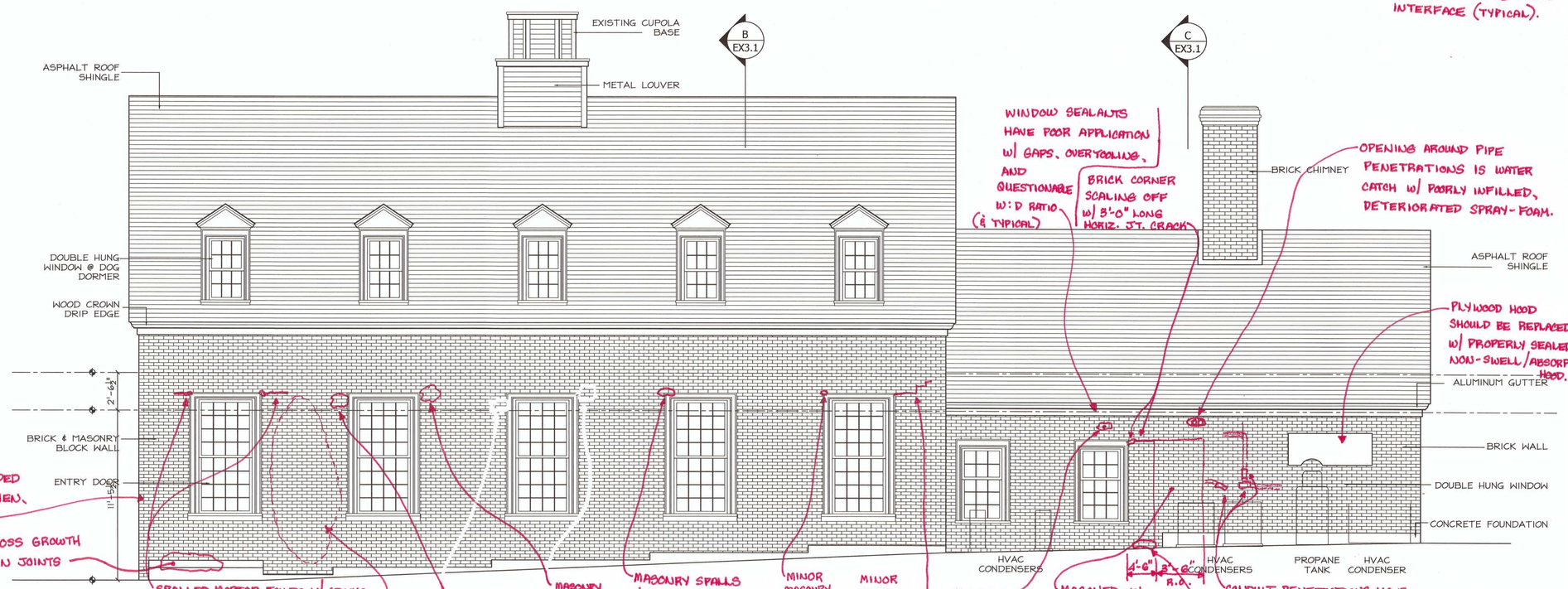
FIELD OBSERVATIONS: THURSDAY, FEB. 17, 2011

GALE ASSOCIATES, INC. D.A.M. #823870



2 WEST ELEVATION

Scale: 1/4" = 1'-0"



4 NORTH ELEVATION

Scale: 1/4" = 1'-0"

STAMP:

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PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING BUILDING ELEVATIONS
1/4" = 1'-0"

DATE ISSUED: 12.01.2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

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Appendix # 4

Hazardous Material Survey and Testing Results –dated February 3, 2011 by Hygienetics Environmental Services, Inc.

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LIMITED, NON-DESTRUCTIVE INVESTIGATIVE SURVEY REPORT FOR HAZARDOUS MATERIALS

OLD NANTUCKET POLICE STATION
NANTUCKET, MASSACHUSETTS

Prepared for:
Brown Lindquist Fenuccio & Raber Architects, Inc.
203 Willow Street, Suite A
Yarmouthport, MA 02675

Prepared by:
Hygienetics Environmental Services, Inc.
33 Arch Street
Suite 2900
Boston, MA 02110
A Subsidiary of:

esis

February 3, 2011
Hygienetics Environmental Project Number *1076.715*

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APPENDICES

Appendix A Asbestos Analytical Data
Appendix B Lead-Based Paint Inspection Forms
Appendix C Site Photographs
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Appendix E Limitations

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CERTIFICATION OF RESULTS

This report has been prepared for the exclusive use of Brown Lindquist Fenuccio & Raber Architects, Inc. (BLFRA) and all their successors, assigns and lenders, solely for use in an environmental evaluation of the site. Photocopying and use of this document by parties other than those designated by BLFRA and their successors, assigns and lenders, is prohibited without the prior written consent of Hygienetics Environmental Services, Inc.

Respectfully submitted this 9th day of February 2011.

Hygienetics Environmental Services, Inc.

Thomas A. Moody

Thomas Moody
Professional Engineer

Bill McBirney
Regional Director, CHMM

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EXECUTIVE SUMMARY

Hygienetics Environmental Services, Inc. (Hygienetics Environmental) was contracted by BLFRA to conduct a limited, non-destructive survey for hazardous materials at the Old Nantucket Police Station in Nantucket, Massachusetts. The purpose of the survey was to identify what hazardous materials, including asbestos-containing materials (ACM), lead-based paint (LBP) and other above ground hazardous materials (OHM) are present. This report describes the survey methodology and laboratory analysis results, and provides recommendations if the hazardous materials are to be removed.

Asbestos-Containing Material Results

Hygienetics Environmental performed a limited, non-destructive investigative survey to identify ACM at the Old Nantucket Police Station in Nantucket, Massachusetts on January 28, 2011. The scope of the survey included sampling of all accessible friable and non-friable materials. The following types of materials were confirmed to contain asbestos based upon bulk sample analytical results:

ASBESTOS CONTAINING MATERIALS **Old Nantucket Police Station** **Nantucket, Massachusetts**		
MATERIAL	**LOCATION**	**ESTIMATED TOTAL QUANTITY**
Yellow Block Linoleum	Locker Room and Bathrooms – 1st Floor; Darkroom and Bathroom – 2nd Floor	454 SF
Black Mastic Associated With 12"X12" Orange Mottled Floor Tile[1]	Hall Closets and Closet Beneath Stairs, Stair Landing – 1st Floor; Server Room, Hallway and Alcove Room, Stair Landings – 2nd Floor	560 SF
Black Mastic Associated With Blue Vinyl Flooring[1]	Hallways, Kitchen Area, Report Room, Secretary Room, Office Across from Control Room, Control Room and Waiting Area – 1st Floor	1,052 SF
Black Adhesive Behind Gold Splash Guard[2]	Kitchen Area – 1st Floor	45 SF

[1]12"x12" Orange Mottled Floor Tile and Blue Vinyl Flooring must be managed as ACM also due to ACM Black Mastic contamination.
[2]Gold Splash Guard in Kitchen Area must be managed as ACM due to ACM Black Adhesive contamination. ACM Black Adhesive may also be behind Wood Wall paneling in Kitchen area. Hygienetics recommends that the Wood Wall Paneling in the Kitchen Area also be managed as ACM.

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POSSIBLE ASBESTOS CONTAINING MATERIALS NOT INSPECTED

Inaccessible Shafts, Chases and Wall Cavities

Hygienetics did not inspect inaccessible or hidden shafts, hidden chases or wall cavities. Hygienetics strongly recommends that all hidden shafts, hidden chases and wall cavities are inspected for ACM in conjunction with any renovation/demolition activities.

Old Electrical Wiring, Electrical Mounting Boards, Electrical Penetration Sealants

Hygienetics did not sample any electrical wiring. It is assumed that older electrical wires are present throughout the building. Occasionally, old electrical wires are wrapped in an asbestos casing or cloth.

Hygienetics did not inspect any electrical mounting boards or panels. ACM Transite panels and/or 'Ebony" boards were used as electrical mounting panels/boards in the past. The possibility exists that ACM may be present in old electrical boards/panels/switchgear.

Hygienetics did not inspect any electrical penetration sealants as the wires were live. The possibility exists that ACM may be present in electrical penetration sealants.

Wall-Mounted Mirrors

Mirrors are occasionally affixed to walls by adhesive material. Hygienetics did not remove any mirrors in the School to inspect for adhesive material. The possibility exists that ACM may be present in Mirror adhesives.

Wall-Mounted Items

Wall-mounted items are occasionally are affixed to walls with adhesives. The possibility exists that during demolition/renovation activities additional adhesives and glues may be found behind wall-mounted items such as cork boards, wall tiles, decorative panels or other wall-mounted items.

HVAC Stick-Pin Adhesive

Hygienetics did not see any stick-pin adhesive on bare HVAC ductwork. However, Hygienetics did see foil/fiberglass wrapped HVAC ductwork but could not remove the foil/fiberglass to inspect for stick-pins/adhesive without damaging the foil/fiberglass. The possibility exists that ACM may be present in any HVAC ductwork stick-pin adhesive.

Mechanical, Electrical, Plumbing and Other "Operational" Equipment

Hygienetics did not inspect any operational equipment within the Old Nantucket Police Station,

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such as transformers, motors or generators. The possibility exists that ACM may be present within operational equipment.

Radiators

Hygienetics visually inspected radiators, but did not inspect inside any radiator units. The possibility exists that ACM, specifically ACM TSI pipe insulation or ACM "Transite" panels may be present within the heating units.

Exterior Waterproofing

Waterproofing, such as tar paper, was occasionally used behind the Brick work in older buildings. Hygientics did not visually observe any waterproofing but also did not break/penetrate any brick work. The possibility exists that ACM may be present in any waterproofing materials possibly behind brick work.

Lead-Based Paint Results

Hygienetics Environmental performed a lead-based paint investigative survey at the Old Nantucket Police Station in Nantucket, Massachusetts on January 28, 2011. The purpose of this survey was to identify painted surfaces that contain lead-based paint. The scope of work for this investigation included accessible building materials. Paint colors and surfaces containing measurable amounts of lead (greater than or equal to 0.1 mg/cm^2) are listed in detail in the inspection tables in Appendix B.

In general, components that **tested positive** for lead-based paint include:

SUMMARY OF LEAD BASED PAINT **Old Nantucket Police Station** **Nantucket, Massachusetts**		
COMPONENT	**LOCATION**	**COLOR OF PAINT**
Brick/ Wood/Plaster/Sheetrock	Throughout Building - Interior	Cream
Plaster/Sheetrock	Bathroom – 2nd Floor - Interior	Beige
Wood Wall	Throughout Building - Interior	Grey
Wood Stairs	Throughout Building - Interior	Brown
Plaster/Sheetrock	Captain's Room – 2nd Floor - Interior	Light Brown
Metal	Throughout Building - Interior	Dark Blue, Blue, Dark Brown, Brown, Red, Black, Green

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SUMMARY OF LEAD BASED PAINT Old Nantucket Police Station Nantucket, Massachusetts		
COMPONENT	**LOCATION**	**COLOR OF PAINT**
Pre-formed Floor	Cell Area – 1st Floor - Interior	Light Blue Speckled
Wood Window/Door Frames, Moldings and Trim	Throughout Building - Interior	White
Plaster Ceilings	Throughout Building - Interior	White
Wood Gutters	Exterior	White

Other Above-Ground Hazardous Materials

Hygienetics performed a visual assessment of other hazardous materials located at the property. These materials included:

- Mercury Vapor Fluorescent Light Tubes
- Light Fixture Ballasts
- Mercury Thermostats
- Emergency Lighting (Lead-Acid / Ni-Cad/ Lithium Batteries)
- Smoke Detectors
- AC and Refrigeration Units

The following tables shows the various hazardous materials discovered during the visual assessment of materials:

SUMMARY OF HAZARDOUS MATERIALS Old Nantucket Police Station Nantucket, Massachusetts		
Component/Location	**Quantity**	**Size**
Emergency Lights (Lead Acid Batteries)	10	Each
Fluorescent Lights (Bulbs)	36	U-Shape
Fluorescent Lights (Bulbs)	115; 6	4-Foot; 2-Foot
Fluorescent Light Ballasts	86	Each
Smoke Detectors	32	Each
Mercury Thermostats	24	Each
AC Units – Interior/Exterior	16	Each
Refrigerator	2	Each
Generator (Oil)	1	Each

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SUMMARY OF HAZARDOUS MATERIALS Old Nantucket Police Station Nantucket, Massachusetts		
Component/Location	**Quantity**	**Size**
Propane Tank - Exterior	1	Each

Note: Although visually observed, Hygienetics did not inventory any stored chemicals as it is assumed these are items utilized for maintenance purposes and would be removed for future use by Nantucket PO personnel.

Additionally, Hygienetics observed suspect mold in the 2nd Floor hallway and offices. One office had evidence of severe water intrusion, with part of the wall covered in polyethylene sheeting.

1.0 PURPOSE AND SCOPE OF WORK

Hygienetics Environmental Services, Inc. (Hygienetics Environmental) was contracted by BLFRA to conduct a limited, non-destructive survey for hazardous materials at the Old Nantucket Police Station in Nantucket, Massachusetts. The purpose of the survey was to identify what hazardous materials, including asbestos-containing materials (ACM), lead-based paint (LBP) and other above ground hazardous materials (OHM) are present. This report describes the survey methodology and laboratory analysis results, and provides recommendations if the hazardous materials are to be removed.

This report presents all investigative survey results for ACM, LBP and above ground OHM. Section 3.4 provides a listing of all observed ACM, including estimated quantities and recommendations. Copies of all asbestos bulk sample analytical results are provided in Appendix A. Sections 4.5 and 4.6 provide LBP survey results and recommendations. LBP inspection forms are provided in Appendix B to indicate specific locations where suspect lead-based paint was tested and the actual lead concentration at those locations. Lead results, as determined by Hygienetics Environmental using the x-ray fluorescence analyzer (XRF), are reported in milligrams of lead per centimeter squared (mg/cm^2).

2.0 SITE DESCRIPTION

The Old Nantucket Police Station, a former Fire Station, is a (2) two brick structure with a 3rd floor walk-up alcove/storage area. The Police Station was constructed in 1929, with subsequent renovations in 1971, 1995 and 1999. Interior flooring systems consist of wood, 12”x12” floor tile, linoleum, blue vinyl flooring, concrete, carpeting, and blue speckled terrazzo-like flooring. Interior walls consist of original plaster, brick and sheetrock. Ceiling systems include plaster, sheetrock, wood and 2x4 acoustical ceiling tiles.

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The Police Station is heated via central feed from an oil tank located outside the building to a furnace located in a 1st floor mechanical room. The Roof and some Windows of the entire Building appear to be greater than 20 years.

3.0 ASBESTOS-CONTAINING MATERIAL RESULTS AND RECOMMENDATIONS

3.1 Survey Personnel and Definitions

3.1.1 Survey Team Members and Laboratory

The limited, non-destructive investigative survey was conducted on January 28th, 2011 by licensed Massachusetts Department of Occupational Safety (MADOS) asbestos inspectors Mr. Bill McBirney (MADOS Asbestos Inspector and industrial hygienist Ms. Sarah Differ.

EMSL Laboratories in Woburn, Massachusetts and Cinnaminson, New Jersey analyzed all asbestos bulk samples collected during the survey. EMSL is fully accredited for bulk sample analysis under the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology (NIST). In addition, the laboratory is licensed by the MADOS. Bulk samples were analyzed for asbestos content using the Environmental Protection Agency's (EPA) Method 600/M4-82-920: "Interim Method for The Determination of Asbestos in Bulk Insulation Samples". Vermiculite bulk samples were analyzed for asbestos content using the Environmental Protection Agency's (EPA) Method 600/R-93/116 Method with CARB 435 (Milling) Level A 0.25% Target Analytical Sensitivity. The estimation techniques were used to quantify all reported asbestos concentrations (unless otherwise noted).

3.1.2 Definition of Key Asbestos Survey Terms

Given the specific purposes and objectives of this inspection, the following definitions were used for the terms: suspect asbestos materials, homogeneous applications of suspect materials, friable suspect materials, inaccessible areas, and confirmed asbestos-containing materials:

1. Suspect Materials: Installed building materials that either were pre-formed (i.e., manufactured off-site) or were prepared and installed on-site. For the purposes of this survey, the following materials were considered non-suspect and were not assessed or sampled if observed:

    - Plastic
    - Wood or Wood Composite Materials

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- Brick, Granite, Marble, or Other Stonework
- Paint (unless textured)
- Clay or Ceramic Tiles
- Rubber or Synthetic Foam
- Carpeting, Curtains, Wallpaper, and Other Paper or Natural Fiber, Fabric, or Synthetic Goods
- Pink or Yellow fiberglass Insulation on Pipes or Other Mechanical Components
- Concrete or Mortar (except Gyp-Crete)

2. Homogeneous Applications or Suspect Materials: Suspect materials which serve the same function or purpose (e.g., floor or ceiling tiles); have similar color and texture; and were likely installed at or near the same time. Homogeneity is a determining factor in calculating the number of bulk samples collected for a particular material.

3. Friable Suspect Materials: Suspect materials that may be easily reduced to a powder by applying hand pressure, (e.g., sprayed fireproofing as opposed to a non-friable material such as vinyl floor tile).

4. Inaccessible Areas: Areas, systems, structural components, or surfaces which could not be observed because it was unsafe or impractical to demolish, disassemble, or remove systems or coverings, or because a human being cannot physically enter or observe the area or components.

5. Confirmed Asbestos-Containing Materials: Are suspect materials where at least one (1) of the collected bulk samples contained an asbestos concentration of 1% or more. According to EPA/Asbestos Hazard Emergency Response Act (AHERA) criteria, all bulk samples of a homogeneous area of suspect ACM must be found to contain less than 1% asbestos to conclude that the material is not regulated as ACM by OSHA or EPA under the asbestos NESHAP regulation.

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3.2 ACM Survey Methodology

3.2.1 Survey Methods

Hygienetics Environmental's survey methods are designed so that suspect ACM was identified and sampled in accordance with the EPA AHERA regulations. This regulation prescribes sampling protocols that are considered "state-of-the-art" for the asbestos industry. The inspection was conducted in a systematic manner using Hygienetics Environmental's standard safety procedures and inspection steps. These steps included:

1. Performing a detailed walk through and visual inspection of all accessible building areas to locate, quantify, sample and assess the condition of materials suspected to contain asbestos.

2. Collection of representative bulk samples of each homogeneous application area of suspect asbestos.

3. Analyzing bulk samples at a NVLAP-accredited laboratory using the EPA Polarized Light Microscopy with Dispersion Staining (PLM/DS) and EPA CARB 435 Prep (Milling) Level A methods with visual estimation of any resulting asbestos concentrations.

4. Performing a review of the survey findings, sampling protocols, and lab results to ensure proper and consistent identification and characterization of all ACM.

3.2.2 Bulk Sampling Protocol

The number of bulk samples collected depended on the type of identified suspect material. According to the EPA/AHERA regulation, materials may be classified as surfacing (i.e., applied to a surface), thermal (i.e., providing thermal insulation), or miscellaneous. The number of samples required increases as the potential for either a non-uniform mixture or poor asbestos distribution in the material increases. The following chart summarizes the sampling protocol deemed appropriate by Hygienetics Environmental during this inspection:

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MINIMUM BULK SAMPLING CRITERIA	
TYPE OF SUSPECT MATERIAL	**MINIMUM SAMPLING CRITERIA**
Surfacing	AHERA statistically random criteria (Minimum of 3 samples; Maximum of 7 samples)
Thermal	Minimum of 3 samples per homogeneous area of suspect material
Miscellaneous	Minimum of 2 samples per homogeneous area of suspect material since potential for non-uniform mixture is relatively slight.

3.3 ACM Analytical Methods and Limitations

3.3.1 Collection and Analysis of Bulk Material Samples for Asbestos Content

Samples were collected in a manner that would prevent airborne fiber release. Each suspect material was sampled using an appropriate tool to cut through its entire thickness to ensure that a complete cross section was obtained. The sample was then placed in an appropriately labeled container, which was sealed and submitted to the laboratory for analysis.

Samples were submitted for analysis using the EPA-endorsed Polarized Light Microscopy with Dispersion Staining (PLM/DS) and CARB 435 Prep (Milling) Level A methods. The percentage of asbestos present in each sample was determined by the visual area estimation technique.

3.4 Asbestos Observations, Findings, and Recommendations

The results of the asbestos investigative survey are presented below. Copies of Asbestos Bulk Sample Data Forms are included in Appendix A. Photographs of asbestos containing materials are included in Appendix C. Asbestos Location Drawings are included in Appendix D.

3.4.1 Materials Classified as or Assumed to be Asbestos-Containing

The following table lists building materials identified as asbestos during the survey:

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ASBESTOS CONTAINING MATERIALS **Old Nantucket Police Station** **Nantucket, Massachusetts**		
MATERIAL	**LOCATION**	**ESTIMATED TOTAL QUANTITY**
Yellow Block Linoleum	Locker Room and Bathrooms – 1st Floor; Darkroom and Bathroom – 2nd Floor	454 SF
Black Mastic Associated With 12"X12" Orange Mottled Floor Tile[1]	Hall Closets and Closet Beneath Stairs, Stair Landing – 1st Floor; Server Room, Hallway and Alcove Room, Stair Landings – 2nd Floor	560 SF
Black Mastic Associated With Blue Vinyl Flooring[1]	Hallways, Kitchen Area, Report Room, Secretary Room, Office Across from Control Room, Control Room and Waiting Area – 1st Floor	1,052 SF
Black Adhesive Behind Gold Splash Guard[2]	Kitchen Area – 1st Floor	45 SF

[1]12"x12" Orange Mottled Floor Tile and Blue Vinyl Flooring must be managed as ACM also due to ACM Black Mastic contamination.
[2]Gold Splash Guard in Kitchen Area must be managed as ACM due to ACM Black Adhesive contamination. ACM Black Adhesive may also be behind Wood Wall paneling in Kitchen area. Hygienetics recommends that the Wood Wall Paneling in the Kitchen Area also be managed as ACM.

3.4.2 Materials Classified as Non-Asbestos-Containing

The following materials have been classified as non-asbestos containing:

NON – ASBESTOS CONTAINING MATERIALS **Old Nantucket Police Station** **Nantucket, Massachusetts**	
MATERIAL	**LOCATION**
Adhesive Associated with ACM Yellow Block Linoleum	Throughout Building
12”x12” Orange Mottled Floor Tile[1]	Throughout Building
Blue Vinyl Flooring[1]	Throughout Building
Paper Beneath Hardwood Floor	Throughout Building
Yellow and Green Carpet Mastic	Throughout Building
Brown Stair Tread and Associated Adhesive	Throughout Building

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NON – ASBESTOS CONTAINING MATERIALS **Old Nantucket Police Station** **Nantucket, Massachusetts**	
MATERIAL	**LOCATION**
Brown Covebase and Associated Mastic	Throughout Building
Sheetrock and Joint Compound	Throughout Building
Skim and Coarse Coat Plaster; Textured Skim Coat Plaster	Throughout Building
2'x4 Crow Feet, Sheetrock and Laminate Ceiling Tiles	Throughout Building
Brick Mortar	Throughout Building
Generator Vibration Duct Cloth	Throughout Building
Furnace Gasket and Furnace Duct White Sealant	Throughout Building
Sink Undercoating	Throughout Building
Fiberglass Insulation Foil Glue	Throughout Building
Mud Elbows on Fiberglass Lines	Throughout Building
Vermiculite Insulation	Throughout Building
Window Caulking and Glazing	Throughout Building – Interior/Exterior
Door Frame Caulking and Door Window Glazing	Throughout Building – Interior/Exterior
Vent Caulking	Building – Exterior
Roof Shingle	Building – Exterior

[1]Material to be managed as ACM due to ACM black mastic contamination.

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3.4.3 Recommendations

Contractors brought in to perform any work activities should be informed of the results of this survey as their activities may potentially impact ACM and release asbestos fibers. Hygienetics Environmental recommends that all ACM that may be impacted by renovation activities be removed prior to starting such work. This will ensure compliance with applicable State and Federal regulations. All asbestos work must be performed by a Massachusetts DOS licensed Asbestos Contractor. Asbestos abatement work should be monitored by a licensed asbestos abatement project monitor during the course of removal.

4.0 LEAD-BASED PAINT SURVEY RESULTS

4.1 Introduction

Hygienetics Environmental performed a lead-based paint investigative survey at the Old Nantucket Police Station in Nantucket, Massachusetts on January 28, 2011. The purpose of this survey was to identify painted surfaces that contain lead-based paint. The scope of work for this investigation included accessible building materials.

Historically, lead was added to paint because its color stability properties made it a desirable pigment and because it enhances durability. Lead-based paint becomes harmful when inhaled as dust or ingested as paint chips. Once lead pigment was proven to be a health hazard, it was officially banned in 1978 from paint applied in residences. In an occupational or industrial setting, if lead-based painted surfaces are to be impacted by demolition activities, contractor personnel exposure (per OSHA compliance) and waste disposal (per EPA compliance) issues must be addressed and factored into the cost of the project. Specifically, contractors are required to comply with all applicable OSHA regulations including 29 CFR 1926.62 "Lead Exposure on Contractors Interim Final Rule" and 29 CFR 1926.59 "Hazard Communication for the Construction Industry". These regulations are applicable for all construction workers that are involved in activities that impact lead based paint and generate lead dust. These precautions include worker training, medical examinations and personal protective equipment, including high efficiency particulate air (HEPA) filtered air-purifying respirators. See Section 4.4 of this report for more information.

4.2 Survey Personnel

Mr. Bill McBirney and Ms. Sarah Differ conducted the investigative survey for lead-based paint on January 28, 2011.

4.3 Testing Methodology

Hygienetics Environmental utilized a Portable X-Ray Fluorescence Analyzer (XRF) to perform the lead-based paint survey. The XRF is a hand held instrument that contains a radioisotopic source and operates on the principle of X-ray fluorescence. The depression of a spring-loaded button on the XRF unit opens a shutter in the face-plate that allows radiation from an isotopic source to stimulate the lead atoms in the paint. This stimulation causes the atoms to emit (fluoresce) X-rays, which the unit detects and converts into electrical pulses. These pulses are then sorted and counted by an analyzer in the instrument. The result of this analysis is read through a digital display window located on the topside of the instrument.

Surface levels of lead are measured in units of milligrams per square centimeter (mg/cm^2). The XRF used in this survey, the Niton Model XL Analyzer, is able to detect as little as 0.1 mg of lead/cm^2. OSHA classifies any substance with a

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detectable amount of lead to be a "lead-containing" material. In older buildings, the lead-bearing part of the paint may often be hidden under numerous layers of lead-free paint. The Niton XL Lead Paint Analyzer is a complete lead paint analysis system that quickly, accurately, and non-destructively measures the concentration of LBP on surfaces. The time period for conclusive measurements is typically between 1 to 5 seconds, but can extend to a measurement of 60 seconds.

4.3.1 XRF Testing Procedures

Upon arrival at the job site, a "validation test" is performed to ensure that the XRF instrument is operating properly. The validation test is performed on a calibration test sheet supplied by the manufacturer to determine if the instrument is measuring the lead content consistently on a day to day basis. During this survey the instrument was functioning within the standard deviation as defined by the manufacturer.

The basic technique for increasing the precision and reducing the variability of XRF readings is to take repeated measurements at the same point. Statistical theory demonstrates that the variability of the average of a set of measurements is less than the variability of an individual measurement. The greater the number of repeated measurements, the greater the reduction in variability.

The federal Department of Housing and Urban Development (HUD) Guidelines recommend that XRF operators take multiple readings at each sampled point to ensure that the variability of a single measurement is not greater than 0.3 mg/cm^2 when using a spectrum analyzer. The XRF readings will generally be different, not due to operator error or problems with the instrument, but because of the natural variability of XRF measurements.

In conducting the LBP survey at the site, representative tests were conducted on homogeneous (similar color, texture, and use) painted surfaces. Analysis results from these surfaces were applied to other surfaces possessing identical homogeneous characteristics. By following this sampling protocol, every painted surface did not have to be sampled.

4.4 Standards and Regulations

The OSHA regulation 1926.354 “Welding, Cutting and Heating in Way of Preservative Coating” requires the removal of hazardous coatings prior to torch cutting.

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The OSHA regulation 29 CFR 1926.62 applies to situations involving lead paint disturbance in structures not used as a residence by children under six years of age. A synopsis of the significant components of these regulations is as follows:

The EPA national Ambient Air Quality Standard NAAQS for Lead and Particulate Matter establishes a limit of lead in air of 1.5 ug/m^3 averaged over a 90 day period. (40 CFR 50.12). For projects of shorter duration, it is recommended that an air sampling strategy as described in the SSPC Guide 6 "Containing Debris Generated During Paint Removal Operations" be implemented to protect the general public and adjacent sensitive receptors.

The EPA under the Resource Conservation and Recovery Act (RCRA) has promulgated regulations for the disposal of construction debris contaminated with lead-based paint. Construction waste containing lead-coated materials is considered hazardous waste under the EPA RCRA regulations if toxicity characteristic leaching procedure (TCLP) analytical results are greater than 5 milligrams per liter (mg/l). Representative samples of the waste stream that include materials coated with lead-based paint must be collected and analyzed to determine disposal requirements.

4.5 Results

Hygienetics Environmental inspected representative areas of all homogenous painted surfaces in the areas surveyed. In general, measurable amounts of lead (0.1 mg/cm^2 or greater) were positively identified on those surfaces listed below (for specific locations of all components, refer to Appendix B):

SUMMARY OF LEAD BASED PAINT
Old Nantucket Police Station
Nantucket, Massachusetts

COMPONENT	LOCATION	COLOR OF PAINT
Brick/ Wood/Plaster/Sheetrock	Throughout Building - Interior	Cream
Plaster/Sheetrock	Bathroom – 2nd Floor - Interior	Beige
Wood Wall	Throughout Building - Interior	Grey
Wood Stairs	Throughout Building - Interior	Brown
Plaster/Sheetrock	Captain's Room – 2nd Floor - Interior	Light Brown
Metal	Throughout Building - Interior	Dark Blue, Blue, Dark Brown, Brown, Red, Black, Green

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SUMMARY OF LEAD BASED PAINT **Old Nantucket Police Station** **Nantucket, Massachusetts**		
COMPONENT	**LOCATION**	**COLOR OF PAINT**
Pre-formed Floor	Cell Area – 1st Floor - Interior	Light Blue Speckled
Wood Window/Door Frames, Moldings and Trim	Throughout Building - Interior	White
Plaster Ceilings	Throughout Building - Interior	White
Wood Gutters	Exterior	White

4.6 Recommendations

For purposes of renovation work or any other work that may impact lead-based paint, lead-based paint is defined as any paint containing detectable amounts of lead. Contractors should be made aware of the presence of lead-based paint so that they can properly protect their workers, address the testing and disposal of this material (as required), and properly comply with all applicable regulations. Specifically, Contractors are required to comply with all applicable OSHA regulations including 29 CFR 1926.62, "Lead Exposure in Construction: Interim Final Rule" and 29 CFR 1926.59, "Hazard Communication for the Construction Industry". Also, the receiving or disposal facilities may require specific testing results before disposal of the waste.

5.0 Other Above-Ground Hazardous Materials

5.1 Introduction

Hygienetics performed a visual assessment of other hazardous materials located at the property. These materials included:

- Mercury Vapor Fluorescent Light Tubes
- Light Fixture Ballasts
- Mercury Thermostats
- Emergency Lighting (Lead-Acid / Ni-Cad/ Lithium Batteries)
- Smoke Detectors
- AC and Refrigeration Units

The following tables shows the various hazardous materials discovered during the visual assessment of materials:

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SUMMARY OF HAZARDOUS MATERIALS **Old Nantucket Police Station** **Nantucket, Massachusetts**		
Component/Location	**Quantity**	**Size**
Emergency Lights (Lead Acid Batteries)	10	Each
Fluorescent Lights (Bulbs)	36	U-Shape
Fluorescent Lights (Bulbs)	115; 6	4-Foot; 2-Foot
Fluorescent Light Ballasts	86	Each
Smoke Detectors	32	Each
Mercury Thermostats	24	Each
AC Units – Interior/Exterior	16	Each
Refrigerator	2	Each
Generator (Oil)	1	Each
Propane Tank - Exterior	1	Each

Note: Although visually observed, Hygienetics did not inventory any stored chemicals as it is assumed these are items utilized for maintenance purposes and would be removed for future use by Nantucket PO personnel.

Additionally, Hygienetics observed suspect mold in the 2nd Floor hallway and offices. One office had evidence of severe water intrusion, with part of the wall covered in polyethylene sheeting.

5.2 Recommendations

PCB Ballast:

Any unlabelled ballasts discovered should be assumed to contain PCB's. They should be removed and placed into 55-gallon steel drums (17C or 1710 or other DOT-approved container appropriately labeled in accordance with 310 CMR 30, EPA and DOT regulations. The ballast within fluorescent light fixtures should be disassembled and collected in a manner that leaves the ballast units intact.

When removing ballasts, wear protective gear and dispose of it along with the ballasts. Be careful not to drop any ballasts, possibly causing them to leak. Ballast disposal workers must be provided with special education about hazardous waste handling, and a materials data safety sheet must be available at the site. When moving non-leaking ballasts within a building, a cardboard box can be used. Do not overload the boxes and risk dropping the ballasts and causing a potential PCB leak. If more than one pound of PCBs (the amount contained in 12-16 ballasts) is spilled, it must be reported to the EPA National Response Center and cleaned up according to EPA procedures. A typical 55-gallon drum will hold 150-300 ballasts from four

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foot fixtures or 60-100 ballasts from eight foot fixtures and will weigh 600-1000 pounds. For exact packing instructions, contact the disposal facility that you plan to ship the ballasts to. Non-leaking ballasts must be disposed of within one year of being removed from the fixture.

Fluorescent Light Tubes:

Used lamps should remain intact (unbroken) and should be placed carefully into cardboard containers designed to hold lamps (preferably obtained from the manufacturer or lamp recycling facility) according to USEPA' Universal Waste Rule 40 CFR Protection of Environment, Chapter 1, Subchapter 1, Solid Wastes, Part 273, Subpart A and Connecticut Department of Environmental Protection, "Universal Wastes Rule in Connecticut."

The contractor should HEPA vacuum and thoroughly decontaminate any areas where lamps are accidentally broken.

Other Miscellaneous Hazardous Materials

All other materials identified not utilized should be disposed of in accordance with all local, state and federal regulations.

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APPENDIX A

ASBESTOS ANALYTICAL DATA

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Project: **1076.715 / Old Nantucket Police Station**

Customer ID: HGCL21
Customer PO: B-23657
Received: 02/01/11 11:40 AM
EMSL Order: 131100344

EMSL Proj:
Analysis Date: 2/4/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
012811-1A *131100344-0001*	Locker Room - Yellow Block Linoleum	White/Yellow Fibrous Heterogeneous		70% Non-fibrous (other)	**30% Chrysotile**
012811-1B *131100344-0002*	Bathroom - Yellow Block Linoleum				**Stop Positive (Not Analyzed)**
012811-2A *131100344-0003*	Locker Room - Adhesive a/w 1A	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-2B *131100344-0004*	Bathroom - Adhesive a/w 1B	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-3A *131100344-0005*	Closet under Stairs - 12x12 Orange Mottled Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-3B *131100344-0006*	Server Room - 12x12 Orange Mottled Floor Tile	Tan Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-4A *131100344-0007*	Closet under Stairs - Black Mastic a/w 3A	Black Non-Fibrous Homogeneous		90% Non-fibrous (other)	**10% Chrysotile**

Initial report from 02/04/2011 12:28:55

Analyst(s)

Kevin Pine (77)

Renaldo Drakes, Laboratory Manager
or other approved signatory

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012811-4B *131100344-0008*	Server Room - Black Mastic a/w 3B						**Stop Positive (Not Analyzed)**	
012811-5A *131100344-0009*	Waiting Room - Blue Vinyl Flooring	Blue Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
012811-5B *131100344-0010*	Hall - Blue Vinyl Flooring	Blue Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
012811-6A *131100344-0011*	Waiting Room - Black Mastic a/w 5A	Black Non-Fibrous Homogeneous			90%	Non-fibrous (other)	**10%**	**Chrysotile**
012811-6B *131100344-0012*	Hall - Black Mastic a/w 5B						**Stop Positive (Not Analyzed)**	
012811-7A *131100344-0013*	Stairwell - Paper beneath Hardwood Floor	Tan Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**	
012811-7B *131100344-0014*	Stairwell - Paper beneath Hardwood Floor	Tan Fibrous Homogeneous	95%	Cellulose	5%	Non-fibrous (other)	**None Detected**	

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
012811-8A *131100344-0015*	Victim Witness Room - Yellow Carpet Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-8B *131100344-0016*	Classroom - Yellow Carpet Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-9A *131100344-0017*	Waiting Room - Green Carpet Mastic	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-9B *131100344-0018*	Waiting Room - Green Carpet Mastic	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-10A *131100344-0019*	Stairwell - Brown Stair Tread	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-10B *131100344-0020*	Stairwell - Brown Stair Tread	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-11A *131100344-0021*	Stairwell - Adhesive a/w 10A	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
012811-11B *131100344-0022*	Stairwell - Adhesive a/w 10B	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-12A *131100344-0023*	Hallway - Brown Covebase	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-12B *131100344-0024*	Locker Room - Brown Covebase	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-13A *131100344-0025*	Hallway - Adhesive a/w 12A	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-13B *131100344-0026*	Locker Room - Adhesive a/w 12B	Brown Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-14A *131100344-0027*	Victim Witness Room - Black Covebase	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-14B *131100344-0028*	Victim Witness Room - Black Covebase	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
012811-15A *131100344-0029*	Victim Witness Room - Adhesive a/w 14A	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-15B *131100344-0030*	Victim Witness Room - Adhesive a/w 14B	Yellow Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-16A *131100344-0031*	Server Room - Sheetrock	Tan/White Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
012811-16B *131100344-0032*	Closet - Sheetrock	Tan/White Fibrous Heterogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
012811-17A *131100344-0033*	Garage - Joint Compound	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-17B *131100344-0034*	Closet - Joint Compound	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-17C *131100344-0035*	Hall - Joint Compound	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**

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Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos %	Type
012811-18A *131100344-0036*	Kitchen - Black Adhesive behind Gold Splash Guard	Black Non-Fibrous Homogeneous			95%	Non-fibrous (other)	**5%**	**Chrysotile**
012811-18B *131100344-0037*	Kitchen - Black Adhesive behind Gold Splash Guard						**Stop Positive (Not Analyzed)**	
012811-19A *131100344-0038*	Attic - Black Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
012811-19B *131100344-0039*	Storage Room - Black Mortar	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**	
012811-20A *131100344-0040*	Conference Room - 2x4 Crow Feet Ceiling Tile	Gray Fibrous Homogeneous	40% 40%	Cellulose Min. Wool	20%	Non-fibrous (other)	**None Detected**	
012811-20B *131100344-0041*	Hall - 2x4 Crow Feet Ceiling Tile	Gray Fibrous Homogeneous	40% 40%	Cellulose Min. Wool	20%	Non-fibrous (other)	**None Detected**	
012811-21A *131100344-0042*	Locker Room - 2x4 Sheetrock Ceiling Tile	Tan/White Fibrous Heterogeneous	10% 2%	Cellulose Glass	88%	Non-fibrous (other)	**None Detected**	

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012811-21B *131100344-0043*	Locker Room - 2x4 Sheetrock Ceiling Tile	Tan/White Fibrous Heterogeneous	20% 2%	Cellulose Glass	78%	Non-fibrous (other)	**None Detected**
012811-22A *131100344-0044*	Waiting Room - 2x4 Laminate Ceiling Tile	White/Yellow Fibrous Heterogeneous	70%	Glass	30%	Non-fibrous (other)	**None Detected**
012811-22B *131100344-0045*	Hall - 2x4 Laminate Ceiling Tile	White/Yellow Fibrous Heterogeneous	70%	Glass	30%	Non-fibrous (other)	**None Detected**
012811-23A *131100344-0046*	Stairwell - Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-23B *131100344-0047*	Attic - Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-23C *131100344-0048*	Closet - Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-24A *131100344-0049*	Stairwell - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**

DRAFT

Initial report from 02/04/2011 12:28:55

Analyst(s)

Kevin Pine (77)

Renaldo Drakes, Laboratory Manager
or other approved signatory

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EMSL Analytical, Inc.
7 Constitution Way, Suite 107, Woburn, MA 01801
Phone: (781) 933-8411 Fax: (781) 933-8412 Email: bostonlab@emsl.com

Attn: **Bill McBirney**
Hygienetics Environmental Services, Inc.
33 Arch St. Suite 2900
Boston, MA 02110

Fax: (617) 737-8971 Phone: (617) 737-8996
Project: **1076.715 / Old Nantucket Police Station**

Customer ID: HGCL21
Customer PO: B-23657
Received: 02/01/11 11:40 AM
EMSL Order: 131100344

EMSL Proj:
Analysis Date: 2/4/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
012811-24B *131100344-0050*	Attic - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-24C *131100344-0051*	Closet - Coarse Coat Plaster	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-25A *131100344-0052*	Chief's Office - Textured Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-25B *131100344-0053*	Chief's Office - Textured Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-25C *131100344-0054*	Chief's Office - Textured Skim Coat Plaster	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-26A *131100344-0055*	Generator Room - Generator Duct Vibe Cloth	Black Non-Fibrous Homogeneous	20%	Synthetic	80%	Non-fibrous (other)	**None Detected**
012811-26B *131100344-0056*	Generator Room - Generator Duct Vibe Cloth	Black Non-Fibrous Homogeneous	20%	Synthetic	80%	Non-fibrous (other)	**None Detected**

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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
012811-27A *131100344-0057*	Mechanical Room - Furnace Duct White Sealant	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-27B *131100344-0058*	Mechanical Room - Furnace Duct White Sealant	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-28A *131100344-0059*	Mechanical Room - Furnace Gasket	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-28B *131100344-0060*	Mechanical Room - Furnace Gasket	Black Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-29A *131100344-0061*	Kitchen - Sink Undercoating	White Non-Fibrous Homogeneous	20%	Cellulose	80%	Non-fibrous (other)	**None Detected**
012811-29B *131100344-0062*	Kitchen - Sink Undercoating	White Non-Fibrous Homogeneous	20%	Cellulose	80%	Non-fibrous (other)	**None Detected**
012811-30A *131100344-0063*	Generator Room - Mud Elbow on Fiberglass Line	Gray Fibrous Homogeneous	70%	Glass	30%	Non-fibrous (other)	**None Detected**

DRAFT

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EMSL Proj:
Analysis Date: 2/4/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos %	Fibrous	Non-Asbestos %	Non-Fibrous	Asbestos % Type
012811-30B *131100344-0064*	Locker Room - Mud Elbow on Fiberglass Line	Gray Fibrous Homogeneous	70%	Glass	30%	Non-fibrous (other)	**None Detected**
012811-30C *131100344-0065*	Attic - Mud Elbow on Fiberglass Line	Gray Fibrous Homogeneous	30%	Min. Wool	70%	Non-fibrous (other)	**None Detected**
012811-31A *131100344-0066*	Generator Room - Fiberglass Foil Glue	Tan Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-31B *131100344-0067*	Stairwell - Fiberglass Foil Glue	Tan Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-32A *131100344-0068*	Exterior - White Window Caulking	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-32B *131100344-0069*	Exterior - White Window Caulking	White Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**
012811-33A *131100344-0070*	Exterior - Window Glazing	Gray Non-Fibrous Homogeneous			100%	Non-fibrous (other)	**None Detected**

DRAFT

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EMSL Proj:
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Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
012811-33B *131100344-0071*	Interior - Window Glazing	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-34A *131100344-0072*	Interior - Dispatch Window Glazing	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-34B *131100344-0073*	Interior - Dispatch Window Glazing	Black Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-35A *131100344-0074*	Interior - Door Window Glazing	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-35B *131100344-0075*	Exterior - Door Window Glazing	Gray Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-36A *131100344-0076*	Exterior - Door Frame Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**
012811-36B *131100344-0077*	Exterior - Door Frame Caulking	White Non-Fibrous Homogeneous		100% Non-fibrous (other)	**None Detected**

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EMSL Order: 131100344

EMSL Proj:
Analysis Date: 2/4/2011

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Non-Asbestos				Asbestos
Sample	**Description**	**Appearance**	**%**	**Fibrous**	**%**	**Non-Fibrous**	**% Type**
012811-37A *131100344-0078*	Exterior - Vent Caulking	Gray Non-Fibrous Homogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
012811-37B *131100344-0079*	Exterior - Vent Caulking	Gray Non-Fibrous Homogeneous	10%	Cellulose	90%	Non-fibrous (other)	**None Detected**
012811-38A *131100344-0080*	Exterior - Roof Shingle	Black Fibrous Heterogeneous	10%	Glass	90%	Non-fibrous (other)	**None Detected**
012811-38B *131100344-0081*	Exterior - Roof Shingle	Black Fibrous Heterogeneous	10%	Glass	90%	Non-fibrous (other)	**None Detected**

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THIS IS THE LAST PAGE OF THE REPORT.

131100344

Hygienetics Environmental

HYGIENETICS ENVIRONMENTAL SERVICES, INC. | ASBESTOS BULK DATA FORM | CHAIN OF CUSTODY | PAGE: 1 OF 4

PROJECT: Old Nantucket Police Station | REQUESTED TAT: 72hrs

	SAMPLE ID NO.	FLOOR	SAMPLE DESCRIPTION/ LOCATION	GROUP
1	012811- 1A	1ST	YELLOW BLOCK Linoleum - LOCKER ROOM	
2	012811- 1B	2ND	" " " - BATHROOM	
3	012811- 2A	1ST	ADHESIVE ASSOCIATED WITH 1A	
4	012811- 2B	2ND	" " " 1B	
5	012811- 3A	1ST	12X12 ORANGE MOTTLED FLOOR TILE - CLOSET UNDER STAIRS	
6	012811- 3B	2ND	" " " - SERVER ROOM	
7	012811- 4A	1ST	BLACK MASTIC ASSOCIATED WITH 3A	
8	012811- 4B	2ND	" " " 3B	
9	012811- 5A	1ST	BLUE VINYL Flooring - WAITING ROOM	
10	012811- 5B	|	" " " - HALL	
11	012811- 6A	|	BLACK MASTIC ASSOCIATED WITH 5A	
12	012811- 6B	|	" " " 5B	
13	012811- 7A	2nd	PAPER BENEATH HARDWOOD FLOOR - STAIRWELL	
14	012811- 7B	|	" " "	
15	012811- 8A	|	YELLOW CARPET MASTIC - VICTIM/WITNESS ROOM	
16	012811- 8B	|	" " " - CLASSROOM	
17	012811- 9A	1ST	GREEN CARPET MASTIC - WAITING ROOM	
18	012811- 9B	|	" " "	
19	012811- 10A	|	BROWN STAIR TREAD - STAIRWELL	
20	012811- 10B	2nd	" " " - STAIRWELL	
21	012811- 11A	1ST	ADHESIVE ASSOCIATED WITH 10A	
22	012811- 11B	2ND	" " " 10B	

BATCH #: 23657

CLIENT NAME: BLFR

SAMPLER'S NAME: Bill McBirney

SIGNATURE:

DATE: 01/28/11

LAB NAME: EMSL

X ANALYZE TO FIRST POSITIVE

SKETCH AREA:

RECEIVED
FEB 01 2011
BY: SA 1140

JOB #: 1076.715

RELINQUISHED BY: _____ DATE: 01/30/11 RECEIVED BY: _____ DATE: _____

Fedex # 798707522272

131100344

Hygienetics Environmental

HYGIENETICS ENVIRONMENTAL SERVICES, INC. — ASBESTOS BULK DATA FORM — CHAIN OF CUSTODY — PAGE: 2 OF 4

PROJECT: Old Nantucket Police Station — REQUESTED TAT: 72hrs

JOB #: 1076.715

BATCH #: 23657

CLIENT NAME: BLFR

SAMPLER'S NAME: Bill McBirney

SIGNATURE:

DATE: 01/28/11

LAB NAME: EMSL

X ANALYZE TO FIRST POSITIVE

SKETCH AREA:

	SAMPLE ID NO.	FLOOR	SAMPLE DESCRIPTION/ LOCATION	GROUP
23	012811-12A	1ST	BROWN COVE BASE - HALLWAY	
24	012811-12B	/	" " " - LOCKER ROOM	
25	012811-13A	/	ADHESIVE ASSOCIATED WITH 12A	
26	012811-13B	/	" " " WITH 12B	
27	012811-14A	2nd	BLACK COVE BASE - VICTIM/WITNESS ROOM	
28	012811-14B	/	" " " "	
29	012811-15A	/	ADHESIVE ASSOCIATED WITH 14A	
30	012811-15B	/	" " " 14B	
31	012811-16A	/	SHEETROCK - SERVER ROOM	
32	012811-16B	1ST	" " - CLOSET	
33	012811-17A	/	JOINT COMPOUND - GARAGE	
34	012811-17B	/	" " - CLOSET	
35	012811-17C	2ND	" " - HALL	
36	012811-18A	1ST	BLACK ADHESIVE BEHIND GOLD SPLASH GUARD - KITCHEN	
37	012811-18B	/	" " " "	
38	012811-19A	2ND	BLACK MASTIC - ATTIC	
39	012811-19B	2ND	" " - STORAGE ROOM	
40	012811-20A	1ST	2x4 CROW FEET CEILING TILE - Conference Room	
41	012811-20B	/	" " " - HALL	
42	012811-21A	/	2x4 SHEETROCK CEILING TILE - LOCKER ROOM	
43	012811-21B	/	" " " " "	
44	012811-22A	/	2x4 LAMINATE CEILING TILE - WAITING ROOM	

RECEIVED FEB 01 2011 BY: SA 1140

RELINQUISHED BY: _____ DATE: 01/30/11 RECEIVED BY: _____ DATE: _____

131100344

Hygienetics Environmental

HYGIENETICS ENVIRONMENTAL SERVICES, INC. — ASBESTOS BULK DATA FORM — CHAIN OF CUSTODY — PAGE: 3 OF 4

PROJECT: Old Nantucket Police Station — REQUESTED TAT: 72hrs

JOB #: 1076.715

BATCH #: 23657

CLIENT NAME: BLFR

SAMPLER'S NAME: Bill McBirney

SIGNATURE:

DATE: 01/28/11

LAB NAME: EMSL

X ANALYZE TO FIRST POSITIVE

SKETCH AREA:

RECEIVED FEB 01 2011 BY: SA 1140

		SAMPLE ID NO.	FLOOR	SAMPLE DESCRIPTION/ LOCATION	GROUP
45		012811-22B	1ST	2x4 LAMINATE CEILING TILE - HALL	
44	46	012811-23A	2nd	SKIM COAT PLASTER - STAIRWELL	
45	47	012811-23B	/	" " - ATTIC	
46	48	012811-23C	1ST	" " CLOSET	
47	49	012811-24A	2nd	COARSE COAT PLASTER - STAIRWELL	
48	50	012811-24B	/	" " - ATTIC	
49	51	012811-24C	1ST	" " - CLOSET	
50	52	012811-25A		TEXTURED SKIM COAT PLASTER - CHIEF'S OFFICE	
51	53	012811-25B		" " "	
52	54	012811-25C		" " "	
53	55	012811-26A		GENERATOR DUCT VIBE CLOTH - GENERATOR ROOM	
54	56	012811-26B		" " " "	
55	57	012811-27A		~~WHITE~~ FURNACE DUCT WHITE SEALANT - MECHANICAL ROOM	
56	58	012811-27B		" " " "	
57	59	012811-28A		FURNACE GASKET - MECHANICAL ROOM	
58	60	012811-28B		" " " "	
59	61	012811-29A		SINK UNDERCOATING - KITCHEN	
60	62	012811-29B		" " " "	
61	63	012811-30A		MUD ELBOW ON FIBERGLASS LINE - GENERATOR ROOM	
62	64	012811-30B		" " " - LOCKER ROOM	
63	65	012811-30C	2nd	" " " - ATTIC	
60		012811-31A	1ST	FIBERGLASS FOIL GLUE - GENERATOR ROOM	

RELINQUISHED BY: _____ DATE: 1/30/11 RECEIVED BY: _____ DATE: _____

131100344

Hygienetics Environmental

HYGIENETICS ENVIRONMENTAL SERVICES, INC. — ASBESTOS BULK DATA FORM — CHAIN OF CUSTODY — PAGE: 4 OF 4

PROJECT: Old Nantucket Police Station — REQUESTED TAT: 72hrs

	SAMPLE ID NO.	FLOOR	SAMPLE DESCRIPTION/ LOCATION	GROUP
67	012811-31B	2nd	Fiberglass Foil Glue - Stairwell	
68	012811-32A	EXT	White Window Caulking - Exterior	
69	012811-32B		" " "	
70	012811-33A		Window Glazing - Exterior	
71	012811-33B	INT.	" " - Interior	
72	012811-34A		Window Glazing - Dispatch Windows Interior	
73	012811-34B		" " " " "	
74	012811-35A		Door Window Glazing - Interior	
75	012811-35B	EXT.	" " " - Exterior	
76	012811-36A		Door Frame Caulking - Exterior	
77	012811-36B		" " "	
78	012811-37A		Vent Caulking - Exterior	
79	012811-37B		" " "	
80	012811-38A		Roof Shingle - Exterior	
81	012811-38B		" " "	
X				

BATCH #: 23657

CLIENT NAME: BLFR

SAMPLER'S NAME: Bill McBirney

SIGNATURE:

DATE: 01/28/11

LAB NAME: EMSL

X ANALYZE TO FIRST POSITIVE

SKETCH AREA:

RECEIVED
FEB 01 2011
BY: SA 1140

JOB #: 1076.715

RELINQUISHED BY: _____ DATE: 1/30/11 RECEIVED BY: _____ DATE: _____

131100344

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077
Phone: (800) 220-3675 Fax: (856) 786-5974 Email: westmontasblab@EMSL.com

Attn: **Bill McBirney**
Hygienetics Environmental Services, Inc.
33 Arch St. Suite 2900
Boston, MA 02110

Fax: (617) 737-8971 Phone: (617) 737-8996

Project: **1076.715 BLFR OLD NANTUCKET POLICE STATION BATCH #23658**

Customer ID: HGCL21
Customer PO:
Received: 02/01/11 3:40 PM
EMSL Order: 041102276

EMSL Proj:
Analysis Date: 2/2/2011

Test Report: PLM Analysis of Bulk Samples for Asbestos via EPA 600/R-93/116 Method with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
012811-1A *041102276-0001*	ALCOVE FRONT - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
012811-1B *041102276-0002*	ALCOVE REAR - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
012811-1C *041102276-0003*	ALCOVE STAIRS - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
012811-1D *041102276-0004*	ATIC STORE ROOM @ PERIMETER RIGHT - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
012811-1E *041102276-0005*	ATIC STORE ROOM @ PERIMETER LEFT - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
012811-1F *041102276-0006*	UNDER HALLWAY - VERMICULITE	Brown Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

DRAFT

Initial report from 02/02/2011 14:45:56

Analyst(s)
Dave Poitras (6)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. 200 Route 130 North, Cinnaminson NJ

THIS IS THE LAST PAGE OF THE REPORT.

Hygienetics Environmental

HGCL21 041102276

HYGIENETICS ENVIRONMENTAL SERVICES, INC. — ASBESTOS BULK DATA FORM — CHAIN OF CUSTODY — PAGE: 1 OF 1

PROJECT: Old Nantucket Police Station

REQUESTED TAT: 5 Day

JOB #: 1076.715

BATCH #: 23658

CLIENT NAME: BLFR

SAMPLER'S NAME: Bill McBirney

SIGNATURE:

DATE: 01/28/11

LAB NAME: EMSL

CARB LEVEL A TESTING

SKETCH AREA:

SAMPLE ID NO.	FLOOR	SAMPLE DESCRIPTION/ LOCATION	GROUP
012811-1A	ALCOVE	VERMICULITE - ALCOVE FRONT	
012811-1B	/	" " " - ALCOVE REAR	
012811-1C	/	" " " - ALCOVE STAIRS	
012811-1D	2nd	" " " - ATTIC STORE Room @ Perimeter Right	
012811-1E		" " " - " " " Left	
012811-1F	/	" " " - UNDER Hallway	

RELINQUISHED BY: BY: [illegible] DATE: 2.1.11

DATE: 1/28/11 RECEIVED

RECEIVED EMSL CINNAMINSON, N.J. 11 FEB -1 AM 10:49

SAMPLES ACCEPTED FOR ANALYSIS BY EMSL ANALYTICAL INC.

041102276

APPENDIX B

LEAD-BASED PAINT INSPECTION FORMS

DRAFT

Table of XRF Analysis Results Old Nantucket Police Station Nantucket, Massachusetts				
LOCATION	**DESCRIPTION**	**PAINT CONDITION**	**LEAD CONCENTRATION (MG/SQ. CM)**	**COLOR / COMMENTS**
Generator Room – 1st Floor	Brick Wall	Good	0.3	Cream
Generator Room – 1st Floor	Wood Wall	Good	0.2	Grey
Generator Room – 1st Floor	Concrete Floor	Good	-0.2*	Grey
Generator Room – 1st Floor	Plaster Ceiling	Good	-0.1*	White
Generator Room – 1st Floor	Metal Door	Good	-0.1*	Brown
Mechanical Room – 1st Floor	Wood Window Frame	Good	0.0	White
Mechanical Room – 1st Floor	Metal Locker	Good	-0.0	Light Blue
Mechanical Room – 1st Floor	Metal Door Frame	Good	0.2	Dark Brown
Hall @ Stairwell – 1st Floor	Brick Wall	Good	3.5	Cream
Hall @ Stairwell – 1st Floor	Sheetrock	Good	0.1	Cream
Stairwell – 1st Floor	Metal Stairs	Good	0.5	Black
Locker Room/Bathroom – 1st Floor	Sheetrock Wall	Good	0.1	White
Locker Room/Bathroom – 1st Floor	Metal Door Frame	Good	0.1	Dark Blue
Stairwell – 1st Floor	Plaster Ceiling	Good	0.2	White
Stairwell – 1st Floor	Plaster	Poor	-0.1	Yellow

DRAFT

Table of XRF Analysis Results Old Nantucket Police Station Nantucket, Massachusetts				
LOCATION	**DESCRIPTION**	**PAINT CONDITION**	**LEAD CONCENTRATION (MG/SQ. CM)**	**COLOR / COMMENTS**
Garage – 1st Floor	Brick Wall	Poor	-0.1	White
Garage – 1st Floor	Wood Wall	Good	-0.3	White
Garage – 1st Floor	Metal Door	Good	-0.1	Grey
Garage – 1st Floor	Concrete Wall	Good	-0.3	Yellow
Garage – 1st Floor	Plaster Wall	Good	-0.3	Yellow
Garage – 1st Floor	Concrete Wall	Good	-0.1	White
Garage – 1st Floor	Concrete Wall	Good	-0.1	Grey
Garage – 1st Floor	Concrete Floor	Good	-0.3	Blue
Waiting Area – 1st Floor	Sheetrock Wall	Good	-0.3	Off-White
Waiting Area – 1st Floor	Metal Wall	Good	-0.2	Brown
Hall Area by Cells – 1st Floor	Metal Gun Locker	Good	0.1	Green
Cell Area – 1st Floor	Metal In Cells	Good	0.6	Red
Cell Area – 1st Floor	Metal In Cells	Good	0.3	Blue
Cell Area – 1st Floor	Metal In Cells	Good	0.3	Brown
Cell Area – 1st Floor	Concrete Wall	Good	-0.2	Yellow
Cell Area – 1st Floor	Pre-formed Floor	Good	0.1	Light Blue Speckled

DRAFT

Table of XRF Analysis Results Old Nantucket Police Station Nantucket, Massachusetts				
LOCATION	**DESCRIPTION**	**PAINT CONDITION**	**LEAD CONCENTRATION (MG/SQ. CM)**	**COLOR / COMMENTS**
Captain's Room – 2nd Floor	Plaster Wall	Good	0.1	Light Brown
Captain's Room – 2nd Floor	Sheetrock Wall	Good	0.1	Light Brown
Dark Room – 2nd Floor	Sheetrock Wall	Good	0.0	Black
Alcove Stairs – 2nd Floor	Wood Stairs	Good	0.1	Brown
Victim/Witness Room – 2nd Floor	Wood Wall	Good	0.2	Cream
Hall – 2nd Floor	Wood Door Frame	Good	0.2	White
Bathroom – 2nd Floor	Plaster Wall	Good	0.6	Beige
Bathroom – 2nd Floor	Sheetrock Wall	Good	0.6	Beige
Hall – 2nd Floor	Plaster Wall	Good	0.1	Cream
Hall – 2nd Floor	Sheetrock Wall	Good	0.1	Cream
Utility Closet – 2nd Floor	Plaster Wall	Good	-0.2	Yellow
Classroom – 2nd Floor	Plaster Wall	Good	0.0	Grey
Classroom – 2nd Floor	Sheetrock Wall	Good	0.0	Grey
Stairwell – 2nd Floor	Plaster Wall	Good	0.2	Cream
Stairwell – 2nd Floor	Sheetrock Wall	Good	0.2	Cream
Stairwell – 2nd Floor	Wood Window Frame	Good	0.2	White

DRAFT

Table of XRF Analysis Results Old Nantucket Police Station Nantucket, Massachusetts				
LOCATION	**DESCRIPTION**	**PAINT CONDITION**	**LEAD CONCENTRATION (MG/SQ. CM)**	**COLOR / COMMENTS**
Stairwell – 2nd Floor	Plaster Ceiling	Good	0.2	White
Exterior	Wood Window Trim & Frame	Good	0.0	White
Exterior	Wood Gutters	Poor	9.9	White

*The XRF Analyzer utilizes X-rays to fluoresce lead atoms located in paint. The fluorescence is read and quantified by the analyzer, within a standard deviation defined by the manufacturer. A validation test is conducted prior to sampling to ensure that the analyzer is operating within the manufacturer's standard deviation. However, due to this standard deviation, the analyzer will occasionally provide a negative reading which is essentially below the limit of detection for the instrument. As long as the negative reading is within the allowable standard deviation, the negative reading is treated as 0.0 mg/cm^2.

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APPENDIX C

SITE PHOTOGRAPHS

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Photo 1

Asbestos Containing Yellow Block Linoleum

Old Nantucket Police Station

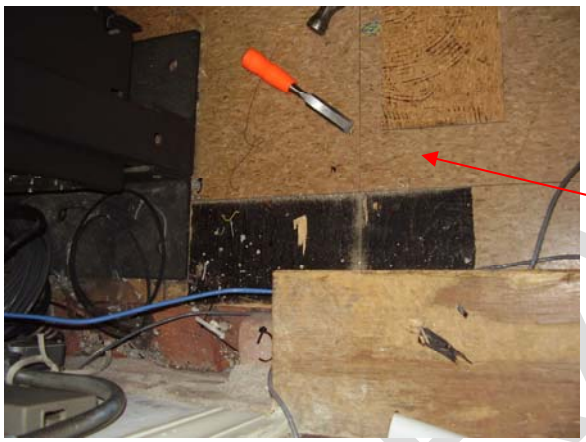

Photo 2

Asbestos Containing Black Mastic Associated With 12"x 12" Orange Mottled Floor (Floor Tile to be managed as ACM also)

Old Nantucket Police Station

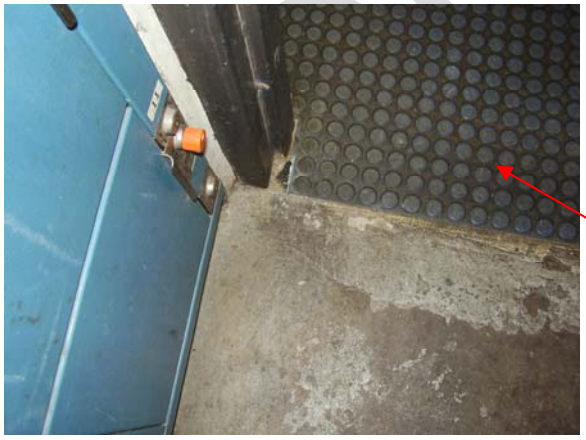

Photo 3

Asbestos Containing Black Mastic Associated With Blue Vinyl Flooring (Flooring to be managed as ACM also)

Old Nantucket Police Station

DRAFT

SITE PHOTOGRAPHS ASBESTOS CONTAINING MATERIALS Date of Photographs: January 28, 2011	esis Hygienetics Environmental Services, Inc. ESIS, Inc. – Global Risk Control Services	Old Nantucket Police Station Nantucket, MA Hygienetics Project Number 1076.715

Photo 4

Asbestos Containing Black Adhesive Behind Gold Splash Guard (Splash Guard to be managed as ACM also)

Old Nantucket Police Station

SITE PHOTOGRAPHS ASBESTOS CONTAINING MATERIALS Date of Photographs: January 28, 2011	esis Hygienetics Environmental Services, Inc. ESIS, Inc. – Global Risk Control Services	Old Nantucket Police Station Nantucket, MA Hygienetics Project Number 1076.715

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APPENDIX D

ASBESTOS LOCATION DRAWINGS

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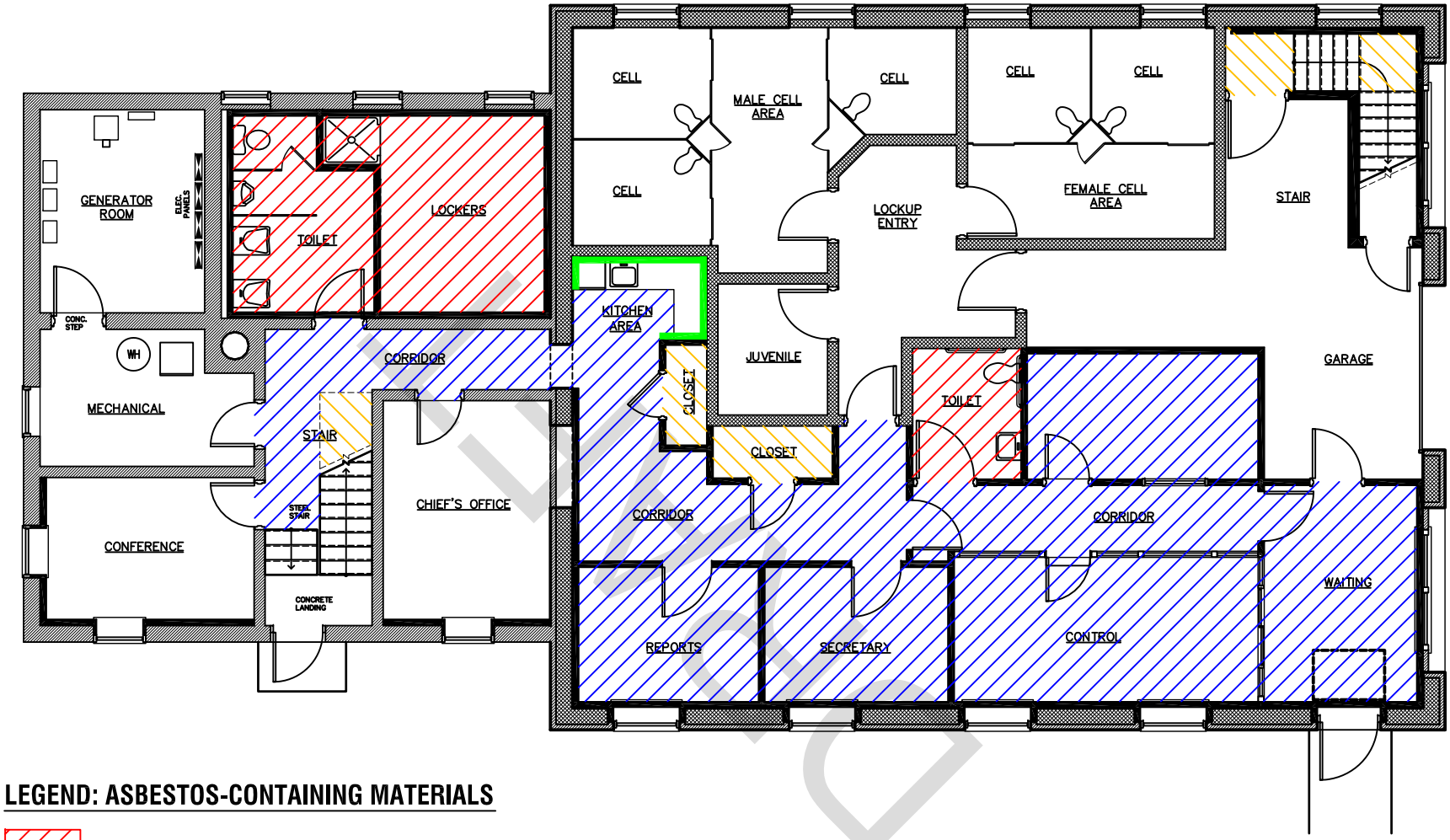


LEGEND: ASBESTOS-CONTAINING MATERIALS

- YELLOW BLOCK LINOLEUM
- BLACK MASTIC ASSOCIATED WITH 12" x 12" ORANGE MOTTLED FLOOR TILE (FLOOR TILE TO BE MANAGED AS ACM ALSO)
- BLACK MASTIC ASSOCIATED WITH BLUE VINYL FLOORING (BLUE VINYL FLOORING TO BE MANAGED AS ACM ALSO)
- BLACK ADHESIVE ASSOCIATED WITH GOLD SPLASH GUARD (SPLASH GUARD TO BE MANAGED AS ACM ALSO)

FIRST FLOOR PLAN

N.T.S.

N

FIRST FLOOR PLAN

ASB-1

DATE: 2/9/11

SHEET 1 OF 2

PROJECT #: 1076.715

T.M.

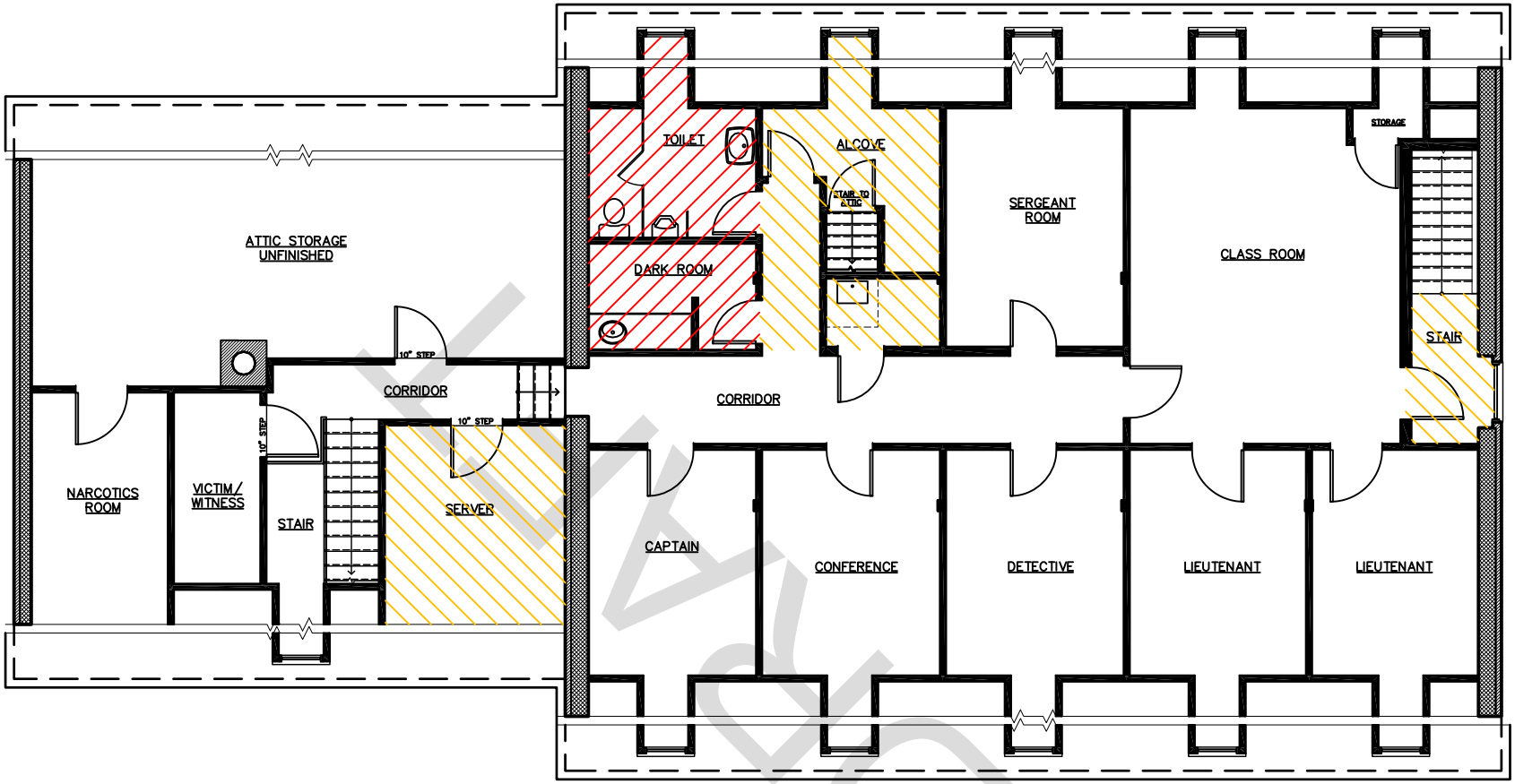
FORMER NANTUCKET POLICE STATION

Hygienetics Environmental

ESIS, INC.– HEALTH, SAFETY & ENVIRONMENTAL SERVICES

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

YARMOUTHPORT, MA



LEGEND: ASBESTOS-CONTAINING MATERIALS

YELLOW BLOCK LINOLEUM

BLACK MASTIC ASSOCIATED WITH 12" x 12" ORANGE MOTTLED FLOOR TILE (FLOOR TILE TO BE MANAGED AS ACM ALSO)

SECOND FLOOR PLAN

N.T.S.

N

DRAFT

DATE: 2/9/11

ASB-2

SHEET 2 OF 2

SECOND FLOOR PLAN

PROJECT NO. 1076.715

DRAWN BY T.M.

FORMER NANTUCKET POLICE STATION

Hygienetics Environmental

ESIS, INC.– HEALTH, SAFETY & ENVIRONMENTAL SERVICES

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

YARMOUTHPORT, MA

APPENDIX E

LIMITATIONS

DRAFT

LIMITATIONS

The conclusions presented in this report are professional opinions based on the indicated data described in this report. They are intended only for the project location described in the report, and those accessible locations within the project location. This investigation and its conclusions are limited in nature to the scope of work described in this report. Unless otherwise specified, in writing, this investigation was not intended to be a definitive study of all asbestos containing materials throughout the project location. Asbestos containing materials may exist in locations not physically accessible for inspection, or specifically excluded from our scope of work for this project.

Opinions and recommendations presented herein may apply to the property conditions existing at the time of our inspection and those reasonably foreseeable. They do not necessarily apply to property changes of which Hygienetics was not aware of at the time of our inspection and did not have the opportunity to evaluate. Changes in property and building component conditions may occur over time due to natural causes or renovation activities. Changes to current governing regulations and standards may also occur that can potentially invalidate these findings and recommendations. Accordingly, the findings and recommendations of this report may be invalidated, wholly or in part, by changes beyond our control. Under no circumstances shall this document be used for the purposes of securing abatement cost estimates, as this survey report is not a specification for the removal of asbestos containing materials.

Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions.

This report is intended for use by the Client named herein, and shall not be used by any other person, entity or third party without the express written authorization from Hygienetics Environmental Services, Inc.

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Appendix # 5

Roof-Mounted Photovoltaic System for the Nantucket Tow Hall – Design, Energy Production Projection, Funding Recommendations and Financial Analysis, by Argo Consulting

DRAFT

Argo Consulting

Review:
Roof-Mounted Photovoltaic System for Nantucket Town Hall - Design, Energy Production Projection, Funding Recommendations and Financial Analysis

DRAFT

In conjunction with

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 Willow Street, Suite A • Yarmouthport, MA 02675 • 508-362-8382

PHOTOVOLTAIC DESIGN, ENERGY PRODUCTION PROJECTION, FUNDING RECOMMENDATIONS and FINANCIAL ANALYSIS

for Nantucket Town Hall, Nantucket, MA

2.28.11

Argo Consulting was commissioned to examine the feasibility of a roof-mounted photovoltaic (PV) installation on Nantucket Town Hall located at the corners of Broad Street and South Water Street on Nantucket Island in Massachusetts. The system designed by Argo Consulting in the feasibility analysis is a behind-the-meter, grid-tied system without battery back-up. The system is intended to leverage the Massachusetts Net Metering provisions, allowing power allocation to additional municipal electrical accounts off-site.

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The Nantucket Town Hall South-facing Roof

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EXISTING ROOF CONDITIONS **7**

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POWER PURCHASE AGREEMENTS **12**

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COST ANALYSIS FOR PHASE ONE WITH A LOAN 14

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DESIGN

The illustration in Figure 1 below illustrates a typical battery-less, grid-tied photovoltaic installation. The typical installation requires the four main elements as illustrated: A, solar modules on the roof, B, inverter(s) to convert DC power to AC power, C, a facility circuit into which to "tie-in", D, meters to measure the production and flow of energy, and E, utility interconnection.

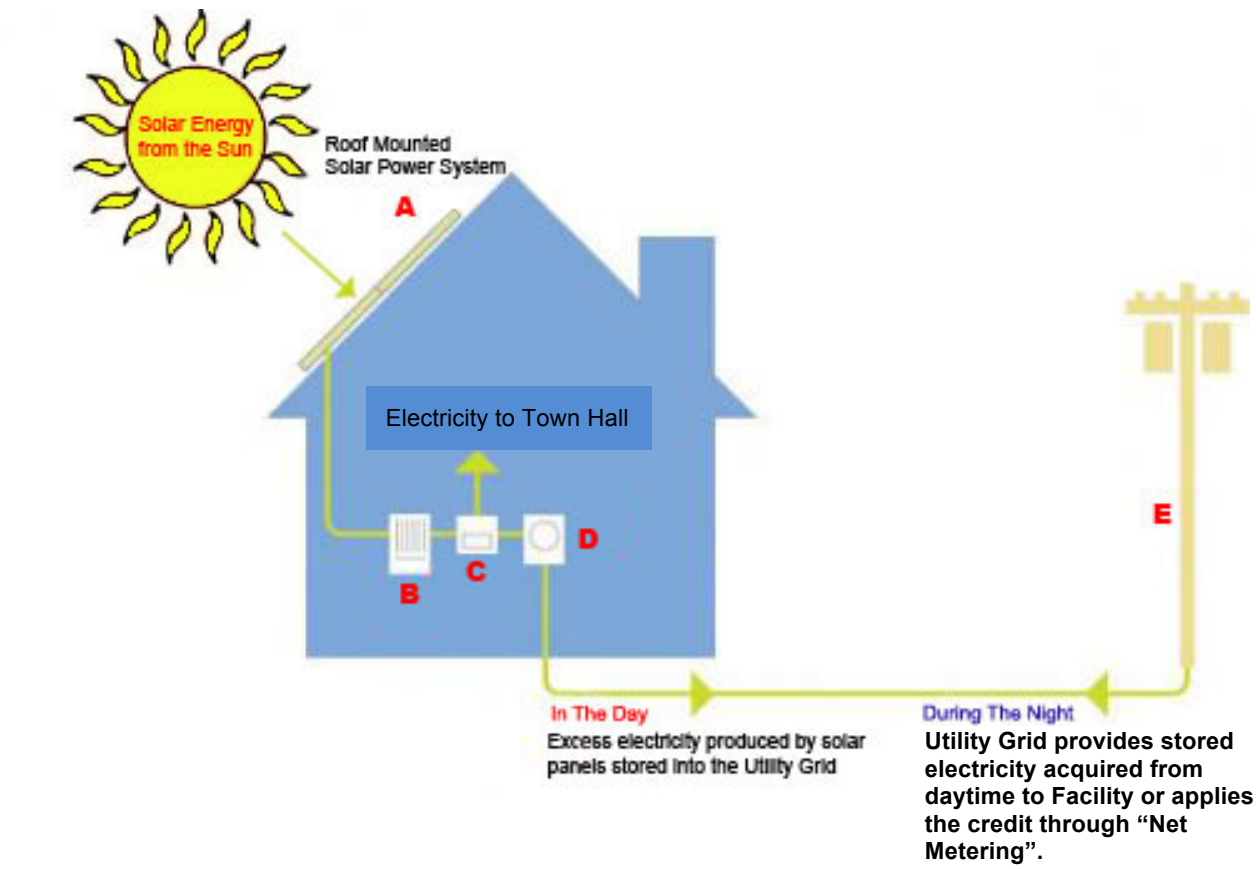

FIGURE 1: Design elements for photovoltaic installation

To establish the feasibility of an installation of a photovoltaic (PV) renewable energy resource on the roof of Nantucket's Town Hall, Argo Consulting designed a prototype roof-mounted PV installation using the basic solar system elements identified above. Based on the plans provided by Brown, Lindquist, Fenuccio & Raber Architects, the illustration in

Figure 2 was created. The illustration is of a prototype solar array design for the Nantucket Town Hall Building roof. The view is a perpendicular aerial view of the southern roof elevation.

The orange cross-hatching defines shaded areas due to a chimney and a cupola on the southern roof. Additional shading is indicated due to the rise of the main roof over the smaller eastern and western roofs. The shaded areas are reserved from photovoltaic installation.

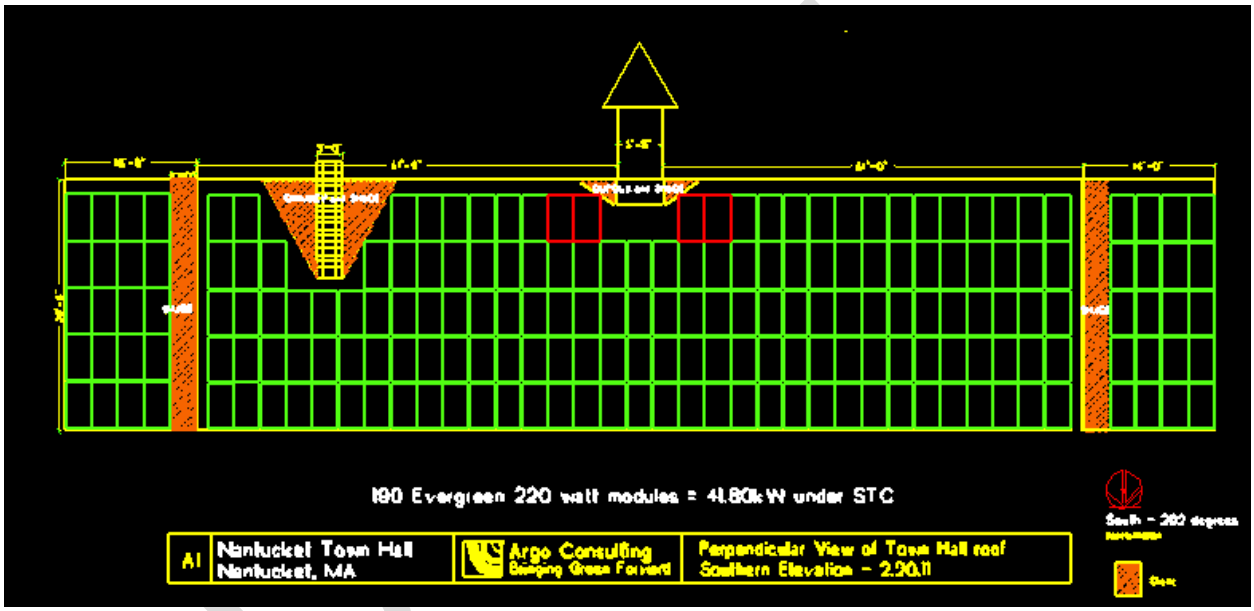

FIGURE 2: Prototype design for photovoltaic installation on Nantucket Town Hall Building

The green and red rectangles in Figure 2 represent a solar array consisting of 194 Evergreen solar modules, each measuring 37.5” X 67.8”. The Evergreen module was utilized as representative of a generic solar module, both in size and power.

In typical solar system design, module counts are broken down into “strings” based on power considerations. The strings feed the DC power to the inverters for conversion to AC power. While 194 of the Evergreen modules can physically be contained on the three southern roof areas, the inverters can accommodate only 190 modules due to string sizing requirements. The four modules in red were thus removed from the count leaving a total of

190 modules. 190 of the 220watt Evergreen solar modules will deliver a total DC output of 41.80 kilowatts under Standard Test Conditions. The photovoltaic design for the Nantucket Town Hall building as illustrated above is a 41.8kW system.

The racking system used to support the roof-mounted solar installation proposal is non-specific. However a spacing of 1" was incorporated between the modules as per Unirac SolarMount specifications. Various other manufacturers may require less spacing.

EXISTING ROOF CONDITIONS

The age of the existing asphalt roof on the Nantucket Town Hall building is a key consideration before solar system installation. If the roof is over ten years old, it's recommended that an analysis be performed to assess the condition of the shingles. Roof repairs and shingle replacement will want to be performed before the installation of a solar system on the building.

A solar system will extend the life of the shingles located underneath the solar system, as the shingles are protected from degradation due to the effects of weather and the sun's ultraviolet rays.

Solar systems do not classically compromise roofing element warranties.

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INVERTER AND BULK OF SYSTEM DESIGN

The prototype solar array design presented utilizes two Solectria PVI 15kW inverters for tie-in with the existing three-phase 1600-amp power at the Town Hall. Multiple inverters bring a benefit, as inverters tend to fail before solar modules, with life expectancies of 10 – 15 years for inverters and over 25 years for modules. For that reason, designs with multiple inverters are preferable, as independent inverters can be replaced while remaining ones carry on.

2-inch EMT conduit would provide enough space for an interior wire run from the solar system entry point in the attic of the Town Hall, down to an unidentified mechanical room. The discovery of an existing conduit or the introduction of a conduit will be required.

The two Solectria PVI 15kW inverters would be located in a mechanical room near a circuit box. Each freestanding inverter measures 34.5” x 26” x 13.6”.

A system performance electric meter, measuring 24" X 12" X 8", would be installed next to the inverters in the mechanical room.

While the system design outlined above employs centralized inverters mounted in a mechanical room, an alternative approach is to employ micro-inverters. In the micro-inverter design, mini-inverters are integrated in the module assembly on the roof. The micro-inverter approach has advantages and disadvantages. One advantage lies in the fact that micro-inverter design is less affected by shade. The disadvantage is cost.

The same conduit run to the circuit breaker for tie-in would be utilized for micro-inverters.

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ELECTRICAL GENERATION

Using the software, PVWatts, an industry standard for photovoltaic system performance analysis, Argo Consulting identified the electrical generation potential of the proposed 41.80kW photovoltaic installation on the Nantucket Town Hall roof. A roof pitch of 9 – 10 degrees and an azimuth of 180° were assumed. The PVWatts result is illustrated in Figure 3.

PVWatts AC Energy & Cost Savings

Cautions for Interpreting the Results

Nantucket Town Hall

Station Identification	
City:	Boston
State:	Massachusetts
Latitude:	42.37° N
Longitude:	71.03° W
Elevation:	5 m
PV System Specifications	
DC Rating:	41.8 kW
DC to AC Derate Factor:	0.770
AC Rating:	32.2 kW
Array Type:	Fixed Tilt
Array Tilt:	38.0°
Array Azimuth:	180.0°
Energy Specifications	
Cost of Electricity:	17.0 ¢/kWh

Results			
Month	Solar Radiation ($kWh/m^2/day$)	AC Energy (kWh)	Energy Value ($)
1	3.26	3390	576.30
2	4.27	4007	681.19
3	4.78	4787	813.79
4	4.98	4721	802.57
5	5.46	5102	867.34
6	5.58	4864	826.88
7	5.76	5177	880.09
8	5.74	5195	883.15
9	5.14	4617	784.89
10	4.59	4411	749.87
11	3.07	2950	501.50
12	2.88	2920	496.40
Year	4.63	52141	8863.97

FIGURE 3: Projected Output for Prototype Design

The 41.80kW photovoltaic installation on the Nantucket Town Hall roof with a roof pitch of 9 – 10 degrees and an azimuth of 180° would provide about 52,141 kilowatt hours (kWh) of electricity annually to the Town of Nantucket.

COSTS

The current market-rate for a turn-key roof mounted photovoltaic installations such as the design proposed in this study is about $6.40 per kilowatt. This rate allows for prevailing rate wage structure but does not consider added construction costs attributable to higher construction costs on Nantucket Island. Potential cost before any grants or rebates for the installation of the 41.80kW photovoltaic installation would thus total about $267,520.

FUNDING & GRANTS - SRECs

Currently the Massachusetts Clean Energy Center (MassCEC) provides grants for photovoltaic installations. Through the MassCEC, the Commonwealth Solar II Rebate Program will provide rebates for up to 5 kW for commercial PV projects up to 10 kW in nameplate capacity. Because the solar array design for the Nantucket Town Hall Building is above the 10kW grant cap maximum, it is not eligible for a MassCEC grant.

To provide incentives for larger solar installations, the state of Massachusetts has adopted a Solar Carve Out Program, allowing for the sale of Renewable Energy Certificates (SRECs). SRECs represent the renewable attributes of solar generation, bundled in minimum denominations of one megawatt-hour (MWh) of production. Massachusetts' Solar Carve-Out provides a means for SRECs to be created and verified, and allows electric suppliers to buy these certificates in order to meet their solar RPS (Renewable Portfolio Standards) requirements. All electric suppliers must use SRECs to demonstrate compliance with the RPS.

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The price of SRECs is determined primarily by market availability, although the DOER has created a certain amount of market stability by establishing a state Solar Credit Clearinghouse Auction (where prices are fixed at $300/MWh), as well as the Solar Alternative Compliance Payment (SACP) for the state RPS (set at $550/MWh for 2011). The Solar Credit Clearinghouse will only be utilized if or when SREC generators cannot sell their SRECs on the open market; the fixed price of $300/MWh effectively acts as price floor. The SACP, on the other hand acts, acts as a ceiling on the value of SRECs because it is the per-MWh payment that electricity suppliers must make if they fail to obtain enough SRECs to cover their RPS obligation.

SRECs last traded at $500/MWh, which would have provided about $26,000 in REC sales for the annual PV production estimate of the PV installation Nantucket Town Hall of 52,141 kilowatt hours. 52,141 kilowatt hours annually equals 52 annual megawatt hours, for 52 SRECs at $500 each. The remaining 141 kwh would be bundled with future kWh production and sold in the next auction, once a MWh is reached.

The minimum SREC valued at $285 payment would generate approximately $14,820 annually for the 52 SRECs. To view current SREC values, visit the website markets.flettexchange.com/massachusetts/ .

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NET METERING

The electrical demand of the Nantucket Town Hall Building is not anticipated to utilize all 52,141 kWh of annual electrical production produced by the proposed solar array. In Massachusetts, through Net Metering, the excess production would be allocated to other municipal electrical accounts. The Town Hall would provide the "net-metered" system". All "net-metered" systems must be behind a customer's meter, but only a minimal amount of load located on-site is required. Through Net Metering, the excess power from the solar array on the Town Hall would be either monetized or credited. The utility has the discretion of monetizing or crediting the excess energy. When applying for the

interconnection with the local utility, a "Schedule Z" is filled out, which directs the utility as to the Net Metering schedule to other accounts.

POWER PURCHASE AGREEMENTS

Power Purchase Agreements (PPA), are an arrangement between a third party financier and a host, that allows the third party investor to own and operate the photovoltaic system on the host's roof (or property), with the third party leveraging the tax credits and the sale of the RECs. The host, in this case the Town of Nantucket, would then be offered a lowered cost for the electricity coming from the system on the roof paid to the investor, as the benefit of the arrangement.

The PPA has become an increasingly popular solution for municipalities where upfront installation costs are unmanageable. Typically the municipality is also offered a system buy-out at year 10, 15 or 20, which can be quite attractive due to solar system longevity.

While the finances of a PPA may not be as attractive as outright ownership, when a municipality does not have the cash to fund a photovoltaic installation, the PPA solution may be a viable one.

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VISIBILITY

With the Town Hall situated in Nantucket's primary historic district, the visibility of the solar system will be a key consideration. However, the combination of the Town Hall's great height, the low profile of the solar panels against the roof, and the relative low pitch of the Town Hall roof will all contribute to making the installation low visibility.

COST ANALYSIS – TOWN OWNERSHIP

In performing a cost analysis for the proposed photovoltaic installation on Nantucket Town Hall under a scenario where the Town owns and operates the system, two versions of financial profiles were run. The first reflects a scenario with a loan. The second is a cash-only financial profile. In both cases, certain assumptions have been made. These are:

- The SREC value will remain constant at its present value of $500 per MWh and be available for the next five years.
- The prevailing wage payment schedule would be required.
- The cost of electricity for the Nantucket municipality is .17 per kilowatt hour. (This cost was based on previous feasibility analysis for the Nantucket High School wind project.)
- An annual escalator of 5% for electricity costs was applied.
- A cost of $261 per year with an annual escalator of 3% for maintenance was incorporated. (No maintenance costs are typically incurred). At year 20 the replacement of the inverters at a cost of $16,000 was included. The lifespan of solar modules is typically 35 – 45 years.
- The Town of Nantucket has no tax base against which to apply tax rebates for solar installations.

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COST ANALYSIS FOR PHASE ONE with a loan

The loan conditions applied in the financial review are 5% down-payment ($13,376) with a 5% interest payment for 15 years.

The charts in Figure 4 below identify the loan assumptions as well as the assumptions identified on p.13.

Nantucket Town Hall PV Project

Prepared for: **Nantucket Town Hall**

Date: **2/29/2011**

Project Assumptions		
Total Installed Capacity (kW)		42
Annual Energy Output (kWh)		52,141
Annual Energy Output (MWh)		52
Maintenance ($/kWh)	$	0.010
Annual Maintenance Cost (avg.)	$	261
Escalation Rate		3.0%
Current Effective Utility Rate ($/kWh)	$	0.170
Annual Energy Value	$	8,864
Escalation Rate		5%
SREC Value	$	500.00
# of Years to Sell REC's		5

Cost Summary		
Total System Price	$	267,520
State MassCEC Rebate (before tax)	$	-
State/Utility/USDA Rebate (%)		0%
Net Installed Cost	**$**	**267,520**
Cost/kW	$	6,400
Down-Payment (100%=No Finance)		5%
Down-Payment	$	13,376
Amount of Loan	$	254,144
Term of loan (years)		15
Loan Interest Rate (annual)		5.0%
Annual Loan Payment	$	24,485
Monthly Loan Payment	$	2,040
Lowest Ann. Debt Coverage Ratio		0.47

FIGURE 4: Project Cost Analysis Assumptions with a 15-year loan

Figure 5 illustrates the Cash Flow and Accumulated Cash Flow for the Nantucket Town Hall solar array if a loan is utilized with rates as stipulated on p.14. The accumulated cash flow is positive until the sale of RECs is assumed to be no longer available after year 5. The accumulated cash flow moves towards the positive trend again after the loan has been paid off in year 15.

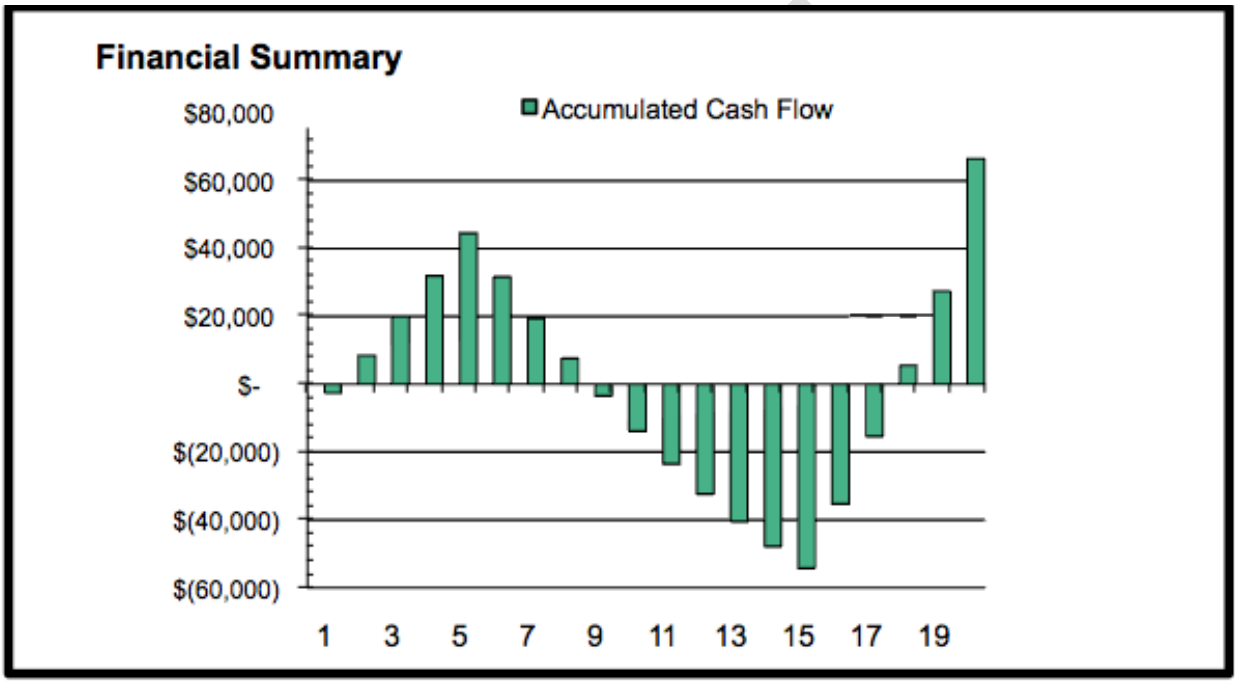

FIGURE 5: Financial Summary for the Nantucket Town Hall solar installation with a 15-year loan.

The Detailed Economics chart below illustrates the savings/costs over the first five years with a loan in place. The sale of SRECs allows for a cash income of $26,000 per year. The offset of electrical costs equals $9,307 in the first year. The yellow column titled "Total" is the accumulated economics in year 20.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Costs						
Up-Front Cost/Down Payment	$ 267,520	$ (13,376)				
Annual Loan Payments	$ (367,272)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)
Routine Maintenance	$ (6,548)		$ (261)	$ (269)	$ (277)	$ (285)
Major Repairs	$ 16,000	$ -	$ -	$ -	$ -	$ -
Total Costs	$ (371,196)	$ (37,861)	$ (24,746)	$ (24,753)	$ (24,761)	$ (24,770)
PV of Costs	$ (371,196)	$ (37,861)	$ (24,746)	$ (24,753)	$ (24,761)	$ (24,770)
Benefits						
Rebate as taxable Income		$ -				
Utility Escalation Rate		5.0%	5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 307,750	$ 9,307	$ 9,773	$ 10,261	$ 10,774	$ 11,313
SREC Value ($/kWh)		$ 500.000	$ 500.000	$ 500.000	$ 500.000	$ 500.000
REC Value ($)	$ 130,000	$ 26,000	$ 26,000	$ 26,000	$ 26,000	$ 26,000
Total Income	$ 437,750	$ 35,307	$ 35,773	$ 36,261	$ 36,774	$ 37,313
PV of Income	$ 437,750	$ 35,307	$ 35,773	$ 36,261	$ 36,774	$ 37,313
Income Tax Impact						
Summary						
Cash Flow after Tax		$ (2,554)	$ 11,027	$ 11,508	$ 12,013	$ 12,543
Accumulated Cash Flow	**$ 66,554**	$ (2,554)	$ 8,473	$ 19,981	$ 31,994	$ 44,537
PV of Cash Flow		$ (2,554)	$ 11,027	$ 11,508	$ 12,013	$ 12,543
NPV at 0%	**$ 66,554**					
Payback Yrs	**18.97**					
IRR	**434.95%**					

Loan Calculations

Year		1	2	3	4	5
Balance		(254,144)	(242,366)	(230,000)	(217,015)	(203,381)
Payment	(367,272)		(24,485)	(24,485)	(24,485)	(24,485)
Principal			(11,778)	(12,366)	(12,985)	(13,634)
Interest			(12,707)	(12,118)	(11,500)	(10,851)
Debt Coverage Ratio			0.90	1.45	1.47	1.49

FIGURE 6: Detailed Economics for the Nantucket Town Hall solar installation with a 15-year loan – first five years and year 20 in yellow

The Detailed Economics chart below illustrates the savings/costs continued over years six through thirteen with a loan.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year ... 12	Year 13
Costs									
Up-Front Cost/Down Payment	$ 267,520								
Annual Loan Payments	$ (367,272)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)	$ (24,485)
Routine Maintenance	$ (6,548)	$ (293)	$ (302)	$ (311)	$ (321)	$ (330)	$ (340)	$ (350)	$ (361)
Major Repairs	$ 16,000	$ -	$ -	$ -	$ -	$ -			
Total Costs	$ (371,196)	$ (24,778)	$ (24,787)	$ (24,796)	$ (24,805)	$ (24,815)	$ (24,825)	$ (24,835)	$ (24,846)
PV of Costs	$ (371,196)	$ (24,778)	$ (24,787)	$ (24,796)	$ (24,805)	$ (24,815)	$ (24,825)	$ (24,835)	$ (24,846)
Benefits									
Rebate as taxable Income									
Utility Escalation Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 307,750	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918	$ 16,714
SREC Value ($/kWh)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
REC Value ($)	$ 130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Income	$ 437,750	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918	$ 16,714
PV of Income	$ 437,750	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918	$ 16,714
Income Tax Impact									
Summary									
Cash Flow after Tax		$ (12,900)	$ (12,315)	$ (11,700)	$ (11,055)	$ (10,377)	$ (9,665)	$ (8,917)	$ (8,131)
Accumulated Cash Flow	**$ 66,554**	$ 31,638	$ 19,323	$ 7,623	$ (3,432)	$ (13,808)	$ (23,473)	$ (32,389)	$ (40,521)
PV of Cash Flow		$ (12,900)	$ (12,315)	$ (11,700)	$ (11,055)	$ (10,377)	$ (9,665)	$ (8,917)	$ (8,131)
NPV at 0%	**$ 66,554**								
Payback Yrs	**18.97**								
IRR	**434.95%**								

Loan Calculations

Year		6	7	8	9	10	11	12	13
Balance		(189,065)	(174,034)	(158,251)	(141,678)	(124,277)	(106,006)	(86,822)	(66,678)
Payment	(367,272)	(24,485)	(24,485)	(24,485)	(24,485)	(24,485)	(24,485)	(24,485)	(24,485)
Principal		(14,316)	(15,032)	(15,783)	(16,572)	(17,401)	(18,271)	(19,184)	(20,144)
Interest		(10,169)	(9,453)	(8,702)	(7,913)	(7,084)	(6,214)	(5,300)	(4,341)
Debt Coverage Ratio		1.51	0.47	0.50	0.52	0.55	0.58	0.61	0.64

FIGURE 7: Detailed Economics for the Nantucket Town Hall solar installation with a 15-year loan – years six through thirteen.

The Detailed Economics chart below illustrates the continued savings/costs over years 14 through 20 with a 15-year loan. The income from the system is significant in year 16 and after. The solar system will have a life expectancy of over 25 years, so the income from the system after year 20 is an important consideration. Potential inverter replacement has been accounted for in year 20.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Costs									
Up-Front Cost/Down Payment	$ 267,520								$ (13,376)
Annual Loan Payments	$ (367,272)	$ (24,485)	$ (24,485)	$ -	$ -	$ -	$ -	$ -	$ (367,272)
Routine Maintenance	$ (6,548)	$ (372)	$ (383)	$ (394)	$ (406)	$ (418)	$ (431)	$ (444)	$ (6,548)
Major Repairs	$ 16,000		$ -					$ 16,000	$ 16,000
Total Costs	$ (371,196)	$ (24,857)	$ (24,868)	$ (394)	$ (406)	$ (418)	$ (431)	$ 15,556	$ (371,196)
PV of Costs	$ (371,196)	$ (24,857)	$ (24,868)	$ (394)	$ (406)	$ (418)	$ (431)	$ 15,556	$ (371,196)
Benefits									
Rebate as taxable Income									$ -
Utility Escalation Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 307,750	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 23,519	$ 307,750
SREC Value ($/kWh)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125
REC Value ($)	$ 130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 130,000
Total Income	$ 437,750	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 23,519	$ 437,750
PV of Income	$ 437,750	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 23,519	$ 437,750
Income Tax Impact									
Summary									
Cash Flow after Tax		$ (7,306)	$ (6,440)	$ 18,955	$ 19,910	$ 20,914	$ 21,968	$ 39,075	$ 66,554
Accumulated Cash Flow	$ 66,554	$ (47,827)	$ (54,267)	$ (35,313)	$ (15,403)	$ 5,511	$ 27,479	$ 66,554	$ 66,554
PV of Cash Flow		$ (7,306)	$ (6,440)	$ 18,955	$ 19,910	$ 20,914	$ 21,968	$ 39,075	$ 66,554
NPV at 0%	$ 66,554								
Payback Yrs	18.97								
IRR	434.95%								

Loan Calculations

Year		14	15	16	17	18	19	20	
Balance		(45,527)	(23,319)	(0)	(0)	(0)	(0)	(0)	(0)
Payment	(367,272)	(24,485)	(24,485)	(24,485)	0	0	0	0	0
Principal		(21,151)	(22,208)	(23,319)	0	0	0	0	0
Interest		(3,334)	(2,276)	(1,166)	(0)	(0)	(0)	(0)	(0)
Debt Coverage Ratio		0.67	0.70	0.74	99.00	99.00	99.00	99.00	99.00

FIGURE 8: Detailed Economics for the Nantucket Town Hall solar installation with loan – years 14 through 20.

COST ANALYSIS FOR PHASE ONE with NO loan

The charts in Figure 9 below reflect the assumptions enumerated on page 13 and the adjustment to no loan.

Nantucket Town Hall PV Project

Prepared for: **Nantucket Town hall**

Date: **2/29/2011**

Project Assumptions		
Total Installed Capacity (kW)		42
Annual Energy Output (kWh)		52,141
Annual Energy Output (MWh)		52
Maintenance ($/kWh)	$	0.010
Annual Maintenance Cost (avg.)	$	261
Escalation Rate		3.0%
Current Effective Utility Rate ($/kWh)	$	0.170
Annual Energy Value	$	8,864
Escalation Rate		5%
SREC Value	$	500.00
# of Years to Sell REC's		5

Cost Summary		
Total System Price	$	267,520
State MassCEC Rebate (before tax)	$	-
State/Utility/USDA Rebate (%)		0%
Net Installed Cost	**$**	**267,520**
Cost/kW	$	6,400
Down-Payment (100%=No Finance)		100%
Down-Payment	$	267,520
Amount of Loan	$	-
Term of loan (years)		0
Loan Interest Rate (annual)		0.0%
Annual Loan Payment	$	-
Monthly Loan Payment	$	-
Lowest Ann. Debt Coverage Ratio		NA

FIGURE 9: Project Cost Analysis Assumptions with No loan.

Figure 10 illustrates the Cash Flow and Accumulated Cash Flow for the Nantucket Town Hall solar array with no loan. Positive cash flow is in year 11.

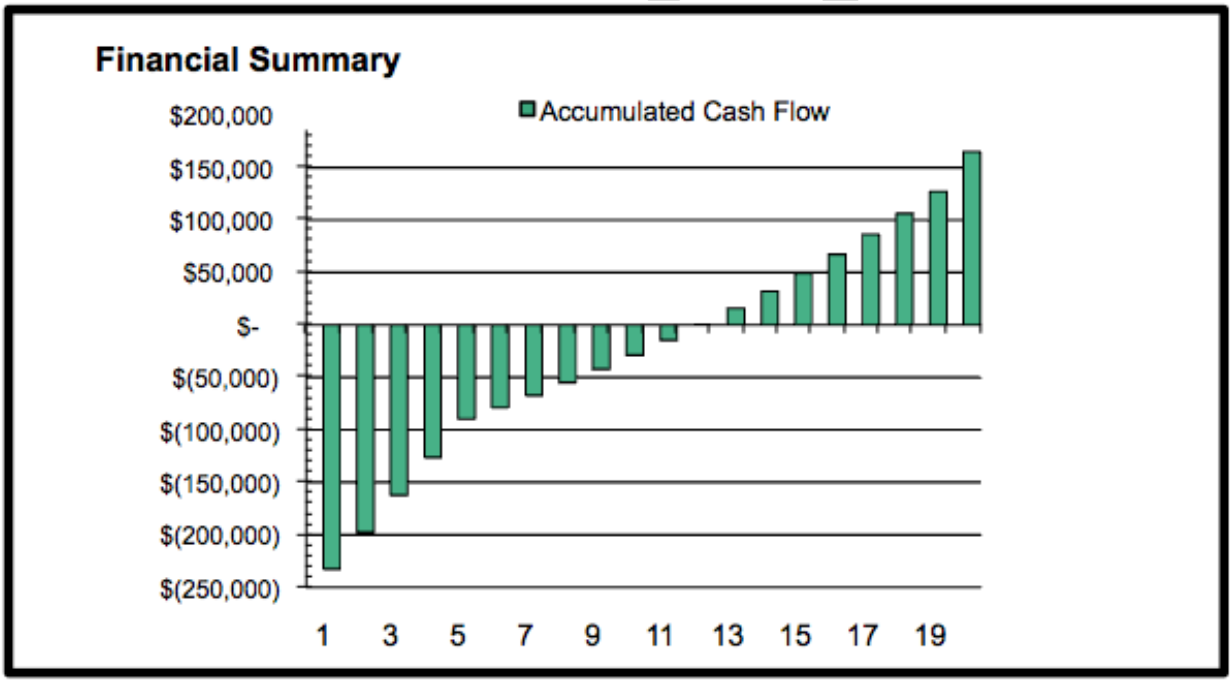

FIGURE 10: Financial Summary for the Nantucket solar installation with NO loan – ROI in year 11

The Detailed Economics chart below illustrates the savings/costs over the first five years with no loan. The sale of SRECs allows for a cash income of $26,000 per year. The offset of electrical costs equals $8,864 in the first year. The yellow column titled "Total" is the profile of accumulated economics in year 20.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 1	Year 2	Year 3	Year 4	Year 5
Costs						
Up-Front Cost/Down Payment	$ 267,520	$ (267,520)				
Annual Loan Payments	$ -	$ -	$ -	$ -	$ -	$ -
Routine Maintenance	$ (6,548)		$ (261)	$ (269)	$ (277)	$ (285)
Major Repairs	$ 16,000	$ -	$ -	$ -	$ -	$ -
Total Costs	$ (258,068)	$ (267,520)	$ (261)	$ (269)	$ (277)	$ (285)
PV of Costs	$ (258,068)	$ (267,520)	$ (261)	$ (269)	$ (277)	$ (285)
Benefits						
Rebate as taxable Income		$ -				
Utility Escalation Rate			5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 293,096	$ 8,864	$ 9,307	$ 9,773	$ 10,261	$ 10,774
SREC Value ($/kWh)		$ 500.000	$ 500.000	$ 500.000	$ 500.000	$ 500.000
REC Value ($)	$ 130,000	$ 26,000	$ 26,000	$ 26,000	$ 26,000	$ 26,000
Total Income	$ 423,096	$ 34,864	$ 35,307	$ 35,773	$ 36,261	$ 36,774
PV of Income	$ 423,096	$ 34,864	$ 35,307	$ 35,773	$ 36,261	$ 36,774
Summary						
Cash Flow after Tax		$ (232,656)	$ 35,046	$ 35,504	$ 35,985	$ 36,489
Accumulated Cash Flow	**$ 165,028**	$ (232,656)	$ (197,610)	$ (162,106)	$ (126,121)	$ (89,632)
PV of Cash Flow		$ (232,656)	$ 35,046	$ 35,504	$ 35,985	$ 36,489
NPV at 0%	**$ 165,028**					
Payback Yrs	**11.98**					
IRR	**6.78%**					

FIGURE 11: Detailed Economics for the Nantucket Town Hall solar installation with No loan – first five years and year 20 in yellow

The Detailed Economics chart below illustrates the continued savings/costs over years six through thirteen with NO loan with sustained positive cash flow visible in year 11.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year ... 12	Year 13
Costs									
Up-Front Cost/Down Payment	$ 267,520								
Annual Loan Payments	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Routine Maintenance	$ (6,548)	$ (293)	$ (302)	$ (311)	$ (321)	$ (330)	$ (340)	$ (350)	$ (361)
Major Repairs	$ 16,000	$ -	$ -	$ -	$ -				
Total Costs	$ (258,068)	$ (293)	$ (302)	$ (311)	$ (321)	$ (330)	$ (340)	$ (350)	$ (361)
PV of Costs	$ (258,068)	$ (293)	$ (302)	$ (311)	$ (321)	$ (330)	$ (340)	$ (350)	$ (361)
Benefits									
Rebate as taxable Income									
Utility Escalation Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 293,096	$ 11,313	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918
SREC Value ($/kWh)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
REC Value ($)	$ 130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Income	$ 423,096	$ 11,313	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918
PV of Income	$ 423,096	$ 11,313	$ 11,879	$ 12,472	$ 13,096	$ 13,751	$ 14,438	$ 15,160	$ 15,918
Summary									
Cash Flow after Tax		$ 11,019	$ 11,576	$ 12,161	$ 12,775	$ 13,421	$ 14,098	$ 14,810	$ 15,558
Accumulated Cash Flow	**$ 165,028**	$ (78,612)	$ (67,036)	$ (54,875)	$ (42,099)	$ (28,678)	$ (14,580)	$ 230	$ 15,787
PV of Cash Flow		$ 11,019	$ 11,576	$ 12,161	$ 12,775	$ 13,421	$ 14,098	$ 14,810	$ 15,558
NPV at 0%	**$ 165,028**								
Payback Yrs	**11.98**								
IRR	**6.78%**								

FIGURE 12: Detailed Economics for the Nantucket Town Hall solar installation with NO loan – years six through thirteen.

The Detailed Economics chart below illustrates the continued savings/costs over years 14 through 20 with NO loan.

Detailed Project Economics for Nantucket Town Hall

	Total	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Total
Costs									
Up-Front Cost/Down Payment	$ 267,520								$ (267,520)
Annual Loan Payments	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Routine Maintenance	$ (6,548)	$ (372)	$ (383)	$ (394)	$ (406)	$ (418)	$ (431)	$ (444)	$ (6,548)
Major Repairs	$ 16,000							$ 16,000	$ 16,000
Total Costs	$ (258,068)	$ (372)	$ (383)	$ (394)	$ (406)	$ (418)	$ (431)	$ 15,556	$ (258,068)
PV of Costs	$ (258,068)	$ (372)	$ (383)	$ (394)	$ (406)	$ (418)	$ (431)	$ 15,556	$ (258,068)
Benefits									
Rebate as taxable Income									$ -
Utility Escalation Rate		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Electricity rate savings	$ 293,096	$ 16,714	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 293,096
SREC Value ($/kWh)		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 125
REC Value ($)	$ 130,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 130,000
Total Income	$ 423,096	$ 16,714	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 423,096
PV of Income	$ 423,096	$ 16,714	$ 17,550	$ 18,428	$ 19,349	$ 20,316	$ 21,332	$ 22,399	$ 423,096
Summary									
Cash Flow after Tax		$ 16,343	$ 17,167	$ 18,033	$ 18,943	$ 19,898	$ 20,901	$ 37,955	$ 165,028
Accumulated Cash Flow	$ 165,028	$ 32,130	$ 49,297	$ 67,330	$ 86,273	$ 106,171	$ 127,073	$ 165,028	$ 165,028
PV of Cash Flow		$ 16,343	$ 17,167	$ 18,033	$ 18,943	$ 19,898	$ 20,901	$ 37,955	$ 165,028
NPV at 0%	$ 165,028								
Payback Yrs	11.98								
IRR	6.78%								

FIGURE 13: Detailed Economics for the Nantucket Town Hall solar installation with NO loan – years 14 through 20.

SUMMARY

While the sale of SRECs currently makes the installation of PV in Massachusetts financially attractive, the ability to allocate the cash for initial installation remains a challenge for towns. In addition, towns' inability to leverage renewable energy tax credits is a disadvantage. Nonetheless, the lengthy lifespan of photovoltaic installations and the benefits make photovoltaic installation financially rewarding.

The availability of Power Purchase Agreements (PPA), under which a third party investor owns and operates a photovoltaic system on a host's roof, has become an increasingly popular solution for municipalities. While the long-range financial benefits may not be as attractive as outright ownership, when a municipality does not have the cash to fund a photovoltaic installation, the PPA is a possible solution.

The expanse of southern roof on Nantucket's Town Hall presents a significant photovoltaic installation prospect that would prove to be a benefit both to the Town's economy and as an offset to the Town's carbon footprint. Whether through outright ownership or through a third-party Power Purchase Agreement, pursuit of a solar system on the Nantucket Town Hall roof is a viable and practical opportunity.

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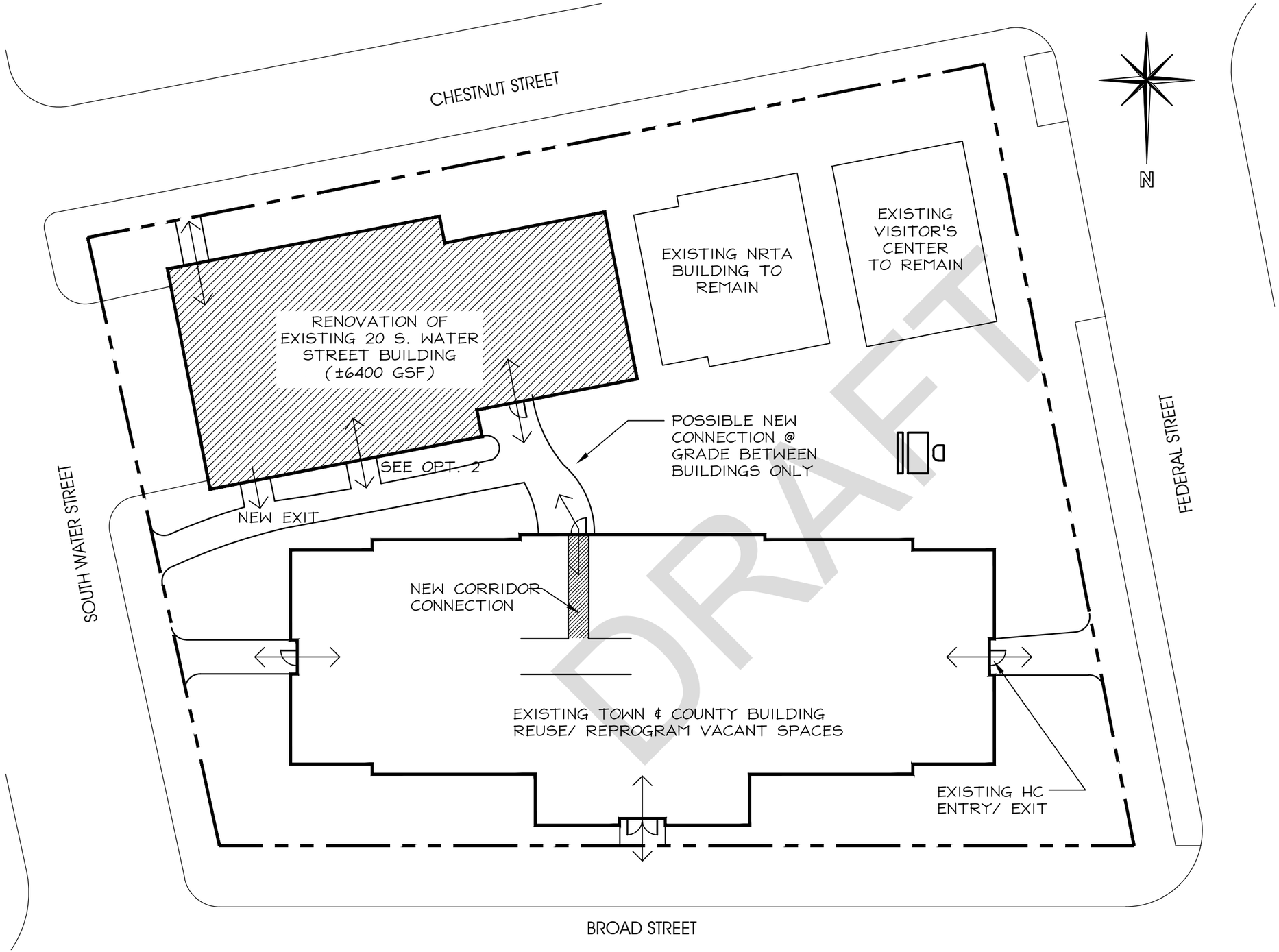
Appendix # 6

Earlier versions of Design Drawings with accompanying Total Project Cost Estimates

DRAFT



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DESIGN SUMMARY:

- EXISTING 6,400 GSF YIELDING 5,430 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION ONLY PER ORIGINAL PROJECT OBJECTIVE.
- OPEN OR ENCLOSED CONNECTION TO TOWN HALL IS OPTIONAL.
- NRTA & VISITOR'S CENTER REMAIN AS IS.
- FREES UP ONLY 22 FEDERAL FOR DISPOSITION.

PROS:

- SMALLEST DEVELOPMENT W/ LOWEST COST.
- RELOCATION OF PLANNING FREES SPACE AT 2 FAIRGROUNDS.
- IMPROVE SITE LANDSCAPING BETWEEN BUILDINGS
- PEDESTRIAN CIRCULATION IS VIABLE THROUGH THE SITE.
- UTILITY CROSS CONNECTIONS REMAIN.
- EXISTING VAULTS REMAIN.

CONS:

- REQUIRES NEW ELEVATOR.
- DOES NOT GROUP ALL OF FINANCE DEPARTMENTS TOGETHER.
- DOES NOT EXPAND EXISTING TOWN & COUNTY BUILDING OFFICES.
- NO SHARED CONF. SPACE.
- PLANNING DEPARTMENT SPACE IS REDUCED SIGNIFICANTLY FROM EXISTING.
- NON COMPLIANT ISSUES ARE NOT CORRECTED IN EXISTING TOWN & COUNTY BUILDING

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$2,000,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "A" - BASE SCHEME

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg

OFFICE SPACE	•	± 1310 S.F.
HUMAN & SOCIAL SERVICES	•	± 240 S.F.
HUMAN RESOURCES	•	± 160 S.F.
PLANNING	•	± 910 S.F.
SHERIFF	•	± 680 S.F.
STORAGE	•	± 100 S.F.
SUPPORT SPACE	•	± 360 S.F.
CIRCULATION	•	± 430 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "A" - BASE SCHEME

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Justin Gardner AIA Standard & WITH COLOR SHADING.dwg
J:\Current Projects\Nantucket\20 S. Water St. Renovation\Drawings\Current Dwgs\JAN 4 2011 11 x 17 Concept Options.dwg

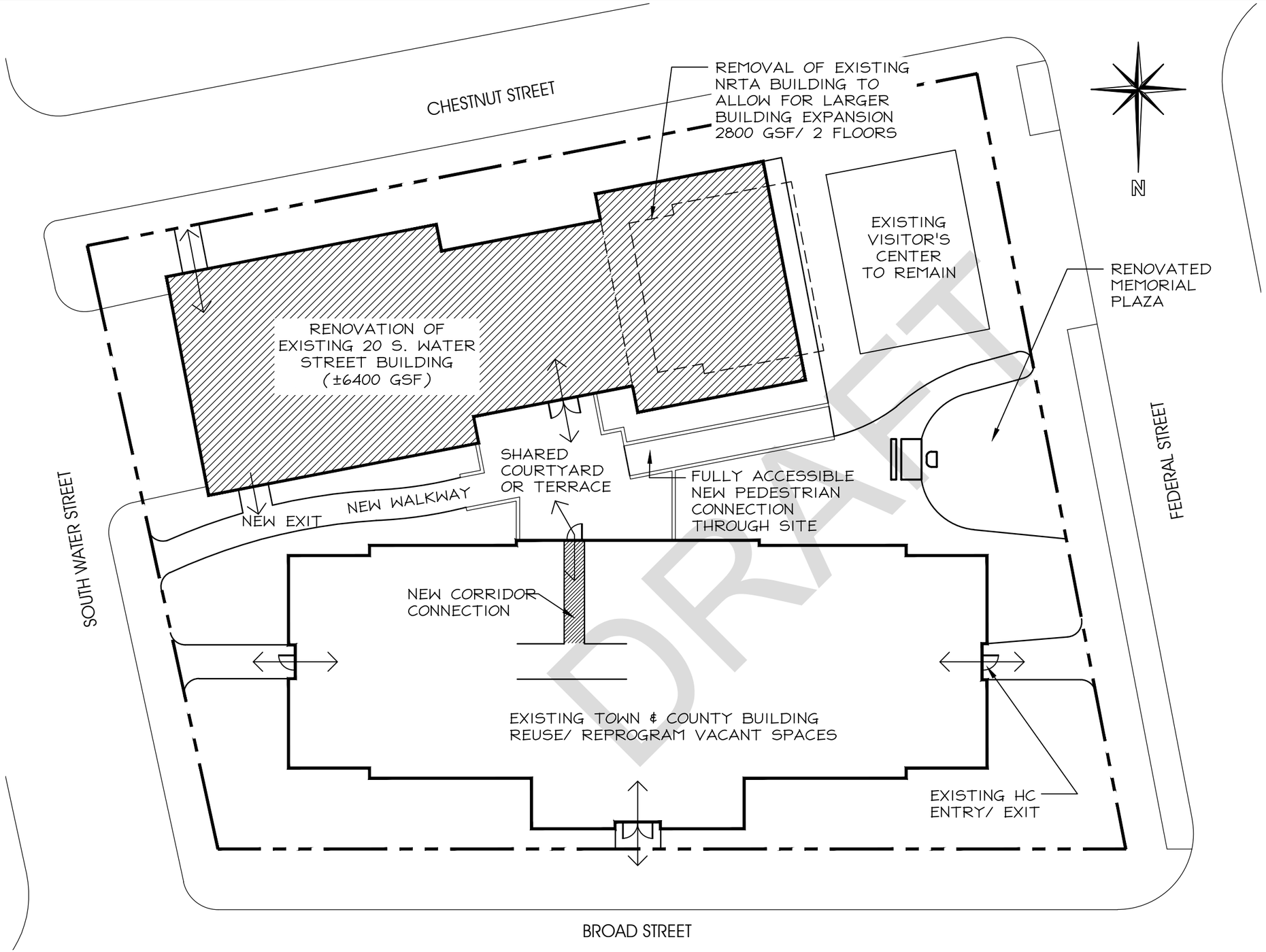
FINANCE OFFICES	•	± 1530 S.F.
STORAGE	•	± 120 S.F.
SUPPORT SPACE	•	± 300 S.F.
CIRCULATION	•	± 600 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "A" - BASE SCHEME

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA



DRAFT

DESIGN SUMMARY:

- 9,200 GSF YIELDING 8,010 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE.
- OPEN OR ENCLOSED CONNECTION TO TOWN HALL IS OPTIONAL.
- NRTA BUILDING REMOVED W/ VISITOR'S CENTER REMAINING AS IS.

PROS:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- PEDESTRIAN CIRCULATION IS VIABLE THROUGH THE SITE.
- IMPROVES ACCESS TO VISITOR'S CENTER.
- UTILITY CROSS CONNECTIONS REMAIN.

CONS:

- NEW ELEVATOR REQUIRED.
- NON COMPLIANT ISSUES IN TOWN & COUNTY BUILDING ARE NOT CORRECTED.
- NEW VAULTS MUST BE CONSTRUCTED.
- REQUIRES A TEMPORARY LOCATION FOR DEPARTMENTS WITHIN EXISTING NRTA BUILDING DURING CONSTRUCTION.

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$4,000,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard-5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Draw\Arch_Current Dwgs_JAN 4 2011 Concept Options.dwg

OFFICE SPACE	•	± 1020 S.F.
PLANNING	•	± 1020 S.F.
FINANCE OFFICES	•	± 1160 S.F.
SHERIFF	•	± 650 S.F.
NRTA	•	± 250 S.F.
MECH. & STORAGE	•	± 240 S.F.
SUPPORT SPACE	•	± 300 S.F.
CIRCULATION	•	± 580 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard,5 WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg

OFFICE SPACE	•	± 670 S.F.
HUMAN & SOCIAL SERVICES	•	± 350 S.F.
HUMAN RESOURCES	•	± 320 S.F.
FINANCE OFFICES	•	± 1590 S.F.
PUBLIC CONF. ROOM	•	± 280 S.F.
STORAGE	•	± 150 S.F.
SUPPORT SPACE	•	± 430 S.F.
CIRCULATION	•	± 790 S.F.

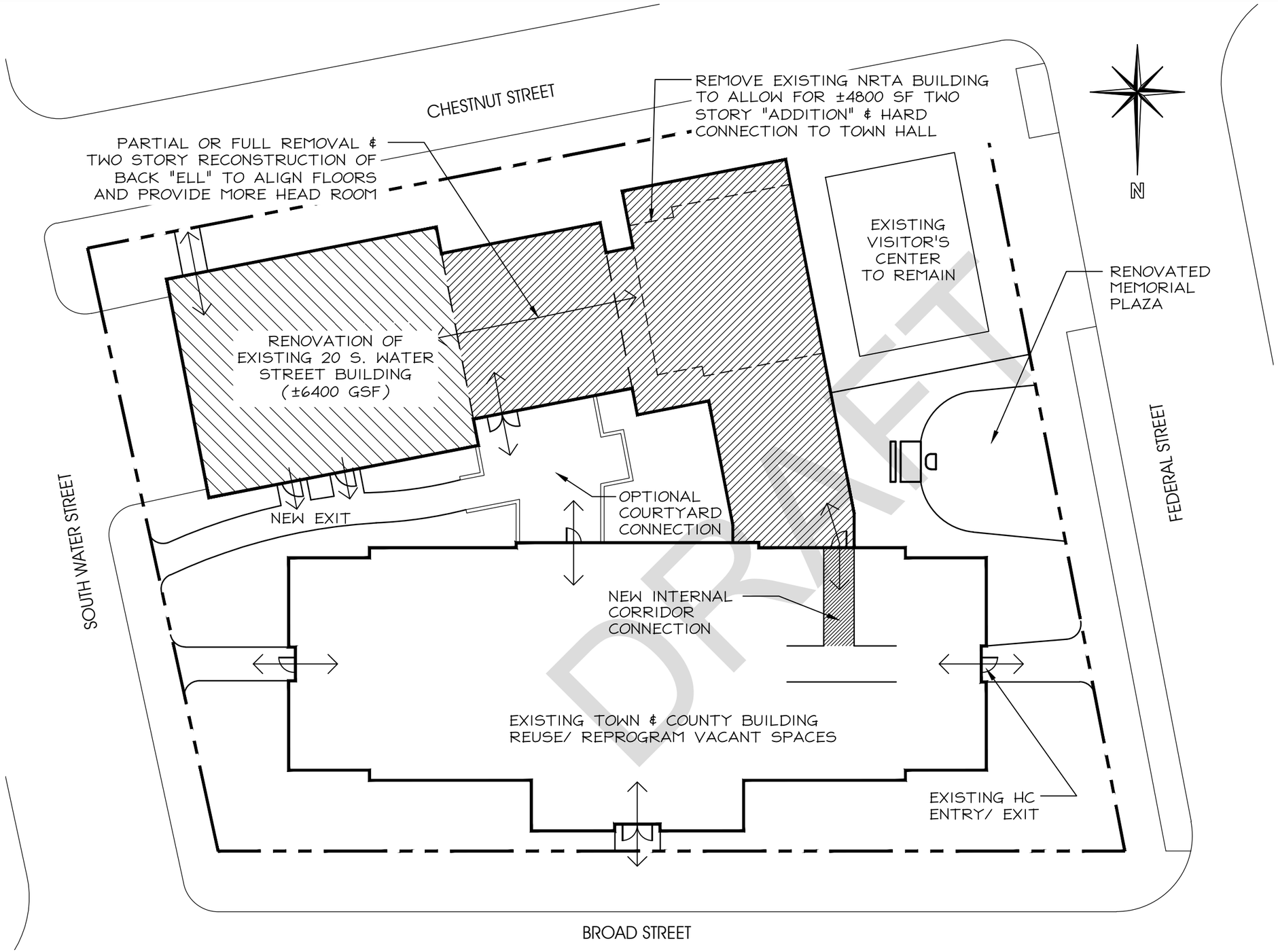
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard.S WITH COLOR SHADING.aib
H:\Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\Current Dwgs.\JAN 4 2011 Concept Options.dwg



DRAFT

DESIGN SUMMARY:

- 11,200 GSF YIELDING 9,725 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE.
- OPEN OR ENCLOSED CONNECTION TO TOWN HALL IS OPTIONAL.
- NRTA BUILDING REMOVED & VISITOR'S CENTER REMAINS AS IS.
- FREES UP 22 FEDERAL & 2 FAIRGROUNDS FOR OTHER USES OR DISPOSITION.

PRO:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- FUNCTIONAL EFFICIENCY GAINED THROUGH HARD CONNECTION.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- GAIN LARGE CONF. SPACE FOR ±33 PEOPLE.
- VISITOR'S CENTER REMAIN AS IS.
- UTILITY CROSS CONNECTIONS REMAIN.

CONS:

- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- SIGNIFICANT SCALE & COST OF DEVELOPMENT.
- CONSTRUCTION OF NEW VAULTS
- REQUIRES A TEMPORARY LOCATION FOR DEPARTMENTS WITHIN EXISTING NRTA BUILDING DURING CONSTRUCTION.

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$5,200,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard.5 (WITH COLOR SHADING.ctb
H:\Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg

OFFICE SPACE PLANNING	•	± 1135 S.F.
FINANCE OFFICES	•	± 950 S.F.
PUBLIC CONF. ROOM	•	± 585 S.F.
SHERIFF	•	± 650 S.F.
NRTA	•	± 130 S.F.
MECH. & STORAGE	•	± 140 S.F.
SUPPORT SPACE	•	± 250 S.F.
CIRCULATION	•	± 1120 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard_5 (WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs.\JAN 4 2011 Concept Options\Avg

OFFICE SPACE	•	± 670 S.F.
HUMAN & SOCIAL SERVICES	•	± 350 S.F.
HUMAN RESOURCES	•	± 320 S.F.
FINANCE OFFICES	•	± 1590 S.F.
PUBLIC CONF. ROOM	•	± 280 S.F.
STORAGE	•	± 150 S.F.
SUPPORT SPACE	•	± 430 S.F.
CIRCULATION	•	± 790 S.F.

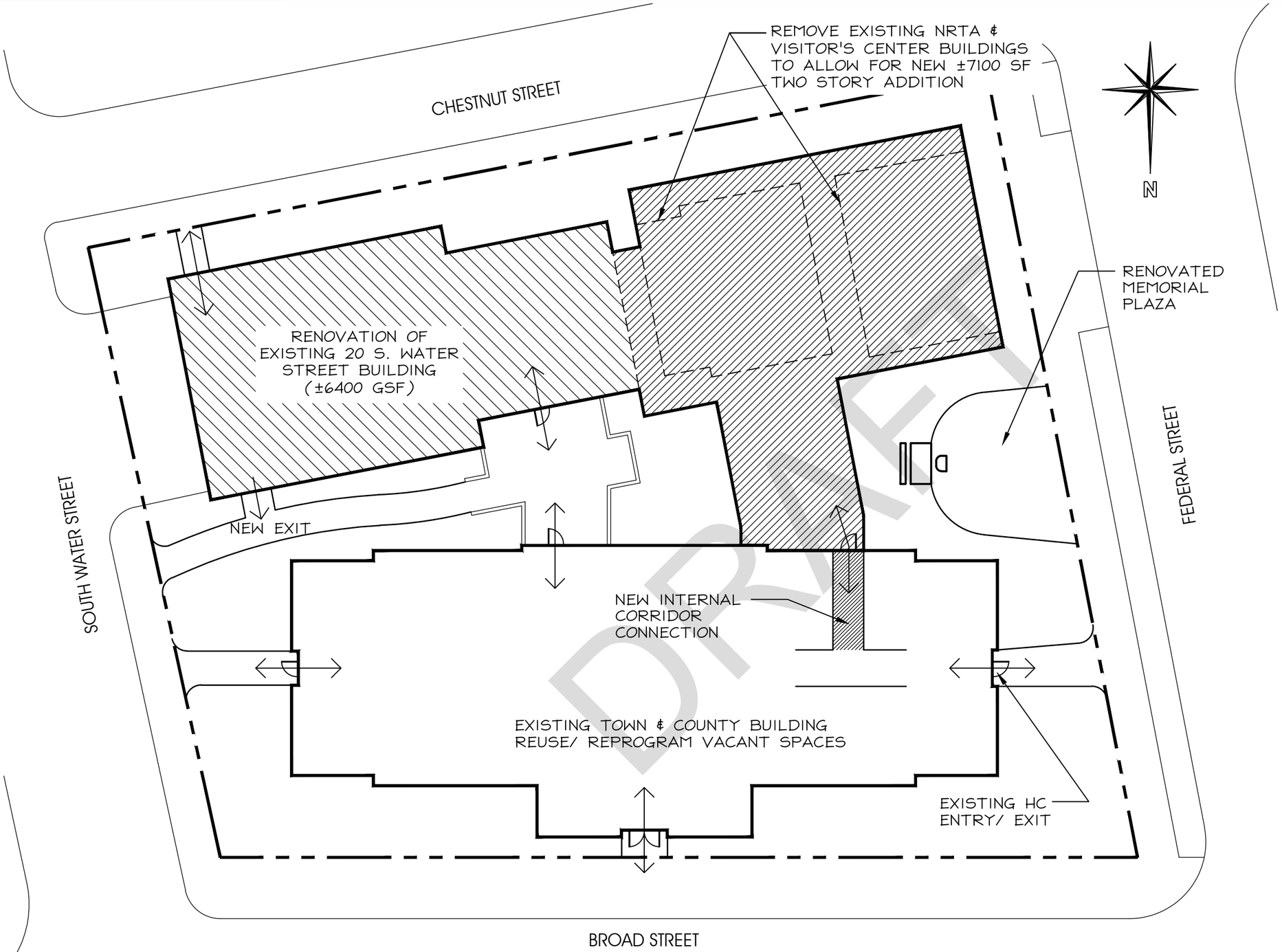
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard,3 WITH COLOR SHADING.stb
H:_Current Projects\Public\020 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg



DESIGN SUMMARY:

- 13,500 GSF YIELDING 12,550 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE+ NEW SUBSTANTIAL ADDITION.
- THE LARGEST OF THE CONCEPTS – THE INTENTION HERE WOULD BE TO RELOCATE/ CONSOLIDATE ALL TOWN DEPARTMENTS IN ONE LOCATION.
- FREES UP 22 FEDERAL, 37 WASHINGTON & 2 FAIRGROUNDS FOR OTHER USES OR DISPOSITION.
- ENCLOSED CONNECTION TO TOWN HALL
- OPTIONAL COURTYARD CONNECTION
- NEW VISITOR'S CENTER SPACES TO BE INCORPORATED INTO NEW LARGER BUILDING / PROJECT

PROS:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- FUNCTIONAL EFFICIENCY GAINED THROUGH HARD CONNECTION.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- UTILITY CROSS CONNECTIONS REMAIN.

CONS:

- MOST COSTLY & SUBSTANTIAL DEVELOPMENT.
- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- CONSTRUCTION OF NEW VAULTS
- REQUIRES A TEMPORARY LOCATION FOR ALL DISPLACED DEPARTMENTS DURING CONSTRUCTION

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$6,641,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "D" - NRTA & VISITOR CENTER REMOVAL WITH NEW TWO STORY ADDITION & CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
H:_Current Projects\Nantucket\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg

OFFICE SPACE	•	± 1610 S.F.
PLANNING & BUILDING		
FINANCE OFFICES	•	± 485 S.F.
VISITOR'S CENTER	•	± 1100 S.F.
VISITOR'S CENTER	•	± 750 S.F.
PUBLIC RESTROOMS	•	± 360 S.F.
PUBLIC CONF. ROOM	•	± 400 S.F.
SHERIFF	•	± 650 S.F.
NRTA	•	± 200 S.F.
MECH./STORAGE	•	± 360 S.F.
SUPPORT SPACE	•	± 475 S.F.
CIRCULATION	•	± 1115 S.F.

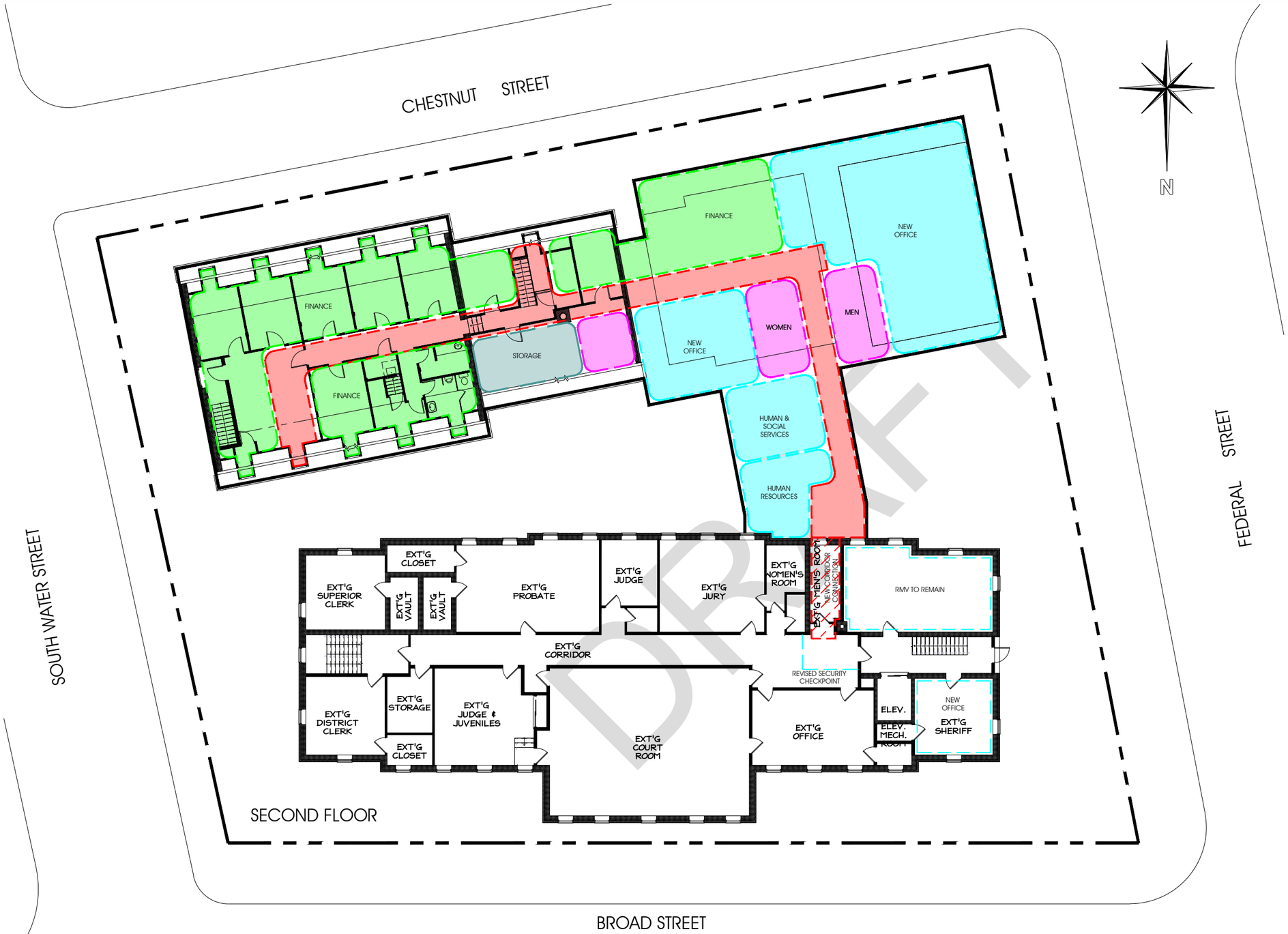
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "D" - NRTA & VISITOR CENTER REMOVAL WITH NEW TWO STORY ADDITION & CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.dwg
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg



OFFICE SPACE	•	± 1620 S.F.
MISC. DEPARTMENTS	•	± 1550 S.F.
HUMAN & SOCIAL SERVICES	•	± 1140 S.F.
HUMAN RESOURCES	•	± 480 S.F.
FINANCE OFFICES	•	± 2210 S.F.
STORAGE	•	± 210 S.F.
SUPPORT SPACE	•	± 760 S.F.
CIRCULATION	•	± 1390 S.F.

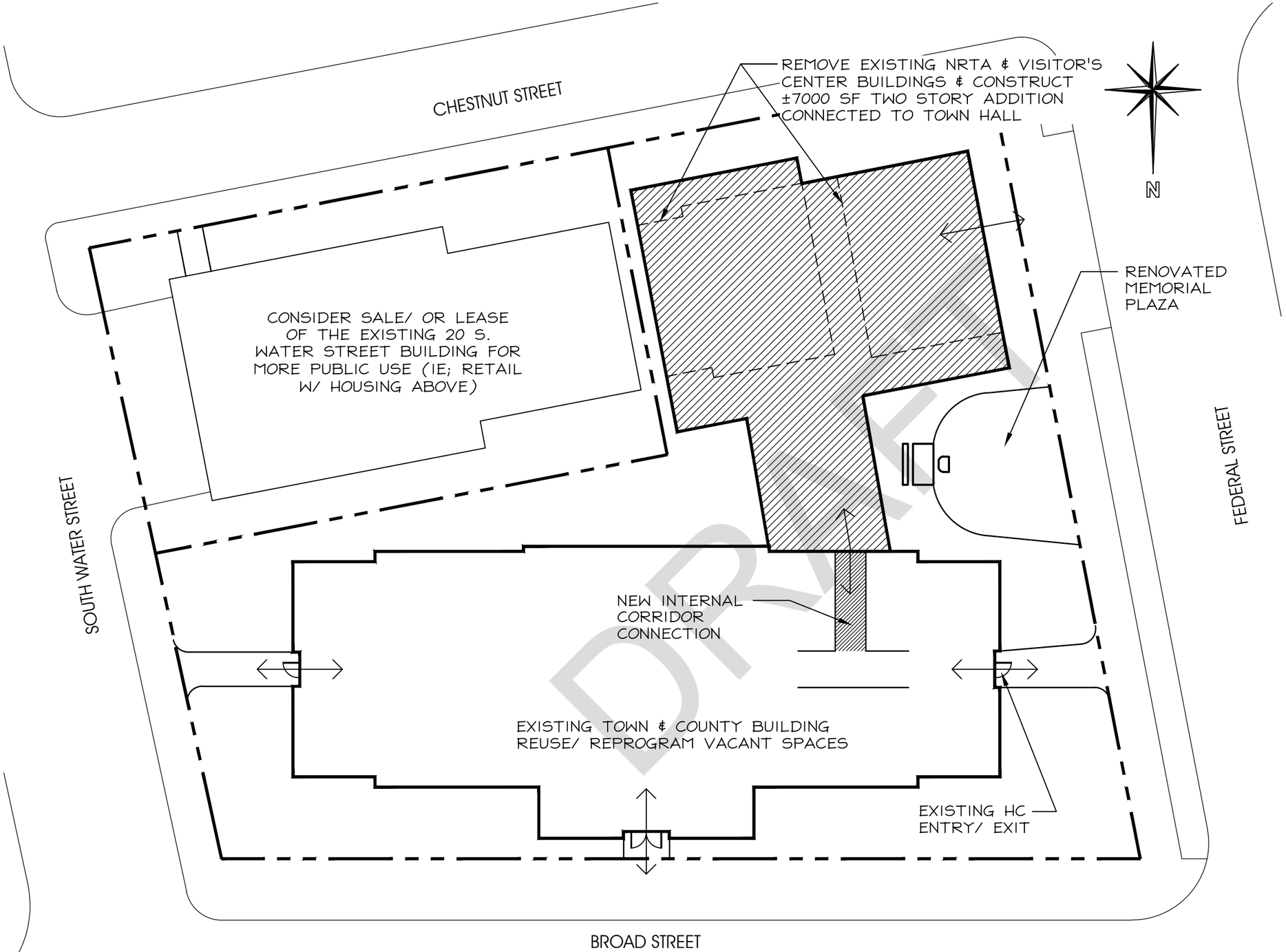
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "D" - NRTA & VISITOR CENTER REMOVAL WITH NEW TWO STORY ADDITION & CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January, 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
H:_Current Projects\Portfolio\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 Concept Options.dwg



DRAFT

DESIGN SUMMARY:

- 7,000 GSF YIELDING 6,480 NET S.F.
- FOREGOES RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE.
- REPLACES NRTA & VISITOR'S CENTER BY ADDING AN ADDITION DIRECTLY TO THE TOWN & COUNTY BUILDING.
- FREES UP 22 FEDERAL & 20 S. WATER ST. FOR OTHER USES OR DISPOSITION.
- PROVIDES ENCLOSED CONNECTION TO TOWN & COUNTY BUILDING.
- NEW VISITOR'S CENTER SPACES ARE SHOWN TO BE INCORPORATED INTO THE NEW ADDITION.

PROS:

- DISPOSITION OR LEASE OF 20 S. WATER ST. MAY PROVIDE A LARGE REVENUE STREAM FOR THE TOWN.
- GIVES THE TOWN A CHANCE TO SOLVE ADA/ ACCESSIBILITY ISSUES IN TOWN & COUNTY BUILDING.
- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- DOES NOT REQUIRE A NEW ELEVATOR.

CONS:

- DISPOSITION OF 20 S. WATER ST. MAY LIMIT TOWN USE OF SITE IN THE FUTURE.
- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- CONSTRUCTION OF NEW VAULTS
- REQUIRES A TEMPORARY LOCATION FOR ALL DISPLACED DEPARTMENTS DURING CONSTRUCTION.
- UTILITY CROSS CONNECTIONS ON SITE WOULD HAVE TO BE UNTANGLED TO SOME EXTENT.

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$3,461,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "E"

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\JAN 4 2011 11 X 17 Concept Options.dwg

OFFICE SPACE	•	± 200 S.F.
HUMAN RESOURCES	•	± 200 S.F.
FINANCE OFFICES	•	± 400 S.F.
SHERIFF	•	± 570 S.F.
VISITOR'S CENTER	•	± 1000 S.F.
NRTA	•	± 170 S.F.
SUPPORT SPACE	•	± 370 S.F.
CIRCULATION	•	± 430 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "E" - NRTA & VISITOR CENTER REMOVAL WITH NEW TWO STORY ADDITION & CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard,5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_JAN 4 2011 11 X 17 Concept Options.dwg

OFFICE SPACE	•	± 470 S.F.
HUMAN & SOCIAL SERVICES	•	± 320 S.F.
OFFICE	•	± 150 S.F.
FINANCE OFFICES	•	± 1810 S.F.
SUPPORT SPACE	•	± 530 S.F.
CIRCULATION	•	± 430 S.F.

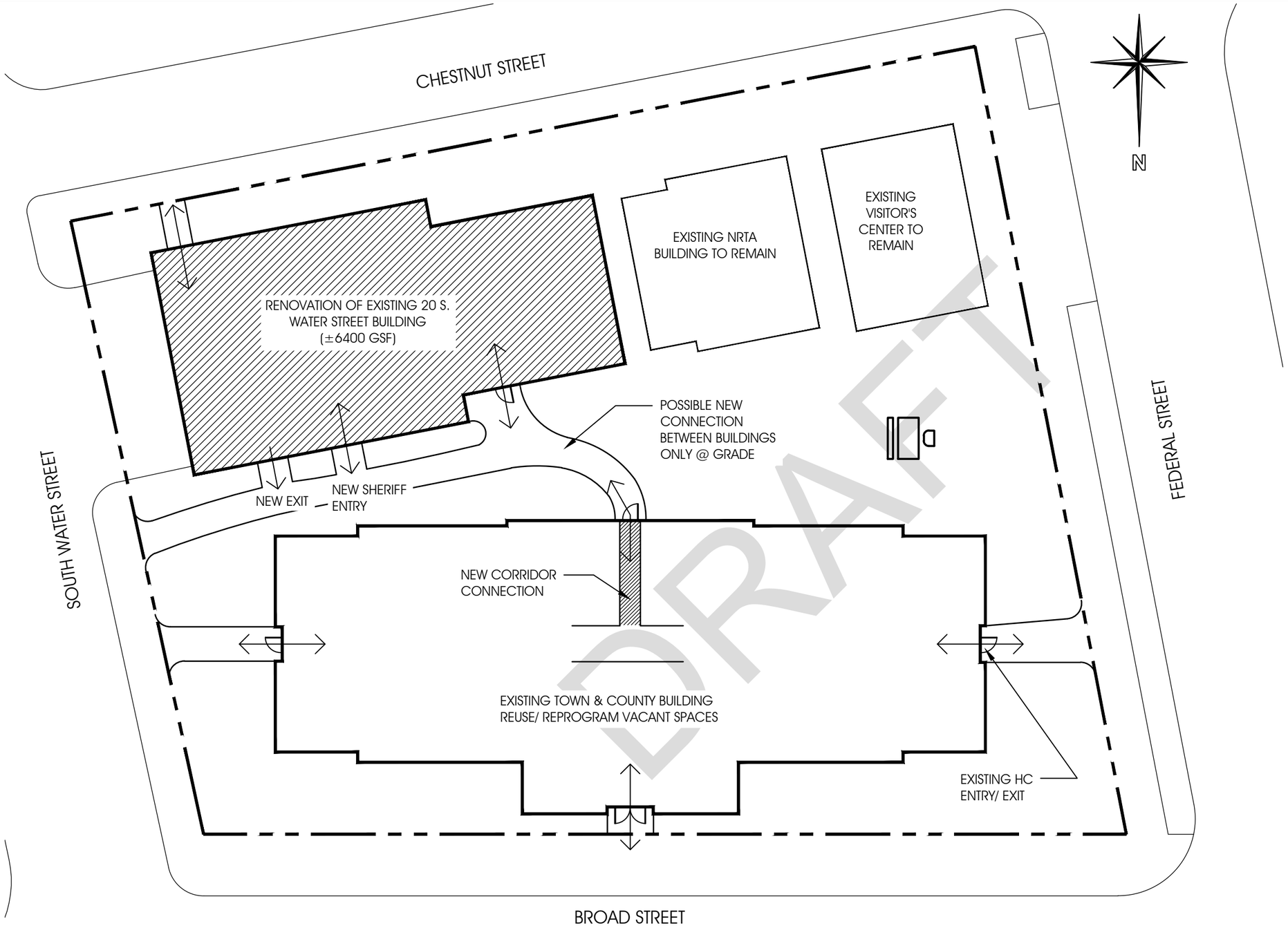
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

SCHEME "E" - NRTA & VISITOR CENTER REMOVAL WITH NEW TWO STORY ADDITION & CONNECTOR

01 . 04 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 January 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:\Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\Current Dwgs.\JAN 4 2011 11 X 17 Concept Options.dwg



DESIGN SUMMARY:

- EXISTING 6,400 GSF YIELDING 5,430 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION ONLY PER ORIGINAL PROJECT OBJECTIVE.
- OPEN OR ENCLOSED CONNECTION TO TOWN HALL IS OPTIONAL.
- NRTA & VISITOR'S CENTER REMAIN AS IS.
- FREES UP ONLY 22 FEDERAL FOR DISPOSITION.
- PLANNING DEPT. IS NOT RELOCATED TO 20 S. WATER STREET.

PROS:

- SMALLEST DEVELOPMENT W/ LOWEST COST.
- RELOCATION OF FINANCIAL DEPARTMENTS TO 20 S. WATER ST. ALLOWS BETTER ORGANIZATION & USE OF SPACE IN EXISTING TOWN & COUNTY BUILDING.
- IMPROVE SITE LANDSCAPING BETWEEN BUILDINGS
- PEDESTRIAN CIRCULATION IS VIABLE THROUGH THE SITE.
- UTILITY CROSS CONNECTIONS REMAIN.
- EXISTING VAULTS REMAIN.
- NO SIGNIFICANT IMPACT ON LOCAL PARKING OR ON SITE STAFF.

CONS:

- REASONABLE SPACE NOT AVAILABLE TO RELOCATE PLANNING DEPT. TO 20 S. WATER STREET.
- REQUIRES NEW ELEVATOR.
- NO SHARED CONF. SPACE IN 20 S. WATER STREET BUILDING.
- CONSTRUCTION OF NEW VAULT IN 20 S. WATER STREET MAY BE NEEDED.
- NON COMPLIANT ISSUES ARE NOT CORRECTED IN EXISTING TOWN & COUNTY BUILDING (I.E. HC TOILETS)

ORDER OF MAGNITUDE TOTAL PROJECT COST:

($ 3,512,200.00)

ORDER OF MAGNITUDE CONSTRUCTION COST:

± $ 2,310,000.00
(INCLUDES SITEWORK & SOME WORK @ T&C BUILDING)

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard.S WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\I 14 2011\JAN 14 2011 11 X 17 Concept A.dwg

FIRST FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 300 S.F.
HUMAN & SOCIAL SERVICES	•	± 300 S.F.
PLANNING (N/A)	•	± 0 S.F.
FINANCE OFFICES	•	± 1040 S.F.
TAX COLLECTOR (INCL. VAULT SPACE) (EX. = 590 S.F.)	•	± 540 S.F.
TAX ASSESSOR (EX. = 650)	•	± 500 S.F.
SHERIFF	•	± 600 S.F.
SUPPORT SPACE	•	± 390 S.F.
LOBBY/ PUBLIC COUNTER	•	± 150 S.F.
BATHROOMS	•	± 240 S.F.
STORAGE/ MECH.	•	± 230 S.F.
CIRCULATION	•	± 420 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 1240 S.F.
TOWN CLERK'S OFFICE	•	± 380 S.F.
LICENSING	•	± 220 S.F.
HUMAN RESOURCES	•	± 220 S.F.
ASST. TOWN MANAGER	•	± 210 S.F.
PROCUREMENT	•	± 210 S.F.
SUPPORT SPACE	•	± 800 S.F.
COPY/ SUPPLY ROOM	•	± 175 S.F.
CONFERENCE ROOM	•	± 230 S.F.
BATHROOMS	•	± 405 S.F.
CIRCULATION	•	± 120 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard_5 (WITH COLOR SHADING.stb
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SECOND FLOOR

20 S. WATER STREET

FINANCE OFFICES	•	± 1570 S.F.
STORAGE	•	± 120 S.F.
SUPPORT SPACE	•	± 300 S.F.
CIRCULATION	•	± 575 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 230 S.F.

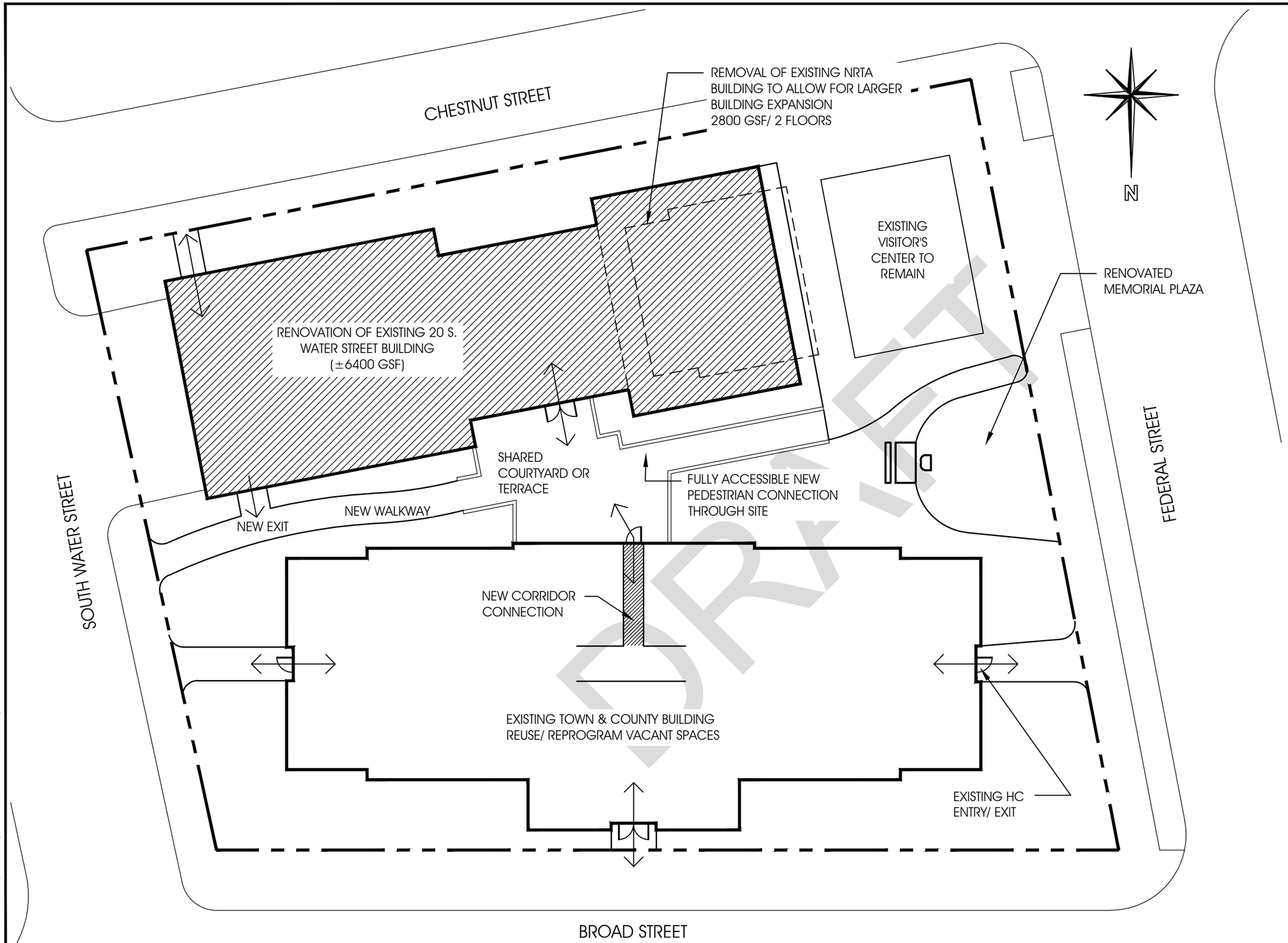
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "A" - BASE SCHEME

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard,5 (WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\J 14 2011\JAN 14 2011 11 X 17 Concept A.dwg



DESIGN SUMMARY:

- 9,200 GSF YIELDING 8,010 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE PLUS 2800 S.F. EXPANSION.
- OPEN OR ENCLOSED CONNECTION TO TOWN HALL IS OPTIONAL.
- NRTA BUILDING REMOVED W/ VISITOR'S CENTER REMAINING AS IS.
- PLANNING DEPT. IS NOT RELOCATED TO 20 S. WATER STREET.
- FIRST FLOOR SPACE ON S. WATER STREET AVAILABLE FOR NON-MUNICIPAL USES/ RENTAL INCOME.

PROS:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- ACCESSIBLE PEDESTRIAN CIRCULATION IS VIABLE THROUGH THE SITE.
- IMPROVES ACCESS TO VISITOR'S CENTER.
- UTILITY CROSS CONNECTIONS REMAIN.
- NO SIGNIFICANT IMPACT ON LOCAL PARKING OR ON SIT STAFF.

CONS:

- NEW ELEVATOR REQUIRED.
- NON COMPLIANT ISSUES IN TOWN & COUNTY BUILDING ARE NOT CORRECTED.
- NEW VAULTS MUST BE CONSTRUCTED.
- REQUIRES A TEMPORARY LOCATION FOR DEPARTMENTS WITHIN EXISTING NRTA BUILDING DURING CONSTRUCTION.
- PLANNING OR OTHER "REGULATORY/ PERMITTING" DEPTS. NOT RELOCATED.

ORDER OF MAGNITUDE TOTAL PROJECT COST:

($ 5,924,000.00)

ORDER OF MAGNITUDE CONSTRUCTION COST:

($ 4,200,000.00)

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

DRAFT

3 June 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.ctb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_\I 14 20th-JAN 14 2011 11 X 17 Concept B.dwg

FIRST FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 540 S.F.
HUMAN & SOCIAL SERVICES	•	± 540 S.F.
PLANNING (N/A)	•	± 0 S.F.
FINANCE OFFICES	•	± 990 S.F.
TAX COLLECTOR (INCL. VAULT SPACE)	•	± 590 S.F.
TAX ASSESSOR	•	± 400 S.F.
POTENTIAL LEASE SPACE	•	± 1215 S.F.
SHERIFF	•	± 650 S.F.
NRTA	•	± 200 S.F.
STORAGE/ MECH.	•	± 320 S.F.
SUPPORT SPACE	•	± 320 S.F.
CIRCULATION	•	± 660 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 1240 S.F.
TOWN CLERK'S OFFICE	•	± 380 S.F.
LICENSING	•	± 220 S.F.
HUMAN RESOURCES	•	± 220 S.F.
ASST. TOWN MANAGER	•	± 210 S.F.
PROCUREMENT	•	± 210 S.F.
SUPPORT SPACE	•	± 800 S.F.
COPY/ SUPPLY ROOM	•	± 175 S.F.
CONFERENCE ROOM	•	± 230 S.F.
BATHROOMS	•	± 405 S.F.
CIRCULATION	•	± 120 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard_5 WITH COLOR SHADING.stb
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SECOND FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 350 S.F.
HUMAN & SOCIAL SERVICES	•	± 350 S.F.
FINANCE OFFICES	•	± 1980 S.F.
PUBLIC CONF. ROOM	•	± 390 S.F.
STORAGE	•	± 130 S.F.
SUPPORT SPACE	•	± 300 S.F.
CIRCULATION	•	± 780 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 230 S.F.

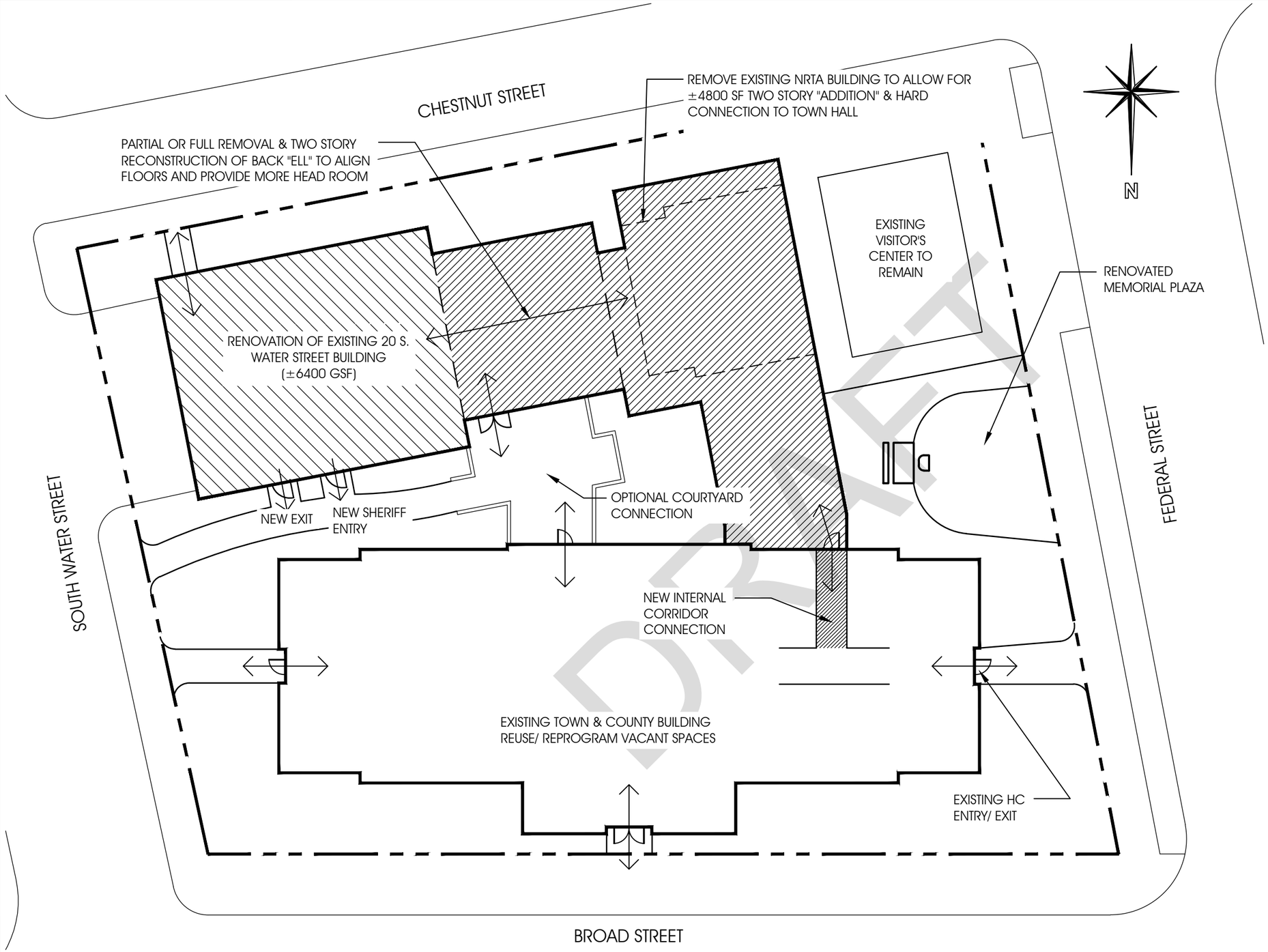
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "B" - NRTA REMOVAL & EXPANSION

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs\I 14 2011\JAN 14 2011 11 X 17 Concept B.dwg



DRAFT

DESIGN SUMMARY:

- 11,200 GSF YIELDING 9,725 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE & 4800 S.F. EXPANSION.
- TWO STORY FUNCTIONAL CONNECTION TO TOWN & COUNTY BUILDING.
- NRTA BUILDING REMOVED & VISITOR'S CENTER REMAINS AS IS.
- FREES UP 22 FEDERAL FOR OTHER USES OR DISPOSITION.
- PLANNING DEPT. IS NOT RELOCATED TO 20 S. WATER STREET.
- SPACE FRONTING ON S. WATER STREET AVAILABLE FOR NON-MUNICIPAL USES/ RENTAL INCOME.

PRO:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- FUNCTIONAL EFFICIENCY GAINED THROUGH HARD CONNECTION.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- GAIN LARGE CONF. SPACE FOR ±39 PEOPLE.
- VISITOR'S CENTER REMAIN AS IS.
- UTILITY CROSS CONNECTIONS REMAIN.

CONS:

- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- SIGNIFICANT SCALE & COST OF DEVELOPMENT.
- CONSTRUCTION OF NEW VAULTS
- REQUIRES A TEMPORARY LOCATION FOR DEPARTMENTS WITHIN EXISTING NRTA BUILDING DURING CONSTRUCTION.
- MINOR INCREASE OF STAFF ON SITE AND MINOR ADDED BURDEN TO LOCAL PARKING DEMAND.

ORDER OF MAGNITUDE TOTAL PROJECT COST:

($ 6,629,400.00)

ORDER OF MAGNITUDE CONSTRUCTION COST:

±$5,000,000.00

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard,5 (WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\J 14 2011\JAN 14 2011 11 X 17 Concept C.dwg

FIRST FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 0 S.F.
PLANNING (N/A)	•	± 0 S.F.
FINANCE OFFICES	•	± 930 S.F.
TAX COLLECTOR (INCL. VAULT SPACE)	•	± 520 S.F.
TAX ASSESSOR	•	± 410 S.F.
POTENTIAL LEASE SPACE	•	± 1215 S.F.
PUBLIC CONF. ROOM	•	± 590 S.F.
SHERIFF	•	± 670 S.F.
NRTA	•	± 140 S.F.
MECH. & STORAGE	•	± 160 S.F.
SUPPORT SPACE	•	± 280 S.F.
CIRCULATION	•	± 1170 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 1110 S.F.
TOWN CLERK'S OFFICE	•	± 400 S.F.
LICENSING	•	± 230 S.F.
PROCUREMENT	•	± 230 S.F.
ASST. TOWN MANAGER	•	± 250 S.F.
TAX ASSESSOR	•	± 190 S.F.
SUPPORT SPACE	•	± 560 S.F.
CONFERENCE ROOM	•	± 230 S.F.
BATHROOMS	•	± 330 S.F.
STORAGE	•	± 80 S.F.
CIRCULATION	•	± 190 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 28 . 2011
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SECOND FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 770 S.F.
HUMAN & SOCIAL SERVICES	•	± 340 S.F.
HUMAN RESOURCES	•	± 230 S.F.
OFFICE SPACE	•	± 200 S.F.
FINANCE OFFICES	•	± 1700 S.F.
CONFERENCE RM.	•	± 240 S.F.
STORAGE	•	± 300 S.F.
SUPPORT SPACE	•	± 550 S.F.
CIRCULATION	•	± 2000 S.F.

TOWN & COUNTY BUILDING

SUPPORT SPACE	•	± 230 S.F.
CIRCULATION	•	± 105 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "C" - NRTA REMOVAL W/ NEW TWO STORY CONNECTOR

01 . 28 . 2011
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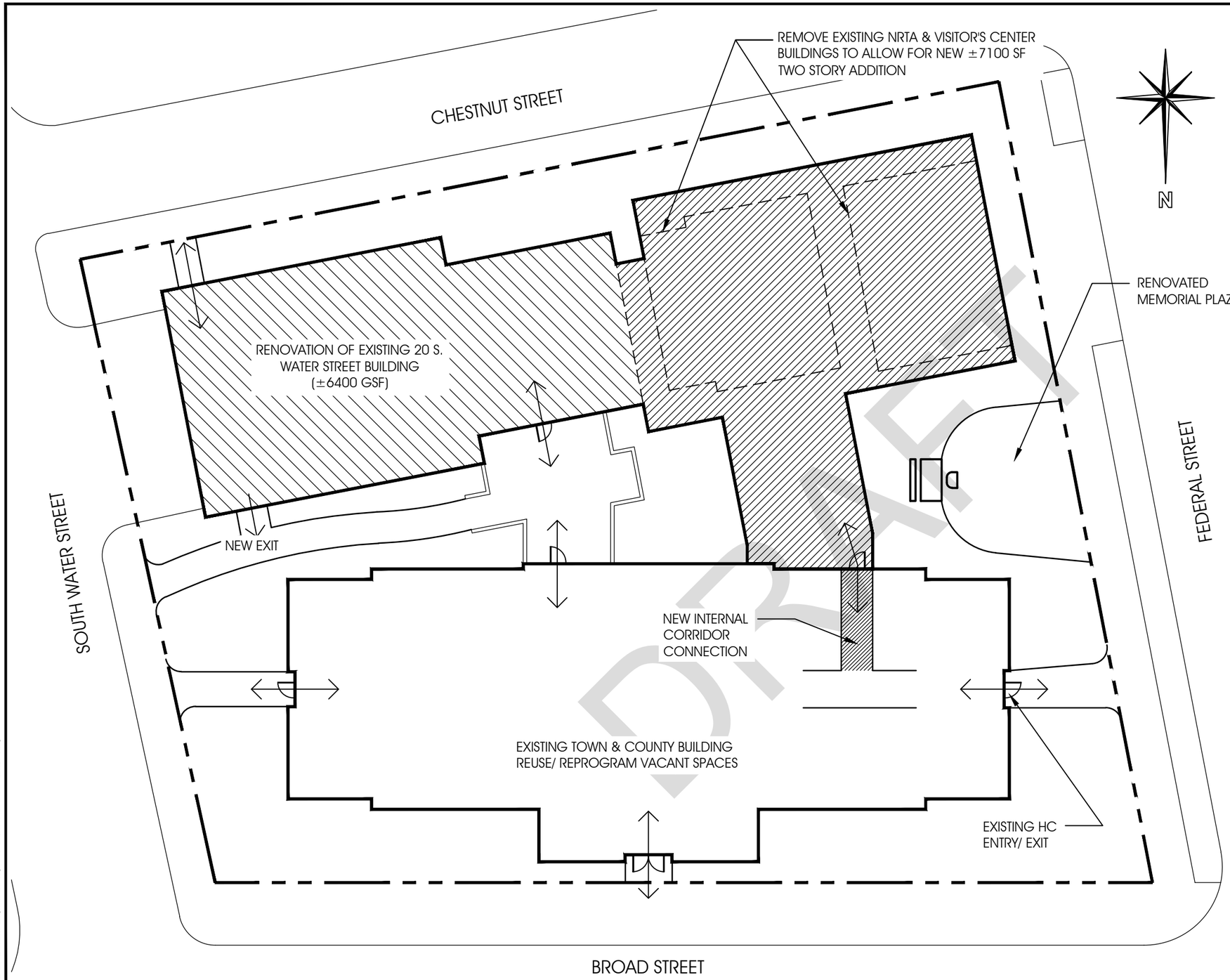
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_\1 14 2011\JAN 14 2011 11 X 17 Concept C.dwg



DESIGN SUMMARY:

- 13,500 GSF YIELDING 12,550 NET S.F.
- COMPLETE RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE+ NEW 7100 S.F. ADDITION.
- THE LARGEST OF THE CONCEPTS – THE INTENTION HERE WOULD BE TO RELOCATE/ CONSOLIDATE ALL TOWN DEPARTMENTS IN ONE LOCATION.
- FREES UP 22 FEDERAL, 37 WASHINGTON & 2 FAIRGROUNDS FOR OTHER USES OR DISPOSITION.
- ENCLOSED CONNECTION TO TOWN HALL
- OPTIONAL COURTYARD CONNECTION
- NEW NRTA & VISITOR'S CENTER SPACES TO BE INCORPORATED INTO NEW LARGER BUILDING / PROJECT

PROS:

- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- FREES UP SIGNIFICANT SPACE IN TOWN & COUNTY BUILDING.
- FUNCTIONAL EFFICIENCY GAINED THROUGH HARD CONNECTION.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- UTILITY CROSS CONNECTIONS REMAIN.

CONS:

- MOST COSTLY & SUBSTANTIAL DEVELOPMENT.
- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- CONSTRUCTION OF NEW VAULTS
- REQUIRES A TEMPORARY LOCATION FOR ALL DISPLACED DEPARTMENTS DURING CONSTRUCTION
- INCREASES STAFF ON SITE AND NEED FOR DEDICATED PARKING DOWNTOWN.
- INCREASES PARKING DEMAND FOR TOWNS PEOPLE CONDUCTING BUSINESS AT THIS CONSOLIDATED LOCATION.
- NO SPACE AVAILABLE FOR NON-MUNICIPAL USES @ 20 S. WATER STREET.

ORDER OF MAGNITUDE TOTAL PROJECT COST:

($ 8,136,900.00)

ORDER OF MAGNITUDE CONSTRUCTION COST:

± $ 6,150,000.00

DRAFT

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "D" - "THE FULL CONSOLIDATION SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_\I 14 2011\JAN 14 2011 11 X 17 Concept D.dwg

FIRST FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 2210 S.F.
PLANNING DEPARTMENT	•	± 1010 S.F.
BUILDING DEPARTMENT	•	± 1200 S.F.
FINANCE OFFICES	•	± 490 S.F.
TAX ASSESSOR	•	± 490 S.F.
VISITOR'S CENTER	•	± 1070 S.F.
VISITOR'S CENTER	•	± 710 S.F.
PUBLIC RESTROOMS	•	± 360 S.F.
SHERIFF	•	± 640 S.F.
NRTA	•	± 210 S.F.
MECH./STORAGE	•	± 310 S.F.
SUPPORT SPACE	•	± 475 S.F.
CIRCULATION	•	± 1120 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 820 S.F.
TOWN CLERK'S OFFICE	•	± 400 S.F.
ASST. TOWN MANAGER	•	± 210 S.F.
PROCUREMENT	•	± 210 S.F.
EXT'G TAX ASSESSOR'S OFFICE	•	± 230 S.F.
CIRCULATION	•	± 210 S.F.
STORAGE	•	± 70 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "D" - "THE FULL CONSOLIDATION SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard_5 (WITH COLOR SHADING).stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\1 14 2011\JAN 14 2011 11 X 17 Concept D.dwg

SECOND FLOOR

20 S. WATER STREET

OFFICE SPACE	•	± 1620 S.F.
HDC	•	± 660 S.F.
HEALTH DEPARTMENT	•	± 610 S.F.
HUMAN & SOCIAL SERVICES	•	± 260 S.F.
HUMAN RESOURCES	•	± 220 S.F.
CON. COMM.	•	± 180 S.F.
FINANCE OFFICES	•	± 1570 S.F.
COMMON FILE RM.	•	± 610 S.F.
STORAGE	•	± 100 S.F.
CONFERENCE RM.	•	± 480 S.F.
SUPPORT SPACE	•	± 390 S.F.
CIRCULATION	•	± 1120 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 230 S.F.
CIRCULATION	•	± 100 S.F.

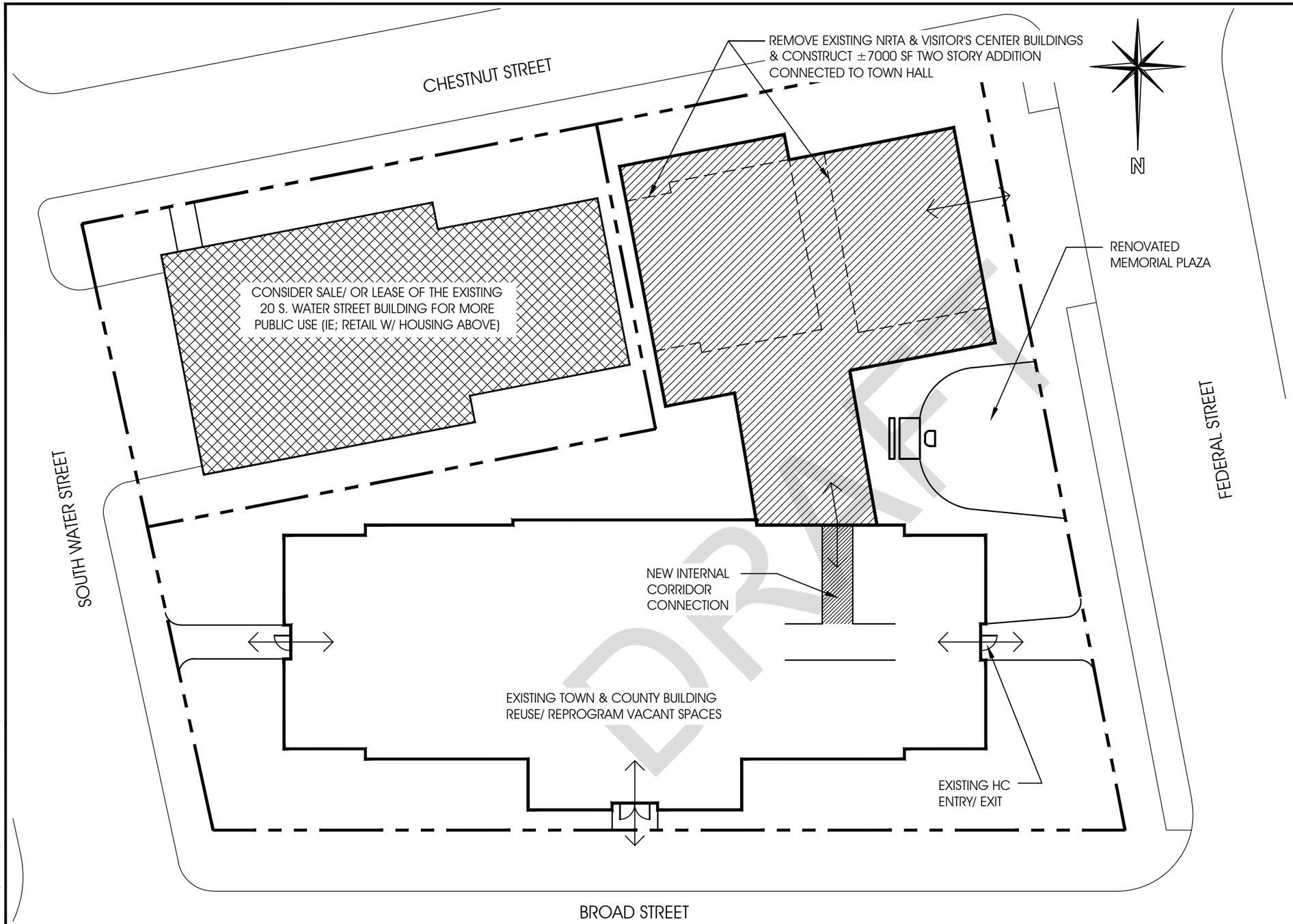
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "D" - "THE FULL CONSOLIDATION SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard_5 (WITH COLOR SHADING).stb
H:_Current Projects\Punch\20 S. Water St. Nantucket\Drawings_Current Dwgs_\1 14 2011\JAN 14 2011 11 X 17 Concept D.dwg



DESIGN SUMMARY:

- 7,000 GSF ADDITION TO TOWN & COUNTY BUILDING YIELDING 6,480 NET S.F.
- FOREGOES RENOVATION OF FORMER POLICE STATION PER ORIGINAL PROJECT OBJECTIVE.
- REPLACES NRTA & VISITOR'S CENTER BY ADDING AN ADDITION DIRECTLY TO THE TOWN & COUNTY BUILDING.
- FREES UP 22 FEDERAL & 20 S. WATER ST. FOR OTHER USES OR DISPOSITION.
- PROVIDES ENCLOSED CONNECTION TO TOWN & COUNTY BUILDING.
- NEW VISITOR'S CENTER SPACES ARE SHOWN TO BE INCORPORATED INTO THE NEW ADDITION.
- PLANNING DEPT. IS NOT RELOCATED TO 20 S. WATER STREET.
- TAX COLLECTOR REMAINS AT TOWN & COUNTY BUILDING.

PROS:

- DISPOSITION OR LEASE OF 20 S. WATER ST. MAY PROVIDE AN IMMEDIATE OR LONG TERM REVENUE STREAM FOR THE TOWN.
- RELOCATES ALL FINANCE DEPARTMENT FUNCTIONS INTO ONE BUILDING.
- MORE UNIFIED TOWN & COUNTY COMPLEX.
- DOES NOT REQUIRE A NEW ELEVATOR.
- GIVES THE TOWN A CHANCE TO SOLVE ADA/ ACCESSIBILITY ISSUES IN TOWN & COUNTY BUILDING.

CONS:

- DISPOSITION OF 20 S. WATER ST. MAY LIMIT TOWN USE OF SITE IN THE FUTURE.
- LOSS OF PEDESTRIAN PATH THROUGH THE SITE.
- REQUIRES A TEMPORARY LOCATION FOR ALL DISPLACED DEPARTMENTS DURING CONSTRUCTION.
- UTILITY CROSS CONNECTIONS ON SITE WOULD HAVE TO BE RECONFIGURED TO SOME EXTENT.
- SHERIFF'S DEPT. WOULD NEED TO BE ACCOMMODATED WITHIN NEW ADDITION OR REMAIN WITHIN LEASED 20 S. WATER STREET.
- NO PLANNING, BUILDING, HEALTH, HDC OR CON. COMM. RELOCATED TO THIS LOCATION.

ORDER OF MAGNITUDE TOTAL PROJECT COST:

($ 5,264,400.00)

ORDER OF MAGNITUDE CONSTRUCTION COST:

± $ 3,800,000.00

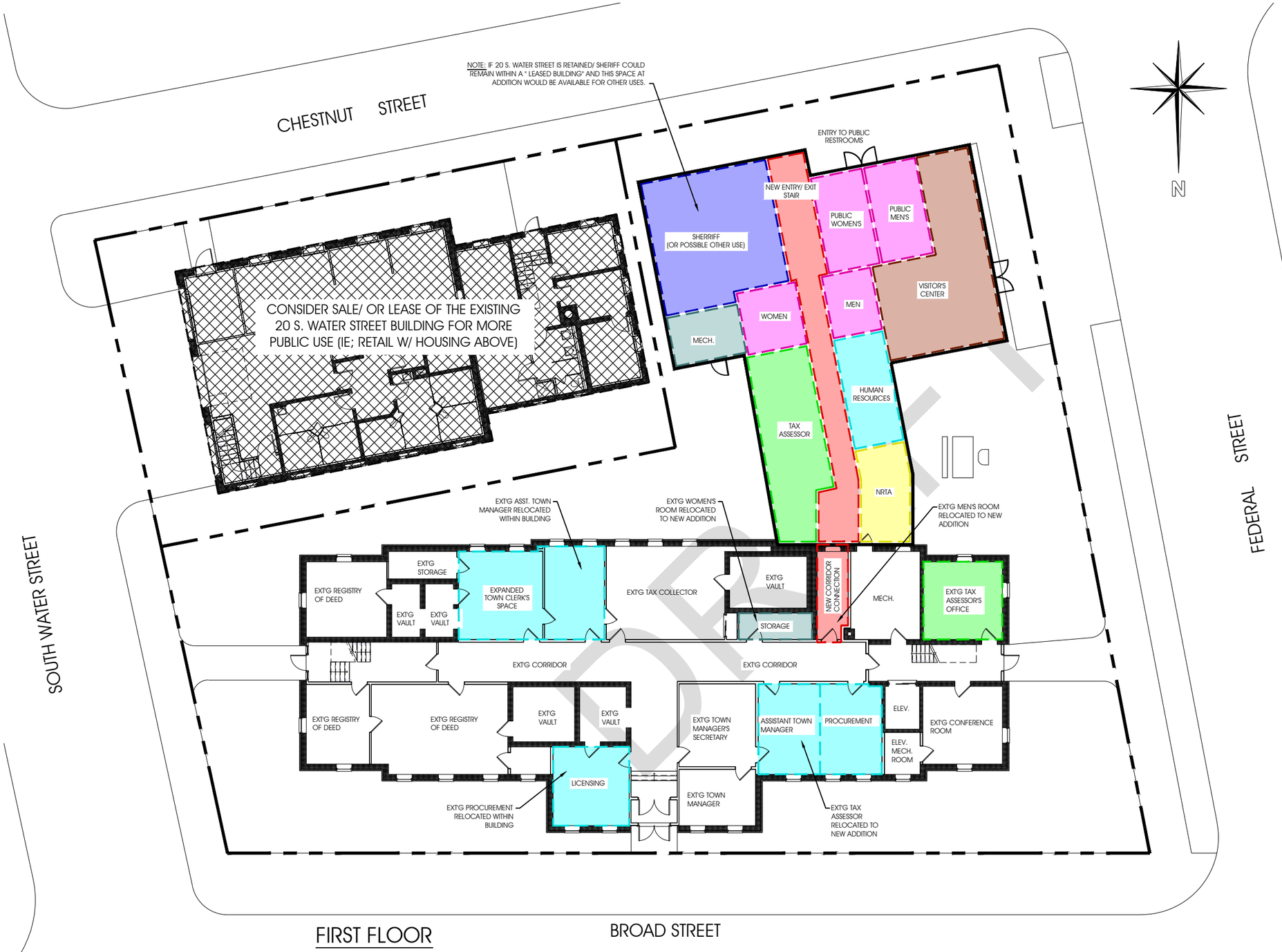
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "E" - "OUT OF THE BOX SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard,5 [WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\J 14 2011\JAN 14 2011 11 X 17 Concept E.dwg



FIRST FLOOR

NEW ADDITION

OFFICE SPACE	•	± 200 S.F.
HUMAN RESOURCES	•	± 200 S.F.
TAX ASSESSOR	•	± 400 S.F.
SHERIFF	•	± 620 S.F.
VISITOR'S CENTER	•	± 600 S.F.
NRTA	•	± 180 S.F.
MECH.	•	± 130 S.F.
SUPPORT SPACE	•	± 630 S.F.
EXTERIOR ACCESS PUBLIC RESTROOMS	•	± 380 S.F.
CIRCULATION	•	± 440 S.F.

TOWN & COUNTY BUILDING

OFFICE SPACE	•	± 1150 S.F.
TOWN CLERK'S OFFICE	•	± 500 S.F.
LICENSING	•	± 230 S.F.
ASST. TOWN MANAGER	•	± 210 S.F.
PROCUREMENT	•	± 210 S.F.
EXT'G TAX ASSESSOR'S OFFICE	•	± 230 S.F.
STORAGE	•	± 70 S.F.
CIRCULATION	•	± 110 S.F.

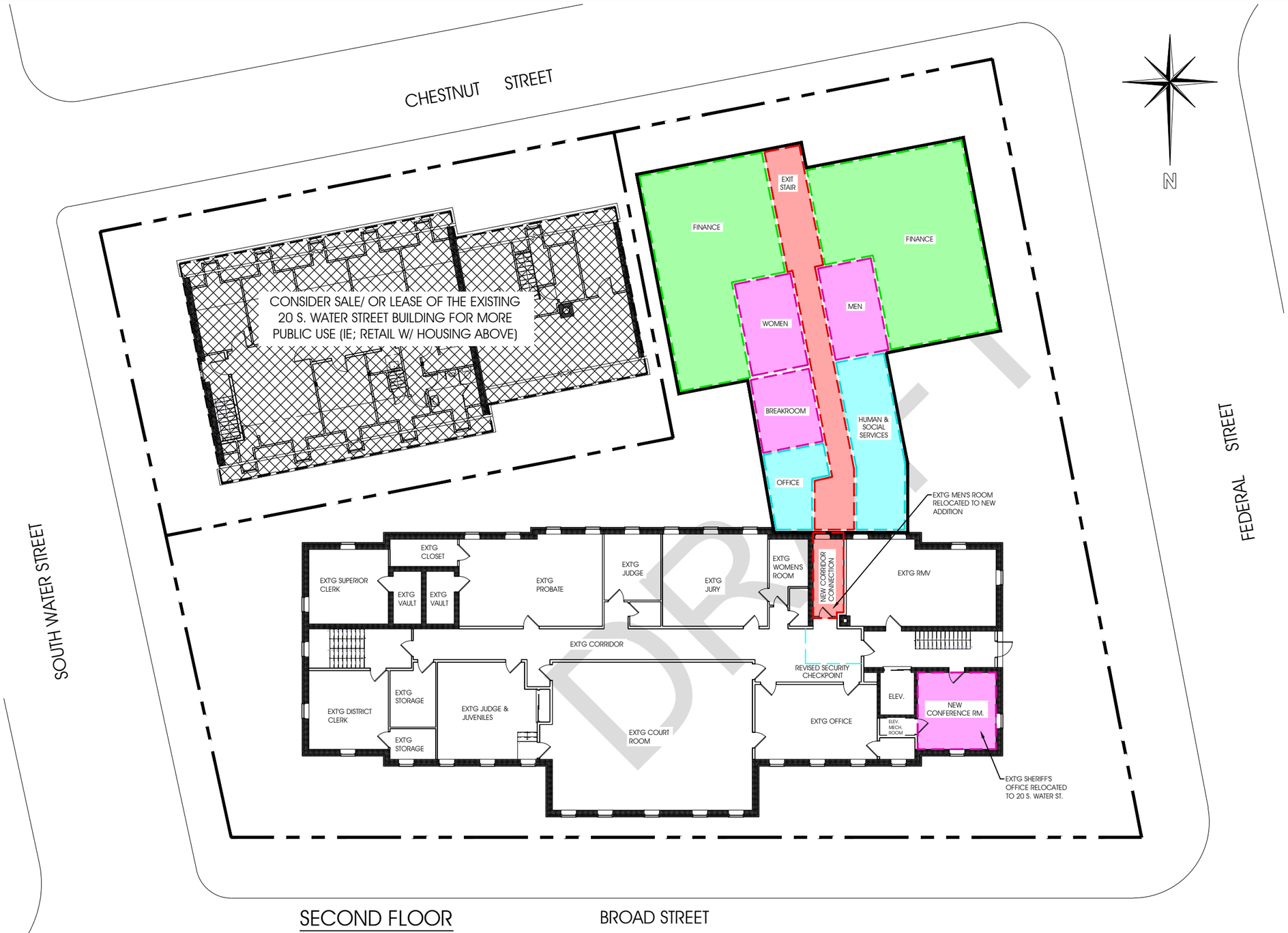
BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "E" - "OUT OF THE BOX SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard.5 WITH COLOR SHADING.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings_Current Dwgs_\1 14 2011\JAN 14 2011 11 X 17 Concept E.dwg



SECOND FLOOR

NEW ADDITION

OFFICE SPACE	•	± 480 S.F.
HUMAN & SOCIAL SERVICES	•	± 330 S.F.
OFFICE	•	± 150 S.F.
FINANCE OFFICES	•	± 1840 S.F.
SUPPORT SPACE	•	± 570 S.F.
BREAK ROOM	•	± 170 S.F.
CIRCULATION	•	± 430 S.F.

TOWN & COUNTY BUILDING

SUPPORT SPACE	•	± 230 S.F.
CIRCULATION	•	± 100 S.F.

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.

BPC ARCHITECTURE

CONCEPTUAL SCHEME "E" - "OUT OF THE BOX SCHEME"

01 . 28 . 2011
20 SOUTH WATER STREET STUDY
NANTUCKET, MA

3 June 2011 Chris Raber AIA Standard.S WITH COLOR SHADING.stb
H:_Current Projects\Public\20 S. Water St. Nantucket\Drawings_Current Dwgs_\I 14 2011\JAN 14 2011 11 X 17 Concept E.dwg

Appendix # 7

Copies of the CAD generated Existing Conditions Plans, Sections and Elevations for 20 South Water Street created for the study by BLF&R, from available town records.

DRAFT

1 EXISTING SITE PLAN

Scale: 1/8" = 1'-0"

STAMP:

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.LINRABERARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING SITE PLAN
1/8" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

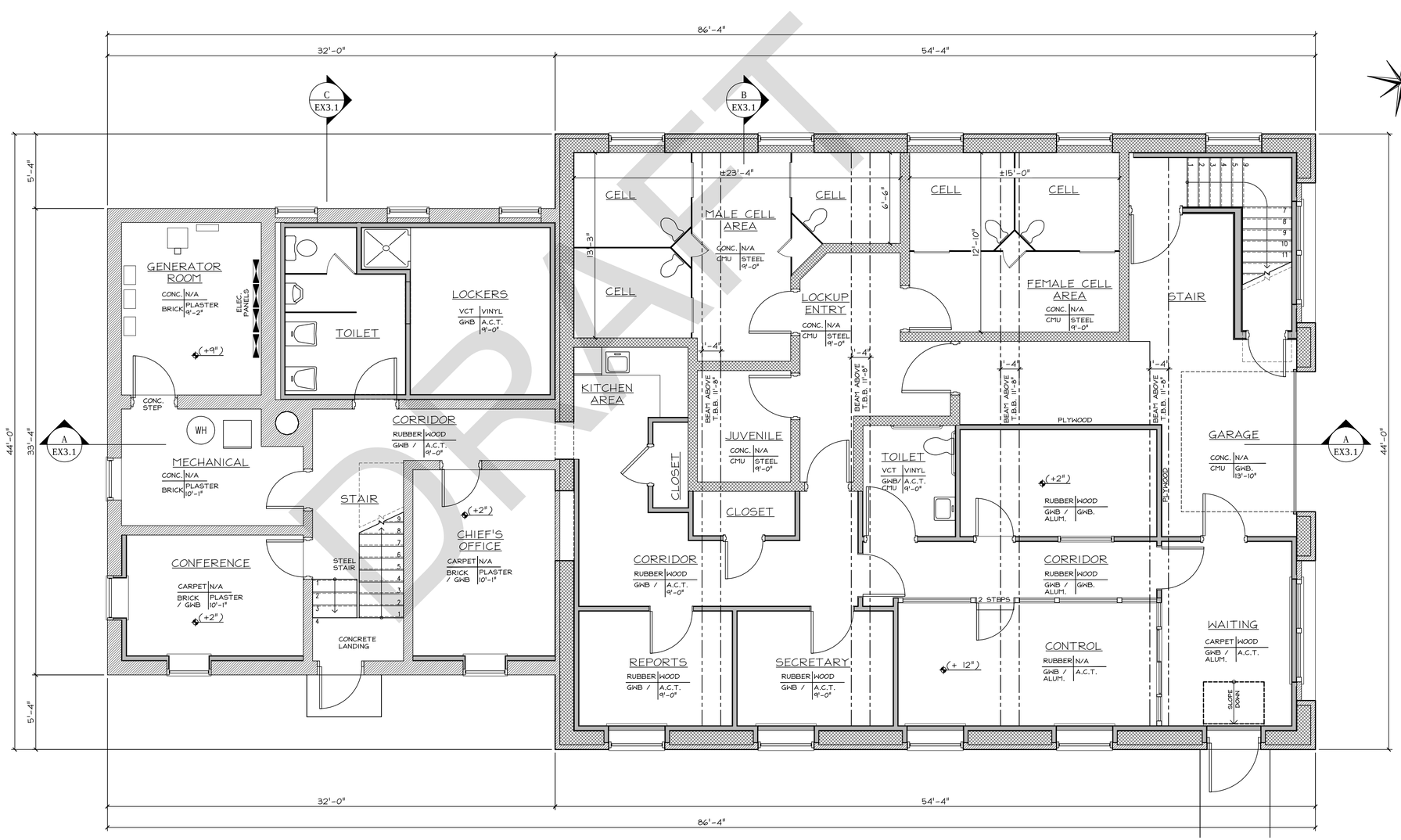
REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.: EX SP

8 December 2010 Chris Raber AIA Standard.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\As-Built Dwgs\Nantucket Police EX-1.dwg



1 FIRST FLOOR PLAN

Scale: 1/4" = 1'-0"

FLOOR TO FLOOR = 11'-6" @ WEST WING

DRAFT

STAMP:

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.LINRABERARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING FIRST FLOOR PLAN
1/4" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.: EX1.1

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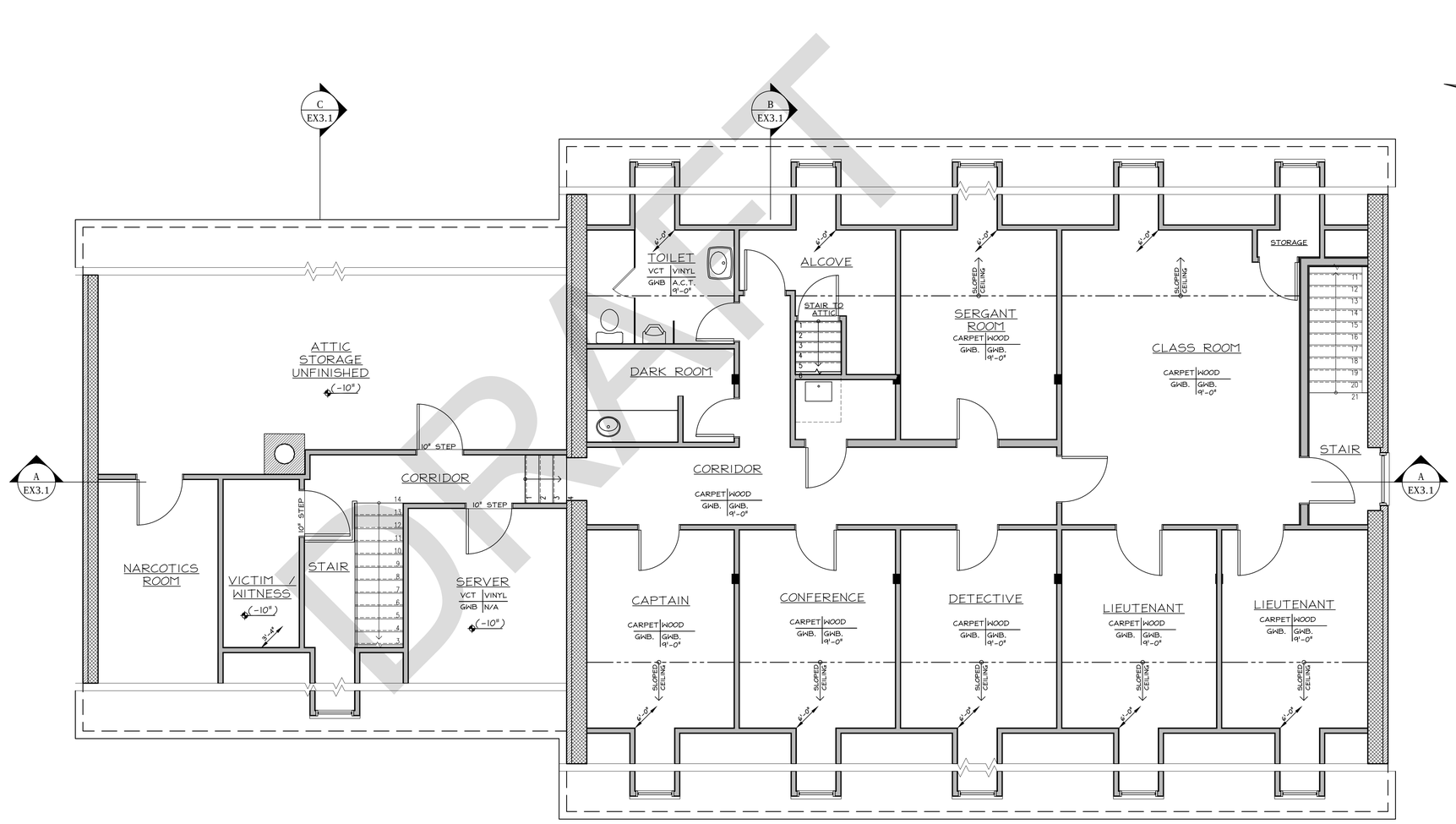

1 SECOND FLOOR PLAN

Scale: 1/4" = 1'-0"

STAMP:

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203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.LINRABERARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING SECOND FLOOR PLAN
1/4" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

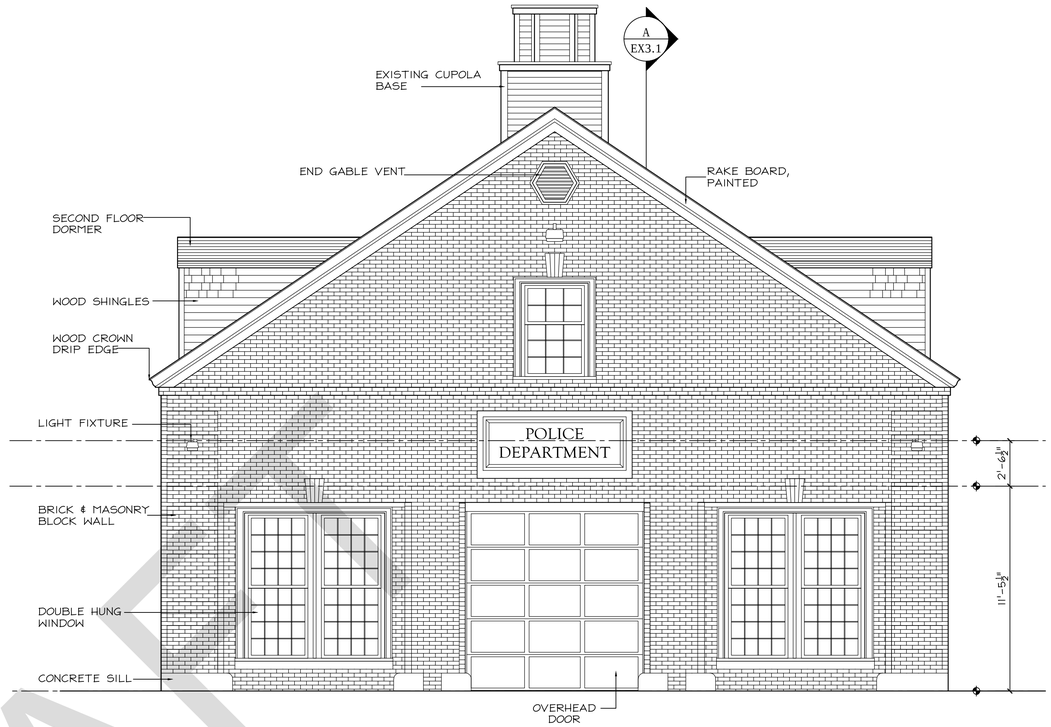
DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.:

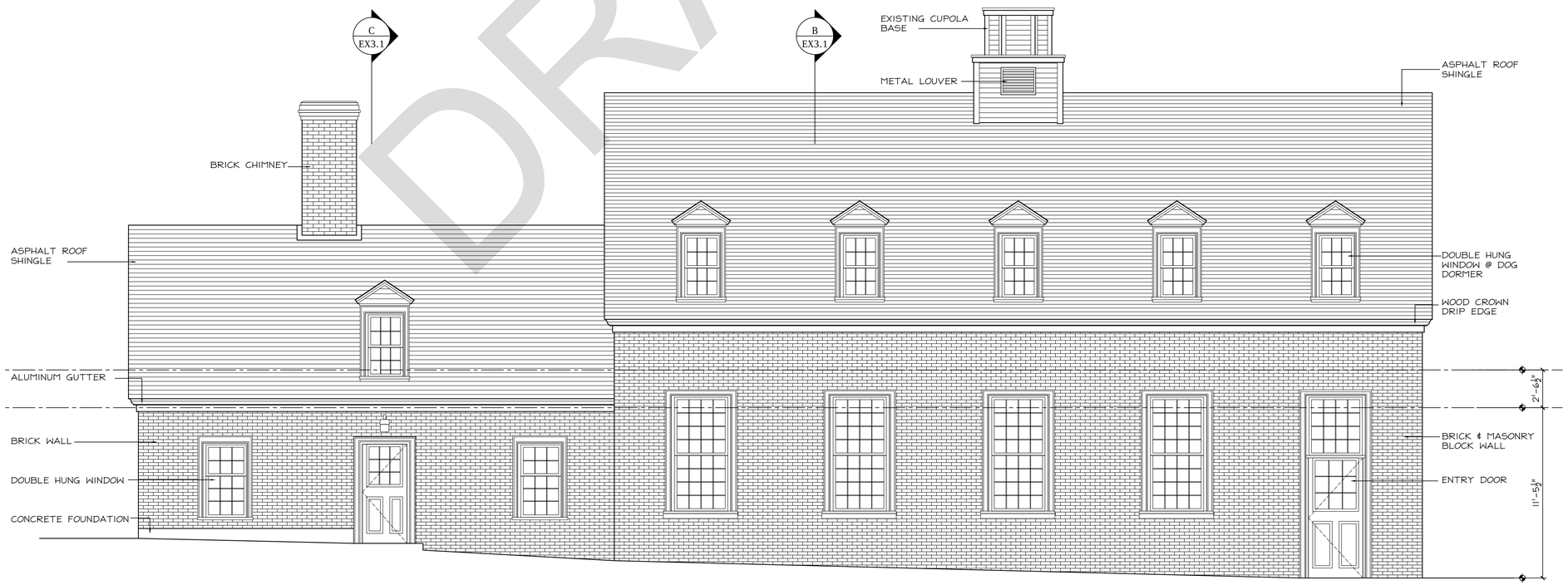
EX1.2

8 December 2010 Chris Raber AIA Standard.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\As-Built Dwgs\Nantucket Police EX-1.dwg



1 EAST ELEVATION

Scale: 1/4" = 1'-0"



2 SOUTH ELEVATION

Scale: 1/4" = 1'-0"

DRAFT

STAMP:

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203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
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PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING BUILDING ELEVATIONS
¼" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

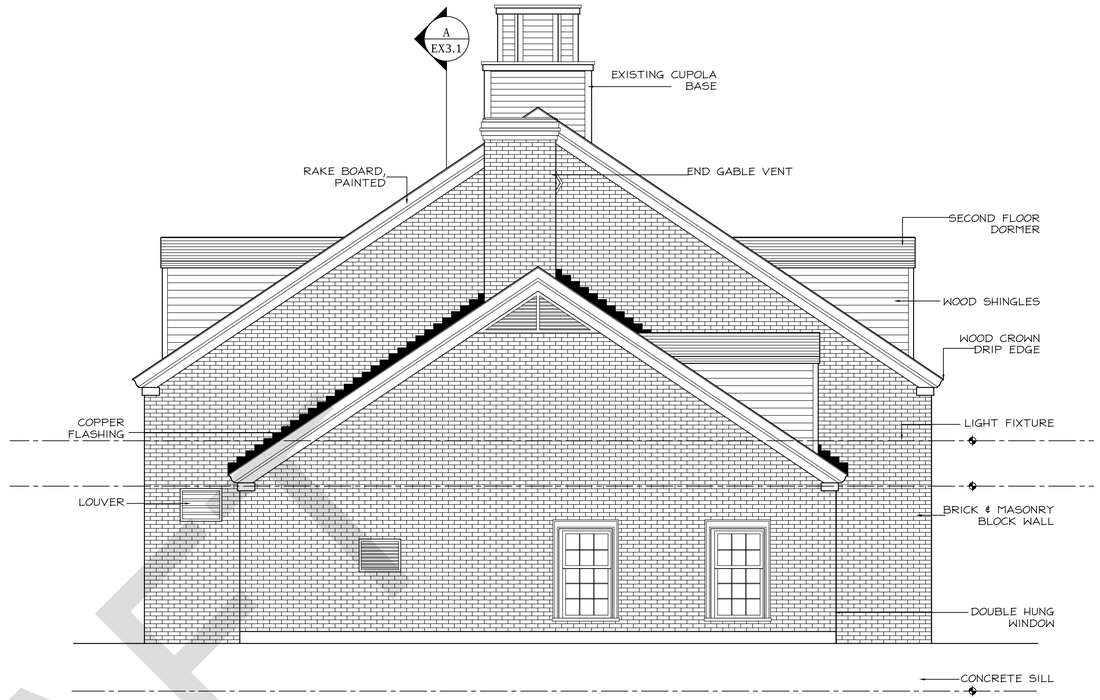
DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.:

EX2.1

8 December 2010 Chris Raber AIA Standard.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\As-Built Dwgs\Nantucket Police EX-1.dwg



2 WEST ELEVATION

Scale: 1/4" = 1'-0"

4 NORTH ELEVATION

Scale: 1/4" = 1'-0"

DRAFT

STAMP:

BROWN LINDQUIST FENUCCIO & RABER ARCHITECTS, INC.
203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.LINRABERARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING BUILDING ELEVATIONS
¼" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

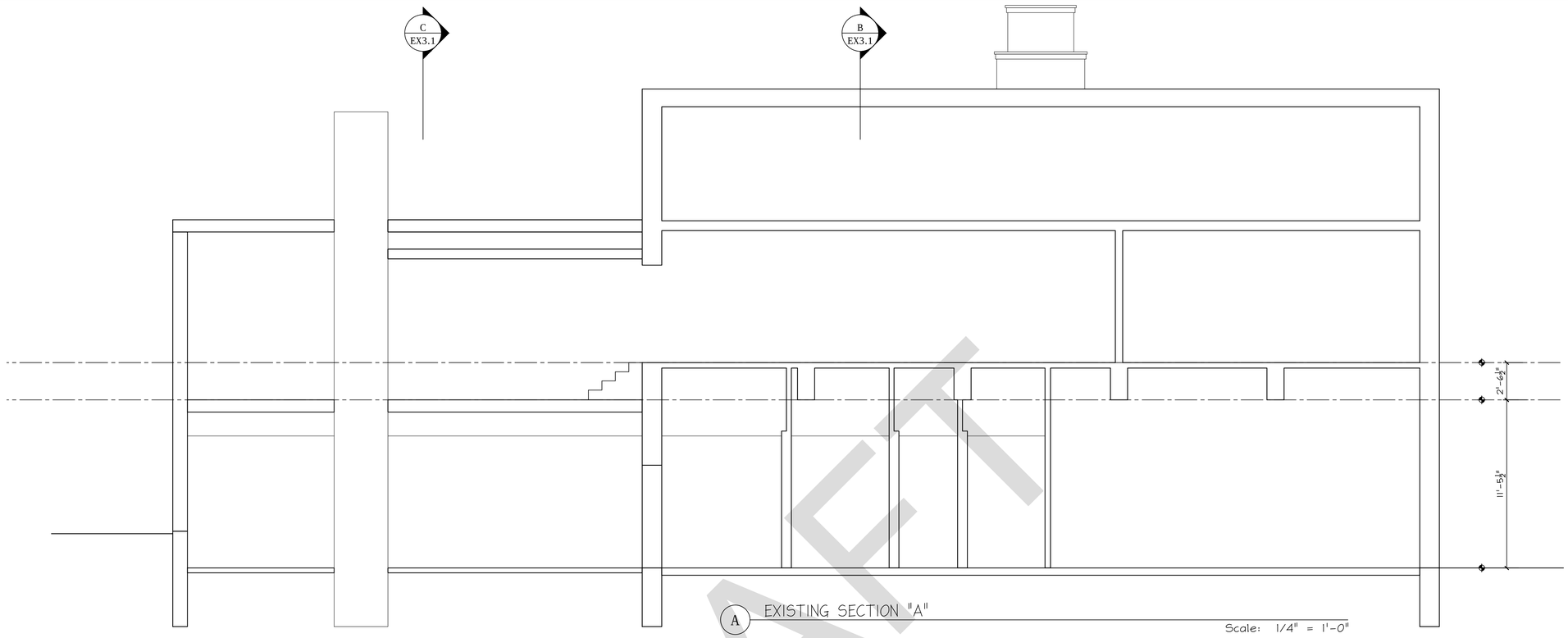
REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

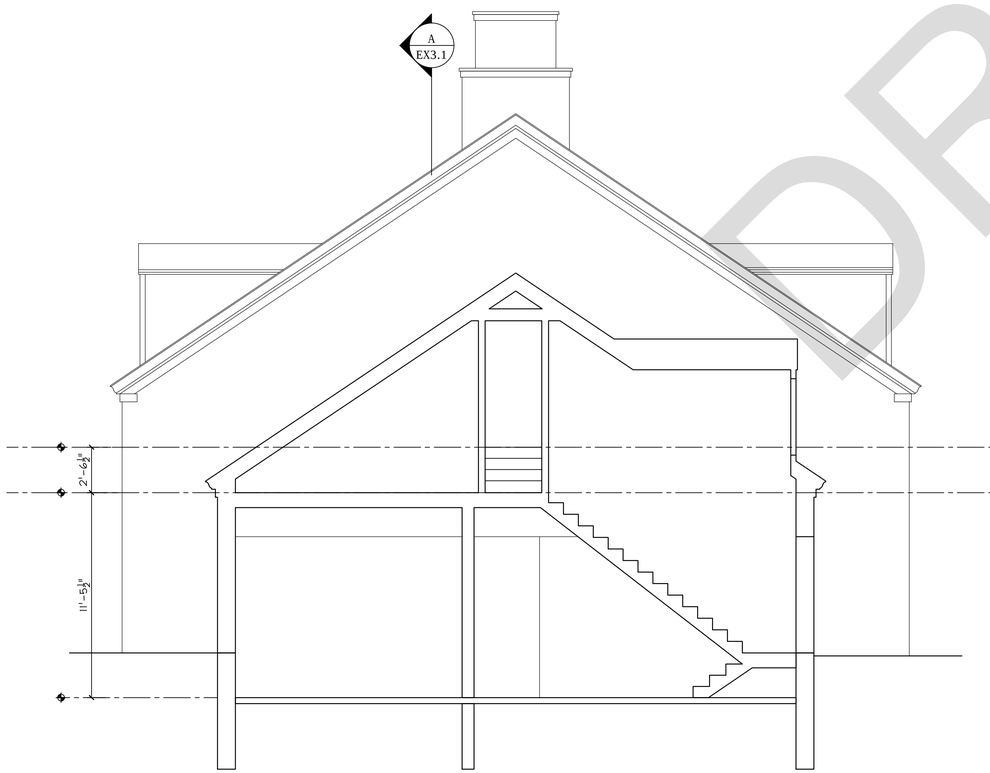
DRAWING NO.: EX2.2

8 December 2010 Chris Raber AIA Standard.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\As-Built Dwgs\Nantucket Police EX-1.dwg



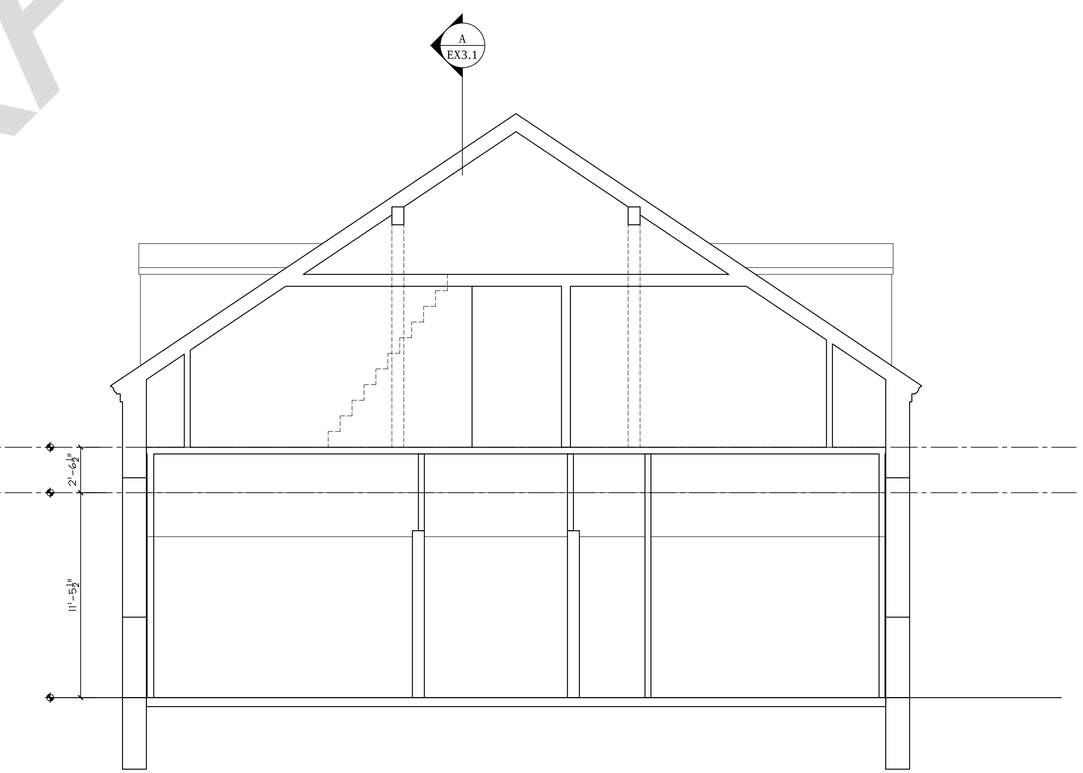
A EXISTING SECTION "A"

Scale: 1/4" = 1'-0"



C EXISTING SECTION "C"

Scale: 1/4" = 1'-0"



B EXISTING SECTION "B"

Scale: 1/4" = 1'-0"

DRAFT

STAMP:

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203 WILLOW STREET, SUITE A
YARMOUTHPORT, MA 02675
WWW.LINRABERARCHITECTS.COM
PH 508-362-8382
FAX 508-362-2828

EXISTING CONDITION
NANTUCKET POLICE STATION

20 SOUTH WATER STREET
NANTUCKET, MA

TITLE:

EXISTING BUILDING SECTIONS
¼" = 1'-0"

DATE ISSUED: 12 . 01 . 2010

REVISIONS: ##

DRAWN BY: S. KHALIL

PROJECT #: M - 10 -

DRAWING NO.:

EX3.1

8 December 2010 Chris Raber AIA Standard.stb
H:_Current Projects\Municipal\20 S. Water St. Nantucket\Drawings\As-Built Dwgs\Nantucket Police EX-1.dwg

Appendix # 8

Electronic copies of project generated drawings and documents in PDF format.

DRAFT