Town of Nantucket

FY2019 Capital Project Request Form

PROJECT INTRODUCTION

Department: POLICE | **Submittal Date:** 8/8/2017

Project Title: Town Pier Public Restrooms/Showers and Harbormaster Office Space | **Contact Person:** Chief Pittman

Project Summary: Repacement of existing public restroooms/showers and Harbormaster office space

Project Location: 34 Washington St

Project related to other depts/agencies, explain:

CLASSIFICATION

Type: *(Check all applicable)*

- [ ] Land or Land Improvements
- [X] Building or Building Improvement
- [ ] Infrastructure
- [ ] Outdoor Asset (park, playing fields, etc.)
- [X] Soft Cost (design, study, plans, permitting)
- [ ] Vehicles (on or off-road, specialty)
- [ ] Equipment, Machinery, Fixture, Furniture (long-life, durable)
- [ ] Intangible (software, other licenses, permits, covenants)

Nature: *(Check all appliable)*

- [ ] New Asset--if new operation too, explain:
- [ ] Upgrade/Improvement
- [X] Replacement
- [ ] Renovate/Repair
- [ ] Decommissioning
- [ ] Heritage/Culture/Legacy/Tradition
- [ ] Purchase
- [ ] Lease

PRIORITIZATION

- [ ] Low/Elective - Dept quality or functional enhancement if funding permits
- [ ] Med./Recommended - Dept necessary functions impaired -- explain:
- [ ] High/Required - Dept mission critical -- explain:

[ ] If not funded, Alternative Action available--explain:

(Check all applicable)

- [ ] Imminent threat to public safety or property, explain:
- [X] Preservation of operations
- [X] Legal requirement of Federal, State or Local agencies
- [X] Improvement to infrastructure
- [X] Improvement in the efficiency and effectiveness of service delivery, explain:

[ ] Minor [✓] Major

Existing building has toilet/shower facilities that cannot handle the demand from boaters and liveaboards who use the Nantucket piers and mooring fields. Facilities are not ADA compliant.

- [X] Alleviation of an overstressed/overburdened situation
- [ ] Supports strategic plan (i.e. master plan, housing prod. plan, facilities maint plan, CWMP, etc.)
- [ ] Results in lower energy consumption
- [ ] Results in lower operations and maintenance costs
- [ ] Phased funding/included in a prior year's budget
- [ ] Scheduled replacement (i.e. motor vehicles, roofs, computers)
- [ ] Placeholder -- explain:

COSTS & FUNDING

Basis for Cost:

Source of Quote or Estimate:

- [ ] Informal (name source):
- [ ] Comparable Valuation
- [ ] Historic Reference
- [X] Other -- explain: Study and cost estimates provided by Steven Kelleher Architects
- [ ] Quote (written)
- [ ] Bid

Cost Breakdown:

	$ Amounts (±)	FY19	FY20	FY21	FY22	FY23	Totals
	Land		$ -	$ -	$ -	$ -	$ -
	Aquisition Cost(s):						
	± Appraisal(s)	$ -	$ -	$ -	$ -	$ -	$ -
	± Survey(s)	$ -	$ -	$ -	$ -	$ -	$ -
	Other Legal:	$ -	$ -	$ -	$ -	$ -	$ -
X	Design	$ 350,000	$ -	$ -	$ -	$ -	$ 350,000
	Permitting	$ -	$ -	$ -	$ -	$ -	$ -
	Construction	$ 3,000,000	$ -	$ -	$ -	$ -	$ 3,000,000

Town of Nantucket

FY2019 Capital Project Request Form

	Equipment or Fixture:	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
	±Installation Cost(s)	$ -	$ -	$ -	$ -	$ -	$ -
	±Trade-in/Redemption Cost(s)	$ -	$ -	$ -	$ -	$ -	$ -
	OPM (Owner's Project Manager)	$ -	$ -	$ -	$ -	$ -	$ -
	O+M or Post-Const.	$ -	$ -	$ -	$ -	$ -	$ -
	Disposal	$ -	$ -	$ -	$ -	$ -	$ -
X	Contingency	$ -	$ -	$ -	$ -	$ -	$ -
	Financing	$ -	$ -	$ -	$ -	$ -	$ -
	Insurance	$ 50,000	$ -	$ -	$ -	$ -	$ 50,000
	Other, explain in cost doc.	$ -	$ -	$ -	$ -	$ -	$ -
	Total	$ 3,450,000	$ -	$ -	$ -	$ -	$ 3,450,000

	'Green' Component(s):	$ -	$ -	$ -	$ -	$ -
	Compliance requirement:	$ -	$ -	$ -	$ -	$ -

Explain:

Net effect on Operating Budget:	FY19	FY20	FY21	FY22	FY23	Totals
Maintenance Cost	$ -	$ -	$ -	$ -	$ -	$ -
Personnel Cost	$ -	$ -	$ -	$ -	$ -	$ -
Utilities	$ -	$ -	$ -	$ -	$ -	$ -
Total	$ -	$ -	$ -	$ -	$ -	$ -

Maintenance Plan:	FY19	FY20	FY21	FY22	FY23	Totals
Annual Cost	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000
Total	$ 15,000	$ -	$ -	$ -	$ -	$ 15,000

Anticipated Useful Life:	65 YRS
Average Use Hrs/Day (approx.):	365
Annual Days-in-use (approx.):	365

Outsourcing Alternative(s) Applicable(Yes/No) -- explain:

PROJECT TIMELINE

Project Manager: Charles Gibson

Other Departments Involved in the Project: Finance

Timeline (leading to anticipated completion date):

	FY19	FY20	FY21	FY22	FY23
Procurement	x	--	--	--	--
Aquisition	--	--	--	--	--
Design	x	--	--	--	--
Permitting	x	--	--	--	--
Construction	--	x	--	--	--
Substantial Comp.	--	x	x	--	--
Full Completion	--	--	x	--	--
One-time:					
Decommission	--	--	--	--	--
Removal	--	--	--	--	--
Installation	--	--	--	--	--
Final Delivery	--	--	--	--	--

SUPPLEMENTAL DOCUMENTS REQUIRED

- [x] Detailed Project Description and Photos
- [x] Basis for Cost
- [ ] Documentation for Operating Budget Impact
- [ ] Summary Plan for Maintenance

STEPHEN KELLEHER ARCHITECTS, INC.

July 14, 2014

Mr. Charles Gibson
Deputy Chief of Police
Nantucket Police Department
4 Fairgrounds Road
Nantucket, MA 02554-2804

Re: Harbor Master Building: Municipal Town Pier, 34 Washington Street
Existing Conditions Report

Dear Deputy Chief Gibson and Committee,

Stephen Kelleher Architects, Inc. (SKA) has been conducting a master plan study in conjunction with the Harbor Master Planning Committee for the last six months. As part of the master plan study, SKA prepared this Existing Conditions Report. The two schematic master plans have been completed and the Committee has selected the preferred option. Once the preferred option has been accepted by the Massachusetts Building Code Appeals Board, a cost estimate will be prepared, and a public forum will be held. As part of the presentation, the Existing Conditions Report will be made public information.

This Existing Conditions Report includes Tripi Engineering Services structural survey of existing conditions and recommendations. Tripi concludes that the existing building could not be economically put back into service given the required addition and alteration work. They recommend demolishing and replacement of the building. Garcia Galuska DeSousa mechanical, electrical, plumbing, and fire protection report notes that many of the existing systems do not meet code or are only in fair condition and need to be completely replaced, especially the electric and heating. CLE Engineering notes that the existing building was in a flood zone when the project was started, however at the 2014 Town meeting the new FEMA maps were accepted which put the existing building into a velocity zone.

The present Harbor Master building is in the new FEMA velocity zone VE 10. Any substantial improvement to the building is subject to Appendix G of the State Building Code as follows:

> **G301.2.2** ***In Flood Hazard Areas Subject to High Velocity Wave Action.*** For new buildings and structures, *substantial improvements* replacement or substantial repair of a foundation and lateral additions that are substantial improvements, the entire structure shall be elevated so that the bottom of the lowest horizontal structural member supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is located at an elevation that is at least **two feet** above the base flood elevation.

The State Building Code is amplified by the FEMA requirements under Definition 44CFR 59.1 Definition Substantial Improvement.

> **44 CFR 59.1. Definitions:** "Substantial improvement" means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement.

SK Main Office: 57 Alden Road • Fairhaven, MA 02719 • Phone: 508-992-2007 • Fax: 508-992-2021
Studio: P.O. Box 107 • Mattapoisett, MA 02739

Also, based on the applicable code, repairs to the plumbing, mechanical, and electrical systems of the existing building are to be included in calculating that value. These systems will amount to greater than 50% of the value of the building. Therefore, the construction of the required improvements would fall under the requirements for substantial improvements.

The existing main floor of the Harbor Master building is at elevation 6.2'. Therefore, under the Massachusetts State Building Code and FEMA requirements, the existing Harbor Master building substructure would need to be raised 4' plus 2', or 6' total, above existing grade on stilt piles, with the bottom of the structure at elevation 12.0 +. The finish floor would be approximately 2' higher at elevation 14.0 requiring a 60' long ramp into the building.

The structure of the building would need to be strengthened to withstand the new code requirement of 120 mph wind speed. The windows would be required to have hurricane debris resistant glazing. The toilet rooms would need to be completely reconfigured to meet Massachusetts Architectural Access Board and ADA compliance, along with doorways, walkways, and seating.

The combined information of these reports and the space needs assessment that was done by SKA, and information gathered while working with Committee, is that the Harbor Master building needs to be demolished and replaced with a new FEMA and Massachusetts State Building Code compliant building. To that end, SKA and our team, while working with the Committee, have developed a preferred master plan for the Town which will take some effort to permit and build because of the variances that are required, though it will be one that will fulfill the Harbor Master, staff, and permanent and transient boater's needs for years to come. The new structure will resist the hurricane forces anticipated in a unique and Nantucket way.

Sincerely,

Stephen L. Kelleher, AIA
President / Principal Architect

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Studio: P.O. Box 107 • Mattapoisett, MA 02739

TRIPI ENGINEERING SERVICES, LLC
433 Main Street, Suite 4
Hudson, Massachusetts 01749
www.tripiengineering.com

3 June 2014

Mr. Stephen L. Kelleher
Stephen Kelleher Architects
57 Alden Road
Fairhaven, MA 02719

Project: 130133.00 - Nantucket Harbor Master Building
Town Pier - 34 Washington Street, Nantucket, MA

Subject: Field Observations of Foundations and Structural Elements

Dear Mr. Kelleher:

At your request, I visited the above site with you on 13 May 2014 to observe selected, visible portions of the foundations and structural elements of the existing building. We performed this work in accordance with our 22 November 2013 consulting agreement. Our field observations are presented below. Our scope of work is limited to the structural elements that we were able to access / observe during the site visit.

1. BACKGROUND

Based upon our review of the Space Needs Assessment RFQ and information that you / others provided, we understand that the current project scope includes a space and needs study to determine the issues surrounding structural deficiencies and space utilization of the existing Harbor Master Office and public restroom / showers located at the Nantucket Harbor Master Building at 34 Washington Street, Nantucket, MA. We understand that:

- The building was originally constructed in 1976 and has undergone numerous renovations and expansions;
- During major coastal storms there has reportedly been flooding to a depth of two (2') feet above the first floor of the building, and there are concerns about the integrity of the building foundations.

Documents Provided:

- Design drawings by DNP Associates for a 2008 Renovation, dated 26 June 2008.

2. FIELD OBSERVATIONS

- The building is a 2-story, wood-framed structure that consists of multiple sections that were constructed at different times (Photos 1 and 2).
- The foundation appears to consist of three separate sections, a concrete masonry unit (CMU) foundation nearest the street, and two sections of slab-on-grade with turned-down edges at the middle, right side, and back sections of the building (Photos 1, 3, 4, 5).

- The observed portions of the CMU foundation beneath the west portion of the building are in fair condition, with some signs of weathered block and mortar. It appears that some sections of soil in the crawlspace beneath this portion of the building have apparently eroded (Photos 3 through 5). The 1st Floor framing in this section of the building is supported by a main carrying girder on intermittent CMU block piers. No connection hardware was observed between the piers and the girder (Photo 4), and no blocking was observed between floor joists. The soil along a portion of the southern foundation wall has apparently eroded (Photo 5). Anchorage between the foundation and framing could not be confirmed; I observed an approx. fifteen foot long section of wall at the east side of the crawlspace that did not appear to have any anchor bolts between the foundation and framing.
- Visible portions of the cast-in-place concrete foundations are in fair condition. I did not observe outward signs of significant deterioration in these sections.
- Portions of the roof framing were visible in each section of the building. The roof framing appears to be relatively new, but I observed many framing issues throughout the building:
  a. The main roof rafters over the western portion of the building frame into the side of supporting laminated veneer lumber (LVL) girders (Photos 6 and 7), with only a small portion of each rafter bearing on top of the LVL beam. No connection hardware is present between the rafters, ceiling joists, and supporting LVL girders. The "birdsmouths" are typically overcut into the connection zone of the rafter (Photo 7).
  b. A portion of the roof over the middle section of the building is "over-framed" onto the main roof (Photo 6). The over-framed section does not appear to be strapped or otherwise detailed to resist uplift. Similar conditions are present at the over-framed roofs along the south side of the building (Photos 8 and 9).
  c. A "shed roof" covers the one-story section at the back-right corner of the building. The shed roof framing consists of 2x8s at 16"o.c. that are connected to the exterior wall above with a 2x ledger (Photo 10). No connection hardware is present between the rafters and ledger.
- The ramp / deck framing on the north side of the building is supported by intermittent concrete "sonotube" foundations. At some locations, the joists are "flush-framed" to the supporting girders, but no connection hardware is present (Photo 11). Two of the observed support posts are misaligned with the supporting sonotubes, leaving less than ½" of the post bearing on the supporting concrete (Photo 12).

3. DISCUSSION / FINDINGS

Based upon our field observations and review of the drawings that you provided, it is our opinion that the foundations and structural elements of the building are generally in fair condition, but there are numerous issues that raise concerns about the building's ability to resist design forces that may develop during storms (e.g. due to wind and flooding).

It is our opinion that:

- Flooding in the crawlspace beneath the western portion of the building could result in structural instability of the support piers, walls, and floor framing due to the geometry and elevations of these elements, as well as the lack of anchorage between these elements.
- Many portions of the roof framing that we observed are not properly detailed to resist design wind loads.
- The ramp / deck framing members are not adequately supported to resist design loads.
- Extensive structural alterations and repairs would be required to address the observed conditions.

4. RECOMMENDATIONS

Based upon our field observations and findings, we recommend that the cost of removing and replacing the building be considered and compared to the cost of performing in situ structural alterations and repairs.

Sincerely yours,

COMMONWEALTH OF MASSACHUSETTS
JOSEPH M. TRIPI
STRUCTURAL
No. 45212
REGISTERED PROFESSIONAL ENGINEER

6-3-14

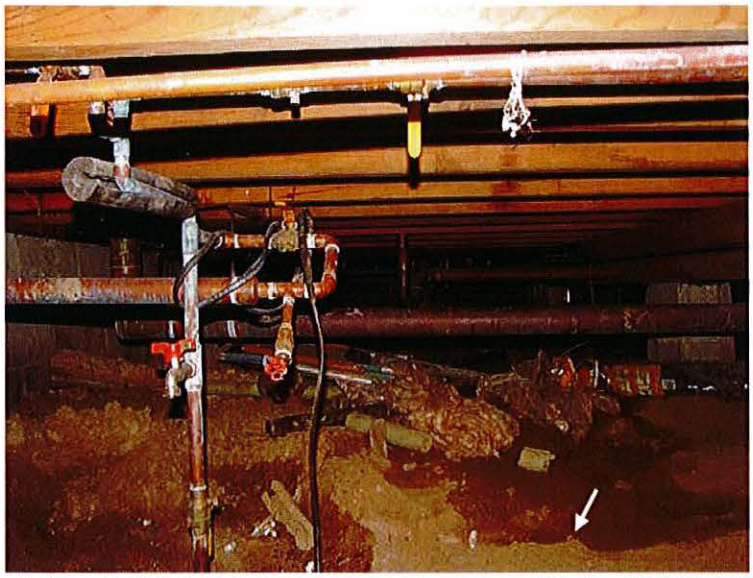
J. Matthew Tripi, PE
Principal

PHOTOGRAPH 1

Front (called "west") and left (called "north") faces of building at 34 Washington Street, Nantucket, MA. White arrow shows concrete masonry unit (CMU) foundation beneath main portion of building; red arrow shows cast-in-place concrete foundation.

PHOTOGRAPH 2

Rear (called "east") and right (called "south") faces of building at 34 Washington Street, Nantucket, MA.



PHOTOGRAPH 3

Looking west into crawlspace beneath west portion of building. Surface of soil in foreground (white arrow) is lower than in adjacent areas.

PHOTOGRAPH 4

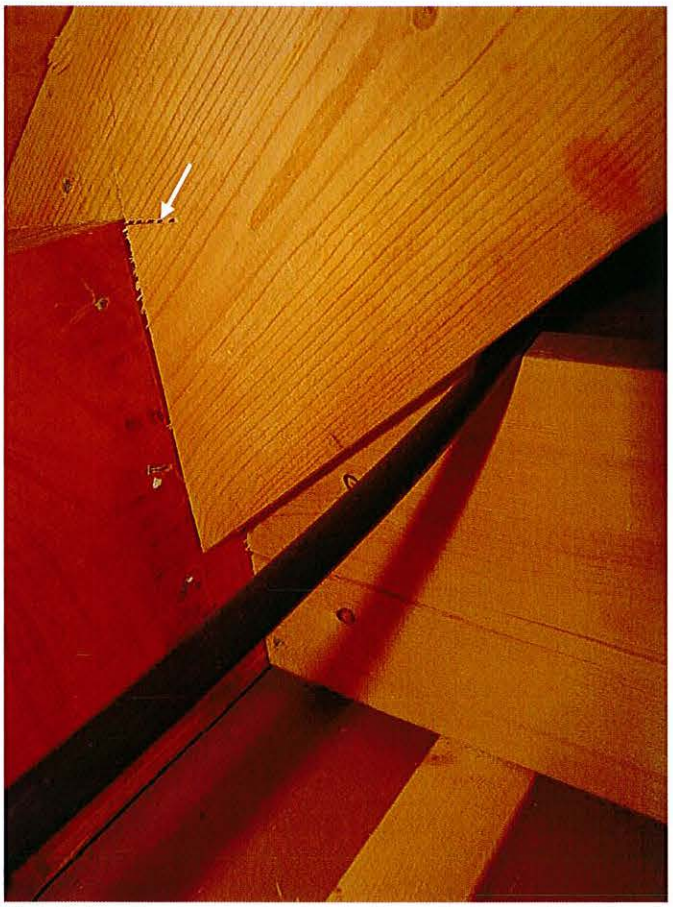
Concrete masonry unit (CMU) "pier" is visible beneath main carrying beam in 1st Floor Framing. No anchorage is visible between beam and pier.

PHOTOGRAPH 5

CMU foundation wall along south side of crawl space. White arrow shows apparently eroded soil surface adjacent to wall. Foundation anchorage could not be confirmed. Looking along east foundation wall, no anchorage was visible within a distance of approx. fifteen feet.

PHOTOGRAPH 6

Main roof framing for front (west) section of framing consisting of 2x10 rafters supported by a laminated veneer lumber (LVL) beam (white arrows). The rafters are "flush-framed" into the side of the LVL beam, with a small portion of the rafter left intact on top. No connection hardware was observed. Red arrow shows roof of middle section of building "over-framed" onto main roof framing.

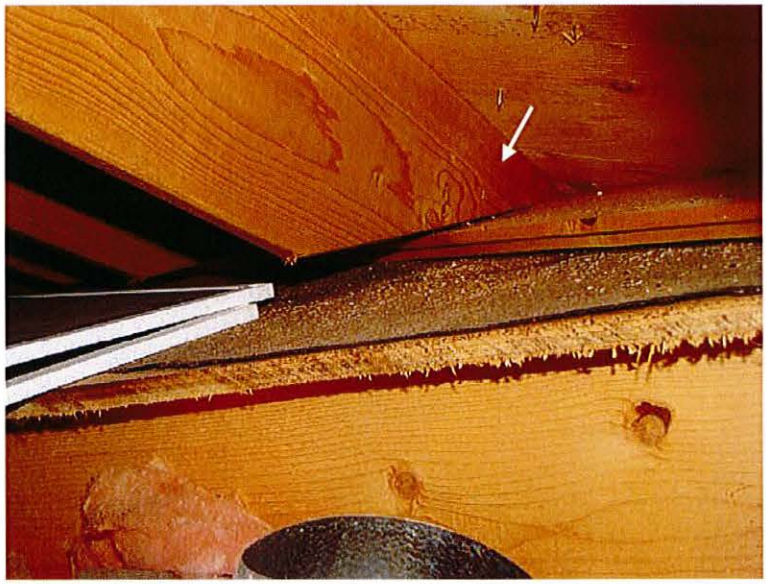


PHOTOGRAPH 7

Main roof rafter framing into side of LVL support beam without connector hardware. White arrow shows typical "overcut" condition at main roof rafter cuts.

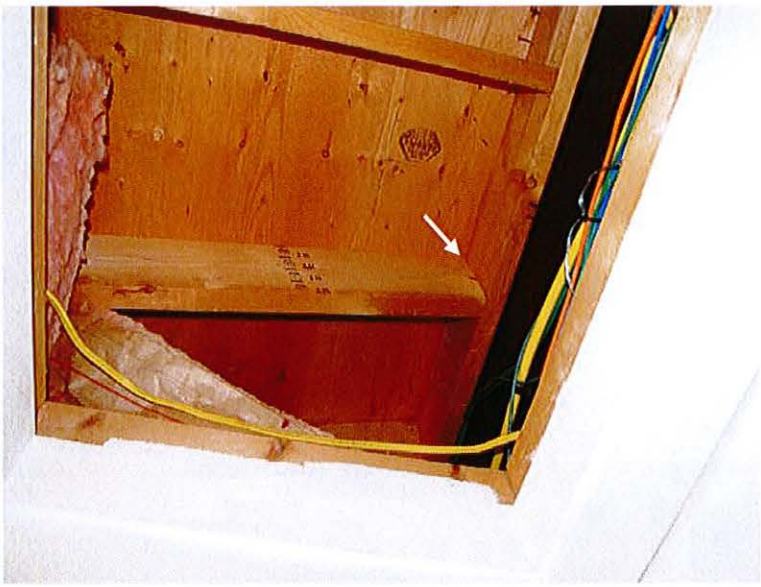
PHOTOGRAPH 8

Typical overframed roof framing.



PHOTOGRAPH 9

Typical overframed roof conditions showing minimal bearing area and no hold-downs or other connection hardware.



PHOTOGRAPH 10

Typical framing conditions at "shed roof" on right (south) side of building. No connection hardware is visible between ledger and rafters. Very few nails were visible connecting the ledger to the exterior wall.

PHOTOGRAPH 11

Wood joist framing at ramp on north side of building. No hardware connectors are present at flush-framed joists (white arrow). Post supporting end of girder bears partly on sonotube, partly on concrete pad. Post connector does not fit completely onto post.

PHOTOGRAPH 12

Typical condition, observed ramp support posts do not bear on sonotube foundations.

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Electrical Existing Conditions Systems Report
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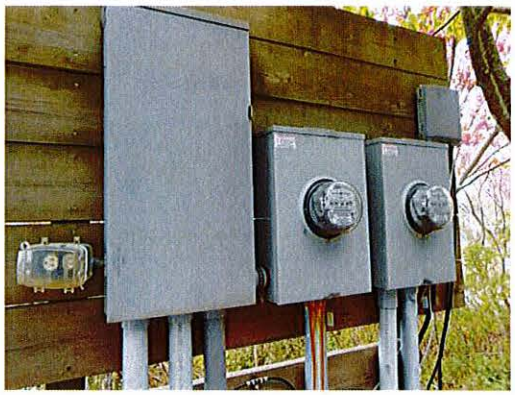
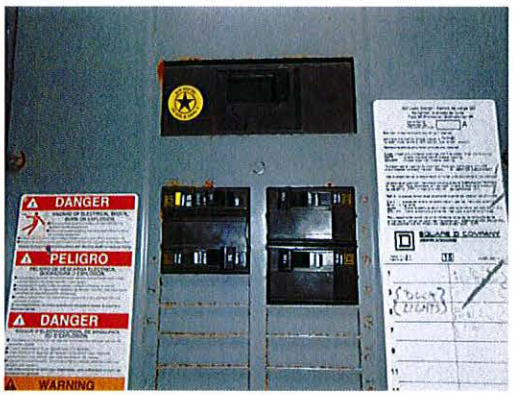
ELECTRICAL

Electrical Service:

The electrical service is derived from a utility pole on Washington Street on the opposite side of the road of the Building. The service comes overhead to a utility pole on the property, then underground and feeds two utility company meters, meter numbers 064008264 and 07208738. Meter 07208738 connects to the main distribution panel rated at 120/240V, 200 Ampere, 22 KAIC. The two meters and the main distribution panel are mounted exterior to the building on a wooden stand. The second meter may serve the dock power and lighting, this could not be determined at the time of the site visit. The equipment is beginning to show signs of deterioration due to weather conditions.



Electrical Service



Main Distribution Panel

Overhead Service Conductors

Electrical Distribution:

The building is served by (2) 100 Ampere, 120/240 Volt panels, one located on the first floor and the second located on the second floor. The panels are in fair condition.

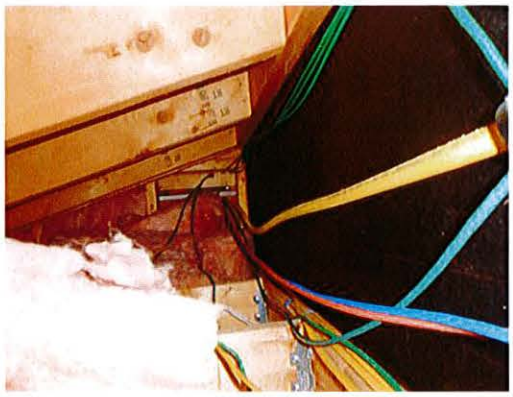
Panel 1

Panel 2

Branch Circuits:

All wiring throughout the building is type NM cable "Romex" and is in violation of the NEC. NM type cable is not allowed in commercial buildings. There seems to be an adequate amount of receptacles where needed. There is an abundance of surface mounted raceways installed in renovated spaces; other wiring is run in the crawl space and within the eaves of the attic space.

Receptacles for Radio Equipment



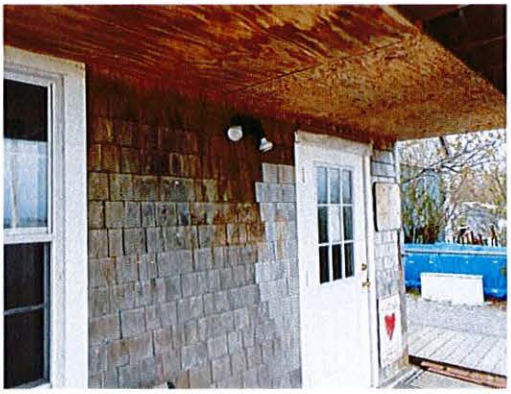
Romex Wiring

Extension Cord

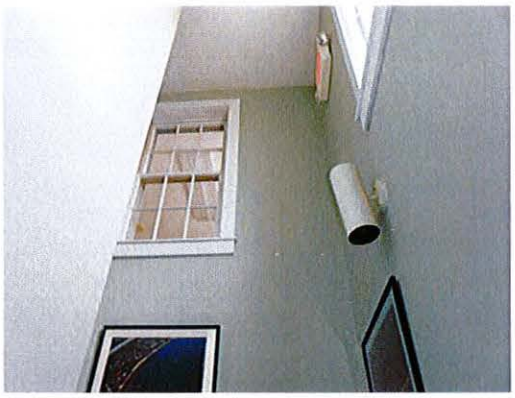
Lighting:

Lighting consists of surface mounted fluorescent wrap around fixtures, recessed compact fluorescent fixtures in the Public Restrooms and wall mounted compact fluorescent sconces in the Stairwell. Lighting control is via local line voltage switches. Exterior lighting consists of HID flood lights. Interior lighting is in fair condition and the exterior lighting is in poor condition.

Surface Wraparound Fixtures



Exterior Flood Lights



Wall Sconces

Down Lights

Emergency Lighting:

Emergency lighting consists of emergency battery units and self-contained battery type exit signs. They seem to be code compliant and in fair condition within the building. There is no emergency light on the exterior of the building. This is a code violation.

Battery Unit

Exit Sign

Fire Alarm System:

The fire alarm system consists of a Fire Lite MS-4 conventional 4-zone panel. The panel was normal and no troubles were present at the time of inspection. Detection devices consist of local smokes and C.O. detector laid out for a residential occupancy. System devices consist of heat detectors. No pull stations were noted during the visit. The A/V devices were located in the Public Restrooms and were in poor condition. A number of local 120V smokes have been removed, most likely due to false alarms.

Local Smoke and CO Detectors

A/V Device and Heat Detector

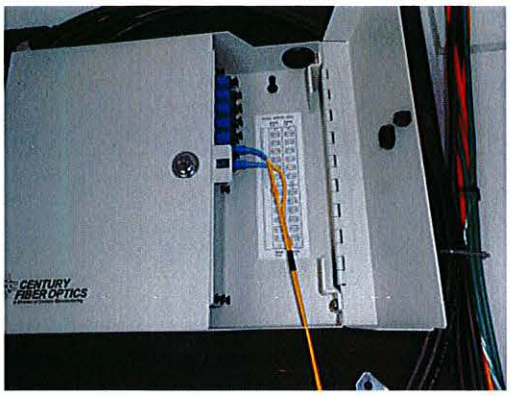
Removed Device

Removed Device

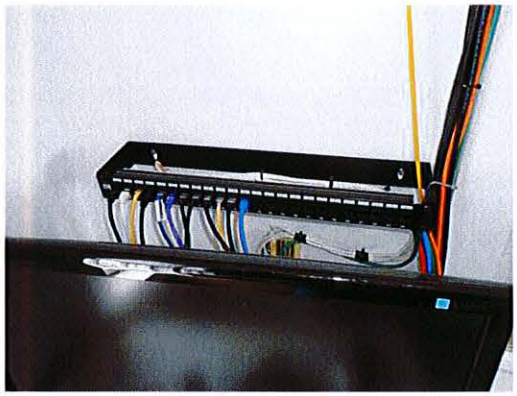
Tel/Data System:

The Tel/Data system consists of CAT6 cabling to each data device. Wiring is run in the attic eaves and surface mounted in many cases. A Fiber Optic WAN connection is located on the second floor along with the network equipment and servers. Equipment and wiring seems to be in fair condition.

Exposed Network Wiring



Fiber WAN Connection



Data Connectors

Recommendations:

Electrical Service:

The electrical service should be upgraded to a 400 Ampere, 120/208V, 3 phase, 4 wire service and should be located in a dedicated space within the building.

Electrical Distribution:

Existing 100A load centers can be re-used. New 3 phase panels should be added to accommodate any renovations.

Branch Circuitry:

Existing Romex wiring should be removed and replaced with MC type cable to comply with NEC.

Lighting:

A majority of the lighting can be reused, however, the fixtures are all utilitarian type and consideration should be made to replace them with more attractive, energy efficient LED type fixtures.

Occupancy sensors should be installed throughout the building to comply with the energy code. A timeclock and photocell should control the exterior lighting. Exterior light fixtures should be replaced with dark sky compliant LED fixtures.

Emergency Lighting:

The more recently installed battery units and exit signs can be re-used. New battery units should replace some of the older battery units. Exterior light fixtures should be provided with integral emergency batteries to comply with exterior egress path lighting.

Fire Alarm System:

The fire alarm control panel is in good condition and can be reused, however, the building's fire alarm system does not meet code and should be removed and new devices installed.

Tel/Data System:

Network equipment should be installed in a dedicated room with dedicated cooling equipment.

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Nantucket, MA
HVAC Existing Conditions Systems Report
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L#44324/Page 1/June 6, 2014

HVAC

Heating and Ventilation:

The majority of the building is heated by propane fired unit heaters.

The open office areas on the First and Second floors are heated by propane fired unit heaters. The heating units were manufactured by Rinnai (Model Energy Saver ES22). The units appear to be in fair condition.

Open Office – Propane Fired Heating Unit (Typical of 2)

The Harbor Master's office is heated by a wall mounted propane fired unit heater (manufactured by Empire). The unit heater and associated thermostat appear to be in poor condition.

Harbor Master's Office – Propane Fired Heating Unit

Each of the restrooms are heated by propane fired unit heaters (manufactured by Empire) which appear to be in poor condition.

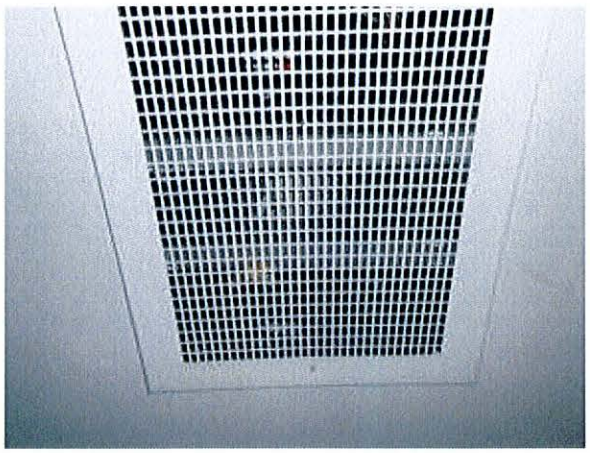
Restroom Heating Unit (Typical of 2)

There is a propane tank, which appears to be in good condition, located on grade.

Propane Tank

Ventilation for the majority of the building is provided by natural ventilation through the use of operable windows.

The restrooms are exhausted by ceiling type exhaust air fans which appear to be in fair condition.



Restroom – Exhaust Fan/Grille

Air Conditioning:

The building is not air conditioned.

Recommendations:

In consideration of the above observed existing conditions, we would recommend that the existing propane unit heaters, in particular the older units manufactured by Empire that are located in the Harbor Master's Office and the Restrooms be replaced.

As part of a renovation project, we would recommend that a more energy efficient heating and ventilation system (such as high efficiency air cooled heat pump, energy recovery ventilation and programmable thermostat controls) be considered for improved energy efficiency.

The existing propane heating units manufactured by Rinnai and the propane tank could potentially be re-used. The existing exhaust air fans should be tested and serviced if re-used.

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Nantucket, MA
Plumbing Existing Conditions Systems Report
J#839 024 00.00
L#44499/Page 1/June 6, 2014

PLUMBING

Fixtures:

The water closets are floor mounted tank type vitreous china. There is a wall hung vitreous china urinal with manually operated flush valve. There is also a wall hung waterless type urinal. Lavatories are wall hung vitreous china with manually operated hot and cold water handle faucets.

Showers are modular units with recessed pressure balanced shower valves.

Kitchenette sink is single bowl stainless steel counter mounted with gooseneck faucet.

There is no Janitor's sink.

There is no drinking fountain.

Typical bathroom fixtures

Wall hung urinals

Kitchenette sink

Shower

In general the plumbing fixtures do not meet accessibility standards. Installation of all new high efficiency fixtures are recommended.

Water Systems:

The majority of the domestic distribution piping is located in the building crawl space. The crawl space allow for minimal accessibility for maintenance. Piping is copper tubing with sweat joints. The majority of the piping is not insulated. There are signs of corrosion at pipe joints and valves. Due to the lack of accessibility, a major renovation should include all new domestic water piping.

Domestic hot water is generated through LP gas fired tankless type water heater. The water heater is located in the attic. The hot water systems are not circulated.

Typical domestic water piping in crawl space

Tankless water heater

LP Gas:

The building is serviced by LP gas. Storage tank is approximately 120 gallons. LP gas is supplied to the tankless water heater, heating furnace, and exterior cooking grille.

Gas piping is combination of black steel with screwed joints and fittings and copper tubing.

LP gas tank

Nantucket Marine Department
Nantucket, MA
Plumbing Existing Conditions Systems Report
J#839 024 00.00
L#44499/Page 3/June 6, 2014

Drainage Systems:

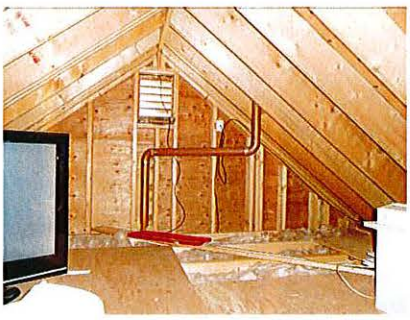
Sanitary and waste drainage and vent systems are copper with sweat joints. Where visible, the drainage and vent piping appears to be in good condition.

The slope roof discharges directly to grade, building does not have gutter.

In general, the drainage piping can be reused even in a major renovation where adequately sized for the intended new use.

Drainage at Kitchen sink

Drainage & vent piping



Vent piping in attic

Nantucket Marine Department
Nantucket, MA
Fire Protection Existing Conditions Systems Report
J#839 024 00.00
L#44500/Page 1/June 6, 2014

FIRE PROTECTION ASSESSMENT

The Building does not contain an automatic sprinkler system.

In general, Massachusetts General Law M.G.L. c.148, s.26G requires that any existing building over 7,500 square feet that undergoes major alterations or modifications or a building addition that results in a gross floor area over 7,500 square feet must be sprinklered.

The proposed scope of work needs to be reviewed to determine if project is a major alteration. If the work is considered a major alteration or building addition constructed, then an automatic sprinkler system is required for the entire existing building and any additions.

A hydrant flow test will be required to determine adequate Municipal water supply.

cleengineering

15 Creek Road | Marion, Massachusetts 02738
t: 508.748.0937 | 800.668.3220 | f: 508.748.1363

May 13, 2014

Mr. Stephen L. Kelleher
Stephen Kelleher Architects
57 Alden Road
Fairhaven, MA 02719

Re: Harbor Master Building

Ref: 1. CLE Plan dated May 13, 2014
2. MA Building Code 780 CMR – 8th Edition dated August 6, 2010
3. FEMA Map No. 250230 0011 D revised June 9, 2014
4. MASS GIS Historic Fill & Coastal Resources Map

Dear Mr. Kelleher,

CLE is pleased to submit this report and the above referenced documents in response to your request to perform a brief site visit, create a Google Earth overlay plan with the FEMA flood elevations, review existing building codes and determine building requirements for flood zones and prepare a list of required environmental permits for the new harbor master building.

On January 16, 2014, I visited the project site and performed a cursory visual inspection of the exterior and readily accessible sections from ground elevation of the existing harbor master building. The building is in fair to poor condition with reported flooding to a depth of two (2') feet above the first floor elevation during major coastal storm and advanced deterioration of foundation structural components.

West View

Southeast View

I called the Nantucket Building Commissioner Stephen J. Butler and confirmed the town is now using the 8th Edition of the Massachusetts Building Code dated August 6, 2010 and that Annual

Town meeting just voted in new FEMA maps for the project area dated June 9, 2014. The new building code does not substantially change the construction requirements in flood hazard areas. The revised FEMA maps moved the VE zone landward to Washington Street. The MASS GIS maps show the existing building footprint located in historic filled tidelands. Based on a cursory review of the above referenced documents, maps and plans the following will need to be incorporated into the project and considered for the proposed work:

FEMA Flood Zone
The harbor master building is location in a FEMA V8 (EL 10) zone based on the June 9, 2014 maps.

Building Requirements
The Massachusetts Building Code (8th Edition) dated August 6, 2010 requires in **Section G301.2.1** *For all new buildings or structures, substantial improvements, new foundations, and replacement or substantial repair of a foundation, the entire structure shall be elevated so that the lowest floor, including basement/cellars, is located at or above base flood elevation.*

Permitting
Based on our review of existing web-based information the following permits and/or licenses will be required for the proposed building:

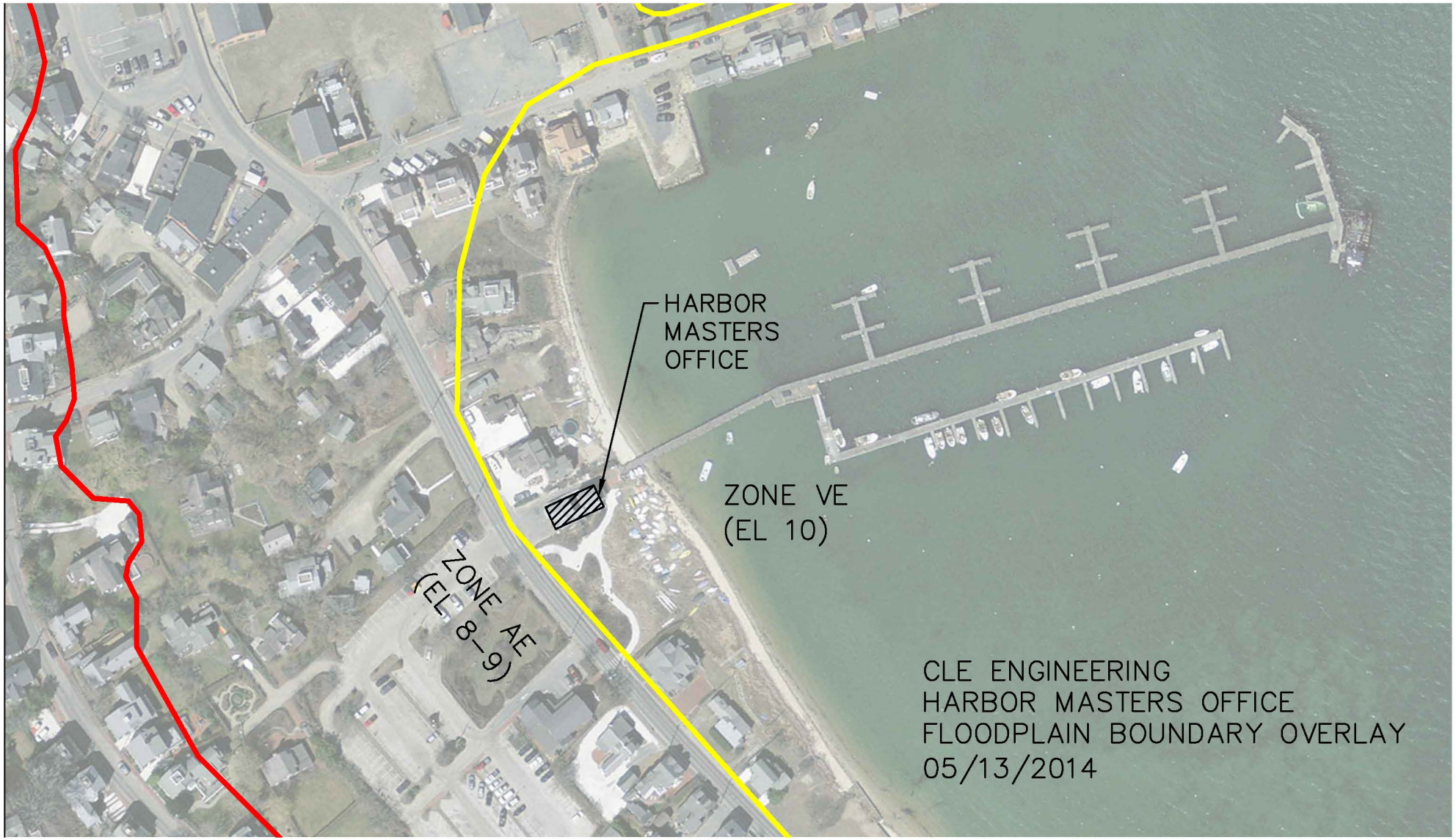
- Historical Commission: The project will require a submission to the Nantucket Historical Commission before filing for a Building Permit.
- EOEEA-MEPA: The project will require a submission of an Environmental Notification Form (ENF) unless it is pile supported.
- Notice of Intent (NOI): The proposed new building will be located on land subject to coastal flowage (LSCF) and within the 100' buffer zone to resource areas and require a Notice of Intent (NOI) submission to the Nantucket Conservation Commission.
- DEP Chapter 91: The proposed new building will require a Chapter 91 License for the structure located in historic filled tidelands.

Please feel free to contact me if you have any questions.

Yours truly,
CLE Engineering, Inc.

Carlos G. Peña, P.E.
Vice President

Cc: Susan E. Nilson, P.E.


HARBOR
MASTERS
OFFICE
ZONE VE
(EL 10)
ZONE AE
(EL 8-9)
CLE ENGINEERING
HARBOR MASTERS OFFICE
FLOODPLAIN BOUNDARY OVERLAY
05/13/2014

Harbormaster's Building-Nantucket

115.00: continued

G103 POWERS AND DUTIES Reserved

G104 POWERS Reserved

G105 VARIANCES Reserved

G201.2 Definitions. Add the following definitions and delete the definitions for DEVELOPMENT, FUNCTIONALLY DEPENDENT FACILITY, MANUFACTURED HOME PARK OR SUBDIVISION, VARIANCE, and VIOLATION:

BREAKWAY WALL. A wall that is not part of the structural support of the building and intended, through its design and construction, to collapse under specific lateral forces, without causing damage to the elevated portion of the building or supporting foundation system.

COASTAL DUNE. Any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. *Coastal dune* also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control. For purposes of this appendix, a coastal dune is one that has been determined to be significant to the interests of flood control and/or storm damage prevention as defined in the Wetlands Protection Act, M.G.L. c. 131, § 40.

FLOOD HAZARD BOUNDARY MAP. An official map of a community where the boundaries of the flood, mudslide (*i.e.*, mudflow) related erosion areas have been designated as Zones A, M, and/or E.

HIGHEST ADJACENT GRADE. The highest natural elevation of the ground surface, prior to construction, adjoining the proposed foundation walls of a structure.

LATERAL ADDITION. an addition that expands the footprint of a building or structure including a manufactured home.

STRUCTURE. (This definition is intended to be utilized with this Appendix.) A walled and roofed building, including a gas or liquid storage tank, that is principally above ground and affixed to a permanent site, as well as a manufactured home.

SUBSTANTIAL REPAIR OF A FOUNDATION. Work to repair and/or replace a foundation that results in the repair or replacement of the portion of the foundation walls with a perimeter along the base of the foundation that equals or exceeds 50% of the perimeter of the base of the entire foundation measured in linear feet. The term "substantial repair of a foundation" also includes a building or structure including a manufactured home that has incurred a failure of a foundation regardless of the actual work done to repair or replace the foundation.

SECTION G301 Replace the entire section as follows:

SECTION G301 Design and Construction Requirements in *Flood Hazard Areas* and *Coastal Dunes*.

G301.1 General. Work subject to the requirements of Appendix G shall be designed by a *registered design professional*. Design certification shall be provided in accordance with section 1612.5.

Construction documents shall indicate proposed details of floor, wall, foundation support components, loading computations, and other essential technical data used to meet the requirements of this appendix.

G301.2 Elevation of Structures.

G301.2.1 In *Flood Hazard Areas*. For new buildings and structures, *substantial improvements*, new foundations, and replacement or substantial repair of a foundation, the entire structure shall be elevated so that the *lowest floor*, including basement/cellars, is located at or above *base flood* elevation. For lateral additions that are a *substantial improvement*, only the addition shall be elevated so that the *lowest floor*, including basement/cellars, is located at or above base flood elevation.

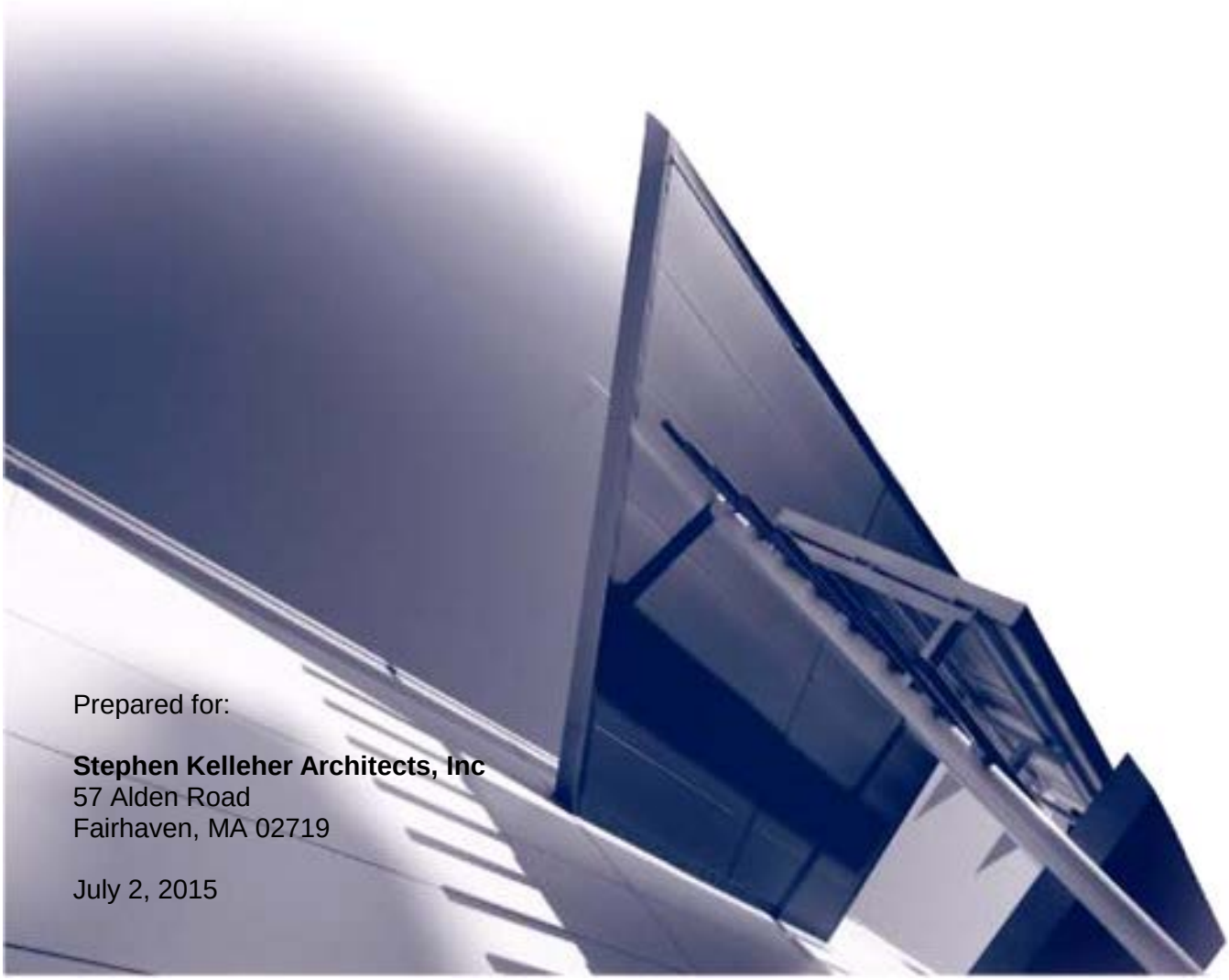
RLB | Rider Levett Bucknall

Construction Cost Estimate

Conceptual Design Cost Estimate

Nantucket Harbor Master Building

Nantucket, MA



Prepared for:

Stephen Kelleher Architects, Inc
57 Alden Road
Fairhaven, MA 02719

July 2, 2015

RLB | Rider Levett Bucknall

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Project Details

Description

Basis of Estimate

This estimate has been prepared at the request of Stephen Kelleher Architects, Inc and is to provide a Conceptual Design Estimate of construction cost for the Nantucket Harbor Master Building, located in Nantucket, Massachusetts.

The estimate is based upon measured quantities and built-up rates prepared from the Conceptual Design submittal package issued to RLB on June 09, 2015, prepared by Stephen Kelleher Architects, Inc.

Where information was insufficient, assumptions and allowances were made based wherever possible on discussions with the architect and engineers.

It is assumed that the project will be competitively bid by four to six general contractors and that the awarded contractor and all subcontractors will be required to pay prevailing wage rates.

Unit pricing is based on July 2015 costs. Construction cost escalation has been carried at 9% in the estimate and assumes a Q3 2016 construction start. A design and estimating contingency has been included at 15%.

Items Specifically Included

. Allowance for hazardous materials abatement - $10,000 (as per SKAI)
. Allowance for window shutters - $8,000 (as per SKAI)
. Allowance for emergency generator - $20,000 (as per SKAI)
. Allowance for miscellaneous plantings - $50,000 (as per SKAI)

Items Specifically Excluded

. Hazardous materials abatement
. Rock excavation
. Costs associated with phasing the construction work
. Out of hours work
. Photovoltaics and other renewable energy resources
. Furniture, Fittings and Equipment (FF&E)
. Murals and works of art
. Mock-ups
. Work outside the site boundaries unless noted otherwise
. Special testing & inspections
. Utility tap fees and charges
. Permits & plan review fees
. Owner's contingency
. Construction phase contingency
. Land and legal costs
. Architectural, Engineering and other professional fees
. Geotechnical, traffic and all other studies
. Items marked as "Excl." in the estimate
. Escalation allowance beyond 01/2017

Documents

Please refer to Basis of Estimate.

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Summary

Rates Current At July 2015

Description		Total Cost
02 Existing Conditions		
F2020	Hazardous Components Abatement	10,000
G1020	Site Demolition and Relocations	16,849
	Existing Conditions	***$26,849***
03 Concrete		
A1010	Standard Foundations	36,300
A1020	Special Foundations	273,200
B1010	Floor Construction	81,935
	Concrete	***$391,435***
06 Wood, Plastics, and Composites		
B1010	Floor Construction	83,481
B1020	Roof Construction	56,002
B2010	Exterior Walls	78,885
C1010	Partitions	2,423
C2010	Stair Construction	10,050
E2010	Fixed Furnishings	25,975
G2040	Site Development	8,030
	Wood, Plastics, and Composites	***$264,846***
07 Thermal and Moisture Protection		
B1010	Floor Construction	19,834
B2010	Exterior Walls	51,779
B3010	Roof Coverings	24,001
C1030	Fittings	4,039
G2040	Site Development	3,598
	Thermal and Moisture Protection	***$103,251***
08 Openings		
B2020	Exterior Windows	40,800
B2030	Exterior Doors	16,000
B3020	Roof Openings	2,170
C1020	Interior Doors	5,200
	Openings	***$64,170***
09 Finishings		
B2010	Exterior Walls	9,051
C1010	Partitions	39,475
C3020	Floor Finishes	79,215

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Summary

Rates Current At July 2015

Description		Total Cost
C3030	Ceiling Finishes	17,643
	Finishings	***$145,384***
10 Specialties		
C1030	Fittings	36,208
D4090	Other Fire Protection Systems	1,950
	Specialties	***$38,158***
11 Equipment		
E1090	Other Equipment	Excl.
	Equipment	***Excl.***
14 Conveying Equipment		
D1010	Elevators & Lifts	50,000
	Conveying Equipment	***$50,000***
21 Fire Suppression		
D4010	Sprinklers	Excl.
	Fire Suppression	***Excl.***
22 Plumbing		
D2010	Plumbing Fixtures	33,250
D2020	Domestic Water Distribution	37,310
D2030	Sanitary Waste	16,155
D2090	Other Plumbing Systems	9,808
	Plumbing	***$96,523***
23 Heating, Ventilating, and Air Conditioning		
D3040	Distribution Systems	58,158
	Heating, Ventilating, and Air Conditioning	***$58,158***
26 Electrical		
D5010	Electrical Service & Distribution	52,310
D5020	Lighting and Branch Wiring	53,312
	Electrical	***$105,622***
27 Communications		
D5030	Communications & Security	6,462
	Communications	***$6,462***
31 Earthwork		
A1020	Special Foundations	181,148
	Earthwork	***$181,148***
32 Exterior Improvements		
G2030	Pedestrian Paving	567

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Summary

Rates Current At July 2015

Description		Total Cost
G2040 Site Development		50,000
G2050 Landscaping		50,000
	Exterior Improvements	***$100,567***
33 Utilities		
G3010 Water Supply		10,000
G3020 Sanitary Water		5,000
G3030 Storm Sewer		20,000
G4010 Electrical Distribution		15,000
	Utilities	***$50,000***
	ESTIMATED NET COST	**$1,682,573**
MARGINS & ADJUSTMENTS		
General Conditions	12.0 %	$201,909
Bonds and Insurances	2.7 %	$50,881
Overhead and Profit	5.0 %	$96,768
Design/Estimating Contingency	15.0 %	$304,820
Escalation allowance to mid-point of construction (01/2017)	9.0 %	$210,049
	ESTIMATED TOTAL COST	**$2,547,000**

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
02	**Existing Conditions**				
F2020	**Hazardous Components Abatement**				
5	Allowance for hazardous materials abatement (as per SKAI)	Item			10,000
	Hazardous Components Abatement				***$10,000***
G1020	**Site Demolition and Relocations**				
1	Demolish existing two story wood structure	SF	2,407	7.00	16,849
	Site Demolition and Relocations				***$16,849***
	Existing Conditions				***$26,849***
03	**Concrete**				
A1010	**Standard Foundations**				
6	Concrete columns, allow 2'-0" x 2'-0" x 5'-9" deep	EA	27	900.00	24,300
7	Concrete columns, allow 2'-0" x 2'-0" x 4'-0" deep	EA	20	600.00	12,000
	Standard Foundations				***$36,300***
A1020	**Special Foundations**				
8	Allowance for ballast footings, 6'-0" x 2'-6" deep	LF	683	400.00	273,200
	Special Foundations				***$273,200***
B1010	**Floor Construction**				
15	Concrete framed slab, 8" thick	SF	1,855	35.00	64,925
17	Perimeter concrete knee wall, 8" thick	SF	567	30.00	17,010
	Floor Construction				***$81,935***
	Concrete				***$391,435***
06	**Wood, Plastics, and Composites**				
B1010	**Floor Construction**				
2	Allowance for wood framing including posts, beams, floor joists, etc.	SF	3,231	20.00	64,620
16	Allowance for deck framing including beams, joists, etc.	SF	882	15.00	13,230
21	Allowance for access ramp framing including beams, joists, etc.	SF	240	10.00	2,400
34	Allowance for miscellaneous rough carpentry	SF	3,231	1.00	3,231
	Floor Construction				***$83,481***
B1020	**Roof Construction**				
3	Allowance for wood roof trusses	SF	2,348	15.00	35,220
4	Allowance for additional roof framing including roof beams, joists, etc.	SF	2,348	2.50	5,870
38	Allowance for framing to deck gazebo	SF	100	15.00	1,500

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
41	Plywood sheathing, allow 3/4" thick	SF	2,956	2.75	8,129
42	Allowance for rough carpentry	SF	2,348	1.00	2,348
43	Allowance for miscellaneous connections and framing	SF	2,348	1.25	2,935
	Roof Construction				***$56,002***
B2010	**Exterior Walls**				
31	Wood stud framing, allow 2" x 6"	SF	3,821	8.00	30,568
32	Exterior plywood sheathing, allow 1/2" thick	SF	3,821	2.25	8,597
33	Exterior window and door framing/blocking	LF	623	15.00	9,345
56	Stained wood railing to access ramps and deck	LF	239	125.00	29,875
119	Pulley including support beams	Item			500
	Exterior Walls				***$78,885***
C1010	**Partitions**				
35	Allowance for miscellaneous wood blocking	SF	3,231	0.75	2,423
	Partitions				***$2,423***
C2010	**Stair Construction**				
19	Wood stairs including stringers, treads and risers approximately 4'-0" wide	FT/R	11	500.00	5,500
20	Wood stairs including stringers, treads and risers approximately 5'-6" wide	FT/R	7	650.00	4,550
	Stair Construction				***$10,050***
E2010	**Fixed Furnishings**				
50	Casework: Plastic laminate workstation	LF	45	175.00	7,875
51	Casework: Plastic laminate information counter	LF	14	150.00	2,100
52	Casework: Tall cabinets to Harbor Master Offices	LF	9	400.00	3,600
53	Casework: Allowance for credenza to Harbor Master Office	LF	10	600.00	6,000
54	Casework: Solid surface lavatory including supports	LF	23	200.00	4,600
55	Casework: Built-in shower bench	LF	18	100.00	1,800
	Fixed Furnishings				***$25,975***
G2040	**Site Development**				
47	Allowance for framing to site gazebo	SF	364	15.00	5,460
48	Plywood sheathing, allow 3/4" thick	SF	514	5.00	2,570
	Site Development				***$8,030***
	Wood, Plastics, and Composites				***$264,846***

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
07	**Thermal and Moisture Protection**				
B1010	**Floor Construction**				
18	Rigid insulation, 5" thick	SF	1,855	6.50	12,058
120	Fiberglass batt insulation, allow 9" thick	SF	1,296	6.00	7,776
	Floor Construction				***$19,834***
B2010	**Exterior Walls**				
22	Fiber cement siding to crawl space	SF	805	9.00	7,245
25	White cedar shingle to exterior walls	SF	2,483	9.00	22,347
26	Fiber cement siding	SF	534	10.00	5,340
27	Rigid foam insulation, 4 1/2" total thickness, to exterior wall base	SF	700	6.50	4,550
28	Building wrap	SF	3,017	0.75	2,263
29	Fiberglass batt insulation	SF	2,517	2.00	5,034
30	Allowance for miscellaneous exterior wall PVC trims	Item			5,000
	Exterior Walls				***$51,779***
B3010	**Roof Coverings**				
36	Asphalt shingles to building pitched roof	SF	2,815	7.00	19,705
37	Asphalt shingle to deck gazebo pitched roof	SF	141	7.00	987
39	Ice and water shield	SF	2,956	1.00	2,956
40	Fioberglass batt insulation	SF	141	2.50	353
	Roof Coverings				***$24,001***
C1030	**Fittings**				
57	Allowance for miscellaneous firestopping	SF	3,231	0.25	808
58	Allowance for miscellaneous caulking and sealing	SF	3,231	1.00	3,231
	Fittings				***$4,039***
G2040	**Site Development**				
46	Asphalt shingle to site gazebo pitched roof	SF	514	7.00	3,598
	Site Development				***$3,598***
	Thermal and Moisture Protection				***$103,251***
08	**Openings**				
B2020	**Exterior Windows**				
23	Allowance for glazed aluminum widow units	SF	410	80.00	32,800
121	Allowance for window shutters (as per SKAI)	Item			8,000
	Exterior Windows				***$40,800***

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
B2030	**Exterior Doors**				
59	Single leaf wood doors including frame, hardware and finish	EA	6	1,300.00	7,800
60	Double leaf wood doors including frame, hardware and finish	Pr	1	2,500.00	2,500
118	Door dams	EA	6	950.00	5,700
	Exterior Doors				***$16,000***
B3020	**Roof Openings**				
24	Unit skylights	SF	31	70.00	2,170
	Roof Openings				***$2,170***
C1020	**Interior Doors**				
61	Single leaf wood doors including frame, hardware and finish	EA	4	1,300.00	5,200
	Interior Doors				***$5,200***
	Openings				***$64,170***
09	**Finishings**				
B2010	**Exterior Walls**				
81	Gypsum board interior lining to exterior walls	SF	3,017	3.00	9,051
	Exterior Walls				***$9,051***
C1010	**Partitions**				
78	Gypsum board interior partitions	SF	2,155	9.50	20,473
79	Gypsum board interior partitions, lift enclosure	SF	342	15.00	5,130
80	Gypsum board interior partitions, plumbing enclosure	SF	1,156	12.00	13,872
	Partitions				***$39,475***
C3020	**Floor Finishes**				
82	Vinyl composition tile flooring	SF	1,701	5.75	9,781
83	Ceramic tile flooring	SF	1,067	14.00	14,938
84	Rubber floor base	LF	380	3.50	1,330
85	Ceramic tile floor base	LF	506	14.00	7,084
86	Ceramic wall tiles to shower area	SF	2,193	16.00	35,088
87	Prepare and apply paint to to interior walls	SF	7,329	1.50	10,994
	Floor Finishes				***$79,215***
C3030	**Ceiling Finishes**				
88	Acoustical ceiling tiles, 2' x 2'	SF	1,095	5.50	6,023
89	Gypsum board ceiling, moisture resistant	SF	1,035	9.50	9,833
90	Prepare and apply paint to gypsum board ceiling	SF	1,035	1.50	1,553

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
91	Prepare and apply paint to exposed deck	SF	156	1.50	234
	Ceiling Finishes				***$17,643***
	Finishings				***$145,384***
10	**Specialties**				
C1030	**Fittings**				
62	Toilet Compartment: Plastic laminate, floor mounted, handicap	EA	2	1,500.00	3,000
63	Toilet Compartment: Plastic laminate, floor mounted, standard	EA	4	1,000.00	4,000
64	Toilet Compartment: Shower doors	EA	8	650.00	5,200
65	Toilet Accessories: Paper towel dispenser/receptacle	EA	4	850.00	3,400
66	Toilet Accessories: Grab bar	EA	8	65.00	520
67	Toilet Accessories: Shower grab bar	EA	3	250.00	750
68	Toilet Accessories: Toilet tissue holder	EA	8	60.00	480
69	Toilet Accessories: Mirror	SF	81	35.00	2,835
70	Toilet Accessories: Folding shower seat	EA	3	350.00	1,050
71	Toilet Accessories: Coat hook	EA	16	25.00	400
72	Toilet Accessories: Baby changing station	EA	1	350.00	350
73	Janitorial Accessories: Wall shelves	LF	12	150.00	1,800
74	Allowance for glass encased bulletin board	EA	1	5,000.00	5,000
75	Allowance for interior code/statutory signage	SF	3,231	0.75	2,423
76	Allowance for exterior building signage	Item			5,000
	Fittings				***$36,208***
D4090	**Other Fire Protection Systems**				
77	Allowance for fire extinguishers and cabinets	EA	3	650.00	1,950
	Other Fire Protection Systems				***$1,950***
	Specialties				***$38,158***
11	**Equipment**				
E1090	**Other Equipment**				
110	Ceiling mounted projection screen and projector - by Owner	EA	1		Excl.
111	Residential Appliance: Refrigerator	EA	1		Excl.
112	Residential Appliance: Microwave oven	EA	1		Excl.
	Other Equipment				***Excl.***
	Equipment				***Excl.***

Nantucket Harbor Master Building
Conceptual Design Cost Estimate - Revision 1

Divisions/Elements Item

Rates Current At July 2015

Description		Unit	Qty	Rate	Total Cost
14	**Conveying Equipment**				
D1010	**Elevators & Lifts**				
92	Allowance for handicap lift, 2 stops	EA	1	50,000.00	50,000
	Elevators & Lifts				***$50,000***
	Conveying Equipment				***$50,000***
21	**Fire Suppression**				
D4010	**Sprinklers**				
93	Allowance for sprinkler systems - assumed not required	SF	3,231		Excl.
	Sprinklers				***Excl.***
	Fire Suppression				***Excl.***
22	**Plumbing**				
D2010	**Plumbing Fixtures**				
94	Water closet, ADA	EA	3	1,500.00	4,500
95	Water closet	EA	5	1,500.00	7,500
96	Shower	EA	9	750.00	6,750
97	Urinal	EA	1	1,500.00	1,500
98	Lavatory basin	EA	10	1,200.00	12,000
99	Mop sink	EA	1	1,000.00	1,000
	Plumbing Fixtures				***$33,250***
D2020	**Domestic Water Distribution**				
100	Hot water tank, allow electric	EA	1	5,000.00	5,000
101	Allowance for domestic water distribution including piping, insulation, connections, etc.	SF	3,231	10.00	32,310
	Domestic Water Distribution				***$37,310***
D2030	**Sanitary Waste**				
102	Allowance for sanitary waste including drains, piping, etc.	SF	3,231	5.00	16,155
	Sanitary Waste				***$16,155***
D2090	**Other Plumbing Systems**				
103	Fees and bonds	Item			4,000
104	Testing and commissioning	SF	3,231	0.25	808
105	Coordination and management	Item			5,000
	Other Plumbing Systems				***$9,808***
	Plumbing				***$96,523***

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Divisions/Elements Item

Rates Current At July 2015

Description	Unit	Qty	Rate	Total Cost
23 Heating, Ventilating, and Air Conditioning				
D3040 Distribution Systems				
106 Allowance for HVAC system	SF	3,231	18.00	58,158
Distribution Systems				***$58,158***
Heating, Ventilating, and Air Conditioning				***$58,158***
26 Electrical				
D5010 Electrical Service & Distribution				
107 Allowance for electrical service and distribution	SF	3,231	10.00	32,310
122 Allowance for emergency generator (as per SKAI)	Item			20,000
Electrical Service & Distribution				***$52,310***
D5020 Lighting and Branch Wiring				
108 Allowance for lighting and branch wiring	SF	3,231	16.50	53,312
Lighting and Branch Wiring				***$53,312***
Electrical				***$105,622***
27 Communications				
D5030 Communications & Security				
109 Allowance for Tel/Data infrastructure (equipment by Owner)	SF	3,231	2.00	6,462
Communications & Security				***$6,462***
Communications				***$6,462***
31 Earthwork				
A1020 Special Foundations				
9 Excavate for ballast footings	CY	2,466	12.00	29,592
10 Remove excavated materials and stockpile on site for re-use	CY	2,466	8.00	19,728
11 Prepare and compact footing sub-base	SF	4,097	0.75	3,073
12 Stone footing sub-base	CY	76	65.00	4,940
13 Backfill footing excavation using salvage materials	CY	2,011	10.00	20,110
14 Modified rock fill to top layer of excavation backfill	CY	57	65.00	3,705
113 Allowance for dewatering	Item			100,000
Special Foundations				***$181,148***
Earthwork				***$181,148***

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Divisions/Elements Item

Rates Current At July 2015

Description	Unit	Qty	Rate	Total Cost
32 Exterior Improvements				
G2030 Pedestrian Paving				
49 Stone walkways including sub-base	SF	162	3.50	567
Pedestrian Paving				***$567***
G2040 Site Development				
44 Allowance for miscellaneous site development	Item			50,000
Site Development				***$50,000***
G2050 Landscaping				
45 Allowance for miscellaneous plantings (as per SKAI)	Item			50,000
Landscaping				***$50,000***
Exterior Improvements				***$100,567***
33 Utilities				
G3010 Water Supply				
114 Allowance for water supply system including modification of existing	Item			10,000
Water Supply				***$10,000***
G3020 Sanitary Water				
115 Allowance for sanitary sewer system including modification of existing	Item			5,000
Sanitary Water				***$5,000***
G3030 Storm Sewer				
116 Allowance for storm sewer system	Item			20,000
Storm Sewer				***$20,000***
G4010 Electrical Distribution				
117 Allowance for electrical distribution including modification of existing	Item			15,000
Electrical Distribution				***$15,000***
Utilities				***$50,000***
ESTIMATED NET COST				***$1,682,573***