HELEN WATTS ENGINEERING
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February 15, 2012

Shepard Bosworth, Owner
Glendale Corporation
532 Plains Road
Hollis, ME 04042

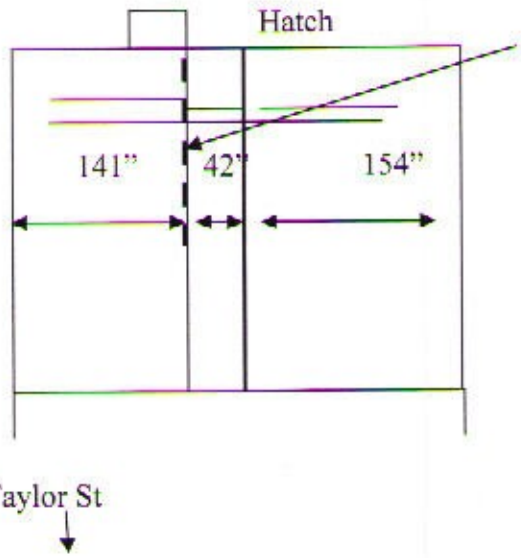
Re: Structural Evaluation, Wall Removal, 16 Taylor Street, Portland, Maine
HCW Project No. 12-009

Dear Shepard:

At your request, I inspected the visible structure of 16 Taylor Street in Portland, Maine on February 13, 2012 with you. The building at 16 Taylor Street is a 6-unit condominium, with two units on each of three floors. The unit owner at #16 is remodeling and wants to remove a wall. The purpose of my inspection was to determine if it is a bearing wall and size a beam to handle the expected loads. The pertinent code is the MUBEC. The building is a wood-framed structure on a full ashlar basement with a concrete floor built in 1912. The building has a flat roof.

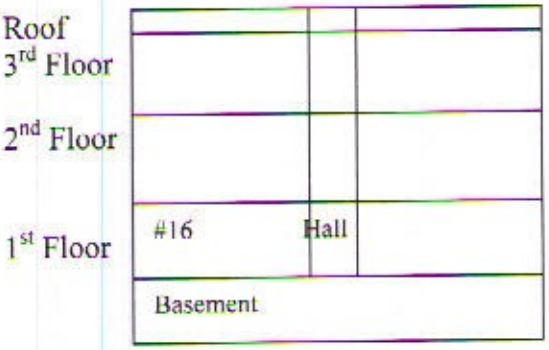
Mr. Bosworth opened holes in the ceiling of the first floor on either side of the wall to be removed. See the sketch below:

SKETCH – NOT TO SCALE, Plan, Back End of #16, and Elevation



Wall to be removed, 15' span from end wall

Hall Joists 2" x 7 7/8" @ 18" OC
Room Joists 2x10 @ 16" OC
(Assumed same both sides of Hall)



The wall to be removed is a bearing wall, taking roof, third floor and second floor loads from the hall and the room. The hall is assumed to be present with bearing walls on either side on all the floors, and the roof is assumed to also be supported at this wall.

I calculated the beam as engineered lumber (Versalam, 3100 Fb, or equal), as a flitch beam with engineered lumber with a center steel plate, and as a steel beam. The required beam is either:
Engineered Lumber: Versalam, 3100 Fb, 5.25" x 14"
Flitch: 2 – 3.5"x12" Versalam, 3100 Fb with ½" steel plate
Steel: A36 W8x21 (8¼" deep x 21 pounds per linear foot)

All need 4" of bearing on each of the ends. The columns will be directly under the ends of the beams, and installed vertically. The columns at the first floor are assumed to be 10'; the required end supports are 3 – 2x4s or 1 – 4x4, which can also be used for the shorter column height in the basement. The columns should be built tight to the framing above and below. The basement floor is concrete; this can be measured with a concrete drill in locations near the columns. If there is a 6" depth of concrete, no additional footing is needed. The precast 12 or 16" diameter concrete footings are adequate; there are also precast rectangular footings, or the slab can be opened and a 16"x16"x 8" footing can be installed.

The base of the column shall have a moisture barrier and be pinned to the footing with PK nails or masonry screws. The top of the column, and the base and top of the column on the first floor, will be nailed to the adjacent framing. If steel framing is used, it should be ordered pre-drilled on both the web and the flange so framing and trim can easily be attached.

The framing above this opening should be supported before the wall is removed.

Please contact me if you need additional information, if the condominium association needs to have the beam inspected before being finished, or find additional conditions of concern. Thank you for giving me the opportunity to be of service to you.

Yours truly,

Helen C. Watts, P.E.
Principal

Attached: Resume
C:\Users\Ralph\Documents\HWE\16 Taylor ltr.doc

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HELEN C. WATTS, P.E., SECB
Principal, Helen Watts Engineering

Professional Engineer, Civil Engineering: Maine, #5261, Massachusetts, #47515, New Hampshire, #12984, New Jersey #GE48975. Pending: New York. SECB and NCEES Certified. State of Maine Certified Woman-Business Enterprise (WBE) and Local Project Administration (LPA), Massachusetts-certified SOWMBA, State of New Hampshire WBE.

CAREER SUMMARY

Hands-on experience, developing and completing effective, on-time, and on-budget projects, including construction, design, and repair design and planning.

ACCOMPLISHMENTS

Eingineer of record, new construction of various new commercial and residential properties 2007 - , including:

- Addition providing new industrial spaces, 8000 SF, Portland
- Design, construction inspection, permitting assistance, new residence + cottage and new sea wall under the new Sand Dune regulations, 3200 SF, Biddeford
- Design, construction inspection, new restaurant, 3000 SF, Limington

Facility engineer at Bath Iron Works, 10 years+, projects include:

- Managed BIW $2M Medical Building from conceptual design to move-in, including teaming, union and non-union subcontract labor, and value analysis, and providing ADA access and IT connectivity for adjacent buildings on a tight site, opening on schedule and at budget.
- Developed and defended a DEP/Army Corps permit application for a 200-Ton Transporter Roadway crossing saltwater wetlands against three intervenors, designed and built the roadway.

Performed various construction quality/structural evaluations, commercial and residential facilities. Working with masonry and concrete repair, façades, parking garages, bridges, determining urgent repairs and planning and completing maintenance contracting. Façade inspections with rope access.

Experience:

2007 – Structural engineering consultant, Helen Watts Engineering, Principal
2000-2007: Project structural engineer, Criterium-Mooney Engineers
1996-2000: Structural engineering, technical writing, various clients. Secret clearance with DOD, 1999.
1986-1996: Bath Iron Works Corporation, Bath, ME, Facility Engineer for 9000 employee shipbuilder. Project and structural engineering, from concept to close-out, including permitting, funding requests, estimated and actual costs, and schedule performance. Projects included marine structures, heavy industrial buildings and fixtures, office and medical areas, rentals, subcontracting and vendors, accommodating disabilities, parking lots, industrial ventilation.
1980-1982: Cianbro Corporation, Pittsfield, ME,. Construction engineer: $25M Recycled Fiber Facility and Waste Treatment Plant, Scott Paper, Winslow Mill. $185M design/build Paper Machine #3, Madison Paper Industries, Madison, ME. Also responsible for construction of wastewater treatment facility, joint with MPI and the Town of Madison, including landfill construction and basin aerators.

B.S. Civil Engineering, University of New Hampshire, 1980, 5th Year Certificate, Pulp and Paper, University of Maine, 1983. Taught structural engineering section, Mechanical Engineering PE Review Course, USM, 2/2002. Past president, Midcoast Commerce Connection. Member, So. Me. Midcoast Chambers.