

# Final Report of Structural Special Inspections

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Project: *New 3-Unit Building*  
Location: *62 Cumberland Street; Portland Maine*  
Owner: *Eco Capital, LLC*  
Structural Design Professional in  
Responsible Charge: *David A. Price, PE / Price Structural Engineers, Inc.*  
Date: *July 19, 2011*

To whom it may concern:

To the best of my information, knowledge and belief, the *Structural Special Inspections* required for this project have been performed and discovered discrepancies have been reported and resolved. Copies of statements, field reports, tests and inspections are included with this report.

Comments:

*13-L-2*

RECEIVED  
JUL 22 2011  
Dept. of Building Inspections  
City of Portland Maine

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,  
Special Inspector

David A. Price, PE  
Price Structural Engineers, Inc.

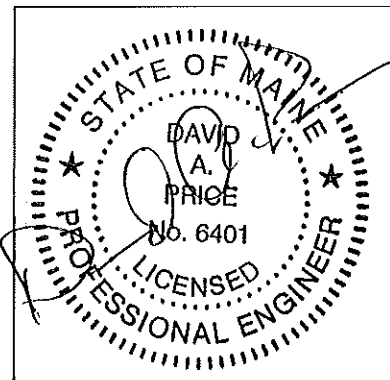
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*DA Price*

Signature

*July 19, 2011*

Date



## Schedule of Structural Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Soils and Foundations  | <input type="checkbox"/> Spray Fire Resistant Material         |
| <input checked="" type="checkbox"/> Cast-in-Place Concrete | <input checked="" type="checkbox"/> Wood Construction          |
| <input type="checkbox"/> Precast Concrete                  | <input type="checkbox"/> Exterior Insulation and Finish System |
| <input type="checkbox"/> Masonry                           | <input type="checkbox"/> Mechanical & Electrical Systems       |
| <input checked="" type="checkbox"/> Structural Steel       | <input type="checkbox"/> Architectural Systems                 |
| <input type="checkbox"/> Cold-Formed Steel Framing         | <input type="checkbox"/> Special Cases                         |

Special Inspection Agency #	Firm	Address, Telephone, e-mail
1. Structural Special Inspector	<i>Price Structural Engineers, Inc. David Price, PE</i>	<i>75 Farms Edge Road North Yarmouth, ME 04097 Tel : (207) 846-0099 Cell: (207) 232-3854 Email pricestructural@maine.rr.com</i>
2. Soils Inspection / Testing	<i>Stephen A. Down, PE</i>	<i>P.O. Box 152, 46 Giles Road Readfield, ME 04355 Tel: (207) 685-3637 Email: stevedown123@gmail.com</i>
3. Concrete Inspection / Testing	<i>Summit Environmental Bill Walsh, PE</i>	<i>1 Industrial Way Portland, ME 04103 Tel: (207) 221-6360 Cell: (207) 576-5021 Email: mwalsh@summitenv.com</i>

### Notes:

- The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.
- Written site visit reports (electronic pdf is acceptable) shall be sent to the contractor, special inspector and owner as soon as possible after site visit. Reports shall identify items observed, noted deficiencies and when observed deficiencies have been corrected.
- Deficiencies identified during the site visit shall be brought to the attention of the contractor's superintendent, or his designated representative, at the conclusion of the site visit. Deficiencies identified after the site visit shall be brought to the attention of the contractor's superintendent, or his designated representative, as soon as possible after they are discovered.

## Quality Assurance Plan

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### Quality Assurance for Seismic Resistance

Seismic Design Category	C
Quality Assurance Plan Required (Y/N)	Yes

Description of seismic force resisting system and designated seismic systems:

*Structure is braced using light frame shear walls at wood framed areas and masonry / concrete shear walls at the parking garage area. Shear walls occur in each orthogonal direction and are located as indicated on Structural Framing Drawings S4.0 to S4.3. Loads are distributed to shear walls by the floor sheathing diaphragms at wood framed areas and by the composite slab at the garage area.*

*Inspections and tests for the seismic resisting components are as indicated within the attached schedule and summarized as follows:*

- 1. Test compaction of foundation backfill adjacent to shearwalls.*
- 2. Visually inspect reinforcement and test concrete at concrete shear walls.*
- 3. Visually inspect structural steel member sizes and bolting at garage floor system.*
- 4. Visually inspect floor sheathing, fastener spacing and sheathing edge support at wood framed floor sheathing diaphragms..*
- 5. Visually inspect shear wall fastener spacing and sheathing edge support at wood framed shear walls.*
- 6. Visually inspect hold- down anchors at wood framed shear walls.*

### Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust)	100 mph
Wind Exposure Category	B
Quality Assurance Plan Required (Y/N)	Yes

Description of wind force resisting system and designated wind resisting components:

*Structure is braced using light frame shear walls at wood framed areas and masonry / concrete shear walls at the parking garage area. Shear walls occur in each orthogonal direction and are located as indicated on Structural Framing Drawings S4.0 to S4.3. Loads are distributed to shear walls by the floor sheathing diaphragms at wood framed areas and by the composite slab at the garage area.*

*Inspections and tests for the wind resisting components are as indicated within the attached schedule and summarized as follows:*

- 1. Test compaction of foundation backfill adjacent to shearwalls.*
- 2. Visually inspect reinforcement and test concrete at concrete shear walls.*
- 3. Visually inspect shear studs, structural steel member sizes and bolting at garage floor system.*
- 4. Visually inspect floor sheathing fastener spacing and sheathing edge support at wood framed floor sheathing diaphragms.*
- 5. Visually inspect shear wall fastener spacing, and sheathing edge support at wood framed shear walls.*
- 6. Visually inspect hold- down anchors at wood framed shear walls.*

# Qualifications of Inspectors and Testing Technicians

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The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official. The credentials of all Inspectors and testing technicians shall be provided if requested.

## Key for Minimum Qualifications of Inspection Agents:

When the Registered Design Professional in Responsible Charge deems it appropriate that the individual performing a stipulated test or inspection have a specific certification or license as indicated below, such designation shall appear below the *Agency Number* on the Schedule.

PE/SE	Structural Engineer – a licensed SE or PE specializing in the design of building structures
PE/GE	Geotechnical Engineer – a licensed PE specializing in soil mechanics and foundations
EIT	Engineer-In-Training – a graduate engineer who has passed the Fundamentals of Engineering examination

### American Concrete Institute (ACI) Certification

ACI-CFTT	Concrete Field Testing Technician – Grade 1
ACI-CCI	Concrete Construction Inspector
ACI-LTT	Laboratory Testing Technician – Grade 1&2
ACI-STT	Strength Testing Technician

### American Welding Society (AWS) Certification

AWS-CWI	Certified Welding Inspector
AWS – ACWI	Associate Certified Welding Inspector
AWS/AISC-SSI	Certified Structural Steel Inspector

### American Society of Non-Destructive Testing (ASNT) Certification

ASNT	Non-Destructive Testing Technician – Level II or III.
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### International Code Council (ICC) Certification

ICC-SMSI	Structural Masonry Special Inspector
ICC-SWSI	Structural Steel and Welding Special Inspector
ICC-SFSI	Spray-Applied Fireproofing Special Inspector
ICC-PCSI	Prestressed Concrete Special Inspector
ICC-RCSI	Reinforced Concrete Special Inspector

### National Institute for Certification in Engineering Technologies (NICET)

NICET-CT	Concrete Technician – Levels I, II, III & IV
NICET-ST	Soils Technician - Levels I, II, III & IV
NICET-GET	Geotechnical Engineering Technician - Levels I, II, III & IV

# Soils and Foundations

Note: Where "periodic inspections" are performed and deficient items are located, additional inspections shall be performed so that extent of deficient areas can be determined and corrected.

Item	Agency # (Qualif.)	Scope
1. Shallow Foundations	Agency #2 (PE/GE or Qualified Technician supervised by PE/GE)	<p><i>Inspect soils below footings for adequate bearing capacity and consistency with geotechnical report.</i></p> <p><i>Inspect removal of unsuitable material and preparation of subgrade prior to placement of controlled fill</i></p>
2. Structural Fill	Agency #2 (PE/GE or Qualified Technician supervised by PE/GE)	<p><i>Verify material properties of crushed stone and structural fill adjacent to foundations and below footings</i></p> <p><i>Inspect placement, lift thickness and compaction of structural fill below footings and adjacent to foundations.</i></p> <p><i>Test density at lifts of fill below footings by nuclear methods (ASTM D2922) and elsewhere deemed necessary by Agent #2.</i></p> <p><i>Perform sieve tests (ASTM D422 &amp; D1140) and modified Proctor tests (ASTM D1557 at fill below footings and elsewhere deemed necessary by Agent #2.</i></p>

# Cast-in-Place Concrete

Note: Where "periodic inspections" are performed and deficient items are located, additional inspections shall be performed so that extent of deficient areas can be determined and corrected.

Item	Agency # (Qualif.)	Scope
<p>1. (a) Concrete Mix Submittal (shaded items indicate submittal required for review, typ.)</p> <p>(b) Reinforcement Submittal</p>	<p>Agency #1 (PE/SE)</p>	<p>Review cement certificate of compliance as part of mix design submittal review.</p> <p>Review steel reinforcement submittal</p>
<p>2. Concrete Mix – During Construction</p>	<p>Agency #3 (ACI-CCI)</p>	<p>Review concrete batch tickets and verify compliance with approved mix design. Verify that water added at the site does not exceed amount allowed by the mix design.</p>
<p>3. Reinforcement Installation</p>	<p>Agency #1 and Agency #3 (ACI- CCI)</p>	<p>Inspect size, spacing, cover, positioning and grade of reinforcing steel, including dowels connecting walls. Reinforcement shall conform to stamped structural drawings in addition to what is indicated on reinforcement shop drawings.</p> <p>Verify that reinforcing bars are free of form oil or other deleterious materials. Inspect bar laps and mechanical splices. Verify that bars are adequately tied and supported on chairs or bolsters</p>
<p>4. Formwork</p>	<p>Agency #3 (ACI- CCI)</p>	<p>Inspect formwork dimensions for compliance with foundation drawings.</p> <p>Verify that formwork does not contain debris or ice.</p> <p>Verify foundation wall control joint bondouts conform to G2/S3.0</p>
<p>5. Anchor Rods &amp; Anchor Bolts</p>	<p>Agency #3 (ACI- CCI)</p>	<p>Inspect size, positioning and embedment of anchor rods/bolts</p> <p>Inspect concrete placement and consolidation around anchors.</p>
<p>6. Concrete Placement</p>	<p>Agency #1 Or Agency #3 (ACI- CCI)</p>	<p>Inspect placement of concrete. Verify that concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.</p>
<p>7. Sampling and Testing of Concrete</p>	<p>Agency #3 (ACI- CFTT)</p>	<p>Test concrete compressive strength (ASTM C31 &amp; C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). One set of tests required for each day of concrete placement when concrete placement exceeds 5 yards.</p>
<p>8. Curing and Protection</p>	<p>Agency #3 (ACI- CCI)</p>	<p>Inspect curing, cold weather protection and hot weather protection procedures.</p>

# Structural Steel

Note: Where "periodic inspections" are performed and deficient items are located, additional inspections shall be performed so that extent of deficient areas can be determined and corrected.

Item	Agency # (Qualif.)	Scope
1. Fabricator Certification/ Quality Control Procedures (shaded items indicate submittal required for review, typ.)	Agency #1	<p>Review shop fabrication and quality control procedures unless fabricator is an AISC certified plant.</p> <p>Review fabricator's written procedures and quality control manuals or provide documentation that fabricator is an AISC certified plant.</p>
2. Structural Steel submittal and Steel Material Certification	Agency #1 (PE/SE)	Review sizes and grades of steel members and fasteners. Review certificates of compliance as part of structural steel submittal.
3. Leveling Plates below columns	Agency #1	Verify that Leveling plates have been grouted as specified prior to placing beams or columns
4. Anchor Rods and Bolts	Agency #1	Verify that washers are in place as specified and that nuts are tight at anchor bolts.
5. Structural Steel components	Agency #1	Verify sizes of beams and columns and that they have been placed at correct locations based on identification markings and beam depth (or column depth) dimensions.
6. Bolting	Agency #1	<p>Inspect high strength bolt material markings for correct bolt type, diameter, storage in lubricated containers and installation / tightening of high-strength bolt.</p> <p>Verify that splines have separated from tension control bolts. Periodically verify proper tightening sequence.</p>

# Rough Carpentry

Note: Where "periodic inspections" are performed and deficient items are located, additional inspections shall be performed so that extent of deficient areas can be determined and corrected.

Item	Agency # (Qualif.)	Scope
1. Column Sizes and Built-up column requirements	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
2. Column Bearing – solid blocking at floor cavities and anchorage at column bases	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
3. Stud size, spacing, alignment with truss centerlines, grade	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
4. Beam sizes and bearing	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
5. Simpson Hangers- gap distance at hangers, nails (diameter, quantity), ZMAX finish at PT members,	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
6. Porch /Deck Framing Details	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observation</i>
7. Shear wall Details <ul style="list-style-type: none"> <li>• Hold-Down Anchors</li> <li>• Sheathing thickness</li> <li>• Fastener Size / Spacing</li> <li>• Framing @ Sheathing Edges</li> <li>• Stud Spacing</li> <li>• Sheathing material</li> </ul>	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
8. Floor Diaphragm Details <ul style="list-style-type: none"> <li>• Sheathing thickness</li> <li>• Fastener Size / Spacing</li> <li>• Framing @ Sheathing Edges</li> <li>• Diaphragm Chords</li> </ul>	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>



## Rough Carpentry (cont.)

Note: Where "periodic inspections" are performed and deficient items are located, additional inspections shall be performed so that extent of deficient areas can be determined and corrected.

10. Stair Framing Details <ul style="list-style-type: none"><li>• Stringer / Landing Framing</li><li>• Connections</li></ul>	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
11. Lintels <ul style="list-style-type: none"><li>• Lintel Sizes</li><li>• Framing @ Jambs</li></ul>	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>
12. Misc. Framing Details	<i>Agency #1 (PE/SE)</i>	<i>Periodic Structural Observations</i>

STEPHEN A. DOWN  
L.S.E. 257, P.E. 8193  
SOIL TESTS  
PO Box 152, 46 GILES RD.  
READFIELD, MAINE 04355  
(207) 685-3637  
stevedown123@gmail.com

Mr. Paul Ledman  
62 Cumberland Ave.  
Portland, ME 04563

October 28, 2010

Soil and Subsurface Investigation  
Proposed condominium  
62 Cumberland Ave.  
Portland, Maine

Dear Mr. Ledman,

As requested by Jeff Munn of Coastal Construction Services, Inc. of Durham, Maine, I performed site and subsurface observations at the subject property on October 28, 2010 to determine the suitability of the lot to support a wood frame condominium structure with lower level parking.

The lot is vacant and sparsely vegetated with grass, weeds, shrubs and several trees. Most of the site appeared to be covered with a surficial depth of fill and disturbed soil. The ground surface is generally level to gently sloping down to the southwest. The lot is located between a gravel parking lot upslope that borders this lot with a low granite slab "retaining wall" extending about 30 inches above ground. A two-story duplex on Sheridan Street borders the downslope side of the lot and appears in good condition from a subsoil viewpoint. A red brick sidewalk borders the northwest side of the lot.

Subsoil conditions were investigated with two test borings. TB-1 is located 25 feet along the Cumberland Avenue boundary from the north corner of the lot and 8 feet perpendicularly onto the lot, beyond the sidewalk. TB-2 is located 16 feet from the southwest property line (downslope side) and 90 feet perpendicularly onto the lot, beyond the sidewalk.

The test borings encountered about 1-1/2 to 2-1/2 foot depth of fill consisting of silty sand and gravel with cobbles to sandy silty clay with scattered gravel and cobbles, overlying medium dense silty to slightly silty gravelly sand with scattered to frequent cobbles extending to the maximum depth explored, 5 feet. These underlying granular soils are relatively free draining, >10 in/hr permeability and by the Unified Soil System, classify as SM/SP to GM/GP. Moisture content was slightly moist to moist and no free water was encountered in the test holes. Graphic soil logs are available upon request.

The nature and extent of variations from the conditions encountered at the test hole locations may not become evident until excavation is performed. If, during construction ground and water conditions appear different than those described, re-evaluation should be performed.

Foundation loadings from the wood structure are expected to be light. Spread footings should be placed on the natural dense coarse granular soils below all topsoil, disturbed soil and existing fill. Maximum allowable bearing pressure of 2,000 to 3,000 psf is anticipated with acceptable total and differential settlements occurring essentially during construction. Ground floor concrete slabs should be separated from bearing members with a positive expansion joint and adequately reinforced.

The subsoils encountered consist of coarse granular materials which have relatively good drainage characteristics. Good surface drainage should be maintained to help prevent development of a free water level.

I recommend on-site observation of excavations and foundation bearing strata by a soil Engineer.

I appreciate the opportunity to perform this geotechnical site and subsoil investigation. If you have any questions, please do not hesitate to contact me.

Sincerely,

Stephen A. Down, PE

STEPHEN A. DOWN  
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PO Box 152, 46 GILES RD.  
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Mr. Paul Ledman  
62 Cumberland Ave.  
Portland, ME 04563

January 6, 2011

Special Inspections Report  
Soils, Foundation Bearing and Controlled Fill  
Proposed Condominium  
62 Cumberland Ave.  
Portland, Maine

Dear Mr. Ledman,

As requested, I attended an initial project meeting on-site with Mike White, David Price, Jeff Munn and Tom (Mid-Maine Foundations) on November 19, 2010. I performed special inspections on Nov. 27 & 29 and Dec. 6 & 14, 2010. Several other brief site visits were made to observe project progress and conditions. I previously conducted a soil and subsurface investigation at the subject site, report dated October 28, 2010.

The partial depth lower level excavation observed Nov. 19<sup>th</sup> and the perimeter continuous spread footing excavation observed Nov. 27<sup>th</sup> (after The Cumberland Ave. utility connection work) exposed sandy to gravelly stiff to very stiff silty clay with scattered cobbles and occasional boulders. Some isolated areas of dense granular soils similar to those described in the Oct. 28<sup>th</sup> soils report were also exposed. Each of these in-situ materials should be adequate for support of foundations designed using the recommended 3,000 psf maximum allowable bearing pressure. The four interior isolated spread footings and the five perimeter pier footings bear on the firm silty clay soil. The perimeter continuous spread footings bear predominately on the firm silty clay with several isolated short sections bearing on the dense silty to clayey granular soils, suitable for foundation support.

No structural fill was required below foundations and less than 4 inch depth of vibration-settled minus 3/4 inch crushed stone was used below foundations. The contractor's source of structural fill is suitably graded, has less than 5% fines (minus #200 sieve material) and is acceptable for use adjacent foundation walls, adjacent piers and below concrete slabs. The contractor's minus 3/4 inch crushed stone is acceptable for underdrain use and below foundations as approved and with placement observed.

As we discussed and you requested after the concrete piers were constructed, monitoring of the contractor's structural fill placement and compaction around the isolated footings and piers would not be performed as the contractor had established acceptable structural fill placement and compaction methods on the project.

Variations in the soil conditions below those exposed in the foundation excavations may exist, drilling or other exploration methods would be required to determine the nature and extent of possible variations. The data obtained by this further investigation could change the recommendations in this report.

**Site visit observations to date for special inspections are presented below:**

**Sat. 11-27-10            Excavation for perimeter footings**

The building perimeter continuous spread footing excavation, integral with the four southwest-side pier footing excavations, were completed exposing the undisturbed very stiff silty clay soil.

Near the north corner of the building (plan S2.0 location A-3) a leveling course of 3/4 inch crushed stone, zero to 4 inch depth, was placed and vibrated to footing grade.

A section of the continuous footing excavation adjacent the sidewalk was deepened to provide for buried service entrance to the building, above footing grade, from the street. Blankets were placed for frost protection.

**Mon. 11-29-10            Concrete placement for perimeter footings**

Surveyors set foundation references. Footings that were excavated for on Saturday were formed, reinforcing steel set and concrete placed on suitable in-situ bearing soils. Blankets were placed for frost protection.

**Mon. 12-6-10            Perimeter foundation backfill & Underdrains**

The contractor reported backfilling the exterior of the building perimeter footings on Saturday 12-4-10 with 3/4 inch crushed stone, beginning at footing grade and in some areas extending partially up the foundation wall. Four-inch PVC underdrain pipe had been placed within the stone along the NE and SE sides of the building. Filter fabric covered the stone along the SE side of the building. A 6 inch PVC roof downspout outlet pipe had also been placed within the stone along part of the NE side of the building.

Structural sand fill was being placed above the stone in approximate 6-inch lifts and adequately compacted with a walk-behind vibratory compactor on both sides of the foundation (frost) wall along the SW and NW sides of the building. Along the exterior of these frost walls the contractor plans to install the perimeter underdrain pipe above the top of footing elevation and below the level of the interior floor slab granular support material to provide for a positive gravity outlet into existing manhole DMH-1.

**Tu. 12-14-10                      Excavation & concrete placement for pier foundation footings**

The four interior isolated spread footing excavations and the exterior column footing at the north corner of the building were completed, exposing the undisturbed very stiff silty clay soil. Less than 4 inch depth of 3/4 inch crushed stone was placed and vibrated to footing grade with a walk-behind vibratory compactor at the building corner footing and at the two interior footings closest to the street.

The footings were formed, reinforcing steel set and concrete placed. Blankets were placed for frost protection.

~

I am available to observe the exterior backfill placement and compaction for the lower level of the building upon request.

It is important that surface runoff and drainage be directed away from the building perimeter and backfill area to help maintain a dry condition within the lower level of the building and reduce the risk of building distress.

~

I appreciate the opportunity to work with you on this project. If you have any questions or when I can be of further service, please feel welcome to contact me.

Sincerely,

Stephen A. Down, PE

pricestructural

From: pricestructural@maine.rr.com  
Sent: Tuesday, November 30, 2010 9:21 PM  
To: Mike White  
Cc: PriceStructural@maine.rr.com  
Subject: Fwd: Fw: 62 Cumberland Ave- Concrete Mix submittal

Attachments: Fw\_ 62 Cumberland Ave- Concrete Mix submittal (5.45 MB)

CONCRETE MIX  
DESIGN



Fw\_ 62 Cumberland  
Ave- Concret...

Mike - the concrete mix design you submitted from Auburn Concrete for the 3 mix designs listed below is "Approved as Corrected".

Comments - For any concrete delivered to the site, the water volume added at the plant must be written on the delivery slip brought to the site and recorded; furthermore, the volume of water added at the site must also be recorded. The combined total volume of water for the concrete within the truck shall not exceed the total volume listed in the mix design.

The approved mixes are as follows:

- Mix 3534SNA / f'c=3500 psi / used for Footings
- Mix 4534SA / f'c=4500 psi / used for Foundation walls and Piers
- Mix 4534SNA / f'c=4500 psi / used for Interior Floor Slabs

For Wednesday's concrete placement of foundation walls, Mike Walsh at Summit will be inspecting steel reinforcement, sleeves at wall penetrations and anchor bolts at piers. Summit will also be testing for concrete air entrainment, slump and making cylinders for testing 7 and 28-day concrete strength.

Please call me on my cell if you or anyone else has a question.

Best regards,  
David

## STRUCTURAL REVIEW NOTES

### A. General

**Project:** 3 Unit Apartment  
**Architect:** Kaplan Thompson  
**Location:** Portland Maine  
**Date:** November 22, 2010  
**Contractor:** Island Carpentry

**Submittal:** Structural Steel :

- Erection Drawings : AEI, E1, EM1
- Beam Drawings : 1
- Column Drawings : 2-3

**General note:** Comments pertaining to this submittal are written on these "Structural Review Notes" to expedite the review process as requested by Mike White the general contractor project manager.

### C. Structural Steel Pieces Approved As Corrected

The (6) structural steel drawings listed above are "Approved As Corrected" as further described below:

Approved                       Approved as Corrected                       Submit Specific Item  
 Revise and Resubmit                       Rejected

This review is only for general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. Any deviations from same not clearly noted by the contractor have not been reviewed. Corrections or comments made on the shop drawings during this review do not relieve contractor from compliance with the requirements of the plans and specifications. Approval of a specific item shall not include approval of an assembly of which the item is a component. Contractor is responsible for:

- Dimensions to be confirmed and correlated at the jobsite;
- Information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of his or her Work with that of all other trades,
- and for performing all work in a safe and satisfactory manner.

**Price Structural Engineers, Inc.**

Review Date: \_\_\_\_\_ Reviewed By: \_\_\_\_\_

See following page (2 of 2) for review corrections



**Review Corrections:**

1. **Drawing AE1** - Dimension between grid A and A.9 is not correct, please verify. Dimension between A.9 and C.9 is not correct, please verify.
2. **Drawing E1** - Dimension between grid A and A.9 is not correct, please verify. Dimension between A.9 and C.9 is not correct, please verify. Column sizes at grids 5/A.9, 7/A.9, 9/A.9 shall be HSS 5x5x5/16" as specified.
3. **Drawing EM1** - Plate BP1 is not correct, plate dimensions shall be 6"x6"x1" thick as specified (else it will not fit in concrete pocket). Use (2) 3/4" holes as specified at 3 1/2" gage (1 1/4" each side distance for a total of 6") and 1 1/2" edge distance as shown on detail H3/S3.0.
4. **Drawing 1** - GC / Architect, please verify distance requested on piecemark 1C (reference drawing S4.1)
5. **Drawing 2** - Location of "north" indicated on columns does not appear to be correct – please verify. Add note indicating that 15/16" x 1 1/8" horizontal short slots are typical at beam to column connections.
6. **Drawing 3** - Location of "north" indicated on columns does not appear to be correct – please verify.

SUMMIT ENVIRONMENTAL CONSULTANTS, INC.

434 Cony Road, Augusta, Maine 04330

Phone: (207) 621-8334 Fax: 626-9094



DAILY FIELD REPORT

Date: 12/2/10
Project: 62 Cumberland Ave 3-Unit
Project #: 14472
Site Contacts: Mike White - Island Carpentry
Purpose of Visit: Rebar inspection and concrete testing services.

Work Activities:

Onsite to complete steel reinforcement inspection for foundation walls not yet completed on 12-1-10. Reinforcement placement was being performed up to, and during the concrete placement by Mid-Maine Foundations at the time of inspection. The following identified issues were inspected prior to the scheduled concrete placement:

- 1) Upper horizontal reinforcement in all foundation walls
2) Bondout in foundation wall at Line A, Line 9 to Line 11 (see H4/S3.1)
3) Break in horizontal reinforcement for control joint at Lines A and 7 (see E1/S3.0)
4) All vertical reinforcement at wall corners and at ends of walls (see C3/S3.0)
5) All #4 bent bars to connect top of wall to slabs (see E8/S3.0)
6) Verify piers at garage entrances reworked to include 4 horizontal stirrups and 4-inch clearance off footers (see E8/S3.0 and C4/S3.1)
7) All anchor bolts

- All bar sizes were consistent with plans and specifications.
Steel did not meet clearance specifications in all areas.
- Endwall at line 11 at line C.9
Spacing of reinforcement met requirements
There were several areas where lap/splice lengths did not meet the minimum requirements of specifications:
- Line 3.5 to 4 at line A
- Line 4.5 at line D
- Line 3 at line A.4
- Line 1 at line C.9
- Line 11 at line C.9
There were several instances of steel reinforcement not placed according to specifications at all corners and an endwall.
There was an excess of form release oil used inside the forms, which is shown in the attached pictures as the blue colored pools on the footings.

Please refer to the observation records attached with this report for more detailed inspection reports.

Portal to Portal

Table with 2 columns: Time/Category and Expenses. Rows include Leave (9:00), Return (16:30), TOTAL (7.5), Mileage (12), Density Gauge, and Other.

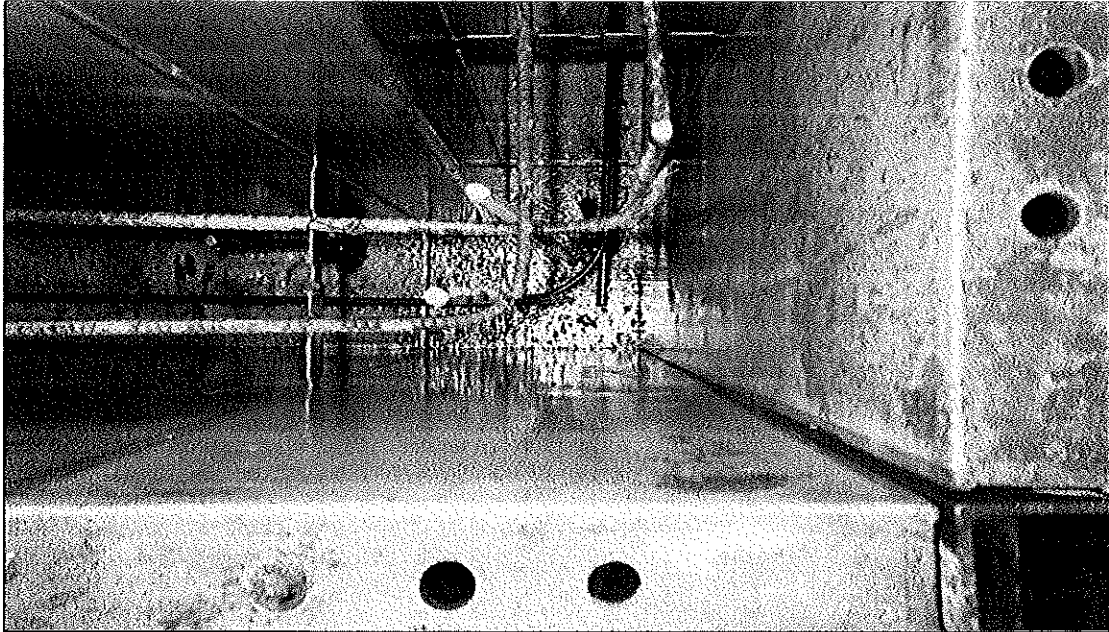
Signed: Matthew Gilman
cc:

Reviewed: Darrell A. Gilman, CMT Manager
Date: 12/8/10



**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** Line 1 at Line C.9

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_ Va. #4's, Hz. #4's

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
Describe: \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_ Hz. Lap and setup inconsistent w/ plans

**Comments:**

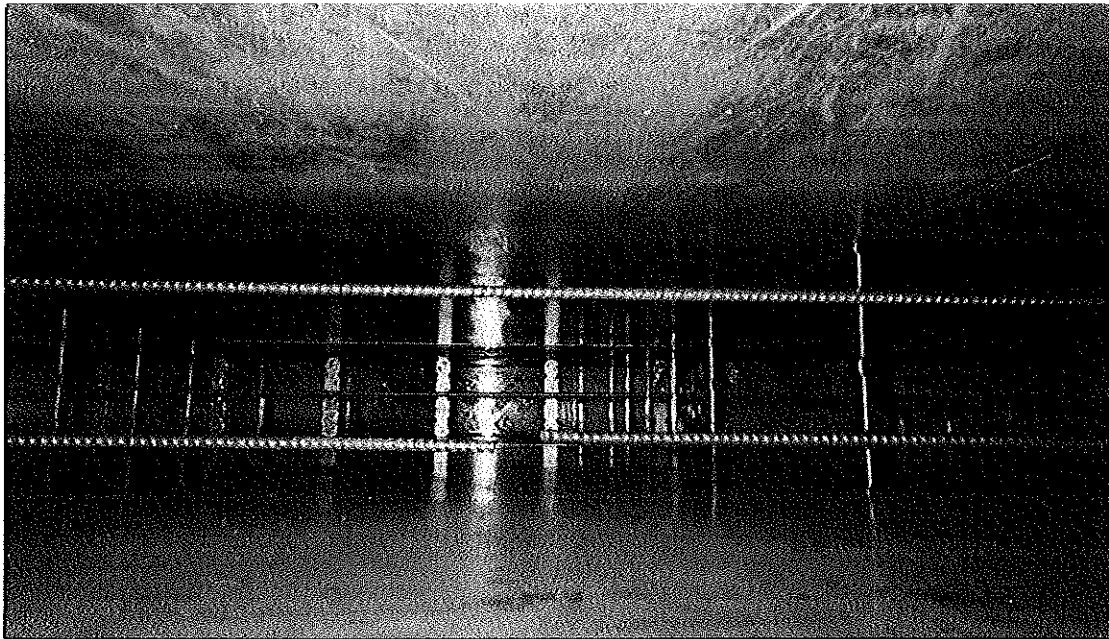
Vertical bar placed at interior of corner, inconsistent with C3/S3.0  
Missing upper and lower horizontal interior and exterior bar laps.

**Technician Signature:** Matthew Gilman



**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine Foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** 30 feet from line 11 at line A along line A

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_ Hz. #4's

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
Describe: \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
Describe: \_\_\_\_\_

**Comments:**

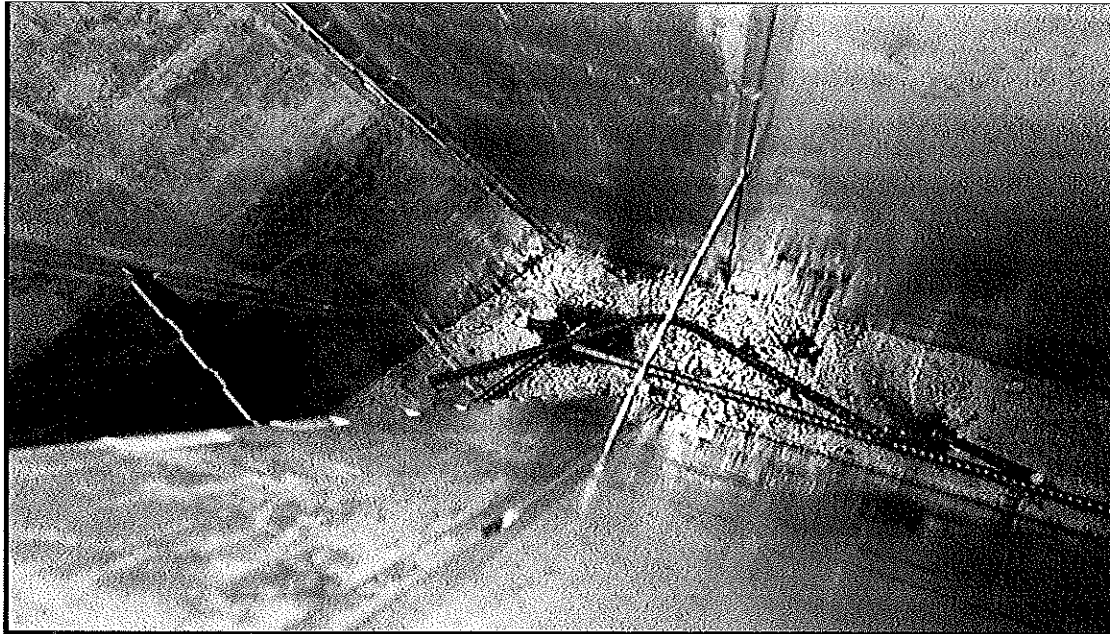
2 inch gap cut out of exterior horizontal bar per E1/S3.0 (Control joint)

**Technician Signature:** Matthew Gilman



Project Name: 62 Cumberland Avenue, 3-Unit      Date: 12/2/2010  
 Project Number: 14472      Ref. Plan No.: S2.0  
 Contractor: Mid-Maine Foundations      Approval Date: 11/15/2010

**SKETCH OF INSPECTED AREA**



Foundation Type:     Footing     Wall     Pier     Other: \_\_\_\_\_

Location: Line 3 at line A.4

Bar sizes consistent with plans and specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_ Hz. #4's

Steel meets min./max. clearance requirements of specifications.:     Forms     Subgrade  
Describe: \_\_\_\_\_

Spacing of steel meets min./max. requirements of specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_

Lap/Splice length meet minimum requirements of specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_

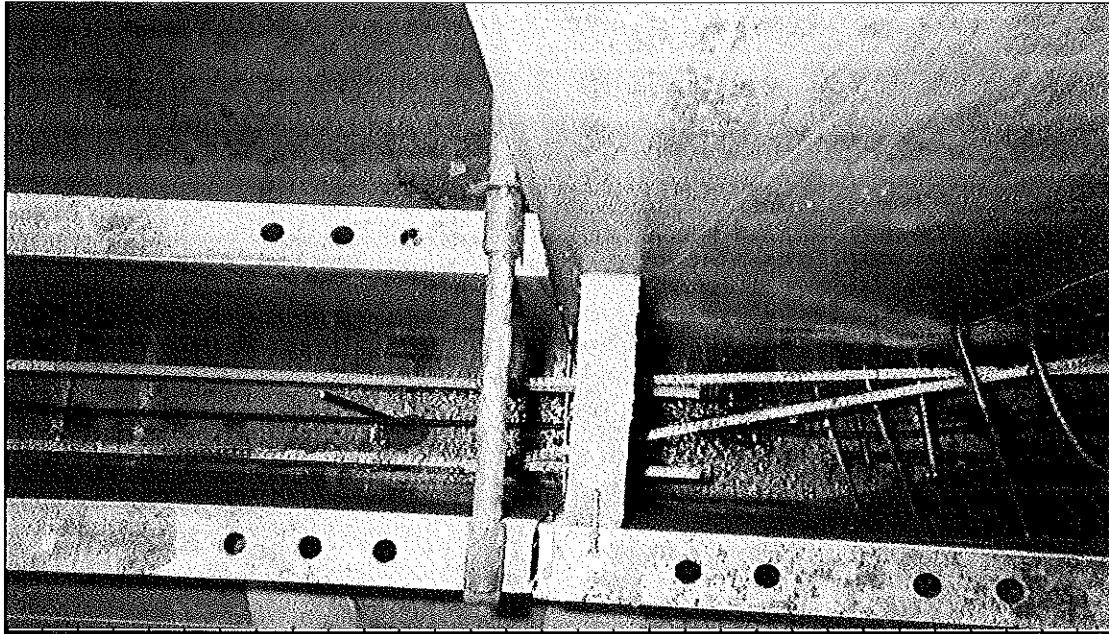
Comments:  
Lower bars around corner inconsistent with plan.  
Lower bar not tied to vertical reinforcement.

Technician Signature: Matthew Gilman



Project Name: 62 Cumberland Avenue, 3-Unit      Date: 12/2/2010  
 Project Number: 14472      Ref. Plan No.: S2.0  
 Contractor: Mid-Maine Foundations      Approval Date: 11/15/2010

**SKETCH OF INSPECTED AREA**



Foundation Type:     Footing     Wall     Pier     Other: \_\_\_\_\_

Location: Line 4.5 at line D off of Pier

Bar sizes consistent with plans and specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_ Va. #4 and Hz. #4

Steel meets min./max. clearance requirements of specifications.:     Forms     Subgrade  
Describe: \_\_\_\_\_

Spacing of steel meets min./max. requirements of specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_

Lap/Splice length meet minimum requirements of specifications.:     Vertical     Horizontal  
Describe: \_\_\_\_\_ Hz lap approximately 6 to 8 inches

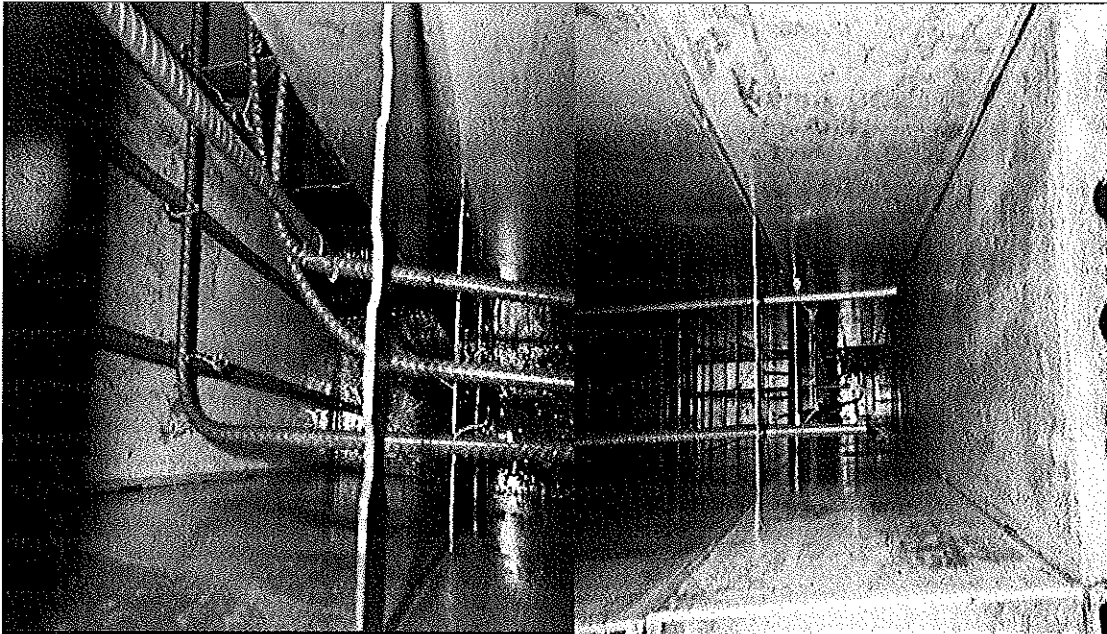
Comments:  
Horizontal lap inconsistent with plan. E.9/S1.0

Technician Signature: Matthew Gilman



Project Name: 62 Cumberland Avenue, 3-Unit Date: 12/2/2010  
 Project Number: 14472 Ref. Plan No.: S2.0  
 Contractor: Mid-Maine Foundations Approval Date: 11/15/2010

**SKETCH OF INSPECTED AREA**



Foundation Type:  Footing  Wall  Pier  Other: \_\_\_\_\_

Location: Line 3 at line A

Bar sizes consistent with plans and specifications.:  Vertical  Horizontal  
Describe: Va. #4 and Hz. #4

Steel meets min./max. clearance requirements of specifications.:  Forms  Subgrade  
Describe: \_\_\_\_\_

Spacing of steel meets min./max. requirements of specifications.:  Vertical  Horizontal  
Describe: \_\_\_\_\_

Lap/Splice length meet minimum requirements of specifications.:  Vertical  Horizontal  
Describe: \_\_\_\_\_

**Comments:**

Upper endwall horizontal and lower horizontal and vertical corner bars placement inconsistent with C3/S3.0

Technician Signature: Matthew Gilman



**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine Foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** Line 3.5 to 4 at line A

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_ **Hz. #4**

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
**Describe:** \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_ **No lap/connection to running upper Hz. Bars**

**Comments:**  
No lap as per E.9/S1.0

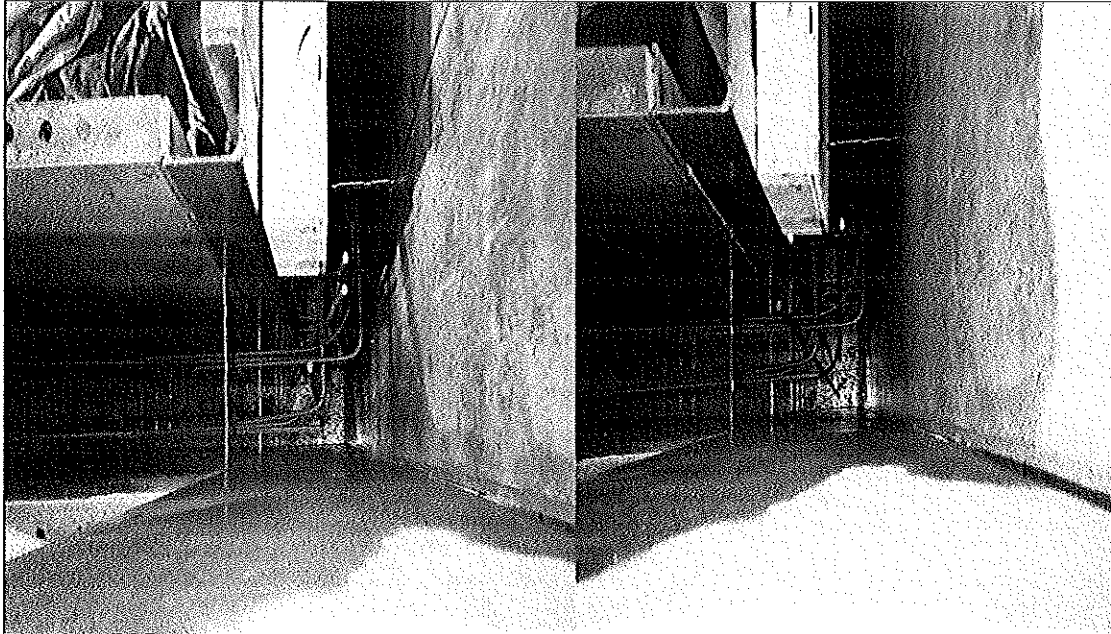
**Technician Signature:** Matthew Gilman





**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine Foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** Line 11 at line A corner

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_ Hz. #4 Va. #4

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
**Describe:** \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Comments:**

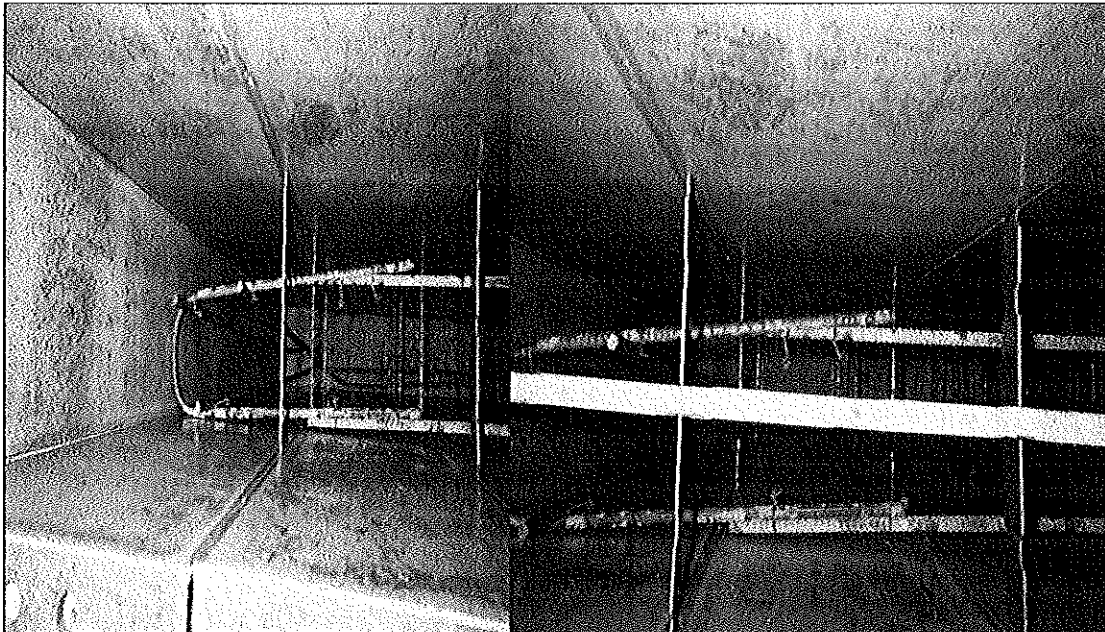
Corner vertical and horizontal bars placement inconsistent with plan. C3/S3.0

**Technician Signature:** Matthew Gilman



Project Name: 62 Cumberland Avenue, 3-Unit Date: 12/2/2010  
 Project Number: 14472 Ref. Plan No.: S2.0  
 Contractor: Mid-Maine Foundations Approval Date: 11/15/2010

**SKETCH OF INSPECTED AREA**



Foundation Type:  Footing  Wall  Pier  Other: \_\_\_\_\_

Location: Line 11 at line C.9 endwall

Bar sizes consistent with plans and specifications.:  Vertical  Horizontal  
Describe: \_\_\_\_\_ Hz. #4 Va. #4

Steel meets min./max. clearance requirements of specifications.:  Forms  Subgrade  
Describe: Bars were hand-positioned during placement away from forms.

Spacing of steel meets min./max. requirements of specifications.:  Vertical  Horizontal  
Describe: \_\_\_\_\_

Lap/Splice length meet minimum requirements of specifications.:  Vertical  Horizontal  
Describe: \_\_\_\_\_ Hz. lap approx. 6 in.

**Comments:**

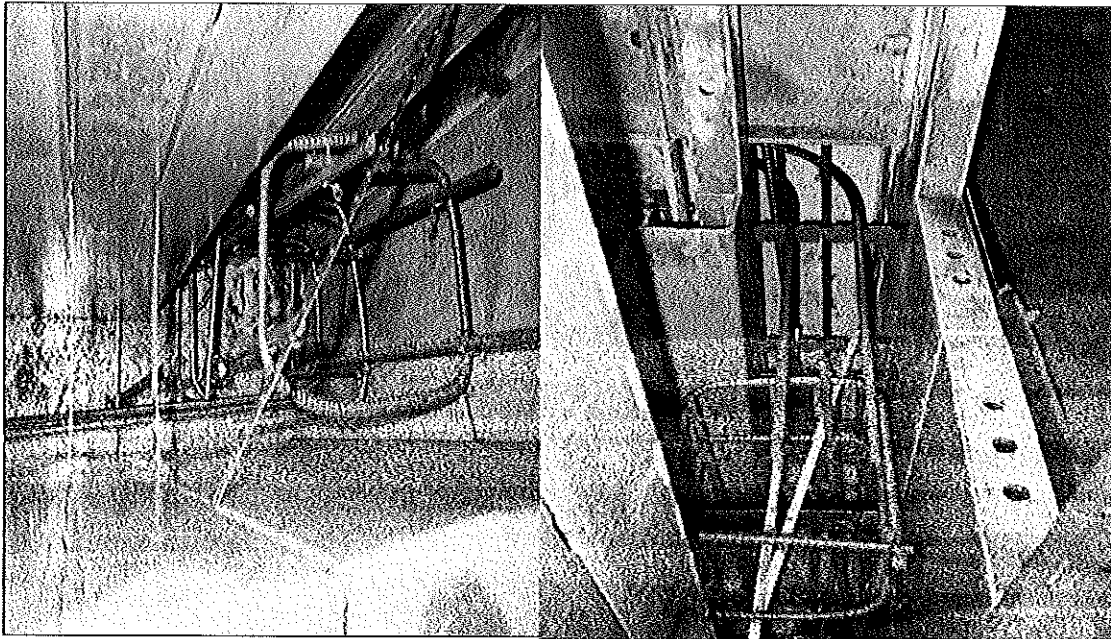
Endwall vertical and horizontal bars placement inconsistent with plan. C3/S3.0  
 Upper horizontal bars did not meet lap requirement per E.9/S1.0 (Ruler in picture overexposed due to flash.)  
 Bars at endwall were held away from forms during placement. Exterior upper horizontal bar did not meet clearance specification.

Technician Signature: Matthew Gilman



**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine Foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** Piers, Type 2 and 3 along line D

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_ Hz. #4 Va. #4

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
**Describe:** \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Comments:**

Example of piers along line D.  
Pictures shown before placement of upper horizontal reinforcement.

**Technician Signature:** Matthew Gilman



**Project Name:** 62 Cumberland Avenue, 3-Unit      **Date:** 12/2/2010  
**Project Number:** 14472      **Ref. Plan No.:** S2.0  
**Contractor:** Mid-Maine Foundations      **Approval Date:** 11/15/2010

**SKETCH OF INSPECTED AREA**



**Foundation Type:**     Footing     Wall     Pier     Other: \_\_\_\_\_

**Location:** Line 9 to 11 at line A

**Bar sizes consistent with plans and specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_ Hz. #4 Va. #4

**Steel meets min./max. clearance requirements of specifications.:**       Forms       Subgrade  
**Describe:** \_\_\_\_\_

**Spacing of steel meets min./max. requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Lap/Splice length meet minimum requirements of specifications.:**       Vertical       Horizontal  
**Describe:** \_\_\_\_\_

**Comments:**

Showing horizontal reinforcement bars setup at bondout. H4/S3.1

**Technician Signature:** Matthew Gilman

**pricestructural**

---

**From:** Jessica Anderson [janderson@summitenv.com]

**Sent:** Friday, March 18, 2011 10:18 AM

**To:** David Price; Mike White; Paul Ledman

**Subject:** Concrete Result

**Attachments:** 14472 Cylinder Break 62 Cumberland Ave 3-Unit.xls

Please see the attached Concrete Result for C5 for our project number 14472 62 Cumberland Avenue.

Have a Nice Day,

**Jessica Anderson**

**Summit Environmental Consultants, Inc.**

**207-621-8334**

[janderson@summitenv.com](mailto:janderson@summitenv.com)



**SUMMIT ENVIRONMENTAL CONSULTANTS, INC.**

434 Cony Road, Augusta, Maine 04330  
Phone: (207) 621-8334 Fax: (207) 626-9094

**CONCRETE COMPRESSIVE STRENGTH TEST - ASTM C39**

**PROJECT INFORMATION**

Project No.: 14472  
Project: 62 Cumberland Ave 3-Unit  
Client: dba Eco Capital, LLC  
19 Ivie Road  
Cape Elizabeth, Maine 04107  
E-Mail: cape1863@yahoo.com  
Attention: Paul Ledman and Colleen Myers  
Mix Designation: 3/4" Aggregate  
Design Strength: 3000psi  
Supplier: Auburn Concrete

Mix Design		
Material	Type	Quantity
Aggregate		lb
Sand		lb
Cement		lb
Water		gal
Air Entrain.		oz
Water Reducer		oz
Retarder		
Accelerator		

Distribution: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Remarks: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_









**CONCRETE COMPRESSIVE STRENGTH TEST RESULTS - ASTM C39**

Project No: 14472  
 Project: 62 Cumberland Ave 3-Unit  
 Client: dba Eco Capital, LLC  
 19 Ivie Road  
 Cape Elizabeth, Maine 04107

**Field Test Data**

Set No.: C1  
 Placement Date: 29-Nov-10  
 Lab Rec'd Date: 30-Nov-10  
 Location: Entire Footprint Footings

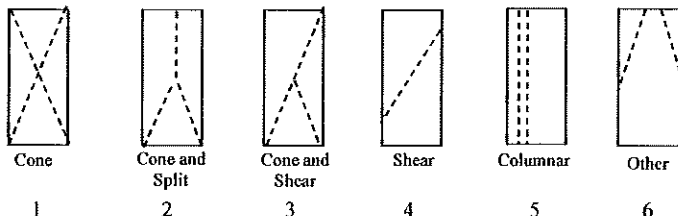
Technician: N. Davis  
 Supplier: Auburn Concrete  
 Mix Designation: 3/4" Aggregate  
 Design Strength: 3000psi

Slump (initial)                    in.  
 Slump (placed)    5 1/4        in.  
 Air Content            2.8        %  
 Conc Temp.            60.0       °F  
 Air Temp.              40.0       °F  
 Volume (yds)        10.0       of    15.0  
 Admixture:            Glenium 7500 (Mid-Range Water Reducer)

**Laboratory Test Data**

Sample No.	Test Date	Age	Type	Unit Wt.	Area (in <sup>2</sup> )	Load (K)	Strength (psi)
C1a	6-Dec-10	7	2	148.4	28.27	98.7	3490
C1b	27-Dec-10	28	3	147.7	28.27	121.2	4290
C1c	27-Dec-10	28	3	148.2	28.27	120.4	4260
C1d							

Average 28 Day (psi):                    4275



Remarks:            A 3500psi mix was delivered.  
 434 Cony Road, Augusta, Maine 04330  
 Phone: (207) 621-8334 Fax: (207) 626-9094

Reviewed: Darrell Gilman, CMT Manager  
 Date: 12-28-10



**CONCRETE COMPRESSIVE STRENGTH TEST RESULTS - ASTM C39**

Project No: 14472  
 Project: 62 Cumberland Ave 3-Unit  
 Client: dba Eco Capital, LLC  
 19 Ivie Road  
 Cape Elizabeth, Maine 04107

**Field Test Data**

Set No.: C2  
 Placement Date: 2-Dec-10  
 Lab Rec'd Date: 3-Dec-10  
 Location: Perimeter Foundation Walls

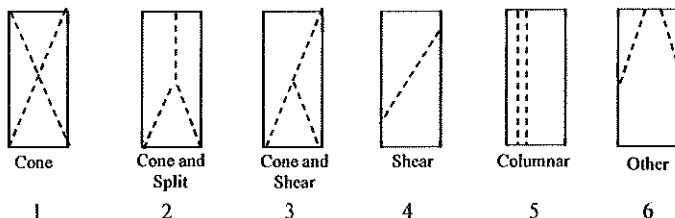
Technician: M. Gilman  
 Supplier: Auburn Concrete  
 Mix Designation: 3/4" Aggregate  
 Design Strength: 4000psi

Slump (initial) 8 in.  
 Slump (placed) 8 in.  
 Air Content 5.7 %  
 Conc Temp. 65.0 °F  
 Air Temp. 50.0 °F  
 Volume (yds) 26.3 of 35.0  
 Admixture: Glenium 7500 (Mid-Range Water Reducer), MicroAir

**Laboratory Test Data**

Sample No.	Test Date	Age	Type	Unit Wt.	Area (in <sup>2</sup> )	Load (K)	Strength (psi)
C2a	9-Dec-10	7	3	142.8	28.37	110.7	3900
C2b	30-Dec-10	28	2	146.0	28.27	127.2	4500
C2c	30-Dec-10	28	2	146.2	28.27	135.1	4780
C2d							

Average 28 Day (psi): 4640



Remarks: A 4,500psi design mix was used.  
 434 Cony Road, Augusta, Maine 04330  
 Phone: (207) 621-8334 Fax: (207) 626-9094

Reviewed: Darrell Gilman, CMT Manager  
 Date: 12-30-10



**CONCRETE COMPRESSIVE STRENGTH TEST RESULTS - ASTM C39**

Project No: 14472  
 Project: 62 Cumberland Ave 3-Unit  
 Client: dba Eco Capital, LLC  
 19 Ivie Road  
 Cape Elizabeth, Maine 04107

**Field Test Data**

Set No.: C3  
 Placement Date: 14-Dec-10  
 Lab Rec'd Date: 15-Dec-10  
 Location: Pier Footings on A.9 Line at Lines 2.1, 5, 7, 9, and on A Line at 1 Line

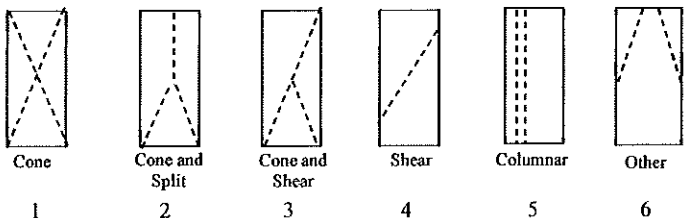
Technician: N. Davis  
 Supplier: Auburn Concrete  
 Mix Designation: 3/4" Aggregate  
 Design Strength: 3000psi

Slump (initial) 5 in.  
 Slump (placed) 4 1/2 in.  
 Air Content 5.0 %  
 Conc Temp. 61.0 °F  
 Air Temp. 34.0 °F  
 Volume (yds) 4.0 of 4.0  
 Admixture: Glenium 7500 (Mid-Range Water Reducer), MicroAir

**Laboratory Test Data**

Sample No.	Test Date	Age	Type	Unit Wt.	Area (in <sup>2</sup> )	Load (K)	Strength (psi)
C3a	21-Dec-10	7	2	147.4	28.27	113.2	4000
C3b	11-Jan-11	28	2	147.3	28.27	164.2	5810
C3c	11-Jan-11	28	5	147.3	28.27	165.6	5860
C3d							

Average 28 Day (psi): 5835



Remarks: A 4500psi Mix Was Delivered  
 434 Cony Road, Augusta, Maine 04330  
 Phone: (207) 621-8334 Fax: (207) 626-9094

Reviewed: Darrell Gilman, CMT Manager  
 Date: 1-11-11



**CONCRETE COMPRESSIVE STRENGTH TEST RESULTS - ASTM C39**

Project No: 14472  
 Project: 62 Cumberland Ave 3-Unit  
 Client: dba Eco Capital, LLC  
 19 Ivie Road  
 Cape Elizabeth, Maine 04107

**Field Test Data**

Set No.: C4  
 Placement Date: 16-Dec-10  
 Lab Rec'd Date: 17-Dec-10  
 Location: Piers on A.9 Line at 2.1, 5, 7, 9, and A-Line at 1-Line

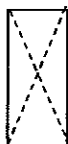
Technician: N. Davis  
 Supplier: Auburn Concrete  
 Mix Designation: 3/4" Aggregate  
 Design Strength: 4000psi

Slump (initial) in.  
 Slump (placed) 5 in.  
 Air Content 7.0 %  
 Conc Temp. 59.0 °F  
 Air Temp. 20.0 °F  
 Volume (yds) 1.5 of 1.5  
 Admixture: Glenium 7500 (Mid-Range Water Reducer), MicroAir

**Laboratory Test Data**

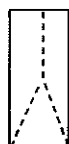
Sample No.	Test Date	Age	Type	Unit Wt.	Area (in <sup>2</sup> )	Load (K)	Strength (psi)
C4a	23-Dec-10	7	3	140.7	28.27	100.5	3550
C4b	13-Jan-11	28	3	141.6	28.27	119.3	4220
C4c	13-Jan-11	28	3	141.0	28.27	121.1	4280
C4d							

Average 28 Day (psi): 4250



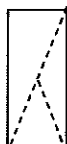
Cone

1



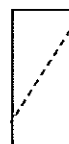
Cone and Split

2



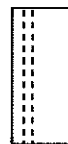
Cone and Shear

3



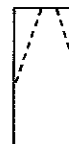
Shear

4



Columnar

5



Other

6

Remarks: \* A 4500psi design mix was delivered.

434 Cony Road, Augusta, Maine 04330  
 Phone: (207) 621-8334 Fax: (207) 626-9094

Reviewed: Darrell Gilman, CMT Manager  
 Date: 1-13-11



**CONCRETE COMPRESSIVE STRENGTH TEST RESULTS - ASTM C39**

Project No: 14472  
 Project: 62 Cumberland Ave 3-Unit  
 Client: dba Eco Capital, LLC  
 19 Ivie Road  
 Cape Elizabeth, Maine 04107

**Field Test Data**

Set No.: C5  
 Placement Date: 17-Feb-11  
 Lab Rec'd Date: 18-Feb-11  
 Location: Slab on grade Line 1 to 1 from D to A.5  
 Line A to A.5 from 3 to 11 including Elevator base slab  
 Technician: N. Davis  
 Supplier: Auburn Concrete  
 Mix Designation: 3/4" agg.  
 Design Strength: 4,000psi

Slump (initial) in.  
 Slump (placed) 6 in.  
 Air Content 1.6 %  
 Conc Temp. 64.0 °F  
 Air Temp. 26.0 °F  
 Volume (yds) 10.0 of 10.0  
 Admixture: Glenium 7500 MRWR, Calcium Chloride, Fibremesh

**Laboratory Test Data**

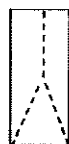
Sample No.	Test Date	Age	Type	Unit Wt.	Area (in <sup>2</sup> )	Load (K)	Strength (psi)
5a	24-Feb-11	7	3	149.5	28.27	119.6	4230
5b	17-Mar-11	28	2	149.8	28.27	146.6	5180
5c	17-Mar-11	28	2	149.9	28.27	143.7	5080
5d							

Average 28 Day (psi): 5130



Cone

1



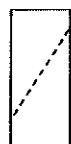
Cone and Split

2



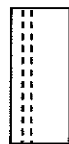
Cone and Shear

3



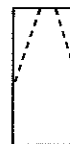
Shear

4



Columnar

5



Other

6

Remarks:

434 Cony Road, Augusta, Maine 04330  
 Phone: (207) 621-8334 Fax: (207) 626-9094

Reviewed: Darrell Gilman, CMT Manager  
 Date: 3-17-11

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc.**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** December 14, 2010  
**Time:** 12:30 PM

**Weather:** Partly Cloudy  
**Temperature:** 40 deg. F.  
**Contractor:** Island Carpentry  
**Site contact:** Mike White (Contractor)

**Project Items to be Observed:**

Preparations for concrete spread footing placement

**Field Observations / Project Status:**

1. Preparations in progress for spread footings at 5 locations.
2. Bottom of excavations dry, drainage stone observed at base of footings.
3. Footing reinforcement size, quantity and location appeared to conform with project design documents.
4. Vertical #8 reinforcement dowels installed with hooks.
5. Laser level used for vertical control of footing elevation.
6. Concrete blankets observed on site for frost protection.
7. Steve Down (geotechnical engineer) was on site and reported that soil bearing strata below footings was sound. He also reported that he observed perforated footing under-drains during previous site visit that appeared to conform to plans and specifications.
8. Sleeve at foundation wall pipe penetration appeared to be installed as specified.

**Items Needing Correction:**

1. Vertical #8 reinforcement dowels not adequately secured or aligned which could cause problems for concrete cover during future pier placement.
2. String-lines not observed for horizontal positioning of footings.
3. GC reported concerns that previous concrete piers were not accurately placed per drawings

**Corrective action taken:**

1. Steps to position and secure vertical #8 bars taken by concrete contractor during site visit
2. String lines used for alignment.
3. GC surveyed existing piers and submitted request for relocation of some gridlines

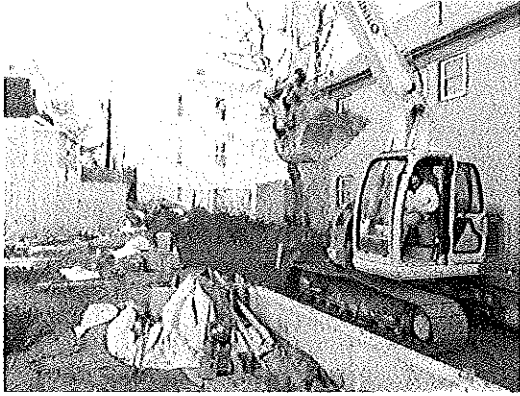
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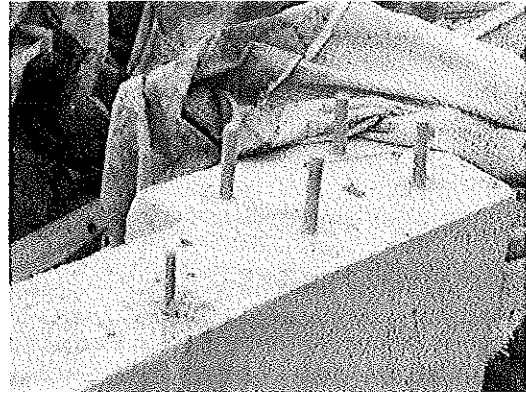
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**Report prepared by:** David A. Price, P.E.  
Price Structural Engineers, Inc.  
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North Yarmouth, ME 04097

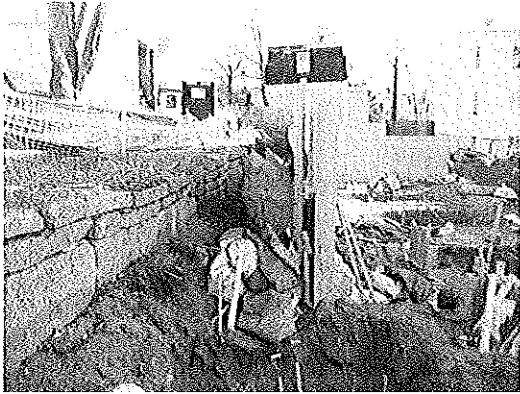
**Distribution:** Mike White – Island Carpentry  
Paul Ledman – Eco Capital, LLC  
Richard Lo – Kaplan Thompson Architects



**Photo # 1 – Jeff Munn Excavation**



**Photo #2 – Concrete pier placed previously**



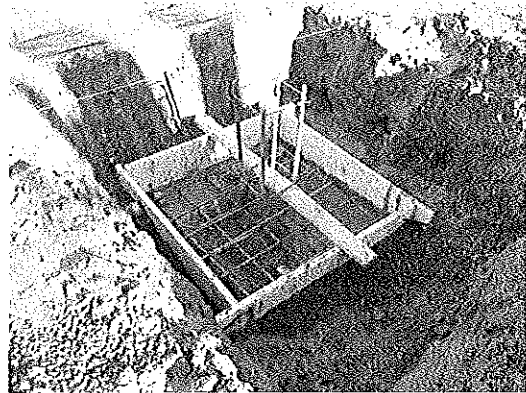
**Photo # 3 – Existing retaining wall at left**



**Photo #4 – Foundation wall with beam pocket**



**Photo # 5 – Formwork for footing at grid A/1**



**Photo #6 – Formwork for interior A.9 footing**

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc.**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** January 26, 2010  
**Time:** 1:00 PM

**Weather:** Partly Cloudy  
**Temperature:** 20 deg. F. +/-  
**Contractor:** Island Carpentry  
**Site contact:** Mike White, Paul Ledman

**Project Items to be Observed:**  
Steel Installation and Initial Wood Framing

**Field Observations / Project Status:**

1. Steel beams and columns have been installed. Beam / column connections covered with wood.
2. Contractor installing 2x12 joists during site visit. Sill plate appeared to pressure treated.
3. Deep snow currently providing frost protection for footings in addition to insulated blankets.
4. Concrete pocket for steel beam was installed too low at grid 11/A.9. See "Correction Items" below.
5. Anchor bolts missing at some steel columns. See "Correction Items" below.
6. Concrete walls measured for plumbness. Wall at grid 11 is farthest out of plumb, with top of wall leaning southeast, 7/8" horizontal in 48" vertical. Wall studs at grid 1 were plumb. Framing was Bruce Pitt.
7. Bracket used to connect post at grid A/1 appears to be correct. Grout observed below steel columns.
8. Control joint installed at grid A (see photos), as a result diagonal cracking not observed in concrete walls.
9. Black coating of damp-proofing observed at exterior face of concrete at some areas.

**Items Needing Correction:**

1. Steel beam pocket at grid 11/A.9 was placed too low. Contractor shall provide adequate temporary support of steel beam and infill void below beam with solid concrete ( $f'c = 4000$  psi). The temporary shoring shall remain in place until concrete has cured a minimum of 7 continuous days unless 2% accelerator or "high early" concrete is used in concrete mix design which would reduce curing period to 3 days.
2. Missing anchor bolts – install 3/4" diameter Hilti Kwik bolts with 4" embedment in concrete per Hilti requirements including, but not limited to hole diameter, cleaning of hole and nut tightness.

**Corrective action taken:**

1. GC coordinated steel beam lengths to accommodate previous concrete piers that were not accurately placed per drawings

**General:**

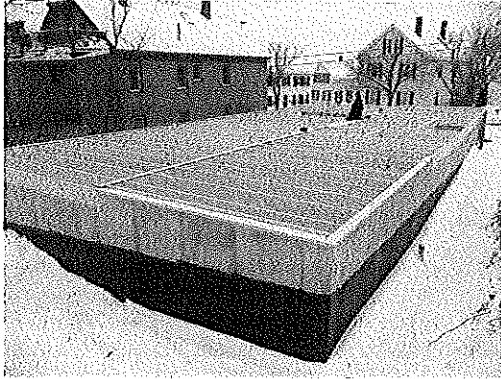
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North Yarmouth, ME 04097

**Distribution:** Mike White – Island Carpentry  
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Richard Lo – Kaplan Thompson Architects

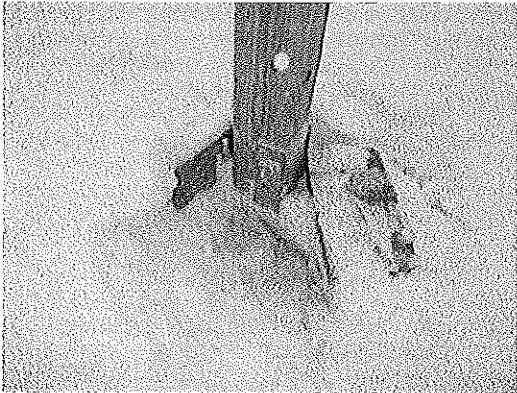




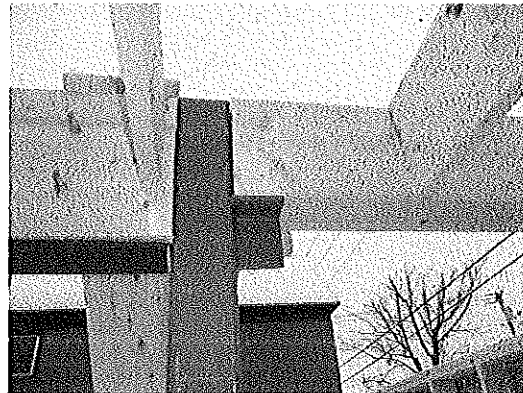
**Photo # 1 – Joist installation**



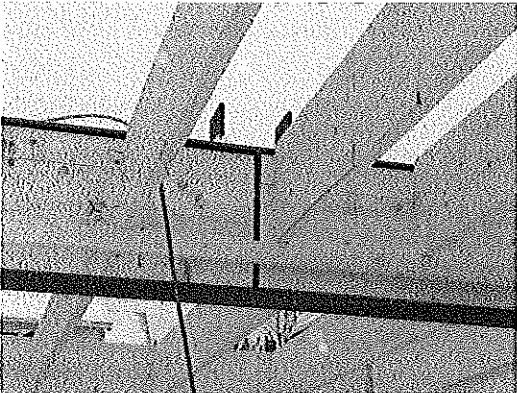
**Photo #2 – Concrete beam pocket was too low**



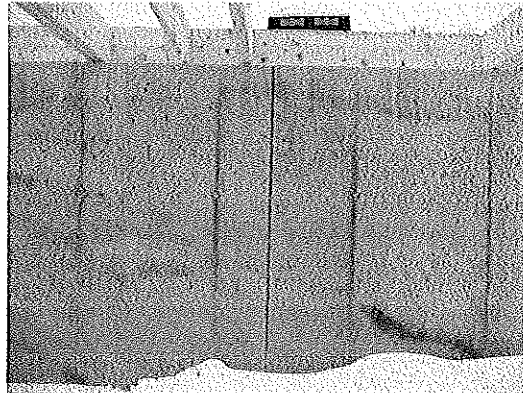
**Photo # 3 – Simpson post base bracket as specified**



**Photo #4 – Beam connection at grid 2.1/A.9**



**Photo # 5 – Bracket on steel beam with stiffeners below**



**Photo #6 – Vertical concrete control joint installed**

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc.**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** February 19, 2011  
**Time:** 9:30 PM

**Weather:** Partly Cloudy  
**Temperature:** 20 deg. F. +/-  
**Contractor:** Island Carpentry  
**Site contact:** Mike White, Paul Ledman

**Project Items to be Observed:**

Wood Framing and general progress

**Field Observations / Project Status:**

1. Contractor has proceeded to 2<sup>nd</sup> floor level.
2. Walls checked for plumbness at random locations and in general look acceptable.
3. Not all beams have hangers. Contractor said that installation is pending or at some locations a wall will continually support the beam from below.
4. Lintel framing looks acceptable at locations that have been completed.
5. A portion of the ground floor slab was installed.
6. Stair stringers not yet installed.

**Items Needing Correction:**

1. Steel beam pocket at grid 11/A.9 was placed too low. Contractor shall provide adequate temporary support of steel beam and infill void below beam with solid concrete (f<sub>c</sub> = 4000 psi). The temporary shoring shall remain in place until concrete has cured a minimum of 7 continuous days unless 2% accelerator or "high early" concrete is used in concrete mix design which would reduce curing period to 3 days.
2. Missing anchor bolts – install 3/4" diameter Hilti Kwik bolts with 4" embedment in concrete per Hilti requirements including, but not limited to hole diameter, cleaning of hole and nut tightness.
3. Joist and beams hangers missing at some joists and beams.
4. Nails missing from some joist and beam hangers.

**Corrective action taken:**

- 1.

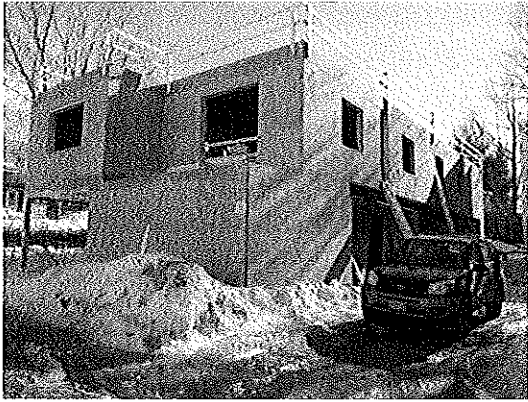
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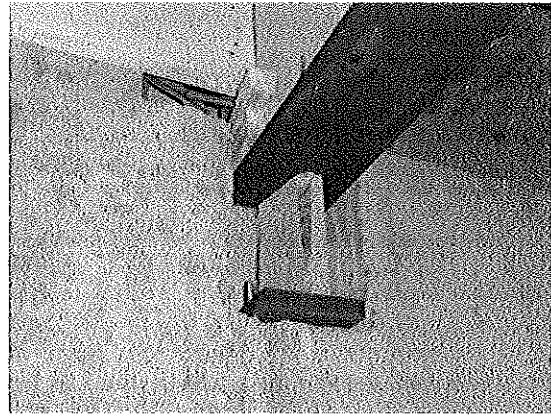
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75 Farms Edge Road  
North Yarmouth, ME 04097

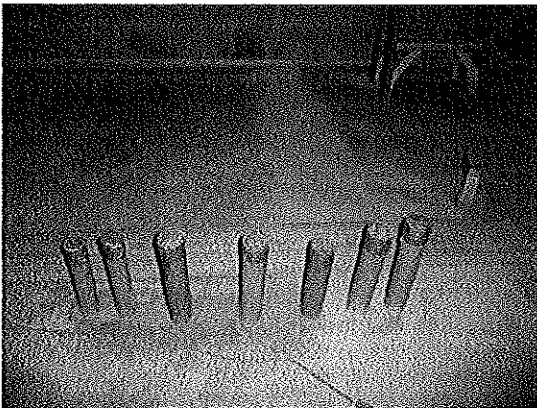
**Distribution:** Mike White – Island Carpentry  
Paul Ledman – Eco Capital, LLC  
Richard Lo – Kaplan Thompson Architects



**Photo # 1 – Overall View**



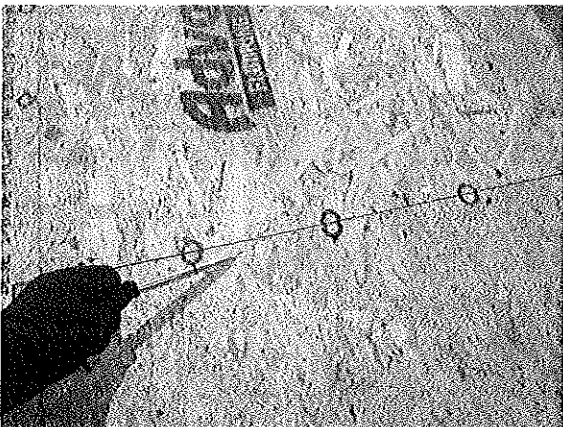
**Photo #2 – Unacceptable steel beam support**



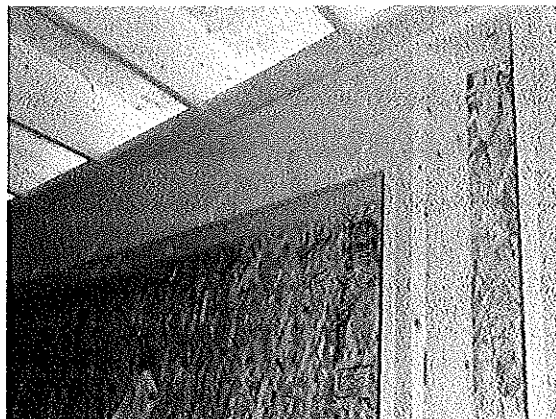
**Photo # 3 – Utilities at Slab Penetrations**



**Photo #4 – Hangers missing at some joists**



**Photo # 5 – Nail spacing at floor sheathing edges**



**Photo #6 – Double jack studs at garage lintels**

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc.**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** March 29, 2011  
**Time:** 10:30 PM

**Weather:** Partly Cloudy  
**Temperature:** 40 deg. F. +/-  
**Contractor:** Island Carpentry  
**Site contact:** Mike White, Jim Small, Bruce

**Project Items to be Observed:**

Wood Framing and general progress

**Field Observations / Project Status:**

1. Stair stringers not installed per plans and specs, see below.
2. Contractor has proceeded to roof level.
3. Joist sizes checked at random locations and in general look acceptable.
4. Column spliced between floor levels and needs to be replaced as discussed. See below.
5. Stair stringers at ground level are supported at midspan with stub wall which is acceptable.
6. Not all beams have hangers. Contractor said that installation is pending.
7. Lintel framing looks acceptable at locations that have been completed.
8. Some column to beam connectors not yet installed.

**Items Needing Correction:**

1. Steel beam pocket at grid 11/A.9 was placed too low. Contractor shall provide adequate temporary support of steel beam and infill void below beam with solid concrete ( $f'c = 4000$  psi). The temporary shoring shall remain in place until concrete has cured a minimum of 7 continuous days unless 2% accelerator or "high early" concrete is used in concrete mix design which would reduce curing period to 3 days.
2. Missing anchor bolts – install 3/4" diameter Hilti Kwik bolts with 4" embedment in concrete per Hilti requirements including, but not limited to hole diameter, cleaning of hole and nut tightness.
3. Joist and beams hangers missing at some joists and beams.
4. Nails missing from some joist and beam hangers.
5. Built-up beams with multiple LVL's need to be fastened together with (3) 16d nails at 12" on center at locations where this has not yet been done. Install nails from both sides where (3) LAMS are combined.
6. Replace column where it is spliced between 1<sup>st</sup> and 2<sup>nd</sup> elevated floors with 5.25"x9.25" VLAM beam (placed vertically) as discussed at jobsite.
7. Incorrect stair stringers installed at elevated floors. Add a 1.75"x 6" (w/Fb=3100 psi) VLAM sister (ripped to 6") to each stringer at elevated floors. Fasten with (2) 16d nails at 8" oc,
8. Install remaining beam and joist hangers where missing.
9. Not all holes in joist, beam and columns connectors have nails. Each hole must have a fastener and it needs to be the fastener size specified for the specific connector.
9. Finish installing column to beam connectors where missing.

**Corrective action taken:**

1.

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North Yarmouth, ME 04097

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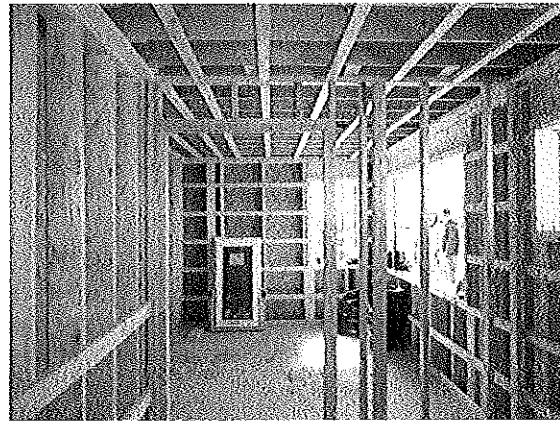
**Photo # 1 – Replace spliced column**



**Photo #2 – Missing beam hanger**



**Photo # 3 – Nails missing at beam/column connectors**



**Photo #4 – Framing at top floor level**

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc. (PSE)**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** April 7, 2011  
**Time:** 2:00 PM

**Weather:** Partly Cloudy  
**Temperature:** 50 deg. F. +/-  
**Contractor:** Island Carpentry  
**Site contact:** Mike White, Paul Ledman

**Project Items to be Observed:**  
Wood Framing

**Field Observations / Project Status:**

**Basement and 1<sup>st</sup> Floor Framing**

1. Drainage stone was being installed in preparation for placement of basement slab.
2. Missing anchor bolts adequately replaced with expansion bolts.
3. Steel beam at south end in concrete wall pocket appeared to be adequately supported by concrete bearing.

**1<sup>st</sup> Floor walls and 2nd Floor Framing**

1. Joist sizes, spacing and hangers were checked and in general appeared acceptable.
2. Bridging observed.
3. Spliced column noted during previous site visit has been replaced by a single piece column which appeared to be acceptable.
4. The beam between B/5 and B/6 was not as large as what was specified on drawing S4.1.
5. Except for beam between B/5 and B/6, beam sizes were checked and in general appeared acceptable.
6. Lintel sizes were checked and in general appeared acceptable.
7. Deck guardrail posts appeared to be a concern.
8. Contractor reported that beam at deck had been reduced in size with the top of one 2x12 removed and the other 2x12's were full size. A check was made and the beam was found to be adequate in its current state.

**2nd Floor walls and 3rd Floor Framing**

1. Stair stringers were supported at mid-span which is acceptable, however the center stair stringer was not adequately supported at the top, see Corrections section.
2. Bridging observed.
3. Joist sizes, spacing and hangers were checked and in general appeared acceptable.
4. Beam sizes were checked and in general appeared acceptable.
5. Lintel sizes were checked and in general appeared acceptable.

**3rd Floor walls and Roof Framing**

1. Joist sizes, spacing and hangers were checked and in general appeared acceptable.
2. Beam sizes were checked and in general appeared acceptable.
3. Lintel sizes were checked and in general appeared acceptable.

**Items Needing Correction:**

**Basement walls and 1<sup>st</sup> Floor Framing**

1. A double 2x10 beam supporting the front porch was not adequately supported at the east end near the steel column at B/2. This beam needs to be supported by a wood 4x4 column underneath. The 4x4 will need to be pressure treated if it bears on concrete.
2. At the same area as above each deck and floor joist needs to be checked to be sure they are supported by a joist hanger that is fully nailed.
3. Non pressure -treated door jambs observed adjacent to the garage door openings. These need to be replaced with pressure treated jambs.

4. Anchorage of top level guardrail posts were not be observed at this level and based on concerns expressed at other floor levels the first floor level guardrail anchorage will need to be inspected for code compliance.

#### **1<sup>st</sup> Floor walls and 2nd Floor Framing**

1. The guardrail posts were not installed in accordance with Detail C1/S5.1 and do not satisfy code requirements with regard to strength. The base of the posts were reduced in size to 1.75"x3.5" causing the posts to be significantly overstressed. These life/safety components will need to satisfy code requirements.
2. Incorrect stair stringers were installed that do not conform to Detail C1/S5.0. Add a 1.75"x 6" (w/Fb=3100 psi) VLAM sister (ripped to 6") to stringers. Fasten with (2) 16d nails at 8" oc,
3. Stair stringer connection at top of stairs does not conform to Detail E4/S5.0 and is not adequate. Stairs must not be covered with finishes until a connection repair detail stamped by PSE engineers has been prepared and the repair installed.
4. The beam extending between grid B/5 and B/6 is specified on drawing S4.1 as a 5 ¼"x14" Versalam beam. The installed beam does not conform with this requirement. A check will need to be made by PSE engineers to see if the installed beam is adequate.
5. Triangular blocking was supporting a wall at the north end of the stair opening and this support is inadequate. The blocking may remain; however, a 2x4 ledger needs to be installed below the wall plate between the blocking to support the wall. Face nail the ledger to the beam at the north end of the stair with (2) 16 penny nails at 4" on center.

#### **2nd Floor walls and 3rd Floor Framing**

1. The guardrail posts were not installed in accordance with Detail C1/S5.1 and do not satisfy code requirements with regard to strength. At areas where posts could be observed, the base of the posts were reduced in size to 1.75"x3.5" causing the posts to be significantly overstressed. These are life/safety components that will need to satisfy code requirements.
2. The ceiling joists at the west side of the building are not adequately nailed to the sloped rafters. Fasten ceiling joists to rafters with 10d nails at 24".
3. The triple 2x beam at the west side of the elevator was not connected with beam hangers at each end. Add these hangers.
4. A floor joist at the west side of the elevator was not connected with a joist hanger which will need to be added.
5. The center stringer leading to the 3<sup>rd</sup> floor needs to have a ledger underneath at the connection near the top of the stair.

#### **3rd Floor walls and Roof Framing**

1. The beam to column connection at grid B/5 and B/6 is not adequate. These connections should conform to Details G1/S5.1 and G2/S5.1.

#### **Corrective action taken:**

1. Steel beam pocket at grid 11/A.9 filled in with concrete below steel beam
2. Replacement of missing anchor bolts is acceptable
3. Missing joist hangers and fasteners have been installed except where noted above.
4. Missing beam hangers and fasteners have been installed except where noted above.
5. Missing beam to column connectors have been installed except where noted above.
6. Built-up beams with multiple LVL's fastened together.
7. Spliced column on 1<sup>st</sup> floor has been replaced with 5.25"x9.25" VLAM as discussed at jobsite.

#### **General:**

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4/7/11

Portland, ME

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North Yarmouth, ME 04097

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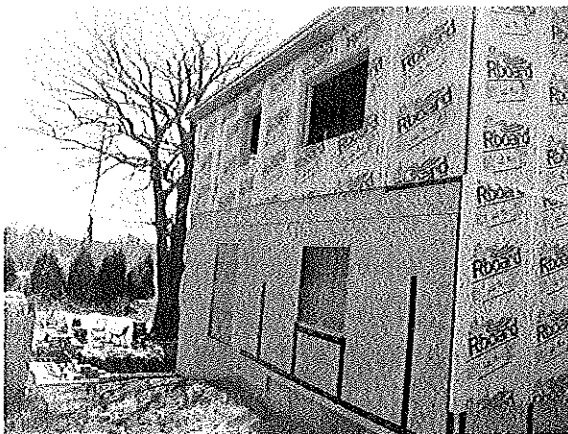




**Photo # 1 – North elevation**



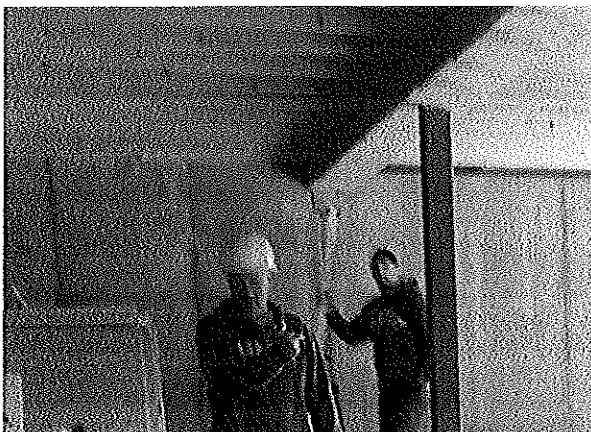
**Photo #2 – East elevation**



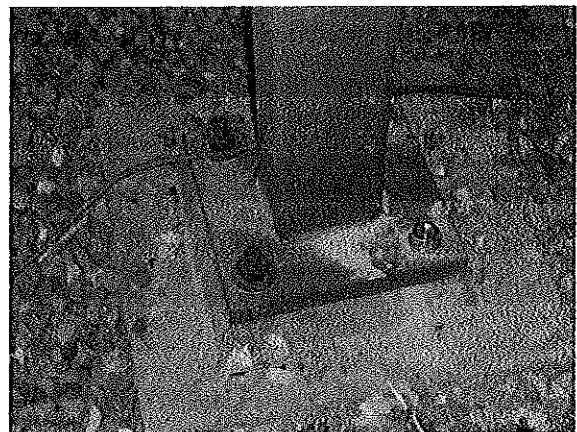
**Photo # 3 – South elevation**



**Photo #4 – North entrance – note post base anchor**



**Photo # 5 – Steel beam pocket filled in with concrete**



**Photo #6 – Expansion bolt replaces missing anchor**



**Photo # 7 –Joist needs hanger; double 2x beam needs post**



**Photo #8 – Jack studs must be pressure treated**



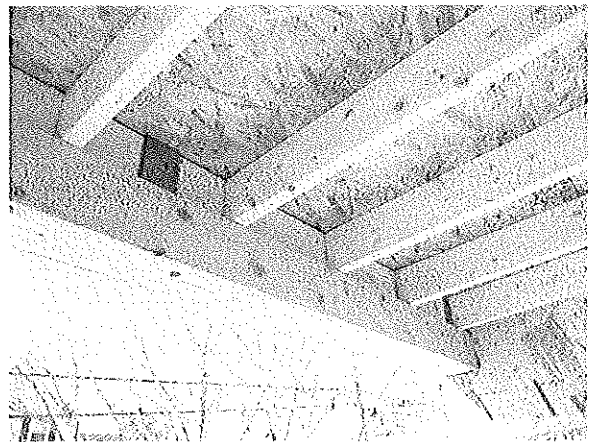
**Photo # 9 – 1<sup>st</sup> Flr: Spliced column replaced correctly**



**Photo #10 – 1<sup>st</sup> Flr: Inadequate wall support**



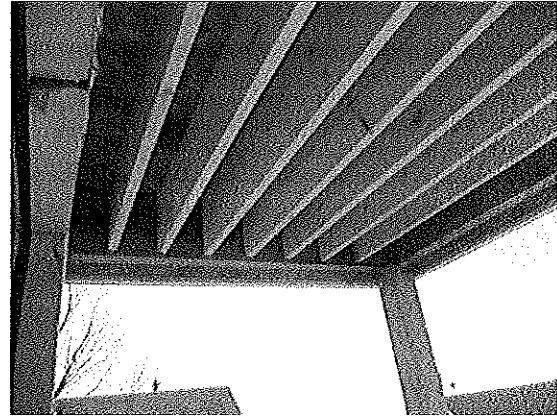
**Photo # 11 – 1<sup>st</sup> Flr: Inadequate stringer connection**



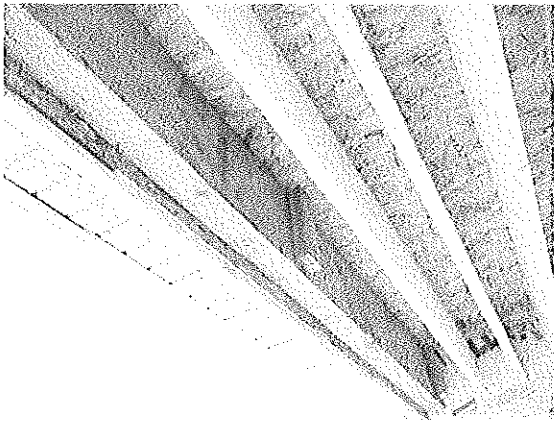
**Photo #12 – 1<sup>st</sup> Flr: Guardrail @ reduced beam**



**Photo # 13 – 1<sup>st</sup> Flr: LVL 6" Stringer sisters required**



**Photo #14 – 2<sup>nd</sup> Flr: Porch hangers needed**



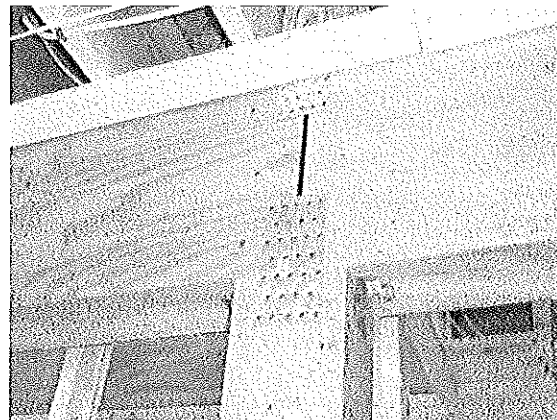
**Photo # 15 – 2<sup>nd</sup> Flr: Blocking needed @ guardrail post**



**Photo #16 – 2<sup>nd</sup> Flr: Center stringer needs ledger**



**Photo # 17 – 2<sup>nd</sup> Flr: Elevator shaft framing**



**Photo #18 – 2<sup>nd</sup> Flr: Beam to column connection**

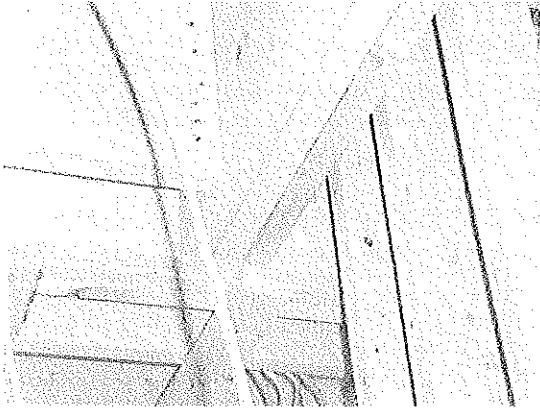


Photo # 29 – 2<sup>nd</sup> Flr: Missing beam and joist hangers

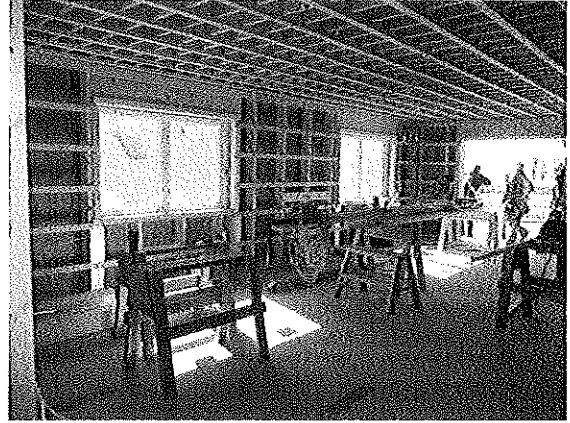


Photo #20 – 2<sup>nd</sup> Flr: View looking north



Photo # 21 – 3<sup>rd</sup> Flr: Missing beam/column connector

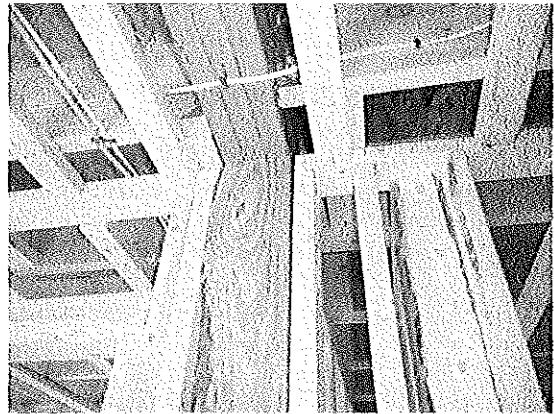


Photo #22 – 3<sup>rd</sup> Flr: Missing beam/column connector



Photo # 23 – 3<sup>rd</sup> Flr: Top loaded multi-ply beam



Photo #24 – 3<sup>rd</sup> Flr: View looking at Back Cove

**FIELD OBSERVATION REPORT**  
**Price Structural Engineers, Inc. (PSE)**

**Project:** 3 – Unit Apartment  
**Location:** 62 Cumberland St.; Portland, ME  
**Date:** Apr. 29 & May 10, 2011  
**Time:** 11:00 AM

**Weather:** Partly Cloudy  
**Temperature:** 55 deg. F. +/-  
**Contractor:** Island Carpentry  
**Site contact:** Mike White

**Project Items to be Observed:**  
Final Structural Site visits

**Field Observations / Project Status:**

1. Structural adjustments had been performed and were being finalized during the site visits, see "Corrective Action Taken" below.
2. Other items were discussed and contractor stated that this work would also be completed after the final site visit:
  - a. More nails added to ground floor shear walls so nail spacing would be less than 4".
  - b. Guardrails on top of deck posts would be installed, stainless steel fasteners added.
  - c. Continuous 2x4 ledger added above main stair at second floor (replaces triangle blocking described in previous reports).

**Corrective Action Taken:**

1. A double 2x10 beam supporting the front porch was supported at the east end near the steel column at B/2 by a column underneath, see attached photos.
2. Pressure -treated door jambs were observed adjacent to the garage door openings, see attached photos.
3. Guardrail post anchorage connections were reinforced, see attached photos.
4. The stair stringers at the primary stair were relocated and connected directly to the existing VLAM beam with approved hangers, see attached photos.
5. The beam extending between grid B/5 and B/6 was reinforced with a Versalam sister, see attached photos.
6. The triple 2x beam at the west side of the elevator was connected with beam hangers at each end, see attached photos.
7. The center stringer leading to the 3<sup>rd</sup> floor had a ledger underneath at the connection near the top of the stair, see attached photos.

**General:**

The purpose of this site visit is to observe the project and generally become familiar with the progress and quality of the Contractor's work and to assess whether the work is proceeding in general conformance with the construction documents regarding the specific items listed within this report. The client has not retained Price Structural Engineers Inc. to make detailed inspections of every structural component, perform structural design or to provide exhaustive or continuous project review.

Price Structural Engineers Inc. shall not, during such visits or as a result of any observations of construction, supervise, direct or have control over Contractor's work nor shall Price Structural Engineers Inc. have authority over or responsibility for the equipment, means, methods, techniques or procedures by the Contractor or health and safety precautions in programs incident to the work of the Contractor. Price Structural Engineers Inc. does not assume responsibility for Contractor's failure to comply with laws, rules, regulations or codes or the Contractor's failure to furnish and perform their work in accordance with the construction documents and does not guarantee the performance of the construction contract by the Contractor.

**Report prepared by:** David A. Price, P.E.

**Distribution:** Mike White – Island Carpentry  
Paul Ledman – Eco Capital, LLC  
Richard Lo – Kaplan Thompson Architects



Photo # 1 – Steel beam Pocket filled w/ concrete



Photo #2 – Pressure treated jack studs at doors



Photo # 3 – Post supporting 1<sup>st</sup> floor beam



Photo #4 – Stair stringer supports

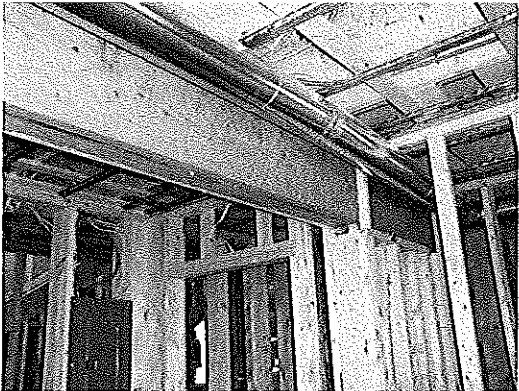


Photo # 5 –VLAM sister added @ 1<sup>st</sup> floor beam



Photo #6 – Beam Hangers added near elevator

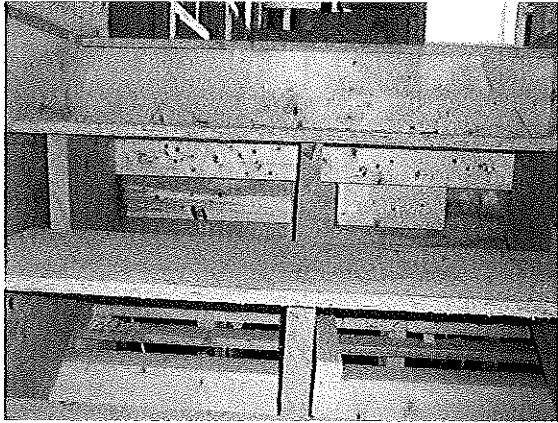


Photo # 7 – Ledger added below stringer- top stair



Photo #8 – Guardrail post base reinforcement

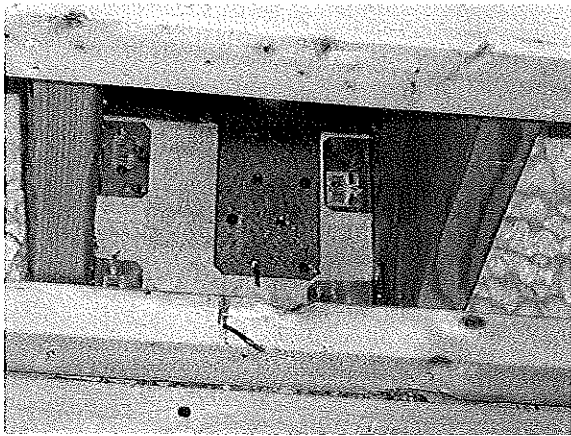


Photo # 9 – Guardrail post base reinforcement (below)

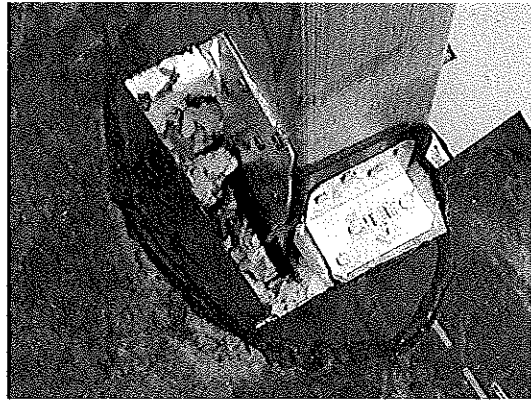


Photo #10 – Guardrail post base reinforcement

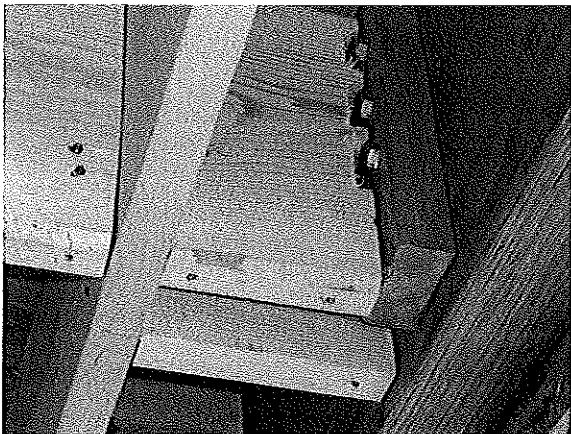


Photo # 11 – Guardrail post base reinforcement



Photo #12 – Similar area as previous