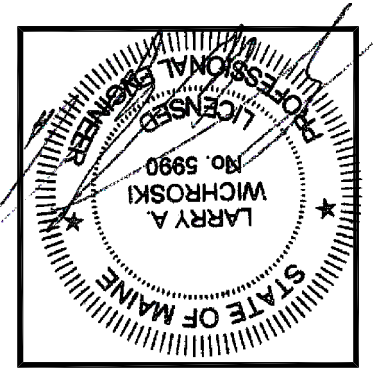




**STRUCTURAL NOTES & MISC. DETAILS**

Building Renovations at  
223 Cumberland Avenue, Portland, Me.



DESIGNED BY:	Larry A. Wichroski, P.E.
DRAWN BY:	LAW
JOB #:	02915
DATE:	05-26-2015

REVISIONS	
△	10-28-2015
△	01-03-2016

**STRUCTURAL NOTES:**

CODE: Comply with the 2012 International Residential Building Code (IRBC).

**DESIGN LOADS:**

Dead Load: Roof = 16.0 psf, Floors = 12.0 psf  
Roof = 45.0 psf (Plus Drift), 1st Floor = 100.0 psf, 2nd, 3rd & 4th Floors = 40.0 psf  
Wind Load: Building = 31.0 psf

**FOUNDATIONS:**

1. Bear footings on firm, undisturbed dense native soil at 4'-6" minimum below lowest adjacent finish or natural grade, whichever is lower.  
2. Place foundation concrete only on clean, firm, dry bearing material.  
3. Place foundation concrete in one continuous pour. No construction joints are to be formed during excavation.  
4. Allowable Bearing Capacity = 2,000 psf (Code Max.)

**CONCRETE:**

1. Concrete regular weight (144 pcf) with Type II cement per ASTM C150, aggregate per ASTM C33, and potable water. No fly-ash permitted in floor slab. Aggregate size = 1-1/2" maximum for footings and slab. Minimum 28-day compressive strength = 3000 psi for foundations and 4000 psi for slabs. All concrete shall be placed in one continuous pour. No construction joints are to be formed during excavation.  
2. We cure concrete for 5 days or with a curing compound approved by the Engineer.  
3. Saw cuts for floor slab control joints shall be made as soon as the slab can support the weight of the saw, but no more than 12 hours after placing concrete.  
4. Provide isolation joints using 2" thick formed pre-molded joint filler where slab on grade abuts all vertical surfaces.  
5. Submit foundation, interior slab and exterior slab concrete mix designs for engineer review.  
6. Non shrink grout shall be rammed in tight to maximum density attainable with a minimum 28 day strength of 5,000 psi.

**NON-SHRINK GROUT:**

1. Provide L & M non-shrink flowable structural grout (Durogrout) or approved equal.  
2. Grout shall meet the requirements of ASTM C-1107 with minimum 28 day compressive strength = 9,000 psi.  
3. Placement shall be in accordance with manufacturer recommendations.

**REINFORCING:**

1. ASTM A 615 S1, Grade 60 except as follows:  
a. #2 and #3 bars ASTM A615-S1; Grade 40.  
b. Welded Plain Wire Fabric: ASTM A 185.  
c. Field Bent and/or Welded Bars: A706.  
2. Reinforcing bars deformed except #2 bars and welded plain wire fabric.  
3. Concrete encasing for reinforcing bars (concrete or grout including ties) except as shown or noted:  
a. Lapped bars: concrete with earth, 2"  
b. Formed concrete in contact with earth: 2"  
4. Lap splices in concrete: 42 bar diameters.  
a. Welded wire fabric splices: Mesh spacing " 2".  
5. Provide bent corner reinforcing to match and lap with horizontal reinforcing at corners and intersections of walls, and footings per A.C.I. Detailing Manual (ACI 315).  
6. Dowel all vertical reinforcing to footings.

**STEEL:**

1. Rolled sections and plates: ASTM A-36, Fy = 36 ksi.  
2. Steel Pipe Column: (not lally columns) ASTM A-36, Fy = 36 ksi.  
3. Bolts and plain anchors: ASTM A 307.

**WOOD:**

1. General:  
a. Each piece of lumber shall be "S-DRY" and bear the grade stamp of a grading rules agency approved by the American Lumber Standards Committee.  
b. Double up studs at jamb and under beams.  
c. Do not notch or drill joists, beams or load bearing studs without approval.  
2. Construction:  
a. Nail wall plywood with 8d common at 6" o.c. at all edges and boundary members and 10" o.c. at intermediate supports.  
b. Nail wall plywood with 10d common nails at 6" o.c. at all edges and boundary members and 12" o.c. at intermediate supports.  
3. Structural Saw/Lumber:  
a. 2 x 6 thru 2 x 14 joists: Spruce Pine Fir No. 1 with Fb (repetitive) = 1200 p.s.i.  
b. Studs: Spruce Pine Fir No. 1 with Fb (repetitive) = 1200 p.s.i.  
c. Laminated Veneer Lumber (LVL): Fb = 2900 psi, Fv = 285 psi, E = 2,000 ksi.

**SUPPLEMENTARY NOTES:**

1. Verify all dimensions and conditions with architectural drawings prior to starting work. Notify the Engineer of any discrepancies or inconsistencies.  
2. Provide all necessary temporary bracing, shoring, guying or other means to avoid excessive stresses and to hold structural elements in place during construction.

