IF THIS SHEET IS NOT 24 X 36 IT IS A REDUCED SCALE PRINT – SCALE ACCORDINGLY

STRUCTURAL GENERAL NOTES

DESIGN CODE: MUBEC/IBC 2009 Edition,

FOUNDATION DESIGN:
Soils engineer shall verify soil conditions and types during excavation and prior to concrete placement.

--Footings--
Design of footings is based on
Maximum allowable bearing pressure 2,000 psf
Bear on the natural undisturbed soil, or compacted structural fill, below frost depth.
Owner to have soils engineer verify soil bearing capacity prior to footing placement.

WOOD FRAMING:
* Dimension Lumber is designed and shall be supplied using BASE VALUES Design Criteria.
* Spruce–Pine-Fir #2 and better (Maximum Moisture Content 19%) U.O.N.
Sill plates: Pressure Treated SPF or Southern Pine:

"Pressure treated lumber" shall be framing material of the specified species which has been pressure treated with a decay and insect resistant solution, meeting all current standards for wood in contact with concrete or earth.

Sill plates in contact with masonry or concrete foundations, footings or slabs may be treated Timber Strand LSL (zinc borate treatment). Sodium borate treatment may also be acceptable for sill plate applications when protected from weather.
Acceptable treatment mediums for wood in contact with earth or in exterior applications include ACQ-C and ACQ-D (Alkaline Copper Quaternary) and copper azole (CBA-A and CBA-B).
DO NOT USE WOODS WHICH HAVE BEEN TREATED WITH AMMONIA BASED CARRIERS.
All connectors shall meet the recommendations of the pressure treated wood manufacturer, but shall be not less than Hot Dipped Galvanized meeting requirements of ASTM A653, such as Simpson ZMAX (G185). All screws, nails and bolts shall match hangers and other connectors, and shall meet ASTM A123 for individual connectors and ASTM A153 for fasteners.
For durability, it is our recommendation that connectors used in exposed conditions with treated lumber be stainless steel.
Do not mix galvanized and stainless products.
Do not allow aluminum to contact treated wood.

Top and Bottom Plates: SPF No. 2 and Better
SPF Studs U.O.N: 2 x 4 and 2 x 6 to 8'-0: stud grade
2 x 4 over 8'-0: standard and better
2 x 6 over 8'-0: No. 2 and better
Floor Joists: AJS by Boise or Equivalent, see plan
* Laminated Veneer Lumber (LVL): Manufactured 1 3/4" wide Microllams (ML) by Trus Joist or equivalent.
Fb=2,600 psi, E=1,900,000 psi, Fv=285 psi, depth noted on plans.
* All plywood and oriented strand board (OSB) sheathing shall be engineered grades with APA grade stamp indicating appropriate maximum spacing of supports.
* Nail wall sheathing with 8d commons at 6" o.c. at panel edges, and 12" o.c. intermediate framing U.N.O. BLOCK AND NAIL ALL EDGES BETWEEN STUDS. Sheathing shall be continuous from bottom plate to top plate. Cut in "L" and "T" shapes around openings. Lap sheathing over rim joists min. 4" at all floors to tie upper and lower stud walls together. Minimum height of sheathing panels shall be 16" to assure that plates are tied to studs. Use minimum 3-8d per stud and nail plates with edge nail spacing.
* Sole plate at all perimeter walls and at designated shear walls shall be nailed as for braced panels with 3-16d x 3 1/2" long box nails (coated or deformed shank) per 16". 12d nails are not acceptable.

SHEATH ALL EXTERIOR WALLS. SHEATH INTERIOR WALLS AS SHOWN ON THE DRAWINGS.

* Minimum nailing shall comply with IBC Table 2304.9.1 except where more or larger nailing shown on drawings.

STRUCTURAL STEEL:
Structural and Misc. steel shall be detailed, fabricated, and erected in accordance with AISC Specifications, 2005, and Code of Standard Practice, 2000.
Rolled shapes, including plates, channels, and angles shall conform to ASTM A36.
Hollow structural section (HSS) tube shapes shall conform to ASTM A500, Grade B, 46 ksi yield.
Pipe shapes shall conform to ASTM A53 Grade B.
Welding shall be done by a certified welder in accordance with AISC and AWS specifications and recommendations using E70- electrodes.
Where not specifically noted, minimum weld shall be 3/16" fillet by length of contact edge.
All post-installed anchors shall have current ICC- ES Report, and shall be installed in accordance with the manufacturer's requirements.
Expansion anchors shall be approved "wedge" type unless specifically noted to be "sleeve" type.
Grout beneath column base and beam-bearing plates and at railings shall be
minimum 28-day compressive strength of 7,500 psi,
approved pre-bagged, non-metallic, non-gaseous, bleed free,
non-shrink, when tested in accordance with ASTM C1107
Grade B or C at a flow cone fluid consistency of 20 to 30 seconds

REINFORCED CONCRETE:
Design is based on "Building Code Requirements for Reinforced Concrete"(ACI 318-02). Concrete work shall conform to "Standard Specifications for Structural Concrete" (ACI 301-99).
Structural concrete shall have the following properties:

Intended Use	F'c, psi 28day	Max W/C Ratio	Maximum Aggregate	Slump inches	Entrained Air Percent ±1.5%	Cement Type	Admixtures, Comments
footings	3,000	.6	¾" Stone	4	---	I/II	
walls	4,000	.5	¾" Stone	4	4%	I/II	
exterior slab on grade	4,000	.45	¾" Stone	4	5%	I/II	Fibermesh

Detailing, fabrication, and placement of reinforcing steel shall be in accordance with the Manual of Standard Practice for Detailing Reinforced Concrete Structures (ACI 315-99).
Welded wire fabric shall conform to ASTM A185.
Reinforcing bars shall conform to ASTM A615,
Grade 60,
except ties or bars shown to be field-bent, which shall be Grade 40.
Epoxy coated reinforcing bars shall conform to ASTM 775.
Zinc coated (galvanized) reinforcing bars shall conform to ASTM 767.
Bars to be welded shall conform to ASTM 706.
At splices, lap bars 54 diameters unless noted otherwise.
At corners and intersections, make horizontal bars continuous or provide matching corner bars.
Around openings in walls and slabs, provide 2-#5, extending 2'-0 beyond edge of opening.
In continuous members, splice top bars at mid-span and splice bottom bars over supports.
Provide intermittent shear keys at all construction joints and elsewhere as shown on the drawings.
Except as noted on the drawings, concrete protection for reinforcement in cast-in-place concrete shall be as follows:
a. Cast against and permanently exposed to earth 3"
b. Exposed to earth or weather:
#6 through #18 bars 2"
#5 bar, W31 or D31 wire, and smaller 1-1/2"
c. Not exposed to weather or in contact with ground:
Slabs, walls, joists: #11 bar and smaller 3/4"
Beams, columns:
Primary reinforcement 1-1/2"
Stirrups, ties, spirals 1-1/2"
Fibremesh admixture shall be 100% virgin polypropylene, fibrillated fibers as manufactured by Fibremesh Co. per ASTM C-1116 type 111 4.1.3 and ASTM C-1116 performance level one, 1.5 lbs per cubic yard of concrete.
Anchor bolts and rods for beam and column-bearing plates shall be placed with setting templates.
The Contractor shall provide Quality Assurance for all concrete work in accordance project specifiacations
All concrete work is subject to inspection by a qualified special inspector employed by the owner in accordance with IBC Section 1704.4.

SHOP DRAWINGS:
Construction Documents are copyrighted and shall not be copied for use as erection plans or shop details.
The General Contractor and his subcontractors shall submit in writing any requests to modify the plans or specifications.
All shop and erection drawings shall be checked and stamped by the General Contractor prior to submission for Engineer's review.
Unchecked submittals will be returned without review.
Furnish one (1) reproducible and two (2) prints of shop and erection drawings to the Structural Engineer for review prior to fabrication for:
reinforcing steel,
hand and guard railings.
Submit in a timely manner to permit ten (10) working days for review.
Shop drawings submitted for review do not constitute "in writing" unless specific suggested changes are clearly marked.
In any event, such changes by means of the shop drawing submittal process become the responsibility of the one initiating such change.

FIELD VERIFICATION OF EXISTING CONDITIONS:
Contractor shall thoroughly inspect and survey existing structure to verify conditions that affect the work shown on the drawings.
Contractor shall report any variations or discrepancies to the Architect before proceeding.

STRUCTURAL ERECTION AND BRACING REQUIREMENTS:
The structural drawings illustrate the completed structure with elements in their final positions, properly supported and braced.
These construction documents contain typical and representative details to assist the contractor.
Details shown apply at all similar conditions unless otherwise indicated.
Although due diligence has been applied to make the drawings as complete as possible, not every detail is illustrated, nor is every exceptional condition addressed.
All proprietary connections shall be installed in accordance with the manufacturers' recommendations.
All work shall be accomplished in a workmanlike manner and in accordance with the applicable code and local ordinances.
The general contractor is responsible for coordination of all work, including layout and dimension verification, materials coordination, shop drawing review, and the work of subcontractors.
Any discrepancies or omissions discovered in the course of the work shall be immediately reported to the architect for resolution.
Continuation of work without notification of discrepancies relieves the architect and engineer from all consequences.
Unless otherwise specifically indicated, the drawings do not describe methods of construction.
The contractor, in the proper sequence, shall perform or supervise all work necessary to achieve the final completed structure, and to protect the structure, workmen, and others during construction.
Such work shall include, but not be limited to, bracing, shoring for construction equipment, shoring for excavation, formwork, scaffolding, safety devices and programs of all kinds, support and bracing for cranes and other erection equipment.
Do not backfill against basement or retining walls until supporting slabs and floor framing are in place and securely anchored, unless adequate bracing is provided.
Temporary bracing shall remain in place until all floors, walls, roofs and any other supporting elements are in place.
The architect and engineer bear no responsibility for the above items, and observation visits to the site do not in any way include inspection of them.

NEW RAMP LAYOUT

SCALE 1/4"=1'-0"

NOTES:
ALL STEEL TO BE PRIMED AND PAINTED PER OWNER / ARCHITECTURAL SPCIFICATIONS

0' 1' 5' 10'

SI# 14-0021

STATE OF MAINE
AARON C. JONES
No. 10965
LICENSED
PROFESSIONAL ENGINEER
03/19/2014

St

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 05/01/14

BUILD WITH CONFIDENCE
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PROJECT:
New Ramp
Merrill's Wharf
252/254 Commercial St.
Portland, Maine

#	DATE	DESCRIPTION

Date Issued: MARCH. 19 / 2014
Project Number: 14-0021
SHEET NAME
RAMP PLAN
Drawing Scale: as noted
Drawn By: WMc
Checked By: ACJ
S1.1

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