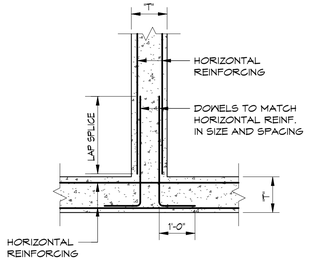
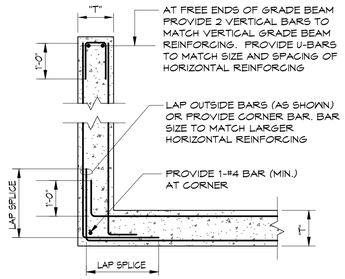


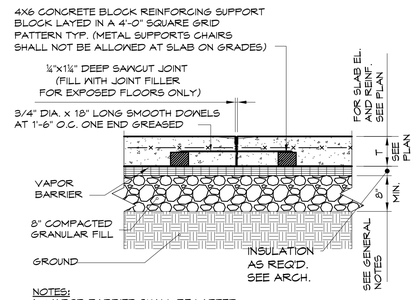
HORIZONTAL REINFORCING OF CONCRETE GRADE BEAMS

A 1/2" = 1'-0"



HORIZONTAL REINFORCING OF CONCRETE GRADE BEAMS

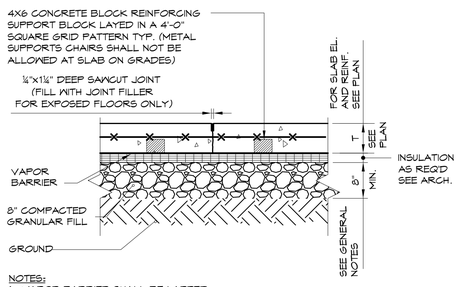
B 1/2" = 1'-0"



NOTES:
1. VAPOR BARRIER SHALL BE LAPPED 12" MINIMUM AND TAPED. ALL CUTS AND RIPS IN VAPOR BARRIER SHALL BE TAPED.

TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL

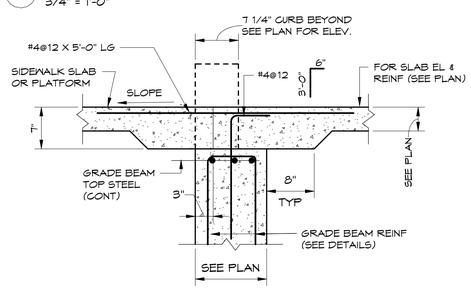
C 3/4" = 1'-0"



NOTES:
1. VAPOR BARRIER SHALL BE LAPPED 12" MINIMUM AND TAPED. ALL CUTS AND RIPS IN VAPOR BARRIER SHALL BE TAPED.

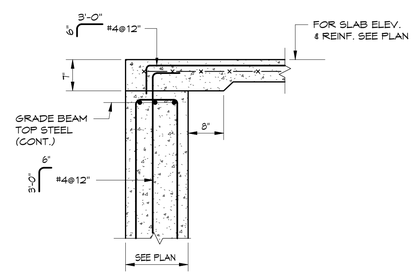
TYPICAL SAW CUT CONTROL JOINT DETAIL

D 3/4" = 1'-0"



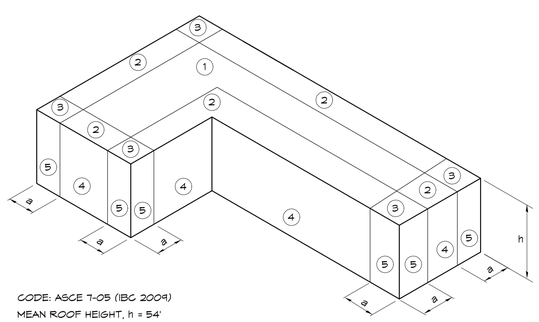
TYPICAL SECTION AT DOORWAY W/ SIDEWALK OR PLATFORM

E 1" = 1'-0"



TYPICAL WALL SECTION AT DOORWAY (NO ADJACENT SLAB CONDITION)

F 3/4" = 1'-0"



CODE: ASCE 7-05 (IBC 2009)
MEAN ROOF HEIGHT, h = 54'
WIND SPEED = 99 mph
EXPOSURE = C

NOTES:
a: 10 PERCENT OF LEAST HORIZONTAL DIMENSION OR 0.4h, WHICHEVER IS SMALLER, BUT NOT LESS THAN 4% OF LEAST HORIZONTAL DIMENSION OR 3 FT .
h: MEAN ROOF HEIGHT, IN FEET. EAVE HEIGHT SHALL BE USED FOR ROOF ANGLES < 10 .

COMPONENT & CLADDING LOADS AT WALL

G 1/8" = 1'-0"

COMPONENT & CLADDING
WIND PRESSURES
WIND SPEED, V = 99mph
MEAN ROOF HEIGHT, h=54 Ft.
EXPOSURE C

ZONE	EFFECTIVE WIND AREA (FT²)	PRESSURE (PSF)	
1	10	-28.0	11.4
	20	-27.7	10.0
	50	-26.3	10.0
	100	-25.6	10.0
2	10	-46.9	25.6
	20	-41.9	24.5
	50	-35.3	23.0
	100	-30.3	21.8
3	10	-46.9	25.6
	20	-41.9	24.5
	50	-35.3	23.0
	100	-30.3	21.8
4	10	-27.7	25.6
	20	-26.6	24.5
	50	-25.1	23.0
	100	-24.0	21.8
5	10	-34.1	25.6
	20	-31.9	24.5
	50	-28.9	23.0
	100	-26.6	21.8

GENERAL NOTES:

1. The design is in accordance with the 2009 IBC Building Code.
2. The structural drawings shall be used in conjunction with the architectural, mechanical, electrical, plumbing, and landscape drawings and specifications.
3. Details shown as typical are applicable to all similar conditions.
4. All dimensions, elevations and conditions shall be verified in the field by the contractors and any discrepancies shall be brought to the attention of the Engineer for clarification before proceeding with the affected part of the work. For work attached to or within existing structures, the contractors shall determine all necessary dimensions, elevations and conditions required for the accurate fabrication and erection of the building components. The contractor shall verify all dimensions and conditions at the site and report any discrepancy to the engineer before ordering material and proceeding with the work. Dimensions and elevations noted in the contract documents as (+/-) and all field conditions shall be verified in the field (V.I.F.) by the contractors prior to the submission of shop drawings. Upon receipt of shop drawings, the engineer has the right to assume that all field dimensions, elevations and conditions have been verified by the contractors and that the shop drawings accurately reflect such verifications unless stated otherwise on the shop drawings.
5. All blasting shall be completed prior to the placement of concrete.
6. The contractor is entirely responsible for the stability of the structure during all phases of erection & construction. The contractor shall take special note that the horizontal stability of the building relies on the floor slabs and the roof deck diaphragm as well as by the bracing shown on the drawings. Temporary guys and bracings shall be provided as required in the AISC Specification considering this building as a non self-supporting frame.
7. Where drawings and specifications show conflicting information, it shall be brought to the attention of the Engineer for clarification.
8. General Contractor to Submit a Stamped Anchor Bolt Survey Plan of Anchor Bolt As-Builts.

FOUNDATIONS:

1. Foundations shall bear on driven piles of 80 tons capacity. See plans for required capacities.
2. All bottom of exterior foundations shall be a minimum of 4'-0" below finished grade, to provide adequate frost protection to footings.
3. No foundations or slabs shall be placed in water or on frozen ground.
4. The contractor should review the Geotechnical Report prepared by Summit Geoengineering Services. Any recommendations made by the Report shall become part of the job specifications.
5. Basement level foundation walls are not designed to be free-standing. Do not place backfill without adequate bracing or until first floor framing is in place and has cured for seven days.
6. Backfill on both sides of foundation and retaining walls at the same time, maintaining equal heights of backfill on each side, until final grade is reached on one side.
7. If rock ledge is encountered during the excavation of the foundations, the ledge shall be overexcavated by a minimum of 12 inches. A 12 inch layer of compacted gravel shall be placed as a cushion between the ledge and the bottom of footing.

REINFORCED CONCRETE:

1. All structural concrete shall be normal weight, stone aggregate concrete, and shall be proportioned, mixed and placed under the supervision of a control engineer in accordance with ACI 315, 318 and 301 standards, latest editions. Concrete shall develop the following 28 day strengths:
   a. Concrete Flatwork exposed to weather: 4500 psi(6% air entrained)
   b. Exterior: walls, footings, piers and slabs: 3000 psi(6% air entrained)
   c. Interior Slabs on Grade: 3000 psi (2% air entrained)
   d. Slabs on Deck: 3500psi
   e. All other concrete: 3000 psi
2. Reinforcing bars including stirrups shall conform to ASTM A615 with 60,000 psi yield strength with minimum anchorage and splice requirements for reinforcing in accordance with ACI 318, latest edition. Welded wire fabric shall conform to ASTM A185.
3. Concrete walls shall be cast in alternate panels not exceeding 90 ft. in length. The use of pour strips at splices in horizontal reinforcing may be used to extend the length of pours.
4. Slabs on grade shall be placed in accordance with the latest ACI recommendations.
5. Slabs on grade shall be placed on a layer of well graded granular material compacted to 95% of maximum dry density.
6. Provide concrete pads for mechanical equipment according to the requirements of the manufacturer and in accordance with the typical details, and mechanical drawings.
7. Detailing of reinforcement shall be according to the latest edition of ACI 315 "Details and Detailing of Concrete Structures".
8. Not all openings through concrete slabs and walls are shown on structural drawings. Openings indicated on the drawings or any additional openings or inserts required must be verified with respective trades before placement of concrete.
9. See architectural drawings for finishes, depressions, reglets, notches, and other architectural features.
10. Concrete exposed to the exterior shall be air entrained.
11. Unless noted otherwise, provide the following clear cover for reinforcing steel:
    a. Footings: 3"
    b. Foundation Walls: 2"
    c. Interior Slabs: 1"
    d. Exterior Slabs: 2"
    e. Columns, Piers or Pilasters: 1 1/2" to ties.
12. All exposed concrete to be rubbed to a smooth finish.
13. All Anchor Bolts shall be dryset (Set prior to placement)(wet setting is unacceptable).

PILES:

1. Foundations shall bear on piles having a design capacity as indicated on drawing S101.
2. If the piles deviate more than 9" from the design location the engineer shall be notified.
3. Structural slabs on grade shall be poured in accordance with the latest ACI recommendations.
4. No grade beams, pile caps or slabs shall be poured in water or on frozen ground.
5. All exterior foundations shall be a minimum of 4'-0" below finished grade.
6. Concrete grade beams shall be cast in panels not exceeding 100 feet in length.
7. No foundations or slabs shall be poured in water or on frozen ground.
8. Slabs on grade shall be placed on a minimum of 6" of well graded granular material compacted to 95% of max. dry density and a 10 mil polyethylene vapor barrier.
9. All slab reinforcing shall be supported on sand chairs or concrete brick. Sand chairs shall be spaced at 3'-0" o.c. Whole concrete brick shall be spaced on a 3'-0" square pattern.

STRUCTURAL STEEL & METAL DECK:

1. All structural steel work shall conform to the "Specifications for Design, Fabrication and Erection of Structural Steel for Buildings" of the American Institute of Steel Construction. All joists and joist girders shall conform to the latest Steel Joist Institute Standard Specifications.
2. The structural steel shall conform to the following:
   a. Structural W shapes: ASTM A572 (Grade 50) or A992
   b. Plates, and angles: ASTM A36.
   c. Channels: ASTM A572 (Grade 50) or A992
   d. Structural tubing HSS: ASTM A500 Grade B or C.
   e. Structural pipe: ASTM A53 Grade B.
3. All floor deck to be composite floor deck (unless noted otherwise), of the size, type and finish indicated on the plans.
4. All deck to be placed continuously over two or more spans except in areas where there is only one span.
5. Provide 16 gage (minimum thickness) metal closures (pour stops) all around periphery and edges of openings
6. All column ends shall be sawed or milled.
7. The contractor shall supply all plates, clips, seat angles, connections, etc. as required for completion of the structure, even if such items are not explicitly called for on the architectural or structural drawings.
8. All connections of non-composite beams where reactions are not given on the plans shall be designed for the Allowable Uniform Loads on Beams divided by two.
9. Provide temporary shoring for metal deck or concrete slabs as required for those areas where they cannot support the weight of wet concrete and construction loads. Shoring shall be kept in place until concrete attains full strength.
10. Design and detail all connections according to the AISC specifications.
11. Design all brace connections to develop the full capacity of the member unless otherwise noted.
12. All connections shall be bolted with ASTM A325 or A490 high-strength bolts or welded in accordance with AWS and AISC requirements.
13. Unless otherwise noted All composite beams connections shall be designed for 2.0 times the reaction from the Allowable Uniform Loads on Beams tables. Unless noted otherwise all girders shall be designed for 1.5 times the reaction from the Allowable Uniform Loads on Beam tables. Girders are defined as horizontal framing members that support other horizontal framing members. Beams are defined as horizontal framing members which do not support other members.
14. The fabricator shall submit job standards for each type of connection to be used on the project. If shop drawings, are submitted without prior submittal of job standards the shop drawings will be returned without review.

STRUCTURAL LIGHT GAGE METAL FRAMING:

1. All steel studs, joists, headers, tracks and accessories shall be formed from steel conforming with ASTM A446 and be hot-dipped galvanized in accordance with ASTM A525-G60.
2. All framing, including but not limited to: studs, floor and ceiling joists, headers, sills, tracks, accessories and connections, shall be designed by the supplying subcontractor in accordance with the latest edition of AISI's "Specification for the Design of Cold-Formed Steel Structural Members". All designs shall be performed and be submitted to the Arch./Engineer for dimensional review only. The governing building code shall be referred to for determining dead and live load requirements. The contract documents shall be referred to for additional loading conditions (if any). Members, sizes and connections shown in the contract documents are to be considered schematic only, unless noted otherwise.
3. Submit shop drawings, which shall include dimensioned erection plans, member loadings and sizes, layouts of walls, ceilings, floors and openings, connections and temporary and permanent bracing requirements, all of which shall be stamped and signed by a professional structural engineer registered in the state in which the project is located.
4. Studs exposed to wind pressure or suction forces (i.e. exterior walls, ceilings, soffits and roofs) shall be 18 gauge minimum and spaced at 16" maximum o.c.
5. All members shall be proportioned with the following deflection limits:
   a. L/600; Masonry back-up for wind loads.
   b. L/360; Non-masonry back up for wind loads.
   c. L/360; Floor live loads.
   d. L/360; Snow live loads.
   e. L/240; Total dead plus live loads.
6. An expansion track shall be provided at all stud wall framing coming up under beams, girders, decking and the like that are subject to live load deflection. The expansion track shall allow for a deflection of 1/2" or the maximum member deflection as defined herein, whichever is greater.

DESIGN LOADS

The building has been designed to conform to the 2009 IBC and to resist the following loads:

FLOOR:
Live Load = 100 psf

ROOF:
Live Load = 20 psf; 100psf at Public Roof Areas

WIND:
1. Wind Speed (3 Second Gust) V = 99 MPH
2. Wind Importance Factor: Iw = 1.00
3. Building Category: II
4. Wind Exposure: "C"
5. Internal Pressure Coefficient = 0.18
6. Components and Cladding
   Wind Pressure See Figure 6-3 of ASCE7-05

SNOW LOADS
Ground Snow Pg = 50 psf
Flat Roof SnowPf = 35 psf (IBC)
Snow Exposure Factor Ce = 1.00
Snow Load Importance Factor I = 1.00
Thermal Factor Ct = 1.00

SEISMIC LOADS
1. Seismic Importance Factor I = 1.0
2. Seismic Use Group(Occupancy Category): "II"
3. Mapped Spectral Response Accelerations:
   Ss = 0.240
   S1 = 0.078
4. Site Class D
5. Spectral Response Coefficients:
   SDS = 0.256
   SD1 = 0.125
6. Seismic Design Category B
7. Basic Seismic Force Resisting System: Steel Systems not Specifically Detailed for Seismic Resistance.
8. Seismic Response Coefficient(s) Cs = 0.054
9. Response Modification Factor(s) R = 3.0
10. Design Base Shear: V = 5.9K
11. Analysis Procedure: Equivalent Lateral Force

INTENT OF THE STRUCTURAL DRAWINGS:

1. The intent of the structural drawings is to show the main structural features and structural design for the project. Architectural details are shown incidentally only and not completely. Therefore, architectural drawings must be used in conjunction with the structural drawings.

SHOP DRAWINGS:

1. All shop drawings submitted to the Engineer should indicate the date, revision number and issue description of the reference drawings (the structural contract drawings used to prepare the shop drawings). If shop drawings are not prepared according to the latest structural drawings, or if shop drawings are submitted without indicating reference drawings, the shop drawings will be returned without review.
2. All shop drawings shall be checked by the Subcontractor and reviewed by the General Contractor prior to submission. Shop drawings which have not been checked by the Subcontractor or reviewed by the General Contractor will be returned without review.
3. Review of shop drawings by the Engineer does not relieve the Contractor from full conformance to the contract documents.

ABBREVIATIONS OF STRUCTURAL DRAWINGS:

A.B.	Anchor Bolt	L.P.	Low Point
A.R.	Anchor Rod	LVL	Laminated Veneer Lumber
ARCH.	Architectural/Architect	MC	Moment Connection
BOF	Bottom of Footing	MIN.	Minimum
CJ	Control Joint	N.S.	Near Side
CL.	Center line	O.C.	On Center
CONC.	Concrete	PL	Plate
CMU	Concrete Masonry Unit	P.T.	Pressure Treated
DIA.	Diameter	RD	Roof Drain
DWGS.	Drawings	REINF.	Reinforced / Reinforcing
EF	Each Face	REQ'D.	Required
EL.	Elevation	RTU	Roof Top Unit
EOD	Edge of Deck	T&B	Top & Bottom
EW B.	Each Way Bottom	TOC	Top of Concrete
EXIST.	Existing	TOS	Top of Steel
FDN.	Foundation	TOW	Top of Wall
F.S.	Far Side	TYP.	Typical
FTG.	Footing	UNO.	Unless Noted Otherwise
H.P.	High Point	VERT.	Vertical
HSS	Hollow Structural Steel	V.I.F.	Verify In Field
HORZ.	Horizontal	W/	With
LAM	Parallam		
LLH	Long Leg Horizontal		
LLV	Long Leg Vertical		

Refer to project specifications for additional requirements.

STATE OF MAINE
RIMANTAS M. VEITAS
No. 9477
PROFESSIONAL ENGINEER
Date: 10/27/17

Prepared For: 0 Hancock Street LLC

Consulting Engineer: VEITAS PLLC VEITAS engineers
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TEL: 781-842-2882 FAX: 781-849-2065

Architect: ARCHETYPE architects
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(207) 772-6022 Fax (207) 772-4056

Project: 0 HANCOCK STREET
0 HANCOCK STREET PORTLAND, MAINE

Revisions:
08-11-17 Issued for Foundation Permit
08-31-17 Permit Set
09-15-17 Steel Bid Set
09-22-17 Pile Bid Set
09-29-17 Concrete Bid Set
10-06-17 Issued for Permit

Scale:

Date: 08/11/17

General Notes & Typical Details

S201