



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



TYPICAL SAW CUT DETAIL
CONTROL JOINT DETAIL



A.B.	Anchor Bolt	L.P.	Low Point
A.R.	Anchor Rod	L.V.L.	Laminated Veneer Lumber
ARCH.	Architectural	MC	Moment Connection
BOF	Bottom of Footing	MIN.	Minimum
C-J	Control Joint	N.S.	North Side
C	Center line	O.C.	On Center
CNC.	Concrete	E	Plate
CMA	Concrete Masonry Unit	P.T.	Pressure Treated
DJU	Diameter	RD	Roof Drain
DNF	Drawings	REINF.	Reinforced / Reinforcing
EQ	Each Face	REGID.	Required
E	Elevation	RTU	Roof Top Unit
EOD	Edge of Deck	T4B	Top 4 Bottom
EN B.	Each May Bottom	TCU	Top of Concrete
EXIST.	Existing	TOS	Top of Steel
FDN.	Foundation	TOW	Top of Wall
F.S.	For Side	TYP.	Typical
F	Footing	UNO.	Unless Noted Otherwise
H.P.	High Point	VERT.	Vertical
HSS	Hollow Structural Steel	V.I.F.	Verify In Field
HORIZ.	Horizontal	W	With
L	Parallel		
LLH	Long Leg Horizontal		
LVL	Long Leg Vertical		

Refer to project specifications for additional requirements

7. The design is in accordance with the IBC 2009.
8. The structural drawings shall be used in conjunction with the architectural, mechanical, electrical, plumbing, and landscape drawings and specifications.
9. Details shown as typical are applicable to all similar conditions.
10. 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, elevations 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 at the shop drawings.
11. 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 bracing shall be provided as required in the AIA Specification considering this building as a non self-supporting frame.
12. Where drawings and specifications show conflicting information, it shall be brought to the attention of the Engineer for clarification.

1. Foundations shall bear on compacted granular fill or natural undisturbed soils having a minimum bearing capacity of 1.5 tons per square foot (as verified by the Geotechnical Engineer). Structural fill shall meet the requirements of the Geotechnical Report.
2. All exterior foundation walls shall be constructed of 12" or better 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 shall review the Geotechnical Report prepared by the Geotechnical Consultants. 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 final floor framing is in place and has been approved by the engineer.
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 covered with a minimum of 12 inches of compacted layers of compacted gravel shall be placed as a cushion between the ledge and the bottom of footing.

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 ACI 301 standards. Independent concrete shall develop the following 28 day strengths:
 - a. Concrete Flatwork exposed to weather: 4000 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. 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 reinforcement shall conform to ASTM A615.
3. Concrete walls shall be cast in alternate panels not exceeding 100 ft. in length. The use of pour strips at splices in horizontal reinforcement may be used to extend the length of pours.
4. Slabs on grade shall be placed in accordance with the latest ACI recommendations.
5. Coats on unprepared subgrade 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 shall be placed on a layer of well graded granular material compacted to 95% of maximum dry density. 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. Slabs: 4 inches
 - b. Walls: 4 inches
 - c. Columns: 4 inches
 - d. Footings: 4 inches
 - e. Piers: 4 inches
 - f. Foundations: 4 inches
 - g. Other: 4 inches

1. All Lumber used shall conform to the following species:
 - a. All Lumber for trusses shall be as required by the truss supplier.
 - b. Laminated Strand Lumber (LSL) shall be Grade 2500 Fb-1.75E and have an allowable bending stress of $F_b=2500$ psi, an allowable shear stress of $F_v=410$ psi, and a modulus of elasticity $E=1.75 \times 10^6$ psi.
 - c. Parallam (LAM) shall have an allowable bending stress of 2400 psi, an allowable compression stress parallel to grain of 2400 psi, and a modulus of elasticity of 2,000,000 psi.
 - d. Laminated Veneer Lumber (LVL) shall have an allowable bending stress of 2800 psi, an allowable shear stress of 285 psi, and a modulus of elasticity of 1.8×10^6 psi.
 - e. "LSL" indicates laminated strand lumber, grade 2500 Fb-1.75E w/bending stress $F_b=2500$ psi, modulus of elasticity $E=1.75 \times 10^6$ psi and shear stress $F_v=410$ psi.

All lumber used shall conform to the following species:

- F. Versa Lam Studs:
F_{C1}=3000 psi, E=1.70X10⁶ psi, F_b=2650 psi
- F. Versa Lam Columns:
F_{C1}=3000 psi, E=1.80X10⁶ psi, F_b=2500 psi

h. All other lumber shall be spruce-pine-fir as follows:
F_b=875psi, F_v=135psi, E=1,400,000psi

- 1. Studs - No.1 / No.2 or better
- 2. Joists and Rafter - No.1 / No.2 or better
- 3. Beams and Girders - No.1 or better

i. All pressure treated wood shall be SYP #2 or better and treated with ACQ-C or ACQ-D Carbonate preservative.

2. Wood Trusses shall be designed for loads shown, supplier to submit stamped calculations and shop drawings for approval.

3. All wood straps shall conform to the Truss Plate Institute.

4. All wood in contact with concrete shall be pressure treated.

5. All exterior walls shall be sheathed in 7/16" APA exterior grade, Exposure I (24/64) plywood or OSB (unless noted otherwise).

6. All floor sheathing shall be 23/32" STURD-I-FLOOR (24") plywood or OSB (unless noted otherwise) to floor members.

7. All roof sheathing shall be 1/32" APA Exposure I (40/20) plywood or OSB (unless noted otherwise). Provide plywood edge clips, ridge clips and hip clips.

8. Nailing Pattern for Wood Sheathing:
Roof... 8d (13d) nails 6" at edges and 12" at interior.
Wall.... 8d (13d) nails " at edges and 12" at interior.
Floor... 8d (13d) nails 6" at edges and 12" at interior.
unless noted otherwise.

9. The truss fabricator shall design all wood trusses for the live and dead loads shown on drawings. The fabricator shall be required to submit shop drawings and stamped calculations for approval to the Engineer. Shop drawings shall include erection drawings, details, bridging and other customary information required to properly construct the roof trusses. The Truss Supplier shall provide all hangers for LVLs and trusses. The hanger marks shall be shown and marked on the Erection plans. The Truss Supplier shall coordinate supply of all hanging pipes, mechanical units and other equipment.

10. The contractor shall adequately brace the wood trusses during erection. Installation of permanent bracing shall be in accordance with the truss designer's requirements.

11. At all interior load bearing walls over 8' in height, provide one row of wood blocking at mid-height of studs.

12. All floor trusses to align with wall stud below. In 2x4 walls w/studs spaced @24" o.c., vertical alignment tolerances shall be within 5" left or right of wall stud below.

13. All mechanical fasteners in contact with pressure treated wood shall be hot-dip galvanized or mechanically deposited zinc coated fasteners. Hot-dip galvanized fasteners shall meet ASTM A153, with 2-ounces of zinc coating per square foot minimum. Mechanically deposited zinc coated fasteners shall meet ASTM B645 Class 55 or greater.

14. All mechanical connectors in contact with pressure treated wood shall be hot-dip galvanized connectors. All cold-dip galvanized connectors shall meet ASTM A653, Class B155 with 1.05-ounces of zinc coating per square foot minimum or Type 304 and 316 stainless steel products.

15. Fasteners and connectors used together should be of the same type (e.g. hot-dip nails with hot-dip joist hangers).

16. All mechanical connectors in contact with pressure treated wood and not in contact with the concrete shall have requirements shall be isolated from contact with the pressure treated wood by means of three layers of 15-lbs felt paper.

1. Truss design shall be prepared by the truss manufacturer in accordance with the truss plate institutes specifications and under the supervision of a professional engineer licensed in the State of Maine. All truss design drawings and calculations shall be submitted to the architect / engineer for review and shall be signed and sealed by the truss design engineer.
2. The configuration of the truss web members shall be determined by the truss manufacturer.
3. Floor and roof trusses are to be spaced at 24" o.c. unless otherwise noted on plans.
4. The uniform loads indicated in the schedule in combination snow drift loads shall be used to design hip and/or girder trusses.
5. The maximum truss live load deflection shall be span/240 for roof trusses and span/360 for floor trusses.
6. Truss bridging shall be installed as required by the truss manufacturer's design in accordance with the Truss Plate Institute Specifications & Recommendations.
7. All roof trusses shall be designed to withstand all applied wind loads at site in combination with loads indicated above and in accordance with the 2009 International Building Code windward, leeward and suction wind pressures shall be considered in the design.
8. All roof truss shop drawings shall be submitted to the Architect/Engineer for approval prior to fabrication.
9. Trusses shall be stored in accordance with the manufacturer's requirements.
10. Roof trusses with spans greater than 5'-0" shall be connected at supporting locations at each end as noted below:
 - a. Where the roof truss carries a double 2x plate, the truss shall be connected with a minimum 2-12d toenails and a Simpson H2.5 hurricane anchor at each end of truss. The double 2x plate shall be anchored at 4'-0" o.c. max. to the studs with a Simpson H2.5 hurricane anchor.
 - b. Where the roof truss connects to another truss or beam, it shall be connected with a galvanized metal truss anchor or hanger capable of resisting gravity and wind loads.

1. All masonry walls shall develop a strength of $f_m=1500$ psi.
2. All grouting shall be in accordance with ACI 530J Specifications, latest edition.
3. All reinforcing in masonry walls shall be $f_y=60,000$ psi.
4. All exterior and interior walls shall be reinforced as noted on plans.
5. Continuous wire reinforcing (horizontal joint reinforcing) shall be galvanized ladder type, and shall be spaced at 16" O.C. vertically in all masonry walls.
6. Contractor shall use low lift grouting procedure for construction of reinforced masonry walls (see Typical Masonry Details). Vertical reinforcing shall be lap spliced at 48" O.C. and all grout shall be placed in bond beams unless noted otherwise. The consistency of grout should be as required to assure complete filling of the cavities and to produce the required masonry strength.
7. Reinforced bond beams are to be provided where specified on the structural and architectural drawings.
8. Provide concrete segment at sides and above and below masonry openings as indicated on typical details.
9. Provide one piece custom blocks at 135° corners.

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 Specification.
2. The structural steel shall conform to the following:
 - a. Structural I shapes: ASTM A572 (Grade 50) or A992
 - b. Plates, channels and angles: ASTM A36.
 - c. Structural tubing HSS: ASTM A500 Grade B or C.
 - d. 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 (pore 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, seal and other connections for the steel connections 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 decks or concrete slabs as required for these areas when 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 A440 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 divided by two unless otherwise noted. 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.

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

Live Load = 20 psf

Live Load = 40 psf

1. Wind Speed (3 Second Gust): $V=100$ MPH
2. Wind Importance Factor: $I = 1.00$
3. Building Category II
4. Wind Exposure "B"
5. Internal Pressure Coefficient = ± 0.18
6. Components and Cladding

Wind Pressure See Figure 6-3
of ASCE 7-05

Ground Snow Pg = 50 psf
Flat Roof Snow Pf = 35 psf
Snow Exposure Factor Ce = 1.00
Snow Load Importance Factor I = 1.00
Thermal Factor Ct = 1.00

1. Seismic Importance Factor..... $I=1.00$
2. Occupancy Category II
3. Mapped Spectral Response Accelerations:
 $S_s=0.314$
 $S_1=0.077$

$$\begin{aligned} \text{SDS} &= 0.251 \\ \text{SDI} &= 0.087 \end{aligned}$$

- 7b. Seismic Response Coefficient..... $C_s=0.039$
- 7c. Response Modification Coefficient:
 $R=6.5$ W/ OSB Shear Walls.
- 7d. Design Procedure: $V=C_s \cdot W$
- 7e. Design Base Shear: $V = 38k$
- 8a. Basic Seismic Force Resisting System of Steel Structure:
Steel Special Concentric Braced Frames.
- 8b. Seismic Response Coefficient..... $C_s=0.030$
- 8c. Response Modification Coefficient:
 $R=6.0$ W/ Steel Special Concentric Braced Frames.
- 8d. Design Procedure: $V=C_s \cdot W$
- 8e. Design Base Shear: $V = 100k$

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.

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, if shop drawings are submitted without indicating the 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.



118 on Munjoy
Hill, LLC

118 CONGRESS STREET

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Project:

revisions:
100% CONSTRUCTION
DOCUMENTS

As indicated

Date: 5 ML

TYPICAL DETAILS AND GENERAL NOTES

S2.01