

167-169 WOODFORD STREET

PORTLAND, MAINE

Two Family Residence Code Review

167-169 Woodford Street
Portland, Maine

Project Description:

This project is the re-construction of an existing Two Family Residence which was destroyed by fire. The re-construction is based on the same footprint, area and volume of the original structure. The reconstruction includes replacement of the foundation and entire superstructure.

CODES: These plans are intended to comply with the following codes.

- Maine Uniform Building and Energy Code
- 2009 International Residential Code
- 2009 International Energy Conservation Code
- City of Portland, Maine Ordinances

CODE REVIEW: IRC2009

CH3

SECT 301 DESIGN CRITERIA

Design Wind speed = 100mph, therefore design per IRC
Design Snow, P_g = 60psf, therefore design per IRC
For additional structural design criteria, refer to Structural notes.

SECT 302 FIRE RESISTANT CONSTRUCTION

R302.1 Exterior Walls shall comply with Table R302.1
Fire resistance rated not required as separation is > 5ft.
Openings in walls is unlimited
Penetrations in walls do not require a fire resistant rating

R302.3 TWO FAMILY DWELLINGS Dwelling Units shall be separated by wall/floor assemblies having a 1hr rating, Except a 1hr separation is permitted where protected throughout by a sprinkler system installed in accordance with NFPA13. FOR THIS PROJECT WALL/FLOOR SEPARATIONS WILL BE DESIGNED AS 1HR RATED ASSEMBLIES.

R302.3.1 Where floor assemblies are required to be rated, the supporting construction shall have an equal or greater rating

R302.4 Penetrations in rated assemblies, Penetrations shall be protected by an approved penetration firestop system per ASTM E814 or UL 1479. Membrane penetrations shall comply with R302.4.1 and electrical boxes shall be installed per this section

R302.7 Under stair protection shall be provided by walls with min. 1/2" gyp
R302.9 Wall and ceiling finishes shall meet flame spread <200 and smoke index <450.

R302.10 Insulation materials including vapor barriers shall meet flame spread <25 and smoke index <450 except as otherwise provided in this section

R302.11 Fireblocking is required at floors and ceilings, top and bottom of stair runs, and openings at vents, pipes, ducts, cables and wires with materials approved in this code

R302.12 Draftstopping at floor/ceilings is not required for this project

R302.13 Recessed lights shall be installed per this section

R303 LIGHT VENTILATION AND HEATING

R303.1 Habitable rooms shall have glazing >8% of floor area, with 4% operable

R303.3 Bathrooms, min. glazing area of 3 sq. ft. with half operable

R303.6 Stairways shall have artificial illumination per this section

R303.8 Heating shall be provided per the requirements of this code

R304 MINIMUM ROOM AREA requirements have been met in these plans

R305 CEILING HEIGHT min. of 7ft has been met

R306 SANITATION requirements have been met

R307 TOILET, BATH AND SHOWER SPACES comply with this section

R308 GLAZING shall comply with the requirements of this section

R310 EMERGENCY ESCAPE is required from the basement for new construction

R311 MEANS OF EGRESS each unit in these plans has one egress in compliance with this section

R311.6 Hallways are > 36" wide

R311.7 Stairways, handrails, rise and run, nosings, headroom, etc are in compliance with this code refer to stairway sections and details within

R313 AUTOMATIC SPRINKLER SYSTEMS R313.2, new two family dwellings shall have an automatic sprinkler system complying with NFPA13D

R314 SMOKE ALARMS shall be provided in each sleeping room, outside each separate sleeping area in the immediate vicinity, and on each additional level including attic and basement, and shall be interconnect per this code

R315 CARBON MONOXIDE ALARMS shall be provided in the immediate vicinity outside sleeping areas

CHAPTER II ENERGY EFFICIENCY

II101.2 Climate zone 6A

Windows, U = 0.35, SHGC = NR

Doors, U = 0.35

Glazed Fenestrations, U = 0.35, SHGC = NR

Attic, R = 49 (R30 if uncompressed over exterior walls)

Exterior walls, R=20

Basement, R= 30 at ceiling

CODE REVIEW NFPA 101

Chapter 24 One and Two Family Dwellings

24.2 Means of Egress - One primary means of egress and one secondary means of escape is required from every sleeping room and every living area. This design meets this requirement

24.2.5 Stairs - min. width = 36in.

24.2.6 Hallways - min. width 36in.

24.2.7 Bulkheads - shall provide direct access to the basement, are exempt from requirements of 24.2.5.1

24.3.4.1 Smoke alarms shall be provided in each sleeping room, outside each separate sleeping area in the immediate vicinity, and on each additional level including attic and basement, and shall be interconnect per this code

24.3.5.2 Sprinkler system is required per NFPA 13D



RESIDENTIAL SPECIFICATIONS:

FLOOR SYSTEM:
Joists As Indicated
Briging at Center
Subfloor As Indicated

EXTERIOR WALLS:
2x4 Studs as Indicated (16"oc)
Sheathing as Indicated
Vapor Barrier at Inside
Siding/Finish By Owner

INTERIOR WALLS:
2x4 Studs @ 16"oc U.N.O.
1/2" Gypboard as Indicated-U.N.O.

ROOF SYSTEM:
Joists as Indicated
Sheathing as Indicated (5/8")
15# Underlayment
Ice & Water Shield at Eaves/Valleys
.060 EPDM Adhered Rubber Membrane

INSULATION:
Exterior Walls R-21
Roof R-38
Basement Ceiling R-30

BEAMS/HEADERS:
As Indicated on Plan, or
(3)2x6 Max. 40' Span
(3)2x8s Max 80' Span
Min. 4" Bearing all Beams

INTERIOR FINISHES:
1/2" Gypboard or As Indicated
At Walls/Ceilings
Flooring As Indicated
Paint/Stain As Indicated

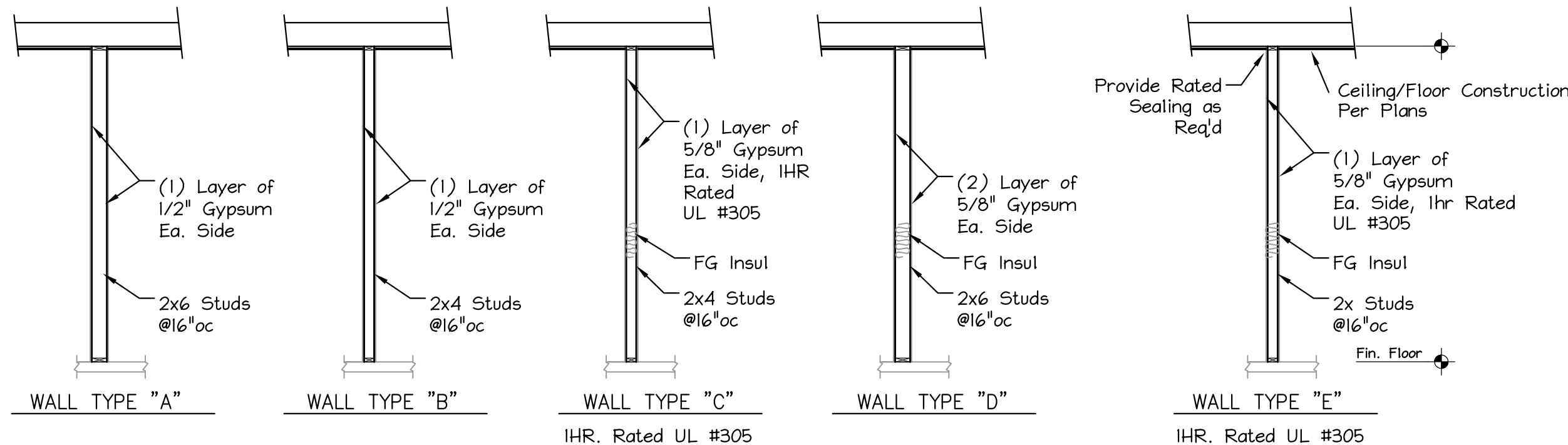
Note: Items not Indicated Shall be Per Contract/

DRAWING LIST:

- A0.0 COVER SHEET
- A1.0 FLOOR PLANS
- A1.1 ROOF PLAN
- A2.0 ELEVATIONS
- A3.0 BLDG SECTIONS
- A3.1 STAIR SECTIONS
- S0.1 NOTES
- S1.0 FOUNDATION PLAN
- S2.0 FRAMING PLANS
- S3.0 FRAMING DETAILS

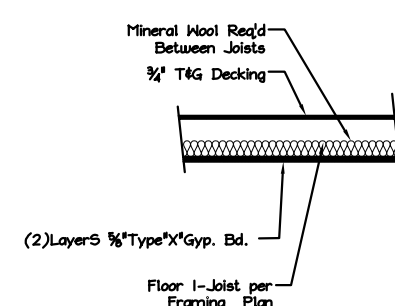
WALL TYPE LEGEND

- A** 2x6 WOOD STUDS, 5/8" GHB ON EACH SIDE
- B** 2x4 WOOD STUDS, 5/8" GHB ON EACH SIDE
- C** 2x4 WOOD STUDS, (1) LAYERS OF 5/8" GHB ON EACH SIDE (1-HOUR RATED WALL; UL U305)
- D** 2x6 WOOD STUDS, (2) LAYERS OF 5/8" GHB ON EACH SIDE (2-HOUR RATED WALL; UL U301)
- E** 2x WOOD STUDS, (1) LAYERS OF 5/8" GHB ON EACH SIDE (1-HOUR RATED WALL; UL U305). At Exterior Walls Use 1/2" Dens-Glas at Exterior Face



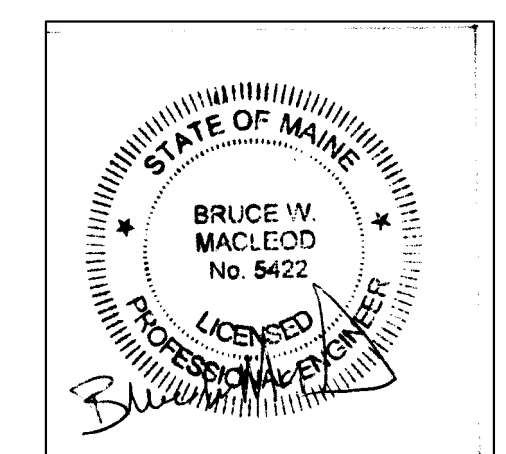
PARTITION TYPES

Note: This Design Based on Boise Cascade Fire Design and Installation Guide. Requires Approval of the AHJ.



RATED CEILING ASSEMBLY TYPICAL AT FIRST FLOOR CEILING

FOR PERMIT
ISSUED
2/06/17



MacLeod Structural Engineers, PA		
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167-169 Woodford Street		
Portland, Maine		
TITLE: COVER SHEET		
DATE: 1/27/17	DRAWN BY: BIM	DRAWING NUMBER: A-0.0
SCALE: as noted	PROJ NO: 2017-010	