

C.N. Carley Associates, Architects and Planners Code Analysis
 June 5, 2023

Building Code Compliance Summary Project: Concord Quaker Meeting		Notes	Code Citation
Applicable Code(s)	NH State Building Code (IBC 2018, IECC 2018) LS 101 (2015)		
Use Group(s)	Daycare, Assembly		LS 101 6.1.2.1 6.1.4
Mixed Use Requirements	Mixed Occupancy	The building shall comply with the most restrictive requirements of the occupancies involved, unless separate safeguards are approved.	LS 101 6.1.14.3.2
Construction Type	Type V(000)	Unsprinkled, 1 story permitted	LS 101 Table 16.1.6
Occupant Load		Occupant Load: 14	LS 101 Table 7.3.1.2
Required Egress Width	.3" per person @ stairways	N/A	LS Table 7.3.3.1
	.2" per person @ other means (doors)	Door width provided = 36"x2	
Required # of Exits	2 exits from space with occupancy up to 500, 3 from 500 to 1000	No space exceeds occupancy of 500. 2 Exits are provided	LS 101 7.4.1.1,2
Exit Access Travel Distance	100' in an unsprinkled building	Maximum travel distance=40'	LS 101 16.2.6
Fire Separation Requirements			
Protection from Hazards			
Furnace Room	1 hour rating or automatic sprinkler required	1 hour enclosure provided ¹	LS101 16.3.2.1(1)a
Cooking Facilities	16.3.2.3 Cooking facilities shall be protected in accordance with 9.2.3, unless otherwise permitted by 16.3.2.4 or 16.3.2.5. --16.3.2.5 Approved domestic cooking equipment used for food warming or limited cooking shall not be required to be protected.	No protection required ²	LS 101 16.3.2.5

Fire Alarm System	Fire alarm system required	Provide detection and a fire alarm system with emergency forces notification per LS 101 9.6	LS 101 16.3.4
Exit Signs	To required exits	1 directional exit sign each at the west and east walls of Multi-Purpose Room.	State of NH Department of Safety Informational Bulletin 2020-05
Smoke detectors	Smoke detectors required	Provide smoke detectors in the Multi Purpose Room (daycare), Lobby, and the hall to the southeast exit. ³	LS 101 16.3.4.5
Emergency Lighting	To required exits	1 battery powered each in Lobby and corridor leading to southeast door.	State of NH Department of Safety Informational Bulletin 2020-05

Occupancy Calculations			
1 st	Area/Person (sf)	Area (sf)	Occupancy Per LS101 Table 7.3.1.2
Daycare	35	482	14

Notes:

1. It appears that the existing wall between the furnace room and the rest of the interior complies with UL design 305 (5/8" gypsum board both sides of 2x4 studs @ 16" oc). We propose the following construction:
 - a. Probe the existing wall to confirm that is constructed as we believe it is.
 - b. Replace the existing door and frame with a 45 minute rated door and frame per LS 101 Table 8.3.4.2.
 - c. Patch existing opening in the west wall with matching construction.
 - d. Install fire resistant sealant at the perimeter of all duct and pipe penetrations in the existing wall.
2. The existing kitchen is comprised of residential type appliances and is used for warming and final preparation of food brought from outside, rather than for cooking. We believe that it complies with the requirements of LS 101 16.3.2.5.

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3. There are battery powered smoke detectors which would remain in some areas of the building. My reading of LS 101 9.6.2.10.3 is that the existing and any new smoke detectors do not need to be interconnected since we are dealing with a new use but not new construction.



C.N. CARLEY
ASSOCIATES
Architects & Planners

4 Vernon Street, Concord, NH 03301

MEMO

DATE: June 6, 2023

Project: Quaker Meeting Daycare 2315

Chief Michael Gamache
Canterbury, NH Fire Department
26 Baptist Road
Canterbury, NH 03224

Subject: Quaker Meeting House Code Compliance

Dear Chief Gamache:

As a follow up to our phone conversation, I have attached a plan and code analysis matrix for the Quaker Meeting daycare along with a copy of UL Design #305 for a one hour wall. When I was on site, I noticed that the existing door is 20 min rated, which is not sufficient for our purposes, but led me to think that the wall is probably a 305 assembly. I suggest that we do a little investigation and, if the wall is compliant, proceed as I have outlined.

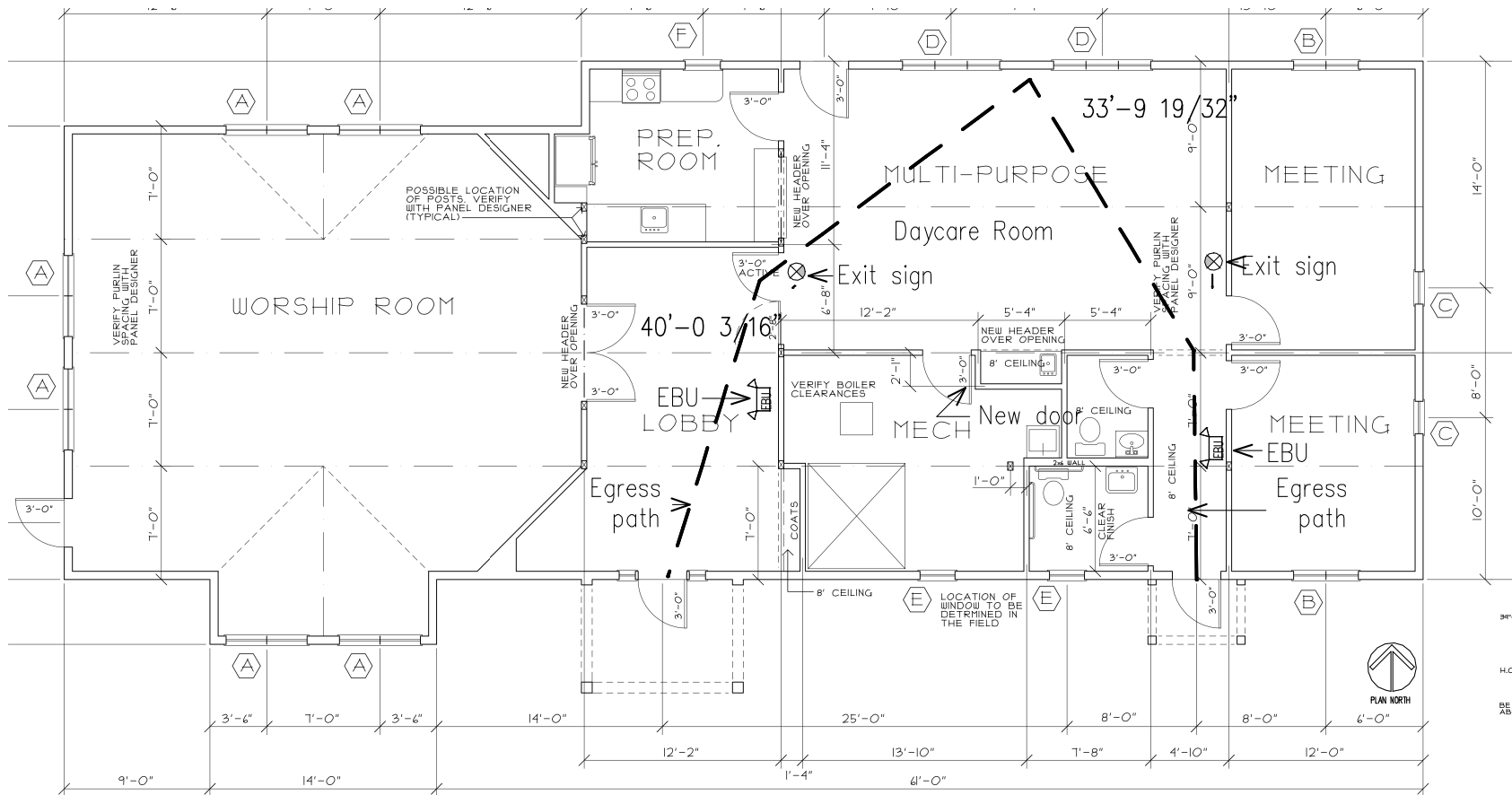
The matrix also covers the other items that I believe are required for the new occupancy.

Let me know what you think.

Thank you

Yours truly,

Christopher N. Carley, AIA

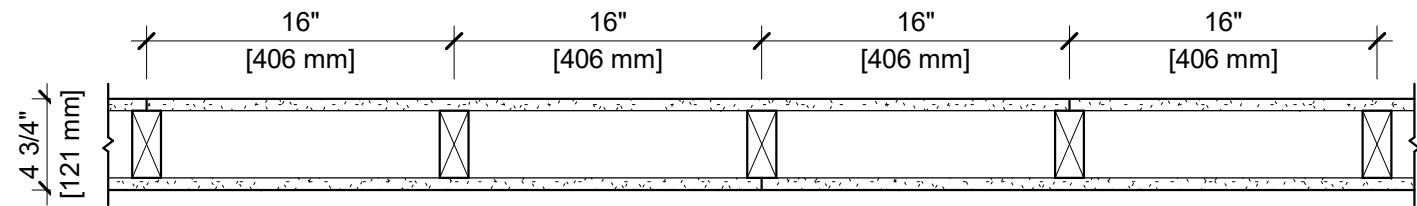


1	Plan	1/16"=1'-0"
CP. 1		

Concord Quaker Meeting
 11 Oxbow Road, Canterbury, NH
 6/6/2023 2315

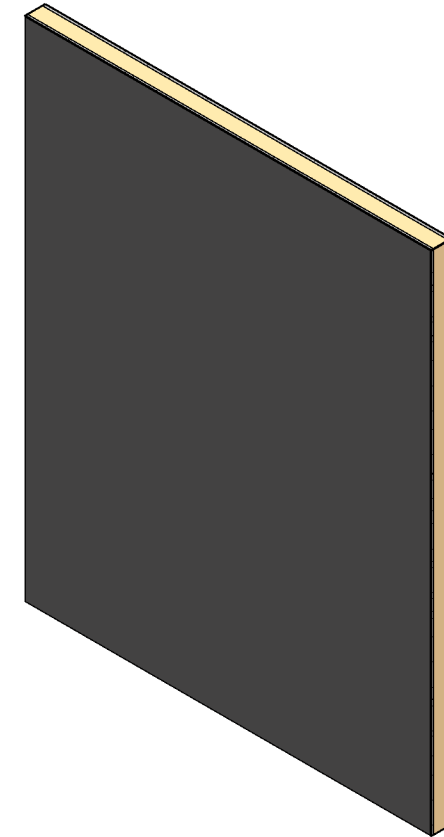
DESIGN NO. UL U305

FIRE RATING: 1 HOUR
 STC RATING: 32
 SOUND TEST: RAL-TL11-129
 SYSTEM THICKNESS: 4-3/4" [121 MM]
 LOCATION: INTERIOR
 FRAMING TYPE: WOOD STUD (LOAD-BEARING)



ASSEMBLY REQUIREMENTS:

GYPSUM PANELS: ONE LAYER 5/8" [15.9 MM] SHEETROCK® GYPSUM PANEL (UL TYPE SCX)
 WOOD STUDS: 2" X 4" [38 X 89 MM] WOOD STUDS, 16" [406 MM] O.C.
 GYPSUM PANELS: ONE LAYER 5/8" [15.9 MM] SHEETROCK® GYPSUM PANEL (UL TYPE SCX)



GENERAL WALL NOTES:

1. REFER TO APPLICABLE CODES REQUIREMENTS TO ENSURE COMPLIANCE PRIOR TO CONSTRUCTION.
2. FOR THE MOST UP-TO-DATE DETAILS, INCLUDING CONSTRUCTION VARIATIONS, REFER TO THE PUBLISHED DESIGN.
3. WHERE DESIGN NO. INDICATES "PER", THE FIRE RATING IS BASED ON LABORATORY TEST DATA OF THE REFERENCED SIMILARLY CONSTRUCTED ASSEMBLIES.
4. STUD SIZES AND INSULATION THICKNESS ARE MINIMUM UNLESS OTHERWISE STATED IN THE PUBLISHED ASSEMBLY.
5. STUD AND FASTENER SPACINGS ARE MAXIMUM UNLESS OTHERWISE STATED IN THE PUBLISHED ASSEMBLY.
6. PANEL ORIENTATION SHALL BE AS SPECIFIED IN THE PUBLISHED DESIGN.
7. FIRE-RATINGS ARE FROM BOTH SIDES UNLESS OTHERWISE STATED.
8. FIRE-RATINGS ARE MAINTAINED WITH ONE OR MORE OF THE FOLLOWING MODIFICATIONS: INCREASE STUD DEPTH, INCREASE STUD MATERIAL THICKNESS, DECREASE STUD SPACING, DECREASE FASTENER SPACING, INCREASE INSULATION THICKNESS UP TO CAVITY DEPTH.
9. WHERE ACOUSTICAL PERFORMANCE IS PROVIDED IN AN ESTIMATED RANGE, THE VALUES ARE BASED ON LABORATORY TEST DATA OF SIMILARLY CONSTRUCTED ASSEMBLIES.
10. SOUND-RATINGS ARE MAINTAINED WITH ONE OR MORE OF THE FOLLOWING MODIFICATIONS: INCREASE STUD DEPTH, DECREASE STUD MATERIAL THICKNESS, INCREASE STUD SPACING, INCREASE FASTENER SPACING, INCREASE INSULATION THICKNESS UP TO CAVITY DEPTH. MODIFICATIONS MUST NOT EXCEED LIMITATIONS OF FIRE RATING.