

CODE SUMMARY - LUMINATO

- Applicable Codes
• MUECC - Maine Uniform Building and Energy Code
• 2009 International Building Code - IBC (except chapters 11 and 30)
• 2009 IECC: International Energy Conservation Code
• NFPA 101 Life Safety

- Accessibility Codes
• Fair Housing Act Section 504
• State of Maine Human Rights Act
• ICC ANSI 117.1 Accessible and Usable Buildings and Facilities

PROJECT SUMMARY:

The building is all new construction. It consists of six (6) stories with a basement level, two (2) stair towers and an elevator. The first floor and basement level are of Type IA Construction. Both levels will mainly be enclosed parking garage (Low Hazard Storage S-2 occupancy) with accessory occupancies, a fitness room (Assembly A-3). The accessory occupancies for these levels include lobbies and storage units for the residents. Levels two (2) through six (6) are of Type 3A Construction and consist of apartments (Residential R-2 occupancy) with a 190sf meeting room (accessory occupancy) on the third floor. There is a communal deck located on the roof.

Table with 2 columns: Level, Square Footage. Rows include BASEMENT, 1ST FLOOR, 2ND FLOOR, 3RD FLOOR, 4TH FLOOR, 5TH FLOOR, 6TH FLOOR, and ROOF.

Unit Count: 24 UNITS

Chapter 3- Use and Occupancy Classification Mixed Use

- 310.1 Residential Group R-2 Apartments at Levels 2-6
311.3 Low Hazard Storage Group S-2 Enclosed Parking Garage
303.1 Assembly Group A-3 Fitness Room at Level 1

Chapter 4- Special Detailed Requirements Based on Use and Occupancy

Section 406 Motor Vehicle Related Occupancies

406.2 Parking Garages (classified as an enclosed parking garage per Section 406.4).

406.2.2 Clear height on each floor level in vehicle and pedestrian traffic areas shall not be less than 7 feet.

406.2.4 Vehicle Barrier Systems
Not required- Vertical distance to ground is not greater than one foot

406.2.6 Floor Surface

406.2.7 Mixed Occupancy Separation
Parking garage is separated from R-2 Residential Use at Level 2 above by three (3) hour rated floor assembly in accordance with Section 509.2.

406A Enclosed Parking Garages
406A.2 Ventilation
Ventilation is provided in accordance with the International Mechanical Code

406.4.1 Heights and Areas
Area and height of enclosed parking garages of Type IA construction are unlimited per Table 503.

420 Group R-2
420.2 Separation Walls-Walls separating Dwelling Units from Dwelling Units and from other occupancies are Fire Partitions in accordance with Section 709 (1 hour rated).

420.3 Horizontal Separation- Floor Assemblies separating Dwelling Units from Dwelling Units and from other occupancies are Horizontal Assemblies in accordance with Section 712 (1 hour), except the podium level which is separated by a 3 hour rated horizontal assembly per Section 509.2

Chapter 5- General Building Heights and Areas

Table 503 Allowable Heights and Areas
Residential Group R-2 Type 3A Construction - 4 stories . 65 feet 24,000 sf

504.2 Automatic Sprinkler System Increase (Building Height)
In buildings equipped with an NFPA 13 automatic sprinkler system, the maximum building height is increased by 20 feet and the maximum number of stories is increased by one. For Group R buildings equipped with an NFPA 13R automatic sprinkler system the building height may be increased by 20 feet and the maximum number of stories is increased by one (1) but shall not exceed 60 feet or four (4) stories respectively.

Construction Type 3A
Group R-2 (multifamily residential): 5 stories . 85 feet
See also Section 508.2.3 for Accessory Occupancies

506.0 Building Area Modifications

506.1 General Equation 5-1
Aa= (A+ [At x If] + [At x Is])

Table 503 for Type 3A Construction, R-2 Residential Use
Aa= 24,000 sf + 0 + (24,000 x 2)
Aa= 72,000 sf Allowable building area per story

506.2 Frontage Increase Equation 5-2- Not Applied
If= [F/P - 0.25] W/30

F= If open perimeter
P= If total perimeter
W= 20 (varies from 20' - 30')

506.3 Automatic Sprinkler System Increase
Approved Automatic Sprinkler System in accordance with Section 903.3.1. More than one-story above grade= 200% increase above Table 503 tabular area allowed:
Group R2: Type 3A: 24,000 + 2 x (24,000) = 72,000 sf allowable

506.4 Single Occupancy Buildings with More than One Story

506.4.1 Area Determination
Total allowable building area of a single occupancy building per item 2 with three or more stories above grade planer= Allowable building area per Section 506.1, multiply times 3 and item 3. No story shall exceed the allowable building area per story per Section 506.1.

Table with 2 columns: Floor, Area. Rows include Floor 1, Floors 2-3, Floor 4, Floor 5, Floor 6, and Total Floors 2-6.

508 Mixed Use and Occupancy
508.1 General
Exception 1. Occupancies separated in accordance with Section 509.

508.2 Accessory Occupancies
Aggregate accessory occupancies, ancillary to principal occupancy, shall not occupy more than 10% of the building area of the story and shall not exceed Table 503 values (without building area increases). Accessory occupancies shall be individually classified.

508.2.4 No separation is required between accessory occupancies and the main occupancy. (Exception 2: R2 occupancy dwelling units must be separated from accessory occupancies per Section 420 (1 hour).)
508.3 Non-Separated Occupancies
Buildings or portions of buildings that comply with the provisions of this section shall be considered non-separated occupancies.

Lower Level and Level 1-Type 1A construction
Use Groups: Residential Storage

508.4 Separated Occupancies
Table 508.4 Occupancy Assembly (A3) to Storage (S2) no separation requirements in building protected by an automatic sprinkler system in accordance with section 903.3.1.1 "

508.4.3 Allowable Height: Each separated occupancy shall comply with building height limitations based on the type of construction

Table with 3 columns: Type 1A, Occupancy, Allowed. Rows include Residential, Storage, Assembly (Fitness Room).

Type 3A:
Occupancy Allowed Increase Total Actual
R-2 Residential 4 Stories 1 Story 5 Stories 5 Stories

509 Special Provisions

509.2 Horizontal Building Separation Allowance
A building shall be considered as separate and distinct buildings for the purpose of determining area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:

- The buildings are separated with a horizontal assembly having a minimum 3-hour fire-resistance rating.
The building below the horizontal assembly is no more than one story above grade level.
The building below the horizontal assembly is of Type IA construction.
Shaft, stairways, ramp and escalator enclosures through horizontal assembly shall have not less than a 2-hour fire-resistance rating with opening protectives in accordance with Section 715.4.

Chapter 6- Types of Construction

Table 601 - Fire Resistance Ratings for Building Elements

Table with 3 columns: Building Element, Type 3A, Type 1A. Rows include Primary Structural Frame, Bearing Walls, Exterior Walls, Interior Walls, Non-Bearing Walls and Partitions, etc.

Table 602- Fire Resistance Rating Requirements For Exterior Walls Based on Fire Separation Distance (non-loadbearing walls)

Table with 3 columns: Fire Separation Dist., Construction Type, Group R, S2. Rows include x < 5', 5' <= x < 10', 10' <= x < 30', x >= 30'.

Higher of 2 determining factors (Tables 601 and 602) indicate exterior bearing walls to be 2 hour fire resistance rated from the inside.

602.2 Type I Construction
Noncombustible materials. Fire retardant treated wood (FRTW) is permitted in limited uses. Other combustible materials are permitted as outlined in Section 603.1.

602.3 Type III Construction

Exterior walls are to be noncombustible materials and interior building elements are any materials permitted by Code.
Fire retardant treated framing is permitted as substitute for noncombustible materials for framing within exterior wall assemblies of a 2 hour rating or less.
Exterior nonloadbearing wall are not required by Table 601 to have a fire-resistance rating, but must comply with the provisions of Table 602

Chapter 7- Fire and Smoke Protection Features

704 Fire Rating of Structural Members
704.3 Primary Structural Frame
Supporting more than 2 floors, and required to have a fire resistance rating, or supporting a load bearing wall, shall be provided with individual encasement protection on all sides.
Exception: Individual encasement on all exposed sides provided protection is in accordance with fire resistance rating

704.4 Secondary Structural Members
If required to be fire resistant rated, secondary members shall be protected by individual encasement when supporting more than 2 floors. Membrane protection is permissible if supporting 2 floors or less.

705 Exterior Walls
705.2.1 Projections from walls of Type I or II construction shall be of noncombustible materials
Exception 1 fire-retardant-treated wood shall be permitted for balconies, porches, decks and exterior stairways not used as required exits with Section 1406.3

705.2.2 Projections from walls of Type III construction shall be of any approved materials.

705.5 Fire Resistance Ratings
Fire Separation Distance of greater than 10 feet, at exterior walls, shall be rated for exposure from the inside. Fire separation less than 10' shall be rated for fire exposure from both sides.

705.6 Exterior walls shall have sufficient structural stability to remain in place for duration of the time required by the fire resistance rating.
Supporting elements must be fire resistance rated
Band joist, or supporting beam, must be fire rated
Only the structural element within the floor system that supports the vertical load of the wall must be fire resistance rated construction

Table 705.8 Maximum Area of Wall Openings Based on Fire Separation Distance and Degree of Opening Protection

Table with 3 columns: Fire Separation Dist., Degree of Opening Protection, Allowable Area. Rows include 0' to less than 3', 3' to less than 5', 5' to less than 10', 10' to less than 15', 15' to less than 20', 20' to less than 25', 25' to less than 30', 30' or greater.

705.8.5 Vertical Separation of openings
Not Required, Exception no. 2, Automatic Sprinkler System in Accordance with 903.3.1.1

705.11 Parapets
Not required on exterior walls per Exception No. 6 where the wall is permitted to have at least 25% of the exterior wall areas containing unprotected openings per Table 705.8, and Exception No.5 where the entire building is covered with a class C roof covering, the exterior wall shall be allowed to terminate at the underside of the roof sheathing or deck in Type 3 construction provided the roof sheathing or deck is constructed of approved fire retardant treated wood for a distance of 4'.

707 Fire Barriers (shafts, exit and floor opening enclosures)
707.3.1 Shaft enclosures shall comply with Section 708.4 (2 hours)

707.3.2 The fire resistance rating of exit enclosures shall comply with Section 1022.1 (2 hours).

707.3.6 Incidental Accessory Occupancies Fire barriers separating incidental accessory occupancies shall have a fire resistance rating of not less than that indicated in Table 508.2.5.

707.5 Fire barriers shall extend from the top of the floor/ceiling assembly below to the underside of the floor or roof sheathing, slab or deck above.

707.5.1 Supporting construction shall be protected to required fire resistance rating of the fire barrier supported (fireblocking is required in cavities if shaft extends through the floor level at every floor level).

707.6 Openings in fire barrier shall be protected in accordance with Section 715. Openings shall be limited to a maximum aggregate width or 25% of length of wall, with max area of any single opening not to exceed 156 sf. Openings in exit enclosures and passageways shall comply with Sections 1022.3 and 1023.5.

Exception 1: Openings not limited to 156 sf with automatic sprinkler systems.
Exception 2: Openings not limited to 156 sf or 25% of length at fire door serving exit enclosure.

708 Shaft Enclosures (stairs, chutes, elevators, duct shafts, etc.)
708.1 Shaft enclosures to be constructed as fire barriers

708.2 Fire barrier construction not required at piping, conduits, etc. penetrations if protected per Section 712.4

708.4 Shaft enclosures shall have a 2 hour fire resistance rating where connecting 4 stories or more, and shall have a fire resistance rating not less than the floor assembly penetrated but not exceeding 2 hours.

708.8.1 Penetrations other than those necessary for the purpose of the shaft shall not be permitted.

708.14.1 Elevator Lobby Enclosure
Not required per exception no. 4. "Building is protected by an automatic sprinkler system in accordance with section 903.3.1.1 "

709 Fire Partitions (exit access corridors, dwelling unit separations, etc.)

709.3 Fire Resistance Ratings
Fire partitions shall have a fire resistance rating of not less than 1 hour.
Walls Separating Dwelling Units (420.2) One hour
Corridor Walls per Table 1018.1 1/2 hour (when fully sprinklered per NFPA 13)

709.4 Continuity: Fire partitions shall extend from floor below to underside of floor/roof sheathing above. Supporting structure shall be protected similarly to wall. Fire blocking is not required if equipped with automatic sprinkler system and sprinklers are installed within combustible floor/ceiling and roof/ceiling spaces.

709.5 Where exterior walls serve as part of the required fire resistance rating separation, walls shall comply with Section 705 Exterior Walls and fire resistance rated requirements shall not apply.

712.3 Horizontal assemblies separating dwelling units shall be a minimum of 1 hour fire resistance rated construction.

712.3.1 Provide wire or other approved device above panels to prevent vertical displacement (ceiling assembly to remain in place)

712.3.2 Rated access doors permitted in fire rated ceiling assemblies.

712.3.3 Ceiling membrane not required over unusable crawl spaces or unusable ceiling spaces.

713.1.1 Penetrations of fire resistance rated walls by ducts (not protected by dampers). Sleeves through walls, in cavity construction, shall be securely fastened (a fire stop assembly is required between sleeve and pipe/duct).

713.3.2 Membrane penetrations shall be limited to 16 square inches each and an aggregate of 100 square inches/100 sf of wall
Offset boxes by 2" on opposite sides of wall
Not required at sprinklers with escutcheon plate

714.4 Where fire resistance rated floor/ceiling assemblies are required, voids along curtain wall and floors shall be sealed with an approved system, matching the fire resistance rating of the floor system.

715.4 Fire Door and Shutter Assemblies

Table with 3 columns: Type of Assembly, Required Assembly Rating, Min Door Assembly Rating (hrs). Rows include Fire Walls, Fire Barriers (2 Hr), Other Fire Barriers, Fire Partitions, Corridor walls, Other fire partitions, Exterior Walls, Smoke Barriers.

715.4.3.1 Fire door assemblies shall meet requirements for smoke and draft control door assemblies

717 Concealed Spaces
717.2 In combustible construction fire barriers shall be installed to cut off concealed draft openings and form a barrier between floors. Fireblocking required at:
Mineral wool allowed in double stud walls
Vertically at floors and ceilings
Horizontal spacing not exceeding 10 feet
Connections between horizontal and vertical spaces (soffits, dropped ceilings, etc.)
Stairways at top and bottom of run between stringers
Piping, vents, etc.

717.2.5 Double Stud Walls Batts or blankets of mineral or glass fiber insulation shall be allowed as fire blocking in walls constructed using parallel rows of studs or staggered studs.

717.2.2 Concealed Wall Spaces Fire blocking shall be provided in concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of studs or staggered studs as follows:
Where roof slope is less than 4:12 each standpipe shall be provided with a hose connection either on the roof or the highest landing of a stairway with stair access to roof.
On each side of the wall adjacent to exit opening of horizontal exit (Not required where hose stream is reachable).

717.3.2 Use Group R-2 Draft stopping in floor/ceiling spaces not required per Exception No. 1, Sprinkler system provided in accordance with Section 903.3.1.1.

717.4 Draft Stopping In Attics
717.4.2 Group R-2 Not required in attics and concealed roof spaces per Exception No. 2, Sprinkler system provided in accordance with Section 903.3.1.1.

1016 Exit Access Travel Distance
Table 1016.1 Exit Access Travel Distance
Occupancy Max. Distance Sprinklered Actual Distance
S2-Garage- Basement Level 400' 195'
S2-Garage- Level 1 400' 77'
R2 -Residential- FI 2-5 250' 93'
R2 -Residential- FI 6 250' 67'

1018 Corridors
Table 1018.1 Corridor Fire Resistance Rating
Occupancy Occupant Load Fire Rating with Sprinkler System
B Greater than 30 0 hour
R-2 Greater than 10 .5 hour

1018.2 Corridor Width: Minimum 44" provided. Exception No. 3: 36" minimum width allowed within dwelling units.

1018.4 Dead Ends: 50' maximum dead end corridor allowed per Exception No. 2 for Group R-2 and B Occupancies in buildings with automatic sprinkler system.

1018.6 Corridor Continuity: Fire resistance rated corridors shall be continuous from point of entry to an exit. Elevator shall be fire resistance rated and smoke protection.
Exception: Foyers, lobbies or reception rooms constructed as required for corridors shall not be constructed as intervening spaces.

907 Fire Alarm and Detection Systems

907.2 Where Required-New Buildings and Structures
Exception 2: Automatic heat detection is not required in buildings with automatic sprinkler system

907.2.9 Group R-2: Manual fire alarm station is required in buildings with more than 12 dwelling units in accordance with Section 907.5

907.2.9.2 Smoke alarms shall be installed per Section 907.2.11 (within sleeping units)

907.2.11.2 Group R-2: Smoke alarms shall be installed outside each sleeping area and within each room used for sleeping.

907.5.2.3.4 Group R-2: All dwelling and sleeping units shall be capable of supporting visual alarm notification and extended to the unit smoke detectors.

912.1.1 Fire Department Connections: Locations as approved by fire chief so vehicles and hose lines will not interfere with building access (visible location on street side of building).

Chapter 10- Means of Egress

1004 Occupant Load
Table 1004.1 Maximum Floor Area Allowances per Occupant
Residential 200 gross sf
Exercise Rooms 50 gross sf

1005 Egress Width
Function Location Floor Area Occupants Req'd Egress Width (1005.1)

Table with 5 columns: Function, Location, Floor Area, Occupants, Req'd Egress Width. Rows include Parking Basement level, Parking Level 1, Fitness Rm Level 1, Residential Level 2-3, Residential Level 4, Residential Level 5, Residential Level 6.

Notes:
1. A minimum of 2 egress or stair locations provided at each floor (36" wide doors and 44" wide stairs)

1007 Accessible Means of Egress

1007.2.1 Elevators Required. In buildings where a required accessible floor is four or more stories above a level of exit discharge, at least one accessible means of egress shall be an elevator. (Backup Generator Req'd).

1007.3 Stairways
Clear width 48". Not Required in buildings with automatic sprinkler system. Exception no. 2
Area of Refuge- Not Required in Group R-2, Exception no. 7

1007.4 Elevators Exception 2: Area of refuge not required if building equipped with automatic sprinkler system.

1007.8 Two-way communication system shall be provided at each elevator landing.

1007.10 Directional signage shall be provided at elevator landings.

1008 Doors, Gates and Turnstiles
1008.1.1 Size of Doors- Minimum Clear width = 32", maximum leaf width 48" Exception no. 1- Minimum and maximum widths do not apply to door openings not part of the required means of egress in Group R-2 occupancies.

1008.1.4.4 Group R-2 occupancies building entry doors are permitted to be equipped with access control system.

1008.1.5 Provide a level landing on each side of door, except at exterior locations with 2% slope pitch for drainage.

1008.1.9.10 Interior stairway means of egress doors shall be operable from both sides
Exception 1: Stairway discharge doors shall only be locked from the opposite side.

1008.1.10 Electrical rooms with equipment rated at 1200 amps or more will require panic hardware.

1009 Stairways
1009.1 Stairway width- Minimum required width of 44" is provided.

1009.12 Handrails required on each side of stair.

1009.13 Stairway to Roof- In buildings four or more stories in height, one stairway shall extend to the roof surface. In buildings without an occupied roof, access to the roof from the top story shall be permitted to be by an alternating tread device.

1013.1 Guard (rails) are required at stairs more than 30" above the floor and within 50" horizontally to the edge of the open side.

Section 1014 Exit Access
1014.3 Common Path of Egress Travel- 125' maximum per exception no. 4. In buildings with automatic sprinkler system, for Group R-2 occupancy, 100' maximum per exception No.1: in Group S occupancies.

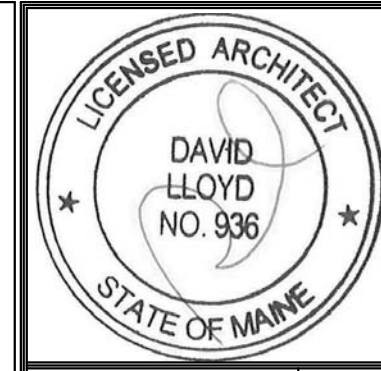
1015- Exit and Exit Access Doorways
1015.1 Two exits required from any space except as permitted by Table 1015.1

Table 1015.1 Spaces with one exit or exit access doorway
Level 1 Occupancy Occupant Load- Max./ Actual Doors Required/ Provided
Fitness Rm (821 sf) 49/17 1/1

Levels 2-6 (both fire areas)
One means of egress is permitted from all apartment units per Exception #1.

1015.2.1 Two Exits or Exit Access Doorways= Exit doors shall be placed not less than 1/3 (exception #2) the length of the maximum overall diagonal dimension.

Table with 4 columns: Residential Floor Levels 2 - 6, Fire Area, Max. Diagonal, 1/3 Min. Actual. Rows include 6,736 sf, 143'-0", 47'-8", 48'-1"



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