CODE SUMMARY

Applicable Codes
- MUBEC - 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
- State of Maine Human Rights Act
- ADAAG Americans with Disabilities Act

PROJECT SUMMARY:

5 Story office building with potential mercantile and/or assembly on 1st floor which is LED. existing vehicular access to adjacent parking garage will be discontinued during construction, than returned to service upon recept of C.O.

NFPA 13 Sprinkler
TYPE 1A Construction on 1st Floor
Type 2B Construction on 2nd - 5th Floors
Design based on Section 509.2 - Horizontal Building Seperation Allowance

CODE SUMMARY :

Chapter 3- Use and Occupancy Classification Mixed Use)

1st Floor Potential Uses
304.1 - Business Group B
303.1 - Assembly Group A-2
309.1 - Mercantile Group M

Existing 1st Floor Use
311.3 - Parking Garage S-2

2nd Floor - 5th Floor
304.1 Business Group B

Chapter 4- Special Detailed Requirements Based on Use and Occupancy

Section 406 Motor Vehicle Related Occupancies
406.2 Parking Garages (classifed as an enclosed parking garage per Section 406.4)

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

406.2.6 Floor Surface
Driving surface is asphalt

Chapter 5- General Building Heights and Areas

Table 503 Allowable Heights and Areas

Group B	4 Stories w/sprinkler	23,000 square feet
Group A-2	UL	UL
Group M	UL	UL
Group S-2	UL	UL

Proposed Height -- 5 Stories (4+1)
Proposed Area -- 10,712 square feet

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.

Note: All Use Groups compatible for area
All use groups except A-2 are allowable at 5th story. A-2 group will need separation from occupancy above.

506.0 Building Area Modifications
Not Used

Chapter 6- Types of Construction
Table 601 - Fire Resistance Ratings for Building Elements

Building Element	Type 2B	Type 1A
Primary Structural Frame	0 hour	3 hour
Bearing Walls		
Exterior Walls	0 hours	3 hour
Interior Walls	0 hour	3 hour
Non-Bearing Walls and Partitions. Exterior	(See Table 602)	(See Table 602)
Non-Bearing Walls and Partitions, Interior	0 hour	0 hour
Floor Construction and Secondary Members	0 hour	3 hour
Roof Construction and Secondary Members	0 hour	1 1/2 hour

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

Fire Separation Dist.	Construction Type	Group M	Group A, B, R, S2
x < 5'	All	2 hour	1 hour

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

602.2 Type I And 2 Construction
Noncombustible materials. Fire retardant treated wood (FRTW) is permitted in limited uses. Other combustible materials are permitted as outlined in Section 603.1.

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

705.5 Fire Resistance Ratings
Fire Seperation 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

Fire Separation Dist.	Degree of Opening Protection	Allowable Area
0' to less than 3'	Unprotected, Sprinklered	Not Permitted
3' to less than 5'	Unprotected, Sprinklered	15%
5' to less than 10'	Unprotected, Sprinklered	25%

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

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 (2hours).

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 "

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 24" on opposite sides of wall
- Not required at sprinklers with escutcheon plate

714.1 Individual Protection
Supporting more than 2 floor, and required to support a load bearing wall, shall be provided with individual encasement protection on all sides for the full length.

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 715.4

Type of Assembly	Required Assembly Rating	Min Door Assembly Ratinq (hrs)
Fire Barriers (2 Hr)	2 hours	1-1/2 hours
Other Fire Barriers	1 hour	3/4 hour
Exterior Walls	2 hours	1 1/2 hours

Chapter 8- Interior Finishes

Table 803.9 Interior Wall and Ceiling Finish Requirements By Occupancy- Sprinklered

Group	Exit Enclosures	Corridors	Rooms and Enclosed Spaces
A-3	Class B	Class B	Class C
B	Class B	Class C	Class C
M	Class B	Class C	Class C

Chapter 9- Fire Protection Systems

Table 903.2 Occupancy Related Automatic Sprinkler Requirements

Threshold	Occupant Load	Comment
A-3 Fire area over 5,000 sf	over 100 occ.	Required
S-2 Sprinklers required	-	-

903.3.1.1 NFPA 13 Sprinkler Systems
The building will be equipped throughout with an automatic sprinkler system in accordance with NFPA 13.

903.4 Valve controlling water supply for automatic sprinkler system shall be electronically supervised by a fire alarm control unit.

905 Standpipe Systems
905.2 Standpipe Systems will be provided in accordance with NFPA 14

905.3.1 Height- Class 1 Standpipes are allowed in buildings equipped throughout with an automatic sprinkler system.

905.4 Class I standpipe hose connections shall be provided in the following locations:
- In every stairway at an intermediate floor level between floors, unless otherwise approved by the fire code official
- Where roof slope is less than 4:12 each standpipe shall be provided with a hose a 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).

906 Portable Fire Extinguishers- Required in Group A, B, M, R-2, and S occupancies: provided in accordance with NFPA 10
- Exception: In Group A and B occupancies extinguishers only required on each floor.

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

907.2.1 Group A: Manual fire alarm system with occupant notification system required in areas over 50 occupants.

907.2.2 Group B: Not required where combined Group B occupancy load is less than 500

907.2.7 Group M: Manual Fire Alarm system required.

912.2.1 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

Assembly	15 net sf. Un-concentrated
Business	100 gross sf
Mercantile	Grade Floor area= 30 gross sf
Parking- Garage Spaces	200 gross sf

1005 Egress Width

Function of Space	Location	Floor Area	Occupants	Req'd Egress Width (1005.1)
Business	Levels 2-5	10,712 SQFT	53	10.7"

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 automotic sprinkler system.
Exception no. 2

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"
Note: Non-egress doors are sized to meet Accessibility requirements per 521 CMR.

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

1008.1.8 48" plus door width required minimum space between doors in series.

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

1008.1.10 Doors serving an occupancy load of 50 or more in Group A shall be provided with panic hardware. Electrical rooms with equipment rated at 1200 amps or more will also 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 36" 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
B Leasing Office	49/14	1/1
M Retail A	TBD	-/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.

Fire Area	Max. Diagonal	1/3 Min.	Actual
1- 6,684 sf	125'-6"	41'-9"	58'-2"
2- 10,712 sf	168'-0"	56'-0"	58'-2"
3- 10,712sf	168'-0"	56'-0"	58'-2"
4- 10,712sf	168'-0"	56'-0"	58'-2"
5- 9,673 sf	168'-0"	56'-0"	58'-2"

1016 Exit Access Travel Distance
Table 1016.1 Exit Access Travel Distance

Occupancy	Max. Distance Sprinklered	Actual Distance
A3-Assembly	250'	67'
M-Retail	250'	67'
B-Business	300'	81'

*Floors 2 thru 5 similar

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CODE SUMMARY

CS1.2