PROJECT SUMMARY:

Tenant fit-up plan within a 5 Story office building. This tenant will take the entire fifth floor.

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

2nd Floor - 5th Floor
304.1 Business Group B
310.1 Residential Group R (3rd floor, not part of this tenant fit-up)

Chapter 5- General Building Heights and Areas

Table 503 Allowable Heights and Areas

(2B)	Group B	4 Stories w/sprinkler	23,000 SF
(1A)	Group A-2	UL	UL
(1A)	Group M	UL	UL
(2B)	Group R-3	4 stories	UL
(1A)	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

Table 508.3 Nonseparated Occupancies

508.3.1 Occupancy Classification
Nonseparated Occupancies shall be individually classified in accordance with Section 302.1. The requirements of this code shall apply to each portion of the building based on the occupancy classification of that space except that the most restrictive applicable provisions of Section 503 and Chapter 9 shall apply.

508.3.2 Allowable Building Area and Height
The allowable building area and height of the building or portion thereof shall be based on the most restrictive allowances for the occupancy groups under consideration for the type of construction.

Occupancy/Const. Type	Allow. Area/Height	Actual Area/Height
B / 2B	**23,000 / 3+1**	**10,712 SF / 4**

508.3.3 Separation
No separation is required between nonseparated occupancies.

509 Special Provisions
509.2 Horizontal Building Separation Allowance
A building shall be considered as separate and distinct buildings for the puropose of determinding area limitations, continuity of fire walls, limitation of number of stories and type of construction where all of the following conditions are met:
(see diagram on cover sheet explaining how all conditions are met)

1. The buildings are separated with a horizontal assembly having a min. 3-hr fire-resistance rating.
2. The building below the horixontal assembly is no more than one story above grade plane.
3. The building below the horizontal assembly is of Type 1A construction
4. Shaft and stairway enclosures through the horizontal assembly shall have not less than a 2-hr fire-resistance rating
5. The building above the horizontal assembly shall be permited to have multiple Group A occupany uses, each with an occupant load of less than 300, or Group B,M,R or S occupancies.
6. The building below the horizontal assembly shall be protected throughout by an approved automatic sprinkler system, and shall be permitted to be any of the following occupancies:
   Group M - eash with occupant load less than 300
   Group B, M, R
7. The maximum building height shall not exceed the limits set fourth in section 503.

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

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

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 "

709 Fire Partitions

709.1 General
The following wall assemblies shall comply
1. Walls separating dwelling units in the same building
2. Walls separating sleeping units in the same building
3. Corridor Walls

709.3 Fire-resistance Rating
Exception:
-Corridor walls permitted to have a 1/2 hour fire-resistance rating by Table 1018.1.
-Dwelling unit and sleeping unit separations in buildings of Type IIB Construction shall have fire-resistance ratings of not less than 1/2 hour in buildings equipped throughout with and automatic sprinkler system in accordance with section 903.3.1.1

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 Rating (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
B	Class B	Class C	Class C

Chapter 9- Fire Protection Systems

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

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

Chapter 10- Means of Egress

1004 Occupant Load
Table 1004.1 Maximum Floor Area Allowances per Occupant

		5th Floor
Business	100 gross sf	10,712/100=107

1005 Egress Width

Function of Space	Location	Floor Area	Occupants	Req'd Egress Width (1005.1)
Business	Levels 2-5	10,712 SQFT	107	32.1"

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.

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

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
10,712sf	168'-0"	56'-0"	58'-2"

1016 Exit Access Travel Distance
Table 1016.1 Exit Access Travel Distance

Occupancy	Max. Distance Sprinklered	Actual Distance
B-Business	300'	81'

1027 Exit Discharge

1027.1 A maximum of 50 percent of the number and capacity of the exit enclosures is permitted to egress through areas on the level of discharge provided all of the following are met:

1. Such exit enclosures egress to a free and unobstructed path of travel to an exterior exit door and such exits readily visible and identifiable from the point of termination of the exit enclosure.
2. The entire area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for exit enclosure.
3. The egress path from the exit enclosure on the level of discharge is protected throughout by an approved automatic sprinkler system.

1027.5 Egress Courts

1027.5.1 - Width the width of egress courts shall not be less than 44"

1027.5.2 Construction and Openings where an egress court serving a building of portion thereof is less than 10' in width, the egress court walls shall have not less tha 1-hour fire-resistance-rated construction for a distance of 10' about the floor of the court. Openings within such walls shall be protected by having a fire protection rating of not less than 3/4 hour.

Fixture Count (Uniform Plumbing Code)
Plumbing calculations based on an Office Building use, with the occupant load being 1 person per office for a total of 31 occupants.
30 occupants / 2 = 15. 5(men) / 15.5 (women)

Required	Water Closets	Urinals	Lavatories
Male : 1-15	1	0	1
Female : 1-15	1	N/A	1
Acutal			
Male :	1	1	2
Female :	2	N/A	2

IBC 2009 =

Maximum occupant load for floor (base on square footage) = 107 occupants

Business Occupancy Requirements:			
Male :	1	1	2
Female :	2	N/A	2

REGISTERED ARCHITECT WILLIAM KENNETH HOPKINS No. 1030 STATE OF MAINE

Reviewed for Code Compliance Inspection Division Approved as Noted
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Revisions:

8	07/05/17	Revisions For Permit

Scale: 12" = 1'-0"

Date: APRIL 20, 2017

CODE SUMMARY

CS1.2