

IBC TABLE 1004.1.1 OCCUPANT LOADS						NFPA TABLE 7.3.1.2		
FLOOR	ROOM NAME	OCCUPANCY	AREA	SF/PERSON	OCC. LOAD			
FIRST	PARKING GARAGE	S-2 ENCLOSED PARKING GARAGE	35,232	200 GROSS	177			
SECOND	PARKING GARAGE	S-2 ENCLOSED PARKING GARAGE	35,232	200 GROSS	177			

CODE ANALYSIS

CODE SUMMARY: PARKING GARAGE
 THE BUILDING IS DESIGNED IN COMPLIANCE WITH THE MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC) WITH AMENDMENTS WHICH INCLUDES IBC 2009, IECC 2009, MAINE STATE PLUMBING CODE, NEC 2011, STATE FIRE CODE SAF-C 6000, NFPA 101-2009, NFPA 1, ADAAG, MAINE HUMAN RIGHTS ICC/ANSI A117.1-2003, ASME A17.1, AND ALL LOCAL, STATE AND FEDERAL CODES.

BUILDING DATA:
 2 STORY

CONSTRUCTION TYPE IIB (FULLY SUPERVISED AUTOMATIC SPRINKLER SYSTEM, IN ACCORDANCE WITH NFPA 13, NOT 13R) (IBC SECTION 903.3.1.1)

OCCUPANCY: LOW-HAZARD STORAGE, GROUP S-2 (IBC SECTION 311.3)

THE FIRST FLOOR AND SECOND FLOOR CONTAIN PARKING USE WITH NO SEPARATION.

THE PARKING GARAGE HAS BEEN SEPARATED VERTICALLY FROM THE RETAIL/RESIDENTIAL BUILDING WITH A 2-HOUR FIRE WALL (IBC TABLE 706.4, NOTE A AND SECTION 706.1.1 STEPPED BUILDINGS EXCEPTION 1 AND 2).

FIRE PROTECTION FEATURES:
 THE ENTIRE STRUCTURE IS PROVIDED WITH A SUPERVISED FULLY AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH IBC SECTION 903.3.1.1 (NFPA 13), FIRE ALARM, SMOKE, AND CARBON MONOXIDE DETECTION SYSTEMS ARE PROVIDED PER APPLICABLE CODES.

SINGLE OCCUPANCY

Story	Group	Actual Area (s.f.)	Adjusted Area (s.f.)	Allowable Area (s.f.)	Ratio of Area	Actual Height	Adjusted Height	Allowable Height
1	S2	35,232	78,000	26,000	0.4517	15 ft. 1 stories	75ft. 4 stories	55ft. 3 stories
2	S2	35,232	78,000	26,000	0.4517	15 ft. 1 stories	75ft. 4 stories	55ft. 3 stories

Total sum of ratios = 0.9024 <= 3

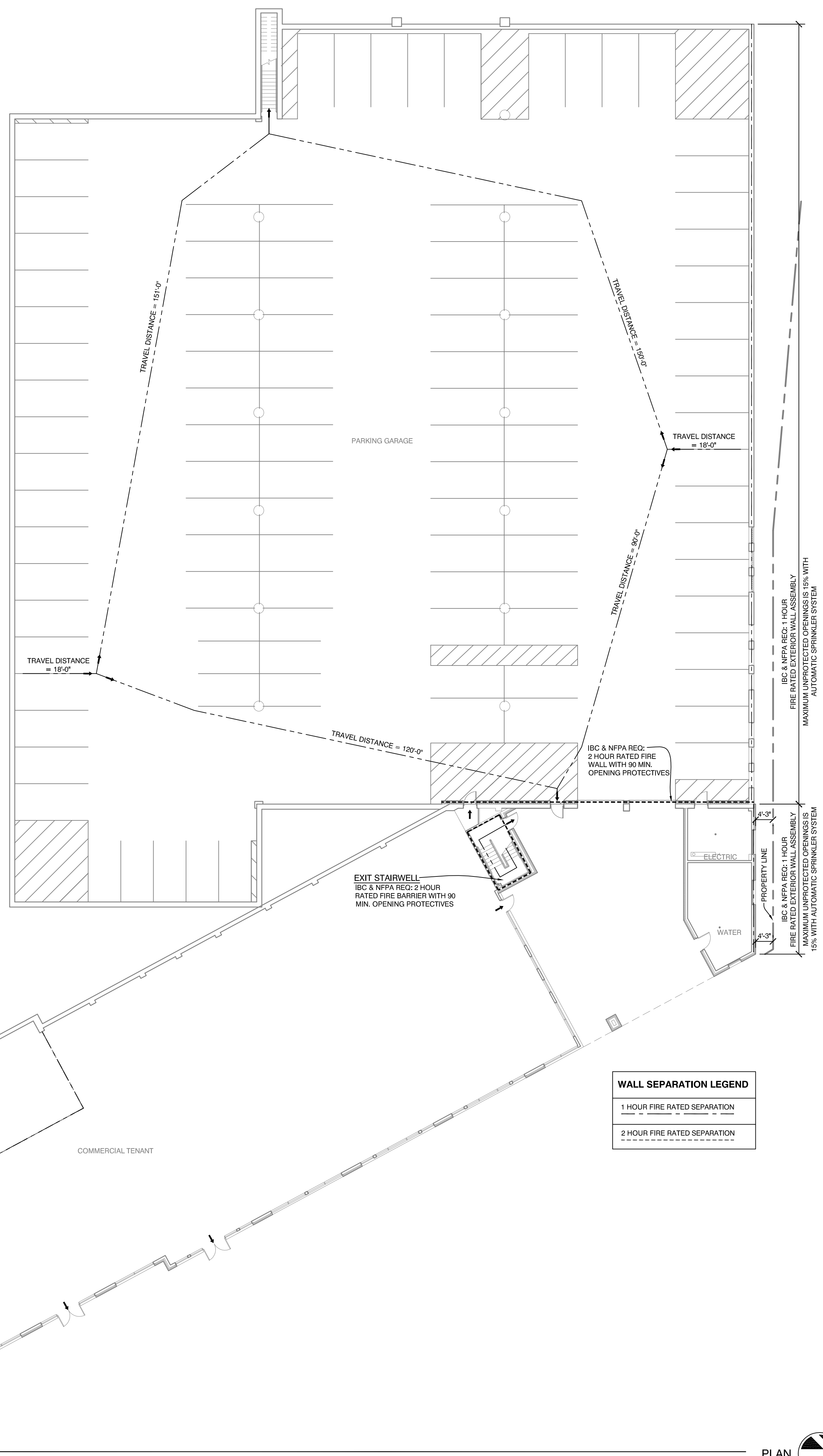
Permitted types of construction IA, IB, IIA, IIB, IIA, IIB, IV, VA Type specified IIB

FIRE RESISTANCE RATING FOR BUILDING ELEMENTS - IBC TABLE 601

BUILDING ELEMENT	REQUIRED	PROVIDED	CODE REFERENCE
STRUCTURAL FRAME	0	0	
FIRE WALLS AND PARTY WALLS	2	2	IBC TABLE 706.4 AND SECTION 706.6.1
BEARING WALLS			
EXTERIOR*	0	0	
INTERIOR	0	0	
NONBEARING WALLS			
EXTERIOR*	0	0	
INTERIOR	0	0	
FLOOR CONSTRUCTION	NA	NA	
ROOF CONSTRUCTION	0	0	

MEANS OF EGRESS - STORAGE OCCUPANCY (ORDINARY HAZARD)

EGRESS COMPONENT	REQUIRED	PROVIDED	CODE REFERENCE
NUMBER OF EXITS	2	2	NFPA 7.4.1.1
TRAVEL DISTANCE:			
LOWER LEVEL (ENCLOSED):	200' MAX.	<200'	NFPA TABLE A7.6
UPPER LEVEL (OPEN):	400' MAX.	<400'	NFPA TABLE A7.6
EGRESS DOOR WIDTH	32" (CLEAR)	>32"	NFPA 101-2009 7.2.1.2.3.2
EGRESS STAIR WIDTH	44" MIN.	>44"	NFPA TABLE 7.2.2.2.1.2(B)



IBC TABLE 1004.1.1 OCCUPANT LOADS						NFPA TABLE 7.3.1.2			
FLOOR	RM. #	ROOM NAME	OCCUPANCY	AREA	SF/PERSON	OCC. LOAD			
FIRST	1CT	COMMERCIAL TENANT	A-3 UNCONCENTRATED ASSEMBLY	14,350	15 NET	957			
	1RS	RESIDENTIAL STORAGE	S-1 ACCESSORY STORAGE	2,022	300 GROSS	7			
TOTAL FIRST FLOOR OCCUPANCY LOAD							964		
SECOND	201-216	APARTMENTS	R-2 RESIDENTIAL	17,920	200 GROSS	90			
	2TR	TRASH	S-1 ACCESSORY STORAGE	280	300 GROSS	2			
	2ML 2LB 2VS	MAIL LOBBY VESTIBULE	A-3 UNCONCENTRATED ASSEMBLY	448	15 NET	30			
	2FT	FITNESS	A-3 UNCONCENTRATED ASSEMBLY	510	50 GROSS	11			
TOTAL SECOND FLOOR OCCUPANCY LOAD							133		
THIRD	301-316	APARTMENTS	R-2 RESIDENTIAL	19,260	200 GROSS	97			
FOURTH	401-416	APARTMENTS	R-2 RESIDENTIAL	19,260	200 GROSS	97			
FIFTH	501-516	APARTMENTS	R-2 RESIDENTIAL	19,260	200 GROSS	97			
TOTAL OCCUPANCY LOAD, THIRD - FIFTH FLOORS							291		
TOTAL OCCUPANCY							1,388		

CODE ANALYSIS

CODE SUMMARY: RETAIL/RESIDENTIAL
 THE BUILDING IS DESIGNED IN COMPLIANCE WITH THE MAINE UNIFORM BUILDING AND ENERGY CODE (MUBEC) WITH AMENDMENTS WHICH INCLUDES IBC 2009, IECC 2009, MAINE STATE PLUMBING CODE, NEC 2011, STATE FIRE CODE SAF-C 6000, NFPA 101-2009, NFPA 1, ADAAG, MAINE HUMAN RIGHTS ICC/ANSI A117.1-2003, ASME A17.1, AND ALL LOCAL, STATE AND FEDERAL CODES.

BUILDING DATA:
 5 STORY

CONSTRUCTION TYPE IIB (FULLY SUPERVISED AUTOMATIC SPRINKLER SYSTEM, IN ACCORDANCE WITH NFPA 13, NOT 13R) (IBC SECTION 903.3.1.1)

OCCUPANCY: IBC - MIXED USE; NFPA 101: A-2 (RESTAURANT, SECTION 303.1) ASSEMBLY - RESTAURANTS, R-2 (APARTMENT, SECTION 310.1) RESIDENTIAL - APARTMENTS

THE FIRST FLOOR CONTAINS AN UNDETERMINED USE GROUP (DESIGNED AS MOST RESTRICTIVE USE, ASSEMBLY (RESTAURANT), AND STORAGE USE FOR RESIDENTIAL USE ABOVE. THE ASSEMBLY AREA USE HAS BEEN SEPARATED FROM THE STORAGE USE (S-1) FOR THE RESIDENTIAL BY A FIRE SEPARATION ASSEMBLY WITH A 1 HOUR RATING. THE ENTIRE FIRST FLOOR HAS BEEN SEPARATED FROM THE SECOND FLOOR BY A 1 HOUR FIRE-RESISTIVE HORIZONTAL ASSEMBLY (IBC SECTION AND TABLE 508.4 AND NFPA TABLE 6.1.14.4.1).

THE RETAIL/RESIDENTIAL BUILDING HAS BEEN SEPARATED VERTICALLY FROM THE PARKING GARAGE WITH A 2-HOUR FIRE WALL (IBC TABLE 706.4, NOTE A AND SECTION 706.1.1 STEPPED BUILDINGS EXCEPTION 1 AND 2).

THE SECOND FLOOR CONTAINS USE GROUPS R-2, ACCESSORY USES B AND S. SEPARATION IS NOT REQUIRED FOR AN ACCESSORY USE WITH AN AGGREGATE AREA LESS THAN 10% OF THE MAIN USE GROUP. GROUP R-2 OCCUPANCY MEETS THE HEIGHT AND AREA LIMITATIONS FOR ITS USE GROUP (IBC TABLE 503). INCIDENTAL ACCESSORY OCCUPANCY AREAS HAVE BEEN PROTECTED IN ACCORDANCE WITH THE REQUIREMENTS OF IBC TABLE 508.2.5. THE SECOND FLOOR IS SEPARATED FROM THE FIRST FLOOR WITH A 1 HOUR HORIZONTAL ASSEMBLY FOR USE GROUP SEPARATION (IBC SECTION AND TABLE 508.4 AND NFPA TABLE 6.1.14.4.1).

THE THIRD, FOURTH AND FIFTH FLOORS CONTAIN USE GROUP R-2. GROUP R-2 OCCUPANCY MEETS THE HEIGHT AND AREA LIMITATIONS FOR ITS USE GROUP (IBC TABLE 503). THE FLOORS ARE SEPARATED FROM EACH OTHER WITH A 1/2 HOUR HORIZONTAL ASSEMBLY AS REQUIRED BY IBC SECTION 709.3, EXCEPTION 2 FOR DWELLING UNITS.

FIRE PROTECTION FEATURES:
 THE ENTIRE BUILDING IS PROVIDED WITH A SUPERVISED FULLY AUTOMATIC FIRE SPRINKLER SYSTEM IN ACCORDANCE WITH IBC SECTION 903.3.1.1 (NFPA 13). A CLASS 1 STANDPIPE IS LOCATED IN EACH STAIRWELL. FIRE ALARM, SMOKE, AND CARBON MONOXIDE DETECTION SYSTEMS ARE PROVIDED PER APPLICABLE CODES.

MIXED OCCUPANCIES

Mixed Occupancies Separated (IBC Section 508.4)								
Story	Group	Actual Area (s.f.)	Adjusted Area (s.f.)	Allowable Area (s.f.)	Ratio of Area	Actual Height	Adjusted Height	Allowable Height
1	A-2	17,921	38,000	9,500	0.4716	15 ft. 1 stories	75ft. 4 stories	55ft. 3 stories
2	R-2	20,015	48,000	16,000	0.4170	15 ft. 1 stories	75ft. 4 stories	55ft. 4 stories
3	R-2	20,015	48,000	16,000	0.4170	15 ft. 1 stories	75ft. 4 stories	55ft. 4 stories
4	R-2	20,015	48,000	16,000	0.4170	15 ft. 1 stories	75ft. 4 stories	55ft. 4 stories
5	R-2	20,015	48,000	16,000	0.4170	15 ft. 1 stories	75ft. 4 stories	55ft. 4 stories

Total sum of ratios = 2.1395 <= 3

Permitted types of construction IA, IB, IIA, IIB, IIA, IIB, IV, VA Type specified IIB

FIRE RESISTANCE RATING FOR BUILDING ELEMENTS - IBC TABLE 601

BUILDING ELEMENT	REQUIRED	PROVIDED	CODE REFERENCE
STRUCTURAL FRAME	0	0	
BEARING WALLS			
EXTERIOR*	0	0	
INTERIOR	0	0	
NONBEARING WALLS			
EXTERIOR*	0	1 (WHERE REQUIRED, SEE PLAN)	
INTERIOR	0	0	
FLOOR CONSTRUCTION	0	0	
ROOF CONSTRUCTION	0	0	

INTERIOR FINISH REQUIREMENTS - IBC TABLE 803.9

USE GROUP	VERTICAL EXITS AND EXIT PASSAGEWAYS	EXIT ACCESS CORRIDORS AND OTHER EXITS	ROOMS AND ENCLOSED SPACES
A2-RESTAURANTS	B	B	C
R2-APARTMENTS	B	C	C

WALL AND CEILING FINISHES SHALL BE TESTED IN ACCORDANCE WITH ASTM E 84
 CLASS A: FLAME SPREAD 0-25; SMOKE-DEVELOPMENT 0-450
 CLASS B: FLAME SPREAD 26-75; SMOKE-DEVELOPMENT 0-450
 CLASS C: FLAME SPREAD 76-200; SMOKE-DEVELOPMENT 0-450
 DECORATIVE MATERIALS SHALL MEET NFPA 701 IN ACCORDANCE WITH IBC SECTION 806.2 OR BE NONCOMBUSTIBLE
 DECORATIVE TRIM SHALL MEET IBC SECTION 806.5.
 NOTE: INTERIOR FLOOR FINISHES IN VERTICAL EXITS, EXIT PASSAGEWAYS AND EXIT ACCESS CORRIDORS SHALL BE CLASS II AS CLASSIFIED PER NFPA 253 AND TESTED IN ACCORDANCE WITH ASTM E 848.

MEANS OF EGRESS - ASSEMBLY OCCUPANCY

EGRESS COMPONENT	REQUIRED	PROVIDED	CODE REFERENCE
NUMBER OF EXITS	2 PER FLOOR	2	NFPA 7.4.1.1
TRAVEL DISTANCE:	250' MAX.	<250'	NFPA TABLE A7.6
COMMON PATH OF TRAVEL	75' MAX.	<75'	NFPA TABLE A7.6
DEAD END CORRIDOR	20' MAX.	<20'	NFPA TABLE A7.6
CORRIDOR WIDTH	44" MIN.	>44"	NFPA 101-2009 30.2.3.3
EGRESS DOOR WIDTH	32" (CLEAR)	>32"	NFPA 101-2009 7.2.1.2.3.2
EGRESS STAIR WIDTH	44" MIN.	>44"	NFPA TABLE 7.2.2.2.1.2(B)

MEANS OF EGRESS - RESIDENTIAL OCCUPANCY

EGRESS COMPONENT	REQUIRED	PROVIDED	CODE REFERENCE
NUMBER OF EXITS	2 PER FLOOR	2	NFPA 7.4.1.1
TRAVEL DISTANCE:	325' MAX.	<325'	NFPA TABLE A7.6
COMMON PATH OF TRAVEL	50' MAX.	<50'	NFPA TABLE A7.6
DEAD END CORRIDOR	50' MAX.	<50'	NFPA TABLE A7.6
CORRIDOR WIDTH	44" MIN.	>44"	NFPA 101-2009 30.2.3.3
EGRESS DOOR WIDTH	32" (CLEAR)	>32"	NFPA 101-2009 7.2.1.2.3.2
EGRESS STAIR WIDTH	44" MIN.	>44"	NFPA TABLE 7.2.2.2.1.2(B)

GYPSUM BOARD MATERIALS AND ACCESSORIES

GYPSUM BOARD MATERIALS AND ACCESSORIES SHALL COMPLY WITH THE FOLLOWING:

ACCESSORIES FOR GYPSUM BOARD	ASTM C 1047
ADHESIVES FOR FASTENING GYPSUM WALLBOARD	ASTM C 557
EXTERIOR SOFFIT BOARD	ASTM C 931
FIBER-REINFORCED GYPSUM PANEL	ASTM C 1278
GLASS MAT GYPSUM BACKING PANEL	ASTM C 1178
GLASS MAT GYPSUM SUBSTRATE	ASTM C 1177
GYPSUM BACKING BOARD AND GYPSUM SHAFTLINER BOARD	ASTM C 442
GYPSUM CEILING BOARD	ASTM C 1395
GYPSUM SHEATHING	ASTM C 79
GYPSUM WALLBOARD	ASTM C 36
JOINT REINFORCING TAPE AND COMPOUND	ASTM C 474; C 475
STEEL SCREWS	ASTM C 954; C 1002
STEEL STUDS, NONLOAD BEARING	ASTM C 645
STANDARD SPECIFICATION FOR GYPSUM BOARD	ASTM C 1396
TESTING GYPSUM AND GYPSUM PRODUCTS	ASTM C 22; C 472; C 473
WATER-RESISTANT GYPSUM BACKING BOARD	ASTM C 630

GYPSUM BOARD MATERIALS AND ACCESSORIES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

GYPSUM BOARD	GA-216; ASTM C 840
GYPSUM SHEATHING	ASTM C 1280
STEEL FRAMING FOR GYPSUM BOARDS	ASTM C 754; C 1007

RESIDENTIAL UNIT BREAKDOWN

	2ND FLOOR	3RD FLOOR	4TH FLOOR	5TH FLOOR	TOTAL
ONE BEDROOM	4	4	4	3	15
ACCESSIBLE ONE BEDROOM W/ DEN	0	0	0	1	1
TWO BEDROOM	10	10	11	11	42
ACCESSIBLE TWO BEDROOM	0	1	0	0	1
THREE BEDROOM	0	1	1	1	3
ACCESSIBLE THREE BEDROOM	1	0	0	0	1
TOTAL	15	16	16	16	63

ACCESSIBLE ROOM MATRIX

ROOM TYPE	REQD COUNT	PROVD COUNT	RM NUMBERS
ONE BEDROOM			504
TWO BEDROOM	3	1	308
THREE BEDROOM		1	215
TOTAL	3	3	

ROOM TYPE	PROVD COUNT	ROOM NUMBERS
ONE BEDROOM	1	504
TWO BEDROOM	1	308
THREE BEDROOM	1	215
TOTAL	3	

NOTE: ALL UNITS OTHER THAN THE ACCESSIBLE UNITS LIST ABOVE HAVE BEEN DESIGNED IN ACCORDANCE WITH MAINE HUMAN RIGHTS ICC/ANSI A117.1-2003 FOR TYPE B UNITS.

Mixed Use Development
 York & High Street
 Portland, Maine

REVISION:
 05-13-16 EXTENDED FIREWALL
 06-24-16 ADDED NFPA REFERENCES
 08-31-16 ADDED NOTE: MAINE HUMAN RIGHTS ICC/ANSI A117.1-2003

ISSUED:
 04-01-16 FOR STATE FIRE MARSHAL
 05-09-16 FOR BUILDING PERMIT

project architect: KAK
 drawn by: JUD

LIFE SAFETY
 BLDG FIRST FLOOR PLAN

sheet number:
LS1.01



MIXED USE RETAIL/RESIDENTIAL CODE INFORMATION