

CODE ANALYSIS

PROJECT DESCRIPTION

THE BUILDING HAS THREE FULL FLOORS ABOVE GRADE WITH A BASEMENT. THE EXTERIOR WALLS OF THE BUILDING ARE CAVITY WALL CONSTRUCTION (BRICK & CMU) WITH NO THERMAL INSULATION. THE EXISTING WINDOWS ARE SINGLE PANE, WOOD FRAME. THE ROOF IS LOW-SLOPE BUILT-UP ROOF WITH LITTLE OR NO INSULATION WITH INTERNAL ROOF DRAINING AND NO PARAPETS. ALL FLOORS AND THE ROOF STRUCTURE ARE CONSTRUCTED OF CONCRETE PLANKS WITH CONCRETE TOPPING SUPPORTED BY CMU BEARING WALLS AND A FEW CONCRETE COLUMNS.

APPLICABLE CODES

- INTERNATIONAL EXISTING BUILDING CODE (IEBC) / 2012
- INTERNATIONAL MECHANICAL CODE / 2012
- NATIONAL ELECTRIC CODE / 2011
- NATIONAL STANDARD PLUMBING CODE / 2009
- INTERNATIONAL ENERGY CODE / 2012
- NFPA 1 - FIRE PREVENTION CODE / 2004
- NFPA 13 - INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 72-99 NATIONAL FIRE ALARM CODE
- NFPA 101 - LIFE SAFETY CODE / 2009
- COMAR 05.02.02 ADA/ADAAG MARYLAND ACCESSIBILITY CODE

3.1 BUILDING USE & TYPE OF CONSTRUCTION

OCCUPANCY TYPE: NON SEPARATED MIXED USE OCCUPANCIES

IBC 302: RESIDENTIAL (R), ASSEMBLY (A), STORAGE (S), BUSINESS (B)
 NFPA 101 6.1.8: RESIDENTIAL, 6.1.2: ASSEMBLY & 6.1.11: BUSINESS
 NFPA 13 & 13-R.

SPACE	OCCUPANCY	CLASSIFICATION
3RD FLOOR	CONVENT/ASSEMBLY	R-2 (A)
2ND FLOOR	CONVENT/ASSEMBLY	R-2 (A)
1ST FLOOR	OFFICE	B
BASEMENT	STORAGE/ MECH	S

(ACCESSORY USE)

IBC 302: RESIDENTIAL (R), ASSEMBLY (A), STORAGE (S), BUSINESS (B)

303.1.2 SMALL ASSEMBLY SPACES:
 THE FOLLOWING ROOMS AND SPACES SHALL NOT BE CLASSIFIED AS ASSEMBLY OCCUPANCIES:
 2. A ROOM OR SPACE USED FOR ASSEMBLY PURPOSES THAT IS LESS THAN 750 SF IN AREA AND ACCESSORY TO ANOTHER OCCUPANCY SHALL BE CLASSIFIED AS A GROUP B OCCUPANCY OR AS PART OF THAT OCCUPANCY.

TYPE OF CONSTRUCTION:

IBC TABLE 601 - TYPE IIB, NONCOMBUSTIBLE MATERIALS

3.2 SPECIAL OCCUPANCY REQUIREMENT- INCIDENTAL USE AREAS (IBC 2012 TABLE 509)

SPACE	SEPARATION/PROTECTION
FURNACE ROOM (OVER 400,000 BTU EQUIPMENT)	1 HR OR AUTOMATIC SPRINKLERS
BOILER ROOM (OVER 15 PSI AND 10 HORSE POWER EQUIPMENT)	1 HR OR AUTOMATIC SPRINKLERS
LAUNDRY ROOM (OVER 100 SF)	1 HR OR AUTOMATIC SPRINKLERS
STORAGE (OVER 100 SF)	1 HR OR AUTOMATIC SPRINKLERS
WASTE AND LINEN COLLECTION (OVER 100 SF)	1 HR OR AUTOMATIC SPRINKLERS

3.3 EXTERIOR WALL FIRE RATING DUE TO DISTANCE

EQUAL TO OR GREATER THAN 30 FT. 0 HR.

3.4 OCCUPANCY CALCULATIONS :

PER IBC 2012 (TABLE 1004.1.2):

FLOOR	OCCUPANCY	SF/OCCUPANT	TOTAL
3rd FLOOR:			
635 SF / 425 SF	ASSEMBLY	15 NET	42
3871 SF	RESIDENTIAL (R-2)	200 GROSS	19
200 SF	STORAGE	300 GROSS	1
TOTAL			62
2nd FLOOR:			
690 SF	ASSEMBLY	7 NET	98
3871 SF	RESIDENTIAL (R-2)	200 GROSS	19
200 SF	STORAGE	300 GROSS	1
TOTAL			118
1st FLOOR:			
6635 SF	BUSINESS	100 GROSS	66
TOTAL			66
BASEMENT:			
1564 SF	STORAGE/ MECHANICAL	300 GROSS	5
TOTAL			5
TOTAL BUILDING OCCUPANCY			251

5.1 ALLOWABLE HEIGHT & AREA

CONVENT	ACTUAL AREA (SF)	ALLOWABLE AREA (SF) PER IBC 506
	6635 SF	16,000 SF

PER IBC TABLE 503 FOR TYPE IIB CONSTRUCTION USE GROUP R-2.

- ALLOWABLE TABULATED AREA AND HEIGHT, 16,000 SQ.FT. AND 4 STORIES
- AUTOMATIC SPRINKLER SYSTEM INCREASE (IBC SECTION 506.3): 200 %
 - FRONTAGE INCREASE (IBC SECTION 506.3): 200 %
- ACTUAL FIRST FLOOR AREA: 6635 SQ.FT.

CALCULATION
 AUTOMATIC SPRINKLER SYSTEM INCREASE: 200% X 16,000 = 32,000 SF
 FRONTAGE INCREASE: 0 SF
 AREA ALLOWED/FLOOR: 16,000 SF X 32,000 SF + = 48,000 SF
 TOTAL AREA ALLOWED: 48,000 SF X 3 STORIES = 144,000 SF

ALLOWABLE HEIGHT: 5 STORIES
 ACTUAL HEIGHT: 3 STORIES PLUS BASEMENT

6.1 CONSTRUCTION CLASSIFICATION

BUILDING FIRE RATINGS:

IBC-2012 (TABLE 601) NFPA - 2009 (TABLE A.8.2.1.2)	IBC 2012 TYPE IIB	NFPA 2009 TYPE II
STRUCTURAL FRAME	0	
EXTERIOR BEARING WALL	0	
EXTERIOR NONBEARING WALL	0	
INTERIOR BEARING WALL	0	
INTERIOR NONBEARING WALL	0	
FLOOR CONSTRUCTION	0	
ROOF CONSTRUCTION	0	

6.2 COMBUSTIBLE MATERIAL IN TYPE II CONSTRUCTION

- (IBC SECTION 603)
 FIRE-RETARDANT-TREATED WOOD SHALL BE ALLOWED IN:
- NONBEARING PARTITIONS (LESS THAN 2 HR WALL)
 - NONBEARING EXTERIOR WALLS WITH NO FIRE RATING
 - ROOF CONSTRUCTION
 - THERMAL & ACOUSTIC INSULATION WITH A FLAME SPREAD LESS THAN 25
 - FOAM PLASTIC (SEE IBC SECTION 26)
 - ROOF COVERINGS OF A, B, & C CLASSIFICATIONS
 - INTERIOR WOOD FLOORS, PANELING, TRIM, DOORS, ETC. PLATFORMS PER IBC 410
 - BLOCKING FOR HANDRAILS, CABINETS, WIDOW & DOOR FRAMES
 - MASTICS AND SEALANTS
 - NAILING AND FIRING STRIPS

7.1 FIRE-RESISTANCE RATING REQUIREMENTS

BUILDING FIRE RATINGS:

IBC-2012 (TABLE 1605) NFPA - 2009 (TABLE A.8.2.1.2)	IBC 2012 TYPE IIB	NFPA 2009 TYPE II
FIRE WALLS - USE GROUP R-2, B .PROTECTIVE OPENING RATING (706.3.9 & 715.4) (OTHER FIRE BARRIERS: 3/4 HR)	2 1 1/2	
FIRE ENCLOSURE OF EXITS (1020.1) .PROTECTIVE OPENING RATING	1 1	
*EXTERIOR WALL IN A EXIT: NO RATING TABLES 601 & 602		
SHAFTS AND ELEVATOR HOIST WAYS .PROTECTIVE OPENING RATING (1071.4 / 8.6.5)	1 < 4 STORIES 1	
SMOKE BARRIER EXIT ENCLOSURE, IBC 1019.1: 1 HR. ENCLOSURE CORRIDOR WALLS, IBC 708.1.4 & TABLE 1018.1	0 R: 0.5	

*GLAZING IN EXIT ENCLOSURE DOORS, IBC 715.3.4.1: 100 SQ. IN. AREA

*FIRE DOORS CLOSING, IBC 715.4.7.
 DOORS SHALL BE SELF-CLOSING
 DOORS SHALL BE SECURED W/ LATCH WHEN CLOSED

7.2 DWELLING AND SLEEPING UNIT SEPARATION IN TYPE IIB :

- IBC 708.3:
 • NOT LESS THAN 1/2 HR IN BUILDING EQUIPPED WITH AUTOMATIC SPRINKLER SYSTEM

7.3 DUCTS & AIR TRANSFER OPENINGS:

FIRE BARRIER DAMPERS, IBC 716.5.2:

7.4 REFUSE AND LAUNDRY CHUTES

- IBC 707.3.1:
 • SHAFT WALL-1 HR RATED (707.4)
 • REFUSE AND LAUNDRY CHUTE ACCESS ROOM: 1HR RATED (707.3.3)
 • DOOR: .75 HR & SMOKE ACTIVATED DOOR (715.4.7.3)

7.5 ELEVATOR AND DUMBWAITER

- IBC 707.1.4:
 • SHAFT WALL-1HR RATED (707.4)

8.1 INTERIOR FINISH REQUIREMENTS: WALL & CEILING

IBC-2012 (TABLE - 803.4) NFPA - 2009 (TABLE A.10.2.2)	CLASS	
VERTICAL EXITS & PASSAGeways:	R-2	A-3
CORRIDORS:	C	B
ROOMS & ENCLOSED SPACES:	C	C

8.2 INTERIOR FINISH REQUIREMENTS: FLOOR (IBC 804.1)

CLASSIFICATION, IBC 804.1.1 EXCEPTION: FINISH MUST COMPLY WITH DOC FF-1 "PILL TEST"

9.1. FIRE PROTECTION SYSTEM REQUIREMENTS:

- PROTECTION SYSTEMS SHALL BE INSTALLED, REPAIRED, OPERATED AND MAINTAINED IN ACCORDANCE WITH IBC 2012
- SUPERVISORY SERVICE, IBC 901.6.1: AUTO. SPRINKLER SYSTEMS SHALL BE MONITORED BY AN APPROVED SUPERVISING STATION.
- SPRINKLER SYSTEM SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH NFPA 13

	REQUIRED	IBC 2012	NFPA 2009	PROVIDED
AUTOMATIC SPRINKLERS:	YES	903.3.1.1	9.7.1.1	YES
ALT. AUTOMATIC FIRE SPRINKLER:	NO**	904.2	9.7.3.1	NO
STANDPIPE SYSTEM:	NO**	905.1	9.7.4.2	NO
PORTABLE FIRE EXTINGUISHERS:	YES	906.1	9.7.4.1	YES
FIRE ALARM SYSTEM:	YES	907.2	9.6.7.1	YES
SMOKE CONTROL SYSTEM:	NO	909.1	9.3.1	NO

**WHERE REQUIRED PER 904.2.1: COMMERCIAL HOOD AND DUCT SYSTEMS

** STANDPIPES, IBC 905.1: NOT REQUIRED DUE TO BUILDING HT. PORTABLE FIRE EXTINGUISHERS, IBC 906.1: LOCATE & INSTALL PER NFPA 10 FIRE ALARM & DETECTION SYSTEM, IBC 907.1 WHERE REQUIRED, IBC 907.2.2: GROUP B - NOT REQUIRED DUE TO OCCUPANCY LOAD (OCCUPANTS ON 2ND FLOOR @ 1 OCC. PER 100 SF)

10.1 MAXIMUM TRAVEL DISTANCE TO EXIT:

IBC-2012 (TABLE - 1016.2) WITH SPRINKLER	USE GROUP R-2
WITH SPRINKLER	250'
NFPA - 2009 (TABLE A.1.6) WITH SPRINKLER	325/200'
PROVIDED	63' MAX

10.2 COMMON PATH OF EGRESS TRAVEL:

IBC-2012 (1014.3) WITH SPRINKLER	B, A	R-2
WITH SPRINKLER	100/75'	125'
NFPA - 2009 (TABLE A.1.6) WITH SPRINKLER	NR/100/75'	160'
ACTUAL MAXIMUM TRAVEL DISTANCE	60'	60'

10.3 MINIMUM CORRIDOR WIDTH REQUIREMENTS:

IBC-2012 (1018.2)	REQD.	PROVIDED
WITH SPRINKLER	44" MIN.	70"
NFPA - 2009 (38.2.3.2)	44" MIN.	70"

10.4 MAXIMUM DEAD END / DISTANCE:

USE GROUP:	REQUIRED	PROVIDED
IBC-2012 (1018.4) WITH SPRINKLER	50'	LESS THAN 20'
NFPA - 2009 (TABLE A.1.6) WITH SPRINKLER	50'	LESS THAN 20'

ALL DEAD END CORRIDORS ARE WITHIN THE 20' MAXIMUM DISTANCE.

10.5 EGRESS WIDTH PER OCCUPANT:

(IBC 1005.17 NFPA 101 GOVERNS):

	REQUIRED		PROVIDED	
	STAIRS	OTHER EGRESS	STAIRS	OTHER EGRESS
BASEMENT	0.3"	0.2"	9"	N/A
FIRST FLOOR	1.5"	N/A	150"	56"
SECOND FLOOR	1.8"	N/A	150"	N/A
THIRD FLOOR	1.8"	N/A	100"	N/A

10.6 BOILER, INCINERATED AND FURNACE ROOMS (IBC 1015.3)

- * 2 EXITS REQUIRED IF >500 SF AND ANY FUEL FIRED EQUIP. EXCEEDS 400 K BTU; ONE PERMITTED TO BE A FIXED LADDER (N/A)

10.7 GUARDS & BALUSTRADES

- WHERE REQUIRED, IBC 1013.1:
 OPEN-SIDED STAIRS, RAMPS, LANDINGS AND FLOOR SURFACES LOCATED MORE THAN 30 IN. ABOVE THE GRADE OR FLOOR BELOW
- HEIGHT, IBC & NFPA 101: 30 IN MIN HEIGHT
- OPENING LIMITATIONS: UP TO 6" OPENING AS ALLOWED BY AHJ

10.8 PANIC HARDWARE

IBC 2006 1008.1.10
 GROUP A SPACE WITH OCCUPANCY LOAD >50

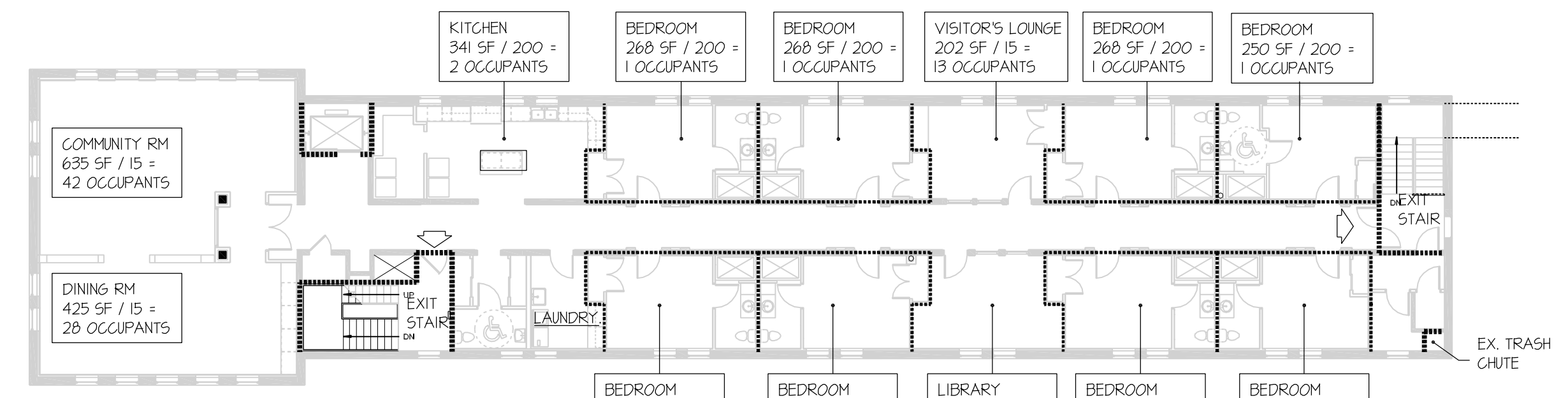
11.1 ACCESSIBLE TOILETS AND UNITS

SPACE	OCCUPANCY	CLASSIFICATION	ACCESSIBLE	TYPE A	TYPE B
3RD FLOOR	CONVENT	R-2	4% OF B=1	1	NA
2ND FLOOR	CONVENT	R-2	4% OF B=1	1	NA
1ST FLOOR	OFFICES	B	1	NA	NA
BASEMENT	STORAGE/ MECH	S	NA	NA	NA

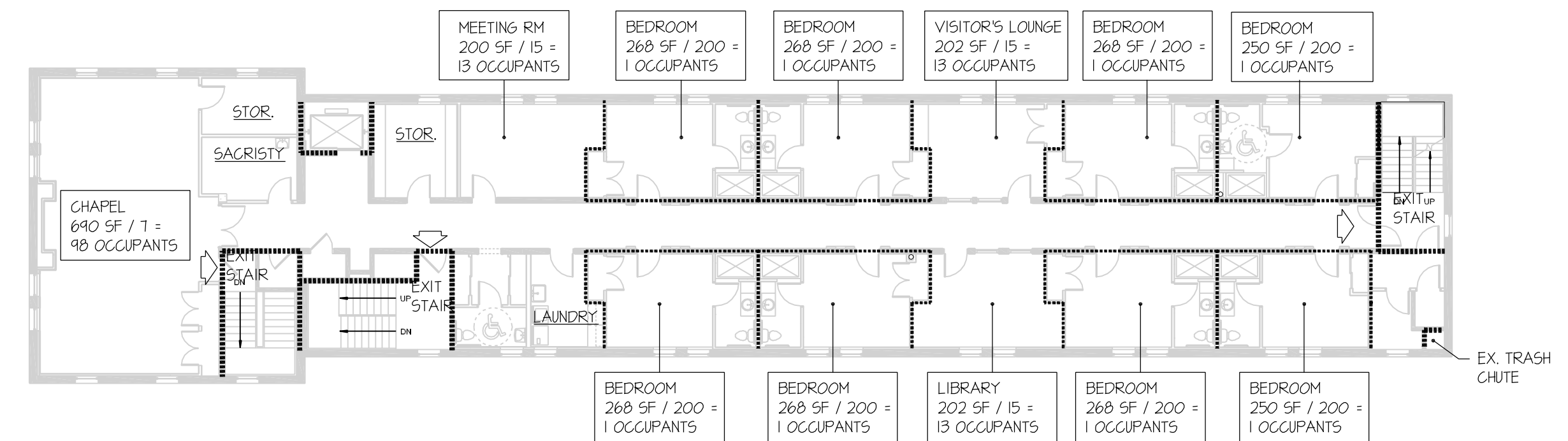
12.1 SOUND TRANSMISSION

IBC 1201.2
 • WALLS, PARTITIONS AND FLOOR/CEILING ASSEMBLIES SEPARATING DWELLING UNITS FROM EACH OTHER OR FROM PUBLIC OR SERVICE AREAS SHALL HAVE A SOUND TRANSMISSION CLASS (STC) OF NOT LESS THAN 50 (45 IF FIELD TESTED) FOR AIR-BORNE NOISE WHEN TESTED IN ACCORDANCE WITH ASTM E 90.

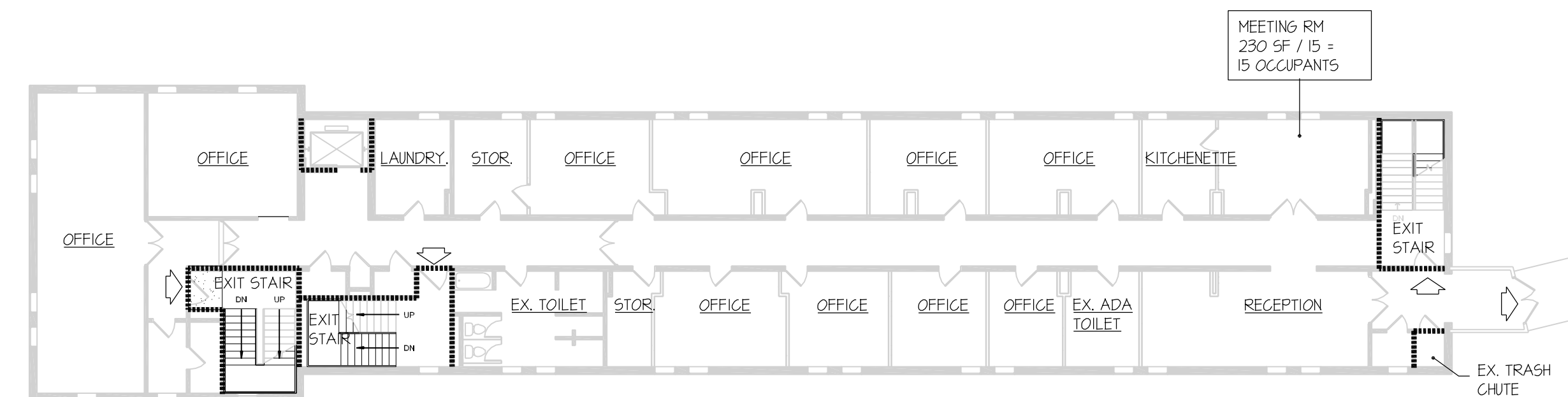
FIRE PROTECTION PLANS



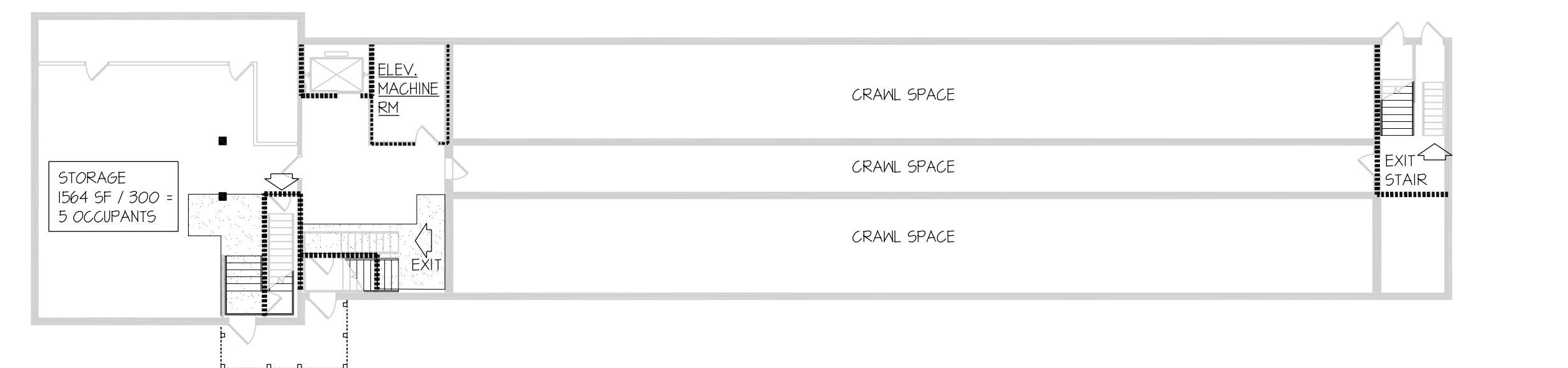
THIRD FLOOR



SECOND FLOOR



FIRST FLOOR



BASEMENT

KEY:

ONE HOUR WALL

ONE HOUR FLOOR/ CEILING CONSTRUCTION

EXIT



810 Light Street Baltimore, Md 21230

Professional Certification: I certify that these documents were prepared or approved by me, and that I am a duly licensed architect under the laws of the State of Maryland.

DGG: License No:3473 Expiration Date:4/7/2015

NO	DATE	PERMIT SET	DESCRIPTION
1	6-17-13		

REVISIONS

NOTRE DAME PREP CONVENT RENOVATION

CODE ANALYSIS & FIRE PROTECTION PLANS

PROJ. NO: 13007-00	DWG NO
DRAWN BY: SRW	G-002
DATE: 06-13-13	