

# 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 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 DRAINS AND NO PARAPETS. ALL FLOORS AND THE ROOF STRUCTURE ARE CONSTRUCTED OF CONCRETE SLABS WITH REINFORCING BARS SUPPORTED BY CMU BEARING WALLS AND A FEW CONCRETE COLUMNS.

## APPLICABLE CODES

- INTERNATIONAL EXISTING BUILDING CODE (IEBC) / 2012
- INTERNATIONAL MECHANICAL CODE / 2012
- NATIONAL STANDARD BUILDING CODE / 2004
- INTERNATIONAL ENERGY CODE / 2012
- NFPA 101 - LIFE SAFETY CODE / 2009
- NFPA 13 - INSTALLATION OF SPRINKLER SYSTEMS
- NFPA 12-4F NATIONAL FIRE ALARM CODE
- NFPA 101 - LIFE SAFETY CODE / 2009
- CONCRETE REINFORCING AND ACCESSIBILITY CODE

## 3.1 BUILDING USE & TYPE OF CONSTRUCTION

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))  
 (NFPA 101 6.1.2, RESIDENTIAL (R), ASSEMBLY (A), BUSINESS (B))  
 (NFPA 13 4.1.3-R)

## 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
FRANCE ROOM (OVER 400,000 BTU EQUIPMENT)	1 HR OR AUTOMATIC SPRINKLERS
BOILER ROOM (OVER 50 HP AND 10 HORSE POWER (OR 1 HR OR AUTOMATIC 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 :

FLOOR	OCCUPANCY	SF/OCCUPANT	TOTAL
3rd FLOOR:	ASSEMBLY	15 NET	42
3rd FLOOR:	RESIDENTIAL (R-2)	200 68095	14
200 SF	STORAGE	300 68095	1
TOTAL			62
2nd FLOOR:	ASSEMBLY	1 NET	48
2nd FLOOR:	RESIDENTIAL (R-2)	200 68095	14
200 SF	STORAGE	300 68095	1
TOTAL			116
1st FLOOR:	BUSINESS	100 68095	66
6635 663F	TOTAL		66
BASEMENT:	STORAGE/MECHANICAL	300 68095	5
164 5F	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 FABRICATED AREA AND HEIGHT: 16,000 SQ.FT. AND 4 STORIES
- ALTERNATE SPRINKLER SYSTEM INCREASE (IBC SECTION 506.2) 200 %
- ACTUAL FIRST FLOOR AREA: 6635 SQ.FT.

CALCULATION:  
 AUTOMATIC SPRINKLER SYSTEM INCREASE: 200% X 16,000 = 32,000 SF  
 ALLOWABLE SPRINKLER AREA: 16,000 SF + 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	NFPA 2004
IBC-2012 (TABLE A.8.2.1.2)	TYPE IIB	TYPE II
STRUCTURAL FRAME	0	0
EXTERIOR BEARING WALL	0	0
EXTERIOR NONBEARING WALL	0	0
INTERIOR BEARING WALL	0	0
INTERIOR NONBEARING WALL	0	0
FLOOR CONSTRUCTION	0	0
ROOF CONSTRUCTION	0	0

## 6.2 COMBUSTIBLE MATERIAL IN TYPE II CONSTRUCTION

(IBC SECTION 603) TREATED WOOD SHALL BE ALLOWED IN:

- FRONT ELEVATION OF EXITS
- NONBEARING EXTERIOR WALLS WITH NO FIRE RATING
- ROOF CONSTRUCTION
- THERMAL & ACUSTIC INSULATION WITH A FLAME SPREAD LESS THAN 25
- FOAM PLASTIC (SEE IBC SECTION 26)

ROOF COVERINGS OF A, B, & C CLASSIFICATIONS

- INTERIOR ROOF FLOORS, PANELING, TRIM, DOORS, ETC. PLATFORMS PER IBC 410
- BLOCKING FOR HANDRAILS, CABINETS, WINDOW & DOOR FRAMES
- WALLS AND CEILINGS
- WALLING AND TRUSS STRIPS

## 7.1 FIRE-RESISTANCE RATING REQUIREMENTS

### BUILDING FIRE RATINGS

IBC-2012 (TABLE 1605)	IBC 2012	NFPA 2004
NFPA - 2004 (TABLE A.8.2.1.2)	TYPE IIB	TYPE II
FIRE WALLS - USE GROUP R-2, B (PROTECTIVE OPENING RATING (T06.34 & T15.4) (OTHER FIRE BARRIERS: 3/4 HR))	1 1/2	

FIRE ENCLOSURE OF EXITS (102.0)

PROTECTIVE OPENING RATING

TABLES 601 & 602

\*EXTERIOR WALL IN AN EXIT: NO RATING

SHAFTS AND ELEVATOR HOISTWAYS

SHAKE BARRIER (IBC 1018.1, 1 HR ENCLOSURE CORRIDOR WALLS, IBC 1024.4 & TABLE 1018)

R: 0.5

\*LIZARDING IN EXIT ENCLOSURE DOORS, IBC 715.3.4.1, 100 SQ. IN. AREA

\*FIRE DOORS CLOSING, IBC 715.4.1.1

DOORS SHALL BE SELF-CLOSING

DOORS SHALL BE SECURED IN LATCHED POSITION

7.2 DWELLING AND SLEEPING UNIT SEPARATION IN TYPE IIB :

IBC 709.3.

\*NOT LESS THAN 1 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 707.13.1.

\* SHAFT WALL - 1 HR RATED (707.4)

\* REFUSE AND LAUNDRY CHUTE ACCESS ROOM, 1 HR RATED (707.13.3)

\* DOORS - 1 1/2 HR & SMOKE ACTIVATED DOOR (715.4.1.3)

7.5 ELEVATOR AND DUMBWAITER

IBC 707.14

\* SHAFT WALL - 1 HR RATED (707.4)

8.1 INTERIOR FINISH REQUIREMENTS: WALL & CEILING

IBC-2012 (TABLE 8.03.4)	R-2	B	A-3
NFPA - 2004 (TABLE A10.2.2)	C <td>B <td>B </td></td>	B <td>B </td>	B
VERTICAL EXITS & PASSAGEWAYS,	C <td>C <td>C </td></td>	C <td>C </td>	C
CORRIDORS,	C <td>C <td>C </td></td>	C <td>C </td>	C
ROOMS & ENCLOSED SPACES,	C <td>C <td>C </td></td>	C <td>C </td>	C

## 8.2 INTERIOR FINISH REQUIREMENTS: FLOOR (IBC 804.1)

CLASSIFICATION (IBC 804.4) EXCEPTION: FINISH MUST COMPLY WITH DOC. FH-1, PILL TEST

## 9.1 FIRE PROTECTION SYSTEM REQUIREMENTS:

- PROTECTION SYSTEMS SHALL BE INSTALLED, REPAIRED, OPERATED AND MAINTAINED IN ACCORDANCE WITH IBC 2012
- SUPERVISOR SERVICE (IBC 901.6): 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 2004 PROVIDED
AUTOMATIC SPRINKLERS:	YES	403.3.1.1	9.1.1.1 YES
ALT. AUTOMATIC FIRE SPRINKLER	NO*	401.2	9.1.3.1 NO
STANDPIPE SYSTEM:	NO**	405.1	9.1.7.2 NO
PORTABLE FIRE EXTINGUISHERS:	YES	406.1	9.1.7.4.1 YES
FIRE ALARM SYSTEM:	YES	407.2	9.6.7.1 YES
SMOKE CONTROL SYSTEM:	NO	409.1	9.3.1 NO

\*\*WHERE REQUIRED PER 904.2.1, COMMERCIAL, WOOD AND DUCT SYSTEMS

\*STANDPIPES (IBC 402.6), NOT REQUIRED DUE TO BUILDING HEIGHT

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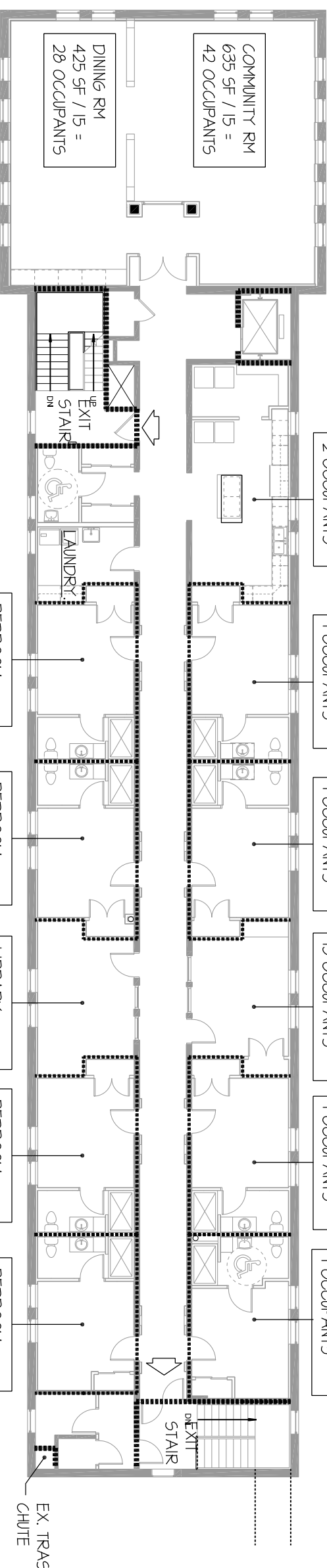
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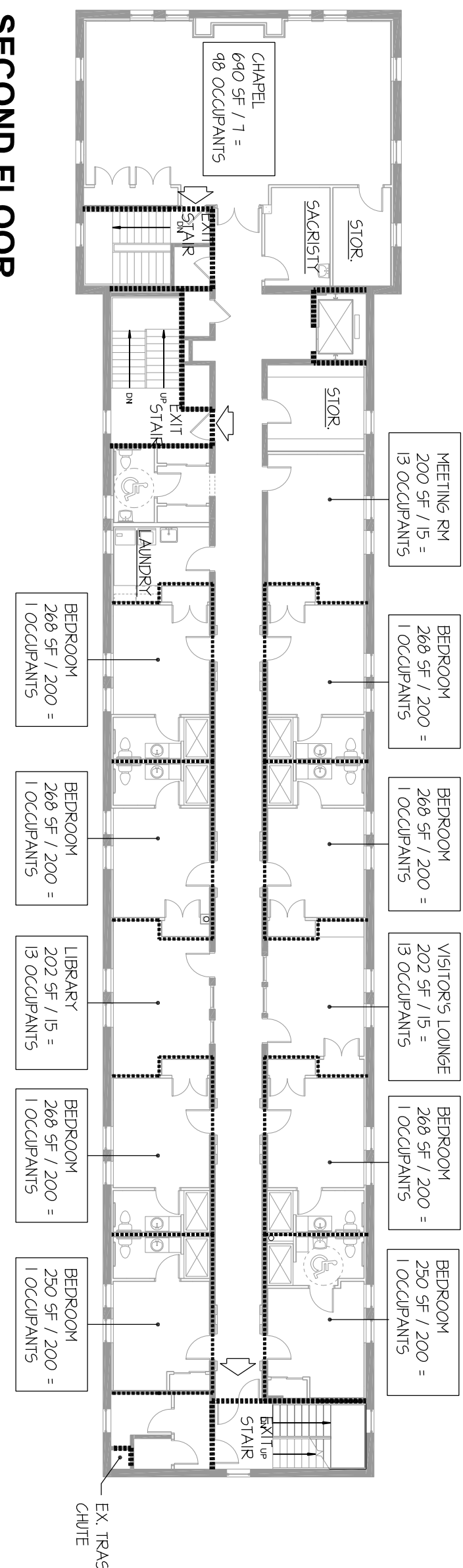
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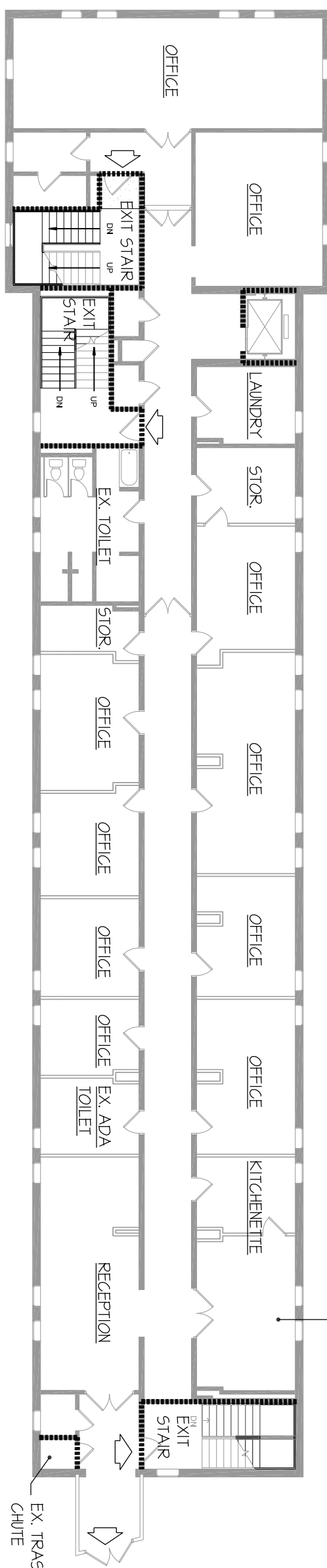
# FIRE PROTECTION PLANS



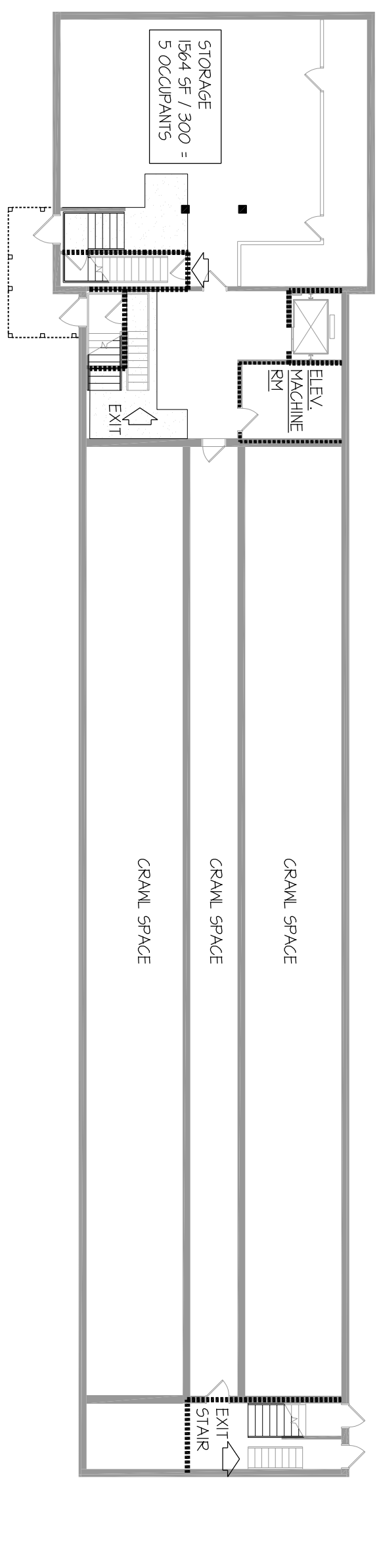
## THIRD FLOOR



## SECOND FLOOR



## FIRST FLOOR



## BASEMENT

KEY:  
 ..... ONE HOUR WALL  
 [ ] ONE HOUR FLOOR/CEILING  
 [ ] CONSTRUCTION  
 [ ] EXIT

# NOTRE DAME PREP CONVENT RENOVATION

# CODE ANALYSIS & FIRE PROTECTION PLANS

PROJ. NO.:	DWG. NO.
13007-00	
DRAWN BY:	
SNW	
DATE:	
06-16-13	

G-002



810 Light Street, Baltimore, MD 21200

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.  
 DGS, License No:9479, Expiration Date:4/7/2015

NO.	DATE	DESCRIPTION	REVISIONS
1	6/1/13	REVISION SET	