

Life Safety & Building Code Analysis

Midtown Portland
 Building 2
 Portland, Maine
 A Mixed-Use Parking Garage Facility

Applicant:
 FEDQ D'YV001, LLC
 3301 NE First Avenue
 Miami, Florida 33137-4110
 1 (786) 350-1400

1) Applicable codes:

- a. International Building Code - 2009 (IBC)
- b. Maine Uniform Building and Energy Code (MUBEC)
- c. ICC/ANSI A117.1-2003, Accessible and Usable Buildings and Facilities
- d. Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities: (ADA-AG) - 2010
- e. NFPA 10, Fire Extinguisher, 2009
- f. NFPA 13, Sprinkler Systems, 2009
- g. NFPA 88A, Parking Structures, 2007
- h. NFPA 101, Life Safety Code, 2009

2) Use Group Classification:

Level Mercantile (M)
 First Floor Mercantile (M)
 Second - Eighth Floor Storage (S-2)*

* Note that storage for parking is low hazard.

3) Special Provisions for Parking Structures (IBC 406.2 & 406.3)

406.2.2 **Min. Clear Height:** 7'-0" for vehicle and pedestrian traffic except where required for accessible vans. Accommodate van accessible parking quantity per IBC Section 1106.5.*

*Note that ADA requires clear height for van access to be 98" (8'-2") minimum. (ADA 502.5, ICC/ANSI 502.6)

406.2.3 **Grade:** required at exterior and interior floor openings per IBC Section 101.3.

406.2.4 **Vehicle Barriers:** In conformance with IBC 1607.7 required at end or drive lanes and end of parking spaces where difference in floor elevation is greater than 1'-0".

406.2.6 **Floor Surface:** shall be concrete or similar noncombustible and nonabsorbent material except asphalt is permitted at ground level.

406.2.7 **Mixed Separation:** parking garage requires a minimum of 1 hour fire separation from mercantile occupancy (Table 508.4).

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

406.3.2 **Open parking garage defined:** Storage for private vehicles with openings as follows: 406.3.3.1 Openings, for natural ventilation purposes, the exterior side of the structure shall have uniformly distributed openings on two or more sides. The area of such openings in exterior walls on a tier must be at least 20 percent of the total perimeter wall area of each tier. The aggregate length of the openings considered to be providing natural ventilation shall constitute a minimum of 40 percent of the perimeter of the tier.

(Exception note: Openings are not required to be distributed over 40 percent of the building perimeter where the required openings are uniformly distributed over two opposing sides of the building.)

Area of openings	Required	Provided
Second Level: (10040 sf x .2)	2008 sf/floor	2317 sf/floor
Third Level: (9102 sf x 2)	1821 sf/floor	1840 sf/floor
Fourth Level: (9102 sf x 2)	1821 sf/floor	1840 sf/floor
Fifth Level: (9102 sf x 2)	1821 sf/floor	1840 sf/floor
Sixth Level: (9102 sf x 2)	1821 sf/floor	1840 sf/floor
Seventh Level: (9102 sf x 2)	1821 sf/floor	1899 sf/floor
Eighth Level: (9102 sf x 2)	Not Applicable	

Length of openings	Required	Provided
Second Level: 892 lf x 4	357 lf	383 lf
Third Level: 892 lf x 4	357 lf	383 lf
Fourth Level: 892 lf x 4	357 lf	383 lf
Fifth Level: 892 lf x 4	357 lf	383 lf
Sixth Level: 892 lf x 4	357 lf	383 lf
Seventh Level: 892 lf x 4	357 lf	383 lf
Eighth Level: 892 lf x 4	Not Applicable	

4) Minimum Occupancy Separation: (IBC Table 508.4)	Provided
Area: Tabular Rating	2 Hr
S-2 to M	1 Hr

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

5) Construction Type: (IBC Chapter 6)

Area Use Group Construction Type
 Level 1 Mercantile (M) HB (Non-Combustible)
 Level 2 thru 8 Storage (S-2) I-B (Non-Combustible)

6) Unadjusted Allowable Area per Floor: (IBC Table 503)

Area Use Group Construction Type Tabular Area
 Level 1 Mercantile (M) I-B (Non-Combustible) Unlimited
 Level 2 thru 8 Storage (S-2) I-B (Non-Combustible) 79,000 sf/floor

7) Building Area

Level	Area
First Floor	31,315 sf
Second Floor	38,346 sf*
Third Floor	38,346 sf*
Fourth Floor	38,346 sf*
Fifth Floor	38,346 sf*
Sixth Floor	38,346 sf*
Seventh Floor	38,346 sf*
Eighth Floor	38,346 sf*
Total	299,237 sf*

* Includes ramps.

8) Unadjusted Allowable Height (IBC Table 503)

Area Use Group Construction Type Tabular Height
 Level 1 Mercantile (M) I-B (Non-Combustible) 11 Stories
 Level 2 thru 8 Storage (S-2) I-B (Non-Combustible) 11 Stories

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

9) Fire-resistance Ratings of Structural Elements (Hours): (IBC Table 601)

Building Element	I-B Construction Type
Structural Frame	2
Bearing Walls	2
Exterior Walls	2
Interior Walls	2
Nonbearing walls and partitions	1
Exterior Walls	1
Interior Walls	0
Floor Construction	2
Roof Construction	1

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

10) Maximum length of exit access travel (IBC 1016.1)

Area	IBC Table 1016.1	NFPA 101
Building 2	Mercantile (M) Storage (S-2)	250 feet 300 feet

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

11) Occupant Load (IBC Table 1004.1.1)*

Area	Occupancy	Area/Factor Load	Occupant Load
Building 2	Storage (S-2)	38,346 sf/200 sf/occupant	= 192/floor

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

*Note: NFPA 101 6.2.2.3, A.6.2.2.3 mercantile space is considered an ordinary hazard.

12) Minimum number of exits (IBC Table 1021.1) *

* In regards to the mercantile spaces, the minimum number of exits will be determined as the mercantile tenant spaces are developed.

Every floor area shall be provided with the minimum number of approved independent exits as required by Table 1021.1 based on the occupant load.

Area	Occupant Load	Exits Required	Exits Provided
Second Floor	192	2	2
Third Floor	192	2	2
Fourth Floor	192	2	2
Fifth Floor	192	2	2
Sixth Floor	192	2	2
Seventh Floor	192	2	2
Eighth Floor	192	2	2

13) Maximum Dead End Corridor Allowable: (IBC 1018.4)	NFPA 101
Mercantile (M)	50 feet
Storage (S-2)	20 feet

Note: Building is equipped with an automatic sprinkler system throughout retail space only and shall be designed and installed in accordance with NFPA 13 (780 CMR 903.3.1.1). The parking garage is not required to be sprinklered per NFPA 88A.

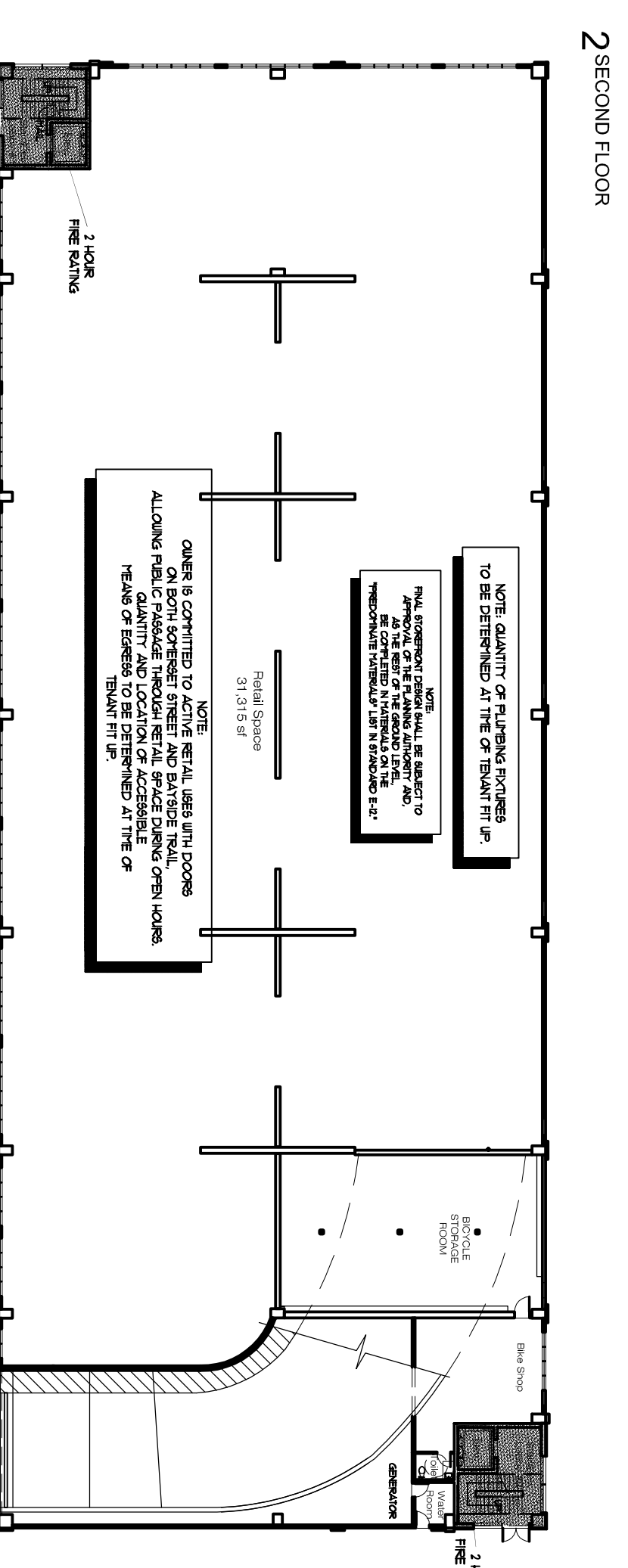
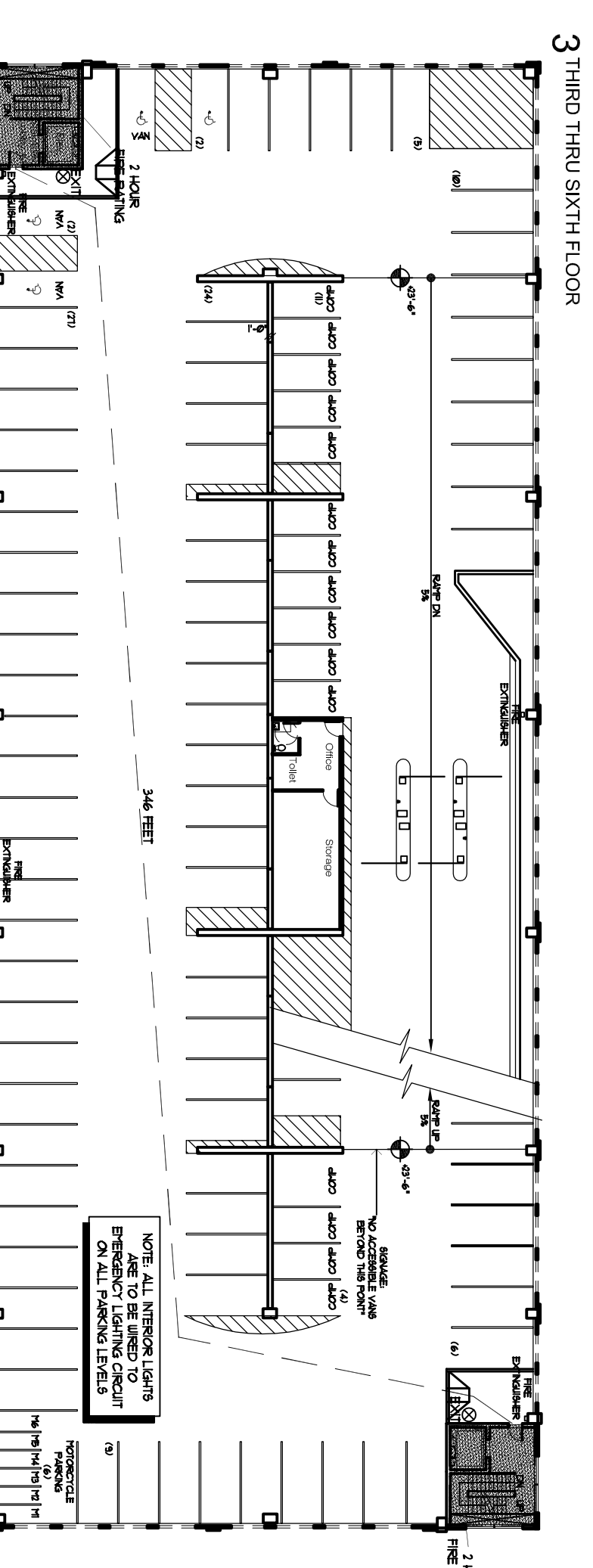
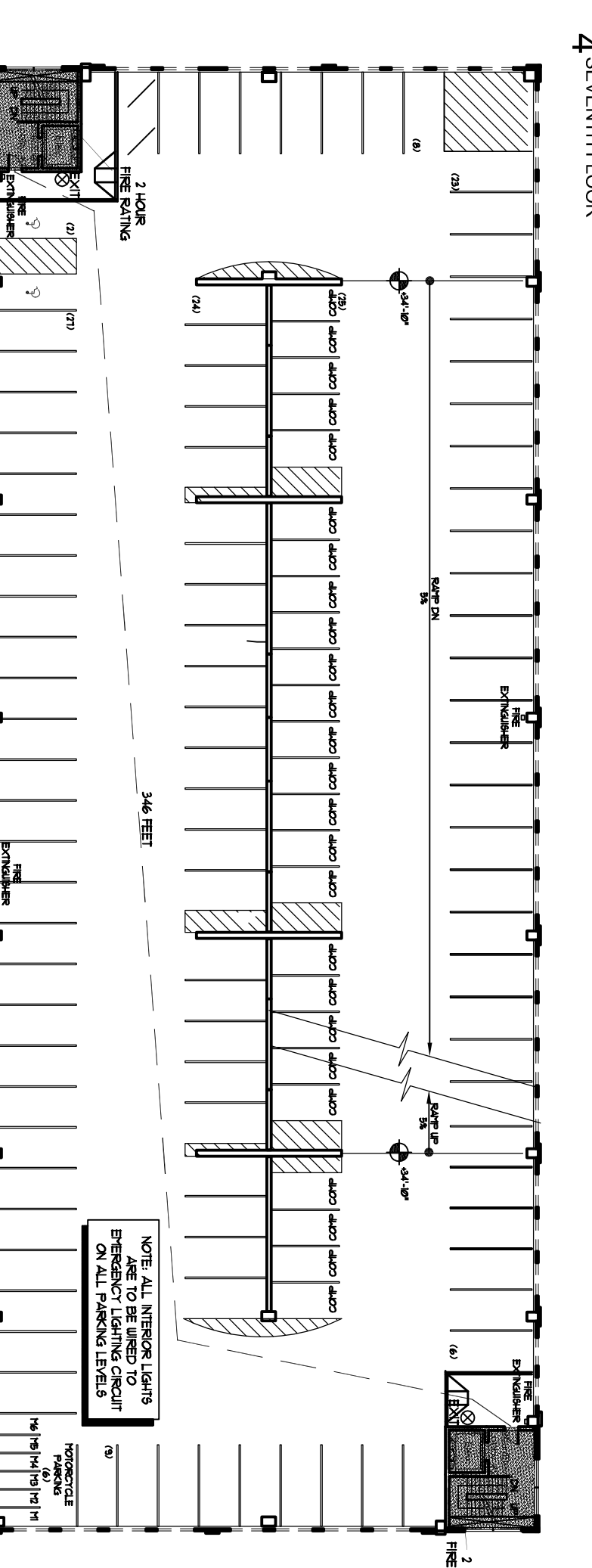
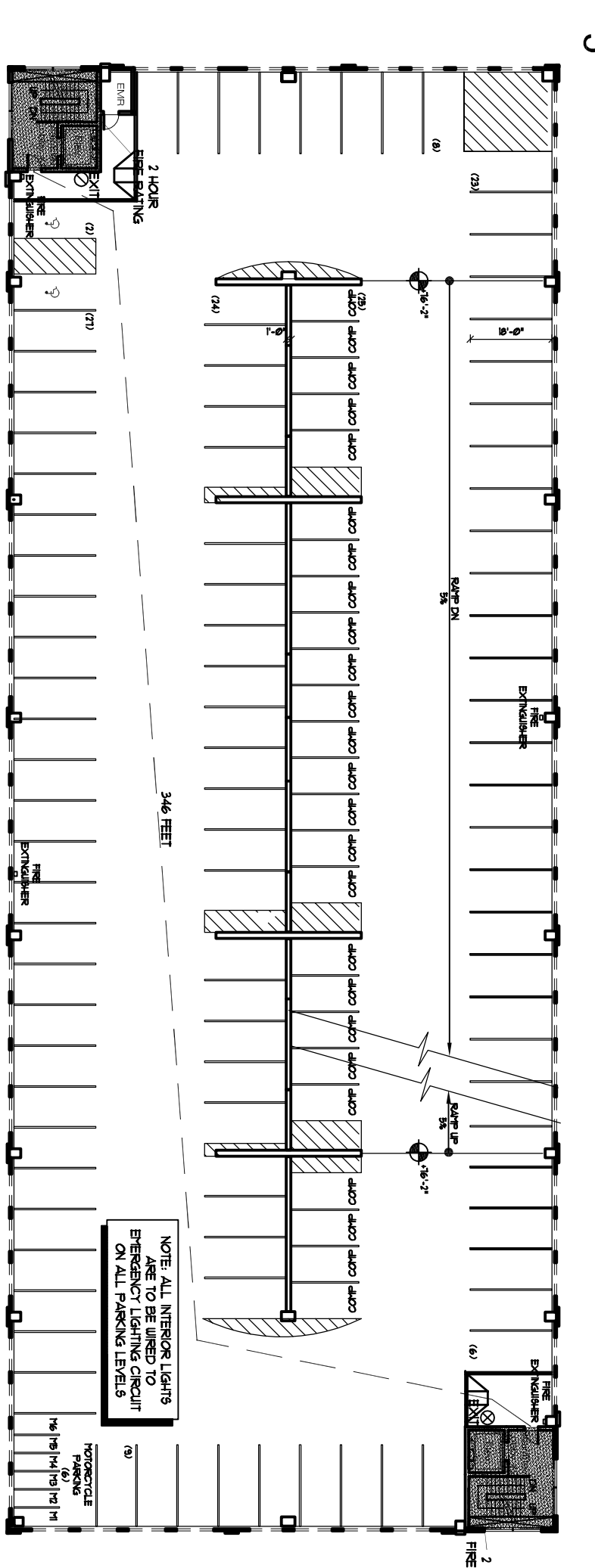
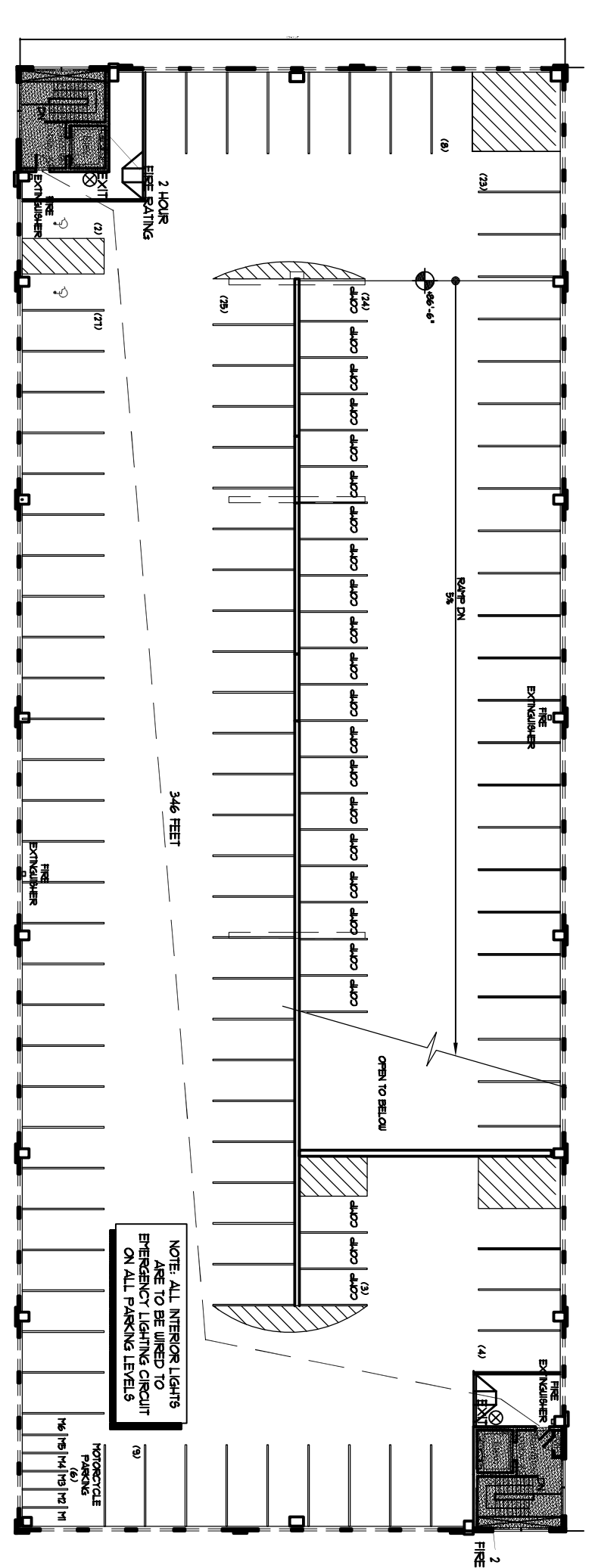
14) Minimum Required Egress Width (IBC 1005.1, NFPA 101 Table 7.3.1)

Area	Occupant Load	Exits Required	Stair Width
Second Floor	192	2	29"
Third Floor	192	2	29"
Fourth Floor	192	2	29"
Fifth Floor	192	2	29"
Sixth Floor	192	2	29"
Seventh Floor	192	2	29"
Eighth Floor	192	2	29"

Note: Stair width will be a minimum of 44" wide per run. (147 Occupants per exit or 294 Occupants for 2 exits)

15) Minimum required width of passageways, aisle passageways, aisles and corridors (IBC 1023.2)

1) 44 inches for occupant load greater than 50 persons
 2) 36 inches for occupant load less than 50 persons.



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LICENSED ARCHITECT
 THOMAS HOUSE
 NO. 3705
 STATE OF MAINE

midtown Portland

Somerset Street
 Elm Street
 Portland, ME

Building 2
 Life Safety
 Building Code
 Analysis

Structural Engineer
 Becker Engineering
 MEP Engineer
 McCabe & Associates
 FP Engineer
 McCabe & Associates

SCALE:

ISSUED / DRAWN BY
 February 8, 2015

REVISION / REVISED BY
 April 15, 2016

JOB NO.: 15001

SHEET NUMBER
A-0.1