

Commercial Tenant Improvement

450 N Flint St. Kaysville,UT 84037

PROJECT DESCRIPTION

THE COMMERCIAL TENANT IMPROVEMENT PROJECT IN KAYSVILLE, UT, I WILL RENOVATE AN OLD DANCE STUDIO INTO A NEW OFFICE SPACE FOR A TECH COMPANY. I WILL CONDUCT CODE RESEARCH TO ENSURE REGULATORY COMPLIANCE. THE GOAL IS TO TRANSFORM THE EXISTING DANCE STUDIO INTO AN INVITING FUNCTIONAL, AND CODE-COMPLIANT OFFICE SPACE THAT MEETS THE CLIENT'S NEEDS.

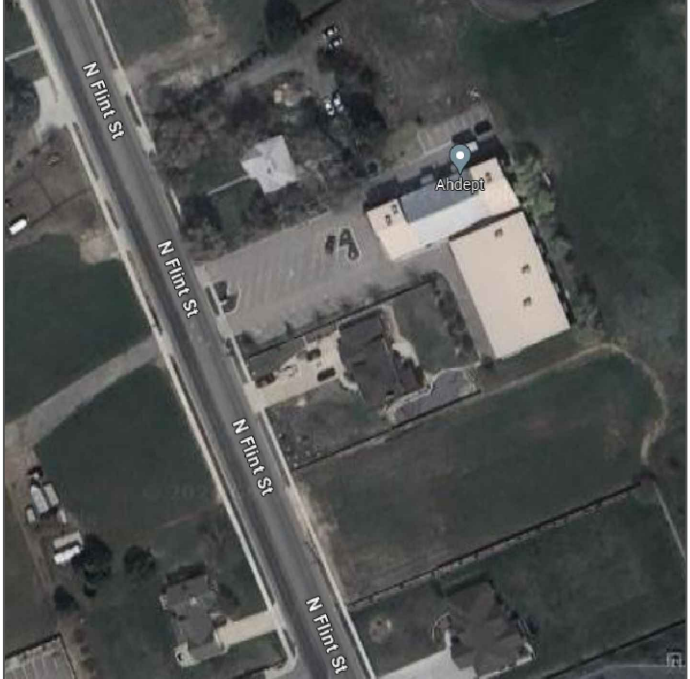
APPLICABLE CODES

- 2021 INTERNATIONAL BUILDING CODE
- 2021 INTERNATIONAL EXISTING BUILDING CODE
- 2021 INTERNATIONAL PLUMBING CODE
- 2021 INTERNATIONAL MECHANICAL CODE
- 2021 INTERNATIONAL FUEL GAS CODE
- 2021 INTERNATIONAL FIRE CODE
- 2020 NATIONAL ELECTRIC CODE
- 2021 INTERNATIONAL ENERGY CONSERVATION CODE
- 2019 NFPA 13 STANDARD FOR INSTALLATION OF SPRINKLER
- 2017 ICC/ANSI A117.1
- 2010 ADA: AMERICANS WITH DISABILITIES ACT & ARCHITECTURAL BARRIERS ACT

STREET VIEW



VICINITY MAP



CONSTRUCTION TYPE

THE CONSTRUCTION TYPE FOR THE COMMERCIAL TENANT IMPROVEMENT IS TYPE VB. THE BUILDING HAS TWO STORIES, WITH THE SECOND FLOOR BEING NEW CONSTRUCTION. THE HEIGHT OF THE BUILDING IS 31 FEET. MIXED OCCUPANCY, WITH MAJORITY OF THE BUILDING SPACE OF FUNCTION BEING BUSINESS, AND THE REMAINING IS STORAGE S-1.

SQUARE FOOTAGE LEGEND			
FLOOR LEVEL	LEVEL 01	LEVEL 02	TOTAL
SQUARE FEET	15,630	2,591	18,221
OCCUPANCY LOAD	73	19	92



NAME:
EMMA JACKSON

PROJECT:
SEMESTER
PROJECT

CLASS:
IDT 2050

NOTES:

SHEET NUMBER:
00

CODE ANALYSIS

2021 IBC CODES

Chapter 3 - Occupancy Classification and Use

304.1 - Business **Group B**

Business Group B occupancy includes office, professional or service-type transactions including storage of records.

311.2 - Moderate Hazard Storage, **Group S-1**

Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2

Chapter 5 - General Building Heights and Areas

504.3 - Table - Allowable Building Height in Feet Above Grade Plane

The allowable levels is 3
New Construction Level 2

506.2 - Table - Allowable Area Factors

Occupancy Classification: **B**
Construction Type: **VB**
Allowable Area per Floor (SM): **27,000 SF**
Existing Area Per Floor: 18,221 SF

508.4 - Table - General Building Heights and Areas

No separation required
Occupancy **Group B and S-1**

Chapter 6 - Types of Construction

601 - Table - Fire-Resistance Rating Requirements for Building Elements

No fire resistance rating
Existing Construction Type VB

602.5 - **Type V**

Type V construction is that type of construction in which the structural elements, exterior walls and interior walls are of any materials permitted by code.

Chapter 7 - Fire and Smoke Protection Features

712.1.9 - Two-story openings

A vertical opening that is not used as one of the applications specified in this section shall be permitted if the opening complies with all of the following.

Chapter 8 - Interior Finishes

802 - General

Interior finishes, including flammability and smoke-developing characteristics of wall, ceiling, and floor materials. Through proper testing and material usage.

806.2 - Combustible Decorative Materials

Curtains, draperies, fabric hangings and similar combustible decorative materials suspended from walls or ceilings shall not exceed 10 percent of specific wall or ceiling area.

Chapter 9 - Fire Protection and Life Safety Systems

906.1 - Where required

Portable fire extinguishers shall be installed in all of the following locations: **Group B**

906.3 - Table - Fire Extinguishers, Class A Fire Hazards

Light (Low) Hazard Occupancy 2-A
Maximum floor area per unit of A: **3,000 SF**
Maximum distance of travel to extinguisher: **75 Feet**

Chapter 10 - Means of Egress

1003.1 - 1003.6 - Means of Egress

1004.5 - Table - Maximum Floor Area Allowances

Business = **150 gross**
Accessory Storage Areas = **300 gross**

1005.3.2 - Other Egress Components

Total Occupancy Load = **92**
Means of egress capacity factor = **0.2**
 $92 \times 0.2 = \mathbf{18.4}$

1006.2.1 - Table - Spaces With One Exit or Exit Access

Maximum common path of egress travel
Occupancy **B** with Sprinkler = **100 Feet**

1006.3.3 - Table - Minimum Number of Exits or Access

1-500 Occupant load per story requires a minimum number of exits or access to exits from story is 2
Occupant Load = **92**
Number of Exits for Floor 2: 2

1017.2 - Table - Exit Access Travel Distance

Occupancy **B**, with Sprinkler System = **300 Feet**

2021 IEBC CODES

Chapter 3 - Provisions for all Compliance Methods

301.3 - Alteration, Addition, or Charge of Occupancy

The alteration, addition, or change of occupancy of all existing buildings shall comply with one of the methods listed in sections 301.3.1 - 301.3.3 as selected by the applicant.

306.2 - Design

Buildings shall be designed and constructed to be accessible in accordance with code and alteration and existing building provisions in ICC A117.1, as applicable.

Chapter 6 - Classification of Work

601.1.1 - Compliance With Other Alternatives

Alterations, additions and changes of occupancy to existing structures shall comply with the provisions of Chapters 7-12 or with one of the alternatives provided in Section 301.3

Chapter 7 - Alterations: Level 1

702.7 - Materials and Methods

New work shall comply with the materials and methods requirements in the IBC, IECC, IIMC, and IPC, as applicable, that specify material standards, detail of installation and connection, joints, penetrations and continuity of any element, component or system in the building.

Chapter 8 - Alterations: Level 2

802.4 - Interior Finish

The interior finish and trim of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the IBC.

Exception: Existing materials that do not comply with the requirements of the IBC shall be permitted to be treated with an approved fire-retardant costing in accordance with the manufacturer's instructions to achieve the required classification.

802.4.1 - Supplemental Interior Finish Requirements

Where work area on any floor exceeds 50% of the floor area, Section 802.4 shall apply to the interior finish and trim in exits and corridors serving and work area throughout the floor.



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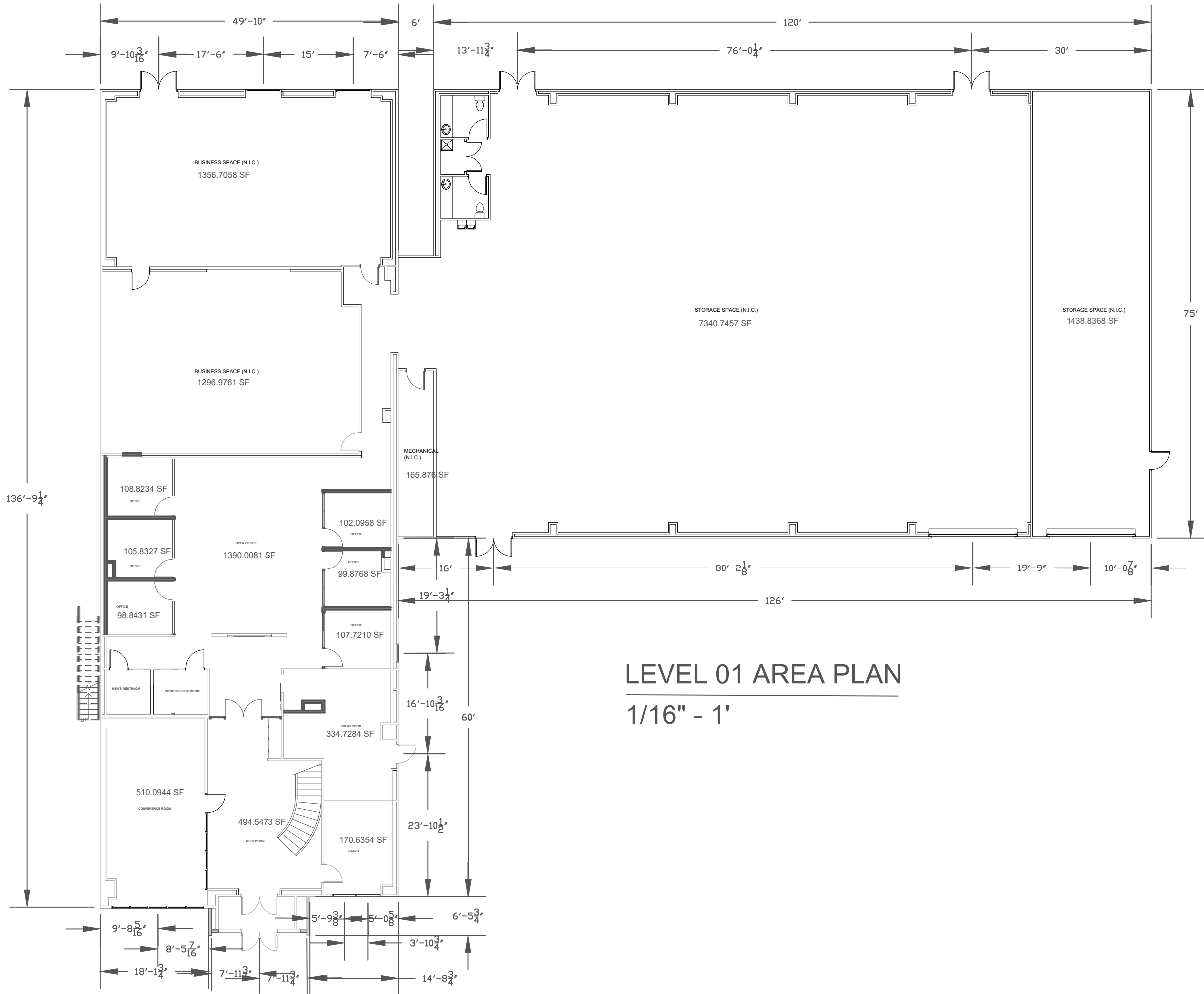
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SHEET NUMBER:

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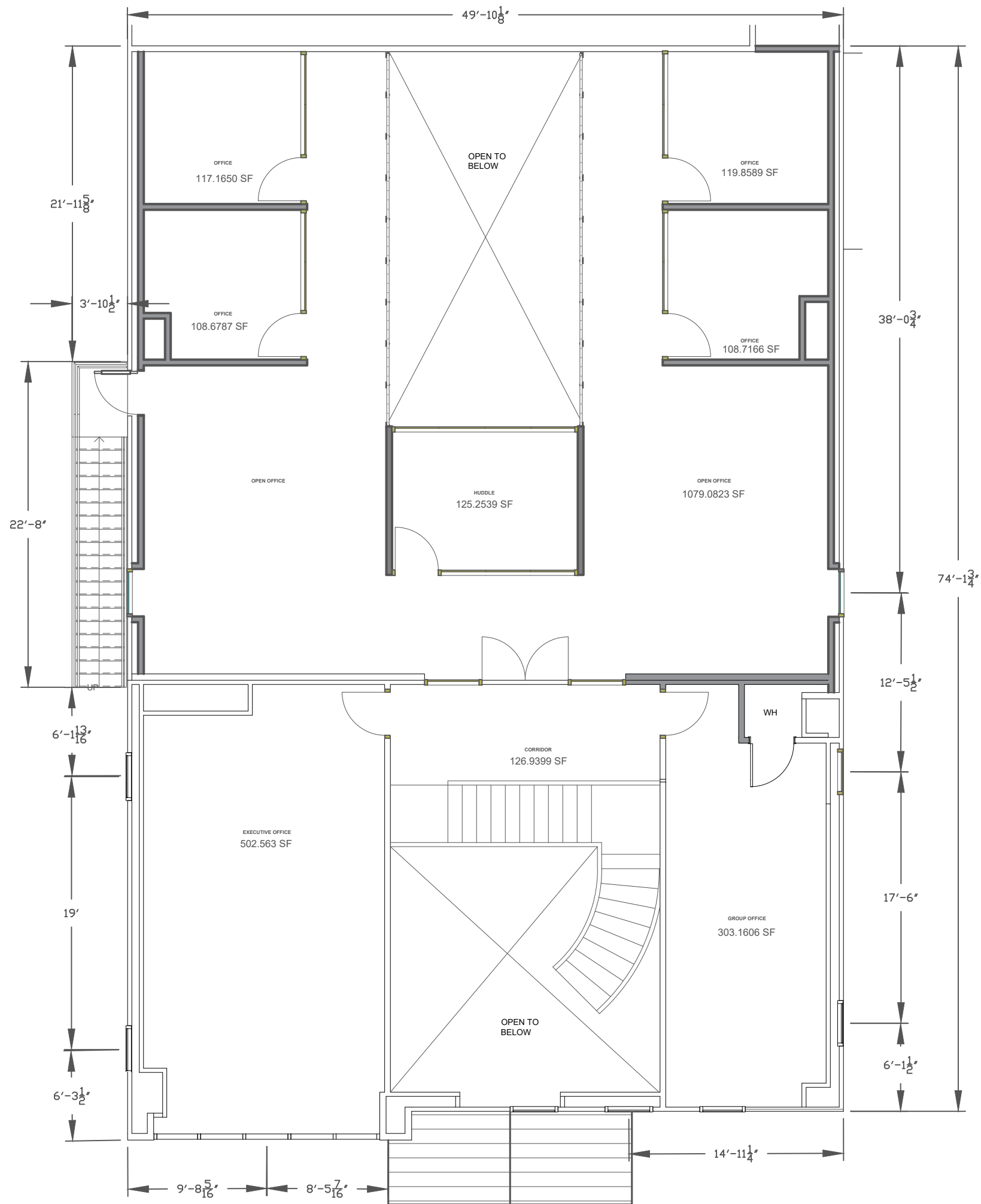
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02



LEVEL 02 AREA PLAN
1/8" - 1'



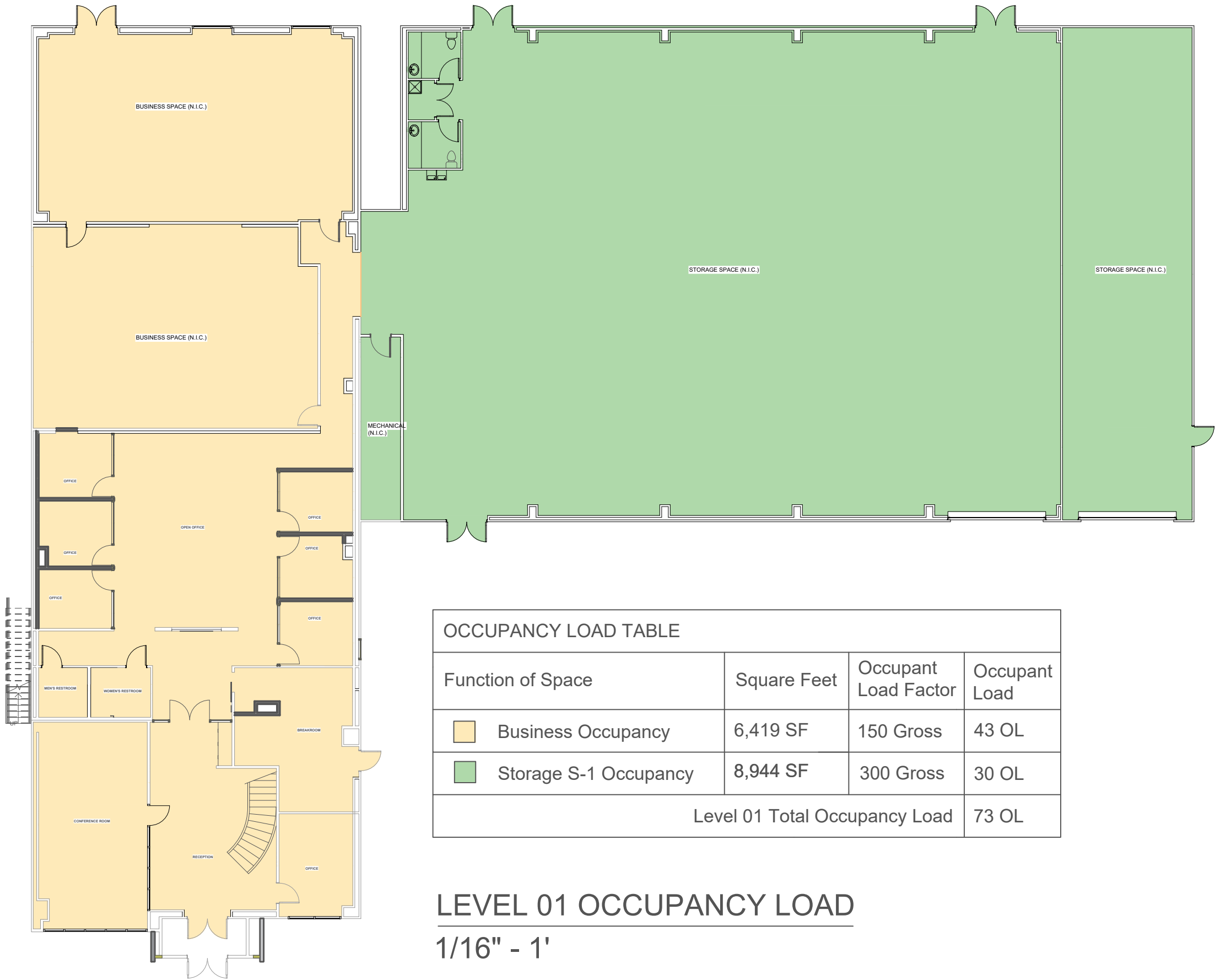
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OCCUPANCY LOAD TABLE			
Function of Space	Square Feet	Occupant Load Factor	Occupant Load
<div></div> Business Occupancy	6,419 SF	150 Gross	43 OL
<div></div> Storage S-1 Occupancy	8,944 SF	300 Gross	30 OL
Level 01 Total Occupancy Load			73 OL

LEVEL 01 OCCUPANCY LOAD

1/16" - 1'



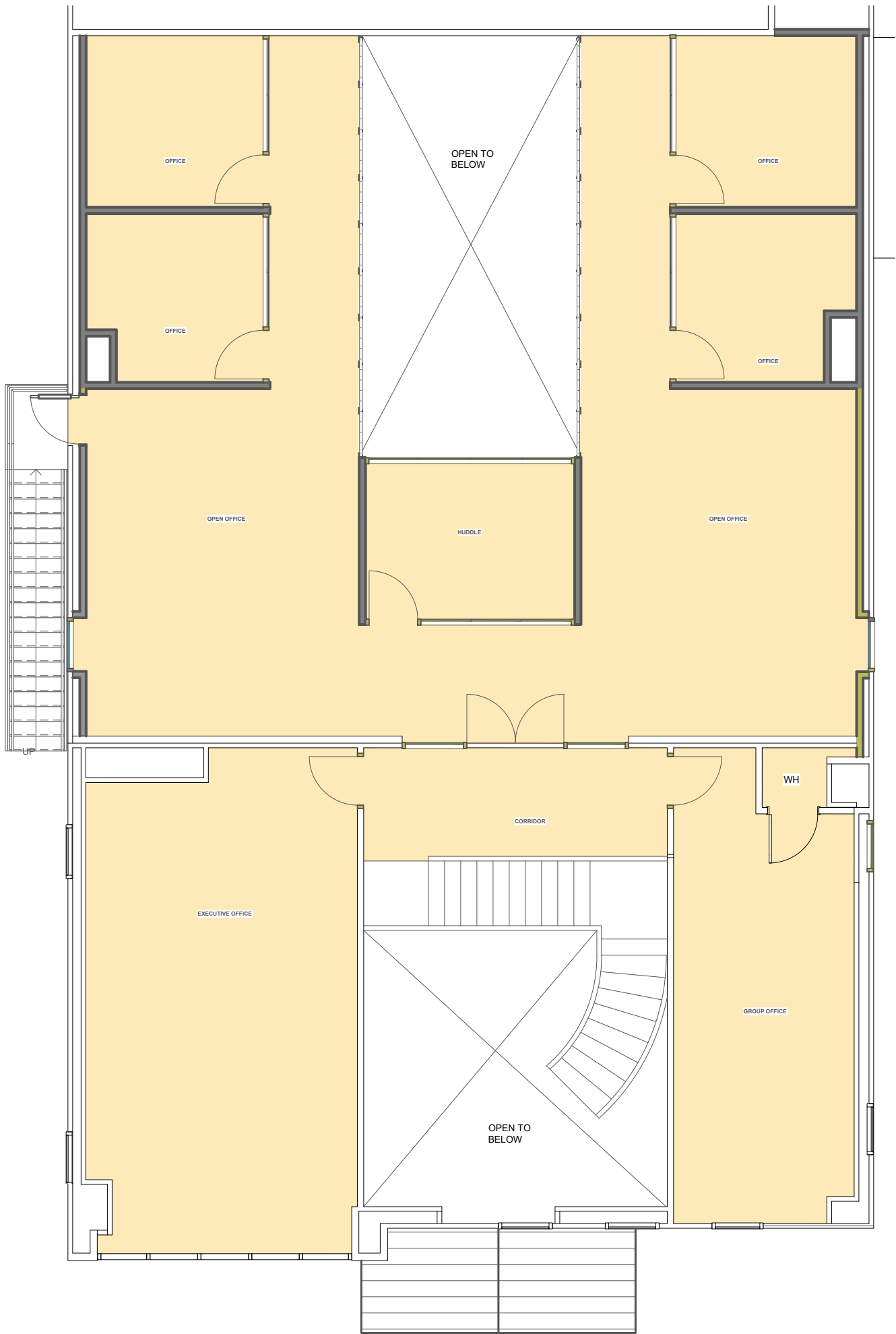
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04



OCCUPANCY LOAD TABLE			
Function of Space	Square Feet	Occupant Load Factor	Occupant Load
<div></div> Business Occupancy	2,707 SF	150 Gross	19 OL
<div></div> Storage S-1 Occupancy	0 SF	300 Gross	0 OL
Level 02 Total Occupancy Load			19 OL

LEVEL 02 OCCUPANCY LOAD

1/8" - 1'



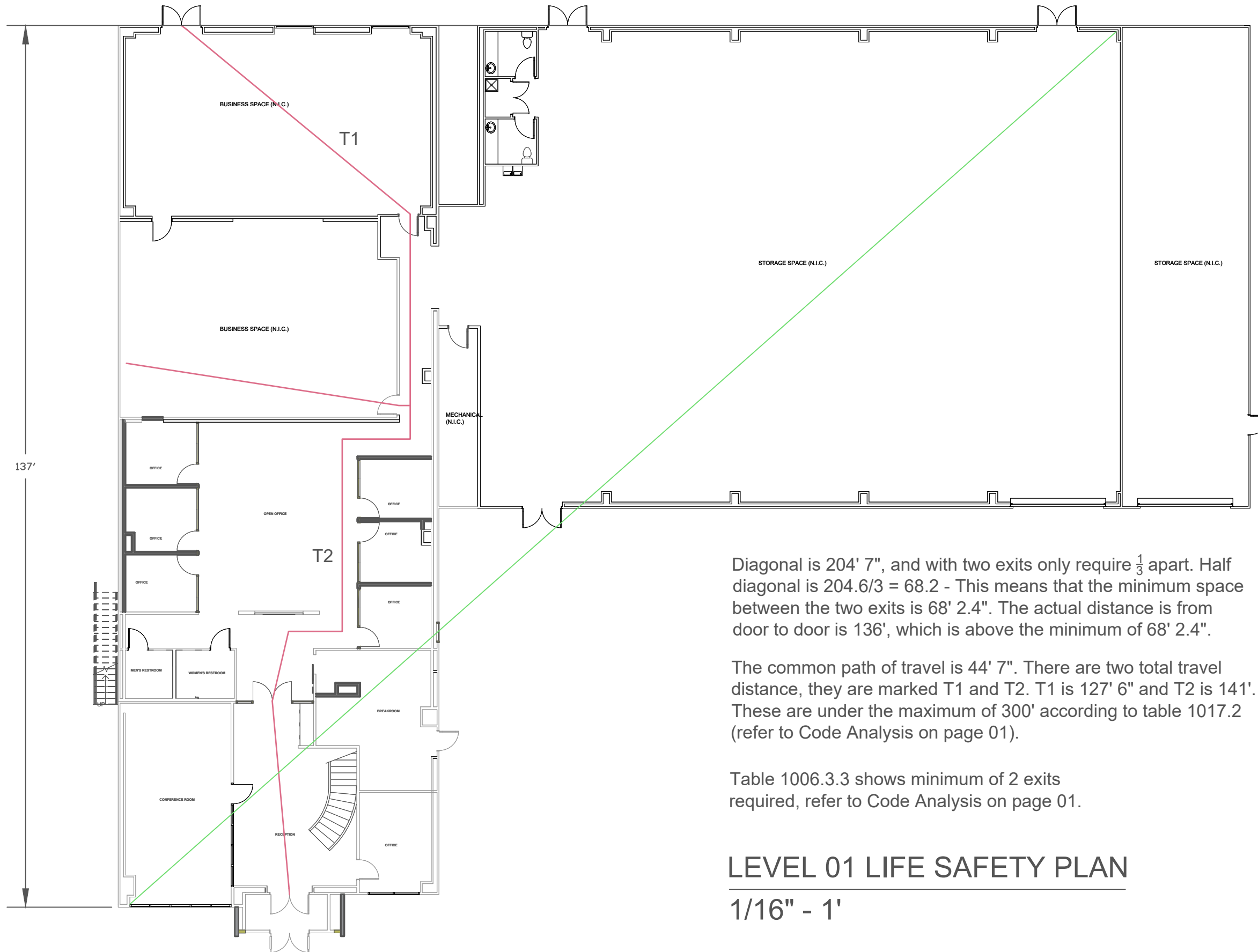
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SHEET NUMBER:
05



Diagonal is 204' 7", and with two exits only require $\frac{1}{3}$ apart. Half diagonal is $204.6/3 = 68.2$ - This means that the minimum space between the two exits is 68' 2.4". The actual distance is from door to door is 136', which is above the minimum of 68' 2.4".

The common path of travel is 44' 7". There are two total travel distance, they are marked T1 and T2. T1 is 127' 6" and T2 is 141'. These are under the maximum of 300' according to table 1017.2 (refer to Code Analysis on page 01).

Table 1006.3.3 shows minimum of 2 exits required, refer to Code Analysis on page 01.

LEVEL 01 LIFE SAFETY PLAN

1/16" - 1'



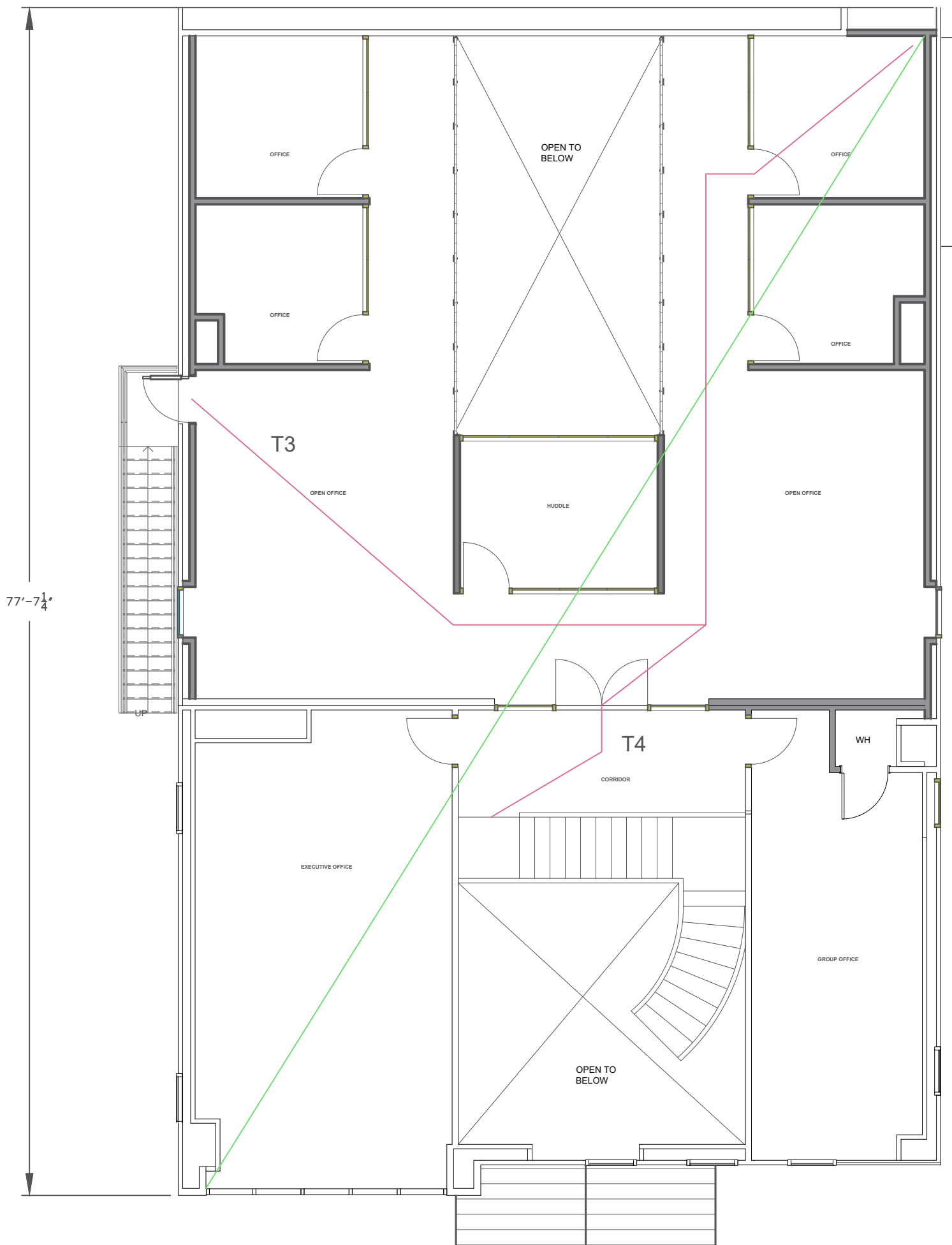
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NOTES:
NO FIRE RATED WALLS.
REFER TO 601 ON CODE
ANALYSIS.

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06



Diagonal is 88' 8", and with two exits only require $\frac{1}{3}$ apart. Half diagonal is $88.66/3 = 29.55$ - This means that the minimum space between the two exits is 29' 6.6". The actual distance is from door to door is 33' 7", which is above the minimum of 29' 6.6".

The common path of travel is 45' 11". There are two total travel distance marked as T3 and T4. T3 is 85' and T4 is 65' 11.5". These are under the maximum of 300' according to table 1017.2 (refer to Code Analysis on page 01)

Table 1006.3.3 shows minimum of 2 exits required, refer to Code Analysis on page 01.

LEVEL 02 LIFE SAFETY PLAN

1/8" - 1'



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NOTES:
NO FIRE RATED WALLS.
REFER TO 601 ON CODE
ANALYSIS.

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07

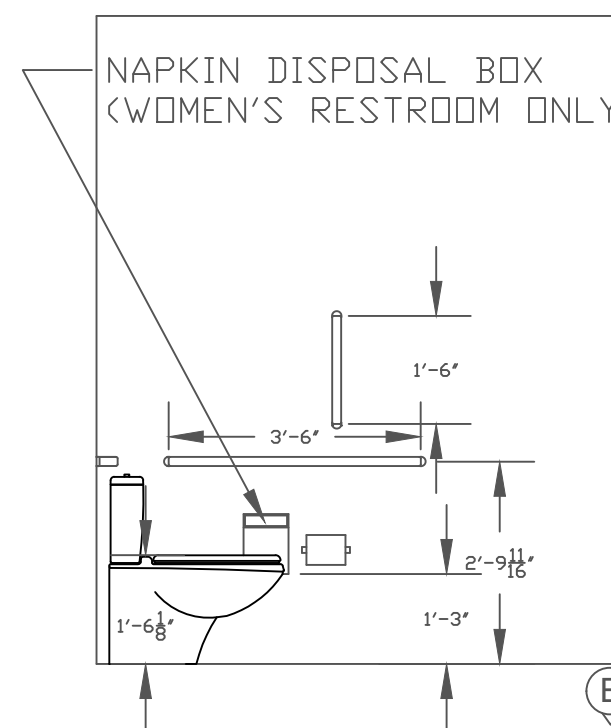
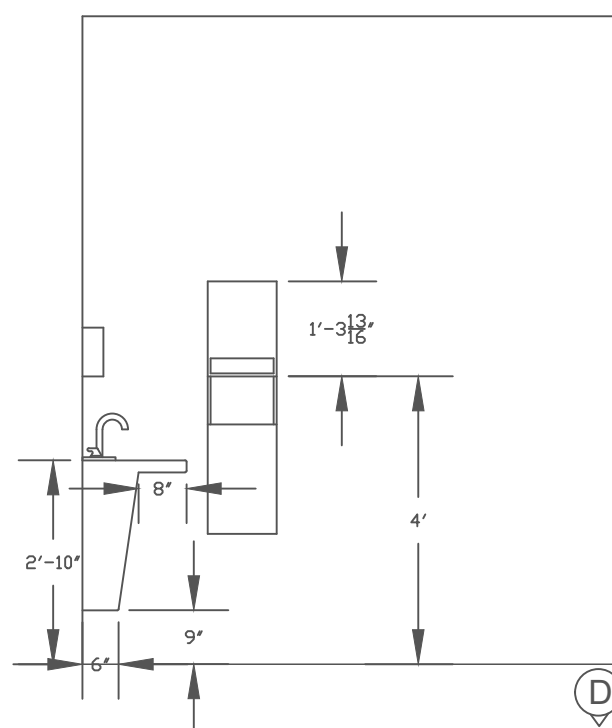
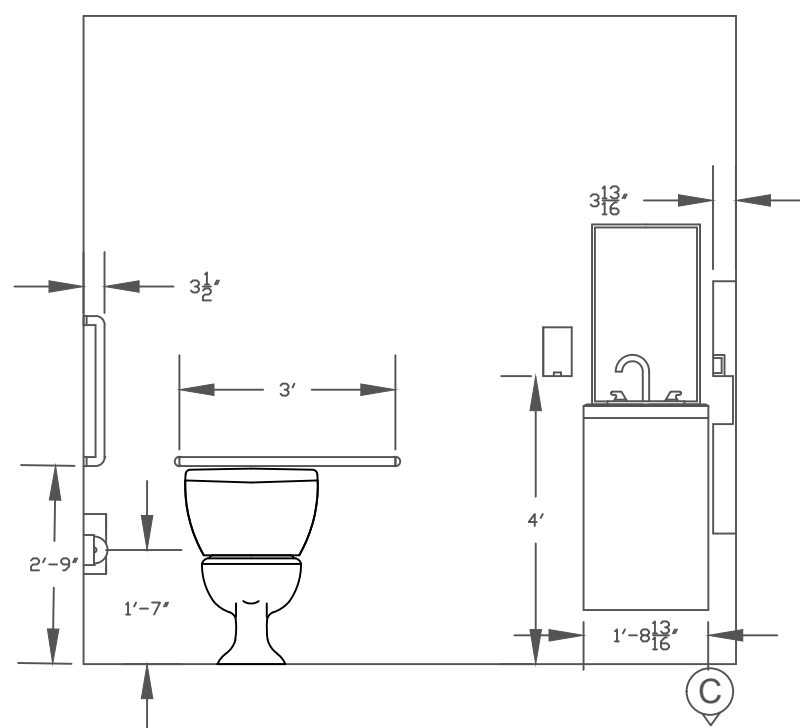
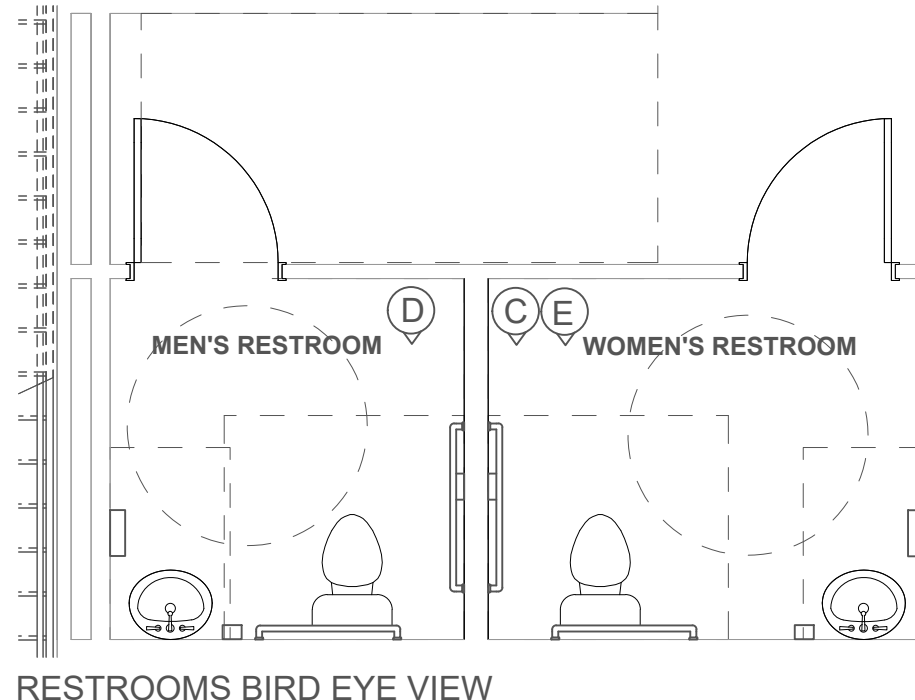
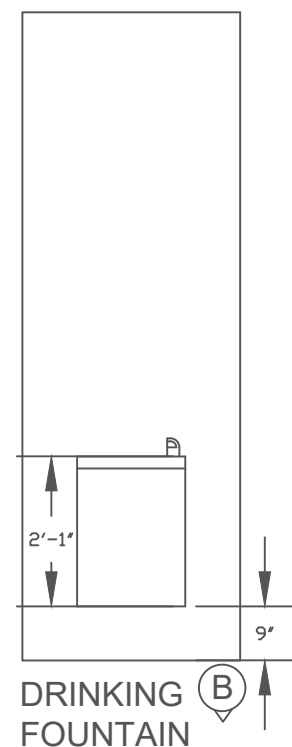
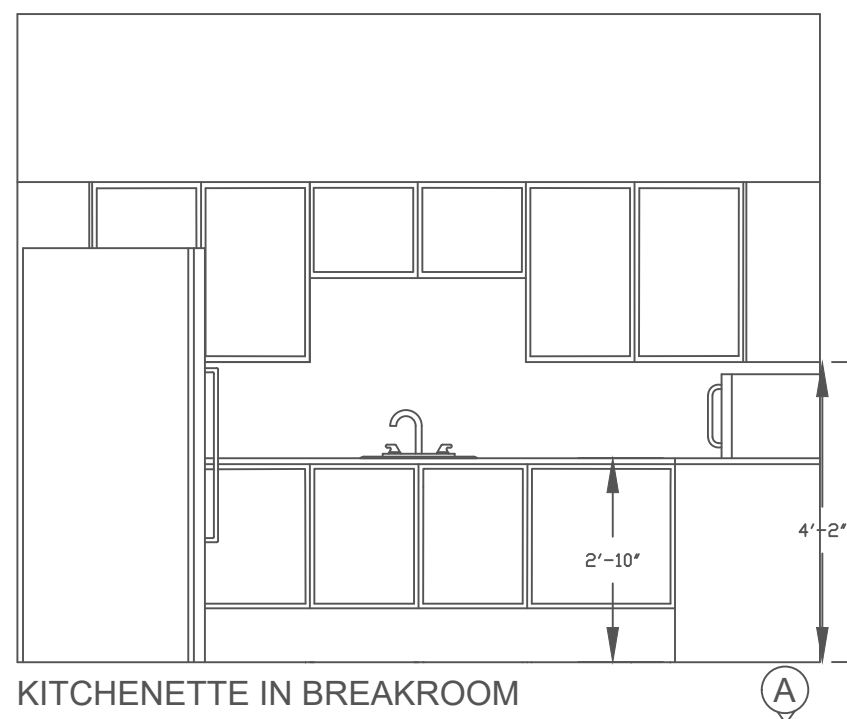
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08



PLUMBING & FIXTURE PLAN

3/8" - 1'

2021 IBC Codes: Chapter 29

2902.1 - Table - Minimum Number of Required Plumbing Fixtures

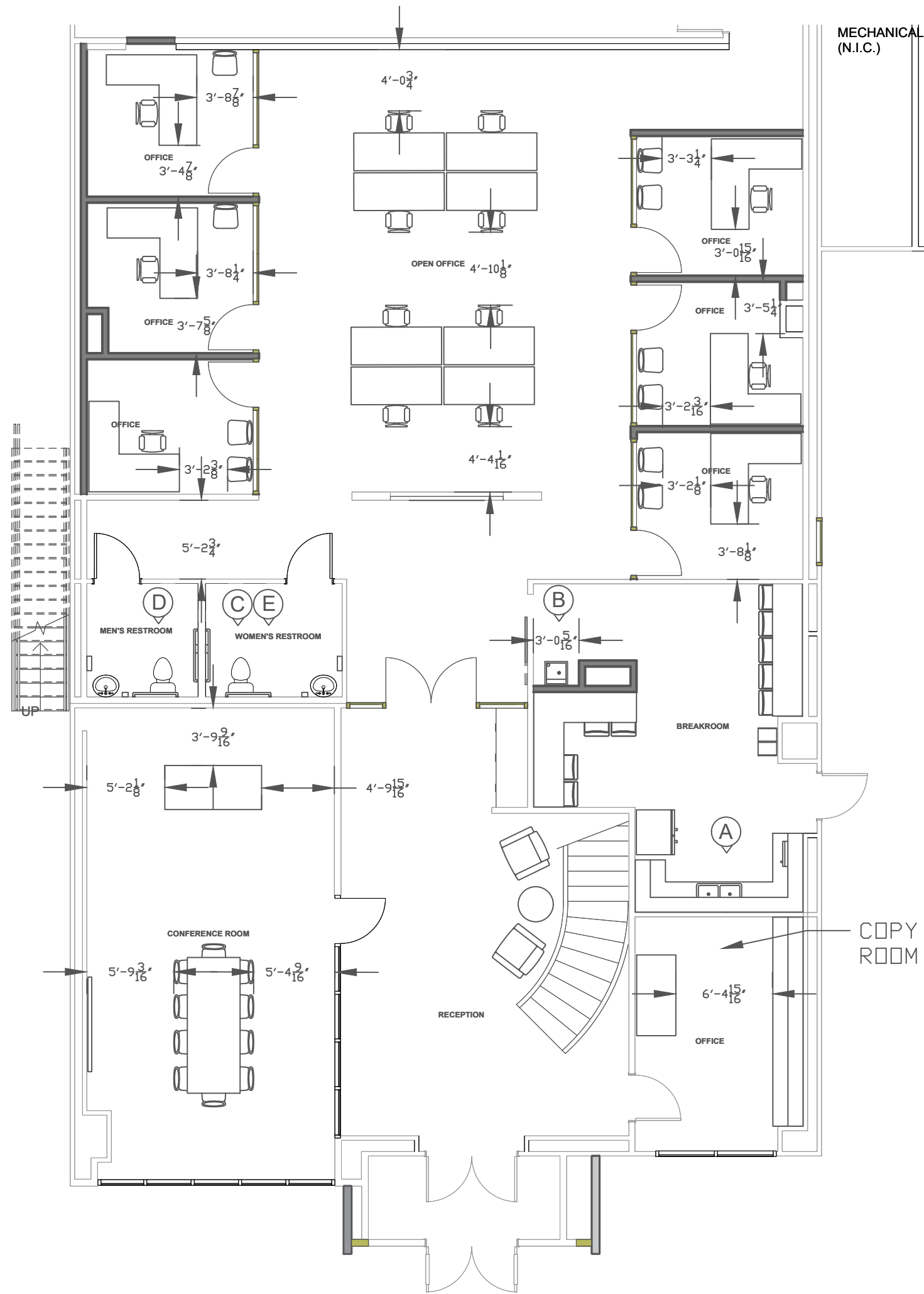
Water Closets for Male and Female: 1 per 25 for first 50 and 1 per 50 for the remainder exceeding 50.
Lavatories for Male and Female: 1 per 40 for first 80 and 1 per 80 for remainder exceeding 80.
Drinking Fountains: 1 per 100.

REQUIRED WATER CLOSETS: 1 MALE AND 1 FEMALE

REQUIRED LAVATORIES: 1 MALE AND 1 FEMALE

B OCCUPANCY = 62 OL

$62 / 2 = 31$ $31 / 50 = .62$ $31 / 50 = .775$



LEVEL 01 FURNITURE PLAN

1/8" - 1'



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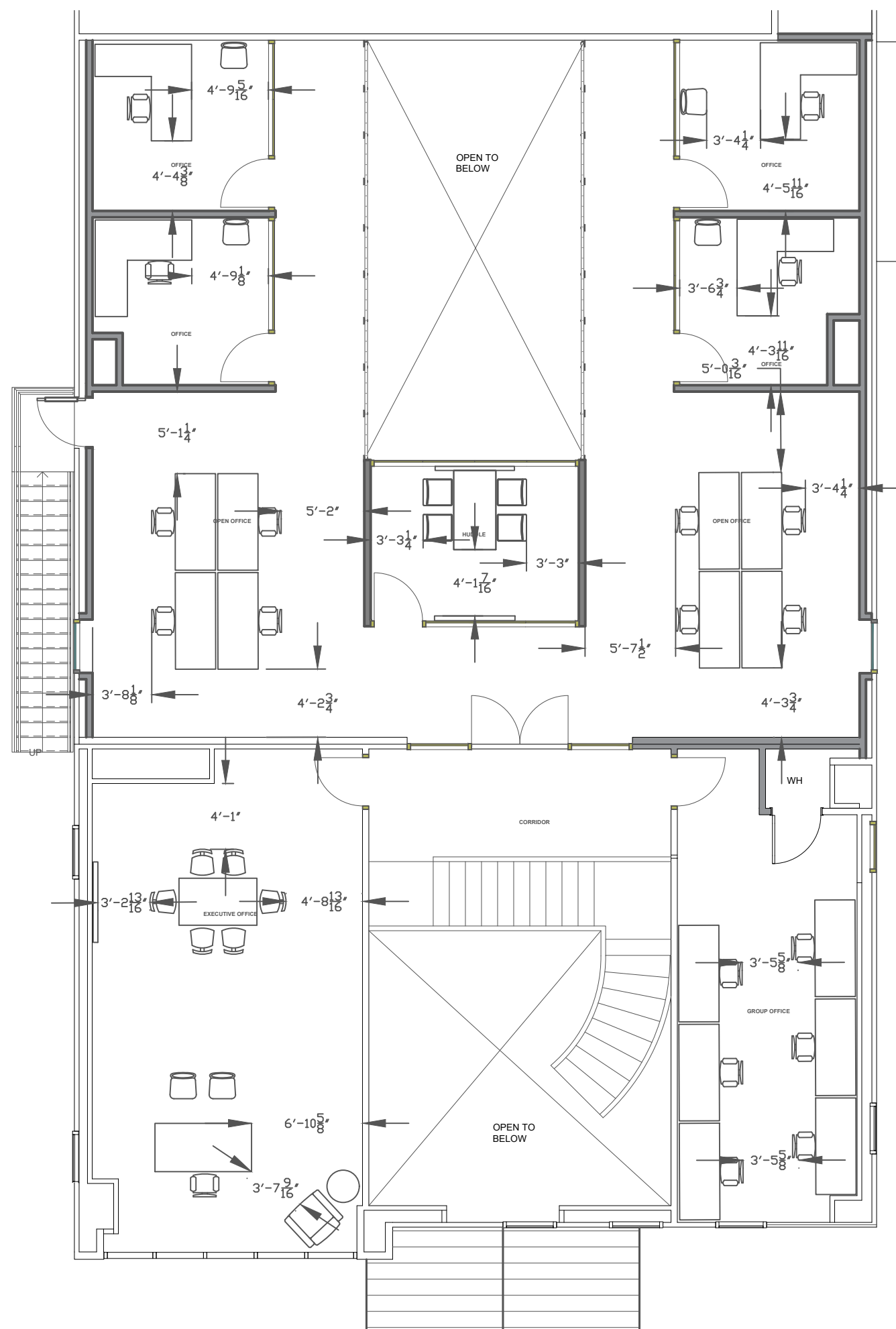
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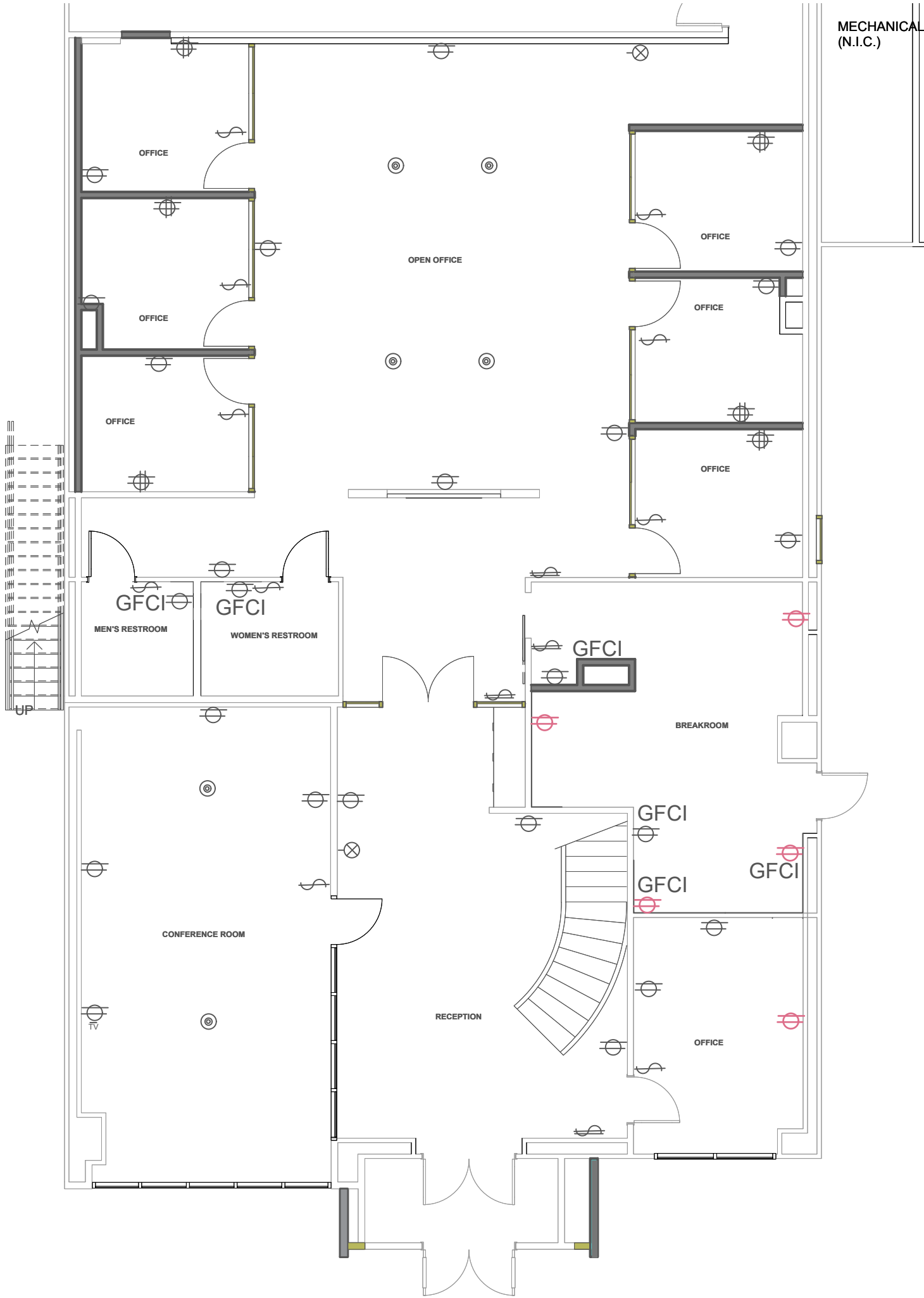
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LEVEL 02 FURNITURE PLAN

1/8" = 1'



MECHANICAL
(N.I.C.)

ELECTRICAL KEY

	SWITCH
	SWITCH (DOUBLE)
	DUPLEX ELECTRICAL
	QUAD ELECTRICAL
	QUAD OUTLET (FLOOR)
	TELEVISION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
	DUPLEX ELECTRICAL PLACED AT 42"
	EXIT SIGN

LEVEL 01 POWER PLAN

1/8" - 1'



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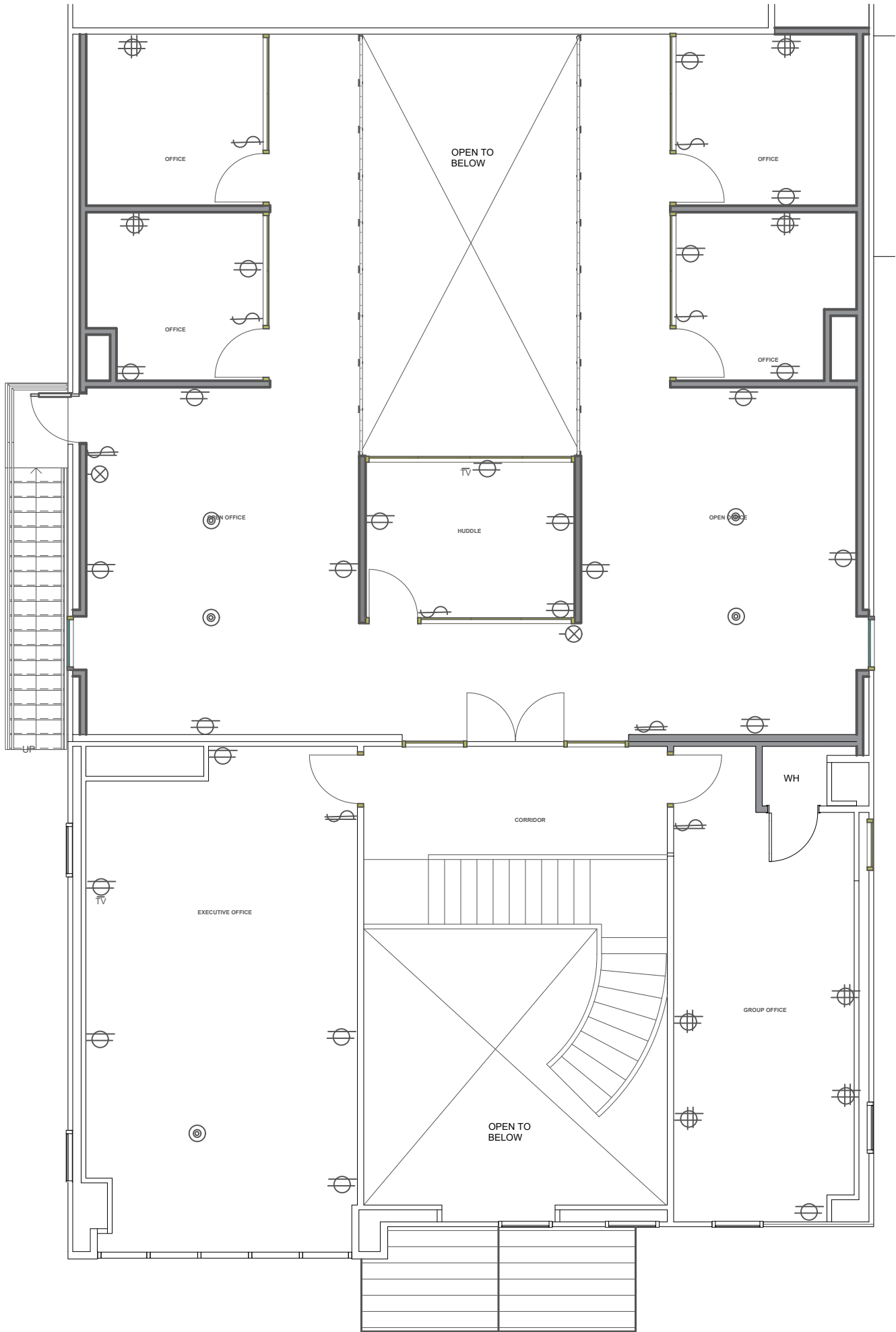
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CLASS:
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NOTES:
ALL QUAD OUTLET
ARE TO BE RECESSED
INTO THE FLOOR.
TELEVISION OUTLETS ARE
TO BE PLACED 63" ABOVE
GROUND.

ALL OUTLETS AT NORMAL
HEIGHT UNLESS OTHER-
WISE LISTED.

SHEET NUMBER:
11



ELECTRICAL KEY

-  SWITCH
-  SWITCH (DOUBLE)
-  DUPLEX ELECTRICAL
-  QUAD ELECTRICAL
-  QUAD OUTLET (FLOOR)
-  TELEVISION
-  GFCI GROUND FAULT CIRCUIT INTERRUPTER
-  DUPLEX ELECTRICAL PLACED AT 42"
-  EXIT SIGN

LEVEL 02 POWER PLAN

1/8" - 1'



NAME:
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NOTES:
ALL QUAD OUTLET
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INTO THE FLOOR.
TELEVISION OUTLETS ARE
TO BE PLACED 63" ABOVE
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ALL OUTLETS AT NORMAL
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WISE LISTED.

SHEET NUMBER:
12