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PERMIT SET  
- NOT FOR CONSTRUCTION -

CONGRESS  
STREET MIXED  
USE

582-584  
Congress Street

Portland, Maine

#	DATE	DESCRIPTION
1	10/6/11	REVIEW DWG
1	10/23/11	PERMIT SET

Date Issued	October 23, 2011
Project Number	15102
Drawing Scale	As Noted

EGRESS / LIFE  
SAFETY PLANS

Drawn By	MC	<b>LS-1.0</b>
Checked By	ACH	

Code Review - NFPA 2009

Chapter 43 - Building Rehabilitation

**Section 43.1.2.1** - This project shall comply with this section of the code and Chapters 37 (Existing Mercantile) for the basement and first floor.

**Section 43.1.2.2** - The upper floors of this project shall comply with Section 43.7 as they are changing their use from Mercantile/Storage to Residential.

**Section 43.1.2.4** - This building is within the historic district and will comply with Section 43.10.

**Section 43.2.2.1.4** - All areas of the building shall comply with the requirements for Reconstruction.

**Section 43.6.2.2.3** - Emergency and egress lighting shall be provided throughout per the requirements for new construction.

**Section 43.6.4** - A sprinkler system will be provided throughout the building (Residential and Mercantile).

**Section 43.6.5** - Smoke alarms shall be provided throughout the residential portions of the building.

**Section 43.7.2.1** - Per Table 43.7.3, all classifications have a Hazard Category of 3. Therefore, the upper floors of the building shall comply with Chapter 30 (Existing Apartment Buildings). Sprinklers, detection, alarms, and communication shall comply with new construction.

**Section 43.7.2.3** - See Section 43.7.2.1 as it is not planned to modify this section per Section 43.10 (due to IBC and other requirements).

Chapter 31 - Existing Apartment Buildings

**Note:** This chapter is applicable to the second, third and fourth floors of this building. The second floor is currently offices for the Mercantile on the first level and will remain. However, the second floors could become Residential units and this project has taken both uses into account.

**Section 31.1.1.1** - The sprinkler system must meet the requirements for new construction. Therefore, Option 4 is used.

- Travel distance from apt door to exit = 200'
- Travel distance with apartment = 125'
- Max. single path corridor distance = 35'
- Max. dead end corridor = 50'
- Corridor walls = 30 min
- Corridor doors = smoke resisting
- Exit walls (3 stories) = 1 hour
- Exit doors (3 stories) = 1 hour
- Escape windows within living unit = Not Required
- Alarm System = Annunciator panel (also see IBC requirements for auto initiation required).

**Section 31.1.2.2.1** - The sole means of egress is permitted to pass through the Mercantile area, however, the means of egress stair from the residential units is separated from the Mercantile area (1-hour).

**Section 31.1.2.3** - The residential units are allowed to be above the Mercantile areas.

**Section 31.1.7** - See egress plans for occupant load.

**Section 31.2.2.1.2** - Exit enclosures are 1-hour rated with 1-hour doors.

**Section 31.2.4.3** - A single exit is permitted (it is also permitted per Section 31.2.4.5).

**Section 31.2.8** - Means of egress shall be illuminated.

**Section 31.2.9** - Emergency lighting is not required.

**Section 31.2.10** - Exit signs for the means of egress shall be provided (see Egress Plans for locations).

**Section 31.3.1.1.1** - The stair enclosure shall have a 1-hour fire rating.

**Section 31.3.4.1.1** - A fire alarm is required (also see Sections 31.1.1.1 and 31.3.4.2.5).

**Section 31.3.4.5.3** - Smoke alarms are not required.

**Section 31.3.5.3** - A sprinkler system will be installed (also see Section 31.1.1.1).

Chapter 37 - Existing Mercantile Occupancy

**Section 37.1.1.4** - The Mercantile Classification is a Class C, and will remain a Class C.

**Section 37.1.2.1.1** - This is considered a separated multiple occupancy of Mercantile and Residential. A 2-hour fire barrier is required per Table 6.1.14.4.1. The 2-hour separation will be reduced to 1-hour due to the installation of a sprinkler system.

**Section 37.1.4.2** - The existing Mercantile consists of the basement, first level and second level. The basement is used for mechanical and storage, the first level is used for sales purposes, and the third level is used for offices for the sales area on the first level. The sales floor is 1,555 sf and therefore is considered a Class C Mercantile (also see Section 37.1.4.2.3).

**Note:** The second floor is currently offices for the Mercantile on the first floor and will currently remain. However, the floors may become Residential units in the future and this project will cover the work so either option can be implemented.

**Section 37.1.4.2.4** - The spaces may be under different tenants, but they are not separated. Therefore, the square footage for all spaces is included in the Classification.

**Section 37.1.5.2** - It is not expected that there will be any high hazard contents.

**Section 37.1.7** - See Egress Plans for the occupant load.

**Section 37.2.1.2** - The stairway down to the basement storage area is an inside open stairway, and only serves one floor.

**Section 37.2.4.3** - A single exit from the second floor is allowed as the travel distance to the exit is under 75' (there are two exits from the first level).

**Section 37.2.5.3.1** - Common paths of travel shall not exceed 100' due to the sprinkler system.

**Section 37.2.6.1** - The maximum travel distance to an exit shall not exceed 250'.

**Section 37.2.8** - Means of egress shall be illuminated.

**Section 37.2.9** - Emergency lighting is not required in Class C.

**Section 37.2.10** - Exit signs for the means of egress shall be provided (see Egress Plans for locations).

**Section 37.3.1** - The means of egress stairway shall be enclosed with a 1-hour enclosure. Also see Section 37.2.1.2 for the basement stair.

**Section 37.3.4.1** - A fire alarm is not required (Class C), but will be provided due to IBC requirements.

**Section 37.3.5.1** - A sprinkler system is not required. However, a sprinkler system will be provided due to IBC requirements and residential requirements in this code.

Architect's note on Maximum Travel Distance For Residential Units

Beginning with IBC Table 1016.1, Residential use groups are allowed a maximum travel distance to the exit (in this case, a vertical exit enclosure) of 250' (sprinkled). However, we must also address "spaces" and "stories" with one means of egress. Section 1015.1(2) states that to be allowed one means of egress from a "space", the Common Path of Travel cannot exceed the requirements of 1014.3. Section 1014.3 (Exception 4), allows for 125' (sprinkled). This supercedes the 250' from the previous Sections. However, Maine has deleted this section in lieu of NFPA Table A7.6 (which allows 325'). But in NFPA Section 30.2.6.2 (for new apartments), the maximum travel distance within the unit is 125' (which is consistent with IBC 1014.3).

Next, exits from "stories" must be reviewed. Section 1021.1 addresses the requirements for one means of egress from a "story". Section 1021.1, Exception 4 states that one means of egress is allowed within and from dwelling units with an occupant load less than 20. There is no mention of a maximum travel distance in this Exception. Table 1021.2 states a maximum of 10 occupants / 75' of travel distance on the first floor and 4 units / 50' of travel distance on the remaining floors. However, this seems to pertain to multiple units on a floor and not to units where the exit out of the unit is the protected exit.

The 2015 IBC code seems to clarify this position. Again, we must look at exits from "spaces" and from "stories". Section 1006.2.1 states that in R-2 and R-3, one means of egress is permitted within and from dwelling units with a maximum occupant load of 20 and a maximum common path of travel of 125' (this covers "spaces"). Section 1006.3.2.5 states that individual single-story or multi-story dwelling units can have a single exit from a "story" if the unit complies with the section on "spaces" and the exit from the dwelling unit discharges directly to the exterior at the level of exit discharge. There is no mention of a maximum travel distance in this section and instead references back to 1006.2.1.

Therefore, in maintaining 2009 IBC Section 1014.3, NFPA Section 30.2.6.2, and 2015 IBC Sections 1006.2.1 and 1006.3.2.5, a maximum travel distance of 125' is used.

**Please note:** The above review was done for new apartment buildings. For existing apartment buildings, the NFPA code allows single exit buildings provided they meet the requirements of 31.2.4.2, 31.2.4.3, 31.2.4.4, or 31.2.4.5.

Code Review - IBC 2009

Chapter 8 - Alterations-Level 3

**Section 801.1** - Work exceeds 50% of the floor area and is considered a Level 3 alteration.

**Section 804.1** - Per Section 704.2.2, the building could serve more than one tenant and the upper floors are changing their use to Residential, therefore a sprinkler system will be installed throughout the building.

**Section 804.2** - Per Section 704.4.1.6, a fire alarm system shall be installed throughout the building.

**Section 804.2.1** - Per IBC sections 907.2.7 (Ex 2) and 907.2.9.1 (Ex 2) manual fire alarm boxes are not required and an automatic system tied into the automatic sprinkler system will be installed.

**Section 805.1** - Means of egress shall comply with Section 705 for the first floor existing Mercantile spaces. Means of egress for the second floors shall comply with the requirements of IBC as this floor currently serves as offices for the Mercantile spaces below, but the spaces have been designed so that they could become Residential units. Therefore, the requirements of IBC shall be used. Means of egress for the upper floors shall also follow the IBC requirements as the floors have a Change of Use and will become Residential units (also see Chapter 9 of this code review, and the specific floor requirements on the Egress Plans).

**Section 805.2** - Means of egress lighting will be installed.

**Section 805.3** - Exit signs shall be provided throughout the building (see Egress Plans for locations).

**Section 807.1** - All structural components will comply with this section, see Structural drawings.

**Section 808.1** - The exteriors are remaining largely intact. See the Floor Plans and Lower Level Elevation for exterior alterations.

Chapter 9 - Change of Occupancy

**Section 901.3.1** - The first floors of both buildings will remain Mercantile. The second floors will currently remain as offices that serve the Mercantile on the first floors, but have been designed to accommodate a Residential use in the future. The third and fourth floors current use is Storage, but will become Residential. Therefore, all levels but the first floor shall adhere to this section.

**Section 901.4** - Certificates of occupancy are required.

**Section 904.1** - The fire protection requirements of Section 912 apply. **Note:** The building is being fully sprinkled with an integrated fire alarm system.

**Section 905.1** - Means of egress shall comply with Section 912.

**Note:** The requirements of IBC apply (see Egress Plans). The first floor (and basement levels) shall adhere to the requirements of Chapter 8 as the use has not changed, but work exceeds 50% of the floor. The residential units on the upper floors are permitted to have one exit per IBC Table 1021.2 (also see Architect's Note on Travel Distance below).

**Section 906.1** - Accessibility shall comply with Section 912.

**Section 907** - See Structural drawings for all structural compliance information.

**Section 908** - It is expected that all electrical work will require additional permits.

**Section 909** - It is expected that all mechanical work will require additional permits.

**Section 910** - It is expected that all plumbing work will require additional permits.

**Section 912.1.1.2** - The upper floors shall be separated from the first floor with a 1-hour rating per IBC Table 508.4. **Note:** The residential units will also be separated from each other with a 1-hour fire separation.

**Section 912.2.1** - The building will be equipped throughout with a sprinkler system.

**Section 912.2.2** - A fire alarm system will be installed throughout the entire building and will be automatically activated.

**Section 912.3** - All interior finishes will comply with IBC.

**Table 912.4** - The first floor and basement levels will remain Mercantile and Storage. The second floor will remain as offices (B) for the Mercantile spaces below, but are designed to become Residential units and are assumed to go from Relative Hazard 4 to 3. The upper floors will be changed from Storage to Residential and go from Relative Hazard 4 to 3.

**Section 912.4.1** - The means of egress for all upper floors shall comply with IBC. **Note:** This includes Sections 912.4.3, 4, and 5.

**Table 912.5** - The building is going to a higher Relative Hazard (4 to 2), therefore the IBC Height and Area limitations apply.

**Section 912.5.3** - The fire barriers shall comply with IBC.

**Section 912.6** - The exterior walls on the sides are shared walls with the neighboring buildings. These walls are multi-wythe masonry walls approximately 8"-12" thick with no openings to the neighboring buildings. Any gaps have been repaired with solid masonry. The walls on the front and back are also multi-wythe masonry with existing window and door openings. All walls satisfy the requirements for Type 3B (2-hour) construction. They also satisfy the requirements for the fire separation distance (2-hour on the sides and 0 on the front and back). Furthermore, the side walls satisfy the requirements for the separation of occupancies between R and M (the adjacent buildings) of 1-hour.

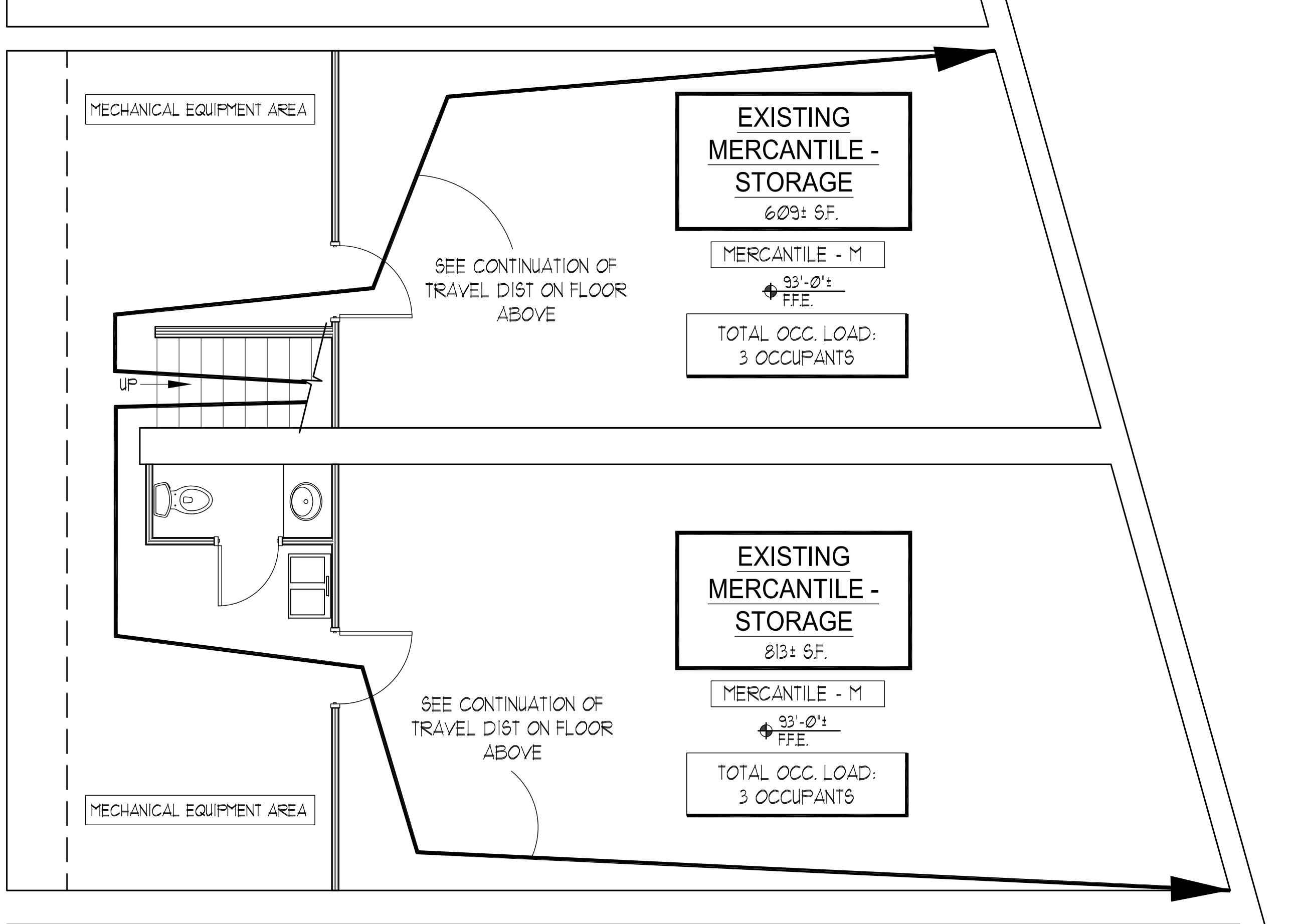
**Section 912.6.3** - The only openings in the exterior wall are on the Congress Street and on the Free Street sides. The exterior walls have a fire separation distance greater than 30' (see IBC Table 705.8) which do not have a limit on the openings.

**Section 912.7.2** - The interior stair that connects the residential units to the exterior will be 1-hour rated as it connects 3 stories.

**Section 912.7.4** - Door openings into the exit stair shall be 1-hour rated per IBC Table 715.4 (see Egress plans).

**Section 912.8.1** - Accessibility will be provided as much as possible. The first floors of Mercantile will have accessible entrances off Congress Street. It is infeasible to provide an elevator to the residential units, both for structural and economic reasons.

**Note:** The Congress street entrances are in the process of being renovated in coordination with Historic Preservation and not part of this project.



- BASEMENT FLOOR NOTES:**
1. THIS LEVEL IS MERCANTILE AND IS CURRENTLY STORAGE FOR ONE TENANT. IT IS PLANNED TO HAVE TWO AREAS OF STORAGE FOR A MAXIMUM OF TWO TENANTS. THIS LEVEL ALSO CONTAINS MECHANICAL SYSTEMS. THE RESTROOM IS NOT FOR PUBLIC USE.
  2. THE BUILDING IS FULLY SPRINKLED WITH AN NFPA 13 SYSTEM.
  3. THE EXISTING EXTERIOR WALLS / FOUNDATION ARE A COMBINATION OF CONCRETE, MULTI-WYTHE SOLID MASONRY, AND SOLID RUBBLE STONES, APPROX 12" THICK (MIN). THEY ARE REQUIRED TO BE 2-HR PER IBC TABLE 601 (CONSTRUCTION TYPE 3B).
  4. THE WALL IN THE MIDDLE OF THE SPACE IS A SOLID MULTI-WYTHE MASONRY WALL APPROX 8"-12" THICK.
  5. THE ADJACENT BUILDINGS (PLAN NORTH AND PLAN SOUTH) ARE MERCANTILE USES (MOST LIKELY STORAGE AND NOT OPEN TO THE PUBLIC).

1 BSMT FLOOR EGRESS PLAN - 582 & 584  
SCALE: 1/4" = 1'-0"