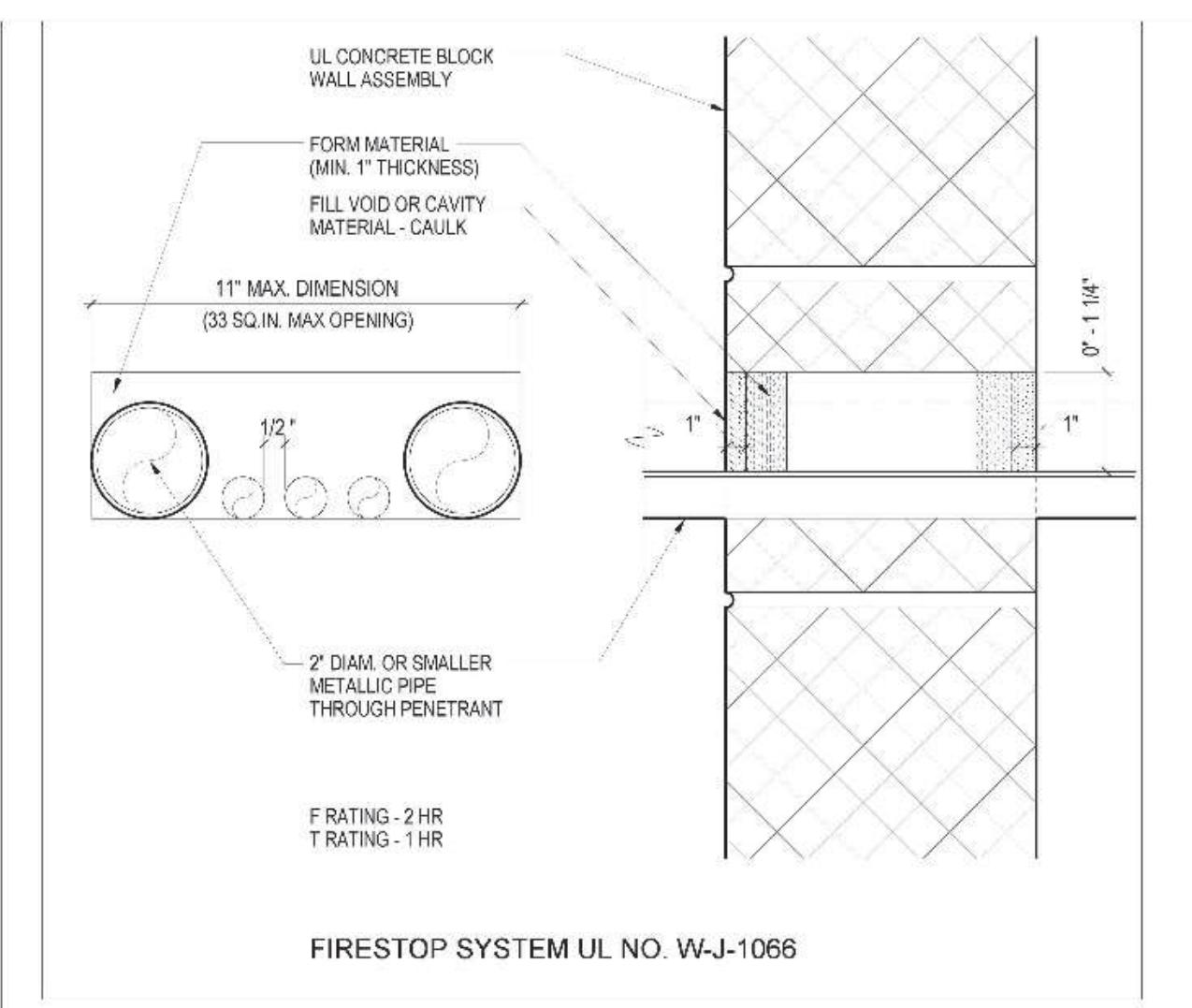




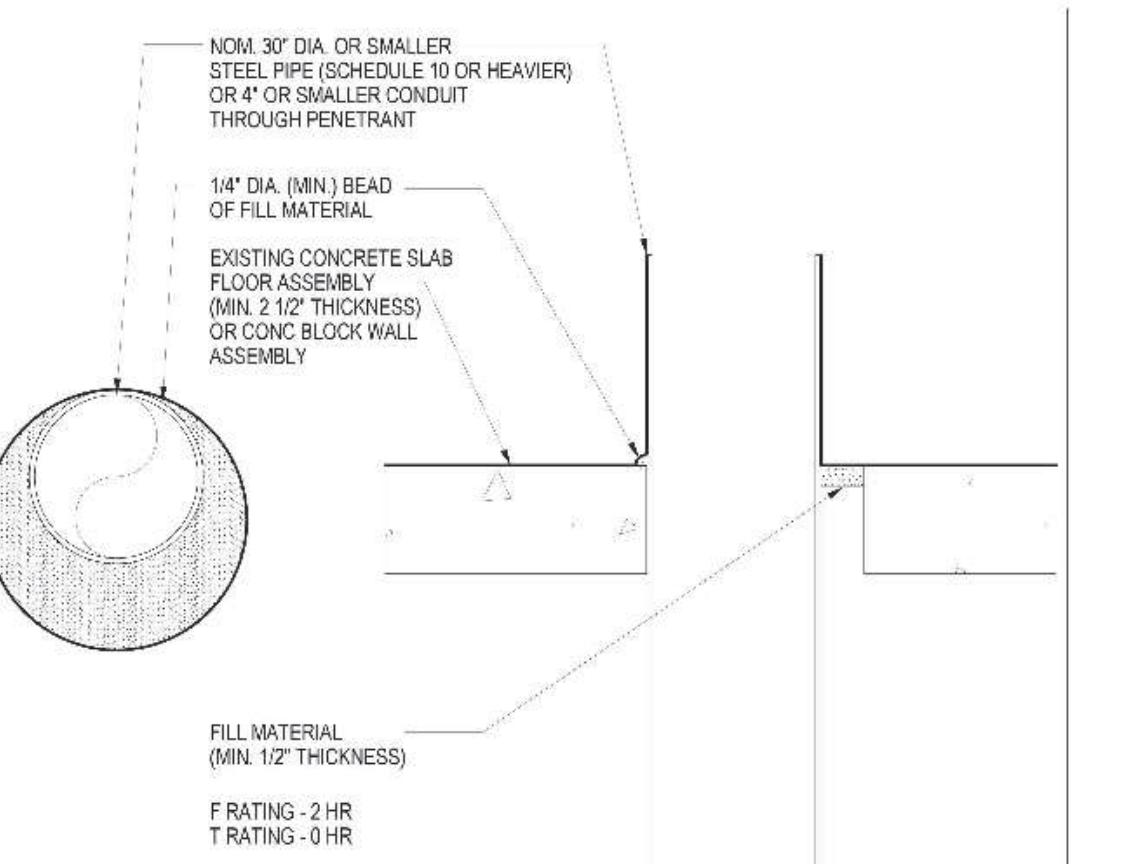
## RENOVATION OF THREE RESIDENCE HALLS DRAPER HALL

RADFORD UNIVERSITY  
RADFORD, VIRGINIA

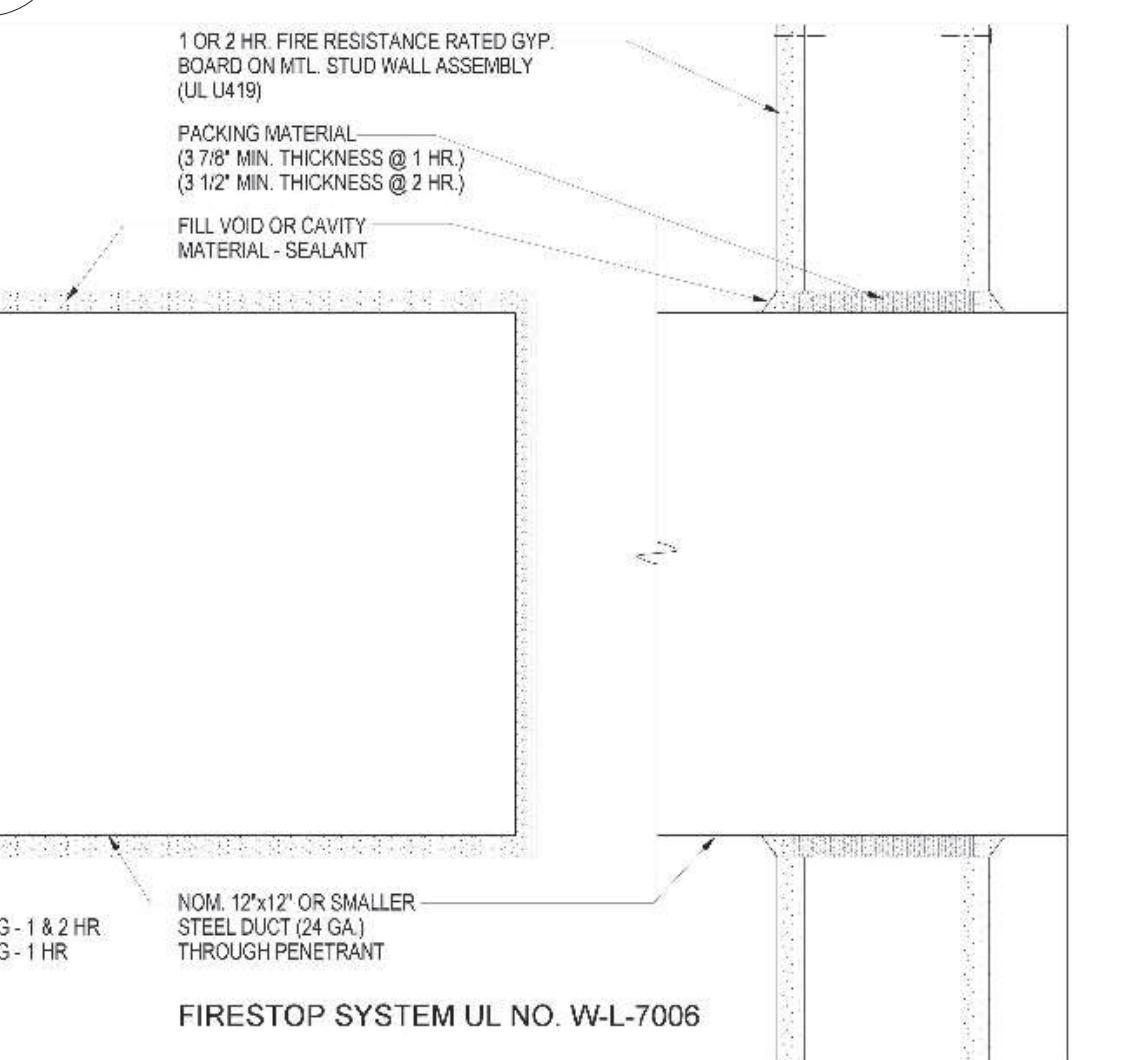
Project Code  
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1115



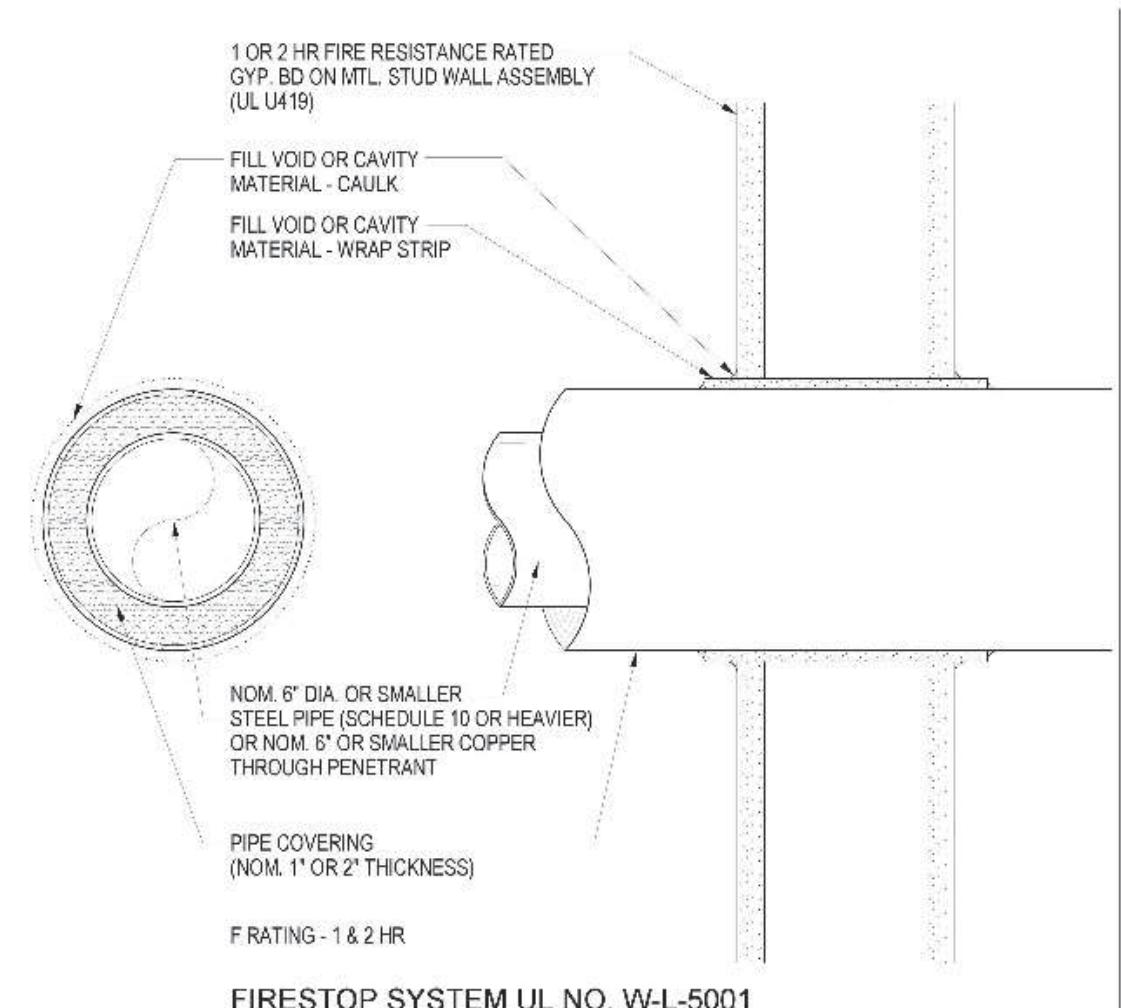
**01**  
STEEL PIPE/CONDUIT THROUGH PENETRATION @ WALL  
FP001  
SCALE: SCALE: 3' = 1'



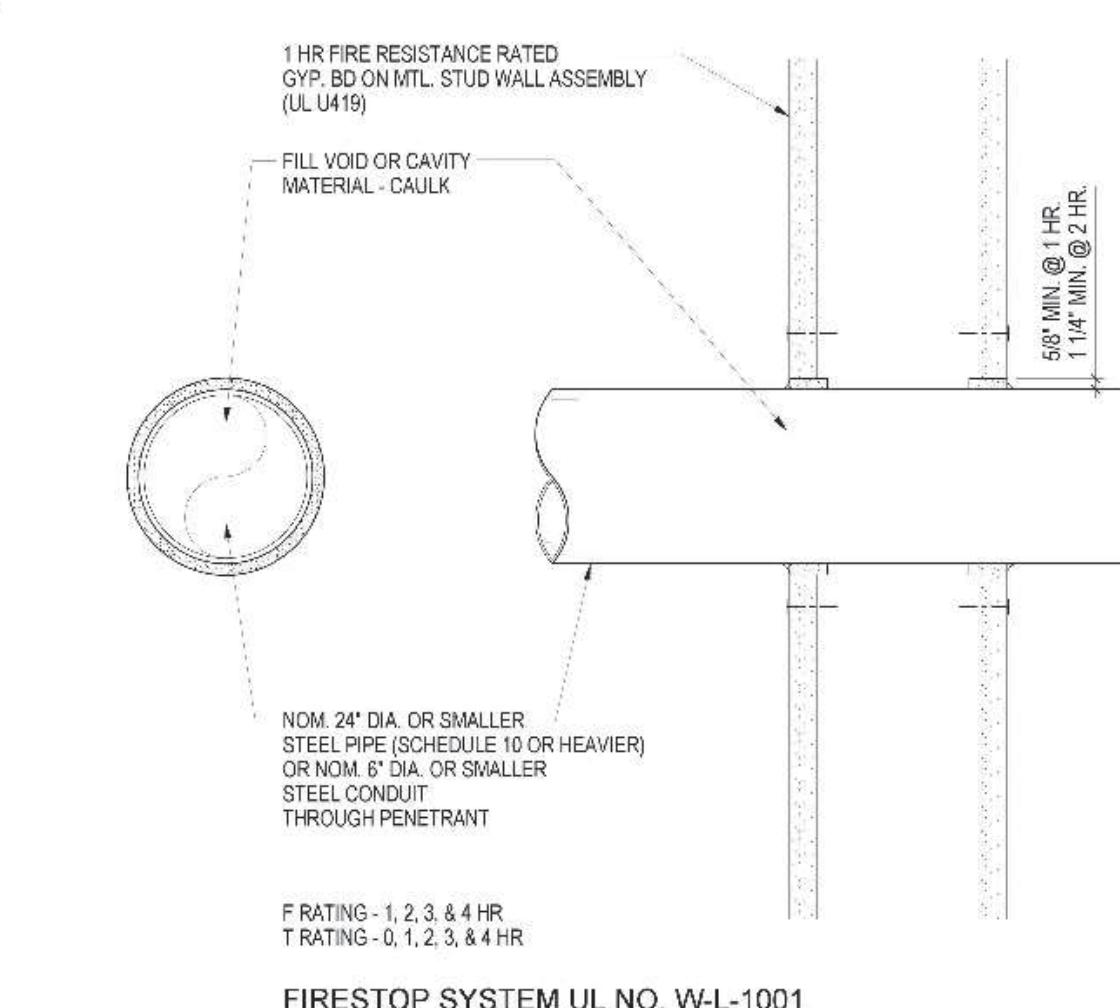
**02**  
STEEL PIPE/CONDUIT THROUGH PENETRATION @ FLOOR  
FP001  
SCALE: SCALE: 3' = 1'



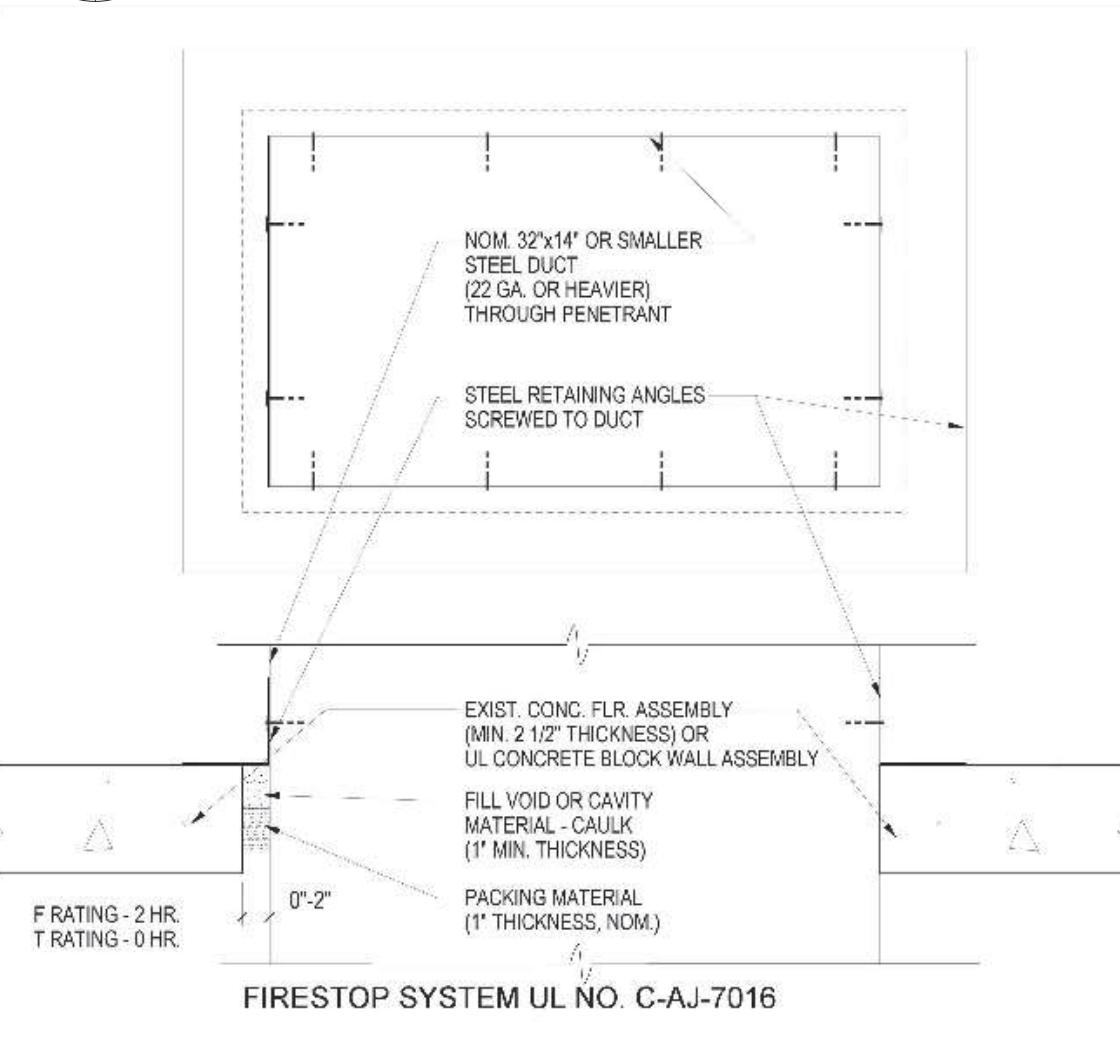
**05**  
STEEL DUCT THROUGH PENETRATION @ WALL  
FP001  
SCALE: SCALE: 3' = 1'



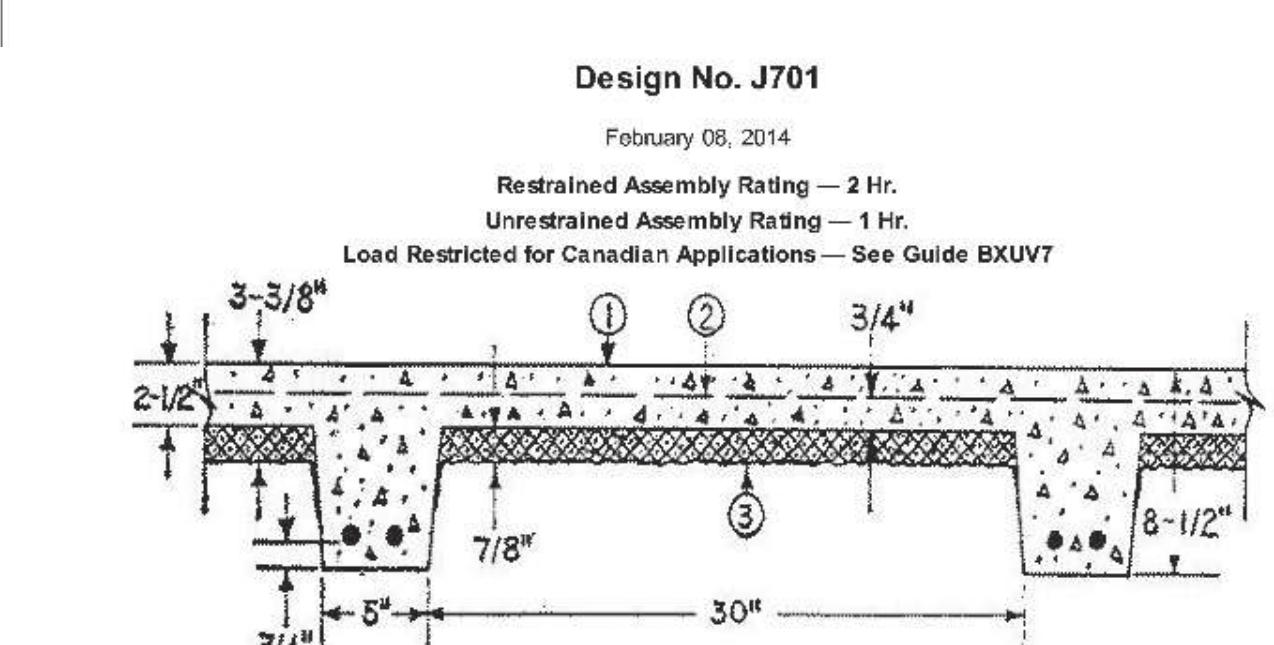
**03**  
STEEL PIPE/CONDUIT THROUGH PENETRATION @ WALL  
FP001  
SCALE: SCALE: 3' = 1'



**04**  
STEEL PIPE/CONDUIT THROUGH PENETRATION @ WALL  
FP001  
SCALE: SCALE: 3' = 1'



**06**  
STEEL DUCT THROUGH PENETRATION @ WALL  
FP001  
SCALE: SCALE: 3' = 1'



**01**  
Normal Weight Concrete — Siliceous or carbonate aggregate, 3000 psi compressive strength, to be designed with continuity over the supports.

**01A**  
Vermiculite Aggregate Concrete\* — (Not Shown) — Optional. Applied over concrete slab, item 1. The vermiculite concrete is to 2 in. min with a max thickness of 6 in.

**SIPLAST INC**

**01B**  
Cellular Concrete — Root Topping Mixture\* — (Not Shown) — Optional — Foam Concrete mixed with water, Portland Cement and UL Classified Vermiculite Aggregate per manufacturer's application instructions. Cast dry density of 33 (+ or - 3.0) pcf and 28-day compressive strength of min 250 psf as determined in accordance with ASTM C466-86. The cellular concrete topping thickness shall be 2 in. min with a max thickness of 6 in.

**SIPLAST INC** — Mix No. 3.

**02**  
Welded Wire Fabric — 6x6 — 6/65WG.

**03**  
Spray-Applied Fire Resistive Materials\* — Spray applied by mixing with water in more than one coat to a final thickness of 7/8 in. to concrete surfaces which must be clean and free of dirt or oil. Min avg and min ind density of 22.19 pcf respectively. Min avg and min ind density of 40.96 pcf respectively for Z-146, Sonophone 35, and Monokote Acoustic 35. For method of density determination, refer to Design Information Section, Sprayed Material.

**ARABIAN VERMICULITE INDUSTRIES** — Types MK-5, MK-6/HY, MK-6a, MK-6 GF, MK-6 GF Extended Set, MK-10 HB, MK-1000/HB, MK-1000/HB Extended Set, Monokote Acoustic 1, RG.

**GRACE KOREA INC** — Types MK-6/CBF, MK-6/ED, MK-6/HY, MK-6a, MK-6 GF, MK-6 GF Extended Set, MK-10 HB, MK-1000/HB, MK-1000/HB Extended Set, Monokote Acoustic 1.

**PYROK INC** — Type LD.

**SOUTHWEST FIREPROOFING PRODUCTS CO** — Types 4, 5, 5EF, 5GP, 5MD, 7GP, 7HD, 8EF, 8GP, 8MD, 8EF, 9GP, 9MD.

**WR GRACE & CO - CONN** — Types MK-5, MK-6/HY, MK-6a, MK-6 GF, MK-6 GF Extended Set, MK-10 HB, MK-1000/HB, MK-1000/HB Extended Set, Monokote Acoustic 1, RG.

**3A**  
Spray-Applied Fire Resistive Materials\* — (Not Shown) — In lieu of item 3 the following spray applied fire resistive materials may be used on multiple surfaces which must be clean and free of dirt or oil. Secured to underside of slab through steel washers with an outside diam of 1/2 in. with fasteners spaced 6 in. OC in both directions with lath edges overlapped approx 3 in.

**ARABIAN VERMICULITE INDUSTRIES** — Types Sonophone 5, Z-106, Z-106/G, Z-106/HY, Z-148 investigated for exterior use, Sonophone 35.

**GRACE KOREA INC** — Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY, Z-148 investigated for exterior use, Monokote Acoustic 35.

**WR GRACE & CO - CONN** — Types Monokote Acoustic 5, Z-106, Z-106/G, Z-106/HY, Z-148 investigated for exterior use, Monokote Acoustic 35.

**4**  
Metal Lath — (Not Shown) — Required with Z-146, Sonophone 35, and Monokote Acoustic 35, otherwise optional — Metal lath shall be 3/8 in. expanded diamond mesh, weighing 2.5 lb per sq yd. Secured to underside of slab through steel washers with an outside diam of 1/2 in. with fasteners spaced 6 in. OC in both directions with lath edges overlapped approx 3 in.

**5**  
Metal Lath — (Not Shown) — Required when type 7HD is applied to — Metal lath shall be 3/8 in. expanded diamond mesh, weighing 3.4 lbs per sq yd. Secured to underside through steel washers with an outside diam of 1/2 in. with fasteners spaced 12 in. OC in both directions with lath edges overlapped approx 3 in.

\*Bearing the UL Classification Mark.

## RADFORD UNIVERSITY - RENOVATION TO THREE RESIDENCE

**Project Data Summary**  
Authority Having Jurisdiction: Virginia Bureau of Capital Outlay Management  
Applicable Building Codes: Virginia Rehabilitation Code (VRC), 2009 Edition, Part II  
Accessibility Standards: 2010 ADA Standards for Accessible Design (ASAD)  
Fire Suppression: Fully Sprinklered per NFPA 13  
Construction Classification: Existing Building constructed in 1954, Assuming Type IIIIB (of the current code)  
Building Occupancy Use Group: Existing R1/R2 (Dormitory) with B/A3/S2 Accessory Use Groups

Building Code Summary	Section Ref.	Required/Allowed	Provided	Remarks
<b>Construction Classification</b>	602	IIB	IIB	
<b>Use and Occupancy Class.</b>	302	R1/R2 / B / A3 / S2	R1/R2 / B / A3 / S2	
<b>Allowable Height - R1/R2</b>	Table 503	4 stories / 55'		
Height Increase - R1/R2	504.2	1 story / 20'		
Adj. Building Height - R1/R2		5 stories / 75'		3 stories / 40'-10"
<b>Allowable Height - S2</b>	Table 503	3 stories / 55'		
Height Increase - S2	504.2	1 story / 20'		
Adj. Building Height - S2		4 stories / 75'		1 story
<b>Allowable Height - A3</b>	Table 503	2 stories / 55'		
Height Increase - A3	504.2	1 story / 20'		
Adj. Building Height - A3		3 stories / 75'		3 stories / 40'-10"

Building Area	Basement	Table 503	9500 SF (A3) / 19,000 (B)	3191 SF (A3) / 220 SF (B)
First Floor	Table 503	9500 (A3) / 16,000 (R1)	2237 SF (A3) / 7412 SF (R1)	
Second Floor	Table 503	9500 (A3) / 16,000 (R1)	522 SF (A3) / 9096 SF (R1)	
Third Floor	Table 503	9500 (A3) / 16,000 (R1)	522 SF (A3) / 9096 SF (R1)	
Subtotal		38,000 SF (A3)/48,000 SF (R1)	6472 SF (A3)/25,550 SF (R1)	
Attic				9591 SF
Grand Total				6472 SF(A3)/25,550 SF(R1)/9,591 SF
				41,613 SF

Occupant Load / Tabulation of Units	Use Group	A3/B/S2	R1 - Actual	R1 - Table 1004.1, 1	# Bedrooms
	Basement	86	0	0	0
	First Floor	43	45	87	18
	Second Floor	37	60	124	25
	Third Floor	37	59	115	25
	Subtotal	203	164	326	68
	Attic	33	0	0	0
	Total	236	164	326	68

Total number of HC bathrooms: 5 (1 roll in shower)

Egress Width per Occupant	Means of Egress	Section Ref.	Required/Allowed	Provided	Remarks
	Corridor Width	1005.1 / 1012.2	0.15' per Occup / 44' min		Refer to Plans
	Exits Room Width	1010.5.1	0.15' per Occup / 44' min		6'-8" min headroom
	Fully Accessible Means of Egress	1007.1	Not less than 2		Refer to Plans

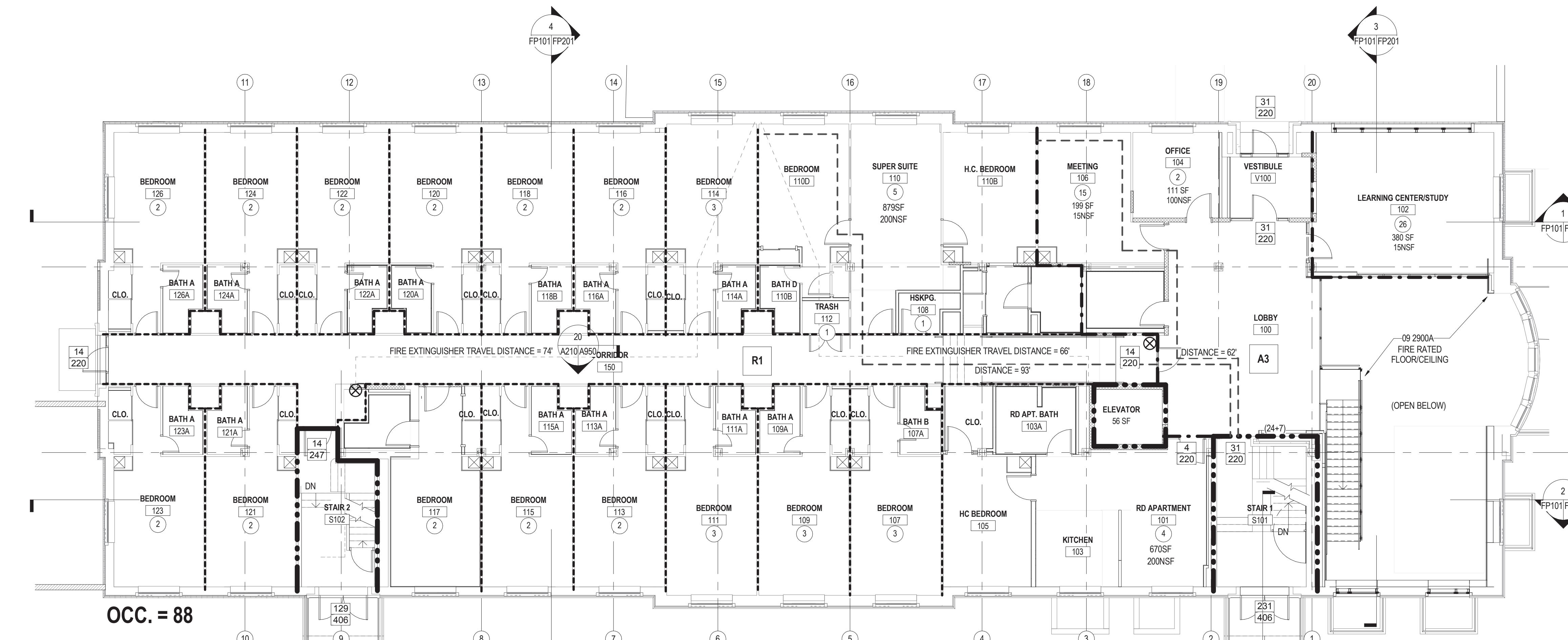
All Means of Egress stairs are existing to remain.  
All new egress / exit door leafs 36"-wide min. 36" door: 33" clear divided by 0.15"/person = 220 per leaf.

Exit	Exit Access Travel Distance	1016.1	250' w/ Auto Sprinkler	Less than 250'	w/ Auto Sprinkler

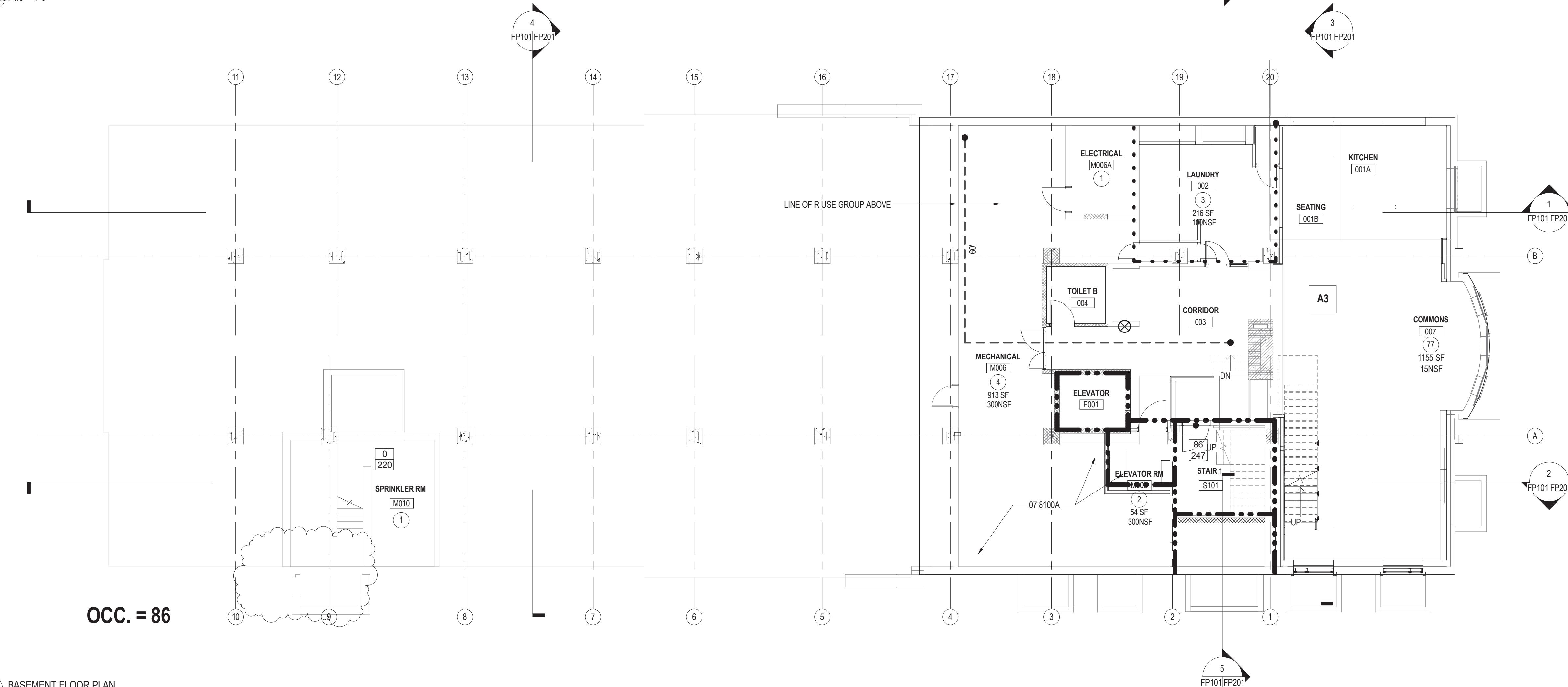
Fire Protection Requirements

Code Topic	Section Ref.	Required	Provided	Remarks
<b>Separated Occupancies</b>	508.4	Basement / First Floor - A3/R1 (Horizontal assembly)	1 HR	The existing concrete joists with new SFRM added is believed to be similar to UL J701
	508.4	First Floor/Second Floor - A3/R1 (Horizontal assembly)	1 HR	Provide UL G504 assembly at new ceilings
	508.4	First Floor/Second Floor - A3/R1 (Horizontal assembly)	1 HR	The existing floor-ceiling assembly (where plaster ceiling is indicated to remain) is believed to be similar to UL G401
	508.4	Fire Barrier - A3/R1	1 HR	The existing wall assembly appears to be 2 5/8" CMU with 5/8" plaster, on both sides, which affords a 1 1/2 hr rating
	508.4	Fire Barrier - A3/R1	1 HR	Provide UL U906
<b>Stair Enclosure</b>	1022.1	Connecting 4 Stories or More	2 HR.	Existing to Remain
</				





2 FIRST FLOOR PLAN  
A201 FP101 1/8" = 1'-0"



1 BASEMENT FLOOR PLAN  
A201 FP101 1/8" = 1'-0"

FIRE PROTECTION LEGEND	
(1)	OCCUPANCY
(X)	FIRE EXTINGUISHER
26	ACTUAL
220	ALLOWABLE EGRESS CAPACITY FOR OPENING CLEAR WIDTH
— — — —	COMMON PATH OF EGRESS TRAVEL
— — — —	2 HR RATED FIRE BARRIER
— — — —	1 HR RATED FIRE BARRIER
— — — —	1/2 HR RATED PARTITION
— — — —	SMOKE PARTITION
/ / / / /	1-HR HORIZONTAL FIRE SEPARATION AT CEILING ABOVE
XX XX XX XX	2-HR HORIZONTAL FIRE SEPARATION AT CEILING ABOVE

## BASEMENT & FIRST FLOOR LIFE SAFETY PLAN

FP101

Checked By MLW / ARS  
Drawn By DEM / MBW

Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.

GRAPHIC SCALE - 1/32" = 1'-0"  
0 32'-0" 64'-0" 96'-0"

ISSUES AND REVISIONS	
NO.	SUBMITTAL DATE
1	BID DOCUMENTS 05.19.14
2	Addendum 1 06.19.14
3	Addendum 2 06.24.14
	Addendum 3 06.25.14
	CONSTRUCTION SET 05.01.15



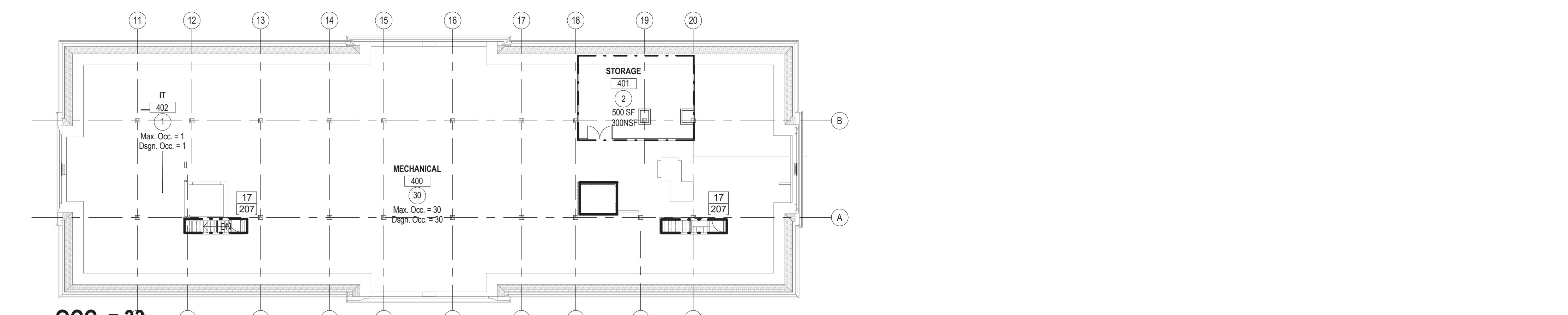
**RENOVATION OF THREE  
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DRAPER HALL**

RADFORD UNIVERSITY  
RADFORD, VIRGINIA

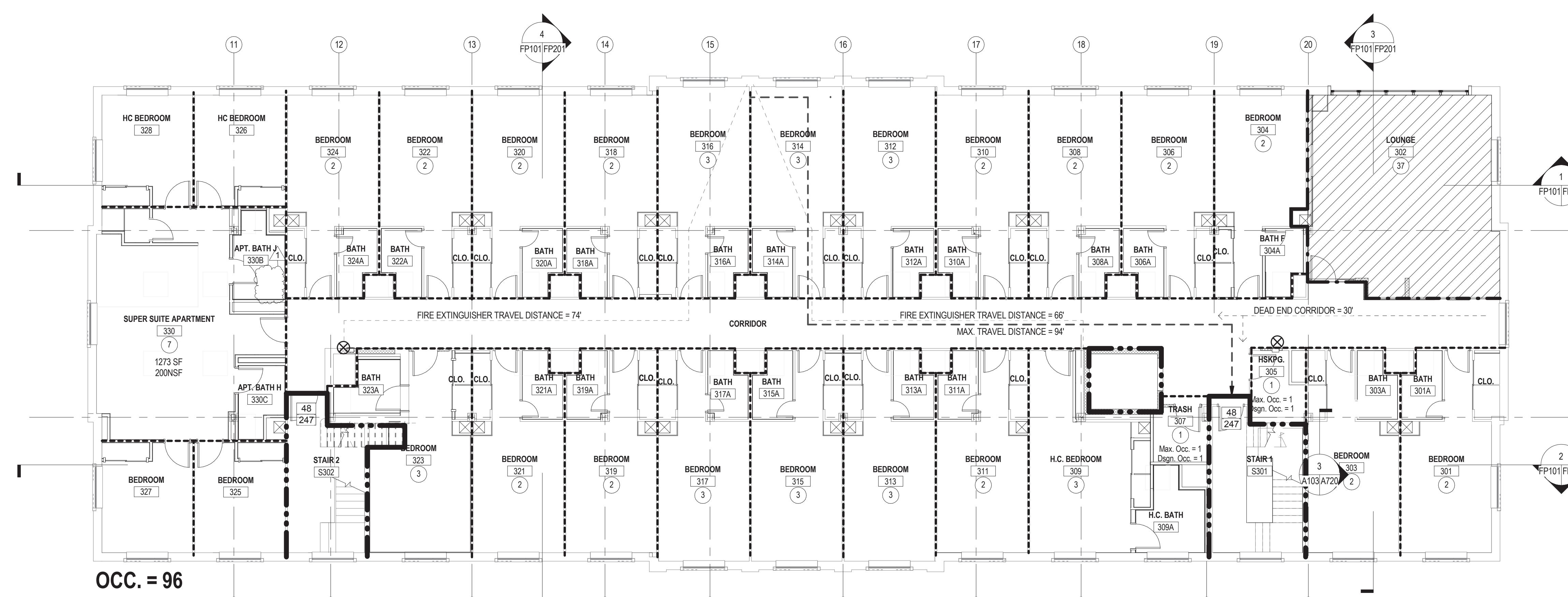
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VMDO Project Number 1115

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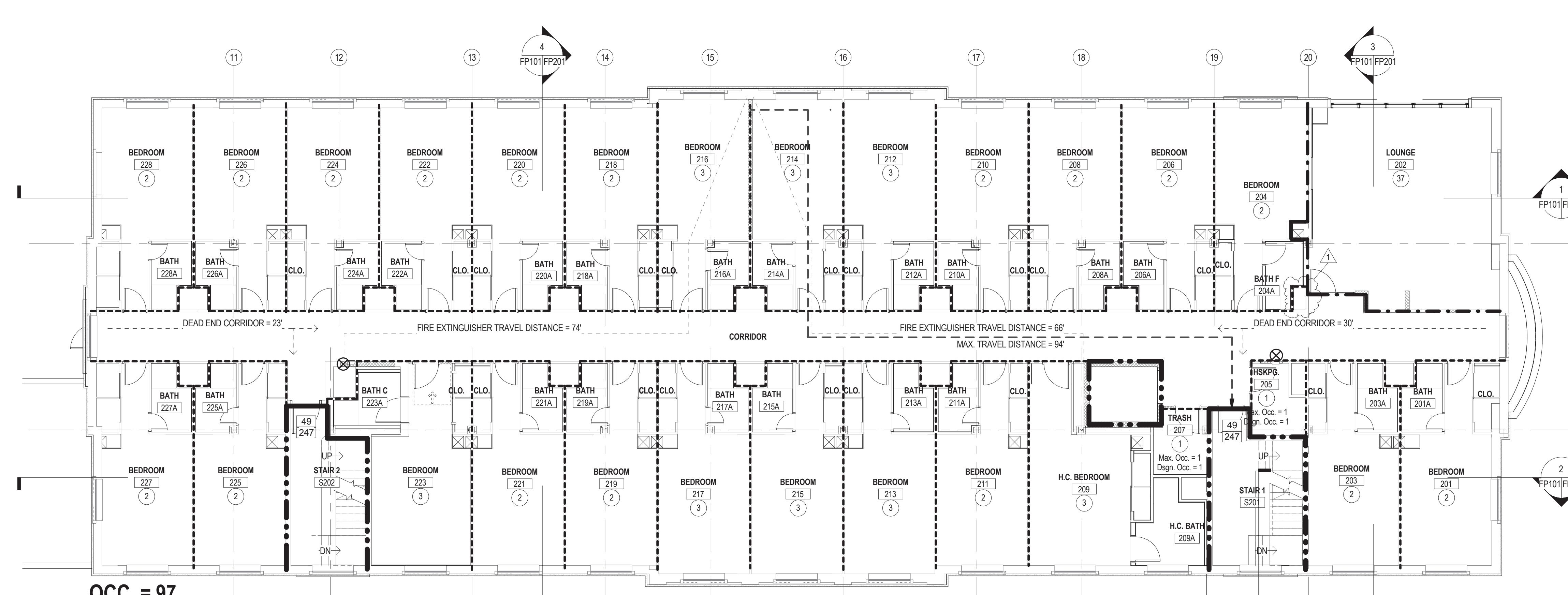
Note: Modifications to the bid documents that were issued by addenda have been incorporated into these drawings for the convenience of the Contractor. In the event of discrepancies between the originally issued addenda and changes depicted on these drawings, the originally issued addenda shall take precedence.



3 ATTIC LIFE SAFETY PLAN  
A201 FP102 1/16" = 1'-0"



2 THIRD FLOOR LIFE SAFETY PLAN  
A201 FP102 1/8" = 1'-0"



1 SECOND FLOOR LIFE SAFETY PLAN  
A201 FP102 1/8" = 1'-0"

GRAPHIC SCALE - 1/32" = 1'-0"  
0 32'-0" 64'-0" 96'-0"

ISSUES AND REVISIONS  
NO. SUBMITTAL DATE  
1 Addendum 1 05.19.14  
2 Addendum 2 06.19.14  
3 Addendum 3 06.24.14  
CONSTRUCTION SET 06.25.14  
05.01.15

FIRE PROTECTION LEGEND	
①	OCUPANCY
⊗	FIRE EXTINGUISHER
—	ACTUAL
26	ALLOWABLE EGRESS CAPACITY FOR OPENING CLEAR WIDTH
—	COMMON PATH OF EGRESS TRAVEL
—	2 HR RATED FIRE BARRIER
—	1 HR RATED FIRE BARRIER
—	1/2 HR RATED PARTITION
—	SMOKE PARTITION
/	1 HR HORIZONTAL FIRE SEPARATION AT CEILING ABOVE
×	2 HR HORIZONTAL FIRE SEPARATION AT CEILING ABOVE

**SECOND, THIRD, & ATTIC  
FLOOR LIFE SAFETY  
PLAN**

FP102

