

COMMON ABBREVIATIONS

A ACCOUS	ACOUSTICAL	M MAX	MAXIMUM
APC	ACOUSTICAL PANEL CEILING	MBM	METAL BUILDING MANUFACTURER
ADJ	ADJACENT OR ADJUSTABLE	MCI	MASONRY CONTROL JOINT
AFF	ABOVE FINISHED FLOOR	MECH	MECHANICAL
AJC	ARCH JOINT COVER	MEMB	MEMBRANE
AJSF	ARCH. JOINT SYS. FLOORS	MEZZ	MEZZANINE
AJSD	ARCH. JOINT SYS. GYPSUM WALLS, SOFFITS, ETC.	MFG	MANUFACTURED, MANUFACTURER
AJSM	ARCH. JOINT SYS. MASONRY WALLS	MG	MONOLITHIC FLOAT GLASS
ALT	ALTERNATE	MT	MONOLITHIC FLOAT GLASS, TEMPERED
ALUM	ALUMINUM	MN	MINIMUM
ARCH	ARCHITECT, ARCHITECTURAL	MTD	MOUNTED
ASSY	ASSEMBLY	MTL, MET	METAL
B		N NA, N/A	NOT APPLICABLE
AV	AUDIO VISUAL	NOM	NOMINAL SIZE
A.W.	ALUMINUM WINDOW	NTS	NOT TO SCALE
AWP	ACOUSTICAL WALL PANEL	O OC	ON CENTER
B BLDG	BUILDING	OCPI	OWNER PROVIDED, CONTRACTOR INSTALLED
BUR	BUILT UP ROOF, ROOFING	OPI	OWNER PROVIDED, OWNER INSTALLED
C CFS	CONCRETE FLOOR SEALER	P P	PAINT
CG	CORNER GUARD	P.C. / PC	POLISHED CONCRETE
CJ	CONSTRUCTION JOINT	P.F.T.	PROFESSIONAL ENGINEER
CL	CENTER LINE	PLAM	PLASTIC LAMINATE
CLG, C	CEILING	PLYWD	PLYWOOD
CMU	CONCRETE MASONRY UNIT	PLT	PLATE
C.O.	CLEAN OUT	PLB, PLUMB	PLUMBING
CZNC	CONCRETE	PRE-MFR	PRE-MANUFACTURED
CON_CONSTR	CONSTRUCTION, CONSTRUCT	PRFH	PENETRATING SILICANT FLOOR HARDENER
CONT	CONTINUOUS	PRFH	PRESSURE TREATED
CRPT	CONTRACTOR PROVIDED, CONTRACTOR INSTALLED	PTB	PORCELAIN TILE BASE
CPC	CONTRACTOR PROVIDED, OWNER INSTALLED	PTF	PORCELAIN TILE FLOOR
CPOI	CERAMIC TILE BASE	PTW	PORCELAIN TILE WALL
CTB	CERAMIC TILE FLOOR	Q QTY	QUANTITY
CTF	CERAMIC TILE WALL	QT	QUARRY TILE
CTW	CURTAINWALL	R RB	RUBBER BASE
C.W.	CURTAINWALL	REC	REGISTRATION
D DEFS	DIRECT EXTERIOR FINISH SYSTEM	RD	ROOF DRAIN
DIA	DIAMETER	RECD	REQUIRED
DS	DOWNSPOUT	REINF.	REINFORCING
DW(S)	DRAWING, DRAWINGS	RES	RESILIENT FLOORING
E E.J., EXP. JT.	EXPANSION JOINT	RH	RESILIENT VINYL - GLUE SEAMS
ELEC	ELECTRIC, ELECTRICAL	RL, RDL	ROOF DRAIN LEADER
EP	EPOXY	RWB	RESILIENT WALL BASE
EQ	EQUAL	RWP	ROUGH OPENING
EPF	EPOXY RESINIOUS FLOORING	S SB	SPLASH BLOCK
EW	ELECTRIC WATER COOLER	SCHED	SCHEDULE
EXIST	EXISTING	SCWD	SOLID CORE WOOD DOOR
EXP	EXPANSION	S.F.	SQUARE FOOT
EXT	EXTERIOR	S.F.	STOREFRONT
F FD	FLOOR DRAIN	SEH	SILICANT FLOOR HARDENER
FIN	FINISHED	SHL	SHELF
FF EL, F.F.E.	FINISHED FLOOR ELEVATION	STL	STAIR
FBI	FIRE GLAZING INSULATED	STOR	STORAGE
FEC	FIRE EXTINGUISHER CABINET	STRUC	STRUCTURAL
FL, FLR	FLOOR	SY, SQ, YD.	SQUARE YARD
FRG	FIRE RATED GLAZING	T TLT, T	TOILET
FSCW	FLUSH SOLID CORE WOOD	TOF	TOP OF FOOTING
G GA	GAUGE	TOS	TOP OF STEEL
GC, GEN CONT	GENERAL CONTRACTOR	TRTD	TREATED
GWB, GYP BD	GYPSUM WALL BOARD, SHEET ROCK	TYP	TYPICAL
H HCP	HANDICAPPED	U UC	UNDERCUT
HT	HEIGHT	UN.O	UNLESS NOTED OTHERWISE
H.M.HM	HOLLOW METAL	UN.N	UNLESS OTHERWISE NOTED
HORIZ	HORIZONTAL	UR	UNLESS OTHERWISE NOTED
HPL	HIGH PRESSURE LAMINATE	V V	VENT
HVAC	HEATING VENTILATION and AIR CONDITIONING	VCT	VINYL COMPOSITION TILE
HR	HOUR	VCTT	VINYL CUSHION TUFTED TEXTILE
I IG	INSULATING GLASS	VERT	VERTICAL
IET	INSULATING GLASS, LOW-E, TEMPERED	VTR	VENT THROUGH ROOF
INSUL	INSULATION	VWC	VINYL WALL COVERING
IPS	INTERIOR PANEL SIGN	W W	WITH
ITIN	ITINERANT	WC	WATER CLOSET
J JT	JOINT	W.C.O.	WALL CLEAN OUT
L L	LENGTH	WD	WOOD
LAV	LAVATORIES	WG	WIRE GLASS
LF INS	LOOSE FILL INSULATION	WWM, WWF	WELDED WIRE MESH OR FABRIC
LL	LIVE LOAD		
LT	LIGHT		
LT GA	LIGHT GAUGE		
LVT	LUXURY VINYL TILE		

DRAWING INDEX

- GENERAL -

G101 COVER SHEET
G102 LIFE SAFETY PLAN

- ARCHITECTURAL -

A101 REFERENCE FLOOR PLANS
A401 ENLARGED TOILET PLANS AND SCHEDULES
A601 CASEWORK AND ROOM FINISH SCHEDULES AND INTERIOR ELEVATIONS

- PLUMBING -

P101 ENLARGED TOILET ROOM PLUMBING PLANS AND FIXTURE SCHEDULE
P102 ENLARGED TOILET ROOM PLUMBING PLAN, DETAILS, AND SPECIFICATION

- MECHANICAL -

M101 ENLARGED HVAC TOILET ROOM PLANS

- ELECTRICAL -

E000 ELECTRICAL LEGEND, NOTES, DETAILS, & SCHEDULES
E001 ELECTRICAL SPECIFICATIONS
E100 ELECTRICAL DEMOLITION PLANS
E200 ELECTRICAL RENOVATION PLANS

2021 Edition

TABLE 3E CODE INFORMATION FOR ADDITIONS, ALTERATIONS, OR CHANGE OF OCCUPANCY TO AN EXISTING STRUCTURE

TYPE OF PROJECT:
 Alteration (IEBC Chaps. 7, 8 & 9) Addition (IEBC Chap. 11) Change of Occupancy (IEBC Chap. 10)

METHOD OF COMPLIANCE:
 (Check only one Option and all items that apply under that Option.)

Option 1: Prescriptive Compliance Method (IEBC Chapter 5)
 Option 2: Work Area Compliance Method (IEBC Chaps. 6-12)
 Alteration Level 1, minor including reroofing (IEBC Chap. 7)
 Alteration Level 2, reconfigurations of space (IEBC Chap. 8)
 Alteration Level 3, work area exceeds 50% (IEBC Chap. 9)
 Aggregate area of building: 112,355 SF
 Work area: 1,391 SF

Option 3: Performance Compliance Method (IEBC Chap. 13)

Original Building Code and Edition Applicable at time of Construction: 1975

Existing Sprinkler System? Yes No

Existing Fire Alarm System? Manual Auto

Seismic Evaluation Required? Yes No

Major Facility Project? (See §48-52-810(10)(a)) Yes No

Change of Occupancy:
 Existing Occupancy Classification(s): _____
 New Occupancy Classification(s): _____

Historic Building (IEBC Chapter 12):
 Preservation Rehabilitation Restoration Reconstruction No

2021 Edition

TABLE 9 PLUMBING INFORMATION

WATER SYSTEM: Service Line Size: 2 _____ Inches
 Peak Flow: _____ GPM Total Demand: _____ No. Fixture Units

SANITARY SEWER SYSTEM: Loading: _____ GPD
 Service Line Size: 4 _____ Inches Slope: _____ min inches/ft

MINIMUM PLUMBING FIXTURES REQUIRED BY OCCUPANCY (IPC Section 403 & Table 403.1)
 All Occupancy Classification(s) (same as OSE Table 3): A-3, B, E
 Total Building Design Occupant Load (same as OSE Table 6): 1598

1. Occupancy: E	Total Load for this Occupancy: <u>722</u>	Male: <u>361</u>	Female: <u>361</u>
Water Closets/Urinals (IPC Section 424.2):	MALE: <u>7.20 (# Urinals allowed 4.80)</u>	FEMALE: <u>7.20</u>	
Lavatories:	MALE: <u>7.20</u>	FEMALE: <u>7.20</u>	
Drinking Fountains:	<u>2</u>		
Unisex Toilet:	<u>2.00</u>		
Service Sink:	<u>1.00</u>		
Other (list):			
2. Occupancy: B	Total Load for this Occupancy: <u>222</u>	Male: <u>111</u>	Female: <u>111</u>
Water Closets/Urinals (IPC Section 424.2):	MALE: <u>3.20 (# Urinals allowed 2.20)</u>	FEMALE: <u>3.20</u>	
Lavatories:	MALE: <u>2.50</u>	FEMALE: <u>2.50</u>	
Drinking Fountains:	<u>2.00</u>		
Unisex Toilet:			
Service Sink:	<u>1.00</u>		
Other (list):			
3. Occupancy: A-3	Total Load for this Occupancy: <u>654</u>	Male: <u>327</u>	Female: <u>327</u>
Water Closets/Urinals (IPC Section 424.2):	MALE: <u>2.80 (# Urinals allowed 1.90)</u>	FEMALE: <u>5.10</u>	
Lavatories:	MALE: <u>1.70</u>	FEMALE: <u>1.70</u>	
Drinking Fountains:	<u>0.70</u>		
Unisex Toilet:			
Service Sink:			
Other (list):			

TOTAL BUILDING COUNT REQUIRED/PROVIDED (add all occupancies)

Note: Round up all numbers Whole numbers only	REQUIRED		PROVIDED	
	Male	Female	Male	Female
Total Water Closets/Urinals	13.20 (# Urinals allowed 9.20)	13	17.00 (# Urinals provided 10)	15
Total Lavatories	11.40	11	14.00	14
Total Drinking Fountains	5.00		5	
Total Unisex Toilets	2.00		3	
Total Service Sinks	2.00		2	
Total Other (list):				

TYPICAL SYMBOLS LEGEND

-----	ONE HOUR RATED WALL		ELEVATION REFERENCES
-----	TWO HOUR RATED WALL		
-----	THREE HOUR RATED WALL		BUILDING SECTION CUT
-----	FOUR HOUR RATED WALL		
-----	SMOKE RATED		WALL SECTION CUT
-----	ELEMENT ABOVE PLANE		DETAIL CUT
-----	CENTERLINE		SPOT ELEVATION OR WORK POINT
-----	PROPERTY / MATCH LINE		WALL TYPE
-----	COLUMN LINE		CEILING TYPE AND CEILING HEIGHT A.F.F. (SEE FINISH SCHEDULE FOR CEILING TYPE FINISHES)
-----	TYPICAL DIMENSION FOR ARCHITECTURAL ELEMENTS		REVISION CLOUD / REVISION NUMBER
-----	CUT LINE		DOOR NUMBER
-----	DETAIL CALLOUT		ITEM TYPE (EQUIP., FURNITURE, ETC.)
-----	ROOM NAME / ROOM NUMBER TAG		ADA ACCESSIBLE
-----	ROOM NAME & NUMBER TAG		WINDOW / FRAME TYPE
-----	PLAN / SECTION / ELEVATION / DETAIL TITLE		CONSTRUCTION NOTE (DEMO, GENERAL, ETC.)

TYPICAL MATERIALS LEGEND

	EARTH		METAL - STEEL
	CONCRETE - POURED		METAL - ALUMINUM
	CONCRETE - PRECAST		WOOD - PLYWOOD
	CRUSHED DRAINAGE FILL (STONE)		WOOD - FINISHED
	MASONRY - BRICK		WOOD - BLOCKING
	MASONRY - CONCRETE MASONRY UNIT (CMU)		GYPSUM BOARD / GROUT
	INSULATION - RIGID		INSULATION - BATT

APPLICABLE CODES

INTERNATIONAL EXISTING BUILDING CODE (IEBC), 2018 EDITION
 INTERNATIONAL FIRE CODE (IFC), 2018 EDITION
 INTERNATIONAL MECHANICAL CODE (IMC), 2018 EDITION
 INTERNATIONAL PLUMBING CODE (IPC), 2018 EDITION
 NATIONAL ELECTRIC CODE (NEC) (NFPA 70), 2017 EDITION
 2017 EDITION OF THE ICC A117.1 ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES STATE FIRE MARSHAL RULES, REGULATIONS, AND POLICIES

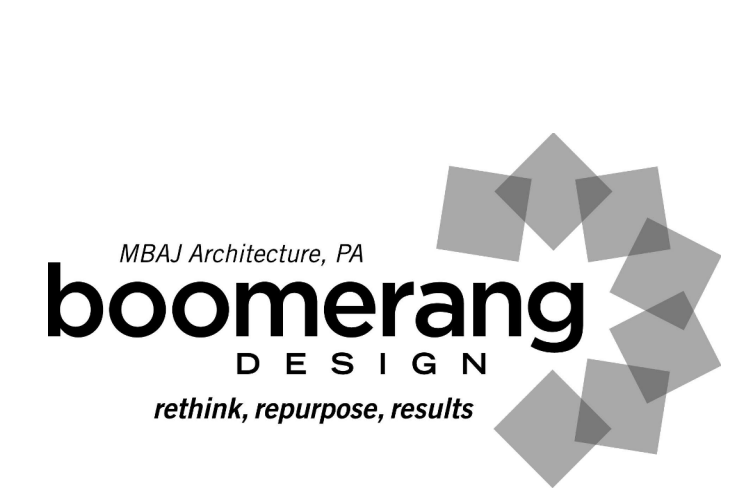
ACADEMIC CENTER BATHROOM RENOVATIONS - AIRPORT CAMPUS

1260 LEXINGTON DRIVE, WEST COLUMBIA, SC 29170

MIDLANDS TECHNICAL COLLEGE

P. O. BOX 2408, COLUMBIA, SC 29202

ARCHITECTURAL



1070 SOUTH LAKE DRIVE
 SUITE J
 LEXINGTON, SC 29073
 P: (803) 356-0507

PLUMBING & MECHANICAL



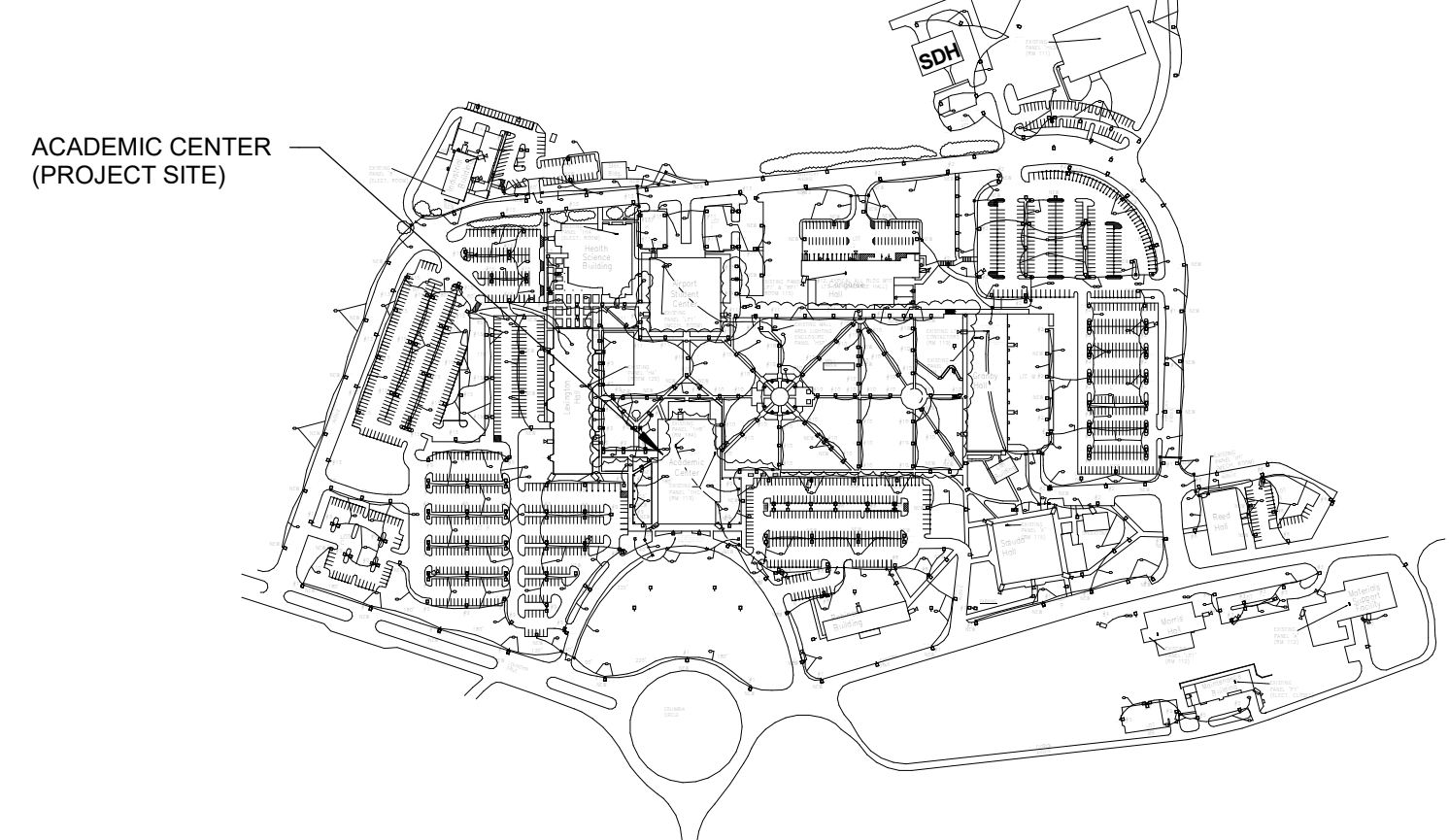
FELKEL & HASTINGS MECHANICAL ENGINEERS
 2725 CYPRESS STREET
 COLUMBIA, SC 29205
 P: (803) 771-0185

ELECTRICAL



ETI ENGINEERING, LLC
 5725 BUSH RIVER ROAD
 COLUMBIA, SC 29212
 P: (803) 233-9396

LOCATION MAP



SHERRY
 201 S. Washington St., Suite 200
 Shelby, NC 28150
 704/956-6000

CHARLOTTE
 1230 W. Morehead St., Suite 214
 Charlotte, NC 28208
 704/731-7000

RALPH
 6133 Falls of Reids, Suite 204
 Raleigh, NC 27609
 919/773-6400

LEXINGTON
 1070 S. Lake Dr., Suite J
 Lexington, NC 29073
 803/356-0507



MIDLANDS TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM RENOVATIONS
AIRPORT CAMPUS

PROJECT TITLE



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REVISIONS

NO.	DATE	DESCRIPTION

CD
 PROJECT PHASE
 2217
 BOOMERANG DESIGN PROJECT NUMBER
 9.23.2022
 DRAWING RELEASE DATE

COVER SHEET
 SHEET TITLE
G101
 SHEET



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

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OSE # - H59-N178-CL



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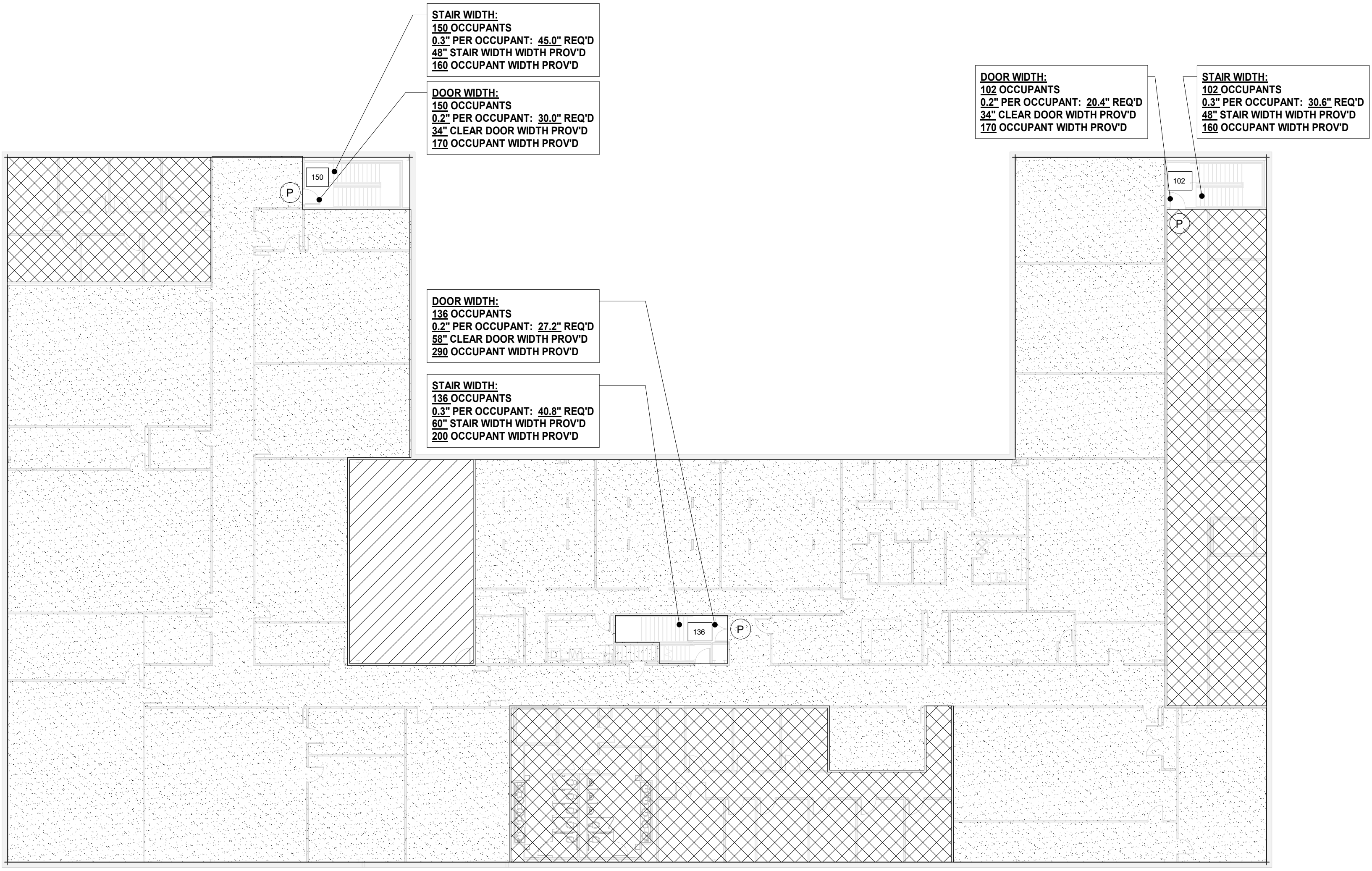
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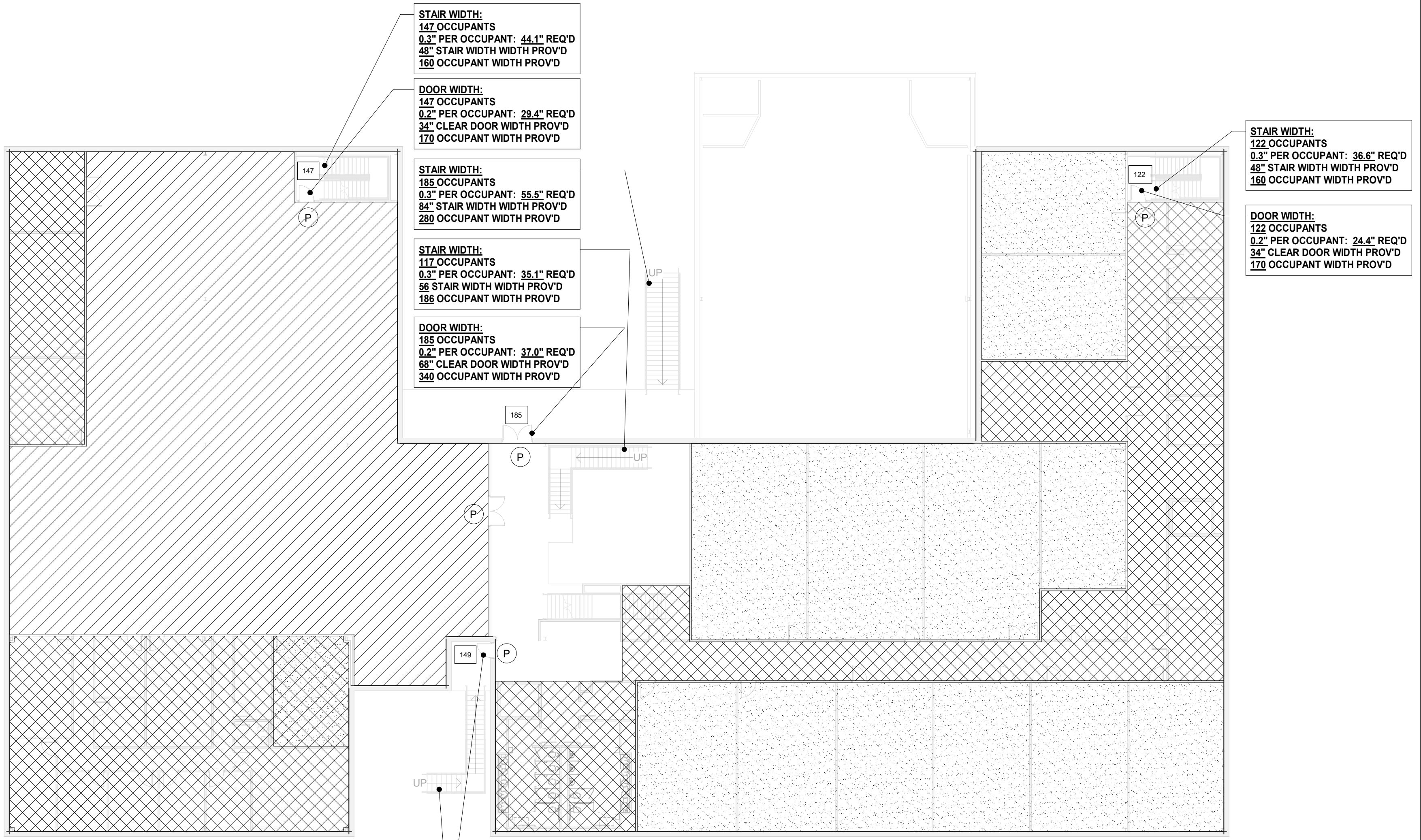
LIFE SAFETY PLAN
SHEET TITLE

G102

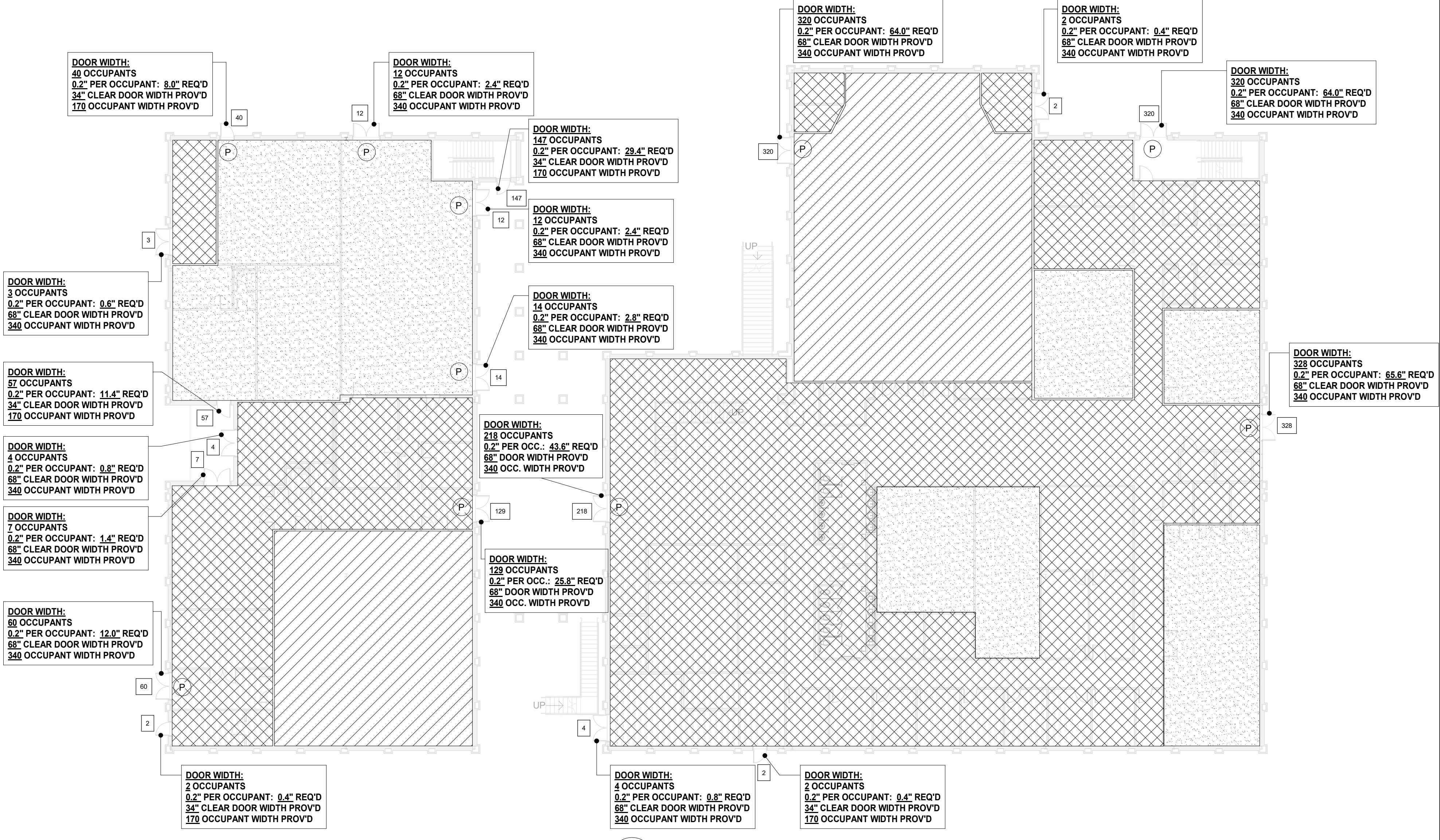
SHEET



3 LIFE SAFETY PLAN - THIRD FLOOR (PHASE THREE)
1/16" = 1'-0"

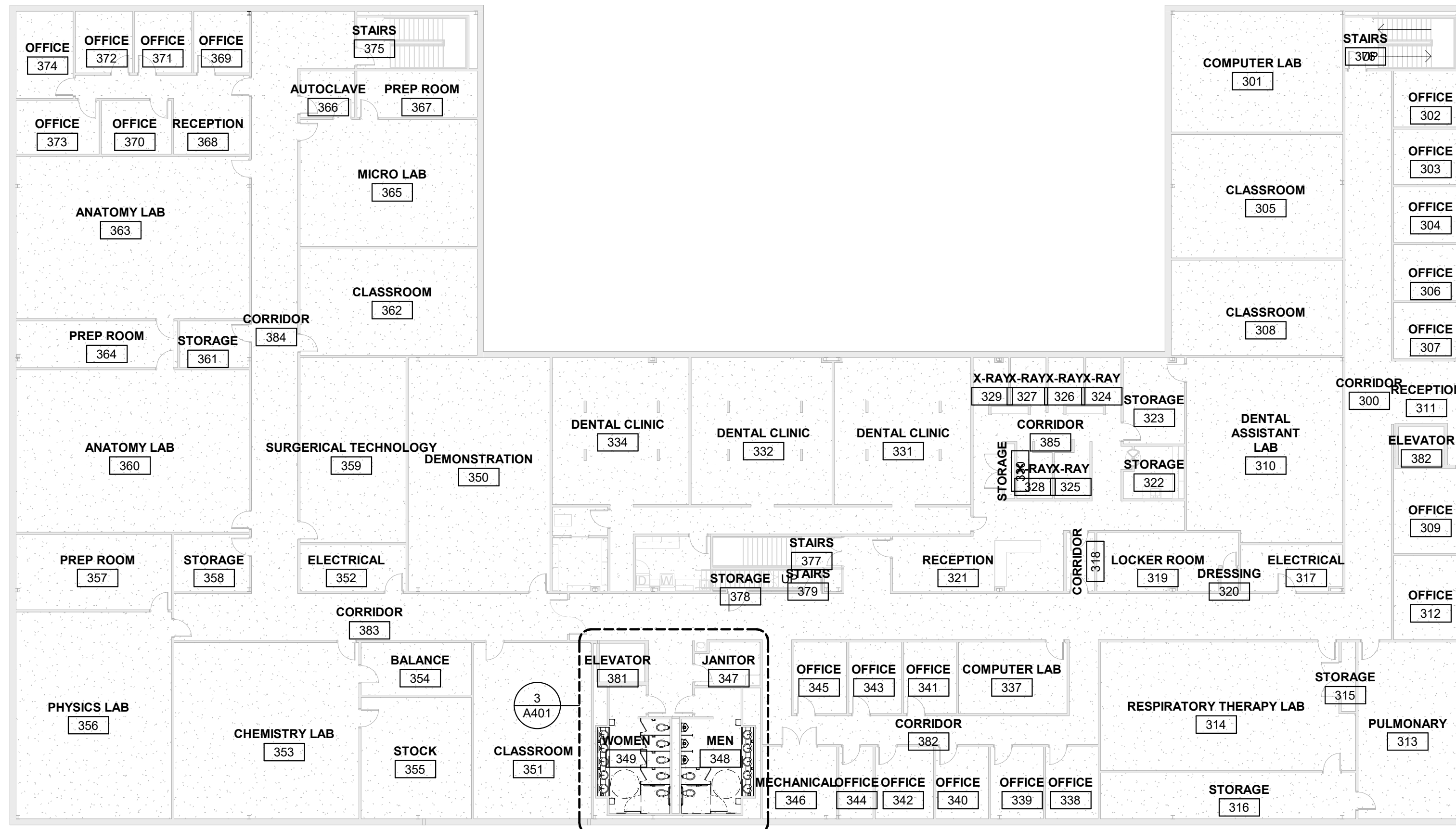


2 LIFE SAFETY PLAN - SECOND FLOOR (PHASE TWO)
1/16" = 1'-0"

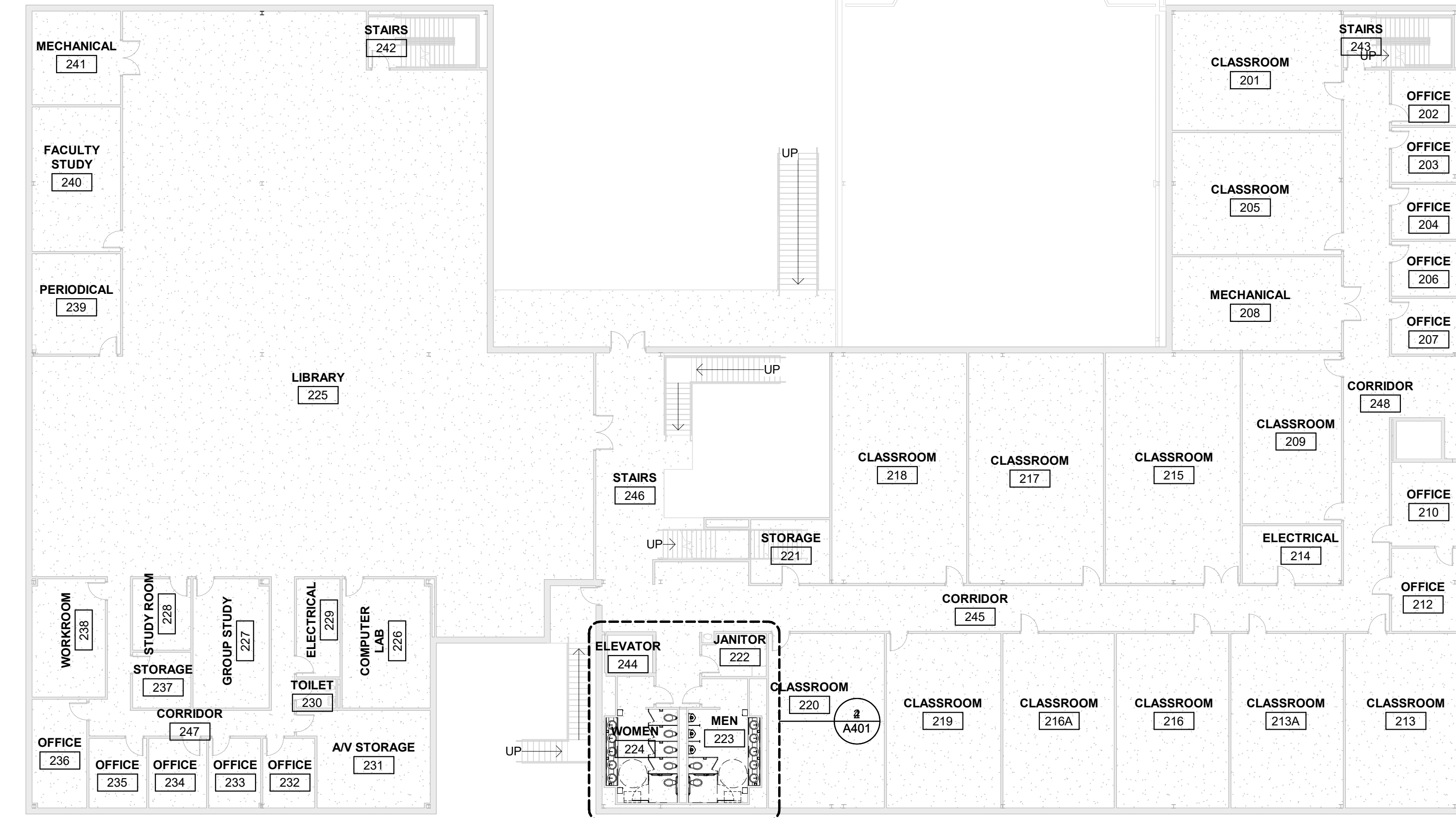


1 LIFE SAFETY PLAN - FIRST FLOOR (PHASE ONE)
1/16" = 1'-0"

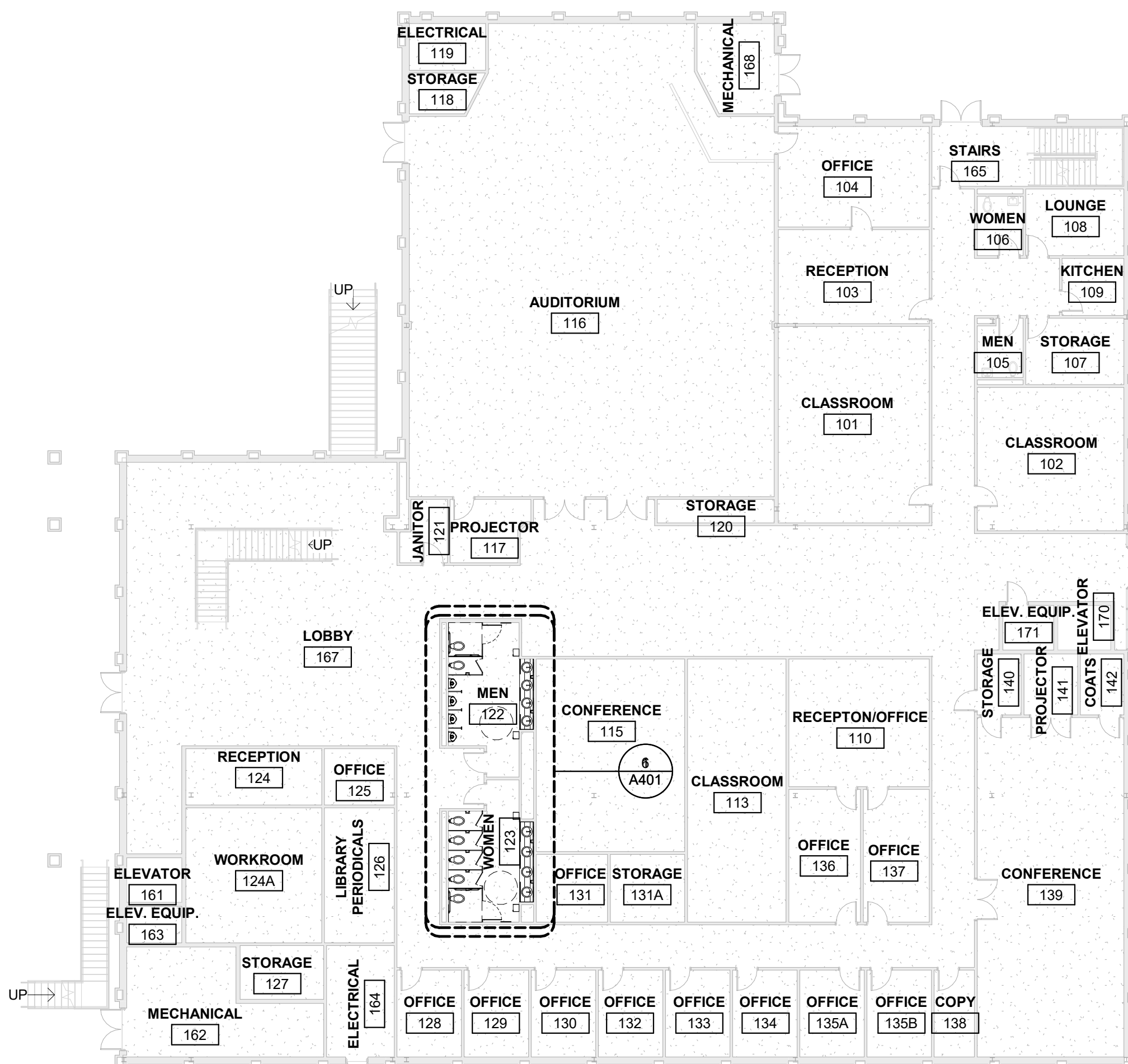
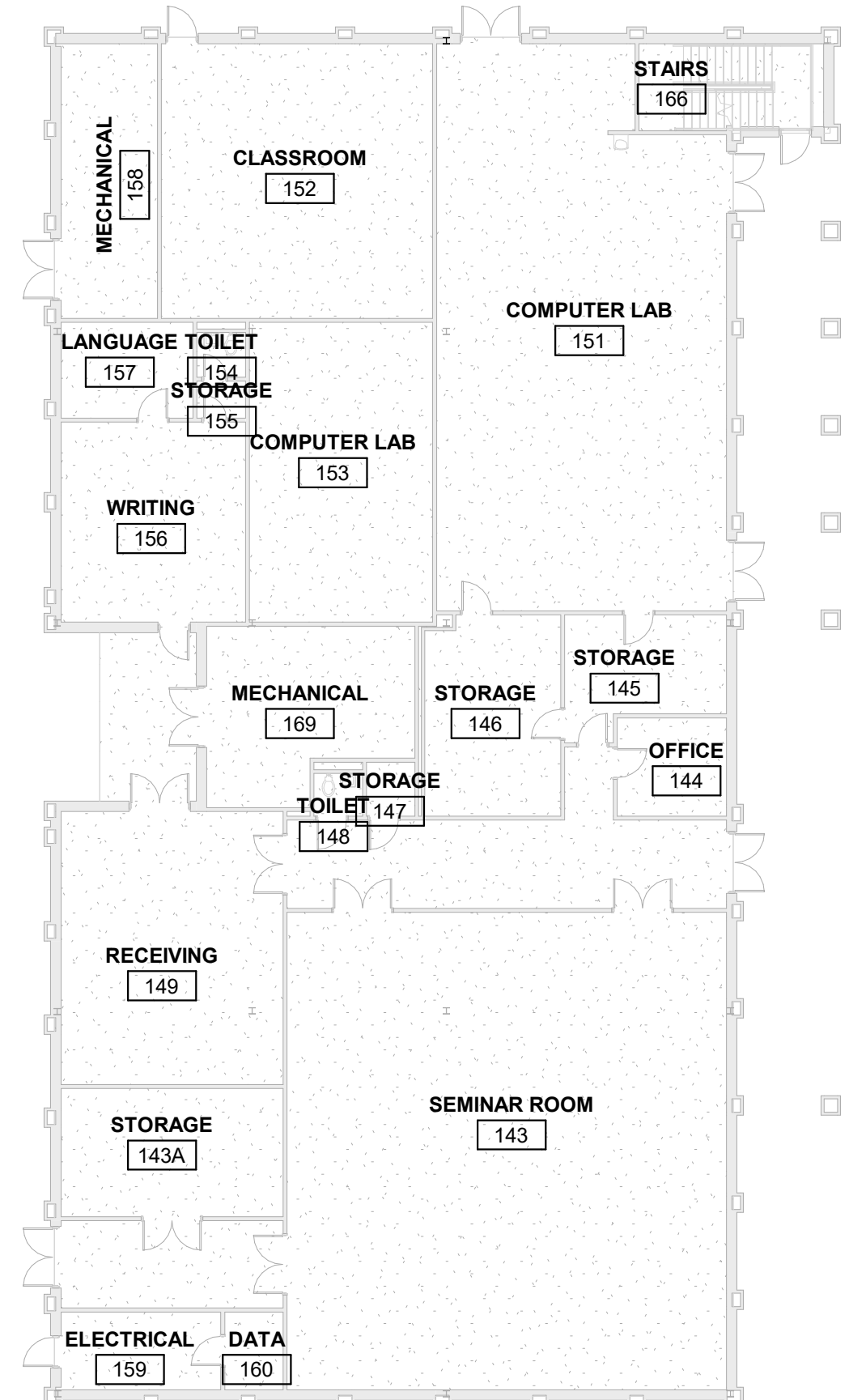
LIFE SAFETY SYMBOL LEGEND	
(P)	DOOR WITH PANIC HARDWARE
(H)	DOOR WITH HOLD OPEN DEVICE
[FEC]	FIRE EXTINGUISHER CABINET
---	1-HR RATED
---	2-HR RATED
→	EGRESS PATH TO EXIT
→ MTD →	MAX TRAVEL DISTANCE TO EXIT
→ Df →	MAX TRAVEL DISTANCE TO DRINKING FOUNTAIN
[Hatched]	ASSEMBLY OCCUPANCY (A-3)
[Cross-hatched]	BUSINESS OCCUPANCY (B)
[Dotted]	EDUCATION OCCUPANCY (E)



PLAN NORTH
3 THIRD FLOOR REFERENCE PLAN
1/16" = 1'-0"



PLAN NORTH
2 SECOND FLOOR REFERENCE PLAN
1/16" = 1'-0"



PLAN NORTH
1 FIRST FLOOR REFERENCE PLAN
1/16" = 1'-0"



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

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OSE # -H59-N178-CL



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**REFERENCE FLOOR
PLANS**
SHEET TITLE
A101
SHEET

GENERAL CEILING PLAN NOTES

- G.C. TO COORDINATE WITH MECHANICAL DRAWINGS FOR ABOVE CEILING WALL OPENINGS.
- SEE CEILING TYPES LEGEND FOR ADDITIONAL CEILING INFORMATION.
- CEILING SYSTEM TO BE DESIGNED FOR SEISMIC DESIGN CATEGORY "C".

CEILING TYPES LEGEND

TYPE	DESCRIPTION
APC-3	2' x 2' LAY-IN ACOUSTIC PANEL CEILING, VINYL COATED

CEILING SYMBOL LEGEND

- NEW 2x2' ACOUSTICAL LAY-IN TILES IN NEW CEILING GRID SYSTEM (REFER TO CEILING TYPES LEGEND FOR CEILING TYPE)
- 5/8" GYPSUM BOARD AT INTERIOR LOCATIONS (USE MOISTURE & MOLD RESISTANT GYPSUM BOARD IN LOCKER ROOMS, SHOWERS, & SPRINKLER ROOMS)
- EMERGENCY LIGHTS
- 2x4' LED FIXTURE IN GRID
- DOWN LIGHT FIXTURE
- WALL MOUNTED DOWN LIGHT FIXTURE
- CEILING MOUNTED OCCUPANCY SENSOR
- CEILING MOUNTED STROBE SPEAKER
- CEILING MOUNTED SMOKE DETECTOR
- HVAC SUPPLY GRILLE
- HVAC RETURN GRILLE or EXHAUST FAN GRILLE
- HVAC EXHAUST FAN
- CEILING MOUNTED EXIT SIGN
- WALL MOUNTED EXIT SIGN

TOILET ACCESSORIES SCHEDULE

TYPE	DESCRIPTION	PROV'D BY	NOTES
DCS	DIAPER CHANGING STATION	CPCI	MOUNT SHELF AT 28-34" A.F.F.
GB36	36" GRAB BAR	CPCI	SEE 1/A601
GB42	42" GRAB BAR	CPCI	SEE 1/A601
GBV	18" GRAB BAR - VERTICAL	CPCI	SEE 1/A601
MR36	18"x36" MIRROR	CPCI	SEE 3/A601
MR60	18"x60" MIRROR	CPCI	SEE 3/A601
PTD	PAPER TOWEL DISPENSER	OPOI	SEE 3/A601
SD	SOAP DISPENSER	OPOI	SEE 3/A601
TTD	TOILET TISSUE DISPENSER	OPOI	SEE 1/A601

GENERAL DEMOLITION NOTES

- THE GENERAL CONTRACTOR SHALL COORDINATE DEMOLITION OF ALL WORK TO ENSURE SYSTEM INTEGRITY IS MAINTAINED FOR STRUCTURAL, FIRE PROTECTION, BUILDING SECURITY, AND PROTECTION FROM WEATHER ELEMENTS.
- THE GENERAL CONTRACTOR SHALL COORDINATE ALL DEMOLITION ACTIVITIES WITH THE MECHANICAL AND PLUMBING DRAWINGS.
- WHERE WALLS DESIGNATED TO REMAIN ARE DAMAGED DUE TO CONSTRUCTION ACTIVITIES, THE GENERAL CONTRACTOR IS TO PATCH THE DAMAGED AREAS PRIOR TO APPLICATION OF NEW WALL FINISHES AS DESCRIBED IN THE RENOVATION DRAWINGS.
- THE PROJECT IS TO BE ACCOMPLISHED IN A PHASED CONSTRUCTION SEQUENCE. THE FIRST FLOOR TOILETS ARE TO BE DEMOLISHED AND RE-BUILT, AND PUT BACK INTO SERVICE, BEFORE DEMOLITION IS BEGUN ON THE SECOND FLOOR. THE SECOND FLOOR TOILETS ARE TO BE DEMOLISHED AND RE-BUILT, AND PUT BACK INTO SERVICE, BEFORE DEMOLITION IS BEGUN ON THE THIRD FLOOR.
- WHERE CASEWORK, PIPING, EQUIPMENT, ETC. IS REMOVED, REPAIR AND REFACE THE WALL TO MATCH ADJACENT. PREPARE THE WALL TO RECEIVE NEW FINISH AS INDICATED IN THE FINISH SCHEDULE.
- REPAIR ALL FLOORS DAMAGED BY DEMOLITION ACTIVITIES. LEVEL THE FLOOR WITH CEMENT UNDERLAYMENT AND PREPARE IT TO RECEIVE THE FLOOR FINISH INDICATED IN THE FINISH SCHEDULE.

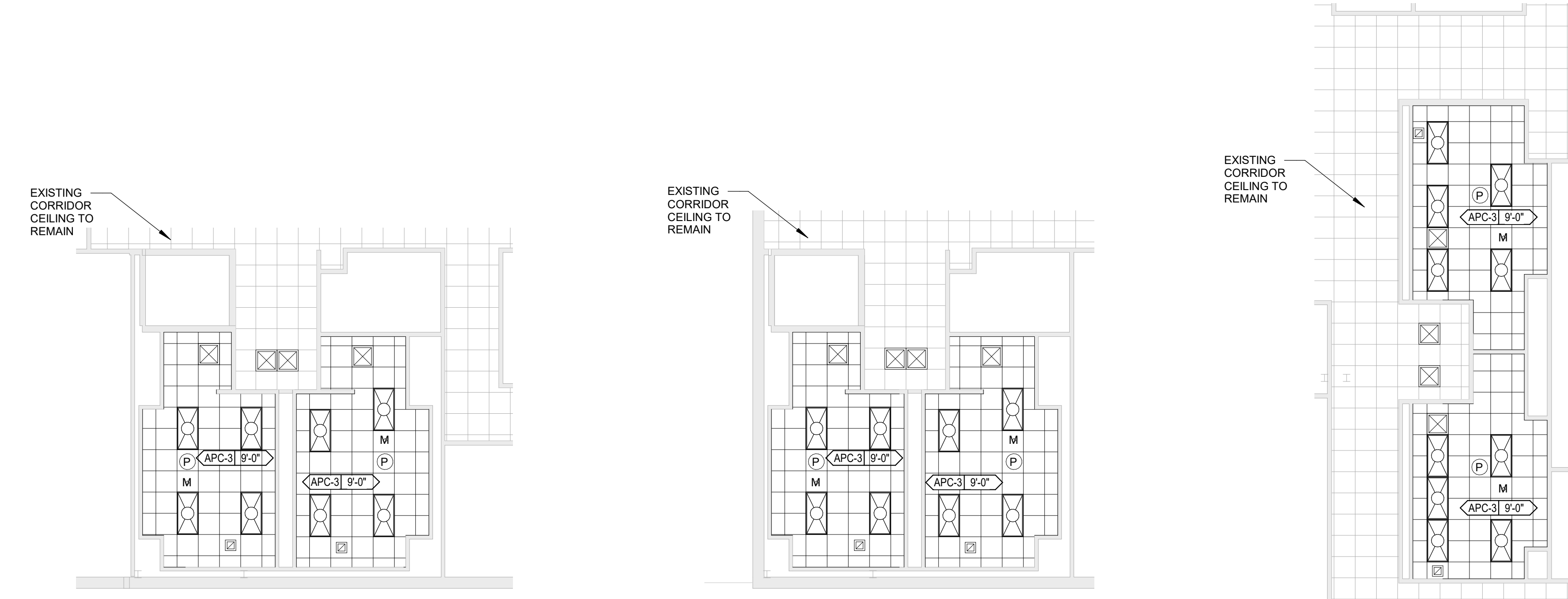
DEMOLITION KEYNOTES

NO.	DESCRIPTION
01	REMOVE EXISTING CEILING AND CEILING ITEMS, PLUMBING FIXTURES (CAREFULLY REMOVE EXISTING SINKS AND SALVAGE FOR RE-USE), PARTITIONS, ACCESSORIES, CASEWORK AND COUNTERTOPS, FLOOR TILE, AND WALL TILE AND SUBSTRATE, AND PREPARE FOR NEW.
02	REMOVE EXISTING WALL SHELVES AND PREPARE OPENING TO BE INFILLED WITH METAL STUDS AND TILE SUBSTRATE FLUSH WITH SURROUNDING CONSTRUCTION.

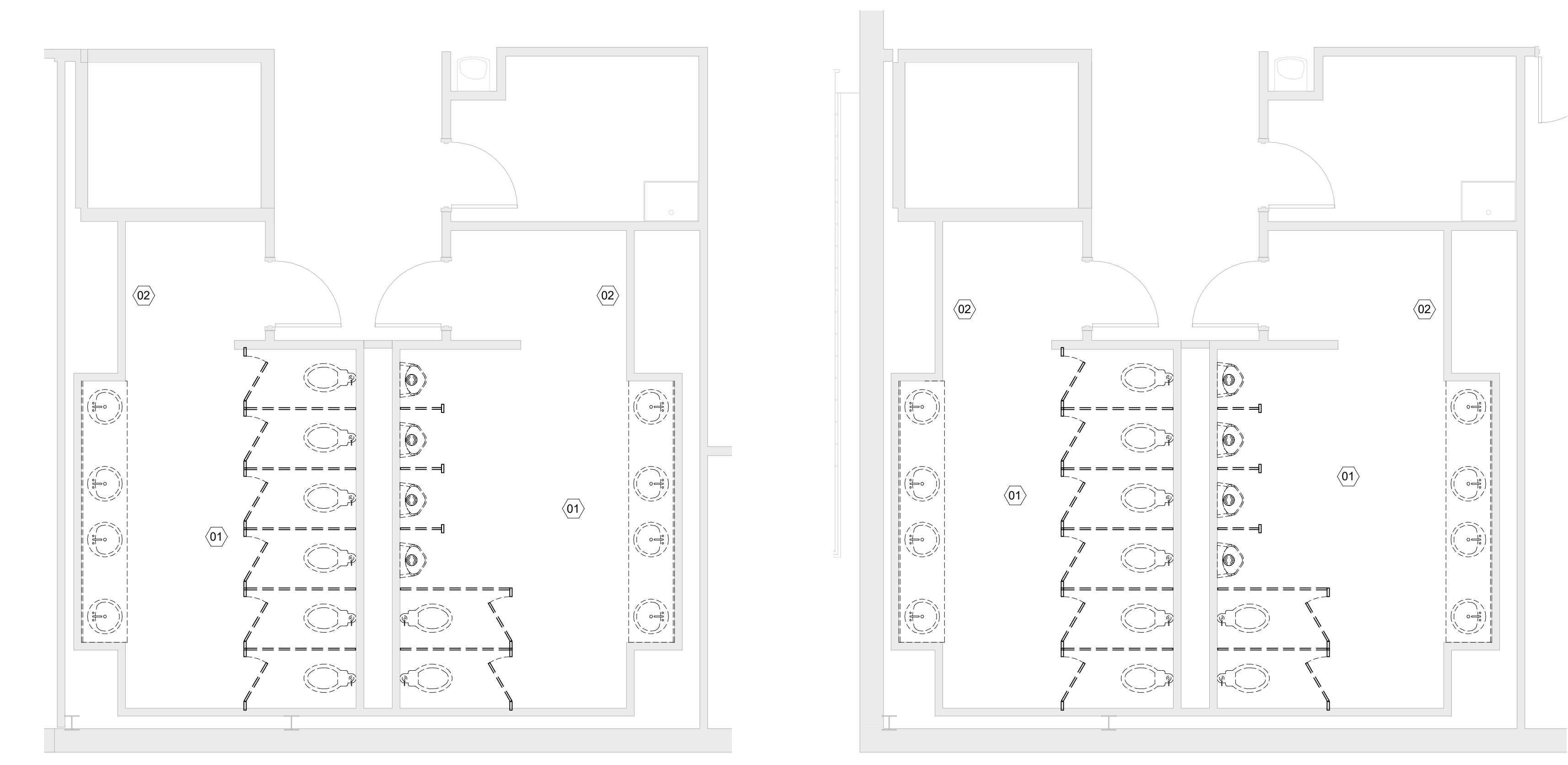
WALL RATINGS LEGEND

- 2 HOUR RATED
- SMOKE RATED

PROJECT TITLE
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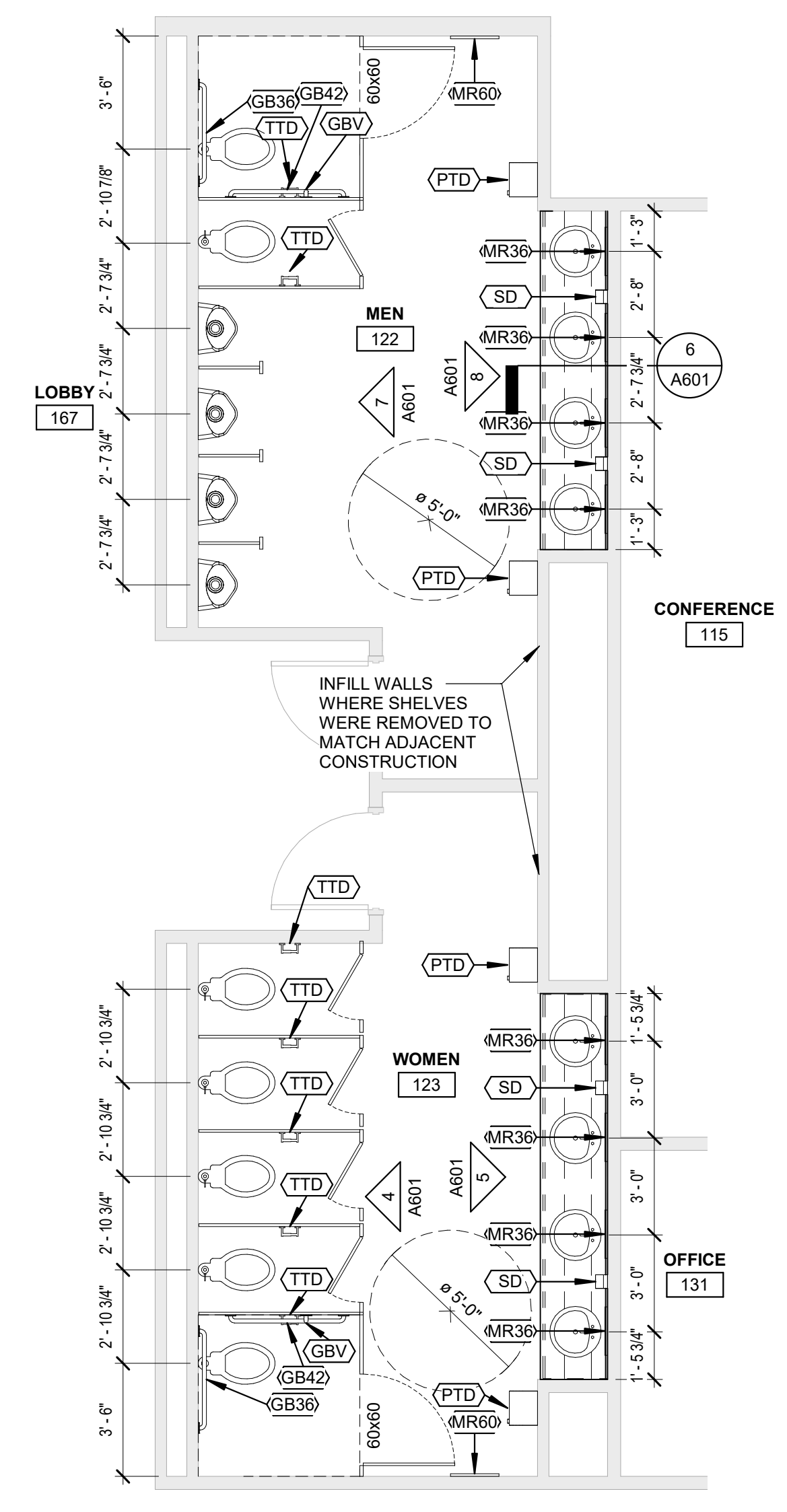


9 PARTIAL THIRD FLOOR REFLECTED CEILING PLAN 1/8" = 1'-0"
8 PARTIAL SECOND FLOOR REFLECTED CEILING PLAN 1/8" = 1'-0"
7 PARTIAL FIRST FLOOR REFLECTED CEILING PLAN 1/8" = 1'-0"

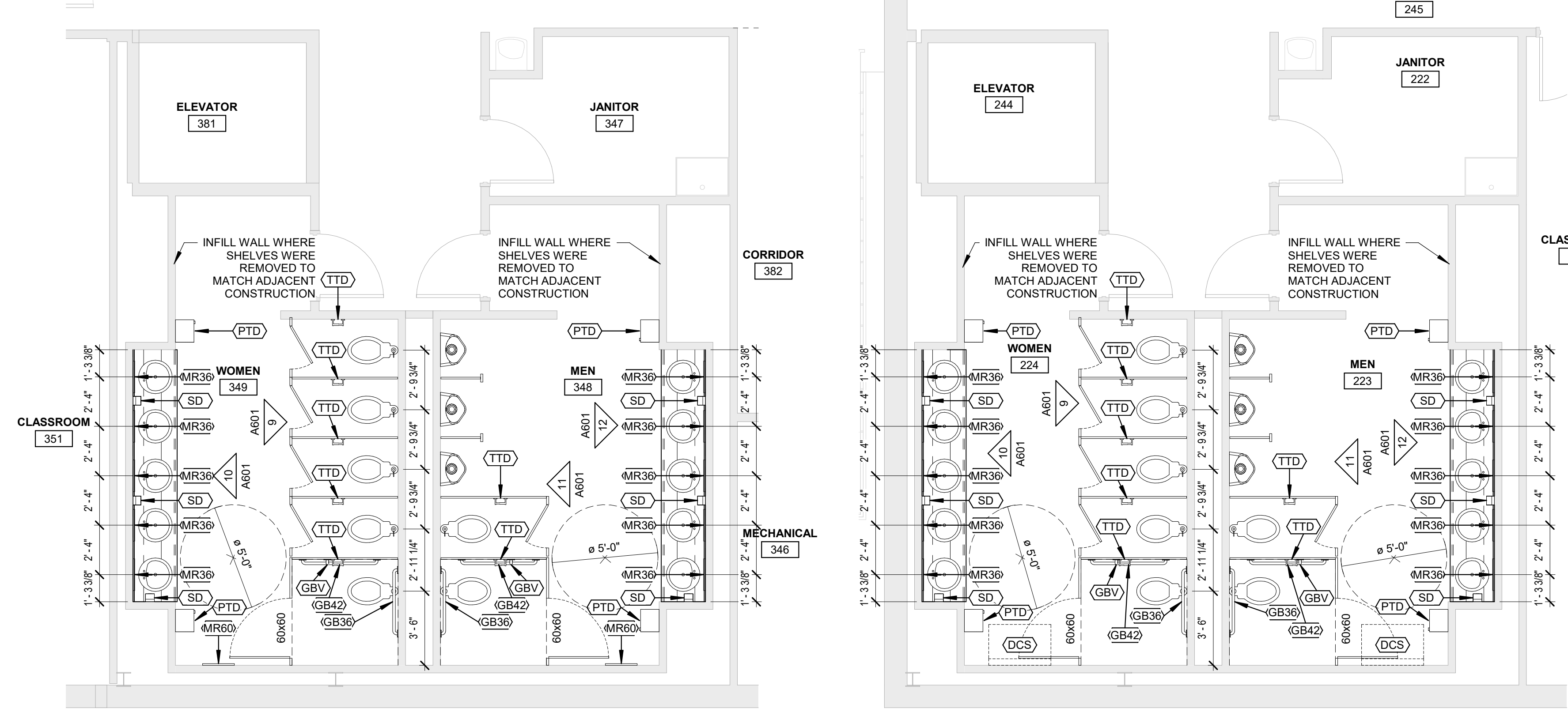


6 FIRST FLOOR GROUP TOILET ENLARGED DEMOLITION FLOOR PLAN 1/4" = 1'-0"

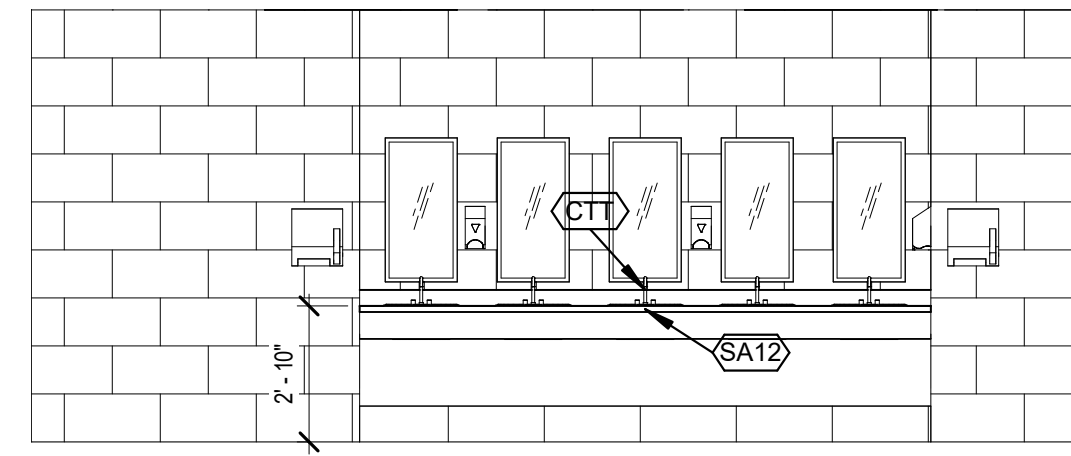
5 THIRD FLOOR GROUP TOILET ENLARGED DEMOLITION FLOOR PLAN 1/4" = 1'-0"
4 SECOND FLOOR GROUP TOILET ENLARGED DEMOLITION FLOOR PLAN 1/4" = 1'-0"



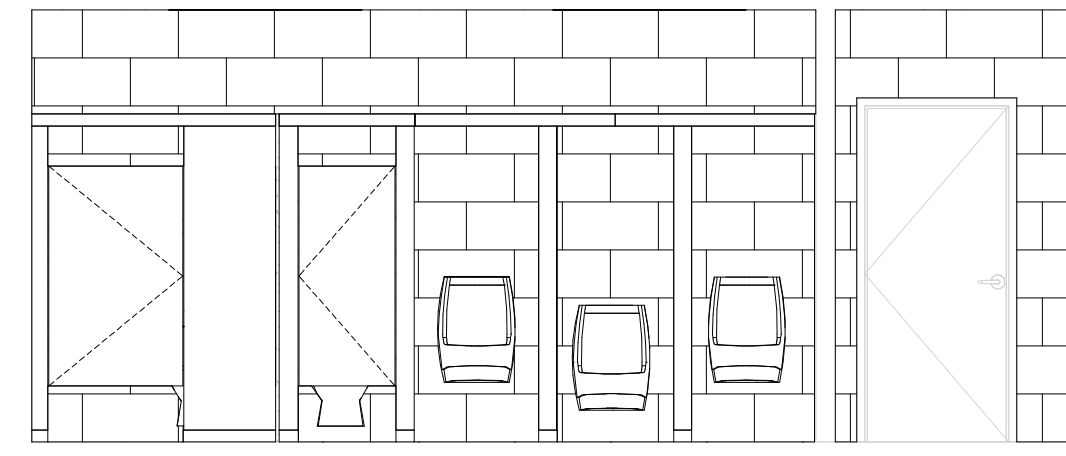
1 FIRST FLOOR GROUP TOILET ENLARGED RENOVATION PLAN 1/4" = 1'-0"



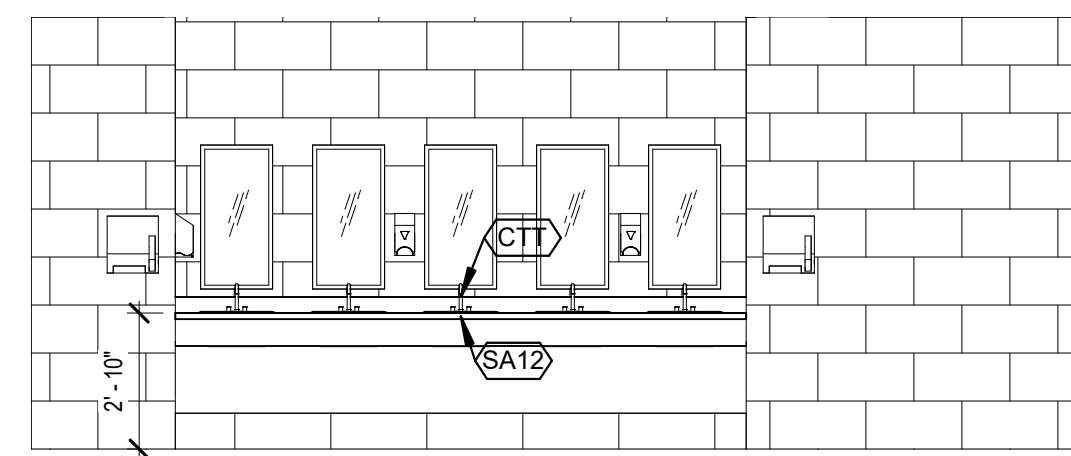
3 THIRD FLOOR GROUP TOILET ENLARGED RENOVATION PLAN 1/4" = 1'-0"
2 SECOND FLOOR GROUP TOILET ENLARGED RENOVATION PLAN 1/4" = 1'-0"



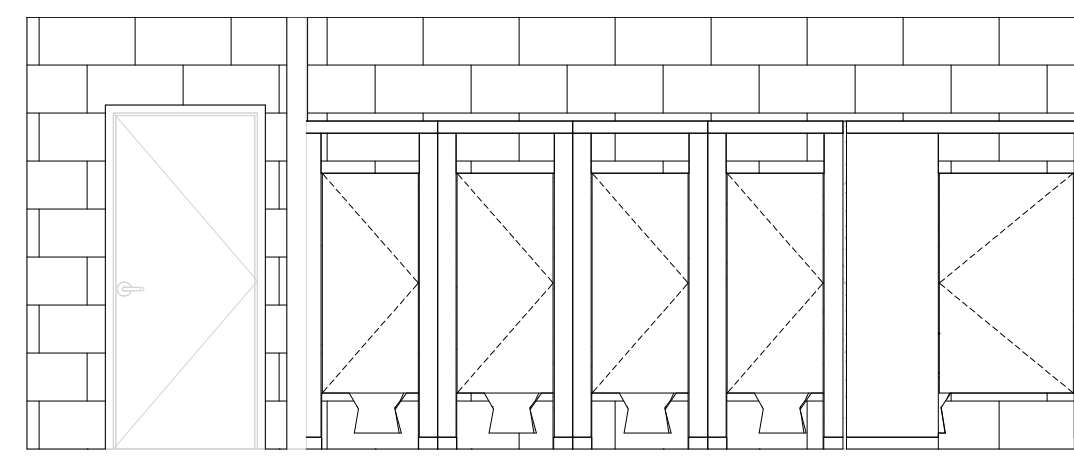
12 SECOND AND THIRD FLOOR MENS TOILET SINK ELEVATION
1/4" = 1'-0"



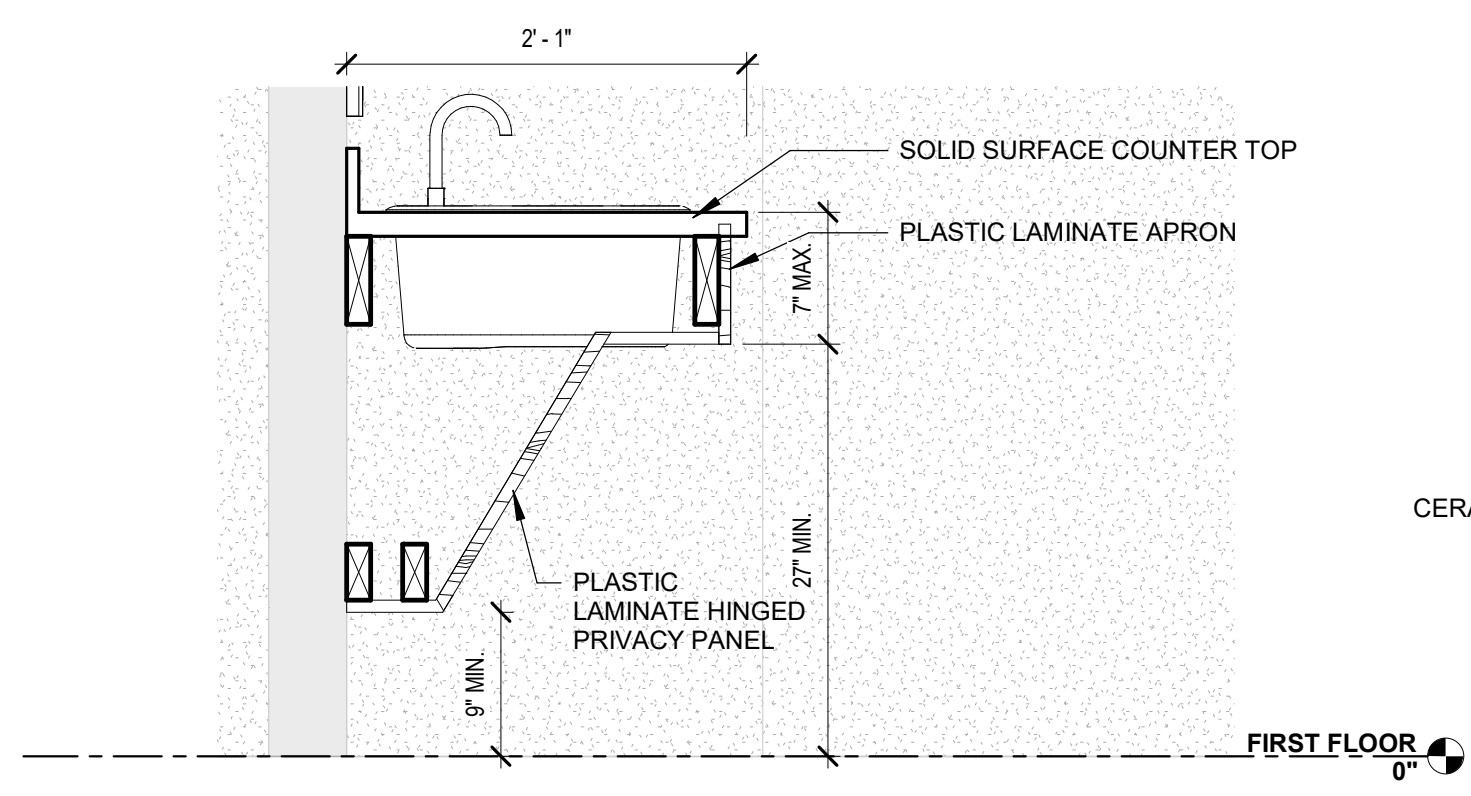
11 SECOND AND THIRD FLOOR MENS TOILET STALL ELEVATION
1/4" = 1'-0"



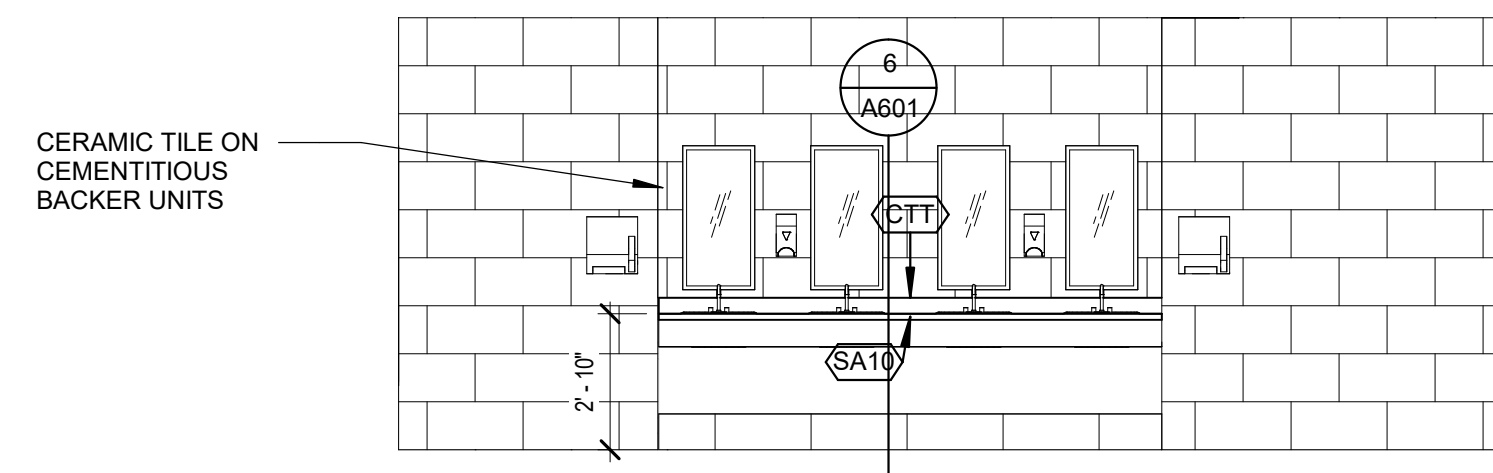
10 SECOND AND THIRD FLOOR WOMENS TOILET SINK ELEVATION
1/4" = 1'-0"



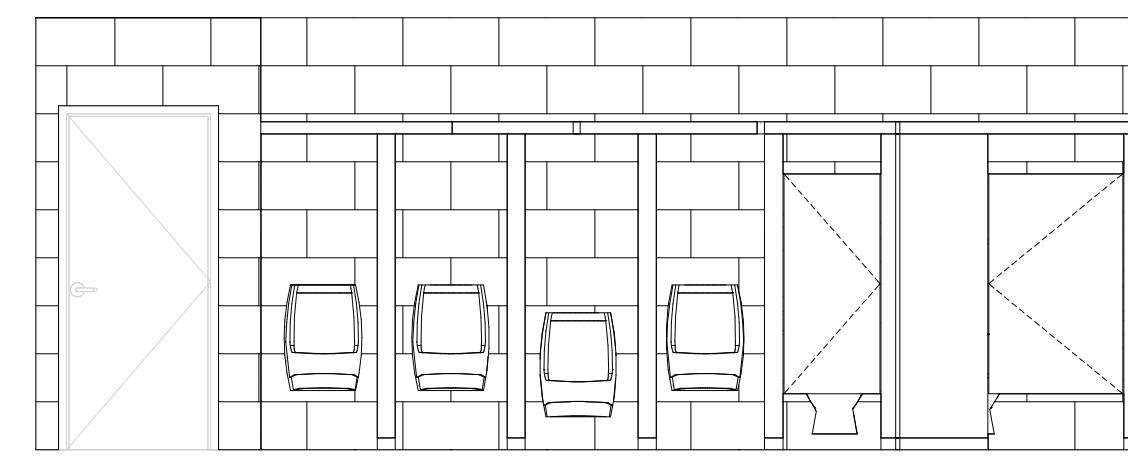
9 SECOND AND THIRD FLOOR WOMENS TOILET STALL ELEVATION
1/4" = 1'-0"



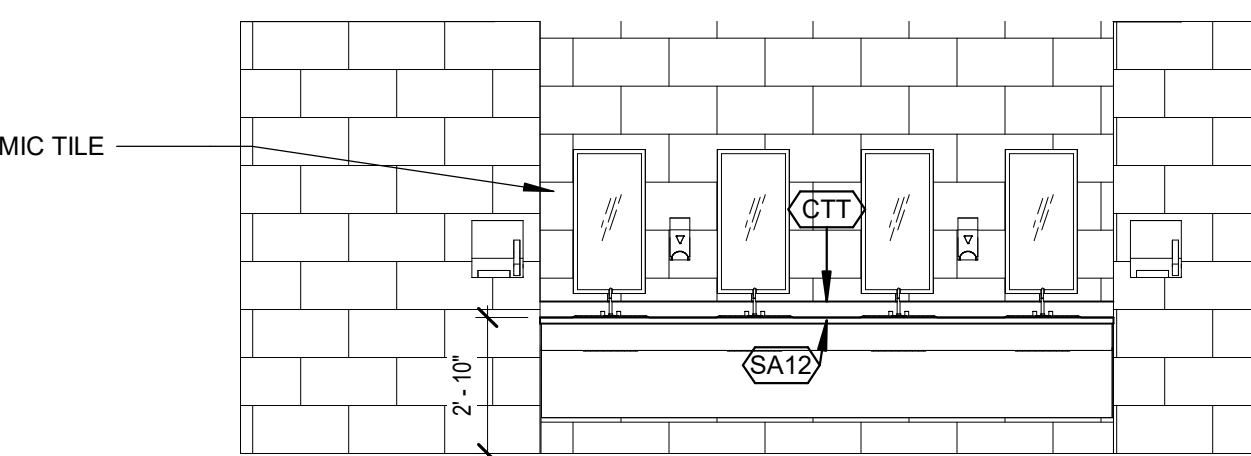
6 SINK APRON DETAIL
1" = 1'-0"



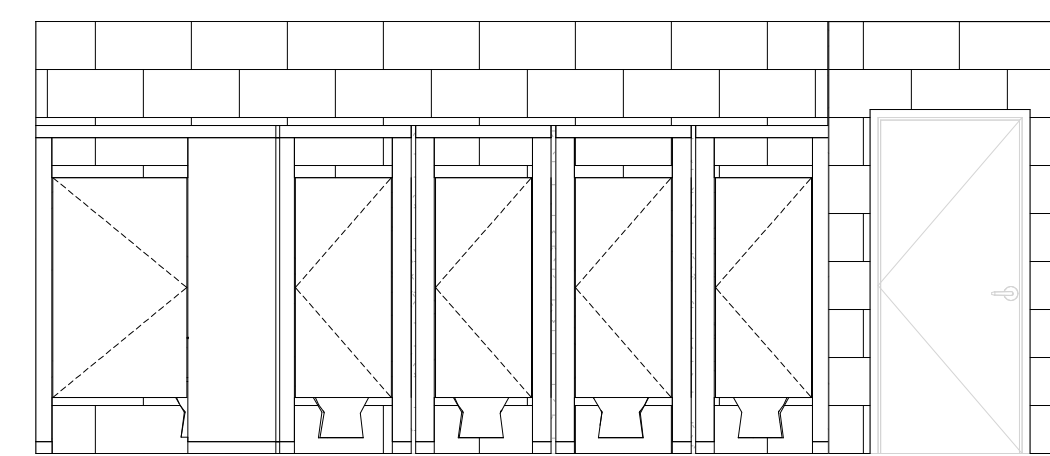
8 FIRST FLOOR MENS TOILET SINK ELEVATION
1/4" = 1'-0"



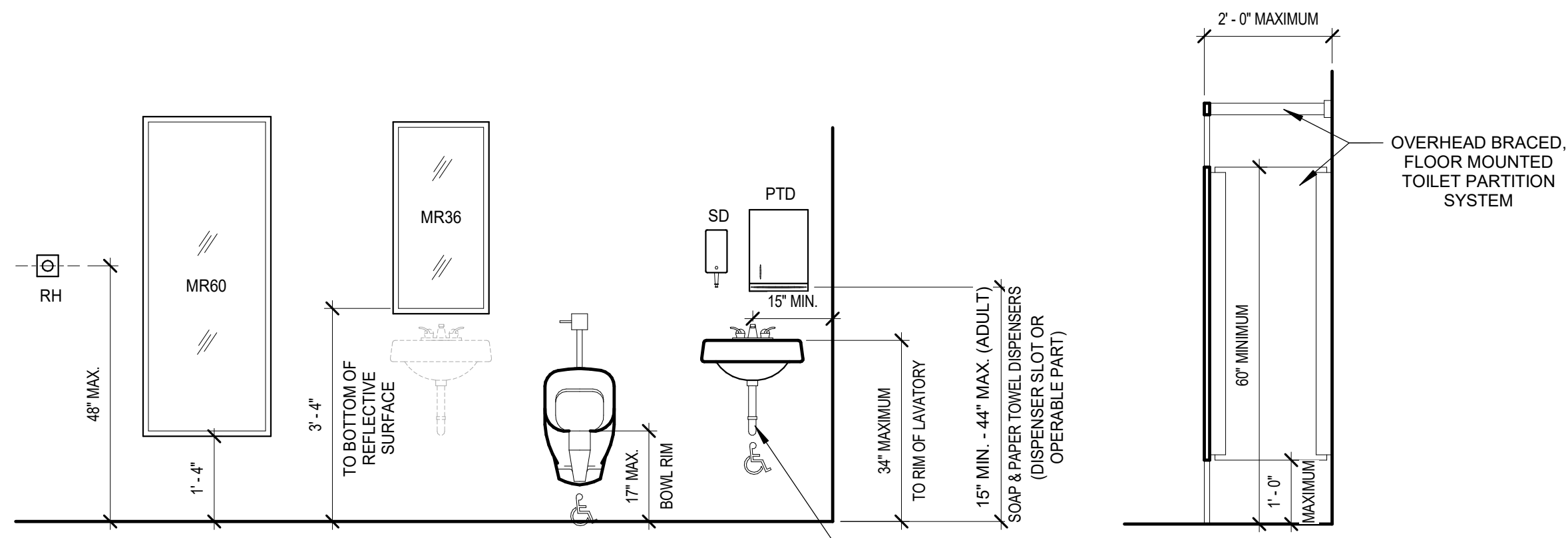
7 FIRST FLOOR MENS TOILET STALL ELEVATION
1/4" = 1'-0"



5 FIRST FLOOR WOMENS TOILET SINK ELEVATION
1/4" = 1'-0"

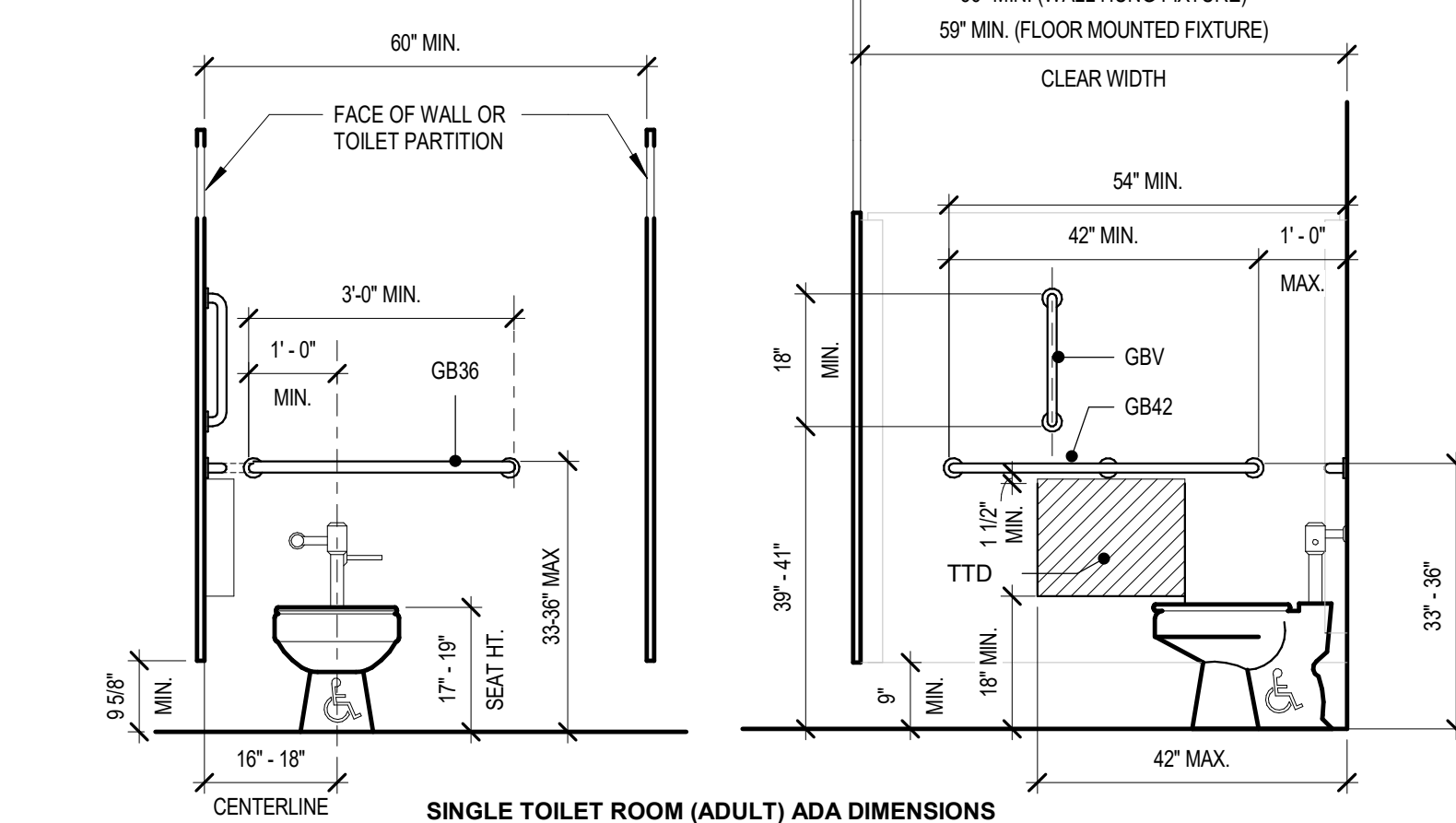


4 FIRST FLOOR WOMENS TOILET STALL ELEVATION
1/4" = 1'-0"



3 TOILET ACCESSORY MOUNTING HEIGHTS
1/2" = 1'-0"

2 URINAL PARTITION MOUNTING HEIGHTS
1/2" = 1'-0"



1 ADA TOILET COMPARTMENT EQUIPMENT MOUNTING HEIGHTS
1/2" = 1'-0"

FIRST FLOOR ROOM FINISH SCHEDULE					
ROOM NO.	NAME	FLOOR FINISH	BASE MATERIAL	WALL FINISH	NOTES
122	MEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING
123	WOMEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING

SECOND FLOOR ROOM FINISH SCHEDULE					
ROOM NO.	NAME	FLOOR FINISH	BASE MATERIAL	WALL FINISH	NOTES
223	MEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING
224	WOMEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING

THIRD FLOOR ROOM FINISH SCHEDULE					
ROOM NO.	NAME	FLOOR FINISH	BASE MATERIAL	WALL FINISH	NOTES
348	MEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING
349	WOMEN	CERAMIC MOSAIC TILE	CERAMIC WALL TILE	CERAMIC WALL TILE	TILE ON ALL WALLS FROM FLOOR TO CEILING

ROOM FINISH SCHEDULE NOTES:

- SEE G102 FOR ARCHITECTURAL MATERIALS LEGEND & ABBREVIATIONS.
- SEE THE PROJECT MANUAL FOR MATERIAL DEFINITIONS, PAINT TYPES, HIGH PERFORMANCE COATINGS, & ADDITIONAL COLOR INFORMATION NOT NOTED ON FINISH SCHEDULE.
- SEE REFLECTED CEILING PLANS FOR ACTUAL CEILING HEIGHTS AND MATERIAL CONFIGURATIONS.
- INSTALL A FLOOR TRANSITION MATERIAL AS INDICATED ON THE ROOM FINISH SCHEDULE & WHEREVER A FLOORING MATERIAL CHANGE OCCURS. REFER TO THE PROJECT MANUAL FOR FLOORING TRANSITION TYPES NOT CALLED OUT IN THE DRAWINGS.
- WHERE APC IS NOTED FOR THE CEILING MATERIAL, THE MFR'S STANDARD FINISH SHALL REMAIN U.N.O.
- CONTRACTOR TO ALLOW FOR UP TO 3 COLORS FOR PAINT THROUGHOUT THE PROJECT.
- FOR ALL H.M. DOOR FRAMES, ALLOW FOR TWO COLORS PER FRAME.
- THE PROJECT IS TO BE ACCOMPLISHED IN A PHASED CONSTRUCTION SEQUENCE. THE FIRST FLOOR TOILETS ARE TO BE DEMOLISHED AND RE-BUILT, AND PUT BACK INTO SERVICE, BEFORE DEMOLITION IS BEGUN ON THE SECOND FLOOR. THE SECOND FLOOR TOILETS ARE TO BE DEMOLISHED AND RE-BUILT, AND PUT BACK INTO SERVICE, BEFORE DEMOLITION IS BEGUN ON THE THIRD FLOOR.

CASEWORK SCHEDULE						
TYPE	DESCRIPTION	WIDTH	DEPTH	HEIGHT	MODEL #	NOTES
CTT	SOLID SURFACE TOILET COUNTERTOP		2'-1"	2'-10"		
SA10	10' LONG ADA PLASTIC LAMINATE GLAD SINK APRON	10'-5 3/4"	2'-0"	2'-9 1/4"	CUSTOM	WITH HINGED PANELS AS REQUIRED FOR PLUMBING ACCESS
SA12	12' LONG ADA PLASTIC LAMINATE CLAD SINK APRON	11'-10 3/4"	2'-0"	2'-9 1/4"	CUSTOM	WITH HINGED PANELS AS REQUIRED FOR PLUMBING ACCESS

GENERAL CASEWORK NOTES:

- CASEWORK MANUFACTURER TO VERIFY IN FIELD ALL DIMENSIONS PRIOR TO CABINET MANUFACTURE AND INSTALLATION.
- G.C. TO COORDINATE WITH CASEWORK MANUFACTURER FOR INSTALLATION OF ALL FRAMED CASEWORK UNITS. MODEL NUMBERS ARE STANDARD AWI CASEWORK DESIGN SERIES (CDS) DESIGNATIONS.
- G.C. TO PROVIDE ALL BLOCKING REQUIRED TO INSTALL WALL & BASE CABINETS. G.C. TO COORDINATE WITH CASEWORK MANUFACTURER FOR BLOCKING REQUIREMENTS.
- UNLESS NOTED OTHERWISE, ALL BASE CABINETS ARE TO BE 24" DEEP UNITS.
- UNLESS NOTED OTHERWISE, ALL CASEWORK TO BE H.P.L. FINISH U.N.O., AND ALL COUNTERTOPS TO BE SOLID SURFACE WALL.
- PROVIDE A FINISHED END PANEL WHERE CASEWORK AND COUNTERTOPS DO NOT TERMINATE AT A CABINET OR SIDE WALL.
- LOCATE ALL COUNTERTOP SEAMS OVER SUPPORTS.
- SEE THE TOILET ACCESSORIES SCHEDULE FOR EQUIPMENT DESCRIPTIONS ON SHEET A401 FOR ALL EQUIPMENT NOTED ON CASEWORK ELEVATIONS.
- UNLESS NOTED OTHERWISE, PROVIDE SIDE SPLASHES @ ALL SIDEWALL RETURNS.

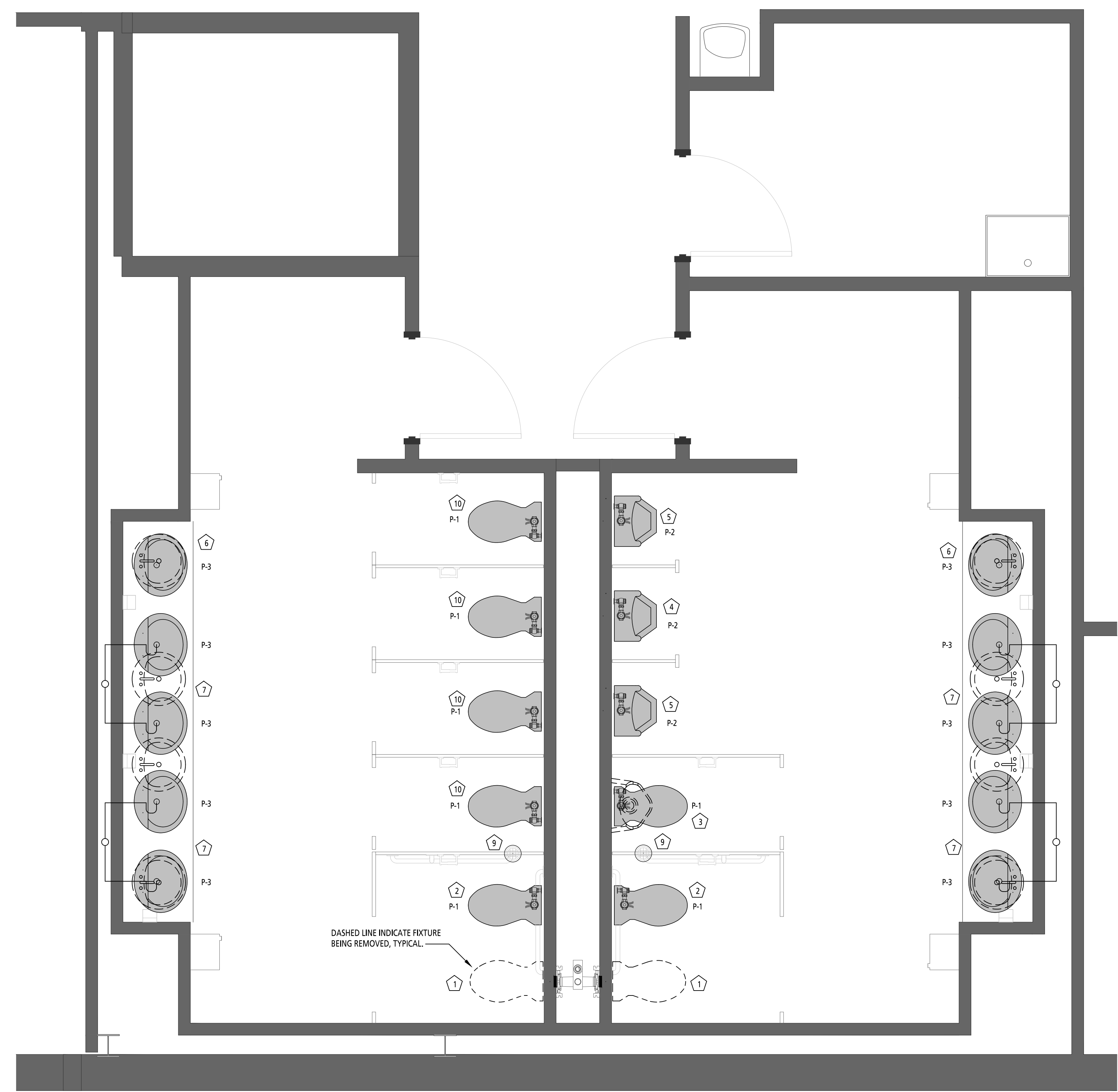


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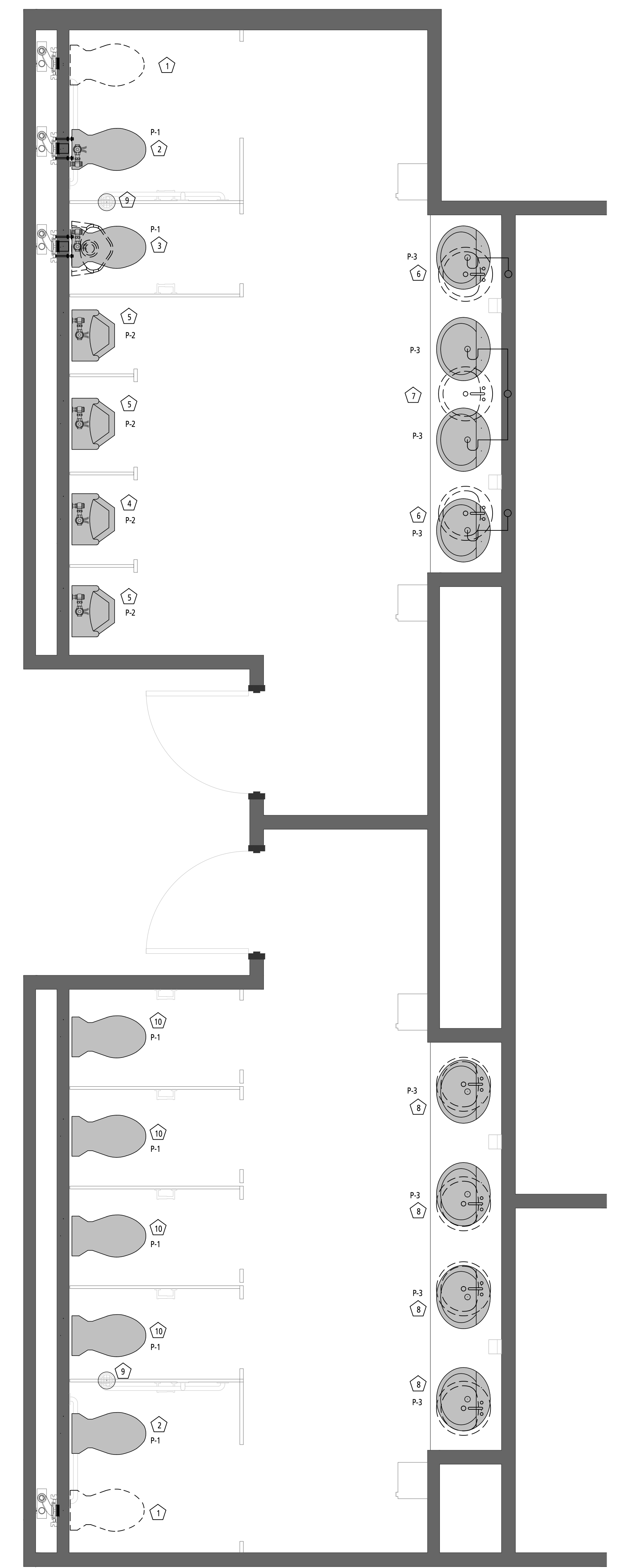
REVISIONS

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PLUMBING FIXTURE SCHEDULE					
SYMBOL	FIXTURE	CONNECTIONS			SPECIFICATIONS
		CW	HW	WASTE	
P-1	WATER CLOSET - ADA REQUIREMENTS	1"	—	4"	KOHLER MODEL K-4325, WALL HUNG, ELONGATED, WHITE, TOP SPUD, MODEL K-7535 TRI-POINT EXPOSED HYBRID 1.6 GPF FLUSH VALVE, MODEL K-4666-SC OPEN FRONT SEAT. REPLACE WALL FLANGE BOLTS, NUTS, AND GASKET WITH NEW.
P-2	URINAL	3/4"	—	2"	KOHLER MODEL K-4991-ET, WALL-HUNG, HIGH-EFFICIENCY, WHITE, TOP SPUD, MODEL K-7546 TRI-POINT EXPOSED HYBRID 0.125 GPF FLUSH VALVE. MODIFY EXISTING PLUMBING WITHIN WALL FOR ONE URINAL TO COMPLY WITH ADA STANDARDS, SEE ARCHITECTURAL PLANS FOR WHICH URINAL.
P-3	DROP-IN LAVATORY	1/2"	1/2"	1-1/4"	KOHLER MODEL K-2699-4, DROP-IN, VITREOUS CHINA, WHITE, 3-HOLE DRILLING, RE-USE EXISTING FAUCET AND ADD NEW OF SAME MFG & MODEL OF EXISTING, APOLLO MODEL MVD8R-LF "MINI" MIXING VALVE, K-7129-A DRAIN, CHROME PLATED, EBC TAI40 Z L18 DBF P-TRAP, IK TRAP INSULATOR, EBC VAN26K HEAVY DUTY STOP VALVES WITH SUPPLIES ON ADDED LAVATORIES.



2 SECOND FLOOR GROUP TOILET ENLARGED RENOVATION PLAN
1/2" = 1'-0"



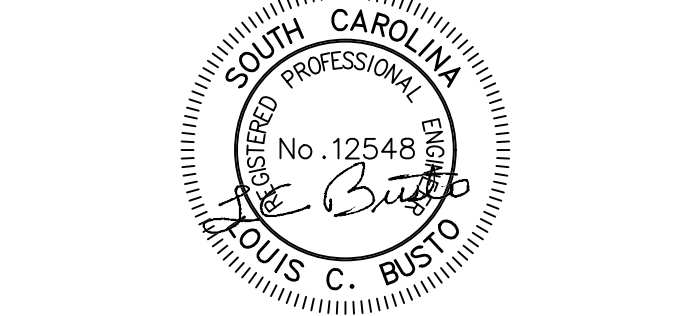
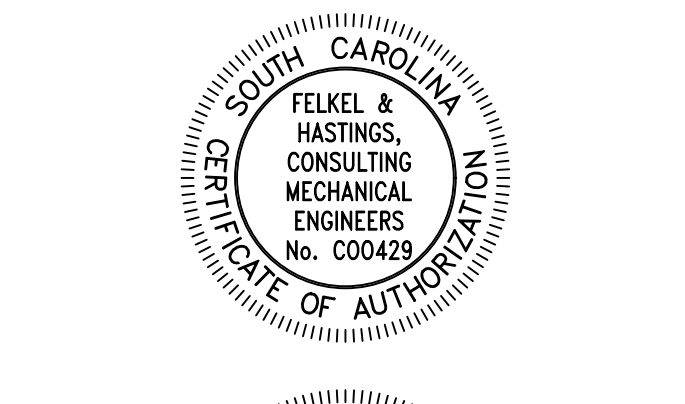
1 FIRST FLOOR GROUP TOILET ENLARGED RENOVATION PLAN
1/2" = 1'-0"

- PLUMBING RENOVATION NOTES**
- CONTRACTOR SHALL REMOVE WALL-HUNG WATER CLOSET, FLUSH VALVE, BOLTS, AND COUPLING. CAP WATER LINE IN WALL.
 - CONTRACTOR SHALL ADJUST LOCATION OF CARRIER & WATER LINE SO THAT WATER CLOSET IS 18" OFF NEAREST FINISHED SIDE WALL. INSTALL NEW WATER CLOSET, FLUSH VALVE, AND SEAT FOR COMPLETE ADA APPROVED WATER CLOSET.
 - CONTRACTOR SHALL DEMOLISH EXISTING URINAL AND MODIFY EXISTING SANITARY SEWER AS REQUIRED TO INSTALL NEW CARRIER & WATER LINE TO FLUSH VALVE AND INSTALL WALL-HUNG CLOSET COMPLETE.
 - PLUMBING CONTRACTOR SHALL REMOVE EXISTING URINAL, MODIFY EXISTING WATER AND WASTE PIPING WITHIN THE WALL AS REQUIRED TO LOWER THE NEW URINAL TO 24" ABOVE FINISHED FLOOR. GENERAL CONTRACTOR SHALL PATCH WALL AS REQUIRED.
 - PLUMBING CONTRACTOR SHALL REMOVE EXISTING URINAL, MODIFY EXISTING WATER AND WASTE PIPING WITHIN THE WALL AS REQUIRED TO LOWER THE NEW URINAL TO 17" ABOVE FINISHED FLOOR. GENERAL CONTRACTOR SHALL PATCH WALL AS REQUIRED.
 - CONTRACTOR SHALL REMOVE LAVATORY, TRAP, AND SUPPLIES. INSTALL ALL NEW FITTINGS ON WATER AND WASTE AS REQUIRED TO TIE BACK INTO EXISTING WASTE CONNECTION TO NEW LAVATORY AND FAUCET.
 - CONTRACTOR SHALL REMOVE LAVATORY, TRAP, AND SUPPLIES. INSTALL ALL NEW SANITARY TEE FITTING TO SERVE TWO LAVATORIES. MODIFY EXISTING HOT AND COLD WATER LINES FOR ADDED LAVATORY. INSTALL NEW LAVATORIES COMPLETE.
 - CONTRACTOR SHALL INSTALL NEW LAVATORY AND RE-USE EXISTING FAUCET. WHERE LAVATORY HAVE BEEN ADDED, PLUMBER SHALL FURNISH NEW LAVATORY, FAUCET, NEW INSULATED P-TRAP, SUPPLIES AND WIRING TO EXISTING TRANSFORMER.
 - EXPOSED FLOOR DRAIN COVER SHALL BE POLISHED WITH STEEL WOOL.
 - PLUMBING CONTRACTOR SHALL REMOVE EXISTING WATER CLOSET AND REPLACE WITH NEW SEAL, BOLTS, WATER CLOSET, SEAT AND FLUSH VALVE. REPAIR/CARRIER AS NEEDED.



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

PROJECT TITLE
OSE # -H59-N178-CL



FELKEL & HASTINGS
Mechanical Engineers
2725 Cypress Street
Columbia, SC 29205
Comm. No.: 22-40e Date: 9-15-22

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**ENLARGED TOILET ROOM
PLUMBING PLANS, AND
FIXTURE SCHEDULE**

SHEET TITLE
P101

PLUMBING SPECIFICATIONS

1.01 SCOPE:
THESE SPECIFICATIONS TOGETHER WITH THE ACCOMPANYING PLUMBING DRAWINGS ARE INTENDED TO PROVIDE COMPLETE PLUMBING INSTALLATION FOR THE NEW BUILDING AND SHALL INCLUDE ALL LABOR, EQUIPMENT AND MATERIALS.

1.02 GENERAL:
ALL WORK SHALL BE PERFORMED BY SKILLED AND CAPABLE WORKMEN UNDER COMPETENT SUPERVISION, EMPLOYING LATEST AND BEST PRACTICES OF THE TRADE. WORK SHALL BE INSTALLED ACCORDING TO THE ADOPTED LOCAL PLUMBING CODE, AND SHALL MEET WITH PLUMBING INSPECTOR'S APPROVAL IN EVERY RESPECT. LOCAL CODE SHALL APPLY WHERE SUCH CODE EXCEEDS REQUIREMENTS OF THIS SPECIFICATION. IN ABSENCE OF CODE OR AUTHORITIES, INSTALL ALL WORK ACCORDING TO THE 2018 INTERNATIONAL PLUMBING CODE.

PLUMBING CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES, AT HIS OWN EXPENSE, AND SHALL PAY ALL SERVICE CHARGES REQUIRED FOR PROSECUTION OF THIS WORK.

PLUMBING DRAWINGS ARE DIAGRAMMATIC ONLY, AND DO NOT SHOW ALL OFFSETS, FITTINGS, ETC. COORDINATE WORK WITH OTHER TRADES, FURNISHING AND INSTALLING ALL FITTINGS, OFFSETS, ETC., REQUIRED AT NO ADDITIONAL COST TO OWNER.

2.01 MATERIALS:

- SOIL, WASTE & VENT PIPING: CAST IRON WITH FOUR BAND NO-HUB CONNECTIONS.
- WATER PIPING: TYPE 1/2" BELOW FLOOR SLAB TYPE 1/2" COPPER ABOVE SLAB.
- PIPE INSULATION: OWENS CORNING AS-J-25 WITH JACKET OR ARMAFLEX CLOSED CELL WITH GLUED JOINTS.

2.02 PIPE HANGERS AND SUPPORTS:
PIPING SHALL BE INSTALLED WITHOUT UNDUE STRESS OR STRAIN ON JOINTS AND EQUIPMENT. HANGERS SHALL BE SECURELY ANCHORED TO BUILDING STRUCTURE. PIPE HANGERS SHALL BE INSTALLED AROUND THE INSULATION WHERE PIPES ARE INSULATED. INSTALL HANGER WITH SHEET METAL SADDLES TO PROTECT THE PIPE INSULATION TO KEEP THE INSULATION FROM CRUSHING.

MAKESHIFT, FIELD DEVISED METHODS OF PLUMBING PIPE SUPPORT, SUCH AS WITH THE USE OF SCRAP FRAMING MATERIALS, ARE NOT ALLOWED. SUPPORT AND POSITIONING OF PIPING SHALL BE BY MEANS OF ENGINEERED METHODS THAT COMPLY WITH UPPRO PS 42-96. THESE SHALL BE HUBBARD ENTERPRISES/HOUBRTE SUPPORT SYSTEMS OR ENGINEER-APPROVED EQUIVALENT.

2.03 FIXTURES:
ALL FIXTURES SHALL BE NEW, FIRST QUALITY, AND FREE FROM DEFECTS. FIXTURES SHALL BE FURNISHED COMPLETE WITH SUPPLY PIPES, STOP VALVES, TRAPS, FAUCETS, ESCUTCHEONS, HANGERS, SUPPORTS, ETC. ALL EXPOSED PIPING SHALL BE CHROME PLATED.

WHERE FIXTURES ARE INSTALLED IN CONTACT WITH WALLS OR FLOORS, SEAL THE SPACES AT THE OUTER EDGES OF FIXTURES IN CONTACT WITH WALLS OR FLOORS USING A NON-HARDENING BATHTUB CAULK, "SELASTIC" BY DOW-CORNING, OR APPROVED EQUAL.

ALL WALL MOUNTED FIXTURES SHALL BE EITHER MOUNTED ON HEAVY DUTY CONCEALED CARRIERS, HEAVY DUTY WALL MOUNTING BRACKETS WITH THRU WALL BOLTS AND BACK PLATES, OR HEAVY DUTY BRACKETS MOUNTED DIRECTLY TO CONCRETE-FILLED BLOCK WORK WITH STRUCTURAL FASTENERS OF THE "BUSH-HEAD" TYPE FASTENED INTO THE CONCRETE FILL. STANDARD LIGHT-WEIGHT PRESSED STEEL MOUNTING BRACKETS WITH SCREWS AND ORDINARY SHIELDS INTO THE SURFACE OF THE BLOCK WILL NOT BE ACCEPTABLE.

3.01 CLEANING, PAINTING, AND ADJUSTING:
AT THE COMPLETION OF THE WORK, ALL PARTS OF THE INSTALLATION SHALL BE THOROUGHLY CLEANED. ALL EQUIPMENT, PIPE, VALVES, AND FITTINGS SHALL BE CLEANED OF ALL GREASE, METAL CUTTINGS, AND SLUDGE WHICH MAY HAVE ACCUMULATED BY OPERATION OF THE SYSTEM FOR TESTING. ANY STORAGE, DISCOLORATION, OR OTHER DAMAGE TO PARTS OF THE BUILDING, ITS FINISH OR FURNISHINGS, DUE TO THE CONTRACTOR'S FAILURE TO PROPERLY CLEAN THE PIPING SYSTEM, SHALL BE REPAIRED BY THE PLUMBING CONTRACTOR WITHOUT COST TO THE OWNER. ALL FLUSH VALVES AND OTHER PARTS OF THE SYSTEM SHALL BE ADJUSTED FOR QUIET AND PROPER OPERATION.

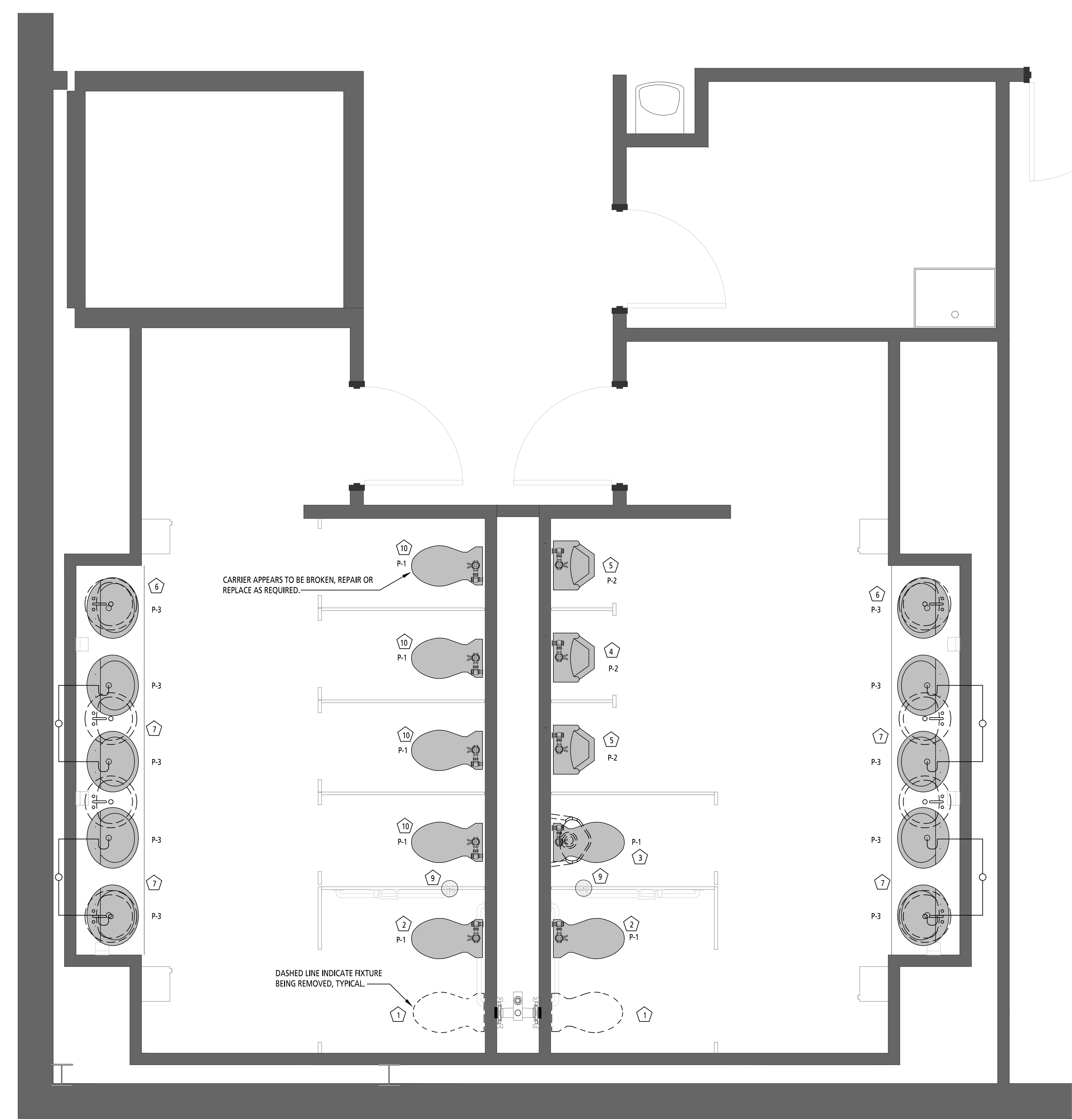
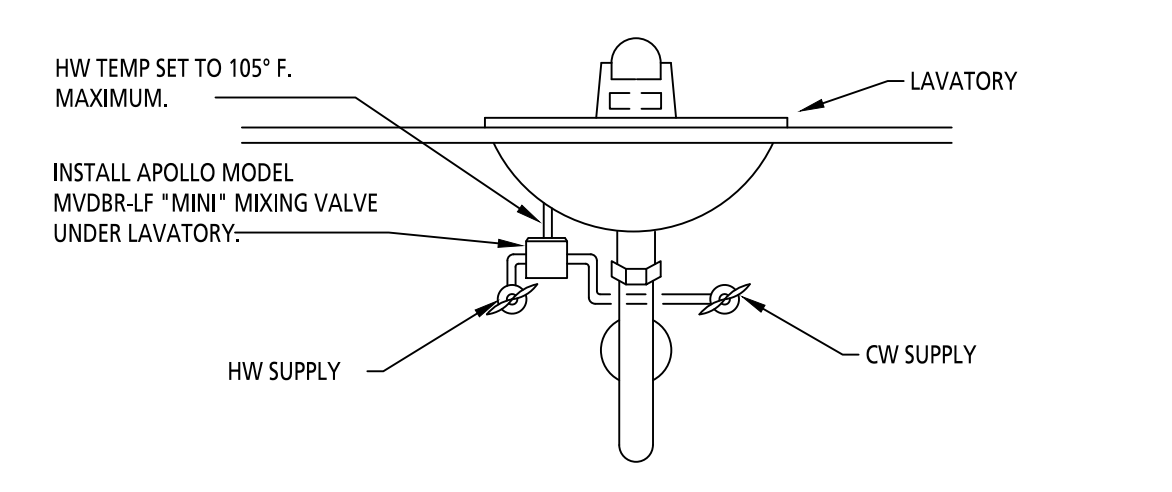
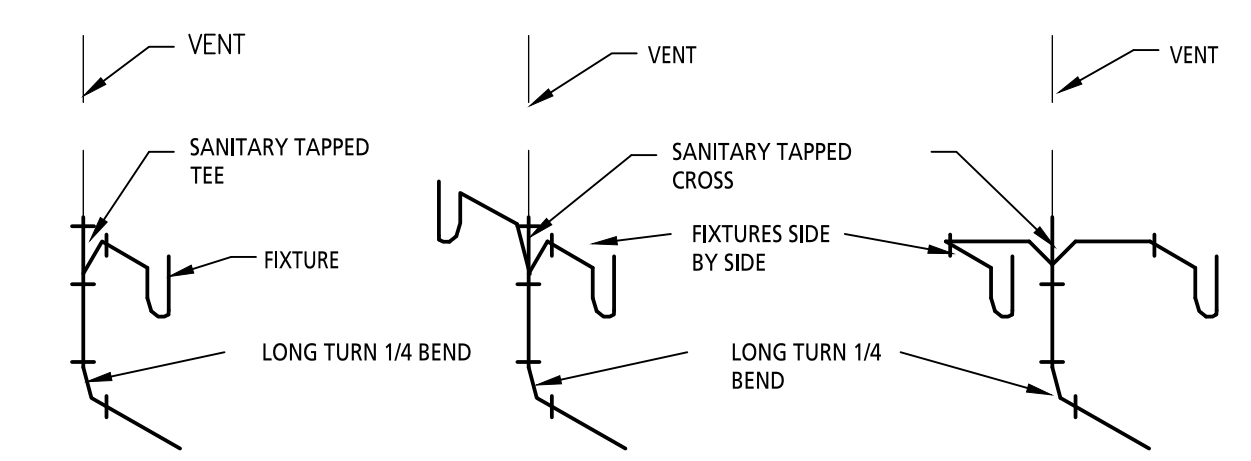
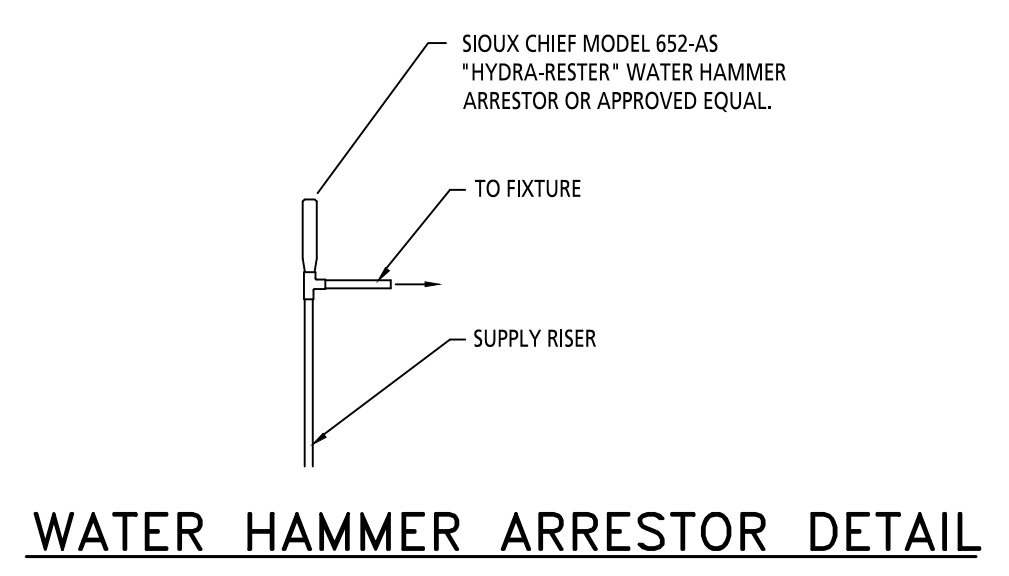
FIXTURES SHALL BE TESTED FOR SOUNDNESS, STABILITY OF SUPPORT, AND SATISFACTORY OPERATION OF ALL COMPONENT PARTS.

3.02 INSTRUCTION BOOKLETS:
CONTRACTOR SHALL FURNISH THE OWNER TWO COMPLETE SETS OF INSTRUCTION BOOKLETS REGARDING THE OPERATION AND MAINTENANCE OF ALL PLUMBING ITEMS OF EQUIPMENT INSTALLED UNDER THIS CONTRACT. BOOKLETS SHALL INCLUDE A COMPLETE PARTS LIST AND TECHNICAL DATA, INCLUDING PREVENTATIVE MAINTENANCE INSTRUCTIONS FOR ALL ITEMS OF EQUIPMENT.

EACH SET OF INSTRUCTION BOOKLETS SHALL BE NEATLY BOUND INTO A SINGLE UNIT AND PRESENTED TO THE OWNER PRIOR TO FINAL ACCEPTANCE OF THE JOB.

3.03 GUARANTEES AND WARRANTIES:
CONTRACTOR SHALL SERVICE AND MAINTAIN ALL EQUIPMENT INSTALLED BY HIM UNDER THIS CONTRACT FOR A LIKE PERIOD OF 12 MONTHS FROM THE DATE THE CERTIFICATE OF SUBSTANTIAL COMPLETION IS ISSUED, PERFORMING ALL REQUIRED SEASONAL MAINTENANCE.

CONTRACTOR SHALL GUARANTEE MECHANICAL SYSTEMS AS INSTALLED BY HIM TO OPERATE QUIETLY, SAFELY, AND EFFICIENTLY.



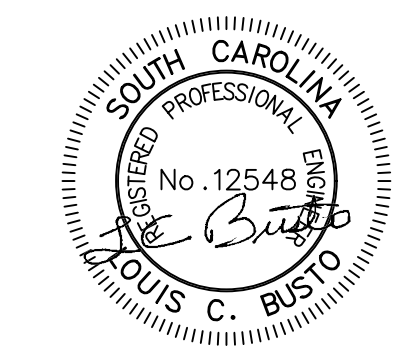
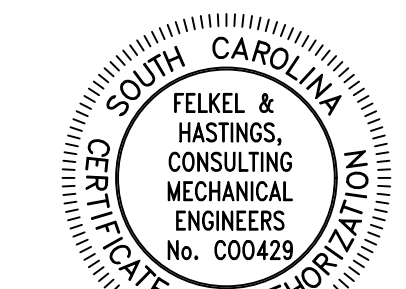
PLUMBING RENOVATION NOTES

1. CONTRACTOR SHALL REMOVE WALL-HUNG WATER CLOSET, FLUSH VALVE, BOLTS, AND COUPLING. CAP WATER LINE IN WALL.
2. CONTRACTOR SHALL ADJUST LOCATION OF CARRIER & WATER LINE SO THAT WATER CLOSET IS 18" OFF NEAREST FINISHED FLOOR. INSTALL NEW WATER CLOSET, FLUSH VALVE, AND SEAT FOR COMPLETE ADA APPROVED WATER CLOSET.
3. CONTRACTOR SHALL DEMOLISH EXISTING URINAL AND MODIFY EXISTING SANITARY SEWER AS REQUIRED TO INSTALL NEW CARRIER & WATER LINE TO FLUSH VALVE AND INSTALL WALL-HUNG CLOSET COMPLETE.
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6. CONTRACTOR SHALL REMOVE LAVATORY, TRAP, AND SUPPLIES. INSTALL ALL NEW FITTINGS ON WATER AND WASTE AS REQUIRED TO THE BACK INTO EXISTING WASTE CONNECTION TO NEW LAVATORY AND FAUCET.
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9. EXPOSED FLOOR DRAIN COVER SHALL BE POLISHED WITH STEEL WOOL.
10. PLUMBING CONTRACTOR SHALL REMOVE EXISTING WATER CLOSET AND REPLACE WITH NEW SEAL, BOLTS, WATER CLOSET, SEAT AND FLUSH VALVE. REPAIR/CARRIER AS NEEDED.



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

PROJECT TITLE
OSE # -H59-N178-CL



FELKEL & HASTINGS
Mechanical Engineers
2725 Cypress Street
Columbia, SC 29205
Comm. No.: 22-40e Date: 9-15-22

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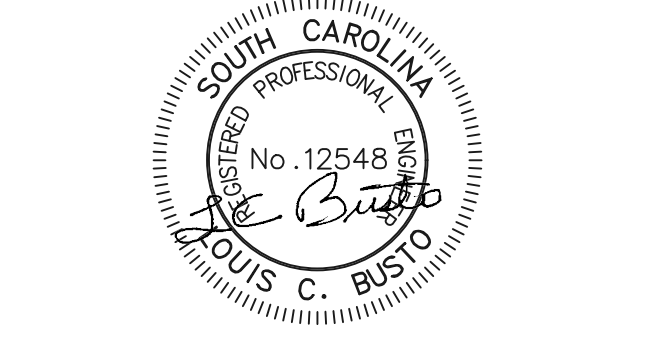
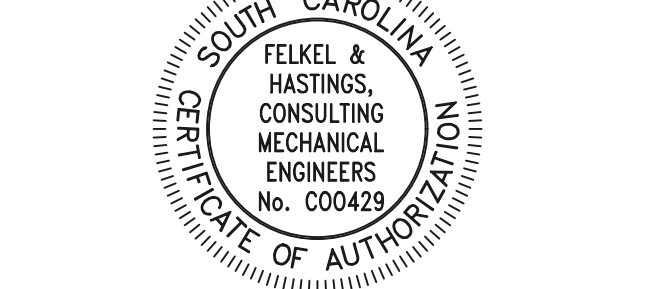
**ENLARGED TOILET ROOM
PLUMBING PLAN, DETAILS,
AND SPECIFICATION**



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

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Mechanical Engineers
2725 Cypress Street
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DRAWING RELEASE DATE

**ENLARGED HVAC
TOILET ROOM
PLANS**
SHEET TITLE

OUTLINE SPECIFICATIONS

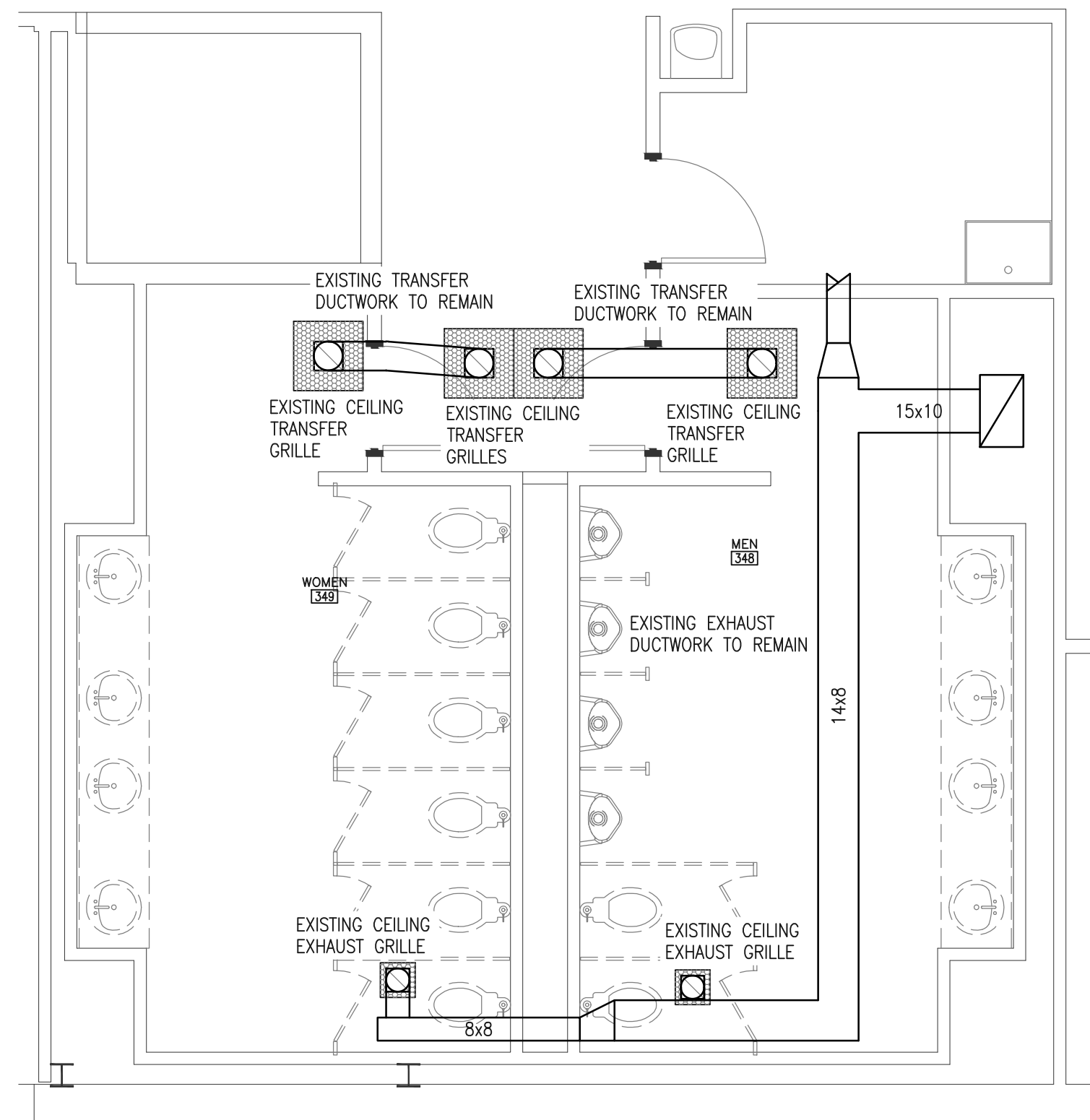
1. ALL WORK SHALL COMPLY WITH THE 2009 EDITION OF THE INTERNATIONAL ENERGY CONSERVATION CODE, THE 2018 EDITIONS OF THE INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, INTERNATIONAL PLUMBING CODE, INTERNATIONAL FUEL GAS CODE AND OTHER REQUIREMENTS OF NFPA, EPA AND ALL OTHER AUTHORITIES HAVING JURISDICTION OVER THIS WORK.
2. THE CONTRACTOR SHALL PAY ALL FEES AND SECURE ALL LICENSES AND PERMITS REQUIRED FOR THE WORK INDICATED ON THE MECHANICAL DRAWINGS.
3. ALL DUCTWORK SHALL MEET SMACNA STANDARDS AND CONSTRUCTED AND ERECTED IN ACCORDANCE WITH THE INTERNATIONAL MECHANICAL CODE FOR LOW PRESSURE DUCT SYSTEMS. ALL LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS SHALL BE SECURELY FASTENED AND SEALED WITH GASKETS, MASTICS OR MASTIC-PLUS-EMBEDDED-FABRIC TAPE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
4. AS-BUILT PRINTS SHALL BE PROVIDED TO THE OWNER AT PROJECT CLOSEOUT.
5. CONTRACTOR SHALL PROVIDE 1 YEAR GUARANTEE ON ALL EQUIPMENT AND WORK.

HVAC NOTES:

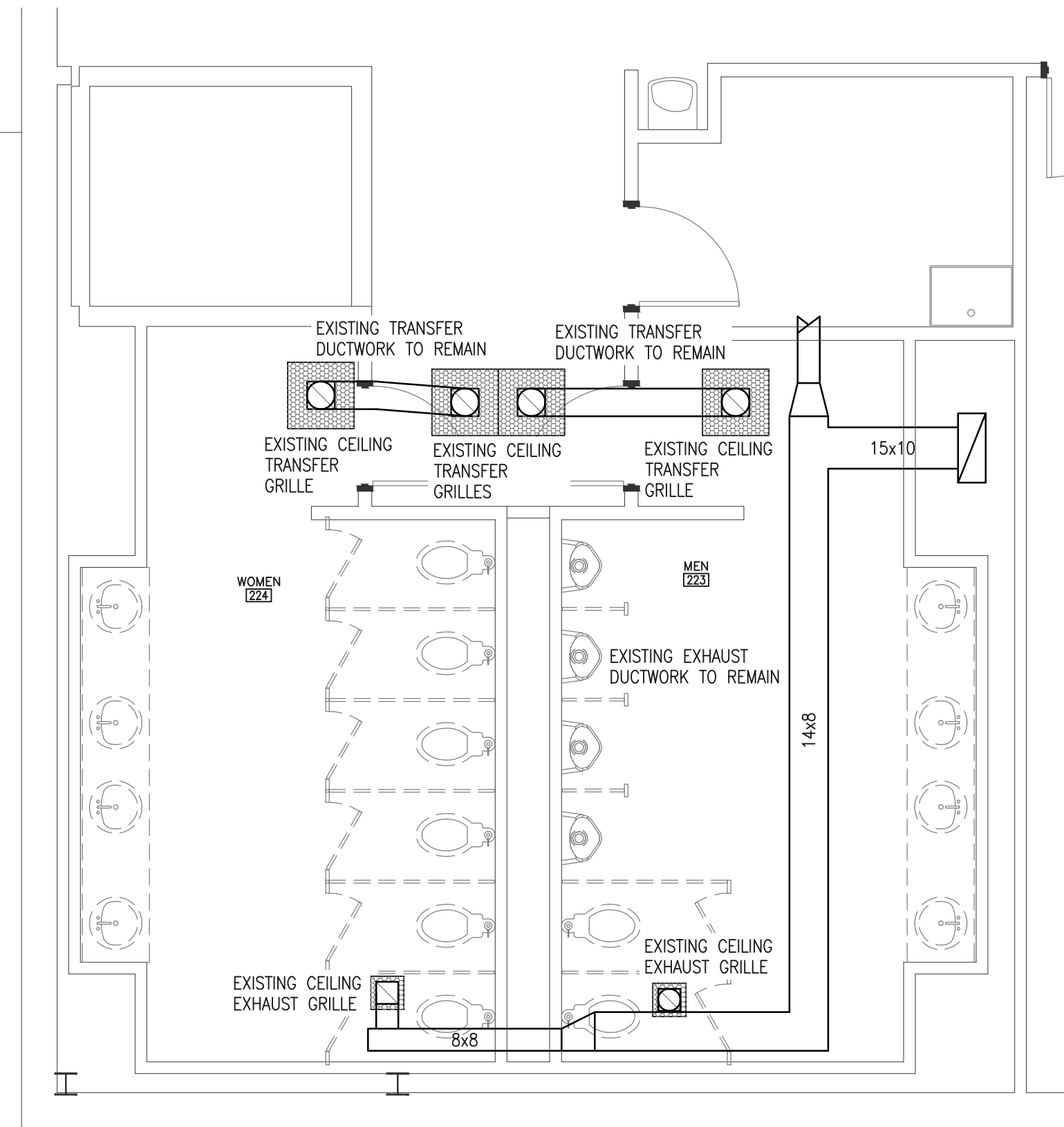
DEMOLITION PLANS ARE BASED ON "AS-BUILT" PRINTS; SOME FIELD DISCREPANCIES MAY EXIST.
REFER TO ARCHITECTURAL DRAWINGS FOR ACTUAL BUILDING CONFIGURATION, DIMENSIONS, ETC.
WHERE AN EXISTING CEILING GRILLE IS IN GOOD REPAIR, CLEAN GRILLE AND RE-USE.
WHERE AN EXISTING CEILING GRILLE IS IN POOR REPAIR, REPLACE GRILLE WITH TYPE AND SIZE SHOWN ON HVAC RENOVATION PLANS. RE-USE EXISTING RUNOUT OR DUCTWORK IF POSSIBLE. IF EXISTING RUNOUT OR DUCTWORK CAN NOT BE RE-USED, REPLACE WITH NEW DUCTWORK OF SAME TYPE AS EXISTING.
THE CONTRACTOR IS RESPONSIBLE FOR THE DISPOSAL OF ALL UNUSED GRILLES, DUCTWORK, ETC. AFTER FIRST ALLOWING THE OWNER THE OPPORTUNITY TO KEEP ANY ITEMS THEY CHOOSE.
EXAMINE EXISTING DUCTWORK AND INSULATION WITHIN PROJECT FOOTPRINT. REPORT TO THE OWNER ANY AREAS WHERE DAMAGE EXISTS.

HVAC LEGEND

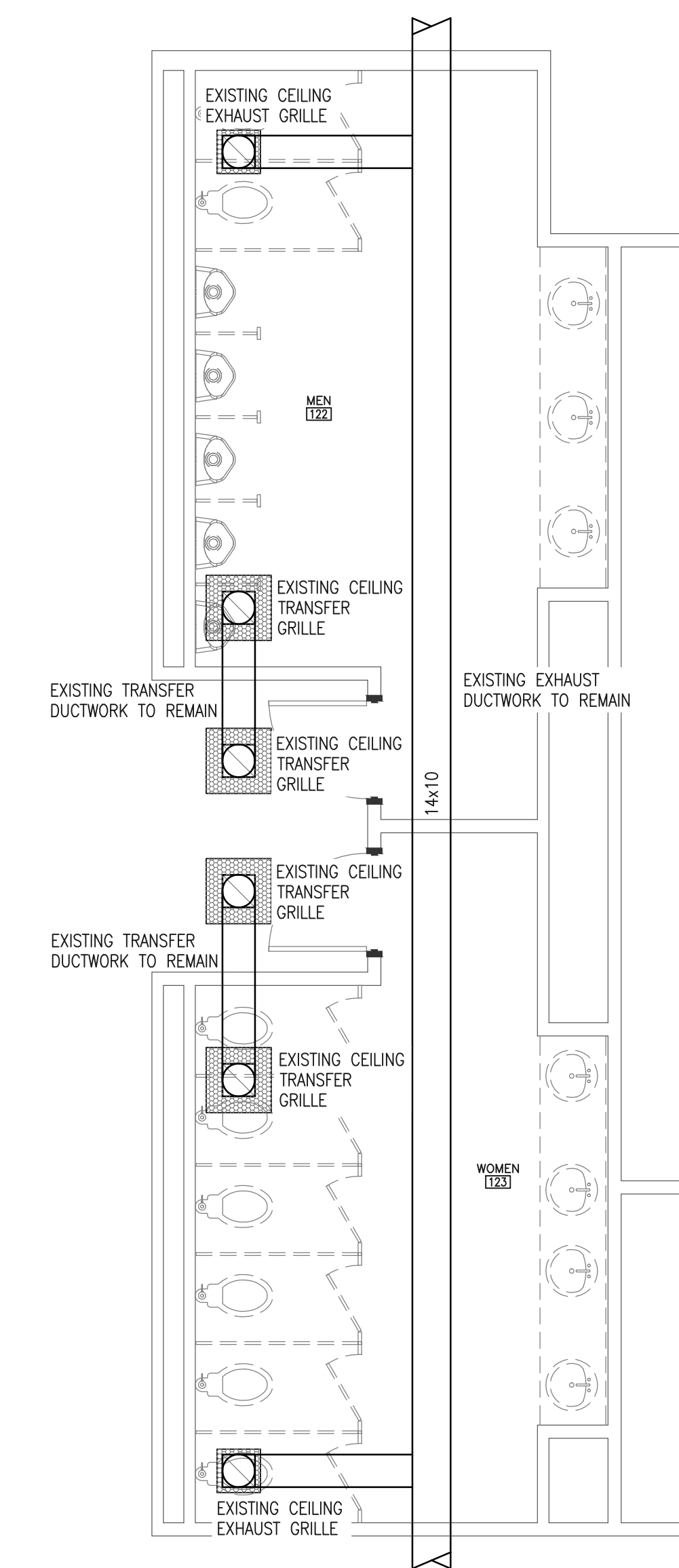
- TYPE "C" GRILLE (SEE SCHEDULE)
6"Ø ROUND NECK
C-6-60
60 CFM
- EXISTING DUCTWORK, PIPING OR EQUIPMENT TO REMAIN
- NEW DUCTWORK, PIPING OR EQUIPMENT BY CONTRACTOR



3 THIRD FLOOR GROUP TOILET ENLARGED HVAC DEMOLITION FLOOR PLAN
1/4" = 1'-0"



2 SECOND FLOOR GROUP TOILET ENLARGED HVAC DEMOLITION FLOOR PLAN
1/4" = 1'-0"

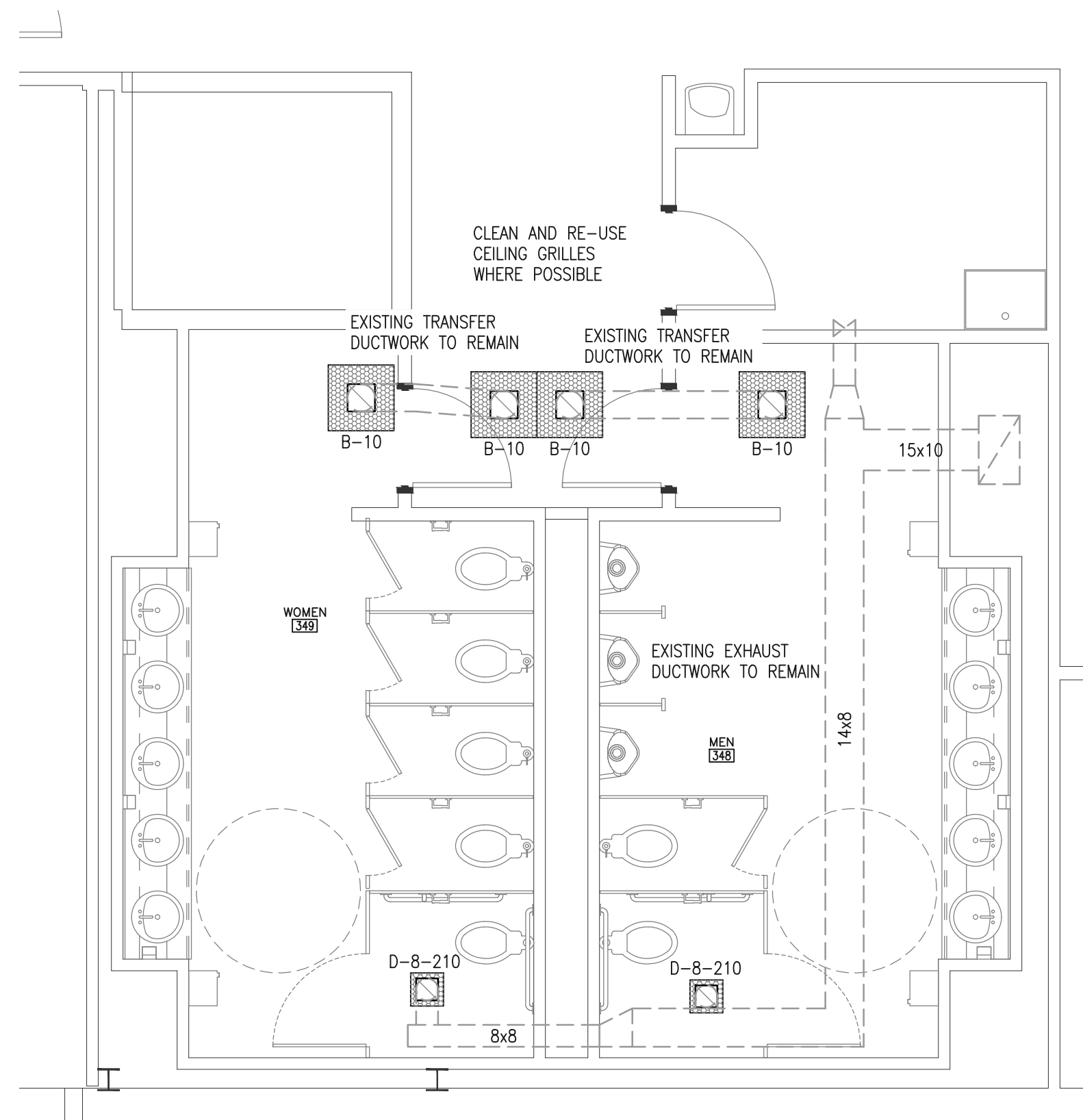


1 FIRST FLOOR GROUP TOILET ENLARGED HVAC DEMOLITION FLOOR PLAN
1/4" = 1'-0"

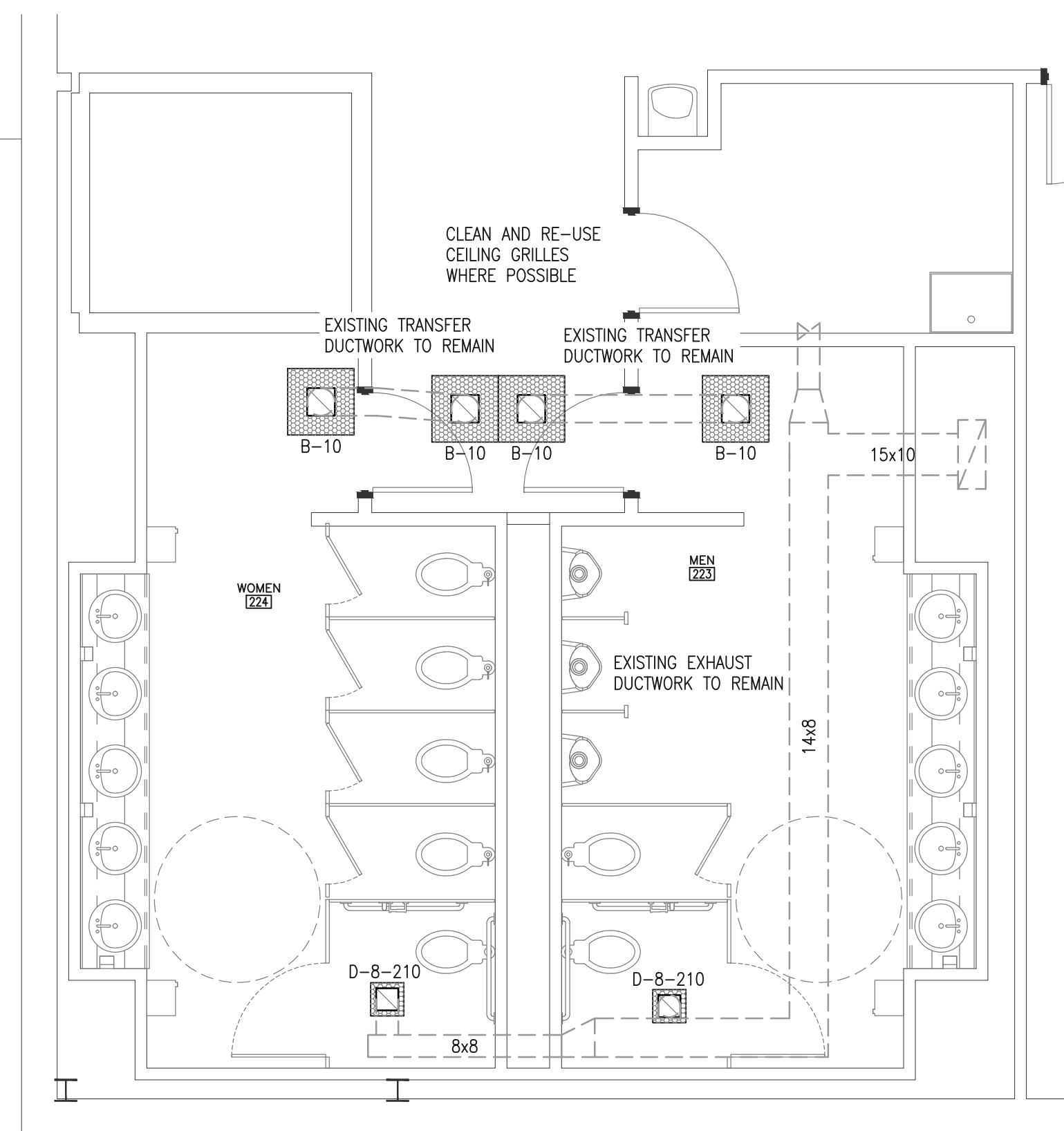
AIR DISTRIBUTION SCHEDULE

SYMBOL	MOUNTING	PRICE MODEL NO.	METAL-AIRE MODEL NO.	TITUS MODEL NO.	FRAME SIZE (IN)	FACE TYPE	NECK	FINISH (FACE/INT)	USE	MATERIAL	REMARKS
B	LAY-IN	APDDR	7000R-6	PAR-AA	24X24	PERFORATED	ROUND	WHT/WHT	RET/EXH	ALUMINUM	-
D	SURFACE/CEILING	APDDR	7000R-1	PAR-AA	NECK + 2	PERFORATED	ROUND	WHT/WHT	RET/EXH	ALUMINUM	1

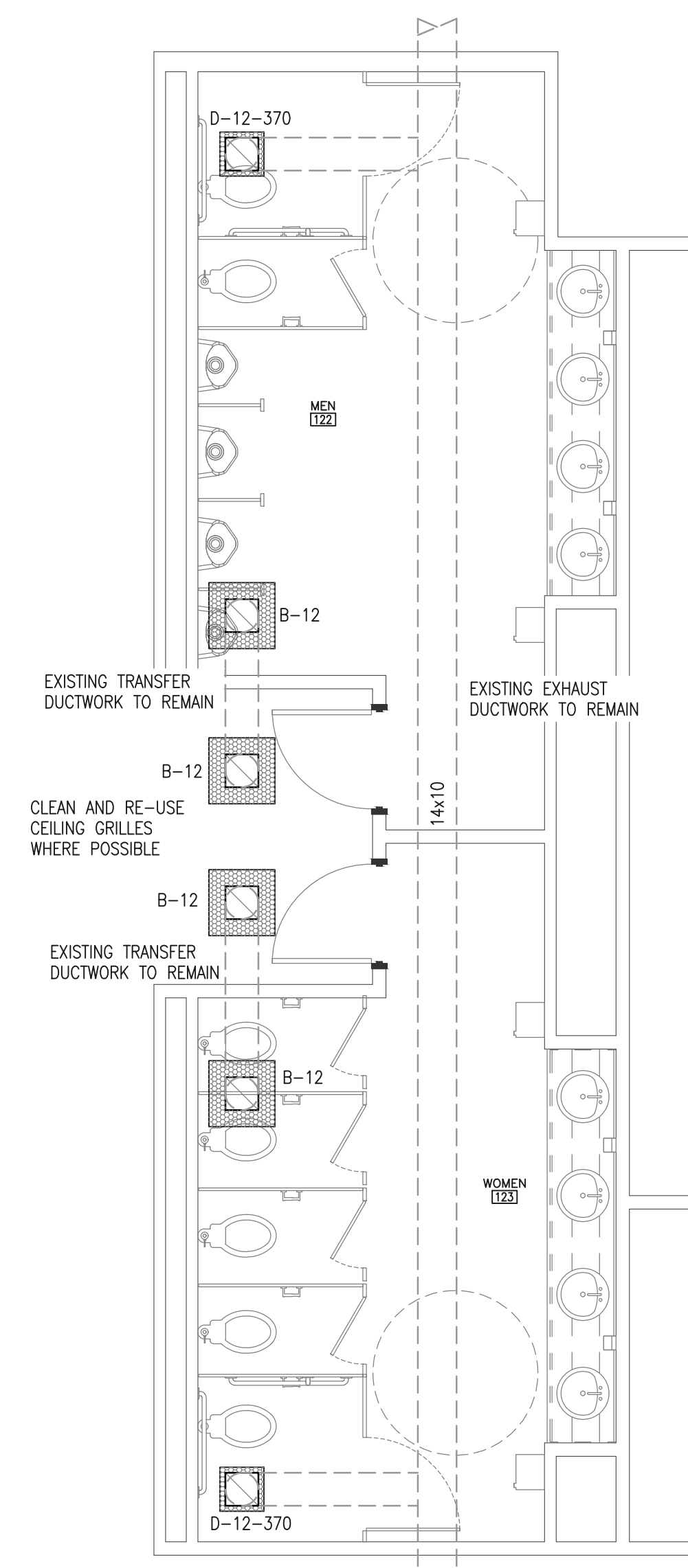
1. FURNISH WITH PLASTER FRAME.



6 THIRD FLOOR GROUP TOILET ENLARGED HVAC RENOVATION PLAN
1/4" = 1'-0"



5 SECOND FLOOR GROUP TOILET ENLARGED HVAC RENOVATION PLAN
1/4" = 1'-0"



4 FIRST FLOOR GROUP TOILET ENLARGED HVAC RENOVATION PLAN
1/4" = 1'-0"

GENERAL NOTES ALL DRAWINGS:

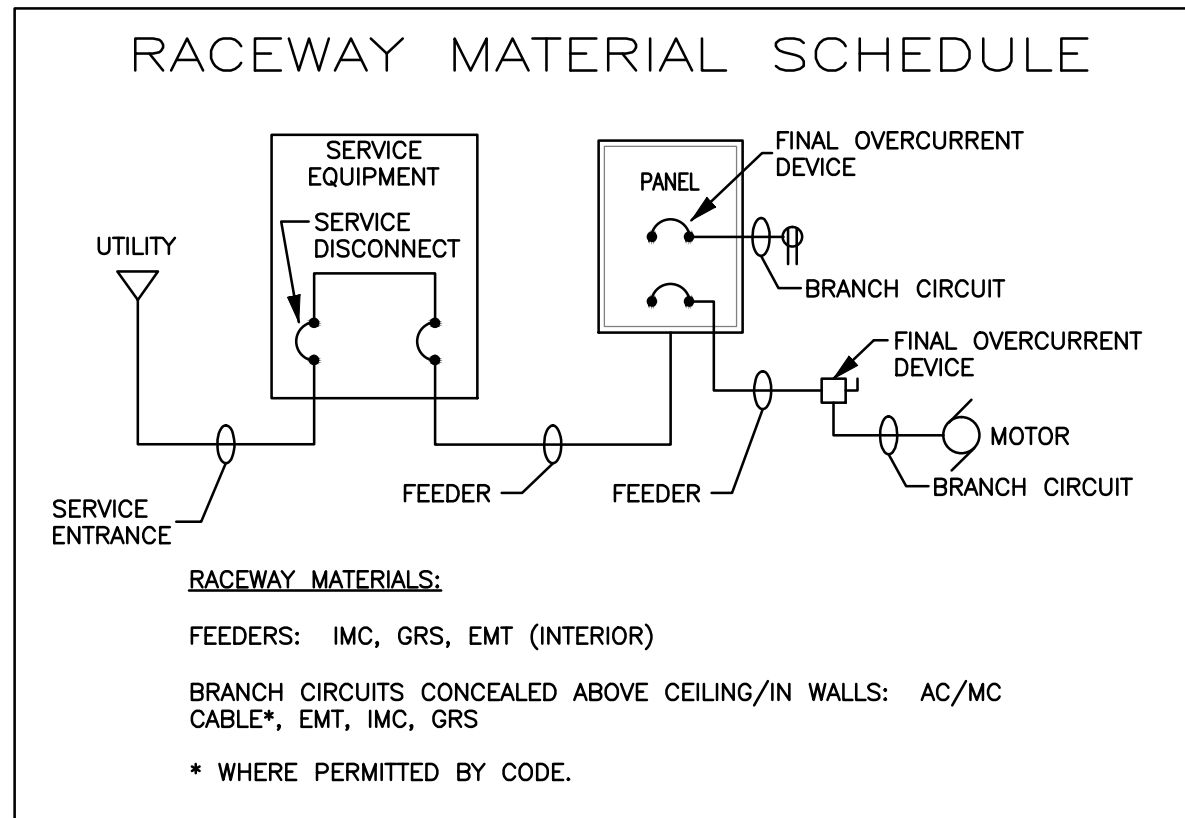
- DO NOT SCALE DRAWINGS. LOCATE OUTLETS, EQUIPMENT AND OTHER ELECTRICAL DEVICES AS INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS. COORDINATE EXACT LIGHTING FIXTURE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLAN.
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE #12 AWG. PROVIDE DEDICATED NEUTRAL FOR EACH MULTI-WIRE BRANCH CIRCUIT IN COMPLIANCE WITH NEC.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, "ECO" BY ECONOMY, OR FERRAZ SHAWMUT.
- BRANCH CIRCUIT SIZES ARE #12 AWG, 1/2" C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES OR ON DRAWINGS.
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUP PER NEC TABLE 250-122.
- PROVIDE PULL STRING IN ALL EMPTY RACEWAYS.
- COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS.
- DO NOT FLUSH MOUNT JUNCTION BOXES BACK TO BACK, STAGGER TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
- CONCEAL OUTLETS FOR ALL EQUIPMENT IN FINISHED AREAS. OBTAIN ROUGHING DIAGRAMS FOR ALL EQUIPMENT AND INSTALL ELECTRICAL WORK ACCORDING TO DIAGRAMS.
- MOUNT BRACKET TYPE LIGHTING FIXTURES AT HEIGHTS SHOWN OR SCHEDULED ON DRAWINGS OR AS DIRECTED ON JOB BY ARCHITECT UNLESS NOTED OTHERWISE.
- SEAL ALL PENETRATIONS THROUGH RATED WALLS AND CEILINGS WITH UL LISTED FIREPROOFING SYSTEM, THIS IS TO INCLUDE BUT IS IN NO WAY LIMITED TO CONDUCTOR, RACEWAY AND DEVICE PENETRATIONS. SUBMIT SYSTEM AND INSTALLATION DETAILS AS PART OF SHOP DRAWING SUBMITTAL.
- WHERE NOT INDICATED OTHERWISE, EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER NEC TABLE 250-122.
- ALL METAL CONDUITS 1" AND LARGER SHALL HAVE A GROUNDING BUSHING BONDING CONDUIT TO ENCLOSURE.
- REMOVE DRYWALL DUST AND MUD FROM THE INTERIOR OF BOXES BEFORE INSTALLING DEVICES.
- AT SUBSTANTIAL COMPLETION CLEAN ALL LIGHT FIXTURES AND CLEAN ALL DEVICES IN THE CONSTRUCTION AREAS. REPLACE DAMAGED DEVICES AND DEVICE PLATES AS NEEDED.
- CONCEAL ALL CONDUIT AND RACEWAY. IF CONDITIONS REQUIRE CONDUIT OR RACEWAY TO BE RUN EXPOSED COORDINATE ROUTING WITH ARCHITECT AND PAINT AS REQUIRED BY ARCHITECT.
- ALL RACEWAYS TRANSITIONING BETWEEN CONDITIONED AND UNCONDITIONED SPACES AND RACEWAYS EXITING BUILDING SHALL BE IN ACCORDANCE WITH NEC. USE POLYWATER FST DUCT SEALANT SYSTEM OR EQUIVALENT.
- ELECTRICAL WORK SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, REQUIREMENTS AND ORDINANCES.
- ALL BACKBOXES SHALL BE MINIMUM 4" SQUARE.
- ALL EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROAT.
- PROVIDE PLASTIC ENGRAVED NAMETAGS FOR ALL ELECTRICAL GEAR, INCLUDING DISCONNECT SWITCHES. INDICATE EQUIPMENT NAME, EQUIPMENT SERVED (WHERE APPLICABLE), FEEDER SOURCE AND CIRCUIT, VOLTAGE. LETTERING SHALL BE 3/8" IN HEIGHT, WHITE ON BLACK BACKGROUND.
- PROVIDE LABELS INDICATING CIRCUIT NUMBER AND SOURCE FOR ALL 120V AND GREATER DEVICES. LABELS SHALL BE THERMAL TRANSFER TYPE, 3/8" WITH 1/4" LETTERING. WHITE BACKGROUND FOR BLACK DEVICES, CLEAR BACKGROUND OTHERWISE.
- IF REQUIRED BY THE FIRE CODE OFFICIAL PER 2018 IFC 1103.2, IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE IN THE PROPOSAL OR BID THE COST OF AN INITIAL SITE SURVEY AND COST FOR THE COMPLETE DESIGN AND INSTALLATION OF A UL 2524 LISTED NFPA 72, NFPA 1221 AND IFC COMPLIANT BI-DIRECTIONAL AMPLIFIER SYSTEM (BDA) FOR THE FACILITY. COMPATIBLE WITH THE REQUIREMENTS OF THE TWO-WAY COMMUNICATIONS SYSTEM(S) UTILIZED BY THE LOCAL JURISDICTION. THE SYSTEM SHALL BE STAND ALONE IN THE ABSENCE OF A BUILDING FIRE ALARM SYSTEM OR SHALL INTEGRATE WITH THE BUILDING FIRE ALARM SYSTEM. THE COST OF THE SYSTEM SHALL BE PROVIDED AS A SEPARATE LINE ITEM SO THAT IF THE SYSTEM IS DETERMINED NOT TO BE REQUIRED AFTER THE PRICE PROPOSAL OR BID HAS BEEN ACCEPTED THE SYSTEM COST CAN BE REMOVED FROM THE PROJECT.
- SLEEVE ALL RACEWAY PENETRATIONS THROUGH SLABS, EXTERIOR WALLS/FOUNDATIONS AND SIMILAR. COORDINATE ALL PROPOSED PENETRATIONS WITH STRUCTURAL ENGINEER AND ARCHITECT.
- PRIOR TO ROUGHING-IN RACEWAYS, ELECTRICAL CONTRACTOR SHALL INSTALL AND LABEL BACKBOXES FOR ALL ELECTRICAL DEVICES (POWER, COMMUNICATIONS, ETC). ELECTRICAL CONTRACTOR SHALL SCHEDULE A TIME WITH THE GENERAL CONTRACTOR FOR THE ARCHITECT AND OWNER REPRESENTATIVE TO WALK THROUGH AND APPROVE LOCATIONS.

ELECTRICAL SYMBOL SCHEDULE - GENERAL	
GENERAL	
	BRANCH CIRCUIT RACEWAY. RUN CONCEALED IN CEILING OR WALLS. ARROWHEAD DENOTES HOMERUN TO PANEL. CROSSLINES DENOTE NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MORE THAN TWO ARE TO BE INSTALLED. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE.
	JUNCTION BOX - EXISTING

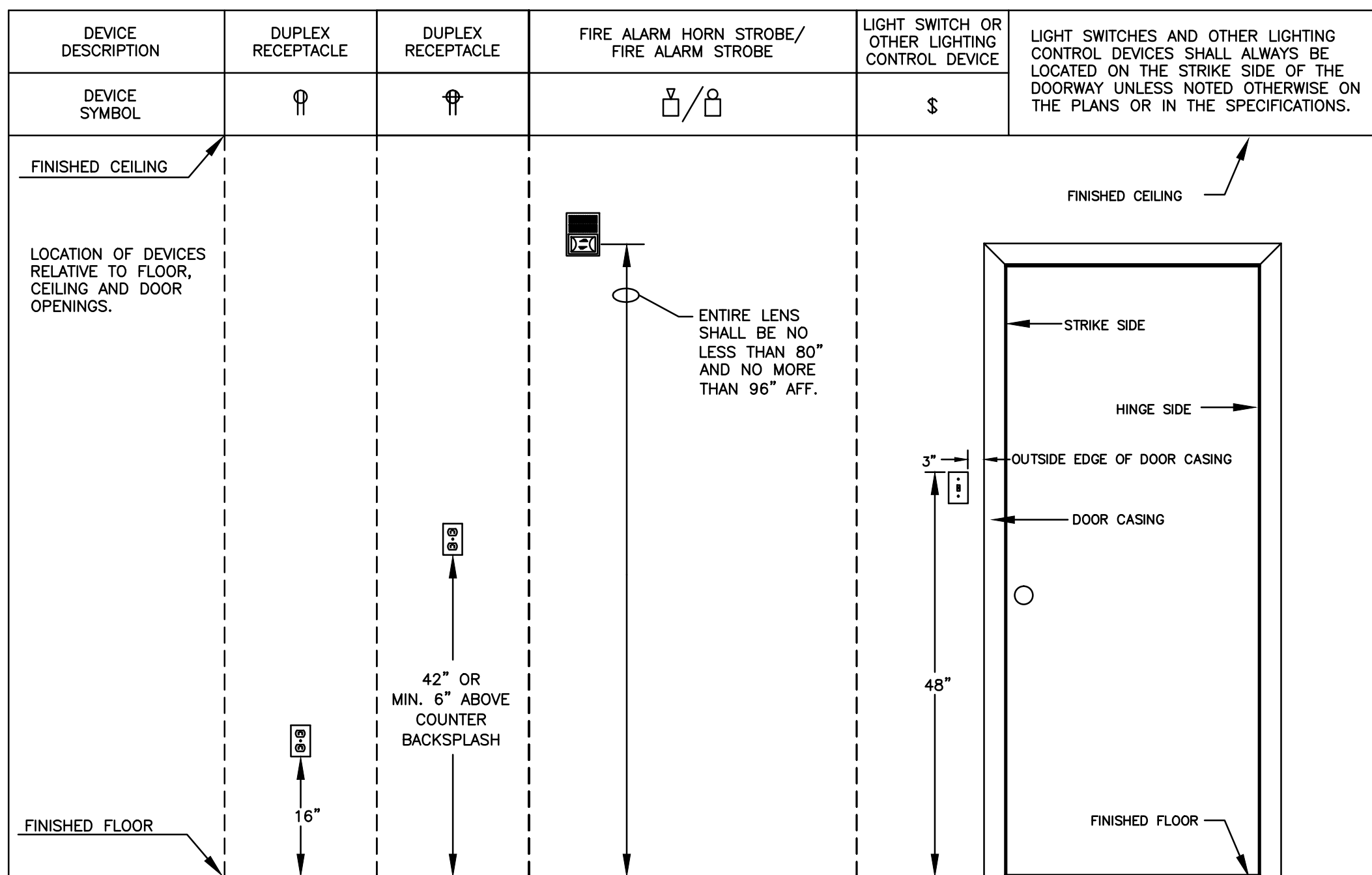
ELECTRICAL SYMBOL SCHEDULE - LIGHTING SYSTEMS AND ACCESSORIES	
LIGHTING	
	CEILING MOUNTED LIGHT FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. SEE RECESSED LAY-IN FIXTURE DETAIL FOR LAY-IN FIXTURES MOUNTED IN CEILING GRID. LETTER DENOTES FIXTURE TYPE.
	120-277V, 20A SINGLE POLE KEYED SWITCH. HUBBELL #HBL1221* OR EQUIVALENT (*COLOR BY ARCHITECT)
	120-277V OCCUPANCY SENSOR WALL SWITCH. DUAL TECHNOLOGY UNLESS OTHERWISE NOTED ON DRAWINGS. WATTSTOPPER DW-100 OR EQUIVALENT. "P" DENOTES PASSIVE INFRARED TYPE (WATTSTOPPER PW-100), "U" DENOTES ULTRASONIC TYPE (WATTSTOPPER UW-100).
	CEILING MOUNTED LOW VOLTAGE 360° COVERAGE OCCUPANCY SENSOR, DUAL TECHNOLOGY UNLESS OTHERWISE NOTED ON DRAWINGS. WATTSTOPPER DT-300/305 OR EQUIVALENT. "P" DENOTES PASSIVE INFRARED TYPE (WATTSTOPPER CI-300/305), "U" DENOTES ULTRASONIC TYPE (WATTSTOPPER WT SERIES). PROVIDE QUANTITY OF POWER PACKS AS REQUIRED TO SUIT LOAD. PROVIDE SIGNAL CABLING AS REQUIRED TO LINK MULTIPLE SENSORS/POWER PACKS SERVING COMMON AREA OR LIGHTING ZONE.

ELECTRICAL SYMBOL SCHEDULE - POWER	
POWER	
	120V, 20A DUPLEX RECEPTACLE, NEMA 5-20R. WALL MOUNTED AT 42" AFF OR MINIMUM 6" ABOVE COUNTERTOP BACKPLASH UNLESS OTHERWISE NOTED. REFER TO ADDITIONAL NOTATIONS BELOW WHERE INDICATED ON DRAWINGS. "TV" INDICATES MOUNT ADJACENT TO CATV OUTLET.
WIRING DEVICE TYPICAL NOTATIONS	
	GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.

ELECTRICAL SYMBOL SCHEDULE - FIRE ALARM	
FIRE ALARM	
	FIRE ALARM CEILING MOUNTED HORN/STROBE. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS. WHITE HOUSING.
	FIRE ALARM CEILING MOUNTED STROBE ONLY. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS. WHITE HOUSING.

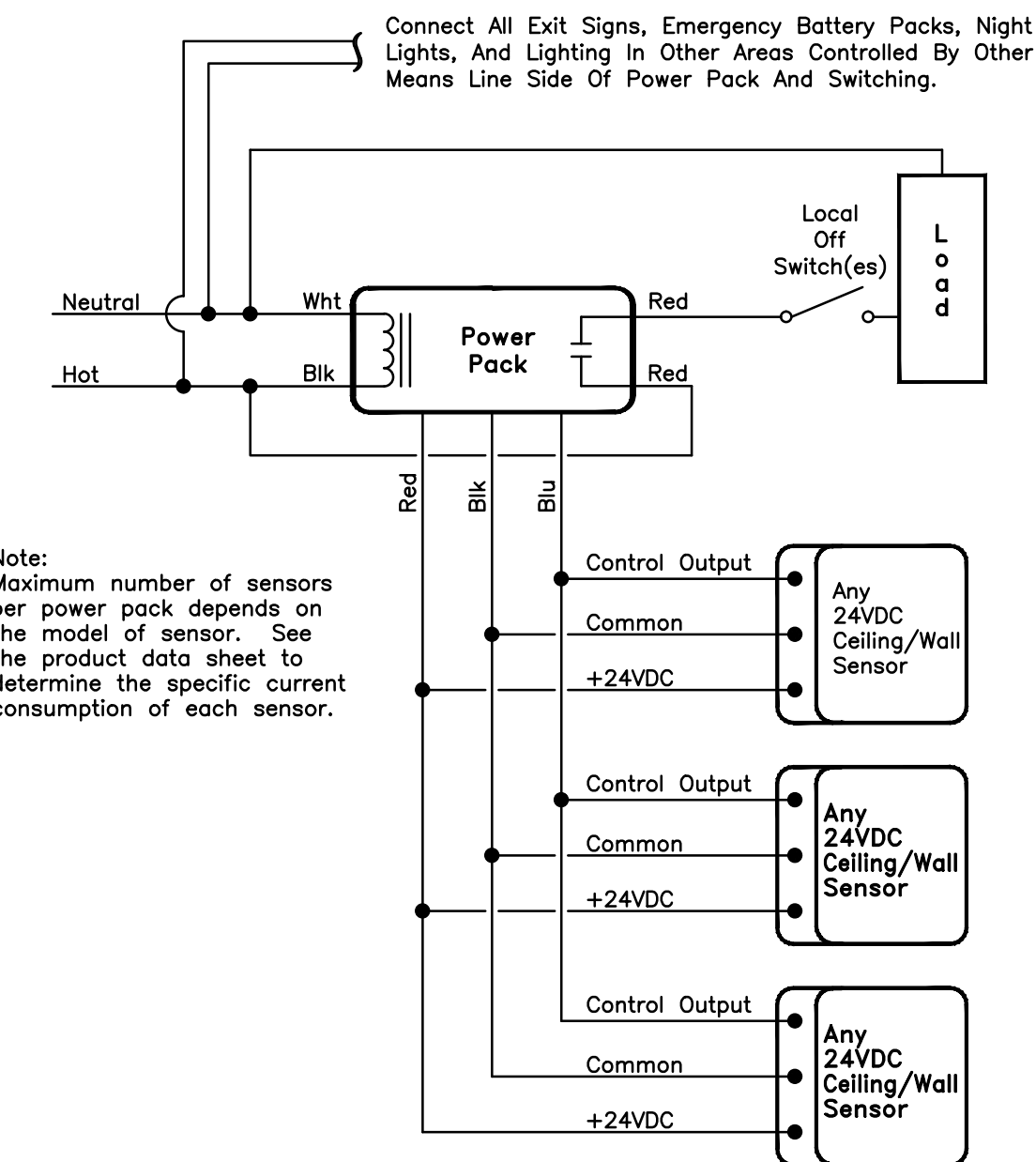
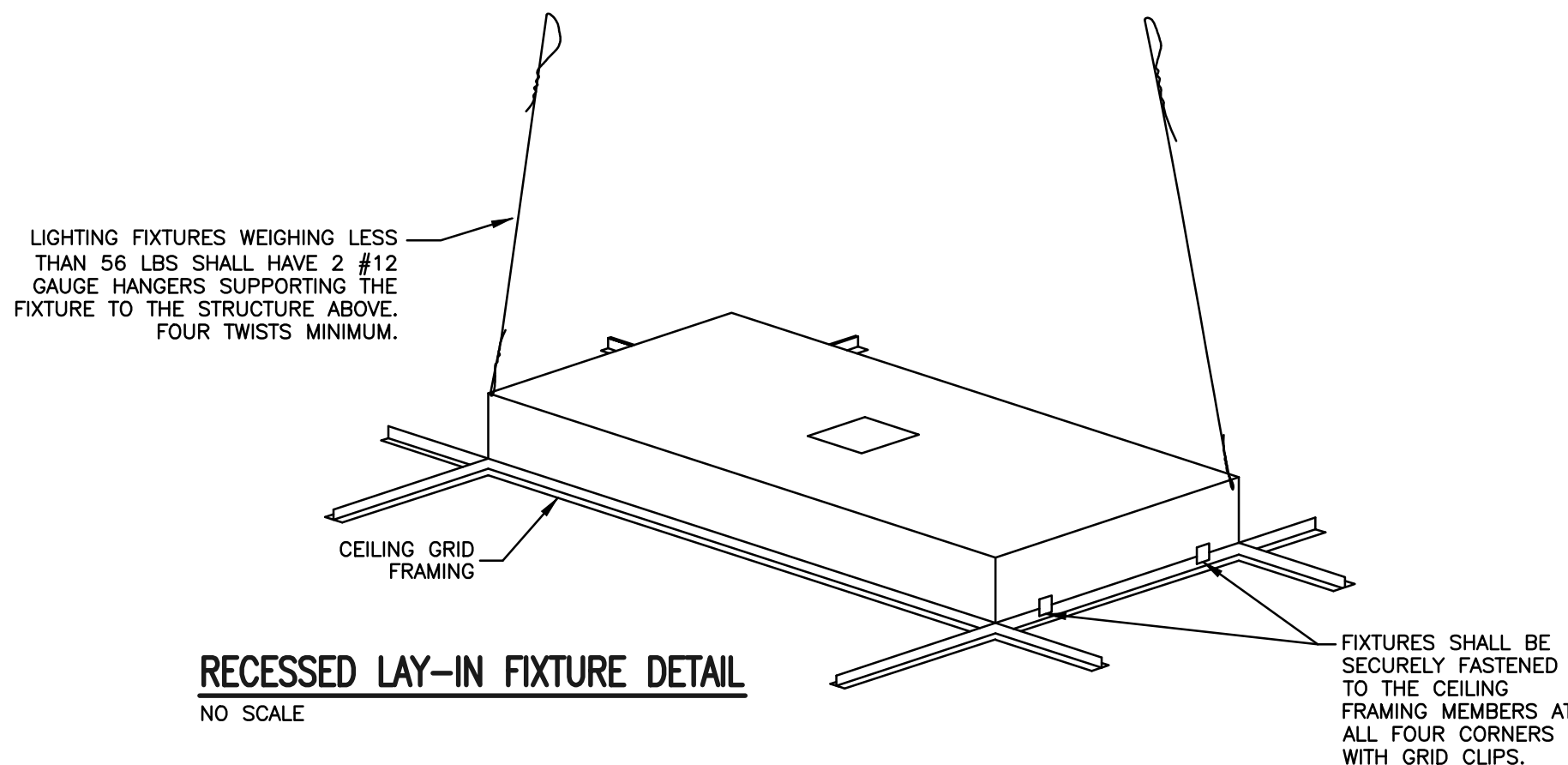


ABBREVIATIONS	
A	AMPERE
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AF	ARC FAULT CIRCUIT INTERRUPTER
BKR	BREAKER
CB	CIRCUIT BREAKER
C	CONDUIT
CATV	CABLE TELEVISION
CKT	CIRCUIT
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EMT	ELECTRICAL METALLIC TUBING
FCU	FAN COIL UNIT
GC	GENERAL CONTRACTOR
GF	GROUND FAULT CIRCUIT INTERRUPTER
GRS	GALVANIZED RIGID STEEL CONDUIT
HD	HIGH INTENSITY DISCHARGE
IC	INTERMEDIATE METALLIC CONDUIT
JB or J-BOX	JUNCTION BOX
KVA	KILOVOLT AMPERES
KW	KILOWATT
MAX	MAXIMUM
MC	MECHANICAL CONTRACTOR
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
MFR	MANUFACTURER
NMC	NONMETALLIC-SHEATHED CABLE
N	NOTED
NEC	2017 NATIONAL ELECTRICAL CODE, (NFPA 70)
SWBD	SWITCHBOARD
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
WC	WATER COOLER
XFMR	TRANSFORMER



DEVICE MOUNTING HEIGHTS
NO SCALE

LIGHT FIXTURE SCHEDULE					
TYPE	DESCRIPTION	CATALOG NUMBER	LAMPS	WATTAGE	NOTES
A30	2'x4' LED FLAT PANEL, FIELD SELECTABLE LUMEN & CCT, 3000 LUMEN	ELITE LIGHTING #14-FPL-BL-LED-3000/4000/5000L -DIM10-MVOLT-1-85-(3000L) EMERGENCY: -0-EMG-LED-10W	LED BY MFR.	30.0W (49.0W MAX)	1. OTHER MANUFACTURERS ACCEPTABLE WITH PRIOR APPROVAL OF ENGINEER. 2. HALF SHADED FIXTURES AND/OR LABELED "EP" SHALL BE EQUIPPED WITH 90 MINUTE MINIMUM EMERGENCY BATTERY PACK CONNECTED LINE SIDE OF ANY SWITCHING, RELAY, OR OTHER CONTROL DEVICE. EMERGENCY FUNCTION SHALL BE CONNECTED TO NORMAL LIGHTING CIRCUIT SERVING SAME AREA. 3. LAMPING COLOR TEMPERATURE PER ARCHITECT AND OWNER REQUIREMENTS.



CEILING MOUNT OCCUPANCY SENSOR TYPICAL WIRING SCHEMATIC FOR LOW VOLTAGE SENSOR
NO SCALE

- NOTE 1: SCHEMATIC IS REPRESENTATIVE OF WATTSTOPPER DT-300/305. CONNECTION REQUIREMENTS AND LOW VOLTAGE TOPOLOGY MAY DIFFER BETWEEN MANUFACTURERS. FOLLOW MANUFACTURERS INSTALLATION INSTRUCTIONS.
 NOTE 2: WHERE APPLICABLE, CONNECT EXIT SIGNS, BATTERY PACKS FOR EGRESS LIGHTING, AND NIGHT LIGHTS LINE SIDE OF AUTOMATIC WALL SWITCH SENSORS.
 NOTE 3: PROVIDE QUANTITY OF POWER PACKS AS REQUIRED TO SERVE LOADS AS INDICATED ON DRAWINGS. WHERE MULTIPLE BRANCH CIRCUITS SERVE THE SAME AREA, PROVIDE SEPARATE POWER PACKS FOR EACH BRANCH CIRCUIT AND PHASE.

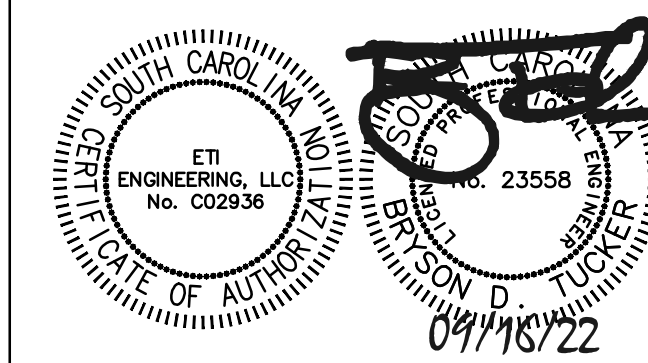


SHELBY
201 S. Washington St., Suite 200
Shelby, NC 27880
704/466-6000

CHARLOTTE
1230 W. Morehead St., Suite 214
Charlotte, NC 28028
704/731-7000

RALEIGH
6133 Falls of Neuse, Suite 204
Raleigh, NC 27609
919/775-6400

LEXINGTON
1070 S. Lake Dr., Suite J
Lexington, NC 27293
919/756-0007



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

PROJECT TITLE

OSE # -H59-N178-CL

- THIS DRAWING IS THE PROPERTY OF EBOOMERANG DESIGN P.A. AND IS NOT TO BE REPRODUCED OR COPIED IN WHOLE OR IN PART. IF IT IS NOT TO BE USED ON ANY OTHER PROJECT AND IS TO BE RETURNED ON REQUEST.
- MATERIALS, DIMENSIONS AND ALL OTHER CONDITIONS WHICH ARE NOT OTHERWISE DEFINED ON THIS DRAWING SHALL BE CONTROLLED BY MAKING THE SAME MEANING AS SIMILARLY INDICATED CONDITIONS WHICH ARE MORE FULLY DEFINED ELSEWHERE ON THIS PROJECT OR OTHER DRAWINGS OF THIS PROJECT.
- DO NOT SCALE OFF DIMENSIONS.

NO.	DATE	DESCRIPTION

CD
PROJECT PHASE
2217
BOOMERANG DESIGN PROJECT NUMBER
9.23.2022
DRAWING RELEASE DATE

**ELECTRICAL LEGEND,
NOTES, DETAILS &
SCHEDULES**

SHEET TITLE

E000

SHEET

ELECTRICAL SPECIFICATIONS

1. GENERAL PROVISIONS

A. Work included in these specifications and included on the drawings shall include furnishing all labor, materials, supplies, and equipment to perform all work required including cutting, chaming, chasing, excavating and backfilling, to install a complete and working electrical system(s) in accordance with these sections of the specifications and the accompanying drawings. This shall include all required preparation work, raceways, coordination, etc. required to install the electrical system.

B. The electrical work shall include, but in no way be limited to the following:

1. Raceways (To include raceways for conductors and cables, and also empty for designated signal systems and future uses.)
2. Electrical Distribution System.
3. Interior Lighting Systems.
4. Interior Power Systems.
5. Wiring Devices.
6. Connection and Installation of Equipment Furnished Under Other Divisions of the Specification.
7. Fire Alarm System Extension.
8. Electrical Demolition.

C. The contractor is responsible for including any and all work related to the electrical that is noted in any part of the specifications or any part of the drawings, including Divisions 1, 15 and any other sections. The contractor will supply power to equipment at the voltage indicated on the drawings. The contractor will be held responsible for coordinating the equipment voltages, control equipment, wiring, and locations and type of terminations/connections and/or disconnects required to comply with the National Electrical Code, International Building Code, International Energy Conservation Code, all local codes, and the equipment manufacturer's requirements.

D. Electrical Drawings are diagrammatic in nature except where specific dimensions, or specific details are shown on the electrical, mechanical, or architectural drawings. The contractor shall refer to other drawings for exact locations of equipment, building dimensions, architectural details and conditions affecting the electrical work; however, field measurements take precedence over dimensioned drawings. The Electrical Contractor shall provide all labor and materials and all incidental elements; junction and pull boxes, filters, pull wires, connectors, support materials, fuses, disconnect switches, lamps, and labels, to install, connect, start-up and result in a complete and working system in accordance with the drawings and specifications. The contractor is responsible for coordinating the installation of all electrical work with the work of other contractors and/or trades. The electrical drawings are such that the electrical service to equipment furnished and installed under other sections of the contract documents (examples, include but are not limited to: HVAC equipment, water heaters, fans, pumps, motors, etc) is coordinated for the specified equipment only. If the equipment installed under other divisions of the contract documents is not the specified equipment it is the responsibility of the contractor to coordinate the electrical service/interface requirements with the electrical contractor.

E. Provide all wiring, connectors, fittings, connections, and all accessories for the complete installation of, and final connections to, equipment furnished under other divisions of the specifications and where indicated on the drawings or otherwise specified.

F. All safety disconnect switches shall be provided under Division 16 unless specifically noted on drawings. The electrical contractor shall furnish and install fuses that are sized in accordance to the equipment nameplate of the equipment served.

G. The contractor is responsible for obtaining all required permits and complying with all National (NEC, IBC, NFPA), State, County, and Municipal codes and regulations. This shall include, but not be limited to, the following:

1. Federal Occupational Safety and Health Act (OSHA)
2. NFPA 70 (National Electrical Code)
3. NFPA 101 (Life Safety Code)
4. Americans with Disabilities Act (ADA).
5. International Building Code (IBC).
6. International Fire Code (IFC).
7. NFPA 72.
8. International Energy Conservation Code (IECC).

H. The contractor shall keep a set of construction drawings during the length of the project on which he shall note any and all changes from the original drawings. This record set of drawings shall be updated daily.

I. Electrical Subcontractor shall submit for review by the Engineer detailed shop drawings of all material listed below. All submittal data shall be submitted at one time through the Architect. No material or equipment for which Engineer's review is required shall be delivered to the job site or installed until the Electrical Contractor has in his possession the reviewed and approved shop drawings for the particular material and/or equipment. The Electrical Contractor shall assemble, organize, prepare and review for correctness shop drawings on all materials, equipment, fixtures and devices to be used. If material submitted is the result of "value engineering" or "prior approval" changes, the submittal must contain supporting documentation of the approved changes, otherwise it will be reviewed against the specified products on these plans. The Electrical contractor shall furnish the number of copies specified by the Architect or one (1) PDF copy shop drawings if no number is specified by the Architect. Shop drawings that are incorrectly submitted, contain errors or omissions, or not in the form and sequence specified shall be rejected as unapproved.

Shop drawings shall contain as cover page a letter by the supplying Vendor stating that the Vendor has received full contract documents and that to the best of his or her knowledge the submittal is in compliance with the contract documents and design intent including all ancillary parts and pieces required for a complete job.

Review of shop drawings in no way relieves the Contractor of his responsibility of quantity, dimensions, weights, means and methods, safety, or coordination with others.

Failure of the Contractor to submit shop drawings to the Engineer with reasonable time for review shall not entitle the Contractor to an extension of contract time. Reasonable review time is fifteen working days unless otherwise specified.

At minimum shop drawings shall be submitted for

1. Lighting fixtures
2. Lighting control systems including relay panel and automatic switches
3. Safety switches
4. Fire Alarm System Extension
5. Basic materials; wire, conduit, fittings, wiring devices
6. Fuses

J. Requests for Substitution

Submit requests for substitution to Engineer through Architect in PDF format no fewer than ten (10) working days prior to bid time.

Requests shall contain cut sheets, catalog numbers, etc. Any approval will be in writing by the Engineer. Prior approval submittals for lighting shall include adequate photometric and energy use documentation for comparison to specified.

Substituted items will not result in an increase in cost to the Owner.

K. Catalog numbers and names that appear in the specifications or on the plans may be incomplete or obsolete and are for descriptive purposes only. As such they do not indicate all of the parts, pieces and systems required for a complete and operating installation. It is the responsibility of the Electrical Contractor, the Vendor and the Supplier to review the plans, specifications and applications to determine the correct item(s) required to include all installation and support materials and systems for a complete and working installation.

2. FIRE SPREAD PREVENTION MATERIAL

A. The work shall include the requirement to install fire spread prevention material wherever the electrical contractor installs or penetrates a material (wall, etc.) to install electrical equipment or materials.

B. Fire Resistance Rating: Whenever a fire rated wall, floor, floor-ceiling or roof-ceiling assembly is shown with through-penetrations, provide materials and application procedures which have been tested and classified by UL and approved by FM for the assembly.

C. Installation shall be in accordance with the printed instructions as supplied by the manufacturer.

3. RACEWAYS/CONDUITS AND ASSOCIATED EQUIPMENT

A. The work shall include all raceways, conduits, fittings, and all other equipment required to install a raceway system. This shall include, but not limited to the following:

1. Rigid metal conduit and fittings.
2. Electrical metallic tubing and fittings.
3. Flexible metal conduit and fittings.
4. Liquid tight flexible metal conduit and fittings.
5. Non-metallic conduit and fittings.

B. Except where otherwise permitted on drawings route all conductors in conduit.

C. All signal systems shall have their wiring installed in conduit/raceways to above accessible ceiling. All cabling exposed above ceiling shall be plenum rated.

Conduit routing and device wiring for signal system components is not shown on the drawings. The contractor shall coordinate with the signal system manufacturer to determine the conduit (size and routing) and wiring requirements to circuit the equipment shown on the drawings.

D. Specified products and their areas of use shall be as described on drawings.

E. Fittings shall be steel compression type, concrete tight for all EMT raceways. For PVC raceways, use slip fittings with glue joints. For rigid galvanized steel and IMC, fittings shall be threaded galvanized iron, heavy steel, concrete tight.

F. Size conduit for conductor type installed; 1/2 inch minimum size.

G. For all empty raceways, furnish and install a nylon pull cord. The nylon pull cord shall be rated for a 200 pound force pull strength.

4. WIRE AND CABLE – 600 VOLTS AND LESS

A. Work shall include the furnishing and installing of all required wire and cable to complete the wiring and electrical system. This shall include, but not be limited to the following:

1. Building wire.
2. Wiring connections and terminations.
3. Fire alarm system extension cabling.

B. Feeders and Branch Circuits 6 AWG and Smaller: Copper conductor, 600 volt insulation, THHN. 6 and 8 AWG, stranded conductor; smaller than 8 AWG, solid conductor. MINIMUM SIZE SHALL BE #12 FOR ALL WIRING ABOVE 48 VOLTS. All conductors in damp or wet locations (including below grade) shall be listed for that use, THWN-2 or equivalent.

C. All cables shall be color coded. Color coding shall be as follows:

120/208 Volt	Phase	277/480 Volt
Black	A	Brown
Red	B	Orange
Blue	C	Yellow
White	Neutral	Gray
Green	Green	Green

D. Each wire or cable in a feeder at its terminal points, and in each pull-box, junction box, and panel gutter through which it passes shall be identified to show the circuit number of the breaker that it connects to. Each common wire, common circuit to common loop of a system, sound system, or any signal system conductor, shall be identified.

E. All installation shall be in accordance with the NEC. All splices shall be in junction boxes and shall be electrically and mechanically secure. Where a circuit home run is shown on the plans without any conductor or raceway identification, it shall be a minimum of 2 # 12, 1 # 12 Ground, 1/2" Conduit. Place an equal number of conductors for each phase of a circuit in same raceway or cable. Splice only in junction or outlet boxes. Neatly train and lace wiring inside boxes, equipment, and panelboards. Perform continuity test on all power and equipment branch circuit conductors. Verify proper phasing connections.

5. WIRING DEVICES

A. The shall include the furnishing and installing of any and all wiring devices required to make a complete and functioning wiring system. See the drawings for symbols and descriptions of devices. Devices specified are to establish a level of quality. All devices shall be best specification grade. Equivalent devices by Pass and Seymour or Leviton are acceptable.

Color of devices shall be per Architect.

B. Duplex receptacle shall be 20 ampere, 120 volt, 2-Pole, 3-Wire, NEMA 5-20R. Unit shall be HBL #5362 or HBL #5362TR (where required).

C. Ground Fault receptacle shall be HBL #GF5362S*.

D. Light switches other than sweep switches and low voltage button stations shall be 20 ampere, 120-277 volt. Unit shall be HBL #1221 for SPST, HBL #1223 for three-way, and HBL #1224 for Four-Way.

E. Installation shall be per NEC. Include ground wire and connection with all receptacle circuits. Quadraplex receptacles shall be two duplex receptacles installed in a two gang box. Install wall switches OFF position down. Install convenience receptacles grounding pole on top. Install devices and wall plates flush and level. Provide GFCI receptacle within 6' of any water source. GFCI receptacles shall not be used to protect non-GFCI receptacles.

F. Wiring Device Plates:

1. Provide over-sized Thermoset type cover plates for all flush mounted devices. Color shall match existing or provide at minimum selection of white, ivory, brown or gray.
2. Plates for surface mounted devices in unfinished areas shall be steel, galvanized types with beveled edges.
3. Screws securing the plate shall have flush mounted heads (when installed) with finish to match that of the plate.
4. Weather-proof plates shall be constructed with cast aluminum base plates and covers. Hinge pins, springs and screws shall be constructed of stainless steel. Covers shall comply with appropriate UL and NEC requirements for use in wet locations.

7. SECONDARY GROUNDING

A. Work included shall include power system grounding, communication system grounding, and electrical equipment and raceway grounding and bonding. Ground electrical work in accordance with NEC Article 250, local codes as specified herein, and as shown on the drawings.

B. Install equipment grounding conductors in raceway with feeder and branch circuit conductors. Ground interior lighting fixtures with grounding conductor to rigid metal raceway serving them. Flexible metal conduit shall have a ground wire installed with the power conductors. Where connections are made to motors or equipment with flexible metal conduit, grounding conductor shall be stranded copper conductor within the conduit, bonded to the equipment and to the rigid metal raceway system. At each convenience outlet, install a grounding clip attached to the outlet box and leave a sufficient length of #12 wire with green color insulation to connect to the grounding terminal of the receptacle.

8. FIRE ALARM SYSTEM EXTENSION

A. Include extension of existing fire alarm detection and notification system as indicated on plans. Provide all required devices, materials, hardware, software, programming, labor, etc for a complete and operable system.

B. Submittals

Provide submittals on battery calculations, voltage drop calculations, decibel level calculations to show horn sound pressure 15 dB above ambient, device layout and point to point wiring diagram on building floor plans, conductor type and sizes, riser showing all devices and connections, interface of fire safety control functions, information on all equipment including model numbers to Engineer and AHJ for approval.

C. Equipment and Material

1. All components shall be by manufacturer of and compatible with existing system.
2. Smoke Detectors shall be photoelectric type.
3. Signal devices: Candelas as indicated on drawings. All alarm signal devices shall have clear strobe cover and the word "FIRE" lettered on visible portion of device. Minimum 85dB at 10ft. Color as directed by Architect.
4. All conductors, enclosures and devices shall be listed for the purpose in which they are being used.
5. Include in bid any required power extender panels for fire alarm system expansion. provide dedicated 120V/20A circuit for power extender panel, label and provide locking provisions for circuit breaker per NFPA 72. Install in electrical room, protect panel with smoke detector.
6. Provide document box per NFPA 72 with memory stick containing copy of programming and all record drawings and approved submittals.

D. Execution

1. Finished system shall comply with all applicable NFPA, IBC, IFC and local codes as well as requirements of local AHJ.
2. Provide synchronization of strobes including any synchronization hardware as required by the existing system.
4. Include in bid any required power extender panels for fire alarm system expansion. Provide dedicated 120V/20A circuit for power extender panel, label and provide locking provisions for circuit breaker per NFPA 72. Install in electrical room, protect panel with smoke detector.
5. Coordinate with door hardware and access control system (provided by others) and provide necessary provisions to release doors upon activation of the fire alarm system.
6. Provide the service of a factory-trained engineer or technician authorized manufacturer to technically supervise and participate during all adjustments and tests for the system. The manufacturer-trained technician shall demonstrate that the system functions properly in every respect to the Engineer, Owner or Owner's representative prior to final acceptance
7. Provide Record of Completion to Engineer and Owner described by NFPA 72.

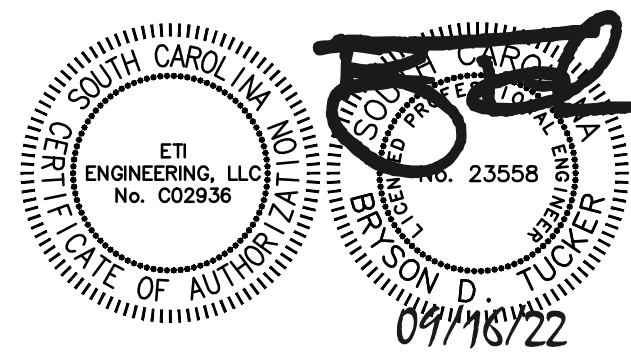


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Raleigh, NC 27609
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800/755-6007



MIDLANDS TECHNICAL COLLEGE ACADEMIC CENTER BATHROOM RENOVATIONS AIRPORT CAMPUS

PROJECT TITLE

OSE # -H59-N178-CL

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REVISIONS		
NO.	DATE	DESCRIPTION

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PROJECT PHASE

2217

BOOMERANG DESIGN PROJECT NUMBER

9.23.2022

DRAWING RELEASE DATE

ELECTRICAL
SPECIFICATIONS

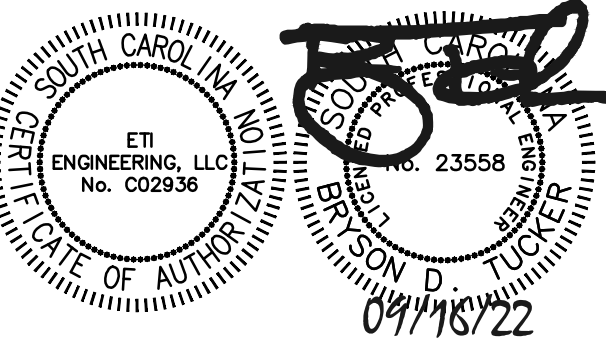
SHEET TITLE

E001

SHEET



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Project Manager:
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**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

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PROJECT PHASE
2217
BOOMERANG DESIGN PROJECT NUMBER
9.23.2022
DRAWING RELEASE DATE

**ELECTRICAL
DEMOLITION PLAN**

SHEET TITLE

E100

SHEET

GENERAL DEMOLITION NOTES:

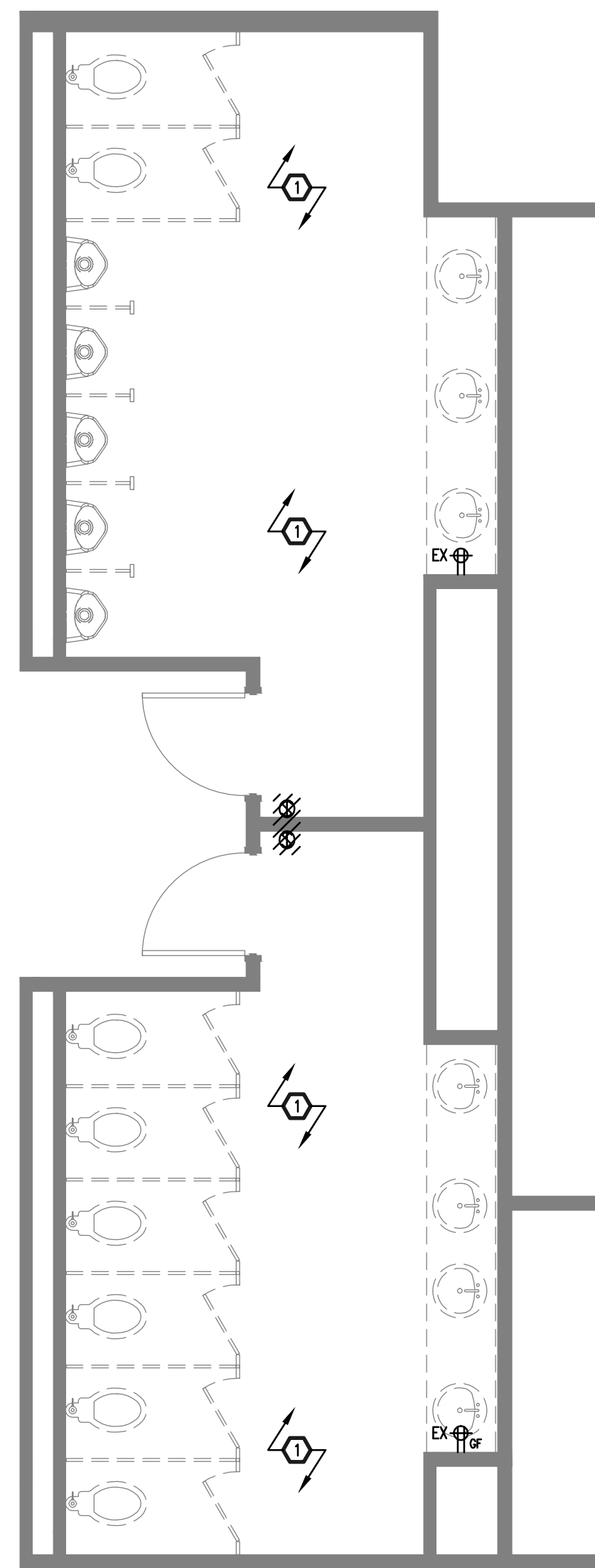
- ELECTRICAL DEMOLITION GENERALLY INCLUDES REMOVAL OF EXISTING ELECTRICAL DEVICES FROM WALLS AND CEILING BEING DEMOLISHED INCLUDING BACKBOXES, CONDUITS, AND CONDUCTORS BACK TO SOURCE PANEL. WHERE ONLY PART OF A CIRCUIT IS BEING REMOVED, REWORK CIRCUITS BY EXTENSION AND RECONNECTION TO CONTINUE REMAINING CIRCUIT IN SERVICE BEYOND THE DEMOLITION AREA.
- PROVIDE ALL NEW WORK AND WORK REQUIRED TO MODIFY EXISTING CONDITIONS WHERE TO CONTINUE IN OPERATION.
- PROVIDE REVISED CIRCUIT DIRECTORIES IN EXISTING PANELBOARDS TO INDICATE ALL LOADS, NEW AND MODIFIED.
- CAREFULLY REVIEW ARCHITECTURAL DEMOLITION PLANS. EXAMINE WORK TO BE DONE AND PROVIDE ALL ELECTRICAL WORK REQUIRED FOR DEMOLITION THIS INCLUDES RELOCATION, REROUTING, ETC OF ELECTRICAL CIRCUITS WHETHER SPECIFICALLY INDICATED ON ELECTRICAL PLANS OR NOT. CONTRACTOR IS CAUTIONED TO VISIT SITE PRIOR TO BID AND INCLUDE IN BID RELOCATION OF ALL EXISTING ELECTRICAL WORK AS REQUIRED FOR THE NEW ADDITION.
- REMOVE ALL ELECTRICAL DEVICES FROM WALLS BEING DEMOLISHED.
- REMOVE ALL LIGHT FIXTURES IN AREAS WHERE NEW LIGHTING IS PROVIDED INCLUDING CONDUIT, BOXES AND CONDUCTORS.
- INDICATE ON RECORD DRAWINGS CIRCUITS FOR ALL ELECTRICAL DEVICES (INCLUDING LIGHTS) IN RENOVATION AREA.
- CONTRACTOR SHALL COORDINATE WITH RENOVATION DRAWINGS FOR IDENTIFICATION OF EXISTING DEVICES AND FIXTURES TO BE RELOCATED. ALL RELOCATED DEVICES AND FIXTURES SHALL BE DENOTED WITH "EX" ON RENOVATION DRAWINGS.

DEMOLITION LEGEND:

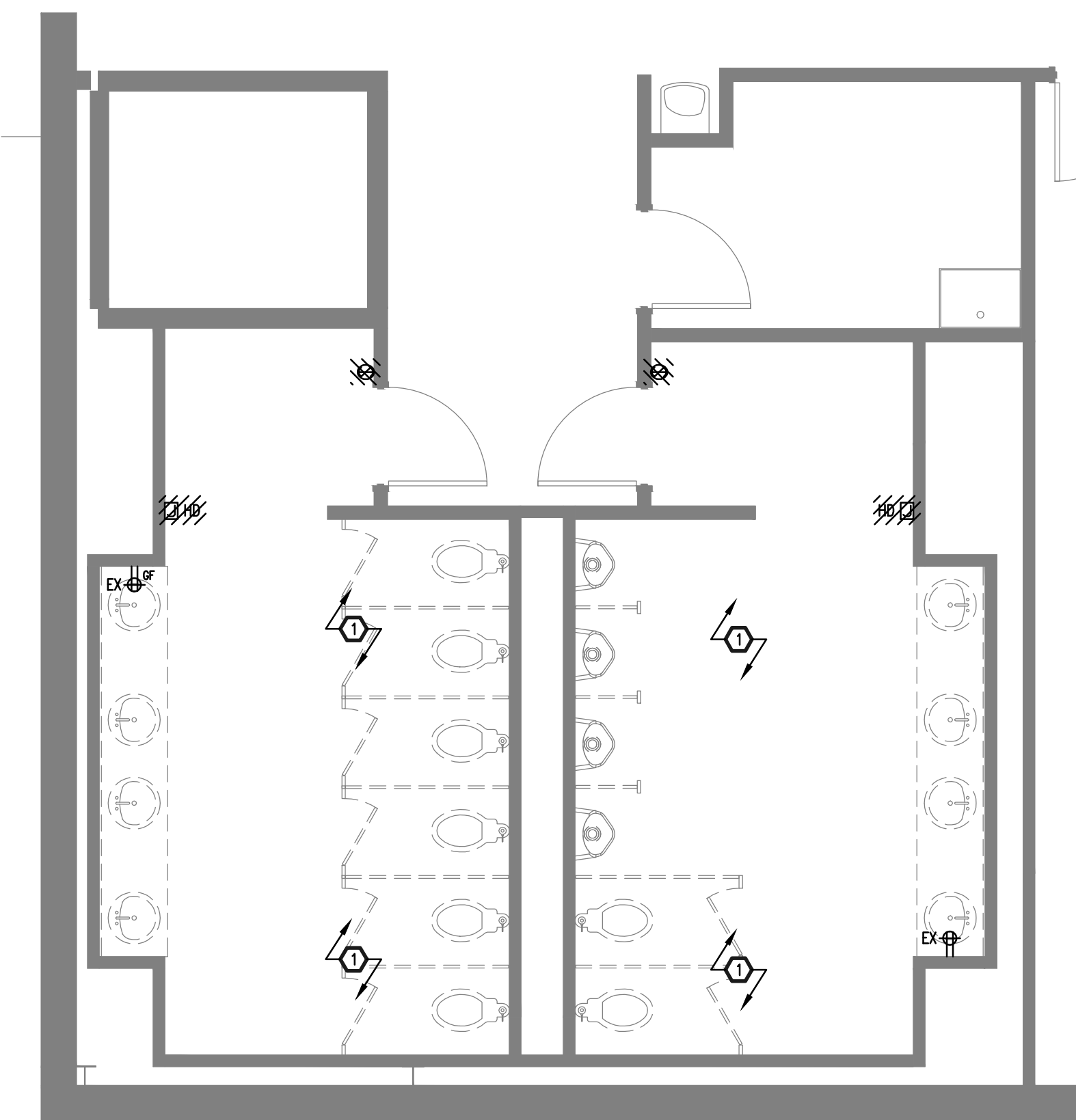
- EXISTING ELECTRICAL SYSTEM ELEMENT BEING DEMOLISHED DENOTED BY HATCHING. REMOVE DEVICE, BOX, CONDUCTOR AND CONDUIT TO SOURCE U.N.O. FOR SWITCH LOCATIONS RE-USE EXISTING LOCATION FOR NEW SWITCHING INDICATED ON RENOVATION PLANS, WHERE NO NEW SWITCH IS INDICATED PROVIDE BLANK PLATE.
- EX EXISTING TO REMAIN
- ER EXISTING TO BE RELOCATED. SEE RENOVATION PLANS FOR NEW LOCATION (EN)

DEMOLITION KEYNOTES:

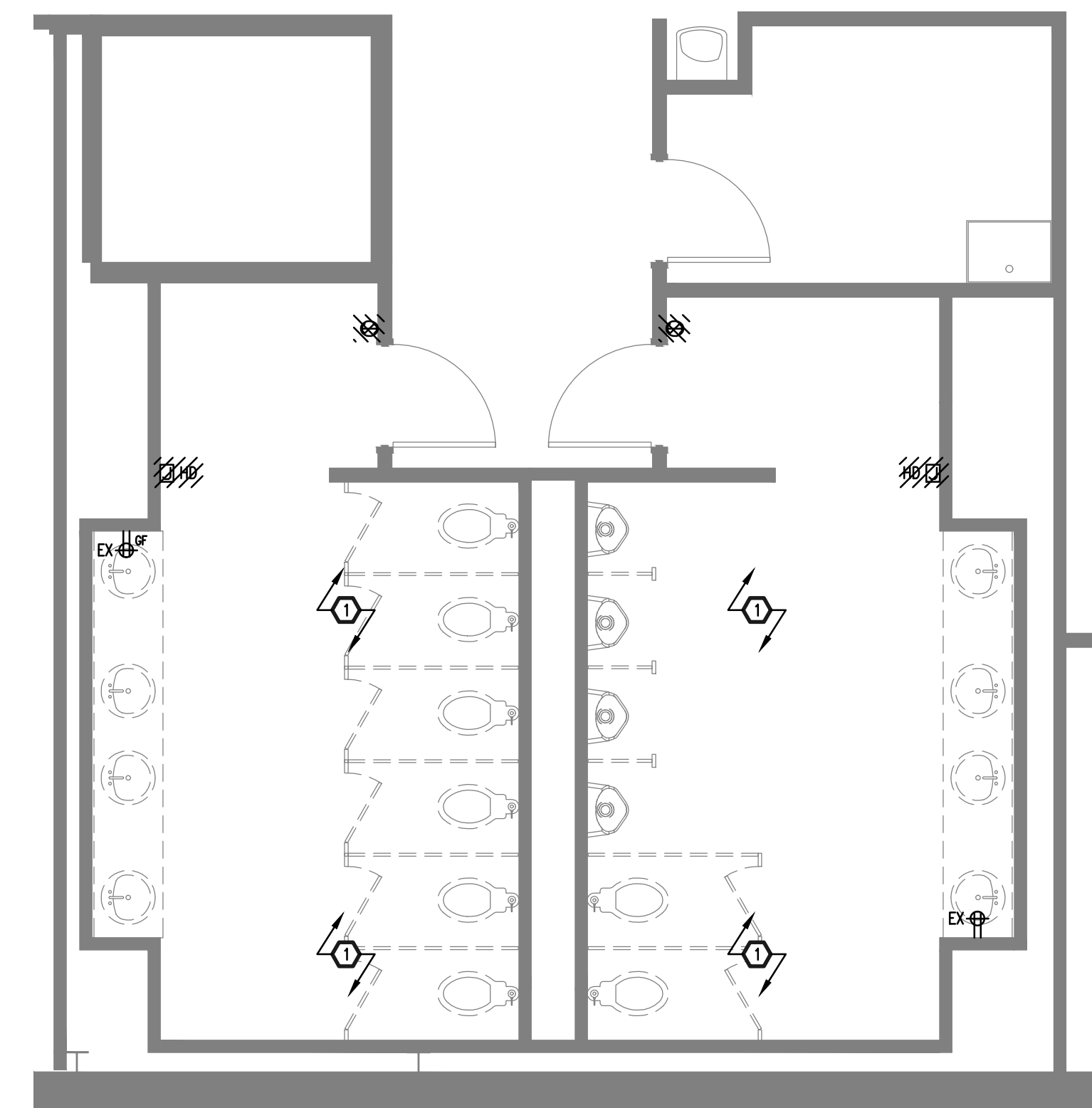
- Ⓢ REMOVE ALL LIGHTING IN THIS AREA AND SAVE EXISTING CIRCUIT FOR RECONNECTION TO NEW LIGHTING PER RENOVATION PLAN.



1ST FLOOR



2ND FLOOR

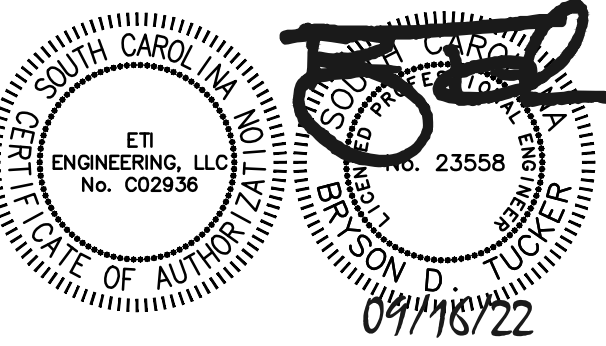


3RD FLOOR

1 ELECTRICAL DEMOLITION PLAN
E100 APPROXIMATE SCALE: 1/4" = 1'-0"



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Project Manager:
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ETI #2255-05251



**MIDLANDS
TECHNICAL COLLEGE
ACADEMIC CENTER
BATHROOM
RENOVATIONS
AIRPORT CAMPUS**

PROJECT TITLE

OSE # -H59-N178-CL

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BOOMERANG DESIGN PROJECT NUMBER

9.23.2022

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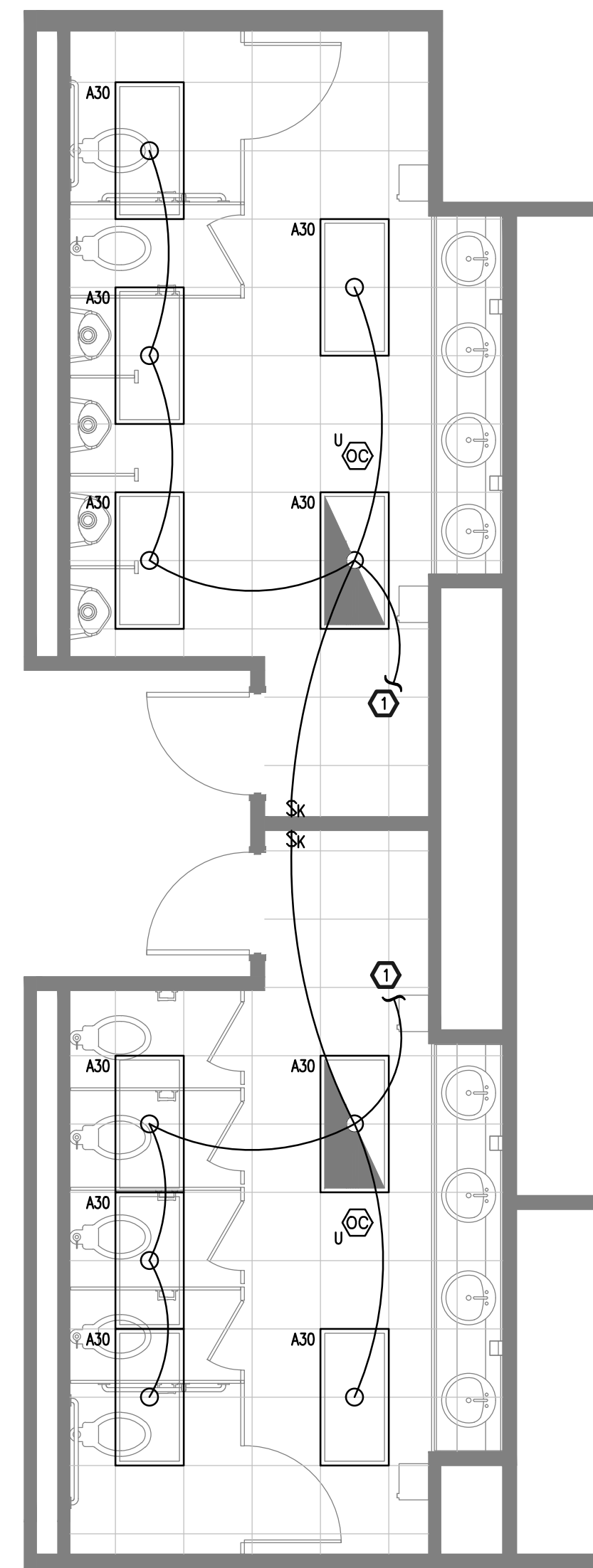
**ELECTRICAL
RENOVATION PLANS**

SHEET TITLE

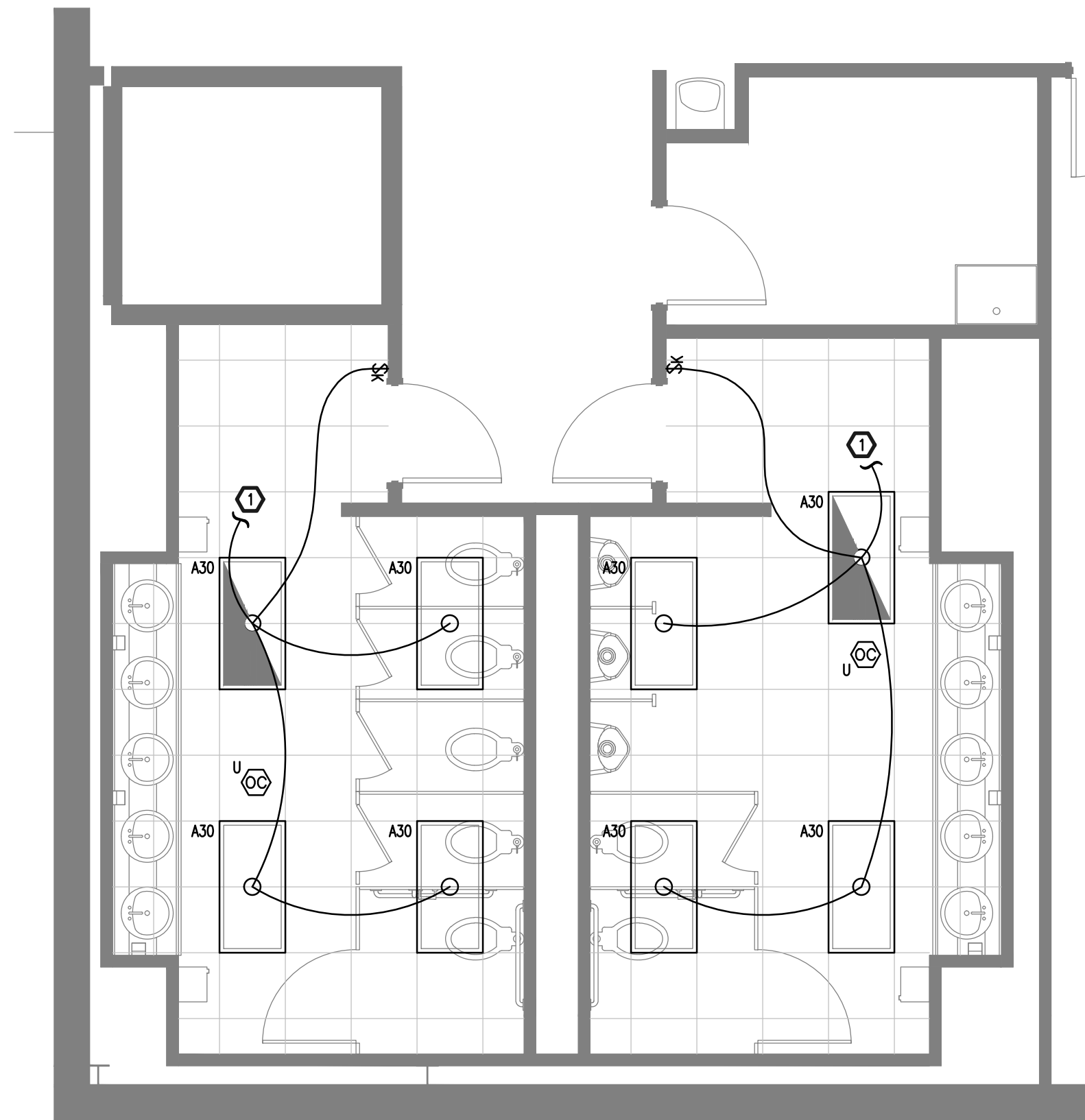
E200

SHEET

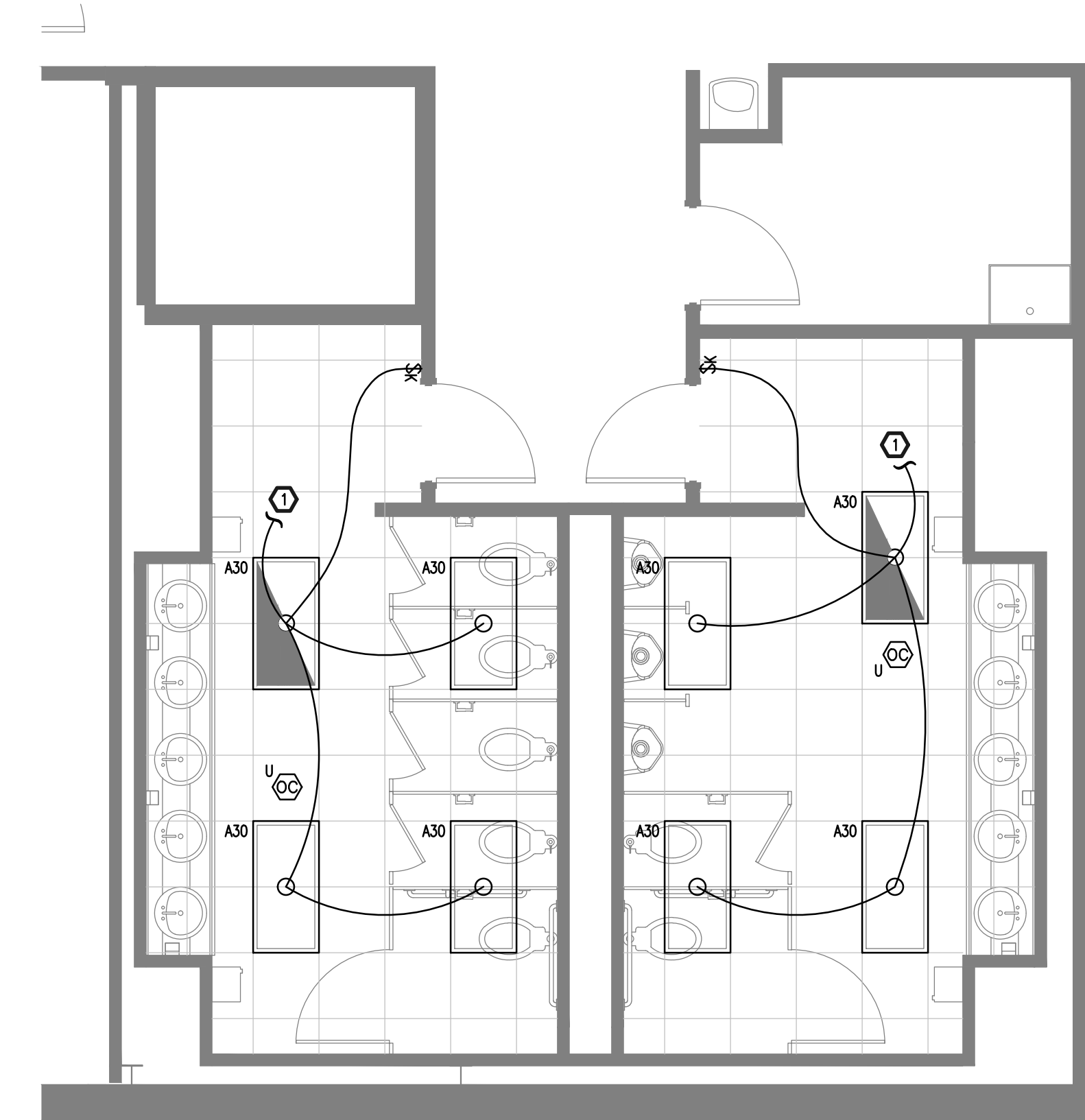
- RENOVATION LEGEND:**
EX EXISTING TO REMAIN
EN EXISTING NEW LOCATION
- LIGHTING KEYNOTES:**
Ⓢ EXTEND AND CONNECT TO EXISTING LIGHTING CIRCUIT RECOVERED FROM DEMOLITION.



1ST FLOOR



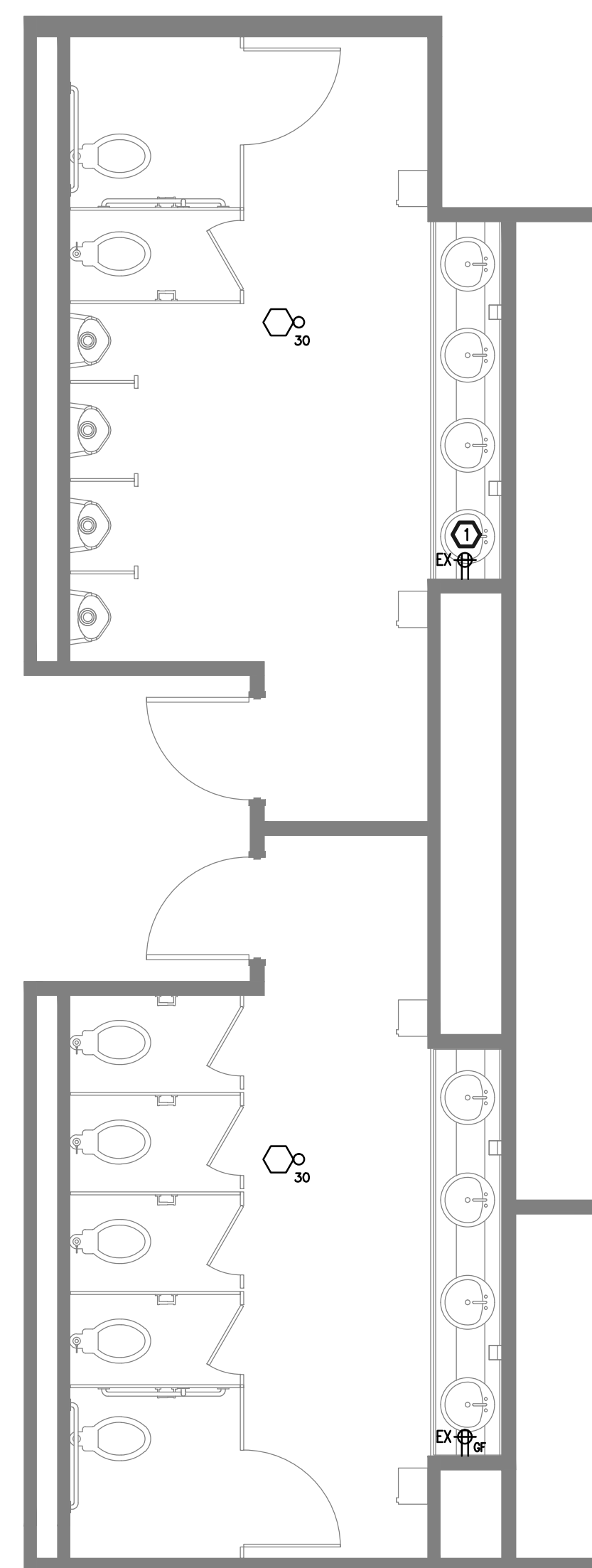
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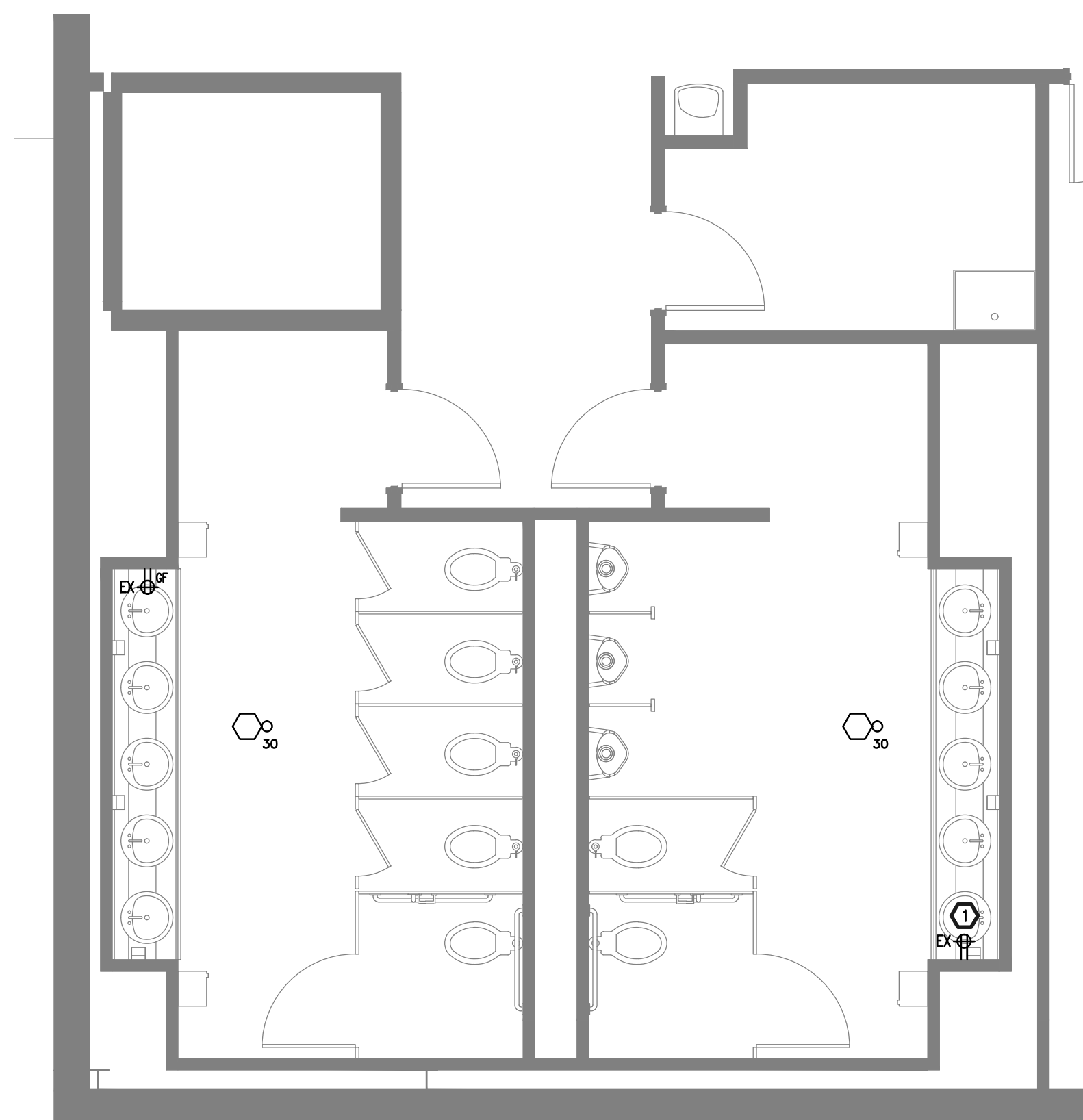
3RD FLOOR

1 ELECTRICAL LIGHTING PLAN
E200 APPROXIMATE SCALE: 1/4" = 1'-0"

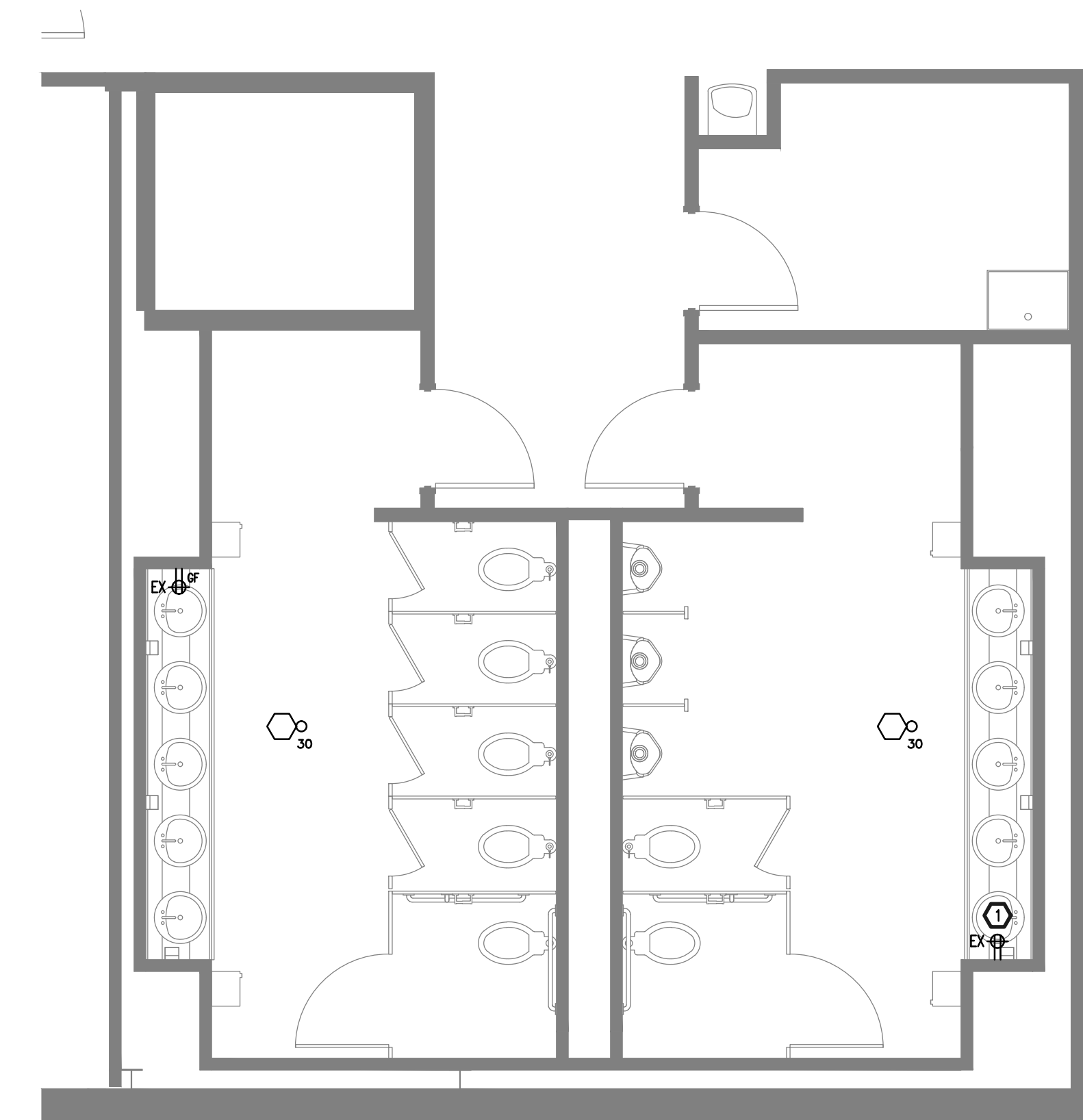
- RENOVATION LEGEND:**
EX EXISTING TO REMAIN
EN EXISTING NEW LOCATION
- POWER KEYNOTES:**
Ⓢ CONFIRM RECEPTACLE IS PROTECTED BY GFCI RECEPTACLE IN OPPOSITE RESTROOM, AND REPLACE EXISTING WITH NEW GFCI RECEPTACLE IF NOT PROTECTED.



1ST FLOOR



2ND FLOOR



3RD FLOOR

2 ELECTRICAL POWER PLAN
E200 APPROXIMATE SCALE: 1/4" = 1'-0"