T1.0	COVER
T1.1	CODE INFORMATION AND NOTES
A0.1	DEMOLITION PLAN
A0.2	DEMOLITION RCP
A0.3	DEMOLITION DETAILS
A1.1	FLOOR PLAN
A1.2	PARTITION TYPES AND DETAILS
A2.1	<b>ENLARGED PLANS &amp; DETAILS</b>
A3.1	REFLECTED CEILING PLAN
A7.0	DOORS, WINDOWS, STOREFRONT AND ENTRY

A0.3	INTERIOR ELEVATIONS			
A8.4 INTERIOR ELEVATIONS				
	Sheet List			
Sheet Number Sheet Name				

FINISH FLOOR PLAN

S1.0	EXISTING AND DEMOLITION PLANOTES
S1.1	FRAMING PLAN AND DETAILS

Sheet List

Sheet	
Number	Sheet Name
E0.0	<b>ELECTRICAL SCHEDULES &amp; DETAIL</b>
E0.1	LIGHTING SCHEDULES & DETAILS
E0.2	ELECTRICAL SPECIFICATIONS

	Sheet List			
Sheet Number	Sheet Name			
ED1.0	LIGHTING DEMOLITION PLAN			
- I	POWER & COMMUNICATIONS DEMOLITION PLAN			
ED3.0	FIRE ALARM DEMOLITION PLAN			

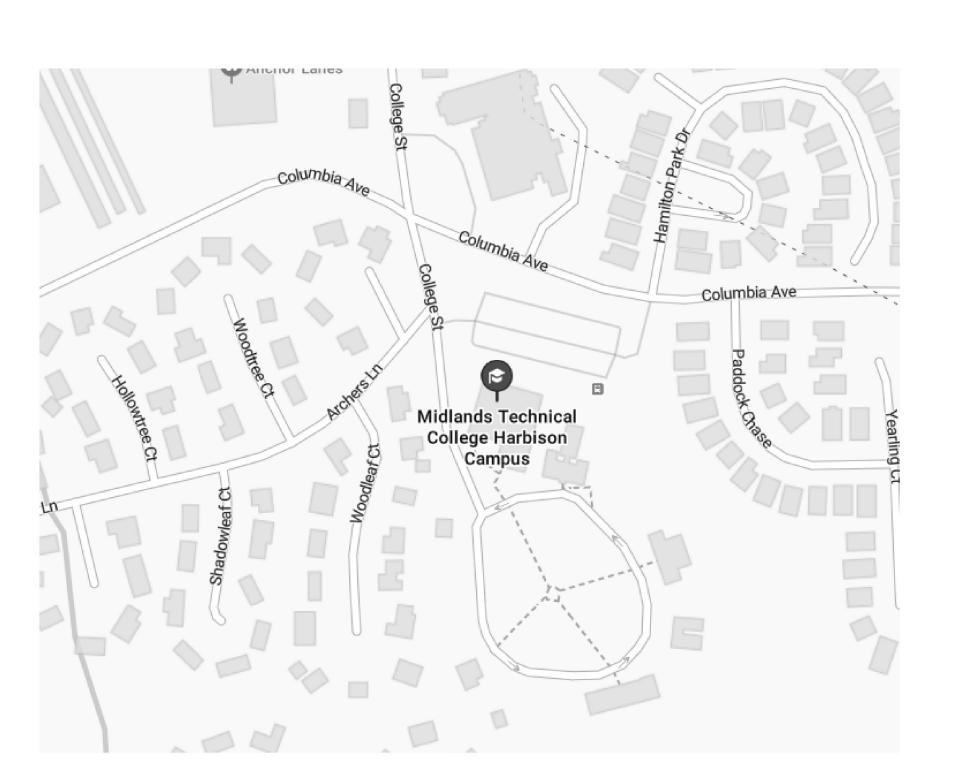
Sheet List			
Sheet Number	Sheet Name		
E1.1	LIGHTING RENOVATION PLAN		
E2.0	POWER AND COMMUNICATION RENOVATION PLAN		

FIRE ALARM RENOVATION PLAN

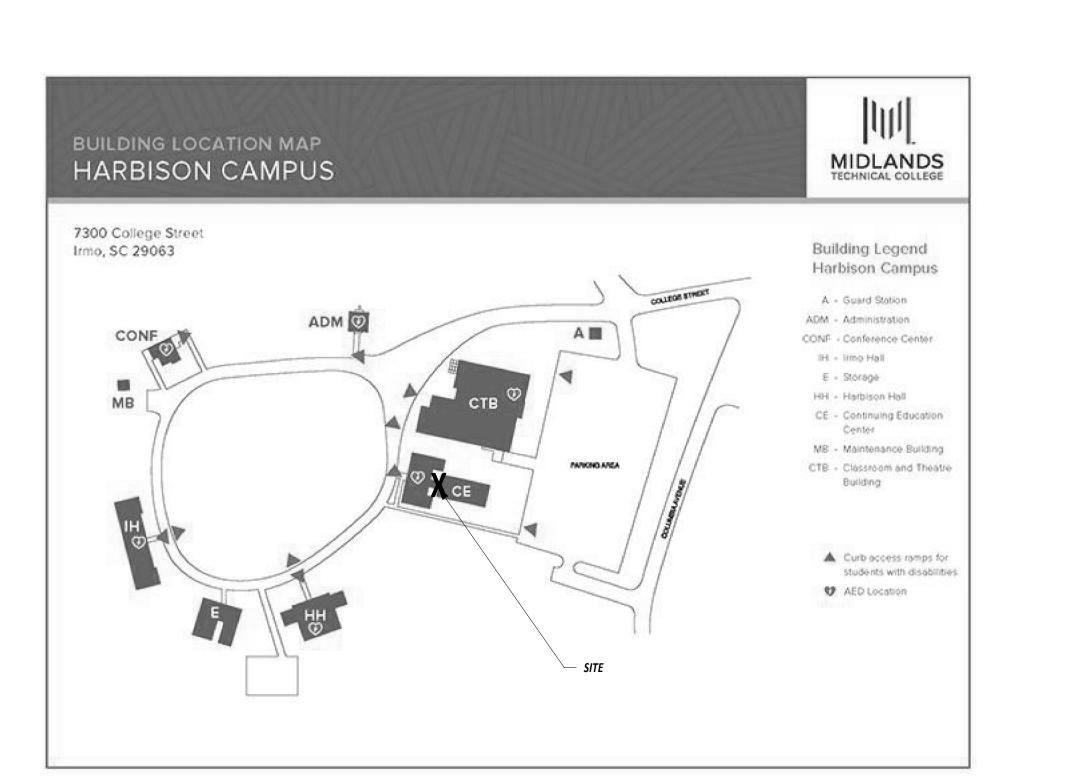
MTC- CE BUILDING RENOVATION HARBISON CAMPUS OSE PROJECT #H59-6330-PD BID DOCUMENTS 09.15.25



STATE MAP



VICINITY MAP CAMPUS MAP



DESIGN INITIATIVE GROUP 등 등 1070 DAVIDSON ROAD LEXINGTON, SC 29072

**CAMPUS** HARBISON RENOVATION-BUILDING GE STREET

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)

Work area: <u>676 REC. SPACE/ BALANCE FINISHES</u> SF

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

☐ Yes

☐ Yes

☐ Yes

☐ Yes

☐ Yes

Restoration

☐ Manual

Aggregate area of building: 6472

DESIGN INITIATIVE GROUP

2023 Edition

⊠ No

X Auto

⊠ No

⊠ No

⊠ No

☐ Reconstruction

SEPARATIONS		
Fireblocking Required (IBC Section 718)	Yes 🗌	No
Draftstopping Required (IBC Section 718)	Yes 🗌	No
Smoke Control System Required (IBC Section 909)	Yes 🗌	No
Smoke Barriers Required (IBC Section 407 & 408)	Yes 🗌	No
Smoke Partitions Required (IBC Section 407)	Yes 🗌	No
Fire Partition Required (IBC Section 708)	Yes 🖂	No
Fire Barrier Required (IBC Section 707)	Yes 🗌	No
ALARM & DETECTION		
Fire Alarm System Required (IFC Section 907)	Yes 🛚	No
Emergency/Voice Alarm Communications System Required (IFC Section 907.5.2.2)	Yes 🗌	No
Fire Command Center Required (IFC Section 508)	Yes	No
SUPPRESSION		
Standpipes Required (IFC Section 905)	Yes 🗌	No
Sprinklers Required (IFC Section 903)	Yes 🗌	No
Sprinklers Provided ()	Yes 🗌	No
Portable extinguishers required (IFC 906)	Yes 🖂	No
Other suppression systems required (IFC 904)	Yes 🗌	No
Smoke & heat vents required (IFC 910)	Yes 🗌	No
OTHER: (Indicate other provided fire and life safety features not listed above, if any)		
Emergency Responder Radio Coverage (IFC Section 510)	Yes 🗌	No

TABLE 3E CODE INFORMATION FOR ADDITIONS, ALTERATIONS, OR CHANGE OF

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

OCCUPANCY TO AN EXISTING STRUCTURE

TYPE OF PROJECT:

under that Option.)

Existing Sprinkler System?

Existing Fire Alarm System?

Seismic Evaluation Required?

**Change of Occupancy:** 

Major Facility Project? (See §48-52-810(10)(a))

Existing Occupancy Classification(s): <u>B/ A-3</u>

New Occupancy Classification(s): <u>B/A-3</u>

Historic Building (IEBC Chapter 12):

METHOD OF COMPLIANCE:

(Check only one Option and all items that apply

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

Rehabilitation

**NOTE:** Where a fire wall is necessary to separate buildings, each building is to be provided individual code criteria Tables 3 through 11. See IBC 503.1.2.

TABLE 3 BASIC BUILDING CODE INFORMATION			
CONSTRUCTION CLASSIFICATION (IBC 602)	Type: VB		
OCCUPANCY CLASSIFICATION (indicate all) (IBC 302 & 504.2)	B/ A-3		
MOST RESTRICTIVE OCCUPANCY CLASSIFICATION (IBC Tables 504.3, 504.4 & 506.2)	_A-3		
Mixed Occupancy (IBC 508)		Yes 🖂	N
Separated (IBC 506.2.2 & 508.4)		Yes 🖂	N
Non separated (IBC 508.3)		Yes 🗌	N
Does building require Incidental Use Area Separation? (IBC 509.1)		Yes 🗌	N
2-way Communication Required (IBC 1009.6.5 & 1009.8)		Yes 🗌	N
Fire Apparatus Access and Water Line (IFC 503 & 507)		Yes 🗌	N
OTHER FIRE PROTECTION SYSTEMS, DEVICES or FEATURES  If the building has any special or notable fire protection or safety feature or hazard the designers should list them here, describe the performance characteristics and refer to locations in construction documents. (e.g. fire extinguishers, smoke- evacuation/control/compartments - IBC 414.1.3.)	PROJECT	ALARM AS	PART

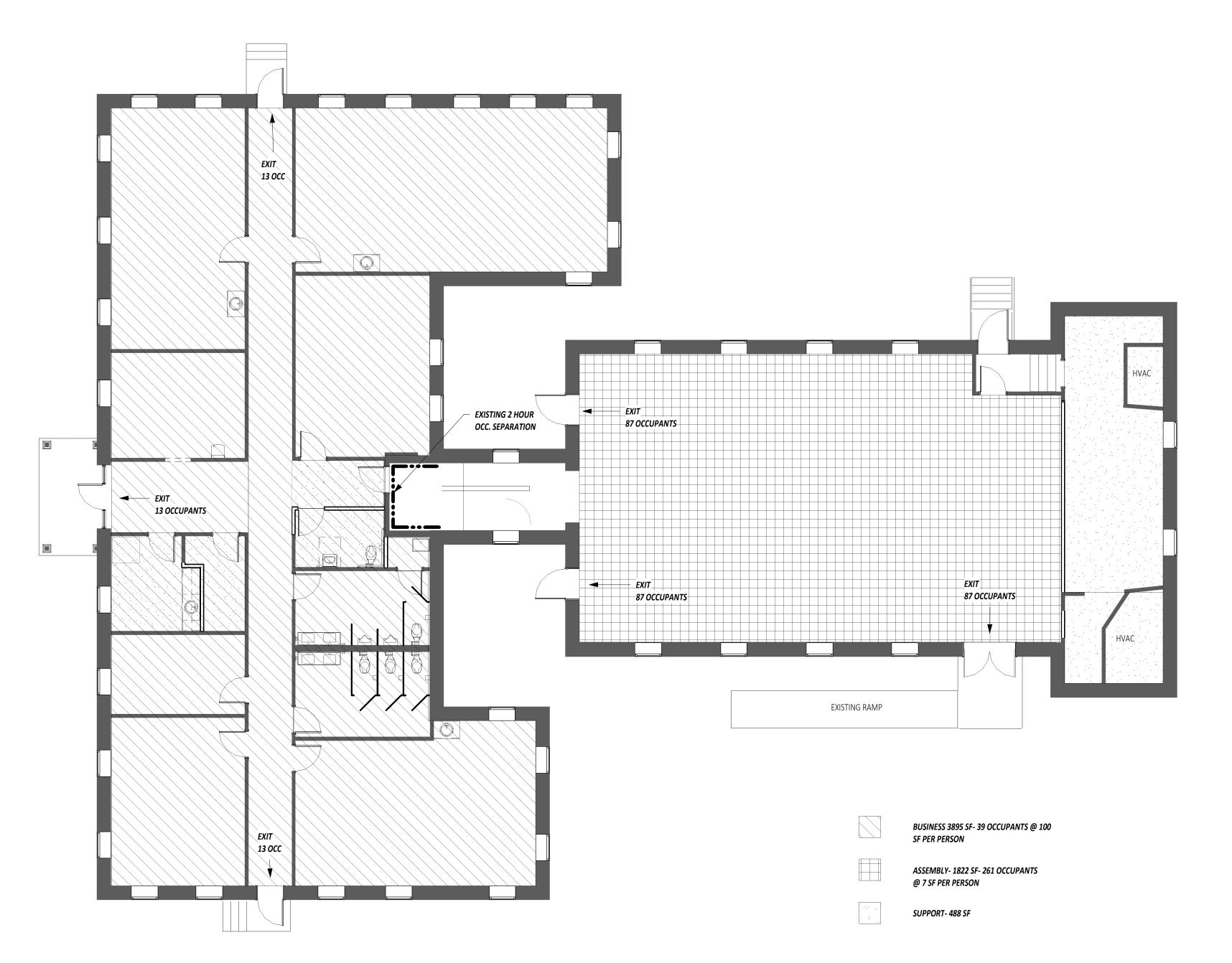
2023 Edition

2023 Edition

<b>BUILDING HEIGHT</b>				
	A	AS DESIGNED	AS ALLOV	VED BY IBC
	In Feet	In Stories	In Feet	In Stories
IBC TABLE 504.3	<u>27</u>	N/A	<u>40</u>	N/A
IBC TABLE 504,4	N/A	<u>2*</u>	N/A	2*
TOTAL HEIGHT (including any Allowable Incre	ease) <u>27</u>	<u>2*</u>	<u>40</u>	<u>2*</u>
BUILDING AREA	·			
AREA LIMIT AS ALLOWE	D RV IRC TARLE 50	6.2 (area limitation for each	story) A-3- 6000	) B-9000 S
AREA AS ALLOWED BY II	BC			
				SE (amon this sta
Story:				
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Story: Story: Story: Story: TOTAL AREA OF BUILDIN  AREA AS DESIGNED  Story: 1 Story:	6500	SF (area this story)	ACCESSORY (IBC 508.2 d	SF (area this sto

TOTAL DESIGNED AREA OF BUILDING (summary of all stories)

BUILDING ELEMENT	RATING AS REQUIRED (in hours)	RATING AS DESIGNED (in hours)	TESTING AGENCY & DESIGN NO. (UL, FM, etc)	DESIGNERS WALL / PARTITION KEY CODE
Primary Structural Frame (IBC Table 601)	<u>0</u>	<u>0</u>		
Bearing Walls: (IBC Table 601)				
Exterior (IBC Table 705.5)	<u>0</u>	<u>0</u>		
Interior	<u>0</u>	<u>0</u>		
Nonbearing Walls & Partitions (IBC Table 601, including footnote "d" & 602)				
Exterior (IBC Table 705.5)	<u>0</u>	<u>0</u>		
Interior	<u>0</u>	<u>0</u>		
Floor Construction (IBC Table 601) (including supporting beams & joists)	0	<u>0</u>		
Roof Construction (IBC Table 601) (including supporting beams & joists)	<u>0</u>	<u>0</u>		
Fire Walls (IBC Section 706)	<u>NA</u>	<u>NA</u>		
Fire Barriers (IBC Section 707)	<u>0</u>	<u>0</u>		
Fire Partitions (IBC Section 708)	2	2	<u>EXISTING</u>	
Shaft Enclosures (IBC Section 713)	<u>NA</u>	<u>NA</u>		
Opening & Protective Listing by Category (fire shutters, doors, etc IBC Section 716)	90	<u>90</u>	SEE SCHEDULE	
Others (as required by Designer)				



GENERAL SCOPE OF WORK DESCRIPTION

1. INSTALLATION OF NEW FINISHES TO INCLUDE FLOORING, PAINT, MILLWORK AND

CEILINGS 2. FINISH UPGRADES AT PORTICO

3. REPLACEMENT OF DOORS AND HARDWARE 4. RECONFIGURATION OF ELEVATED AREA IN MULTIPURPOSE ROOM

5. UPDATED LIGHTING AT FRONT ENTRY AND MULTIPURPOSE ROOM

14. OTHER MINOR ITEMS AS NOTED IN THE CONSTRUCTION DOCUMENTS.

6. NEW FINISHES AND FIXTURES IN EXISTING TOILETS. 1 TO 1 REPLACEMENT. 7. ADDITION OF NEW ADA ACCESSIBLE UNISEX TOILET AND WATER COOLER

8. RECONFIGURATION OF BREAKROOM/ IT ROOM 9. STRUCTURAL REPAIRS TO FOUNDATION FRAMING

10. NEW FIRE ALARM SYSTEM 11. REPAIRS TO EXISTING ABOVE CEILING INSULATION SYSTEMS

12. NEW WINDOWS 13. REPLACEMENT OF EXISTING ADA LIFT **CODE REVIEW NOTES** 

1. NO CHANGE IN OCCUPANT LOAD OR USE IS INCLUDED IN THIS

2. EXISTING NUMBER OF EGRESS PATHS AND LOCATIONS TO BE MAINTAINED.

3. THE BUILDING IS DESIGNED AS A SPLIT LEVEL. BOTH "A" AND "B" OCCUPANCIES EXIT AT GRADE. THE BUILDING IS PREDOMINANTLY OCCUPANCY TYPE "B" WHICH ALLOWS FOR 9000 SF MAXIMUM AREA

AND 2 STORIES ABOVE GRADE. 4. NO RATED CORRIDORS, WALLS OR CEILINGS ARE EVIDENT IN THE

CURRENT CONSTRUCTION EXCEPT FOR THE 2 HOUR OCCUPANCY

SEPARATION WALL AND DOOR. ALL OTHER EXISTING DOORS AND HARDWARE ARE NOT RATED.

# **GENERAL NOTES:**

COORDINATE WITH MTC FOR "IT" REQUIREMENTS FOR THE SCREENS AND PROJECTORS AND TELEVISIONS.

COORDINATE WITH MTC FOR THIRD PARTY INSPECTIONS

B. CONTRACTOR TO INSTALL NEW STAINLESS STEEL FACEPLATES ON ALL OUTLETS EXISTING AND NEW. 4. A HAZARDOUS MATERIALS REPORT IS AVAILABLE FOR REVIEW. HAZARDOUS MATERIALS WERE NOT FOUND TO EXIST IN THE FACILITY. IF THE CONTRACTOR

ENCOUNTERS SUPSECTED HAZARDOUS MATERIALS, STOP WORK IMMEDIATELY IN THE AREA AND CONTACT THE OWNER. 5. CONTRACTOR TO PROVIDE ALL NEW CEILING MOUNTED DIFFUSERS. EXISTING DUCTWORK TO REMAIN.

6. CEILING AND ALL CEILING MOUNTED FIXTURES ARE TO BE INSTALLED PER CURRENT CODE AS SEISMIC DESIGN CATEGORY "D". CONTRACTOR TO ASSUME NEW HANGER WIRES FOR ALL LIGHTING AND HVAC.

7. SUBSITUTION REQUESTS MUST BE MADE IN WRITING AND APPROVED BEFORE THE FINAL ADDENDUM IS ISSUED. REQUESTS MUST INCLUDE A DETAILED

COMPARISON BETWEEN THE SPECIFIED PRODUCT AND PROPOSED TO INCLUDE MATERIALS, AESTHETICS, PERFORMANCE AND WARRANTY. SEE ENGINEERING

8. SEE ENGINEERING DRAWINGS FOR SUBMITTAL REQUIREMENTS. FOR ARCHITECTURAL PRODUCTS PROVIDE THE FOLLOWING: A. ALL FINISH SPECIFICATIONS AND PRODUCT SAMPLES B. MILLWORK SHOP DRAWINGS AND SAMPLES

C. TOILET PARTITION SHOP DRAWINGS AND SAMPLES D. STOREFRONT, WINDOW AND DOOR SHOP DRAWINGS.

E. ROLLER SHADE SUBMITTALS

F. HARDWARE SUBMITTAL G. INSULATION SUBMITTAL

H. SIGNAGE SUBMITTAL AND SHOP DRAWINGS.

I. LIFT SUBMITTAL AND SHOP DRAWINGS J. NEW WALL IN MULTIPURPOSE ROOM PRODUCT SUBMITTALS, SAMPLES AND SHOP DRAWINGS.

# **DEMOLITION NOTES:**

. GC TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALL CONSTRUCTION TO

BE DONE TO LOCAL AND STATE CODES AND STANDARDS. . COORDINATE WITH MTC PRIOR TO INTERRUPTING ANY SERVICES.

EXISTING FLOORS WILL NEED TO BE PREPPED FOR INSTALLATION OF NEW FLOORING. REFER TO MANUFACTURER'S INSTRUCTIONS.

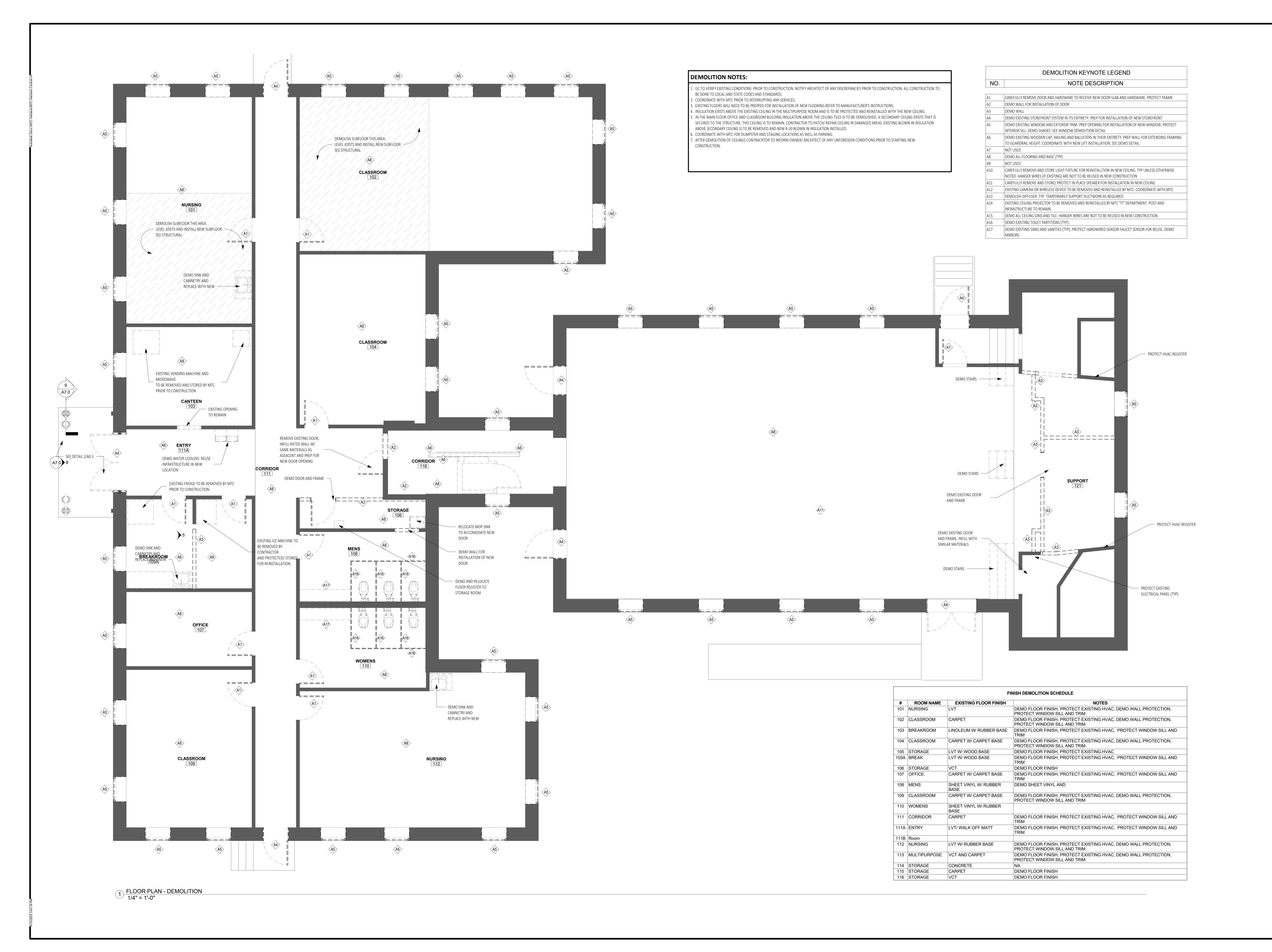
INSULATION EXISTS ABOVE THE EXISTING CEILING IN THE MULTIPURPOSE ROOM AND IS TO BE PROTECTED AND REINSTALLED WITH THE NEW CEILING. . IN THE MAIN FLOOR OFFICE AND CLASSROOM BUILDING INSULATION ABOVE THE CEILING TILES IS TO BE DEMOLISHED. A SECONDARY CEILING EXISTS THAT IS

SECURED TO THE STRUCTURE. THIS CEILING IS TO REMAIN. CONTRACTOR TO PATCH/ REPAIR CEILING IN DAMAGED AREAS. EXISTING BLOWN IN INSULATION

ABOVE SECONDARY CEILING IS TO BE REMOVED AND NEW R-20 BLOWN IN INSULATION INSTALLED.

COORDINATE WITH MTC FOR DUMPSTER AND STAGING LOCATIONS AS WELL AS PARKING. AFTER DEMOLITION OF CEILINGS CONTRACRTOR TO INFORM OWNER/ ARCHITECT OF ANY UNFORESEEN CONDITIONS PRIOR TO STARTING NEW

CONSTRUCTION.



DESIGN
INITIATIVE
GROUP, LLC
COUMBIA, SC
No. 101687

SOUTH CAROL
LUKE
EMERSON
MBCARY
No. 2793

WE SOUTH CAROL
W

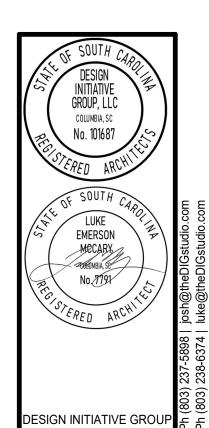
C- CE BUILDING RENOVATION- HARBISON COLLEGE STREET

MP

09.15.25

24-021 **A0.1** 





1070 DAVIDSON ROAD

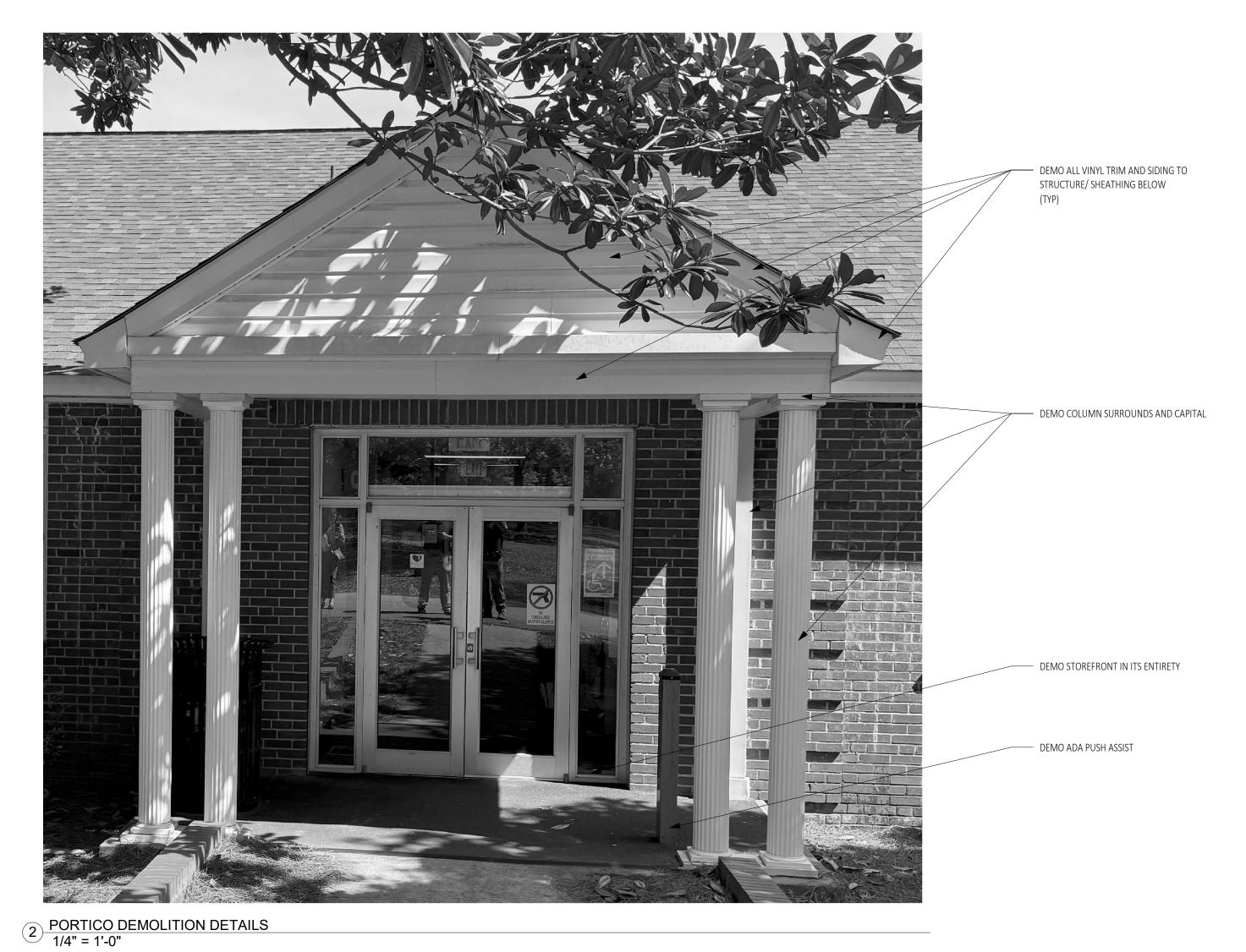
LEXINGTON, SC 29072

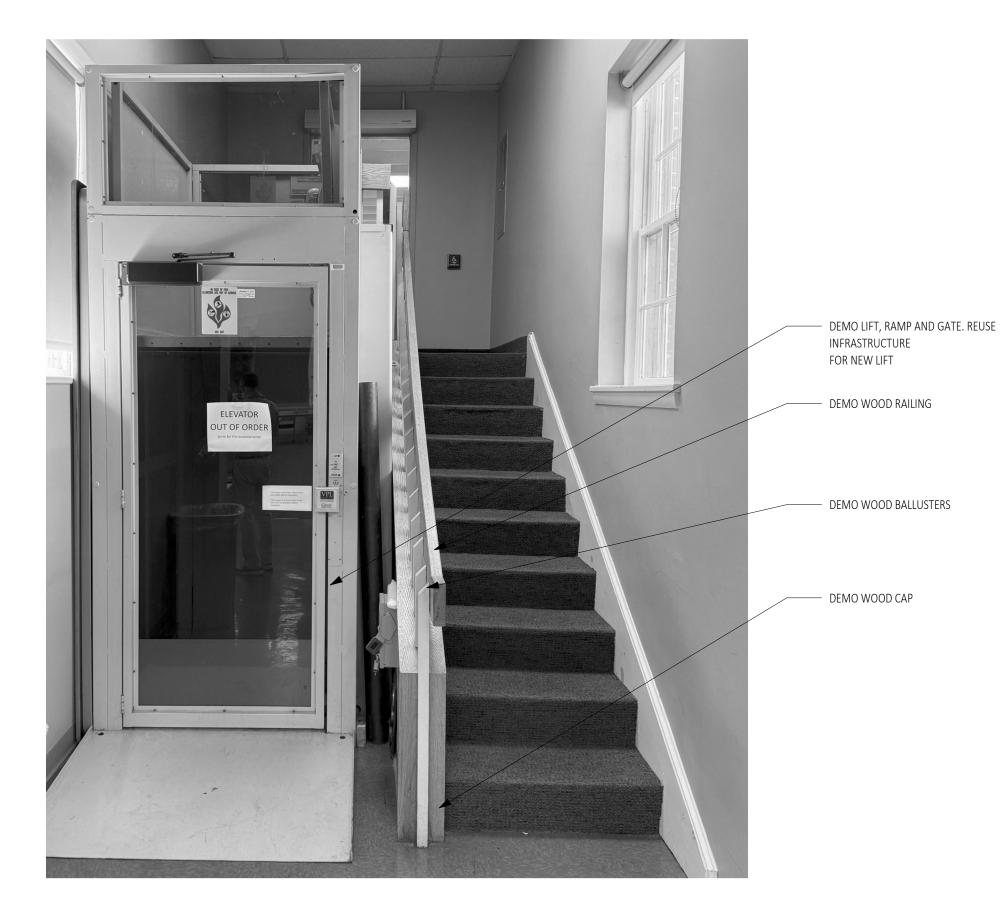
TION- HARBISON CAMPUS

ITC- CE BUILDING RENOVATION
300 COLLEGE STREET
MO SC 29063

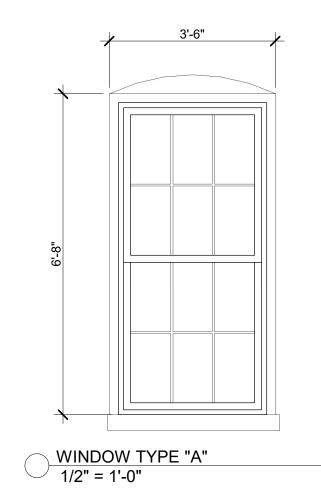
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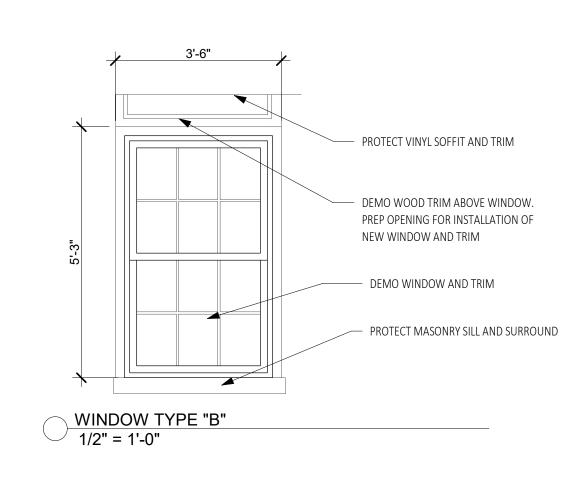
A0.2

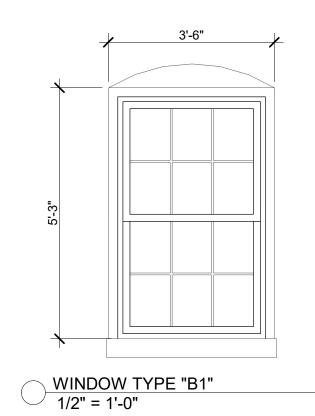




3 RAILING AND LIFT DEMO DETAILS
1/4" = 1'-0"





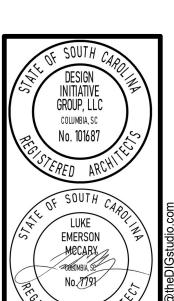


### **DEMOLITION NOTES:**

- 1. GC TO VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION. ALL CONSTRUCTION TO BE DONE TO LOCAL AND STATE CODES AND STANDARDS.
- 2. COORDINATE WITH MTC PRIOR TO INTERRUPTING ANY SERVICES.
- 3. EXISTING FLOORS WILL NEED TO BE PREPPED FOR INSTALLATION OF NEW FLOORING.REFER TO MANUFACTURER'S INSTRUCTIONS.
- 4. INSULATION EXISTS ABOVE THE EXISTING CEILING IN THE MULTIPURPOSE ROOM AND IS TO BE PROTECTED AND REINSTALLED WITH THE NEW CEILING. . IN THE MAIN FLOOR OFFICE AND CLASSROOM BUILDING INSULATION ABOVE THE CEILING TILES IS TO BE DEMOLISHED. A SECONDARY CEILING EXISTS THAT IS SECURED TO THE STRUCTURE. THIS CEILING IS TO REMAIN. CONTRACTOR TO PATCH/ REPAIR CEILING IN DAMAGED AREAS. EXISTING BLOWN IN INSULATION ABOVE SECONDARY CEILING IS TO BE REMOVED AND NEW R-20 BLOWN IN INSULATION INSTALLED.
- 6. COORDINATE WITH MTC FOR DUMPSTER AND STAGING LOCATIONS AS WELL AS PARKING. 7. AFTER DEMOLITION OF CEILINGS CONTRACRTOR TO INFORM OWNER/ ARCHITECT OF ANY UNFORESEEN CONDITIONS PRIOR TO STARTING NEW

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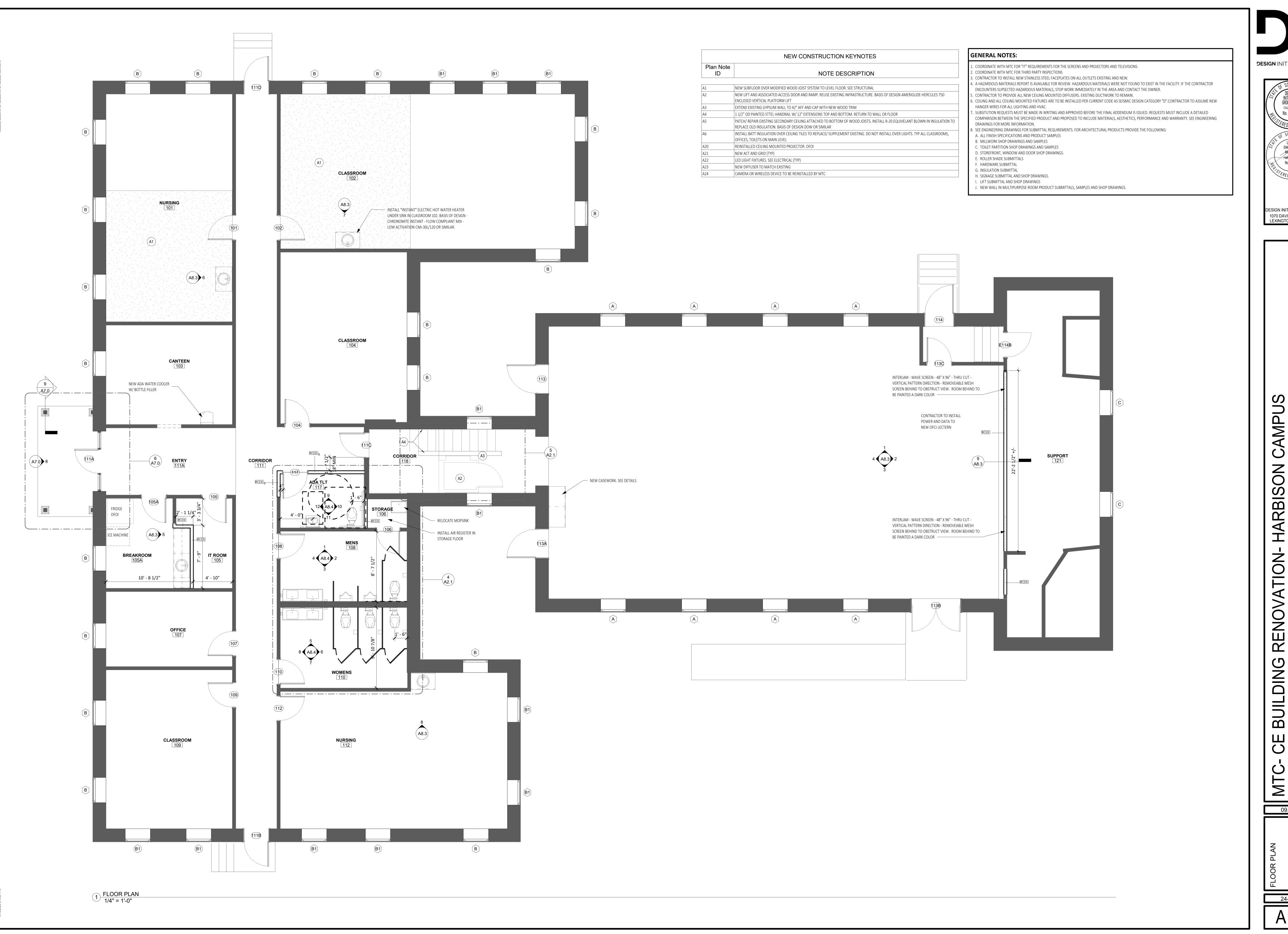
**DESIGN** INITIATIVE **GROUP** 



DESIGN INITIATIVE GROUP 1070 DAVIDSON ROAD LEXINGTON, SC 29072

;AMPUS HARBISON RENOVATION

COLLEGE STREET, SC 29063



DESIGN INITIATIVE GROUP 1070 DAVIDSON ROAD LEXINGTON, SC 29072

HARBISON RENOVATION BUILDING GE STREET

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COMPARISON BETWEEN THE SPECIFIED PRODUCT AND PROPOSED TO INCLUDE MATERIALS, AESTHETICS, PERFORMANCE AND WARRANTY. SEE ENGINEERING

SEE ENGINEERING DRAWINGS FOR SUBMITTAL REQUIREMENTS. FOR ARCHITECTURAL PRODUCTS PROVIDE THE FOLLOWING:

A. ALL FINISH SPECIFICATIONS AND PRODUCT SAMPLES

B. MILLWORK SHOP DRAWINGS AND SAMPLES C. TOILET PARTITION SHOP DRAWINGS AND SAMPLES

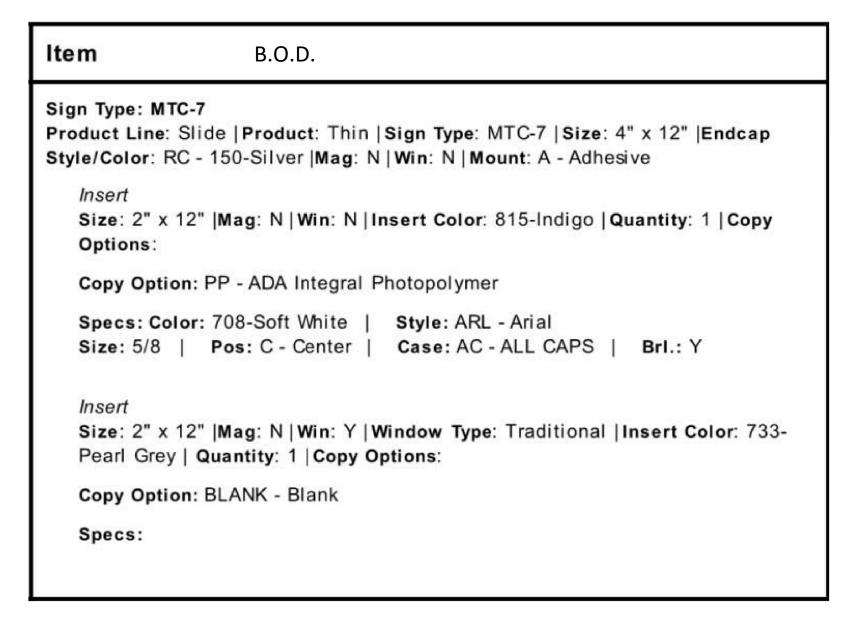
D. STOREFRONT, WINDOW AND DOOR SHOP DRAWINGS E. ROLLER SHADE SUBMITTALS

F. HARDWARE SUBMITTAL G. INSULATION SUBMITTAL

H. SIGNAGE SUBMITTAL AND SHOP DRAWINGS.

I. LIFT SUBMITTAL AND SHOP DRAWINGS

J. NEW WALL IN MULTIPURPOSE ROOM PRODUCT SUBMITTALS, SAMPLES AND SHOP DRAWINGS.



## 703.2.9 Height above floor.

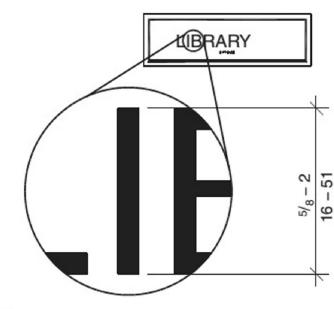
Visual characters shall be 40 inches (1015 mm) minimum above the floor of the viewing position, measured to the baseline of the character. Heights shall comply with Table 703.2.4, based on the size of the characters on the sign.

**Exception:** Visual characters indicating elevator car controls shall not be required to comply with Section 703.2.9.

## 703.3.5 Character height.

The uppercase letter "I" shall be used to determine the allowable height of all characters of a font. The height of the uppercase letter "I" of the font, measured vertically from the baseline of the character, shall be  $\frac{5}{8}$  inch (16 mm) minimum, and 2 inches (51 mm) maximum.

**Exception:** Where separate raised and visual characters with the same information are provided, the height of the raised uppercase letter "I" shall be permitted to be  $^{1}/_{2}$  inch (13 mm) minimum.

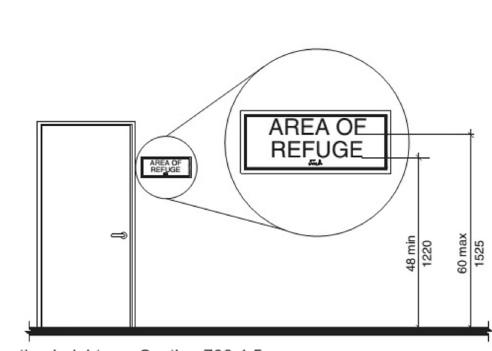


## FIGURE 703.3.5 CHARACTER HEIGHT

## 703.3.10 Height above floor.

Raised characters shall be 48 inches (1220 mm) minimum above the floor, measured to the baseline of the lowest raised character and 60 inches (1525 mm) maximum above the floor, measured to the baseline of the highest raised character.

**Exception:** Raised characters for elevator car controls shall not be required to comply with Section 703.3.10.



Note: For braille character mounting height see Section 703.4.5

FIGURE 703.3.10 HEIGHT OF RAISED CHARACTERS ABOVE FLOOR

# 703.3.11 Location.

Where a sign containing raised characters and braille is provided at a door, the sign shall be alongside the door at the latch side. Where a sign containing raised characters and braille is provided at double doors with one active leaf, the sign shall be located on the inactive leaf. Where a sign containing raised characters and braille is provided at double doors with two active leaves, the sign shall be to the right of the right-hand door. Where there is no wall space on the latch side of a single door, or to the right side of double doors, signs shall be on the nearest adjacent wall. Signs containing raised characters and braille shall be located so that a clear floor area 18 inches (455 mm) minimum by 18 inches (455 mm) minimum, centered on the raised characters is provided beyond the arc of any door swing between the closed position and 45 degree open position.

Exception: Signs containing raised characters and braille shall be permitted on the push side of doors with closers and without holdopen devices.

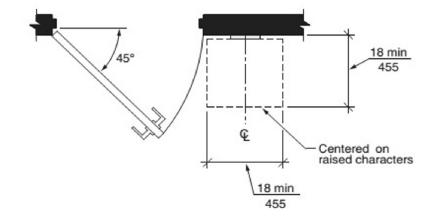
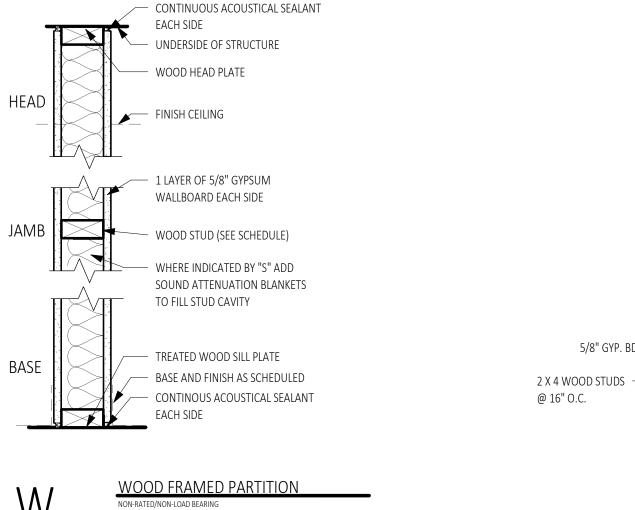


FIGURE 703.3.11 LOCATION OF SIGNS AT DOORS



 CEILING AS - Base and floor finish AS SCHEDULED TYPICAL PARTITION BRACING DETAIL

SCALE: 1 1/2" = 1'-0"

IBC APPROACH TO CATEGORY D, E, AND F INSTALLATIONS

Attached Wall

12ga. hanger wires are required on

is 7/8" or greater

Unattached Wall

perimeter mains and tees within 8" of wall

NOTE: Not required on Category C if angle

**IBC** Requirements

Attached suspension system on

screws, or other means

and cross tees

X Hanger Wire

P Pop Rivets

— Stabilizer Bars

3/4" clearance at perimeter on

Heavy-duty suspension system

two adjacent walls with pop rivets,

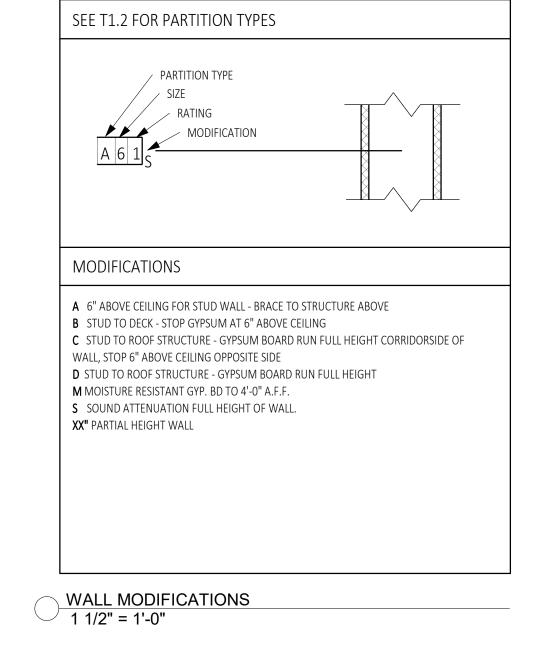
unattached walls and stabilizer bars

to prevent the spread of main beams

2" molding

1 PARTITION TYPES
1 1/2" = 1'-0"

W 3 D 4 3/4" 3 1/2" 16" o.c. #2 SYP (MIN)

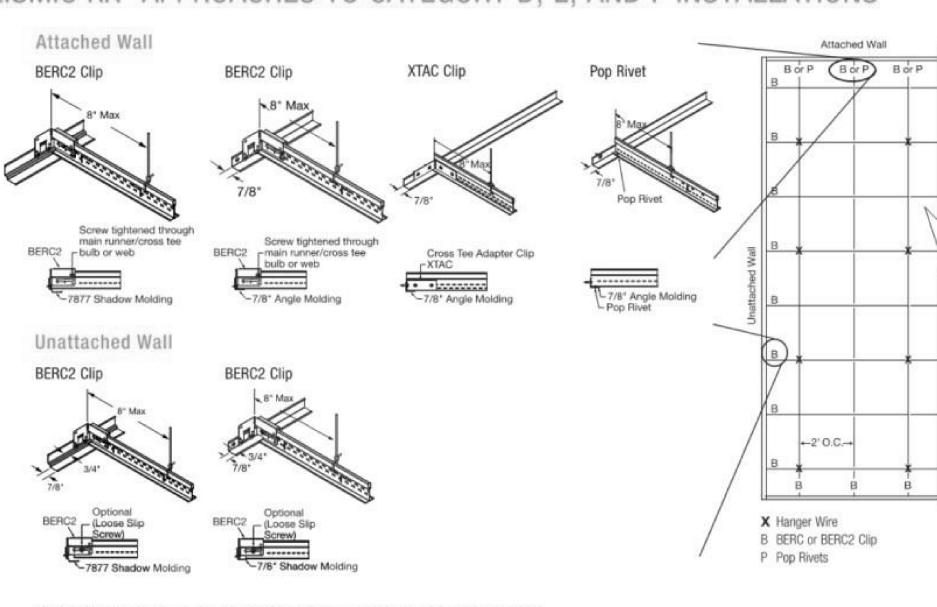


D, E, F Installed to ASTM C636 and ASTM E580

- Minimum 2" wall molding
- Suspension system must be attached to two adjacent walls opposite walls must have a 3/4" clearance
- Ends of main beams and cross tees must be tied together to prevent their spreading
- Heavy-duty suspension system
- Ceiling areas over 1,000 SF must have horizontal restraint wire or rigid bracing
- Ceiling areas over 2,500 SF must have seismic separation joints or full height partitions
- Ceilings without rigid bracing must have 2" oversized trim rings for sprinklers and other penetrations Changes in ceiling plane must have positive bracing
- Cable trays and electrical conduits must be independently supported and braced
- Suspended ceilings will be subject to special inspection Perimeter support wires within 8"

NOTE: Consult your local code professional for information specific to your region. California projects may be governed by DSA and OSHPD.

# SEISMIC RX® APPROACHES TO CATEGORY D, E, AND F INSTALLATIONS



# Seismic Rx Code Compliant Solutions and Benefits (ESR-1308)

- Narrow, sleek aesthetic with standard 7/8" molding
   Eliminates visible pop rivets through the wall angle
- Eliminates installation and aesthetic problems
  - associated with 2" wall molding
- Lower cost solution

Eliminates stabilizer bars

- Better access to the plenum
- More profiles from which to choose
- Perimeter support wires within 8"
  - Attached suspension system on two adjacent walls with the
  - BERC2, ALBERC2, or pop rivets BERC2 or ALBERC2 clip with 3/4" clearance on unattached walls

MPU ARBISON NOL

**DESIGN** INITIATIVE **GROUP** 

LUKE EMERSON MCCARY MCCARY No. 7791

DESIGN INITIATIVE GROUP

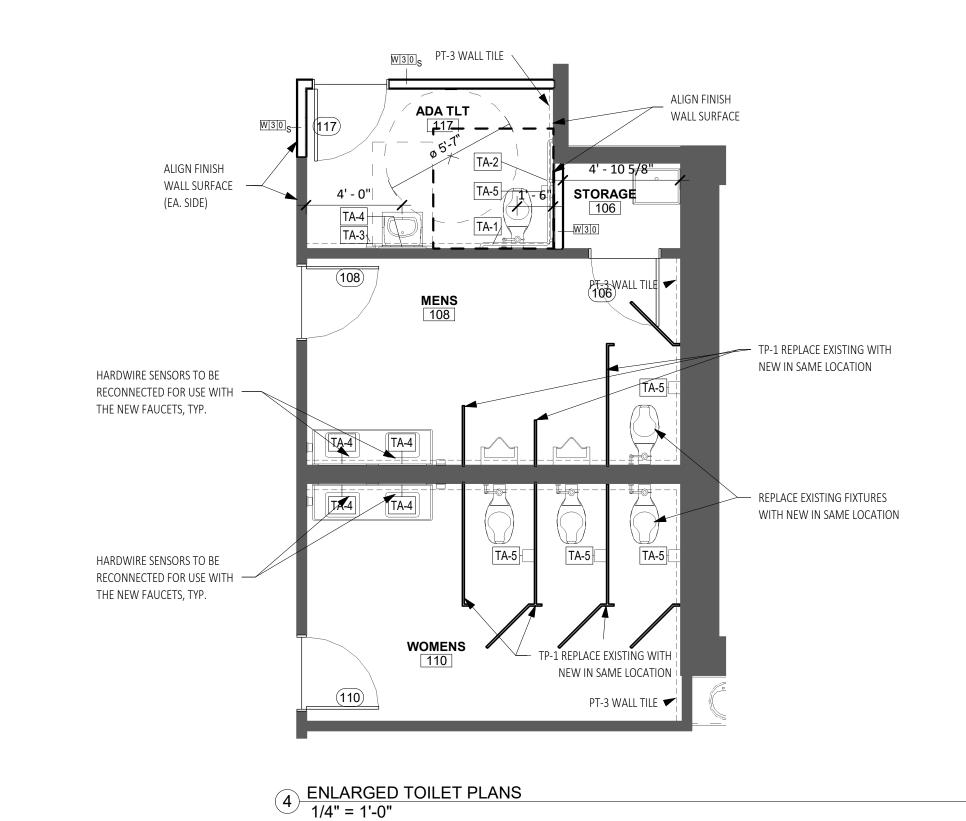
1070 DAVIDSON ROAD

LEXINGTON, SC 29072

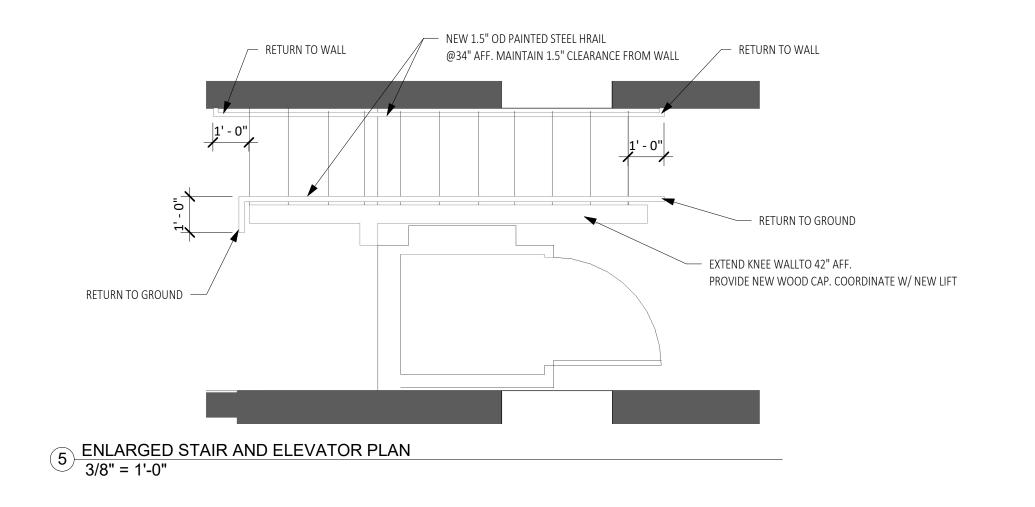
RENO BUILDING GE STREET

24-021

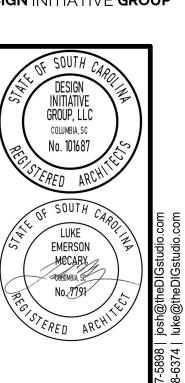
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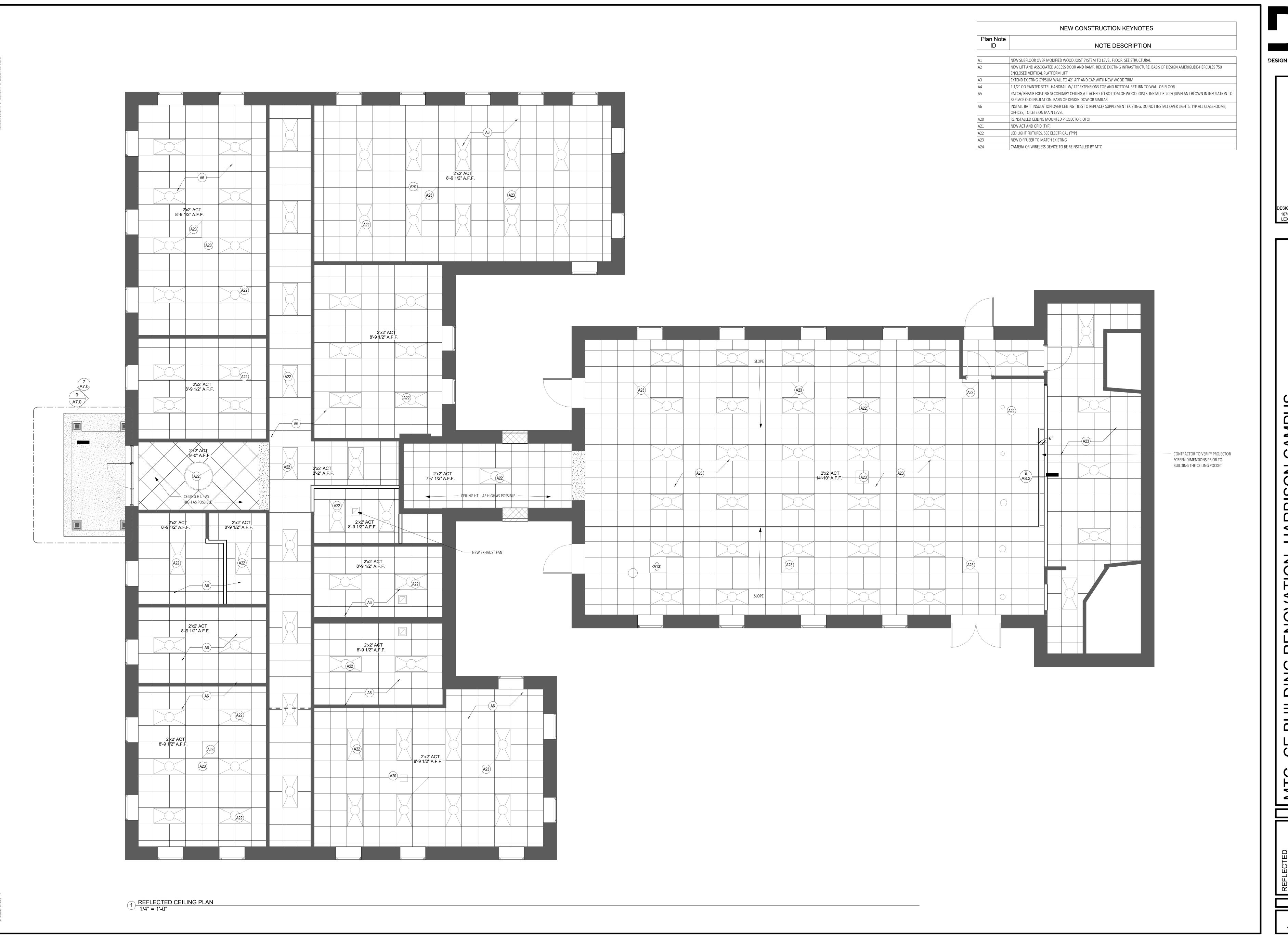
	TOILET ACCESS	SORIES SCHEI	DULE		
ITEM#	DESCRIPTION	MFR.	MODEL#	Provided	COMMENTS
TA-1	36" x 54" STAINLESS STEEL CORNER GRAB BAR	BOBRICK	B-68137.99	CFCI	
TA-2	18" VERTICAL GRAB BAR	BOBRICK	B-6806	CFCI	
TA-3	SURFACE MOUNTED SOAP DISPENSER	BOBRICK	B-2111	<varies></varies>	<varies></varies>
TA-4	24x36 GLASS MIRROR WITH STAINLESS STEEL ANGLE FRAME	BOBRICK	B-290	CFCI	OWNER APPROVAL REQUIRED
TA-5	SURFACE MOUNTED TOILET TISSUE DISPENSER	BOBRICK	B-2888	<varies></varies>	<varies></varies>







CAMPUS HARBISON RENOVATION BUILDING GE STREET

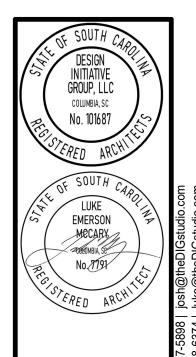


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CAMPUS HARBISON RENOVATION-

MTC- CE BUILDING F
7300 COLLEGE STREET
IRMO, SC 29063
GHTS RESERVED.





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AMP ARBISON RENO BUILDING



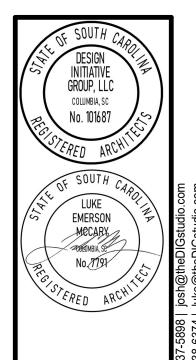


MECARY REGOMBIA, SE No. 7791 ERED ARCH DESIGN INITIATIVE GROUP 🚊 ۾ 1070 DAVIDSON ROAD LEXINGTON, SC 29072

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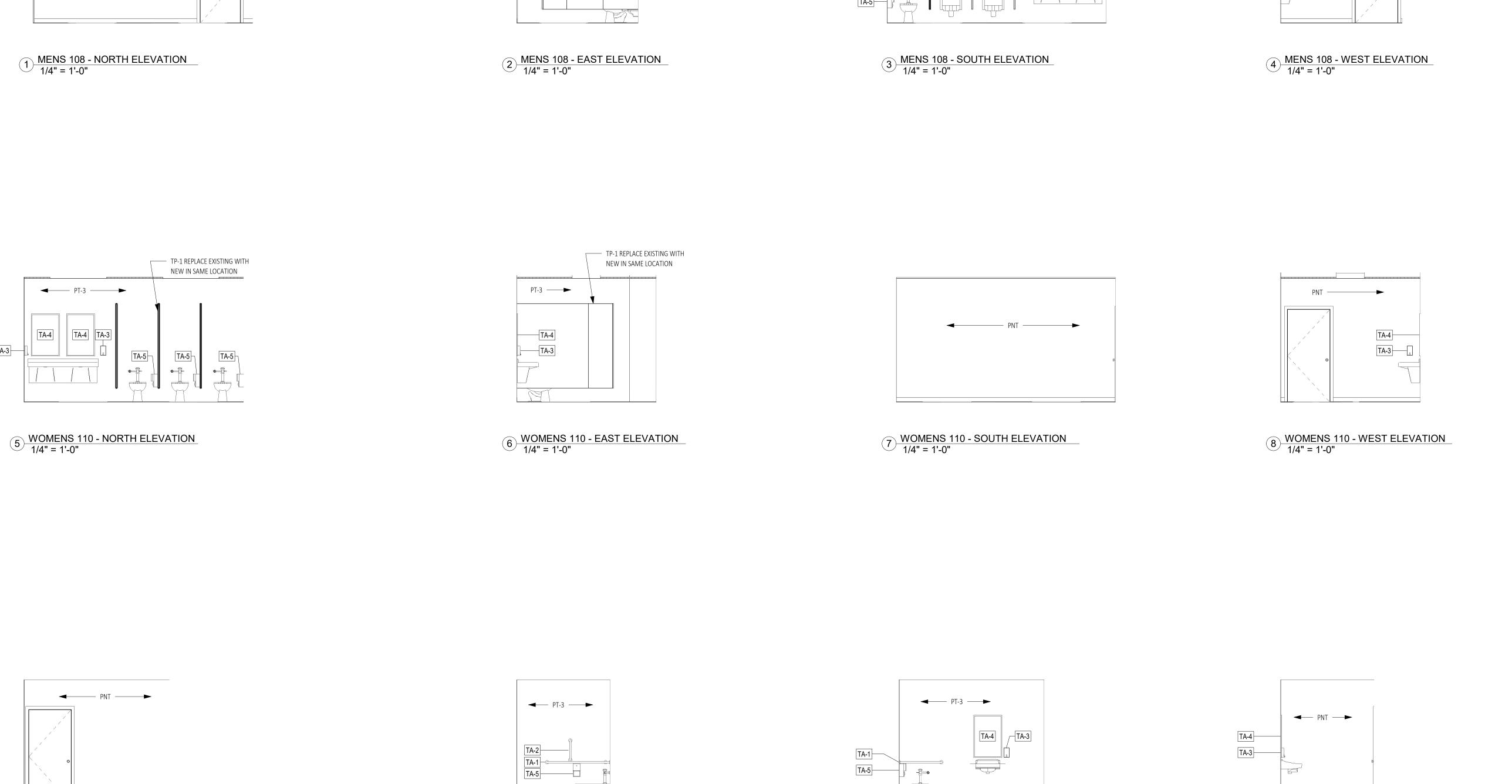
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HARBISON RENOVATION BUILDING GE STREET

24-021



TP-1 REPLACE EXISTING WITH NEW IN SAME LOCATION

10 ADA TLT 117 - EAST ELEVATION 1/4" = 1'-0"

9 ADA TLT 117 - NORTH ELEVATION 1/4" = 1'-0"

TP-1 REPLACE EXISTING WITH NEW IN SAME LOCATION

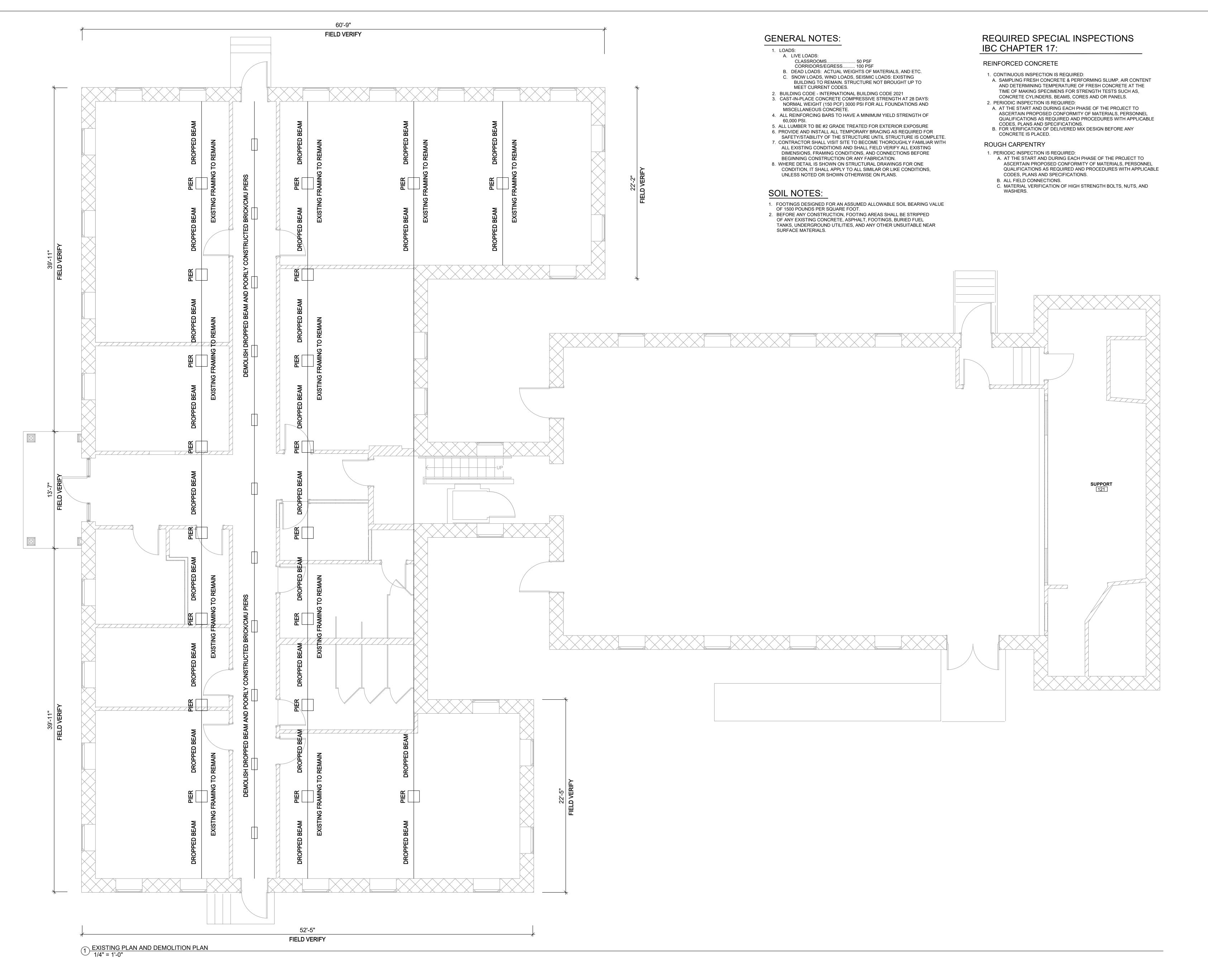
→ PNT →

12 ADA TLT 117 - WEST ELEVATION 1/4" = 1'-0"

TA-4

**◆** PT-3 **→** 

11 ADA TLT 117 - SOUTH ELEVATION 1/4" = 1'-0"



Associates, In StructuralEngineers

840 Shull Street

Suite 100 West Columbia, SC 29169

(803) 926-0000

MEAI# 24-3198

MABRY

ENGINEERING

ASSOCIATES, INC.

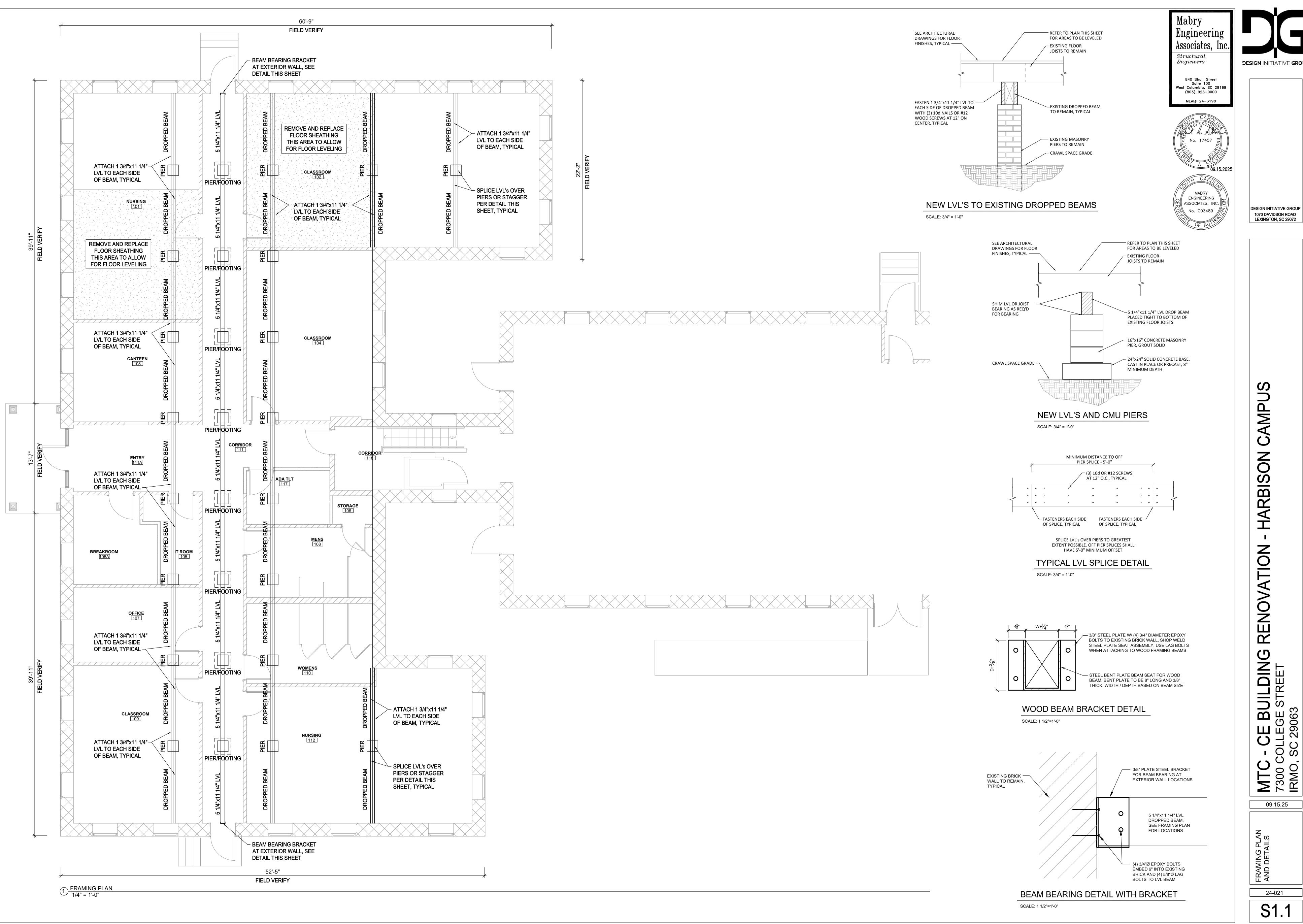


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	ELECTRICAL SYMBOL SCHEDULE - GENERAL
GENERAL	
LP1-2,4	BRANCH CIRCUIT RACEWAY. RUN CONCEALED IN CEILING OR WALLS. ARROWHEAD DENOTES HOMERUN TO PANEL. CROSSLINES DENOTE NUMBER OF PHASE AND NEUTRAL CONDUCTORS WHEN MORE THAN TWO ARE TO BE INSTALLED. TEXT DENOTES PANEL NAME AND CIRCUIT NUMBERS FOR HOMERUN. INSTALL GROUND WIRE IN ALL RACEWAYS. #12 AWG MINIMUM AND AS PER CODE.
LP1-2,4	BRANCH CIRCUIT RACEWAY. RUN IN OR UNDER SLAB OR FLOOR. 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.
TCB*	PLYWOOD TELECOM BACKBOARD. SEE DETAIL.
PP1	ELECTRICAL DISTRIBUTION OR BRANCH CIRCUIT PANELBOARD. TEXT DENOTES NAME, REFER TO DRAWINGS FOR LOCATION. SEE POWER RISER DIAGRAM AND PANEL SCHEDULES. SURFACE OR FLUSH MOUNTED AS INDICATED ON PANEL SCHEDULE.
СР	SIGNAL SYSTEM OR OTHER ELECTRICAL CONTROL OR COMMUNICATIONS CABINET. REFER TO DRAWINGS AND SPECIFICATIONS FOR DETAILS.
J	JUNCTION BOX, FLUSH WALL MOUNTED IN FINISHED WALLS, SURFACE MOUNTED WHERE INDICATED ON DRAWINGS. MINIMUM 4" SQUARE WITH APPROPRIATE REDUCING RING FOR DEVICE BEING INSTALLED. REFER TO TYPICAL MOUNTING HEIGHTS DETAIL WHERE MOUNTING HEIGHT IS NOT INDICATED ON DRAWINGS. SIZE PER NEC.
0	JUNCTION BOX, CEILING MOUNTED. SIZE PER NEC.

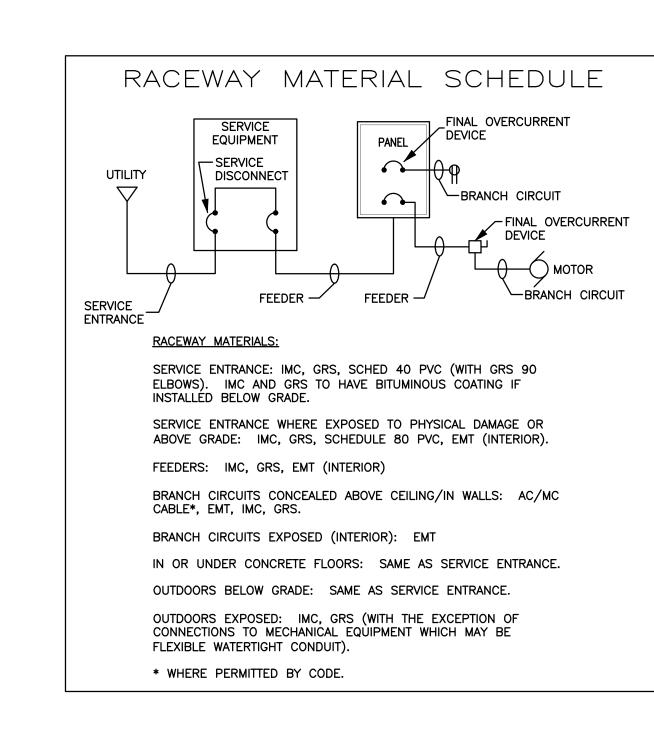
## **GENERAL NOTES ALL DRAWINGS:**

MINIMUM NEUTRAL CURRENT.

- 1. 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.
- 2. MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE #12 AWG. PROVIDE DEDICATED NEUTRAL FOR EACH MULTI-WIRE BRANCH CIRCUIT IN COMPLIANCE" WITH NEC.
- 3. ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, "ECON" BY ECONOMY, OR FERRAZ SHAWMUT.
- 4. BRANCH CIRCUIT SIZES ARE #12 AWG, 1/2"C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES OR ON DRAWINGS.
- 5. ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSSES TO OBTAIN
- 6. ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND PER NEC TABLE 250-122.
- 7. PROVIDE PULL STRING IN ALL EMPTY RACEWAYS.

8. COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN

- CORRECT LOCATIONS.
- 9. DO NOT FLUSH MOUNT JUNCTION BOXES BACK TO BACK, STAGGER TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
- 10. CONCEAL OUTLETS FOR ALL EQUIPMENT IN FINISHED AREAS. OBTAIN ROUGHING DIAGRAMS FOR ALL EQUIPMENT AND INSTALL ELECTRICAL WORK ACCORDING TO DIAGRAMS.
- 11. MOUNT BRACKET TYPE LIGHTING FIXTURES AT HEIGHTS SHOWN OR SCHEDULED ON DRAWINGS OR AS DIRECTED ON JOB BY ARCHITECT UNLESS NOTED OTHERWISE.
- 12. 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
- 13. WHERE NOT INDICATED OTHERWISE, EQUIPMENT GROUNDING CONDUCTORS SHALL BE SIZED PER
- 14. ALL METAL CONDUITS 1" AND LARGER SHALL HAVE A GROUNDING BUSHING BONDING CONDUIT TO ENCLOSURE.
- 15. REMOVE DRYWALL DUST AND MUD FROM THE INTERIOR OF BOXES BEFORE INSTALLING DEVICES.
- 16. AT SUBSTANTIAL COMPLETION CLEAN ALL LIGHT FIXTURES AND CLEAN ALL DEVICES IN THE CONSTRUCTION AREAS. REPLACE DAMAGED DEVICES AND DEVICE PLATES AS NEEDED.
- 17. VERIFY ALL MECHANICAL EQUIPMENT LOCATIONS AND ELECTRICAL REQUIREMENTS WITH MECHANICAL PLANS. IF MECHANICAL EQUIPMENT BEING PROVIDED DOES NOT MATCH DESIGN NOTIFY ENGINEER
- 18. 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.
- 19. ALL RACEWAYS TRANSITIONING BETWEEN CONDITIONED AND UNCONDITIONED SPACES AND RACEWAYS EXITING BUILDING SHALL BE SEALED IN ACCORDANCE WITH NEC. USE POLYWATER FST DUCT SEALANT SYSTEM OR EQUIVALENT.
- 20. ELECTRICAL WORK SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES, REQUIREMENTS AND ORDINANCES.
- 21. ALL BACKBOXES SHALL BE MINIMUM 4" SQUARE.
- 22. ALL EMT FITTINGS SHALL BE STEEL COMPRESSION TYPE WITH INSULATED THROAT.
- 23. COORDINATE WITH GENERAL CONTRACTOR TO PROVIDE BLOCKING AT ALL WALL MOUNTED DEVICES (TELEVISIONS, ETC.).
- 24. 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.
- 25. 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.
- 26. SLEEVE ALL RACEWAY PENETRATIONS THROUGH SLABS, EXTERIOR WALLS/FOUNDATIONS AND SIMILAR. COORDINATE ALL PROPOSED PENETRATIONS WITH STRUCTURAL ENGINEER AND ARCHITECT.
- 27. 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.
- 28. IF REQUIRED BY THE FIRE CODE OFFICIAL PER 2021 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.



ELECTRI	CAL SYMBOL SCHEDULE - LIGHTING SYSTEMS AND ACCESSORIES
LIGHTING	
A o	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.
A	STRIP FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. LETTER DENOTES FIXTURE TYPE.
Å.	WALL MOUNTED FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE. MOUNTING HEIGHTS AS INDICATED ON DRAWINGS OR IN LIGHT FIXTURE SCHEDULE OR AS DIRECTED BY OWNER. LETTER DENOTES FIXTURE TYPE. PROVIDE COLD WEATHER BALLASTS FOR ALL FIXTURES LOCATED OUTDOORS.
<sup>A</sup> O	CEILING MOUNTED FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE AND MOUNTING. PROVIDE MOUNTING HARDWARE APPROPRIATE FOR TYPE OF CEILING WHERE FIXTURE IS INSTALLED. SEE ARCHITECTURAL REFLECTED CEILING PLAN. LETTER DENOTES FIXTURE TYPE.
<del>^</del>	PENDANT MOUNTED FIXTURE. SECURE TO STRUCTURE WITH APPROPRIATE MOUNTING HARDWARE. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE. SUSPENSION TYPE AND LENGTH AS INDICATED ON DRAWINGS OR IN LIGHT FIXTURE SCHEDULE OR AS DIRECTED BY ARCHITECT. LETTER DENOTES FIXTURE TYPE.
⊗/೪	LED EXIT SIGN, WALL OR CEILING MOUNTED, STEM DENOTES WALL MOUNTED. FACES AS INDICATED BY DARKENED AREAS. ARROWS DENOTE CHEVRONS INDICATING DIRECTION OF EXIT AS INDICATED ON DRAWINGS. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE.
<b>₹</b>	LED EXIT SIGN WITH HIGH OUTPUT BATTERY CAPABLE OF POWERING DUAL REMOTE EGRESS HEADS AT BUILDING EXTERIOR. EXIT SIGN DOES NOT INCLUDE INTEGRAL EGRESS LAMP HEADS FOR INTERIOR. WALL OR CEILING MOUNTED, STEM DENOTES WALL MOUNTED. REFER TO LIGHT FIXTURE SCHEDULE FOR TYPE.
\$	120-277V, 20A SINGLE POLE LIGHT SWITCH. HEAVY DUTY TYPE. PROVIDE NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS.
\$D	120-277V, 20A DIMMER LIGHT SWITCH. WITH ON-OFF-PRESET FUNCTIONALITY. PROVIDE NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS. COORDINATE WITH LIGHTING VENDOR TO PROVIDE TESTED AND APPROVED DIMMER FOR LIGHT FIXTURE AND SOURCE BEING CONTROLLED. PROVIDE SEPARATE BACKBOX FOR EACH DIMMER SWITCH. SUBSCRIPT "3" DENOTES 3-WAY DIMMER TYPE.
\$м	120-277V, 20A, 1HP @ 120V MOTOR RATED TOGGLE SWITCH. HEAVY DUTY TYPE. PROVIDE NEUTRAL CONDUCTOR TO ALL SWITCH LOCATIONS. 30A/2HP RATED WHERE INDICATED ON DRAWINGS.
<b>⊚</b>	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.
+€	WALL MOUNTED LOW VOLTAGE OCCUPANCY SENSOR, DUAL TECHNOLOGY UNLESS OTHERWISE NOTED ON DRAWINGS. WATTSTOPPER DT-200/205 OR EQUIVALENT. "P" DENOTES PASSIVE INFRARED TYPE (WATTSTOPPER CX-100/105). 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. MOUNT 12" BELOW FINISHED CEILING UNLESS OTHERWISE NOTED ON DRAWINGS FOR ALL CEILINGS 12' AND UNDER.
HOC	WALL OR CEILING MOUNTED LOW VOLTAGE OCCUPANCY SENSOR WITH EXTENDED RANGE COVERAGE FOR USE IN HALLWAYS AND CORRIDORS. PASSIVE INFRARED, SENSOR SWITCH #HW13 OR EQUIVALENT. 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. MOUNT ON WALL 12" BELOW FINISHED CEILING OR BRACKET MOUNT TO CEILING AS INDICATED ON DRAWINGS.
[S##]	WALL MOUNTED DIGITAL NETWORK LIGHTING CONTROL SWITCH FOR USE WITH RELAY PANEL LIGHTING CONTROL SYSTEMS. QUANITY OF BUTTONS AND PROGRAMMING AS INDICATED ON DRAWINGS AND IN RELAY PANEL SCHEDULE. PROGRAMMING PER SCHEDULE UNLESS OTHERWISE DIRECTED BY OWNER. PROVIDE NETWORK CABLING LINKING SYSTEM SWITCHES, PANELS AND COMPONENTS AS REQUIRED BY MANUFACTURER. SEE RELAY LIGHTING CONTROL RISER DIAGRAM AND SPECIFICATIONS.
D##	WALL MOUNTED DIGITAL NETWORK DIMMER CONTROL STATION SWITCH FOR USE WITH CENTRAL DIMMING PANEL CONTROL SYSTEMS. SEE DIMMING CONTROL SCHEMATIC AND SCHEDULE FOR DEVICE AND CONTROL TYPE. PROGRAMMING PER SCHEDULE AND DRAWINGS UNLESS OTHERWISE DIRECTED BY OWNER. PROVIDE NETWORK CABLING LINKING SYSTEM CONTROL STATIONS, DIMMING PANELS AND OTHER COMPONENTS AS REQUIRED BY MANUFACTURER. SEE DIMMING CONTROL RISER DIAGRAM AND SPECIFICATIONS.

ELECTRICAL SYMBOL SCHEDULE - POWER

EXISTING 120V, 20A DUPLEX RECEPTACLE MOUNTED IN FLUSH FLOOR BOX.

SHALL NOT BE INSTALLED ABOVE FINISHED CEILINGS PER NEC.

GROUND FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.

120V, 20A DUPLEX RECEPTACLE, NEMA 5-20R. WALL MOUNTED, REFER TO TYPICAL MOUNTING HEIGHTS DETAIL. REFER TO ADDITIONAL NOTATIONS BELOW WHERE INDICATED

120V, 20A DUPLEX RECEPTACLE, NEMA 5-20R. WALL MOUNTED AT 42" AFF OR MINIMUM 6" ABOVE COUNTERTOP BACKSPLASH UNLESS OTHERWISE NOTED. REFER TO ADDITIONAL

NOTATIONS BELOW WHERE INDICATED ON DRAWINGS. "TV" INDICATES MOUNT ADJACENT TO

120V, 20A DUPLEX RECEPTACLE FLUSH MOUNTED IN FINISHED CEILING. SECURE BACKBOX

TO CEILING MEMBERS AND TO STRUCTURE AS REQUIRED. CEILING MOUNTED RECEPTACLES

ELECTRIC MOTOR OR EXHAUST FAN. PROVIDE LOCAL MEANS OF DISCONNECT PER NEC

INDICATED ON DRAWINGS OR IN KEYNOTES. PROVIDE SEPARATE RACEWAYS FOR POWER

GROUND FAULT CIRCUIT INTERRUPTER TYPE WITH CAST WEATHERPROOF IN-USE TYPE

1, #6 INSULATE
CONTINUOUS
COPPER WIRE,

TELEPHONE BACKBOARD DETAIL

WEATHER RESISTANT LISTED WITH "WR" LISTING ON FACE OF DEVICE BY FACTORY.

COVER. ALL RECEPTACLES LOCATED OUTDOORS OR EXPOSED TO THE ELEMENTS SHALL BE

2-2"C TO ABOVE

\_\_ ACCESSIBLE CEILING.

1, #6 INSULATED

STAPLE TO BOARD. TERMINATE ON HARGER

<del>--∤----</del>FLOOR LEVEL

SERVICE GROUND.

1. #6 INSULATED COPPER,

"C. TO MAIN ELECTRICAL

— CEILING

GBI14212GKT\* GROUNDING BUSBAR OR EQUIVALENT.

QUADRAPLEX RECEPTACLE

 $\mid$  AND CONTROL WIRING AS REQUIRED. 3/4"C MINIMUM FOR CONTROL OR SIGNAL CABLING.

RATED TO SUIT LOAD WHERE NOT FACTORY EQUIPPED. CONNECT AS REQUIRED.

PUSH PLATE OR OTHER CONTROL DEVICE AS REQUIRED TO OPERATE EQUIPMENT

POWFR

CATV OUTLET.

WIRING DEVICE TYPICAL NOTATIONS

BOARD NAME - PAINT WHITE.

8'H  $\times$  4'  $\times$  3/4" PLYWOOD—

PAINT GRAY WITH FLAME

INDICATED ON DRAWINGS.

2-4" C. OR AS REQUIRED TO

UTILITY SERVICE POINT. COORDINATE ──

BACKBOARD. BOLT TO WALL.

RETARDANT PAINT. LOCATION AS

24" BLOCK LETTERS

PROVIDE BUSHINGS (TYPICAL) — + ㅜㅜ

WITH UTILITY. PROVIDE

PULL STRINGS.

FIRE ALARM	
F	FIRE ALARM PULL STATION. SEE SPECIFICATIONS.
<b>∇</b> 15	FIRE ALARM HORN/STROBE. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS.
<u>0</u> 15	FIRE ALARM STROBE ONLY. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS.
<b></b>	FIRE ALARM CEILING MOUNTED HORN/STROBE. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS. WHITE HOUSING.
<b>○</b> 0	FIRE ALARM CEILING MOUNTED STROBE ONLY. NUMBER INDICATES CANDELA RATING. SEE SPECIFICATIONS. WHITE HOUSING.
SD)	CEILING MOUNTED SMOKE DETECTOR. SEE SPECIFICATIONS. "RB" DENOTES TO PROVIDE WITH RELAY BASE FOR AUXILIARY OUTPUT TO INDICATOR LIGHT OR OTHER DEVICE AS INDICATED.
(HD)	CEILING MOUNTED HEAT DETECTOR. SEE SPECIFICATIONS.
	DUCT SMOKE DETECTOR WITH SAMPLING TUBE. FURNISHED BY DIV. 16, INSTALLED BY DIV. 15 ON RETURN OR RETURN AND SUPPLY AS REQUIRED, SEE DIV 15 DRAWINGS AND COORDINATE. "WP" DENOTES WEATHERPROOF HOUSING FOR OUTDOOR UNITS. PROVIDE REMOTE TEST BUTTON AND INDICATOR LED IN CEILING OF CORRIDOR.
FAA	FIRE ALARM REMOTE ANNUNCIATOR PANEL. SEE SPECIFICATIONS.
	MAIN FIRE ALARM CONTROL PANEL. SEE RISER DIAGRAM AND SPECIFICATIONS.
DH	MAGNETIC DOOR HOLD OPEN DEVICES. INTERFACE WITH FIRE ALARM TO RELEASE IN THE EVENT OF ALARM.
ELE	ECTRICAL SYMBOL SCHEDULE - ACCESS CONTROLS/SECURITY
ACCESS CONTROL	L/SECURITY
	SECURITY CAMERA LOCATION. PROVIDE 3/4"C WITH PULL STRING TO ELECTRICAL ROOM.

PROVIDE BACKBOX PER ACCESS CONTROL/SECURITY VENDOR REQUIREMENTS.

ELECTRICAL SYMBOL SCHEDULE - COMMUNICATIONS

DETAIL. PROVIDE 1"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING.

COMBINATION DATA/TELEPHONE OUTLET LOCATION. REFER TO TYPICAL MOUNTING HEIGHTS

WALL MOUNTED TELEPHONE OUTLET LOCATION, MOUNTED AT COUNTERTOP HEIGHT OR AT 48" AFF WHERE NOT LOCATED ABOVE A COUNTERTOP UNLESS OTHERWISE NOTED ON

SAME AS ABOVE EXCEPT MOUNTED AT COUNTERTOP HEIGHT. MOUNT AT 42" AFF OR MINIMUM 6" ABOVE COUNTERTOP BACKSPLASH UNLESS OTHERWISE NOTED ON DRAWINGS.

DRAWINGS. PROVIDE 3/4"C WITH PULL STRING TO ABOVE ACCESSIBLE CEILING.

ELECTRICAL SYMBOL SCHEDULE - FIRE ALARM

SPEAKER CEILING MOUNTED. STEM INDICATES WALL MOUNTED.

MICROPHONE JACK WALL MOUNTED.

AV CONTROLS WALL MOUNTED.

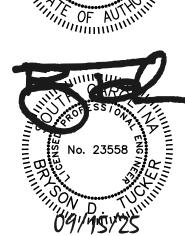
COMMUNICATIONS

SP SPH

A AMPERE AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AF ARC FAULT CIRCUIT INTERRUPTER BKR BREAKER		ABBREVIATIONS
AFF ABOVE FINISHED FLOOR AFG ABOVE FINISHED GRADE AF ARC FAULT CIRCUIT INTERRUPTER BKR BREAKER		ABBREVIATIONS
CATV CATV CATV CCABLE TELEVISION CIRCUIT EC EF EXHAUST FAN ELECTRICAL CONTRACTOR EXHAUST FAN ELECTRICAL METALLIC TUBING FAN COIL UNIT GC GF GROUND FAULT CIRCUIT INTERRUPTER GRS GALVANIZED RIGID STEEL CONDUIT HID HIGH INTENSITY DISCHARGE IG DEVICE SHALL HAVE ISOLATED GROUND INTERMEDIATE METALLIC CONDUIT JUNCTION BOX KVA KILOVOLT AMPERES KW KILOWATT MAX MAXIMUM MC MC MECHANICAL CONTRACTOR MDP MIN MINIMUM MFR MANUFACTURER NMC V VOLT NEC SWBD TYP UNO UNLESS NOTED OTHERWISE WC XFMR TRANSFORMER	AFF AFG AFR AFG AFR CATV CEFT FCUC GFS H IG IMOX MAC MDP MFR NM	ABOVE FINISHED FLOOR ABOVE FINISHED GRADE ARC FAULT CIRCUIT INTERRUPTER BREAKER CONDUIT CABLE TELEVISION CIRCUIT ELECTRICAL CONTRACTOR EXHAUST FAN ELECTRICAL METALLIC TUBING FAN COIL UNIT GENERAL CONTRACTOR GROUND FAULT CIRCUIT INTERRUPTER GALVANIZED RIGID STEEL CONDUIT HIGH INTENSITY DISCHARGE DEVICE SHALL HAVE ISOLATED GROUND INTERMEDIATE METALLIC CONDUIT JUNCTION BOX KILOVOLT AMPERES KILOWATT MAXIMUM MECHANICAL CONTRACTOR MAIN DISTRIBUTION PANEL MINIMUM MANUFACTURER NONMETALLIC—SHEATHED CABLE VOLT 2020 NATIONAL ELECTRICAL CODE, (NFPA 70) SWITCHBOARD TYPICAL UNLESS NOTED OTHERWISE WATER COOLER

DEVICE	DUPLEX	DUPLEX	DATA /TELEDIJONE	DATA /TELEDIJONE	FIRE ALARM HORN STROBE/	FIRE ALARM	LIGHT SWITCH OR	LIGHT SWITCHES AND OTHER LIGHTING
DESCRIPTION	RECEPTACLE	RECEPTACLE	DATA/TELEPHONE	DATA/TELEPHONE	FIRE ALARM STROBE	PULL STATION	OTHER LIGHTING CONTROL DEVICE	CONTROL DEVICES SHALL ALWAYS BE LOCATED ON THE STRIKE SIDE OF THE
DEVICE SYMBOL	P	#	∇	4	<u>å</u> /å	E	\$	DOORWAY UNLESS NOTED OTHERWISE ON THE PLANS OR IN THE SPECIFICATIONS.
FINISHED CEILING		     	       			 	       	FINISHED CEILING
LOCATION OF DEVICES RELATIVE TO FLOOR, CEILING AND DOOR OPENINGS.		    -  -  -	       	 	ENTIRE LENS SHALL BE NO LESS THAN 80" AND NO MORE	       		STRIKE SIDE
		   	   	 	THAN 96" AFF.	 		HINGE SIDE
		               	       				3"	OUTSIDE EDGE OF DOOR CASING  DOOR CASING
			;       			 	i ! !	0
		42" OR   MIN. 6" ABOVE   COUNTER   BACKSPLASH 	           	42" OR     MIN. 6" ABOVE     COUNTER     BACKSPLASH   				
FINISHED FLOOR	16 <b>"</b>		   16" 					FINISHED FLOOR

NOTE: WHERE WALL BLOCKING INTERFERES WITH EXACT MOUNTING HEIGHTS, CONTRACTOR SHALL COORDINATE WITH ARCHITECT FOR EXACT MOUNTING HEIGHT PRIOR TO ROUGH-IN. **DEVICE MOUNTING HEIGHTS** 





ETi #2503-08516

**DESIGN INITIATIVE GROUP** 

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1070 DAVIDSON ROAD

LEXINGTON, SC 29072

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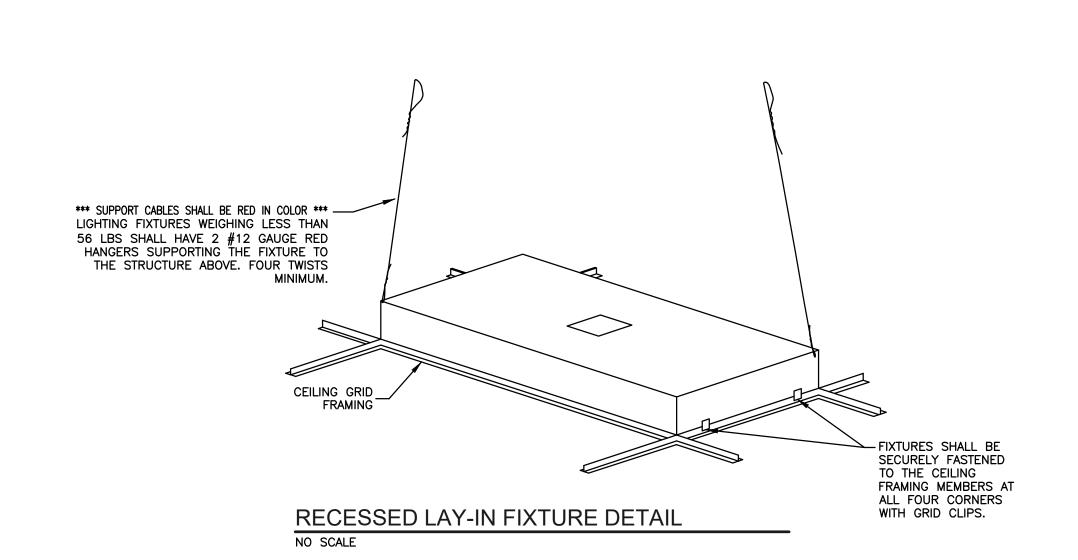
LIGHT FIXTURE SCHEDULE						
TYPE	DESCRIPTION	CATALOG NUMBER	LAMPS	WATTAGE	NOTES	
A35	2'X4' BACKLIT TROFFER PANEL LED, SELECTABLE LUMENS 5500/4400/3300, SELECTABLE CCT 35K/40K/50K.	COLUMBIA LIGHTING #CBT24-LSCS	BY MFR.	45W		
B33	2'X2' BACKLIT TROFFER PANEL LED, SELECTABLE LUMENS 4400/3300/2750, SELECTABLE CCT 35K/40K/50K.	COLUMBIA LIGHTING #CBT22-LSCS SET TO 3300 LUMENS	BY MFR.	30W		
M30	PENDANT MOUNTED 30" SIZE S49. 5000 LUMENS.	BROWNLEE LIGHTING INC #2680-30-BU-S49-WH-35K	BY MFR.	45W		
D12	6" LED DOWNLIGHT, 1200 LUMENS.	ELITE LIGHTING #HH6-LED-1200L-DIM10-MVOLT-WD- 40K-90-HH6-6501-CL-WH	BY MFR.	12W		
WP	EXTERIOR LED WALL PACK. SELECTABLE LUMENS 1500/2800/4000, SELECTABLE CCT 30K/40K/50K SET TO 4000L	ELITE LIGHTING #OWP-FC-116-LED-1500L/2800L/4000L -DIM10-MVOLT-30K/40K/50K-BZ	BY MFR.	12W		
D10	6" ROUND SURFACE LED DOWNLIGHT, WHITE TRIM COLOR, UL DAMP AND WET LOCATION LISTED, 120V, 1000 LUMENS.	ELITE LIGHTING #RL678-1000L-DIMTR-120-40K-90- W-WH	BY MFR.	14W		
፟ 🕏	LED EXIT LIGHT, 90 MINUTE MINIMUM BATTERY BACKUP. *HOUSING AND LETTERING COLOR AS DIRECTED BY ARCHITECT.	EMERGI-LITE #ELX SERIES	BY MFR.	2.5W	CONNECT TO LINE SIDE OF ANY SWITCHING VIA LIGHTING CIRCUIT SERVING SAME AREA.	
	LED EXIT LIGHT AND REMOTE DUAL HEAD LED EGRESS FIXTURE. 90 MINUTE MINIMUM BATTERY BACKUP. *HOUSING AND LETTERING COLOR AS DIRECTED BY ARCHITECT.	EMERGI-LITE #ELXN400 REMOTE SERIES WITH EF12	BY MFR.	3.3W	CONNECT TO LINE SIDE OF ANY SWITCHING VIA LIGHTING CIRCUIT SERVING SAME AREA.	
	DUAL LAMP EMERGENCY EGRESS FIXTURE. MOUNT 7'-6" AFF. WHEN SHOWN AS WALL MOUNTED. 90 MINUTE MINIMUM BATTERY BACKUP. ALLOWS FOR 34FT. SPACING.	EMERGI-LITE #CM-PB-EL SERIES	BY MFR.	1.6W	CONNECT TO LINE SIDE OF ANY SWITCHING VIA LIGHTING CIRCUIT SERVING SAME AREA.	

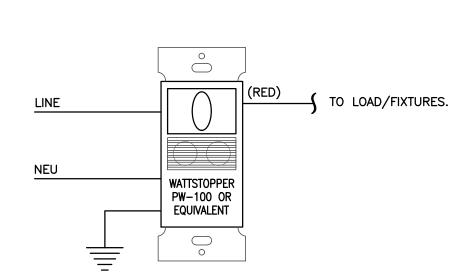
OTHER MANUFACTURERS ACCEPTABLE WITH PRIOR APPROVAL OF ENGINEER. SEE SPECIFICATIONS FOR SUBMITTAL REQUIREMENTS. HALF SHADED FIXTURES AND/OR LABELED "EB" SHALL BE EQUIPPED WITH 90 MINUTE MINIMUM EMERGENCY BATTERY PACK CONNECTED LINE SIDE OF ANY SWITCHING, RELAY, OR OTHER CONTROL DEVICE. EMERGENCY FUNCTION SHALL BE CONNECTED TO NORMAL LIGHTING CIRCUIT SERVING SAME AREA.

FIXTURES LABELED "UNS" SHALL BE CONNECTED LINE SIDE OF ANY SWITCHING, RELAY, OR OTHER CONTROL DEVICE. CONNECT TO NORMAL LIGHTING CIRCUIT SERVING SAME AREA. LAMPING COLOR TEMPERATURE PER ARCHITECT AND OWNER REQUIREMENTS.

	NAME SYST TYPE	EM : NORMAI				MAIN	AMPS:	MLO	40V/1ø						
		RRUPTING RATING :	AL ELECTRIC	•			ITING :								
	CKT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
	1	R-104 REC-HALLWAY RE	С			20	$\overline{}$	Α		20				R-112 REC - HALLWAY REC	2
	3	R-103 REC-COFFE MAC				20	$\overline{}$	В		20				R-102 REC	4
	5	R-103				20	$\overline{}$	Α		20				R-103	6
ATCHING DENOTES ———	<b>●</b> 7	R-101 REC				20	$\overline{}$	В	$\overline{}$	20				R-103 DRINK MACH	8
XISTING (TYP.)	9	R-105,107 REC				20	$\overline{}$	Α	$\overline{}$	20				R-103 REC WC	10
<b>(</b>	11	LIGHTS HALLWAY				20	$\overline{}$	В	$\overline{}$	20				R-107,109 REC	12
	13	R-106,108,110 LIGHTS				20	$\overline{}$	Α	$\overline{}$	20				R-104 LIGHTS	14
	15	R-112 LIGHTS				20	$\overline{}$	В	$\overline{}$	20				R-101 LIGHTS	16
	17	R-102 LIGHTS L				20	$\overline{}$	Α	$\overline{}$	20				R-109 LIGHTS	18
	19	R-102 LIGHTS R				20		В	(	20				R-103,105,107 LIGHTS	20
	21	R-106 REC				20		Α	(					PREPARED SPACE	22
	23	RECEPT; IT	12	1/2	0.4	20		В	(	20				HANDICAP LIFT	24
	25	RECEPT; IT	12	1/2	1.0	20		Α	$\overline{}$	20L		1/2	12	FACP	26
	27	PREPARED SPACE		1			$\overline{}$	В	$\overline{}$					PREPARED SPACE	28
	29	TRANE CONTROLS					$\overline{}$	Α	$\overline{}$					PREPARED SPACE	30
	CON	INECTED LOAD, (KVA):1.4	+ EX	-											
	- 5	SUBSCRIPT "L" DENOTES TO	LABEL BR	EAKER	and Pi	ROVIDE	LOCKI	NG PRO	OVISIONS	PER	NFPA	72			

nter	RUPTING RATING :	1			MOUN	ITING :	SURFA	:40V/1ø CE						
KT.	CIRCUIT NAME	WIRE	COND	LOAD	BKR.	POLES	PHASE	POLES	BKR.	LOAD	COND	WIRE	CIRCUIT NAME	CKT.
1	lights 2nd row				20		Α	$\overline{}$	20				lights 3rd row	2
3	lights 1st row				20		В	$\overline{}$	20				lights 4th row	4
5	lights 5th row				20	$\cap$	Α	$\overline{}$	20				lights 6th row	6
7	4 ea rec left side				20	$\cap$	В	$\overline{}$	20				4 ea door lights	8
9	2 ea rec stage				20	$\cap$	Α	$\overline{}$	20				attic lights	10
11	2 ea rec stage				20	$\cap$	В	$\overline{}$	20				4 ea door lights	12
13	light & rect basement				20	$\cap$	Α	$\overline{}$	20				stage lights	14
15	screen				20	$\cap$	В	$\overline{}$	20				2 ea lights rec rms end	16
17	rec telephone rm (stage)				20	$\cap$	Α	$\overline{}$	20				phone board	18
19	rec phone rm (btwn doors)				20	$\cap$	В	$\overline{}$	20				telephone room	20
21	projector rec				20	$\cap$	Α	$\overline{}$	20				telephone room server	22
23	· VIVE HUB	12	1/2	0.1	20	(	В	(	20				telephone room server	24
25	RECPETS	12	1/2	0.6	20	(	Α	(	20				telephone room server	26
27	space					$\cap$	В	$\overline{}$	30				240 volt	28
29	space					$\overline{}$	Α	$\cap$	30				240 VOIL	30
31	spare				20	$\overline{}$	В	$\overline{}$	20				Phone Rm UPS	32
33	projector rec				20	$\cap$	Α	$\cap$					Thone Kill of 5	34
35	spare				20	$\overline{}$	В	$\overline{}$	20				spare	36
37	space					$\overline{}$	Α	$\overline{}$					space	38
39	space					$\cap$	В	$\overline{}$					space	40
41	space					$\cap$	Α	$\overline{}$					space	42

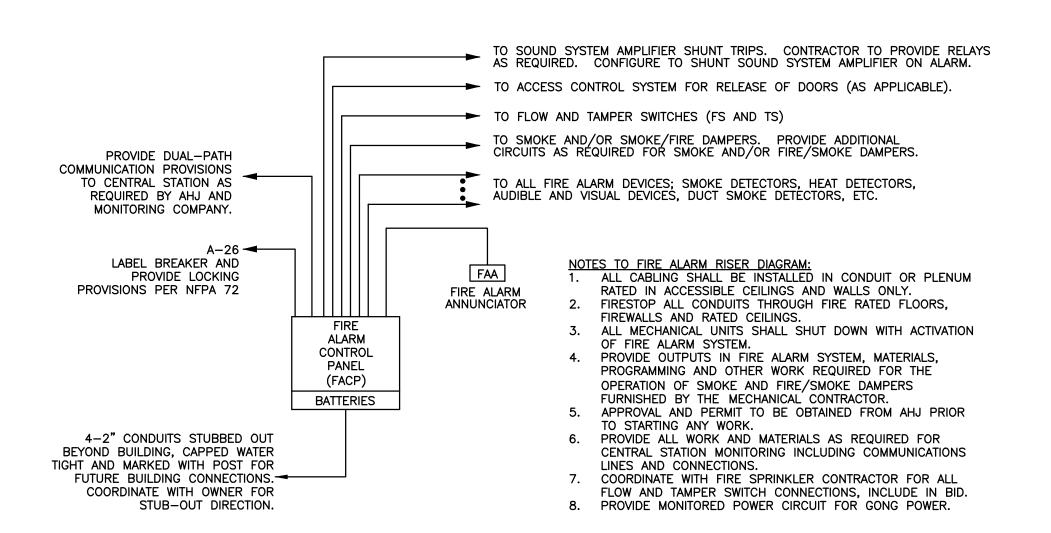




AUTOMATIC WALL SENSOR SWITCH \$\text{TYPICAL SINGLE RELAY WIRING SCHEMATIC} NO SCALE

NOTE 1: SCHEMATIC IS REPRESENTATIVE OF WATTSTOPPER PW/DW-100 AND DSW-100. CONNECTION REQUIREMENTS AND COLOR CODING 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.



FIRE ALARM SYSTEM RISER DETAIL
NO SCALE

ENGINEERING, LL 5725 Bush River Road Columbia, SC 29212 803.233.9396 (Phone) 803.233.4371 (Fax) Bryson D. Tucker, P.E.

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, channeling, 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: Raceways (To include raceways for conductors and cables, but also empty for designated signal systems and future uses.)
- Electrical Distribution System.
- Exterior and Interior Lighting Systems. Exterior and Interior Power Systems. Wiring Devices.
- Telephone Raceway System Data Raceway System.
- Connection and installation of Equipment Furnished Under Other Divisions of the Specification
- Fire Alarm System. 10. 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 affectina the electrical work; however, field measurements take precedence over dimensioned drawinas. 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).
- 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 of 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

- Lighting fixtures Lighting control systems including relay panel and automatic switches Safety switches
- Fire Alarm System Basic materials; wire, conduit, fittings, wiring devices
- Fuses; include current limiting characteristics
- 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 cutsheets, 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. Lighting vendor shall submit photometrics (point-to-point on floor plans) with comparison to specified fixtures as requested by Engineer during the review process. 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 may not indicate all of the parts, pieces and systems required for a complete and operating installation. If 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
- Rigid metal conduit and fittings 2. Electrical metallic tubing and fittings
- 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 and in inaccessible ceiling spaces. 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

- 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: . Building wire. 2. Wiring connections and terminations.
- Communications cabling as specified on drawings 4. Fire alarm system cabling.
- B. Feeders and Branch Circuits Larger Than 6 AWG: Copper, stranded conductor, 600 volt insulation, THHN. 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 arade) shall be listed for that use. THWN-2 or equivalent.

- C. All cables shall be color coded. Color coding shall be as follows:
  - 120/240 Volt Phase White Neutral
  - Green Ground

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.

### 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 Seymore 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

C. Ground Fault receptacle shall be HBL #GF5362 or HBL #GF5362TR (where required).

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.

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: . Provide over—sized stainless—steel cover plates for all flush mounted devices.

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.

### 6. 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 raceways 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 colored insulation to connect to the grounding terminal of the receptacle.

#### 8. TESTING

- GUARANTEE OF WORK, EQUIPMENT AND MATERIALS The complete system shall be free of faults, short circuits, grounds and open circuits. Balance loads across phases to obtain minimum neutral current in feeders and branch circuits. 2. The Electrical Contractor shall perform inspections and test as herein specified. The Electrical Contractor shall provide all material, equipment, labor and supervision to perform such tests and inspections. 3. It is the intent of these tests to assure that all tested electrical equipment and systems are operational and within industry and the
- manufacturer's tolerances and is installed in accordance with the design Specifications. The test and inspections shall determine suitability Written documentation of the tests and inspections shall be provided and shall include the company name performing the work, project name, date and time of tests, weather and humidity
- B. Systems and equipment are to be tested and operated to verify compliance with the requirements of the contract documents and Equipment, systems, conductors and devices to be tested are as follows:
- Power Distribution Equipment shown on the one-line (Power Riser) diagram. Proper torque values on lugs and connectors
- Proper operation of equipment ground fault protective devices. Conductors - Conductors rated 100 amperes and above
- Proper conductor and insulation type Insulation resistance test (Megger) at 1000 volts DC for 1 Minute or per cable manufacturer specifications.
- c. Minimum insulation resistance values shall not be less than fifty (50) megohms.
- 1. Test ground resistance using the attached rod technique (ART) or the fall of potential method according to IEEE 81 at the service
- Verify proper type and size of grounding conductors and proper ground connections If around resistance exceeds 10 ohms or values otherwise specified in the Specifications, equipment requirements or General or Special Conditions notify the Engineer immediately. The Electrical Contractor shall be responsible for providing alternate and/or additional means of grounding to reduce the ground resistance to 10 ohms or below at no additional cost.
- D. Grounding and Ground Fault Personnel Protection a. Test ground fault receptacles and ground fault branch circuit breakers.

b. Test ten (10) percent of all 120 volt receptacle outlets for proper wiring.

E. All devices which must be adjusted or set to operate on a schedule (time clocks, program mechanisms, etc.) shall be set prior to substantial completion to operate on schedules directed by the Owner. Instruct the owner on the proper operation of these devices.

### 10. FIRE ALARM SYSTEM

- This section of the specifications includes the furnishing, installation, and connection of the microprocessor controlled, addressable reporting fire alarm equipment required to form a complete coordinated system ready for operation with automatic reporting of alarms to a monitoring facility contracted with by the Owner. It shall include but not be limited to glarm initiating devices, glarm notification appliances, fire alarm control panel, auxiliary control devices, annunciators, power supplies, and wiring for a complete and operable system. The fire alarm system shall comply with requirements of NFPA standard No. 72 for protected premises signaling systems except as supplemented by this specification. The system shall be electrically supervised and monitor the integrity of all conductors. System shall
- 1. A new addressable reporting, microprocessor controlled fire detection system shall be installed in accordance with the specifications and drawings.
- Alarm, trouble and supervisory signals from all intelligent addressable reporting devices shall be encoded onto a Class B Signaling Line
- Circuit (SLC). b. Initiation Device Circuits (IDCs) shall be wired Class B. c. Notification Appliance Circuits shall be wired Class B.
- Built—in Strobe Synchronization w/ selective silence. Diaitized electronic signals shall employ check digits or multiple polling. f. A single ground or open on the system Signaling Line Circuit (SLC) shall not cause system malfunction, loss of operating

comply with all national, state and local adopted codes and requirements as well as requirements of AHJ.

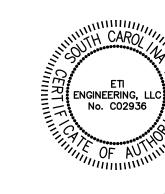
- power or the ability to report an alarm. 3. Alarm signals arriving at the main FACP shall not be lost following a power failure (or outage) until the alarm signal is processed and recorded
- C. Basic System Functional Operation When a fire alarm condition is detected and reported by one of the system initiating devices the following functions shall immediately
- A local piezo electric signal in the control panel shall sound. 3. A 80-character, backlit LCD display shall indicate all information associated with the Fire Alarm condition, including the type of alarm point and its location within the protected premises.
- 4. History storage equipment shall log the information associated with each new Fire Alarm Control Panel condition, along with time and 5. All system output programs assigned via control-by-event equations to be activated by the particular point in alarm shall be
- executed, and the associated System Outputs (alarm Notification Appliances and/or Relays) shall be activated. Shut down all HVAC equipment. Automatically notify the monitoring agency. Include any and all equipment required to accomplish this requirement. Any and all equipment shall comply with requirements of the monitoring agency as to automatic reporting.
- 8. Open all automatic opening doors as applicable. Provide interface with access control system. 9. Provide interface as applicable with all smoke dampers and/or combination smoke/fire dampers to close when the space that the duct that contains the damper is in alarm. Coordinate operational functions with the authority having jurisdiction to comply with all codes and local/state/national requirements. Coordinate with the HVAC contractor and the smoke and/or combination smoke/fire damper supplier to determine the connections required and furnish and install any and all equipment required to control the damper.
- 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, raceway 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.
- All work performed and all material and equipment furnished under this contract shall be free from defects and shall remain so for a period of at least one (1) year from the date of acceptance. The full cost of maintenance, labor and materials required to correct any defect during this one-year period shall be included in the submittal bid.
- Maintenance and testing shall be on a semi-annual basis or as required by the local AHJ. A preventive maintenance schedule shall be provided by the Contractor that shall describe the protocol for preventive maintenance. The schedule shall include: a. Systematic examination, adjustment and cleaning of all detectors, manual fire alarm stations, control panels, power supplies, relays, water flow switches and all accessories of the fire alarm system.
- b. Each circuit in the fire alarm system shall be tested semi-annually. c. Each smoke detector shall be tested in accordance with the requirements of NFPA 72 Chapter 7
- The specifications and standards listed below form a part of this specification. The system shall fully comply with these standards: 1. National Fire Protection Association (NFPA) — USA:
- No. 70 National Electrical Code (NEC) No. 72 Central Station Signaling Systems No. 72 Protective Signaling Systems
- No. 72 Automatic Fire Detectors No. 72 Notification Appliances for Protective Signaling Systems.
- No. 72 Testing Procedures for Signaling Systems. No. 101 Life Safety Code
- Underwriters Laboratories Inc. (UL) USA: No. 268 Smoke Detectors for Fire Protective Signaling Systems
- No. 864 Control Units for Fire Protective Signaling Systems No. 268A Smoke Detectors for Duct Applications. No. 521 Heat Detectors for Fire Protective Signaling Systems
- No. 464 Audible Signaling Appliances. No. 38 Manually Actuated Signaling Boxes.
- No. 346 Waterflow Indicators for Fire Protective Signaling Systems. No. 1971 Visual Notification Appliances for the hearing impaired.
- Local and State Building Codes 4. All requirements of the Authority Having Jurisdiction (AHJ)
- H. Equipment and Material System shall be by Simplex. Control panel shall be Simplex 4007ES series. Other manufacturers by prior approval only. Installing contractor shall be U.L. listed. Heat detectors in conditioned spaces shall be fixed temperature type with replaceable heat collector rated at 135 deg F U.N.O. Heat detectors in non-conditioned spaces shall be rate of rise and fixed temperature type with replaceable heat collector rated at
- 4. Horns shall be field adjustable to allow for adequate dB levels. Minimum 88dB at 10ft. Smoke Detectors and duct detectors shall be photoelectric type
- Provide duct smoke detectors as required by Mechanical plans and specifications, coordinate. 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. Color as directed by Architect. 8. Annunciator(s): Provide an 80 character alphanumeric remote annunciator for display of all system events. This display shall
- acknowledge, trouble acknowledge, signal silence and drill test. 9. All conductors, enclosures and devices shall be listed for the purpose in which they are being used. 10. Batteries shall be gel-cell type (two required). Batteries shall have capacity as required by Code.

duplicate the information displayed on fire alarm control panel and provide key switch protected functions of system reset, alarm

11. Provide document box per NFPA 72 with memory stick containing copy of programming and all record drawings and approved

4. Provide Record of Completion to Engineer and Owner described by NFPA 72.

Finished system shall comply with all applicable NFPA, IBC, IFC and local codes as well as requirements of local AHJ. 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 3. Provide minimum of four hours instruction to the Owner on proper operation of the system, this shall be scheduled at the Owner's









DESIGN INITIATIVE GROUP 1070 DAVIDSON ROAD LEXINGTON, SC 29072

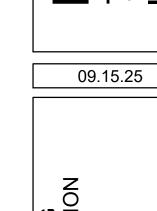
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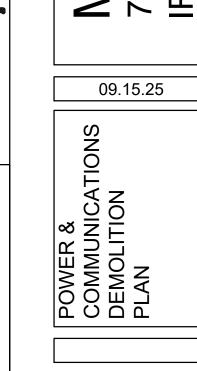
ENGINEERING, LL

5725 Bush River Road Columbia, SC 29212 803.233.9396 (Phone) 803.233.4371 (Fax)





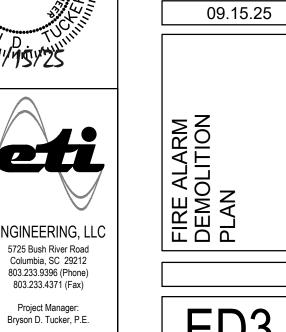


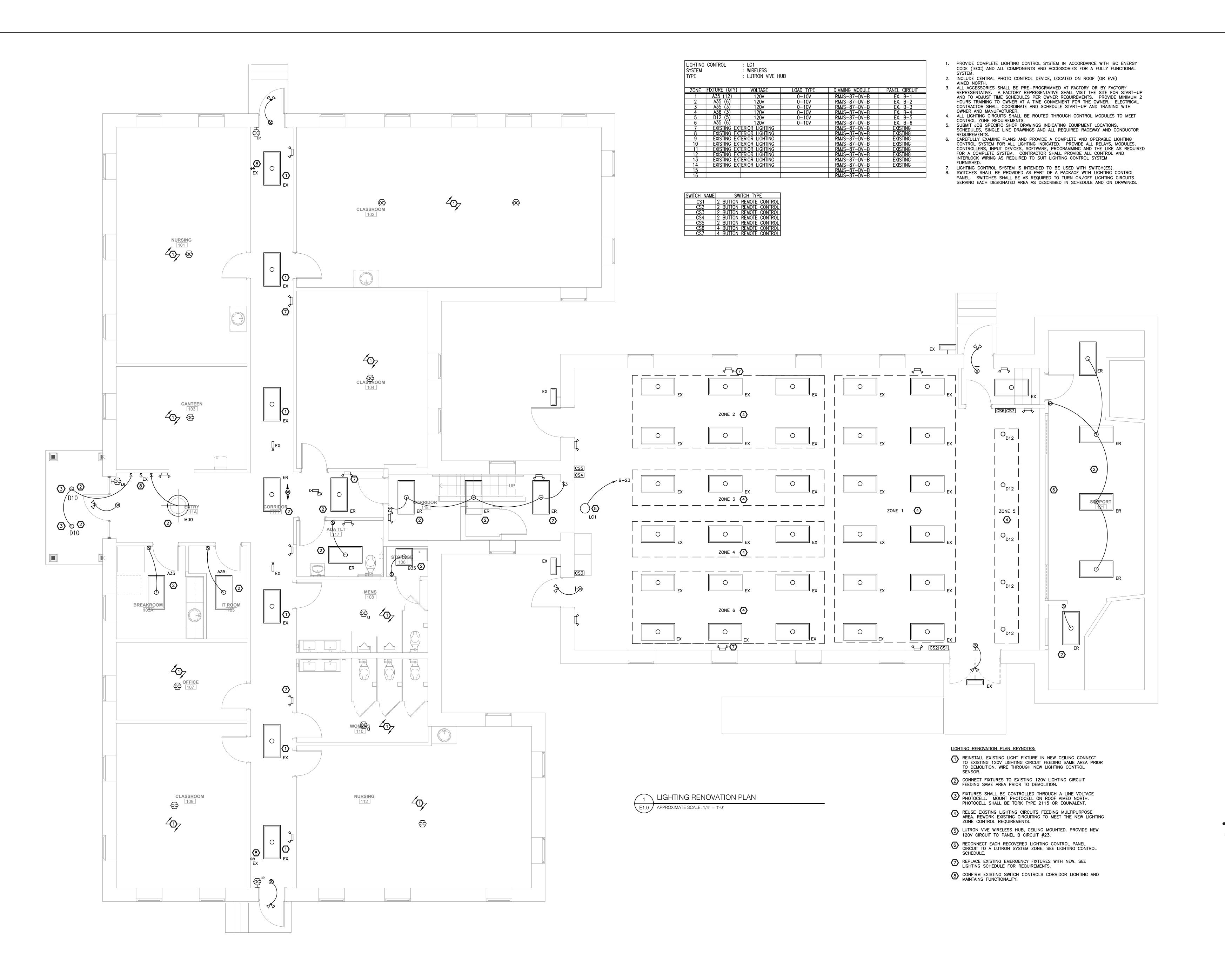




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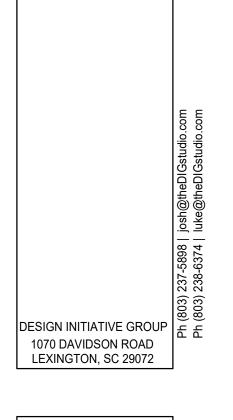
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ARBISON CE BUILDING RENOVATIONS

MTC HARB

FIRE ALARM RENOVATION PLAN

E3.0