

GENERAL NOTES			
GENERAL		RACEWAYS FOR TELECOMMUNICATION SYSTEMS:	
1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.		1. PROVIDE EMPTY CONDUIT SYSTEMS FOR TELECOMMUNICATION WORK, COMPLETE WITH PULL BOXES, OUTLET BOXES, AND CONDUIT AS INDICATED ON THE DRAWINGS.	
WIRING & RACEWAY:		2. PROVIDE MINIMUM INSIDE BENDING RADIUS OF 10 TIMES CONDUIT INSIDE DIAMETER FOR TELECOMMUNICATIONS RACEWAYS.	
1. THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT, RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.		3. WHEN COMPLETED THE CONDUIT SYSTEMS SHALL BE READY FOR THE INSTALLATION OF WIRING AND EQUIPMENT.	
2. ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.		4. FROM EACH OUTLET PROVIDE A 1" EMT EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSHED ELBOW.	
3. LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE; COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH "OFF" POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT RIGHT FOR HORIZONTAL MOUNTING.		MECHANICAL EQUIPMENT WIRING:	
4. LOCATE AND INSTALL ELECTRICAL EQUIPMENT, JUNCTION AND PULL BOXES, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.		1. UNLESS OTHERWISE INDICATED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED/FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED UNDER OTHER DIVISIONS AND INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.	
RACEWAY INSTALLATION:		2. POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTIONS, IS THE WORK OF THIS DIVISION.	
1. IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.		3. CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS, EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.	
2. UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT PROJECT REQUIREMENTS AND FIELD CONDITIONS.		4. PROVIDE 120 VOLT POWER TO ALL TEMPERATURE CONTROL PANELS (TCP'S) SUPPLIED AND INSTALLED BY DIVISION 23. USE EMERGENCY POWER SOURCES WHEN AVAILABLE. COORDINATE ALL POWER REQUIREMENTS AND PANEL LOCATIONS WITH DIVISION 23 TEMPERATURE CONTROLS CONTRACTOR.	
WIRING INSTALLATION:		5. COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.	
1. DO NOT USE WIRE SMALLER THAN NO. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:		COORDINATION DRAWINGS:	
A. 30 AMPERE CIRCUIT: NO. 10 P 40 AMPERE CIRCUIT: NO. 8 50 AMPERE CIRCUIT: NO. 6 60 AMPERE P CIRCUITS SHALL BE AS FOLLOWS:		1. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.	
LENGTH CIRCUIT WIRE SIZE HOME RUN WIRE SIZE CONDUIT SIZE (8 WIRES/CONDUIT)		A. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "REVIEWED" OR "FURNISH AS CORRECTED" PRIOR TO BEING USED AS BASIS FOR COORDINATION DRAWINGS.	
0' TO 50' #12 #12 3/4"		B. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:	
51' TO 100' #12 #10 3/4"		-MECHANICAL SHEET METAL	
101' TO 200' #10 #8 1"		-PLUMBING PIPING	
GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.		-MECHANICAL PIPING	
NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.		-SPRINKLER PIPING	
B. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 277 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:		-ELECTRICAL WORK	
LENGTH CIRCUIT WIRE SIZE HOME RUN WIRE SIZE CONDUIT SIZE (8 WIRES/CONDUIT)		2. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING IS RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COSTS INCURRED BY OTHER TRADES.	
0' TO 100' #12 #12 3/4"		3. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.	
100' TO 200' #12 #10 3/4"		4. SUBMIT FINAL SIGNED COORDINATION DRAWING TO ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.	
GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT.		5. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND RE-INSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.	
NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.		6. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUB-CONTRACTORS.	
2. DO NOT USE WIRE SMALLER THAN NO. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEM MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ARCHITECT.		7. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO CONFLICTS WILL NOT BEAR ADDITIONAL COST.	
3. WHERE GREATER THAN THREE (3) CURRENT-CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUCTOR DERATING AS REQUIRED BY NEC ARTICLE 310.		AS BUILT DRAWINGS	
4. CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.		1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.	
5. UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.		2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:	
6. THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS AT PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:		A. INCLUDE ALL CHANGES AND AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.	
A. LOADS ON PANEL BUSSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.		B. EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.	
GROUNDING INSTALLATION:		C. APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.	
1. EQUIPMENT GROUNDING		D. CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.	
A. INSTALL AN INSULATED GROUND CONDUCTOR, RUN IN THE RACEWAY WITH THE PHASE CONDUCTORS, FOR EACH FEEDER SERVING. PANELBOARDS, LIGHTING DIMMER BOARDS, MOTOR CONTROL CENTERS, MOTORS, EQUIPMENT AND APPLIANCES UNLESS OTHERWISE NOTED.		E. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.	
B. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.			
C. INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.			
2. TELECOMMUNICATIONS CLOSET GROUNDING			
A. PROVIDE A #4 AWG GROUND CONDUCTOR RISER IN 1" EMT CONDUIT TO EACH TELECOMMUNICATIONS CLOSET GROUNDING BUSBAR (TGB) FROM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB), AND TO MAIN SERVICE GROUNDING ELECTRODE SYSTEM.			
B. CONNECT THE GROUND RISER TO TMGB AND TGB'S PER TIA/EIA STANDARD 607 - 1994.			
C. PROVIDE ADDITIONAL #4 AWG GROUND CABLE CONNECTIONS FROM EACH TMGB AND TGB TO THE CLOSEST BUILDING STEEL AND TO THE GROUND BUS IN THE ELECTRIC PANEL FEEDING THE OUTLETS AND EQUIPMENT IN THE ASSOCIATED TELECOMMUNICATIONS ROOM/CLOSET.			
3. GROUND EACH TELECOMMUNICATIONS, FIRE ALARM, SECURITY, AND BMS SYSTEM EQUIPMENT AND CONTROL PANEL WITHIN EACH TELECOMMUNICATIONS ROOM/CLOSET TO THE ASSOCIATED CLOSET TMGB OR TGB WITH A #4 AWG CONDUCTOR PER TIA/EIA STANDARD 607 - 1994.			

DEMOLITION AND REMOVALS	
1. THE EXISTING FACILITY WILL BE OCCUPIED AND IN OPERATION DURING THE PERFORMANCE OF THE WORK.	
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING FEEDER OR BRANCH CIRCUIT SUPPLYING OCCUPIED FACILITIES, CONFER WITH THE OWNER, AND SCHEDULE A MUTUALLY AGREEABLE PERIOD OF INTERRUPTION.	
3. WHERE REPLACEMENT, RELOCATION OR MODIFICATION OF EXISTING EQUIPMENT IS INDICATED, PROVIDE AND MAINTAIN ALL TEMPORARY FEEDERS, CONNECTIONS, CIRCUIT PROTECTION, AND ANY OTHER MATERIALS AND APPURTENANCES REQUIRED TO MAINTAIN SERVICES TO OCCUPIED AREAS.	
4. NO WORK SHALL BE LEFT INCOMPLETE, NOR ANY HAZARDOUS SITUATION CREATED, WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S PRIOR WRITTEN PERMISSION.	
5. THE OWNER RESERVES THE RIGHT TO OPERATE ALL EXISTING ELECTRICAL AND MECHANICAL EQUIPMENT NOT INCLUDED IN THIS WORK, AND TO PERFORM ALL REQUIRED SERVICING AND REPAIRS TO SAME, AT ALL TIMES.	
6. IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED SHALL BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED OPERATIONS OF THE BUILDING.	
7. REMOVE, ABANDON, REROUTE, OR RELOCATE ANY CONDUIT, WIRING, LIGHTING FIXTURES, OUTLETS, AND OTHER ELECTRICAL ITEMS, WHICH ARE LAID BARE IN THE COURSE OF, OR INTERFERE WITH, THE ALTERATIONS. REMOVE ALL EXPOSED OUTLETS, CONDUIT, AND BRANCH CIRCUIT WORK, WHICH INTERFERE WITH THE ALTERATIONS.	
8. IT IS THE INTENTION OF THESE SPECIFICATIONS TO PROVIDE FOR THE CONTINUANCE OF ALL ELECTRICAL SERVICES PRESENTLY INSTALLED IN THE UNALTERED AREAS. PROVIDE ALL CONDUIT, WIRING, AND DEVICES NECESSARY TO MAINTAIN SERVICES TO THESE AREAS.	
9. COMPARE THE PLANS WITH THE EXISTING CONDITIONS TO DETERMINE THE AMOUNT OF WORK AFFECTED. REMOVE ALL UNUSED EXPOSED CIRCUIT WORK, OUTLETS, FIXTURES AND THE LIKE NOT REQUIRED BY THE ALTERATIONS.	
10. ALL MATERIALS REQUIRED TO BE REMOVED AND NOT REINSTALLED UNDER THIS DIVISION OF THE WORK, UNLESS OTHERWISE INDICATED, SHALL BECOME THE PROPERTY OF THE CONTRACTOR, AND SHALL BE REMOVED FROM THE SITE.	
11. WHERE FEEDERS AND BRANCH CIRCUITS OR DEVICES AND EQUIPMENT ARE INDICATED TO BE REMOVED, CONDUCTORS AND CABLES SHALL BE COMPLETELY REMOVED BACK TO THEIR SOURCE. EXPOSED OR ACCESSIBLE CONDUITS SHALL BE REMOVED COMPLETELY. CONDUITS EMBEDDED IN CONCRETE OR MASONRY SHALL BE CUT OFF FLUSH AND THE SURFACE PATCHED SMOOTH AND LEVEL.	
12. REMOVED MATERIALS SHALL BE DISPOSED OF USING LICENSED CARTING SERVICE.	
13. HAZARDOUS MATERIALS - CONTAINING PCB'S (BALLASTS), AND THE LIKE SHALL BE DISPOSED OF BY AN EPA APPROVED, LICENSED DISPOSAL SERVICE. CONTRACTOR SHALL OBTAIN AND HAVE ON FILE, AFFIDAVIT, AND RECEIPTS STATING HOW AND WHERE THE WASTE WAS DISPOSED OF OR CONVERTED.	
14. CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT IN OR ON WALLS THAT ARE TO BE REMOVED - MAINTAIN CONTINUITY OF ALL EXISTING BRANCH CIRCUITRY TO EXISTING ROOMS NOT BEING RENOVATED. REWIRE ALL EXISTING BRANCH CIRCUITS (THAT ARE TO REMAIN) AS REQUIRED. REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR WALLS BEING REMOVED - REFER TO CONSTRUCTION SCHEDULE FOR TIME DELAY.	
15. CONDUIT IN EXISTING OR NEW CEILINGS THAT IS NOT INTENDED FOR REUSE SHALL BE REMOVED BACK TO THE PANEL FROM WHICH IT ORIGINATES.	
16. CONDUCTORS THAT ARE NOT DEEMED REUSABLE SHALL BE REMOVED BACK TO THE NEAREST JUNCTION BOX. WHERE THE ENTIRE CIRCUIT IS TO BE REMOVED, THE CONDUCTORS SHALL BE REMOVED BACK TO THE PANELBOARD FROM WHICH THEY ORIGINATE.	
17. OUTAGES OF EXISTING ELECTRICAL (LIGHTING, POWER, AND SIGNAL) SYSTEMS NECESSITATED BY WORK OF ALL TRADES SHALL BE IN ACCORDANCE WITH FIELD SCHEDULES BY THE GENERAL CONTRACTOR AND OWNER - INCLUDE ALL ELECTRIC WORK OVERTIME AND SUPERVISION TO COMPLY - CONTRACTOR SHALL OBTAIN OWNER'S GENERAL CONTRACTORS APPROVAL PRIOR TO DISRUPTING EXISTING ELECTRICAL SYSTEM.	
18. CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING SYSTEMS AND SYSTEM EQUIPMENT FEEDERS WHICH MAY BE DISRUPTED FOR WORK OF ANY TRADE.	
19. CONTRACTOR TO MAINTAIN CONTINUITY AND ACCESSIBILITY OF ALL EXISTING ELECTRICAL (POWER, LIGHTING, AND SIGNAL) SYSTEMS. EQUIPMENT FEEDERS AND BRANCH CIRCUITS ON FLOORS OR AREAS THAT ARE NOT AFFECTED BY DEMOLITION OR NEW CONSTRUCTION - REFER TO CONSTRUCTION SCHEDULE FOR ADDITIONAL INFORMATION.	
20. ANY EXISTING ELECTRICAL WORK WHICH IS PULLED OUT OR CUT AWAY SHALL BE REMOVED FROM THE SITE AS DIRECTED BY THE GENERAL CONTRACTOR AND THE OWNER.	
21. EXISTING ELECTRICAL EQUIPMENTS WHICH IS NOT TO BE REUSED SHALL BE REMOVED FROM DRYWALL PARTITIONS, ANY OPENING IN EXISTING PARTITIONS LEFT BY THE REMOVAL OF EXISTING ELECTRICAL EQUIPMENT SHALL BE PATCHED BY THIS CONTRACTOR WITH MATERIALS TO MATCH EXISTING.	
22. FOR PURPOSES OF THE CONTRACT, WHAT IS NOTED OR SHOWN ON DRAWINGS INDICATES THE SCOPE OF WORK REQUIRED AND QUALITY OF MATERIALS REQUIRED.	
23. CONTRACTOR TO EXAMINE ALL CONTRACT DOCUMENTS AND PERFORM ALL DEMOLITION BOTH FOR AREAS BEING RENOVATED AND FOR AREAS WHICH MUST BE REWORKED TO PERMIT THE INSTALLATION OF WORK BY THE VARIOUS TRADES.	
24. CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE EXTENT OF DEMOLITION AND REMOVALS PRIOR TO THE SUBMISSION OF BIDS. NO CONSIDERATION SHALL BE GIVEN FOR FAILURE TO VISIT THE SITE.	
25. CONTRACTOR SHALL UTILIZE ALL THE BREAKERS IN THE EXISTING PANELS THAT BECOME AVAILABLE WHEN BRANCH CIRCUITS ASSOCIATED WITH THEM ARE DISCONNECTED AND REMOVED DUE TO DEMOLITION OF THE ELECTRICAL WORK.	

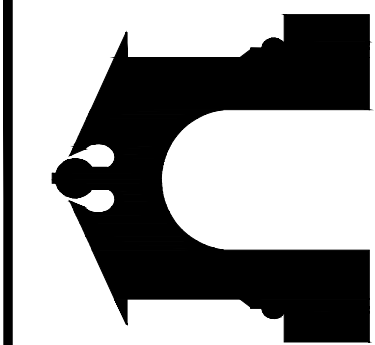
LIGHT FIXTURE NOTES	
1. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND INTERIOR ELEVATIONS FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES.	
2. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND/OR COORDINATE ALL FIXTURE TRIMS PRIOR TO PURCHASE OF FIXTURES.	
3. ALL FLUORESCENT BALLAST'S SHALL BE ELECTRONIC TYPE AND SUITABLE FOR LAMPS SERVED. ALL FIXTURES SHALL BE PROVIDED WITH ONE BALLAST UNLESS OTHERWISE INDICATED.	
4. ALL COMPACT FLUORESCENT FIXTURE SHALL BE PROVIDED WITH HIGH POWER FACTOR BALLASTS.	
5. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING HARDWARE AND LAMPS.	
6. ALL NEW LIGHT FIXTURES SHALL MATCH THE APPEARANCE, VOLTAGE, LAMP TYPE AND COLOR OF THE EXISTING FIXTURES.	

ELECTRICAL SYMBOLS	
KR1	FLUORESCENT LIGHT FIXTURE, LETTER INDICATES TYPE (TYPICAL)
	EMERGENCY LIGHTING BATTERY UNIT W/HEADS
	DUPLEX CONVENIENCE RECEPTACLE - 18" AFF U.O.N.
	DUPLEX RECEPTACLE ON CEILING FOR CEILING PROJECTOR
	FLOOR MOUNTED QUAD CONVENIENCE RECEPTACLE
	QUAD CONVENIENCE RECEPTACLE - 18" AFF U.O.N.
	GROUND FAULT INTERRUPTING RECEPTACLE
S	SINGLE POLE SWITCH
S <sub>D</sub>	WALL MTD DIMMER SWITCH
S <sub>vc</sub>	WALL MTD VACANCY SENSOR WITH MANUAL OVERRIDE
	MOTORIZED DOOR PUSH PLATE
	FIRE ALARM HORN/STROBE - 80" AFF U.O.N.
	FIRE ALARM STROBE - 80" AFF U.O.N.
	FIRE ALARM MANUAL PULL STATION - 48" AFF U.O.N.
	SMOKE DETECTOR
	HEAT DETECTOR
	FLUSH MOUNTED PANEL BOARD
	SURFACE MOUNTED PANEL BOARD
	BRANCH CIRCUIT HOMERUN (X= PANEL, #=CIRCUIT NO.)
	SIMPLEX DROP LOCATION - 1 DATA - 18" AFF U.O.N
	DUPLEX DROP LOCATION - 2 DATA - 18" AFF U.O.N

ABBREVIATIONS	
A	AMPERES
AFF	ABOVE FINISHED FLOOR
C	CONDUIT
CB	CIRCUIT BREAKER
E	EMERGENCY
E.C.	ELECTRICAL CONTRACTOR
ER	EXISTING RELOCATED
ETR	EXISTING TO REMAIN
ETBR	EXISTING TO BE RELOCATED
JB	JUNCTION BOX
MB	MAIN BREAKER
MTD.	MOUNTED
N.I.C.	NOT IN CONTRACT
N.T.S.	NOT TO SCALE
U.O.N.	UNLESS OTHERWISE NOTED

ELECTRICAL DRAWING LIST	
DRAWING NUMBER	DRAWING DESCRIPTION
E-01	COVER SHEET - ELECTRICAL
ED-1	DEMOLITION PLAN - ELECTRICAL
ED-2	DEMOLITION PLAN - LIGHTING
E-1	FLOOR PLAN - ELECTRICAL
E-2	FLOOR PLAN - LIGHTING
E-3	SCHEDULES AND DETAILS - ELECTRICAL
E-4	SPECIFICATIONS - ELECTRICAL

LIGHTING FIXTURE SCHEDULE				
TYPE	LAMP	VOLTAGE	MOUNTING	DESCRIPTION
	(2) 9W LED	120/277V	WALL SURFACE	COMPACT, SELF CONTAINED EMERGENCY LIGHTING UNIT WITH INJECTION MOLDED ABS HOUSING
A	LED	120/277V	WALL SURFACE	EVENLITE PHOENIX#P4E100-PW129 THERMOPLASTIC "IN USE" SIGNAGE LITHONIA LIGHTING #LQM P 1 R 120/277 EL N SW09



# H-WING 2nd FLOOR

## LES PAUL STUDIO

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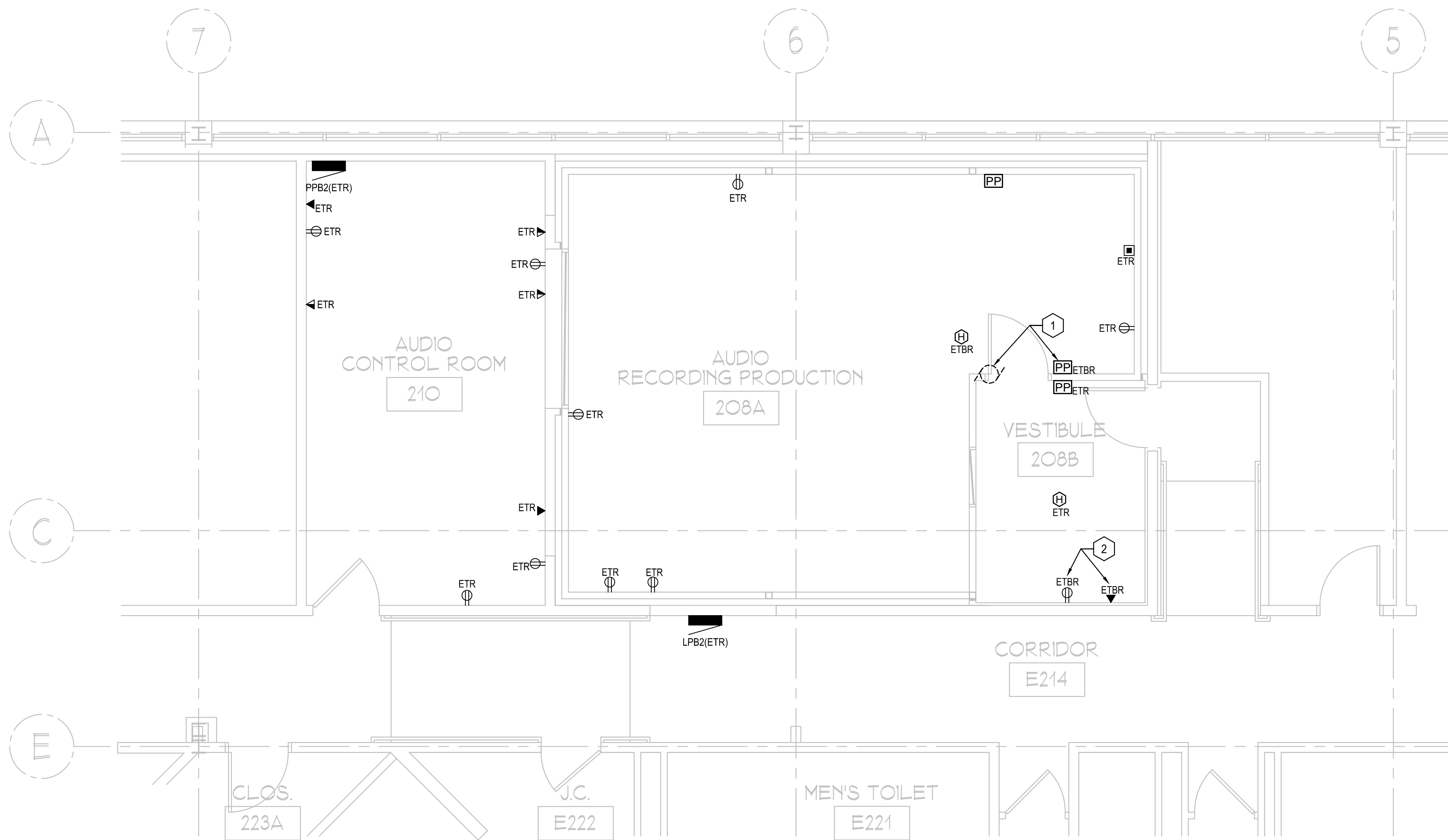


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REVISION 2 - ISSUED FOR CONSTRUCTION	10/03/2014

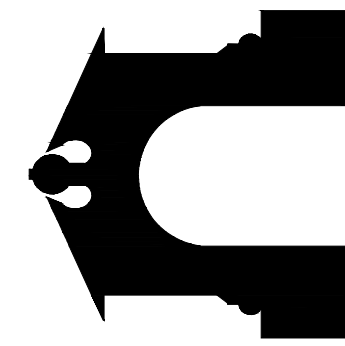
COVER SHEET -  
ELECTRICAL  
SCALE: NONE

# E-01



DEMOLITION KEY NOTES	
1	DISCONNECT AND REMOVE FINAL CONNECTIONS TO MOTORIZED DOOR AND PUSH PLATE, EXISTING CONDUCTORS AND CONDUITS SHALL REMAIN FOR REUSE, EXTEND TO NEW DOOR LOCATION.
2	DISCONNECT AND REMOVE FINAL CONNECTIONS TO RECEPTACLE AND DATA OUTLET, EXISTING CONDUCTORS AND CONDUITS SHALL REMAIN FOR REUSE, EXTEND TO NEW LOCATION.

1 DEMOLITION FLOOR PLAN  
ED-1 SCALE: 1/4" = 1'-0"



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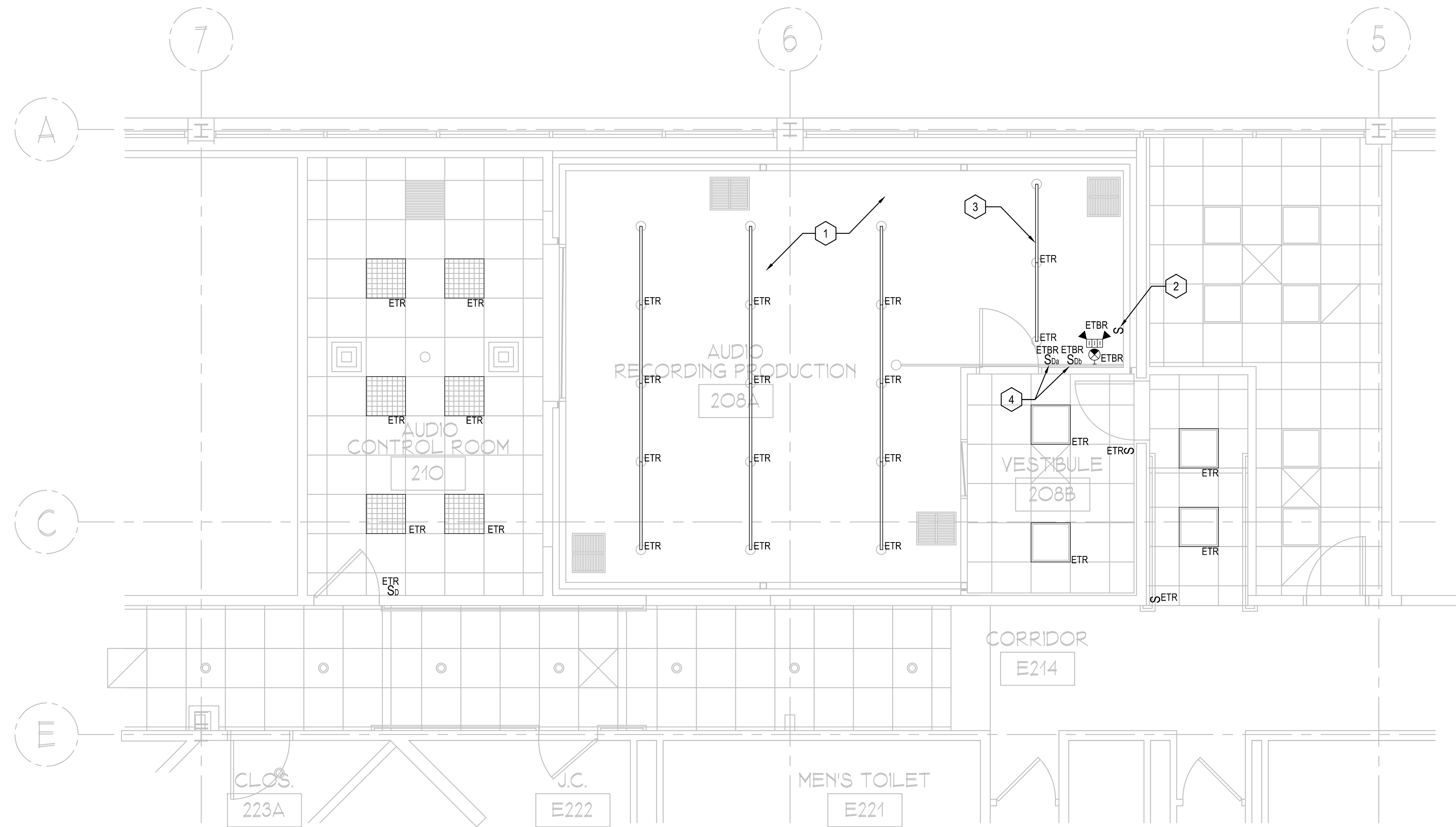


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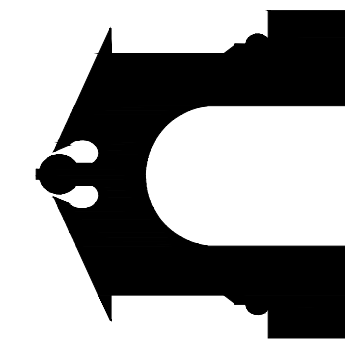
DEMOLITION PLAN  
- ELECTRICAL  
SCALE: 1/4" = 1'-0"

ED-1



DEMOLITION KEY NOTES	
1	REFER TO ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF DEMOLITION WORK.
2	DISCONNECT AND REMOVE EXISTING LIGHT SWITCH FROM THE WALL. PATCH THE WALL AFTER LIGHT SWITCH HAS BEEN REMOVED.
3	DISCONNECT LIGHTING FIXTURES FROM EXISTING LIGHTING CIRCUITS IN THIS ROOM. LIGHTING FIXTURES SHALL REMAIN FOR REUSE.
4	DISCONNECT AND REMOVE WIRING CONNECTIONS AT DIMMER SWITCHES. EXISTING CONDUCTORS AND CONDUITS SHALL REMAIN FOR REUSE. EXTEND TO NEW LOCATION.

1 DEMOLITION FLOOR PLAN  
ED-2 SCALE: 1/4" = 1'-0"



H-WING 2nd FLOOR  
LES PAUL STUDIO  
RAMAPO COLLEGE OF NEW JERSEY

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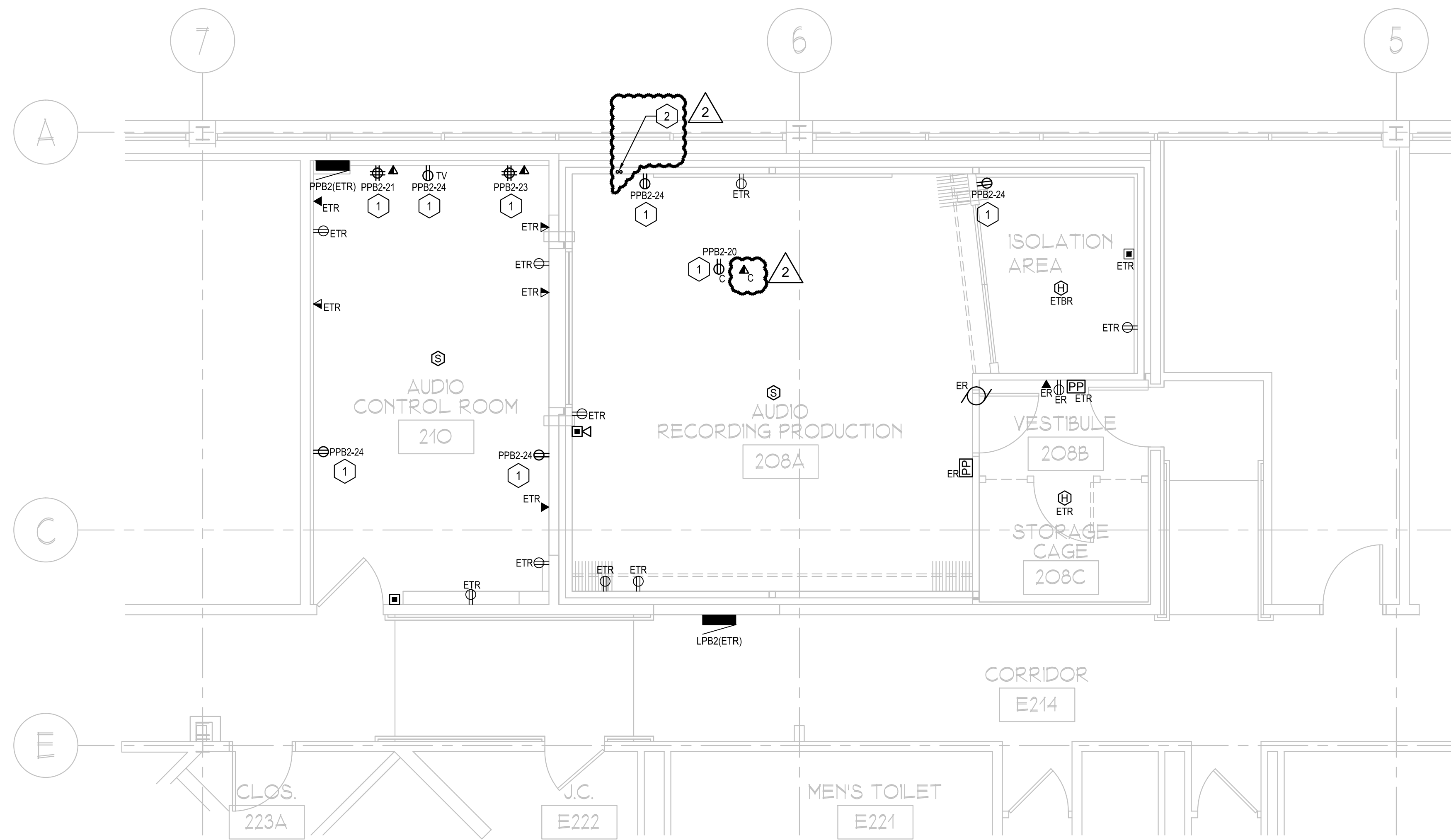


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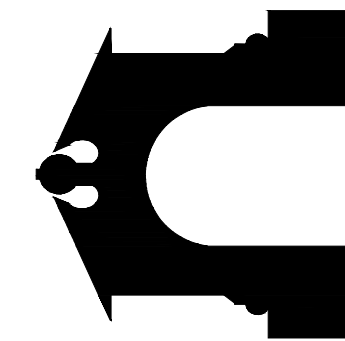
DEMOLITION PLAN  
- LIGHTING  
SCALE: 1/4" = 1'-0"

ED-2



KEY NOTES	
1	PROVIDE NEW RECEPTACLES AT LOCATIONS SHOWN. WIRE NEW RECEPTACLES TO EXISTING 20A-1P SPARE CIRCUIT BREAKERS IN POWER PANEL "PPB2". REFER TO PANEL SCHEDULE ON DRAWING E-3 FOR PANELBOARD DIRECTORY.
2	PROVIDE (1) 3/4" FROM TEACHER'S DESK TO CEILING PROJECTOR LOCATION. PROVIDE (1) 3/4" FROM TEACHER'S DESK TO SPEAKERS LOCATION. COORDINATE IN FIELD.

1 FLOOR PLAN  
E-1 SCALE: 1/4" = 1'-0"



# H-WING 2nd FLOOR LES PAUL STUDIO RAMAPO COLLEGE OF NEW JERSEY

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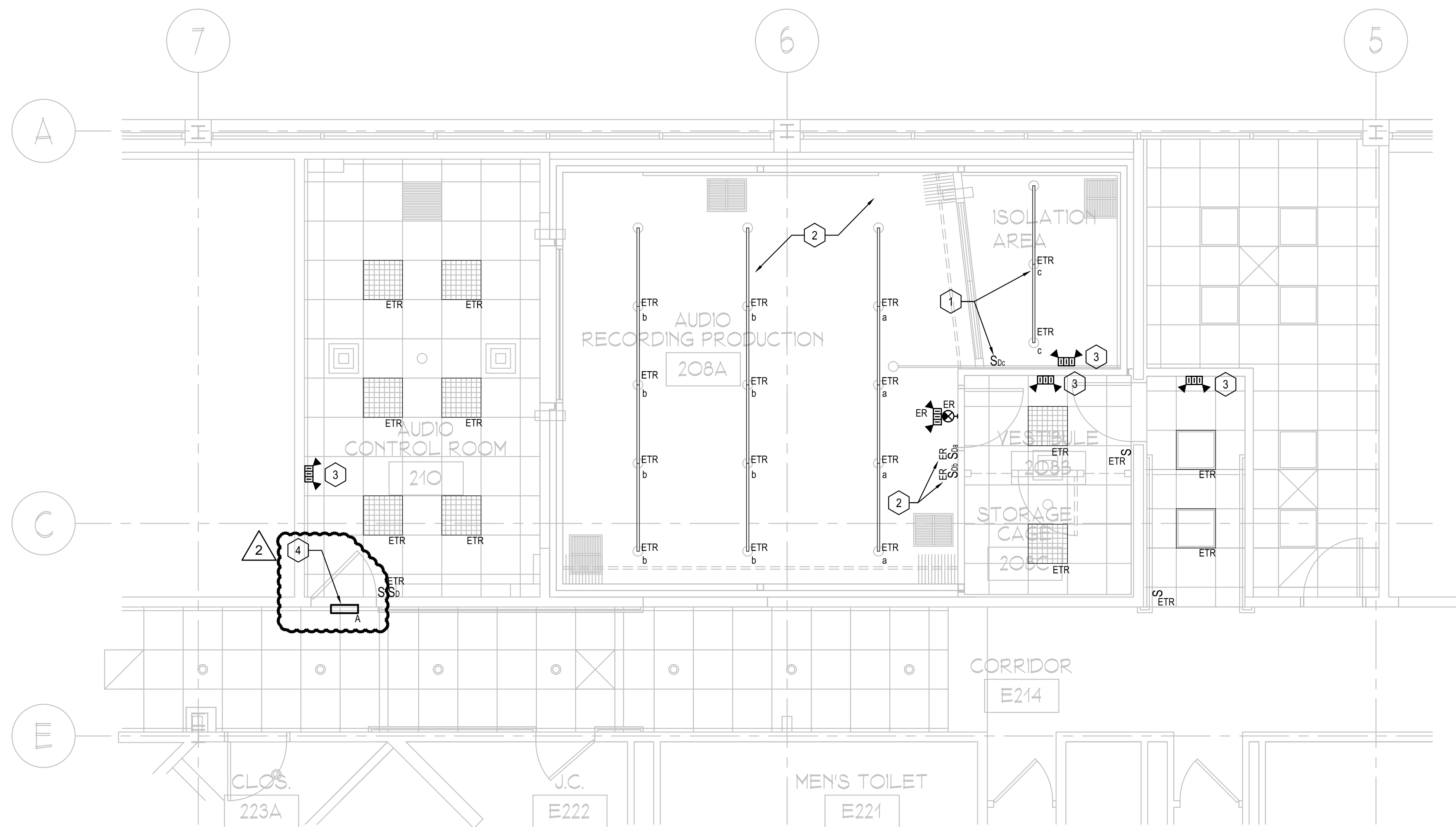


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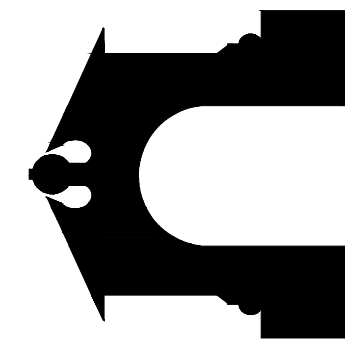
FLOOR PLAN -  
ELECTRICAL  
SCALE: 1/4" = 1'-0"

E-1



KEY NOTES	
1	EXISTING TRACK LIGHTING IN ISOLATION AREA SHALL BE CONTROLLED BY NEW DIMMER SWITCH.
2	EXISTING TRACK LIGHTING IN ROOM 208A SHALL BE CONTROLLED FROM RELOCATED DIMMER SWITCHES.
3	PROVIDE NEW DUAL HEAD EMERGENCY BATTERY PACKS AND WIRE UNSWITCHED TO EXISTING EMERGENCY LIGHTING CIRCUIT CURRENTLY SERVING ROOM 208A.
4	PROVIDE 'IN USE' FIXTURE AND SWITCH. CONNECT TO EXISTING LIGHTING CIRCUITS IN THIS ROOM UTILIZING 2#12+G-3/4\"/>

1 FLOOR PLAN  
E-2 SCALE: 1/4" = 1'-0"



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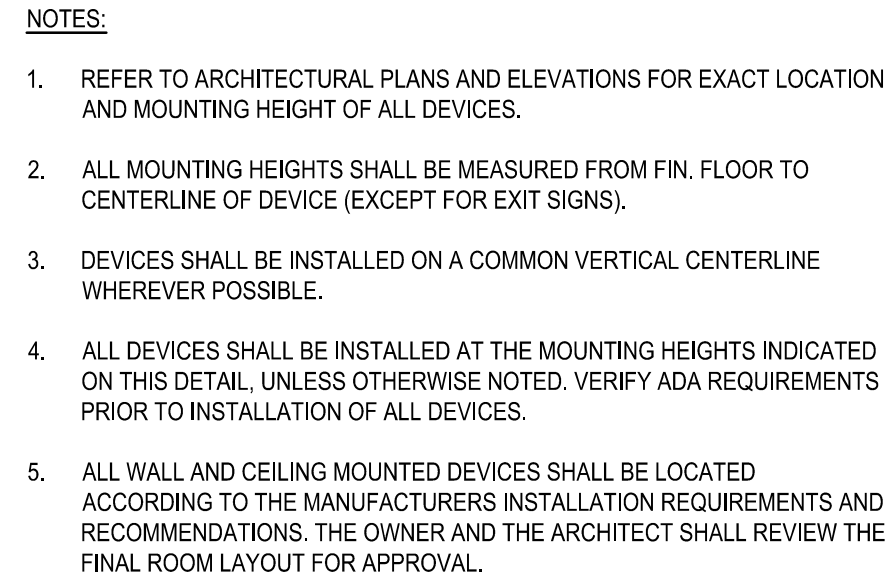


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FLOOR PLAN -  
LIGHTING  
SCALE: 1/4" = 1'-0"





1	TYP
E-3	NONE



UTILIZE EXISTING 20A-1P  
CIRCUIT BREAKER (TYP OF 4) \_\_\_\_\_

ELECTRICAL SPECIFICATIONS

GENERAL:

PROVIDE LABOR, MATERIALS, EQUIPMENT AND SERVICES FOR COMPLETE ELECTRICAL SYSTEMS FOR EXISTING AND NEW SYSTEMS AND AS REQUIRED BY APPLICABLE BUILDING CODES, NATIONAL ELECTRICAL CODES, INCLUDING OSHA, PAY ALL FEES, OBTAIN ALL PERMITS, CERTIFICATES AND ALL CONTROLLED INSPECTIONS AND INSPECTIONS, USE NEW U.L. APPROVED EQUIPMENT, INCLUDE ALL TEMPORARY LIGHT AND POWER DURING CONSTRUCTION.

PROVIDE ALL LABOR MATERIAL AND EQUIPMENT TO ACCOMPLISH ANY REQUIRED DEMOLITION OR REMOVAL WORK.

ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER, ALL MATERIALS SHALL BE OF THE BEST QUALITY FOR THE PURPOSE INTENDED, TRADE NAMES AND CATALOG NUMBERS ARE INTENDED TO INDICATE THIS GRADE AND QUALITY.

RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK OF CONTRACTOR WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS. VERIFY POWER REQUIREMENTS WITH ALL OTHER TRADES.

ON ACCEPTANCE OF CONTRACT, CONTRACTOR AGREES TO GUARANTEE ALL OF HIS WORK AND EQUIPMENT FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR FROM DATE OF INITIAL OPERATION. MANUFACTURED EQUIPMENT SHALL CARRY FULL PERIOD OF MANUFACTURER'S GUARANTEE, AND SHALL NOT BE LESS THAN ONE (1) YEAR.

THE CONTRACTOR SHALL PERFORM ALL CUTTING NECESSARY FOR THE PROPER INSTALLATION OF ELECTRICAL WORK.

KEEP CONDUITS AND OTHER OPENINGS CLOSED TO PREVENT ENTRY OF FOREIGN MATTER. COVER FIXTURES, EQUIPMENT AND APPARATUS AND PROTECT AGAINST DIRT, WATER, CHEMICAL OR MECHANICAL DAMAGE BEFORE AND DURING THE CONSTRUCTION PERIOD UNTIL THE FINAL ACCEPTANCE. EQUIPMENT SHALL BE DELIVERED AND STORED AT SITE, PROPERLY PACKED AND CREATED UNTIL FINALLY INSTALLED.

FURNISH, INSTALL, SET AND LAMP NEW LIGHTING FIXTURES. INCLUDE ALL NECESSARY SUPPORTS AND HANGERS WHERE REQUIRED. ALL FIXTURES SHALL HAVE U.L. LABEL. LIGHTING FIXTURES SHALL BE AS INDICATED ON ARCHITECTURAL DRAWINGS AND SHALL BE MADE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT, IT IS NOT THE INTENT TO GIVE EVERY DETAIL. ON THE DRAWINGS AND IN THE SPECIFICATION. IF AN ITEM OF WORK IS SHOWN ON THE DRAWINGS, IT SHALL BE CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION, WHERE SPECIFICALLY MENTIONED OR NOT.

SHOP DRAWINGS AND OTHER INFORMATION REQUIRED: PRIOR TO PURCHASING ANY EQUIPMENT OR MATERIALS, A MANUFACTURER'S LIST SHALL BE SUBMITTED FOR REVIEW. PRIOR TO ASSEMBLING OR INSTALLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED FOR REVIEW:

CATALOG INFORMATION, FACTORY ASSEMBLY DRAWINGS AND FIELD INSTALLATION DRAWINGS AS REQUIRED FOR A COMPLETE EXPLANATION AND DESCRIPTION OF ALL ITEMS OR EQUIPMENT. THE PURPOSE FOR REVIEW SHOP DRAWINGS IS TO MAINTAIN INTEGRITY OF THE DESIGN, UNLESS THE CONTRACTOR CLEARLY INDICATED IN WRITING AND ON HIS LETTERHEAD, ANY CHANGES, SUBSTITUTIONS, DELETIONS OR ANY OTHER DIFFERENCES BETWEEN THE SUBMISSION AND CONTRACT DOCUMENTS, APPROVAL BY THE ENGINEER DOES NOT CONSTITUTE ACCEPTANCE. IT IS NOT TO BE ASSUMED THAT THE ENGINEER HAS READ THE TEXT NOR REVIEWED THE TECHNICAL DATA OF A MANUFACTURED ITEM AND ITS COMPONENTS EXCEPT WHERE THE VENDOR HAS POINTED OUT DIFFERENCES BETWEEN HIS PRODUCT AND THE SPECIFIED MODEL.

THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE CONSTRAINTS OF THE EXISTING AVAILABLE SPACE PERTAINING TO EQUIPMENT SIZE AND CONFIGURATION AND TO EXAMINE THE CONDITIONS UNDER WHICH THE EQUIPMENT WILL BE INSTALLED. CONTRACTOR SHALL AT THIS TIME REPORT ANY DISCREPANCIES OR QUESTIONS TO THE ARCHITECT/ENGINEER.

WHERE CONFLICTS OCCUR BETWEEN DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE CONTRACTOR SHALL ASK FOR AND OBTAIN A WRITTEN CLARIFICATION FROM THE ENGINEER PRIOR TO SUBMITTING HIS BID. OTHERWISE, THE ITEMS OR ARRANGEMENTS OF SUPERIOR QUALITY, GREATER QUANTITY OR HIGHER COST SHALL PREVAIL AND BE INCLUDED IN THE CONTRACT PRICE.

LIGHTING AND POWER PANELS:

UTILIZE EXISTING LIGHTING AND POWER PANELBOARDS AS INDICATED ON THE DRAWINGS.

WIRING DEVICES:

WIRING DEVICES AND COVER PLATES SHALL MATCH EXISTING.

RECEPTACLES: IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED. USE PRESS ON LABEL, BLACK LETTERING ON WHITE BACKGROUND ON FACE OF PLATE AND IN EASILY READABLE LOCATION INSIDE DEVICE BACKBOX, AND DURABLE WIRE MARKERS OR TAGS ON CONDUCTORS INSIDE OUTLET BOXES.

OUTLET BOXES:

PROVIDE GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS TO SERVE ALL INTERIOR OUTLETS FOR MOTOR CIRCUITS, LIGHTING, SWITCHES, RECEPTACLES, SIGNALS, AND THE LIKE.

LIGHTING:

EXIT SIGNS SHALL MATCH EXISTING.

EMERGENCY LIGHTING UNITS SHALL MATCH EXISTING.

BALLASTS SHALL BE ELECTRONIC TYPE WITH THD LESS THAN 10%, MANUFACTURED BY ADVANCE, MAGNETEK, OR MOTOROLA.

FLUORESCENT LAMPS SHALL BE 3500°K WITH A CRI OF 82 OR HIGHER, MANUFACTURED BY G.E., PHILIPS, OR SYLVANIA.

TELECOMMUNICATIONS SERVICE AND RACEWAY SYSTEMS:

EMPTY CONDUIT SYSTEMS SHALL BE PROVIDED FOR TELECOMMUNICATIONS AND CABLE TELEVISION SYSTEMS. OUTLET DEVICES AND WIRING SHALL BE PROVIDED AND INSTALLED BY OTHERS.

THE EMPTY CONDUIT SYSTEM SHALL CONSIST OF ALL INTERIOR CONDUIT, PULL BOXES, OUTLET BOXES, BUSHED COVER PLATES AND OTHER MATERIALS TO LEAVE THE SYSTEM READY FOR INSTALLATION OF DEVICES.

FIRE ALARM AND SMOKE DETECTION SYSTEM:

THE EXISTING FIRE ALARM SYSTEM DEVICES SHALL REMAIN.

WHERE WORK CONSISTS OF ADDITIONS OR EXTENSIONS TO AN EXISTING SYSTEM, PRIOR TO STARTING WORK, ESTABLISH THAT SYSTEM IS IN PROPER WORKING ORDER, IF CONDITION EXISTS WHICH PREVENTS NORMAL OPERATION OF SPECIFIED ADDITIONS AND EXTENSIONS, BRING THIS FACT TO ARCHITECT'S ATTENTION PRIOR TO DOING WORK AFFECTING EXISTING SYSTEM.

WHERE WORK IS DONE WITHOUT SUCH NOTIFICATION, IT SHALL BE ASSUMED THAT CONNECTIONS HAVE BEEN MADE TO A WORKING SYSTEM, AND PERFORMANCE REQUIREMENTS AND GUARANTEE WILL APPLY TO ENTIRE SYSTEM.

THE EXISTING FIRE ALARM AND SMOKE DETECTION SYSTEM CONSISTS OF A CENTRAL CONTROL PANEL FOR MONITORING AND CONTROL OF SMOKE DETECTING DEVICES, MANUAL ALARM SYSTEMS, WATER FLOW AND TAMPER SWITCHES, AUDIBLE AND VISUAL ALARM SYSTEMS, DOOR RELEASE, AND FAN SHUTDOWN SYSTEMS. PROVIDE ALL MODIFICATIONS AS REQUIRED TO ACCOMMODATE NEW DEVICES SHOWN ON PLANS OR INDICATED IN SPECIFICATION.

AFTER DATE OF SUBSTANTIAL COMPLETION, CONTRACTOR SHALL TEST THE FIRE ALARM SYSTEM COMPLYING WITH TESTING AND VISUAL INSPECTION REQUIREMENTS IN NFPA 72. CONTRACTOR SHALL SUPPLEMENT AUDIBLE DEVICES TO MEET CODE SOUND LEVELS.

PROVIDE FIRE ALARM SHOP DRAWINGS WHICH INCLUDE THE FOLLOWING:

- a) A FLOOR PLAN DRAWN TO SCALE THAT INDICATES THE USE OF ALL ROOMS;
- b) LOCATIONS OF ALARM-INITIATING DEVICES;
- c) LOCATIONS OF ALARM NOTIFICATION APPLIANCES, INCLUDING CANDELA RATINGS FOR VISIBLE ALARM NOTIFICATION APPLIANCES;
- d) LOCATION OF FIRE ALARM CONTROL UNIT, TRANSPONDERS AND NOTIFICATION POWER SUPPLIES;
- e) ANNUNCIATORS;
- f) POWER CONNECTION;
- g) BATTERY CALCULATIONS;
- h) CONDUCTOR TYPE AND SIZES;

1

i) VOLTAGE DROP CALCULATIONS:

j) MANUFACTURERS' DATA SHEETS INDICATING MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS;

k) DETAILS OF CEILING HEIGHT AND CONSTRUCTION;

l) THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS;

m) CLASSIFICATION OF THE SUPERVISING STATION;

n) FIRE DEPARTMENT RESPONSE POINT(S) AND ANNUNCIATOR LOCATION(S);

o) COMPLETE SEQUENCE OF OPERATIONS DETAILING ALL INPUTS AND OUTPUTS;

p) ALL DOCUMENTS PREPARED BY PEOPLE OTHER THAN THE DESIGN PROFESSIONAL SHALL BE REVIEWED BY THE DESIGN PROFESSIONAL AND A SIGNED AND SEALED LETTER SUBMITTED INDICATING THAT THEY HAVE BEEN REVIEWED AND FOUND TO BE IN CONFORMANCE WITH THE REGULATIONS FOR THE DESIGN OF THE BUILDING PER NJAC 6.23 -2.16(f).xii(1). A STAMP OR LABEL PLACED ON DRAWINGS BY THE DESIGN PROFESSIONAL IS NOT ACCEPTABLE.(THE DESIGN PROFESSIONAL IS THE ARCHITECT OR ENGINEER THAT IS RESPONSIBLE FOR THE TOTAL DESIGN OF THE PROJECT.)

q) SHOP DRAWING FOR FIRE ALARM SYSTEMS SHALL BE SIGNED AND SEALED BY A NEW JERSEY LICENSED PROFESSIONAL ARCHITECT AND ENGINEER.

SUPPORTS:

PROVIDE SUPPORTS, BRANCHES AND HANGERS FOR THE INSTALLATION OF OUTLETS, RACEWAYS, PANELS, STARTING AND CONTROL EQUIPMENT.

600 VOLT CABLE:

ALL WIRE NO. 10, 12, AND 14 AWG SHALL BE SOLID CONDUCTOR TYPE THHN/THWN, NO. 8 AWG THROUGH NO. 1 AWG SHALL BE STRANDED CONDUCTOR TYPE THHN/THWN, NO. 1/0 AWG AND LARGER SHALL BE STRANDED CONDUCTOR TYPE XHHW.

TYPE MC ARMORED CABLE SHALL CONFORM TO UL AND NEC ARTICLE 334, AND SHALL BE CONSTRUCTED OF MINIMUM NO. 12 AWG STRANDED COPPER CONDUCTORS, WITH THHN INSULATION.

CONDUIT:

ALL WIRING WILL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING:

ALL NEW BRANCH CIRCUIT WIRING AND EXTENSIONS OF EXISTING BRANCH CIRCUIT WIRING SHALL BE INSTALLED IN SURFACE MOUNTED RACEWAY.

ALL BRANCH CIRCUIT WORK RUN ABOVE ACCESSIBLE CEILINGS OR IN AREAS WITHOUT CEILINGS SHALL BE INSTALLED IN EMT.

ELECTRICAL METALLIC TUBING (EMT) SHALL BE GALVANIZED STEEL, CONFORMING TO ANSI C80.3, UL 797, AND NEC ARTICLE 358. PROVIDE WITH COMPRESSION TYPE FITTINGS, COUPLINGS, AND CONNECTORS.

SURFACE MOUNTED RACEWAY AND ASSOCIATED BOXES AND FITTINGS SHALL CONFORM TO NEC ARTICLE 386.

GROUNDING:

A COMPLETE CONTINUOUS GROUNDING SYSTEM TO THOROUGHLY GROUND THE NON-CURRENT CARRYING METAL PARTS OF EVERY NEW PIECE OF INSTALLED EQUIPMENT SHALL BE PROVIDED. THE SYSTEM SHALL BE CONNECTED TO PROVIDE AN INDEPENDENT FAULT RETURN TO SOURCE.

INSTALLATION:

INSTALL WORK IN A NEAT AND WORKMAN LIKE MANNER.

CONTRACTOR SHALL SEAL ALL PENETRATIONS THROUGH PARTITIONS OR SLABS WITH A U.L. APPROVED SMOKE STOP TO MAINTAIN THE INTEGRITY OF THE RESPECTIVE FIRE RATING.

FOR EXACT LOCATIONS OF LIGHTING FIXTURES, RECEPTACLES, DATA AND TELEPHONE OUTLETS, REFER TO ARCHITECT'S DRAWINGS. COORDINATE ALL WORK WITH DATA AND TELEPHONE CONTRACTORS.

PRIOR TO FINAL ACCEPTANCE, CLEAN ALL LIGHTING FIXTURES, GLASSWARE, PANELBOARDS, CABINETS, DEVICE PLATES AND OTHER ITEMS FURNISHED UNDER THIS CONTRACT.

AS-BUILT DRAWINGS:

PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

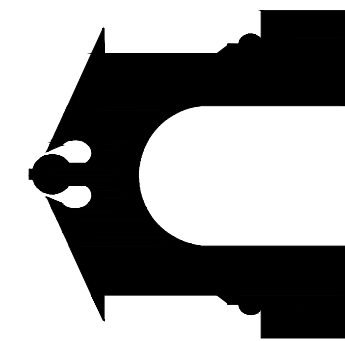
TESTS:

TEST ALL WIRING, LIGHTING FIXTURES, SWITCHES, CONTROLLERS, STARTERS, MOTORS, ETC., WIRED UNDER THIS DIVISION, LEAVE FREE FROM GROUNDS, CROSSES, SHORTS, OPENS, ETC., AND LEAVE MATERIALS AND APPARATUS IN PROPER AND SATISFACTORY WORKING CONDITION.

PERFORM ADDITIONAL TESTS REQUIRED BY OWNER, ARCHITECT OR ANY OTHER AUTHORITIES HAVING JURISDICTION.

CORRECT OR REPLACE ANY CIRCUIT, MATERIAL OR EQUIPMENT WHICH IS FOUND TO BE DEFECTIVE BY THESE TESTS. CORRECT DEFECTS, WHETHER DUE TO FAULTY WORKMANSHIP OR MATERIAL FURNISHED, IN A MANNER ACCEPTABLE TO ENGINEER WITHOUT ADDITIONAL COST.

TEST FOR PROPER OPERATION OF EMERGENCY LIGHTING EQUIPMENT UNDER SIMULATED EMERGENCY CONDITIONS.



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SPECIFICATIONS -  
ELECTRICAL

SCALE: NONE

E-4