ELECTRICAL SYMBOLS

- 20A, 125V, 2P, 3W, NEMA 5-20R, DUPLEX RECEPTACLE MTD 18" ABOVE FLOOR UNLESS NOTED OTHERWISE. SEE ABBREVIATIONS BELOW FOR DESIGNATIONS:
  - WP – WEATHERPROOF IN-USE.
  - G – GROUND FAULT INTERRUPTER.
  - +12" – MOUNTED AT 12" AFF.
  - TV – RECEPTACLE MOUNTED AT OWNER APPROVED HEIGHT FOR TELEVISION.
  - F – RECEPTACLE MOUNTED AT 42" AFF FOR REFRIGERATOR.
  - D – DEDICATED OUTLET.
  - W – RECEPTACLE MOUNTED AT 42" AFF FOR WASHING MACHINE.
  - ACH – RECEPTACLE MOUNTED 4" ABOVE COUNTER HEIGHT.
  - C – CEILING MOUNTED RECEPTACLE MOUNTED AT PROJECTOR. VERIFY EXACT LOCATION.
- SAME AS ⊕ ABOVE EXCEPT QUADRUPLEX TYPE.
- SAME AS ⊕ ABOVE EXCEPT BOTTOM OF OUTLET MOUNTED 4" ABOVE COUNTER HEIGHT, COORDINATE WITH CABINETRY DETAILS.
- SPECIAL PURPOSE RECEPTACLE. VERIFY ELECTRICAL EQUIPMENT REQUIREMENTS WITH EQUIPMENT VENDOR PRIOR TO INSTALLATION.
- ▼2 – DATA OUTLET 18" AFF, UNO. PROVIDE DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND CAT 5e CABLE ROUTED IN 1" CONDUIT TO DATA RACK WITH END BUSHING. "2" INDICATES NUMBER OF CAT 5e CABLE(S)/FEMALE RJ-45 JACK(S) TO PROVIDE PER OUTLET. IF A NUMBER IS NOT INDICATED, ASSUME (1) CABLE PER OUTLET. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR MORE INFORMATION. JACKS, CABLE AND BOX COVER BY ELECTRICAL CONTRACTOR. "ACH" INDICATES 4" ABOVE COUNTER HEIGHT.
- 3▽2 – SAME AS ▼ ABOVE EXCEPT COMBINATION DATA/VOICE OUTLET 18" AFF, UNO. "3" INDICATES NUMBER OF VOICE CAT 5e CABLE(S)/FEMALE RJ-45 JACK(S) AND "2" INDICATES NUMBER OF DATA CAT 5e CABLE(S)/FEMALE RJ-45 JACK(S).
- ▼T – DATA OUTLET AT OWNER APPROVED HEIGHT FOR TELEVISION. PROVIDE DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND CAT 5e CABLE ROUTED IN 1" CONDUIT TO DATA RACK WITH END BUSHING. JACKS, CABLE AND BOX COVER BY ELECTRICAL CONTRACTOR
- ▽A – INTERCOM ADMINISTRATIVE HANDSET. WIRING, JACKS, AND EQUIPMENT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR PER SPECIFICATIONS. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR ADDITIONAL INFORMATION.
- T – CABLE TELEVISION OUTLET MOUNTED AT OWNER APPROVED HEIGHT. DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH RG-6 CABLE ROUTED IN 3/4" CONDUIT TO COAX SPLITTER OR AMPLIFIER WITH END BUSHING. JACKS, CABLE AND BOX COVER BY ELECTRICAL CONTRACTOR.
- TD – TEACHER DESK AUDIO/VIDEO INTERFACE BOX MOUNTED AT 18" AFF. PROVIDE 5" X 6" X 4" FLUSH JUNCTION BOX WITH 2" GROMMET IN COVER PLATE (COVERPLATE TO OVERLAP BOX BY 1/4" MINIMUM ON ALL SIDES). ROUTE (2) EMPTY 1 1/4" CONDUITS W/ PULL STRINGS TO 6"X6"X4" JUNCTION BOX 'PJ' IN CEILING AT ROOM PROJECTOR LOCATION WITH END BUSHINGS. PROVIDE 3'-0" OF CABLE COILED AT JUNCTION BOX. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM ON SHEET E8 FOR ADDITIONAL INFORMATION. INTERCONNECTION CABLING AND JACKS BY OTHERS.
- PJ – PROJECTOR AUDIO/VIDEO INTERFACE BOX MOUNTED IN CEILING. PROVIDE 6" X 6" X 4" JUNCTION BOX WITH COVER PLATE. ROUTE (2) EMPTY 1 1/4" CONDUITS W/ PULL STRINGS TO 6"X6"X4' JUNCTION BOX 'TD' WITH END BUSHINGS. PROVIDE 3'-0" OF CABLE COILED AT JUNCTION BOX. IN ADDITION, ROUTE (2) CAT 5e CABLES IN 1"C TO JUNCTION BOX FROM DATA RACK. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM ON SHEET E8 FOR ADDITIONAL INFORMATION. INTERCONNECTION CABLING AND JACKS BY OTHERS.
- WIFI – WIRELESS ACCESS POINT MOUNTED IN CEILING U.N.O. CONTRACTOR SHALL PROVIDE A DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND CAT 5e CABLE ROUTED IN 1" CONDUIT TO DATA RACK. CONTRACTOR TO PROVIDE 15'-0" OF EXCESS CABLE SERVING WIRELESS ACCESS POINT COILED AT DATA RACK. PRIOR TO OVERHEAD INSPECTION, PROVIDE A BLANK COVER OVER JUNCTION BOX. ONCE SCHOOL HAS PASSED FINAL INSPECTION, WIRELESS ROUTER SHALL BE FURNISHED AND INSTALLED BY SCHOOL DISTRICT. EXCESS WIRE WILL BE UTILIZED TO PINPOINT FINAL LOCATION OF ACCESS POINT BASED ON SIGNAL STRENGTH. IF EXCESS WIRE IS PULLED PAST THE WIRELESS ACCESS POINT JUNCTION BOX, IT MUST BE ROUTED THROUGH FLEXIBLE CONDUIT. PROVIDE A COLORED DOT MARKER ON THE CEILING TILE UNDER EACH ACCESS POINT. IN ADDITION, CONTRACTOR SHALL PROVIDE A 12" PATCH CORD FROM WALL JACK TO WIRELESS ACCESS POINT. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR MORE INFORMATION. JACKS, CABLE AND BOX COVER BY ELECTRICAL CONTRACTOR.
- TGB – TELECOMMUNICATIONS GROUND BUS. SEE GROUNDING DETAILS.
- FB – FLUSH FLOOR BOX FOR POWER AND COMMUNICATIONS SYSTEMS. PROVIDE MULTI-COMPARTMENT FLOOR BOX (HUBBELL #LCFBCA) WITH BRASS COVERPLATE (HUBBELL #LCFBCBRST). (') QUAD POWER OUTLET, AND CAT 5e DATA OUTLET. U.N.O. ROUTE 3/4"C (POWER) AND 1"C (COMMUNICATIONS) DOWN WALL, AND UNDER SLAB TO FLOOR BOX. VERIFY EXACT LOCATION PRIOR TO INSTALLATION. COMMUNICATION WIRING, JACKS, AND EQUIPMENT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
- J – JUNCTION BOX. SIZE AS REQUIRED TO FIT APPLICATION.
- EF – EXHAUST FAN. SEE MECHANICAL DRAWINGS AND MECHANICAL EQUIPMENT ELECTRICAL SCHEDULE.
- WH – WATER HEATER. SEE PLUMBING DRAWINGS.
- WALL MOUNTED EXTERIOR MAN DOOR LIGHT. 'E' INDICATES EXISTING TO REMAIN.
- WALL MOUNTED EXTERIOR AREA LIGHT FIXTURE.
- FLUORESCENT STRIP LIGHT FIXTURE. LENGTH AS INDICATED
- A – CEILING MOUNTED FLUORESCENT LIGHT FIXTURE PER FIXTURE SCHEDULE.
- A – CEILING MOUNTED FLUORESCENT LIGHT FIXTURE PER FIXTURE SCHEDULE.
- FIXTURE TO BE SWITCHED WITH OTHERS IN AREA AND WITH INTERNAL EMERGENCY BATTERY BALLAST.
- SAME AS ABOVE EXCEPT UNSWITCHED FOR NIGHT LIGHTING AND EMERGENCY BATTERY BALLAST
- DOWNLIGHT PER PLANS.
- TRACK LIGHTING. LENGTH OF TRACK AND QUANTITY OF HEADS AS INDICATED ON DRAWINGS.
- WALL MOUNTED TWIN HEAD EMERGENCY FIXTURE. PROVIDE CONTINUOUS HOT LEAD TO FIXTURE FOR BATTERY.
- EMERGENCY TYPE EXIT SIGN. SHADED AREA INDICATES ILLUMINATED FACE. PROVIDE CONTINUOUS HOT LEAD TO FIXTURE FOR BATTERY.
- COMBINATION EXIT/EMERGENCY FIXTURE. PROVIDE CONTINUOUS HOT LEAD TO FIXTURE FOR BATTERY.
- DOWNLIGHT PER FIXTURE SCHEDULE.
- WALL MTD EXTERIOR EGRESS EMERGENCY LIGHT.
- S – SINGLE POLE LIGHTING SWITCH, 48" AFF, 120/277 VOLT, 20 AMP, SPEC GRADE, "T" RATED.
- S3 – SAME AS "S" ABOVE EXCEPT "3" IN SUBSCRIPT DENOTES 3-WAY SWITCH.
- Sa – SAME AS "S" ABOVE EXCEPT "a" IN SUBSCRIPT DENOTES CONTROLLING SWITCH FOR SPECIFIC FIXTURES MARKED THE SAME.
- SD – INCANDESCENT SLIDE TYPE DIMMER SWITCH. SIZE AS REQUIRED.
- PS – PASSIVE INFARRED AUTOMATIC OCCUPANCY SENSOR, WALL MOUNTED AT 4'-0" UNLESS NOTED OTHERWISE (WATTSTOPPER #WA-100). COORDINATE WITH OWNERS REPRESENTITIVE FOR USER-SET, TIME DELAY OFF REQUIREMENTS.
- D – DENOTES DUAL PASSIVE INFRARED AND ULTRASONIC CEILING MOUNTED (FOR GRID CEILING) AND WALL MOUNTED (FOR EXPOSED CEILINGS) OCCUPANCY SENSOR (WATTSTOPPER #DT-200). PROVIDE ALL NECESSARY POWER PACKS TO ACCOMPLISH LIGHTING CONTROL ILLUSTRATED ON DRAWINGS. COORDINATE WITH OWNERS REPRESENTATIVE FOR USER-SET, TIME DELAY FOR OFF REQUIREMENTS.
- U – ULTRASONIC OCCUPANCY SENSOR, CEILING MOUNTED (WATTSTOPPER #WT-1100). ARROWS INDICATE HALLWAY APPLICATION (WATTSTOPPER #W-'050). PROVIDE ALL NECESSARY POWER PACKS TO ACCOMPLISH LIGHTING CONTROL ILLUSTRATED ON DRAWINGS. COORDINATE WITH OWNERS REPRESENTATIVE FOR USER-SET, TIME DELAY FOR OFF REQUIREMENTS.

ELECTRICAL SYMBOLS (CONTINUED)

- A-7 – HOMERUN TO ELECTRICAL PANEL. HOMERUN NOTE (A-7) INDICATES PANEL DESIGNATION AND RELATIVE CIRCUIT NUMBER UNLESS NOTED OTHERWISE, CONDUCTORS SHALL BE #12 AWG IN 3/4" CONDUIT. HATCH MARKS INDICATE THE QUANTITY OF CONDUCTORS REQUIRED. SHORT HATCH MARKS REPRESENT HOT CONDUCTORS OR SWITCHED LEGS. LONG HATCH MARKS REPRESENT THE NEUTRAL CONDUCTOR. ALL BRANCH CIRCUITS SHALL CONTAIN A #12 INSULATED GREEN GROUND CONDUCTOR. PROVIDE ALL WIRING REQUIRED TO ACCOMPLISH CIRCUITRY AS INDICATED. NO HATCH MARKS INDICATE 2#12,#12G-3/4".
- BRANCH CIRCUIT WIRING CONCEALED IN WALL OR CEILING SPACE.
- BRANCH CIRCUIT WIRING CONCEALED IN FLOOR OR UNDERGROUND.
- CONDUIT RUN TURNED DOWN OR AWAY FROM OBSERVER.
- CONDUIT RUN TURNED UP OR TOWARDS OBSERVER.
- CAPPED CONDUIT.
- FLEXIBLE CONNECTION TO EQUIPMENT.
- ELECTRICAL PANEL, 208/120V, MOUNTING AS INDICATED. COORDINATE EXACT LOCATION IN FIELD.
- 30/2/F – SAFETY DISCONNECT SWITCH. "30" INDICATES AMP RATING, 2 INDICATES NUMBER OF POLES, "F" INDICATES FUSED, "NF" INDICATES NON-FUSED. ENCLOSURE TO BE NEMA 1 UNLESS NOTED OTHERWISE (3R, 4X, ETC.) FUSE PER MANUFACTURERS RECOMMENDATONS.
- Sn – MANUAL MOTOR STARTER WITH OVERLOADS (TOGGLE TYPE). PROVIDE NEMA 3R TYPE IF EXPOSED TO WEATHER. 20A UNLESS NOTED OTHERWISE.
- DS – LOCAL 120V TOGGLE TYPE EQUIPMENT DISCONNECT. RATED 20A, UNLESS NOTED OTHERWISE.
- FACP – FIRE ALARM CONTROL PANEL. SEE RISER DIAGRAM.
- FAAP – FIRE ALARM ANNUNCIATOR
- FAKB – FIRE ALARM KNOX BOX. PROVIDE TAMPER SWITCH AT DEVICE. IN ADDITION, PROVIDE CONNECTION TO SECURITY SYSTEM.
- H – FIRE ALARM CEILING MOUNTED HEAT DETECTOR
- S – FIRE ALARM CEILING MOUNTED SMOKE DETECTOR. 'A' INDICATES SMOKE DETECTOR PROVIDED WITH 120V SET OF AUXILLARY CONTACTS.
- D – DUCT DETECTOR
- F – FIRE ALARM PULL STATION MOUNTED AT 48" AFF.
- FIRE ALARM HORN/STROBE UNIT MOUNTED AT 84" AFF. "W" INDICATES FURNISH WITH WIREGUARD. "WP" INDICATES WEATHERPROOF.
- FIRE ALARM STROBE ONLY UNIT MOUNTED AT 84" AFF.
- FIRE ALARM HORN/STROBE UNIT, CEILING MOUNTED.
- FIRE ALARM STROBE ONLY UNIT, CEILING MOUNTED. "WP" INDICATES WEATHERPROOF.
- DH – FIRE ALARM MAGNETIC DOOR HOLD OPEN DEVICE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. PROVIDE POWER WIRING AS REQUIRED.
- FIRE ALARM TAMPER SWITCH
- FIRE ALARM WATER FLOW SWITCH
- SB – SPRINKLER BELL. PROVIDE ALL NECESSARY CONNECTIONS FOR BELL TO ANNUNCIATE UPON SPRINKLER ACTIVATION.
- R – FIRE ALARM RELAY IAM.
- M – FIRE ALARM MONITORED ZAM.
- NAC – FIRE ALARM NOTIFICATION APPLIANCE PANEL.
- SYN – SYNCHRONIZATION MODULE
- I – FIRE ALARM INDIVIDUAL ADDRESSABLE MODULE.
- PIV – PIV VALVE. PROVIDE TAMPER SWITCH AT VALVE.
- BFP – BACK FLOW PREVENTER. PROVIDE (2) TAMPER SWITCHES AT PREVENTER.
- HD – HAND DRYER. PROVIDE DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND W/ 2#10, #10G-3/4"C TO PANEL INDICATED ON DRAWINGS. VERIFY MOUNTING HEIGHT, CONNECTION REQUIREMENTS, AND CIRCUIT SIZE WITH VENDOR AND ARCHITECT PRIOR TO INSTALLATION.
- HH – PULLING HAND HOLE. SEE DETAIL ON DRAWING E8.
- CALL IN SWITCH BOX 4'-0" AFF. DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH 3/4" CONDUIT TO CABLE TRAY WITH END BUSHING. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR TYPES OF CABLE TO PROVIDE TO EACH DEVICE. JACKS, CABLE, AND BOX COVER BY ELECTRICAL CONTRACTOR.
- CEILING MOUNTED SPEAKER. "S" INDICATES STANDARD CIRCULAR TYPE SPEAKER WITH BACK BOX AND CEILING SUPPORT BRACKET. "C" INDICATES 2'X2' LAY-IN PAGING SPEAKER (QUAM SYSTEM 12). "V" INDICATES SPEAKER WITH INTEGRAL VOLUME CONTROLLER. PROVIDE 3/4" CONDUIT ROUTED FROM RACK TO DEVICE WITH END BUSHING. REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR TYPES OF CABLE TO PROVIDE TO EACH DEVICE. SPEAKER, BACK BOX, CONDUIT, AND WIRING BY ELECTRICAL CONTRACTOR.
- EXTERIOR SPEAKER WITH WEATHERPROOF ENCLOSURE (COORDINATE MOUNTING HEIGHT WITH ARCHITECT). REFERENCE SPECIALTY SYSTEMS RISER DIAGRAM FOR TYPES OF CABLE TO PROVIDE TO EACH DEVICE. SPEAKER, BACKBOX, CONDUIT, AND WIRING BY ELECTRICAL CONTRACTOR.
- CCTV / WP – CLOSED CIRCUIT TELEVISION SECURITY CAMERA FED BY FIBER OPTIC CABLE VIA DATA RACK IN MAIN FRAME ROOM. REFERENCE DWG E8 AND SPECIFICATION SECTION 17930 FOR ADDITIONAL INFORMATION. PROVIDE ALL NECESSARY CONNECTIONS FOR A COMPLETE AND OPERABLE SYSTEM. CAMERA BY SCHOOL DISTRICT. "WP" INDICATES EXTERIOR MOUNTED CAMERA. BACKBOX, CONDUIT, WIRING, AND FACEPLATE BY ELECTRICAL CONTRACTOR.
- SAME AS ⊕ ABOVE AND ▼ BELOW EXCEPT FED FROM SURFACE MOUNTED, DUAL CHANNEL, METALLIC RACEWAY (WIREMOLD SERIES 4000). LENGTH OF RACEWAY AND QUANTITY OF DEVICES PER DRAWINGS. SEE SPECIALTY SYSTEMS DRAWINGS ON SHEET E8 FOR ADDITIONAL DETAILS. COLOR BY ARCHITECT. PROVIDE ALL PARTS AND MATERIALS NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE FINAL CONFIGURATION W/ LOCAL INFORMATION TECHNOLOGY REPRESENTATIVE.
- DENOTES SURFACE MOUNTED DEVICE. PROVIDE SURFACE RACEWAY (WIREMOLD SERIES 2400 (SINGLE CHANNEL)) FOR SINGLE POWER, DATA DROP, FIRE ALARM, TELECOM PULL ONLY; (WIREMOLD SERIES 2400 (DUAL CHANNEL)) FOR DUAL POWER AND TELECOMMUNICATIONS; (WIREMOLD SERIES 4000) FOR TEACHER DESK DROPS IN EXISTING ROOMS FOR BRANCH CIRCUIT CONDUCTORS AND WIRING UP TO TRANSITION FITTING FOR CONDUIT AT CEILING UNLESS NOTED OTHERWISE. SEE SYMBOLS ABOVE FOR APPLICABLE NOTES AND OTHER REQUIREMENTS.
- PS – CEILING MOUNTED SPEAKER PROVIDED WITH ACTIVSOUND 100 SERIES AUDIO ENHANCEMENT SYSTEM. DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH SPEAKER WIRE IN 3/4" CONDUIT TO SYSTEM AMPLIFIER. SPEAKER AND CABLE BY ELECTRICAL CONTRACTOR. SEE SPECIALTY SYSTEMS DRAWINGS ON E8 FOR ADDITIONAL INFORMATION.
- PS – WALL MOUNTED SPEAKER PROVIDED WITH ACTIVSOUND 100 SERIES AUDIO ENHANCEMENT SYSTEM. DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH SPEAKER WIRE IN 3/4" CONDUIT TO SYSTEM AMPLIFIER. SPEAKER AND CABLE BY ELECTRICAL CONTRACTOR. SEE SPECIALTY SYSTEMS DRAWINGS ON E8 FOR ADDITIONAL INFORMATION.
- AES – AUDIO ENHANCEMENT AMPLIFIER (ACTIVSOUND SERIES 100). DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH PERFORMANCE AUDIO WIRE IN 3/4" CONDUIT TO AREA SPEAKER. ALL SYSTEM COMPONENTS AND WIRING BY ELECTRICAL CONTRACTOR. VERIFY EXACT LOCATION WITH OWNER PRIOR TO INSTALLATION. SEE SPECIALTY SYSTEMS DRAWINGS ON E8 FOR ADDITIONAL INFORMATION.
- CR – CORD REEL (ERICSON #3000 SERIES OR EQUAL) MOUNTED TO CEILING. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO INSTALLATION.
- PB – HANDICAP PUSH BUTTON FOR MOTORIZED DOORS. DUAL GANG JUNCTION BOX WITH SINGLE GANG PLASTER RING AND WITH ALL NECESSARY CONTROL WIRING IN 3/4" CONDUIT TO MOTORIZED DOOR OPERATOR. CONDUIT AND CABLE BY ELECTRICAL CONTRACTOR. DEVICE FURNISHED WITH EQUIPMENT, INSTALLED BY ELECTRICAL CONTRACTOR.
- ELECTRIC OVERHEAD DOOR CONTROLLER, WALL MOUNTED AT 48"AFF. FURNISHED WITH DOOR EQUIPMENT, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. VERIFY EXACT LOCATIONS W/ OWNER.
- M – OVERHEAD DOOR MOTOR FURNISHED W/ DOOR EQUIPMENT. CONFIRM VOLTAGE AND AMPERAGE REQUIREMENTS WITH EQUIPMENT NAMEPLATE PRIOR TO INSTALLATION.

WIRING METHODS SCHEDULE

FEEDER/CIRCUIT TYPE	WIRING METHOD
UNDERGROUND SERVICE ENTRANCE-5' OR MORE BEYOND BLDG	CONCRETE ENCASED SCHEDULE 40 PVC CONDUIT. MINIMUM DEPTH SHALL BE 24" BELOW GRADE.
UNDERGROUND SERVICE ENTRANCE-WITHIN 5' OR UNDER BLDG	CONCRETE ENCASED SCHEDULE 80 PVC CONDUIT. MINIMUM DEPTH SHALL BE 24" BELOW FLOOR SLAB.
UNDERGROUND FEEDER-5' OR MORE BEYOND BLDG	CONCRETE ENCASED PVC DUCT,
UNDERGROUND FEEDER-WITHIN 5' OR UNDER BLDG	CONCRETE ENCASED PVC CONDUIT, SCHEDULE 80. MINIMUM DEPTH SHALL BE 30" BELOW BOTTOM OF FLOOR SLAB
UNDERGROUND BRANCH CIRCUIT-5' OR MORE BEYOND BUILDING	DIRECT BURIED PVC CONDUIT, SCHED 40. MINIMUM DEPTH SHALL BE 24" BELOW GRADE
UNDERGROUND BRANCH CIRCUIT-WITHIN 5' OR UNDER BUILDING	DIRECT BURIED PVC CONDUIT, SCHED 40. MINIMUM DEPTH SHALL BE 18" BELOW BOTTOM OF FLOOR SLAB
INTERIOR FEEDERS/CIRCUITS-IN FLOOR SLABS	PVC CONDUIT, SCHED 80
EXTERIOR, WET OR DAMP LOCATION FEEDERS/CIRCUITS	RGS CONDUIT
ALL WIRING-HAZARDOUS LOCATIONS	RGS CONDUIT
INTERIOR FEEDERS-EXPOSED	2" OR LESS: EMT. 2 1/2" OR GREATER: RGS CONDUIT- PROVIDE RGS CONDUIT WHERE EXPOSED BELOW 10' AFF, OR WHERE EXPOSED TO SEVERE PHYSICAL DAMAGE, OR WHERE REQUIRED BY NEC.
INTERIOR FEEDERS-CONCEALED IN WALL OR ABV CLG	2" OR LESS: EMT. 2 1/2" OR GREATER: RGS CONDUIT- PROVIDE RGS CONDUIT WHERE EXPOSED BELOW 10' AFF, OR WHERE EXPOSED TO SEVERE PHYSICAL DAMAGE, OR WHERE REQUIRED BY NEC.
FIRE PUMP FEEDERS/CIRCUITS-EXPOSED	MI CABLE, OR RGS CONDUIT WHERE ALLOWED BY NFPA 20
FIRE PUMP FEEDERS/CIRCUITS-BELOW FLOOR SLAB OR UNDERGROUND	CONCRETE ENCASED PVC CONDUIT, IAW NFPA 20-MINIMUM DEPTH SHALL BE 30" BELOW BOTTOM OF FLOOR SLAB.
CONNECTIONS TO XFMR'S, MOTORS, AND VIBRATING EQPT	LIQUIDTIGHT FLEXIBLE METAL CONDUIT, 3 FT MAXIMUM LENGTH
TELECOMMUNICATIONS GROUND SYSTEM GROUND CONDUCTORS	RGS CONDUIT BONDED TO GND CONDUCTOR AT BOTH ENDS, OR PVC SCHED 40 WHERE ALLOWED BY NEC IN NON-PLENUM SPACES
FACILITY GROUND SYSTEM GROUND CONDUCTORS SIGNAL REFERENCE GROUND SYSTEM GROUND CONDUCTORS	RGS CONDUIT BONDED TO GND CONDUCTOR AT BOTH ENDS, OR PVC SCHED 40 WHERE ALLOWED BY NEC IN NON-PLENUM SPACES
GROUNDING ELECTRODE CONDUCTORS	RGS CONDUIT BONDED TO GND CONDUCTOR AT BOTH ENDS, OR PVC SCHED 40 WHERE ALLOWED BY NEC IN NON-PLENUM SPACES
SIGNAL AND TELECOMMUNICATIONS WIRING	EMT, EXCEPT WHERE RGS CONDUIT IS REQUIRED BY NEC. PROVIDE 200 LB. TEST NYLON PULL LINE IN ALL TELECOMMUNICATIONS CONDUITS.
INTERIOR CIRCUITS-EXPOSED	2" OR LESS: EMT. 2 1/2" OR GREATER: RGS CONDUIT- PROVIDE RGS CONDUIT WHERE EXPOSED TO SEVERE PHYSICAL DAMAGE, OR WHERE REQUIRED BY NEC.
INTERIOR CIRCUITS-CONCEALED IN WALL OR ABOVE CEILING	2" OR LESS: EMT. 2 1/2" OR GREATER: RGS CONDUIT- PROVIDE RGS CONDUIT WHERE EXPOSED TO SEVERE PHYSICAL DAMAGE, OR WHERE REQUIRED BY NEC.
WIRING OUTSIDE OF CABLE TRAYS TO INSTRUMENTATION, SENSORS, AND PROCESS EQUIPMENT	RGS CONDUIT
UNDERGROUND FEEDERS AND BRANCH CIRCUITS ENCASED IN CONCRETE POLE FOUNDATIONS	SCHEDULE 80 PVC

WIRING METHODS SCHEDULE NOTES:

1. WIRING METHODS SHALL BE AS INDICATED ABOVE, UNLESS SPECIFIED OR INDICATED OTHERWISE. WIRING METHODS SHALL COMPLY WITH NEC REQUIREMENTS AS A MINIMUM. SEE SPECIFICATIONS AND DRAWINGS FOR ADDITIONAL REQUIREMENTS. SEE LEGEND AND PANEL SCHEDULES FOR MINIMUM CONDUIT SIZES.

2. RISERS AND ELBOWS FROM UNDERGROUND OR IN-SLAB PVC CONDUITS/DUCTS SHALL BE RGS CONDUITS.

3. CONDUITS AND WIRING SHALL BE RUN ABOVE THE FLOOR UNLESS SPECIFICALLY INDICATED OTHERWISE; WIRING BELOW SLABS IS PROHIBITED EXCEPT WHERE SPECIFICALLY INDICATED. CONDUITS AND WIRING IN FINISHED SPACES SHALL BE CONCEALED WITHIN PARTITIONS AND ABOVE CEILINGS UNLESS SPECIFIED OR INDICATED OTHERWISE. CONDUITS AND WIRING IN ELECTRICAL/MECHANICAL ROOMS, UTILITY SPACES, AND MANUFACTURING AREAS SHALL BE EXPOSED AFF UNLESS SPECIFIED OR INDICATED OTHERWISE. NO MC CABLE ALLOWED.

4. ADDITIONAL REQUIREMENTS

A. UNDERGROUND DUCTS/CONDUITS-HORIZONTAL CHANGES IN DIRECTION SHALL BE ACCOMPLISHED WITH LONG SWEEP BENDS, HAVING A MINUMUM RADIUS OF 25 FT. VERTICAL ELBOWS TO RISERS SHALL BE RGS CONDUITS HAVING A MINIMUM BEND RADIUS OF 36" FOR FEEDERS AND 24" FOR CIRCUITS, UNLESS NOTED OTHERWISE. SEAL PENETRATIONS OF DUCTS AND CONDUITS THROUGH FLOOR SLAB VAPOR BARRIERS.

B. ABOVE GRADE POWER WIRING CONDUITS. PROVIDE PULL BOXES IAW NEC AT LOCATIONS APPROVED BY THE ARCHITECT, WHERE REQUIRED BY NEC OR FIELD CONDITIONS. CONDUIT BENDS SHALL COMPLY WITH NEC. INCREASE CONDUIT BEND RADIUS ABOVE NEC REQUIREMENTS WHERE REQUIRED TO PROVIDE AT LEAST 125% OF THE MINIMUM ALLOWABLE BEND RADIUS SPECIFIED BY THE CABLE MANUFACTURER FOR THE CABLES CONTAINED IN THE CONDUIT.

C. ABOVE GRADE CONTROL, INSTUMENTATION, SIGNAL AND TELECOMMUNICATIONS CONDUITS: INSIDE RADIUS OF CONDUIT BENDS SHALL BE AT LEAST 10 TIMES INTERNAL CONDUIT DIAMETER. INCREASE CONDUIT BEND RADIUS ABOVE NEC REQUIREMENTS WHERE REQUIRED TO PROVIDE AT LEAST 125% OF THE MINIMUM ALLOWABLE BEND RADIUS SPECIFIED BY THE CABLE MANUFACTURER FOR THE CABLES CONTAINED IN THE CONDUIT. PROVIDE PULL BOXES AT LOCATIONS APPROVED BY THE ARCHITECT, TO LIMIT CONDUIT RUNS TO 100 FEET OR LESS, AND TO LIMIT THE QUANTITY OF BENDS IN A CONDUIT RUN TO TWO. MINIMUM PULL BOX SIZE SHALL BE AS DESCRIBED BELOW; INCREASE IF NECESSARY FOR FIELD CONDITIONS OR IF NOTED OTHERWISE.

– FOR CONDUITS 1" AND SMALLER: MINIMUM JUCTION BOX SIZE SHALL BE 4" x 2 1/8" SQUARE AND THERE SHALL BE NO MORE THAN ONE EXTENSION PER JUNCTION BOX.

– FOR CONDUITS 1 1/4 " AND LARGER WITH STRAIGHT PULLS: PULL BOX LENGTH SHALL BE 8 TIMES CONDUIT DIAMETER.

– FOR CONDUITS 1 1/4 " AND LARGER WITH ANGLE PULLS: PULL BOX LENGTH AND WIDTH SHALL BE AT LEAST 10 TIMES LARGEST CONDUIT DIAMETER PLUS SUM OF CONDUIT DIAMETERS ON SAME WALL OF BOX, FOR WORST CASE SIDE. LENGTH AND WIDTH SHALL ALSO MAINTAIN MINIMUM SEPARATION OF 6 TIMES CONDUIT DIAMETER BETWEEN CONDUITS CONTAINING THE SAME CONDUCTORS/CABLES. PULL BOX DEPTH SHALL BE APPROPRIATE FOR LARGEST CONDUIT ENTERING THE BOX. FOR BOXES WITH CONDUITS EXITING OPPOSITE A REMOVABLE COVER, MINIMUM PULL BOX DEPTH SHALL BE 6 TIMES DIAMETER OF LARGEST CABLE/CONDUCTOR PLUS DIAMETER OF LARGEST CONDUIT.

5. CONDUCTORS: SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. UNLESS INDICATED OR SPECIFIED OTHERWISE, CONDUCTORS FOR FEEDERS, AND BRANCH CIRCUITS SHALL BE:

A. COPPER: SOLID FOR #10 AWG AND SMALLER, STRANDED FOR #8 AWG AND LARGER.

B. THHN/THWN AND XHHW INSULATION, RATED AT LEAST 90°C FOR DRY LOCATIONS AND 75°C FOR WET LOCATIONS, UNLESS INDICATED OR SPECIFIED OTHERWISE. INSULATION SHALL BE THHN/THWN FOR CONDUCTOR SIZES #6 AND SMALLER AND XHHW FOR CONDUCTOR SIZES LARGER THAN #6. INSULATION VOLTAGE RATING SHALL BE 600V. SEE NOTES BELOW

C. FOR ISOLATED POWER AND GFCI CIRCUIT WIRING ADDITIONAL REQUIREMENTS. POWER FEEDER CABLES SHALL NOT BE SPLICED.

D. LIGHTING AND CONVENIENCE OUTLETS SHALL BE IN SEPARATE RACEWAYS AND SHALL NOT BE ON THE SAME CIRCUIT.

E. #10AWG CONDUCTORS SHALL BE USED ON THE ENTIRE BRANCH CIRCUIT, FOR BRANCH CIRCUITS EXCEEDING 75 FEET IN LENGTH AT 120 VOLTS 200 FEET IN LENGTH AT 277 VOLTS.

6. ADDITIONAL REQUIREMENTS FOR ISOLATED POWER WIRING AND GFCI CIRCUIT WIRING:

A. WIRING SHALL BE IN 3/4" CONDUIT MINIMUM; SHALL BE EMT, IMC, OR RGS CONDUIT.

B. MINIMIZE CIRCUIT LENGTH TO THE GREATEST EXTENT PRACTICAL, WHILE MAINTAINING COMPLIANCE WITH SPECIFICATIONS AND DRAWINGS.

C. PROVIDE XHHW-2 INSULATION FOR ISOLATED POWER WIRING AND GFCI WIRING, WHERE SPECIFIED ON THE PANEL SCHEDULES. CABLE LUBRICANTS NOT PERMITTED ON ISOLATED POWER AND GFCI CIRCUIT WIRING.

D. COMPLY WITH NEC AND NFPA 99

7. ALL LOW VOLTAGE AND LINE VOLTAGE CABLES SHALL BE IN CONDUIT OR CABLE TRAY. NO MORE THAN 6" OF EXPOSED WIRE WILL BE ALLOWED FOR LOW VOLTAGE SYSTEMS. ALL LOW VOLTAGE WIRING SHALL BE ROUTED ABOVE GRADE UNLESS NOTED OTHERWISE. FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT.

TYPICAL MOUNTING HEIGHTS-WALL MOUNT DEVICES/EQUIPMENTS

DEVICE/EQUIPMENT	MTG HT, AFF	MEASURED TO	DEVICE/EQUIPMENT	MTG HT, AFF	MEASURED TO
RECEPTACLES	AS INDICATED	TOP	GROUND FAULT CIRCUIT INTERRUPTERS	4'-0"	TOP
TOGGLE SWITCHES	4'-0"	TOP	GROUND BUSES	2'-0"	CENTER
WALL DIMMERS	4'-0"	TOP	CABLE TRAYS	AS INDICATED	BOTTOM
MANUAL MOTOR STARTERS	4'-0"	TOP	TELECOMMUNICATIONS OUTLETS.	1'-6"	CENTER
WALL/SWITCH OCCUPANCY SENSORS	4'-0"	TOP	TELECOMMUNICATIONS OUTLETS, WITH "W" DESIGNATION ON PLANS.	4'-0"	TOP
LIGHTING CONTROL PANELS	5'-0"	TOP	TELECOMMUNICATIONS OUTLETS, WITH "A" DESIGNATION ON PLANS.	AS INDICATED	-
LIGHTING CONTROL STATIONS	4'-0"	TOP	SPEAKERS	7'-6"	CENTER
JUNCTION BOXES	AS INDICATED	CENTER	PAGING SYSTEM CONTROL PANELS	6'-0"	TOP
MONITORING OR CONTROL PANELS, UNO	5'-0"	TOP			
SURFACE METAL RACEWAY	AS INDICATED	TOP	VOLUME CONTROLS	4'-0"	TOP
PANELBOARDS	6'-0"	TOP	INTEGRATED COMMUNICATION SYSTEM PANELS	6'-0"	TOP
DISCONNECT SWITCHES	5'-0"	TOP			
AUTOMATIC TRANSFER SWITCHES	6'-0"	TOP	ELECTRICALLY OPERATED DOOR STRIKES	AS INDICATED	CENTER
MANUAL TRANSFER SWITCHES	6'-0"	TOP			
CONTROL STATIONS	6'-0"	TOP	TOUCH PADS	AS INDICATED	CENTER
TRANSIENT VOLTAGE SURGE SUPPRESSORS	NTE 6'-0"	TOP	CLOSED CIRCUIT TELEVISION CAMERAS	AS INDICATED	CENTER
MAGNETIC MOTOR STARTERS	6'-0"	TOP	VOLUMETRIC SENSORS	AS INDICATED	CENTER
LIGHTING CONTACTORS	6'-0"	TOP	GEN REMOTE ALARM ANNUNCIATORS	5'-0"	TOP
INDIVIDUAL CIRCUIT BREAKER	6'-0"	TOP	GEN/BAS TERMINAL BLOCKS	5'-0"	TOP
EMERGENCY SHUTDOWN SWITCHES	5'-6"	CENTER	GEN EMERGENCY STOP SWITCHES	5'-6"	TOP
TIME SWITCHES	6'-0"	TOP	GEN TANK FUEL LEVEL INDICATORS	5'-0"	TOP
POWER CONTROL PANELS	5'-0"	TOP	LIGHTING FIXTURES	AS INDICATED	CENTER, UNO
FIRE ALARM AUDIO/VISUAL ALARMS	7'-0"	CENTER	SMOKE DETECTORS (WALL MTD)	6"CLEARANCE TO CEILING	TOP
FIRE ALARM VISUAL ALARMS	7'-0"	CENTER	BEAM-TYPE SMOKE DETECTORS	AS INDICATED	CENTER
			FIRE ALARM CONTROL PANELS	6'-0"	TOP
FIRE ALARM HORNS	7'-0"	CENTER	FIRE ALARM ANNUNCIATOR PANELS	6'-0"	TOP
FIRE ALARM MANUAL STATIONS	4'-0"	TOP	FIRE ALARM MASTER BOXES	AS INDICATED	-
FIRE FIGHTER PHONE JACKS	4'-6"	CENTER	FIRE PUMP ALARM PANELS	6'-0"	TOP
FIRE FIGHTER MASTER PHONES	4'-6"	CENTER	FIRE ALARM GRAPHIC ANNUNCIATORS	6'-0"	TOP

NOTES:

1. COORDINATE MOUNTING HEIGHTS WITH FIELD CONDITIONS, ARCHITECT, OTHER TRADES, AND RELATED EQUIPMENT.
2. EXCEPTIONS TO MOUNTING HEIGHTS INDICATED ABOVE ARE INDICATED ON PLANS.

ALTERNATES
(SEE ARCH. SPEC. SECTION 01230 FOR ADDITIONAL INFORMATION)

- ALTERNATE #1 – NEW POST-MOUNTED EXTERIOR LIGHTING FIXTURES AT LOWER FLOOR ENTRY AND ALONG THE WEST SIDE OF THE BUILDING.
- ALTERNATE #2 – PROVIDE THREE NEW OVERSIZED OVERHEAD DOORS BETWEEN CLASSROOMS.
- ALTERNATE #3 – SOUND ENHANCEMENT SYSTEM IN CLASSROOMS AND ALL ASSOCIATED COMPONENTS, CONDUIT, AND WIRING.
- ALTERNATE #4a – NEW LIGHTING AND SOUND SYSTEM IN AUDITORIUM ALONG WITH ALL ASSOCIATED COMPONENTS, CONDUIT, AND WIRING.
- ALTERNATE #4b – NEW PROJECTOR AND PROJECTOR SCREEN IN AUDITORIUM WITH ALL ASSOCIATED COMPONENTS, CONDUIT, AND WIRING.
- ALTERNATE #5 – NEW LIGHTING AND POWER IN VIDEO ROOM 100 ALONG WITH ALL ASSOCIATED COMPONENTS, CONDUIT, AND WIRING.

ABBREVIATIONS

A, AMP	AMPERE	KV	KILO-VOLT
AC	ALTERNATING CURRENT	KVA	KILO-VOLT AMPERES
ACH	ABOVE COUNTER HEIGHT	KW	KILOWATT
AF	AMP FRAME	LB(S)	POUND(S)
AFF	ABOVE FINISHED FLOOR	LTG	LIGHTING
AFG	ABOVE FINISHED GRADE	LTS	LIGHTS
AHU	AIR HANDLING UNIT	MAX	MAXIMUM
AIC	AMPERE INTERRUPTING CAPACITY	MCB	MAIN CIRCUIT BREAKER
AL	ALUMINUM	MCC	MOTOR CONTROL CENTER
ASYM	ASYMMETRICAL	MFR	MANUFACTURER
AT	AMP TRIP	MIN	MINIMUM
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
AVG	AVERAGE	N, NEUT	NEUTRAL
AWG	AMERICAN WIRE GAUGE	N/A	NOT APPLICABLE
BKR	BREAKER	N.C.	NORMALLY CLOSED
BLDG	BUILDING	NEC	NATIONAL ELECTRICAL CODE
C, CND	CONDUIT	NEMA	NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION
CAT	CATALOG	NIC	NOT IN CONTRACT
CCTV	CLOSED CIRCUIT TELEVISION CAMERA	N.O.	NORMALLY OPEN
CKT	CIRCUIT	NTE	NOT TO EXCEED
CONT	CONTINUOUS	NTS	NOT TO SCALE
CRI	COLOR RENDERING INDEX	P	POLE
CT	CURRENT TRANSFORMER	PDU	POWER DISTRIBUTION UNIT
CU	COEFFICIENT OF UTILIZATION	PH, Ø	PHASE
DISC	DISCONNECT	PMCS	POWER MONITORING AND CONTROL SYSTEM
DIST	DISTRIBUTION	PNL	PANEL
DIV	DIVISION	PVC	POLYVINYL CHLORIDE
DWG(S)	DRAWING(S)	RCPT(S)	RECEPTACLE(S)
DPDT	DOUBLE POLE-DOUBLE THROW	RCR	ROOM CAVITY RATIO
EC	EMPTY CONDUIT	RGS	RIGID GALVANIZED STEEL
ELEC	ELECTRIC	RM	ROOM
EMER	EMERGENCY	SS	STAINLESS STEEL
EMT	ELECTRICAL METALLIC TUBING	SW	SWITCH
EPP	EXISTING POWER POLE	SWBD	SWITCHBOARD
EQPT	EQUIPMENT	SYM	SYMMETRICAL
EWC	ELECTRIC WATER COOLER	TYP	TYPICAL
EWH	ELECTRIC WATER HEATER	UG, UGND	UNDERGROUND
EXST	EXISTING	UH	UNIT HEATER
FACP	FIRE ALARM CONTROL PANEL	UL	UNDERWRITERS' LABORATORIES
FBO	FURNISHED BY OTHERS, FURNISHED BY OWNER	UNO	UNLESS NOTED OTHERWISE
FIXT	FIXTURE	V	VOLT(S)
FWE	FURNISHED WITH EQUIPMENT, INDICATES ITEM IS FURNISHED WITH EQUIPMENT SUPPLIED UNDER OTHER DIVISIONS, BUT INSTALLED UNDER DIVISION 16.	VFD	VARIABLE FREQUENCY DRIVE
		W	WATT(S), WIRE
G, GND	GROUND	W/	WITH
GA	GAUGE	W/O	WITHOUT
GEN	GENERATOR	WP	WEATHERPROOF
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	XFMR	TRANSFORMER
GFI	GROUND FAULT INTERRUPTER	1/C	SINGLE CONDUCTOR CABLE
HID	HIGH INTENSITY DISCHARGE	3/C	THREE CONDUCTOR CABLE
HP	HORSEPOWER	Z	IMPEDANCE
HPF	HIGH POWER FACTOR	%Z	PERCENT IMPEDANCE
HPS	HIGH PRESSURE SODIUM	SPST	SINGLE POLE-SINGLE THROW
HZ	HERTZ	DPST	DOUBLE POLE-SINGLE THROW
IG	ISOLATED GROUND	3PST	THREE POLE-SINGLE THROW
IMC	INTERMEDIATE METAL CONDUIT	SPDT	SINGLE POLE-DOUBLE THROW
INC, INCAND	INCANDESCENT	DPDT	DOUBLE POLE-DOUBLE THROW
KCMIL	ONE THOUSAND CIRCULAR MILS	3PDT	THREE POLE-DOUBLE THROW

GREENVILLE COUNTY SCHOOLS

REVISION		DATE	BY
0	FOR BIDS	01/06/23	PEK

PROJECT NO. 21370B
DATE 01/06/2023
DRAWN BY TMP/LJK
CHECKED BY PEK

LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E6
7 OF 13 SHEETS

GENERAL LIGHTING NOTES:

1. MANUFACURERS & NUMBERS ARE LISTED TO ESTABLISH QUALITY ONLY AND NOT TO LIMIT COMPETITION. TEN DAYS PRIOR TO BIDDING, SUBSTITUTIONS ARE ALLOWED SUBJECT TO SUBMITAL DATA, PHOTOMETRICS & ENGINEERS APPROVAL.
2. ALL FLUORESCENT FIXTURES SHALL HAVE 'PREMIUM ELECTRONIC BALLASTS WITH 90% MIN. BALLAST FACTOR AND MAX. THD OF 20%. ALL TROFFERS TO HAVE T-8 LAMPS AND .125 INCH LENSES, MINIMUM UNLESS NOTED OTHERWISE. ALL FIXTURES TO BE PAINTED AFTER FABRICATION. BALLASTS SHALL BE MANUFACTURED BY MAGNETEK, UNIVERSAL OR ADVANCE. LAMPS SHALL BE MANUFACURED BY PHILIPS OR GE.
3. ALL FIXTIRES TO BE U.L. LABELED. ALL EXTERIOR FIXTURES SHALL HAVE U.L. WET LABEL OR DAMP LABEL AS REQUIRED BY LOCATION. CONTRACTOR SHALL VERIFY BEFORE SUBMITING FIXTURE.
4. CONTRACTOR SHALL PROVIDE ALL MOUNTING ACCESSORIES, BAR HANGARS & HARDWARE REQUIRED.
5. EMERGENCY BATTERY BALIAST FOR FLUORESCENT FIXTURES SHALL PROVIDE A MINIMUM OF 1200 LUMEN OUTPUT. BALLAST SHALL CINTAIN INTEGRAL SENSING CIRCUIT TO ALLOW FIXTURE TO BE SWITCHED WITH AREA FIXTURES FOR NORMAL OPERATION, WHERE INDICATED, AND ENERGIZE BATTERY POWERED LAMP UPON LOSS OF POWER CIRCUIT REGARDLESS OF SWITCH POSITION. MANUFACURER SHALL BE BODINE OR IOTA.
6. IN ADDITON TO EXIT SIGNS SHOWN ON THE DRAWINGS, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND NSTALL (10) ADDITIONAL EXIT SIGNS AT THE DISCRETION OF THE ARCHITECT/ENGINEER, THE OWNER, AND/OR THE LOCAL BUILDING OFFICIAL. FOR BIDDING PURPOSES, ASSUME A 100' RUN OF 2#12, #12G-3/4"C ALONG WITH LABOR FOR INSTALLATION (PER SIGN). FIXTURES NOT USED SHALL BE TURNED OVER TO THE OWNER.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	FIXTURE DESCRIPTON	ACCEPTABLE MANUFACTURERS	LAMPS	FIXTURE WATTAGE	VOLTAGE
DP	DECORATIVE CAST ALUMINUM POLE MOUNTED FIXTURE WITH 10' POLE, DARK SKY FRIENDLY, WET LOCATION LISTED.	FIXTURE USALTG # VRT-CA-175MH-FTB23 POLE USALTG # RTNA-104-25-RBC	1-150W MH	165	208
EL	6 VOLT SINGLE HEAD WEATHERPROOF REMOTE HALOGEN SEALED BEAM	MCPHILBEN # PDLB2	BY MANUFACURER	6	6
EXA	UNIVERSAL MOUNTED EXIT SIGN WITH RED LED ON WHITE HOUSING, BATTERY BACKUP, DIFFUSER LENS, SPEC GRADE. (SEE NOTE 6 ABOVE)	CHLORIDE# ERB	BY MANUFACURER	10	120
EXB	UNIVERSAL MOUNTED EXIT SIGN WITH RED LED ON WHITE HOUSING, BATTERY BACKUP, DIFFUSER LENS, & HIGH OUTPUT BATTERY BALLAST, SPEC. GRADE	CHLORIDE# ERB-XBAT	BY MANUFACURER	10	120
EXC	COMBINATION UNIVERSAL MOUNTED EXIT SIGN WITH RED LED ON WHITE HOUSING, HIGH- OUTPUT BATTERY BALLAST, DIFFUSER LENS, SPEC GRADE	CHLORIDE #ERC2-XBAT	BY MANUFACURER	10	120
IA	4', 1 LAMP STANDARD CHANNEL STRIP LIGHT, 22 GA. STEEL PAF, ELECTRONIC BALLAST, AND WIREGUARD.	WILLIAMS # 16-4-232-EB2-UNV-WG-PAF	2-FO32T8/35K	56	120
IAE	SAME AS 'IA' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # 16-4-232-EB2-UNV-WG-PAF-EM	2-FO32T8/35K	56	120
LS	LED STRIP LIGHTING FIXTURE WITH RUBBER BACKING. LENGTH AS SHOWN ON THE DRAWINGS.	TUBE LIGHTING # LED2-CCBE-9-A-C-LENGTH	LED	2W/FT	120
PA4	4', MODULAR DIRECT/INDIRECT LINEAR FLUARESCENT LIGHT FIXTURE, (2) ELECTRONIC BALLASTS FOR SWITCHING UP LIGHT SEPARATE FROM DOWNLIGHT, WHITE FINISH AND MOUNTED WITH ADJUSTABLE AIRCRAFT CABLE. PROVIDE ALL PARTS AND ACCESSORIES AS REQUIRED TO ACCOMPLISH MOUNTING AND ASSIMBLY AS SHOWN.	FOR BIDDING PURPOSES ALLOW $75.00/LINEAR FOOT.	3-FO32T8/35K	84	120
PA4E	SAME AS 'PA4' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	FOR BIDDING PURPOSES ALLOW $75.00/LINEAR SQUARE FOOT.	3-FO32T8/35K	84	120
PB	PENDANT MOUNTED FLUORESCENT CYLINDER FIXTURE.	WILLIAMS # PHC11/75-242T-EB-PM	2-F42TRT 35K	85	120
PBE	SAME AS 'PB' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # PHC11/75-242T-EB-PM-EM	2-F42TRT 35K	85	120
PC4	4', MODULAR DIRECT/INDIRECT LINEAR FLUARESCENT LIGHT FIXTURE, (2) ELECTRONIC BALLASTS FOR SWITCHING UP LIGHT SEPARATE FROM DOWNLIGHT, WHITE FINISH AND MOUNTED WITH ADJUSTABLE AIRCRAFT CABLE. PROVIDE ALL PARTS AND ACCESSORIES AS REQUIRED TO ACCOMPLISH MOUNTING AND ASSIMBLY AS SHOWN.	FOR BIDDING PURPOSES ALLOW $100.00/LINEAR FOOT.	3-FO32T8/35K	84	120
PH	LED PENDANT MOUNTED FIXTURE TO REPLACE EXISTING.	FURNISHED BY AV CONSULTANT, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.	LED	100	120
PHE	EXISTING EMERGENCY LIGHTING FIXTURE TO REMAIN. ELECTRICAL CONTRACTOR TO CLEAN AND RE-LAMP FIXTURE.	EXISTING	EXISTING	100	120
RF	8" DIA RECESSED CAN LIGHT WITH CLEAR ALZAK REFLECTOR FOR TWO 26 WATT PL LAMPS, BAR HANGERS	OMEGA # SB2H26PLTU-TB2H2PLTCS-Q1032	2-F26DT/ 35K	50	120
RFE	SAME AS 'RF' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	OMEGA # SB2H26PLTU-TB2H2PLTCS-Q1032-EM	2-F26DT/ 35K	50	120
RG	6" DIA RECESSED CAN LIGHT WITH CLEAR ALZAK REFLECTOR AND DROP DOWN DECORATIVE DISK.	OMEGA # OA632PLT-FLR-C9F	1-F32TRT 35K	35	120
TA	RECESSED 2X4, SPEC GRADE STATIC TROFFER, 4 LAMP, F.AT WHITE ALUMINUM DOOR, 22 GA. STEEL, PAF, .125 MIN LENS, ELECTRONIC BALLAST.	WILLIAMS # T8T-24-432-SA12-1/4-UNV-PAF	4-FO32T8/35K	114	120
TAE	SAME AS 'TA' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # T8T-24-432-SA12-1/4-UNV-PAF-EM	4-FO32T8/35K	56	120
TB	RECESSED 2X4, SPEC GRADE STATIC TROFFER, 3 LAMP, F.AT WHITE ALUMINUM DOOR, 22 GA. STEEL, PAF, .125 MIN LENS, ELECTRONIC BALLAST.	WILLIAMS # T8T-24-332 SA 2-1/3-UNV-PAF	3-FO32T8/35K	84	120
TBE	SAME AS 'TB' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # T8T-24-332 SA 2-1/3-UNV-PAF-EM	3-FO32T8/35K	56	120
TC	RECESSED 2X4, SPEC GRADE STATIC TROFFER, 2 LAMP, F.AT WHITE ALUMINUM DOOR, 22 GA. STEEL, PAF, .125 MIN LENS, ELECTRONIC BALLAST.	WILLIAMS # T8T-24-232-SA12-1/2-UNV PAF	2-FO32T8/35K	56	120
TCE	SAME AS 'TC' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # T8T-24-232-SA12-1/2-UNV PAF-EM	2-FO32T8/35K	56	120
TD	RECESSED 2X2, SPEC GRADE STATIC TROFFER, 4 LAMP, F.AT WHITE ALUMINUM DOOR, 22 GA. STEEL, PAF, .125 MIN LENS, ELECTRONIC BALLAST.	WILLIAMS # T8T-22-417-SA12-1/4-UNV-PAF	4-FO17T8/35K	56	120
TDE	SAME AS 'TD' EXCEPT WITH EMERGENCY BATTERY BACK-UP.	WILLIAMS # T8T-22-417-SA12-1/4-UNV-PAF-EM	4-FO17T8/35K	56	120
TS	SINGLE CIRCUIT, PENDANT MOUNTED TRAIK, LENGTH'S AS INDICATED, WITH TRAIK FIXTURES AS SPECIFIED. ALL WITH SILVER FINISH	LSI #10KT., RECESSED (TRACK) LSI #290-01-S (FIXTURE)	1-150W PAR38 MED. FLOOD	75W/FT	120
TU	SINGLE CIRCUIT, PENDANT MOUNTED BENIABLE TRACK, LENGTH'S AS INDIRATED, WITH TRAIK FIXTURES AS SPECIFIED. ALL WITH SILVER FINISH	JESCO LIGHTING #MA SERIES (TRACK) JESCO LIGHTING #QASL-188K3-30 (FIXTURE)	LED	75W/FT	120
WA	4' WALL MOUNTED BRACKET FIXTURE, 2 LAMPS DOWN, WHITE, ALL PARTS PAF	WILLIAMS #29-4-232-A-CT-1382-UNV-PAF	2-FO32T8/35K	56	120

PANELBOARD: "PL" — VOLTAGE: 208/120V, 3Φ, 4W
MOUNTING: SURFACE — MAINS: MCB — MIN. AIC RATING: 42,000A
TRIP: 225A — FRAME: 225A — PHASE LOAD VA

LOAD	DESCRIPTION	CKT.	TRIP	TRIP	CKT.	DESCRIPTION	LOAD	L1	L2	L3
620	L--OFFICES,STRORAGE	1	20	20	2	R.--CLASSROOM	720	340		
1535	L--CORRIDOR	3	20	20	4	R.--CLASSROOM	900		2435	
1261	L--CLASSROOM	5	20	20	6	R.--CLASSROOM	1000			2261
1179	L--CLASSROOM	7	20	20	8	R.--CLASSROOM	1260	1439		
1431	L--CLASSROOM	9	20	20	10	R.--CLASSROOM	1000		2431	
1090	L--CLASSROOM	11	20	20	12	R.--CLASSROOM	540			1630
1460	L--CLASSROOM	13	20	20	14	R.--CLASSROOM	720	1180		
1560	L--CLASSROOM	15	20	20	16	R.--CLASSROOM	540		2100	
1500	L--CLASSROOM TRACK	17	20	20	18	R.--CLASSROOM	1000			2500
1500	FUTURE TRACK LIGHTING	19	20	20	20	R.--CLASSROOM	1260	1760		
1500	FUTURE TRACK LIGHTING	21	20	20	22	R.--CLASSROOM	540		2040	
1500	L--CLASS/CORR. TRACK	23	20	20	24	R.--CLASSROOM	1000			2500
1500	FUTURE TRACK LIGHTING	25	20	20	26	R.--OFFICES	540	1040		
1500	L--CORRIDOR TRACK	27	20	20	28	R.--OFFICES	1440		2940	
1500	L--CLASSROOM TRACK	29	20	20	30	R.--CLASSROOM	1260			2760
1500	FUTURE TRACK LIGHTING	31	20	20	32	R.--CLASSRM FLCORDO	500	1000		
1500	FUTURE TRACK LIGHTING	33	20	20	34	R.--CLASSROOM	900		2400	
1500	FUTURE TRACK LIGHTING	35	20	20	36	R.--CLASSROOM	900			2400
750	FUTURE TRACK LIGHTING	37	20	20	38	R.--CLASSROOM	1000	750		
990	L--EXTERIOR	39	20	20	40	FC-1/2-7A	100		1090	
990	↑	41	↑	↑	42	↑	100			1090
	SECTION TWO (SUBFED)					SECTION TWO (SUBFED)				
500	ELC CONTROLS	43	20	40	44	WH-1	3000	1500		
360	R.--RECEPTION	45	20	↑	46	↑	3000		3360	
500	R.--EXTERIOR	47	20	20	48	SPARE				500
1000	AUTOMATIC DOORS	49	20	20	50	SPARE		000		
1500	ROLL UP DOORS	51	20	20	52	SPARE			1500	
1500	ROLL UP DOORS	53	20	20	54	SPARE				1500
	SPARE	55	20	20	56	SPARE				
	SPARE	57	20	20	58	SPARE				
	SPARE	59	20	20	60	SPARE				
	SPARE	61	20	20	62	SPARE				
	SPARE	63	20	20	64	SPARE				
	SPARE	65	20	20	66	SPARE				
	SPARE	67	20	20	68	SPARE				
	SPARE	69	20	20	70	SPARE				
	SPARE	71	20	20	72	SPARE				
	SPARE	73	20	20	74	SPARE				
	SPARE	75	20	20	76	SPARE				
	SPARE	77	20	20	78	SPARE				
	SPARE	79	20	20	80	SPARE				
	SPARE	81	20	20	82	SPARE				
	SPARE	83	20	20	84	SPARE				

TOTAL L1	10010
TOTAL L2	20296
TOTAL L3	17141
TOTAL VA	55447

151 AMPS CONNECTED @ 208V, 3PH

PANELBOARD: "PU" — VOLTAGE: 208/120V, 3Φ, 4W
MOUNTING: SURFACE — MAINS: MCB — MIN. NC RATING: 22,000A
TRIP: 400A — FRAME: 400A — PHASE LOAD VA

LOAD	DESCRIPTION	CKT.	TRIP	TRIP	CKT.	DESCRIPTION	LOAD	L1	L2	L3
1288	L--CHEMISTRY 220	1	20	30	2	DRYER	2500	3788		
644	L--CHEMISTRY 220	3	20	↑	4	↑	2500		3144	
1624	L--EXHIBIT SPACE	5	20	20	6	R.--WASHER	1500			3124
812	L--EXHIBIT SPACE	7	20	20	8	R.--PREP. ROOM	1250	2062		
1478	L--CORRIDOR,EXHIBIT SP.	9	20	20	10	R.--CHEMISTRY	140		2018	
564	L--OFFICES,STOR.,RROOM	11	20	20	12	R.--CHEMISTRY	1500			2064
1176	L--CLASSROOM	13	20	20	14	R.--CHEMISTRY	1000	2176		
588	L--CLASSROOM	15	20	20	16	R.--CHEMISTRY	400		1488	
1260	L--CLASSROOM	17	20	50	18	R.--VENDeGRAFF GEN.	3500			4760
1260	L--CLASSROOM	19	20	↑	20	↑	3500	4760		
750	FUTURE TRACK LIGHTING	21	20	20	22	R.--EXHIBIT CIRC REEL	1500		2250	
750	FUTURE TRACK LIGHTING	23	20	20	24	R.--EXHIBIT CIRC REEL	1500			2250
750	FUTURE TRACK LIGHTING	25	20	20	26	R.--EXHIBIT CIRC REEL	1000	1750		
750	FUTURE TRACK LIGHTING	27	20	20	28	R.--EXHIBIT SPACE	400		1650	
750	FUTURE TRACK LIGHTING	29	20	20	30	R.--DATA RACK	1500			2250
750	FUTURE TRACK LIGHTING	31	20	20	32	R.--OFFICE,BROOM,STOR.	1060	2010		
750	FUTURE TRACK LIGHTING	33	20	20	34	R.--OFFICE,PREP RM.	750		1500	
	SPARE	35	20	20	36	R.--CLASSROOM	400			900
	SPARE	37	20	20	38	R.--CLASSROOM	1000	1000		
	SPARE	39	20	20	40	R.--CLASSROOM	1000		1000	
	SPARE	41	20	20	42	R.--CLASSROOM	400			900
	SECTION TWO (SUBFED)					SECTION TWO (SUBFED)				
3000	WH-2	43	40	50	44	R.--VENDeGRAFF GEN.	3500	6500		
3000	↑	45	↑	↑	46	↑	3500		6500	
	SPARE	47	20	20	48	R.--CLASSRM CORD REELS	1000			1000
1000	AUTOMATIC DOORS	49	20	20	50	R.--CLASSRM CORD REELS	1000	2000		
1500	FOLD UP DOOR	51	20	20	52	R.--CLASSROOM	220		2220	
	SPARE	53	20	20	54	R.--CLASSROOM	400			900
	SPARE	55	20	50	56	R.--VENDeGRAFF GEN.	3500	3500		
	SPARE	57	20	↑	58	↑	3500		3500	
	SPARE	59	20	20	60	R.--CLASSROOM	1000			1000
	SPARE	61	20	20	62	R.--CLASSROOM	460	360		
	SPARE	63	20	20	64	R.--CLASSRM CORD REELS	1000		1000	
	SPARE	65	20	20	66	R.--CLASSRM CORD REELS	1500			1500
	SPARE	67	20	20	68	R.--CLASSRM CORD REELS	1500	1500		
	SPARE	69	20	20	70	R.--CLASSROOM	400		900	
	SPARE	71	20	20	72	R.--CLASSROOM	220			720
	SPARE	73	20	20	74	R.--CLASSROOM	1000	1000		
	SPARE	75	20	20	76	R.--CLASSRM CORD REELS	1500		1500	
	SPARE	77	20	20	78	R.--CLASSRM CORD REELS	1500			1000
720	R.--EXHIBIT SPACE	79	20	20	80	R.--CLASSRM CORD REELS	1500	2220		
835	FCU-5-3,4,6,7,8,9,10	81	20	20	82	R.--CLASSROOM	460		1195	
835	↑	83	↑	20	84	R.--OFFICE	430			1265

TOTAL L1	34626
TOTAL L2	26365
TOTAL L3	25633
TOTAL VA	85624

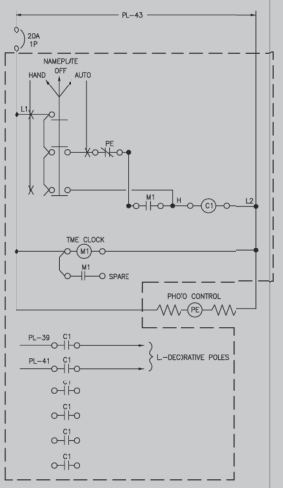
238 AMPS CONNECTED @ 208V, 3PH

MECHANICAL EQUIPMENT ELECTRICAL SCHEDULE

EQUIPMENT	HP/A	VOLTAGE/PHASE	CIRCUIT #	FEEDER	LOCAL DISCONNECT	STARTER	NOTES
FC-1/2-3 (RELOCATED)	0.8A	208/1Φ	EXISTING	2#12,#12G-3/4"C	EXISTING	FVE	2
FC-1/2-5 (RELOCATED)	0.8A	208/1Φ	EXISTING	2#12,#12G-3/4"C	EXISTING	FVE	2
FC-1/2-7A	0.8A	208/1Φ	PL-40/42	2#12,#12G-3/4"C	Σ	FVE	1
FCU-5-3	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-4	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-5	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-6	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-7	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-8	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-9	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
FCU-5-10	0.8A	208/1Φ	PU-81/83	2#12,#12G-3/4"C	30/2/F	FVE	1
WH-1	6KW	208/1Φ	PL-44/46	2#8,#10G-3/4"C	CORD AND PLUG	N/A	3
WH-2	6KW	208/1Φ	PL-43/45	2#8,#10G-3/4"C	CORD AND PLUG	N/A	3

MECHANICAL EQUIPMENT ELECTRICAL SCHEDULE NOTES:

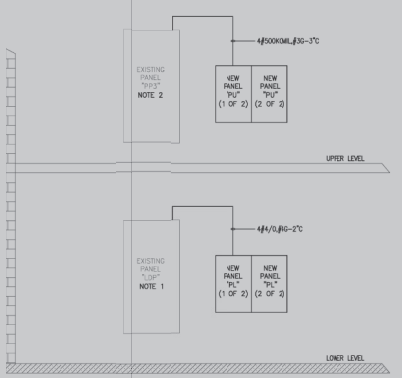
1. DISCONNECT IS REQUIRED. IT SHALL BE FURNISHED, MOUNTED AND WIRED BY ELECTRICAL CONTRACTOR.
2. CONTRACTOR SHALL TAP AND EXTEND EXISTING CIRCUIT FROM EXISTING LOCATION OF UNIT TO NEW UNIT LOCATION.
3. FURNISH AND INSTALL A CORD, PLUG, AND RECEPTACLE AT WATER HEATER FOR LOCAL DISCONNECTING MEANS.



NOTES:

1. EXTERIOR LIGHTING CONTROLLER IS TO BE NEMA 1 ENCLOSURE, SIZED AS REQUIRED. PROVIDE ENGRAVED NAMEPLATE ON DOOR.
2. H-O-A SWITCH IS TO BE ALLEN BRADLEY CAT. NO. 800H-RH3A, 3L 3GHT TYPE OR APPROVED EQUAL. MOUNT SWITCH ON DOOR AND PROVIDE NAMEPLATE ENGRAVED AS SHOWN.
3. CONTACTOR IS TO BE SQUARE D CLASS 8903 TYPE L ELECTRICALY HELD LIGHTING CONTACTOR OR APPROVED EQUAL. CONACTS ARE TO BE 30A CONTINUOUS RATED, QUANTITY AS SHOWN.
4. PHOTO CONTROL IS TO BE TORK 2101, 120V, 2000W, SPST OR APPROVED EQUAL. MOUNT ON HIGHEST PRACTICA. POINT FACING NORTH.
5. TIMECLOCK IS TO BE TORK #1101, 120V, SPST OR APPROVED EQUAL. COORDINATE W/ OWNER FOR MOUNTING LOCATION

EXTERIOR LIGHTING CONTROLLER 'ELC'
SCALE: NOT TO SCALE



NOTES:

1. FURNISH AND INSTALL A 225A/3P BREAKER IN EXITING PANEL TO SERVE NEW PANELS SHOWN. PROVIDE ALL NECESSARY MOUNTING HARDWARE REQUIRED.
2. FURNISH AND INSTALL A 400A/3P BREAKER IN EXITING PANEL TO SERVE NEW PANELS SHOWN. PROVIDE ALL NECESSARY MOUNTING HARDWARE REQUIRED.

ELECTRICAL RISER DIAGRAM
SCALE: NOT TO SCALE

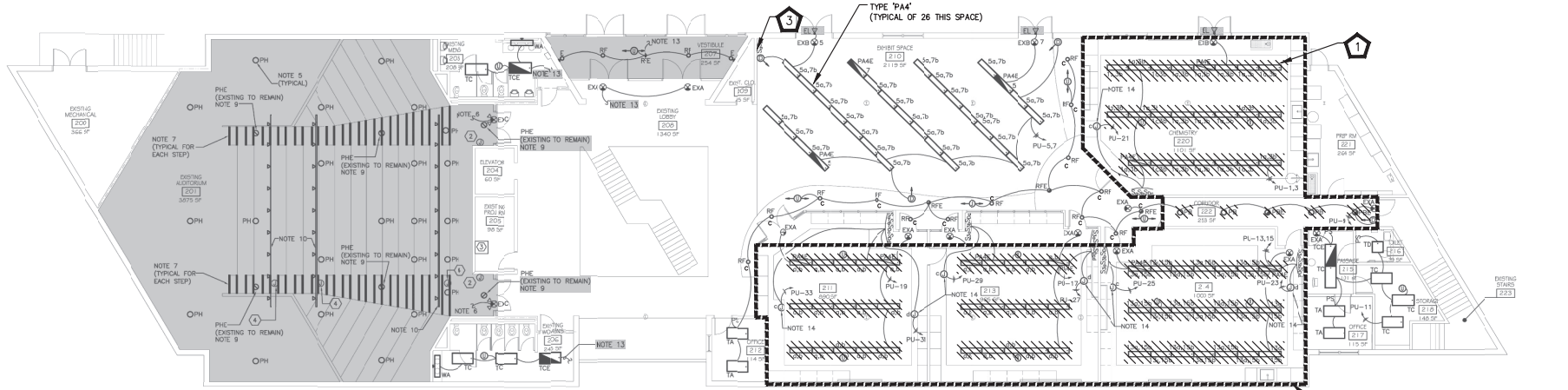
GREENVILLE COUNTY SCHOOLS

NO.	REVISION	DATE	BY
0	FOR BIDS	01/09/23	PEK

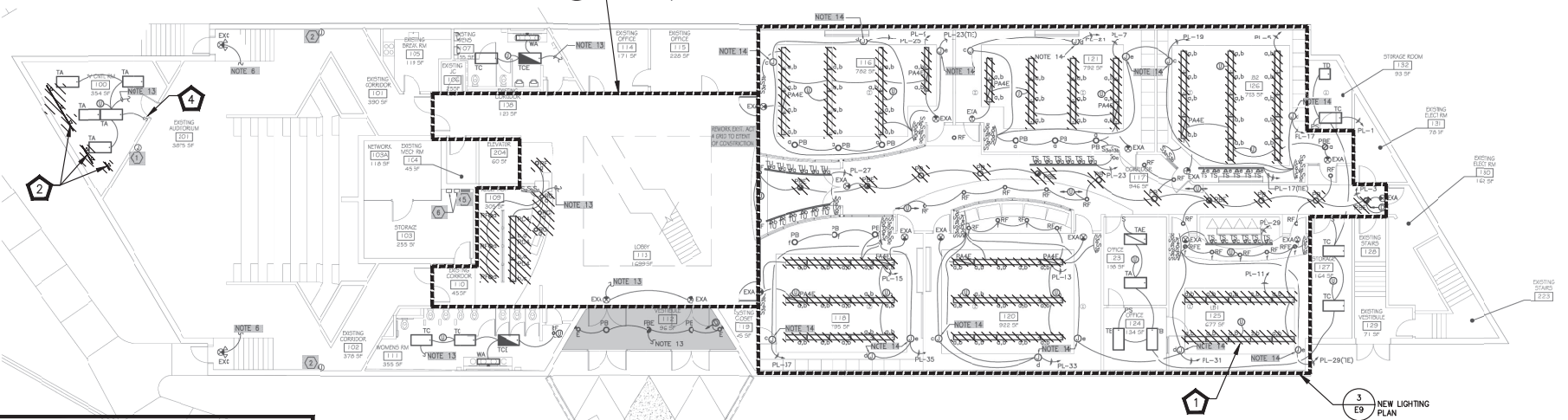
PROJECT NO. 23.3709
DATE 01/09/2023
DRAWN BY TMP/JLK
CHECKED BY PEK

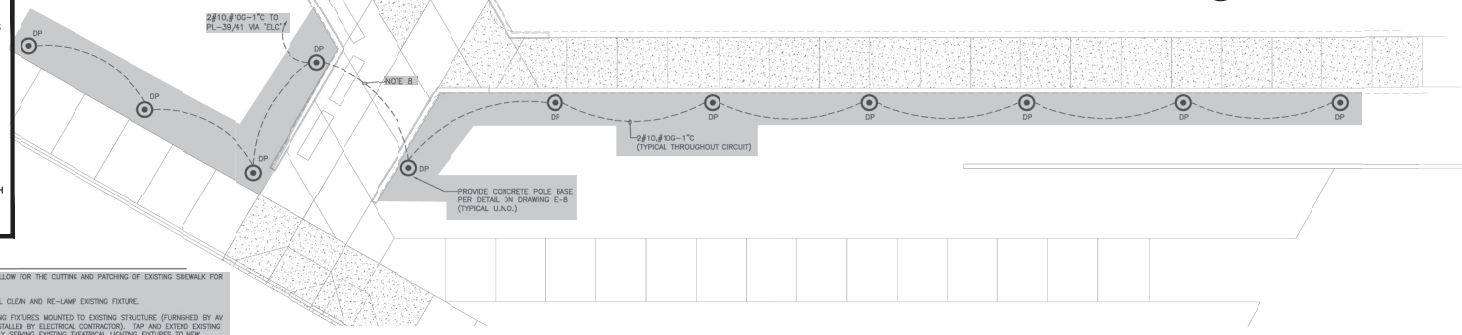
LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E7
8 OF 13 SHEETS



LIGHTING PLAN – UPPER LEVEL
SCALE: 1/8"=1'-0"





LIGHTING PLAN – LOWER LEVEL
SCALE: 1/8"=1'-0"

KEYED NOTES:

1. EXISTING FIXTURES IN THIS AREA SHOWN HATCHED SHALL BE REMOVED. EXISTING CIRCUITS AND SWITCHING SHALL REMAIN FOR NEW FIXTURES TO BE INSTALLED IN THIS AREA.
2. EXISTING FIXTURE(S) SHOWN HATCHED SHALL BE REMOVED. REMOVE ASSOCIATED CIRCUIT BACK TO NEAREST JUNCTION BOX.
3. SWITCHES SHOWN ON PLAN HAVE NOT BEEN INSTALLED. PROVIDE NEW SURFACE MOUNTED 0-10V DIMMING SWITCHES 'a', 'b' AND 'c' AT THIS LOCATION. SWITCH 'a' SHALL CONTROL DOWNLIGHT PORTION OF 'PA4/PA4E' FIXTURES, SWITCH 'b' SHALL CONTROL UPLIGHT PORTION OF 'PA4/PA4E' FIXTURES, AND SWITCH 'c' SHALL CONTROL 'RF/RFE' CORRIDOR DOWNLIGHT FIXTURES.
   PROVIDE WIREMOLD 2300 SERIES RACEWAY AND BOX FOR NEW DEVICE INSTALLATION.
   PROVIDE 0-10V DIMMING CABLE (SINGLE TWO-WIRE CABLE, PLENUM RATED) FROM SWITCH TO EACH FIXTURE AS REQUIRED.
4. PROVIDE WIRED DIMMING FUNCTIONALITY FOR TROFFERS IN THIS ROOM. REPLACE EXISTING SWITCH WITH COMPATIBLE 0-10V DIMMING SWITCH (WITH SLIDE CONTROL AND PRESET, LUTRON OR EQUAL), AND PROVIDE 0-10V DIMMING CABLE (SINGLE TWO-WIRE CABLE, PLENUM RATED) FROM SWITCH TO EACH FIXTURE.

LIGHTING NOTES:

1. FOR DRAWING CLARITY, INDIVIDUAL BRANCH CIRCUIT HOMERUNS ARE INDICATED. ELECTRICAL CONTRACTOR MAY RUN UP TO (4) 20A BRANCH CIRCUITS IN A SINGLE HOMERUN TO A COMMON PANEL.
2. PULL AN UNSWITCHED EG OF THE LOCAL LIGHTING CIRCUIT TO ALL EXIT, EMERGENCY AND NIGHT LIGHTING FIXTURES SHOWN UNLESS INDICATED OTHERWISE ON PLANS.
3. DETERMINE EXACT LOCATION FOR ALL LGHT FIXTURES IN FIELD. COORDINATE W/CEILING GRID LAYOUT WHERE APPLICABLE AND WITH OTHER TRADES.
4. ALL FIXTURES ARE TYPE 'PA4' UNLESS NOTED OTHERWISE.
5. INSTALL NEW FIXTURE AT SAME LOCATION OF FIXTURE REMOVED DURING DEMOLITION. CONTRACTOR SHALL RE-USE EXISTING JRCUITRY CURRINTLY FEEDING EXISTING HOUSE LIGHTING FIXTURES (TO BE REMOVED) TO SERVE NEW HOUSE LIGHTING FIXTURES SHOWN.
6. TIE INTO EXISTING UN-SWITCHED LIGHTING CIRCUIT IN LOCAL AREA TO SERVE NEW EMERGENCY FIXTURE.
7. CONTRACTOR SHALL FURNISH AND INSTALL NEW LED LIGHTING STRIP FIXTURE 'LS' ALONG EDGE OF STEP. CONTRACTOR SHALL PROVIDE 1/4" THICK, STAINLESS STEEL COVER WITH 1/4" GROMMET OVER EXISTING BOX CURRINTLY LOCATED ON VERTICAL FACE OF STEP. TAP AND EXTEND EXISTING WIRING FRIM EXISTING JUNCTION BOX IN STEP TO NEW LED LIGHTING STRIP FIXTURE 'LS'.
8. CONTRACTOR TO ALLOW FOR THE CUTTING AND PATCHING OF EXISTING SIDEWALK FOR NEW CONDUIT.
9. CONTRACTOR SHALL CLEAN AND RE-LAMP EXISTING FIXTURE.
10. THEATRICAL LIGHTING FIXTURES MOUNTED TO EXISTING STRUCTURE (FURNISHED BY AV INSTALLER AND INSTALLED BY ELECTRICAL CONTRACTOR). TAP AND EXTEND EXISTING CABLING CURRENTLY SERVING EXISTING THEATRICAL LIGHTING FIXTURES TO NEW THEATRICAL LIGHTING LOCATIONS.
11. INFORMATION REGARDING AV EQUIPMENT, CONDUIT, AND WIRING IS FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL REFERENCE AV DRAWINGS FOR THE INSTALLATION OF ALL JUNCTION BOXES, CONDUIT, AND POWER CONNECTIONS RELATED TO AV EQUIPMENT.
12. ALL EMPTY CONDUITS TO HAVE PULL STRINGS.
13. TIE INTO EXISTING CIRCUIT CURRENTLY SERVING LOCAL AREA LIGHTING FIXTURES TO SERVE NEW LIGHTS SHOWN.
14. PROVIDE JUNCTION BOX WITH COVER ANC CIRCUIT IN CEILING FOR FUTURE TRACK LIGHTING.

KEYED NOTES:

1. 4"x4" SURFACE MOUNTED JUNCTION BOX AT 48" AFF FOR MANAGER POSITON LCD TOUCHSCREEN (FURNISHED AND INSTALLED BY AV CONTRACTOR). ROUTE 1" CONDUIT TO PARADIGM LIGHTING CONTROL PROCESSOR LOCATED IN PROJECTOR BOOTH.
2. 2"x4" JUNCTION BOX MOUNTED AT 48" AF' FOR ON/OFF REMOTE STATION (FURNISHED AND INSTALED BY AV CONTRACTOR). ROITE A 1" CONDUT TO PARADIGM LIGHTING CONTROL PROCESSOR LOGITED IN PROJECTOR BOOTH.
3. PARADIGM LIGHTING CONTRIL PROCESSOR ,LOCATED IN EQUIPMENT RACK (FURNISHED AND INSTALLED BY AV CONTRACTOR). ROUTE A 1" EMPTY CONDUIT WITH PULL STRING DOWN TO LIGHTING RELAY PANEL IN STORAGE ROOM 105.
4. FURNISH AND INSTALL SINGLE GANG BOX AT THEATRICAL LIGHTING ARRAY IN CEILING FOR LIGHTING CONTROL CABLING. ROUTE A 1" EMPTY CONDUT TO PARADIGM LIGHTING CONTROL PROCESSOR LOCATED IN PROJECTOR BOOTH.
5. NEW LIGHTING RELAY PANEL (FURNISHED BY AV INSTALIER, INSTALLED BY ELECTRICAL CONTRACTOR). ROUTE (4) 20A/1P CIRCUITS FROM EXISTING PANEL 'LF2' TO NEW RELAY PANEL. FURNISH AND INSTALL NEW BREAKERS IN EXISTING PANEL.
6. EXISTING DIMMING MODULES (TO BE REMOVED) LOCATED HIGH ON WALL CURRENTLY SERVING EXISTING AUDFORIUM LIGHTING FIXTURES (TO IE REPLACED). TAP AND EXTENE EXISTING WIRING FROM REMOVED DIMMING MODILES TO NEW LIGHTING RELAY PANEL.

GREENVILLE COUNTY SCHOOLS

NO.	REVISION	DATE	BY
0	FOR BIDS	09/06/23	PEK

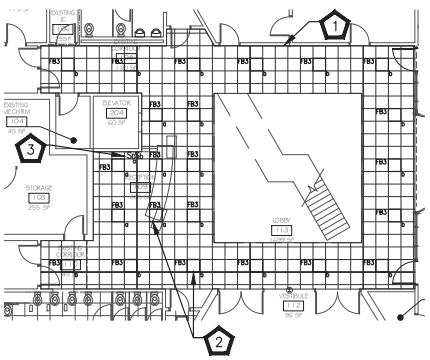
PROJECT NO. 21.3708
DATE 01/06/2023
DRAWN BY TMP/AJK
CHECKED BY PEK

LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

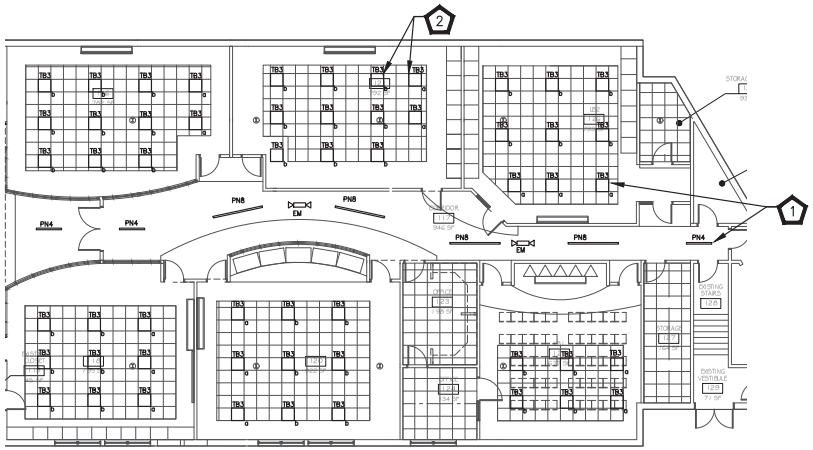
SHEET NUMBER
E8
9 OF 13 SHEETS

KEYED NOTES:

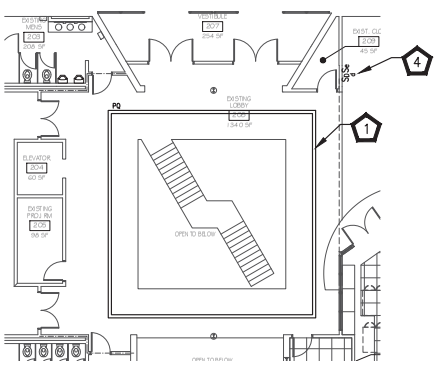
1. PROVIDE NEW FIXTURES AS SHOWN. EXTEND EXISTING CIRCUITS AS REQUIRED TO POWER NEW FIXTURES. NEW FIXTURES SHALL BE CONTROLLED VIA EXISTING LIGHTING CONTROLS.
2. REWORK WIRING AS REQUIRED TO ACCOMPLISH SWITCHING AS SHOWN IN THIS AREA. REMOVE ANY UNUSED SWITCHES AND BLANK OFF COVERPLATES.
3. PROVIDE WIRED DIMMING FUNCTIONALITY FOR TROFFERS IN THIS ROOM. REPLACE EXISTING SWITCH WITH COMPATIBLE 0-10V DIMMING SWITCH (WITH SLIDE CONTROL AND PRESET, LUTRON OR EQUAL), AND PROVIDE 0-10V DIMMING CABLE (SINGLE TWO-WIRE CABLE, PLENUM RATED) FROM SWITCH TO EACH FIXTURE.
4. PROVIDE NEW SURFACE MOUNTED SWITCHES 'd' AND 'e' AT THIS LOCATION. SWITCH 'd' SHALL CONTROL NEW PENDANT FIXTURE TYPE 'PQ', SWITCH 'e' SHALL CONTROL EXISTING ROPE LIGHTS AT THE MODEL-BRAIN IN THE CENTER OF THE STAIRWELL. PROVIDE WIREMOLD 2300 SERIES RACEWAY AND BOX FOR NEW DEVICE INSTALLATION. PROVIDE 0-10V DIMMING CABLE (SINGLE TWO-WIRE CABLE, PLENUM RATED) FROM NEW DIMMING SWITCH 'd' TO FIXTURE TYPE 'PQ' AS REQUIRED.



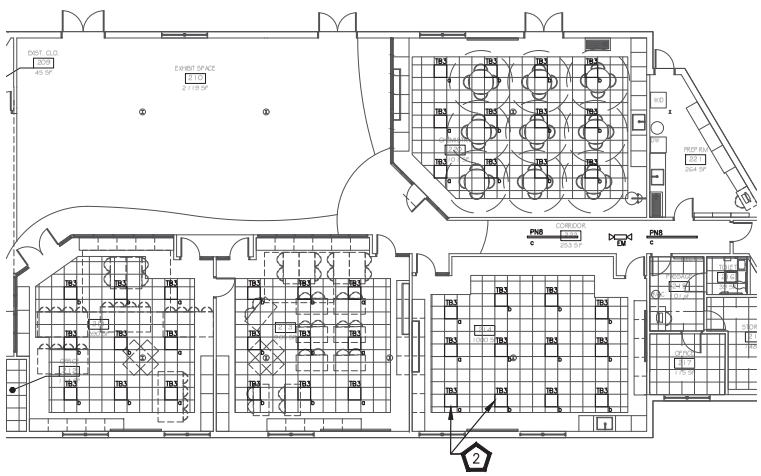
1 LOWER LEVEL LOBBY
SCALE: 1/8" = 1'-0"



3 LOWER LEVEL CLASSROOMS AND CORRIDOR
SCALE: 1/8" = 1'-0"



2 UPPER LEVEL LOBBY
SCALE: 1/8" = 1'-0"



4 UPPER LEVEL CLASSROOMS AND CORRIDOR
SCALE: 1/8" = 1'-0"

GREENVILLE COUNTY SCHOOLS

PROJECT NO.	REVISION	DATE	BY
213708	0 FOR BIDS	01/06/23	PEK
DATE 01/06/2023			
DRAWN BY TMP/JJK			
CHECKED BY PEK			

LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E9

10 OF 13 SHEETS

SYMBOL / DESCRIPTION

HOME RUN TO LIGHTING/SERVICE PANEL. HASH MARKS, WHEN SHOWN, INDICATE NUMBERS OF CONDUCTORS. " / " INDICATES HOT WIRE, "/N" INDICATES NEUTRAL CONDUCTOR," /T" INDICATES GROUND CONDUCTOR. HOME RUN NOT INDICATES PANEL NAME AND CIRCUIT NUME OR FEEDER TAG. CONDUCTORS SHALL BE #12 AWG IN 3/4" CONDUIT UNLESS NOTED OTHERWISE. DO NOT COMBINE HOME RUNS UN.ESS SHOWN ON PLANS.

EXPOSED CONDUIT

CONDUIT RUN IN SLAB OR UNDERGROUND.

CONDUIT RUN CONCEALED ABOVE CEILING OR N WALLS, UNLESS NOTED OTHERWISE.

CONDUIT JUNCTION IN CONDULET OR JUNCTION BOX.

FLEXIBLE CONDUIT

CONDUIT "URNING UP

CONDUIT "URNING DOWN

NOTE: ANY HOME RUN OR CONDUIT WITHOUT HASH MARKS IS TH CONTAIN 3 CONDUCTORS; 1 HOT, 1 NEUTRAL, AND 1 GROUND.

JUNCTION BOX STEM INDICATES WALL MOUNTED

JUNCTION BOX FLOOR MOUNTED

LIGHTING 3R SERVICE PANEL, SURFACE MOUNTED,(208V)

LIGHTING 3R SERVICE PANEL, FLUSH MOUNTED(208V) PROVIDE 6-3/4" SPARE CONDUITS UP FROM PANEL NTO CEILING SPACE FOR FUTURE

EF — EXHAUST FAN. SEE MECHANICAL DRAWINGS FOR FAN SPECIFICATIONS.

WH — WATER HEATER.

2HP M — MOTOR, HORSEPOWER AS SHOWN.

SAFETY DISCONNECT SWITCH ."30" INDICATES \MP RATING, "20" INDICATES FUSE SIZES, "3P" INDICATES NUMBER OF POLES, ENCLOSURE TO BE NEMA 1 UNLESS NOTED OTHERWISE (3R, 4X, ETC.) SQUARE D H300 SERIES HEAVY DUTY SAFETY SWITCH

30/20/3P/3R

WIRING DEVICES

NOTE: AL WIRING DEVICES TO BE IVORY, WITH #302 STAINLESS STEEL COVERPLATE (FLUSH MOUNTED) UNLESS NOTED OTHERWISE ON THE DRAWING OR SPECIFICATIONS.

SWITCH SYMBOLS

SM — MANUAL MOTOR STARTER

S — SINGLE PALE LIGHTING SWITCH 120 VOLT, 20 AMP, SPEC GRADE, "1" RATED

Sa — LETTER "," DESIGNATES WHICH FIXTURES ARE CONTROLLED FROM WHICH SWITCHES WHEN MULTIPLE SWITCHES ARE USED ON ONE CIRCUIT.

S 3 — SAME AS "S" ABOVE EXCEPT "3" IN SUBSCRIPT DENOTES 3-WAY SWITCH.

S D — DIMMER SWITCH WITH SLIDE CONTROL

OC1 — OCCUPANCY SENSOR, WATTSTOPPER CAT # W-100 OR EQUAL

OC2 — OCCUPANCY SENSOR, WATTSTOPPER CAT # DT-200 OR EQUAL

OC3 — OCCUPANCY SENSOR, WATTSTOPPER CAT # WIR OR EQUAL

OC — OCCUPANCY SENSOR, WATTSTOPPER CAT # W-1100 OR EQUAL

STRAIGHT BLADE DEVICE SYMBOLS

20A, 125', 2P, 3W, NEMA 1-20R, DUPLEX RECEPTACLE.

SAME AS " " ABOVE EXCEPT BOTTOM OF OUTLET MOUNTED ABOVE COUNTER HIGHT

QUADRAPLEX – TWO DUPLEI OUTLETS MOUNTED IN A TWO GANG BOX WITH TWO \ANG COVER PLATE

SURFACE RACEWAY WITH DUPLEX OUTLETS AS INDICATED, WIREMOLD #2200B512

SPECIAL RECEPTACLE

FIRE ALARM, COMMUNICATIONS AND CONTROLS

COMBINATION DATA/TELEPHINE OUTLET WITH 1/4" CONDUIT TO TELEPHONE BOARD VIA CEILING SPACE, WITH PULL WIRE, JACKS, CABLE AND BOX COVER BY SYSTEM INSTALLER. 'W' INDICATES WALL PHONE OUTLET, 54" A.F.F.

H — FIBER OPTIC OUTLET. PROVIDE 4"x4" FLUSH JUNCTION BOX IN WALL AND 3/4"C WITH FIBER CABLE TO TELEPHONE BOARD. PROVIDE 5'-0" OF FIBER CABLE COILED AT TELEPHONE BOARD. CONDUIT SHALL UTILIZE LONG RADIUS BENDS.

T — 4"x4"x2 1/4" TWO GANG FLUSH MOUNTED CABLE TV OUTLET BOX WITH SINGLE GANG PLASTER RING MOUNTED 18" A.F.F UNLESS NOTED OTHERWISE. PROVIDE (-) 3/4"C ENTERING AND (1) 3/4"C LEAVING CABLE TV OUTLET BOX TO NEXT CABLE TV OUTLET AND/OR ETV HEAD END BOARD.

TELEPHONE BOARD, ROUTE NO. 6 AWG CU. (ROUND TO SERVICE GROUND

FACP — FIRE ALARM CONTROL PANE.

ANN — REMOTE ANNUNCIATOR PANEL

S — AREA SMOKE DETECTOR.

D — DUCT MOINTED SMOKE DETECTOR.

R — COMBINATION RATE OF RISE AND FIXED TEMPERATURE OR RATE COMPENSATED HEXT DETECTOR

P — FIRE ALARM SYSTEM STROBE UNIT ONLY.

D/P — FIRE ALARM SYSTEM HORN/STROBE UNIT

F — MANUAL IRE ALARM PULL ITATION

MD1 — SECURITY MOTION DETECTOR. PROVIDE 3/4"C TO SECURITY PANEL. CADDX CAT #DT8100-STC

MD2 — SECURITY MOTION DETECTOR. PROVIDE 3/4"C TO SECURITY PANEL. CADDX CAT #DT-ASST

MD3 — SECURITY MOTION DETECTOR. PROVIDE 3/4"C TO SECURITY PANEL. CADDX CAT #DT8360-STC

KP — SECURITY KEY PAD. PROVIE 3/4"C TO CABE TRAY AND ONTO SECURITY PANEL. CADDX CAT # 9060I.

LIGHTING SYMBOLS:

2' X 4' CEILING MOUNTED FJORESCENT FIXTURE

SWITCHED FIXTURE WITH EMERGENCY LIGHTED 3ATTERY BACKUP. ROUTE 'HOT' SENSING CIRCUT TO BATTERY

UNSWITCED FIXTURE WITH EMERGENCY LIGHTED BATTERY BACKUP (TYPICAL)

2' X 2' CEILING MOUNTED FJORESCENT FIXTURE

4' FLUORESCENT STRIP FIXTURE

WALL MOUNTED FLUORESCENT FIXTURE

EXTERIOR HID WALL PACK

SURFACE CEILING MOUNTED OR RECESSED DOWNLIGHT

EXIT FIXTURE – ARROW INDICATES ILLUMINATED DIRECTIONAL ARROWS, SHADED SECTION NDICATES FACE WHICH IS ILLUMINATED. STEM INDICATES WALL MOUNTED

BUILDING MOUNTED FLOOD LIGHT

WALL MOUNTED SCONCE FIXTURE.

GENERAL LIGHTING NOTES:

1. MANUFACTURERS & NUMBERS ARE LISTED TO ESTABLISH QUALITY ONLY AND NOT TO LIMIT COMPETITION. PRIOR TO BIDDING, SUBSTITUTIONS ARE ALLOWED SUBJECT TO SUBMITTAL DATA, PHOTOMETRICS & ENGINEERS APPROVAL AS REQUIRED BY SPECIFICATIONS
2. ALL FLUORESIENT FIXTURES SHALL HAVE PREMIUR ELECTRONIC BALASTS WITH 90% MIN. BALLAST FACTOR AND MAX. THD OF 15%. ALL TRIFFERS TO HAVE T-8 LAMPS AND .125 INCH LENSES, MINIMUM UNLISS NOTED. ALL IXTURES TO BE PAINTED AFTER FABRICATION. BALLASTS SHALL BE MANUFACTURED BY SYLVANIA, ADVANCE OR MAGNETEK. LAMPS SIALL BE MANUFACURED BY G.E. OR SYLVANIA.
3. ALL FIXTURES TO BE U.L. LABEIED. ALL EXTERIOR FIXTURES SHALL HAVE U.L. WET LABEL OR DAMP LABEL AS REQUIRED BY LOCATION. CONTRACTOR SHALL VERIFY BEFORE SUBMITTING FIXTURE.
4. CONTRACTOR TO PROVIDE ALL MOUNTING ACCESSORIES, BAR HANGARS & HARDWARE REQUIRED.
5. EMERGENCY BATTERY BALLAST FOR FLUORESCENT FIXTURES SHALL PROVIDE A MINIMUM OF 1100 LUMEN OUTPUT. BALLAST SHALL CONTAIN NTEGRAL SENSING CIRCUIT TO ALOW FIXTURE TO IE SWITCHED WITH AREA FIXTURES FOR NORMAL OPERATION AND ENERGIZE BATTERY POWERED LAMP UPON LOSS OF POWER CIRCUIT, REGARDLESS OF SWITCH POSITION. MANUFACTURER SHALL BE BODINE OR APPROVED EQUAL.

LIGHTING FIXTURE SCHEDULE

FIXTURE TYPE	'IXTURE DESCRIPTION	ACCEPTABLE MANUFACTURERS	LAMPS	FIXTURE WATTAGE	VOLTAGE
EX	UNIVERSAL MOUNTED EXIT SIGN WITH RED LED ON WHITE HOUSING BATTERY BACKUP, DIFFUSER LENS, SPECIFICATION GRADE	DUAL LITE # UNRWW – LEDE – 120 SURELITES # IAX – 7170 – R – W – 120 LITHONIA # LEMR – ELN – 120	BY MANUFACTURER	10	120
FL	SURFACE MOUNTED TWO HEAD PAR 38 FLOOD LIGHT WITH RED COATED LAMPS	PROGRESS # P5203-31	2-150W PAR 38 FL/R	300	120
IA	4', 2 LAMP STANDARD CHANNEL STRIP LIGHT, 22 GA. STEEL, PA, WITH WIRE GUARD, ELECTRONIC BALLAST BY ADVANCE OR MAGNETEK.	WILLIAMS # 7I4-2320C/120V-WG7611 METALUX # SI-232-120-EBEI-WG/SS-4FT-PAF LITHONIA # C232-120-GEB-WGI-PAF	2-F032T8-35K	56	120
RA	LARGE APERTURE (8" MAX) CAN LIGHT, RECESSED, CLEAR ALZAK REFLECTOR, WHITE TRIM RING, INSULATED HOLSING.	PRESCOLITE # 84-832-120 HALO # H600T-120 LITHONIA # RI6ACH-120	1-150WPAR38 CAPSULITE	150	120
RAR	SAME AS 'RA' ABOVE EXCEPT WITH RED COATED LAMPS.	PRESCOLITE # 84-832-120-R HALO # H600T-120-R LITHONIA # RI6ACH-120-R	1-150WPAR38 FL/R	150	120
RF	8" DIA. RECESSED CAN LIGHT WITH CLEAR ALZAK REFLECTOR FOR 2-26W PL LAMPS.	HALO # H787-9870C-120-GEI LITHONIA # AR2/26QT-7AR-12C-GEB PRESCOLITE # CFR826-492-12C-GEB	2-F26DTT/35K	56	120
RFE	SAME AS "RF" ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP	HALO # H787-9870C-120-GEI-EM LITHONIA # AR2/26QT-7AR-12C-GEB-EM PRESCOLITE # CFR826-492-12C-GEB-EM	2-F26DTT/35K	56	120
RS	10" DIA. RECESSED CAN LIGHT WITH CLEAR ALZAK REFLECTOR FOR 3-26W PL LAMPS	KIRLIN # RR9012-120 LITHONIA # AR3/26DTT-10AR-110	3-F26DTT/35K	90	120
RM	9" METAL HALIE DOWNLIGHT WITH LENS AND WHITE RECESSED TRIM	LITHONIA # LDI-70M-9RWT73- 20	1-70W METAL HALIDE	85	120
SA	4', 4 LAMP, DECORATIVE SURFACE MOUNTED FLUORESCENT, 'AT, ELECTRONIC BALLAST BY ADVANCE OR MAGNETEK.	LITHONIA # MI-2244-32-120-IEB	4-F032T8-35K	112	120
SC	70W METAL HALIDE SEMI-RECESSED WALL SCONCE WITH REMOTE BALLAST AND PAINTED FINISH (COLOR BY ARCHITECT).	VISA # DW100S-PT	1-70W METAL HALIDE	85	120
SM	100W SURFACE MOUNTED METAL HALIDE FIXTURE	LITHONIA # GCI3-100M-120	1-100W METAL HALIDE	120	120
TA	RECESSED 2 X 4, SPEC GRADE STATIC TROFFER, 4 AMP, FLAT WHITE ALUMINUM DOOR, 22 GA. STEL PANTED AFTER FABRICATION, .12i MIN LENS, ELICTRONIC BALAST BY ADVANC OR MAGNETEK.	WILLIAMS # S224-FIWA140-EA2OC/120V METALUX # 2IOXF-432A12MIN-20-EBEI-PAF LITHONIA # 2SPG-432-FIWA12.1.5-120-GEB-PAF	4-F032T8-35K	112	120
TAE	SAME AS 'TA' ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP	WILLIAMS # S224-FIWA140-EA2OC/120V-EM METALUX # 2IOXF-432A12MIN-20-EBEI-PAF-EM LITHONIA # 2SPG-432-FIWA12.1.5-120-GEB-PAF-EM	4-F032T8-35K	112	120
TC	RECESSED 2X4, SPEC GRADE STATIC TROFFER, 2 LAMP, FLAT WHITE ALUMINUM DOOR, 22 GA. STEEL, PAINTED AFTER FABRICATION, 125 MIN LENS, ELICTRONIC BALAST BY ADVANC OR MAGNETEK.	WILLIAMS # S222-FIWA140-E2320C/120V-EM METALUX # 2IOXF-232A125MIN-120-EBEI-PAF-EA LITHONIA # 2SPG-232-FIWA12.1.5-120-GEB-PAF-EM	2-F032T8-35K	56	120
TCE	SAME AS "TC" ABOVE EXCEPT WITH EMERGENCY BATTERY BACKUP	WILLIAMS # S222-FIWA140-E2320C/120V-EM METALUX # 2IOXF-232A125MIN-120-EBEI-PAF-EA LITHONIA # 2SPG-232-FIWA12.1.5-120-GEB-PAF-EM	2-F032T8-35K	56	120
TD	RECESSED 2X4, 3" DEEP, 18 CELL, 3 LAMP, BLACK REGAL PARABOLIC, 22 GA. STEL, MINIMUM RELECTANCE 82% LOW IRIDESCENT LOUVER, PAF, ELICTRONIC BALAST BY ADVANC OR MAGNETEK, WITH DIMMABLE BALLAST.	WILLIAMS # UG-A24-340RS-3IS-E3320C/120V-3B METALUX # 2I30X-3325361-12I-EBEI-PAF-DB LITHONIA # 2IM30B-332-18-LL-120-GEB-PAF-DB	3-F032T8-35K	84	120
TDE	SAME AS "TD" ABOVE EXCEPT WITH EMERGENCY BATTERY BACKIP.	WILLIAMS # UG-A24-340RS-3IS-E3320C/120V-3B-EM METALUX # 2I30X-3325361-12I-EBEI-PAF-DB-IM LITHONIA # 2IM30B-332-18-LL-120-GEB-PAF-DB-EM	3-F032T8-35K	84	120
WA	WALL MOUNTED BATHROOM FIXTLIE, 1 LAMP UP / 1 LAMP DOWN, WHITE, PAINIED AFTER FABRICATION.	LITHONIA # W-232-PAF-WHITE-120 METALUX # 8UU-232-120-EBIE-WH WILLIAMS # 2I22-KA-120-E232OC	2-F032T8/35K	56	120

PROVIE FIRESTOPPING THRU ALL RATED (1 HOUR AND ABOVE) WALLS. FIRESTOPPING SHALL BE 3M CP 25WB CAULK OR FIRDAM 150 CAULK OR EQUAL. FIRESTOPPING SHALL BE AS REQUIRED TO MAINTAIN A U.L. SYSTEM CAUI044 CLOSURE. PROVIDE U.L. NO. AND MANUFACTURES SPECIFICATION AND INSTALLATION DRAWING FOR ALL SUBSTITUTION REQUESTS.

REQUIRED DEPTH 3M FIRE BARRIER CP 25WB CAULK BOTH SIDES, REQUIRED TO MAINTAIN HOURLY RUTING

FLOORBOX FLANGED COVER

MINERAL WOOL (OR EQUIVALENT) PACING MATERIAL TO FILL SPACE BETWEEN REQUIRED CAULKING THICKNESS.

REQUIRED DEPTH 3M FIRE BARRIER CP 25WB CAULK, BOTH SIDES, REQUIRED TO MAINTAIN HOURLY RATING

FLOORBOX SUPPORT

FLOOR BOX

FLOORBOX SUPPORT

CONCRETE TIE'S

CONDIT ROUTED IN LOWER FLOOR CEILING

H FLOORBOX FIREPROOFING DETAIL
E1.01/NOT TO SCALE

ELECTRICAL GENERAL NOTES:

1. CONTRACTOR SHALL INSPECT SITE PRIOR TO SUBMITTING BID. THE DRAWINGS ARE INTENDED TO COVER THE REQUIRED ELECTRICAL SYSTEMS. THE DRAWINGS MAY NOT SHOW THE COMPLETE OR ACCURATE DETAILS OF THE BUILDING OR SYSTEM IN EVERY RESPECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ANY ADDITIONAL INFORMATION AS REQUIRED.
2. ALL ELECTRICAL CONSTRUCTION IS TO CONFORM TO THE NATIONAL ELECTRICAL CODE, APPLICABLE NEMA, ANSI AND IEE PUBLICATIONS, U.L. AND ADA STANDARDS AND OSHA REQUIREMENTS. WORK IS TO COMPLY WITH LOCAL, COUNTY, STATE AND NATIONAL CODES HAVING JURISDICTION.
3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS IN A NEAT AND WORKMANLIKE FASHION. ALL MATERIALS SHALL BE NEW, WITH FIRST QUALITY AND UL LABEL.
4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ANY CLEARANCES PRIOR TO INSTALLATION OF EQUIPMENT AND RACEWAYS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF WORK WITH THAT OF ALL OTHER TRADES AS REQUIRED.
5. CONDUIT SHALL BE EMT FOR BRANCH CIRCUIT WIRING AS ALLOWED BY NEC, EXCEPT THAT SET SCREW OF CRIMP FITTINGS ARE NOT ALLOWED. WHERE EXPOSED TO MECHANICAL DAMAGE CONDUITS SHALL BE RIGID GALVANIZED STEEL. MINIMUM CONDUIT SIZE SHALL BE 3/4". ALL CONDUCTORS SHALL BE TYPE THWN/THWN, 600V COPPER BUILDING WIRE. MINIMUM SIZE SHALL BE #12 AWG COPPER UNLESS NOTED. UNDERGROUND CONDUITS SHALL BE PVC SCHEDULE 80 WITH TRANSITION TO RIGID GALVANIZED STEEL FOR EXPOSED CONDUITS.
6. PROVIDE GROUNDING FOR ALL EQUIPMENT IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. GROUND SERVICE TO BUILDING STEEL, DRIVEN GROUND ROD AND COLD WATER PIPE.
7. ALL ENCLOSURES SHALL BE OF THE NEMA TYPE WHICH IS SUITABLE FOR THE APPLICATION.
8. SEAL ALL CONDUIT PENETRATIONS TO MATCH RATING OF WALL BEING PENETRATED.
9. ALL WORK SHALL HAVE PROPER LABELING AND NAMEPLATES. ALL CIRCUITS SHALL BE LABELED AT PANELS AND BOXES AS INDICATED. ALL PANELS AND DISCONNECTS ARE TO BE PERMANENTLY MARKED WITH NAME OR EQUIPMENT SERVED. AL PANELS ARE TO BE PROVIDED WITH TYPEWRITTEN PANEL SCHEDULES.
10. ALL BREAKERS TO BE TYPE HACR BREAKERS.
11. PROVIDE TELEPHONE ENTRY CONDUIT AND CONNECTION BOARD AS REQUIRED. STUB CONDUIT INTO SPACE AND EXTEND BEYOND PAVEMENT. COORDINATE WITH SOUTHERN BELL AND TAY ALL CHARGES SEAL ALL TELEPHONE SERVICE CONDUIT AND AROUND CABLES TO PREVENT WATER ENTRY AROUND CONDUIT OR THRU CONDUIT.
12. COORDINATE WITH ELECTRICAL UTILITY AS REQUIRED FOR SERVICE ENTRY. INSTALL PAD, METER AND CONDUITS PER UTILITY REQUIREMENTS AND PAY ALL REQUIRED FEES OR CHARGES FOR SERVICES SHOWN.
13. THE CONTRACTOR SHALL THOROUGHLY CLEAN ALL EQUIPMENT AND SYSTEMS BEFORE PLACING IN OPERATION. RESTORE FINISHED SURFACES OF DAMAGED AND REPAINT THE ENTIRE INSTALLATION IN AN APPROVED CONDITION. CONTRACTOR SHALL INSTRUCT THE OWNERS' PERSONNEL IN THE PROPER OPERATION AND MAINTENANCE OF THE SYSTEMS. THE CONTRACTOR SHALL FURNISH TO THE OWNER THREE SETS OF OPERATION AND MAINTENANCE MANUALS FOR EACH SYSTEM.
14. CONTRACTOR SHALL GUARANTEE THE WORK INSTALLED UNDER HIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER DATE OF FINAL ACCEPTANCE. DEFECTS WHICH APPEAR AS A RESULT OF NORMAL USAGE SHALL BE REMEDIED BY THE CONTRACTOR TO THE COMPLETE SATISFACTION OF THE OWNER WITHOUT COST TO THE OWNER.
15. CONTRACTOR SHALL KEEP CURRENT A SET OF PLANS FOR THE DURATION OF CONSTRUCTION WITH ALL CHANGES TO WORK NEATLY AND ACCURATELY MARKED IN RED AND SHALL TURN OVER TO OWNER AT COMPLETION OF PROJECT.

ABBREVIATIONS:

AFF	ABOVE FINISH FLOOR	FWE	FURNISHED WITH EQUIPMENT	RECPT	RECEPTACLE (R.)
AFG	ABOVE FINISHED GRADE	GFI	GROUND FAULT INTERRUPTER DEVICE	REQD	REQUIRED
ACH	ABOVE COUNTER HEIGHT	IG	ISOLATED GROUNE	SP	SI-SE PROTECTED EVICE
BKR	BREAKER	LTG	LIGHTING (L.)	SW	SWITCH
CU	COPPER	MLO	MAIN LUGS ONLY	UNO	UNLESS NOTED OTHERWISE
CKT	CIRCUIT	MCB	MAIN CIRCUIT BREAKER	UH	UNIT HEATER
D	EDICATED OUTLET	MFR	MANUFACTURER	UGND	UNDERGROUND
DWG	RAWING	MDP	MAIN DISTRIBUTION PANEL	W/	WIH
EC	LECTRICAL CONTRACTOR	NTS	NOT TO SCALE	WH	WATER HEATER
EWC	LECTRIC WATER COOLER	PH	PHASE	WP	WETHER PROOF
FU	USE	PNL	PANEL	XFMR	TRANSFORMER

A TELESCOPE POLE RECEPTACLE DETAIL
E1.01/NOT TO SCALE

E SECURITY RISER DIAGRAM
E1.01/NOT TO SCALE

C TYPICAL CONDUIT SLEEVE DETAIL
E1.01/NOT TO SCALE

F ELECTRICAL FIRE ALARM RISER DIAGRAM
E1.01/NOT TO SCALE

D TYPICAL DEVICE MOUNTING HEIGHT
E1.01/NOT TO SCALE

G TYPICAL TELEPHONE BOARD INSTALLATION DETAIL
E1.01/NOT TO SCALE

V ETV HEADEND RISER DIAGRAM
E1.01/NOT TO SCALE

B TYPICAL RECESSED FLUORESCENT FIXTURE MOUNTING
E1.01/NOT TO SCALE

GREENVILLE COUNTY SCHOOLS

NO.	REVISION	DATE	BY
0	FOR BIDS	01/06/2023	PSK

PROJECT NO. 23.3709
Date 01/06/2023
DRAWN BY TMP/LJK
CHECKED BY PSK

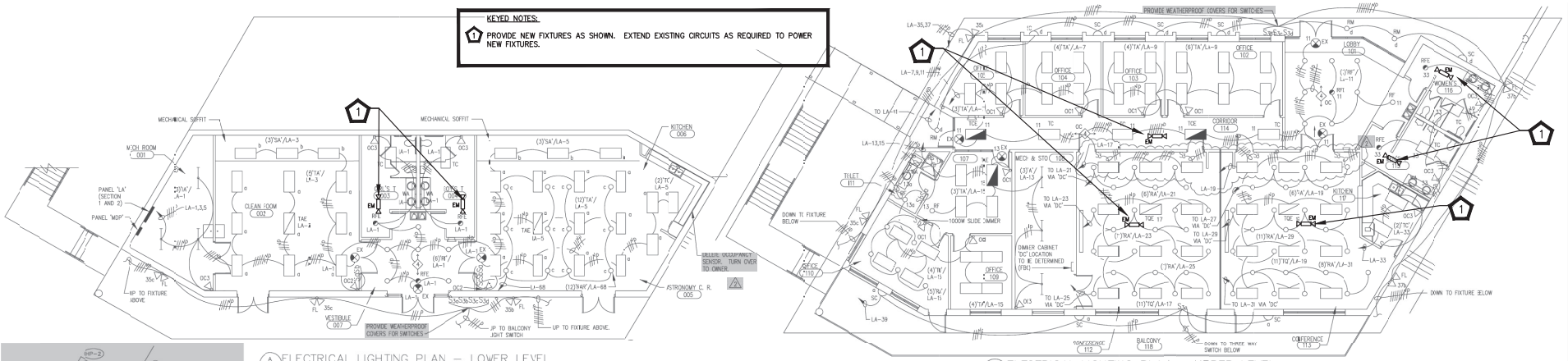
LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E10

11 OF 13 SHEETS

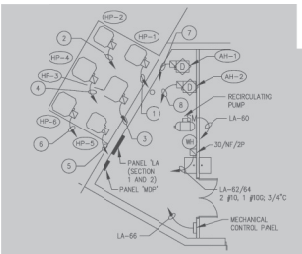
KEYED NOTES:

1. PROVIDE NEW FIXTURES AS SHOWN. EXTEND EXISTING CIRCUITS AS REQUIRED TO POWER NEW FIXTURES.



A E1.02 ELECTRICAL LIGHTING PLAN – LOWER LEVEL
SCALE: 1/8" = 1'-0"

C E1.02 ELECTRICAL LIGHTING PLAN – UPPER LEVEL
SCALE: 1/8" = 1'-0"



G E1.02 ELECTRICAL MECHANICAL PART PLAN
SCALE: 1/8" = 1'-0"

FEEDER SCHEDULE

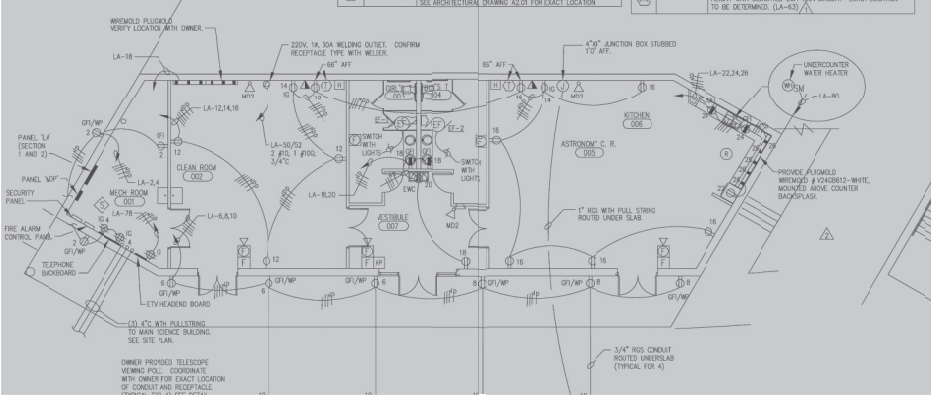
TAG	EQUIPMENT	DISCONNECT	PANEL	WIRE AND CONDUIT
1	HP-1	30/FU/3P/3R	MDP-2/4/6	3 #10, 1 #10G, 3/4"C
2	HP-2	30/FU/3P/3R	MDP-8/10/12	3 #10, 1 #10G, 3/4"C
3	HP-3	60/FU/3P/3R	MDP-14/16/18	3 #8, 1 #10G, 3/4"C
4	HP-4	60/FU/3P/3R	MDP-20/22/24	3 #8, 1 #10G, 3/4"C
5	HP-5	60/FU/3P/3R	MDP-26/28/30	3 #8, 1 #10G, 3/4"C
6	HP-6	60/FU/3P/3R	MDP-32/34/36	1 #4, 1 #10G, 3/4"C
7	AH-1	60/FU/2P	MDP-1/3	2 #8, 1 #10G, 3/4"C
8	AH-2	60/FU/2P	MDP-5/7	2 #8, 1 #10G, 3/4"C
9	AH-3	60/FU/3P	MDP-9/11/13	3 #8, 1 #10G, 3/4"C
10	AH-4	30/FU/3P	MDP-15/17/19	3 #10, 1 #10G, 3/4"C
11	AH-5	60/FU/2P	MDP-21/23	2 #8, 1 #10G, 3/4"C
12	AH-6	30/FU/3P	MDP-25/27/29	3 #10, 1 #10G, 3/4"C

AUDIOVISUAL PLAN LEGEND

TAG #	BOX	DESCRIPTION
1	VER BOX	PROVIDE ONE 24"x24"x8" NEMA BOX IN ROOM 108 AT 36" AFF TO BE SURFACE MOUNTED WITH SCREW FASTENED COVER. EXACT LOCATION TO BE
1A	TDI BOX	PROVIDE ONE 8"x8"x6" JUNCTION BOX ADJACENT TO BOX 1. ATTACH TO BOX 1 WITH 1" CONDUIT. ALSO PROVIDE TWO 1" CONDUIT TO ETV HEADEND BOARD IN ROOM 001.
2A	VCC BOX #1	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN ONE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2B	VCC BOX #2	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN OIE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2C	VCC BOX #3	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN OIE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2D	VCC BOX #4	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN OIE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2E	VCC BOX #5	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN OIE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2F	VCC BOX #6	PROVIDE ONE FSR MODEL # FL500PSLP ILOORBOX, RUN OIE 1" CONDUIT AND TWO 3/4" TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A.
2G	JUNCTION BOX #1	PROVIDE ONE SIX GANG, 2 1/2" DEEP JUNCTION BOX IN BASEBOARD (COORDINATE WITH ARCHITECT). RUN TWO 1" AND TWO 3/4" CONDUITS TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A
2H	JUNCTION BOX #2	PROVIDE ONE SIX GANG, 2 1/2" DEEP JUNCTION BOX IN BASEBOARD (COORDINATE WITH ARCHITECT). RUN TWO 1" AND TWO 3/4" CONDUITS TO BOX 1. RUN ONE 3/4" CONDUIT TO BOX 1A
2I	VCC BOX	PROVIDE DOUBLE GANG WALLBOX AT STANDARD RECEPTACLE HEIGHT IN ROOM 105. COORDINATE POSITION WITH OWNER/INTERIORS PER FURNITURE PLAN. RUN ONE 1 1/4" CONDUIT TO BOX 1
3A	–	PROVIDE ONE 3/4" CONDUIT CONNECTED TO BOX 1 STUBBED ABOVE LEVEL OF SUSPENDED CEILING TILE.
3B	–	PROVIDE ONE 3/4" CONDUIT CONNECTED TO BOX 1 STUBBED ABOVE LEVEL OF SUSPENDED CEILING TILE.
3C	CAMERA ALCOVE	PROVIDE ONE 3/4" CONDUIT CONNECTED TO BOX 1 STUBBED ABOVE LEVEL OF SUSPENDED CEILING TILE.
4	/DP BOX	PROVIDE DOUBLE GANG BOX ATTACHED TO UNDERSIDE OF STRUCTURAL STEEL ABOVE CEILING GRID. RUN ONE 1" AND ONE 3/4" CONDUIT TO BOX 1. LOCATION TO BE FIELD COORDINATED WITH ARCHITECT AND AV CONTRACTOR.
5A	CS BOX #1	PROVIDE ONE 3/4" CONDUIT STUBBED ABOVE CEILING IN ROOM 112.
5B	CS BOX #2	PROVIDE ONE 3/4" CONDUIT STUBBED ABOVE CEILING IN ROOM 113.
5C	SPEAKER ALCOVE #1	PROVIDE ONE 3/4" CONDUIT TO PROGRAM SPEAKER ALCOVE. CONNECTED TO BOX 1. ALCOVE DIMENSIONS TO BE FURNISHED BY AV CONSULTANT AND EXACT LOCATION TO BE DETERMINED.
5D	SPEAKER ALCOVE #2	PROVIDE ONE 3/4" CONDUIT TO PROGRAM SPEAKER ALCOVE. CONNECTED TO BOX 1. ALCOVE DIMENSIONS TO BE FURNISHED BY AV CONSULTANT AND EXACT LOCATION TO BE DETERMINED.
5E	/CR/DVD ALCOVE	PROVIDE ONE 1" CONDUIT TO VCR/DVD ALCOVE. ALCOVE DIMENSIONS TO BE FURNISHED BY AV CONSULTANT AND EXACT LOCATION TO BE DETERMINED.
6A	–	PROVIDE TWO 3/4" CONDUITS STUBBED ABOVE CEILING GRID FROM BOX 1.
7A	AIC BOX #1	INSTALL ONE CRESTRON BACK BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4" CONDUIT TO BOX . BOX PROVIDED BY AV CONTRACTOR. SEE ARCHITECTURAL DRAWING A2.01 FOR EXACT LOCATION.
7B	AIC BOX #2	INSTALL ONE CRESTRON BACK BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4" CONDUIT TO BOX . BOX PROVIDED BY AV CONTRACTOR. SEE ARCHITECTURAL DRAWING A2.01 FOR EXACT LOCATION.
7C	AIC BOX #3	PROVIDE SINGLE GANG BOX AT STANDARI WALL SWITCH HEIGHT. RUN ONE 3/4" CONDUIT TO BOX 1. SEE ARCHITECTURAL DRAWING A2.01 FOR EXACT LOCATION

AUDIOVISUAL PLAN LEGEND

TAG #	BOX	DESCRIPTION
7D	ALC BOX #4	PROVIDE SINGLE GANG BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4" CONDUIT TO BOX. SEE ARCHITECTURAL DRAWING A2.01 FOR EXACT LOCATION.
7E	ALC BOX #5	PROVIDE SINGLE GANG BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4"C TO BOX 1. SEE ARCHITECTURAL DRAWING A2.01 FOR EXACT LOCATION.
7F	ALC BOX #6	PROVIDE SINGLE GANG BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4"C TO BOX 1
7G	ALC BOX #7	PROVIDE SINGLE GANG BOX AT STANDARD WALL SWITCH HEIGHT. RUN ONE 3/4"C TO BOX 1.
8	–	PROVIDE 3/4"C TO LOCATION OF PROJECTION SCREEN IN ROOM 112. ATTACH TO BOX 1.
9	–	PROVIDE 3/4"C TO LOCATION OF PROJECTION SCREEN IN ROOM 113. ATTACH TO BOX 1.
10	–	PROVIDE ONE 3/4"C FROM BOX 1 TO CRESTRON LIGHTING DIMMERS IN DIMMER CABINET. SEE PLAN 'C' FOR LOXATION OF DIMMER CABINET.
11A	–	PROVIDE IG QUAPLEX RECEPTACL: AT STANDARD RECEPTACLE HEIGHT BELOW BOX 1. (LA–47)
11B	–	PROVIDE IG QUAPLEX RECEPTACL: AT STANDARD RECEPTACLE HEIGHT BELOW BOX 1. (LA–53)
12A	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2A. (LA–59)
12B	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2B. (LA–59)
12C	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2C. (LA–59)
12D	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2D. (LA–59)
12E	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2E. (LA–65)
12F	–	PROVIDE IG DUPEX RECEPTACLE, 20A 120V IN BOX 2F. (LA–65)
12G	–	PROVIDE IG DUPLX RECEPTACLE, 2A 120V BESIDE BOX 2G. (LA–71)
12H	–	PROVIDE IG DUPLX RECEPTACLE, 2A 120V BESIDE BOX 2H. (LA–71)
12I	–	PROVIDE IG DUPLEX RECEPTACLE, 2A 120V BESIDE BOX 2I. (LA–71)
14A	–	PROVIDE IG NEMA 5–20R RECEPTACLE ON 6' WHIP (11/3 SO CORD) AT LOCATION OF VIDEO/DATA PROJECTOR. LOCATION TO BE FIELD VERIFIED BY AV CONTRACTOR. (LA–77)
14B	–	PROVIDE IG NEMA 5–20R RECEPTACLE ON 6' WHIP (11/3 SO CORD) AT LOCATION OF VIDEO/DATA PROJECTOR. LOCATION TO BE FIELD VERIFIED BY AV CONTRACTOR. (LA–77)
15	–	PROVIDE IG QUAPLEX RECEPTACL: AT BACK OF VCR ALCOVE VERIFY LOCATION. (LA–77)
16	–	PROVIDE 120V POWER TO PROJECTION SCREEN LOCATION IN ROOM 112. (LA–55)
17	–	PROVIDE 120V POWER TO PROJECTION SCREEN LOCATION IN ROOM 113. (LA–55)
18	–	PROVIDE QUADPLEX RECEPTACLE AT STANDARD RECEPTACLE HEIGHT WITH DEDICATED 20A 120V CIRCUIT. EXACT LOCATION TO BE DETERMINED. (LA–61)
19	–	PROVIDE QUADPLEX RECEPTACLE AT STANDARD RECEPTACLE HEIGHT WITH DEDICATED 20A 120V CIRCUIT. EXACT LOCATION TO BE DETERMINED. (LA–63)



H E1.02 ENLARGED TELE–CONFERENCE ROOM AUDIOVISUAL PLAN
SCALE: 1/4" = 1'-0"

GREENVILLE COUNTY SCHOOLS

REVISION	DATE	BY
0 FOR BIDS	01/06/23	FBK

PROJECT NO. 21.3709
DATE 01/06/2023
DRAWN BY TMP/JLK
CHECKED BY FBK

LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E11
12 OF 13 SHEETS

PANEL LA (SECTION 1) — VOLTAGE 120/208V, 3Ø, 4W — CABINET SURFACE MOUNTED — FEEDER TOP — TYPE NQOD W/THRU FEED LUGS & ISOLATED GND BUS — MAINS 225A MLO

AMPS TRIP	POLES	DESIGNATION	NO.	ØA	ØB	ØC	NO.	DESIGNATION	POLES	AMPS TRIP
20	1	L-MECH., R.ROOM, KITCHEN	1	728 540			2	R-EXTERIOR GFI MECH. 001	1	20
20	1	L-CLEAN ROOM	3		1368 1000		4	R-TELEPHONE BOARD	1	20
20	1	L-ASTRONOMY	5			1824 540	6	R-EXTERIOR GFIS	1	20
20	1	L-OFFICE 104, 105	7	798 540			8	R-EXTERIOR GFIS	1	20
20	1	L-OFFICE 102, 103	9		1140 720		10	R-TELESCOPE POLES	1	20
20	1	L-HALLWAY	11			504 540	12	R-CLEAN ROOM 002	1	20
20	1	L-TOILET, MECHANICAL	13	336 1000			14	R-CLEAN ROOM, ASTROLOGY	1	20
20	1	L-OFFICE 107, 109, 111	15		1480 500		16	R-ASTROLOGY	1	20
20	1	L-CONFERENCE 112 LAYING	17			1008 540	18	R-RESTROOM 2, 3, HALLWAY	1	20
20	1	L-CONFERENCE 113 LAYING	19	1008 1080			20	R-EWC	1	20
20	1	L-CONFERENCE 112 CANS	21		900 500		22	R-KITCHEN 6	1	20
20	1	L-CONFERENCE 112 CANS	23			1650 500	24	R-KITCHEN 6	1	20
20	1	L-CONFERENCE 112 CANS	25	1050 1000			26	R-KITCHEN 6	1	20
20	1	L-CONFERENCE 113 CANS	27		900 1000		28	R-KITCHEN 6 REFRIGERATOR	1	20
20	1	L-CONFERENCE 113 CANS	29			1650 1000	30	OFFICE 105, 104	1	20
20	1	L-CONFERENCE 113 CANS	31	1050 1260			32	OFFICE 105, 104	1	20
20	1	L-KITCHEN 117, R.ROOMS 115,116	33		448 1000		34	OFFICE 102, 103	1	20
20	1	L-EXTERIOR FLOODS	35			1200 900	36	OFFICE 102, 103	1	20
20	1	L-EXTERIOR FLOODS	37	900 1080			38	R-TOILET 111, OFF. 107, MECH.	1	20
20	1	L-EXTERIOR SCONCES	39		360 500		40	R-OFFICE 107	1	20
20	1	L-EXTERIOR SCONCES	41			1215 500	42	FIRE ALARM PANEL	1	20
		INTEGRATED EQUIPMENT RATING: 22K AIC — KVA TOTAL		12.4	12.2	13.6		KVA LOAD TOTAL THIS SECTION: 38.2 PANELBOARD KVA LOAD TOTAL: 75.3		

PANEL LA (SECTION 2) — VOLTAGE 120/208V, 3Ø, 4W — CABINET SURFACE MOUNTED — FEEDER TOP — TYPE NQOD W/ISOLATED GND BUS — MAINS 225A MLO

AMPS TRIP	POLES	DESIGNATION	NO.	ØA	ØB	ØC	NO.	DESIGNATION	POLES	AMPS TRIP
20	1	R.-OFFICE 110, 109	43	1500 720			44	R.-R.ROOM 115, 116	1	20
20	1	R.-OFFICE 110, 109	45		1080 1080		46	R.-EWC	1	20
20	1	R.-AVR BOX	47			1000 500	48	SECURITY SYSTEM	1	20
20	1	R.-CONFERENCE ROOM	49	720 2500			50	R.-WELDER	2	30
20	1	R.-CONFERENCE ROOM	51		1080 2500		52			
20	1	R.-AVR BOX	53			1000 360	54	L.-EXTERIOR CANOPY	1	20
20	1	PROJECTION SCREEN	55	500 960			56	EF-6	1	20
20	1	SPARE	57		--- 960		58	EF-7	1	20
20	1	R.-CONF. FLOOR BOXES	59			1500 250	60	RECIRCULATION PUMP	1	20
20	1	R.-PORTABLE LIGHTS	61	1500 2250			62	WATER HEATER	2	30
20	1	R.-PORTABLE LIGHTS	63		500 2250		64			
20	1	R.-CONF. FLOOR BOXES	65			1500 500	66	MECHANICAL CONTROL PANEL	1	20
20	1	SPARE	67	--- 1800			68	L.-CLASSROOM CANS	1	20
20	1	SPARE	69		--- 500		70	R.-KITCHEN 117	1	20
20	1	CONF. ROOM JUNCTION BOXES	71			1000 500	72	R.-KITCHEN 117	1	20
20	1	SPARE	73	--- 1000			74	R.-KITCHEN 117	1	20
20	1	SPARE	75		--- 1000		76	R.-KITCHEN 117	1	20
20	1	VIDEO/DATA PROJ. WHIPS	77			1000 500	78	R.-KITCHEN 117 REFRIGERATOR	1	20
20	1	SPARE	79	--- 1650			80	R.-ETV HEADEND BOARD	1	20
20	1	SPARE	81		--- 1500		82	WATER HEATER	1	20
20	1	R.-VDP BOX	83			500 ---	84	SPARE	1	20
		INTEGRATED EQUIPMENT RATING: 22K AIC — KVA TOTAL		15.1	13.4	10.1		KVA LOAD TOTAL THIS SECTION: 38.7		

NOTES:
1. PROVIDE BREAKER WITH LOCKING CLIP.
2. VERIFY BREAKER & FEEDER SIZE WITH EQUIPMENT NAME PLATE PRIOR TO INSTALLATION.

PANEL MDP — VOLTAGE 120/208V, 3Ø, 4W — CABINET SURFACE MOUNTED — FEEDER TOP — TYPE NQOD SERVICE ENTRANCE, ISOLATED GND. BUS — MAINS 600A MCB

AMPS TRIP	POLES	DESIGNATION	NO.	ØA	ØB	ØC	NO.	DESIGNATION	POLES	AMPS TRIP
40	2	AH-1	1	3295 1939			2	HP-1	3	30
			3		3245 1939		4			
40	2	AH-2	5			3245 1939	6			
			7	3245 1939			8	HP-2	3	30
50	3	AH-3	9		4797 1939		10			
			11			4797 1939	12			
			13	4797 3695			14	HP-3	3	60
30	3	AH-4	15		2882 3695		16			
			17			2882 3695	18			
			19	2882 2653			20	HP-4	3	40
40	2	AH-5	21		3244 2653		22			
			23			3244 2653	24			
30	3	AH-6	25	2882 2245			26	HP-5	3	35
			27		2882 2245		28			
			29			2882 2245	30			
225	3	PANEL 'LA'	31	24500 2653			32	HP-6	3	40
			33		22086 2653		34			
			35			20231 2653	36			
-	-	SPACE	37	---			38	SURGE SUPRESSOR	3	50
-	-	SPACE	39		---		40			
-	-	SPACE	41			---	42			
		INTEGRATED EQUIPMENT RATING: 22K AIC — KVA TOTAL		53.5	5.1	52.4		PANELBOARD KVA LOAD TOTAL: 163.4		

A ELECTRICAL RISER DIAGRAM
E1.03 NOT TO SCALE

NOTES
1. LOCATE ULTRASONIC OCCUPANCY SENSOR A MINIMUM OF 4' FROM SUPPLY DUCTS, A MINIMUM OF 6' FROM HORIZONTAL DISCHARGE DUCTS, AND A MAXIMUM OF 6" FROM POWER PACKS.
2. IF MORE THAN (3) OCCUPANCY SENSORS ARE USED IN (') AREA, A SECOND POWER PACK SHALL BE REQUIRED.

C OCCUPANCY SENSOR WIRING DIAGRAM
E1.03 NOT TO SCALE

D RESTROOM OCCUPANCY SENSOR WIRING DIAGRAM
E1.03 NOT TO SCALE

B ELECTRICAL SITE PLAN
E1.03 SCALE: 1" = 20'-0"

KEYED NOTES:

1 ADD-ALT A3: DEMOLISH EXISTING TYPE 'SM' CANOPY LIGHTS AND PROVIDE NEW TAPE LIGHT FOR CANOPY AND HANDRAIL. SEE DRAWING E1A FOR DETAILS.

GREENVILLE COUNTY SCHOOLS

REVISION	DATE	BY
0 FOR BIDS	01/06/23	PEK

PROJECT NO. 21370B
DATE 01/06/2023
DRAWN BY TMP/LJK
CHECKED BY PEK

LED LIGHTING RETROFIT PROGRAM
ROPER MOUNTAIN SCIENCE CENTER - SYMMES HALL AND WILKINS CONFERENCE CENTER
THE SCHOOL DISTRICT OF GREENVILLE COUNTY

SHEET NUMBER
E12
13 OF 13 SHEETS