

DOCUMENT 00 90 00
ADDENDUM

ADDENDUM NO. [2] Date: March 19, 2020

**RE: LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL ADDITION AND RENOVATION
504 S OAK ST
LA CRESCENT, MN 55947
HSR 19014**

**FROM: HSR Associates, Inc
100 Milwaukee Street
La Crosse, WI 54603
(608) 784-1830**

To: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Bidding Documents dated March 2020. Acknowledge receipt of this Addendum in the space provided on the bid form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of [3] pages, [1] specification section and [18] 30 x 42 drawings.

CHANGES TO SPECIFICATIONS:

1. Section 10 21 23 CUBICLE CURTAINS AND TRACK
 - a. 2.01, 2: Delete "Econo Cube System". Add "Opti Track".
2. Section 21 51 23 PAGING AND INTERCOM SYSTEM
 - a. Section attached hereto as part of Contract Documents.

CHANGES TO DRAWINGS:

3. Sheets A102 thru A106 (no drawings attached)
 - a. Keynote 27: Change "Topping" to "Coating".
4. Sheet E000 SYMBOLS, ABBREVIATIONS & DETAILS – ELECTRICAL 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise New Luminaire Schedule, as shown.
 - c. Revise Lighting Control Schedule, as shown.
 - d. Revise Communications Device Schedule, as shown.
 - e. Revise Audio Enhancement Device Schedule, as shown.
 - f. Add TV/Monitor connection symbol to general symbols, as shown.
5. Sheet E102L – First Floor – Lighting – Area A 30 x 42 attached hereto
 - g. Revisions clouded on Drawing
 - a. Add keyed note #6 and normal power circuits for UL 924 device, as shown.
 - b. Add light fixtures to emergency power, as shown.
 - c. Revise light fixture layout in elevator pit, as shown.
 - d. Revise switching in staircase up to mechanical mezzanine, as shown.

6. Sheet E102P – First Floor – Power & Systems – Area A 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Revise keyed note #5 to provide 2” conduits for future greenhouse, as shown.
 - d. Add wireless access point connection, as shown.
7. Sheet E103L – First Floor – Lighting – Area B 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise keyed note #2, as shown.
8. Sheet E103P – First Floor – Power & Systems – Area B 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
9. Sheet E104L – First Floor – Lighting – Area C 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise exit lighting in Existing Gym 184, as shown.
10. Sheet E104P – First Floor – Power & Systems – Area C 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Add keyed note #4 and gym sound system connection, as shown.
11. Sheet E105L – Second Floor – Lighting – Area A 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise keyed note #2, as shown.
 - c. Revise Gym 118 lighting, as shown.
 - d. Revise switching in Mechanical Platform 226, as shown.
12. Sheet E105P – Second Floor – Power & Systems – Area A 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Add clocks, as shown.
 - d. Add smoke and heat detector to elevator shaft, as shown.
 - e. Add receptacle to Storage 232, as shown.
 - f. Revise keyed notes #2 and #4, as shown.
 - g. Add wireless access point connections, as shown.
13. Sheet E106P – Second Floor – Power & Systems – Area B 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Revise keyed note #1, as shown.
 - d. Revise wireless access point locations, as shown.
14. Sheet E107L – Second Floor – Lighting – Area C 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Add keyed note #4 and normal power circuits for UL 924 device, as shown.
 - c. Revise Existing Gym 184 switching, as shown.

15. Sheet E107P – Second Floor – Power & Systems – Area C 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Add receptacle to Storage 245, as shown.
 - d. Revise wireless access point locations, as shown.

16. Sheet E108 – Basement – Electrical – Area C 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.
 - c. Add occupancy sensors to basement storage rooms, as shown.
 - d. Add clock to Storage 001, as shown.

17. Sheet E109 – Roof Plan – Electrical 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.

18. Sheet E601 – New One Line Diagram – Electrical 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise general notes, as shown.

19. Sheet E800 – Equipment Schedules – Electrical 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Add GS-2 connection to general equipment schedule, as shown.
 - c. Revise circuit number for motorized hoop connections, as shown.

20. Sheet E801 – Panel Schedules – Electrical 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise panel schedules for Panel A1A, as shown.

21. Sheet E803 – Panel Schedules – Electrical 30 x 42 attached hereto
 - a. Revisions clouded on Drawing
 - b. Revise panel schedules for Panel C1A (L), as shown.

PRIOR APPROVALS

1. Section 09 91 13 and 09 91 23 EXTERIOR AND INTERIOR PAINT
 - a. Diamond Vogel

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**SECTION 27 51 23
PAGING AND INTERCOM SYSTEM**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes microprocessor-switched, IP-based telephone/intercommunications]and program systems with the following components:
 - 1. Administrative console.
 - 2. Call control console.
 - 3. Staff telephone stations.
 - 4. Speaker-microphone stations.
 - 5. Call-switch unit.
 - 6. All-call amplifier.
 - 7. Intercommunication amplifier.
 - 8. Loudspeakers/speaker microphones.
 - 9. Conductors and cables.
 - 10. Raceways.
 - 11. Local Area Network (LAN): Dedicated new system.

- B. Related Requirements:
 - 1. Section 26 05 23 "Control-Voltage Electrical Power Cables" for control systems communications cables and Classes 1, 2 and 3 control cables.
 - 2. Section 27 10 00 "Technology Cabling System" for balanced twisted-pair cabling used for voice and data circuits.

1.2 DEFINITIONS

- A. FXO: Foreign eXchange Office.
- B. H.323: Audio and Video Protocol.
- C. SIP: Session Initiation Protocol.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Shop Drawings: For educational intercommunications and program systems.
 - 1. Include plans, elevations, sections, and mounting/attachment details.
 - 2. Include details of equipment assemblies. Indicate dimensions, weights, loads, required clearances, method of field assembly, components, and location and size of each field connection.
 - 3. Include scaled drawings for administrative console and speaker-microphone station station arrangement of built-in equipment.
 - 4. Include diagrams for power, signal, and control wiring.

- a. Identify terminals to facilitate installation, operation, and maintenance.
- b. Single-line diagram showing interconnection of components.
- c. Cabling diagram showing cable routing.

1.4 INFORMATIONAL SUBMITTALS

- A. Coordination Drawings: Reflected ceiling plan(s) elevations, drawn to scale, and coordinated with each other, using input from installers of the items involved.
- B. Qualification Data: For Installer and testing agency.
- C. Field quality-control reports.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.
- B. Software and Firmware Operational Documentation:
 - 1. Software operating and upgrade manuals.
 - 2. Program Software Backup: On USB media or compact disk, complete with data files.
 - 3. Device address list.
 - 4. Printout of software application and graphic screens.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer.

PART 2 – PRODUCTS

2.1 SYSTEM DESCRIPTION

- A. Equipment: Modular type using solid-state components, fully rated for continuous duty unless otherwise indicated. Select equipment for normal operation on input power usually supplied at 110 to 130 V, 60 Hz in a satisfactory manner without the requirement of any external power conditioning equipment. Comply with UL 813.
- B. Expansion Capability: Increase number of stations in the future by 25 percent above those required without adding any internal or external components or main trunk cable conductors.
- C. Integration: Coordinate features and select components to form an integrated system. Match components and interconnections for optimum performance of specified functions.
- D. Local Area Network: The system will utilize a LAN for the connectivity of all devices and components within the facility for the transmission of electronic data. The LAN will be an expansion to the existing or a separate standalone structure in support of the intercommunication system as dictated by the project design documents.
- E. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for location and application.

- F. Weather-Resistant Equipment: Listed and labeled by an NRTL for duty outdoors or in damp locations.

2.2 FUNCTIONAL DESCRIPTION OF MICROPROCESSOR-SWITCHED SYSTEMS

A. Administrative Console:

1. Communicating selectively with other administrative and speaker-microphone stations by dialing station's number on a 12-digit keypad.
2. Communicating with individual stations in privacy.
3. Communicating on a minimum of three voice channels with up to two simultaneous conversations between administrative consoles and one conversation between an administrative console and a speaker-microphone station.
4. Increasing the number of conversation channels by adding a module in central-control cabinet.
5. Include up to three other station connections in a conference call.
6. Access separate paging speakers or groups of paging speakers by dialing designated numbers on a 12-digit keypad.
7. Display indicates selected station, originating station call, all-call, zone page, normal or emergency status of call(s), and time/date.
8. Communicating simultaneously with all other stations by dialing a designated number on a 12-digit keypad.
9. Automatic control of gain to ensure constant intercom speech level.
10. Controlling simultaneous distribution of program material to various combinations of speaker-microphone stations or groups over two program channels by using keypad to control sources and distribute programs.
11. Operating and controlling class-change signals to speakers and bells by using keypad.
12. User-programmable features include the following:
 - a. Station calling by room number.
 - b. Room station call-in priority levels.
 - c. Audible signal schedule functions.
 - d. Schedule characteristics of audible signals.
 - e. Call-in tone characteristic.
 - f. Grouping of rooms and speakers into zones for paging and program distribution purposes.

B. Speaker-Microphone Station:

1. Remote monitoring without a warning tone signal at monitored station. Designated speaker-microphone stations have a privacy switch to prevent another station from listening and to permit incoming calls.
2. Communicating hands free.
3. Calling administrative console by actuating call switch.
4. Returning a busy signal to indicate that station is already in use.

C. Speakers: Free of noise and distortion during operation and when in standby mode.

2.3 FUNCTIONAL DESCRIPTION OF IP-BASED TELEPHONE/INTERCOMMUNICATION SYSTEMS

A. Integrated central system with the following:

1. Direct-dial, full duplex private telephone communications between all locations equipped with telephones and IP-addressable speaker-microphone. Call initiation among administrative consoles and between administrative consoles and remote stations by dialing station's number on a 12-digit keypad.
2. 16 channels for unrestricted simultaneous communications.
3. Initial system operation with two administrative console and remote stations, expandable to 720 stations.
4. Direct-dial, two-way amplified voice intercommunication between administrative console telephones and remote stations without use of press-to-talk or talk-listen switches.
5. Automatic queuing for intercommunication channels, with automatic call waiting.
6. Call transfer among administrative consoles.
7. Display of selected station and answering calling station by pressing a single "response button."
8. Simultaneous communication with other stations on system by dialing a designated number on a 12-digit keypad.
9. Automatic gain control to ensure constant intercom speech level.
10. Simultaneous distribution of emergency announcements to all locations equipped with speakers by dialing a predetermined code number.
11. User-selectable facility for providing selected telephone stations with dial tone for external telephone calls.
12. Assignment of speaker locations within any one or more of eight zones for zone paging or time signal reception.
13. Digital readout displays on which up to three incoming calls are displayed with additional calls stored for subsequent display.
14. Off-site diagnostics to monitor system functions, operations, and faults through a serial data port on central-control station.
15. Control of simultaneous distribution of program material to various combinations of remote stations or groups by using keypad to control sources and distribute programs.
16. User-programmable features include the following:
 - a. Station calling by room number.
 - b. Room station call-in priority levels.
 - c. Audible signal schedule functions.
 - d. Schedule characteristics of audible signals.
 - e. Call-in tone characteristic.
 - f. Precedence among administrative consoles as destinations for incoming calls from room stations.
 - g. Grouping rooms and speakers into zones for paging and program distribution purposes.

B. Remote Stations:

1. Staff Telephone Station:
 - a. Corded handset or hands-free speakerphone operation.
 - b. Capable of placing outside call.
 - c. Ability to transfer calls.
 - d. Call forwarding functions.
 - e. Paging and emergency call placement.
 - f. Speed-dial programming.
 - g. Programmable restrictive functions.
2. Speaker-Microphone Station:

- a. Having privacy from remote monitoring without a warning tone signal at monitored station. Designated speaker-microphone stations have a privacy switch to prevent another station from listening and to permit incoming calls.
 - b. Communicating hands free.
 - c. Calling administrative console by actuating call switch.
 - d. Returning a busy signal to indicate that station is already in use.
- C. Speakers: Free of noise and distortion during operation and when in standby mode.

2.4 ADMINISTRATIVE CONSOLE FOR MICROPROCESSOR-SWITCHED SYSTEMS

- A. 12-Digit Keypad Selector: Transmits calls to other stations and initiates commands for programming and operation.
- B. Volume Control: Regulates incoming-call volume.
- C. Tone Annunciation: Momentary audible tone signal announces incoming calls.
- D. LED Annunciation: Identifies calling stations and stations in use. LED remains on until call is answered.
- E. Speaker Microphone: Transmits intercom voice signals when used via a voice-operated switch.
 - 1. Minimum Speaker Sensitivity: 91 dB at one meter, with 1-W input.
- F. Hard Buttons: To transfer and place calls on hold.
- G. Reset Control: Cancels call and resets system for next call.
- H. Digital Display: 16-digit alphanumeric LCD readout to register up to four three-digit station numbers.
- I. Central-Equipment Cabinet: Comply with EIA/ECA-310-E. Lockable, ventilated metal cabinet houses terminal strips, power supplies, amplifiers, system volume control, and other switching and control devices required for conversation channels and control functions.

2.5 SPEAKER-MICROPHONE STATIONS

- A. Mounting: Flush unless otherwise indicated, and suitable for mounting conditions indicated.
- B. Faceplate: Stainless steel or anodized aluminum with tamperproof mounting screws.
- C. Enclosure: Two-gang galvanized steel with 2-1/2-inch (64-mm) minimum depth.
- D. Speaker: Minimum axial sensitivity shall be 91 dB at one meter, with 1-W input. Voice coil shall be not less than 3 inches (76 mm), 2.3 oz. (65 g) minimum; permanent magnet.
- E. Tone Annunciation: Recurring momentary tone indicates incoming calls.
- F. Call Switch: Mount on faceplate. Permits calls to administrative console.

- G. Privacy Switch: Mount on faceplate. When in on position, switch prevents transmission of sound from remote station to system; when in off position, without further switch manipulation, response can be made to incoming calls.

2.6 CALL-SWITCH UNIT

- A. Mounting: Flush unless otherwise indicated, and suitable for mounting conditions indicated.
- B. Faceplate: Stainless steel or anodized aluminum with tamperproof mounting screws.
- C. Enclosure: Single-gang box with stainless-steel faceplate.
- D. Call Switch: Momentary contact signals system that a call has been placed.
- E. Privacy Switch: Prevents transmission of sound signals from station to system.
- F. Volume Control: Operated by screwdriver blade through a hole in faceplate to adjust output level of associated speaker.

2.7 ALL-CALL AMPLIFIER

- A. Output Power: 70-V balanced line. 80 percent of the sum of wattage settings of connected for each station and speaker connected in all-call mode of operation, plus an allowance for future stations.
- B. Total Harmonic Distortion: Less than 5 percent at rated output power with load equivalent to quantity of stations connected in all-call mode of operation.
- C. Minimum Signal-to-Noise Ratio: 60 dB, at rated output.
- D. Frequency Response: Within plus or minus 2 dB from 50 to 12,000 Hz.
- E. Output Regulation: Maintains output level within 2 dB from full to no load.
- F. Input Sensitivity: Compatible with administrative console and central equipment so amplifier delivers full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on administrative console, speaker microphones, or handset transmitters.
- G. Amplifier Protection: Prevents damage from shorted or open output.

2.8 INTERCOMMUNICATION AMPLIFIER

- A. Minimum Output Power: 15 W; adequate for all functions.
- B. Total Harmonic Distortion: Less than 5 percent at rated output power with load equivalent to one station connected to output terminals.
- C. Minimum Signal-to-Noise Ratio: 50 dB, at rated output.
- D. Frequency Response: Within plus or minus 3 dB from 70 to 10,000 Hz.
- E. Output Regulation: Maintains output level within 2 dB from full to no load.

- F. Input Sensitivity: Matched to input circuit and to provide full-rated output with sound-pressure level of less than 10 dynes/sq. cm impinging on microphones in administrative console, speaker microphones, or handset transmitters.
- G. Amplifier Protection: Prevents damage from shorted or open output.

2.9 CONE-TYPE LOUDSPEAKERS/SPEAKER MICROPHONES

- A. Minimum Axial Sensitivity: 91 dB at one meter, with 1-W input.
- B. Frequency Response: Within plus or minus 3 dB from 70 to 15,000 Hz.
- C. Minimum Dispersion Angle: 100 degrees.
- D. Line Transformer: Maximum insertion loss of 0.5 dB, power rating equal to speaker's, and at least four level taps.
- E. Enclosures: Steel housings or back boxes, acoustically dampened, with front face of at least 0.0478-inch (1.2-mm) steel and whole assembly rust proofed and factory primed; complete with mounting assembly and suitable for surface ceiling, flush ceiling, pendant or wall mounting; with relief of back pressure.
- F. Baffle: For flush speakers, minimum thickness of 0.032-inch (0.8-mm) aluminum with textured white finish.
- G. Vandal-Proof, High-Strength Baffle: For flush-mounted speakers, self-aging cast aluminum with tensile strength of 44,000 psi (303 MN/sq. m), 0.025-inch (0.65-mm) minimum thickness; countersunk heat-treated alloy mounting screws; and textured white epoxy finish.
- H. Size: 8 inches (200 mm) with 1-inch (25-mm) voice coil and minimum 5-oz. (140-g) ceramic magnet.

2.10 HORN-TYPE LOUDSPEAKERS/SPEAKER MICROPHONES

- A. Speakers shall be all-metal, weatherproof construction; complete with universal mounting brackets.
- B. Frequency Response: Within plus or minus 3 dB from 275 to 14,000 Hz.
- C. Minimum Power Rating of Driver: 15 W, continuous.
- D. Minimum Dispersion Angle: 110 degrees.
- E. Line Transformer: Maximum insertion loss of 0.5 dB, power rating equal to speaker's, and at least four level taps.

2.11 IP ADDRESSABLE MODULES

- A. Modules utilized for the operation of the intercommunication and paging functions.
 1. POE 802.3af compliant.
 2. Support DHCP.

3. RJ45 connectivity.

B. Speaker Modules:

1. Interface with speaker and multiple call switches.
2. Capable of providing privacy function for speaker/microphone when activated.
3. Rated for installation within air plenum spaces.

2.12 CONDUCTORS AND CABLES

- A. Conductors: Jacketed, twisted pair and twisted multipair, untinned solid copper. Sizes as recommended by system manufacturer, but no smaller than No. 22 AWG.
- B. Insulation: Thermoplastic, not less than 1/32 inch (0.8 mm) thick.
- C. Shielding: For speaker-microphone leads and elsewhere where recommended by manufacturer; No. 34 AWG, tinned, soft-copper strands formed into a braid or equivalent foil.
 1. Minimum Shielding Coverage on Conductors: 60 percent.
- D. Plenum Cable: Listed and labeled for plenum installation.

2.13 RACEWAYS

- A. Boxes shall be not less than 2 inches (50 mm) wide, 3 inches (75 mm) high, and 2-1/2 inches (64 mm) deep.
- B. Flexible metal conduit is prohibited.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Comply with NECA 1.
- B. Wiring Method: Install cables in raceways and cable trays except within consoles, cabinets, desks, and counters. Conceal raceway and cables except in unfinished spaces.
- C. Wiring within Enclosures: Bundle, lace, and train cables to terminal points with no excess and without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
- D. General Requirements:
 1. Terminate conductors; no cable shall contain unterminated elements. Make terminations only at outlets and terminals.
 2. Splices, Taps, and Terminations: Arrange on numbered terminal strips in junction, pull, and outlet boxes; terminal cabinets; and equipment enclosures. Cables may not be spliced.

3. Secure and support cables at intervals not exceeding 30 inches (760 mm) and not more than 6 inches (150 mm) from cabinets, boxes, fittings, outlets, racks, frames, and terminals.
4. Bundle, lace, and train conductors to terminal points without exceeding manufacturer's limitations on bending radii. Install lacing bars and distribution spools.
5. Do not install bruised, kinked, scored, deformed, or abraded cable. Do not splice cable between termination, tap, or junction points. Remove and discard cable if damaged during installation and replace it with new cable.
6. Cold-Weather Installation: Bring cable to room temperature before dereeling. Heat lamps shall not be used.

E. Open-Cable Installation:

1. Install cabling with horizontal and vertical cable guides in telecommunication spaces with terminating hardware and interconnection equipment.
2. Suspend cable not in a wireway or pathway a minimum of 8 inches (200 mm) above ceiling by cable supports not more than 60 inches (1524 mm) apart.
3. Cable shall not be run through structural members or be in contact with pipes, ducts, or other potentially damaging items.

F. Separation of Wires: Separate speaker-microphone, line-level, speaker-level, and power wiring runs. Install in separate raceways or, where exposed or in same enclosure, separate conductors at least 12 inches (300 mm) apart for speaker microphones and adjacent parallel power and telephone wiring. Separate other intercommunication equipment conductors as recommended by equipment manufacturer.

G. Match input and output impedances and signal levels at signal interfaces. Provide matching networks where required.

H. Weatherproof Equipment: For units that are mounted outdoors, in damp locations, or where exposed to weather, install consistent with requirements of weatherproof rating.

I. Connect wiring according to Section 26 05 19 "Low-Voltage Electrical Power Conductors and Cables."

J. Mounting of Stations: Surface mount at 54 inches (137.2 cm) above finished floor to center of station unless otherwise indicated.

3.2 GROUNDING

- A. Ground cable shields and equipment to eliminate shock hazard and to minimize ground loops, common-mode returns, noise pickup, cross talk, and other impairments.
- B. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding.

3.3 SYSTEM PROGRAMMING

- A. Programming: Fully brief Owner on available programming options. Record Owner's decisions and set up initial system program. Prepare a written record of decisions, implementation methodology, and final results.

3.4 FIELD QUALITY CONTROL

- A. Perform tests and inspections with the assistance of a factory-authorized service representative:
- B. Tests and Inspections:
 - 1. Schedule tests with at least seven days' advance notice of test performance.
 - 2. After installing educational intercommunications and program systems and after electrical circuitry has been energized, test for compliance with requirements.
 - 3. Operational Test: Test originating station-to-station, all-call, and page messages at each intercommunication station. Verify proper routing and volume levels and that system is free of noise and distortion. Test each available message path from each station on system.
 - 4. Frequency Response Test: Determine frequency response of two transmission paths, including all-call and paging, by transmitting and recording audio tones. Minimum acceptable performance is within 3 dB from 150 to 2500 Hz.
 - 5. Signal-to-Noise Ratio Test: Measure signal-to-noise ratio of complete system at normal gain settings as follows:
 - a. Disconnect speaker microphone and replace it in the circuit with a signal generator using a 1000-Hz signal. Measure signal-to-noise ratio at paging speakers.
 - b. Repeat test for three speaker microphones, and one administrative console microphone, and for each separately controlled zone of paging loudspeakers.
 - c. Minimum acceptable ratio is 45 dB.
 - 6. Distortion Test: Measure distortion at normal gain settings and rated power. Feed signals at frequencies of 150, 200, 400, 1000, and 2500 Hz into each intercom, paging, and all-call amplifier. For each frequency, measure distortion in the paging and all-call amplifier outputs. Maximum acceptable distortion at any frequency is 5 percent total harmonics.
 - 7. Acoustic Coverage Test: Feed pink noise into system using octaves centered at 500 and 4000 Hz. Use sound-level meter with octave-band filters to measure level at five locations in each paging zone. Maximum permissible variation in level is plus or minus 3 dB; in levels between adjacent zones, plus or minus 5 dB.
 - 8. Power Output Test: Measure electrical power output of each paging amplifier at normal gain settings of 150, 1000, and 2500 Hz. Maximum variation in power output at these frequencies is plus or minus 3 dB.
 - 9. Signal Ground Test: Measure and report ground resistance at system signal ground.
- C. Inspection: Verify that units and controls are properly labeled and interconnecting wires and terminals are identified. Prepare a list of final tap settings of paging and independent room speaker-line matching transformers.
- D. Educational intercommunications and program systems will be considered defective if they do not pass tests and inspections.
- E. Prepare test and inspection reports.

3.5 ADJUSTING

- A. On-Site Assistance: Engage a factory-authorized service representative to provide on-site assistance in adjusting sound levels, resetting transformer taps, and adjusting controls to meet occupancy conditions.

- B. Occupancy Adjustments: When requested within 12 months from date of Substantial Completion, provide on-site assistance in adjusting system to suit actual occupied conditions. Provide up to two visits to Project during other-than-normal occupancy hours for this purpose.

3.6 DEMONSTRATION

- A. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain the educational intercommunications and program systems.
- B. Train Owner's maintenance personnel on programming equipment for starting up and shutting down, troubleshooting, servicing, and maintaining the system and equipment.

END OF SECTION

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NEW LUMINAIRE SCHEDULE

SYMBOL	CALLOUT	DESCRIPTION	LAMP	INPUT WATTS	TOTAL LUMENS	LAMP COLOR	VOLTS	MOUNTING	MODEL	FIXTURE DEPTH	NOTES
A	2X2 RECESSED LED	(1) LED	33.1	4070	3500K	MULTIPLE	RECESSED	LITHONIA 2VTL2-40L-ADP-EZ1-LP835 / 2V2T F916 COLUMBIA LCAT22-35VLG-ED1U MERC LR15-22G-4300-35K-1%UNI	4-3/8"	SHADED FIXTURES TO BE CONNECTED TO CENTRAL INVERTER PANEL EL.1A.	
B	6" LED DOWNLIGHT	(1) LED	19.7	2006	3500K	MULTIPLE	RECESSED	GOTHAM EVO6-35/20-AR-MD-LS-MVOLT-G21-TRW PRESCOLITE LTR-GRD-H-ML20L-DM1LTR-GRD-T-ML-35K-8-MD/SS-WT INTENSE S86G4C-R3-359/C0390-C-3F-W	7-9/16"		
D	8FT LED STRIP	(1) LED	81	11267	3500K	MULTIPLE	SURFACE	LITHONIA ZL1D-124-2500LM-FST-MVOLT-35K-80CRI-CS1W-WH COLUMBIA MPS3-35HL-FW-EDU-C6T1L201 MERCURY LIGHTING LSA6-10000-35K-HTA-1%UNI	2.9882"	COORDINATE HANGER CHAIN/AIRCRAFT CABLE/WIREGAURD REQUIREMENTS WITH OWNER.	
E2	2FT LED STRIP	(1) LED	22	2742	3500K	MULTIPLE	SURFACE	LITHONIA ZL1D-124-2500LM-FST-MVOLT-35K-80CRI-CS1W-WH COLUMBIA MPS2-35HL-FW-EDU-C6T1L201 MERCURY LSA4-2800-35K-HTA-1%UNI	2.9882"	COORDINATE HANGER CHAIN/AIRCRAFT CABLE/WIREGAURD REQUIREMENTS WITH OWNER.	
E4	4FT LED STRIP	(1) LED	59	7480	3500K	MULTIPLE	SURFACE	LITHONIA ZL1D-148-7000LM-FST-MVOLT-35K-80CRI-CS1W-WH COLUMBIA MPS4-35VL-FW-EDU-C6T1L201 MERCURY LSA4-5700-35K-HTA-1%UNI	2.9882"	COORDINATE HANGER CHAIN/AIRCRAFT CABLE/WIREGAURD REQUIREMENTS WITH OWNER.	
F	HIGH BAY LED	(1) LED	146	18000	3500K	MULTIPLE	PENDANT/SURFACE	LITHONIA IBHST-18000LM-SD080-MD-0210-35K-80CRI-WH / IBAC120 M20-WGIBH4 COLUMBIA PELA-35MM-FAW-EDU-WG-LH/QM10 MERCURY LHBT4-18000-35K-R-1%UNI WAC KIT	4-3/8"	PROVIDE CABLE LENGTH TO MOUNT LIGHT FIXTURES BELOW STRUCTURAL TRUSSES.	
G	3' LED DECORATIVE PENDANT	(1) LED	38	3335	3500K	MULTIPLE	PENDANT	SPI 12125-L38W-120-277-3500K-14W-45-DF_MA01-DF_PSC OCL T85-PAFK-36-MW-WTP-L-LED2-35K-WF-LED1-35K-UNV-48-DM1 DELRAY 6306-W-W35-D-64MR16LED	45.3		
H6	6" LINEAR LED RECESSED	(1) LED	19.68	2340	3500K	MULTIPLE	RECESSED	NULITE RG4-03-L35-UNV-DO-1C-FRF-6 LITE CONTROL 4L-DW-D-6-SOF-C1-35K-D040-D01-1C-UNV-W1 MERCURY MLS3-G-72-390-35K-ASO-1%U	3-7/8"	REFER TO LIGHTING FLOOR PLANS FOR SYSTEM RUN LENGTHS.	
H8	8" LINEAR LED RECESSED	(1) LED	26.24	3120	3500K	MULTIPLE	RECESSED	NULITE RG4-03-L35-UNV-DO-1C-FRF-6 LITE CONTROL 4L-DW-D-6-SOF-C1-35K-D040-D01-1C-UNV-W1 MERCURY MLS3-G-96-390-35K-ASO-1%U	3-7/8"	REFER TO LIGHTING FLOOR PLANS FOR SYSTEM RUN LENGTHS.	
H12	12" LINEAR LED RECESSED	(1) LED	39.36	4680	3500K	MULTIPLE	RECESSED	NULITE RG4-03-L35-UNV-DO-1C-FRF-6 LITE CONTROL 4L-DW-D-12-SOF-C1-35K-D040-D01-1C-UNV-W1 MERCURY MLS3-G-144-390-35K-ASO-1%U	3-7/8"	REFER TO LIGHTING FLOOR PLANS FOR SYSTEM RUN LENGTHS.	
J	6" LED CYLINDER	(1) LED	40.14	4000	3500K	MULTIPLE	PENDANT	INDY LC6-C-40LM-35K-MVOLT-B-G4-80CRI-ZT / L6-HW-CS / CSTEM-48IN-BL-CAB PRESCOLITE LTC-GRD-CM-40L35K8MD-DM1-SSBL INTENSE S86G4C-L6-358-W-C-P48	13-1/4"		
K	LED TRACK LIGHT	(1) LED	300	793	3500K	MULTIPLE	PENDANT/SURFACE	LUMEN PULSE LATS4-A-120-10-35K-CR80-N-MWH-b-MWH / 1C-AWH-PH ARCHITRAK AKTMLED9L35WHAKT4WH WH AKTEF WH AKTEC WH INTENSE IQ-LO-35-W-NF15WH		PROVIDE WITH SINGLE CIRCUIT TRACK SYSTEM (INCLUDING ALL REQUIRED CONNECTORS/ACCESSORIES) AND CURRENT LIMITER UP TO 300V. VERIFY QUANTITY OF TRACK HEADS AND FINISHES WITH OWNER/ARCHITECT.	
L36	LED BATHROOM WALL MOUNT	(1) LED	31.5	4000	3500K	MULTIPLE	WALL	LUMENWERY WALWHD-LQ-LED-80-1000-35-3-UNV-D1-1-DMB-W FINELITE S17LED-VCF-SF-3V-835-120-SC	4-1/2"		
N2	2" LINEAR LED SURFACE	(1) LED	9.7	1142	3500K	MULTIPLE	SURFACE	NULITE RG6-05-L35-UNV-D-1C-FRF-2 LITCONTROL 6L-S-D-2-SOF-C1-35K-D060-D01-1C-UNV-W1 MERCURY MLS3-M1-24-625-35K-1%U	5-1/2"		
N4	4" LINEAR LED SURFACE	(1) LED	19.4	2284	3500K	MULTIPLE	SURFACE	NULITE RG6-05-L35-UNV-D-1C-FRF-4 LITCONTROL 6L-S-D-4-SOF-C1-35K-D060-D01-1C-UNV-W1 MERCURY MLS3-M1-48-625-35K-1%U	5-1/2"		
N6	6" LINEAR LED SURFACE	(1) LED	29.1	3426	3500K	MULTIPLE	SURFACE	NULITE RG6-05-L35-UNV-D-1C-FRF-6 LITCONTROL 6L-S-D-6-SOF-C1-35K-D060-D01-1C-UNV-W1 MERCURY MLS3-M1-72-625-35K-1%U	5-1/2"		
OA	EXTERIOR LED CYLINDER	(1) LED	28	1491	3000K	MULTIPLE	SURFACE	HESS VL48SL LED-WW-UNV-W-MB-DG-DIM LITON WD2340-B-UE-DUN-T35 LIGMAN UTA-31881-2X37W-T2-T2-W30 STND FINISH-120/277	19.1"	PROVIDE UP AND DOWN CYLINDER LIGHTING.	
OB	SINGLE HEAD POLE LIGHT	(1) LED	140	17221	3000K	120V 1P 2W	CEILING	LITHONIA DSX2-P1-30K-T4M-MVOLT-SPA-HS-DBLXD BEACON VP-L84L-135/4K7/4UNV/ABL/BC/SS820-40A-1-B3-BL GARCOO EGF-S-48L-1A-WW-G2-4R-4-UNV-HIS-B2		PROVIDE SQUARE POLE WITH BASE AND MOUNT FIXTURE AT 20' TO GROUND.	
OC	EXTERIOR LED BOLLARD	(1) LED	30	2120	3500K	MULTIPLE	SURFACE	STERNBERG LIGHTING BL-4-SL360-FG-26L-35-T3R-F-MDL03-PEC-UBT LIGMAN UMC-10011-22W-T3-W35-STND FINISH-120/277			
P	6" LED WALL MOUNT	(1) LED	26.46	2800	3500K	MULTIPLE	PENDANT	INDY LC6-W-28LM-35K-MVOLT-B-G4-80CRI-ZT / L6-HW-CS / CSTEM-48IN-BL-CAB PRESCOLITE LTC-GRD-CM-30L-35K-8-MD-DM1-SS-BL INTENSE S86G4C-L5-358-B-HZ-WB	12"		
XA	EXIT UNIVERSAL	(1) LED	1	0			WALL/CEILING	LITHONIA EXR LED M6 DUAL LITE LECSRDNA EMERG-LITE ELX400RN	7.13"	FIXTURE TO BE CONNECTED TO CENTRAL INVERTER PANEL EL.1A.	
XB	EXIT UNIVERSAL SINGLE FACE SURFACE/PENDANT EDGE LIT	(1) LED	2.5	0			MULTIPLE	LITHONIA EDG-1-R / ELA US12 DUAL LITE LES-STEM-S-R-D-N-A EMERG-LITE PAR6	5-1/2"	FIXTURE TO BE CONNECTED TO CENTRAL INVERTER PANEL EL.1A.	
XB2	EXIT UNIVERSAL DOUBLE FACE SURFACE/PENDANT EDGE LIT	(1) LED	2.5	0			MULTIPLE	LITHONIA EDG-2-R / ELA US12 DUAL LITE LES-STEM-S-R-D-N-A EMERG-LITE PAR6	5-1/2"	FIXTURE TO BE CONNECTED TO CENTRAL INVERTER PANEL EL.1A.	
XC	EXIT UNIVERSAL SINGLE FACE RECESSED EDGE LIT	(1) LED	2.5	0			MULTIPLE	LITHONIA EDGR-1-R DUAL LITE LECSRDNA EMERG-LITE PAR6	5-1/2"	FIXTURE TO BE CONNECTED TO CENTRAL INVERTER PANEL EL.1A.	

MANUFACTURER'S NAMES AND CATALOG NUMBERS ARE USED FOR QUALITY AND PERFORMANCE ONLY. ALTERNATE LISTED LIGHT FIXTURES AND OTHER ELECTRICAL DEVICES MANUFACTURED BY OTHERS SHALL BE EQUALLY ACCEPTABLE PROVIDED THEY MEET OR EXCEED IN PERFORMANCE AND QUALITY AS SPECIFIED.

RECEPTACLE SCHEDULE

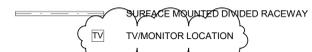
SYMBOL	CALLOUT	VOLTS	NOTES
⊕	CEILING RECEPTACLE	120V 1P 2W	MOUNT IN CEILING UNLESS NOTED OTHERWISE.
ⓐ	CORD REEL CONNECTION	120V 1P 2W	PROVIDE A HUBBELL #HBL 45123R20 CORD REEL. COORDINATE EXACT REQUIREMENTS WITH OWNER.
D	DEDICATED DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE.
Ⓧ	DOUBLE DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE.
Ⓨ	DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE.
F	FLOOR BOX	120V 1P 2W	WIREMOLD #RFB4 SERIES FLOOR BOX. UNLESS OTHERWISE NOTED, PROVIDE WITH TWO DUPLEX RECEPTABLES AND TWO CAT6 CABLES / JACKS DATA COMPLETE WITH ALL REQUIRED HARDWARE. COORDINATE CONCRETE WORK WITH G.C. PROVIDE 1-1/2" CONDUIT MINIMUM FOR DATA CABLING.
○	FURNITURE CONNECTION	120V 1P 2W	PROVIDE CONNECTION/WHIP TO OWNER PROVIDED FURNITURE.
●	GFCI DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE.
Ⓧ	RAISED DOUBLE DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 48" UNLESS NOTED OTHERWISE.
Ⓨ	RAISED DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 48" UNLESS NOTED OTHERWISE.
●	RAISED GFCI DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 48" UNLESS NOTED OTHERWISE.
○	SIMPLEX RECEPTACLE	SEE PLANS	MOUNT @ 18" UNLESS NOTED OTHERWISE.
Ⓧ	USB DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE.
●	WEATHER PROOF GFCI DUPLEX RECEPTACLE	120V 1P 2W	MOUNT @ 18" UNLESS NOTED OTHERWISE. PROVIDE WITH HEAVY DUTY WEATHERPROOF "N USE" COVER.

GENERAL:

- Ⓧ VOLUME CONTROL
- Ⓨ SECURITY INTERCOM/PHONE
- Ⓧ MICROPHONE
- Ⓧ ELECTRICAL DISCONNECT
- Ⓧ MOTOR CONNECTION
- Ⓧ SPECIAL ELECTRICAL CONNECTION
- Ⓧ PUSH BUTTON
- Ⓧ OVERHEAD DOOR CONTROL
- Ⓧ ELECTRICAL PANEL
- Ⓧ OR Ⓨ SEE NOTE SYMBOL

ABBREVIATIONS:

- (E) EXISTING TO REMAIN
- CR CORD REEL
- CD CORD DROP
- EWC ELECTRIC WATER COOLER
- FAAP FIRE ALARM ANNUNCIATOR PANEL
- FACP FIRE ALARM CONTROL PANEL
- GC GENERAL CONTRACTOR
- GFCI GROUND FAULT CURRENT INTERRUPTER
- GFI GROUND FAULT INTERRUPTER
- GRD GROUND
- HP HORSE POWER
- HC HEATING, VENTILATING CONTRACTOR
- J-BOX JUNCTION BOX
- MDP MAIN DISTRIBUTION PANEL
- MLO MAIN LUG ONLY
- PC PLUMBING CONTRACTOR
- PNL PANEL
- RM ROOM
- TCF TEMPERATURE CONTROL PANEL
- WP WEATHERPROOF
- XMR TRANSFORMER
- WG WIRE GUARD



AUDIO ENHANCEMENT DEVICE SCHEDULE

SYMBOL	DESCRIPTION	NOTES
Ⓧ	CLASSROOM CAMERA	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. PROVIDE TWO CAT6 CABLES AND JACKS UNLESS OTHERWISE NOTED. REFER TO AUDIO ENHANCEMENT DETAILS SHOWN OF SHEET E902. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER.
Ⓧ	EMERGENCY CALL	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. MOUNT AT 48" AFF UNLESS NOTED OTHERWISE. PROVIDE A PURPLE CAT6 CABLE AND JACKS UNLESS OTHERWISE NOTED. REFER TO AUDIO ENHANCEMENT DETAILS SHOWN OF SHEET E902. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER.
Ⓧ	SPEAKER CEILING CLASSROOM	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. PROVIDE 18G WIRING TO SPEAKER UNLESS NOTED OTHERWISE. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE CONTRACTOR. REFER TO AUDIO ENHANCEMENT DETAILS SHOWN OF SHEET E902. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER.

LIGHTING CONTROL SCHEDULE

SYMBOL	DESCRIPTION	NOTES
Ⓧ	0-10V DIMMER SWITCH	SINGLE POLE DIMMER SWITCH. MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
Ⓧ	0-10V THREE WAY DIMMER SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
Ⓧ	CEILING MOUNTED OCCUPANCY SENSOR TYPE A	DUAL TECHNOLOGY LOW VOLTAGE 360 DEGREE LARGE MOTION STANDARD RANGE CEILING SENSOR WITH ISOLATED LOW VOLTAGE RELAY. NIGHT #NCM PDT-10 SERIES OR EQUAL BY LEVITON, HUBBELL, OR WATSTOPPER. PROVIDE POWER PACK(S) AND CAT5 CABLING AS REQUIRED.
Ⓧ	CEILING MOUNTED OCCUPANCY SENSOR TYPE B	DUAL TECHNOLOGY LOW VOLTAGE 360 DEGREE HIGH MOUNT (FROM 15" 0" - 45" 0") CEILING SENSOR WITH ISOLATED LOW VOLTAGE RELAY. NIGHT #NCM PDT-6 SERIES OR EQUAL BY LEVITON, HUBBELL, OR WATSTOPPER. PROVIDE POWER PACK(S) AND CAT5 CABLING AS REQUIRED.
Ⓧ	DAYLIGHT SENSOR	CEILING/SURFACE MOUNT DAYLIGHT HARVESTING WITH AUTOMATIC DIMMING PHOTOCELL CONTROL. NIGHT #NCM ADCX SERIES OR EQUAL BY LEVITON, HUBBELL, OR SENSOR SWITCH. PROVIDE POWER PACK(S) AND CAT5 CABLING AS REQUIRED.
4	FOUR WAY SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
PL	PILOT LIGHT SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
3	SINGLE POLE SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
3	THREE WAY SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE.
T	TIMER SWITCH	MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE. SENSOR SWITCH #PTS-60 SERIES OR EQUAL.
Ⓧ	WALL OCCUPANCY SENSOR TYPE A	PIR SINGLE RELAY WALL SENSOR, SELECTABLE SETTINGS FOR OCCUPANCY OR VACANCY. MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE. NIGHT #WXSX PDT LV SERIES OR EQUAL BY LEVITON, HUBBELL, OR WATSTOPPER. PROVIDE POWER PACK(S) AND CAT5 CABLING AS REQUIRED.
Ⓧ	WALL OCCUPANCY SENSOR TYPE B	PIR SINGLE RELAY WALL SENSOR WITH 0-10V DIMMING, SELECTABLE SETTINGS FOR OCCUPANCY OR VACANCY. MOUNT AT 48" TO CENTER UNLESS NOTED OTHERWISE. NIGHT #WXSX PDT LV-DX SERIES OR EQUAL BY LEVITON, HUBBELL, OR WATSTOPPER. PROVIDE POWER PACK(S) AND CAT5 CABLING AS REQUIRED.

FIRE ALARM SCHEDULE

SYMBOL	DESCRIPTION	NOTES
Ⓧ	CEILING MOUNTED AUDIO-VISUAL NOTIFICATION DEVICE	FIRE ALARM SYSTEM CEILING MOUNT AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON AHJ APPROVED FA PLAN.
Ⓧ	DUCT MOUNTED SMOKE	ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR. COORDINATE LOCATION AND CONTROL INTERFACE WITH HC.
Ⓧ	FIRE ALARM ANNUNCIATOR PANEL	FIRE ALARM SYSTEM WALL MOUNTED ANNUNCIATOR PANEL.
Ⓧ	FIRE ALARM CONTROL PANEL	FIRE ALARM SYSTEM WALL MOUNTED CONTROL PANEL.
Ⓧ	FLOW SWITCH	FIRE PROTECTION SYSTEM FLOW SWITCH MONITORED BY FIRE ALARM SYSTEM
Ⓧ	HEAT DETECTOR	FIRE ALARM SYSTEM CEILING HEAT DETECTOR.
Ⓧ	PULLSTATION	FIRE ALARM SYSTEM PULLSTATION. LOCATE IN PATH OF EGRESS WITHIN 5' OF EGRESS DOOR
Ⓧ	SMOKE DETECTOR	FIRE ALARM SYSTEM CEILING SMOKE DETECTOR.
Ⓧ	TAMPER SWITCH	FIRE PROTECTION SYSTEM TAMPER SWITCH MONITORED BY FIRE ALARM SYSTEM
Ⓧ	WALL MOUNTED AUDIO-VISUAL NOTIFICATION DEVICE	FIRE ALARM SYSTEM WALL MOUNTED AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON PLAN.
Ⓧ	WALL MOUNTED VISUAL NOTIFICATION DEVICE	FIRE ALARM SYSTEM WALL MOUNTED AUDIO/VISUAL ANNUNCIATION DEVICE WITH ADJUSTABLE CANDELA SETTINGS. ADJUST CANDELA TO SETTING INDICATED ON PLAN.

ACCESS CONTROL SCHEDULE

SYMBOL	CALLOUT	NOTES
Ⓧ	AIPHONE-DOOR RELEASE	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, RACEWAY AND JUNCTION BOX. REFER TO E900 FOR TYPICAL DOOR ACCESS CONTROL DETAILS. REFER TO SPEC SECTION 28.13.00.
Ⓧ	CARD READER	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, RACEWAY AND JUNCTION BOX. REFER TO E900 FOR TYPICAL DOOR ACCESS CONTROL DETAILS. REFER TO SPEC SECTION 28.13.00.
Ⓧ	DOOR POSITION SWITCH	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, RACEWAY AND JUNCTION BOX. REFER TO E900 FOR TYPICAL DOOR ACCESS CONTROL DETAILS. REFER TO SPEC SECTION 28.13.00.
Ⓧ	ELECTRIC STRIKE	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, RACEWAY AND JUNCTION BOX. REFER TO E900 FOR TYPICAL DOOR ACCESS CONTROL DETAILS. REFER TO SPEC SECTION 28.13.00.

COMMUNICATIONS DEVICE SCHEDULE

SYMBOL	DESCRIPTION	NOTES
Ⓧ	360 DEGREE SECURITY CAMERA	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. PROVIDE ONE CAT6 CABLE AND JACK UNLESS OTHERWISE NOTED. COORDINATE ALL REQUIREMENTS WITH OWNER. COORDINATE WITH SPEC SECTION 28.20.00 FOR MORE INFORMATION.
Ⓧ	COMMUNICATIONS OUTLET	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. MOUNT AT 18" AFF UNLESS NOTED OTHERWISE. PROVIDE TWO CAT6 CABLES AND JACKS UNLESS OTHERWISE NOTED.
Ⓧ	EXTERIOR SECURITY CAMERA	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. PROVIDE ONE CAT6 CABLE AND JACK UNLESS OTHERWISE NOTED. COORDINATE ALL REQUIREMENTS WITH OWNER. COORDINATE WITH SPEC SECTION 28.20.00 FOR MORE INFORMATION.
Ⓧ	INTERIOR SECURITY CAMERA	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. PROVIDE ONE CAT6 CABLE AND JACK UNLESS OTHERWISE NOTED. COORDINATE ALL REQUIREMENTS WITH OWNER. COORDINATE WITH SPEC SECTION 28.20.00 FOR MORE INFORMATION.
Ⓧ	PAGING HORN	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE CONTRACTOR AND OWNER. REFER TO SPEC SECTION 27.51.23 FOR MORE INFORMATION.
Ⓧ	RAISED COMMUNICATIONS OUTLET	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. MOUNT AT 48" AFF UNLESS NOTED OTHERWISE. PROVIDE TWO CAT6 CABLES AND JACKS UNLESS OTHERWISE NOTED.
Ⓧ	SPEAKER CEILING GYM	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE CONTRACTOR AND OWNER. REFER TO GENERAL NOTES ON POWERSYSTEMS PLANS FOR MORE INFORMATION.
Ⓧ	SPEAKER CEILING RECESSED MOUNTED	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE CONTRACTOR AND OWNER. REFER TO SPEC SECTION 27.51.23 FOR MORE INFORMATION.
Ⓧ	SPEAKER CEILING SURFACE MOUNTED	ELECTRICAL CONTRACTOR TO PROVIDE SYSTEM DEVICE, CABLING, AND A 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. COORDINATE EXACT REQUIREMENTS WITH LOW VOLTAGE CONTRACTOR AND OWNER. REFER TO SPEC SECTION 27.51.23 FOR MORE INFORMATION.
Ⓧ	WIRELESS ACCESS POINT	ELECTRICAL CONTRACTOR TO PROVIDE 4" SQUARE BOX WITH EXTENSION RING FOR A SINGLE GANG DEVICE AND A 3/4" CONDUIT TO ACCESSIBLE CEILING MINIMUM. PROVIDE A THREADED BUSHING ON THE CONDUIT END. MOUNT AT 18" AFF UNLESS NOTED OTHERWISE. PROVIDE TWO CAT6 CABLES AND JACKS UNLESS OTHERWISE NOTED.
Ⓧ	WIRELESS CLOCK WALL MOUNTED	ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL CLOCK AT LOCATIONS SHOWN. REFER TO GENERAL NOTES ON POWERSYSTEMS PLANS FOR MORE INFORMATION.

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JDR PROJECT NO. 19.0361

Project Title:
**LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**

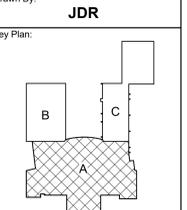
Project Location:
**504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**

Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR

Key Plan:



KEY PLAN

BID DOCUMENTS

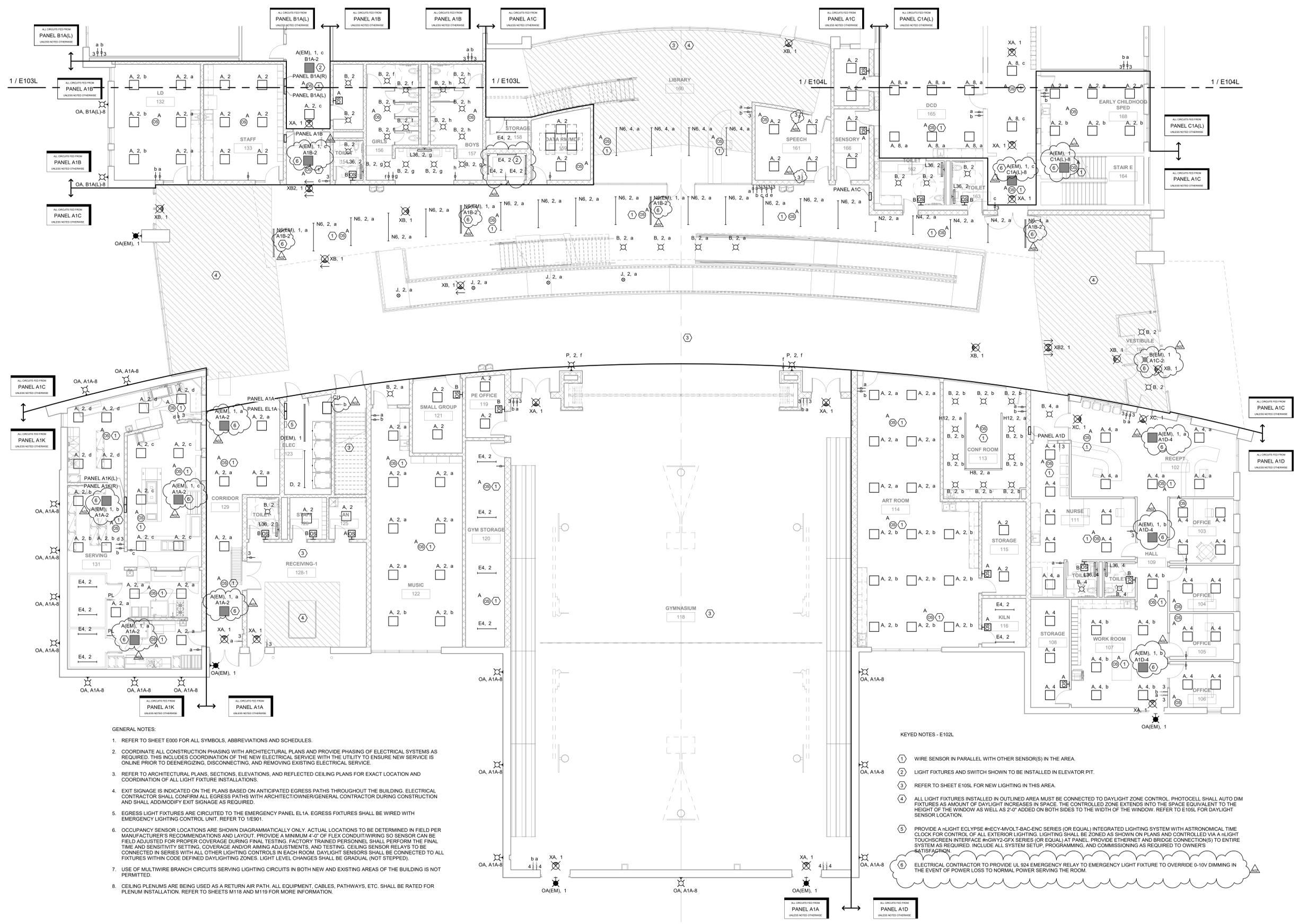
Revisions:

No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:42:05 AM

E102L



- GENERAL NOTES:
- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
 - COORDINATE ALL CONSTRUCTION PHASING WITH ARCHITECTURAL PLANS AND PROVIDE PHASING OF ELECTRICAL SYSTEMS AS REQUIRED. THIS INCLUDES COORDINATION OF THE NEW ELECTRICAL SERVICE WITH THE UTILITY TO ENSURE NEW SERVICE IS ONLINE PRIOR TO DEENERGIZING, DISCONNECTING, AND REMOVING EXISTING ELECTRICAL SERVICE.
 - REFER TO ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS, AND REFLECTED CEILING PLANS FOR EXACT LOCATION AND COORDINATION OF ALL LIGHT FIXTURE INSTALLATIONS.
 - EXIT SIGNAGE IS INDICATED ON THE PLANS BASED ON ANTICIPATED EGRESS PATHS THROUGHOUT THE BUILDING. ELECTRICAL CONTRACTOR SHALL CONFIRM ALL EGRESS PATHS WITH ARCHITECT/OWNER/GENERAL CONTRACTOR DURING CONSTRUCTION AND SHALL ADD/MODIFY EXIT SIGNAGE AS REQUIRED.
 - EGRESS LIGHT FIXTURES ARE CIRCUITED TO THE EMERGENCY PANEL EL1A. EGRESS FIXTURES SHALL BE WIRED WITH EMERGENCY LIGHTING CONTROL UNIT. REFER TO 1/E901.
 - OCCUPANCY SENSOR LOCATIONS ARE SHOWN DIAGRAMMATICALLY ONLY. ACTUAL LOCATIONS TO BE DETERMINED IN FIELD PER MANUFACTURER'S RECOMMENDATIONS AND LAYOUT. PROVIDE A MINIMUM 4'-0" OF FLEX CONDUIT/WIRING SO SENSOR CAN BE FIELD ADJUSTED FOR PROPER COVERAGE DURING FINAL TESTING. FACTORY TRAINED PERSONNEL SHALL PERFORM THE FINAL TIME AND SENSITIVITY SETTING, COVERAGE AND/OR AIMING ADJUSTMENTS, AND TESTING. CEILING SENSOR RELAYS TO BE CONNECTED IN SERIES WITH ALL OTHER LIGHTING CONTROLS IN EACH ROOM. DAYLIGHT SENSORS SHALL BE CONNECTED TO ALL FIXTURES WITHIN CODE DEFINED DAYLIGHTING ZONES. LIGHT LEVEL CHANGES SHALL BE GRADUAL (NOT STEPPED).
 - USE OF MULTIWIRE BRANCH CIRCUITS SERVING LIGHTING CIRCUITS IN BOTH NEW AND EXISTING AREAS OF THE BUILDING IS NOT PERMITTED.
 - CEILING PLENUMS ARE BEING USED AS A RETURN AIR PATH. ALL EQUIPMENT, CABLES, PATHWAYS, ETC. SHALL BE RATED FOR PLENUM INSTALLATION. REFER TO SHEETS M118 AND M119 FOR MORE INFORMATION.

- KEYED NOTES - E102L
- WIRE SENSOR IN PARALLEL WITH OTHER SENSOR(S) IN THE AREA.
 - LIGHT FIXTURES AND SWITCH SHOWN TO BE INSTALLED IN ELEVATOR PIT.
 - REFER TO SHEET E105L FOR NEW LIGHTING IN THIS AREA.
 - ALL LIGHT FIXTURES INSTALLED IN OUTLINED AREA MUST BE CONNECTED TO DAYLIGHT ZONE CONTROL. PHOTOCELL SHALL AUTO DIM FIXTURES AS AMOUNT OF DAYLIGHT INCREASES IN SPACE. THE CONTROLLED ZONE EXTENDS INTO THE SPACE EQUIVALENT TO THE HEIGHT OF THE WINDOW AS WELL AS 2'-0" ADDED ON BOTH SIDES TO THE WIDTH OF THE WINDOW. REFER TO E105L FOR DAYLIGHT SENSOR LOCATION.
 - PROVIDE A LIGHT ECLIPSE #NFCY-MVOLT-BAC-ENC SERIES (OR EQUAL) INTEGRATED LIGHTING SYSTEM WITH ASTRONOMICAL TIME CLOCK FOR CONTROL OF ALL EXTERIOR LIGHTING. LIGHTING SHALL BE ZONED AS SHOWN ON PLANS AND CONTROLLED VIA A LIGHT TOUCHSCREEN INTERFACE #NFWY-GFY SERIES (OR EQUAL) AT PANEL. PROVIDE ETHERNET AND BRIDGE CONNECTION(S) TO ENTIRE SYSTEM AS REQUIRED. INCLUDE ALL SYSTEM SETUP, PROGRAMMING, AND COMMISSIONING AS REQUIRED TO OWNER'S SATISFACTION.
 - ELECTRICAL CONTRACTOR TO PROVIDE UL 924 EMERGENCY RELAY TO EMERGENCY LIGHT FIXTURE TO OVERRIDE 0-10V DIMMING IN THE EVENT OF POWER LOSS TO NORMAL POWER SERVING THE ROOM.



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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**

Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**

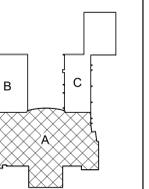
Sheet Title: **FIRST FLOOR - POWER & SYSTEMS - AREA A**

Project Number: **19014-1**

Project Date: **3.5.2020**

Drawn By: **JDR**

Key Plan:



KEY PLAN

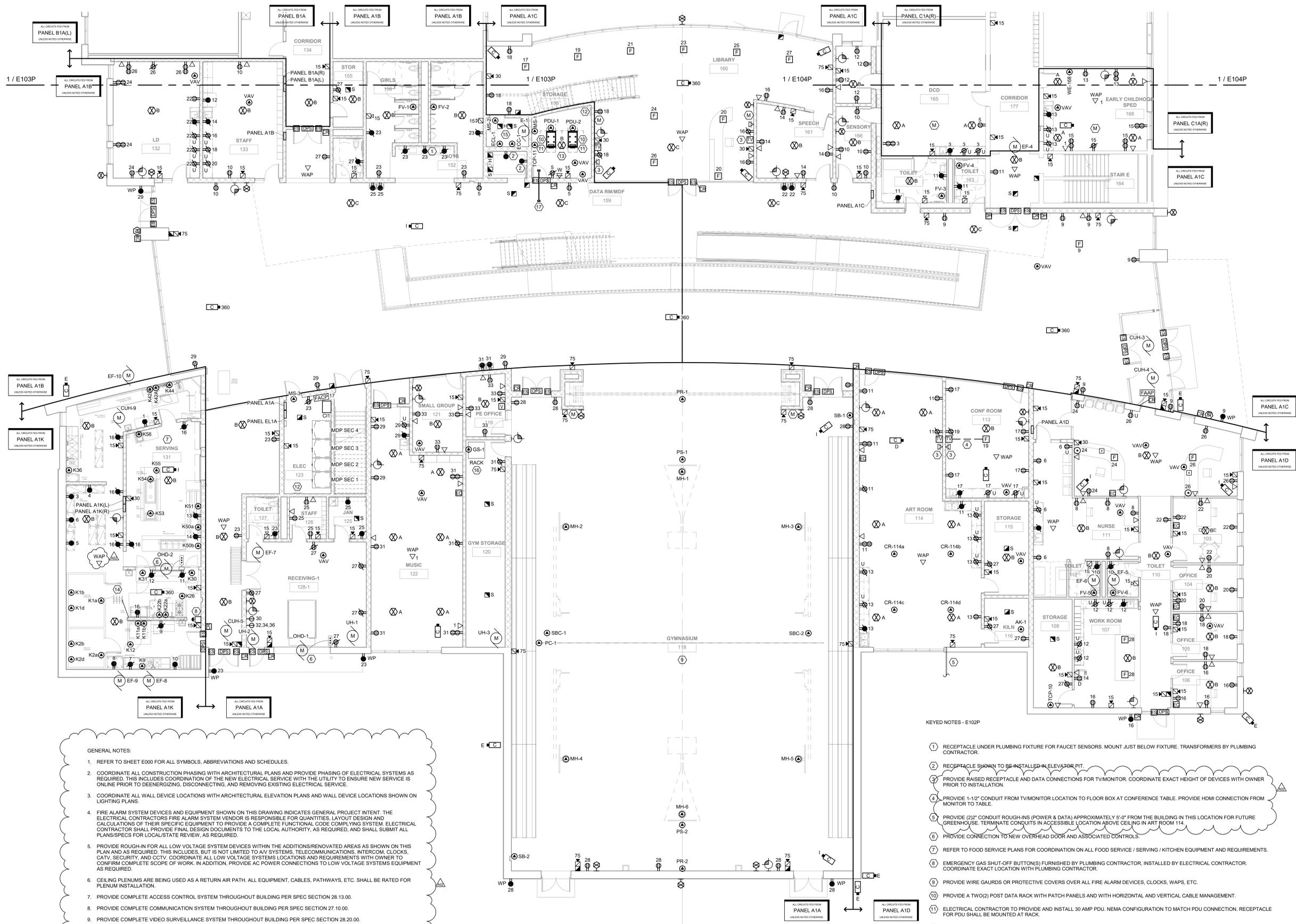
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DOCUMENTS**

No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 6' 8' 12'

Last Update:
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E102P



GENERAL NOTES:

- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
- COORDINATE ALL CONSTRUCTION PHASING WITH ARCHITECTURAL PLANS AND PROVIDE PHASING OF ELECTRICAL SYSTEMS AS REQUIRED. THIS INCLUDES COORDINATION OF THE NEW ELECTRICAL SERVICE WITH THE UTILITY TO ENSURE NEW SERVICE IS ONLINE PRIOR TO DEENERGIZING, DISCONNECTING, AND REMOVING EXISTING ELECTRICAL SERVICE.
- COORDINATE ALL WALL DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATION PLANS AND WALL DEVICE LOCATIONS SHOWN ON LIGHTING PLANS.
- FIRE ALARM SYSTEM DEVICES AND EQUIPMENT SHOWN ON THIS DRAWING INDICATES GENERAL PROJECT INTENT. THE ELECTRICAL CONTRACTOR'S FIRE ALARM SYSTEM VENDOR IS RESPONSIBLE FOR QUANTITIES, LAYOUT DESIGN AND CALCULATIONS OF THEIR SPECIFIC EQUIPMENT TO PROVIDE A COMPLETE FUNCTIONAL CODE-COMPLYING SYSTEM. ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL DESIGN DOCUMENTS TO THE LOCAL AUTHORITY, AS REQUIRED, AND SHALL SUBMIT ALL PLANS/SPECS FOR LOCAL/STATE REVIEW, AS REQUIRED.
- PROVIDE ROUGH-IN FOR ALL LOW VOLTAGE SYSTEM DEVICES WITHIN THE ADDITIONS/RENOVATED AREAS AS SHOWN ON THIS PLAN AND AS REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO AV SYSTEMS, TELECOMMUNICATIONS, INTERCOM, CLOCKS, CATV, SECURITY, AND CCTV. COORDINATE ALL LOW VOLTAGE SYSTEMS LOCATIONS AND REQUIREMENTS WITH OWNER TO CONFIRM COMPLETE SCOPE OF WORK. IN ADDITION, PROVIDE AC POWER CONNECTIONS TO LOW VOLTAGE SYSTEMS EQUIPMENT AS REQUIRED.
- CEILING PLENUMS ARE BEING USED AS A RETURN AIR PATH. ALL EQUIPMENT, CABLES, PATHWAYS, ETC. SHALL BE RATED FOR PLENUM INSTALLATION.
- PROVIDE COMPLETE ACCESS CONTROL SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.13.00.
- PROVIDE COMPLETE COMMUNICATION SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 27.10.00.
- PROVIDE COMPLETE VIDEO SURVEILLANCE SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.20.00.
- PROVIDE COMPLETE PAGING SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 27.51.023.
- PROVIDE COMPLETE FIRE ALARM SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.31.00.
- PROVIDE A PRIMEX ONEUIE SYNC WIRELESS CLOCK SYSTEM THROUGHOUT BUILDING, AS SHOWN AND AS REQUIRED. PROVIDE BRIDGE WITH POE AND BLUETOOTH TECHNOLOGY, REPEATERS, CLOCKS (DIGITAL OR ANALOG), PER OWNER'S SYSTEM SOFTWARE/MESH, ETC. AS REQUIRED FOR A COMPLETE SYSTEM THROUGHOUT THE BUILDING. LOCATE ANY/ALL HEAD-END EQUIPMENT IN MIDRIFE ROOMS. COORDINATE ALL REQUIREMENTS WITH OWNER AND PROVIDE PRODUCT SUBMITTALS, SAMPLES, PRODUCT DATA, AND OPERATIONAL INSTRUCTIONS AS REQUIRED. PROVIDE TWO-YEAR WARRANTY ON ALL EQUIPMENT COMPONENTS. ANY/ALL SYSTEMS PROPOSED TO BE PROVIDED AS AN EQUIVALENT SYSTEM SHALL BE REVIEWED WITH OWNER PRIOR TO BID.

KEYED NOTES - E102P

- RECEPTACLE UNDER PLUMBING FIXTURE FOR FAUCET SENSORS. MOUNT JUST BELOW FIXTURE. TRANSFORMERS BY PLUMBING CONTRACTOR.
- RECEPTACLE SHOWN TO BE INSTALLED IN ELEVATOR PIT.
- PROVIDE RAISED RECEPTACLE AND DATA CONNECTIONS FOR TV/MONITOR. COORDINATE EXACT HEIGHT OF DEVICES WITH OWNER PRIOR TO INSTALLATION.
- PROVIDE 1-1/2" CONDUIT FROM TV/MONITOR LOCATION TO FLOOR BOX AT CONFERENCE TABLE. PROVIDE HDMI CONNECTION FROM MONITOR TO TABLE.
- PROVIDE (2) 2" CONDUIT ROUGH-INS (POWER & DATA) APPROXIMATELY 5'-0" FROM THE BUILDING IN THIS LOCATION FOR FUTURE GREENHOUSE. TERMINATE CONDUITS IN ACCESSIBLE LOCATION ABOVE CEILING IN ART ROOM 114.
- PROVIDE CONNECTION TO NEW OVERHEAD DOOR AND ASSOCIATED CONTROLS.
- REFER TO FOOD SERVICE PLANS FOR COORDINATION ON ALL FOOD SERVICE / SERVING / KITCHEN EQUIPMENT AND REQUIREMENTS.
- EMERGENCY GAS SHUT-OFF BUTTON(S) FURNISHED BY PLUMBING CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE EXACT LOCATION WITH PLUMBING CONTRACTOR.
- PROVIDE WIRE GAUARDS OR PROTECTIVE COVERS OVER ALL FIRE ALARM DEVICES, CLOCKS, WAPS, ETC.
- PROVIDE A TWO(2) POST DATA RACK WITH PATCH PANELS AND WITH HORIZONTAL AND VERTICAL CABLE MANAGEMENT.
- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL 30 AMP PDU. NEMA CONFIGURATION TO MATCH PDU CONNECTION. RECEPTACLE FOR PDU SHALL BE MOUNTED AT RACK.
- ELECTRICAL CONTRACTOR TO PROVIDE A 1/4"x2"x24" COPPER GROUNDING BUS BAR WITH #6 COPPER GROUND CONDUCTORS IN A 1" CONDUIT FROM BUILDING SERVICE GROUND. REFER TO 8E300 AND 7E301 FOR TYPICAL GROUNDING DETAIL.
- ELECTRICAL CONTRACTOR TO PROVIDE A 3/4" PLYWOOD BACK BOARD ON WALLS, PAINED ON ALL SIX(6) SIDES WITH FIRE RETARDANT PAINT.
- ELECTRICAL CONTRACTOR TO WIRE SWITCHES LOCATED ON EXHAUST HOOD TO LIGHTS AND FAN.
- PROVIDE MONITOR MODULE(S) AND CONTROL RELAY(S) AS REQUIRED FOR ELEVATOR RECALL AND POWER MONITOR.
- ELECTRICAL CONTRACTOR TO PROVIDE STAND ALONE SOUND SYSTEM FOR GYM 118. PROVIDE A QSC CORE #110F AUDIO DSP SYSTEM FOR CONTROL AND CONNECTIONS. PROVIDE QSC #AD-PST PENDANT LOUSPEAKERS IN GYMNASIUM AT APPROXIMATE LOCATIONS SHOWN. PROVIDE QSC #DPA-8K SERIES 4-CHANNEL POWER AMPLIFIER. PROVIDE 7" TOUCH PANEL DISPLAY TO CONTROL CHANNELS/VOLUMES CONNECTED DIRECTLY TO DSP SYSTEM. LOCATE TOUCH PANEL AS DIRECTED BY OWNER.
- PROVIDE FOUR(4) CONDUITS FROM BUILDING EXTERIOR STUBBED INTO DATA RMMDF FOR LOW VOLTAGE SYSTEM SERVICES.



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JDR PROJECT NO. 190361

Project Title:
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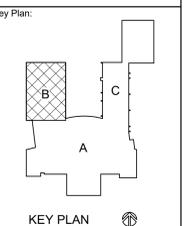
Project Location:
504 SOUTH OAK STREET
LA CROSSE, MINNESOTA

Sheet Title:
FIRST FLOOR - LIGHTING - AREA B

HSR Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR



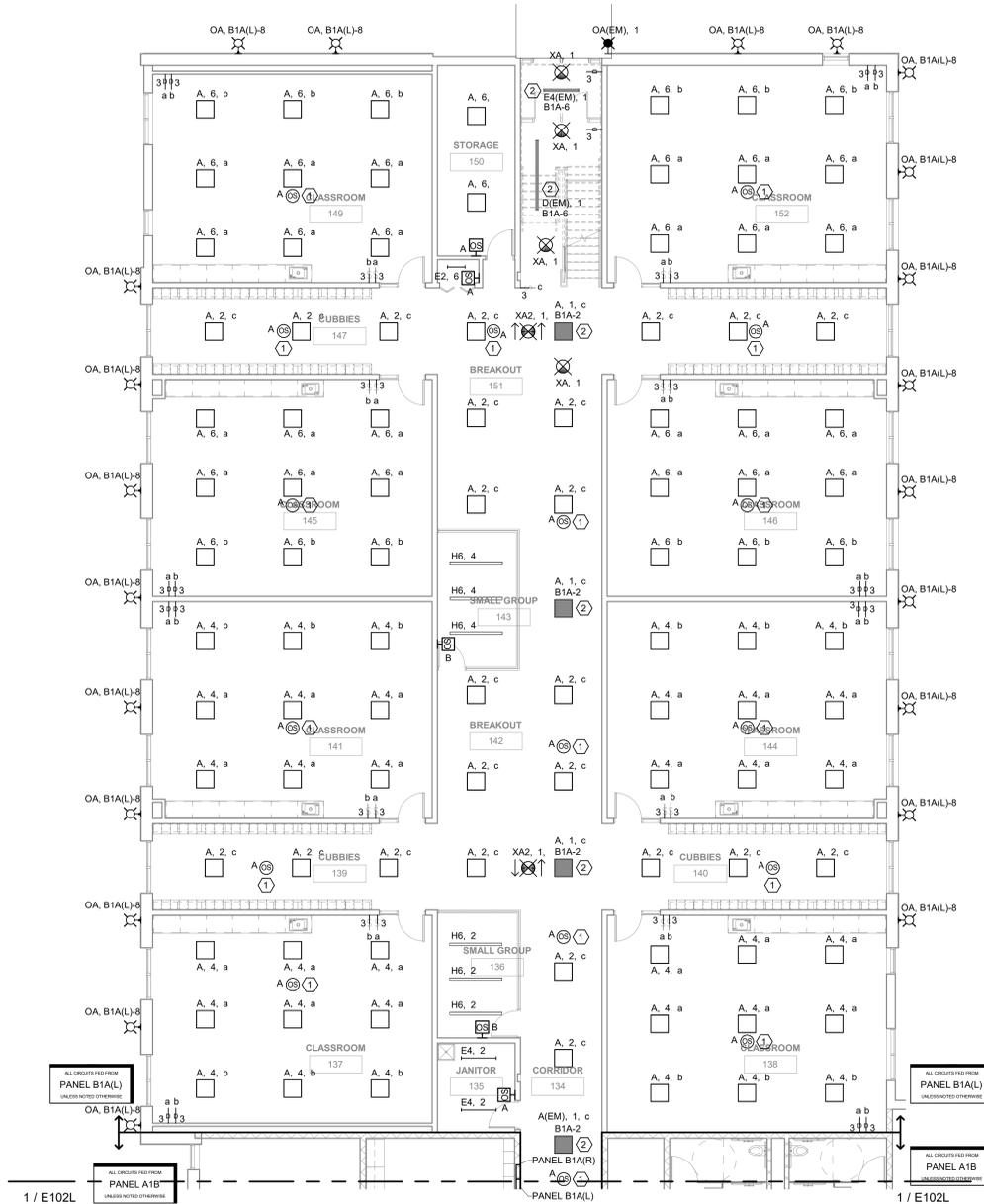
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DOCUMENTS**

No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:
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Last Update:
3/18/2020 10:42:15 AM

E103L



1
E103L SCALE: 1/8" = 1'-0"

FIRST FLOOR - LIGHTING - AREA B

GENERAL NOTES:

- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
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- CEILING PLENUMS ARE BEING USED AS A RETURN AIR PATH. ALL EQUIPMENT, CABLES, PATHWAYS, ETC. SHALL BE RATED FOR PLENUM INSTALLATION. REFER TO SHEETS M118 AND M119 FOR MORE INFORMATION.

KEYED NOTES - E103L

- WIRE SENSOR IN PARALLEL WITH OTHER SENSORS IN THE AREA.
- ELECTRICAL CONTRACTOR TO PROVIDE UL 924 EMERGENCY RELAY TO EMERGENCY LIGHT FIXTURE TO OVERRIDE 0-10V DIMMING IN THE EVENT OF POWER LOSS TO NORMAL POWER SERVING THE ROOM.



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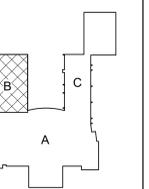
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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**
Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**
Sheet Title: **FIRST FLOOR - POWER & SYSTEMS - AREA B**

Project Number: **19014-1**
Project Date: **3.5.2020**

Drawn By: **JDR**

Key Plan:



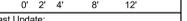
KEY PLAN

**BID
DOCUMENTS**

Revisions:

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A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

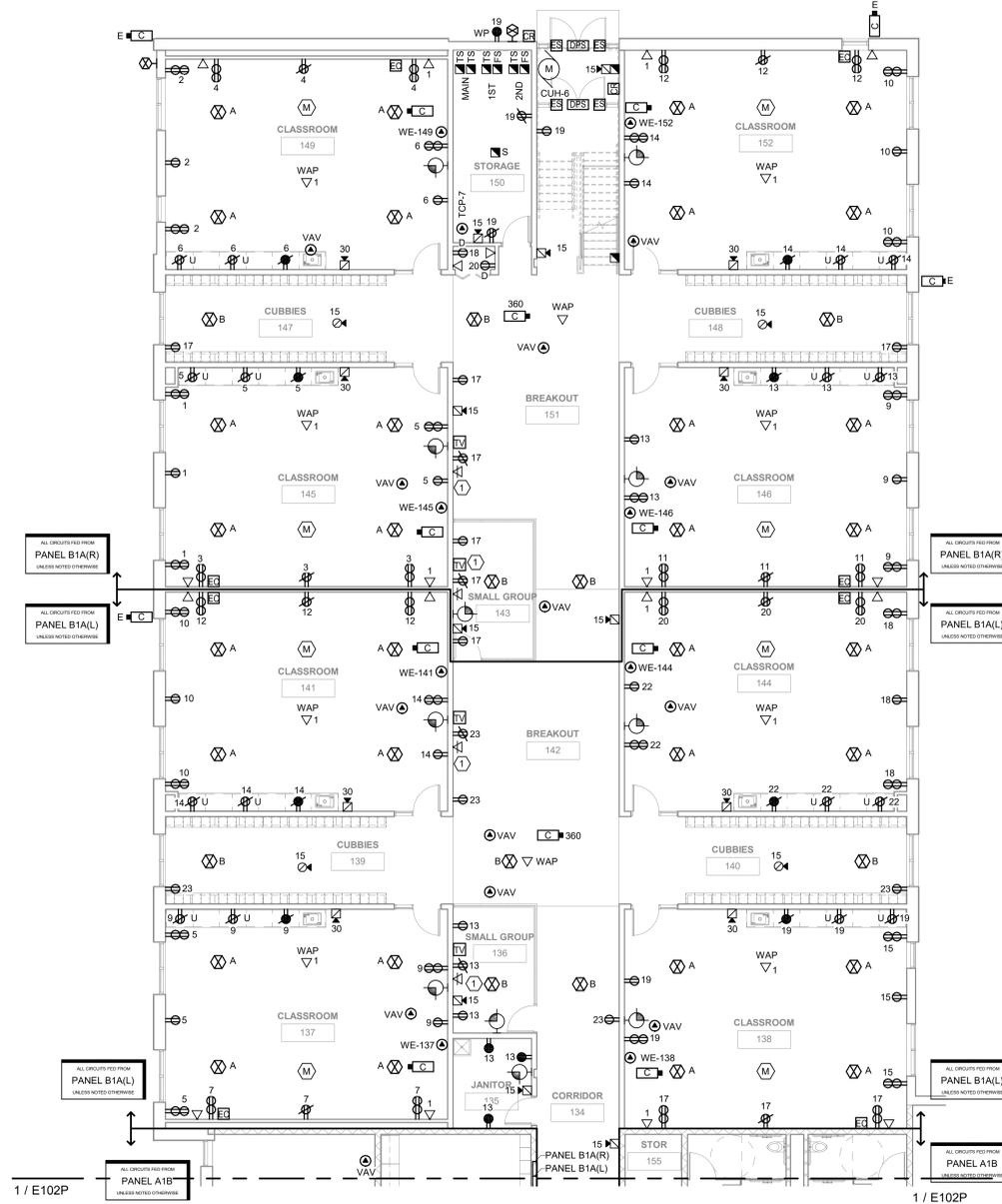
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E103P



1 FIRST FLOOR - POWER & SYSTEMS - AREA B
E103P SCALE: 1/8" = 1'-0"

- GENERAL NOTES:
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 - COORDINATE ALL WALL DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATION PLANS AND WALL DEVICE LOCATIONS SHOWN ON LIGHTING PLANS.
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 - PROVIDE COMPLETE ACCESS CONTROL SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.13.00.
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 - PROVIDE COMPLETE VIDEO SURVEILLANCE SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.20.00.
 - PROVIDE COMPLETE PAGING SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 27.51.023
 - PROVIDE COMPLETE FIRE ALARM SYSTEM THROUGHOUT BUILDING PER SPEC SECTION 28.31.00.
 - PROVIDE A PRIMEX ONEVIEW SYNC WIRELESS CLOCK SYSTEM THROUGHOUT BUILDING, AS SHOWN AND AS REQUIRED. PROVIDE BRIDGE WITH POE AND BLUETOOTH TECHNOLOGY, REPEATERS, CLOCKS (DIGITAL OR ANALOG, PER OWNER), SYSTEM SOFTWARE/MESH, ETC. AS REQUIRED FOR A COMPLETE SYSTEM THROUGHOUT THE BUILDING. LOCATE ANY/ALL HEAD-END EQUIPMENT IN MIDRISE ROOMS. COORDINATE ALL REQUIREMENTS WITH OWNER AND PROVIDE PRODUCT SUBMITTALS, SAMPLES, PRODUCT DATA, AND OPERATION/INSTALLATION INSTRUCTIONS AS REQUIRED. PROVIDE TWO-YEAR WARRANTY ON ALL EQUIPMENT COMPONENTS. ANY/ALL SYSTEMS PROPOSED TO BE PROVIDED AS AN EQUIVALENT SYSTEM SHALL BE REVIEWED WITH OWNER PRIOR TO BID.

- KEYED NOTES - E103P
- PROVIDE RAISED RECEPTACLE AND DATA CONNECTIONS FOR TV/MONITOR. COORDINATE EXACT HEIGHT OF DEVICES WITH OWNER PRIOR TO INSTALLATION.



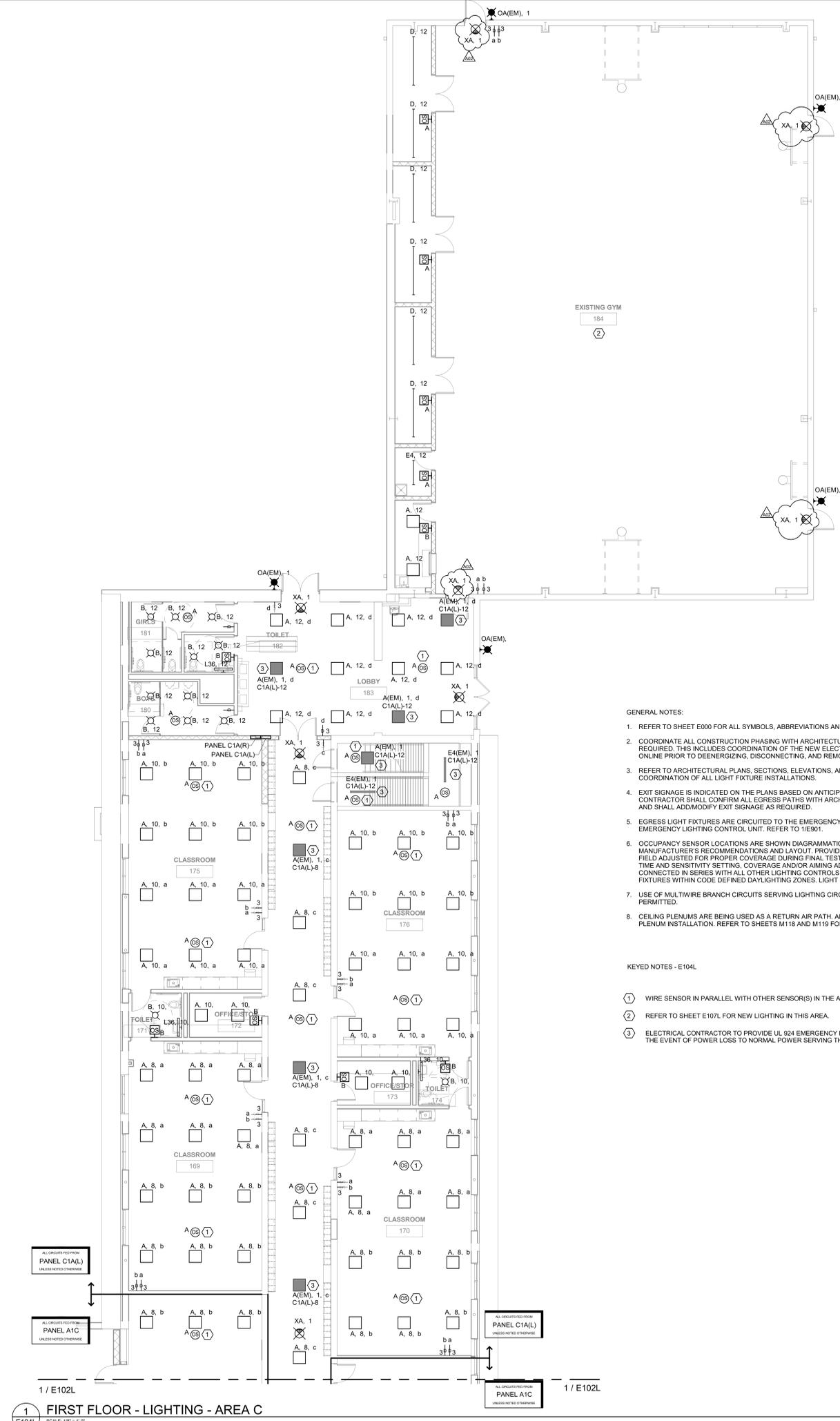
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A02	ADDENDUM 2	3.19.20

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E104L



- GENERAL NOTES:
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- KEYED NOTES - E104L
- WIRE SENSOR IN PARALLEL WITH OTHER SENSOR(S) IN THE AREA.
 - REFER TO SHEET E107L FOR NEW LIGHTING IN THIS AREA.
 - ELECTRICAL CONTRACTOR TO PROVIDE UL 924 EMERGENCY RELAY TO EMERGENCY LIGHT FIXTURE TO OVERRIDE 0-10V DIMMING IN THE EVENT OF POWER LOSS TO NORMAL POWER SERVING THE ROOM.

1 / E104L
FIRST FLOOR - LIGHTING - AREA C
SCALE: 1/8" = 1'-0"



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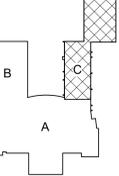
Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
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Project Location: **504 SOUTH OAK STREET
LA CROSSE, MINNESOTA**
Sheet Title: **FIRST FLOOR - POWER & SYSTEMS - AREA C**

HSR Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR

Key Plan:



KEY PLAN

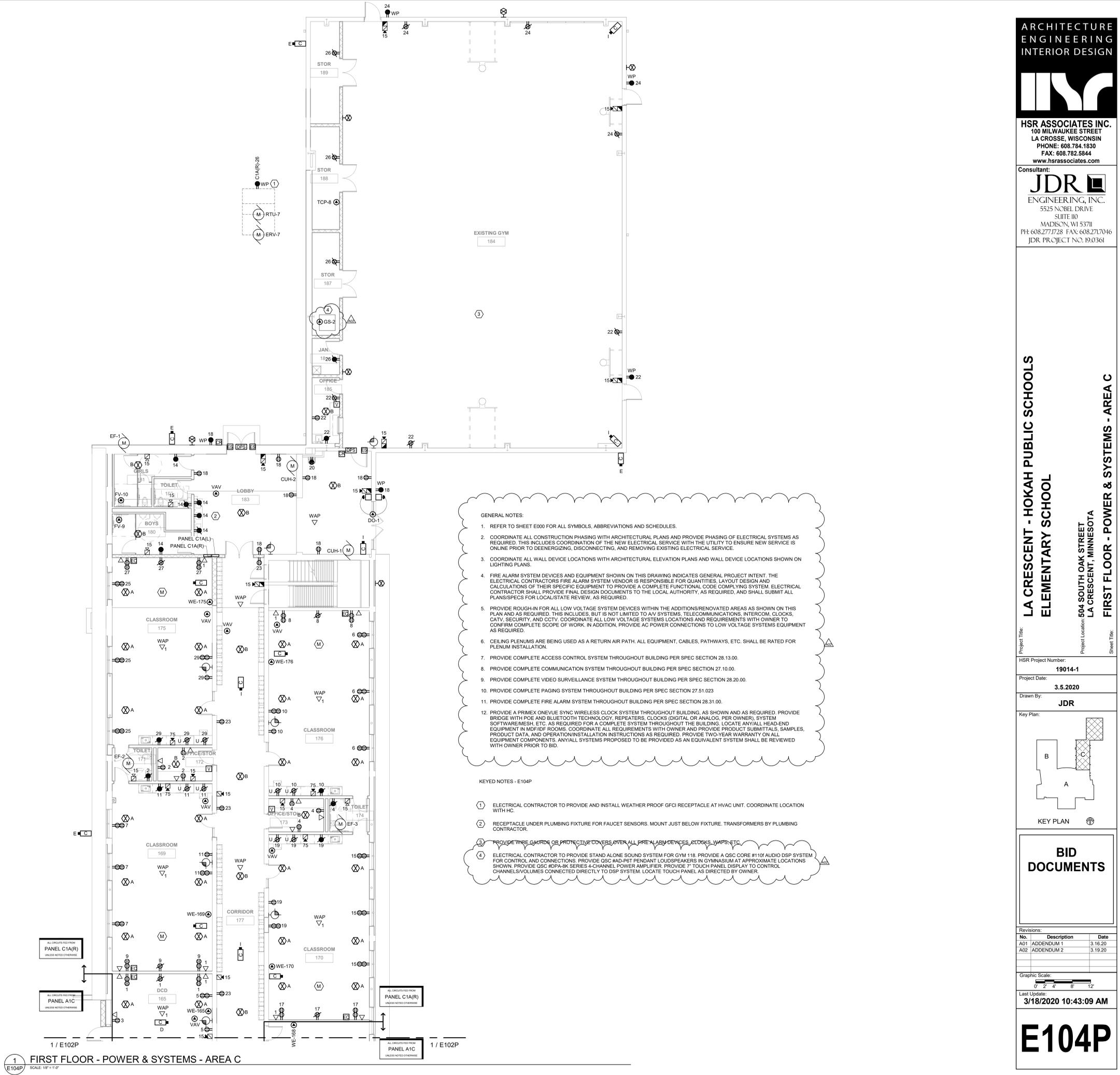
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No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:
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Last Update:
3/18/2020 10:43:09 AM

E104P



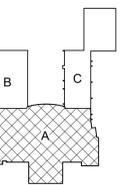
GENERAL NOTES:

- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
- COORDINATE ALL CONSTRUCTION PHASING WITH ARCHITECTURAL PLANS AND PROVIDE PHASING OF ELECTRICAL SYSTEMS AS REQUIRED. THIS INCLUDES COORDINATION OF THE NEW ELECTRICAL SERVICE WITH THE UTILITY TO ENSURE NEW SERVICE IS ONLINE PRIOR TO DEENERGIZING, DISCONNECTING, AND REMOVING EXISTING ELECTRICAL SERVICE.
- COORDINATE ALL WALL DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATION PLANS AND WALL DEVICE LOCATIONS SHOWN ON LIGHTING PLANS.
- FIRE ALARM SYSTEM DEVICES AND EQUIPMENT SHOWN ON THIS DRAWING INDICATES GENERAL PROJECT INTENT. THE ELECTRICAL CONTRACTOR'S FIRE ALARM SYSTEM VENDOR IS RESPONSIBLE FOR QUANTITIES, LAYOUT DESIGN AND CALCULATIONS OF THEIR SPECIFIC EQUIPMENT TO PROVIDE A COMPLETE FUNCTIONAL CODE COMPLYING SYSTEM. ELECTRICAL CONTRACTOR SHALL PROVIDE FINAL DESIGN DOCUMENTS TO THE LOCAL AUTHORITY, AS REQUIRED, AND SHALL SUBMIT ALL PLANS/SPECS FOR LOCAL/STATE REVIEW, AS REQUIRED.
- PROVIDE ROUGH-IN FOR ALL LOW VOLTAGE SYSTEM DEVICES WITHIN THE ADDITIONS/RENOVATED AREAS AS SHOWN ON THIS PLAN AND AS REQUIRED. THIS INCLUDES, BUT IS NOT LIMITED TO AV SYSTEMS, TELECOMMUNICATIONS, INTERCOM, CLOCKS, CATV, SECURITY, AND CCTV. COORDINATE ALL LOW VOLTAGE SYSTEMS LOCATIONS AND REQUIREMENTS WITH OWNER TO CONFIRM COMPLETE SCOPE OF WORK. IN ADDITION, PROVIDE AC POWER CONNECTIONS TO LOW VOLTAGE SYSTEMS EQUIPMENT AS REQUIRED.
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KEYED NOTES - E104P

- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL WEATHER PROOF GFCI RECEPTACLE AT HVAC UNIT. COORDINATE LOCATION WITH HC.
- RECEPTACLE UNDER PLUMBING FIXTURE FOR FAUCET SENSORS. MOUNT JUST BELOW FIXTURE. TRANSFORMERS BY PLUMBING CONTRACTOR.
- PROVIDE WIRE GUARDS OR PROTECTIVE COVERS OVER ALL FIRE ALARM DEVICES, CLOCKS, WAPS, ETC.
- ELECTRICAL CONTRACTOR TO PROVIDE STAND ALONE SOUND SYSTEM FOR GYM 118. PROVIDE A QSC CORE #1101F AUDIO DSP SYSTEM FOR CONTROL AND CONNECTIONS. PROVIDE QSC #AD-P0T PENDANT LOUDSPEAKERS IN GYMNASIUM AT APPROXIMATE LOCATIONS SHOWN. PROVIDE QSC #DPA-8K SERIES 4-CHANNEL POWER AMPLIFIER. PROVIDE 7" TOUCH PANEL DISPLAY TO CONTROL CHANNELS/VOLUMES CONNECTED DIRECTLY TO DSP SYSTEM. LOCATE TOUCH PANEL AS DIRECTED BY OWNER.

1
E104P
FIRST FLOOR - POWER & SYSTEMS - AREA C
SCALE: 1/8" = 1'-0"



KEY PLAN

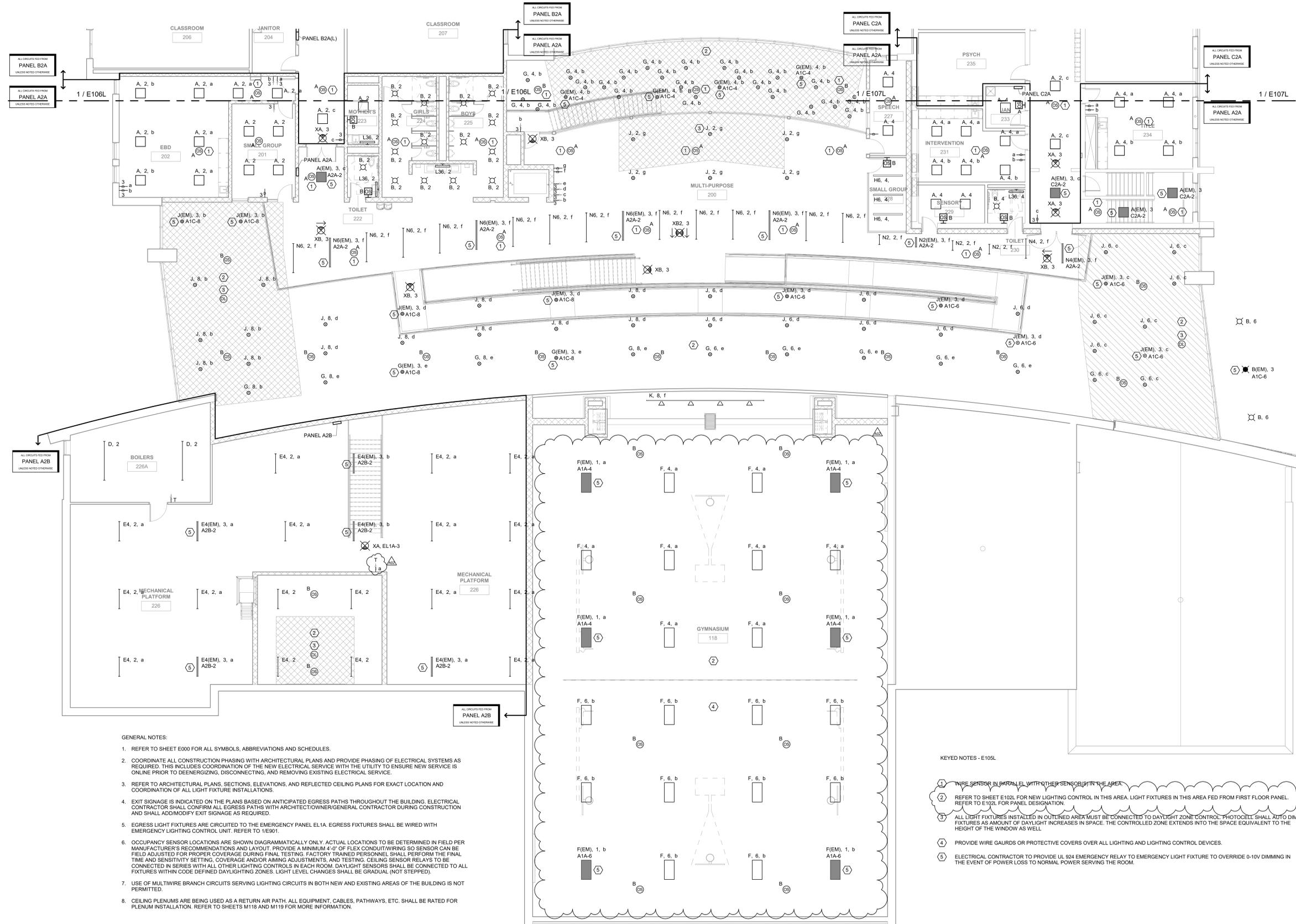
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DOCUMENTS**

No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:42:35 AM

E105L



- GENERAL NOTES:
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 - REFER TO ARCHITECTURAL PLANS, SECTIONS, ELEVATIONS, AND REFLECTED CEILING PLANS FOR EXACT LOCATION AND COORDINATION OF ALL LIGHT FIXTURE INSTALLATIONS.
 - EXIT SIGNAGE IS INDICATED ON THE PLANS BASED ON ANTICIPATED EGRESS PATHS THROUGHOUT THE BUILDING. ELECTRICAL CONTRACTOR SHALL CONFIRM ALL EGRESS PATHS WITH ARCHITECT/OWNER/GENERAL CONTRACTOR DURING CONSTRUCTION AND SHALL ADD/MODIFY EXIT SIGNAGE AS REQUIRED.
 - EGRESS LIGHT FIXTURES ARE CIRCUITED TO THE EMERGENCY PANEL EL1A. EGRESS FIXTURES SHALL BE WIRED WITH EMERGENCY LIGHTING CONTROL UNIT. REFER TO 1/E901.
 - OCCUPANCY SENSOR LOCATIONS ARE SHOWN DIAGRAMMATICALLY ONLY. ACTUAL LOCATIONS TO BE DETERMINED IN FIELD PER MANUFACTURER'S RECOMMENDATIONS AND LAYOUT. PROVIDE A MINIMUM 4'-0" OF FLEX CONDUIT/WIRING SO SENSOR CAN BE FIELD ADJUSTED FOR PROPER COVERAGE DURING FINAL TESTING. FACTORY TRAINED PERSONNEL SHALL PERFORM THE FINAL TIME AND SENSITIVITY SETTING, COVERAGE AND/OR AIMING ADJUSTMENTS, AND TESTING. CEILING SENSOR RELAYS TO BE CONNECTED IN SERIES WITH ALL OTHER LIGHTING CONTROLS IN EACH ROOM. DAYLIGHT SENSORS SHALL BE CONNECTED TO ALL FIXTURES WITHIN CODE DEFINED DAYLIGHTING ZONES. LIGHT LEVEL CHANGES SHALL BE GRADUAL (NOT STEPPED).
 - USE OF MULTIWIRE BRANCH CIRCUITS SERVING LIGHTING CIRCUITS IN BOTH NEW AND EXISTING AREAS OF THE BUILDING IS NOT PERMITTED.
 - CEILING PLENUMS ARE BEING USED AS A RETURN AIR PATH. ALL EQUIPMENT, CABLES, PATHWAYS, ETC. SHALL BE RATED FOR PLENUM INSTALLATION. REFER TO SHEETS M118 AND M119 FOR MORE INFORMATION.

- KEYED NOTES - E105L
- WIRE SENSOR IN PARALLEL WITH OTHER SENSORS IN THE AREA.
 - REFER TO SHEET E102L FOR NEW LIGHTING CONTROL IN THIS AREA. LIGHT FIXTURES IN THIS AREA FED FROM FIRST FLOOR PANEL. REFER TO E102L FOR PANEL DESIGNATION.
 - ALL LIGHT FIXTURES INSTALLED IN OUTLINED AREA MUST BE CONNECTED TO DAYLIGHT ZONE CONTROL. PHOTOCELL SHALL AUTO DIM FIXTURES AS AMOUNT OF DAYLIGHT INCREASES IN SPACE. THE CONTROLLED ZONE EXTENDS INTO THE SPACE EQUIVALENT TO THE HEIGHT OF THE WINDOW AS WELL.
 - PROVIDE WIRE GAUARDS OR PROTECTIVE COVERS OVER ALL LIGHTING AND LIGHTING CONTROL DEVICES.
 - ELECTRICAL CONTRACTOR TO PROVIDE UL 924 EMERGENCY RELAY TO EMERGENCY LIGHT FIXTURE TO OVERRIDE 0-10V DIMMING IN THE EVENT OF POWER LOSS TO NORMAL POWER SERVING THE ROOM.



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JDR PROJECT NO. 19.0361

Project Title:
**LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**

Project Location:
504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA

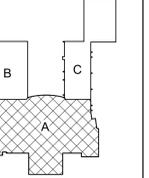
Sheet Title:
SECOND FLOOR - POWER & SYSTEMS - AREA A

HSR Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR

Key Plan:



KEY PLAN

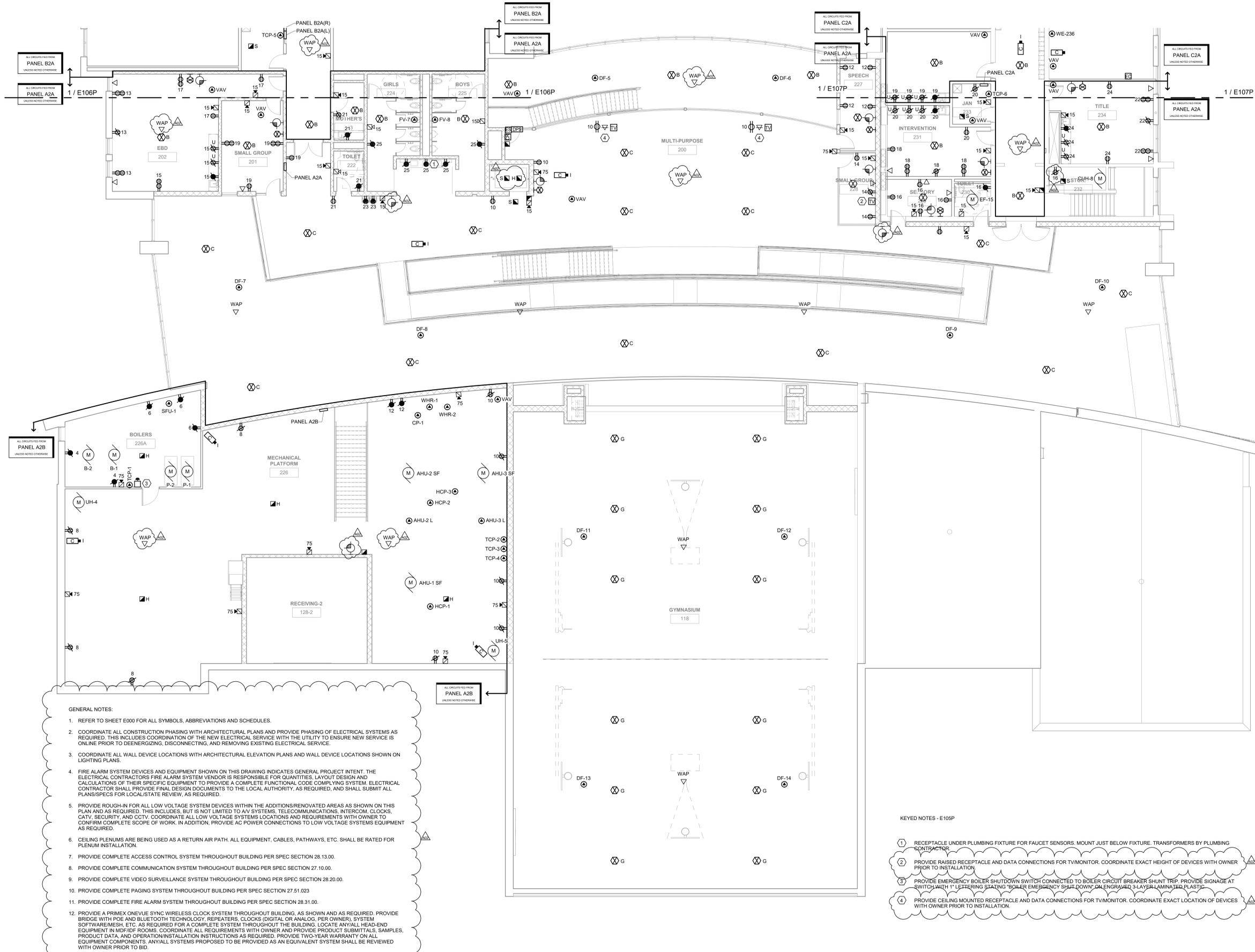
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No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:

Last Update:
3/18/2020 10:43:15 AM

E105P



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- KEYNOTES - E105P
- RECEPTACLE UNDER PLUMBING FIXTURE FOR FAUCET SENSORS. MOUNT JUST BELOW FIXTURE. TRANSFORMERS BY PLUMBING CONTRACTOR.
 - PROVIDE RAISED RECEPTACLE AND DATA CONNECTIONS FOR TV/MONITOR. COORDINATE EXACT HEIGHT OF DEVICES WITH OWNER PRIOR TO INSTALLATION.
 - PROVIDE EMERGENCY BOILER SHUTDOWN SWITCH CONNECTED TO BOILER CIRCUIT BREAKER SHUNT TRIP. PROVIDE SIGNAGE AT SWITCH WITH 1" LETTERING STATING "BOILER EMERGENCY SHUT DOWN" ON ENGRAVED 3-LAYER LAMINATED PLASTIC.
 - PROVIDE CEILING MOUNTED RECEPTACLE AND DATA CONNECTIONS FOR TV/MONITOR. COORDINATE EXACT LOCATION OF DEVICES WITH OWNER PRIOR TO INSTALLATION.



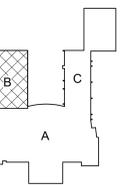
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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**
Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**
Sheet Title: **SECOND FLOOR - POWER & SYSTEMS - AREA B**

Project Number: **19014-1**
Project Date: **3.5.2020**
Drawn By: **JDR**

Key Plan:



KEY PLAN

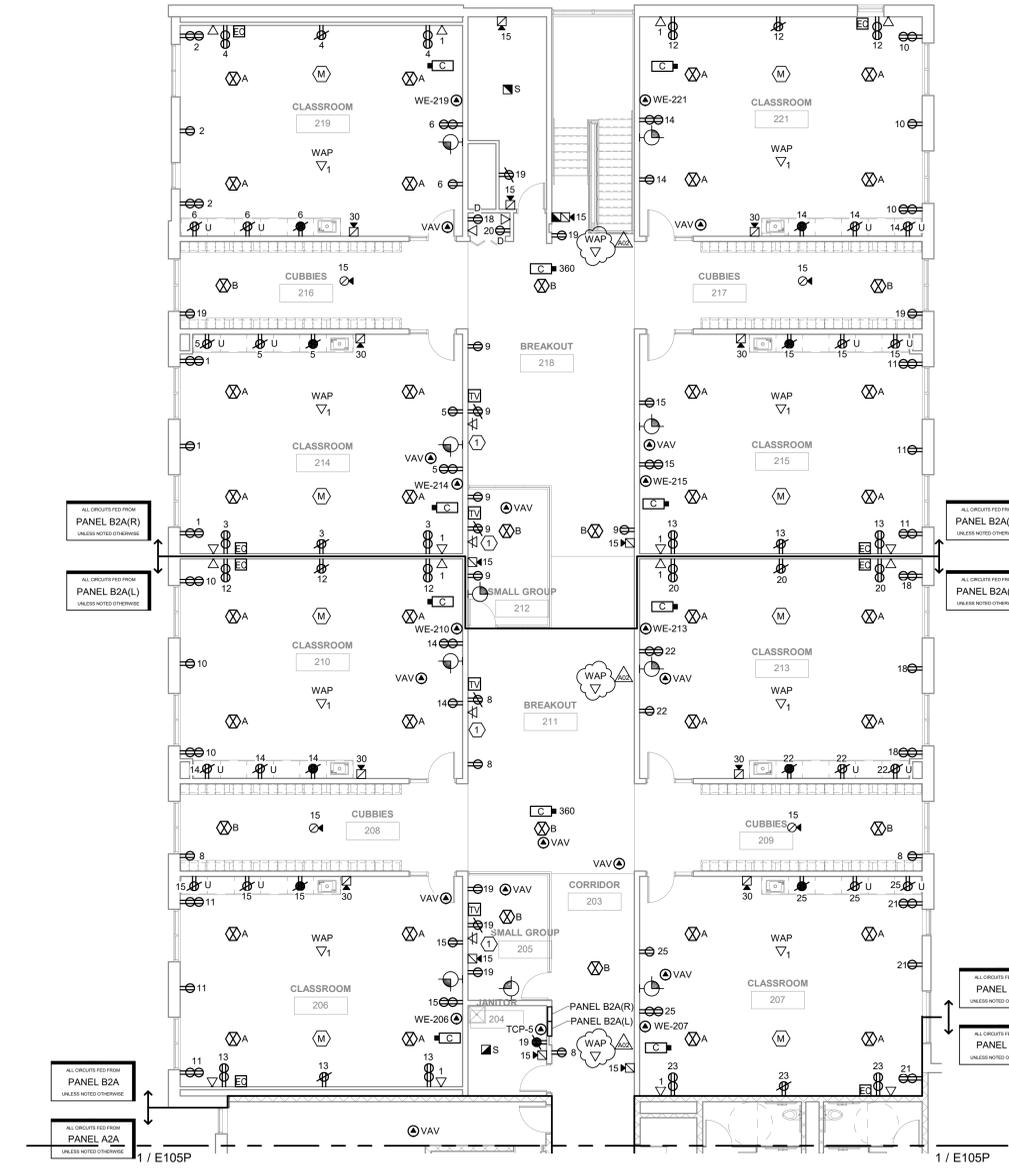
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No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:43:24 AM

E106P



1 SECOND FLOOR - POWER & SYSTEMS - AREA B
SCALE: 1/8" = 1'-0"

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- KEYED NOTES - E106P
- PROVIDE RAISED RECEPTACLE AND DATA CONNECTIONS FOR TV/MONITOR. COORDINATE EXACT HEIGHT OF DEVICES WITH OWNER PRIOR TO INSTALLATION.



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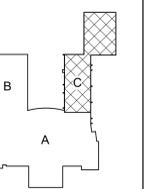
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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**
Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**
Sheet Title: **SECOND FLOOR - POWER & SYSTEMS - AREA C**

HSR Project Number: **19014-1**
Project Date: **3.5.2020**

Drawn By: **JDR**

Key Plan:



KEY PLAN

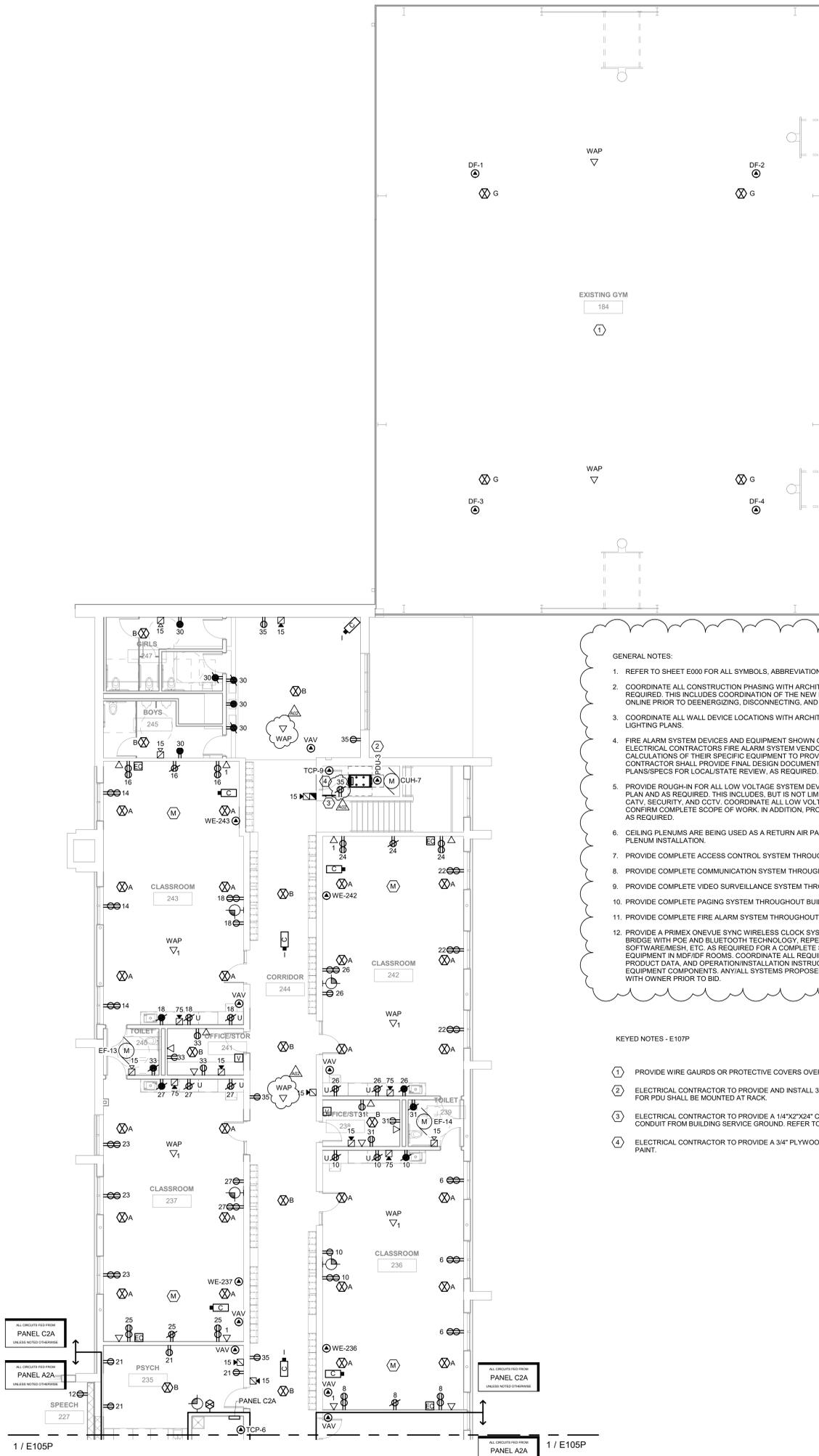
BID DOCUMENTS

No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:43:32 AM

E107P



GENERAL NOTES:

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KEYED NOTES - E107P

- PROVIDE WIRE GAUDES OR PROTECTIVE COVERS OVER ALL FIRE ALARM DEVICES, CLOCKS, WAPS, ETC.
- ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL 30 AMP PDU. NEMA CONFIGURATION TO MATCH PDU CONNECTION. RECEPTACLE FOR PDU SHALL BE MOUNTED AT RACK.
- ELECTRICAL CONTRACTOR TO PROVIDE A 14"x2"x24" COPPER GROUNDING BUS BAR WITH #6 COPPER GROUND CONDUCTORS IN A 1" CONDUIT FROM BUILDING SERVICE GROUND. REFER TO 8/E900 AND 7/E901 FOR TYPICAL GROUNDING DETAIL.
- ELECTRICAL CONTRACTOR TO PROVIDE A 3/4" PLYWOOD BACK BOARD ON WALLS, PAINTED ON ALL SIX(6) SIDES WITH FIRE RETARDANT PAINT.

1 / E105P
SECOND FLOOR - POWER & SYSTEMS - AREA C
SCALE: 1/8" = 1'-0"



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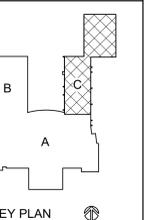
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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**
Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**
Sheet Title: **BASEMENT - ELECTRICAL - AREA C**

HSR Project Number: **19014-1**
Project Date: **3.5.2020**

Drawn By: **JDR**

Key Plan:



KEY PLAN

**BID
DOCUMENTS**

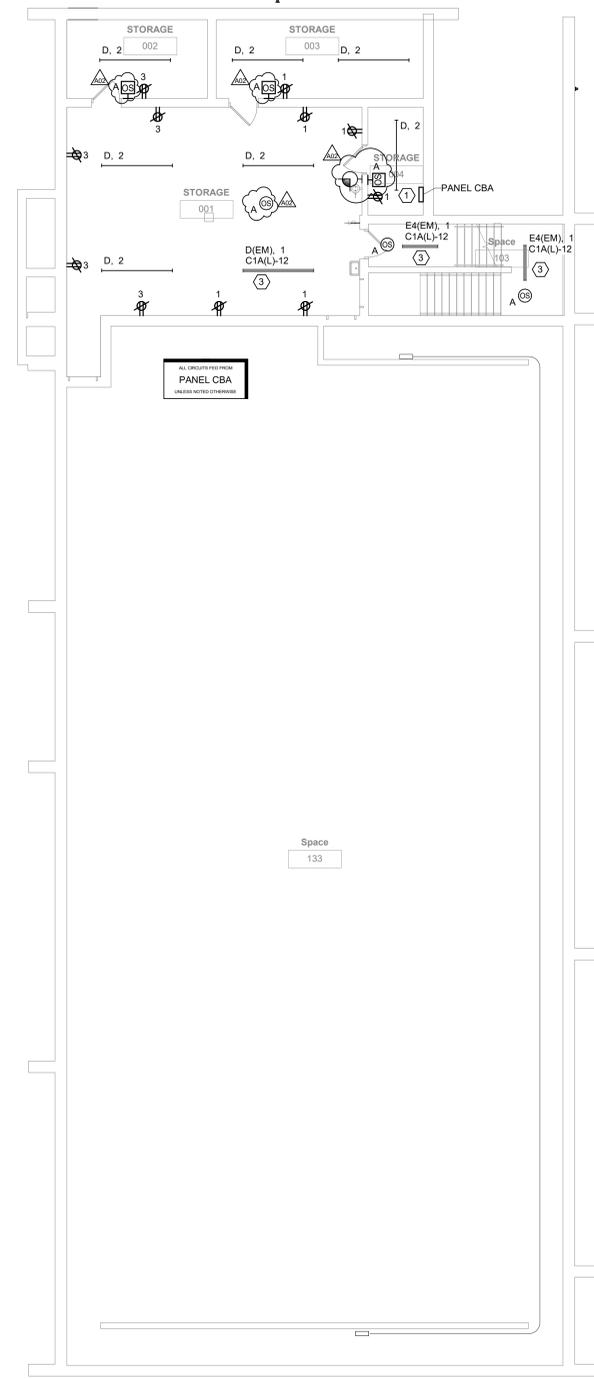
Revisions:

No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:42:50 AM

E108



- GENERAL NOTES:
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1 BASEMENT - ELECTRICAL - AREA C
E108 SCALE: 1/8" = 1'-0"

KEYED NOTES - E108

- (1) ELECTRICAL CONTRACTOR TO PROVIDE NEW PANEL CBA. COORDINATE EXACT LOCATION WITH OWNER. COORDINATE NEW FEED TO 1ST FLOOR PANEL C1A(L) IN AREA C.



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JDR PROJECT NO. 19.0361

Project Title: **LA CRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL**
Project Location: **504 SOUTH OAK STREET
LA CRESCENT, MINNESOTA**
Sheet Title: **ROOF PLAN - ELECTRICAL**

HSR Project Number: **19014-1**
Project Date: **3.5.2020**
Drawn By: **JDR**

Key Plan:

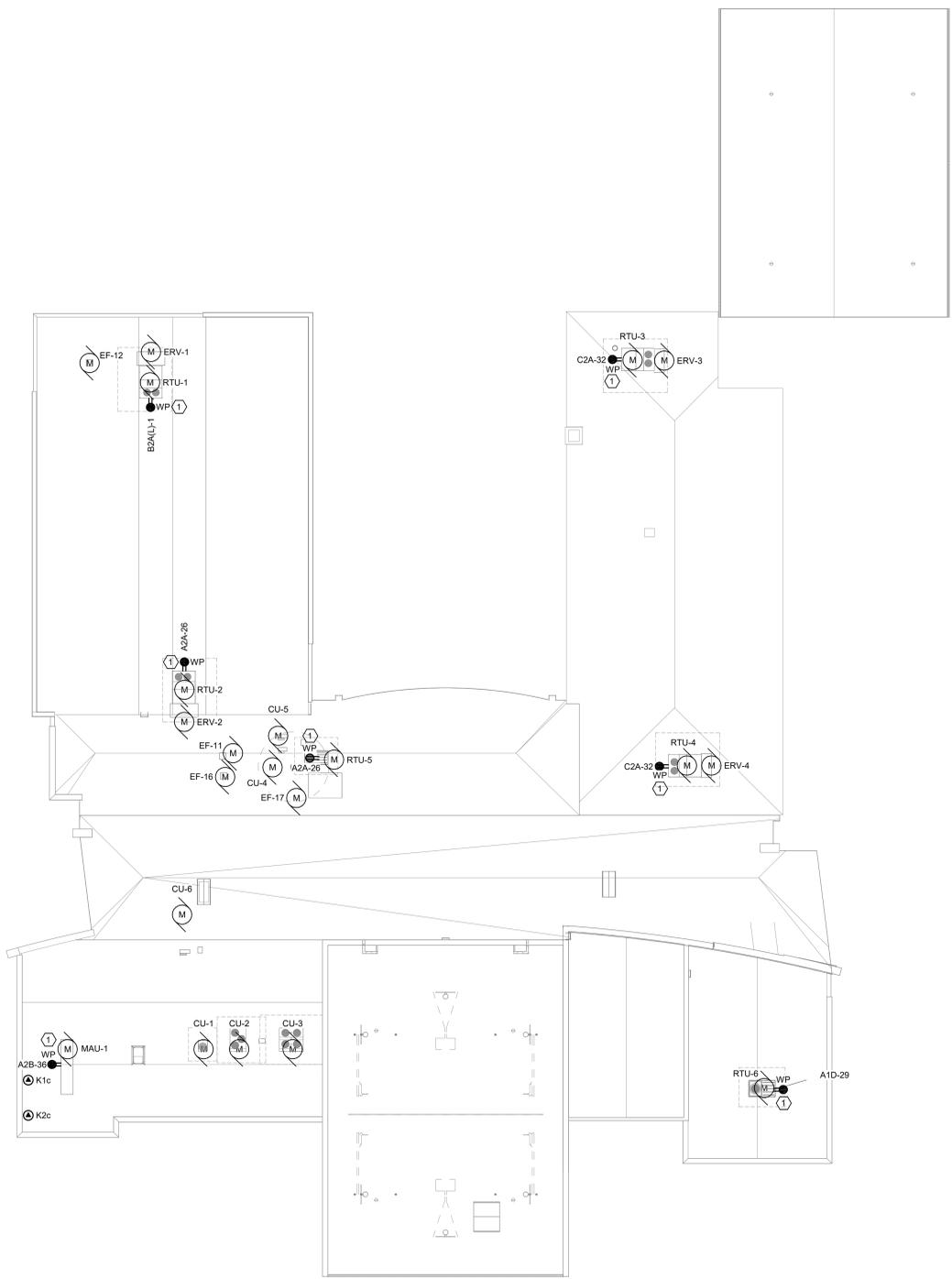
**BID
DOCUMENTS**

No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:
0' 2' 4' 8' 12'

Last Update:
3/18/2020 10:43:53 AM

E109



1
E109 **SCALE: 1" = 20'-0"**
ROOF PLAN - ELECTRICAL

KEYED NOTES - E109

Ⓜ ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL WEATHER PROOF GFCI RECEPTACLE AT ROOF MOUNTED HVAC UNIT. COORDINATE LOCATION WITH HC.

- GENERAL NOTES:**
- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
 - COORDINATE ALL CONSTRUCTION PHASING WITH ARCHITECTURAL PLANS AND PROVIDE PHASING OF ELECTRICAL SYSTEMS AS REQUIRED. THIS INCLUDES COORDINATION OF THE NEW ELECTRICAL SERVICE WITH THE UTILITY TO ENSURE NEW SERVICE IS ONLINE PRIOR TO DEENERGIZING, DISCONNECTING, AND REMOVING EXISTING ELECTRICAL SERVICE.
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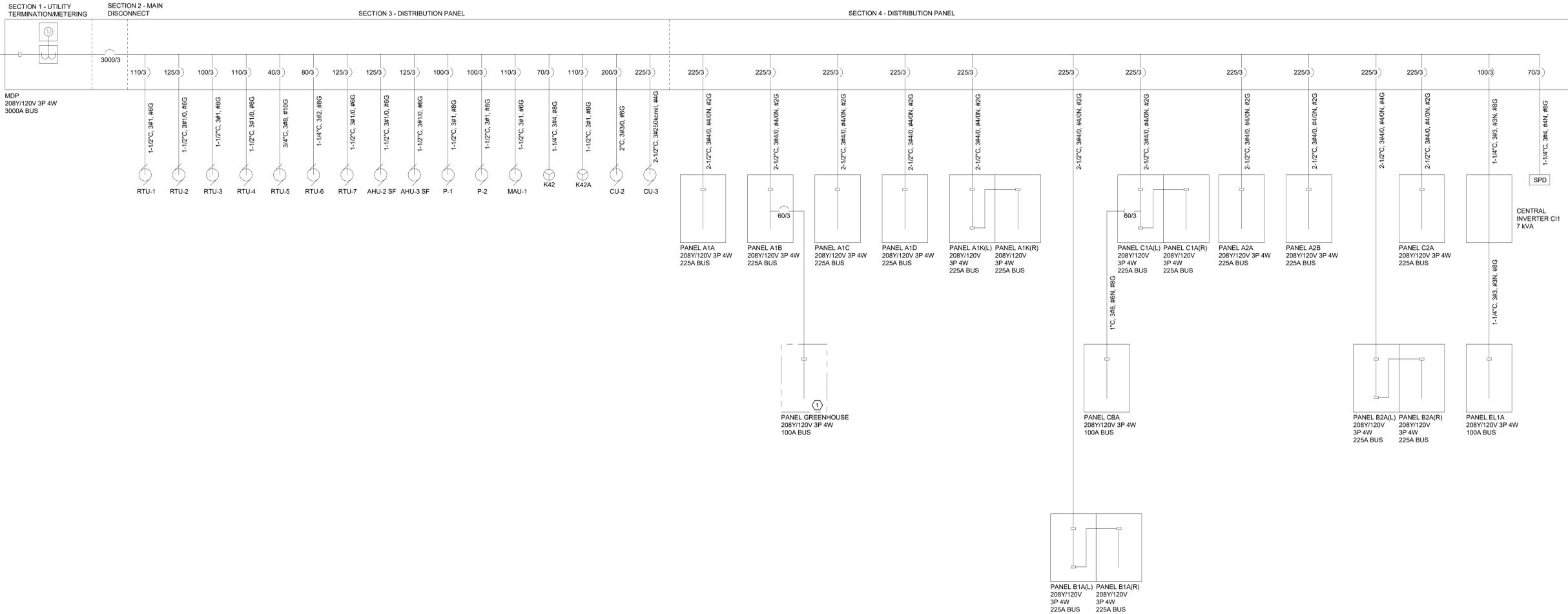
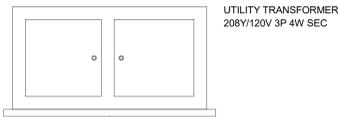


No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:

Last Update:
3/18/2020 10:43:36 AM

E601



1 NEW ONE LINE DIAGRAM - ELECTRICAL
SCALE: 1/2" = 1'-0"

- GENERAL NOTES:
- REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS AND SCHEDULES.
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- KEYED NOTES - E601
- FUTURE PANEL. COORDINATE WITH FUTURE GREENHOUSE. REFER TO E102P FOR MORE INFORMATION ON CONDUIT ROUGH-IN.



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JDR PROJECT NO. 19.0361

LACRESCENT - HOKAH PUBLIC SCHOOLS
ELEMENTARY SCHOOL
 504 SOUTH OAK STREET
 LA CROSSE, MINNESOTA
 EQUIPMENT SCHEDULES - ELECTRICAL

Project Title: _____
Sheet Title: _____

HSR Project Number: **19014-1**

Project Date: **3.5.2020**

Drawn By: **JDR**

Key Plan: _____

Revisions:

No.	Description	Date
A02	ADDENDUM 2	3.19.20

BID DOCUMENTS

Graphic Scale: _____

Last Update: **3/18/2020 10:41:53 AM**

E800

CALLOUT	DESCRIPTION	VOLTS	AMPS	KVA	BREAKER	FEEDER	CIRCUIT	NOTES
E-1	ELEVATOR	208V 3P 3W	78.5 A	28.28 kVA	100	1-1/2", 3#1, #1N, #6G	A1B-4,6,8	ELECTRICAL CONTRACTOR TO PROVIDE SHUNT TRIP BREAKER AT ELEVATOR CONTROLLER LOCATION. PROVIDE A MANUAL STARTER LABELED "ELEVATOR CAR LIGHTS" FOR ELEVATOR CAR LIGHTING CONTROL. FEED ELEVATOR CAR LIGHTS FROM SHUNT TRIP BREAKER. PROVIDE DISCONNECT FOR ELEVATOR. PROVIDE ALL POWER WIRING FROM PANEL, THROUGH DISCONNECT, TO ELEVATOR CONTROLLER. TO MOTOR. PROVIDE A BUSMAN POWER MODULE OR EQUIVALENT. FOR ELEVATOR RECALL.
OHD-1	OVER HEAD DOOR	120V 1P 2W	16 A	1.92 kVA	20	1/2", #12, #12N, #12G	A1A-35	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. PROVIDE DISCONNECT AT UNIT.
OHD-2	OVER HEAD DOOR	120V 1P 2W	16 A	1.92 kVA	20	1/2", #12, #12N, #12G	A1K(L)-37	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. PROVIDE DISCONNECT AT UNIT.

CALLOUT	DESCRIPTION	VOLTS	AMPS	KVA	BREAKER	FEEDER	CIRCUIT	NOTES
AK-1	AUTOMATIC KILN	208V 3P 3W	31.7 A	11.42 kVA	40	3/4", 3#8, #8N, #10G	A1D-21,23,25	PROVIDE 208V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
CR-114a	CORD REEL	120V 1P 2W	1.5 A	0.18 kVA	20	1/2", #12, #12N, #12G	A1D-15	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
CR-114b	CORD REEL	120V 1P 2W	1.5 A	0.18 kVA	20	1/2", #12, #12N, #12G	A1D-15	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
CR-114c	CORD REEL	120V 1P 2W	1.5 A	0.18 kVA	20	1/2", #12, #12N, #12G	A1D-15	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
CR-114d	CORD REEL	120V 1P 2W	1.5 A	0.18 kVA	20	1/2", #12, #12N, #12G	A1D-15	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
DO-1	DOOR OPERATOR	120V 1P 2W	5 A	0.6 kVA	20	1/2", #12, #12N, #12G	C1A(L)-18	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
ECL-1	ELEVATOR CONVENIENCE CIRCUIT	120V 1P 2W	5 A	0.6 kVA	20	1/2", #12, #12N, #12G	A1B-19	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
EL-1	ELEVATOR CAR LIGHTS	120V 1P 2W	5 A	0.6 kVA	20	1/2", #12, #12N, #12G	EL1A-2	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
GS-1	GYM SOUND SYSTEM TRACK	120V 1P 2W	1.2 A	0.14 kVA	20	1/2", #12, #12N, #12G	A1A-26	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
GS-2	GYM SOUND SYSTEM RACK	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	C1A(L)-20	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
MH-1	MOTORIZED HOOP	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	A1A-37	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
MH-3	MOTORIZED HOOP	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	A1A-37	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
MH-4	MOTORIZED HOOP	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	A1A-37	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
MH-5	MOTORIZED HOOP	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	A1A-40	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
MH-6	MOTORIZED HOOP	120V 1P 2W	1.0 A	0.12 kVA	20	1/2", #12, #12N, #12G	A1A-40	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
PC-1	POWER CURTAIN	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-22	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
PDU-1	POWER DISTRIBUTION EQUIPMENT	208V 2P 2W	16 A	3.33 kVA	30	1/2", #12, #12N, #12G	A1B-19	SINGLE RECEPTACLE. NEMA CONFIGURATION TO MATCH PDU CONNECTION.
PDU-2	POWER DISTRIBUTION EQUIPMENT	208V 2P 2W	16 A	3.33 kVA	30	1/2", #12, #12N, #12G	A1B-11,13	SINGLE RECEPTACLE. NEMA CONFIGURATION TO MATCH PDU CONNECTION.
PDU-3	POWER DISTRIBUTION EQUIPMENT	208V 2P 2W	16 A	3.33 kVA	30	1/2", #12, #12N, #12G	C2A-37,39	SINGLE RECEPTACLE. NEMA CONFIGURATION TO MATCH PDU CONNECTION.
PR-1	PROJECTOR	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-20	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
PR-2	PROJECTOR	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-22	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
PS-1	PROJECTOR SCREEN	120V 1P 2W	5 A	0.6 kVA	20	1/2", #12, #12N, #12G	A1A-24	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
PS-2	PROJECTOR SCREEN	120V 1P 2W	5 A	0.6 kVA	20	1/2", #12, #12N, #12G	A1A-24	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
SB-1	SCORE BOARD	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-10	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
SB-2	SCORE BOARD	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-12	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
SB-3	SCORE BOARD CONTROLLER	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-14	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
SB-2	SCORE BOARD CONTROLLER	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	A1A-16	PROVIDE 120V CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER.
WE-137	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(L)-11	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-138	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(L)-21	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-141	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(L)-16	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-144	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(L)-24	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-145	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(R)-7	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-146	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(R)-15	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-149	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(R)-8	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-152	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B1A(R)-16	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-165	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-30	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-168	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-32	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-169	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-13	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-170	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-21	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-175	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-31	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-176	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C1A(R)-12	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-206	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(L)-17	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-207	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(L)-27	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-210	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(L)-16	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-213	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(L)-24	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-214	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(R)-7	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-215	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(R)-17	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-219	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(R)-8	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-221	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	B2A(R)-16	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-236	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C2A-2	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-237	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C2A-12	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-242	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C2A-28	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.
WE-243	WALL ENCLOSURE AUDIO ENHANCEMENT	120V 1P 2W	10 A	1.2 kVA	20	1/2", #12, #12N, #12G	C2A-20	PROVIDE 120V CONNECTION AND CAT6 CONNECTION AS SHOWN ON DRAWING. COORDINATE EXACT LOCATION WITH OWNER. REFER TO E902 FOR MORE INFORMATION.

CALLOUT	DESCRIPTION	VOLTS	AMPS	KVA	CONNECTION	BREAKER	FEEDER	CIRCUIT	NOTES
K1a	WALK-IN FREEZER DOOR PANEL CONNECTION	120V 1P 2W	9.5 A	1.14 kVA	HARDWIRED	20	1/2", #12, #12N, #12G	A1K(L)-1	ELECTRICAL CONTRACTOR TO WIRE TO DOOR PANEL CONNECTION POINT. CONNECT VAPOR SUPPRESSION SYSTEM TO LED FIXTURES. PROVIDE DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K1b	WALK-IN FREEZER EVAPORATOR COIL CONNECTION	208V 2P 2W	10.8 A	2.25 kVA	HARDWIRED	20	1/2", #212, #12N, #12G	A1K(L)-3,5	ELECTRICAL CONTRACTOR TO WIRE FROM JUNCTION BOX TO COIL CONNECTION. PROVIDE DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K1c	WALK-IN FREEZER CONDENSING UNIT CONNECTION	208V 2P 2W	22.3 A	4.64 kVA	HARDWIRED	30	1/2", #210, #10N, #10G	A2B-25,27	ELECTRICAL CONTRACTOR TO WIRE FROM JUNCTION BOX TO COIL CONNECTION. PROVIDE NEMA 3R DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K1d	WALK-IN FREEZER UTILITY OUTLET	120V 1P 2W	16 A	1.92 kVA	5-20P	20	1/2", #12, #12N, #12G	A1K(L)-7	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL A GFCI DUPLEX RECEPTACLE IN AN OUTDOOR WEATHER PROOF ENCLOSURE. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K2a	WALK-IN COOLER DOOR PANEL CONNECTION	120V 1P 2W	9.4 A	1.13 kVA	HARDWIRED	20	1/2", #12, #12N, #12G	A1K(L)-9	ELECTRICAL CONTRACTOR TO WIRE TO DOOR PANEL CONNECTION POINT. CONNECT VAPOR PROOF LIGHT FIXTURE TO LED FIXTURES. PROVIDE DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K2b	WALK-IN COOLER EVAPORATOR COIL CONNECTION	120V 1P 2W	1.6 A	0.19 kVA	HARDWIRED	20	1/2", #12, #12N, #12G	A1K(L)-11	ELECTRICAL CONTRACTOR TO WIRE FROM JUNCTION BOX TO COIL CONNECTION. PROVIDE DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K2c	WALK-IN COOLER CONDENSING UNIT CONNECTION	208V 2P 2W	9.1 A	1.89 kVA	HARDWIRED	20	1/2", #212, #12N, #12G	A2B-29,31	ELECTRICAL CONTRACTOR TO WIRE FROM JUNCTION BOX TO COIL CONNECTION. PROVIDE NEMA 3R DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K2d	WALK-IN COOLER UTILITY OUTLET	120V 1P 2W	10 A	1.2 kVA	5-20P	20	1/2", #12, #12N, #12G	A1K(L)-13	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL A GFCI DUPLEX RECEPTACLE IN AN OUTDOOR WEATHER PROOF ENCLOSURE. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K9	DISPOSER	208V 3P 3W	6.6 A	2.38 kVA	HARDWIRED	20	1/2", #312, #12N, #12G	A1K(L)-15,17,19	ELECTRICAL CONTRACTOR TO CONNECT DISPOSER SOLENOID AND CONTROL PANEL. PROVIDE DISCONNECT AT UNIT. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K11a	COMBINATION OVEN-STACK	208V 2P 2W	3.7 A	0.77 kVA	6-15P	20	1/2", #212, #12N, #12G	A1K(L)-4,6	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SHUNT TRIP BREAKER. CONNECT TO FIRE SUPPRESSION SYSTEM. PROVIDE SEAL TIGHT CONNECTIONS AS REQUIRED. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K11b	COMBINATION OVEN-STACK	208V 2P 2W	3.7 A	0.77 kVA	6-15P	20	1/2", #212, #12N, #12G	A1K(L)-4,6	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SHUNT TRIP BREAKER. CONNECT TO FIRE SUPPRESSION SYSTEM. PROVIDE SEAL TIGHT CONNECTIONS AS REQUIRED. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K12	EXHAUST HOOD LIGHTS	120V 1P 2W	3 A	0.36 kVA	HARDWIRED	20	1/2", #12, #12N, #12G	A1K(L)-21	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SWITCHES FOR EXHAUST FAN AND LIGHTS. CONNECT TO EXHAUST FAN AND HOOD. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K22a	COMBINATION OVEN-STACK	208V 2P 2W	7.4 A	1.54 kVA	6-15P	20	1/2", #212, #12N, #12G	A1K(L)-10,12	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SHUNT TRIP BREAKER. CONNECT TO FIRE SUPPRESSION SYSTEM. PROVIDE SEAL TIGHT CONNECTIONS AS REQUIRED. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K22b	COMBINATION OVEN-STACK	208V 2P 2W	7.4 A	1.54 kVA	6-15P	20	1/2", #212, #12N, #12G	A1K(L)-10,12	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SHUNT TRIP BREAKER. CONNECT TO FIRE SUPPRESSION SYSTEM. PROVIDE SEAL TIGHT CONNECTIONS AS REQUIRED. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K26	EXHAUST HOOD LIGHTS	120V 1P 2W	2 A	0.24 kVA	HARDWIRED	20	1/2", #12, #12N, #12G	A1K(L)-21	ELECTRICAL CONTRACTOR TO FURNISH AND INSTALL SWITCHES FOR EXHAUST FAN AND LIGHTS. CONNECT TO EXHAUST FAN AND HOOD. COORDINATE FINAL CONNECTIONS WITH FOOD SERVICE SUPPLIER.
K30	ROLL-THROUGH HEATED CABINET	208V 3P 4W	7.9 A	2.85 kVA	HARDWIRED	20	1/2", #312, #12N, #12G	A1K(L)-23,25,27	



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PANEL SCHEDULES - ELECTRICAL

Project Title:
Project Location:
Sheet Title:

HSR Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR

Key Plan:

Revisions:

No.	Description	Date
A01	ADDENDUM 1	3.16.20
A02	ADDENDUM 2	3.19.20

Graphic Scale:

Last Update:
3/18/2020 10:43:41 AM

E801

Branch Panel: A1A										
Location: CORRIDOR 129				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	UH-1, UH-2, UH-3 - UNIT HEATER	20 A	1	0.3	1.3			1	20 A	LIGHTING 1ST FLOOR AREA A
3	CUH-5 - CAB HEATER	20 A	1		0.7	1.2		1	20 A	LIGHTING 1ST FLOOR AREA A
5	EF-8, EF-9, EF-10	20 A	2			1.7	1.5	1	20 A	LIGHTING 1ST FLOOR AREA A
7	--	--	--	1.7	0.4			1	20 A	EXTERIOR LIGHTING
9	DF-11, DF-12, DF-13, DF-14	20 A	2		0.2	1.2		1	20 A	SB-1 - SCORE BOARD
11	--	--	--			0.2	1.2	1	20 A	SB-2 - SCORE BOARD
13	VAV CONTROL AREA A	20 A	1	0.2	1.2			1	20 A	SBC-1 - SCORE BOARD CONTROLLER
15	CUH-9 - CAB HEATER	20 A	1		0.7	1.2		1	20 A	SBC-2 - SCORE BOARD CONTROLLER
17	FACP	20 A	1			0	1.2	1	20 A	PC-1 - POWER CURTAIN
19	MS-3 - MINI SPLIT	20 A	2	0.1	1.2			1	20 A	P-1 - PROJECTOR
21	--	--	--			0.1	1.2	1	20 A	P-2 - PROJECTOR
23	RECP RM 123, 127, 129	20 A	1			1.1	1.2	1	20 A	PS-1, PS-2 - PROJECTOR SCREEN
25	RECP RM 126, 125	20 A	1	0.9	1.2			1	20 A	GS-1 - GYM SOUND SYSTEM
27	EF-7	20 A	1		0.9	1.6		1	20 A	RECP RM 118
29	RECP RM 122	20 A	1			0.7	0.2	1	20 A	WASHING MACHINE RM 128
31	RECP RM 122	20 A	1	1.1	14.4			3	50 A	DRYER RM 128
33	RECP RM 148, 120	20 A	1		1.3	0		--	--	--
35	DMPT - OVERHEAD DOOR	20 A	1			1.0	0	--	--	--
37	MH-1 - MOTORIZED HOOP	20 A	1	1.2	1.1			1	20 A	EXTERIOR POLE LIGHTS
39	MH-2 - MOTORIZED HOOP	20 A	1		1.2	1.2		1	20 A	MH-5 - MOTORIZED HOOP
41	MH-3 - MOTORIZED HOOP	20 A	1			1.2	1.2	1	20 A	MH-6 - MOTORIZED HOOP
43	MH-4 - MOTORIZED HOOP	20 A	1	1.2	0			1	20 A	SPARE
45	SPARE	20 A	1		0	0		1	20 A	SPARE
47	SPARE	20 A	1		0	0		1	20 A	SPARE
49	SPARE	20 A	1	0	0			1	20 A	SPARE
51	SPARE	20 A	1		0	0		1	20 A	SPARE
53	SPARE	20 A	1			0	0	1	20 A	SPARE
Total Load:				27.4 kVA	12.6 kVA	13.2 kVA				
Total Amps:				229.1 A	105.4 A	110.3 A				
Legend:										
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals						
HVAC	5831 VA	100.00%	5831 VA							
Motor	1920 VA	125.00%	2400 VA	Total Conn. Load: 53217 VA						
Other	0 VA	0.00%	0 VA	Total Est. Demand: 46266 VA						
Receptacle	31740 VA	65.75%	20870 VA	Total Conn.: 148 A						
Power	8400 VA	125.00%	10500 VA	Total Est. Demand: 128 A						
Lighting	5447 VA	125.00%	6808 VA							
Notes:										

Branch Panel: A1C											
Location: CORRIDOR 129				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)			
Supply From: MDP SEC 4				Phases: 3				Mains Type:			
Mounting: Recessed				Wires: 4				Mains Rating: 225 A			
Enclosure: Type 1								MCB Rating:			
Notes:											
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT	
1	DF-5, DF-6	20 A	2	0.1	1.3			1	20 A	LIGHTING EARLY CHILDHOOD SPED 168	
3	--	--	--		0.1	1.1		1	20 A	LIGHTING LIBRARY 160	
5	DF-9, DF-10	20 A	2			0.1	0.8	1	20 A	LIGHTING COMMONS/MULTI-PURPOSE 101	
7	--	--	--	0.1	0.8			1	20 A	Lighting	
9	Receptacle Room 100, 101	20 A	1		1.6	0.9		1	20 A	Receptacle SENSORY 166	
11	Room 163, 162	20 A	1			1.2	0.7	1	20 A	Receptacle	
13	Receptacle EARLY CHILDHOOD SPED 168	20 A	1	0.9	0.7			1	20 A	Receptacle SPEECH 161	
15	Receptacle EARLY CHILDHOOD SPED 168	20 A	1		0.7	0.7		1	20 A	Receptacle LIBRARY 160	
17	FLOOR BOX LIBRARY 160	20 A	1		0.00%	0 VA		1	20 A	Receptacle LIBRARY 160	
19	FLOOR BOX LIBRARY 160	20 A	1	1	0.7		1	0.9	1	20 A	Receptacle LIBRARY 160
21	FLOOR BOX LIBRARY 160	20 A	1		1	0.8		1	20 A	Receptacle COMMONS/MULTI-PURPOSE 101	
23	FLOOR BOX LIBRARY 160	20 A	1			1	1	1	20 A	FLOOR BOX LIBRARY 160	
25	FLOOR BOX LIBRARY 160	20 A	1	1	1			1	20 A	FLOOR BOX LIBRARY 160	
27	FLOOR BOX LIBRARY 160	20 A	1		1	0		1	20 A	SPARE	
29	SPARE	20 A	1			0	0	1	20 A	SPARE	
31	SPARE	20 A	1	0	0			1	20 A	SPARE	
33	SPARE	20 A	1		0	0		1	20 A	SPARE	
35	SPARE	20 A	1			0	0	1	20 A	SPARE	
37	SPARE	20 A	1	0	0			1	20 A	SPARE	
39	SPARE	20 A	1		0	0		1	20 A	SPARE	
41	SPARE	20 A	1			0	0	1	20 A	SPARE	
Total Load:				7.5 kVA	8 kVA	6.7 kVA					
Total Amps:				63.9 A	67.7 A	56.2 A					
Legend:											
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals							
HVAC	416 VA	100.00%	416 VA								
Other	0 VA	0.00%	0 VA	Total Conn. Load: 22279 VA							
Receptacle	17440 VA	78.67%	13720 VA	Total Est. Demand: 19670 VA							
Power	480 VA	125.00%	600 VA	Total Conn.: 62 A							
Lighting	3992 VA	125.00%	4990 VA	Total Est. Demand: 55 A							
Notes:											

Branch Panel: A1B										
Location: STAFF 133				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	DF-7, DF-8	20 A	2	0.1	1.1			1	20 A	Lighting DATA RMMDF 159
3	--	--	--		0.1	9.4		3	100 A	E-1 - ELEVATOR
5	Receptacle Room 101, 159	20 A	1			0.5	9.4	--	--	--
7	PDU-1 - POWER DISTRIBUTION UNIT	30 A	2	1.7	9.4			--	--	--
9	--	--	--		1.7	0.5		1	20 A	Receptacle Room 101, 133
11	PDU-2 - POWER DISTRIBUTION UNIT	30 A	2			1.7	1	1	20 A	Receptacle STAFF 133
13	--	--	--	1.7	1.2			1	20 A	Receptacle STAFF 133
15	MS-1, MS-2 - MINI SPLIT	20 A	2		0.2	1.2		1	20 A	Receptacle STAFF 133
17	--	--	--			0.2	1.2	1	20 A	Receptacle STAFF 133
19	ECC-1 - ELEVATOR CONVENIENCE CIRCUIT	20 A	1	0.6	1.2			1	20 A	Receptacle STAFF 133
21	Receptacle Space 299	20 A	1		0.4	0.9		1	20 A	Receptacle LD 132
23	Room 157, 152	20 A	1			1.3	0.5	1	20 A	Receptacle LD 132
25	Receptacle COMMONS/MULTI-PURPOSE 101	20 A	1	0.8	0.5			1	20 A	Receptacle LD 132
27	Receptacle Room 154, 155, 173	20 A	1		0.5	1.2		1	20 A	TCF-11 - TEMPERATURE CONTROL PANEL
29	Receptacle COMMONS/MULTI-PURPOSE 101	20 A	1			0.7	1.2	1	20 A	FV-1 - FLUSH VALVE POWER SUPPLY
31	Receptacle COMMONS/MULTI-PURPOSE 101	20 A	1	0.8	1.2			1	20 A	FV-2 - FLUSH VALVE POWER SUPPLY
33	SPARE	20 A	1		0	0		1	20 A	SPARE
35	SPARE	20 A	1			0	0	1	20 A	SPARE
37	SPARE	20 A	1	0	0			1	20 A	SPARE
39	SPARE	20 A	1		0	0		1	20 A	SPARE
41	SPARE	20 A	1			0	0	1	20 A	SPARE
Total Load:				20.2 kVA	16.1 kVA	17.8 kVA				
Total Amps:				170.8 A	134.5 A	150.1 A				
Legend:										
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals						
HVAC	1824 VA	100.00%	1824 VA							
Motor	28281 VA	125.00%	35351 VA	Total Conn. Load: 54147 VA						
Receptacle	19950 VA	75.01%	14998 VA	Total Est. Demand: 57232 VA						
Power	3000 VA	125.00%	3750 VA	Total Conn.: 150 A						
Lighting	1094 VA	125.00%	1368 VA	Total Est. Demand: 159 A						
Notes:										

Branch Panel: A1D										
Location: CONF ROOM 113				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	GREENHOUSE PANEL	60 A	3	0	1			1	20 A	LIGHTING 1ST FLOOR AREA A
3	--	--	--		0	1.1		1	20 A	LIGHTING 1ST FLOOR AREA A
5	--	--	--			0	0.9	1	20 A	RECP RM 111
7	CUH-3, CUH-4 - CAB HEATER	20 A	1	1.4	0.7			1	20 A	RECP RM 111
9	EF-5, EF-6	20 A	1		0	0.8		1	20 A	FV-5, FV-6
11	RECP RM 114	20 A	1			1.3	0.9	1	20 A	RECP RM 107
13	RECP RM 114	20 A	1	1.3	1.2			1	20 A	RECP RM 107
15	CR-114a, CR-114b, CR-114c, CR-114d	20 A	1		0.7	2.1		1	30 A	RECP RM 106, 107
17	RECP RM 113	20 A	1			1.3	0.9	1	20 A	RECP RM 105, 109
19	RECP RM 113	20 A	1	0.7	0.7			1	20 A	RECP RM 104
21	AC-1 - AUTOMATIC KILN	40 A	3		3.8	0.9		1	20 A	RECP RM 103, 109
23	--	--	--			3.8	0.7	1	20 A	RECP RM 102
25	--	--	--	3.8	0.9			1	20 A	RECP RM 102
27	RECP RM 115, 116, 108	20 A	1		0.7	0.7</				



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JDR PROJECT NO. 19.0361

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PANEL SCHEDULES - ELECTRICAL

Project Title:
Project Location:
Sheet Title:

HSR Project Number:
19014-1

Project Date:
3.5.2020

Drawn By:
JDR

Key Plan:

**BID
DOCUMENTS**

No.	Description	Date
A02	ADDENDUM 2	3.19.20

Graphic Scale:

Last Update:
3/18/2020 10:43:46 AM

E803

Branch Panel: C1A(L)										
Location: LOBBY 183				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	CUH-1, CUH-2 - CAB HEATER	20 A	1	1.4	1.6		3	60 A	PANEL CBA	2
3	EF-1	20 A	1		0.4	0.9				4
5	EF-2	20 A	1			0	0			6
7	EF-3	20 A	1	0	1.3			1	20 A Lighting DCD 165	8
9	EF-4	20 A	1		0	1		1	20 A Lighting OFFICE/STOR 173	10
11	DF-1, DF-2, DF-3, DF-4	20 A	2			0.2	1.2	1	20 A Lighting OFFICE 185	12
13	--	--	--	0.2	1.5			1	20 A Lighting EXISTING GYM 184	14
15	ERV-7 - ENERGY RECOVERY UNIT	20 A	3		1.2	1.5		1	20 A Lighting EXISTING GYM 184	16
17	--	--	--			1.2	0.6	1	20 A DOOR OPERATOR	18
19	--	--	--	1.2	1.2			1	20 A GYM - GYM SOUND SYSTEM	20
21	VAV CONTROL AREA C	20 A	1		0.1	0		1	20 A SPARE	22
23	SPARE	20 A	1			0	0	1	20 A SPARE	24
25	SPARE	20 A	1	0	0			1	20 A SPARE	26
27	SPARE	20 A	1		0	0		1	20 A SPARE	28
29	SPARE	20 A	1			0	0	1	20 A SPARE	30
31	SPARE	20 A	1	0	0			1	20 A SPARE	32
33	SPARE	20 A	1		0	0		1	20 A SPARE	34
35	SPARE	20 A	1			0	0	1	20 A SPARE	36
37	SPARE	20 A	1	0	0			1	20 A SPARE	38
39	SPARE	20 A	1		0	0		1	20 A SPARE	40
41	SPARE	20 A	1			0	0	1	20 A SPARE	42
Total Load:				8.3 kVA	5.1 kVA	3.1 kVA				
Total Amps:				72 A	44.8 A	26.2 A				
Legend:										
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals						
HVAC	6593 VA	100.00%	6593 VA							
Receptacle	1980 VA	100.00%	1980 VA	Total Conn. Load: 16566 VA						
Power	1200 VA	125.00%	1500 VA	Total Est. Demand: 18584 VA						
Lighting	6993 VA	125.00%	8741 VA	Total Conn.: 46 A						
				Total Est. Demand: 52 A						
Notes:										

Branch Panel: C1A(R)										
Location: LOBBY 183				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Receptacle DCD 165	20 A	1	0.5	0.7			1	20 A Receptacle Room 172, 171	2
3	Receptacle DCD 165	20 A	1		0.9	0.7		1	20 A Receptacle Room 174, 173	4
5	Receptacle DCD 165	20 A	1			0.5	0.5	1	20 A Receptacle CLASSROOM 176	6
7	Receptacle CLASSROOM 169	20 A	1	0.5	0.5			1	20 A Receptacle CLASSROOM 176	8
9	Receptacle CLASSROOM 169	20 A	1		0.5	0.9		1	20 A Receptacle CLASSROOM 176	10
11	Receptacle CLASSROOM 169	20 A	1			0.9	1.2	1	20 A WE-176 - WALL ENCLOSURE	12
13	WE-169 - WALL ENCLOSURE	20 A	1	1.2	1.1			1	20 A Receptacle Room 183, 182, 181, 180	14
15	Receptacle CLASSROOM 170	20 A	1		0.5	0.5		1	20 A FV-9, FV-10	16
17	Receptacle CLASSROOM 170	20 A	1			0.5	1.6	1	20 A Receptacle LOBBY 183	18
19	Receptacle CLASSROOM 170	20 A	1	0.9	0.4			1	20 A Receptacle LOBBY 183	20
21	WE-170 - WALL ENCLOSURE	20 A	1		1.2	1.1		1	20 A Receptacle Room 185, 186, 187, 188, 189	22
23	Receptacle CORRIDOR 177	20 A	1			0.7	0.9	1	20 A Receptacle EXISTING GYM 184	24
25	Receptacle CLASSROOM 175	20 A	1	0.5	0.9			1	20 A Receptacle	26
27	Receptacle CLASSROOM 175	20 A	1		0.5	1.2		1	20 A TCP-8 - TEMPERATURE CONTROL PANEL	28
29	Receptacle CLASSROOM 175	20 A	1			0.9	1.2	1	20 A WE-165 - WALL ENCLOSURE	30
31	WE-175 - WALL ENCLOSURE	20 A	1	1.2	1.2			1	20 A WE-168 - WALL ENCLOSURE	32
33	SPARE	20 A	1		0	0		1	20 A SPARE	34
35	SPARE	20 A	1			0	0	1	20 A SPARE	36
37	SPARE	20 A	1	0	0			1	20 A SPARE	38
39	SPARE	20 A	1		0	0		1	20 A SPARE	40
41	SPARE	20 A	1			0	0	1	20 A SPARE	42
Total Load:				9.8 kVA	8.1 kVA	9.1 kVA				
Total Amps:				82.6 A	67.5 A	76.7 A				
Legend:										
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals						
HVAC	1020 VA	100.00%	1020 VA							
Receptacle	18040 VA	77.72%	14020 VA	Total Conn. Load: 26920 VA						
Power	7680 VA	125.00%	9600 VA	Total Est. Demand: 24820 VA						
				Total Conn.: 75 A						
				Total Est. Demand: 69 A						
Notes:										

Branch Panel: A2A										
Location: Space 118				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	EF-11, EF-16 - EXHAUST FAN	20 A	2	0.7	1.4			1	20 A Lighting EBD 202	2
3	--	--	--		0.7	0.6		1	20 A Lighting INTERVENTION 231	4
5	EF-15	20 A	1			0.1	1.2	1	20 A FV-7 - FLUSH VALVE POWER SUPPLY	6
7	ERV-2 - ENERGY RECOVERY UNIT	30 A	3	2.6	1.2			1	20 A FV-8 - FLUSH VALVE POWER SUPPLY	8
9	--	--	--		2.6	0.7		1	20 A Receptacle MULTI-PURPOSE 200	10
11	--	--	--			2.6	0.7	1	20 A Receptacle SPEECH 227	12
13	Receptacle EBD 202	20 A	1	0.5	0.5			1	20 A Receptacle SMALL GROUP 228	14
15	Receptacle EBD 202	20 A	1		0.7	1.3		1	20 A Receptacle Room 200, 229, 230	16
17	Receptacle EBD 202	20 A	1			0.5	0.7	1	20 A Receptacle INTERVENTION 231	18
19	Receptacle SMALL GROUP 201	20 A	1	0.7	1.1			1	20 A Receptacle INTERVENTION 231	20
21	Receptacle Room 200, 223, 222	20 A	1		0.7	0.5		1	20 A Receptacle TITLE 234	22
23	Receptacle MULTI-PURPOSE 200	20 A	1			0.8	0.9	1	20 A Receptacle TITLE 234	24
25	Receptacle Room 224, 225	20 A	1	0.9	0.4			1	20 A ROOF RECP	26
27	CU-4 - AIR COOLED CONDENSING UNIT	20 A	2		1.4	2.6		2	40 A CU-5 - AIR COOLED CONDENSING UNIT	28
29	--	--	--			1.4	2.6	--	--	30
31	EF-17 - EXHAUST FAN	20 A	1	0.7	0			1	20 A SPARE	32
33	SPARE	20 A	1		0	0		1	20 A SPARE	34
35	SPARE	20 A	1			0	0	1	20 A SPARE	36
37	SPARE	20 A	1	0	0			1	20 A SPARE	38
39	SPARE	20 A	1			0	0	1	20 A SPARE	40
41	SPARE	20 A	1			0	0	1	20 A SPARE	42
Total Load:				10.8 kVA	11.8 kVA	11.6 kVA				
Total Amps:				89.9 A	99.7 A	97.5 A				
Legend:										
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals						
HVAC	18019 VA	100.00%	18019 VA							
Receptacle	11780 VA	92.44%	10890 VA	Total Conn. Load: 34194 VA						
Power	2400 VA	125.00%	3000 VA	Total Est. Demand: 34404 VA						
Lighting	2056 VA	125.00%	2570 VA	Total Conn.: 95 A						
				Total Est. Demand: 95 A						
Notes:										

Branch Panel: A2B										
Location: COMMONS/MULTI-PURPOSE...				Volts: 208Y/120V 3P 4W				A.I.C. Rating: 22,000 (FIELD VERIFY)		
Supply From: MDP SEC 4				Phases: 3				Mains Type:		
Mounting: Recessed				Wires: 4				Mains Rating: 225 A		
Enclosure: Type 1								MCB Rating:		
Notes:										
CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	UH-4, UH-5 - UNIT HEATER	20 A	1	0.2	0.9			1	20 A Lighting Room 226A, 226	2
3	AHU-1 SF - AIR HANDLING UNIT SUPPLY FAN	20 A	3		1.4	0.4		1	20 A Receptacle BOILERS 226A	4
5	--	--	--			1.4	0.7	1	20 A SFU-1	6
7	--	--	--	1.4	0.7			1	20 A Receptacle MECHANICAL PLATFORM 226	8
9	AHU-2 L, AHU-3 L	20 A	1		0.7	0.9		1	20 A Receptacle MECHANICAL PLATFORM 226	10
11	HCP-1 - HEATING COIL PUMP	20 A	1			0.9	0.4	1	20 A Receptacle MECHANICAL PLATFORM 226	12
13	HCP-2, HCP-3 - HEATING COIL PUMP	20 A	1	1.8	3.5			3	60 A B-1 - BOILER	14
15	TCP-1 - TEMPERATURE CONTROL PANEL	20 A	1		1.2	3.5		--	--	16
17	TCP-2 - TEMPERATURE CONTROL PANEL	20 A	1			1.2	3.5	--	--	18
19	TCP-3 - TEMPERATURE CONTROL PANEL	20 A	1	1.2	3.5			3	60 A B-2 - BOILER	20
21	TCP-4 - TEMPERATURE CONTROL PANEL	20 A	1		1.2	3.5		--	--	22
23	VAV CONTROL AREA A	20 A	1			0	3.5	--	--	24
25	K1c - CONDENSING UNIT	30 A	2	2.3	2.8			3	30 A CU-1 - AIR COOLED CONDENSING UNIT	26
27	--	--	--		2.3	2.8		--	--	28
29	K2c - CONDENSING UNIT	20 A	2			0.9	2.8	--	--	30
31	--	--	--	0.9	1.9			2	30 A CU-6 - AIR COOLED CONDENSING UNIT	32
33	CP-1 - CIRC PUMP	20 A	1		1.6	1.9		--	--	34
35	WHR-1 - WATER HEATER	20 A	1			0.6	0.2	1	20 A ROOF RECP	36
37	WHR-2 - WATER HEATER	20 A	1	0.6	0			1	20 A SPARE	38
39	SPARE	20 A	1			0	0	1	20 A SPARE	40
41	SPARE	20 A	1			0	0	1	20 A SPARE	