

**ADDENDUM NO. 2 - TO  
SPECIFICATIONS AND CONTRACT DOCUMENTS  
SOUTHAVEN ELEMENTARY SCHOOL  
CLASSROOM EXPANSION  
DESOTO COUNTY, MISSISSIPPI  
FOR  
DESOTO COUNTY SCHOOLS**

**JANUARY 18, 2017**

This addendum forms a part of the Contract Documents and modifies the original specifications and drawings, dated 12-6-16 as noted below. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject Bidder to disqualification.

This Addendum consists of 1 page and 20 attachments.

- Item No. 1: SPECIFICATIONS, SECTION 26 5000 – LIGHTING: Remove and destroy this section and insert the attached revised Section 265000 – LIGHTING CONTROLS, consisting of 15 pages and marked “Revised 1-18-17” in lower left corner.
- Item No. 2: SPECIFICATIONS, SECTION 27 2200 – INTERACTIVE BOARD AND PROJECTOR SYSTEM: Delete this section in its entirety.
- Item No. 3: DRAWINGS, SHEET 0.0 – INDEX OF DRAWINGS: Remove Sheet A11.1 – Interior Details from the Architectural Index.
- Item No. 4: DRAWINGS, SHEET CO.1 – EXISTING CONDITIONS AND DEMOLITION PLAN: Remove and destroy this sheet and insert the attached revised Sheet C0.1 – EXISTING CONDITIONS AND DEMOLITION PLAN, dated 1-18-17.
- Item No. 5: DRAWINGS, SHEET C4.1 - UTILITY PLAN: Remove and destroy this sheet and insert the attached revised Sheet C4.1 – UTILITY PLAN, dated 1-18-17.
- Item No. 6: DRAWINGS, SHEET A3.1 – REFLECTED CEILING PLAN: Remove and destroy this sheet and insert the attached revised Sheet A3.1 – REFLECTED CEILING PLAN dated 1-18-17.
- Item No. 7: DRAWINGS, SHEET E0.1 - LEGEND, LIGHTING FIXTURE SCHEDULE AND DETAILS – ELECTRICAL: Remove and destroy this sheet and insert the attached revised Sheet E0.1 - LEGEND, LIGHTING FIXTURE SCHEDULE AND DETAILS – ELECTRICAL dated 1-18-17.
- Item No. 8: DRAWINGS, SHEET E2.1 – FLOOR PLAN - LIGHTING – ELECTRICAL: Remove and destroy this sheet and insert the attached revised Sheet E2.1 – FLOOR PLAN - LIGHTING – ELECTRICAL dated 1-18-17.

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JOB NO. 62565

SECTION 26 5000  
LIGHTING CONTROLS

PART 1        GENERAL

1.1        SECTION INCLUDES

- A. Single space wireless lighting control systems and associated components:
  - 1. Wireless occupancy/vacancy sensors.
  - 2. Wireless control stations.
  - 3. LED Drivers.
  - 4. Power interfaces.
- B. Wireless hub(s) for centralized control, monitoring, and system integration.

1.2        RELATED REQUIREMENTS

- A. Section 26 0553 - Identification for Electrical Systems: Identification products and requirements.
- B. Section 26 2726 - Wiring Devices - Lutron: (Basis of Design)
  - 1. Finish requirements for wall controls specified in this section.
  - 2. Accessory receptacles and wallplates, to match lighting controls specified in this section.
- C. Section 26 5113 - Luminaires, Ballasts, and Drivers - Lutron. (Basis of Design)

1.3        REFERENCE STANDARDS

- A. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements; 2011.
- B. ANSI/ESD S20.20 - Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices); 2014.
- C. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; 2002a (Reapproved 2010).
- D. CAL TITLE 24 P6 – California Code of Regulations, Title 24, Part 6 (California Energy Code); 2013.
- E. CSA C22.2 No. 223 – Power Supplies with Extra-low-voltage Class 2 Outputs; 2015.
- F. IEC 60929 - AC and/or DC-Supplied Electronic Control Gear for Tubular Fluorescent Lamps - Performance Requirements; 2015.
- G. IEC 61000-4-2 - Electromagnetic Compatibility (EMC) - Part 4-2: Testing and Measurement Techniques - Electrostatic Discharge Immunity Test; 2008.
- H. IEC 61347-2-3 - Lamp Control Gear - Part 2-3: Particular Requirements for A.C. and/or D.C. Supplied Electronic Control Gear for Fluorescent Lamps; 2011.
- I. IEEE 1789 - Recommended Practice for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers; 2015.

- J. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; 2002 (Cor 1, 2012).
- K. ISO 9001 - Quality Management Systems-Requirements; 2008.
- L. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.
- M. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; 2010.
- N. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; National Electrical Manufacturers Association; 2011.
- O. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; 1999 (R 2010).
- P. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- Q. UL 20 - General-Use Snap Switches; Current Edition, Including All Revisions.
- R. UL 508 - Industrial Control Equipment; Underwriters Laboratories Inc.; Current Edition, Including All Revisions.
- S. UL 924 - Emergency Lighting and Power Equipment; Current Edition, Including All Revisions.
- T. UL 935 - Fluorescent-Lamp Ballasts; Current Edition, Including All Revisions.
- U. UL 1310 – Class 2 Power Units; Current Edition, Including All Revisions.
- V. UL 1472 - Solid-State Dimming Controls; Current Edition, Including All Revisions.
- W. UL 1598C - Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits; Current Edition, Including All Revisions.
- X. UL 2043 - Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; Current Edition, Including All Revisions.
- Y. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

#### 1.4 ADMINISTRATIVE REQUIREMENTS

- A. Coordination:
  - 1. Coordinate the placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate the placement of wall controls with actual installed door swings equipment, or other potential obstructions to light level measurement installed under other sections or by others.
  - 3. Coordinate the work to provide luminaires and lamps compatible with the lighting controls to be installed.
  - 4. Notify Engineer of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

- B. Pre-Wire Meeting; Lutron LSC-PREWIRE: Include as part of the base bid additional costs for Lighting Control Manufacturer to conduct on-site meeting prior to commencing work. Manufacturer to review with installer:
  - 1. Low voltage wiring requirements.
  - 2. Separation of power and low voltage/data wiring.
  - 3. Wire labeling.
  - 4. Wireless hub locations and installation.
  - 5. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", sensor locations to be reviewed in accordance with layout provided by Lighting Control Manufacturer. Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require a deviation from locations indicated.
  - 6. Control locations.
  - 7. Computer jack locations.
  - 8. Load circuit wiring.
  - 9. Network wiring requirements.
  - 10. Connections to other equipment.
  - 11. Installer responsibilities.
- C. Sequencing:
  - 1. Do not install sensors and wall controls until final surface finishes and painting are complete.

#### 1.5 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Design Documents: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide plans indicating occupancy/vacancy sensor locations.
- C. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
  - 1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.
  - 2. Wall Dimmers: Include derating information for ganged multiple devices.
- D. Samples:
  - 1. Wall Controls:
    - a. Show available color and finish selections.
- E. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- F. Project Record Documents: Record actual installed locations and settings for lighting control system components.
- G. Operation and Maintenance Data: Include detailed information on lighting control system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
- H. Warranty: Submit sample of manufacturer's Warranty or Enhanced Warranty as specified in Part 1 under "WARRANTY". Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.

## 1.6 QUALITY ASSURANCE

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications:
  - 1. Company with not less than ten years of experience manufacturing lighting control products using wireless communication between devices.
  - 2. Registered to ISO 9001, including in-house engineering for product design activities.
  - 3. Provides factory direct technical support hotline available 24 hours per day, 7 days per week.
  - 4. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.

## 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

## 1.8 FIELD CONDITIONS

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.
  - 1. Basis of Design System Requirements - Lutron, Unless Otherwise Indicated:
    - a. Ambient Temperature:
      - (1) Lighting Control System Components, Except Fluorescent Electronic Dimming Ballasts: Between 32 and 104 degrees F (0 and 40 degrees C).
      - (2) Fluorescent Electronic Dimming Ballasts: Between 50 and 140 degrees F (10 and 60 degrees C).
    - b. Relative Humidity: Less than 90 percent, non-condensing.
    - c. Protect lighting controls from dust.

## 1.9 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Manufacturer's Standard Warranty, Without Manufacturer Full-Scope Start-Up:  
*Manufacturer Lighting Control System Components, Except Wireless Sensors, Ballasts/Drivers and Ballast Modules: One year 100 percent parts coverage, no manufacturer labor coverage.*
  - 1. Wireless Sensors: Five years 100 percent parts coverage, no manufacturer labor coverage.
  - 2. Ballasts/Drivers and Ballast Modules: Three years 100 percent parts coverage, no manufacturer labor coverage.

## PART 2 PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis of Design Manufacturer: Lutron Electronics Company, Inc; Vive; [www.lutron.com](http://www.lutron.com).
- B. Other Acceptable Manufacturers:
  - 1. Watt Stopper.

2. Crestron.
  3. Approved equal.
  4. Products by listed manufacturers are subject to compliance with specified requirements.
- C. Substitutions:
1. All proposed substitutions (clearly delineated as such) must be submitted in writing for approval by Architect.
- D. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

## 2.2 LIGHTING CONTROLS - GENERAL REQUIREMENTS

- A. Sensor Layout and Tuning: Include as part of the base bid additional costs for Lighting Control Manufacturer's Sensor Layout and Tuning service; Lutron LSC-SENS-LT:
1. Lighting Control Manufacturer to take full responsibility for wired or wireless occupancy/vacancy and daylight sensor layout and performance for sensors provided by Lighting Control Manufacturer.
  2. Lighting Control Manufacturer to analyze the reflected ceiling plans, via supplied electronic AutoCAD format, and design a detailed sensor layout that provides adequate occupancy sensor coverage and ensures occupancy and daylight sensor performance per agreed upon sequence of operations. Contractor to utilize the layouts for sensor placement.
  3. During startup, Lighting Control Manufacturer to direct Contractor regarding sensor relocation, as required, should conditions require a deviation from locations specified in the drawings.
  4. Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits, within one calendar year from Date of Substantial Completion to fine-tune sensor calibration per the agreed upon sequence of operations.
- B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) as suitable for the purpose indicated.
- C. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, programming, etc. as necessary for a complete operating system that provides the control intent indicated.
- D. Design lighting control equipment for 10 year operational life while operating continually at any temperature in an ambient temperature range of 32 degrees F (0 degrees C) to 104 degrees F (40 degrees C) and 90 percent non-condensing relative humidity.
- E. Electrostatic Discharge Tolerance: Design and test equipment to withstand electrostatic discharges without impairment when tested according to IEC 61000-4-2.
- F. Power Failure Recovery: When power is interrupted for periods up to 10 years and subsequently restored, lights to automatically return to same levels (dimmed setting, full on, or full off) as prior to power interruption.
- G. Wireless Devices:
1. Wireless device family includes area or fixture level sensors, area or fixture level load controls for dimming or switching, and load controls that can be mounted in a wallbox, on a junction box, or at the fixture.
  2. Wireless devices including sensors, load controls, and wireless remotes or wall stations, can be set up using simple button press programming without needing any other equipment (e.g. central hub, processor, computer, or other smart device).
  3. Wireless hub adds the ability to set up the system using any smart device with a web browser (e.g. smartphone, tablet, PC, or laptop).

4. System does not require a factory technician to set up or program the system.
5. Capable of diagnosing system communications.
6. Capable of having addresses automatically assigned to them.
7. Receives signals from other wireless devices and provides feedback to user.
8. Capable of determining which devices have been addressed.
9. RF Range: 60 feet (18 m) line-of-sight or 30 feet (9 m) through typical construction materials between RF transmitting devices and compatible RF receiving devices.
10. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of CFR, Title 47, Part 15, for Class B application.

H. Wireless Network:

1. RF Frequency: 434 MHz; operate in FCC governed frequency spectrum for periodic operation; continuous transmission spectrum is not permitted.
  - a. Wireless sensors, wireless wall stations and wireless load control devices do not operate in the noisy 2.4 GHz frequency band where high potential for RF interference exists.
  - b. Wireless devices operate in an uncongested frequency band providing reliable operation.
  - c. Fixed network architecture ensures all associated lights and load controls respond in a simultaneous and coordinated fashion from a button press, sensor signal, or command from the wireless hub (i.e. no popcorning).
2. Distributed Architecture: Local room devices communicate directly with each other. If the wireless hub is removed or damaged, local control, sensing, and operation continues to function without interruption.
3. Local room devices communicate directly with each other (and not through a central hub or processor) to ensure:
  - a. Reliability of system performance.
  - b. Fast response time to events in the space (e.g. button presses or sensor signals).
  - c. Independent operation in the event of the wireless hub being removed or damaged.

I. Device Finishes:

1. Wall Controls: Match finishes for Wiring Devices in Section 26 2726, unless otherwise indicated.

## 2.3 WIRELESS SENSORS

A. General Requirements:

1. Operational life of 10 years without the need to replace batteries when installed per manufacturer's instructions.
2. Communicates directly to compatible RF receiving devices through use of a radio frequency communications link.
3. Does not require external power packs, power wiring, or communication wiring.
4. Capable of being placed in test mode to verify correct operation from the face of the unit.

B. Wireless Occupancy/Vacancy Sensors:

1. General Requirements:
  - a. Provides a clearly visible method of indication to verify that motion is being detected during testing and that the unit is communicating to compatible RF receiving devices.
  - b. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
  - c. Sensing Mechanism: Passive infrared coupled with technology for sensing fine motions; Lutron XCT Technology. Signal processing technology detects

- fine-motion passive infrared (PIR) signals without the need to change the sensor's sensitivity threshold.
- d. Provide optional, readily accessible, user-adjustable controls for timeout, automatic/manual-on, and sensitivity.
- e. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 5, 15, and 30 minutes.
- f. Capable of turning dimmer's lighting load on to an optional locked preset level selectable by the user. Locked preset range to be selectable on the dimmer from 1 percent to 100 percent.
- g. Color: White.
- h. Provide all necessary mounting hardware and instructions for both temporary and permanent mounting.
- i. Provide temporary mounting means for drop ceilings to allow user to check proper performance and relocate as needed before permanently mounting sensor. Temporary mounting method to be design for easy, damage-free removal.
- j. Sensor lens to illuminate during test mode when motion is detected to allow installer to place sensor in ideal location and to verify coverage prior to permanent mounting.
- k. Ceiling-Mounted Sensors:
  - (1) Provide surface mounting bracket compatible with drywall, plaster, wood, concrete, and compressed fiber ceilings.
  - (2) Provide recessed mounting bracket compatible with drywall and compressed fiber ceilings.
- l. Wall-Mounted Sensors: Provide wall or corner mounting brackets compatible with drywall and plaster walls.
- 2. Wireless Combination Occupancy/Vacancy Sensors:
  - a. Ceiling-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), an occupancy sensor with low light feature (automatic-on when less than one footcandle of ambient light available and automatic-off), or a vacancy sensor (manual-on and automatic-off).
  - b. Wall-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), or a vacancy sensor (manual-on and automatic-off).
  - c. Product(s):
    - (1) Ceiling-Mounted Occupancy/Vacancy Sensor; Coverage from 324 square feet (30.2 sq m) to 676 square feet (62.4 sq m) depending on ceiling height from 8 to 12 feet (2.4 to 3.7 m); 360 degree field of view.
    - (2) Wall-Mounted Occupancy/Vacancy Sensor; Minor motion coverage of 1500 square feet (139.4 sq m) and major motion coverage of 3000 square feet (278.7 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 180 degree field of view.
    - (3) Corner-Mounted Occupancy/Vacancy Sensor; Minor motion coverage of 1225 square feet (113.8 sq m) and major motion coverage of 2500 square feet (232.3 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 90 degree field of view.

## 2.4 LOAD CONTROL MODULES

- A. Provide wireless load control modules as indicated or as required to control the loads as indicated.
- B. Junction Box-Mounted Modules:
  - 1. Plenum rated.
  - 2. Dimming Modules:

- a. Product(s):
  - (1) 8 A dimming module with 0-10V control
- b. Communicates via radio frequency with up to ten compatible occupancy/vacancy sensors, ten wireless control stations, and one daylight sensor
- c. Single low voltage dimming module with Class 1 or Class 2 isolated 0-10V output signal conforming to IEC 60929 Annex E.2; source or sink automatically configures.
- d. Selectable minimum light level.
- e. Configurable high- and low-end trim.
- f. Relay: Rated for 0-10 V ballasts, LED drivers, or fixtures that conform with NEMA 410.

## 2.5 WIRELESS CONTROL STATIONS

- A. Communicates directly to compatible RF receiving devices through use of a radio frequency communications link.
- B. Does not require external power packs, power or communication wiring.
- C. Allows for easy reprogramming without replacing unit.
- D. Button Programming:
  - 1. Single action.
  - 2. Toggle action.
- E. Includes LED to indicate button press or programming mode status.
- F. Mounting:
  - 1. Capable of being mounted with a table stand or directly to a wall under a faceplate.
  - 2. Faceplates: Provide concealed mounting hardware.
- G. Power: Battery-operated with minimum ten-year battery life (3-year battery life for night light models).
- H. Finish: As specified for wall controls in "Device Finishes" under LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS article above.

## 2.6 LED DRIVERS

- A. General Requirements:
  - 1. Operate for at least 50,000 hours at maximum case temperature and 90 percent non-condensing relative humidity.
  - 2. Provide thermal fold-back protection by automatically reducing power output (dimming) to protect LED driver and LED light engine/fixture from damage due to over-temperature conditions that approach or exceed the LED driver's maximum operating temperature at calibration point.
  - 3. Provide integral recording of operating hours and maximum operating temperature to aid in troubleshooting and warranty claims.
  - 4. Designed and tested to withstand electrostatic discharges without impairment when tested according to IEC 61000-4-2.
  - 5. Manufactured in a facility that employs ESD reduction practices in compliance with ANSI/ESD S20.20.
  - 6. UL 8750 recognized or listed as applicable.
  - 7. UL Type TL rated where possible to allow for easier fixture evaluation and listing of different driver series.
  - 8. UL 1598C listed for field replacement as applicable.

9. Designed and tested to withstand Category A surges of 4,000 V according to IEEE C62.41.2 without impairment of performance.
  10. Class A sound rating; Inaudible in a 27 dBA ambient.
  11. Demonstrate no visible change in light output with a variation of plus or minus 10 percent change in line-voltage input.
  12. LED drivers of the same family/series to track evenly across multiple fixtures at all light levels.
  13. Offer programmable output currents in 10 mA increments within designed driver operating ranges for custom fixture length and lumen output configurations, while meeting a low-end dimming range of 100 to 1 percent or 100 to 5 percent as applicable.
  14. Meet NEMA 410 inrush requirements for mitigating inrush currents with solid state lighting sources.
  15. Employ integral fault protection up to 277 V to prevent LED driver damage or failure in the event of incorrect application of line-voltage to communication link inputs.
  16. LED driver may be remote located up to 100 feet (30 m) from LED light engine depending on power outputs required and wire gauge utilized by installer.
- B. 3-Wire Control:
1. Provide integral fault protection to prevent driver failure in the event of a mis-wire.
  2. Operate from input voltage of 120 V through 277 V at 50/60 Hz.
- C. Digital Control (when used with compatible Lutron lighting control systems):
1. Employ power failure memory; LED driver to automatically return to the previous state/light level upon restoration of utility power.
  2. Operate from input voltage of 120 V through 277 V at 50/60 Hz.
  3. Automatically go to 100 percent light output upon loss of control link voltage and lock out system commands until digital control link voltage is restored. Manufacturer to offer UL 924 compliance achievable through use of external Lutron Model LUT-ELI-3PSH interface upon request.
  4. When normal power is lost, drivers fed with emergency power go to emergency mode.
  5. Replacement of single driver during maintenance does not require reprogramming.
  6. Digital low-voltage control wiring capable of being wired as either Class 1 or Class 2.
- D. Product(s):
1. 3-Wire and Digital Control, One Percent Dimming; Lutron Hi-lume 1% (L3D-Series):
    - a. Dimming Range: 100 to one percent relative light output.
    - b. Complies with FCC requirements of CFR, Title 47, Part 15, for commercial applications at 120 V or 277 V.
    - c. Total Harmonic Distortion (THD): Less than 20 percent at full output for loads greater than 25 W typical (higher for select models); complies with ANSI C82.11.
    - d. Constant Current Drivers:
      - (1) Support for downlights and pendant fixtures from 200 mA to 2.1 A to ensure a compatible driver exists.
        - (a) Support LED arrays up to 53 W.
        - (b) Pulse Width Modulation (PWM) or Constant Current Reduction (CCR) dimming methods available.
      - (2) Support for troffers, linear pendants, and linear recessed fixtures from 200 mA to 2.1 A to ensure a compatible driver exists.
        - (a) Support LED arrays up to 40 W.
        - (b) Pulse Width Modulation (PWM) or Constant Current Reduction (CCR) dimming methods available.
      - (3) Support for cove and under-cabinet fixtures from 200 mA to 2.1 A to ensure a compatible driver exists.
        - (a) Support LED arrays up to 40 W.

- (b) Pulse Width Modulation (PWM) or Constant Current Reduction (CCR) dimming methods available.
    - (c) UL listed.
  - e. Constant Voltage Drivers:
    - (1) Support for downlights and pendant fixtures from 10 V to 60 V (in 0.5 V steps) to ensure a compatible driver exists.
      - (a) Support LED arrays up to 40 W.
      - (b) Pulse Width Modulation (PWM) dimming method.
    - (2) Support for troffers, linear pendants, and linear recessed fixtures from 10 V to 60 V (in 0.5 V steps) to ensure a compatible driver exists.
      - (a) Support LED arrays up to 40 W.
      - (b) Pulse Width Modulation (PWM) dimming method.
    - (3) Support for cove and under-cabinet fixtures from 10 V to 60 V (in 0.5 V steps) to ensure a compatible driver exists.
      - (a) Support LED arrays up to 40 W.
      - (b) Pulse Width Modulation (PWM) dimming method.
      - (c) UL listed.
- 2. Digital Control, Five Percent Dimming; Lutron 5-Series (LDE5-Series):
  - a. Dimming Range: 100 to five percent measured output current.
  - b. Typically dissipates 0.2 W standby power at 120 V and 0.3 W standby power at 277 V.
  - c. Complies with FCC requirements of CFR, Title 47, Part 15, for commercial applications at 120-277 V.
  - d. Constant Current Reduction (CCR) dimming method.
  - e. Total Harmonic Distortion (THD): Less than 21 percent at full load; complies with ANSI C82.11.
  - f. Constant Current Drivers:
    - (1) Lutron K-Case Form Factor: Support for downlights and pendant fixtures in select currents from 350 mA to 1.4 A to ensure a compatible driver exists.
      - (a) Support LED arrays up to 35 W.
    - (2) Lutron M-Case Form Factor: Support for troffers, linear pendants, and linear recessed fixtures from 150 mA to 2.1 A to ensure a compatible driver exists.
      - (a) Support LED arrays up to 75 W.
      - (b) Meets solid state requirements for power factor, transient protection, standby power consumption, start time, and operating frequency in ENERGY STAR for Luminaires Version 2.0.
      - (c) Models available to meet the DesignLights Consortium (DLC) power line quality requirements.
- 3. Digital Control, One Percent Dimming with Soft-On and Fade-to-Black Low End Performance; Lutron Hi-lume 1% Soft-on Fade-to-Black (LDE1-Series):
  - a. Dimming Range: 100 to one percent measured output current.
  - b. Features smooth fade-to-on and fade-to-black (Lutron Soft-On, Fade-to-Black™) low end dimming performance for an incandescent-like dimming experience.
  - c. Typically dissipates 0.2 W standby power at 120 V and 0.3 W standby power at 277 V.
  - d. Complies with FCC requirements of CFR, Title 47, Part 15, for commercial applications at 120-277 V.
  - e. Employs true Constant Current Reduction (CCR) dimming method from 100 to five percent light level and Pulse Width Modulation (PWM) dimming method from five percent to off.
  - f. Pulse Width Modulation (PWM) frequency of 240 Hz.

- g. Total Harmonic Distortion (THD): Less than 20 percent at full output for drivers greater than 25 W; complies with ANSI C82.11.
- h. UL Class 2 output.
- i. Driver outputs to be short circuit protected, open circuit protected, and overload protected.
- j. Constant Current Drivers:
  - (1) Lutron K-Case Form Factor: Support for fixtures from 220 mA to 1.4 A over multiple operating ranges.
    - (a) Support LED arrays up to 40 W.
    - (b) Meets solid state requirements for power factor, transient protection, standby power consumption, start time, and operating frequency in ENERGY STAR for Luminaires Version 2.0.
  - (2) Lutron M-Case Form Factor: Support for fixtures from 150 mA to 2.1 A over multiple operating ranges.
    - (a) Support LED arrays up to 75 W.
    - (b) Meets solid state requirements for power factor, transient protection, standby power consumption, start time, and operating frequency in ENERGY STAR for Luminaires Version 2.0.
    - (c) Models available to meet the DesignLights Consortium (DLC) power line quality requirements.

## 2.7 WIRELESS HUBS

- A. Product(s):
  - 1. Wireless hub with BACnet; Lutron Vive Premium Hub.
    - a. Surface-mount wireless hub; Model HJS-2-SM.
- B. Integrated multicolor LED provides feedback on what mode the hub is in for simple identification and diagnosis.
- C. Integrated processor and web server allows hub to set up and operate the system without any external connections to outside processors, servers, or the internet.
- D. Utilizes Ethernet connection for:
  - 1. Networking up to 64 hubs together to create a larger system.
  - 2. Integration with Building Management System (BMS) via native BACnet; does not require interface (Lutron Vive Premium wireless hub with BACnet only).
  - 3. Remote connectivity capabilities, including maintaining system date/time and receiving periodic firmware updates (requires internet connection).
- E. A single hub or network of hubs can operate on either a dedicated lighting control only network or can be integrated with an existing building network as a VLAN.
- F. Communicates directly to compatible Lutron Vive RF devices through use Lutron Clear Connect radio frequency communications link; does not require communication wiring; RF range of 71 feet (23 m) through walls to cover an area of 15836 square feet (1471 sq m) (device and hub must be on the same floor).
- G. Communicates directly to mobile device (smartphone or tablet) or computer using built-in Wi-Fi, 2.4 GHz 802.11b/g; wireless range of 71 feet (23 m) through walls (device and hub must be on the same floor).
  - 1. Does not require external Wi-Fi router for connecting to the hub.
- H. Allows for system setup, control, and monitoring from mobile device or computer using Vive Vue web-based software:

1. Supports up to 700 total paired devices including compatible wireless sensors, wireless control stations, and wireless load devices.
  2. Allows for timeclock scheduling of events, both time of day and astronomic (sunrise and sunset).
    - a. Timeclock is integrated into the unit and does not require a constant internet connection.
    - b. Retains time and programming information after a power loss.
  3. Allows for control, monitoring, and adjustment from anywhere in the world (Lutron Vive wireless hub internet connection required).
  4. Uses RF signal strength detection to find nearby devices for quick association and programming without having to climb ladders.
    - a. Association and setup does not require a factory technician to perform.
  5. System using Lutron Vive wireless hub(s) can operate with or without connection to the internet.
  6. Supports energy reporting.
    - a. Reports measured energy data for PowPak fixture control modules at accuracy of plus/minus 2 percent or 0.5 W (whichever is higher).
    - b. Reports calculated energy data for PowPak junction box mounted modules at accuracy of 10 percent.
  7. Supports automatic demand response for load shedding via:
    - a. Local contact closure without need for separate interface.
    - b. BACnet (Lutron Vive Premium wireless hub with BACnet only).
  8. Wireless hub can be firmware upgraded to provide new software features and system updates.
    - a. Firmware update can be done either locally using a wired Ethernet connection or Wi-Fi connection, or remotely if the wireless hub is connected to the internet.
- I. Lutron Vive Vue Web-Based Application:
1. Accessibility and Platform Support:
    - a. Web-based; runs on most HTML5 compatible browsers (including Safari and Chrome).
    - b. Supports multiple platforms and devices; runs from a tablet, desktop, laptop, or smartphone.
    - c. User interface supports multi-touch gestures such as pinch to zoom, drag to pan, etc.
    - d. Utilizes HTTPS (industry-standard certificate-based encryption and authentication for security).
    - e. Multi-level Password Protected Access: Individual password protection on both the integrated Wi-Fi network and web-based software.
    - f. WPA2 security for Wi-Fi communication with wireless hub.
  2. System Navigation and Status Reporting:
    - a. Area Tree View: Easy navigation by area name to view status and make programming adjustments through the software.
    - b. Area and device names can be changed in real time.
- J. BACnet Integration (Lutron Vive Premium wireless hub with BACnet only):
1. Provide ability to communicate by means of native BACnet IP communication (does not require interface) to lighting control system from a user-supplied 10BASE-T or 100BASE-T Ethernet network.
  2. Requires only one network connection per hub.
  3. BACnet Integrator Capabilities:
    - a. The BACnet integrator can command:
      - (1) Area light output.
      - (2) Area load shed level.
      - (3) Area load shed enable/disable.
      - (4) Enable/Disable:

- (a) Area occupancy sensors.
    - (b) Area daylighting.
  - (5) Daylighting level.
  - (6) Area occupied and unoccupied level
  - (7) Occupancy sensor timeouts (for fixture sensors).
- b. The BACnet integrator can monitor:
  - (1) Area on/off status.
  - (2) Area occupancy status.
  - (3) Area load shed status.
  - (4) Area instantaneous energy usage and maximum potential power usage.
  - (5) Enable/Disable:
    - (a) Area occupancy sensors.
    - (b) Daylighting.
    - (c) Timeclocks.
  - (6) Daylighting level.
  - (7) Light levels from photo sensors.
  - (8) Area occupied and unoccupied level.
  - (9) Occupancy sensor timeouts.
- K. Contact Closure Interface: Provide two contact closure inputs; accepts both momentary and maintained contact closures that can be used for automatic demand response.
- L. Rated for use in air-handling spaces as defined in UL 2043.
- M. Meets CAL TITLE 24 P6 requirements.
- N. Provide Ethernet switch(es) as required for inter-hub network wiring per manufacturer's instructions; do not exceed manufacturer's required maximum wiring segment lengths.
  - 1. Product(s):
    - a. Lutron Model ETH-SWITCH-16; 16 port.
    - b. Lutron Model ETH-SWITCH-24; 24 port.
    - c. Lutron Model ETH-SWITCH-24-1M; 24 port, 1 multi-mode fiber.
    - d. Lutron Model ETH-SWITCH-24-2M; 24 port, 2 multi-mode fiber.
    - e. Lutron Model ETH-SWITCH-24-1S; 24 port, 1 single-mode fiber.
    - f. Lutron Model ETH-SWITCH-24-2S; 24 port, 2 single-mode fiber.

## 2.8 SOURCE QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Factory Testing; Lutron Standard Factory Testing:
  - 1. Perform full-function factory testing on all completed assemblies. Statistical sampling is not acceptable.
  - 2. Perform full-function factory testing on 100 percent of all ballasts and LED drivers.
  - 3. Perform factory burn-in of 100 percent of all ballasts at 104 degrees F (40 degrees C).

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that ratings and configurations of system components are consistent with the indicated requirements.

- C. Verify that mounting surfaces are ready to receive system components.

### 3.2 Verify that conditions are satisfactory for installation prior to starting work. PREPARATION

- A. System and Network Integration Consultation; Lutron LSC-INT-VISIT: Include as an alternate to the base bid additional costs for Lighting Control Manufacturer to conduct meeting with facility representative and other related equipment manufacturers to discuss equipment and integration procedures.
  - 1. Coordinate scheduling of visit with Lighting Control Manufacturer. Manufacturer recommends that this visit be scheduled early in construction phase, after system purchase but prior to system installation.

### 3.3 INSTALLATION

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130.
- B. Install products in accordance with manufacturer's instructions.
- C. Sensor Locations:
  - 1. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", locate sensors in accordance with layout provided by Lighting Control Manufacturer. Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require a deviation from locations indicated. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, locate sensors in accordance with Drawings.
  - 2. Sensor locations indicated are diagrammatic. Within the design intent, reasonably minor adjustments to locations may be made in order to optimize coverage and avoid conflicts or problems affecting coverage, in accordance with manufacturer's recommendations.
- D. Ensure that daylight sensor placement minimizes sensor view of electric light sources. Locate ceiling-mounted and luminaire-mounted daylight sensors to avoid direct view of luminaires.
- E. Lamp Burn-In: Operate lamps at full output for prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.
- F. Lamp Lead Lengths: Do not exceed 3 feet (0.9 m) for T4 4-pin compact and T5 BIAX lamps and 7 feet (2.1 m) for T5, T5-HO, T8 U-bend, and T8 linear fluorescent lamps.
- G. LED Light Engine/Array Lead Length: Do not exceed 100 feet (31 m).
- H. Identify system components in accordance with Section 26 0553.

### 3.4 FIELD QUALITY CONTROL

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Manufacturer's Full-Scope Start-Up Service is not required.
- C. Manufacturer's Programming Service: .
  - 1. Product(s):
    - a. On-site programming, 4-hour block; Lutron LSC-OS-PROG4-SP.

- D. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.

### 3.5 ADJUSTING

- A. On-Site Scene and Level Tuning; Lutron LSC-AF-VISIT: Include as an alternate to the base bid; additional costs for Lighting Control Manufacturer to visit site to conduct meeting with Owner's representative; to make required lighting adjustments to the system for conformance with original design intent.
- B. Sensor Fine-Tuning: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits for fine-tuning of sensor calibration. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, Contractor to provide fine-tuning of sensor calibration.

### 3.6 CLEANING

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### 3.7 CLOSEOUT ACTIVITIES

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. See Section 01 7900 - Demonstration and Training, for additional requirements.
- C. Demonstration:
  - 1. Demonstrate proper operation of lighting control devices to Engineer; or Owner's Representative, and correct deficiencies or make adjustments as directed.
- D. Training:
  - 1. Include services of manufacturer's certified service representative to perform on-site training of Owner's personnel on operation, adjustment, and maintenance of lighting control system as part of on-site system start-up services.

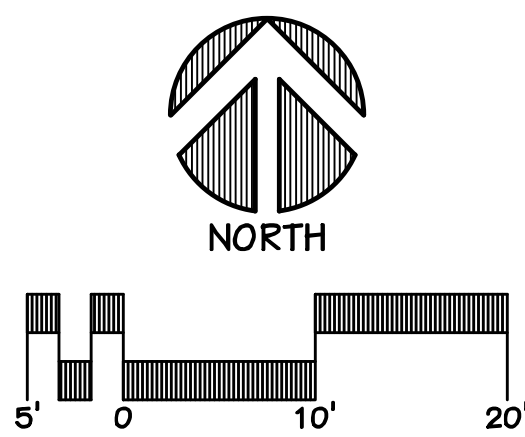
### 3.8 MAINTENANCE

- A. See Section 01 7000 – Execution and Closeout Requirements, for additional requirements relating to maintenance service.

### 3.9 PROTECTION

- A. Protect installed products from subsequent construction operations.

END OF SECTION



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## SOUTHAVEN ELEMENTARY SCHOOL EXPANSION

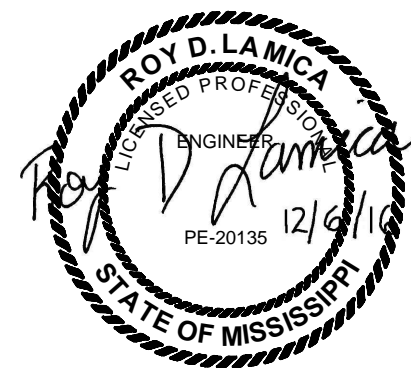
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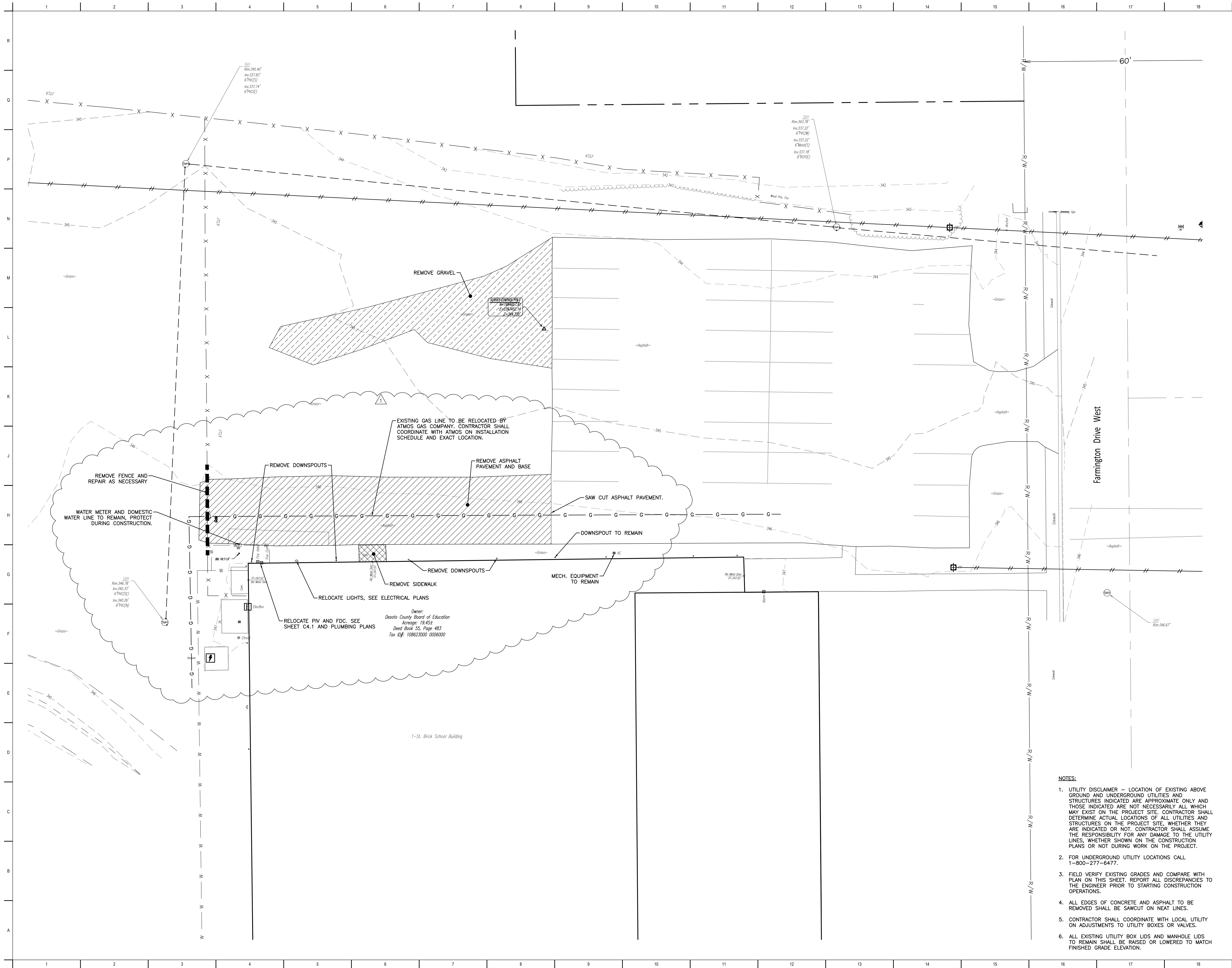
1	ADDENDUM #2	01.18.17
No.	Revision	Date

### EXISTING CONDITIONS AND DEMOLITION PLAN

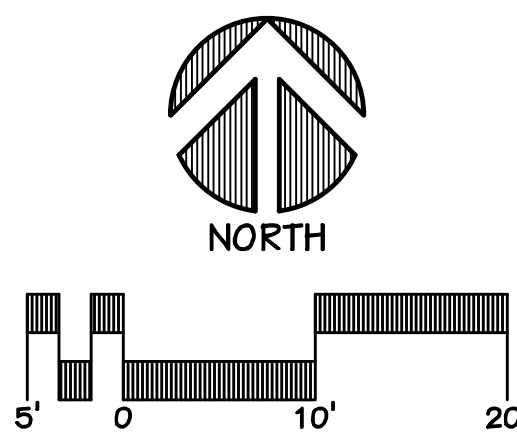
JOB NO: 62565  
DATE: 12.06.16  
DRAWN: IFW  
CHECKED: RDL  
CAD FILE:



C0.1



- NOTES:**
- UTILITY DISCLAIMER — LOCATION OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES AND STRUCTURES INDICATED ARE APPROXIMATE ONLY AND THOSE INDICATED ARE NOT NECESSARILY ALL WHICH MAY EXIST ON THE PROJECT SITE. CONTRACTOR SHALL DETERMINE ACTUAL LOCATIONS OF ALL UTILITIES AND STRUCTURES ON THE PROJECT SITE, WHETHER THEY ARE INDICATED OR NOT. CONTRACTOR SHALL ASSUME THE RESPONSIBILITY FOR ANY DAMAGE TO THE UTILITY LINES, WHETHER SHOWN ON THE CONSTRUCTION PLANS OR NOT DURING WORK ON THE PROJECT.
  - FOR UNDERGROUND UTILITY LOCATIONS CALL 1-800-277-6477.
  - FIELD VERIFY EXISTING GRADES AND COMPARE WITH PLAN ON THIS SHEET. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO STARTING CONSTRUCTION OPERATIONS.
  - ALL EDGES OF CONCRETE AND ASPHALT TO BE REMOVED SHALL BE SAWCUT ON NEAT LINES.
  - CONTRACTOR SHALL COORDINATE WITH LOCAL UTILITY ON ADJUSTMENTS TO UTILITY BOXES OR VALVES.
  - ALL EXISTING UTILITY BOX LIDS AND MANHOLE LIDS TO REMAIN SHALL BE RAISED OR LOWERED TO MATCH FINISHED GRADE ELEVATION.



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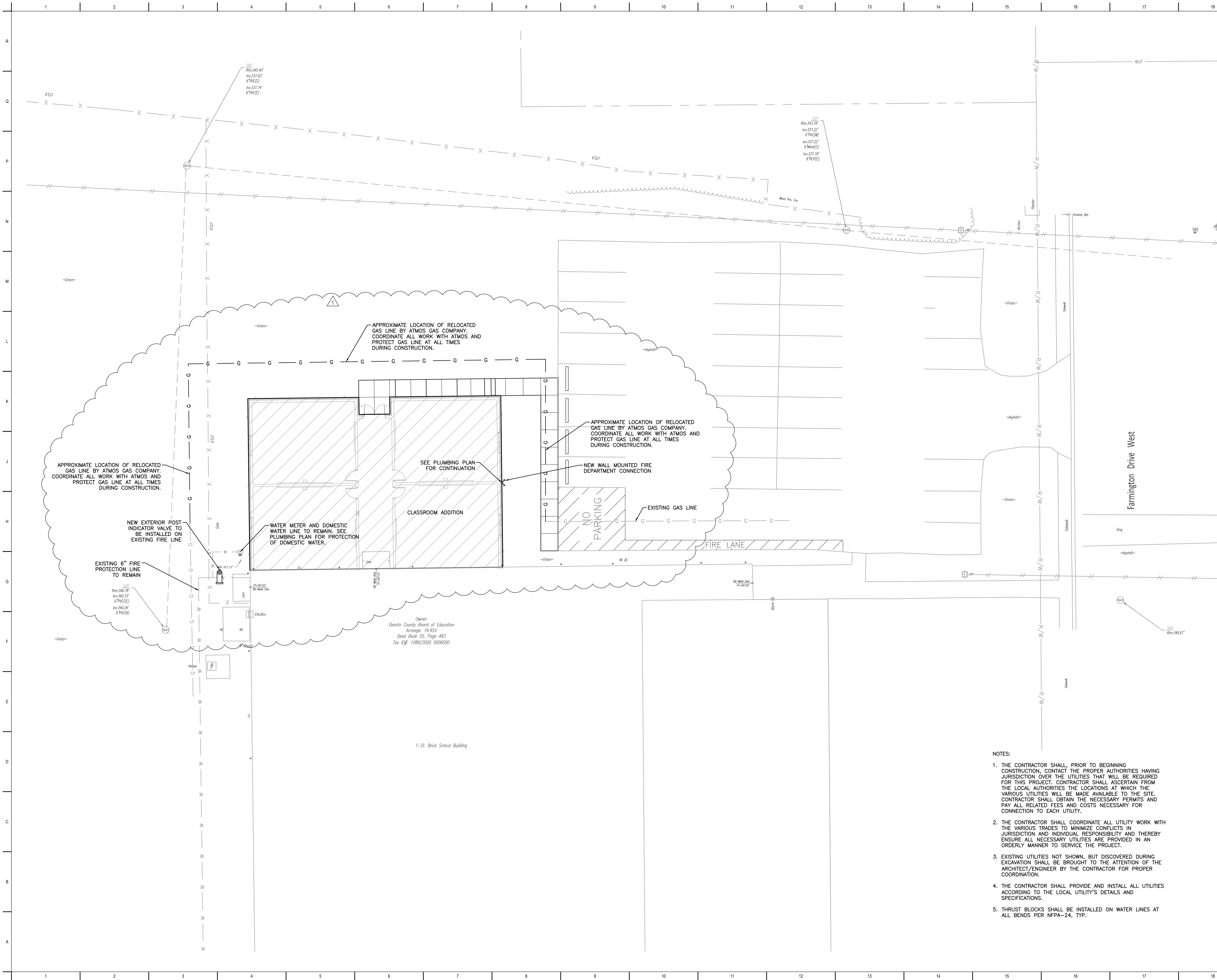
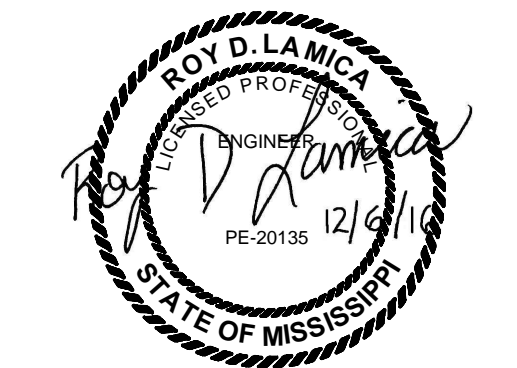
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1	ADDENDUM #2	01.18.17
No.	Revision	Date

### UTILITY PLAN

JOB NO: 62565  
DATE: 12.06.16  
DRAWN: IFW  
CHECKED: RDL  
CAD FILE:



### NOTES:

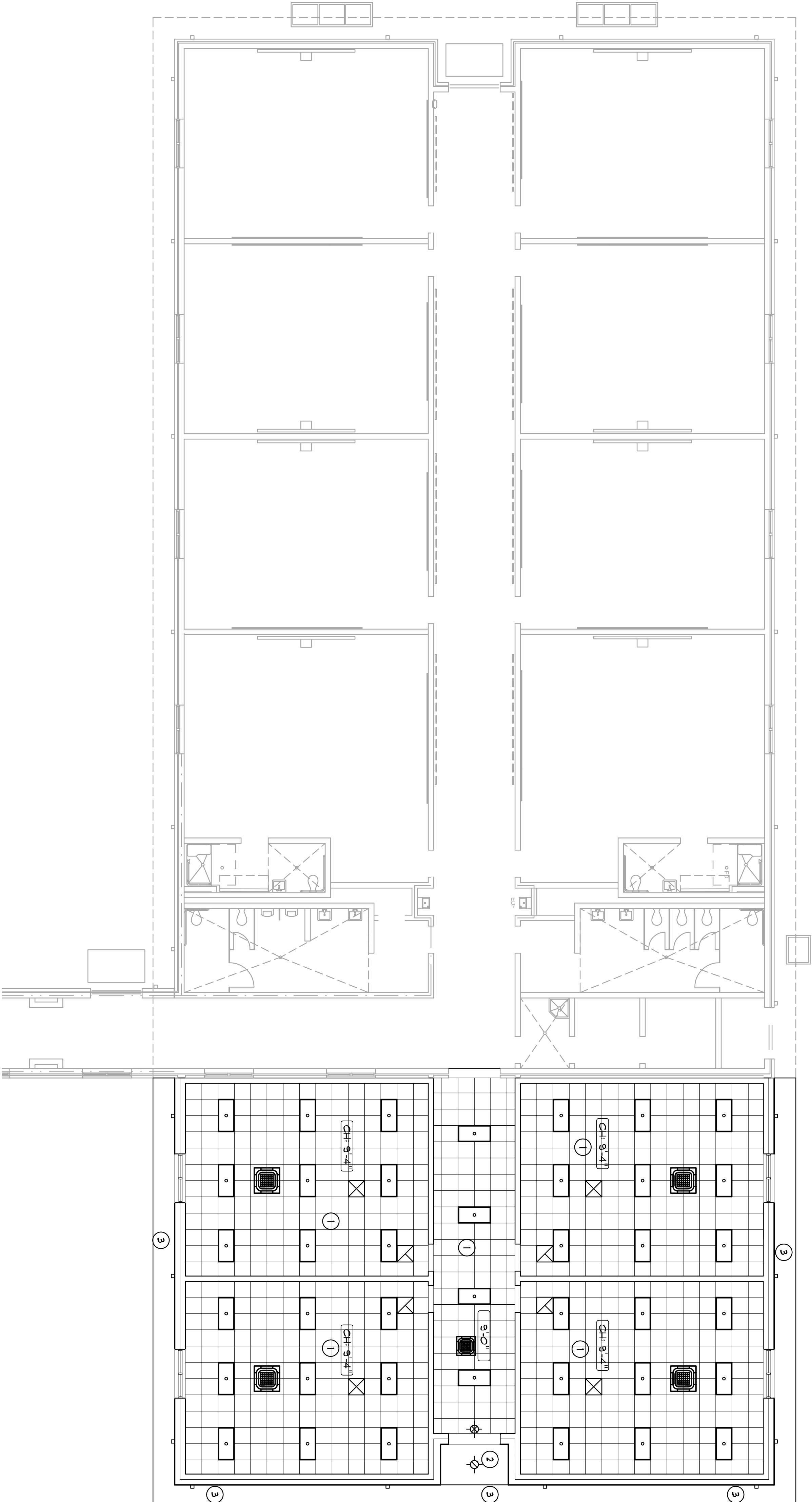
1. THE CONTRACTOR SHALL, PRIOR TO BEGINNING CONSTRUCTION, CONTACT THE PROPER AUTHORITIES HAVING JURISDICTION OVER THE UTILITIES THAT WILL BE REQUIRED FOR THIS PROJECT. CONTRACTOR SHALL ASCERTAIN FROM THE LOCAL AUTHORITIES THE LOCATIONS AT WHICH THE VARIOUS UTILITIES WILL BE MADE AVAILABLE TO THE SITE. CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS AND PAY ALL RELATED FEES AND COSTS NECESSARY FOR CONNECTION TO EACH UTILITY.
2. THE CONTRACTOR SHALL COORDINATE ALL UTILITY WORK WITH THE VARIOUS TRADES TO MINIMIZE CONFLICTS IN JURISDICTION AND INDIVIDUAL RESPONSIBILITY AND THEREBY ENSURE ALL NECESSARY UTILITIES ARE PROVIDED IN AN ORDERLY MANNER TO SERVICE THE PROJECT.
3. EXISTING UTILITIES NOT SHOWN, BUT DISCOVERED DURING EXCAVATION SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER BY THE CONTRACTOR FOR PROPER COORDINATION.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL UTILITIES ACCORDING TO THE LOCAL UTILITY'S DETAILS AND SPECIFICATIONS.
5. THRUST BLOCKS SHALL BE INSTALLED ON WATER LINES AT ALL BENDS PER NFPA-24, TYP.

- REFLECTED CEILING LEGEND**

  - SUSPENDED ACOUSTICAL TILE CEILING SYSTEM
  - HVAC RETURN / SUPPLY GRILLE
  - LAV-IN / RECESSED 2'x4' FLUORESCENT LIGHT
  - LAV-IN / RECESSED 1'x4' FLUORESCENT LIGHT
  - SURFACE FLUORESCENT LIGHT STRIP
  - RECESSED CAN LIGHT
  - EXIT LIGHT, CEILING MOUNTED
  - AUTOMATIC SPRINKLER HEAD
  - SUSPENDED LIGHT (PENDANT OR CHANDELIER)
  - NEW CEILING HEIGHT ABOVE FINISHED FLOOR
  - CEILING CASSETTE
- GENERAL NOTES FOR NEW CEILING WORK:**

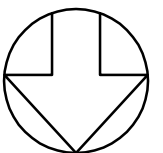
  - REFERENCE MECHANICAL DRAWINGS FOR MECHANICAL AIR DEVICES INCLUDING CEILING GRILLES AND DIFFUSERS.
  - REFERENCE ELECTRICAL DRAWINGS FOR LIGHTING
- KEYNOTES (THESE NOTES APPLY TO THIS SHEET ONLY)**

  - SUSPENDED ACOUSTICAL TILE CEILING SYSTEM
  - SUSPENDED METAL SOFFIT PANEL
  - NON VENTED METAL SOFFIT PANEL



**A1 REFLECTED CEILING PLAN**

1/8" = 1'-0"



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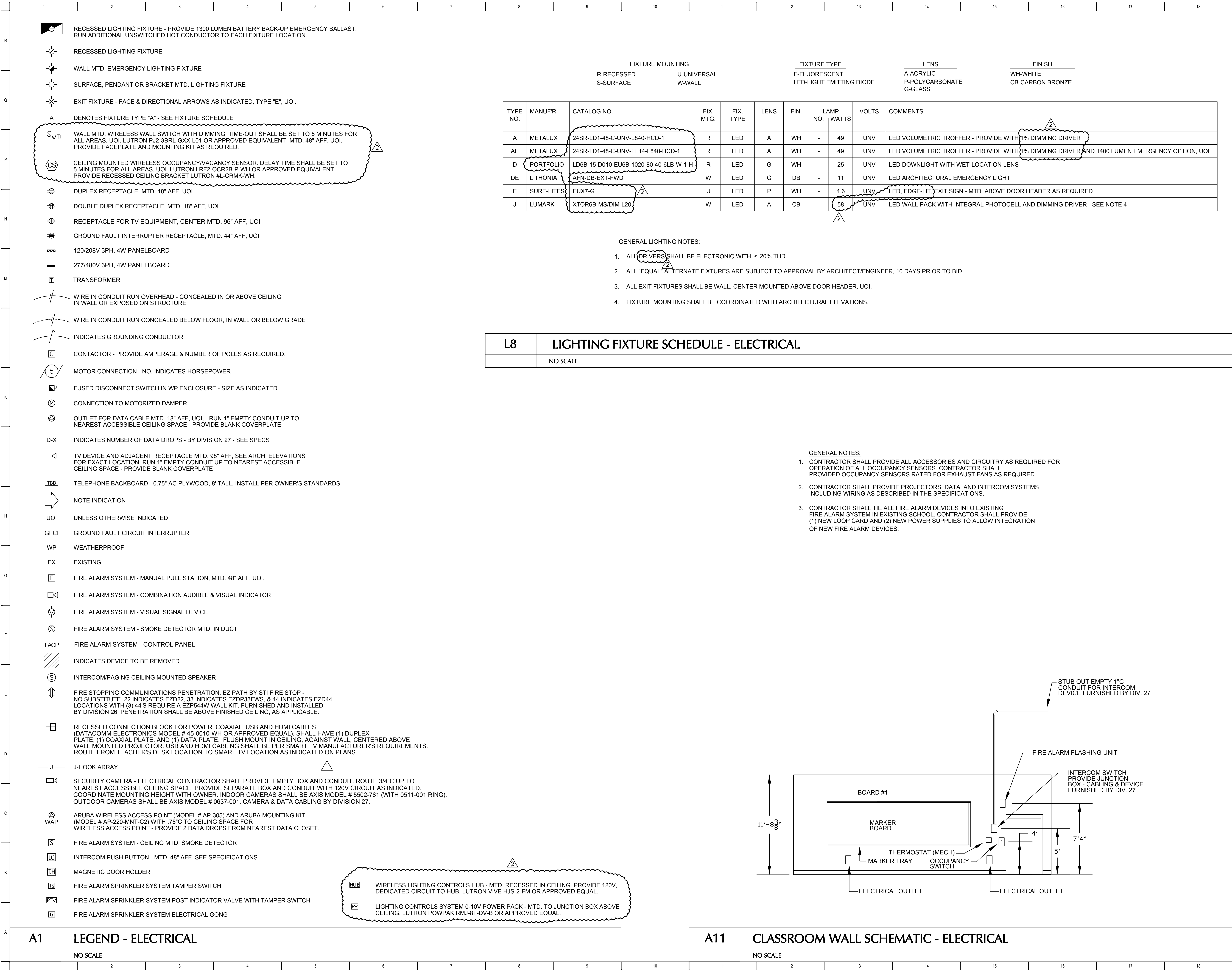
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1. ADDENDUM #2, ISSUE SHEET	118.17
No. Revision	Date

**REFLECTED CEILING PLAN**

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DATE 12.06.16  
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CHECKED: MHL  
CADD FILE:





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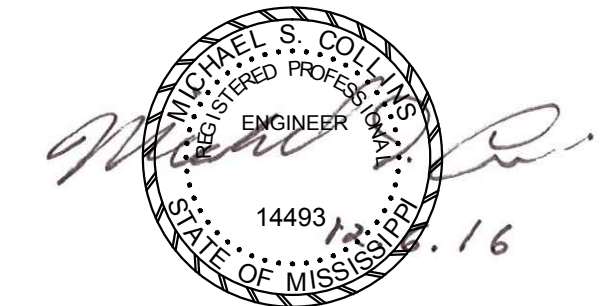
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1 ADDENDUM NO. 2 1.18.17  
No. Revision Date

FLOOR PLAN - LIGHTING - ELECTRICAL

JOB NO: 62565  
DATE: 12.06.16  
DRAWN: JAB  
CHECKED: MSC  
CAD FILE: E2.1

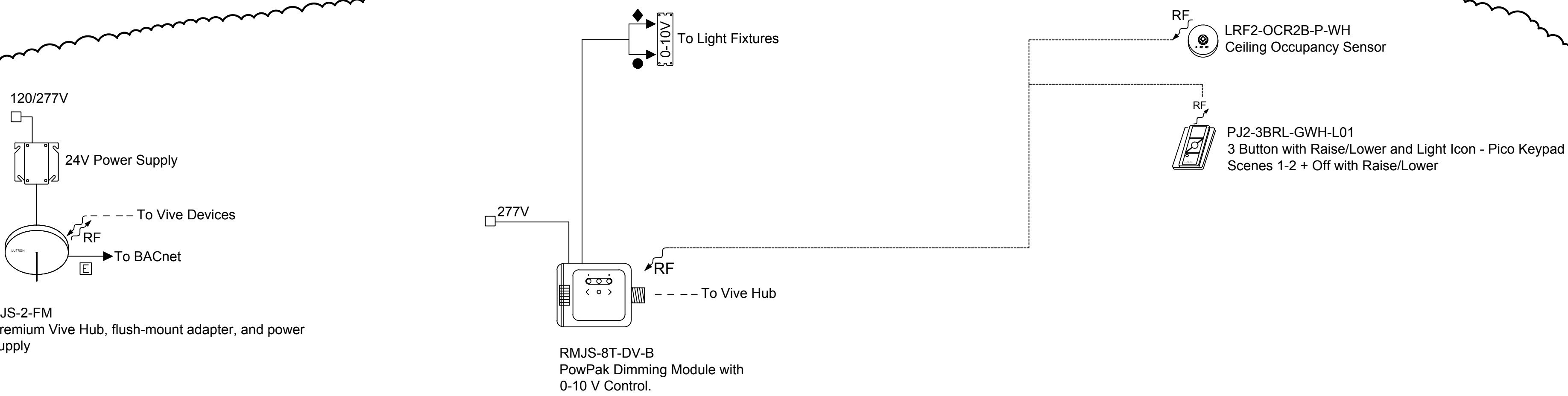


GENERAL NOTES:

- ALL LIGHTING LAYOUTS ARE BASED ON REFLECTED CEILING PLAN. DO NOT ALTER THE NUMBER OF FIXTURES INDICATED ON DRAWINGS. SEE FIXTURE SCHEDULE FOR APPLICABLE NOTES.
- ALL FIXTURES ARE TYPE "A", UOI.
- LIGHT FIXTURES SHALL BE CENTERED IN CORRIDOR. COORDINATE WITH ARCHITECTURAL PLANS.
- COORDINATE EXACT LOCATION OF EXTERIOR FIXTURES WITH ARCHITECTURAL DRAWINGS.
- CIRCUITS DESIGNATED BY LOWER-CASE LETTERING ARE DIAGRAMMATIC AND SHALL BE SELECTED BY THE CONTRACTOR IN THE DESIGNATED PANEL, IN A BALANCED MANNER. CONTRACTOR SHALL UPDATED ALL EXISTING PANEL CIRCUIT DIRECTORIES WITH NEW, TYPED DIRECTORIES.

REFERENCE NOTES:

- OCCUPANCY SENSORS SHALL CONTROL CORRIDOR FIXTURES, UOI (TYPICAL).
- DEMOLISH WALL PACK AND EXTEND CIRCUIT "25 L-13" TO THE (6) NEW EXTERIOR TYPE "J" WALL PACKS.
- ROUTE THROUGH EXISTING PHOTOCELL AND CONTACTOR (TYPICAL FOR ALL EXTERIOR LIGHT FIXTURES).
- DEMOLISH EGRESS LIGHT AND EXTEND CIRCUIT "27 L-13" TO THE (2) NEW EXTERIOR TYPE "D/DE" LIGHT FIXTURES.



\*NOTE: THIS ONE-LINE DIAGRAM REPRESENTS TYPICAL WIRING EXAMPLES, AND IS REPRESENTATIVE OF THE OVERALL LIGHTING CONTROLS SYSTEM. FULL SHOP DRAWINGS WITH A DETAILED ONE-LINE WILL BE PROVIDED DURING THE SUBMITTAL PHASE PRIOR TO INSTALLATION.

LIGHTING CONTROL SERVICES

QTY	SERVICE TITLE (MODEL NUMBER)	SERVICE DESCRIPTION
PRE-STARTUP SERVICES		
1	ONSITE PRE-WIRE VISIT (LSC-PREWIRE)	AN ONSITE VISIT WITH THE ELECTRICAL CONTRACTOR TO DISCUSS LOGISTICAL CONSTRUCTION CONSIDERATIONS INCLUDING THE WIRING AND MOUNTING OF SYSTEM DEVICES, THE CONSTRUCTION SCHEDULE, AND LUTRON DOCUMENTATION. QUANTITY DICTATES THE NUMBER OF VISITS PURCHASED.
STARTUP SUPPORT SERVICES		
1	ONSITE PERFORMANCE-VERIFICATION WALKTHROUGH (LSC-WALK)	AN ONSITE WALKTHROUGH WITH FACILITY REPRESENTATIVES OR PROJECT COMMISSIONING AGENTS TO DEMONSTRATE THAT THE SYSTEM FUNCTIONALITY MEETS THE DESIGN INTENT. THIS MAY INCLUDE ANY OF THE FOLLOWING ONSITE ACTIVITIES – CONSULTATION/TRAINING DEMOS, FUNCTIONAL TESTING ASSISTANCE, OR INVENTORY OF LUTRON EQUIPMENT.
MAINTENANCE & SUPPORT SERVICES		
1	COMMERCIAL SYSTEMS 2-YEAR LIMITED WARRANTY (LSC-B2)	A 2-YEAR SYSTEM WARRANTY PROVIDING 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A FIRST-AVAILABLE RESPONSE TIME.

A1 FLOOR PLAN - LIGHTING - ELECTRICAL

1/8" = 1'-0"

A16 KEYPLAN

NO SCALE