

**DATE:**

04/23/2025

**AGENDA ITEM (ACTION ITEM):**

Consider / Approve the schematic design and design development plan for the Piner Elementary renovation project (BG 25-353) from Emboss Design.

**APPLICABLE BOARD POLICY:**

01.1 Legal Status of the Board; 04.31 Authority to Encumber and Expend Funds; 702 KAR 4:160

**HISTORY/BACKGROUND:**

After a thorough review of the 2023-2027 District Facility Plan (DFP) and the physical condition of each building and building system by the Operations team, Piner Elementary was identified for a renovation project focused on site circulation improvements, roof replacement, interior renovations of restrooms and the gymnasium, and exterior renovations. The District has continued our partnership with Emboss Design and CMTA Engineers to provide the schematic design of the proposed renovation. Emboss has presented a detailed narrative of the project which will become the basis of design for the construction drawings. The initial construction cost estimate for the renovation is \$2,800,000. The project will tentatively begin in the fall of 2025.

**FISCAL/BUDGETARY IMPACT:**

None

**RECOMMENDATION:**

Approve the schematic design and design development plan for the Piner Elementary renovation project (BG 25-353) from Emboss Design.


**CONTACT PERSON:**

Matt Rigg, Chief Operations Officer

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*Principal/Administrator*

  
*District Administrator*

  
*Superintendent*



PINER ELEMENTARY RENOVATION 25-011

## SCHEMATIC DESIGN NARRATIVE

2025.04.22

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### Addressee

**Kenton County  
School District**  
1055 Eaton Dr.  
Fort Wright, KY 41017

### EXECUTIVE SUMMARY:

The proposed renovation of Piner Elementary School includes primarily interior upgrades to the existing restrooms and gymnasium, improvements and replacement of the roof, re-surfacing of the parking lots and drives, and the addition of a canopy structure at the library entrance. Limited repair work on the exterior will ensure the building's thermal and moisture protection in the coming years.

No work is planned on the 2021 addition.

### Provided By

**eMBOSS Design<sup>PSC</sup>**  
906 Monmouth St.  
Newport, KY, 41071

### CODE COMPLIANCE + ACCESSIBILITY:

The renovation will be designed to meet the following Kentucky and local building codes and accessibility requirements.

#### Applicable building codes:

- 2018 Kentucky Building Code
- 2015 International Existing Building Code
- 2015 Kentucky Mechanical Code
- NFPA 70 2023 National Electrical Code
- NFPA 72 National Fire Alarm & Signaling Code
- Kentucky State Plumbing Code
- Commercial Energy Conservation Code 2012 of Kentucky
- NFPA 13 Kentucky Fire Sprinkler Code 2013

#### Cited References:

- ICC A117.1: Accessible and Usable Buildings and Facilities 2017
- ASHRAE Standard 62.1 – 2010
- ASHRAE Standard 90.1 – 2010



**PROJECT SCOPE:**

(MEP Scope noted separately)

**Civil & Landscaping:**

- Mill all parking lot and drives on the site and provide new topping and striping. Existing signage and parking blocks to be removed and re-installed.
- Install new asphalt drive from side parking lot to sidewalk at Door 131. Compact subgrade. Area to include layer of dense aggregate, asphalt base course, and asphalt surface course. Align with existing paving. Provide positive drainage.

**Architecture | Interior:**

- Gymnasium
  - Remove existing scoreboard and install new scoreboard with wireless controls. Scoreboard to be shifted for new projector See Electrical and Information Technology, Systems, and Security.
  - Remove existing retractable basketball goals and associated equipment. Install new retractable basketball goals with wireless controls in existing locations. See Electrical.
  - Remove existing telescoping stands and associated equipment. Install new telescoping stands same size and location with handrails & guards. See Electrical.
  - Remove existing gym wall pads & install new gym pads in existing locations. Provide cutouts for existing outlets and controls.
  - Remove existing sound system and install new speakers and controls. See Information Technology, Systems, and Security.
  - Remove existing acoustic panels from roof trusses. Install new direct-attach acoustic panels to new furring on underside of roof deck (Armstrong Tectum or equal). Install batt insulation between furring members.
  - Install new floor sleeves for volleyball net connection. Court to run length of gymnasium.
  - Install new projector and projection screen on north wall, centered opposite stands.
  - Existing retractable divider curtain, retractable archery net, and rock-climbing wall to remain and be protected during construction.
  - Existing gymnasium lighting to remain and be protected during construction.
  - Paint walls. Remove and reinstall tackboards, white boards, cover plates, and signage as required.
  - Paint existing roof deck (including new acoustical panels), structure, piping, duct, and conduit. Do not paint fire alarm devices or sprinkler heads.
  - Refinish wood gymnasium floor. Add striping for new volleyball court running length of gym. Maintain existing striping and school logo.
- Restrooms – (4) locations
  - Remove existing fixtures, partitions, and mounted accessories.
  - Remove existing tile and finishes down to block or concrete. Where existing floor is terrazzo, grind down cove base for new finishes.



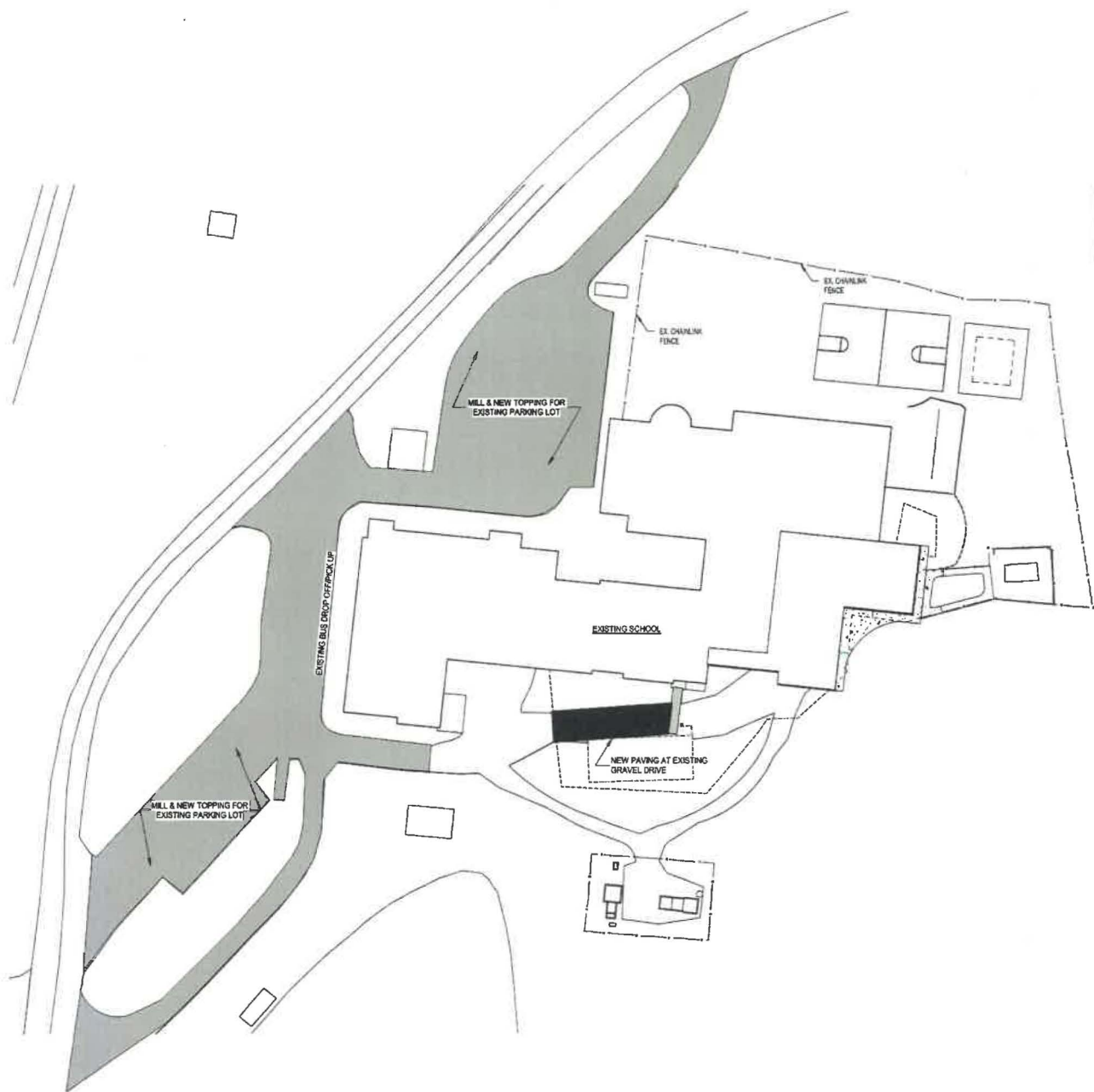
- Install new plumbing fixtures (sinks, toilets, urinals, hydrants, floor drains) in existing locations.
    - Girls 123, 206 & Boys 124, 207 – remove chase walls for new fixture layout. Conversion of (1) stall in Girls and removal of (1) stall in Boys for new ADA compliant stalls.
    - Boys 126 & Girls 127 – remove (1) existing fixture and stall in each for new ADA compliant stalls.
    - Girls 155 & Boys 156 (1993 addition) – no change to fixture layout or count.
  - Limited removal of non-bearing walls in 123, 124, 126, 127, 206, & 207 for improved accessibility.
  - Install new ceramic tile on walls & floors. Paint exposed concrete block.
  - Existing grid ceilings, light fixtures, and ceiling fixtures to remain and be protected during construction (replaced in 2021 renovation).
  - Provide and install new toilet partitions.
  - Provide and install new hand dryers, soap dispensers and accessories.
- General/Miscellaneous
    - Remove existing drinking fountains. Install new drinking fountains with bottle fillers.
    - Relocate boiler and connect to geothermal loop.
    - Technology scope to be determined.

#### Architecture | Exterior:

- General Exterior Repairs:
  - Remove existing expansion joint material and install new, all locations.
  - Replace caulking/sealant around all windows, all locations.
  - Remove existing Transite panels on underside of overhangs. Replace with new metal panel or similar.
- Replace exterior HM door frame at Electric Room 120.
- Repair gutter connection to underground near library exterior door 140B.
- New pre-fabricated metal canopy between existing gazebo and library entrance. Provide lighting and drainage to existing manhole. See Plumbing.
- New power and data to new marquee sign location. Exact placement to be determined.
- Roof Improvements/Replacement:
  - Replace roof drains on main roof. Scope roof drain piping to determine extent of replacement needed.
  - Replace existing scupper collector boxes with new collector boxes with overflow indicators.
  - Remove and repair membrane in areas where roof is wet.
  - Remove ballast and install insulation and new roof membrane. Raise or modify roof drain inlets, parapets, vents, equipment supports, scupper outlets, ladders, and other rooftop items as required.
  - Replace roof drains and piping in canopies – scope roof drains to determine extent of replacement.







Extent of asphalt re-topping and new drive



**MECHANICAL (HVAC)****A. Summary**

The mechanical design includes all work related to the replacement of the roof mounted kitchen make-up air unit and roof mounted kitchen restroom exhaust fan. Also included in the mechanical scope of the project is finding a resolution to some ongoing issues with the geothermal system. Classrooms are served by vertical unit ventilator (VUV) heat pump units, which have been tripping when the geothermal loop temperature drops below 50 degrees. KCSD has proposed relocating a boiler from another location to this building to maintain loop temperature by injecting hot water into the system. CMTA recommends investigating alternate strategies to avoid needing to add a boiler. Some of these strategies will include retro-commissioning activities like testing and balancing, and control sequence modifications.

**B. Codes and Standards**

1. ASHRAE Standard 62.1 – 2010
2. ASHRAE Standard 90.1 – 2010
3. 2018 Kentucky Building Code (IBC 2015 with amendments)
4. 2015 Kentucky Mechanical Code (IMC 2015 with amendments)

**C. Design Parameters**

1. Outdoor Design Conditions
  - a. Heating: 5.3° F DB
  - b. Cooling: 91.4° F DB / 74.1° F WB
2. Occupied Indoor Design Conditions
  - a. Heating: 68° F DB
  - b. Cooling: 74° F DB
3. Non-Occupied Indoor Design Conditions
  - a. Heating: 60° F DB
  - b. Cooling: 80° F DB

**D. Kitchen Make-Up Air Unit**

Kitchen make-up air is currently provided by a propane fired, Reznor rooftop make-up air unit. This unit will be replaced like for like. The unit shall be installed on a new roof curb. Existing ductwork shall be reused and connected to new unit. The propane line shall be reused and connected to new unit. The make-up air unit shall be sized to match the existing unit: 4,500 CFM, 2" esp., 208/3/60 power, 340 Mbh output capacity, 70-degree temperature rise. Acceptable manufacturers shall be: CaptiveAire, Reznor, and Greenheck. The new MAU shall be integrated with the existing BAS.

**E. Kitchen Restroom Exhaust Fan**

A small roof mounted exhaust fan currently serves the restroom adjacent to the kitchen. This fan shall be replaced as part of the project. The new fan shall be installed on a new 12" tall roof curb. The fan shall operate continuously during occupied building hours and fan operation shall be integrated with the existing BAS.

**F. Group Restrooms**

All restroom exhaust fans have already been replaced in a previous project. The exhaust fans and airflows to each restroom shall be rebalanced in this project. Air devices will be replaced where the ceilings are new. There is a janitor closet adjacent to one of the restroom groups that is currently not being exhausted. An exhaust grille and branch duct shall be installed to the janitor closet, and the connected exhaust system shall be rebalanced to meet the airflow requirements.

**G. Geothermal System Resolutions**

The school has proposed the relocation of an existing boiler to inject hot water into the geothermal loop to maintain a minimum loop temperature of 50 degrees. The school has a propane system which would need to be utilized to fuel the boiler. If a boiler is added, the ideal location is in the mechanical room where the propane enters the building. To fit the boiler in this room, existing water source heat pumps will need to be reconfigured to create space. The boiler would sit on a new concrete housekeeping pad. New hot water pipes would tap into the 3" geothermal lines in this mechanical room, and an inline circulating pump would be provided to flow water from the boiler to the geothermal loop. The boiler and pump would normally be off and would operate to inject hot water into the loop when the wellfield temperature drops below 50 degrees. The boiler and pump would be integrated with the existing BAS, and a sequence would be written to automatically operate the boiler and pump when required to maintain temperature.

Prior to going down the path of installing a boiler, it is recommended that the geothermal system is retro-commissioned to see if there are control modifications or rebalancing exercises which can solve the ongoing issues.

**ELECTRICAL**

## Applicable Governing Criteria

1. American National Standard Institute (ANSI)
2. IEEE-C2 National Electrical Safety Code
3. IEEE Institute of Electrical and Electronic Engineers
4. IEEE 142 Recommended Practice for Grounding of Industrial and Commercial Power Systems
5. NFPA 70 2023 National Electrical Code
6. NFPA 70E 2015 Standard for Electrical Safety in the Workplace
7. NFPA 780 2014 Standard for the Installation of Lightning Protection Systems
8. National Fire Protection Association (NFPA)
9. National Electrical Manufacturers Association (NEMA)
10. Any applicable Local and State Codes – Latest Approved Editions
11. Kentucky Building Code 2024
12. Illuminating Engineering Society of North America Handbook 10th Edition ASHRAE 90.1 2010



A. Electrical Site Power Distribution

- a. The existing main switchboard is sized at 2000 amp, 120/208 volt, 3-phase, 4-wire. This main switchboard was installed in 2021 and ties the previous main switchboard into the new via a 1200 amp breaker. The 1200 amp switchboard feeds existing and new panels and loads.
- b. The project scope includes renovations throughout the building as the last major renovation was recently completed in 2021. Project scope also includes the replacement of a make-up air unit on the roof. It is anticipated that the existing service is sufficient to support planned HVAC replacement. This will be confirmed as the HVAC design progresses. Where required, the existing distribution infrastructure will be reworked to support the renovation, HVAC equipment replacement, and other planned scope for the project.

B. Electrical Facility Power

- a. 120/208V power is distributed through the building from the main switchboard. 120/208V panels power everything in the building as there are no other available voltages/services to the building.
- b. New panelboards will be door-in-door style with copper bussing and will have 35% spare capacity. The minimum general panelboard bus rating will be 225A and have a minimum 84 breaker spaces with the exception of Life Safety panelboards which will be sized per connected load. Panelboards will be located in electrical rooms on each floor.
- c. Lamacoid labels will be provided for all electrical distribution equipment.

C. Electrical Emergency Power

- a. There is no generator or central emergency system for the building and there are no changes anticipated for this system.

D. Electrical Lighting

- a. All lighting fixtures and controls will be replaced throughout the entire building.
- b. The lighting will be designed per IESNA (Illuminating Engineering Society of North America) recommendations. The lighting will meet the requirements of ASHRAE 90.1 2010 energy code.
- c. All new lighting will be LED lighting to reduce maintenance costs and to provide energy savings. All indoor lighting sources will be 3500 Kelvin color temperature. Outdoor lighting pole lighting will be LED area lights, anticipated to be 4000 Kelvin. The outdoor pole-lights will be a 1-for-1 replacements.
- d. Emergency egress lighting throughout the facility will be powered by integral battery packs for each fixture. Code required egress corridor lighting will be connected as night lights to operate 24/7. Other egress lighting will be equipped with an integral automatic transfer relay to allow local control during normal operation.
- e. New outdoor lighting will be provided for walkways and entrances into the building and will match other lighting in the vicinity of the project. These will also be 1-for-1 replacements.

E. Electrical Luminaires

- a. All lighting in educational spaces will have 0-10V dimmable with code required ceiling mount occupancy sensors and daylight sensors (in rooms with large windows).
- b. Exterior: Pathways will be illuminated by new lighting bollards. Building egress points will have emergency illumination from recessed soffit lights when applicable or building mounted LED wall packs.
- c. Stairwells: Lighting in the stairwell spaces will consist of LED recessed linear and/or wall mounted direct/indirect fixtures with integral occupancy sensors. These fixtures will be bi-level and operate at 50% when unoccupied and will go to 100% when occupied.

- d. Exterior parking lot lighting will consist of new 20'-0" pole mounted led lights on existing 24" concrete pole base.
- e. Exit signs will be die cast aluminum connected to emergency power. Ceiling or wall mounted as necessary for the location. Lithonia TLE or equal.
- f. Emboss will take the lead in selecting lighting fixtures and establishing the design intent for the lighting system. This includes specifying fixture types, layouts, and aesthetic considerations to ensure that lighting aligns with the architectural vision and functional requirements of the spaces. CMTA will also conduct photometric calculations across all areas to verify that target lighting levels are achieved according to design standards and occupant needs.

#### F. Electrical Lighting Controls

- a. The building lighting will have automatic shutoff controls based on occupancy and time of day. After hours lighting will be occupancy-controlled for corridors. Sensor Switch Light systems as basis of design.
- b. Lobby and corridors will be connected to time-of-day controls via lighting relay panels. Time of day schedule be provided by the BAS system. These areas will have local switching and override capability. This system will interface with the facility energy management system for ease of reporting, programming, and scheduling.
- c. Classrooms, admin space, and small support rooms will be provided with standalone dual-technology occupancy or vacancy sensors. Select areas will be provided with an input/output module for reporting of occupancy status to the mechanical BAS system if required for demand control ventilation.
- d. Daylight harvesting and multi-level control of lighting will be provided in accordance with energy code requirements.

#### G. Electrical General Materials

- a. Conductors for 480V through 120V circuits will be copper THWN/THHN thermoplastic insulated. Color code will follow industry standards. Each circuit will have a dedicated neutral conductor.
- b. Conductors will be sized to limit voltage drop to 2% for feeders and 3% for branch circuits. Minimum wire size will be #12 AWG.
- c. All conduits to mechanical equipment will be copper.

#### H. Electrical Conduit

- a. All power wiring will be installed in conduit. Minimum size will be ¾" except communications which is discussed under that section. Supports will be installed per NEC.
- b. EMT will be utilized for general purpose locations within the building. Fittings will be compression type for ¾" to 2 ½" and double setscrew type for 3" and larger.
- c. Rigid steel conduit will be utilized in above-grade exterior locations, in mechanical spaces, and in other areas exposed to physical damage.
- d. Schedule 40 PVC will be used below slab and in any area necessary for corrosion resistance. No conduit will be installed within slabs.
- e. All interior conduit will be concealed except for mechanical and other unfinished spaces where appropriate.
- f. Area with exposed conduit shall be painted black.
- g. MC cable is allowed for final equipment connections.

**I. Electrical Devices**

- a. General use duplex receptacles will be 20 amperes, 125 volts, and tamper-resistant.
- b. General use light switches will be 20 amperes, 277 volts or low voltage type as necessary for the control system. Low-voltage switches will be equipped with multi-zone and dimming control.
- c. GFCI protected receptacles are used in wet locations and elsewhere as required by code. All exterior receptacles will be provided with a die-cast in-use cover.
- d. Floor boxes will be provided in select seating and collaboration spaces where wall power connections are not feasible. All floor boxes and poke-throughs to be Legrand Evolution series.
- e. All outlet covers will be labeled with panel number and circuit number. The inside of outlet box covers will also be labeled with panel and circuit.
- f. Classrooms: General purpose; four duplex receptacles (one per wall minimum).
- g. Classrooms: Technology; one double duplex for each student computer station, one double duplex for teacher computer, one double duplex for video/audio equipment, one double duplex receptacle for video projector, one simplex receptacle for charging cart, and two duplex receptacles with two USB charging receptacles each).
- h. Offices: Four general purpose duplex receptacles (one on each wall), one double duplex for a computer station, and one duplex receptacle with two USB charging receptacles above counter level at desk.
- i. Storage: One near door.
- j. Corridors: Approximately 30 feet apart.
- k. Receptacle Circuits: Branch circuit loading per Code. Generally, a circuit or multiple circuits are provided to serve receptacles within a single room. Dedicated circuits will be provided as required (e.g. circuit serving charging cart receptacle).
- l. Ground fault circuit interrupting (GFCI) receptacles shall be provided within 5 feet of all sinks, exterior, and other locations per NEC.
- m. Provide an exterior GFCI receptacle in weatherproof "in-use" type cover adjacent to all exterior doors
- n. All rooms or spaces will have at least one duplex receptacle.
- o. A maximum of four computers shall be on a single 20-amp, 120 volt branch circuit.

**J. Electrical Fire Alarm**

- a. A manual and automatic fire alarm system is existing for the facility in accordance with the Kentucky Fire Code, Life Safety Code, National Fire Alarm and Signaling Code, and there are no changes anticipated for this system.
- b. Any new devices that are replaced will be a 1-for-1 swap.
- c. All fire alarm cabling will be installed in a dedicated conduit system.
- d. Wire guards will be installed on fire alarm devices in gymnasium and locker rooms.

**K. Electrical Lightning Protection**

- a. Section includes lightning protection systems for structures and any roof top mounted equipment.
- b. The electrical contractor shall provide the necessary materials, services necessary to provide a complete lightning protection system. There is currently a lightning protection system in place for the building, but new devices and tie-in will be need for new roof-top equipment.
- c. This work shall include, but not limited to conductors, air terminals, connectors, splicers, ground rods, rod clamps, ground plates, bonding plates, and surge arrestors.
- d. Connections to the existing building lightning protection system.
- e. Provide a UL Master label for the complete new and existing system.

L. Electrical Emergency Response Radio System

- a. Provide allowance for an emergency responder radio system (ERRS). This will need to be tested before construction.
- b. The need for a distributed antenna system to amplify signal for first responder communications equipment is to be evaluated with the local Fire Department as progress continues. At time of submission of the SD package, the cost estimate should include costs for a full system throughout the building.
- c. Amplifiers shall be located in telecommunications closets.
- d. System main antenna located on roof with other communications antennas.
- e. System distributed antennas located at approximately 200 feet spacing throughout the building.
- f. Per all applicable national, state and local codes.
- g. System necessity based on post-construction testing by Contractor with assistance of local Authorities.
- h. Cost of system material and installation will be in project budget as an allowance, exact amount of which to be determined during the GMP Phase.

M. Electrical Low Voltage Systems (Rough-in Only)

- a. CMTA's scope of the work is to provide pathways for all low voltage systems. All other work designed by others. Rough data backboxes and pathways for all other low voltage systems based on the technology drawings designed by others.
- b. Telecomm rooms, cable trays, pathways, conduit, devices, cabling, terminations and testing will be provided. Racks, switches, patch panels, telecom room ladder tray, and UPS equipment will be furnished / designed by others.
- c. Combination telephone/data wall outlets will be provided throughout the facility for wired equipment needs. Cabling paths will consist of backbox with 1" conduit to above accessible ceiling, a J-Hook pathway within rooms, and wire basket cable tray in corridors.
- d. IDF and MDF rooms will have fire-retardant plywood backboards on all walls. Two 4" sleeves will connect between each telecom room. Where telecom rooms are vertically adjacent, EZ Path 44+ system pathways will be utilized.

**INFORMATION TECHNOLOGY, SYSTEMS, AND SECURITY****A. STRUCTURED CABLING SYSTEM**

1. There is (1) existing centrally-located MDF room in this building.
2. The audio visual system in the gymnasium is to be replaced with new. The headend equipment is located in the storage room connected to the gym and is to be replaced. Provide (2) wireless microphones within the gym. A new projector and projection screen is also to be provided within the gymnasium.
3. Wireless control of the basketball hoops is to be provided and replace the key switches on the wall of the gymnasium.
4. All DAS equipment is to be demolished in its entirety.
5. The data network within the building shall consist of Category 6 cabling to each voice/data outlet. Voice/Data cables shall originate from ER/TR Telecom rooms connected to each other via Fiber Optic Backbone cabling. Any required voice public safety copper circuits like Fax machines, fire alarm dialer, burglar alarm dialer, emergency phones or Elevator phones shall be supported by multi-pair copper backbone cabling between telecom closets.
6. Terminate data outlets on labeled wall plates with keystone terminal outlets.
7. Test and label all horizontal and backbone cables per BICSI standards.
8. Where Voice/Data drop locations are required, the contractor will provide all rough-in's, faceplates, cabling paths, cabling and patch panels for all data and communication systems. Provide conduit risers/sleeves with firestopping where penetrations are required.
9. Stub-out conduit size will be 1" and cabling paths will consist of cable tray and J-hook assemblies on 48" centers.

**B. ERRCS SYSTEM**

1. An allowance will be provided for the testing and addition of an ERRCS (Emergency Responder Radio Communication System) DAS system



**PLUMBING AND FIRE PROTECTION SYSTEMS****A. Plumbing Scope**

1. This project includes all work related to the renovation of the existing school building. The group restrooms from the original building construction are getting reworked in their entirety and will be provided with new plumbing fixtures, floor drains, and piping as required. Water coolers without bottle fillers will be replaced with water coolers with bottle fillers. The roof drains will be replaced in all the areas that the roof is being replaced and on all the canopy roofs. A new roof drain and storm tie in will be provided in the new Canopy at the entry way.

**B. Codes and Standards**

1. ASHRAE Standard 90.1 – 2010
2. 2018 Kentucky Building Code (IBC 2015 with amendments)
3. Kentucky State Plumbing Code
4. Commercial Energy Conservation Code 2012 of Kentucky (IECC 2012)
5. Kentucky Fire Sprinkler Code 2013 (NFPA 13, 2013)

**C. Domestic Cold Water System**

1. Piping material for all domestic water service piping shall be type “L” copper pipe and fittings above floor and type “K” copper pipe and fittings below floor where under slab water piping is required. All fittings for copper piping are to be soldered.
2. The domestic water distribution system piping will be provided with broad, local and individual fixture shut off valves throughout the new building for complete control of these systems. Water hammer arresters will be provided to relieve the system of shocking and movement due to quick closing valve operations.
3. The entire length of the cold water piping will be provided with 1” insulation to control condensation on the pipes.
4. The maximum velocity for cold water in piping is to be 8 ft/sec.

**D. Domestic Hot Water System**

1. The domestic hot water system is to be recirculated within the code minimum lengths to each plumbing fixture with hot water.
2. Hot water and hot water return piping will be provided with 1” insulation on pipe sizes ½” – 1 ½”, and 1 ½” insulation on pipes 2” and greater to minimize heat loss.
3. The maximum velocity for hot water in piping is to be 5 ft/sec.

**E. Building Sanitary Waste and Vent Systems**

1. Each plumbing fixture, floor drain or other equipment requiring plumbing drain connections will be provided with sanitary waste and vent piping in accordance with the State of Kentucky Plumbing Code. Sanitary vent piping will be gathered and routed through the roof to atmosphere. There will be multiple vent to roof locations in the building. Sanitary waste piping will be gathered and routed to the building exterior at a point which will be coordinated with the surrounding exterior sanitary sewer system.
2. Sanitary cleanouts shall be installed at 50 feet on center up to 4” diameter and 100 feet on center for 6” diameter and above, and at changes in direction of 90 degrees or more, at the bottom of vertical risers and as the sewer exits the building.
3. Piping materials for sanitary waste and vent piping will be extra heavy hub and spigot cast iron piping below grade, and no hub cast iron piping above grade. All no hub cast iron piping will be joined using 4 and 6 band heavy duty couplings. Vent piping above grade will be no hub cast iron.

## F. Building Storm Sewer System

1. Storm water will be removed from the roof of the building through a network of roof drains. Overflow drains with 2" high water dams will be provided for each roof drain shown on the architectural roof plan. All overflow drain piping will be piped separate from the primary roof drain system and terminate at a point through the building exterior wall in site of maintenance personnel on the ground for visual verification of potential primary roof drain failure in accordance with the State of Kentucky Plumbing Code.
2. The primary interior roof drain system will be gathered together within the building and routed to the exterior. The final exit location will be coordinated with the site storm sewer system. The under floor storm water piping will terminate at a cleanout located at 5'-0" from building foundation wall.
3. Piping materials for storm sewer piping will be extra heavy hub and spigot cast iron piping below grade, and no hub cast iron piping above grade. All no hub cast iron piping will be joined using 4 and 6 band heavy duty couplings.
4. Storm sewer cleanouts shall be installed at 50 feet on center up to 4" diameter and 100 feet on center for 6" diameter and above, and at changes in direction of 90 degrees or more, at the bottom of vertical risers and as the storm sewer exits the building.
5. Canopy roof drains are to be replaced and their piping cleared of debris. Scoping will be required to determine the extent of piping replacement that may be required.

## G. Propane Piping System

1. Propane service will be provided to any new HVAC equipment that requires propane.
  - a. The propane supply on site will be evaluated to determine if the infrastructure is sized appropriately for any new additions to the system. Upgrades to the system may be required based on the load.
  - b. Material for propane piping shall be schedule 40 black steel, threaded for pipe sizes 3/4 to 2 inch.

## H. Plumbing Fixtures

1. Water closets for this project will be white, vitreous china; wall hung for regular and handicapped accessibility.
  - a. Flush valves for water closets will be automatic type, battery.
2. Urinals for this project will be white, vitreous china, wall hung for regular and handicapped accessibility.
  - a. Flush valves for urinals will be automatic type, battery.
3. Lavatories for this project will be white, vitreous china; wall hung for regular and handicapped accessibility.
  - a. Faucets for lavatories will be meter operation (push button).
4. Electric water coolers will be stainless steel, automatic, hi-low style with single chiller unit and bottle filler and mounted for regular and handicapped accessibility.
5. Mop basins will be floor mounted, molded stone, 24" x 24" with stainless steel splash guards and dropped front lip. Mop basins to include accessories such as mop hook, caulking and rubber hose.
  - a. Faucets for mop basins will be all brass construction, 8" centersets, integral vacuum breaker, and wall mounted with threaded hose connection.
6. Staff breakroom sinks shall be undermount stainless steel with gooseneck faucets with wrist blade handles.
7. All plumbing fixtures and trim designed or designated for use by the handicapped shall meet the Americans with Disabilities Act guidelines.

## I. General Plumbing Systems Information/Plumbing Specialties

1. Floor drains will be provided in all restroom groups. Floor drains will be provided with trap seals.

2. New cast iron roof drains on the roofs without scuppers will be combination primary / secondary, with a 2" overflow dam on the secondary drain. New roof drains on the roofs with scuppers and on the canopies will be a cast iron primary drain only.
  3. Hose bibs will be provided in the main restroom groups.
  4. Art room sinks will be regular and handicapped accessible and will have solids traps included at each sink. The trap shall be accessible for cleaning.
  5. Piping shall be identified in mechanical rooms, unfinished spaces without ceilings, above suspended lay-in acoustical ceilings for the type of service and the direction of flow. Equipment shall be identified with name plates.
  6. Operations and maintenance manuals for data and materials shall include the following:
    - a. Operating & Maintenance (O & M) Manuals
    - b. All required warranty certificates
    - c. A letter from the general contractor stating the start date and duration of all warranty items
    - d. The name and phone numbers of the general contractor's point of contact for all warranty repairs
    - e. A list with contact information of the warranty providers for all systems and equipment
- K. Wet Pipe Fire Protection Sprinkler System
1. The building is fully sprinklered.
  2. New sprinklers will be provided in the Restrooms and anywhere there are new ceilings. The system will be modified as needed to maintain complete sprinkler coverage of the building in accordance with NFPA 13.
  3. New sprinklers are to be "semi recessed" type, painted white.