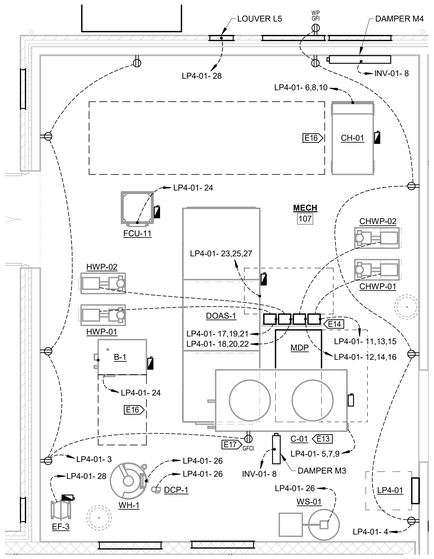
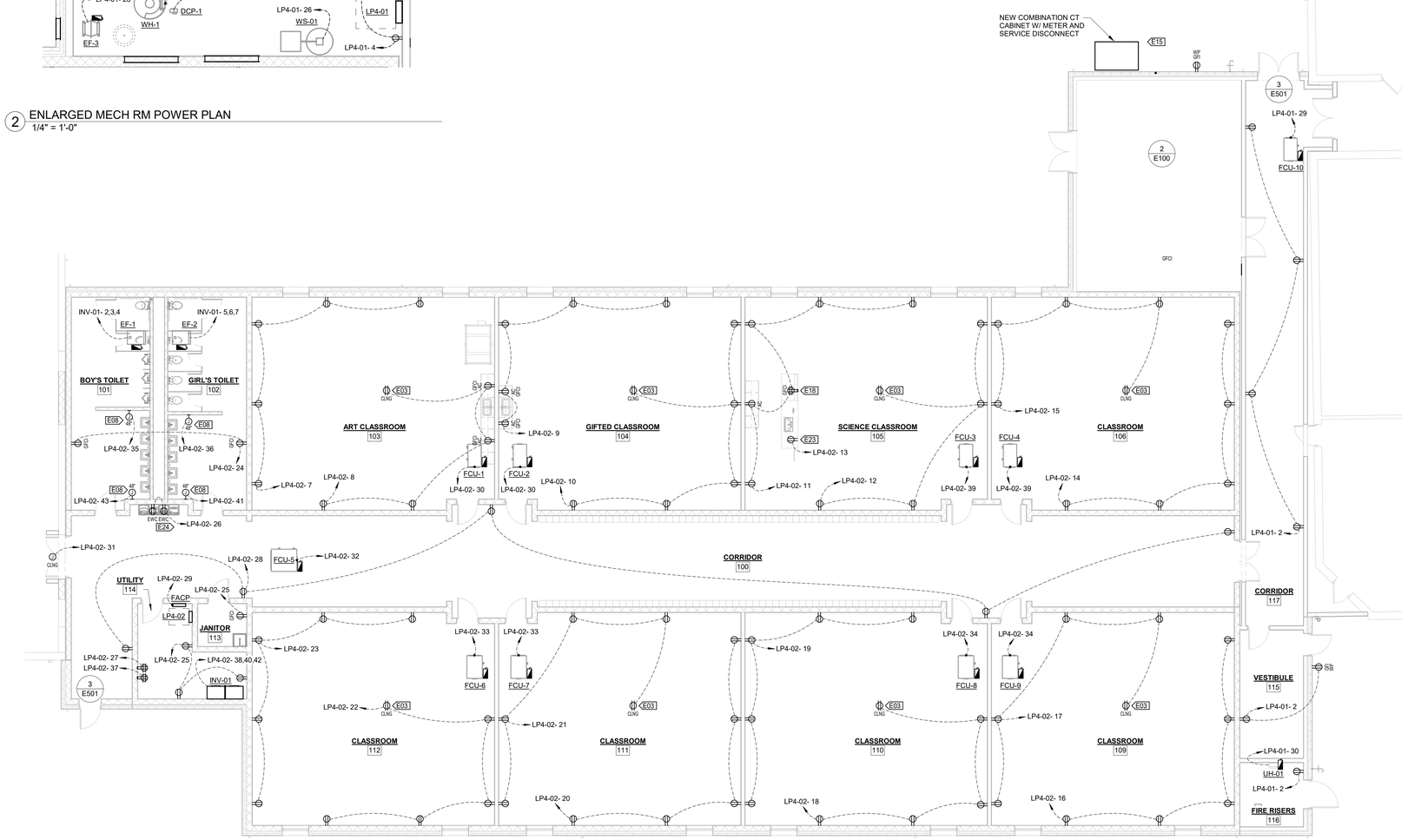



2 ENLARGED MECH RM POWER PLAN
1/4" = 1'-0"




1 POWER PLAN
1/8" = 1'-0"

**FOR REFERENCE ONLY**

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

**KEYNOTE LEGEND**

| VALUE | DESCRIPTION |
|---|---|
| E03 | INSTALL RECEPTACLE IN CEILING TILE FOR POWER TO PROJECTOR. COORDINATE LOCATION WITH OWNER. |
| E08 | JUNCTION BOX FOR ELECTRIC HAND DRYER. SEE ELECTRIC HAND DRYER SCHEDULE. |
| E13 | CONDENSER IS MOUNTED ON ROOF ABOVE MECHANICAL ROOM. |
| E14 | PROVIDE (1) VARIABLE-SPEED CONTROLLER WITH INTEGRAL SAFETY SWITCH PER HYDRONIC PUMP. PROVIDE SEPARATE SAFETY SWITCH IF NOT AVAILABLE AS INTEGRAL COMPONENT OF CONTROLLER. MOUNT HYDRONIC PUMP VARIABLE-SPEED CONTROLLERS AND SAFETY SWITCHES ON STRUT CHANNEL FRAME. DO NOT EXTEND STRUT CHANNEL FRAME INTO THE SPACE DIRECTLY BELOW THE DOAS-1 UNIT. |
| E15 | SEE CIVIL SITE UTILITY PLAN FOR ADDITIONAL DETAILS ON EXTERIOR ELECTRICAL ITEMS. |
| E16 | SPACE RESERVED FOR FUTURE EQUIPMENT. |
| E17 | CONVENIENCE RECEPTACLE FOR CONDENSER. |
| E18 | COORDINATE INSTALLATION OF RECEPTACLE IN BOX ON TOP OF COUNTER WITH MANUFACTURER OF INSTRUCTOR TABLE. |
| E23 | COORDINATE INSTALLATION OF RECEPTACLE UNDER COUNTER FOR FUTURE DISHWASHER (BY OTHERS) WITH MANUFACTURER OF INSTRUCTOR TABLE. |
| E24 | PROVIDE GFCI BREAKER ON ELECTRIC WATER COOLER CIRCUIT. |

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REVISION HISTORY

| # | DESCRIPTION | DATE | APPR |
|---|---|---|---|

Klingner & Associates, P.C.
Missouri State Certificate of Authority
No. E-000866

ISSUED FOR **1/16/23**

**BIDDING DOCUMENTS**

STATE OF MISSOURI
JOSIAH BRADLEY MOORE
NUMBER PE-2022038556
PROFESSIONAL ENGINEER
1/16/23

JOSIAH B. MOORE - ENGINEER
MO # PE-2022038556

HALLSVILLE MIDDLE SCHOOL ADDITION

HALLSVILLE SCHOOL DISTRICT
421 MO-124 E
HALLSVILLE, MO 65255

Non-Reduced Sheet Size 30" x 42"
Full sized plans have been prepared using standard scales. Reduced sized plans may not conform to standard scales.

| DESIGNED | DRAWN |
|---|---|
| JBM | JBM |
| FIELD | FIELD BOOK |
| CHECKED | CHECK DATE |
| JJN | 01/09/2023 |

SHEET TITLE

POWER PLAN

PROJECT NO.
**21-5052**
DRAWING ISSUED DATE:
**01/16/2023**
SHEET
**E100**

1/16/2023 8:55:06 PM
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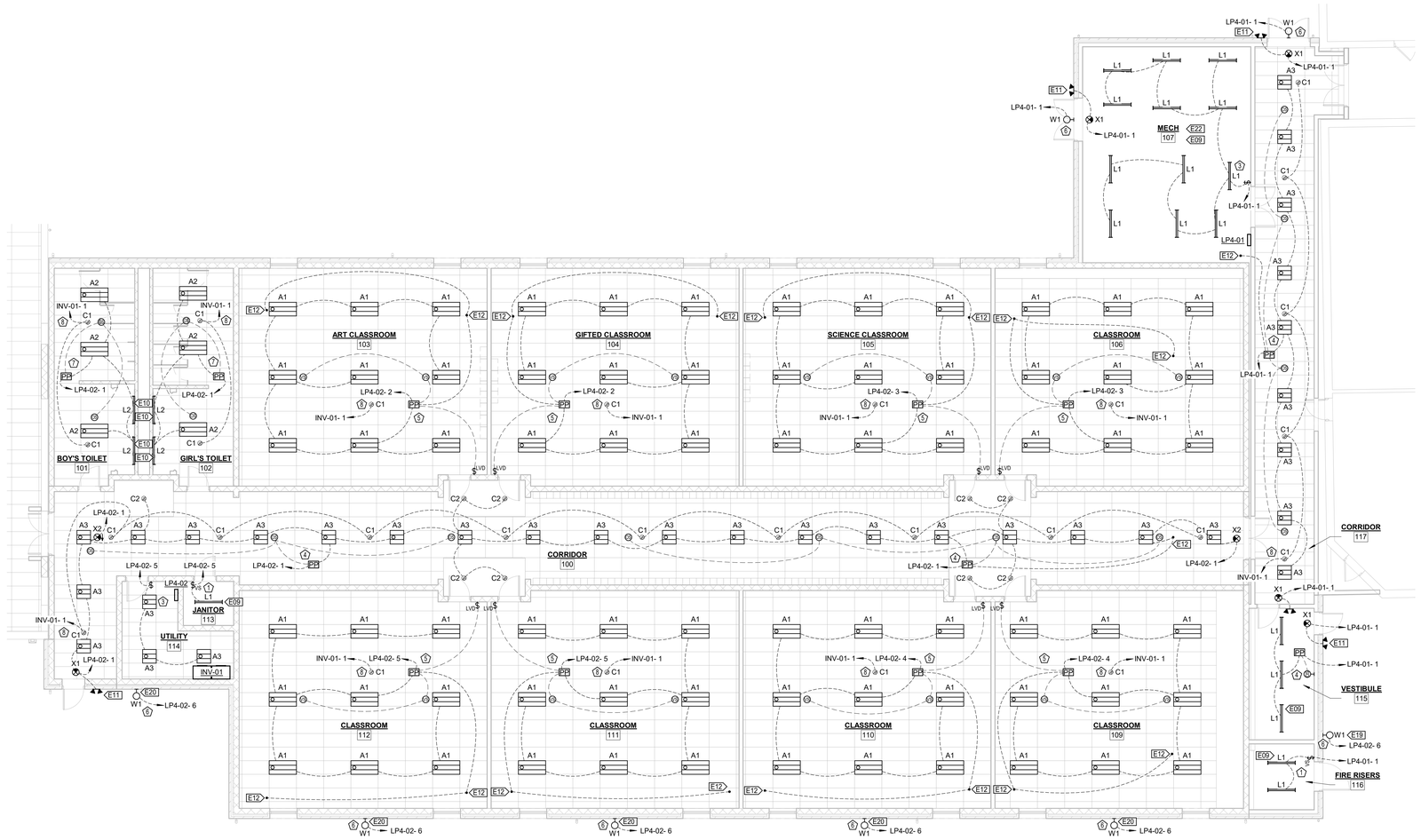
| KEYNOTE LEGEND | |
|---|---|
| **VALUE** | **DESCRIPTION** |
| E09 | STRIP LIGHT FIXTURE SUSPENDED AT APPROX. 9' AFF (TYPICAL FOR MATCHING FIXURES WITHIN A ROOM). |
| E10 | WRAPAROUND LIGHT FIXTURE MOUNTED AT APPROX. 7.5' AFF. |
| E11 | COORDINATE INSTALLATION OF EMERGENCY REMOTE HEADS WITH ARCHITECTURE. |
| E12 | PROVIDE CIRCUIT TO OUTDOOR AIR DAMPER. SEE MECHANICAL DETAILS FOR CONTROL SEQUENCE. |
| E19 | INSTALL EXTERIOR WALL PACK AT APPROX. 9' ABOVE GRADE. |
| E20 | INSTALL EXTERIOR WALL PACK AT APPROX. 11' ABOVE GRADE. |
| E22 | COORDINATE LOCATION OF LIGHT FIXTURES WITH MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SYSTEMS. |




1 LIGHTING PLAN
1/8" = 1'-0"

FOR REFERENCE ONLY

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

1/16/2023 8:55:07 PM
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REVISION HISTORY

| # | DESCRIPTION | DATE | APPR |
|---|---|---|---|

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Missouri State Certificate of Authority
No. E-000866

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JOSIAH BRADLEY MOORE
NUMBER PE-2022038556
PROFESSIONAL ENGINEER
1/16/23

JOSIAH B. MOORE - ENGINEER
MO # PE-2022038556

# HALLSVILLE MIDDLE SCHOOL ADDITION

HALLSVILLE SCHOOL DISTRICT
421 MO-124 E
HALLSVILLE, MO 65255

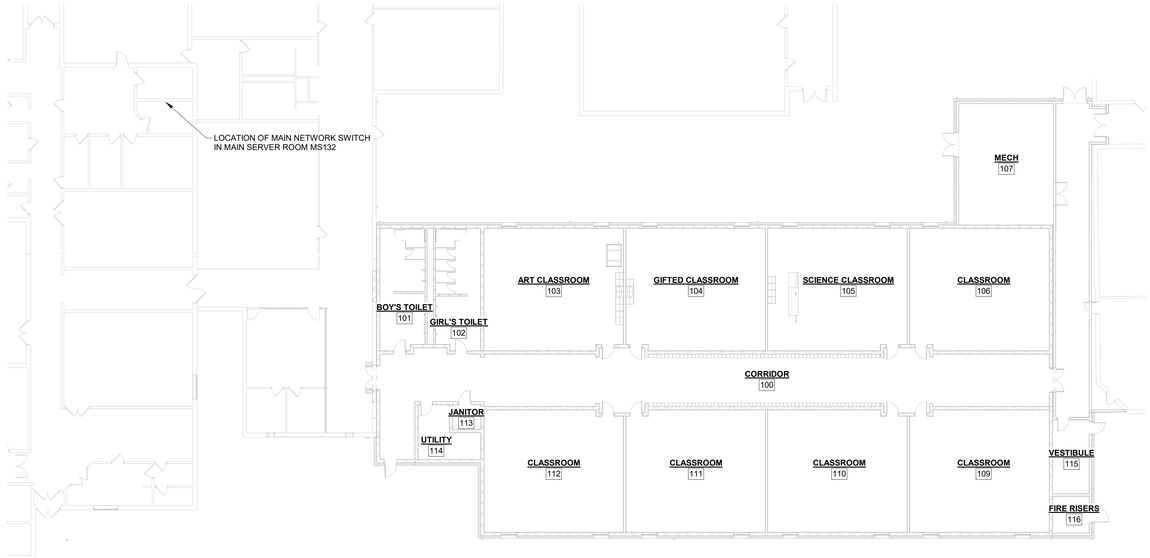
Non-Reduced Sheet Size 30" x 42"
Full sized plans have been prepared using standard scales. Reduced sized plans may not conform to standard scales.

| DESIGNED | DRAWN |
|---|---|
| JBM | JBM |
| FIELD | FIELD BOOK |
| CHECKED | CHECK DATE |
| JJN | 01/09/2023 |

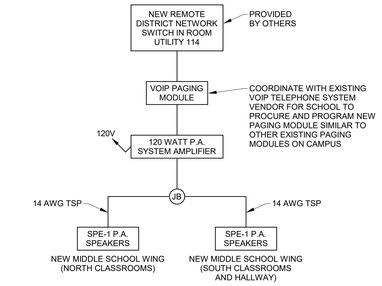
SHEET TITLE

LIGHTING PLAN

PROJECT NO.
**21-5052**
DRAWING ISSUED DATE:
**01/16/2023**
SHEET
**E101**



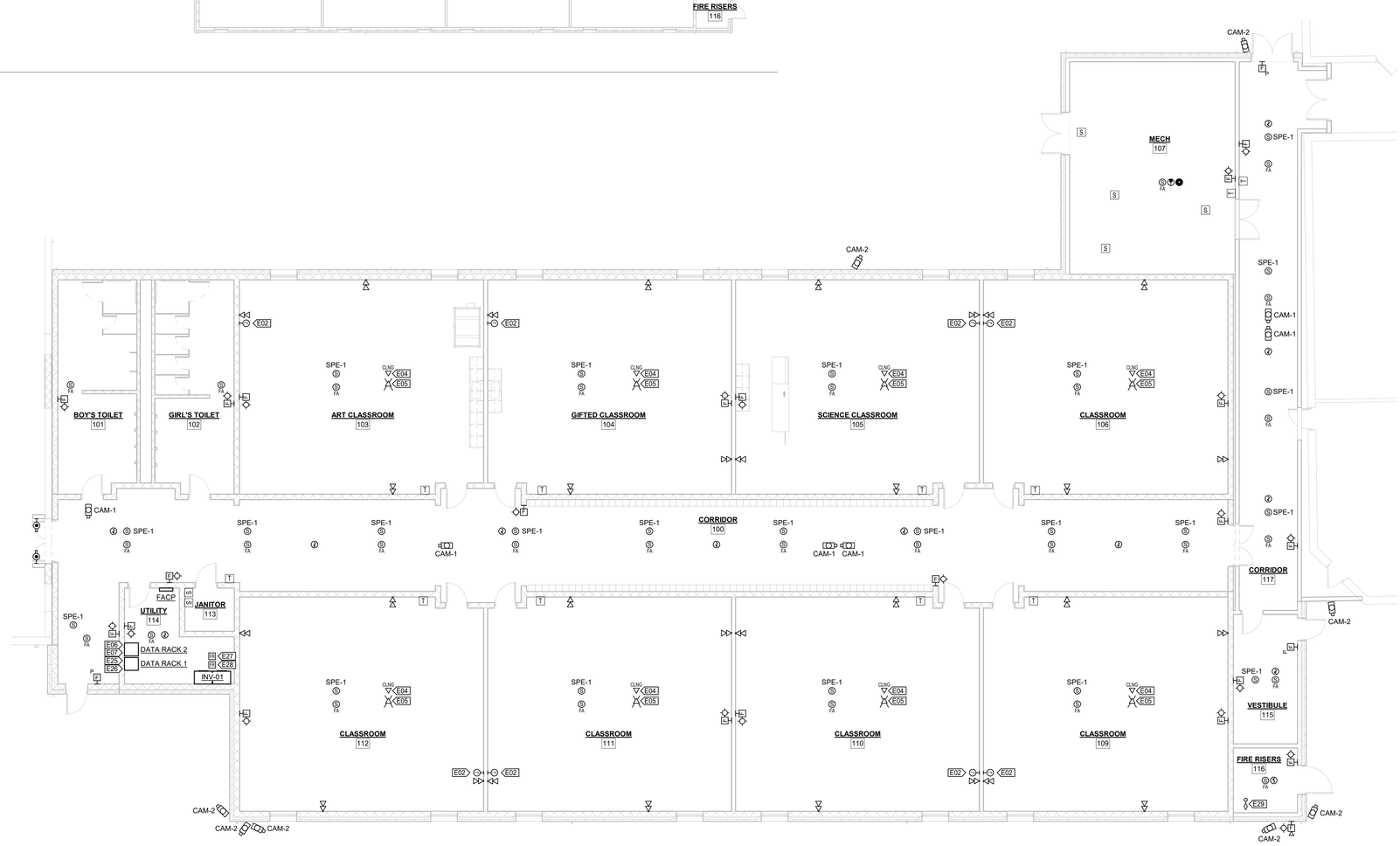

2 MAIN NETWORK SWITCH PLAN
NTS




3 P.A. SYSTEM ARCHITECTURE
NTS

**KEYNOTE LEGEND**

| VALUE | DESCRIPTION |
|---|---|
| E02 | INSTALL QUADPLEX JUNCTION BOX WITH 2" CONDUIT TO ABOVE FINISHED CEILING. LOCATE NEXT TO DATA RECEPTACLES. (TYPICAL FOR ALL WALL-MOUNTED JUNCTION BOXES SHOWN IN THIS ROOM ON THIS SHEET.) |
| E04 | PROVIDE DATA CABLE TO CENTER OF ROOM ABOVE FINISHED CEILING WITH 20 FT OF EXCESS CABLE NEATLY COILED AND SECURED. |
| E05 | PROVIDE DATA CABLE TO LOCATION SHOWN FOR FUTURE WIRELESS ACCESS POINT. PROVIDE 20 FT OF EXCESS CABLE NEATLY COILED AND SECURED ABOVE FINISHED CEILING. WIRELESS ACCESS POINT BY OWNER. |
| E06 | TERMINATE ALL CLASSROOM NETWORK CABLES IN WALL-MOUNTED NETWORK CABINET USING PANDUIT MINICOM CAT6 JACKS IN PANDUIT RACK PANELS. |
| E07 | INSTALL 12-STRAND 6-PAIR OM4 FIBER CABLE WITH LC CONNECTORS IN RACK PANEL INSIDE NETWORK CABINET AND ROUTE TO MAIN SERVER ROOM MS132 AND TERMINATE IN WALL BOX WITH LC ADAPTERS. |
| E25 | INSTALL P.A. SYSTEM AMPLIFIER WITHIN DATA RACK. |
| E26 | INSTALL DEDICATED CAMERA NETWORK SWITCH WITHIN DATA RACK AND ROUTE NEW CAMERA CABLES TO SWITCH. CONNECT SWITCH TO EXISTING CAMERA NETWORK VIDEO RECORDER VIA CAT6A CABLE. |
| E27 | RELAY INPUT FOR LIGHTING INVERTER: FIRE ALARM AND INTRUDER. |
| E28 | RELAY INPUT FOR LIGHTING INVERTER: SEVERE WEATHER. |
| E29 | FIRE ALARM FLOW SWITCH ON FIRE RISER. |




1 LOW VOLTAGE PLAN
1/8" = 1'-0"

0 4' 8' 16'
SCALE: 1/8" = 1'-0"

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JOSIAH BRADLEY MOORE
NUMBER PE-2022038556
PROFESSIONAL ENGINEER
1/16/23

JOSIAH B. MOORE - ENGINEER
MO # PE-2022038556

# HALLSVILLE MIDDLE SCHOOL ADDITION

HALLSVILLE SCHOOL DISTRICT
421 MO-124 E
HALLSVILLE, MO 65255

Non-Reduced Sheet Size 30" x 42"
Full sized plans have been prepared using standard scales. Reduced sized plans may not conform to standard scales.

| DESIGNED | DRAWN |
|---|---|
| JBM | JBM |
| FIELD | FIELD BOOK |
| | |
| CHECKED | CHECK DATE |
| JJN | 01/09/2023 |

SHEET TITLE

LOW VOLTAGE PLAN

PROJECT NO.
**21-5052**
DRAWING ISSUED DATE:
**01/16/2023**
SHEET
**E102**

1/16/2023 8:55:08 PM
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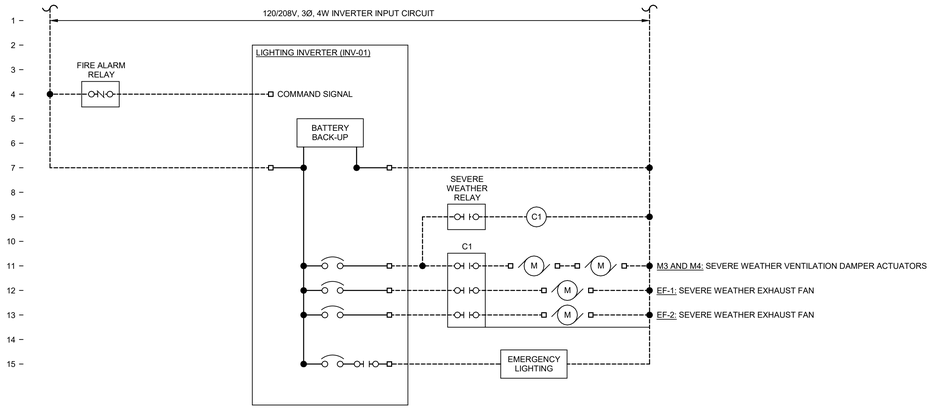



LIGHTING INVERTER CONTROL DIAGRAM

## LIGHTING INVERTER SEQUENCE OF OPERATION

NORMAL:

1. INVERTER BATTERIES ARE CHARGED BY INPUT LINE VOLTAGE.
2. SEVERE WEATHER VENTILATION DAMPERS ARE CLOSED.
3. SEVERE WEATHER EXHAUST FANS ARE OFF.
4. EMERGENCY LIGHTING IS OFF.

POWER OUTAGE:

1. INVERTER BATTERIES ARE DISCHARGED TO POWER EMERGENCY LOADS.
2. SEVERE WEATHER VENTILATION DAMPERS ARE CLOSED.
3. SEVERE WEATHER EXHAUST FANS ARE OFF.
4. EMERGENCY LIGHTING IS ON.

ACTIVE FIRE ALARM:

1. N.C. FIRE ALARM RELAY OPENS, WHICH REMOVES INPUT LINE VOLTAGE FROM COMMAND SIGNAL.
2. SEVERE WEATHER VENTILATION DAMPERS ARE CLOSED.
3. SEVERE WEATHER EXHAUST FANS ARE OFF.
4. EMERGENCY LIGHTING IS ON.
5. IF POWER OUTAGE OCCURS CONCURRENTLY WITH ACTIVE FIRE ALARM, THE SEQUENCE FOR THE ACTIVE FIRE ALARM OCCURS EXCEPT POWER IS PROVIDED BY THE BATTERY AS OPPOSED TO INPUT LINE VOLTAGE.

ACTIVE SEVERE WEATHER ALARM:

1. N.O. SEVERE WEATHER RELAY CLOSES AND SEVERE WEATHER VENTILATION DAMPERS ARE POWERED OPEN.
2. N.O. SEVERE WEATHER RELAY CLOSES AND SEVERE WEATHER EXHAUST FANS ARE POWERED ON.
3. IF POWER OUTAGE OCCURS CONCURRENTLY WITH ACTIVE SEVERE WEATHER ALARM, THE SEQUENCE FOR THE ACTIVE SEVERE WEATHER ALARM OCCURS EXCEPT POWER IS PROVIDED BY THE BATTERY AS OPPOSED TO INPUT LINE VOLTAGE.

## 1 INVERTER WIRING DIAGRAM
NTS

**LIGHTING CONTROL MATRIX**

| TAG | LINE VOLTAGE | LOW VOLTAGE | MANUAL ON | MANUAL OFF | MANUAL DIMMING | OCCUPANCY SENSOR | VACANCY SENSOR | DUAL TECHNOLOGY | PHOTOCONTROL (ON/OFF) | SEE INVERTER CONTROL DIAG. | SEQUENCE OF OPERATION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | X | | X | X | | | X | | | | 1 |
| 2 | X | | X | X | X | | | | | | 2 |
| 3 | X | | X | X | | | | | | | 3 |
| 4 | X | X | | | | X | | | | | 4 |
| 5 | X | X | X | X | X | | X | | | | 5 |
| 6 | X | | | | | | | | | X | 6 |
| 7 | X | X | | | | X | | X | | | 7 |
| 8 | X | | | | | | | | | X | 8 |

## LIGHTING CONTROL SEQUENCES OF OPERATION

1. WALL MOUNT, LINE VOLTAGE, VACANCY SENSOR & MANUAL CONTROL.
   A. UPON ACTIVATION BY MANUAL BUTTON LIGHTING SHALL BE ON.
   B. AFTER NO MOTION DETECTION FOR 15 MIN. LIGHTING SHALL BE OFF.
   C. LIGHTING MAY BE DEACTIVATED BY MANUAL BUTTON.

2. WALL MOUNT, DIMMING, LINE VOLTAGE, MANUAL CONTROL.
   A. UPON ACTIVATION BY MANUAL BUTTON LIGHTING SHALL BE ON.
   B. LIGHTING MAY BE MANUALLY DIMMED.
   C. LIGHTING SHALL BE DEACTIVATED BY MANUAL BUTTON.

3. WALL MOUNT, LINE VOLTAGE, & MANUAL CONTROL.
   A. UPON ACTIVATION BY MANUAL BUTTON LIGHTING SHALL BE ON.
   B. UPON DEACTIVATION BY MANUAL BUTTON LIGHTING SHALL BE OFF.

4. LOW VOLTAGE, CEILING MOUNT OCCUPANCY SENSOR CONTROL.
   A. UPON DETECTION OF MOTION BY ANY OCCUPANCY SENSOR IN THE ZONE, ALL LIGHTING SHALL BE ON.
   B. AFTER NO MOTION DETECTION FOR 15 MIN. LIGHTING SHALL BE OFF.

5. LOW VOLTAGE, CEILING MOUNT VACANCY SENSOR CONTROL.
   A. UPON ACTIVATION BY MANUAL BUTTON LIGHTING SHALL BE ON.
   B. LIGHTING MAY BE MANUALLY DIMMED.
   C. AFTER NO MOTION DETECTION FOR 15 MIN. LIGHTING SHALL BE OFF.
   D. LIGHTING MAY BE DEACTIVATED BY MANUAL BUTTON.

6. EXTERIOR FIXTURE, PHOTOCELL CONTROL.
   A. LIGHT FIXTURE SHALL BE CONTROLLED BY PHOTOCELL.

7. LOW VOLTAGE, CEILING MOUNT OCCUPANCY SENSOR CONTROL.
   A. UPON DETECTION OF MOTION BY ANY OCCUPANCY SENSOR IN THE ZONE, ALL LIGHTING SHALL BE ON.
   B. MOTION SENSOR SHALL BE DUAL TECHNOLOGY.
   C. AFTER NO MOTION DETECTION FOR 15 MIN. LIGHTING SHALL BE OFF.

8. EMERGENCY LIGHTING.
   A. SEE LIGHTING INVERTER CONTROL SCHEMATIC FOR SEQUENCE OF OPERATION.

***CONTRACTOR NOTES:***

***1. COORDINATE COMPATIBILITY OF ALL LIGHTING CONTROLS AND LIGHT FIXTURE DRIVERS.***
***2. PROVIDE ALL WIRE, DEVICES, POWER PACKS, SENSORS, ETC. AS NECESSARY TO CREATE A STAND-ALONE SYSTEM THAT ACCOMPLISHES THE DESCRIBED SEQUENCE OF OPERATION.***
***3. ALL LIGHTING CONTROLS SHALL BE HARD-WIRED (WIRELESS SYSTEMS ARE NOT ACCEPTABLE) ACCEPTABLE CONTROL DEVICE MANUFACTURERS SHALL INCLUDE SENSORSWITCH, WATTSTOPPER, AND LUTRON. SUBSTITUTIONS SHALL BE ALLOWED WITH ENGINEERS PRIOR APPROVAL ONLY.***

## 2 LIGHTING CONTROL MATRIX
NTS

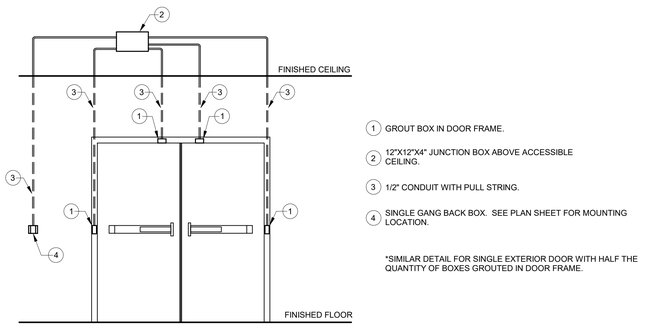
**FEEDER SCHEDULE**

| FEEDER TAG | PARALLEL SETS | PHASE CONDUCTORS QUANTITY | PHASE CONDUCTORS SIZE | NEUTRAL SIZE | EGC SIZE | CONDUIT SIZE | CONDUIT TYPE |
|---|---|---|---|---|---|---|---|
| F1 | 2 | 3 | 600 KCMIL Cu | 600 KCMIL Cu | NONE | 4" | PVC |
| F2 | 6 | 0 | NONE | NONE | NONE | 4" | PVC |
| F3 | 2 | 3 | 600 KCMIL Cu | 600 KCMIL Cu | #1 AWG Cu | 4" | PVC |
| F4 | 1 | 3 | 600 KCMIL Cu | 600 KCMIL Cu | #3 AWG Cu | 3-1/2" | EMT |
| F5 | 1 | 3 | 3/0 AWG Cu | 3/0 AWG Cu | #6 AWG Cu | 2" | EMT |

NOTE: PROVIDE PULL STRING IN EMPTY (SPARE) CONDUITS.

**GEC SCHEDULE**

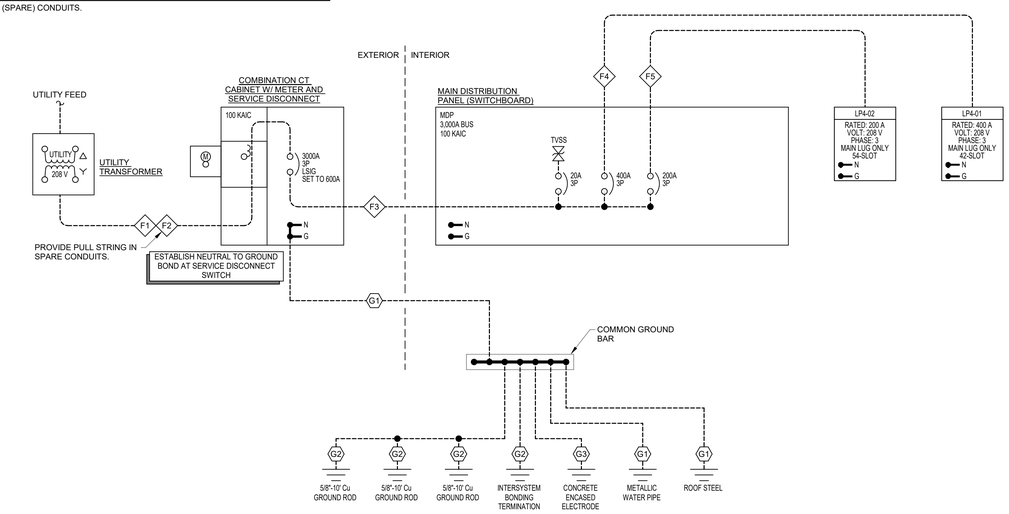
| GEC TAG | GEC SIZE |
|---|---|
| G1 | 3/0 AWG Cu |
| G2 | #6 AWG Cu |
| G3 | #4 AWG Cu |




1. GROUT BOX IN DOOR FRAME.
2. 12"X12"X4" JUNCTION BOX ABOVE ACCESSIBLE CEILING.
3. 1/2" CONDUIT WITH PULL STRING.
4. SINGLE GANG BACK BOX. SEE PLAN SHEET FOR MOUNTING LOCATION.

*SIMILAR DETAIL FOR SINGLE EXTERIOR DOOR WITH HALF THE QUANTITY OF BOXES GROUTED IN DOOR FRAME.

## 3 ACCESS CONTROL DETAIL - EXTERIOR DOOR ROUGH-IN
NTS




## 4 ELECTRICAL POWER ONE-LINE DIAGRAM
NTS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REVISION HISTORY

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| FIELD | FIELD BOOK |
| CHECKED | CHECK DATE |
| JJN | 01/09/2023 |

SHEET TITLE

ELECTRICAL DETAILS

PROJECT NO.
**21-5052**
DRAWING ISSUED DATE:
**01/16/2023**
SHEET
**E501**

1/16/2023 8:55:09 PM
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## BRANCH PANEL: LP4-01

**LOCATION:** MECH 107 | **VOLTS:** 120/208 | **A.I.C. RATING:** 100,000 AMPS SYMMETRICAL
**SUPPLY FROM:** MDP | **PHASES:** 3 | **PANEL TYPE:** MLO
**MOUNTING:** SURFACE | **WIRES:** 4 | **MAINS RATING:** 400 A
**ENCLOSURE:** NEMA 1 | **ACCESSORIES:** PROVIDE FEED-THRU LUGS

| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING: 107, 115-117, NORTH EXT. | 20 A | 1 | 1287 VA | 1260 VA | | 1 | 20 A | RCPT: 115-117 | 2 |
| 3 | RCPT: 107 WEST/EXTERIOR ROOF | 20 A | 1 | 900 VA | 900 VA | | 1 | 20 A | RCPT: 107 EAST/EXTERIOR WALL | 4 |
| 5 | | | | | | 4503 VA | 21783 VA | | | 6 |
| 7 | CONDENSER C-01 | 40 A | 3 | 4503 VA | 21783 VA | | 3 | 225 A | CHILLER CH-01 | 8 |
| 9 | | | | | 4503 VA | 21783 VA | | | | 10 |
| 11 | | | | | | 901 VA | 901 VA | | | 12 |
| 13 | CHWP-01 | 20 A | 3 | 901 VA | 901 VA | | 3 | 20 A | CHWP-02 | 14 |
| 15 | | | | | 901 VA | 901 VA | | | | 16 |
| 17 | | | | | | 901 VA | 901 VA | | | 18 |
| 19 | HWP-01 | 20 A | 3 | 901 VA | 901 VA | | 3 | 20 A | HWP-02 | 20 |
| 21 | | | | | 901 VA | 901 VA | | | | 22 |
| 23 | | | | | | 1441 VA | 502 VA | 1 | 15 A FCU-11 & BOILER B-1 | 24 |
| 25 | DOAS-1 | 15 A | 3 | 1441 VA | 788 VA | | | 1 | 15 A WH-1, DCP-1, WS-01 | 26 |
| 27 | | | | | 1441 VA | 726 VA | | 1 | 15 A EXHAUST FAN EF-3 & LOUVER L5 | 28 |
| 29 | FCU-10 | 20 A | 1 | | | 616 VA | 1500 VA | 1 | 20 A FIRE RISER RM WALL HEATER | 30 |
| 31 | SPACE | -- | -- | 0 VA | 0 VA | | | -- | -- SPACE | 32 |
| 33 | SPACE | -- | -- | | 0 VA | 0 VA | | -- | -- SPACE | 34 |
| 35 | SPACE | -- | -- | | | 0 VA | 0 VA | -- | -- SPACE | 36 |
| 37 | SPACE | -- | -- | 0 VA | 0 VA | | | -- | -- SPACE | 38 |
| 39 | SPACE | -- | -- | | 0 VA | 0 VA | | -- | -- SPACE | 40 |
| 41 | SPACE | -- | -- | | | 0 VA | 0 VA | -- | -- SPACE | 42 |
| | | **PHASE LOAD:** | | 34,665 VA | 33,856 VA | 33,948 VA | | **TOTAL LOAD:** | **102,469 VA** | |
| | | **PHASE AMPS:** | | 289 A | 282 A | 283 A | | **TOTAL AMPS:** | **284 A** | |

*** FIELD VERIFY BREAKER SIZE WITH ACTUAL EQUIPMENT PROVIDED. COORDINATE WITH OTHER CONTRACTORS AS NECESSARY.**
****TOTAL LOAD AND TOTAL AMPS DO NOT INCLUDE DEMAND FACTOR CALCULATIONS.**

## Branch Panel: INV-01

**LOCATION:** UTILITY 114 | **VOLTS:** 120/208 | **A.I.C. RATING:** 65 KAIC
**SUPPLY FROM:** | **PHASES:** 3 | **CAPACITY:** 8250 VA
**MOUNTING:** FLOOR | **WIRES:** 4
**ENCLOSURE:** NEMA 1

**Notes:**
REFER TO INVERTER WIRING DIAGRAM.
INVERTER SHALL PROVIDE RATED CAPACITY FOR 90 MINUTES (MINIMUM).

| CKT | Circuit Description | Trip | Poles | A | B | C |
|---|---|---|---|---|---|---|
| 1 | LIGHTING: EMERGENCY WAFER | 20 A | 1 | 367 VA | | |
| 2,3,4 | EMERGENCY EXHAUST FAN EF-1 | 20 A | 3 | 901 VA | 901 VA | 901 VA |
| 5,6,7 | EMERGENCY EXHAUST FAN EF-2 | 20 A | 3 | 901 VA | 901 VA | 901 VA |
| 8 | MOTORIZED DAMPERS M3 & M4 | 20 A | 1 | | 60 VA | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |
| 16 | | | | | | |
| 17 | | | | | | |
| 18 | | | | | | |
| 19 | | | | | | |
| 20 | | | | | | |
| 21 | | | | | | |
| | **Total Load:** | | | 2169 VA | 1861 VA | 1801 VA |
| | **Total Amps:** | | | 18 A | 16 A | 15 A |

## BRANCH PANEL: LP4-02

**LOCATION:** UTILITY 114 | **VOLTS:** 120/208 | **A.I.C. RATING:** 22,000 AMPS SYMMETRICAL
**SUPPLY FROM:** MDP | **PHASES:** 3 | **PANEL TYPE:** MLO
**MOUNTING:** SURFACE | **WIRES:** 4 | **MAINS RATING:** 200 A
**ENCLOSURE:** NEMA 1 | **ACCESSORIES:** PROVIDE FEED-THRU LUGS

| CKT | CIRCUIT DESCRIPTION | TRIP | POLES | A | B | C | POLES | TRIP | CIRCUIT DESCRIPTION | CKT |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | LIGHTING: 100-102 | 20 A | 1 | 1453 VA | 1274 VA | | 1 | 20 A | LIGHTING: 103-104 | 2 |
| 3 | LIGHTING: 105-106 | 20 A | 1 | | 1274 VA | 1274 VA | 1 | 20 A | LIGHTING: 109-110 | 4 |
| 5 | LIGHTING: 111-114 | 20 A | 1 | | | 1450 VA | 156 VA | 1 | 20 A | LIGHTING: SOUTH/EAST EXTERIOR | 6 |
| 7 | RCPT: 103 NORTH/WEST | 20 A | 1 | 900 VA | 720 VA | | 1 | 20 A | RCPT: 103 SOUTH/EAST/CLNG | 8 |
| 9 | RCPT: 104 NORTH/WEST | 20 A | 1 | | 900 VA | 900 VA | 1 | 20 A | RCPT: 104 SOUTH/EAST/CLNG | 10 |
| 11 | RCPT: 105 NORTH/WEST/AC | 20 A | 1 | | | 1080 VA | 720 VA | 1 | 20 A | RCPT: 105 SOUTH/EAST/CLNG | 12 |
| 13 | RCPT: 105 FUTURE DISHWASHER | 20 A | 1 | 1440 VA | 900 VA | | 1 | 20 A | RCPT: 106 SOUTH/EAST | 14 |
| 15 | RCPT: 106 NORTH/WEST/CLNG | 20 A | 1 | | 720 VA | 900 VA | 1 | 20 A | RCPT: 109 SOUTH/EAST | 16 |
| 17 | RCPT: 109 NORTH/WEST/CLNG | 20 A | 1 | | | 720 VA | 720 VA | 1 | 20 A | RCPT: 110 SOUTH/EAST/CLNG | 18 |
| 19 | RCPT: 110 NORTH/WEST | 20 A | 1 | 900 VA | 900 VA | | 1 | 20 A | RCPT: 111 SOUTH/EAST | 20 |
| 21 | RCPT: 111 NORTH/WEST/CLNG | 20 A | 1 | | 720 VA | 720 VA | 1 | 20 A | RCPT: 112 SOUTH/EAST/CLNG | 22 |
| 23 | RCPT: 112 NORTH/WEST | 20 A | 1 | | | 900 VA | 360 VA | 1 | 20 A | RCPT: RESTROOMS | 24 |
| 25 | RCPT: 113-114 | 20 A | 1 | 720 VA | 1104 VA | | 1 | 20 A | RCPT: WATER COOLERS | 26 |
| 27 | MIDDLE SCHOOL DATA RACK 2 | 20 A | 1 | | 360 VA | 900 VA | 1 | 20 A | RCPT: CORRIDOR 100 | 28 |
| 29 | FACP | 20 A | 1 | | | 240 VA | 1231 VA | 1 | 20 A | FCU-1, FCU-2 | 30 |
| 31 | MAGNETIC DOOR HOLD OPENS | 20 A | 1 | 60 VA | 1080 VA | | 1 | 20 A | FCU-5 | 32 |
| 33 | FCU-6, FCU-7 | 20 A | 1 | | 1231 VA | 1231 VA | 1 | 20 A | FCU-8, FCU-9 | 34 |
| 35 | BOYS HAND DRYER NORTH | 20 A | 1 | | | 1464 VA | 1464 VA | 1 | 20 A | GIRLS HAND DRYER NORTH | 36 |
| 37 | MIDDLE SCHOOL DATA RACK 1 | 20 A | 1 | 360 VA | 2750 VA | | | | | | 38 |
| 39 | FCU-3, FCU-4 | 20 A | 1 | | 1231 VA | 2750 VA | 3 | 70 A | SEVERE WEATHER INVERTER INV-01 | 40 |
| 41 | GIRLS HAND DRYER SOUTH | 20 A | 1 | | | 1464 VA | 2750 VA | | | | 42 |
| 43 | BOYS HAND DRYER SOUTH | 20 A | 1 | 1464 VA | 0 VA | | 1 | 20 A | SPARE | | 44 |
| 45 | SPARE | 20 A | 1 | | 0 VA | 0 VA | 1 | 20 A | SPARE | | 46 |
| 47 | SPARE | 20 A | 1 | | | 0 VA | 0 VA | 1 | 20 A | SPARE | 48 |
| 49 | SPARE | 20 A | 1 | 0 VA | 0 VA | | 1 | 20 A | SPARE | | 50 |
| 51 | SPARE | 20 A | 1 | | 0 VA | 0 VA | 1 | 20 A | SPARE | | 52 |
| 53 | SPARE | 20 A | 1 | | | 0 VA | 0 VA | 1 | 20 A | SPARE | 54 |
| | | **PHASE LOAD:** | | 16,025 VA | 15,112 VA | 14,720 VA | | **TOTAL LOAD:** | **45,857 VA** | |
| | | **PHASE AMPS:** | | 134 A | 126 A | 123 A | | **TOTAL AMPS:** | **127 A** | |

*** FIELD VERIFY BREAKER SIZE WITH ACTUAL EQUIPMENT PROVIDED. COORDINATE WITH OTHER CONTRACTORS AS NECESSARY.**
****TOTAL LOAD AND TOTAL AMPS DO NOT INCLUDE DEMAND FACTOR CALCULATIONS.**

## LIGHT FIXTURE SCHEDULE

| TAG | DESCRIPTION | MOUNT | LENS | LAMP TYPE | LAMP COLOR TEMP. | NOMINAL OUTPUT | DRIVER CONTROL | VOLTAGE | LOAD | BASIS OF DESIGN MAKE | BASIS OF DESIGN MODEL | ACCESSORIES | REMARKS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 2X4 ARCHITECTURAL TROFFER | LAY-IN | RIBBED | LED | 4000 K | 7200 lm | DIMS TO 1% | 120 V | 65 VA | DAY-BRITE<br>LITHONIA<br>METALUX | 2-FG-G-74L-840-4-D-UNV-DIM<br>2BLT4-72L-ADP-EZ1-LP840<br>24CZ2-70HE-UNV-L840-HCD1 | | |
| A2 | 2X4 ARCHITECTURAL TROFFER | LAY-IN | RIBBED | LED | 4000 K | 6000 lm | DIMS TO 1% | 120 V | 48 VA | DAY-BRITE<br>LITHONIA<br>METALUX | 2-FG-G-54L-840-4-D-UNV-DIM<br>2BLT4-60L-ADP-EZ1-LP840<br>24CZ2-60-UNV-L840-HCD1 | | |
| A3 | 2X2 ARCHITECTURAL TROFFER | LAY-IN | RIBBED | LED | 4000 K | 4500 lm | DIMS TO 1% | 120 V | 44 VA | DAY-BRITE<br>LITHONIA<br>METALUX | 2-FG-G-45L-840-2-D-UNV-DIM<br>2BLT2-48L-ADP-EZ1-LP840<br>22CZ2-44-UNV-L840-HCD1 | | |
| C1 | EMERGENCY RECESSED WAFER LIGHT | RECESSED | FLUSH | LED | 4000 K | 1200 lm | | 120 V | 14 VA | HALO<br>LITHONIA<br>NORA | HLB6-09-940-1E-MW<br>WF6-LED-30K40K50K-90CRI-MW<br>NEFLINTW-R6MPW | | CONNECTED TO LIGHTING INVERTER |
| C2 | RECESSED WAFER LIGHT | RECESSED | FLUSH | LED | 4000 K | 1200 lm | | 120 V | 14 VA | HALO<br>LITHONIA<br>NORA | HLB6-09-940-1E-MW<br>WF6-LED-30K40K50K-90CRI-MW<br>NEFLINTW-R6MPW | | |
| L1 | 4' STRIP | SUSPENDED | DIFFUSE | LED | 4000 K | 5000 lm | | 120 V | 45 VA | DAY-BRITE<br>LITHONIA<br>METALUX | FSS-4-55L-840-UNV-DIM<br>CLX-L48-5000LM-SEF-RDL-MVOLT-GZ10-40K-80CRI-WH<br>4SLSTP4040DD-120V | | |
| L2 | 4' WRAPAROUND | WALL | DIFFUSE | LED | 4000 K | 3000 lm | | 120 V | 29 VA | DAY-BRITE<br>LITHONIA<br>METALUX | FSW-4-30L-840-UNV-DIM<br>BLWP4-30L-ADP-EZ1-LP840<br>4SWLED-32SL-LW-UNV-L840-CD1 | | |
| W1 | EXTERIOR WALL PACK | WALL | CLEAR | LED | 3000 K | 2500 lm | | 120 V | 26 VA | LITHONIA<br>LUMARK<br>STONCO | WPX1-LED-P2-30K-MVOLT-PE-DBLXD<br>XTOR3B-Y-BK-PC1<br>LPW16-20-WW-G3-4-120-PCB-BK | | INTEGRAL PHOTOCELL |
| X1 | EXIT SIGN W/ REMOTE HEADS | WALL/CEILING | | LED | | | | 120 V | 13 VA | CHLORIDE<br>LITHONIA<br>SURE-LITES | CLX-N-RW-4R<br>LHQM-LED-R-HO-R0-SD<br>LPX-RS-SD | CLR-2-W-G<br>ELA-T-QW/P-L0309-SD<br>SR-P-25-D-GY | SELF-DIAGNOSTICS, WET-LOCATION DUAL REMOTE HEAD |
| X2 | EXIT SIGN | WALL/CEILING | | LED | | | | 120 V | 9 VA | CHLORIDE<br>LITHONIA<br>SURE-LITES | CLX-N-RW<br>LHQM-LED-R-HO-R0-SD<br>LPX-7-SD | | SELF-DIAGNOSTICS |

## SPEAKER SCHEDULE

| MARK | TYPE | BASIS OF DESIGN MAKE | BASIS OF DESIGN MODEL | SENSITIVITY | FREQUENCY RESPONSE | DISPERSION | COMMENTS |
|---|---|---|---|---|---|---|---|
| SPE-1 | 8" CEILING-MOUNTED CONE LOUDSPEAKER | ATLAS | SDT2W | 97 dB AT 1W/1M | 55Hz - 19kHz (+/- 5dB) | 105 DEGREES | PROVIDE WITH ALL REQUIRED MOUNTING HARDWARE |

BASIS OF DESIGN EQUIPMENT IS LISTED. OTHER MANUFACTURERS AND MODELS ARE ACCEPTABLE WITH ENGINEER APPROVAL.

## ELECTRIC HAND DRYER SCHEDULE

| DESCRIPTION | MOUNT | BASIS OF DESIGN MAKE | BASIS OF DESIGN MODEL | VOLTAGE | LOAD |
|---|---|---|---|---|---|
| SENSOR-OPERATED WARM AIR ELECTRIC HAND DRYER | MASONRY WALL | EXCEL DRYER | XL-BW-120 | 120 V | 1,450 W |

## SECURITY CAMERA SCHEDULE

| MARK | MOUNT | BASIS OF DESIGN MAKE | BASIS OF DESIGN MODEL | TEMP/HUMIDITY RATINGS | PROTECTION | ANGLE ADJUSTMENT | FIELD OF VIEW (FOV) | IMAGE SENSOR | SLOW SHUTTER | FOCAL LENGTH / APERTURE / FOCUS | DAY/ NIGHT | VIDEO BIT RATE | MAXIMUM RESOLUTION | NETWORK STORAGE | ALARM TRIGGERS | COMMUNICATION INTERFACE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CAM-1 | INDOOR CEILING | HIKVISION | ECI-D64Z2 | -22°F TO 140°F, 95% MAXIMUM HUMIDITY (NON-CONDENSING) | IP67, TVS 2000V LIGHTING PROTECTION, TRANSIENT VOLTAGE PROTECTION, IK10, SURGE PROTECTION | PAN: 0-355° TILT: 0-70° ROTATION: 0-360° | HORIZONTAL: 98-28° VERTICAL: 51-16° DIAGONAL: 116-32° | 1/3" PROGRESSIVE SCAN CMOS | YES | 2.8-12 mm f/1.6 AUTOMATIC | IR CUT FILTER (IR RANGE: 100 FT) | 32 Kbps TO 8 Mbps | 2560 X 1440 | microSD/SDHC/SDXC CARD (128 GB), LOCAL STORAGE, ANR, NAS (NFS, SMB/CIFS) | MOTION DETECT, IP ADDRESS CONFLICT, VIDEO TAMPER, ILLEGAL LOGIN, NETWORK DISCONNECT | SINGLE-PORT RJ-45 10M/100M SELF-ADAPTING ETHERNET PORT |
| CAM-2 | OUTDOOR WALL | | | | | | | | | | | | | | | |

1. PROVIDE WITH ALL REQUIRED MOUNTING HARDWARE.
2. BASIS OF DESIGN EQUIPMENT IS LISTED. OTHER MANUFACTURERS AND MODELS ARE ACCEPTABLE WITH ENGINEER APPROVAL.


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Pella, IA Davenport, IA Hannibal, MO




REVISION HISTORY

| | DESCRIPTION | DATE | APPR |
|---|---|---|---|
| 1 | | | |

Klingner & Associates, P.C.
Missouri State Certificate of Authority No. E-000866

ISSUED FOR **1/16/23**

**BIDDING DOCUMENTS**

STATE OF MISSOURI
JOSIAH BRADLEY MOORE
NUMBER PE-2022038556
PROFESSIONAL ENGINEER
JOSIAH B. MOORE - ENGINEER
MO # PE-2022038556

HALLSVILLE MIDDLE SCHOOL ADDITION

HALLSVILLE SCHOOL DISTRICT
421 MO-124 E
HALLSVILLE, MO 65255

Non-Reduced Sheet Size 30" x 42"
Full sized plans have been prepared using standard scales. Reduced sized plans may not conform to standard scales.

| DESIGNED | DRAWN |
|---|---|
| JBM | JBM |
| FIELD | FIELD BOOK |
| CHECKED | CHECK DATE |
| JJN | 01/09/2023 |

SHEET TITLE

ELECTRICAL SCHEDULES

PROJECT NO.
**21-5052**
DRAWING ISSUED DATE:
**01/16/2023**
SHEET
**E601**

1/16/2023 8:55:09 PM
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