Generator and Electrical Equipment Replacement

CLARKSBURG ELEMENTARY SCHOOL

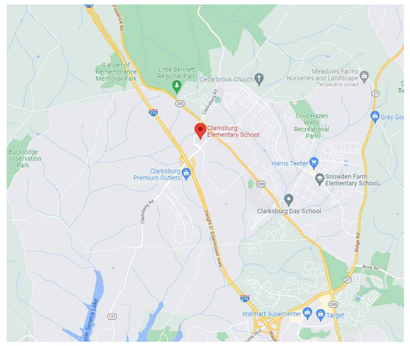
13530 REDGRAVE PLACE, CLARKSBURG, MD 20871

Montgomery County Public Schools

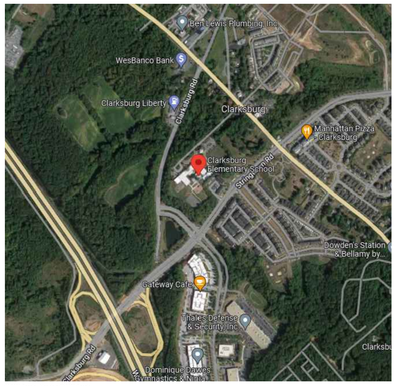
MECHANICAL AND ELECTRICAL ENGINEERS
JAMES POSEY ASSOCIATES, INC.
11155 RED RUN BOULEVARD, SUITE 310
BALTIMORE, MARYLAND 21117
PHONE: 410.265.6100

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT
CLARKSBURG ELEMENTARY SCHOOL
13530 REDGRAVE PLACE
CLARKSBURG, MD 20871
MONTGOMERY COUNTY PUBLIC SCHOOLS

VICINITY PLAN



AERIAL SITE PLAN



DRAWING INDEX

PROFESSIONAL CERTIFICATION

These contract documents for Clarksburg Elementary School were prepared under my supervision and to the best of my knowledge, information, and belief, they comply with the relevant building codes of the State of Maryland.

02/06/23 (Date)

Maryland Professional Engineer Registration No. 24861

STATE OF MARYLAND · JAMES · POSEY · No. 24861 · PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date 02-24-2024.

APPLICABLE CODES & STANDARDS

2018 IBC:	INTERNATIONAL BUILDING CODE
2018 IMC:	INTERNATIONAL MECHANICAL CODE
2018 IPC:	INTERNATIONAL PLUMBING CODE WITH WSSC AMENDMENTS
ASHRAE 90.1:	ENERGY STANDARD FOR BUILDINGS EXCEPT LOW RISE RESIDENTIAL BUILDINGS.
NEC 2017:	NATIONAL ELECTRICAL CODE

ASHRAE 2017-2020 HANDBOOKS.

James Posey Associates
Engineering Your Vision
Mechanical & Electrical Consulting Engineers
11155 Red Run Boulevard, Suite 310
Baltimore, Maryland 21117
tel 410-265-6100
jamesposey.com

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MR. ARVIN KIM	STUDENT MEMBER

CODE ANALYSIS

CODE ANALYSIS
(FROM INTERNATIONAL BUILDING CODE/2018)

	EXISTING BLDG	PROPOSED ALTERATION
IBC OCCUPANCY CLASSIFICATION	E	THE SCOPE OF THIS WORK IS TO REPLACE EXISTING GENERATOR AND REVISE NORMAL LIGHTING CIRCUITS IN TOILET ROOMS, BOILER ROOM AND ELEC ROOM TO EMERGENCY LIGHTING. THERE IS NO INCREASE IN FLOOR AREA, NO SITE CHANGES, NO CHANGE IN CLASSIFICATION OR TYPE OF CONSTRUCTION.
TYPE OF CONSTRUCTION	IIB	
NUMBER OF STORIES ABOVE GRADE	1	
HIGH RISE (Y/N)	N	
FIRE ALARM (Y/N)	Y	
FULLY SPRINKLERED (Y/N)	Y	
TOTAL BUILDING FLOOR AREA	54,983 SF	

SCOPE OF WORK

SCOPE OF WORK GENERALLY CONSISTS OF THE FOLLOWING OVER TWO PHASES. PHASE 1 SHALL CONSIST OF THE FOLLOWING:

* PROVIDE CONDUITS AND RACEWAYS FOR NEW GENERATOR.
* PROVIDE CONDUITS AND RACEWAYS FOR NEW DEVICES AND CONNECTIONS TO EXISTING EQUIPMENT. FINAL CONNECTIONS TO NEW DEVICES AND EXISTING EQUIPMENT SHALL BE PERFORMED DURING THE SECOND SUMMER.
* PROVIDE NEW CONCRETE PAD FOR NEW GENERATOR.
* CONNECT LIGHTING FIXTURES IN TOILET ROOMS ON NORMAL CIRCUITS TO EXISTING EMERGENCY LIGHTING CIRCUITS, WHERE INDICATED ON DRAWINGS.

PROJECT SCOPE SHALL INCLUDE THE WORK FOR PHASE 2:

* PROVIDE NEW GENERATOR AND ASSOCIATED EQUIPMENT.
* CONNECT EXISTING BOILERS AND ASSOCIATED PUMPS TO THE NEW STANDBY PANELBOARD.
* CONNECT EXISTING KITCHEN REFRIGERATION EQUIPMENT TO NEW STANDBY PANELBOARD.
* CONNECT EXISTING INTERCOMMUNICATIONS/PUBLIC ADDRESS SYSTEM TO THE NEW STANDBY PANELBOARD.
* CONNECT EXISTING MAIN TELECOM ROOM RECEPTACLES TO THE NEW STANDBY PANELBOARD.
* CONNECT NORMAL LIGHTING FIXTURES IN THE MAIN MECHANICAL ROOM/BOILER ROOM AND MAIN ELECTRICAL ROOM TO THE NEW EMERGENCY PANELBOARD.
* CONNECT LIGHTING FIXTURES IN TOILET ROOMS ON NORMAL CIRCUITS TO THE NEW EMERGENCY PANELBOARD, WHERE INDICATED ON DRAWINGS.

THE SCOPE OF WORK INDICATED ON THIS SHEET IS INTENDED AS A BRIEF SUMMARY FOR GENERAL INFORMATIONAL PURPOSES ONLY, AND DOES NOT NECESSARILY INCLUDE ALL OF THE WORK REQUIRED. THE CONTRACTOR SHALL PROVIDE MATERIALS AND LABOR AS REQUIRED TO COMPLETE THE WORK AS INDICATED IN THE CONTRACT DOCUMENTS.

GRAPHIC SCALES

16 8 0 16 32
SCALE: 1/16" = 1'-0"

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

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

CAUTION: EXCEPT WHERE DIMENSIONS ARE INDICATED, GRAPHIC SCALE MUST BE USED.

Tag	Description	Date
	BID SET	02/06/23

PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title
TITLE SHEET

Sheet No:
T-1

MECHANICAL SYMBOLS AND ABBREVIATIONS

Symbol	Description
G	LOW PRESSURE GAS PIPE
G (2 PSI)	MEDIUM PRESSURE GAS PIPE
	PIPE CAP OR PLUG
	UNION
	SHUT-OFF VALVE
	SOLENOID VALVE
	PRESSURE REDUCING / REGULATING VALVE
M	METER
	GAUGE COCK / TEST PORT
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	FLOW DIRECTION ARROW
	STRAINER
	POINT OF CONNECTION, NEW TO EXISTING
	DEMOLITION WORK TERMINATION POINT
1	SYMBOL FOR SPECIFIC NOTE. NOTE APPLIES TO DRAWING ON WHICH IT OCCURS.
3 / M1	DETAIL OR DIAGRAM NO. 3 SHOWN ON DRAWING M1

Abbreviation	Meaning
ø	INDICATES DIAMETER
A/D	ACCESS DOOR
AAV	AUTOMATIC AIR VENT
ABV	ABOVE
AFF	ABOVE FINISHED FLOOR
BLDG	BUILDING
BLW	BELOW
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
CONC	CONCRETE
CW	DOMESTIC COLD WATER PIPE
DIA	DIAMETER
EA	EXHAUST AIR
ETR	EXISTING TO REMAIN
EX	EXISTING
EXH	EXHAUST
FL	FLOOR
FT	FEET
G	GAS PIPE
GALV	GALVANIZED
IN	INCH, INCHES
MAX	MAXIMUM
MBH	THOUSAND BTU'S PER HOUR
MCPS	MONTGOMERY COUNTY PUBLICK SCHOOLS
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
OA	OUTDOOR AIR
PSI	POUNDS PER SQUARE INCH
RX	REMOVE EXISTING
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED

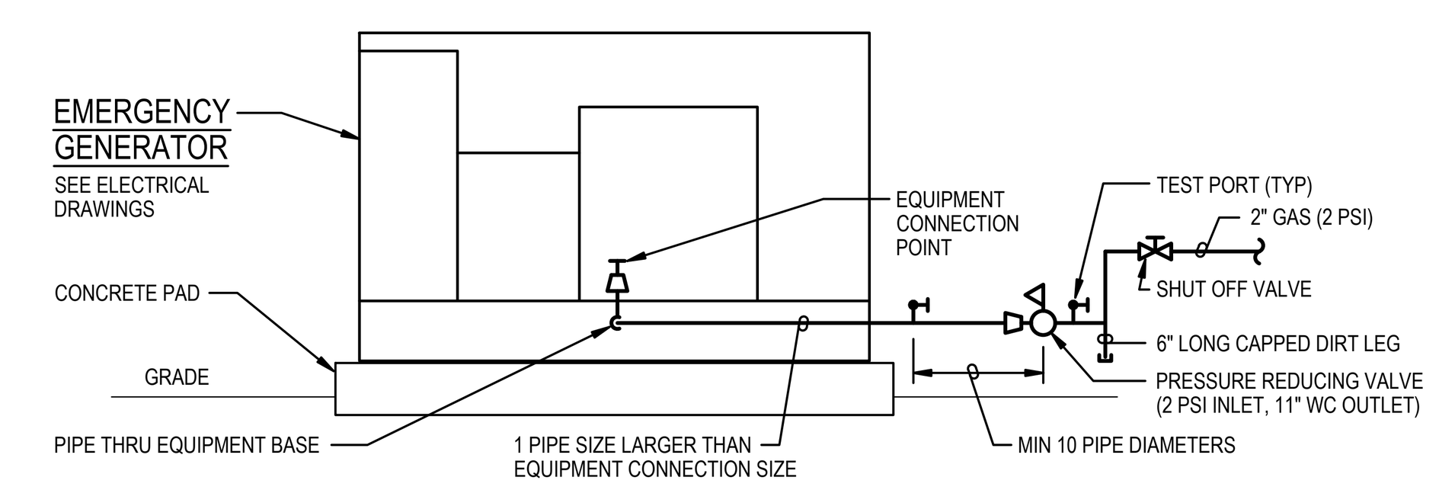

DIAGRAM 1 / M-1
EQUIPMENT CONNECTION
NOT TO SCALE

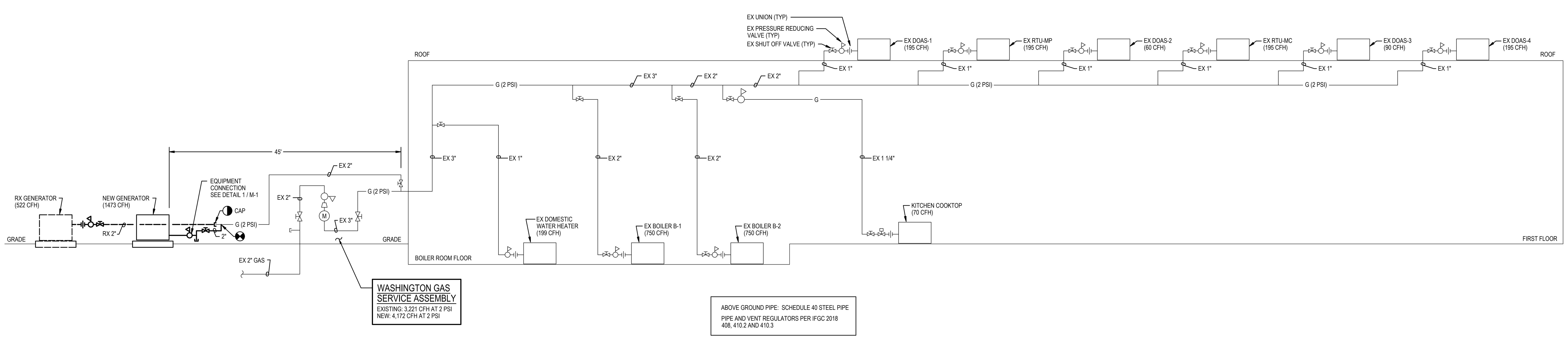

DIAGRAM 2 / M-1
GAS RISER
NOT TO SCALE

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND – MICHAEL PATRICK SHERREN – 33986 – PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 33986, Expiration date 01-16-2025.

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Tag	Description	Date
	BID SET	02/06/23

PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title

DIAGRAMS, SYMBOLS AND ABBREVIATIONS

Sheet No:

M-1

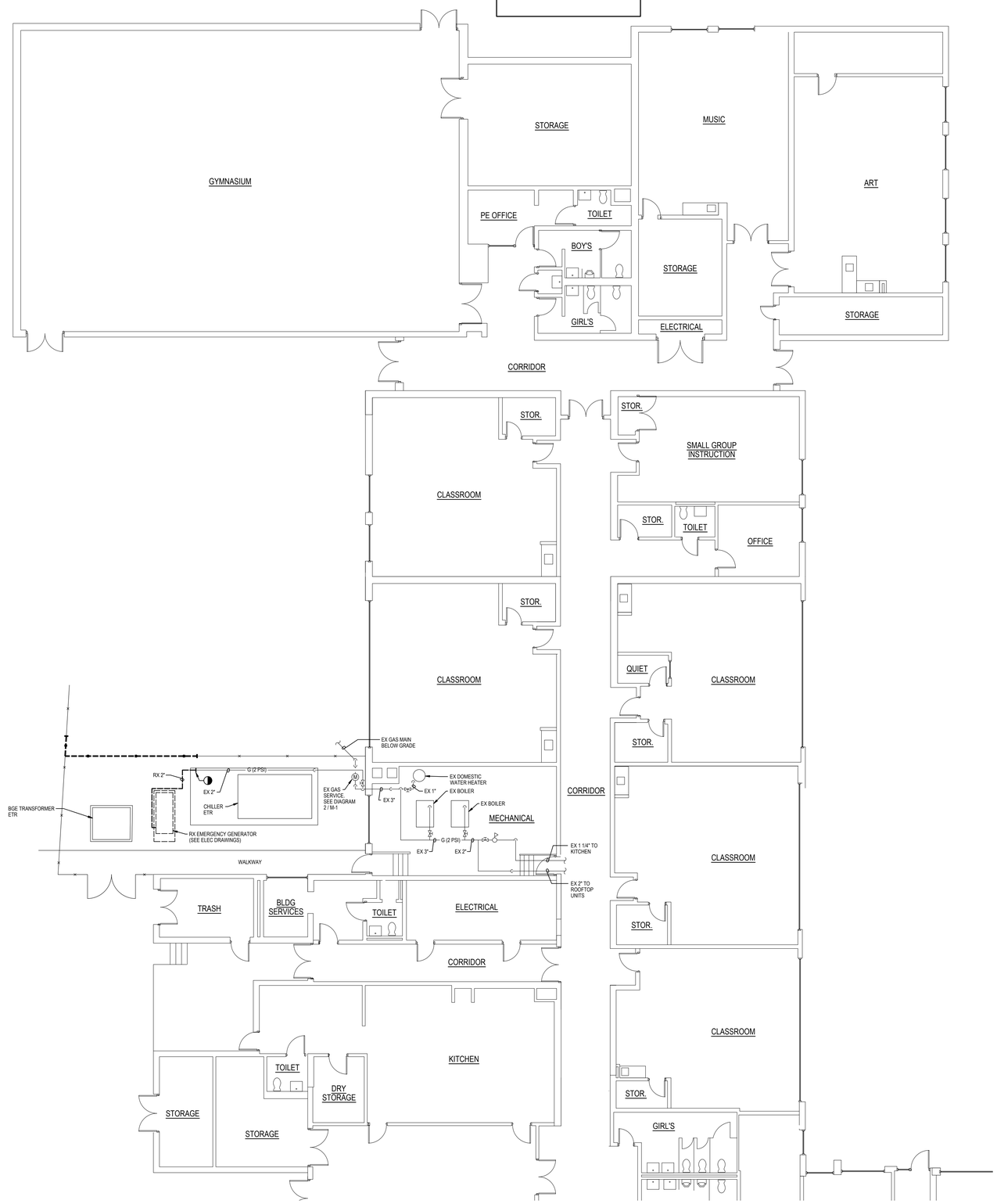
GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY MECHANICAL AND RELATED ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

C. UNLESS OTHERWISE NOTED, MECHANICAL/PLUMBING ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND MECHANICAL/ PLUMBING ITEMS SHOWN LIGHT SOLID (————) SHALL REMAIN.

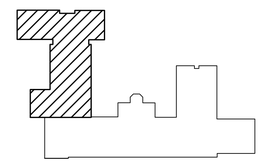
D. NEW GENERATOR AND GAS PIPING TO BE INSTALLED BEFORE EXISTING IS REMOVED. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.



1 / M-2 PART FLOOR PLAN - AREA A
DEMOLITION
SCALE: 1/8" = 1'-0"

NORTH

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



KEY PLAN
NOT TO SCALE

NORTH

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND
MICHAEL PATRICK MCGUIRE
33986
PROFESSIONAL ENGINEER

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Tag	Description	Date
	BID SET	02/06/23

PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title

PART FLOOR PLAN
AREA A
DEMOLITION

Sheet No:

M-2

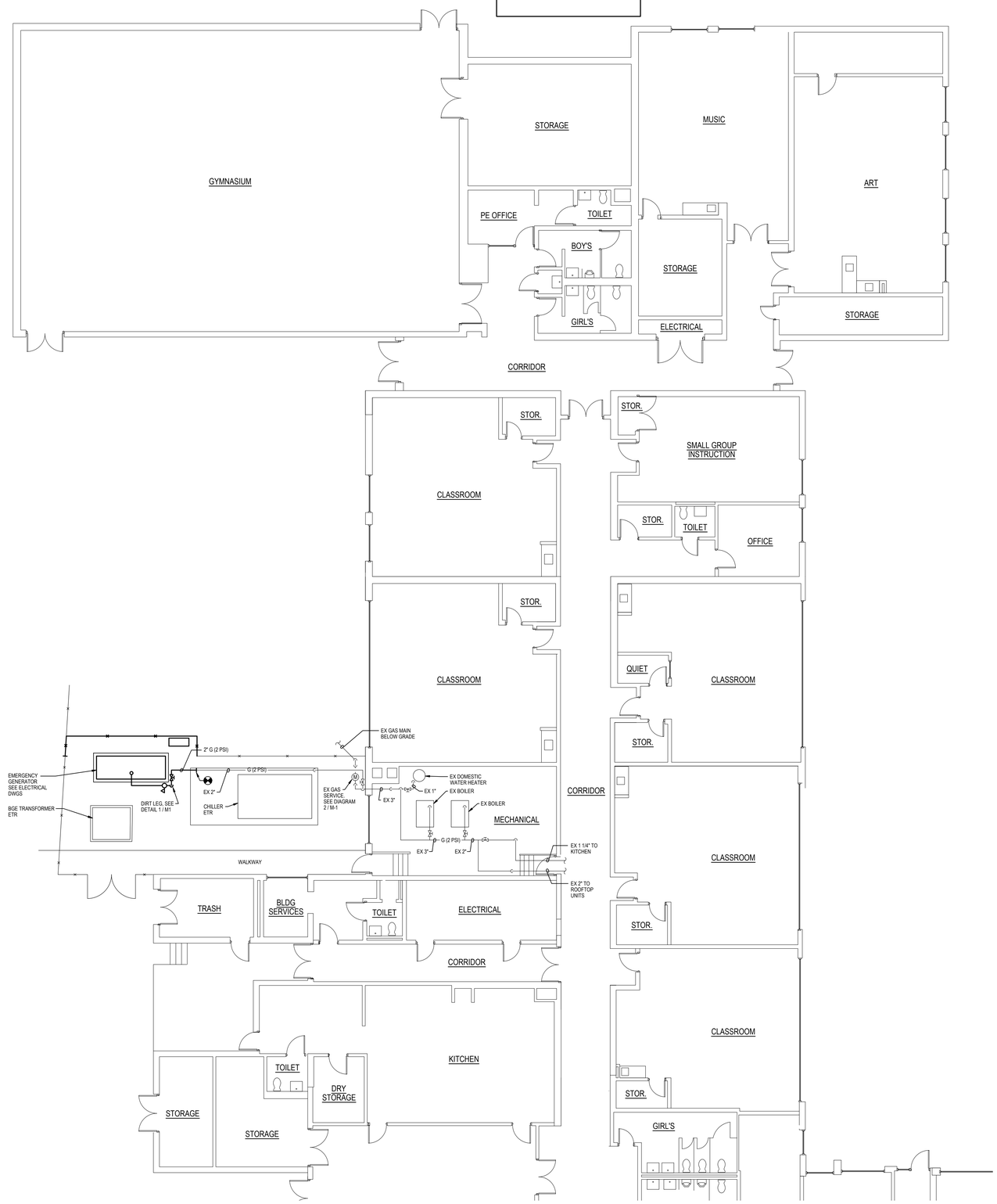
GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. DO NOT LOCATE PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT.

C. UNLESS OTHERWISE NOTED, MECHANICAL/PLUMBING ITEMS SHOWN HEAVY (———) SHALL BE NEW AND MECHANICAL/PLUMBING ITEMS SHOWN LIGHT (———) ARE EXISTING TO REMAIN.

D. NEW GENERATOR AND GAS PIPING TO BE INSTALLED BEFORE EXISTING IS REMOVED. REFER TO ELECTRICAL DRAWINGS FOR ADDITIONAL PHASING INFORMATION.



1 / M-3 PART FLOOR PLAN - AREA A
NEW WORK
SCALE: 1/8" = 1'-0"

NORTH

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

KEY PLAN
NOT TO SCALE

NORTH

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

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Tag	Description	Date
	BID SET	02/06/23

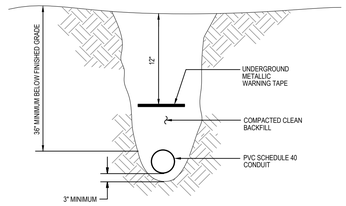
PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title

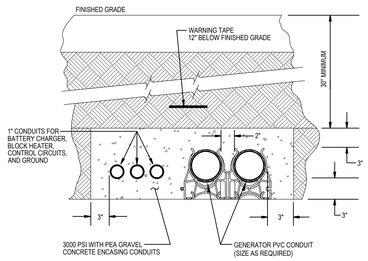
PART FLOOR PLAN
AREA A
NEW WORK

Sheet No:

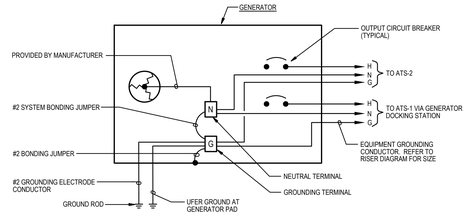
M-3



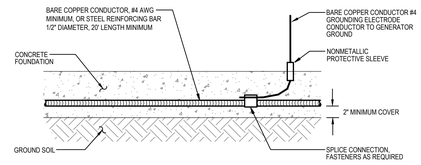
8 E-0 **DETAIL**
DIRECTLY-BURIED CONDUIT
NOT TO SCALE



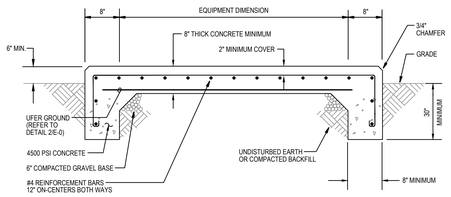
7 E-0 **DETAIL**
GENERATOR DUCTBANK
NOT TO SCALE



3 E-0 **DIAGRAM**
GENERATOR GROUNDING WIRING
NOT TO SCALE



2 E-0 **DETAIL**
TYPICAL UFER GROUND
NOT TO SCALE



1 E-0 **DETAIL**
GENERATOR CONCRETE PAD
NOT TO SCALE

GENERATOR DOCKING STATION

FOR CONNECTIONS TO A TEMPORARY PORTABLE GENERATOR

CONFIGURE TEMPORARY PORTABLE GENERATOR WITH GENERATOR NEUTRAL CONNECTED TO GENERATOR GROUND. GENERATOR SHALL BE A SEPARATELY DERIVED SYSTEM.

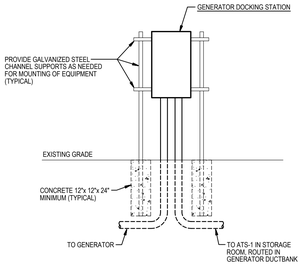
MECHANICALLY FASTEN SIGN TO FRONT OF GENERATOR DOCKING STATION

6 E-0 **DETAIL**
PLACARD AT GENERATOR DOCKING STATION
NOT TO SCALE

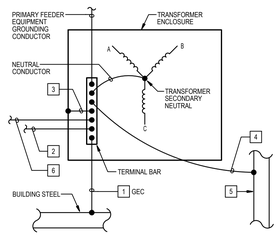
EMERGENCY AND STANDBY POWER
125KW, 277/480 VOLTS, 3-PHASE, 4-WIRE
NATURAL GAS GENERATOR
LOCATED OUTDOORS
NEXT TO LOADING DOCK AND
MECHANICAL ROOM

MECHANICALLY FASTEN SIGN TO FRONT OF MAIN SWITCHBOARD

5 E-0 **DETAIL**
PLACARD AT MAIN SERVICE
NOT TO SCALE



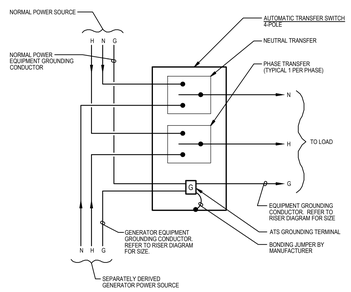
10 E-0 **DETAIL**
ELECTRICAL EQUIPMENT ELEVATION
NOT TO SCALE



DETAIL NOTES:

1. GROUNDING ELECTRODE CONDUCTOR (GEC), SIZED PER SCHEDULE OF TRANSFORMERS ON DRAWING E7.
2. SUPPLY-SIDE BONDING JUMPER, 2017 NEC TABLE 250.102(C)(1), SIZED PER SCHEDULE OF TRANSFORMERS ON DRAWING E7, TO EQUIPMENT GROUND BAR OF PANELBOARD SUPPLIED BY TRANSFORMER.
3. SYSTEM BONDING JUMPER, SIZED PER SUPPLY-SIDE BONDING JUMPER.
4. SYSTEM BONDING CONDUCTOR, SIZED PER PER SUPPLY-SIDE BONDING JUMPER.
5. METAL WATER PIPING SYSTEM (TYPICAL FOR EACH SYSTEM IN AREA SERVED BY TRANSFORMER).
6. NEUTRAL CONDUCTOR, TO NEUTRAL BUS BAR (ISOLATED NEUTRAL TERMINAL) OF PANELBOARD SUPPLIED BY TRANSFORMER.

9 E-0 **DETAIL**
TRANSFORMER GROUNDING & BONDING
NOT TO SCALE



4 E-0 **DIAGRAM**
AUTOMATIC TRANSFER SWITCH GROUND WIRING
NOT TO SCALE

ABBREVIATIONS

A, AMP	AMPERE(S)
AIC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
C	CONDUIT
CB	CIRCUIT BREAKER
CKT	CIRCUIT
CT	CURRENT TRANSFORMERS
DIST	DISTRIBUTION
EM	EMERGENCY
ETR	EXISTING TO REMAIN
EX	EXISTING
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
G	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
H	HOT
HP	HORSEPOWER
KVA	KILOVOLT-AMPERES
KW	KILOWATTS
LTG	LIGHTING
MCPS	MONTGOMERY COUNTY PUBLIC SCHOOLS
MIN	MINIMUM
N	NEUTRAL
NEMA	NATIONAL ELECTRICAL MANUFATURERS ASSOCIATION
P	POLE(S) OR PUMP
PA	PUBLIC ADDRESS
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
REC	RECEPTACLE
REFRIG	REFRIGERATOR
RX	REMOVE EXISTING
SPD	SURGE PROTECTIVE DEVICE
STOR.	STORAGE
V	VOLT(S)
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE(S)
XFMR	TRANSFORMER
Ø	PHASE

ELECTRICAL SYMBOLS AND ABBREVIATIONS

GENERAL

- (1) — DENOTES REFERENCE TO SPECIFIC NOTE ON DRAWING.
- (1 / E-1) — DETAIL, DIAGRAM OR PLAN NUMBER / DRAWING NUMBER WHERE DETAIL, DIAGRAM OR PLAN IS LOCATED.
- #/E-# — DETAIL, DIAGRAM OR PLAN REFERENCE: DETAIL, DIAGRAM OR PLAN NUMBER/DRAWING NUMBER

NOTES:

A. PROVIDE DEDICATED NEUTRAL CONDUCTOR FOR EACH BRANCH CIRCUIT.

B. THE EXISTING FACILITY WILL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE USER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORK HOURS.

DEMOLITION

- DISCONNECT AND REMOVE EXISTING WIRING IN CONDUIT, UNLESS OTHERWISE NOTED.
- DISCONNECT AND REMOVE EXISTING HOMERUN WIRING IN CONDUIT BACK TO SOURCE.
- DISCONNECT AND REMOVE PANELBOARD OR CABINET AS INDICATED.
- DISCONNECT AND REMOVE TRANSFORMER, INCLUDING HOUSEKEEPING PAD.
- DISCONNECT AND REMOVE ENCLOSED SWITCH (DISCONNECT/SAFETY SWITCH).
- DISCONNECT AND REMOVE EXISTING DUPLEX OR DOUBLE-DUPLEX (QUAD) RECEPTACLE.

EXISTING

- EXISTING TO REMAIN WALL OUTLET AND LIGHTING FIXTURE.
- EXISTING TO REMAIN CEILING OUTLET AND LIGHTING FIXTURE.
- EXISTING TO REMAIN WALL OUTLET AND LIGHTING FIXTURE PREVIOUSLY ON NORMAL POWER CIRCUIT AND CHANGED TO GENERATOR POWER CIRCUIT.
- EXISTING TO REMAIN CEILING OUTLET AND LIGHTING FIXTURE ON GENERATOR POWER CIRCUIT, OR PREVIOUSLY ON NORMAL POWER CIRCUIT AND CHANGED TO GENERATOR POWER CIRCUIT.
- S_E — EXISTING TO REMAIN WALL MOUNTED SWITCH.
- EXISTING TO REMAIN 277/480 OR 120/208V PANELBOARD, SURFACE MOUNTED.
- T — EXISTING TO REMAIN TRANSFORMER.
- EM — EXISTING TO REMAIN WIRING IN CONDUIT.
- EXISTING TO REMAIN WIRING IN CONDUIT CONTINUED.
- EXISTING TO REMAIN WIRING IN CONDUIT TURNING DOWN.
- EXISTING TO REMAIN HOMERUN WIRING IN CONDUIT BACK TO SOURCE.
- J — EXISTING TO REMAIN WALL MOUNTED JUNCTION BOX.
- Ø — EXISTING TO REMAIN MOTOR CONNECTION.
- EXISTING EQUIPMENT CONNECTION TO BE RECONNECTED WHERE INDICATED.
- D — EXISTING TO REMAIN ENCLOSED SWITCH (DISCONNECT/SAFETY SWITCH).
- M — EXISTING TO REMAIN MOTOR STARTER.
- VFD — EXISTING TO REMAIN VARIABLE FREQUENCY DRIVE.
- EXISTING TO REMAIN DUPLEX RECEPTACLE.
- EXISTING TO REMAIN QUADRUPLEX (DOUBLE-DUPLEX) RECEPTACLE.

POWER

- HOMERUN TO PANELBOARD. NUMBER OF HASH MARKS INDICATES NUMBER OF WIRES PLUS GROUND WIRE. REFER TO PANEL SCHEDULES FOR CONDUCTOR SIZES. PROVIDE GROUND WIRES IN CONDUITS.
- HOMERUN TO PANELBOARD, RUN BELOW GRADE. NUMBER OF HASH MARKS INDICATES NUMBER OF WIRES PLUS GROUND WIRE. REFER TO PANEL SCHEDULES FOR CONDUCTOR SIZES. PROVIDE GROUND WIRES IN CONDUITS.
- EM — WIRING IN CONDUIT RUN CONCEALED IN CEILING SPACE ABOVE CEILINGS AND EXPOSED IN OPEN CEILINGS, UNLESS OTHERWISE NOTED. WIRING IN CONDUIT DESIGNATED WITH "EM" DENOTE EMERGENCY LIGHTING CIRCUIT. PROVIDE GROUND WIRES IN CONDUITS.
- WIRING IN CONDUIT RUN BELOW GRADE OR BELOW ROOF.
- WIRING IN CONDUIT CONTINUED.
- J — JUNCTION BOX WITH BLANK COVER PLATE.
- ELECTRIC PANELBOARD (277/480V), SURFACE MOUNTED.
- T — TRANSFORMER.
- ELECTRIC PANELBOARD (120/208V), SURFACE MOUNTED.
- EQUIPMENT CABINET AS NOTED.
- ATS — AUTOMATIC TRANSFER SWITCH.
- CB — ENCLOSED CIRCUIT BREAKER.
- D — ENCLOSED SWITCH (DISCONNECT/SAFETY SWITCH) IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED. MOUNT 5'-6" ABOVE FLOOR TO TOP OF ENCLOSURE, UNLESS OTHERWISE NOTED. RATING AND FUSING AS INDICATED.
- Ø — MOTOR CONNECTION.
- HARD-WIRED ELECTRICAL CONNECTION. CONNECT TO EQUIPMENT AS NOTED.
- SPD — SURGE PROTECTIVE DEVICE IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED.
- DUPLEX RECEPTACLE (NEMA 5-20R) ON GENERATOR STANDBY POWER CIRCUIT, SURFACE WALL-MOUNTED 16" ABOVE FLOOR TO BOTTOM OF BOX.
- WP — DUPLEX RECEPTACLE (NEMA 5-20R) ON GENERATOR STANDBY POWER CIRCUIT, SURFACE WALL-MOUNTED 48" ABOVE FLOOR TO TOP OF BOX. RECEPTACLES DESIGNATED WITH A "WP" SHALL BE WEATHER-RESISTANT AND GROUND FAULT CIRCUIT INTERRUPTER (GFCI) TYPE RECEPTACLE (NEMA 5-20R) WITH WEATHERPROOF WHILE-IN-USE COVER. RECEPTACLES DESIGNATED WITH A "H" SHALL BE SHALL BE HOSPITAL GRADE TYPE.
- DOUBLE-DUPLEX (QUADRUPLEX) RECEPTACLE (NEMA 5-20R) ON GENERATOR STANDBY POWER CIRCUIT, SURFACE WALL-MOUNTED 48" ABOVE FLOOR TO TOP OF BOX.

FIRE DETECTION AND ALARM

- MM MM — MONITORING MODULES. PROVIDE FIRE ALARM WIRING IN CONDUIT AND CONNECT MONITORING MODULES TO EXISTING FIRE DETECTION AND ALARM SYSTEM FOR "GENERATOR RUN" AND "GENERATOR FAULT". MAKE CONNECTIONS NECESSARY FOR COMPLETE INSTALLATION. RE-PROGRAM FIRE ALARM CONTROL PANEL AS REQUIRED.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND — No. 24861 — PROFESSIONAL ENGINEER

Professional Certification, I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date 02-24-2024.

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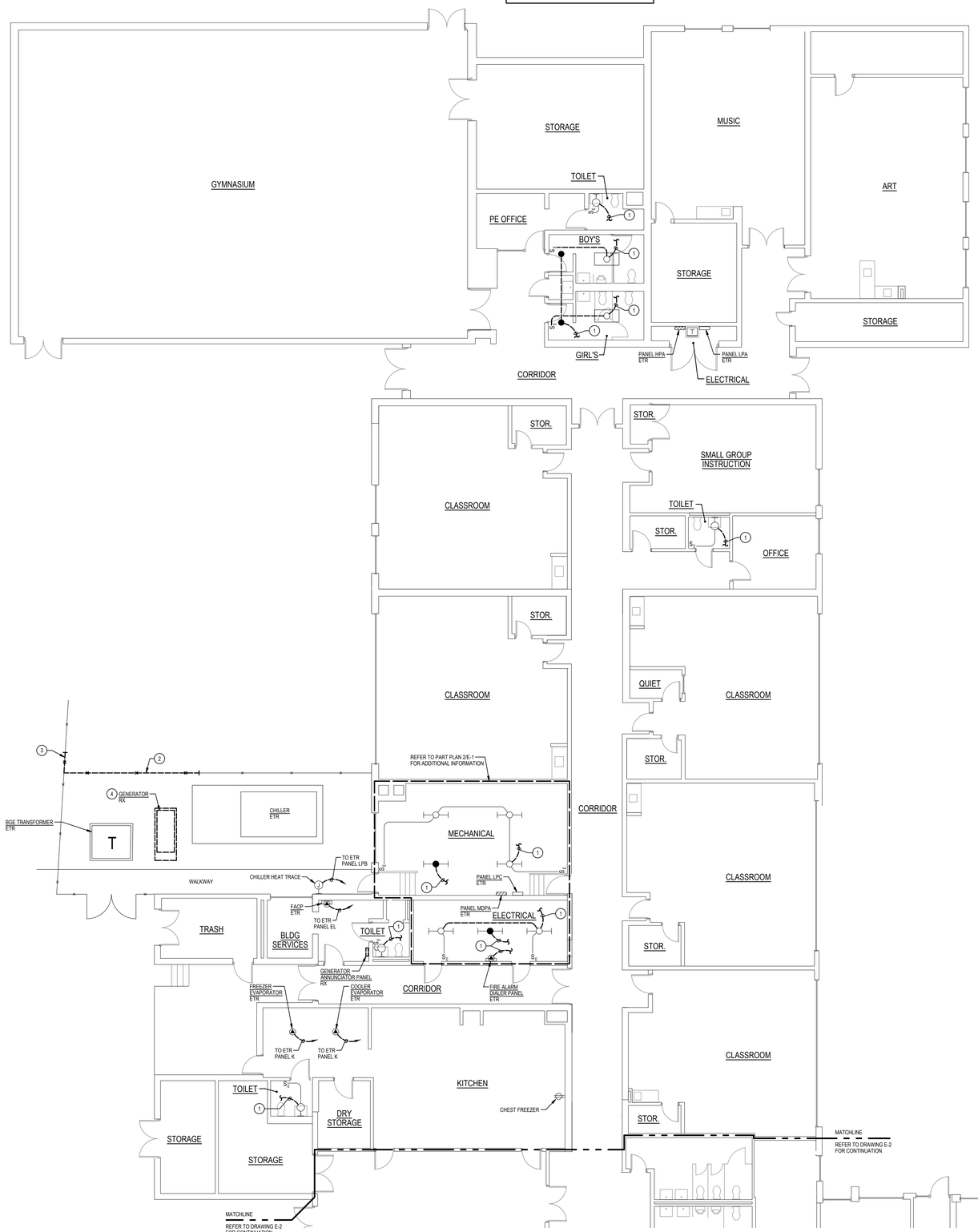
Tag	Description	Date
	BID SET	02/06/23

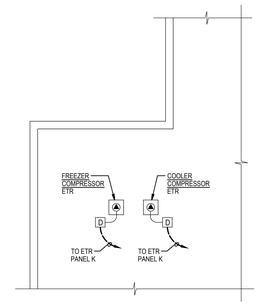
PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title
SYMBOLS LIST, ABBREVIATIONS, DETAILS AND DIAGRAMS

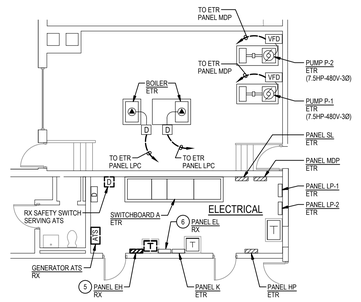
Sheet No:
E-0



1 E-1 **PART FLOOR PLAN - AREA A**
DEMOLITION
SCALE: 1/8" = 1'-0"



3 E-1 **PART PLAN - ROOF**
DEMOLITION
SCALE: 1/16" = 1'-0"

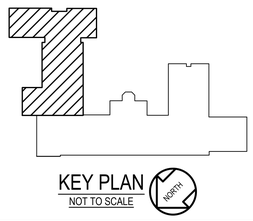


2 E-1 **PART PLAN - ELECTRICAL ROOM**
DEMOLITION
SCALE: 1/8" = 1'-0"

NORTH

16 8 0 16 32
SCALE: 1/16" = 1'-0"

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



KEY PLAN
NOT TO SCALE

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

E. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (———) SHALL REMAIN.

F. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

G. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

H. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

I. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT ARE TO REMAIN, SHALL BE MADE CONTINUOUS.

J. WHERE DEVICES ARE TO BE REMOVED AND REINSTALLED, PROVIDE WIRE AND CONDUIT TO NEW LOCATION AS REQUIRED.

K. IN BLOCK OR CONCRETE WALLS TO REMAIN, PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR DEVICES REMOVED.

SPECIFIC NOTES:

1. DISCONNECT AND REMOVE EXISTING WIRING IN CONDUIT SERVING EXISTING LIGHTING FIXTURE(S).
2. REMOVE PORTION OF CHAIN LINK FENCE TO ALLOW FOR INSTALLATION OF NEW WORK.
3. REMOVE PORTION OF WOOD FENCE TO ALLOW FOR INSTALLATION OF NEW WORK.
4. DISCONNECT AND REMOVE EXISTING GENERATOR, INCLUDING HOUSEKEEPING PAD AND CONDUIT AND WIRING BACK TO SOURCE FOR BLOCK HEATER, BATTERY CHARGER AND CONTROL WIRING.
5. REMOVE PORTION OF EXISTING BRANCH CIRCUITS EH-7, EF-9, AND EH-11 TO ABOVE ACCESSIBLE CEILING SPACE FOR SPLICING TO NEW PANEL. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
6. DISCONNECT EXISTING BRANCH CIRCUITS FROM CIRCUIT BREAKERS EXISTING CIRCUITS SHALL REMAIN. REMOVE INTERIOR COMPONENTS (BUSBAR, CIRCUIT BREAKERS) OF EXISTING PANEL EL. ENCLOSURE OF EXISTING PANEL EL SHALL REMAIN AND BECOME A PULLBOX.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT
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13530 REDGRAVE PLACE
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MONTGOMERY COUNTY PUBLIC SCHOOLS

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PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title
PART FLOOR PLAN
AREA A
DEMOLITION

Sheet No:
E-1

GENERAL NOTES:

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B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

E. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (————) SHALL REMAIN.

F. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

G. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

H. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

I. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT ARE TO REMAIN, SHALL BE MADE CONTINUOUS.

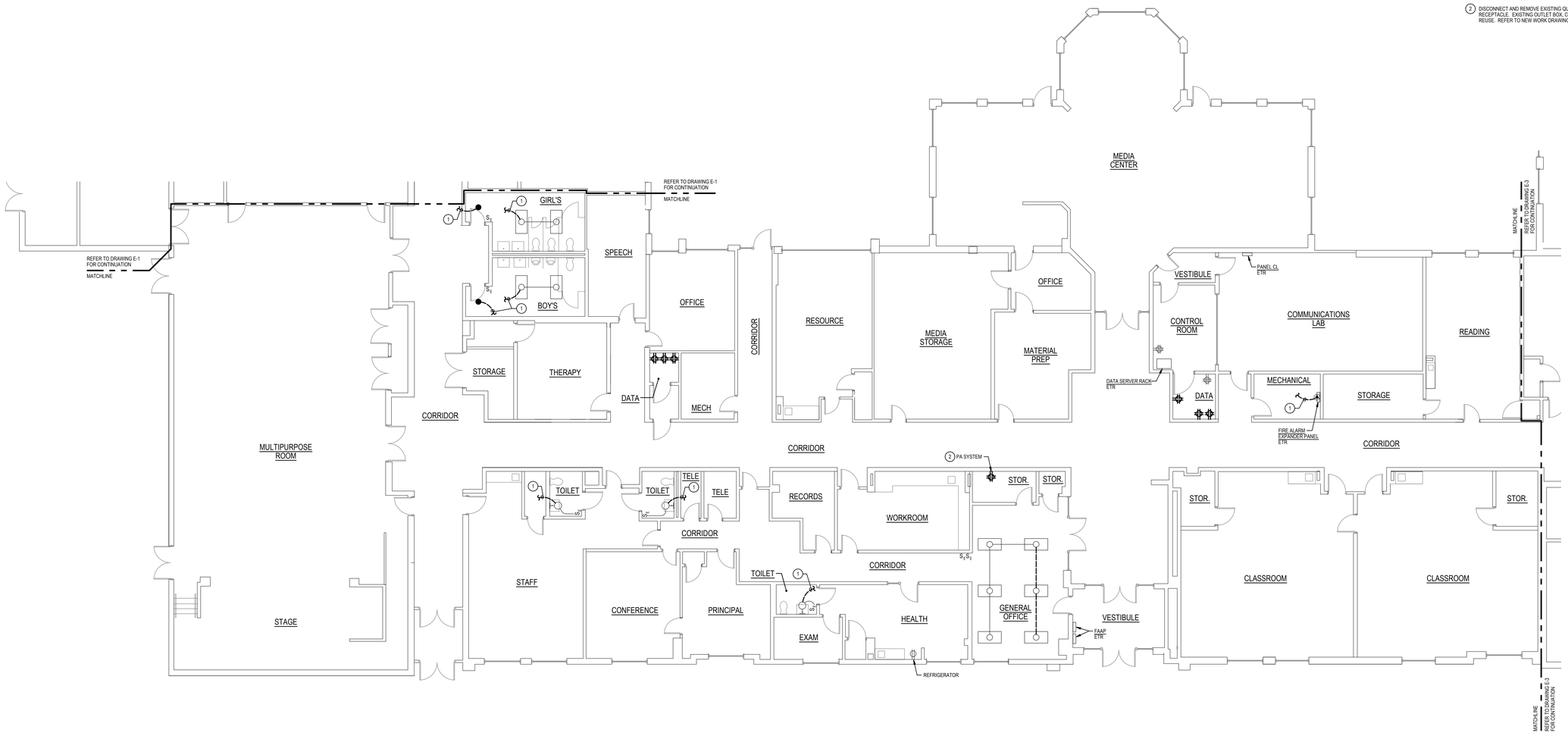
J. WHERE DEVICES ARE TO BE REMOVED AND REINSTALLED, PROVIDE WIRE AND CONDUIT TO NEW LOCATION AS REQUIRED.

K. IN BLOCK OR CONCRETE WALLS TO REMAIN, PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR DEVICES REMOVED.

SPECIFIC NOTES:

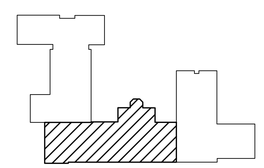
(1) DISCONNECT AND REMOVE EXISTING WIRING IN CONDUIT SERVING EXISTING LIGHTING FIXTURE(S) AND FIRE ALARM EQUIPMENT. RESPECTIVELY.

(2) DISCONNECT AND REMOVE EXISTING QUADRUPLEX (DOUBLE DUPLEX) RECEPTACLE. EXISTING OUTLET BOX, CONDUIT, AND WIRING TO REMAIN FOR REUSE. REFER TO NEW WORK DRAWINGS FOR ADDITIONAL INFORMATION.



1 / E-2 PART FLOOR PLAN - AREA B
DEMOLITION
SCALE: 1/8" = 1'-0"

NORTH



KEY PLAN
NOT TO SCALE

NORTH

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT
CLARKSBURG ELEMENTARY SCHOOL
13530 REDGRAVE PLACE
CLARKSBURG, MD 20871
MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND · JAMES · POSEY · No. 24861 · PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date 02-24-2024.

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Project No	7737-22
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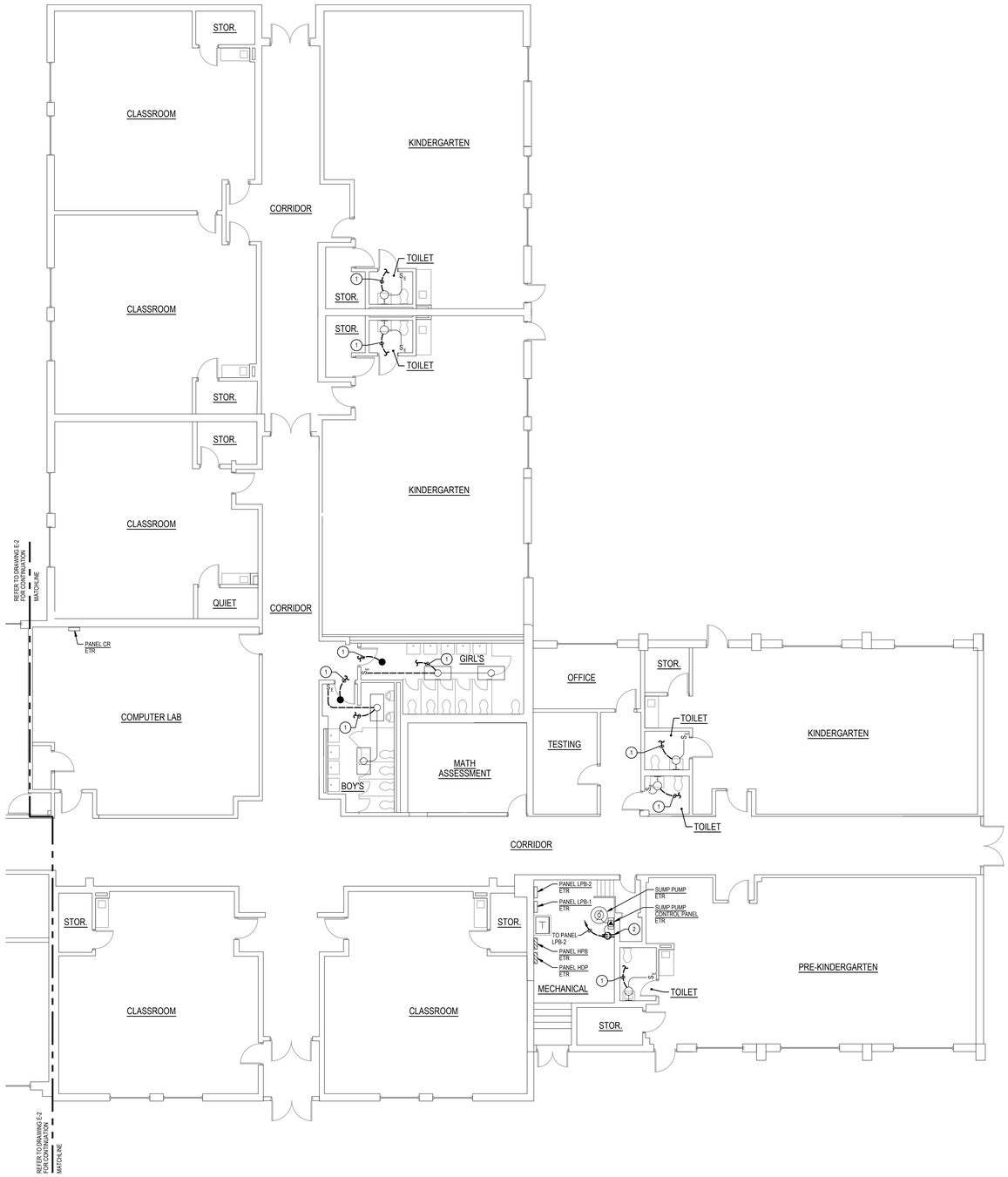
Drawing Title
PART FLOOR PLAN
AREA B
DEMOLITION

Sheet No:
E-2



1 / E-3 PART FLOOR PLAN - AREA C DEMOLITION

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

NORTH

8 4 0 8 16

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

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

E. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (————) SHALL REMAIN.

F. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

G. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

H. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

I. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT ARE TO REMAIN, SHALL BE MADE CONTINUOUS.

J. WHERE DEVICES ARE TO BE REMOVED AND REINSTALLED, PROVIDE WIRE AND CONDUIT TO NEW LOCATION AS REQUIRED.

K. IN BLOCK OR CONCRETE WALLS TO REMAIN, PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR DEVICES REMOVED.

SPECIFIC NOTES:

(1) DISCONNECT AND REMOVE EXISTING CONDUIT AND WIRING SERVING EXISTING LIGHTING FIXTURE(S).

(2) DISCONNECT AND REMOVE EXISTING RECEPTACLE AND COVER PLATE. OUTLET BOX AND CONDUIT AND WIRING TO SUMP PUMP CONTROL PANEL SHALL REMAIN FOR REUSE.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND — JAMES POSEY — No. 24861 — PROFESSIONAL ENGINEER

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	BID SET	02/06/23

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Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title

PART FLOOR PLAN
AREA C
DEMOLITION

Sheet No:

E-3

KEY PLAN
NOT TO SCALE

NORTH

CLARKSBURG ELEMENTARY SCHOOL

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

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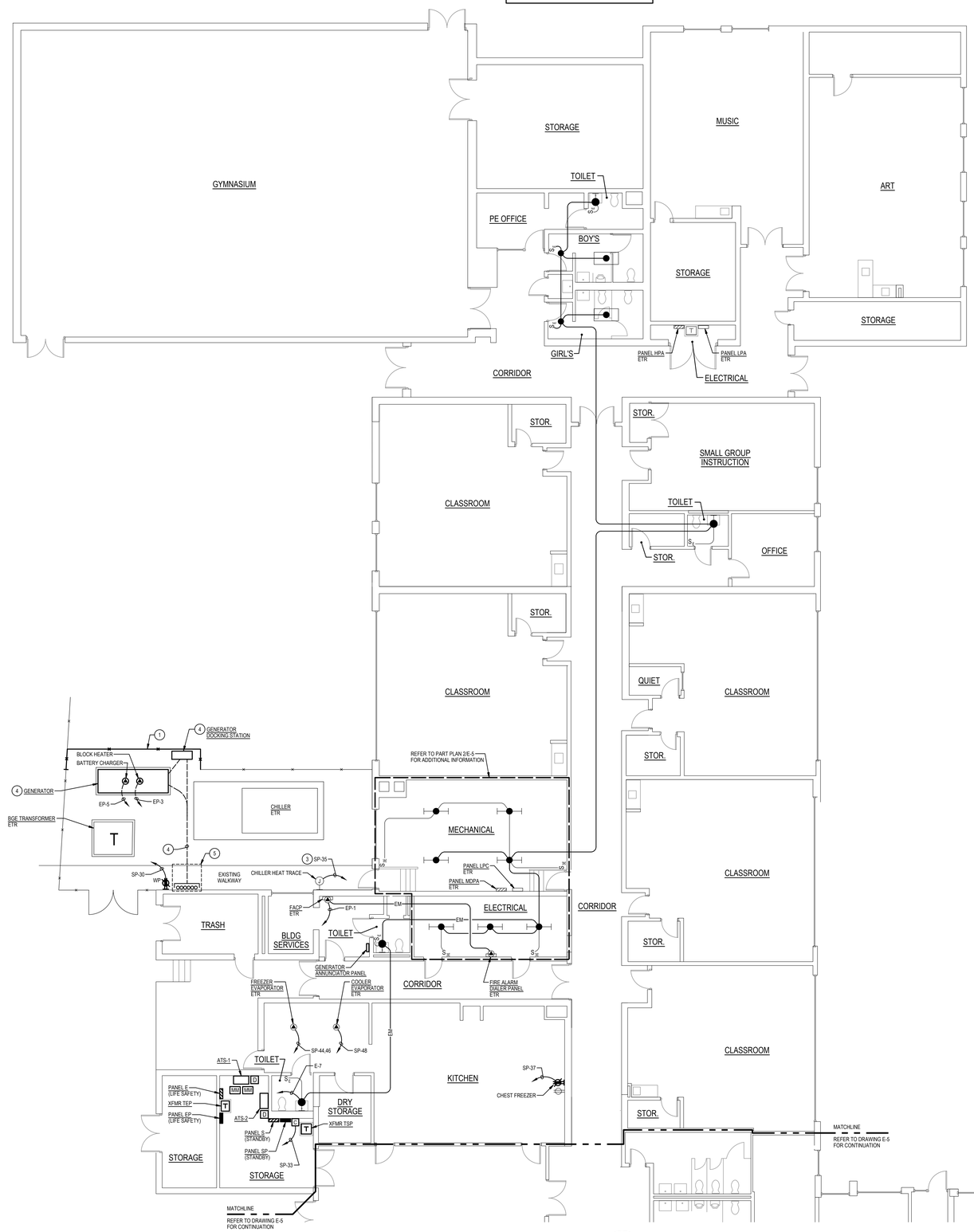
B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

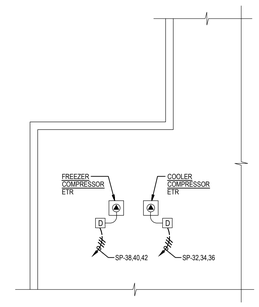
D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

SPECIFIC NOTES:

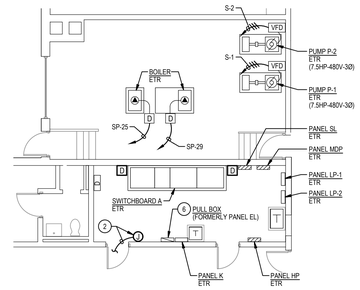
1. PROVIDE CHAIN LINK FENCE. MAINTAIN MINIMUM 3'-0" CLEARANCE AROUND GENERATOR.
2. SPLICE EXISTING BRANCH CIRCUITS EH-7, EH-9, AND EH-11 ABOVE ACCESSIBLE CEILING SPACE AND EXTEND TO PANEL E. REFER TO WIRING PANEL SCHEDULE E ON DRAWING E-7 FOR ADDITIONAL INFORMATION.
3. PROVIDE CONNECTION TO GFCI TYPE CIRCUIT BREAKER. REFER TO PANEL SCHEDULE ON DRAWING E-7 FOR ADDITIONAL INFORMATION.
4. REFER TO POWER RISER DIAGRAM 2/E-7 FOR CONNECTIONS, DUCTBANK SIZES, AND ADDITIONAL INFORMATION ON ELECTRICAL EQUIPMENT AS NOTED.
5. CUT AND PATCH EXISTING CONCRETE WALKWAY AS NEEDED FOR INSTALLATION OF GENERATOR DUCTBANK AND CONDUITS.
6. UTILIZE PANELBOARD ENCLOSURE AS A PULLBOX TO INTERCEPT AND SPLICE EXISTING BRANCH CIRCUITS E1-2, 4, 6, 8, 10, 11, 12, 13, 14, 15, 16, 18, 20, 21, 23, 26, AND 28 AND EXTEND TO PANEL SP. REFER TO SPECIFIC NOTE 6 ON DRAWING E-1 AND WIRING SCHEDULE FOR PANEL SP ON DRAWING E-7 FOR ADDITIONAL INFORMATION.



1 E-4 PART FLOOR PLAN - AREA A
NEW WORK
SCALE: 1/8" = 1'-0"



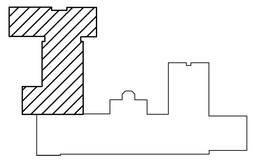
3 E-4 PART PLAN - ROOF
NEW WORK
SCALE: 1/16" = 1'-0"



2 E-4 PART PLAN - ELECTRICAL ROOM AREA A
NEW WORK
SCALE: 1/8" = 1'-0"

16 8 0 16 32
SCALE: 1/16" = 1'-0"

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



KEY PLAN
NOT TO SCALE

STATE OF MARYLAND
JAMES M. WHITE
No. 24861
PROFESSIONAL ENGINEER

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Date	FEBRUARY 6, 2023

Drawing Title
PART FLOOR PLAN
AREA A
NEW WORK

Sheet No:
E-4

GENERAL NOTES:

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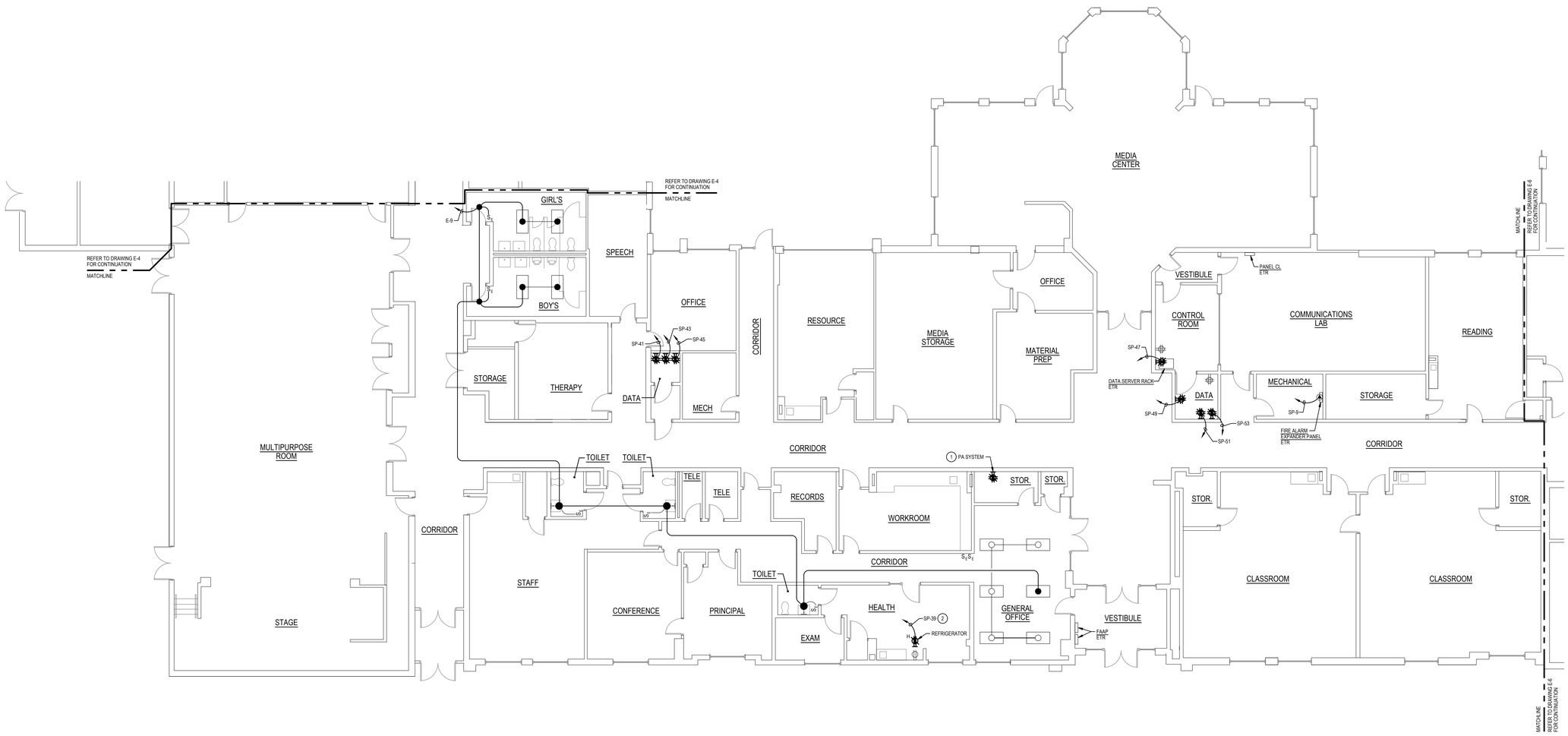
B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

SPECIFIC NOTES:

1. PROVIDE QUADRUPLEX RECEPTACLE IN EXISTING OUTLET BOX AND CONNECT TO EXISTING WIRING. PROVIDE NEW COVER PLATE.
2. PROVIDE CONNECTION TO GFCI TYPE CIRCUIT BREAKER. REFER TO PANEL SCHEDULE ON DRAWING E-7 FOR ADDITIONAL INFORMATION.



1 / E-5 PART FLOOR PLAN - AREA B
NEW WORK
SCALE: 1/8" = 1'-0"

NORTH

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

KEY PLAN
NOT TO SCALE
NORTH

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND · JAMES M. WALTZ · No. 24661 · PROFESSIONAL ENGINEER

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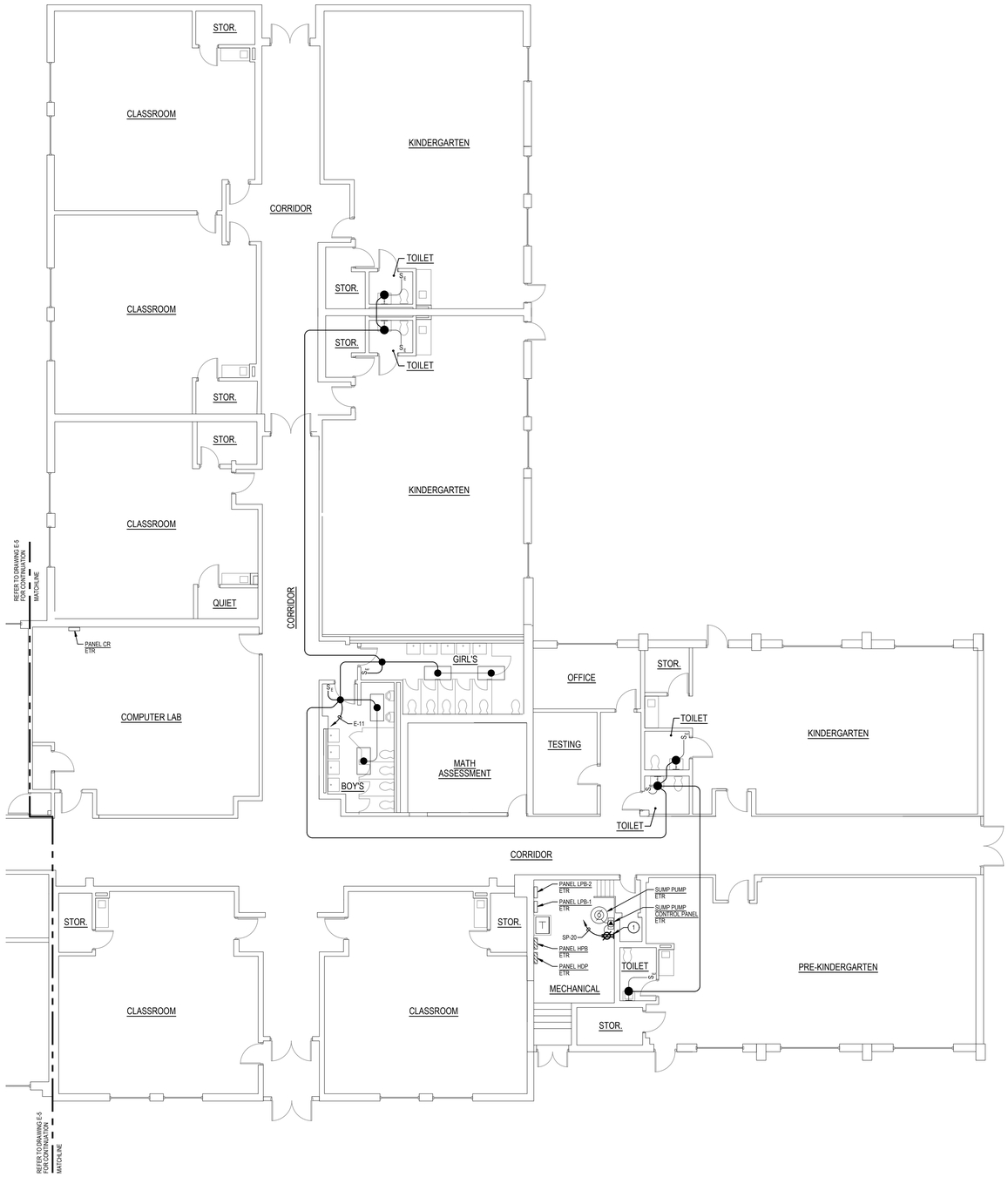
Drawing Title
PART FLOOR PLAN
AREA B
NEW WORK

Sheet No:
E-5



1 / E-6 PART FLOOR PLAN - AREA C

NEW WORK

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

NORTH

8 4 0 8 16

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

KEY PLAN

NOT TO SCALE

NORTH

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

SPECIFIC NOTES:

(1) PROVIDE RECEPTACLE IN EXISTING SURFACE MOUNTED OUTLET BOX AND INTERCONNECT TO SUMP PUMP CONTROL PANEL.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

STATE OF MARYLAND · JAMES · POSEY · No. 24861 · PROFESSIONAL ENGINEER

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date 02-24-2024.

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Tag	Description	Date
	BID SET	02/06/23

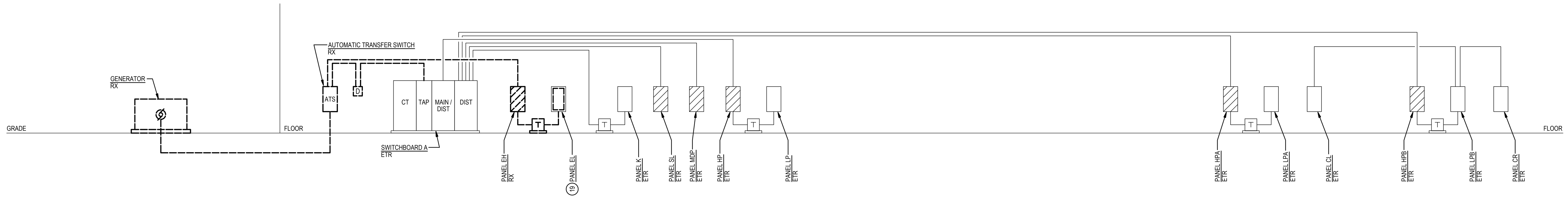
PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title

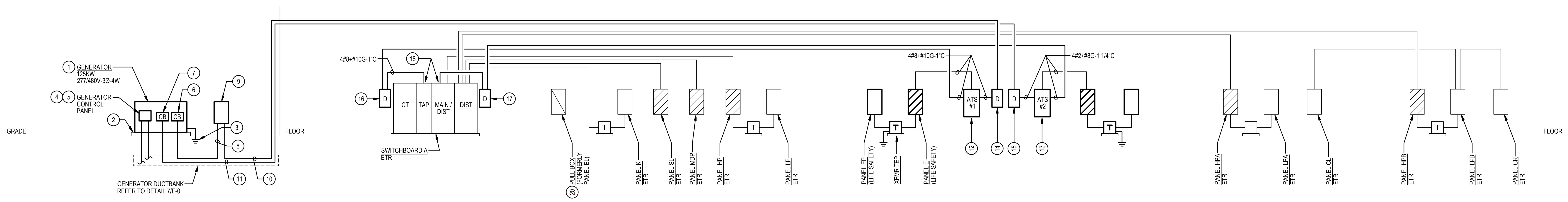
PART FLOOR PLAN
AREA C
NEW WORK

Sheet No:

E-6



1 / E-7 POWER RISER DIAGRAM
DEMOLITION
NOT TO SCALE



2 / E-7 POWER RISER DIAGRAM
NEW WORK
NOT TO SCALE

WIRING SCHEDULE: PANEL E

277 / 480 VOLTS — 3 PHASE 4 WIRE — 125 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø AØ		BØ		CØ		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	CKT 1 LIGHTS (FROM EH-7)	#8-3/4"C	1	20	1.5						2	2	SPARE		1	20
3	3	CKT 3 LIGHTS (FROM EH-9)	#8-3/4"C	1	20			1.5				4	4	SPARE		1	20
5	5	CKT 5 LIGHTS (FROM EH-11)	#8-3/4"C	1	20					1.5		6	6	SPARE		1	20
7	7	LTG AREA A	#8-3/4"C	1	20	1.3						8	8	SPARE		1	20
9	9	LTG AREA B	#8-3/4"C	1	20			1.2				10	10	SPARE		1	20
11	11	LTG AREA C	#8-3/4"C	1	20					0.8		12	12	SPARE		1	20
-	13	SPACE AND PROVISIONS	-	1	-	-	-					-	14	SPACE AND PROVISIONS	-	1	-
-	15	SPACE AND PROVISIONS	-	1	-			-	-			-	16	SPACE AND PROVISIONS	-	1	-
-	17	SPACE AND PROVISIONS	-	1	-					-	-	-	18	SPACE AND PROVISIONS	-	1	-
-	19	SPACE AND PROVISIONS	-	1	-	-	-					-	20	SPACE AND PROVISIONS	-	1	-
-	21	SPACE AND PROVISIONS	-	1	-			-	-			-	22	SPACE AND PROVISIONS	-	1	-
-	23	SPACE AND PROVISIONS	-	1	-					-	-	-	24	SPACE AND PROVISIONS	-	1	-
25	25	XFMR TEP	3#12+	3	25	1.0	-					-	26	SPACE AND PROVISIONS	-	1	-
-	27	(SERVING PANEL EP)	#12G-					1.0	-			-	28	SPACE AND PROVISIONS	-	1	-
-	29		3/4"C							0.5	-	-	30	SPACE AND PROVISIONS	-	1	-
						3.8	0.0	3.7	0.0	2.8	0.0						
						3.8		3.7		2.8							

CONNECTED LOAD = 10.3 KVA

DEMAND LOAD = 10.3 KVA

MIN AIC RATING = 42,000 AMPS SYMMETRICAL

MAIN FUSE 50 AMPS

LOCATION STORAGE

NOTES:
(1) PROVIDE FUSIBLE BRANCH CIRCUIT PANELBOARD.
(2) PROVIDE PANELBOARD WITH INTEGRAL SURGE PROTECTION DEVICE.

WIRING SCHEDULE: PANEL EP

120 / 208 VOLTS — 3 PHASE 4 WIRE — 100 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø AØ		BØ		CØ		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	FACP	#10-3/4"C	1	20	1.0						2	2	SPARE		1	20
3	3	BLOCK HEATER	#10-1"C	1	20			1.0				4	4	SPARE		1	20
5	5	BATTERY CHARGER	#10-1"C	1	20					0.5		6	6	SPARE		1	20
7	7	SPARE		1	20							8	8	SPARE		1	20
9	9	SPARE		1	20							10	10	SPARE		1	20
11	11	SPARE		1	20							12	12	SPARE		1	20
-	13	SPACE AND PROVISIONS	-	1	-	-	-					-	14	SPACE AND PROVISIONS	-	1	-
-	15	SPACE AND PROVISIONS	-	1	-			-	-			-	16	SPACE AND PROVISIONS	-	1	-
-	17	SPACE AND PROVISIONS	-	1	-					-	-	-	18	SPACE AND PROVISIONS	-	1	-
						1.0	0.0	1.0	0.0	0.5	0.0						
						1.0		1.0		0.5							

CONNECTED LOAD = 2.5 KVA

DEMAND LOAD = 2.5 KVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN FUSE 50 AMPS

LOCATION STORAGE

NOTES:
(1) PROVIDE FUSIBLE BRANCH CIRCUIT PANELBOARD.
(2) PROVIDE PANELBOARD WITH INTEGRAL SURGE PROTECTION DEVICE.

WIRING SCHEDULE: PANEL S

277 / 480 VOLTS — 3 PHASE 4 WIRE — 125 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø AØ		BØ		CØ		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	PUMP P-1	3#10+	3	25	2.9	2.9					2	2	PUMP P-2	3#10+	3	25
-	3		#10G-					2.9	2.9			-	4		#10G-		
-	5		3/4"C							2.9	2.9	-	6		3/4"C		
7	7	SPARE		1	20							8	8	SPARE		1	20
9	9	SPARE		1	20							10	10	SPARE		1	20
11	11	SPARE		1	20							12	12	SPARE		1	20
-	13	SPACE AND PROVISIONS	-	1	-	-	-					-	14	SPACE AND PROVISIONS	-	1	-
-	15	SPACE AND PROVISIONS	-	1	-			-	-			-	16	SPARE	-	1	-
-	17	SPACE AND PROVISIONS	-	1	-					-	-	-	18	SPARE	-	1	-
-	19	SPACE AND PROVISIONS	-	1	-	-	-					-	20	SPARE	-	1	-
-	21	SPACE AND PROVISIONS	-	1	-			-	-			-	22	SPARE	-	1	-
-	23	SPACE AND PROVISIONS	-	1	-					-	-	-	24	SPARE	-	1	-
-	25	SPACE AND PROVISIONS	-	1	-	-	11.2					26	26	XFMR TSP	3#3+	3	90
-	27	SPACE AND PROVISIONS	-	1	-			-	9.1			-	28	(SERVING PANEL SP)	#8G-		
-	29	SPACE AND PROVISIONS	-	1	-					-	11.9	-	30		1 1/4"C		
						2.9	14.1	2.9	12.0	2.9	14.8						
						17.0		14.9		17.7							

CONNECTED LOAD = 49.6 KVA

DEMAND LOAD = 49.6 KVA

MIN AIC RATING = 65,000 AMPS SYMMETRICAL

MAIN BREAKER 100 AMPS

LOCATION STORAGE

WIRING SCHEDULE: PANEL SP

120 / 208 VOLTS — 3 PHASE 4 WIRE — 225 AMP BUS — SURFACE MOUNTED

CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP	KVA / Ø AØ		BØ		CØ		CIR-CUIT	POLE	DESCRIPTION	WIRE/ CONDUIT	BREAKER POLE	BREAKER AMP
1	1	SPARE		1	20		0.5					2	2	TELEPHONE	NOTE (2)		
3	3	SPARE		1	20				0.5			4	4	PA	NOTE (2)		
5	5	SPARE		1	20						0.4	6	6	SECURITY	NOTE (2)		
7	7	SPARE		1	20		0.4					8	8	SECURITY	NOTE (2)		
9	9	FIRE ALARM BOOSTER PANEL	#8-3/4"C	1	20			0.1	0.4			10	10	SECURITY	NOTE (2)		
11	11	SECURITY CKT 17	NOTE (2)	1	20					0.4	0.4	12	12	SECURITY	NOTE (2)		
13	13	SECURITY CKT 19	NOTE (2)	1	20	0.4	0.4					14	14	SECURITY CKT 20	NOTE (2)		
15	15	SECUIRTY CKT 21	NOTE (2)	1	20			0.4	0.4			16	16	SECURITY	NOTE (2)		
17	17	SPARE	NOTE (2)	1	20						0.4	18	18	SECURITY	NOTE (2)		
19	19	SPARE	NOTE (2)	1	20		1.2					20	20	REC - SUMP PUMP	#8-3/4"C	1	20
21	21	WALL HEATER IN HEALTH	NOTE (2)	1	20			1.5				22	22	SPARE		1	20
23	23	WALL HEATER IN HEALTH	NOTE (2)	1	20					1.5		24	24	SPARE		1	20
25	25	BOILER	#10-3/4"C	1	20	0.5	1.5					26	26	WALL HEATER IN HEALTH	NOTE (2)	1	20
-	27	SHUNT-TRIP SPACE	-	1	-			-	1.5			28	28	WALL HEATER IN HEALTH	NOTE (2)	1	20
29	29	BOILER	#10-3/4"C	1	20					0.5	0.2	30	30	REC - GENERATOR	#10-3/4"C	1	20
-	31	SHUNT-TRIP SPACE	-	1	-	-	1.5					32	32	COOLER CONDENSER	3#10+	3	35
33	33	4-POLE CONTACTOR	#10-3/4"C	1	20			0.1	1.5			-	34	(ROOF)	#10G-		
35	35	CHILLER HEAT TRACE (1)	#10-3/4"C	1	20					1.5	1.5	-	36		3/4"C		
37	37	REC - CHEST FREEZER	#10-3/4"C	1	20	1.0	1.0					38	38	FREEZER CONDENSER	3#12+	3	20
39	39	REC - REFRIG (HEALTH) (1)	#8-3/4"C	1	20			0.5	1.0			-	40	(ROOF)	#12G-		
41	41	REC - DATA	#8-3/4"C	1	20					0.5	1.0	-	42		3/4"C		
43	43	REC - DATA	#8-3/4"C	1	20	0.5	1.0					44	44	FREEZER EVAPORATOR	2#12+	2	15
45	45	REC - DATA	#8-3/4"C	1	20			0.5	1.0			-	46		#12G-3/4"C		
47	47	REC - CONTROL RM	#8-3/4"C	1	20					0.5	1.0	48	48	COOLER EVAPORATOR	#12-3/4"C	1	15
49	49	REC - DATA	#8-3/4"C	1	20	0.5						50	50	SPARE		1	20
51	51	REC - DATA	#8-3/4"C	1	20			0.5	-			52	52	SPARE		1	20
53	53	REC - DATA	#8-3/4"C	1	20					0.5	-	54	54	SPARE		1	20
						2.9	7.5	3.6	6.3	5.4	4.9						
						10.4		9.9		10.3							

CONNECTED LOAD = 30.6 KVA

DEMAND LOAD = 28.0 KVA

MIN AIC RATING = 10,000 AMPS SYMMETRICAL

MAIN BREAKER 150 AMPS

LOCATION STORAGE

NOTES:
(1) PROVIDE GFCI-TYPE CIRCUIT BREAKER.
(2) INTERCEPT & SPLICE EXISTING BRANCH CIRCUIT AT PANELBOARD ENCLOSURE, PREVIOUSLY PANEL EL, TO BE USED AS A PULL BOX. MATCH EXISTING WIRING AND CONDUIT AND EXTEND WIRING AND CONDUIT FROM PANEL SP TO PANELBOARD ENCLOSURE.
(3) PROVIDE PANELBOARD WITH INTEGRAL SURGE PROTECTION DEVICE.

GENERAL NOTES:

A. INFORMATION SHOWN ON THIS DRAWING PERTAINING TO EXISTING CONDITIONS HAS BEEN OBTAINED FROM AVAILABLE BUILDING DRAWINGS OR GENERAL FIELD OBSERVATIONS AND MAY NOT INDICATE EXISTING CONDITIONS IN DETAIL OR DIMENSION. DETERMINE EXISTING CONDITIONS PRIOR TO FABRICATION OR PERFORMANCE OF ANY WORK. SHOULD CONDITIONS BE DISCOVERED THAT PREVENT EXECUTION OF THE WORK AS INDICATED, IMMEDIATELY NOTIFY THE ENGINEER IN WRITING AND AWAIT DIRECTION BEFORE PROCEEDING WITH THE WORK.

B. THE EXISTING FACILITY SHALL REMAIN IN OPERATION DURING RENOVATION. INTERRUPTION TO THE EXISTING BUILDING ELECTRIC SERVICE SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE DISRUPTION. INTERRUPTION OF UTILITIES SHALL NOT OCCUR DURING SCHOOL WORKING HOURS.

C. REMOVE AND REINSTALL EXISTING CEILING TILES WITHIN CONSTRUCTION AREAS AS REQUIRED.

D. CONSTRUCTION SHALL BE PERFORMED IN PHASES. AVOID INTERRUPTION TO ANY SERVICES. GENERATOR POWER DISTRIBUTION SYSTEM SHALL BE OPERATIONAL AT ALL TIMES WHEN SCHOOL IS IN SESSION.

E. UNLESS OTHERWISE NOTED, ELECTRICAL ITEMS SHOWN HEAVY DASHED (— — —) SHALL BE REMOVED AND ELECTRICAL ITEMS SHOWN LIGHT SOLID (———) SHALL REMAIN.

F. DEMOLITION SHALL INCLUDE REMOVAL AND OFF-SITE DISPOSAL OF MATERIALS. DO NOT ABANDON IN PLACE ANY ELECTRICAL COMPONENTS UNLESS OTHERWISE NOTED ON DRAWINGS.

G. WHERE EQUIPMENT IS NOTED "DISCONNECT" OR "REMOVE", REMOVE ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE, UNLESS OTHERWISE NOTED.

H. REMOVE EXISTING EQUIPMENT AND DEVICES INDICATED, INCLUDING ASSOCIATED WIRE AND CONDUIT BACK TO SOURCE UNLESS OTHERWISE NOTED.

I. EXISTING CIRCUITS INTERRUPTED BY DEMOLITION, BUT ARE TO REMAIN, SHALL BE MADE CONTINUOUS.

SPECIFIC NOTES:

1. PROVIDE TYPE 10 GENERATOR, PER NFPA 110. THE GENERATOR SHALL BE ABLE TO PROVIDE GENERATOR POWER TO THE SCHOOL WITHIN 10 SECONDS AFTER A UTILITY POWER OUTAGE.
2. PROVIDE GENERATOR CONCRETE PAD. REFER TO DETAIL 1/E-0 FOR ADDITIONAL INFORMATION.
3. REFER TO DIAGRAM 3/E-0 FOR GENERATOR GROUNDING.
4. PROVIDE GENERATOR CONTROL WIRING IN CONDUIT BETWEEN GENERATOR CONTROL PANEL AND ASSOCIATED AUTOMATIC TRANSFER SWITCHES. MAKE CONNECTIONS NECESSARY FOR COMPLETE INSTALLATION. GENERATOR CONTROL WIRING SHALL BE AS PER GENERATOR MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE WIRING IN CONDUIT FROM GENERATOR CONTROL PANEL TO GENERATOR REMOTE ALARM ANNUNCIATOR PANEL. WIRING SHALL BE AS PER GENERATOR MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE 3P-200A ELECTRONIC TRIP CIRCUIT BREAKER TO SERVE GENERATOR EMERGENCY (LIFE SAFETY) LOADS. MOUNT CIRCUIT BREAKER WITHIN GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.
7. PROVIDE 3P-100A CIRCUIT BREAKER TO SERVE GENERATOR STANDBY LOADS. MOUNT CIRCUIT BREAKER WITHIN GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.
8. PROVIDE 4 #3/0 + #6 GROUND IN 2" CONDUIT BETWEEN 3P-200A ELECTRONIC TRIP CIRCUIT BREAKER AT GENERATOR SERVING EMERGENCY (LIFE SAFETY) LOADS AND GENERATOR DOCKING STATION, SIZED FOR LOAD BANK CONNECTION.
9. PROVIDE 200A GENERATOR DOCKING STATION IN NEMA TYPE 3R ENCLOSURE, EQUAL TO TRYSTAR DBDS-5 WITH 3P-50A CIRCUIT BREAKERS, KIRK KEY INTERLOCKED, FOR CONNECTIONS TO ATS-1 AND PORTABLE MOBILE GENERATOR. FEEDER FOR LOAD BANK CONNECTION SHALL BE SIZED FOR 200A. PROVIDE SIGN ON FRONT OF GENERATOR DOCKING STATION TO READ AS FOLLOWS "SERVING EMERGENCY TRANSFER SWITCH (ATS-1) IN ELECTRICAL ROOM, 120/208V, 3-PHASE, 4-WIRE".
10. PROVIDE 4 #8 + #10 GROUND IN 2" CONDUIT. REFER TO DETAIL 7/E-0 FOR GENERATOR DUCTBANK.
11. PROVIDE 4 #2 + #8 GROUND IN 2" CONDUIT. REFER TO DETAIL 7/E-0 FOR GENERATOR DUCTBANK.
12. PROVIDE 4P-50A AUTOMATIC TRANSFER SWITCH (ATS) TO SERVE EMERGENCY (LIFE SAFETY) LOADS. ATS SHALL HAVE A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65K AIC. PROVIDE NAMEPLATE ON FRONT OF ATS TO READ "EMERGENCY ATS".
13. PROVIDE 4P-100A AUTOMATIC TRANSFER SWITCH (ATS) TO SERVE STAND-BY LOADS. ATS SHALL HAVE A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65K AIC. PROVIDE NAMEPLATE ON FRONT OF ATS TO READ "STANDBY ATS".
14. PROVIDE 3P-60A-600V NON-FUSED ENCLOSED SWITCH WITH NEUTRAL KIT IN NEMA TYPE 1 ENCLOSURE TO SERVE GENERATOR EMERGENCY / LIFE SAFETY LOADS.
15. PROVIDE 3P-100A-600V NON-FUSED ENCLOSED SWITCH WITH NEUTRAL KIT IN NEMA TYPE 1 ENCLOSURE TO SERVE GENERATOR STAND-BY LOADS.
16. PROVIDE 3P-60A-600V FUSED ENCLOSED SWITCH WITH NEUTRAL IN NEMA TYPE 1 ENCLOSURE. PROVIDE WITH 50A CURRENT-LIMITING FUSES.
17. PROVIDE 3P-100A-600V FUSED ENCLOSED SWITCH WITH NEUTRAL IN NEMA TYPE 1 ENCLOSURE. PROVIDE WITH 100A CURRENT-LIMITING FUSES.
18. PROVIDE LUGS ON BUS OF EXISTING SWITCHBOARD AND TAP BUS FOR CONNECTION TO FEEDER. PROVIDE U.L. CERTIFICATION (OR CERTIFICATION BY A NATIONALLY RECOGNIZED TESTING LABORATORY) FOR THE BUS TAP.
19. REFER TO SPECIFIC NOTE 6/E-1 FOR ADDITIONAL INFORMATION.
20. REFER TO SPECIFIC NOTE 6/E-4 FOR ADDITIONAL INFORMATION.

SCHEDULE OF TRANSFORMERS

TRANSFORMER DESIG.	TRANSFORMER KVA	LOCATION	PRIMARY FEEDER	SECONDARY TAP WIRING & CONDUIT (NOTE A)	GROUNDING ELECTRODE CONDUCTOR	EQUIPMENT SERVED	NOTES
TEP	15	STORAGE	E-25	4 #8 + #8G - 1"C	#8	PANEL EP	1
TSP	45	STORAGE	S-26	4 #1/0 + #6G - 2"C	#6	PANEL SP	1

TRANSFORMER GENERAL NOTES:
A. TRANSFORMER SECONDARY TAP: CONDUCTORS INDICATED REFLECT PHASE, NEUTRAL (IN WYE-CONFIGURATION), AND SUPPLY-SIDE BONDING JUMPER (SSBJ) IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) ARTICLES 450, 240.21, AND 250.30.
B. TRANSFORMER SHALL HAVE 480-VOLT, 3-PHASE, DELTA PRIMARY AND 120/208-VOLT, 3-PHASE, WYE SECONDARY.

TRANSFORMER SPECIFIC NOTES:
1. PROVIDE ON 4" HIGH HOUSEKEEPING PAD.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

CLARKSBURG ELEMENTARY SCHOOL

13530 REDGRAVE PLACE
CLARKSBURG, MD 20871

MONTGOMERY COUNTY PUBLIC SCHOOLS

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the state of Maryland, License No. 24861, Expiration date 02-24-2024.

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Tag	Description	Date
	BID SET	02/06/23

PSC No	
Scale	AS NOTED
Project No	7737-22
Date	FEBRUARY 6, 2023

Drawing Title
POWER RISER DIAGRAMS AND SCHEDULES

Sheet No:
E-7