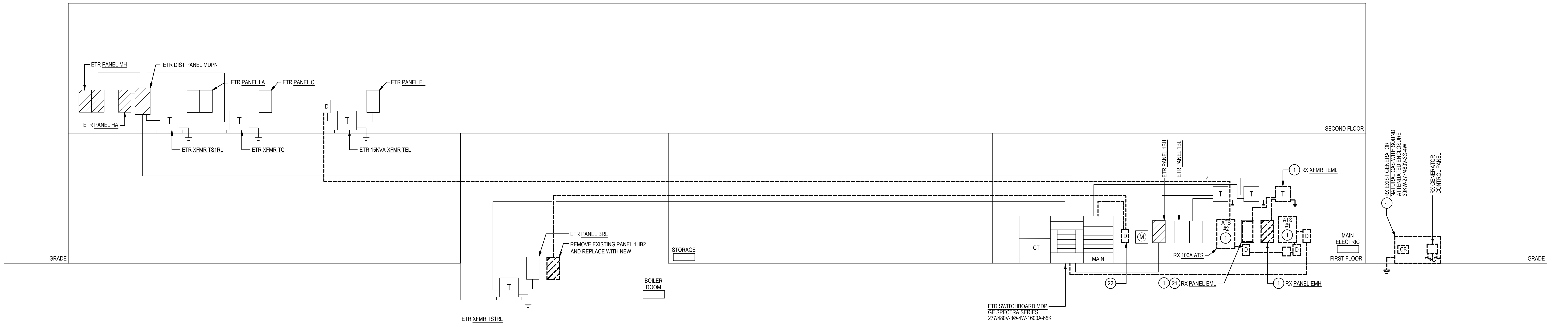
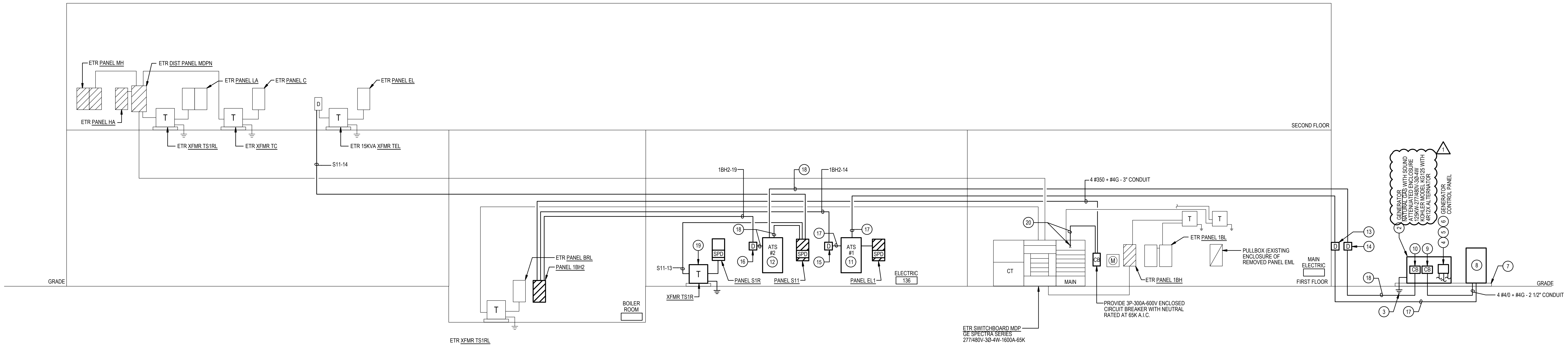


1
E-9
DIAGRAM
POWER RISER DIAGRAM - DEMOLITION
NOT TO SCALE



2
E-9
DIAGRAM
POWER RISER DIAGRAM - NEW WORK
NOT TO SCALE

SCHEDULE OF TRANSFORMERS

TRANSFORMER DESIG.	TRANSFORMER KVA	LOCATION	PRIMARY FEEDER	SECONDARY TAP WIRING & CONDUIT (NOTE A)	GROUNDING ELECTRODE CONDUCTOR	EQUIPMENT SERVED	XFMR TYPE (NOTE B)	NOTES
TS1R	45	ELECTRIC 136	S11-13	4 #1/0 + #6 SSBJ - 2"C	#6	PANEL S1R	DOE	

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 TYPES: GENERAL PURPOSE DOE 2016 (DOE); RESIN ENCAPSULATED (RE)

C. TRANSFORMER SHALL HAVE 480-VOLT, 3-PHASE, DELTA PRIMARY AND 120/208-VOLT, 3-PHASE, WYE/GROUNDED SECONDARY.

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 REMOVE EXISTING ELECTRICAL EQUIPMENT AFTER NEW GENERATOR IS INSTALLED AND OPERATIONAL.

② 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.

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. LOCATE GENERATOR REMOTE ALARM ANNUNCIATOR PANEL IN BUILDING SERVICES OFFICE 114.

⑥ PROVIDE WIRING IN CONDUIT FROM GENERATOR CONTROL PANEL TO FIRE ALARM CONTROL PANEL. WIRING SHALL BE AS PER GENERATOR MANUFACTURER'S RECOMMENDATIONS

⑦ GENERATOR CONCRETE PAD. REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION.

⑧ PROVIDE 250A GROUND MOUNTED GENERATOR DOCKING STATION IN NEMA TYPE 3R ENCLOSURE, EQUAL TO TRYSTAR DBDS-5 WITH TWO 3P-70A CIRCUIT BREAKERS, KIRK KEY INTERLOCKED, FOR CONNECTION TO ATS-1 AND PORTABLE MOBILE GENERATOR. FEEDER FOR LOAD BANK CONNECTION TO SHALL BE SIZED FOR 250A. PROVIDE SIGN ON FRONT OF OF GENERATOR DOCKING STATION TO READ AS FOLLOWS "SERVING EMERGENCY TRANSFER SWITCH (ATS-1) 277/480V, 3-PHASE, 4-WIRE".

⑨ PROVIDE 3P-250A 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.

⑩ PROVIDE 3P-150A CIRCUIT BREAKER TO SERVE GENERATOR STANDBY LOADS. MOUNT CIRCUIT BREAKER WITHIN GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.

⑪ PROVIDE 4P-100A AUTOMATIC TRANSFER SWITCH (ATS) TO SERVE EMERGENCY (LIFE-SAFETY) LOADS. ATS SHALL HAVE A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65KAIC. PROVIDE NAMEPLATE ON FRONT OF ATS TO READ "EMERGENCY ATS-1".

⑫ PROVIDE 4P-150A AUTOMATIC TRANSFER SWITCH (ATS) TO SERVE STAND-BY LOADS. ATS SHALL HAVE A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65KAIC. PROVIDE NAMEPLATE ON FRONT OF ATS TO READ "STANDBY ATS-2".

⑬ PROVIDE 3P-100A-600V NON-FUSED ENCLOSED SWITCH IN NEMA 3R ENCLOSURE TO SERVE GENERATOR EMERGENCY (LIFE-SAFETY) LOADS.

⑭ PROVIDE 3P-200A-600V NON-FUSED ENCLOSED SWITCH IN NEMA 3R ENCLOSURE, TO SERVE GENERATOR STANDBY LOADS.

⑮ PROVIDE 3P-100A-600V FUSED ENCLOSED SWITCH FUSED AT 70A TO SERVE GENERATOR EMERGENCY (LIFE-SAFETY) LOADS.

⑯ PROVIDE 3P-200A-600V FUSED ENCLOSED SWITCH, FUSED AT 150A TO SERVE GENERATOR STANDBY LOADS.

⑰ PROVIDE 4 #4 + #8 GROUND IN 1 1/4" CONDUIT.

⑱ PROVIDE 4 #1/0 + #6 GROUND IN 2" CONDUIT.

⑲ REFER TO SCHEDULE OF TRANSFORMERS ON THIS DRAWING FOR ADDITIONAL INFORMATION ON TRANSFORMER AS NOTED, AND FOR NUMBER AND SIZE OF WIRE AND CONDUIT OF PRIMARY AND SECONDARY FEEDERS FOR TRANSFORMER AS NOTED.

⑳ TAP EXISTING SWITCHBOARD AND PROVIDE 4 #350 + #4 GROUND IN 3" CONDUIT. COORDINATE OUTAGES WITH POWER COMPANY AND OWNER. PROVIDE UL CERTIFICATION (OR CERTIFICATION BY NATIONALLY RECOGNIZED TESTING LABORATORY) FOR THE BUS TAP.

㉑ REMOVE PANEL INTERIOR AND LEAVE EXISTING PANEL ENCLOSURE AS A PULLBOX. DISCONNECT EXISTING BRANCH CIRCUITS FROM CIRCUIT BREAKERS. REMOVE INTERIOR COMPONENTS OF EXISTING PANEL. PROVIDE CONDUIT AND WIRING TO MATCH EXISTING TO CONNECT REMAINING CIRCUITS TO NEW PANEL.

㉒ DISCONNECT AND REMOVE 3P-200A FUSED ENCLOSED SWITCH AND ASSOCIATED CONDUIT AND WIRING BACK TO SWITCHBOARD AND REMOVE ASSOCIATED TAPS. COORDINATE OUTAGE WITH OWNER AND POWER COMPANY.

GENERATOR AND ELECTRICAL EQUIPMENT REPLACEMENT

BROOKHAVEN ELEMENTARY SCHOOL

4610 RENN STREET
ROCKVILLE, MD 20853

MONTGOMERY COUNTY PUBLIC SCHOOLS

No. 24861

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: 02-24-2026.

James Posey Associates
Engineering Your Vision

Mechanical & Electrical
Consulting Engineers

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jamesposey.com

Tag	Description	Date
	BID SET	04/07/25
	ADDENDUM 1	06/03/25

PSC No	
Scale	AS NOTED
Project No	8078-25
Date	APRIL 7, 2025

Drawing Title
POWER RISER DIAGRAMS

Sheet No:
E-9