SCHEDULE OF TRANSFORMERS

TRANSFORMER DESIGNATION	TRANSFORMER KVA	LOCATION	PRIMARY FEEDER	SECONDARY TAP WIRING & CONDUIT (NOTE A)	GROUNDING ELECTRODE CONDUCTOR	EQUIPMENT SERVED	XFMR TYPE	NOTES
TDR1C	300	ELECTRICAL C115	SWBD1-10	3 SETS OF (4 #500AL + #4/0AL G - 3-1/2"C)	#4/0	PANEL DR1C	STD	1
TML1C	45	ELECTRICAL C115	MD1C-13	4 #3/0AL + #6G - 2"C	#6	PANEL ML1C	STD	1
TSDL1C	150	ATS C115A	SDH1C-2	2 SETS OF (4 #350AL + #1/0AL G - 3"C)	#1/0	PANEL SL1C	STD	1

GENERAL NOTES:

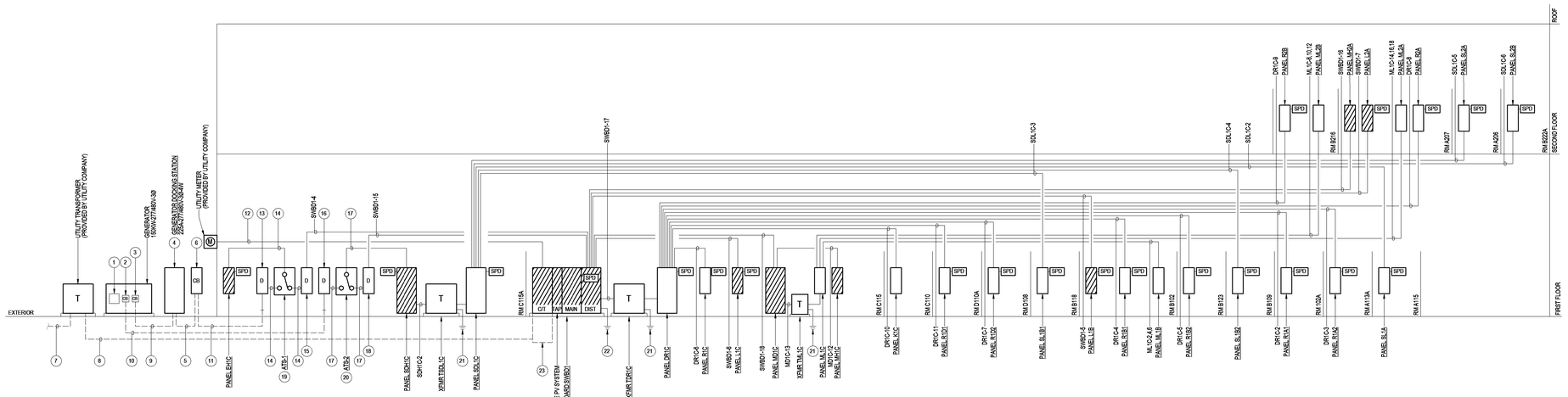
A. TRANSFORMER SECONDARY TAP: CONDUCTORS INDICATED REFLECT PHASE, NEUTRAL (IN WYE-CONFIGURATION), AND SUPPLY-SIDE BONDING JUMPER (SSBJ) IN ACCORDANCE WITH NEC ARTICLES 450, 240.21, AND 250.30.

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

C. TRANSFORMER TYPES: STANDARD DOE 2016 ENERGY EFFICIENT TRANSFORMER (STD).

SPECIFIC NOTES:

1. PROVIDE EQUIPMENT ON CONCRETE HOUSEKEEPING PAD.



1 E601 **RISER DIAGRAM**
POWER DISTRIBUTION
SCALE: NOT TO SCALE

GENERAL NOTES (POWER RISER DIAGRAM):

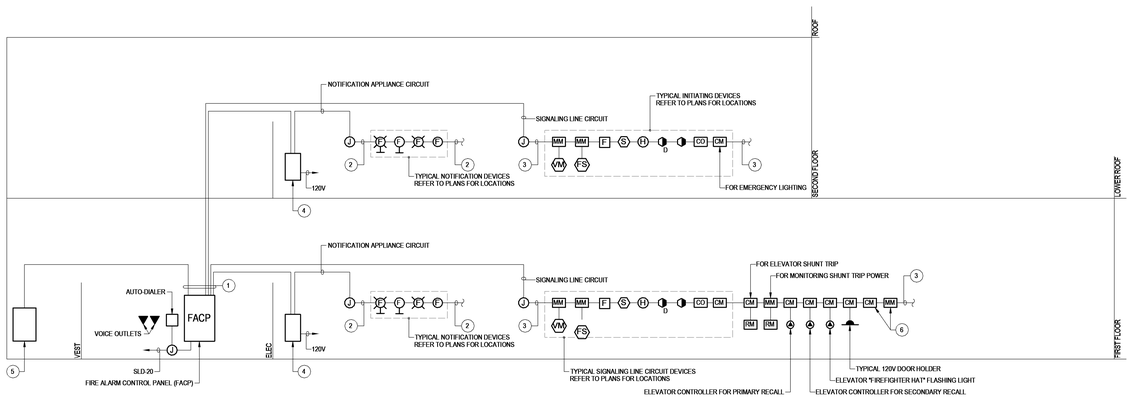
A. REFER TO SCHEDULE OF TRANSFORMERS ON THIS SHEET FOR TRANSFORMER SECONDARY CONDUCTOR AND CONDUIT SIZES.

B. PROVIDE ALUMINUM CONDUCTORS FOR AWG SIZE #2 THROUGH #750. ALUMINUM CONDUCTORS ARE INDICATED WITH "AL".

C. GROUNDING CONDUCTORS SMALLER THAN AWG SIZE #2 SHALL BE COPPER.

SPECIFIC NOTES (POWER RISER DIAGRAM):

1. GENERATOR CONTROL PANEL: PROVIDE GENERATOR CONTROL PANEL WIRING PER GENERATOR MANUFACTURER'S REQUIREMENTS IN CONDUIT BETWEEN GENERATOR CONTROL PANEL AND ASSOCIATED AUTOMATIC TRANSFER SWITCHES. PROVIDE WIRING IN CONDUIT FROM GENERATOR CONTROL PANEL TO GENERATOR REMOTE ANNUNCIATOR PANEL, LOCATED IN EMERGENCY ELECTRICAL ROOM.
2. PROVIDE 3P-400A-480V (400A FRAME) ELECTRONIC TRIP CIRCUIT BREAKER TO SERVE OPTIONAL STAND-BY LOADS. MOUNT CIRCUIT BREAKER WITH GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.
3. PROVIDE 3P-100A-480V (100A FRAME) ELECTRONIC TRIP CIRCUIT BREAKER TO SERVE THE FIRE PUMP AND EMERGENCY (LIFE SAFETY) LOADS. MOUNT CIRCUIT BREAKER WITH GENERATOR ENCLOSURE AND MAKE CONNECTIONS. COORDINATE LOCATION OF CIRCUIT BREAKER WITH GENERATOR MANUFACTURER.
4. PROVIDE 225A GENERATOR DOCKING STATION IN NEMA TYPE 3R ENCLOSURE WITH INTERNAL 100A CIRCUIT BREAKER KIRK KEY INTERLOCKED WITH GENERATOR CIRCUIT BREAKER FOR THE EMERGENCY (LIFE SAFETY) LOADS. PROVIDE WITH CONNECTIONS TO LOAD BANK, AUTOMATIC TRANSFER SWITCH ATS-1, AND PORTABLE MOBILE GENERATOR. SIZE FEEDER FOR LOAD BANK CONNECTION AT 225A. PROVIDE TRYSTAR MODEL SIEDS-6, OR APPROVED EQUAL. PROVIDE SIGN ON FRONT OF GENERATOR DOCKING STATION TO READ AS FOLLOWS: "SERVING EMERGENCY TRANSFER SWITCH (ATS-1) IN MAIN ELECTRICAL ROOM, 277/480V, 3-PHASE, 4 WIRE". REFER TO DETAIL 6/E504 FOR ADDITIONAL INFORMATION.
5. GDS-E OUTPUT FEEDER #1: 4#1AL + #8 G - 2"C.
6. PROVIDE 3P-100A-480V (100A FRAME), SERVICE ENTRANCE RATED, ELECTRONIC TRIP CIRCUIT BREAKER IN NEMA TYPE 3R ENCLOSURE TO SERVE EMERGENCY LOADS.
7. PROVIDE TWO (2) 4" CONDUITS INCLUDED IN THE 8-WAY CONCRETE ENCASED DUCTBANK FOR UTILITY PRIMARY SERVICE FEEDERS.
8. PROVIDE 15-WAY CONCRETE ENCASED DUCTBANK FOR UTILITY SECONDARY SERVICE FEEDER.
9. PROVIDE 4#3000AL + #4G 3" CONDUIT INCLUDED IN THE CONCRETE ENCASED GENERATOR DUCTBANK. FEEDER SIZED FOR LOAD BANK CONNECTION.
10. PROVIDE TWO (2) SETS OF (4#250AL + #1AL G) OPTIONAL STAND-BY POWER FEEDER IN ONE (1) 3"C INCLUDED IN THE CONCRETE ENCASED GENERATOR DUCTBANK.
11. PROVIDE 4#1AL + #8G EMERGENCY POWER FEEDER IN ONE (1) 4"C INCLUDED IN THE CONCRETE ENCASED GENERATOR DUCTBANK.
12. PROVIDE 1-1/4" EMPTY CONDUIT WITH PULL ROPE FOR CONNECTION TO UTILITY METER (PROVIDED BY THE UTILITY).
13. PROVIDE 3P-100A-600V NON-FUSED ENCLOSED SWITCH IN NEMA TYPE 1 ENCLOSURE.
14. PROVIDE 4#1AL + #8G - 1-1/4"C.
15. PROVIDE 3P-100A-600V FUSED ENCLOSED SWITCH IN NEMA TYPE 1 ENCLOSURE. PROVIDE THREE (3) 100A CLASS J CURRENT LIMITING FUSES.
16. PROVIDE 3P-400A-600V NON-FUSED ENCLOSED SWITCH IN NEMA TYPE 1 ENCLOSURE.
17. PROVIDE TWO (2) SETS OF (4#250AL + #3 G - 2-1/2"C).
18. PROVIDE 3P-400A-600V FUSED ENCLOSED SWITCH IN NEMA TYPE 1 ENCLOSURE. PROVIDE THREE (3) 100A CLASS J CURRENT LIMITING FUSES.
19. PROVIDE 4P-100A AUTOMATIC TRANSFER SWITCH TO SERVE EMERGENCY LOADS WITH A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65KAIC.
20. PROVIDE 4P-400A AUTOMATIC TRANSFER SWITCH TO SERVE OPTIONAL STAND-BY LOADS WITH A MINIMUM UL 1008 WITHSTAND AND CLOSING RATING OF 65KAIC.
21. REFER TO DETAIL 4/E503 FOR ADDITIONAL INFORMATION REGARDING TRANSFORMER GROUNDING.
22. REFER TO DETAIL 3/E503 FOR ADDITIONAL INFORMATION REGARDING SWITCHBOARD GROUNDING.
23. PROVIDE PIT (TROUGH) UNDER C/T SECTION OF SWITCHBOARD SWBD1, 2 FEET DEEP AND MEASURE 1" LESS THAN THE WIDTH AND DEPTH OF THE C/T SECTION OF SWITCHBOARD SWBD1



2 E601 **RISER DIAGRAM**
FIRE DETECTION AND ALARM SYSTEM
SCALE: NOT TO SCALE

FIRE ALARM SEQUENCE OF OPERATION MATRIX

NOTES:
* COMMUNICATE VIA BACKUP AUTODIALER

INITIATION DEVICE ACTION: / CORRESPONDING SYSTEM ACTION:	ACTIVATE AUDIBLE ALARM SIGNAL	ACTIVATE VISIBLE ALARM SIGNAL	ACTIVATE AUDIBLE TROUBLE SIGNAL	ACTIVATE VISIBLE TROUBLE SIGNAL	ACTIVATE AUDIBLE SUPERVISORY SIGNAL	ACTIVATE VISIBLE SUPERVISORY SIGNAL	DISPLAY ADDRESSABLE ZONE INDICATOR	TRANSMIT ALARM SIGNAL TO FACP	TRANSMIT TROUBLE SIGNAL TO FACP	TRANSMIT SUPERVISORY SIGNAL TO FACP	ACTIVATE ELEVATOR RECALL	TRANSMIT SIGNAL TO MONITORING SERVICE*	SEND SIGNAL TO EMERGENCY LIGHTING ROOM CONTROLLERS	SEND SIGNAL TO ELEVATOR SHUNT TRIP CONTROLLER	TRANSMIT SIGNAL TO MONITORING SERVICE*	TRANSMIT SIGNAL TO DEDICATED AUTOMATION SYSTEM
FIRE ALARM AC POWER FAILURE			●	●				●								●
FIRE ALARM SYSTEM LOW BATTERY			●	●				●								●
OPEN CIRCUIT			●	●				●								●
GROUND FAULT			●	●				●								●
NOTIFICATION APPLIANCE SHORT CIRCUIT			●	●				●								●
SPRINKLER FLOW SWITCH			●	●			●	●								●
SPRINKLER VALVE MONITOR					●	●	●		●							●
MANUAL PULL STATION	●	●					●	●				●	●			●
SMOKE DETECTOR	●	●					●	●			●	●	●			●
ELEV. LOBBY SMOKE DETECTOR, FIRST FLOOR	●	●					●	●			●	●	●			●
ELEV. LOBBY SMOKE DETECTOR, OTHER FLOORS	●	●					●	●			●	●	●			●
HEAT DETECTOR	●	●					●	●				●	●	●		●
CARBON MONOXIDE DETECTOR	●	●					●	●				●				●

SPECIFIC NOTES (FIRE ALARM RISER DIAGRAM):

1. PROVIDE FIRE ALARM WIRING IN EMT CONDUIT. WIRING SHOWN IS DIAGRAMMATIC. PROVIDE WIRING AS RECOMMENDED BY FIRE ALARM SYSTEM MANUFACTURER. PROVIDE QUANTITIES AS REQUIRED TO SERVE DEVICES INDICATED ON DRAWINGS.
2. PROVIDE FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT WIRING TO ADDITIONAL NOTIFICATION DEVICES AS FOLLOWS: TYPE MC CABLE CONCEALED WITHIN WALLS OR ABOVE CEILINGS; EMT CONDUIT EXPOSED IN OPEN CEILINGS OR UNFINISHED SPACES. REFER TO PLANS FOR LOCATIONS ON EACH FLOOR.
3. PROVIDE FIRE ALARM SIGNALING LINE CIRCUIT (SLC) WIRING TO ADDITIONAL SIGNALING LINE CIRCUIT (SLC) DEVICES AS FOLLOWS: TYPE MC CABLE CONCEALED WITHIN WALLS OR ABOVE CEILING, EMT CONDUIT EXPOSED IN OPEN CEILINGS OR UNFINISHED SPACES. REFER TO PLANS FOR LOCATIONS ON EACH FLOOR.
4. FIRE ALARM NOTIFICATION BOOSTER PANEL (FABP). QUANTITY AS REQUIRED.
5. PROVIDE FIRE ALARM SYSTEM REMOTE ANNUNCIATOR AND GRAPHIC DISPLAY, SURFACE MOUNTED IN THE MAIN VESTIBULE.
6. PROVIDE CONTROL AND MONITORING MODULES AS NECESSARY FOR INTERFACE WITH GENERATOR ANNUNCIATOR.
7. PROVIDE MONITORING MODULES AS NECESSARY FOR INTERFACE WITH DISTRIBUTED ANTENNA SYSTEM (PROVIDED BY OTHERS).

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MSDE - PUBLIC SCHOOL CONSTRUCTION PROGRAM (PSCP)#15.285

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PROJECT # 23029

DATE:	ISSUE:
02/15/24	DESIGN DEVELOPMENT
07/25/24	95% CD SUBMISSION
08/30/24	BID SET

STATE OF MARYLAND — ANH — 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: 02-24-2026.

JPA Project No.: 7821-23

DRAWN: ANH CHECKED: BMM
SCALE: AS INDICATED

SHEET TITLE: **RISER DIAGRAMS**

SHEET # **E601**