

DEPARTMENT OF ENVIRONMENTAL SERVICES

Engineering and Capital Projects Division
Engineering Bureau
2100 Clarendon Boulevard, Suite 813, Arlington, VA 22201
Phone: 703.228.3629 Fax: 703.228.3606 www.arlingtonva.us

ISSUED FOR CONSTRUCTION AUGUST 7, 2023

Plans For: ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)

General Notes:

- 1. INSTALLATION OF ALL ELECTRICAL WORK SHALL CONFORM WITH THE LATEST ADOPTED EDITION OF THE NATIONAL ELECTRICAL CODE (NFPA 70) AND ALL APPLICABLE LOCAL CODES.
2. CONDUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. EXPOSED CONDUITS SHALL BE INSTALLED PARALLEL TO THE BEAMS AND WALLS.
3. PROVIDE ALL REQUIRED PULL BOXES AND JUNCTION BOXES FOR INSTALLATION OF THE WIRING IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS THOUGH THE BOXES MAY NOT BE INDICATED ON THE DRAWINGS.
...
34. CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.

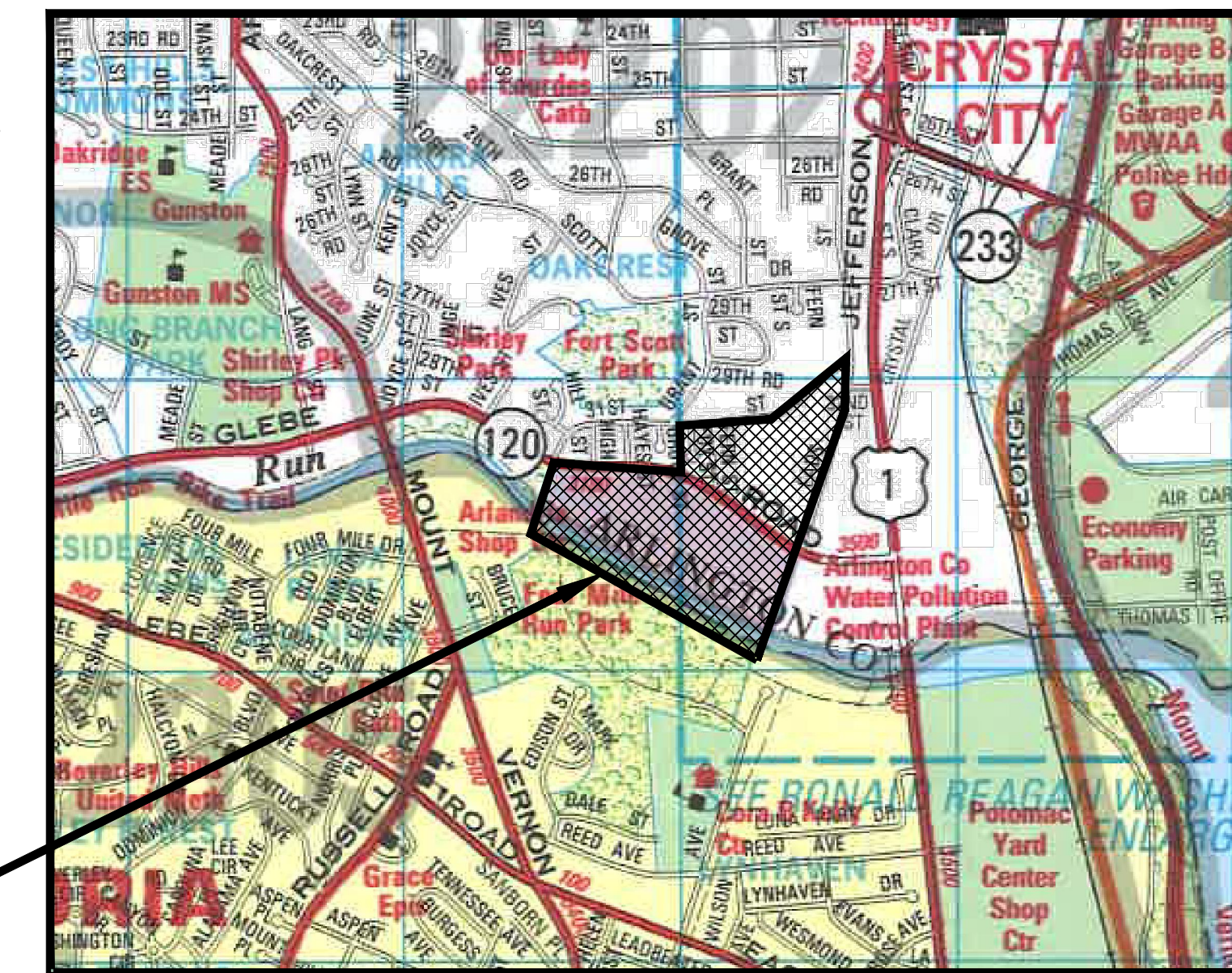
Sheet Index

Table listing sheet titles: G-1 TITLE SHEET, G-2 PHASING NOTES, E-1 ELECTRICAL ENLARGED PLANS - DEMOLITION, etc.

Location Map

Scale: 1"=1000'

Vicinity



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ARLINGTON COUNTY WPCP SITE

3402 SOUTH GLEBE ROAD ARLINGTON, VA 22202

ELECTRICAL LEGEND

Table defining electrical symbols: ELECTRICAL PANELBOARD (208/120V), JUNCTION BOX, DRY TYPE TRANSFORMER, MOTOR, RACEWAY types, etc.

ELECTRICAL ABBREVIATIONS

Table defining electrical abbreviations: A AMPERE, AIC AMPS INTERRUPTING CAPACITY, AC ALTERNATING CURRENT, etc.



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Seal



Approvals Date

DESIGN TEAM SUPERVISOR

CHIEF ENGINEERING BUREAU

CHIEF WATER, SEWER STREETS BUREAU

DEPARTMENT OF TRANSPORTATION

Revisions Date

Project Name and Location: ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)

TITLE SHEET

Designed: IHK
Drawn: AGT
Checked: IHK
Miss Utility Transmittal #:

Filename: 90258015-G01.dwg
Path: N:\90258-015\CADD\90258015-G01.DWG
Plotted: Aug 07, 2023
Plotted by: cwolfe

Scale: NONE

Date: AUGUST 7, 2023

Sheet G-1





# Phase 1:

- A. PHASE 1A (OUTAGE REQUIRED AT STEPS A.2 THRU A.4)
  - A.1. INSTALL NEW PANEL PPD.
  - A.2. PROVIDE NEW 125A, 3-POLE CIRCUIT BREAKER AT EX PNL MDB. (FULL OUTAGE)
  - A.3. EXTEND TEMPORARY FEEDER FROM EX PNL MDB TO NEW PNL PPD. (FULL OUTAGE)
  - A.4. EXTEND EX BRANCH CIRCUITS FROM EX PNL PPD TO NEW PNL PPD. (PARTIAL OUTAGE)
  - A.5. ENERGIZE NEW PNL PPD.
  - A.6. REMOVE EX PNL PPD.
- B. PHASE 1B (OUTAGE REQUIRED AT PILOT ROOM FOR THIS PHASE; OUTAGES REQUIRED AT STEPS B.2 THRU B.7)
  - B.1. INSTALL NEW PANEL LPD.
  - B.2. REMOVE EX 15 KVA XFMR.
  - B.3. INSTALL NEW 45 KVA XFMR.
  - B.4. INSTALL PRIMARY AND SECONDARY FEEDER FROM NEW 45 KVA XFMR TO NEW PNL PPD AND NEW PNL LPD, RESPECTIVELY.
  - B.5. EXTEND EX BRANCH CIRCUITS FROM EX PNL LPD TO NEW PNL LPD.
  - B.6. ENERGIZE NEW PNL LPD.
  - B.7. REMOVE EX PNL LPD.
- C. PHASE 1C (NO OUTAGES REQUIRED)
  - C.1. INSTALL NEW PANEL PPC SECTIONS 1 & 2 IN 3RD FLOOR ELEC RM 323.
  - C.2. INSTALL NEW 225 KVA XFMR AT 1ST FLR ELEC RM 117.
  - C.3. INSTALL NEW PANEL DB AT 2ND FLR ELEC RM 216.
  - C.4. INSTALL SECONDARY FEEDER FROM NEW 225 KVA XFMR TO NEW PANEL DB.
  - C.5. INSTALL NEW FEEDER TO NEW PANEL PPC FROM NEW PANEL DB.
  - C.6. INSTALL NEW PANEL MDB AT 1ST FLR ELEC RM 117.
  - C.7. INSTALL PRIMARY FEEDER TO NEW 225 KVA XFMR FROM NEW PANEL MDB.
  - C.8. INSTALL NEW FEEDER FROM NEW PANEL MDB TO EX ATS LOCATION. TERMINATE NEW FEEDER IN JUNCTION BOX ADJACENT TO EX ATS FOR FUTURE EXTENSION.
- D. PHASE 1D (FULL OUTAGE REQUIRED FOR STEPS D.1 THRU D.3; PARTIAL OUTAGE REQUIRED FOR STEPS D.7 THRU D.10)
  - D.1. DE-ENERGIZE EX INCOMING FEEDER B.
  - D.2. DISCONNECT EX FEEDER B ON LOAD SIDE OF EX 'B' ECB.
  - D.3. INSTALL NEW FEEDER B CONDUCTORS FROM EX 'B' ECB LOAD TERMINALS TO NEW PANEL MDB.
  - D.4. ENERGIZE NEW PANEL MDB VIA TEMPORARY FEEDER B.
  - D.5. ENERGIZE NEW 225 KVA XFMR
  - D.6. ENERGIZE NEW PANEL DB.
  - D.7. RE-WIRE EXISTING PUSHBUTTON AT LAB TO NEW SHUNT TRIP MAIN CIRCUIT BREAKER AT NEW PANEL PPC.
  - D.8. EXTEND EX BRANCH CIRCUITS FROM EX PANEL PPC TO NEW PANEL PPC.
  - D.9. ENERGIZE NEW PANEL PPC.
  - D.10. DISCONNECT AND REMOVE EX PANEL PPC FEEDER BACK TO EX PANEL DB.
  - D.11. REMOVE EX PANEL PPC.
  - D.12. REMOVE EX 3-POLE CONTACTOR.
- E. PHASE 1E (PARTIAL OUTAGE REQUIRED FOR STEPS E.2 THRU E.3 AND STEP E.6)
  - E.1. INSTALL NEW PANEL LPC AT 3RD FLR ELEC RM 323.
  - E.2. MODIFY AND EXTEND EX FEEDER SUCH THAT NEW PANEL LPC IS FED FROM NEW PANEL DB.
  - E.3. EXTEND EX BRANCH CIRCUITS FROM EX PANEL LPC TO NEW PANEL LPC.
  - E.4. ENERGIZE NEW PANEL LPC.
  - E.5. REMOVE EX PANEL LPC.
  - E.6. REMOVE EX PANEL LPC FEEDER BACK TO EX PANEL DB.
- F. PHASE 1F (PARTIAL OUTAGE REQUIRED FOR STEPS F.2 THRU F.3 AND STEP F.6)
  - F.1. INSTALL NEW PANEL LPE AT 1ST FLR ELEC RM 117.
  - F.2. MODIFY AND EXTEND EX FEEDER SUCH THAT NEW PNL LPE IS FED FROM NEW PANEL DB.
  - F.3. EXTEND BRANCH CIRCUITS FROM EX PNL LPE TO NEW PNL LPE.
  - F.4. ENERGIZE NEW PANEL LPE.
  - F.5. REMOVE EX PANEL LPE.
  - F.6. REMOVE EX PANEL LPE FEEDER BACK TO EX PNL DB.
- G. PHASE 1G (PARTIAL OUTAGE REQUIRED AT STEPS G.2 THRU G.3 AND STEP G.6)
  - G.1. INSTALL NEW PANEL LPA SECT 1 & 2 AT 1ST FLR ELEC RM 117.
  - G.2. MODIFY AND EXTEND EX FEEDER SUCH THAT NEW PANEL LPA SECT 1 IS FED FROM NEW PNL DB. PANEL LPA SECT 2 IS FED VIA FEED THRU LUGS AT PANEL LPA SECT 1.
  - G.3. EXTEND BRANCH CIRCUITS FROM EX PANEL LPA TO NEW PANEL LPA.
  - G.4. ENERGIZE NEW PANEL LPA.
  - G.5. REMOVE EX PANEL LPA.
  - G.6. REMOVE EX PNL LPA FEEDER BACK TO EX PNL DB.
- H. PHASE 1H (PARTIAL OUTAGE REQUIRED FOR STEPS H.1 THRU H.6; FULL OUTAGE REQUIRED FOR STEPS H.7 THRU H.8)
  - H.1. PROVIDE TEMPORARY FEEDER FROM NEW PNL DB TO EX PNL LPB.
  - H.2. DE-ENERGIZE AND REMOVE EX FEEDER FROM EX PNL DB TO EX PNL LPB.
  - H.3. PROVIDE TEMPORARY FEEDER FROM NEW PNL DB TO EX PNL PPE.
  - H.4. DE-ENERGIZE AND REMOVE EX FEEDER FROM EX PNL DB TO EX PNL PPE.
  - H.5. PROVIDE TEMPORARY FEEDER FROM NEW PNL DB TO EX PNL PPG.
  - H.6. DE-ENERGIZE AND REMOVE EX FEEDER FROM EX PNL DB TO EX PNL PPG.
  - H.7. PROVIDE TEMPORARY FEEDER FROM NEW PNL MDB TO EX PNL PPF.
  - H.8. DE-ENERGIZE AND REMOVE EX FEEDER FROM EX PNL MDB TO EX PNL PPF.
- I. PHASE 1I (PARTIAL OUTAGE REQUIRED FOR STEPS I.1 THRU I.3)
  - I.1. DE-ENERGIZE EX PANEL PPJ.
  - I.2. DISCONNECT EX PANEL PPJ FEEDER AT EX PANEL DB.
  - I.3. EXTEND EX PANEL PPJ FEEDER TO NEW PANEL DB.
  - I.4. ENERGIZE EX PANEL PPJ.

# Phase 2:

- A. PHASE 2A (FULL OUTAGE REQUIRED FOR STEP A.1)
  - A.1. DISCONNECT AND REMOVE EX 225 KVA XFMR PRIMARY & SECONDARY FEEDERS.
  - A.2. REMOVE EX 225 KVA XFMR.
  - A.3. REMOVE EX PANEL DB.
- B. PHASE 2B (FULL OUTAGE REQUIRED FOR STEP B.2; PARTIAL OUTAGE FOR STEP B.3; FULL OUTAGE FOR STEP B.6)
  - B.1. INSTALL NEW PANEL PPB IN 2ND FLR ELEC RM 216 IN EX 225 KVA XFMR LOCATION.
  - B.2. MODIFY AND EXTEND EX FEEDER SUCH THAT NEW PANEL PPB IS FED FROM NEW PANEL MDB.
  - B.3. EXTEND EX BRANCH CIRCUITS FROM EX PANEL PPB TO NEW PANEL PPB.
  - B.4. ENERGIZE NEW PANEL PPB.
  - B.5. REMOVE EX PANEL PPB.
  - B.6. REMOVE EX PANEL PPB FEEDER BACK TO EX PNL MDB.
- C. PHASE 2C (PARTIAL OUTAGE REQUIRED FOR STEPS C.2 THRU C.4)
  - C.1. INSTALL NEW PANEL PPE IN EX PANEL PPB LOCATION AT 2ND FLR ELEC RM 216.
  - C.2. INSTALL NEW FEEDER FROM NEW PANEL DB TO NEW PANEL PPE.
  - C.3. EXTEND BRANCH CIRCUITS FROM EX PNL PPE TO NEW PNL PPE.
  - C.4. REMOVE TEMPORARY FEEDER FROM NEW PNL DB.
  - C.5. ENERGIZE PANEL PPE.
  - C.6. REMOVE EX PANEL PPE.
- D. PHASE 2D (PARTIAL OUTAGE REQUIRED FOR STEPS D.2, D.3 AND D.5)
  - D.1. INSTALL NEW PANEL LPB SECT 1 & 2 AT 2ND FLR ELEC RM 216.
  - D.2. INSTALL NEW FEEDER FROM NEW PANEL DB TO NEW PANEL LPB.
  - D.3. EXTEND EX BRANCH CIRCUITS FROM EX PANEL LPB TO NEW PANEL LPB.
  - D.4. ENERGIZE NEW PANEL LPB.
  - D.5. DISCONNECT TEMPORARY FEEDER FROM NEW PANEL DB TO EX PANEL LPB.
  - D.6. REMOVE EX PANEL LPB SECT 1 & 2.
- E. PHASE 2E (PARTIAL OUTAGE REQUIRED FOR STEPS E.2, E.4 AND E.6)
  - E.1. INSTALL NEW PANEL PPG AT 2ND FLR A/C RM 201.
  - E.2. INSTALL NEW FEEDER FROM NEW PANEL DB TO NEW PANEL PPG.
  - E.3. PRIOR TO TAKING PANEL PPG EX BRANCH CIRCUITS OFFLINE, PROVIDE TEMPORARY POWER SOURCE FOR ALL EX UPS BRANCH CIRCUITS FED FROM EX PPG FOR DURATION OF PANEL OUTAGE. TEMPORARY POWER SOURCE TO BE PROVIDED IN FORM OF POWER CORDS EXTENDED FROM AREAS WITH ENERGIZED RECEPTACLES.
  - E.4. EXTEND EX BRANCH CIRCUITS FROM EX PANEL PPG TO NEW PANEL PPG.
  - E.5. ENERGIZE NEW PANEL PPG.
  - E.6. DISCONNECT TEMPORARY FEEDER FROM NEW PANEL DB TO EX PNL PPG.
  - E.7. REMOVE EX PANEL PPG.

# Phase 3:

- A. PHASE 3A (PARTIAL OUTAGE REQUIRED FOR STEP A.2; FULL OUTAGE REQUIRED FOR STEPS A.3 THRU A.4)
  - A.1. PRIOR TO TAKING EX PANEL PPX OFFLINE, PROVIDE TEMPORARY POWER SOURCE FOR ALL EX UPS BRANCH CIRCUITS FED FROM EX PNL LPX FOR DURATION OF PANEL OUTAGE.
  - A.2. DE-ENERGIZE EX PANEL PPX.
  - A.3. MODIFY AND EXTEND EX PANEL PPX FEEDER FROM EX PNL MDB TO NEW PNL MDB.
  - A.4. REMOVE EX FEEDER BACK TO EX PNL MDB.
  - A.5. ENERGIZE EX PANEL PPX.
- B. PHASE 3B (FULL OUTAGE REQUIRED FOR STEP B.2; PARTIAL OUTAGE REQUIRED FOR STEP B.3; FULL OUTAGE REQUIRED FOR STEP B.5)
  - B.1. INSTALL NEW PANEL PPF.
  - B.2. INSTALL NEW FEEDER FROM NEW PNL MDB TO NEW PNL PPF.
  - B.3. EXTEND EX BRANCH CIRCUITS FROM EX PNL PPF TO NEW PNL PPF.
  - B.4. ENERGIZE NEW PNL PPF.
  - B.5. REMOVE TEMPORARY FEEDER FROM EX PANEL PPF BACK TO NEW PNL MDB.
  - B.6. REMOVE EX PNL PPF.
- C. PHASE 3C (FULL OUTAGE REQUIRED FOR STEP C.2; PARTIAL OUTAGE REQUIRED FOR STEP C.3; FULL OUTAGE REQUIRED FOR STEP C.5)
  - C.1. INSTALL NEW PANEL PPA AT 1ST FLR ELEC RM 117.
  - C.2. INSTALL NEW FEEDER FROM NEW PANEL MDB TO NEW PANEL PPA.
  - C.3. EXTEND EXISTING BRANCH CIRCUITS FROM EX PANEL PPA TO NEW PANEL PPA.
  - C.4. ENERGIZE NEW PANEL PPA.
  - C.5. DISCONNECT AND REMOVE FEEDER FROM EX PNL MDB TO EX PNL PPA.
  - C.6. REMOVE EX PANEL PPA.
- D. PHASE 3D (FULL OUTAGE REQUIRED FOR ALL STEPS)
  - D.1. DE-ENERGIZE PANEL PPD.
  - D.2. EXTEND PANEL PPD FEEDER FROM EX PNL MDB TO NEW PNL MDB.
  - D.3. ENERGIZE PANEL PPD.
- E. PHASE 3E (FULL OUTAGE REQUIRED FOR STEPS E.1 THRU E.2)
  - E.1. DE-ENERGIZE EX ELEVATOR.
  - E.2. EXTEND EX ELEVATOR FEEDER FROM EX PNL MDB TO NEW PNL MDB.
  - E.3. ENERGIZE EX ELEVATOR.
- F. PHASE 3F (FULL OUTAGE REQUIRED FOR STEPS F.1 THRU STEP F.10)
  - F.1. DE-ENERGIZE FEEDER A.
  - F.2. DISCONNECT EX PNL MDB FROM EX ATS.
  - F.3. REMOVE EX PANEL MDB FEEDER BACK TO EX ATS.
  - F.4. EXTEND NEW PNL MDB FEEDER FROM JUNCTION BOX TO EX ATS.
  - F.5. TEST EX ATS TO VERIFY THAT IT IS FUNCTIONING PROPERLY.
  - F.6. DE-ENERGIZE NEW PNL MDB.
  - F.7. DE-ENERGIZE FEEDER B.
  - F.8. DISCONNECT FEEDER B CONDUCTORS FROM NEW PNL MDB AND FROM LOAD SIDE OF EX 'B' ECB.
  - F.9. ENERGIZE EX FEEDER A AND NEW PNL MDB.
  - F.10. CONNECT EX FEEDER B TO LOAD SIDE OF EX 'B' ECB.
  - F.11. ENERGIZE EX FEEDER B.
  - F.12. REMOVE EX PNL MDB.

## PHASE 1 NOTES

- DURING EXTENSION OF EXISTING BRANCH CIRCUITS TO NEW PANEL PPC, PROVIDE TEMPORARY POWER TO EXISTING EQUIPMENT IN LABS THAT CANNOT SUSTAIN LONG PERIODS OF TIME WITHOUT POWER (I.E. INCUBATORS AND REFRIGERATORS). PROVIDE TEMPORARY POWER CORDS FROM POWERED RECEPTACLES IN ADJACENT SPACES.
- TRANSITION EXISTING BRANCH CIRCUITS AT PANEL PPC DURING LAB DOWNTIME AFTER HOURS DURING WEEKDAYS AFTER 4PM. COORDINATE WORK ON PANELS IN THIS AREA WITH OWNER PRIOR TO PROCEEDING. COORDINATE WITH LAB PRIOR TO SHUTDOWN TO DETERMINE IF THEY WILL REMAIN ONSITE TO MONITOR EQUIPMENT DURING THE REQUIRED SHUTDOWN.

## PHASE 2 NOTES

- DURING EXTENSION OF EXISTING BRANCH CIRCUITS TO NEW PANEL PPG, PROVIDE TEMPORARY POWER TO EX UPS SOURCE BRANCH CIRCUITS SERVED FROM PNL PPG. PROVIDE TEMPORARY POWER CORDS FROM POWERED RECEPTACLES IN ADJACENT SPACES.
- COORDINATE WORK AT BRANCH CIRCUITS AFFECTING EX UPS CIRCUITS WITH OWNER PRIOR TO PROCEEDING WITH MODIFICATIONS.

## PHASE 3 NOTES

- DURING MODIFICATIONS TO PANEL PPX FEEDER, PROVIDE TEMPORARY POWER TO EX UPS SOURCE BRANCH CIRCUITS SERVED FROM PNL LPX. PROVIDE TEMPORARY POWER CORDS FROM POWERED RECEPTACLES IN ADJACENT SPACES.
- COORDINATE WORK AT BRANCH CIRCUITS AFFECTING EX UPS CIRCUITS WITH OWNER PRIOR TO PROCEEDING WITH MODIFICATIONS.
- DURING FINAL MODIFICATIONS TO NEW PANEL MDB FEEDER, PROVIDE TEMPORARY POWER SOURCE FOR PANEL LPX AND PANEL PPG FOR LAB EQUIPMENT AND UPS SOURCE CIRCUITS. PROVIDE TEMPORARY POWER SOURCE FOR PANEL LPC AND PPC AS REQUIRED. COORDINATE TEMPORARY POWER SOURCE REQUIREMENTS WITH OWNER AND LAB USERS PRIOR TO POWER OUTAGE.

## GENERAL NOTES

- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
- REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS AND PHASING NOTE DESIGNATIONS.
- REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.
- OFF-HOURS WORK SHALL OCCUR ON WEEKDAYS AFTER 5 PM. COORDINATE WITH ARLINGTON COUNTY TO DETERMINE REQUIRED NOTIFICATION IN ADVANCE FOR WORK THAT SHALL OCCUR DURING OFF HOURS.
- COORDINATE WORK ON EXISTING PANELS WITH ARLINGTON COUNTY PRIOR TO PROCEEDING. THIS SHALL INCLUDE DISCONNECTION OF EXISTING PANELS, TRANSITIONING OF EXISTING BRANCH CIRCUITS FROM EXISTING PANELS TO NEW PANELS AND REMOVAL OF EXISTING PANELS.
- CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.
- PRIOR TO SHUTDOWNS FOR SWITCHING OVER OF POWER SOURCES FOR NEW AND EXISTING PANELBOARDS, ROUTE FEEDER CONDUIT AND CONDUCTORS TO MINIMIZE THE LENGTH OF THE OUTAGE. INSTALL ALL ASSOCIATED CONDUIT, BOXES, SUPPORTS, APPURTENANCES AND WIRING IN ORDER TO MINIMIZE REQUIRED SHUTDOWNS.
- PROVIDE TEMPORARY LIGHTING AND TEMPORARY POWER FOR TOOLS AS REQUIRED DURING OUTAGES.

## HAZARDOUS LOCATION GENERAL NOTES

- IN CLASS I DIVISION 2 HAZARDOUS LOCATION, WIRING METHODS SHALL COMPLY WITH NEC 501.10(A) AND 501.10(B). RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE PERMITTED FOR USE WHEN PROVIDED WITH LISTED THREADED OR THREADLESS FITTING. WIREWAYS SHALL BE OF THE ENCLOSED GASKETED TYPE. METAL CONDUIT MUST PROVIDE SUFFICIENT CORROSION RESISTANCE FOR USE WITHIN THE HAZARDOUS LOCATION.
- BOXES AND FITTINGS WITHIN THE HAZARDOUS AREA ARE NOT REQUIRED TO BE EXPLOSIONPROOF EXCEPT AS REQUIRED BY NEC 501.105(B)(2), 501.115(B)(1) AND 501.150(B)(1).
- PROVIDE CONDUIT SEALS AT CONNECTIONS TO ENCLOSURES THAT ARE REQUIRED TO BE EXPLOSIONPROOF. CONDUIT SEALS SHALL BE INSTALLED WITHIN 18-INCHES OF THE ENCLOSURE. PROVIDE THREADED COUPLINGS OR EXPLOSIONPROOF FITTING BETWEEN THE SEALING FITTING AND THE EXPLOSIONPROOF ENCLOSURE. NO OTHER TYPES OF COUPLINGS OR FITTINGS ARE PERMITTED. INSTALLATION OF CONDUIT SEALS SHALL COMPLY WITH NEC 501.15(B).
- A CONDUIT SEAL IS REQUIRED IN EACH CONDUIT LEAVING A CLASS I DIVISION 2 SPACE. THE SEAL CAN BE INSTALLED ON EITHER SIDE OF THE BOUNDARY WITHIN TEN FEET OF THE BOUNDARY. THE SEAL SHALL BE DESIGNED AND INSTALLED TO MINIMIZE THE AMOUNT OF GAS OR VAPOR WITHIN THE PORTION OF THE CONDUIT IN HAZARDOUS LOCATION THAT CAN BE COMMUNICATED BEYOND THE SEAL. RGS CONDUIT SHALL BE USED BETWEEN THE SEALING FITTING AND THE POINT WHERE THE CONDUIT LEAVES THE HAZARDOUS LOCATION SPACE. IN ADDITION, A THREADED CONNECTION SHALL BE USED AT THE SEALING FITTING. THE CONDUIT RUN BETWEEN THE CONDUIT SEAL AND THE HAZARDOUS LOCATION BOUNDARY SHALL NOT CONTAIN ANY UNIONS, COUPLINGS, BOXES OR OTHER FITTINGS EXCEPT AS PERMITTED BY NEC.
- GROUNDING AND BONDING WITHIN THE HAZARDOUS SPACE MUST COMPLY WITH NEC 250, NEC 501.30(A) AND 501.30(B).
- IF SURGE PROTECTION IS PROVIDED WITHIN THE HAZARDOUS LOCATION SPACE, THE DEVICES SHALL BE NON-ARCING.
- PER NEC 501.115(B), ANY CIRCUIT BREAKERS, SWITCHES, FUSES, PANELBOARDS, ETC. SHALL BE ENCLOSED IN ENCLOSURES RATED FOR USE IN CLASS I DIVISION 1 HAZARDOUS LOCATIONS.



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Seal



Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

CHIEF ENGINEERING BUREAU \_\_\_\_\_

CHIEF WATER, SEWER STREETS BUREAU \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_

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Project Name and Location  
ELECTRICAL PANEL REPLACEMENT AT  
OPERATIONS AND CONTROL BUILDING (OCB)

PHASING NOTES

Designed: IHK  
Drawn: AGT  
Checked: IHK  
Miss Utility Transmittal #:

Filename: 90258015-G02.dwg  
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Plotted by: cwolfe

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Date: AUGUST 7, 2023

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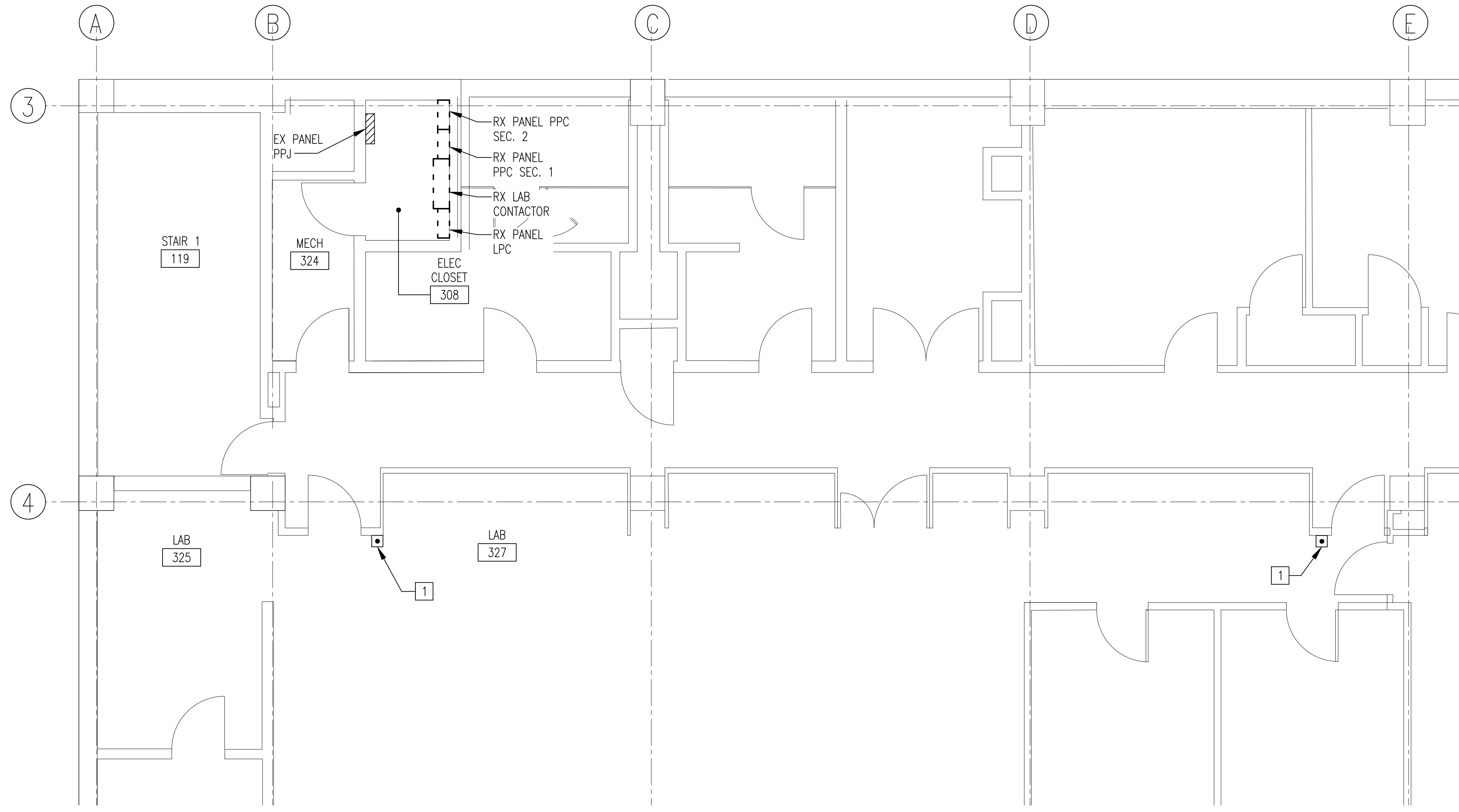
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Whitman, Requardt & Associates, LLP  
801 South Caroline Street, Baltimore, Maryland 21231







5 ENLARGED THIRD FLOOR A PART PLAN - DEMOLITION  
 E-1 SCALE: 1/4" = 1'-0" ←

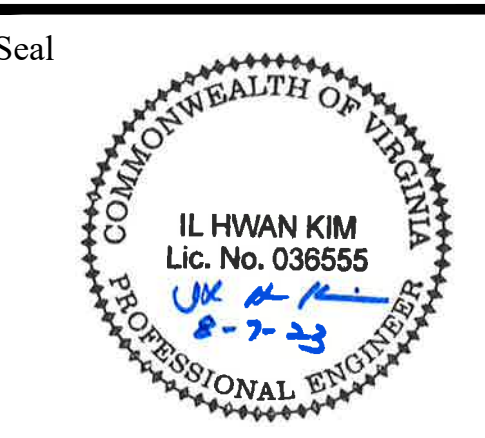
- GENERAL NOTES**
- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
  - REFER TO DRAWING G-2 FOR PHASING OF REPLACEMENT OF THE ELECTRICAL DISTRIBUTION SYSTEM.
  - REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS.
  - REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.

- SPECIFIC NOTES**
- DISCONNECT EX PUSHBUTTON FROM RX LAB CONTACTOR AND RETAIN FOR REUSE.



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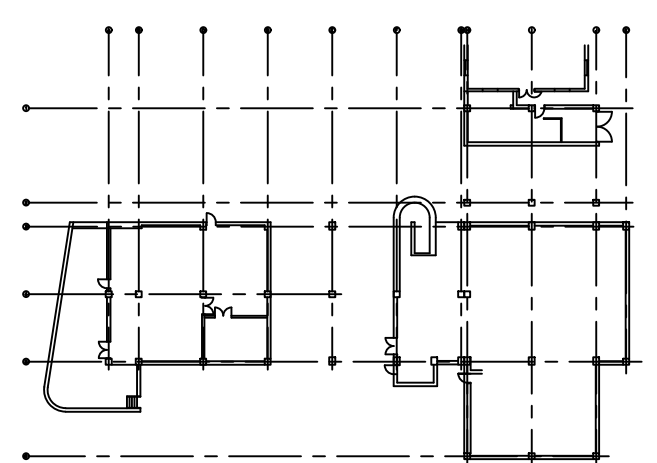
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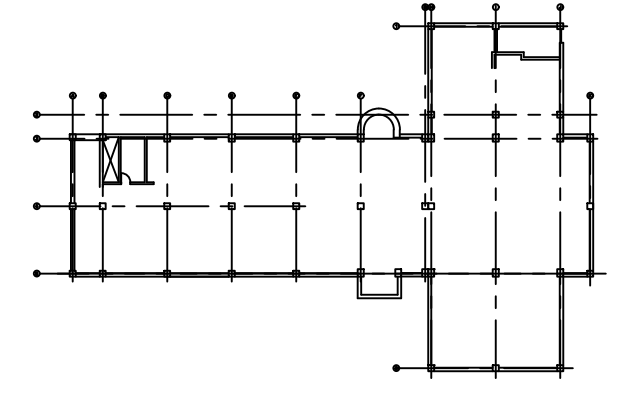
E-2



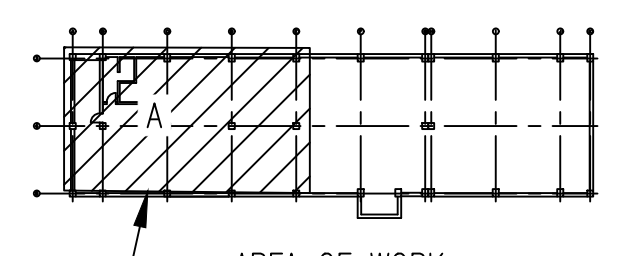
**Whitman, Reardon & Associates, LLP**  
 801 South Caroline Street, Baltimore, Maryland 21231



GROUND FLOOR KEYPLAN ←

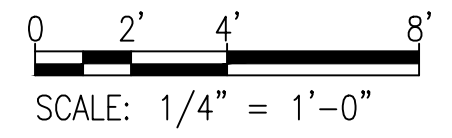


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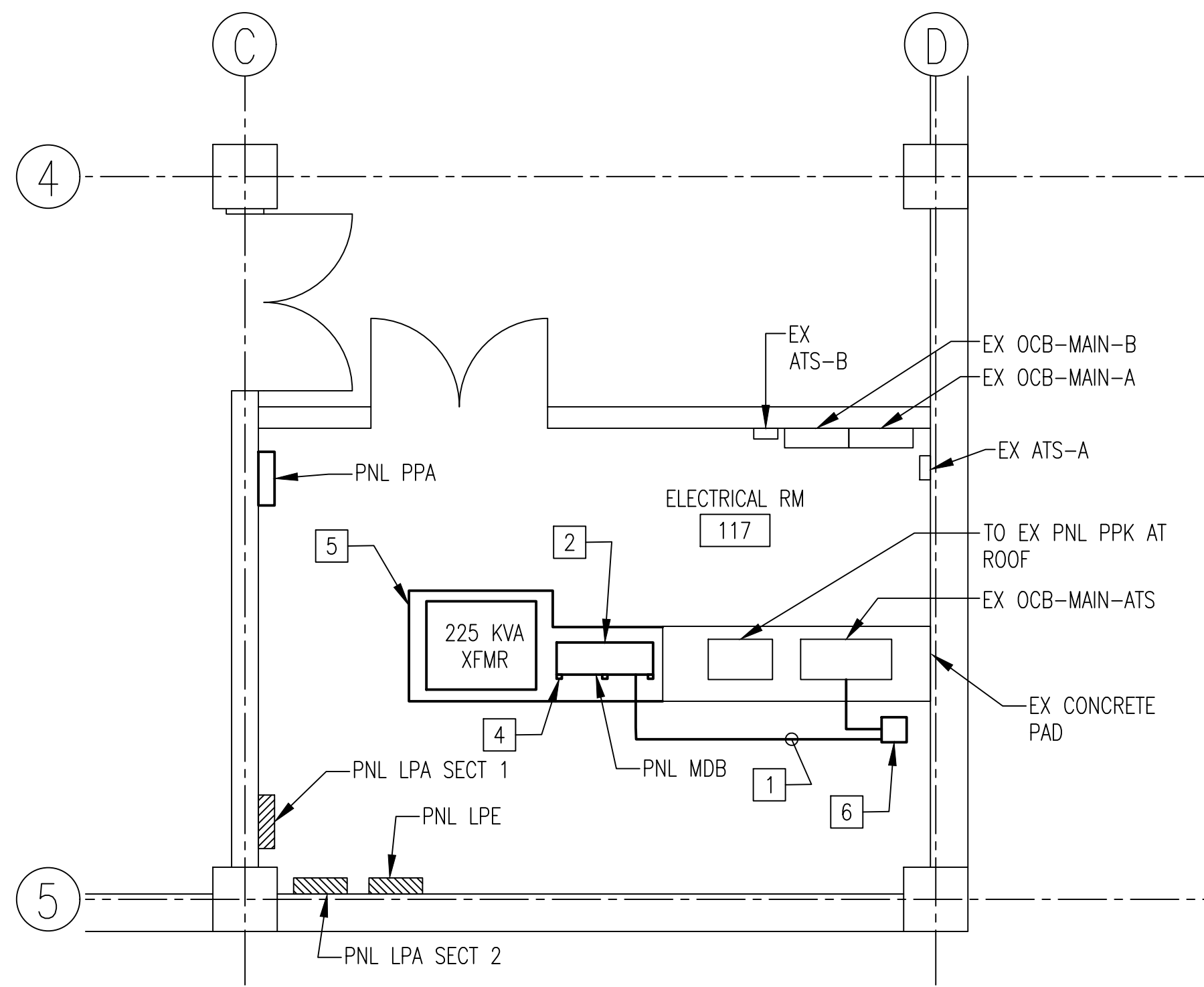


THIRD FLOOR KEYPLAN ←

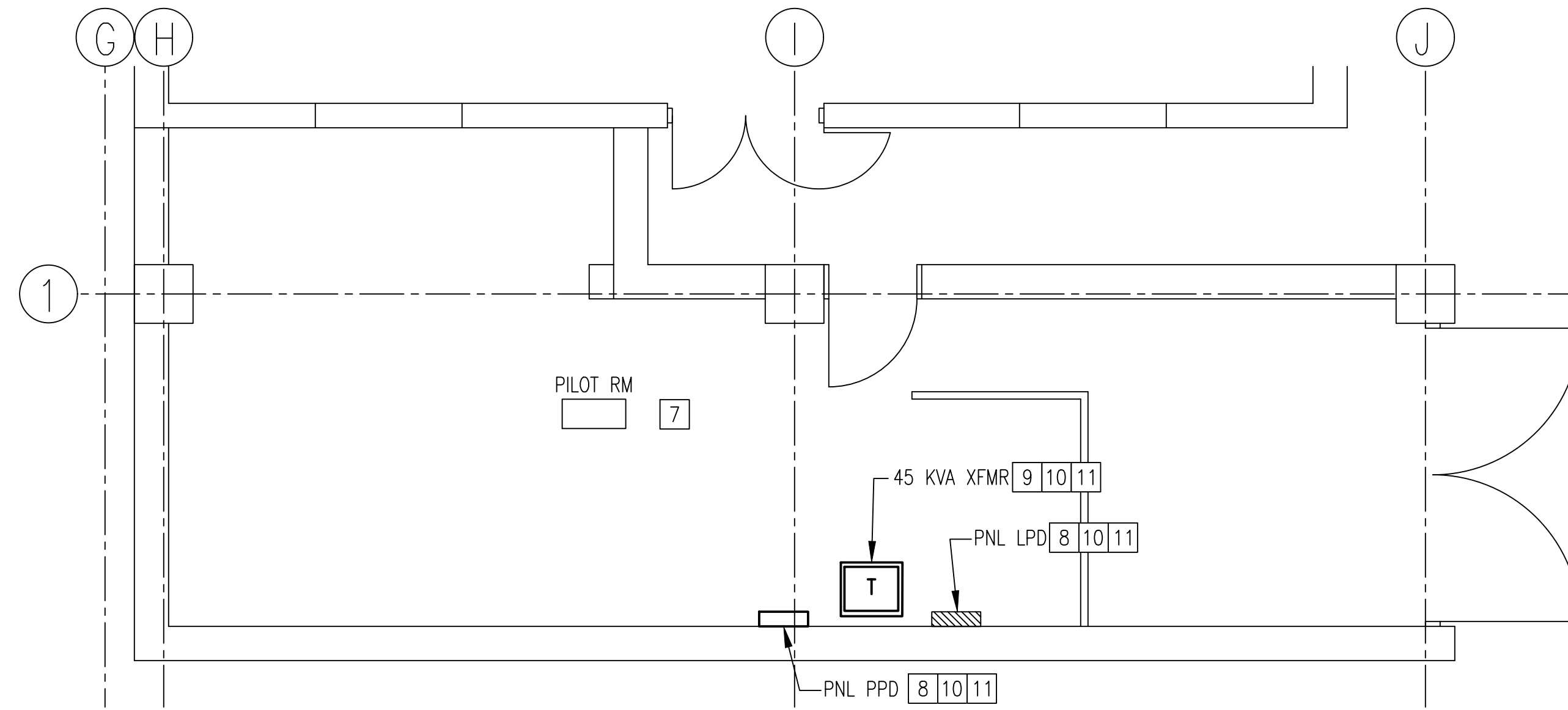
GRAPHIC SCALE



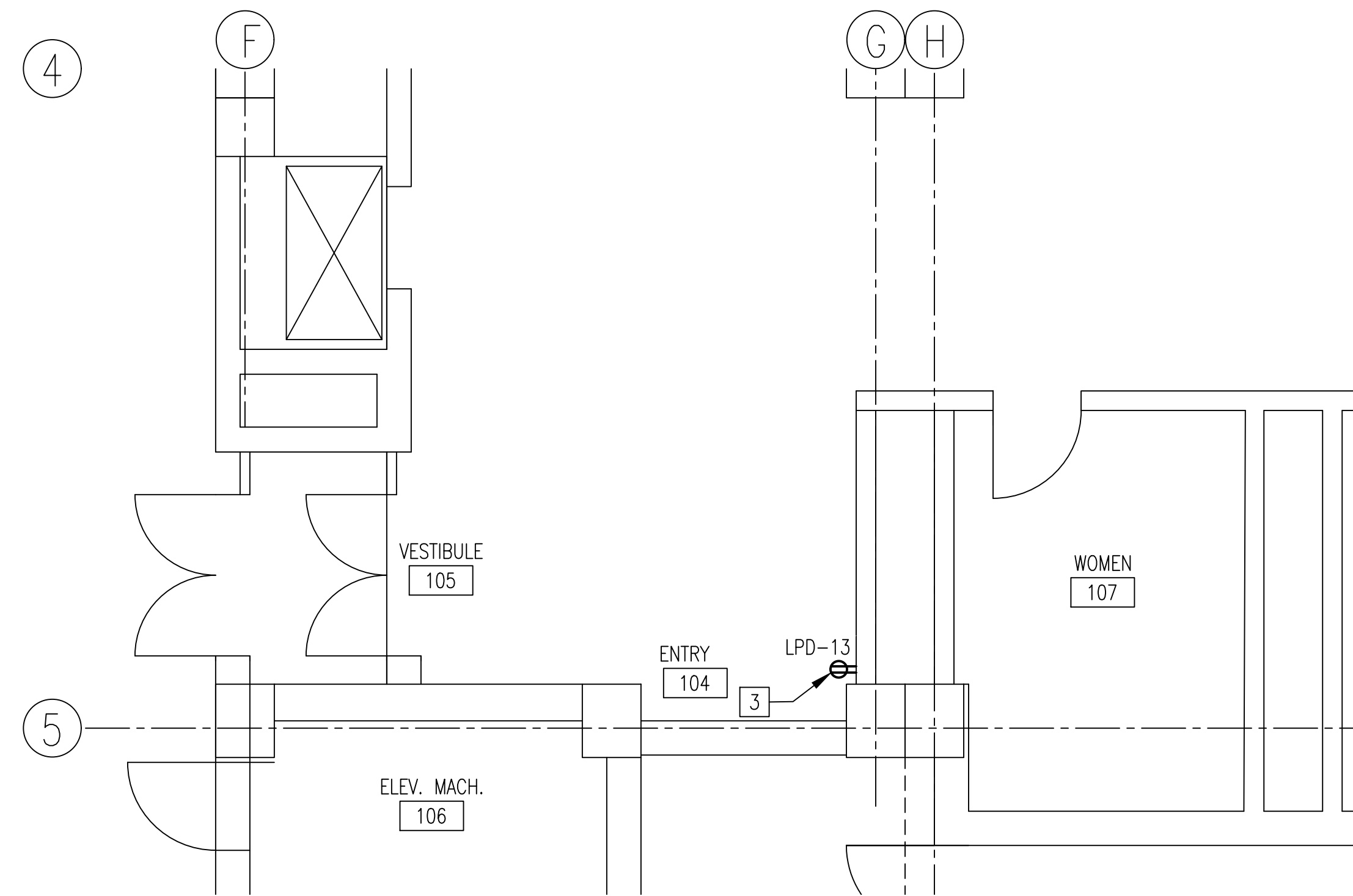




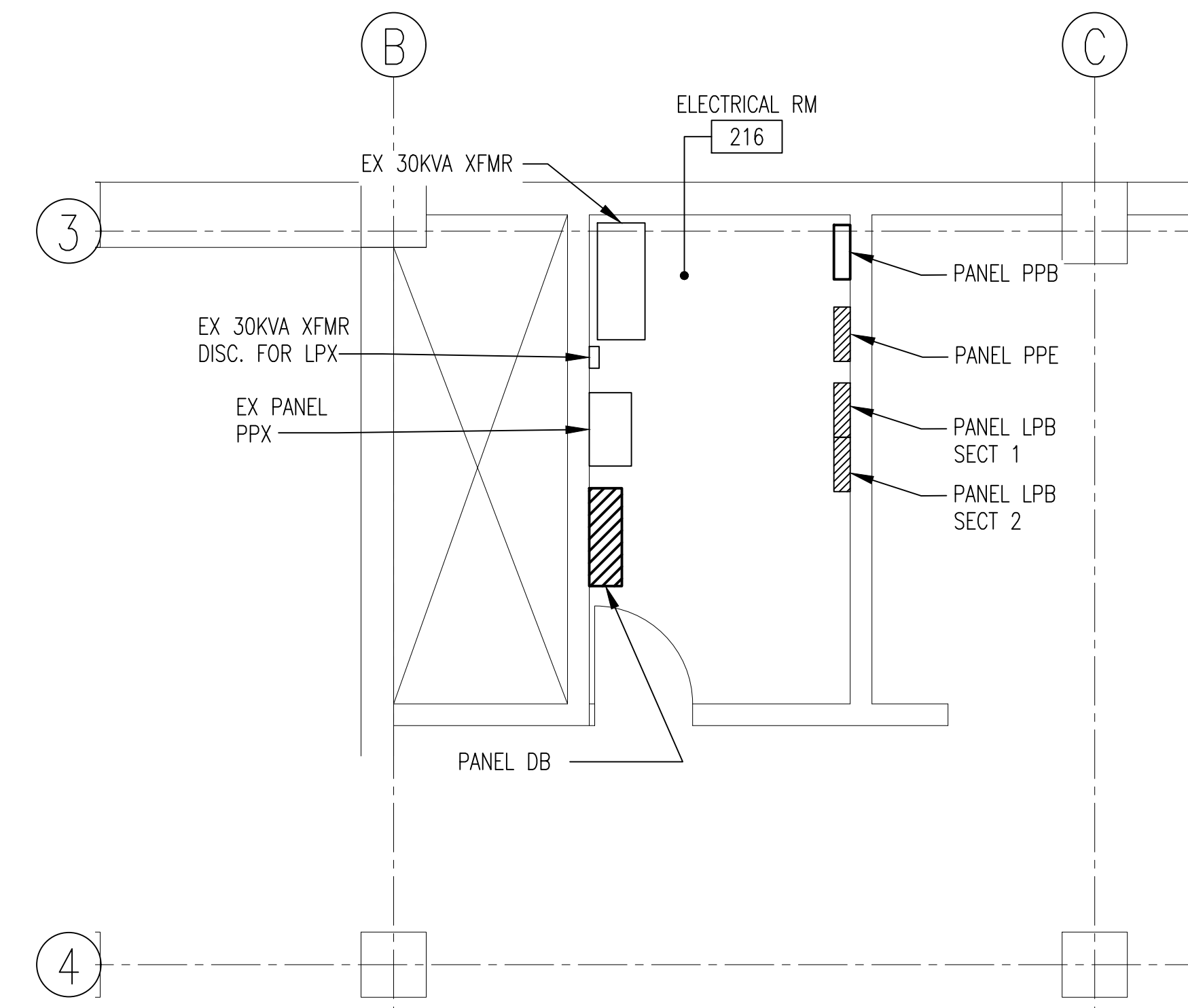
1 ENLARGED GROUND FLOOR A PART PLAN - NEW WORK  
E-2 SCALE: 1/4" = 1'-0"



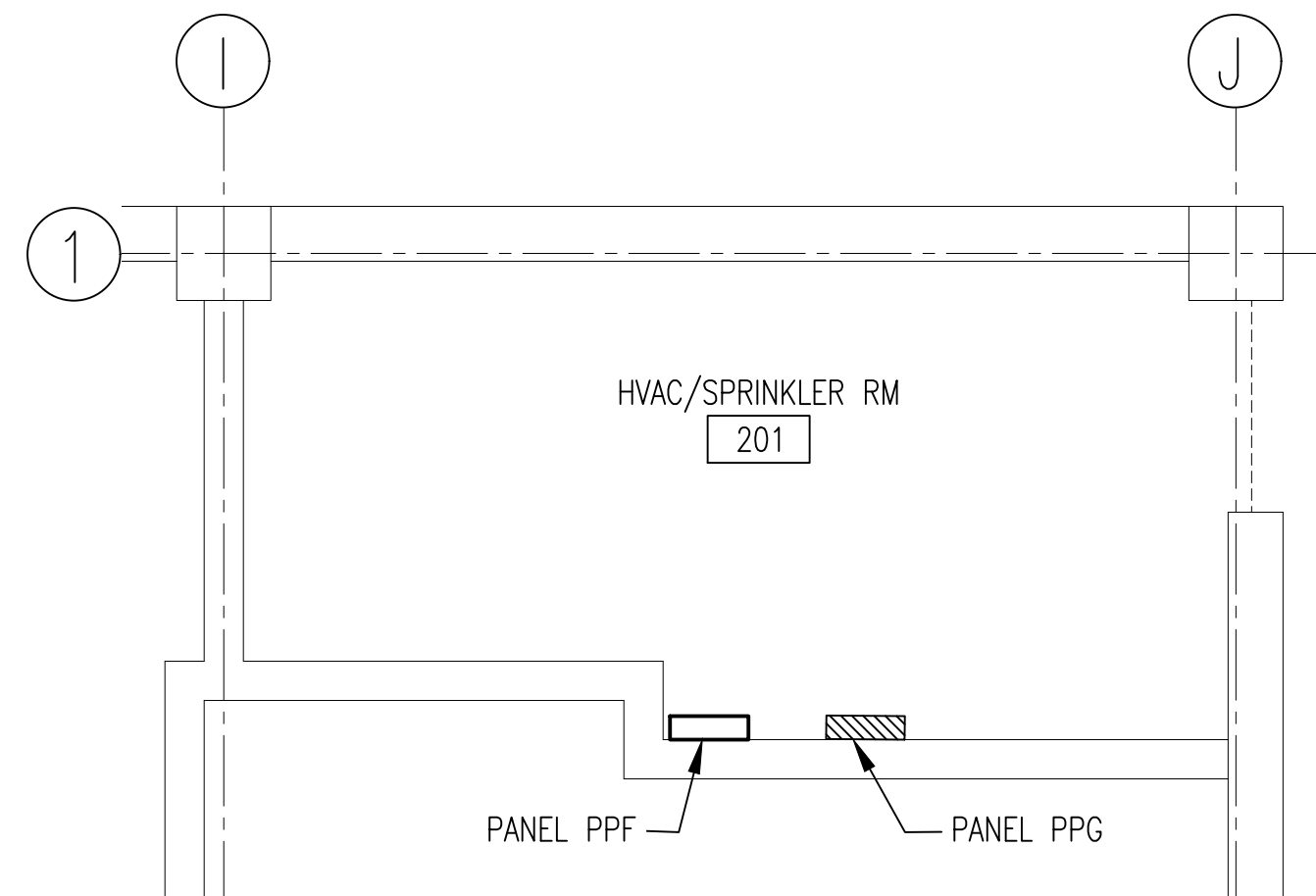
2 ENLARGED GROUND FLOOR B PART PLAN - NEW WORK  
E-2 SCALE: 1/4" = 1'-0"



3 ENLARGED GROUND FLOOR C PART PLAN - NEW WORK  
E-2 SCALE: 1/4" = 1'-0"



4 ENLARGED SECOND FLOOR E PART PLAN - NEW WORK  
E-2 SCALE: 1/4" = 1'-0"



5 ENLARGED SECOND FLOOR D PART PLAN - NEW WORK  
E-2 SCALE: 1/4" = 1'-0"

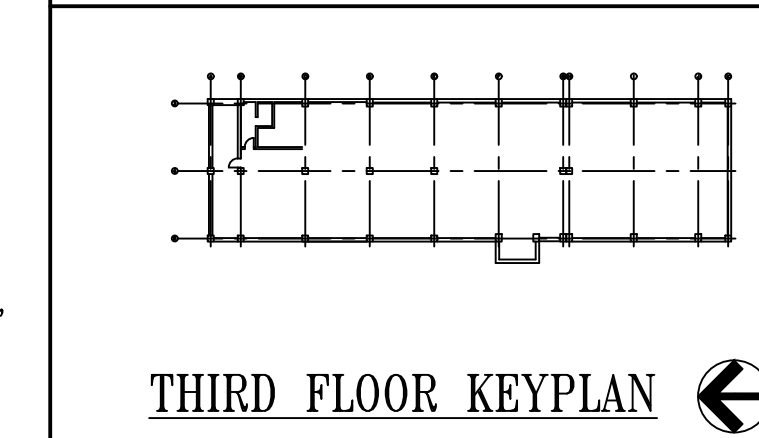
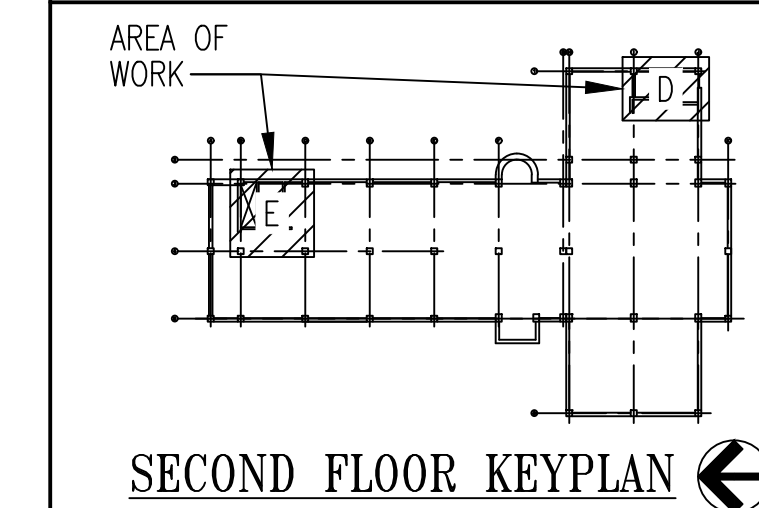
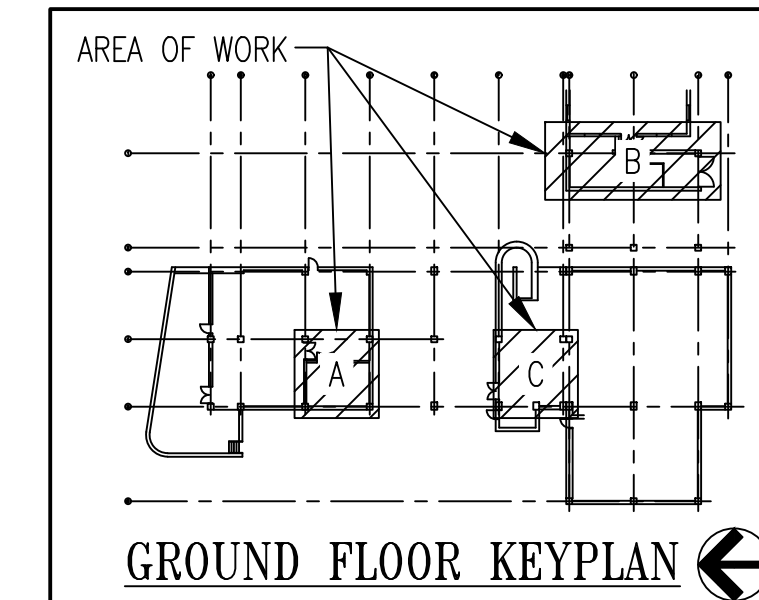
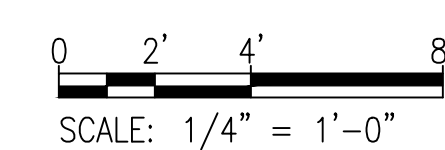
**GENERAL NOTES**

- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
- REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT AND FOR HAZARDOUS LOCATION GENERAL NOTES.
- REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS.
- REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.
- REFER TO DRAWING E-1 FOR HAZARDOUS LOCATION GENERAL NOTES.

**SPECIFIC NOTES**

- ROUTE NEW PANEL MDB FEEDER TO JUNCTION BOX LOCATED ADJACENT TO EX ATS. EXTEND FEEDER TO EX ATS WHERE INDICATED BY PHASING.
- PROVIDE TEMPORARY GENSET TO POWER NEW PNL MDB DURING CONSTRUCTION PHASING. REFER TO PHASE 1 POWER RISER DIAGRAM ON DRAWING E-7. COORDINATE WITH OWNER FOR AVAILABLE LOCATIONS TO PLACE TEMPORARY GENSET.
- PROVIDE NEW RECEPTACLE AT ENTRY DESK IN LOBBY.
- MOUNT NEW PANEL MDB ON STEEL CHANNELS AT CONCRETE PAD. PROVIDE KINDORF STEEL CHANNELS TO SECURE PANELBOARD TO. KINDORF CHANNELS SHALL BE BOLTED TO CONCRETE EQUIPMENT PAD.
- EXTEND EX CONCRETE PAD FOR NEW PNL MDB AND NEW 225 KVA XFMR. NEW HOUSEKEEPING PAD SHALL BE SAME HEIGHT (MINIMUM OF 4-INCHES) AS EX PAD.
- PROVIDE JUNCTION BOX FOR EXTENSION OF EX INCOMING FEEDER TO NEW PANEL MDB.
- PILOT ROOM WILL BE CONVERTED TO A SOLIDS TESTING LAB BY ARLINGTON COUNTY IN THE FUTURE. WHEN THE MODIFICATION TAKES PLACE, THE SPACE WILL BE CONSIDERED A CLASS I DIVISION 2 HAZARDOUS LOCATION. ARLINGTON COUNTY WILL BE FULLY RESPONSIBLE FOR CONVERTING ALL COMPONENTS OF THE SPACE TO MEET THE STRINGENT REQUIREMENTS FOR THE HAZARDOUS LOCATION.
- PROVIDE PANELBOARD WITH ENCLOSURE RATED FOR HAZARDOUS LOCATION THAT MEETS THE REQUIREMENTS FOR A CLASS I DIVISION 2 LOCATION AND COMPLIES WITH NEC 501.115(B).
- PROVIDE TRANSFORMER WITH ENCLOSURE RATED FOR USE IN A HAZARDOUS LOCATION THAT MEETS THE REQUIREMENTS FOR A CLASS I DIVISION 2 LOCATION AND COMPLIES WITH NEC 501.100(B).

**GRAPHIC SCALE**



Seal

Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

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Revisions \_\_\_\_\_ Date \_\_\_\_\_

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Project Name and Location  
**ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)**

**ELECTRICAL ENLARGED PLANS - NEW WORK**

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Drawn: AGT  
Checked: IHK  
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Plotted: Aug 07, 2023  
Plotted by: cwolfe  
Scale: 1/4" = 1'-0"  
Date: AUGUST 7, 2023  
Sheet **E-3**



Seal



Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

CHIEF ENGINEERING BUREAU \_\_\_\_\_

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DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_

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Designed: IHK

Drawn: AGT

Checked: IHK

Miss Utility Transmittal #:

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Plotted: Aug 07, 2023

Plotted by: cwolfe

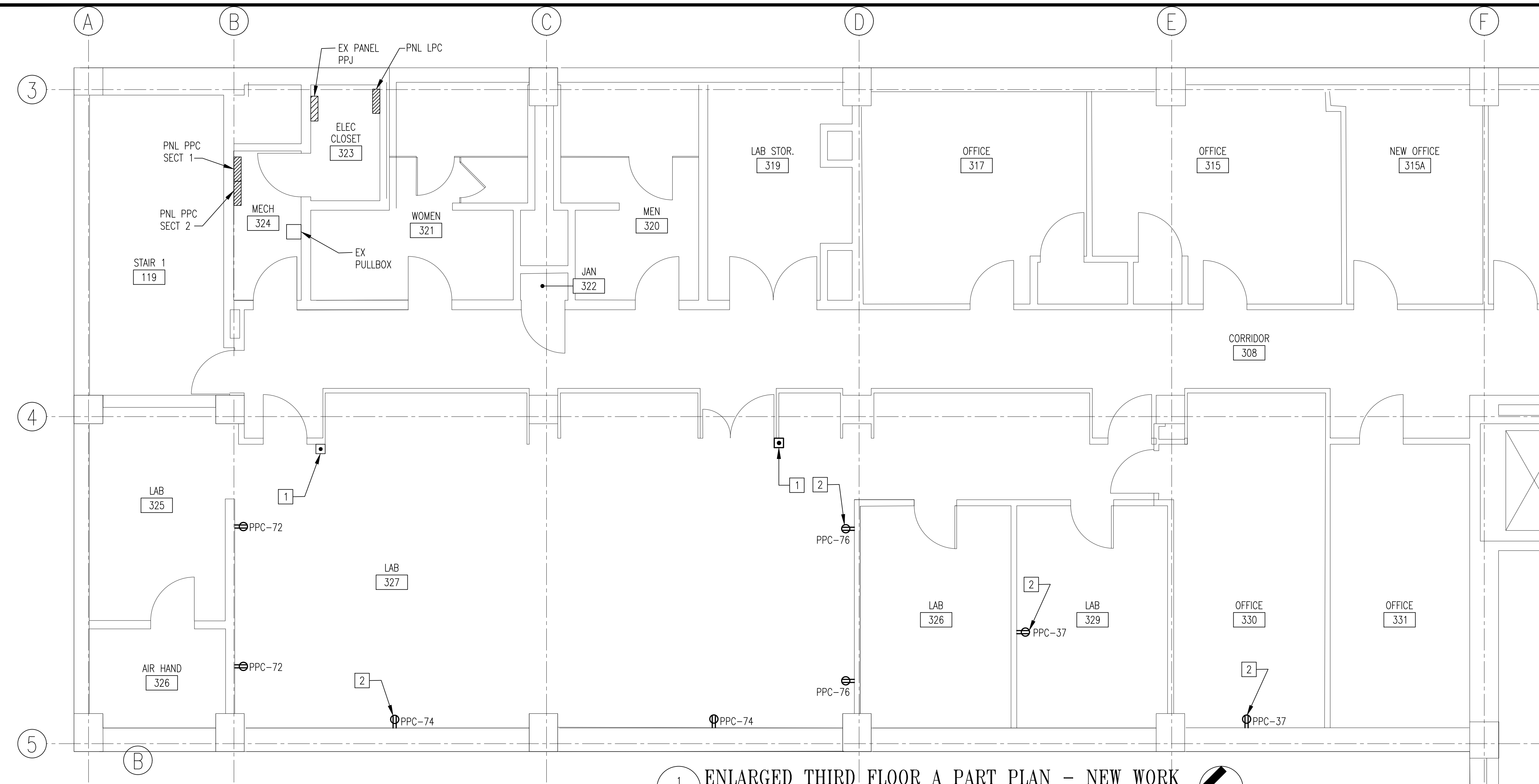
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Date: AUGUST 7, 2023

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Sheet

E-4



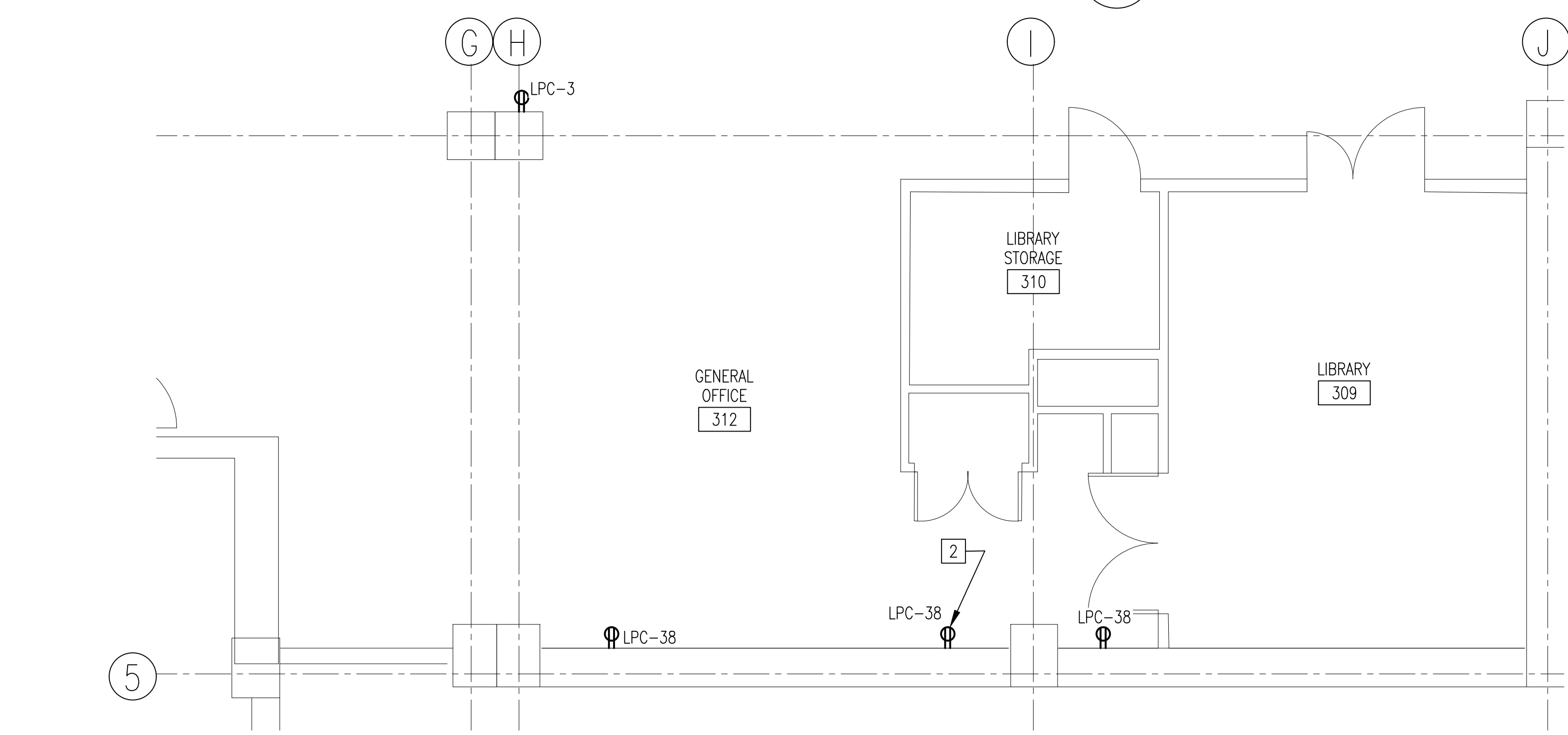
1 ENLARGED THIRD FLOOR A PART PLAN - NEW WORK  
 E-3 SCALE: 1/4" = 1'-0"

**GENERAL NOTES**

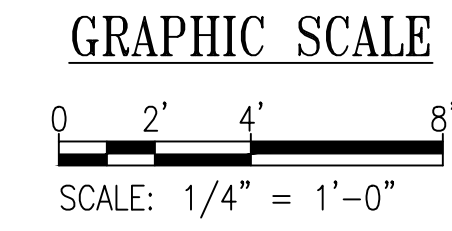
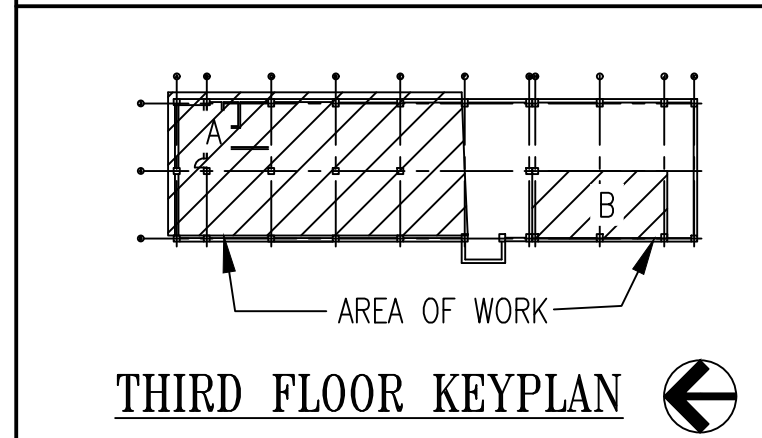
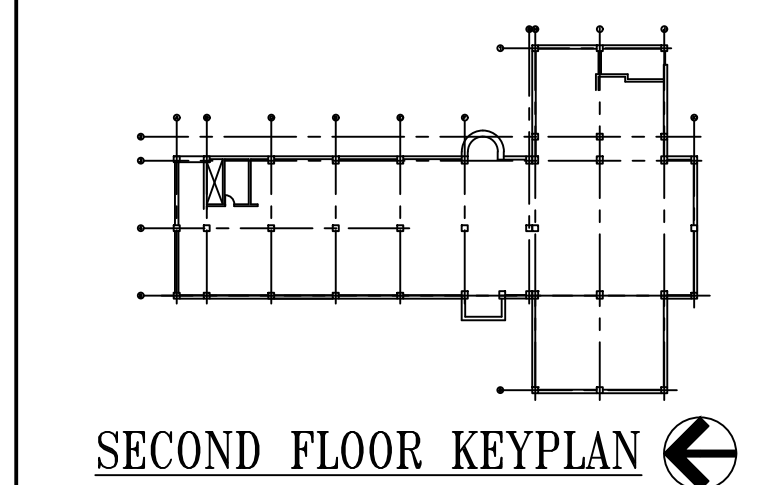
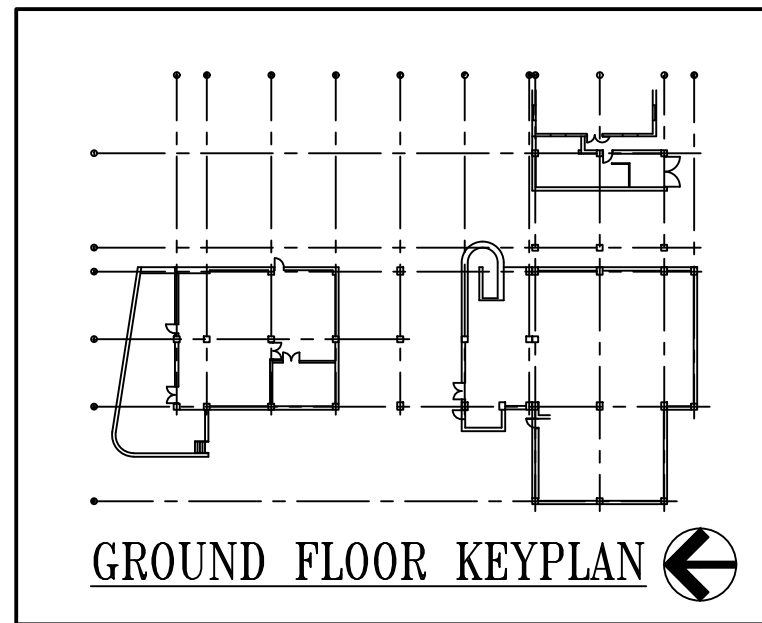
- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
- REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT.
- REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS.
- REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.

**SPECIFIC NOTES**

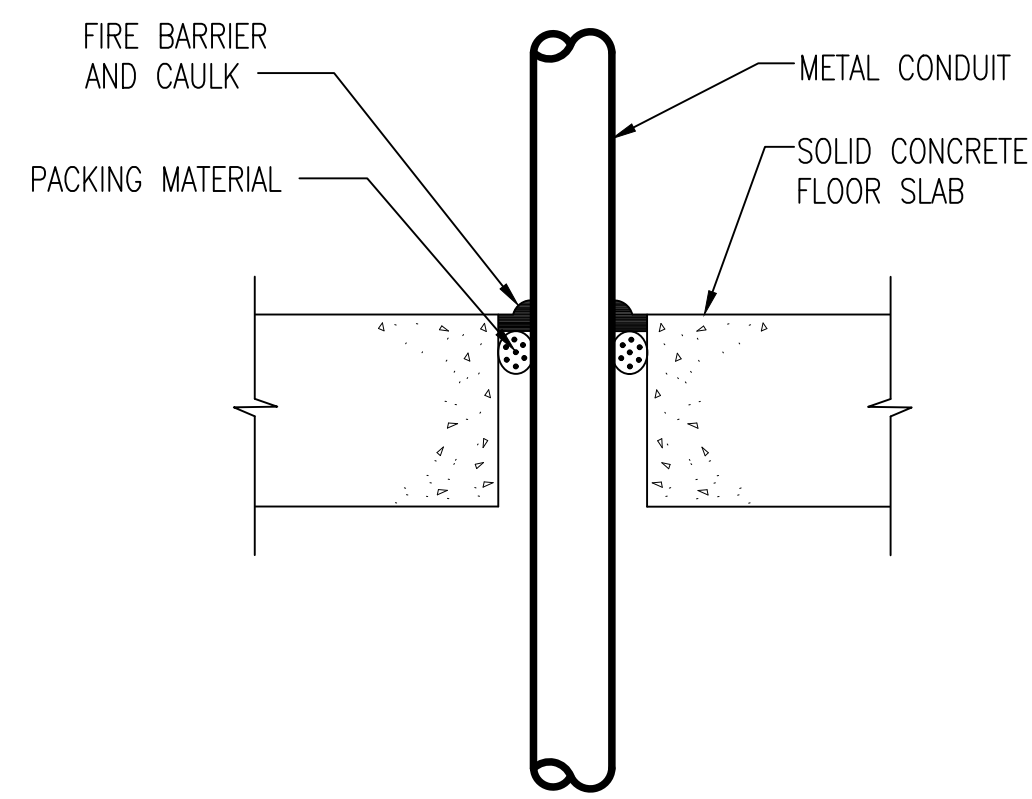
- CONNECT EX PUSHBUTTON AT LAB TO NEW SHUNT TRIP MAIN CIRCUIT BREAKER AT NEW PANEL PPC TO ALLOW FOR DISCONNECTION OF PANEL PPC MAIN CIRCUIT BREAKER UPON OPERATION OF PUSHBUTTON.
- PROVIDE NEW RECEPTACLE IN LOCATIONS SHOWN (TYPICAL).



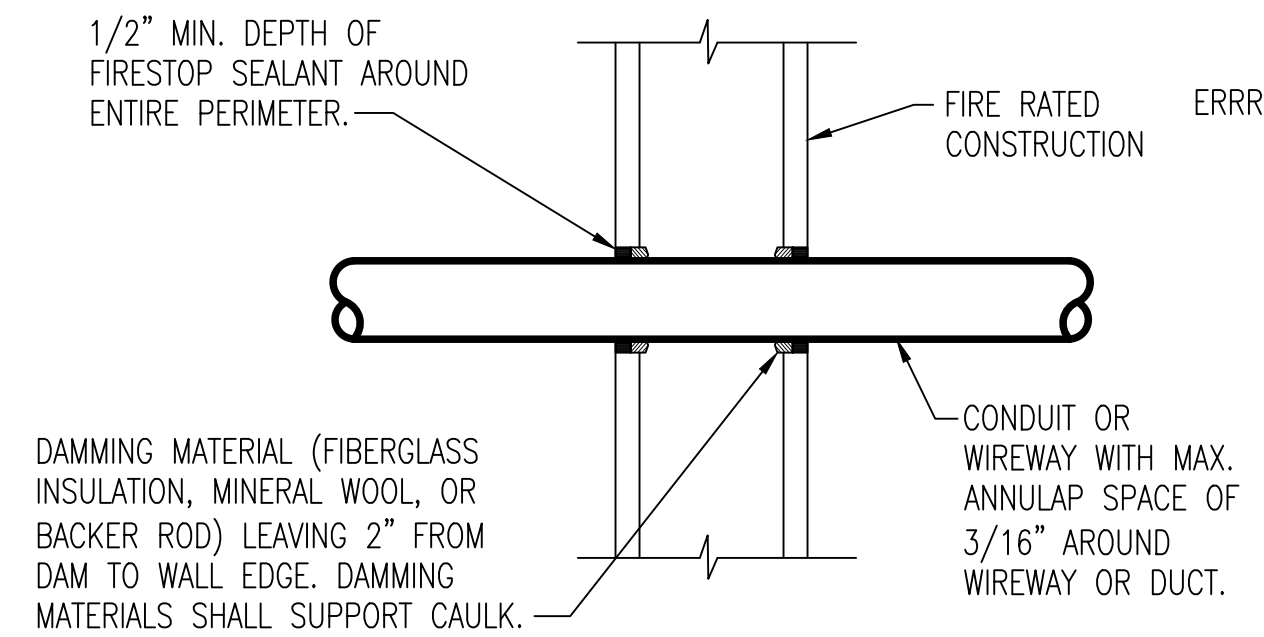
2 ENLARGED THIRD FLOOR B PART PLAN - NEW WORK  
 E-3 SCALE: 1/4" = 1'-0"



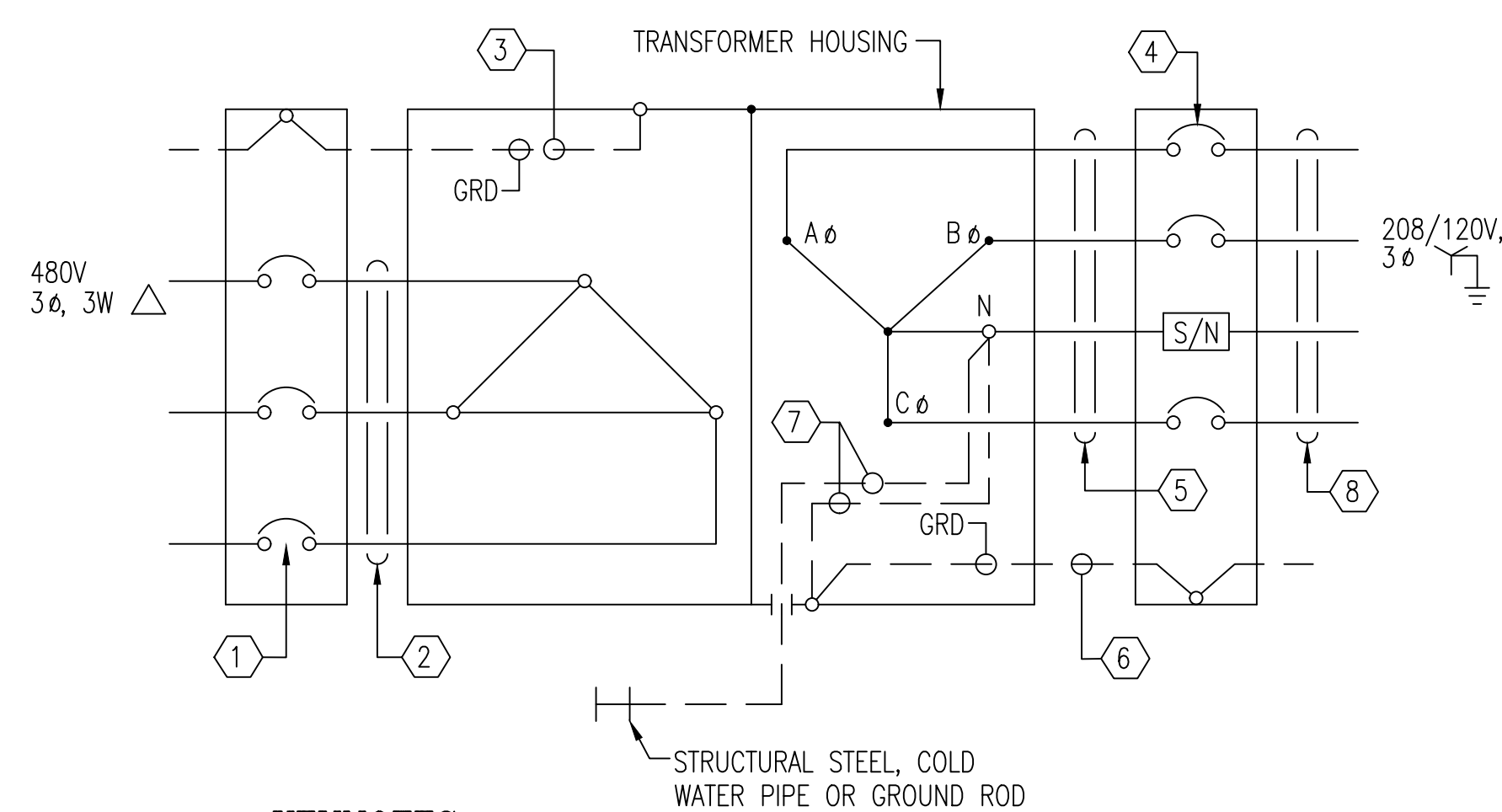




1 PENETRATION FIRESTOP FOR CONDUIT THROUGH CONCRETE FLOOR  
E-4 SCALE: NOT TO SCALE



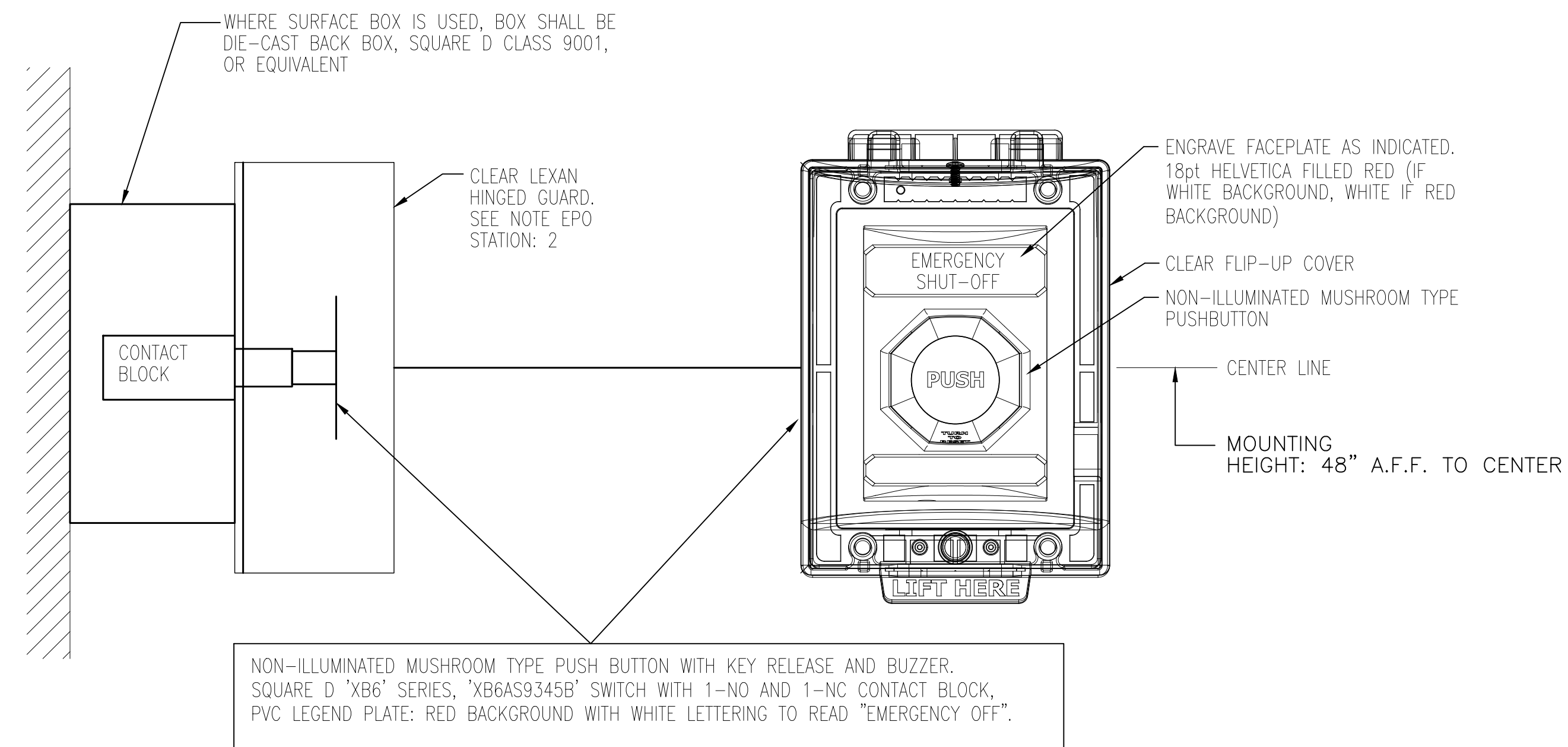
2 DETAIL FIRESTOP THROUGH WALL  
E-4 SCALE: NOT TO SCALE



**KEYNOTES:**

- 1 PRIMARY CIRCUIT BREAKER NOT TO EXCEED 250% PRIMARY FLA. FOR BEST RESULTS USE 125% TO AVOID UNNECESSARY TRIPPING DUE TO INRUSH. INRUSH CURRENT WILL APPROXIMATE 12 x FLA FOR .1 SEC.
- 2 PRIMARY CONDUCTORS, SIZE PER PRIMARY CIRCUIT BREAKER.
- 3 PRIMARY GROUND, SIZE PER PRIMARY CIRCUIT BREAKER AND NEC 250, TABLE 250-122.
- 4 SECONDARY CIRCUIT BREAKER NOT TO EXCEED 125% OF SECONDARY FLA.
- 5 SECONDARY CONDUCTORS; SIZE PER SECONDARY CIRCUIT BREAKER. MUST NOT BE LESS THAN 1/3 PRIMARY CIRCUIT BREAKER RATING TIMES THE RATIO OF 480/208. NOT MORE THAN 25 FOOT LONG PER NEC 240-20.
- 6 WHERE THE FIRST DISCONNECTING MEANS AT THE SECONDARY SIDE OF THE TRANSFORMER AND THE TRANSFORMER ARE LOCATED IN SEPARATE ENCLOSURES. A SUPPLY SIDE BONDING CONDUCTOR MUST BE RUN WITH THE SECONDARY NEUTRAL AND THE TRANSFORMER HOUSING MUST BE INSTALLED IN ACCORDANCE WITH NEC 250.30(A)(1) AND SIZED PER NEC 250.28(D). REFER TO GROUNDING RISER DIAGRAMS ON SHEET E-XX.
- 7 THE CONDUCTOR THAT MUST BE GROUNDED IS THE GROUND WIRE FROM THE SECONDARY NEUTRAL TO A GROUNDING NEAR THE XFMR LOCATION. SEE NEC 250-26. THE SIZE IS BASED ON NEC TABLE 250-66. THE BONDING JUMPER CONNECTED BETWEEN THE SECONDARY NEUTRAL AND THE TRANSFORMER HOUSING MUST BE INSTALLED IN ACCORDANCE WITH NEC 250.30(A)(1) AND SIZED PER NEC 250.28(D). REFER TO GROUNDING RISER DIAGRAMS ON SHEET E-XX.
- 8 SECONDARY CONDUCTORS, SIZE PER SECONDARY CIRCUIT BREAKER.

3 DRY TYPE TRANSFORMER WIRING  
E-4 SCALE: NOT TO SCALE



**GENERAL NOTES:**

1. EMERGENCY POWER OFF (EPO) SYSTEM SHALL BE PROVIDED WITH EPO SWITCHES.
2. EPO CONTROL PANEL POWER SHALL BE 120 VAC PROVIDED FROM THE 208/120 VOLT PANEL IN RESPECTIVE ROOM.
3. MECHANICALLY HELD CONTACTOR WITH 120V COIL. RELAYS SHALL BE SQUARE-D CLASS 8501 TYPE X SERIES, OR EQUAL R400: 120 VAC, 10 AMP, CONTACT RATING. PROVIDE CONTACTS AS NECESSARY.
4. PUSHBUTTONS, SWITCHES, AND OTHER WIRING DEVICES SHALL BE INDUSTRIAL GRADE.

**EPO SWITCH NOTES:**

EPO SWITCHES SHALL CONSIST OF THE FOLLOWING COMPONENTS:

1. RED PUSH BUTTON WITH NORMALLY OPENED CONTACTS, SQUARE-D CLASS 9001 TYPE K SERIES. THE PUSH BUTTON SHALL LOCK IN THE DEPRESSED POSITION. THE PUSH BUTTON SHALL BE RELEASED TO ITS NORMAL STATE BY MEANS OF A KEY RELEASE MECHANISM.
2. HINGED COVER GUARD WITH AUDIBLE COVER ACTIVATION HORN TO PROTECT PUSH BUTTON STATION FROM ACCIDENTAL OPERATION. MANUFACTURED BY: SAFETY TECHNOLOGY INCORPORATED, 2306 AIRPORT RD., WATERFORD, MICHIGAN 48327-1209. PHONE: 248-673-9898. PROVIDE "EMERGENCY SHUT OFF" LABEL UNDER COVER.

4 EPO SWITCH  
E-4 SCALE: NOT TO SCALE



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Seal



Approvals Date

DESIGN TEAM SUPERVISOR

CHIEF ENGINEERING BUREAU

CHIEF WATER, SEWER STREETS BUREAU

DEPARTMENT OF TRANSPORTATION

Revisions Date

Project Name and Location  
ELECTRICAL PANEL REPLACEMENT AT  
OPERATIONS AND CONTROL BUILDING (OCB)

ELECTRICAL DETAILS

Designed: IHK  
Drawn: AGT  
Checked: IHK  
Miss Utility Transmittal #:

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Scale: NTS

Date: AUGUST 7, 2023

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E-5

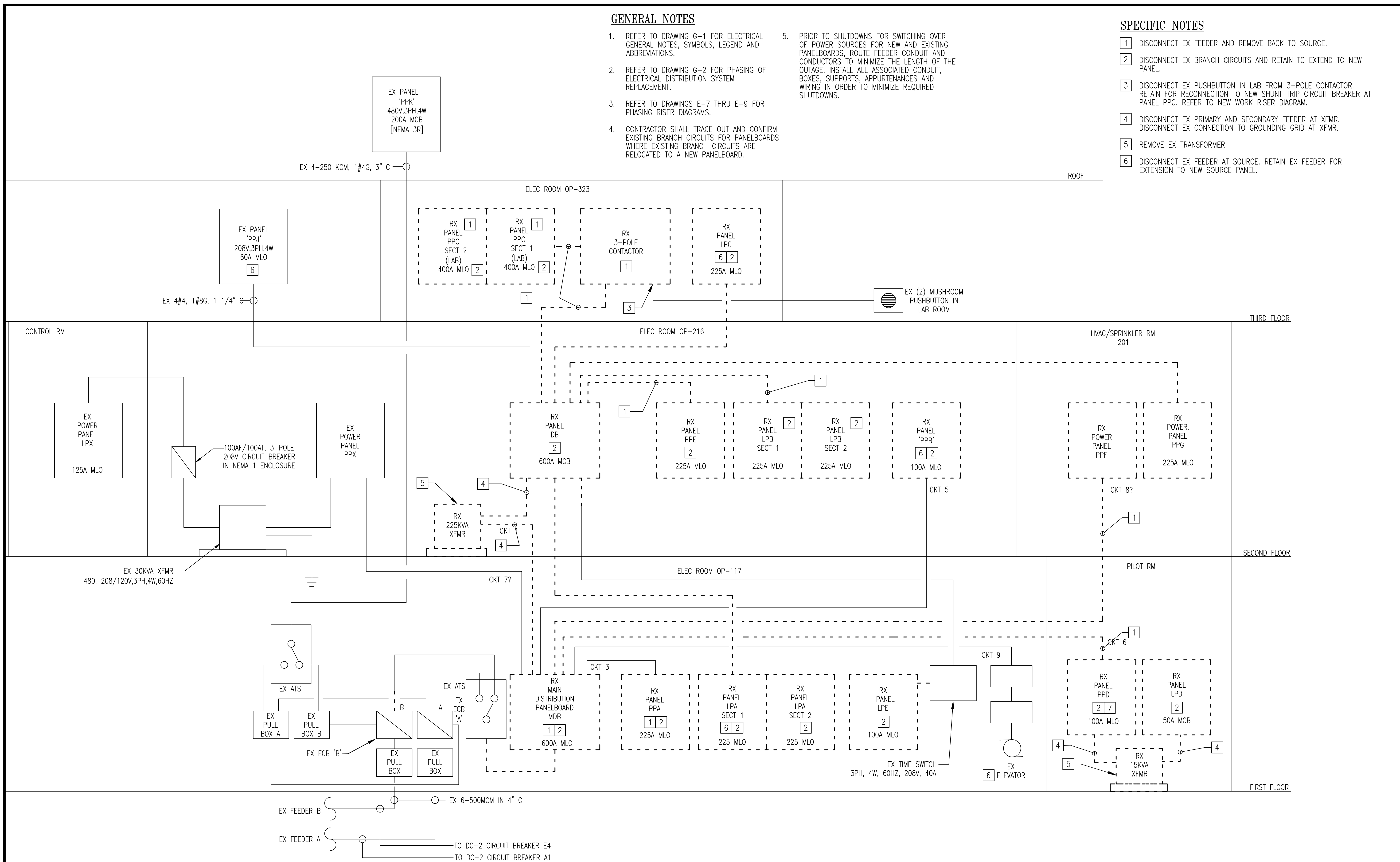


**GENERAL NOTES**

1. REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
2. REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT.
3. REFER TO DRAWINGS E-7 THRU E-9 FOR PHASING RISER DIAGRAMS.
4. CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.
5. PRIOR TO SHUTDOWNS FOR SWITCHING OVER OF POWER SOURCES FOR NEW AND EXISTING PANELBOARDS, ROUTE FEEDER CONDUIT AND CONDUCTORS TO MINIMIZE THE LENGTH OF THE OUTAGE. INSTALL ALL ASSOCIATED CONDUIT, BOXES, SUPPORTS, APPURTENANCES AND WIRING IN ORDER TO MINIMIZE REQUIRED SHUTDOWNS.

**SPECIFIC NOTES**

- 1 DISCONNECT EX FEEDER AND REMOVE BACK TO SOURCE.
- 2 DISCONNECT EX BRANCH CIRCUITS AND RETAIN TO EXTEND TO NEW PANEL.
- 3 DISCONNECT EX PUSHBUTTON IN LAB FROM 3-POLE CONTACTOR. RETAIN FOR RECONNECTION TO NEW SHUNT TRIP CIRCUIT BREAKER AT PANEL PPC. REFER TO NEW WORK RISER DIAGRAM.
- 4 DISCONNECT EX PRIMARY AND SECONDARY FEEDER AT XFMR. DISCONNECT EX CONNECTION TO GROUNDING GRID AT XFMR.
- 5 REMOVE EX TRANSFORMER.
- 6 DISCONNECT EX FEEDER AT SOURCE. RETAIN EX FEEDER FOR EXTENSION TO NEW SOURCE PANEL.



1 OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - DEMOLITION  
E-5 SCALE: NOT TO SCALE



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Approvals Date

DESIGN TEAM SUPERVISOR

CHIEF ENGINEERING BUREAU

CHIEF WATER, SEWER STREETS BUREAU

DEPARTMENT OF TRANSPORTATION

Revisions Date

Designed: IHK

Drawn: AGT

Checked: IHK

Miss Utility Transmittal #:

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Plotted: Aug 07, 2023

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**GENERAL NOTES**

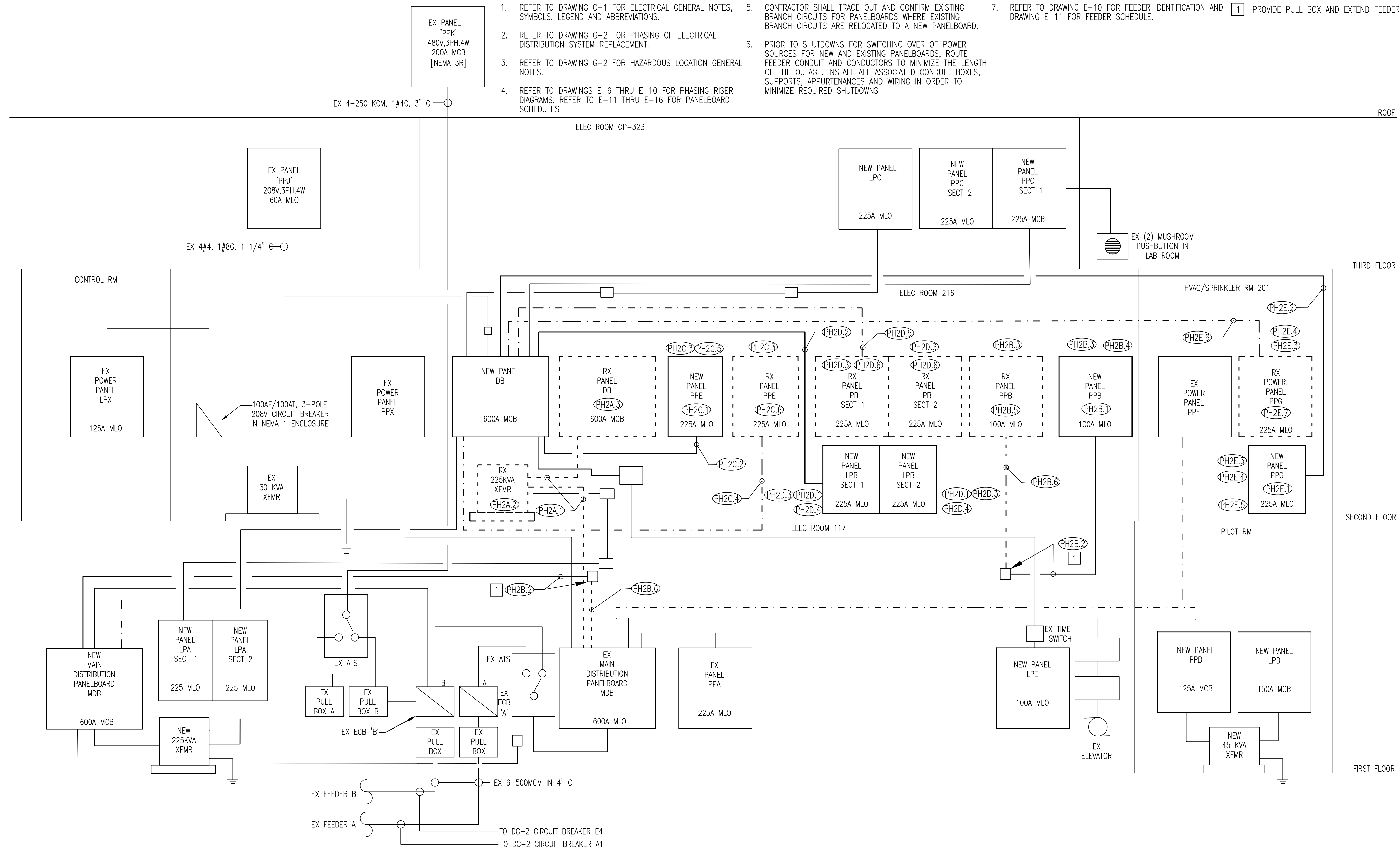
- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
- REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT.
- REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION GENERAL NOTES.
- REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS, REFER TO E-11 THRU E-16 FOR PANELBOARD SCHEDULES

- CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.
- PRIOR TO SHUTDOWNS FOR SWITCHING OVER OF POWER SOURCES FOR NEW AND EXISTING PANELBOARDS, ROUTE FEEDER CONDUIT AND CONDUCTORS TO MINIMIZE THE LENGTH OF THE OUTAGE. INSTALL ALL ASSOCIATED CONDUIT, BOXES, SUPPORTS, APPURTENANCES AND WIRING IN ORDER TO MINIMIZE REQUIRED SHUTDOWNS

- REFER TO DRAWING E-10 FOR FEEDER IDENTIFICATION AND DRAWING E-11 FOR FEEDER SCHEDULE.

**SPECIFIC NOTES**

- PROVIDE PULL BOX AND EXTEND FEEDER AS INDICATED



1 OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - PHASE 2  
E-7 SCALE: NOT TO SCALE



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CHIEF ENGINEERING BUREAU	
CHIEF WATER, SEWER STREETS BUREAU	
DEPARTMENT OF TRANSPORTATION	

Revisions

	Date

Project Name and Location  
ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)  
OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - PHASE 2

Designed: IHK  
Drawn: AGT  
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Date: AUGUST 7, 2023

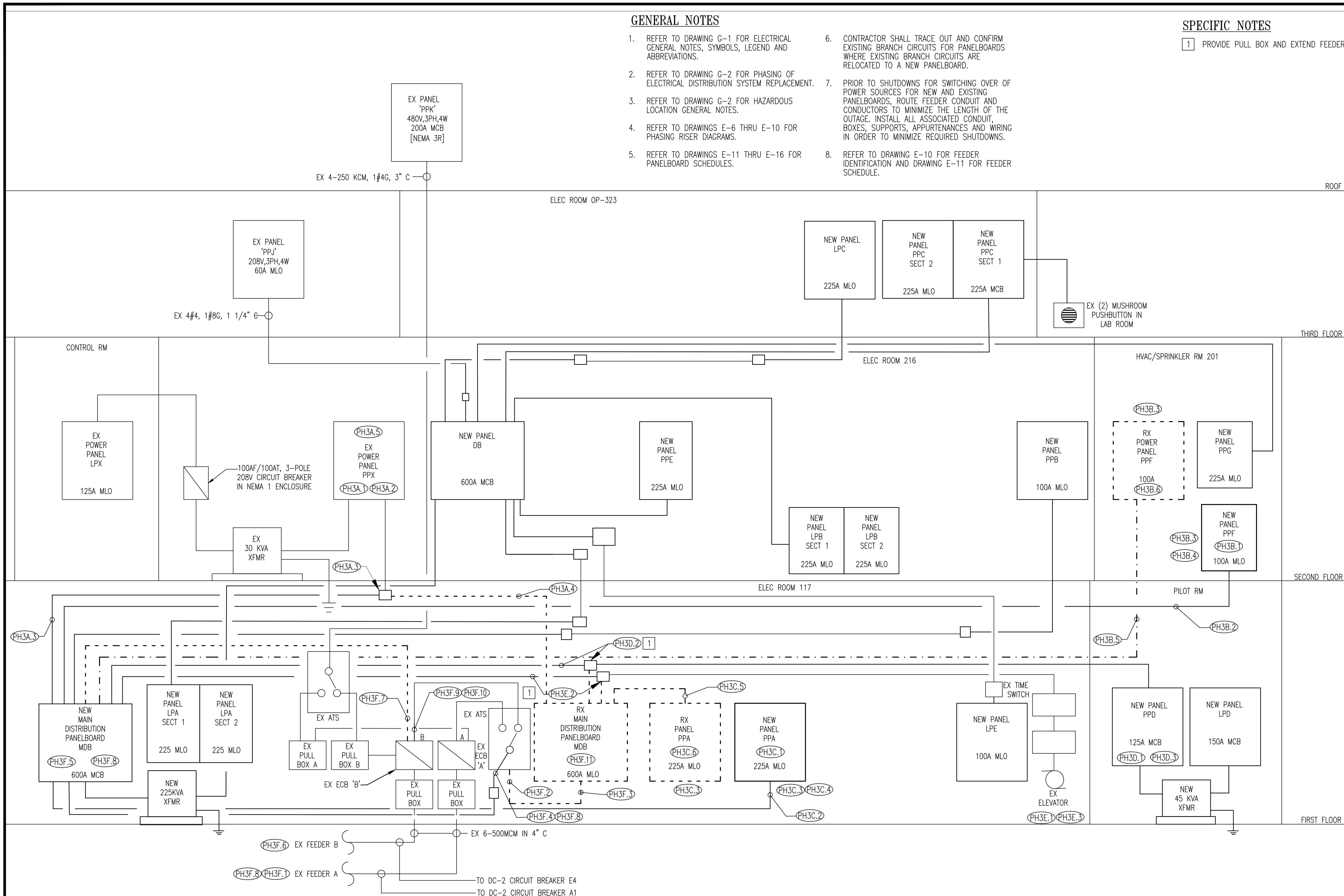


**GENERAL NOTES**

- REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
- REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT.
- REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION GENERAL NOTES.
- REFER TO DRAWINGS E-6 THRU E-10 FOR PHASING RISER DIAGRAMS.
- REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.
- CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.
- PRIOR TO SHUTDOWNS FOR SWITCHING OVER OF POWER SOURCES FOR NEW AND EXISTING PANELBOARDS, ROUTE FEEDER CONDUIT AND CONDUCTORS TO MINIMIZE THE LENGTH OF THE OUTAGE. INSTALL ALL ASSOCIATED CONDUIT, BOXES, SUPPORTS, APPURTENANCES AND WIRING IN ORDER TO MINIMIZE REQUIRED SHUTDOWNS.
- REFER TO DRAWING E-10 FOR FEEDER IDENTIFICATION AND DRAWING E-11 FOR FEEDER SCHEDULE.

**SPECIFIC NOTES**

- PROVIDE PULL BOX AND EXTEND FEEDER AS INDICATED.



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Revisions \_\_\_\_\_ Date \_\_\_\_\_  
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Project Name and Location  
**ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)**  
**OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - PHASE 3**

Designed: IHK  
 Drawn: AGT  
 Checked: IHK  
 Miss Utility Transmittal #:  
 Filename: 90258015-E09.dwg  
 Path: N:\90258-015\CADD\90258015-E09.DWG  
 Plotted: Aug 07, 2023  
 Plotted by: cwolfe

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Sheet **E-9**



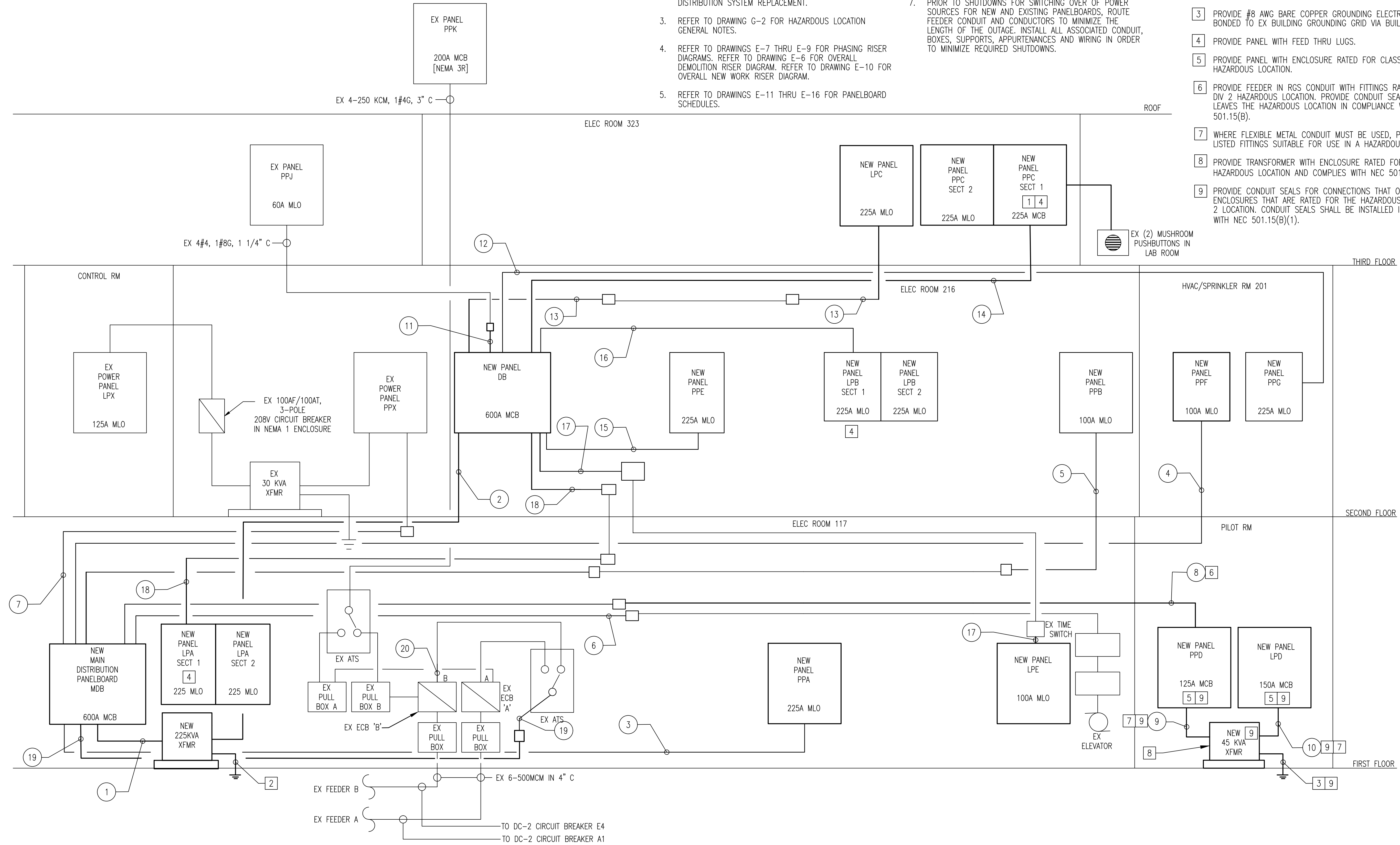


**GENERAL NOTES**

1. REFER TO DRAWING G-1 FOR ELECTRICAL GENERAL NOTES, SYMBOLS, LEGEND AND ABBREVIATIONS.
2. REFER TO DRAWING G-2 FOR PHASING OF ELECTRICAL DISTRIBUTION SYSTEM REPLACEMENT.
3. REFER TO DRAWING G-2 FOR HAZARDOUS LOCATION GENERAL NOTES.
4. REFER TO DRAWINGS E-7 THRU E-9 FOR PHASING RISER DIAGRAMS. REFER TO DRAWING E-6 FOR OVERALL DEMOLITION RISER DIAGRAM. REFER TO DRAWING E-10 FOR OVERALL NEW WORK RISER DIAGRAM.
5. REFER TO DRAWINGS E-11 THRU E-16 FOR PANELBOARD SCHEDULES.
6. CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.
7. PRIOR TO SHUTDOWNS FOR SWITCHING OVER OF POWER SOURCES FOR NEW AND EXISTING PANELBOARDS, ROUTE FEEDER CONDUIT AND CONDUCTORS TO MINIMIZE THE LENGTH OF THE OUTAGE. INSTALL ALL ASSOCIATED CONDUIT, BOXES, SUPPORTS, APPURTENANCES AND WIRING IN ORDER TO MINIMIZE REQUIRED SHUTDOWNS.

**SPECIFIC NOTES**

1. PROVIDE PANEL WITH SHUNT TRIP MAIN CIRCUIT BREAKER.
2. PROVIDE 2/0 AWG BARE COPPER GROUNDING ELECTRODE CONDUCTOR BONDED TO EX BUILDING GROUNDING GRID VIA BUILDING STEEL.
3. PROVIDE #8 AWG BARE COPPER GROUNDING ELECTRODE CONDUCTOR BONDED TO EX BUILDING GROUNDING GRID VIA BUILDING STEEL.
4. PROVIDE PANEL WITH FEED THRU LUGS.
5. PROVIDE PANEL WITH ENCLOSURE RATED FOR CLASS 1 DIV 1 HAZARDOUS LOCATION.
6. PROVIDE FEEDER IN RGS CONDUIT WITH FITTINGS RATED FOR CLASS 1 DIV 2 HAZARDOUS LOCATION. PROVIDE CONDUIT SEAL WHERE FEEDER LEAVES THE HAZARDOUS LOCATION IN COMPLIANCE WITH NEC 501.15(B).
7. WHERE FLEXIBLE METAL CONDUIT MUST BE USED, PROVIDE WITH LISTED FITTINGS SUITABLE FOR USE IN A HAZARDOUS LOCATION.
8. PROVIDE TRANSFORMER WITH ENCLOSURE RATED FOR CLASS 1 DIV 2 HAZARDOUS LOCATION AND COMPLIES WITH NEC 501.100(B).
9. PROVIDE CONDUIT SEALS FOR CONNECTIONS THAT OCCUR AT ENCLOSURES THAT ARE RATED FOR THE HAZARDOUS CLASS 1 DIVISION 2 LOCATION. CONDUIT SEALS SHALL BE INSTALLED IN COMPLIANCE WITH NEC 501.15(B)(1).



1 OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - FINAL  
E-9 SCALE: NOT TO SCALE



DEPARTMENT OF ENVIRONMENTAL SERVICES  
Engineering & Capital Projects Division  
Engineering Bureau  
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Approvals \_\_\_\_\_ Date \_\_\_\_\_  
DESIGN TEAM SUPERVISOR \_\_\_\_\_  
CHIEF ENGINEERING BUREAU \_\_\_\_\_  
CHIEF WATER, SEWER STREETS BUREAU \_\_\_\_\_  
DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_  
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Project Name and Location  
ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)  
OPERATIONS CONTROL BUILDING POWER RISER DIAGRAM - FINAL

Designed: IHK  
Drawn: AGT  
Checked: IHK  
Miss Utility Transmittal #:  
Filename: 90258015-E10.dwg  
Path: N:\90258-015\CADD\90258015-E10.DWG  
Plotted: Aug 07, 2023  
Plotted by: cwolfe  
Scale: NTS  
Date: AUGUST 7, 2023



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Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

CHIEF ENGINEERING BUREAU \_\_\_\_\_

CHIEF WATER, SEWER STREETS BUREAU \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_

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E-11

### FEEDER SCHEDULE

FEEDER NO.	CONDUIT		CABLE			FROM	TO	REMARKS
	SIZE	TYPE	QUANTITY	SIZE	GROUND			
1	4"	RGS	(4)	400 KCMIL	#3	PNL MDB	225 KVA XFMR	
2	(2) 3"	RGS	2 SETS	(4) 350 KCMIL	2/0	225 KVA XFMR	PANEL DB	
3	2"	RGS	(4)	3/0	#6	PNL MDB	PNL PPA	
4	2"	RGS	(4)	1/0	#6	PNL MDB	PNL PPF	
5	1 1/2"	EMT	(4)	#4	#8	PNL MDB	PNL PPB	
6	1"	RGS	(4)	#6	#10	PNL MDB	ELEVATOR	
7	2"	RGS	(4)	1/0	#6	PNL MDB	PNL PPX	
8	2"	RGS	(4)	1/0	#6	PNL MDB	PNL PPD	NOTE 1
9	1"	FMC/RGS	(3)	#4	#8	PANEL PPD	45 KVA XFMR	NOTE 1 & 2
10	2"	FMC/RGS	(4)	1/0	#6	45 KVA XFMR	PNL LPD	NOTE 1 & 2
11	1 1/4"	EMT	(4)	#4	#8	PNL DB	PNL PPJ	
12	2"	RGS	(4)	1/0	#6	PNL DB	PNL PPG	
13	2"	RGS	(4)	1/0	#6	PNL DB	PNL LPC	
14	3"	RGS	(4)	250 KCMIL	#4	PNL DB	PNL PPC	
15	1"	EMT	(4)	#6	#10	PNL DB	PNL PPE	
16	2"	RGS	(4)	1/0	#6	PNL DB	PNL LPB	
17	1"	EMT	(4)	#10	#10	PNL DB	PNL LPE	
18	2"	RGS	(4)	1/0	#6	PNL DB	PNL LPA	
19	(2) 4"	RGS	2 SETS	(4) 600 KCMIL	#1	EX ATS	PANEL MDB	
20	(2) 4"	RGS	2 SETS	(4) 600 KCMIL	#1	EX ECB 'B'	EX ATS	

NOTE 1: PROVIDE FEEDER IN RGS CONDUIT WITH FITTINGS RATED FOR CLASS 1 DIVISION 2 HAZARDOUS LOCATION. PROVIDE CONDUIT SEAL WHERE FEEDER LEAVES THE HAZARDOUS LOCATION IN COMPLIANCE WITH NEC 501.15(B).

NOTE 2: WHERE FLEXIBLE METAL CONDUIT MUST BE USED, PROVIDE WITH LISTED FITTINGS SUITABLE FOR USE IN A HAZARDOUS LOCATION.

### NEW PANEL MDB

LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGG SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGG SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
225 KVA XFMR/PNL DB	4"	RGS	(4) 400 KCMIL	#3	THWN	35	350	1	0.0	0.0	2								SPACE
PNL PPA	2"	RGS	(4) 3/0	#6	THWN	35	200	3	0.0	0.0	10	100	35	THWN	#6	(4) 1/0	RGS	2"	SPARE/TEMP FEED TO EX PNL PPF
PNL PPF	2"	RGS	(4) 1/0	#6	THWN	35	100	11	0.0	0.0	12	100	35	THWN	#6	(4) 1/0	RGS	2"	PNL PPF
PNL PPB	2"	RGS	(4) 1/0	#6	THWN	35	70	13	0.0	0.0	14	70	35	THWN	#8	(4) #4	EMT	1"	PNL PPD
ELEVATOR	1"	RGS	(4) #6	#10	THWN	35	50	15	0.0	0.0	16	50	35						SPARE
SPACE								17	0.0	0.0	18								SPACE
SPACE								19	0.0	0.0	20								SPACE
SPACE								21	0.0	0.0	22								SPACE
SPACE								23	0.0	0.0	24								SPACE
SPACE								25	0.0	0.0	26								SPACE
SPACE								27	0.0	0.0	28								SPACE
SPACE								29	0.0	0.0	30								SPACE
SPACE								31	0.0	0.0	32								SPACE
SPACE								33	0.0	0.0	34								SPACE
SPACE								35	0.0	0.0	36								SPACE
SPACE								37	0.0	0.0	38								SPACE
SPACE								39	0.0	0.0	40								SPACE
SPACE								41	0.0	0.0	42								SPACE

### LOAD SUMMARY PANEL

LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS

PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR

-	-	CONTINUOUS LOAD FACTOR:	1.25	0.0	KVA	-	-	-	-
-	-	FUTURE LOAD FACTOR:	1.25	0.0	AMPS	-	-	-	-

### NEW PANEL DB

LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGG SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGG SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
EX PNL PPJ	1 1/4"	EMT	(4) #4	#8	THWN	35	70	1	0.0	0.0	2	100							EX CIRCUIT
PNL PPG	2"	RGS	(4) 1/0	#6	THWN	35	90	3	0.0	0.0	4								SPACE
PNL LPC	2"	RGS	(4) 1/0	#6	THWN	35	125	5	0.0	0.0	6								EX CIRCUIT
PNL PPC	3"	RGS	(4) 250 KCMIL	#4	THWN	35	225	7	46.0	0.0	8								PNL LPE
SPARE/TEMP FEED TO EX PNL PPE	1"	EMT	(4) #6	#10	THWN	35	50	9	46.0	0.0	10	125	35	THWN	#10	(4) #10	EMT	1"	PNL LPE
SPARE/TEMP FEED TO EX PNL LPB	2"	RGS	(4) 1/0	#6	THWN	35	125	11	46.0	0.0	12								PNL PPE
SPARE/TEMP FEED TO EX PNL PPG	2"	RGS	(4) 1/0	#6	THWN	35	90	13	30.5	16.7	14								PNL LPB
								15	30.5	16.7	16								PNL LPA
								17	25.0	25.0	20								SPACE
								19	25.0	25.0	22								SPACE
								21	28.0	25.0	24								SPACE
								23	19.2	25.0	24								SPACE
								25	0.0	0.0	26								SPACE
								27	0.0	0.0	28								SPACE
								29	0.0	0.0	30								SPACE
								31	0.0	0.0	32								SPACE
								33	0.0	0.0	34								SPACE
								35	0.0	0.0	36								SPACE
								37	0.0	0.0	38								SPACE
								39	0.0	0.0	40								SPACE
								41	0.0	0.0	42								SPACE

### LOAD SUMMARY PANEL

LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES
LIGHTING	17.0	100%	17.0	51.2	142.2	0.0	90%	0.0	MOTOR LOADS
RECEPTACLES (1ST 10KVA)	10.0	100%	10.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC
RECEPTACLES (BALANCE)	24.2	50%	12.1	39.1	108.5	0.0	70%	0.0	MISCELLANEOUS

PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR

A-PHASE KVA	17.2	CONTINUOUS LOAD FACTOR:	1.25	61.1	KVA	143.2	A-PHASE AMPS
B-PHASE KVA	17.5	FUTURE LOAD FACTOR:	1.25	169.6	AMPS	146.2	B-PHASE AMPS
C-PHASE KVA	18.5					137.4	C-PHASE AMPS



Whitman, Requardt & Associates, LLP  
 801 South Caroline Street, Baltimore, Maryland 21231



Seal



Approvals Date

DESIGN TEAM SUPERVISOR

CHIEF ENGINEERING BUREAU

CHIEF WATER, SEWER STREETS BUREAU

DEPARTMENT OF TRANSPORTATION

Revisions Date

Revisions Date

Project Name and Location  
 ELECTRICAL PANEL REPLACEMENT AT  
 OPERATIONS AND CONTROL BUILDING (OCB)

ELECTRICAL SCHEDULES

Designed: IHK  
 Drawn: AGT  
 Checked: IHK  
 Miss Utility Transmittal #:

Filename: 90258015-E12.dwg  
 Path: N:\90258-015\CADD\90258015-E12.DWG  
 Plotted: Aug 07, 2023  
 Plotted by: cwolfe

Scale: NTS

Date: AUGUST 7, 2023

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NEW PANEL LPA SECTION 1																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120		PH-GRD VOLTAGE:	120	ACCESSORIES:	DOOR-IN-DOOR											
MCB OR MLO:	MLO	PHASE:	3		PH-PH VOLTAGE:	208	ACCESSORIES:	FEED THRU LUGS											
MCB FRAME SIZE:	-	BUS MATERIAL:	CU		SOURCE EQUIPMENT:	PANEL DB	ACCESSORIES:	-											
MCB TRIP AMPS:	-	BUS RATING:	225		SOURCE LOCATION:	ELEC RMRM 216	ACCESSORIES:	-											
MCB MAX KVA RATING:	-	KAIC:	10		PANEL LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
SPARE KVA:	81	SPARE PERCENT:	36%																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
LTG MECH RM	10						20	1	0.0	0.0	2	20	10						LTG RECEIVING
LTG BOILER RM	10						20	3	0.0	0.0	4	20	10						LTG RECEIVING
LTG ELEC RM GAS CYL STR	10						20	5	0.0	0.0	6	20	10						LTG TOILETS
LTG EXHIBITION LOBBY	10						20	7	0.0	0.0	8	20	10						LTG ENTRY EXHIBIT LOBBY
LTG EXHIBITION LOBBY	10						20	9	0.0	0.0	10	20	10						HEATER TOILETS
LTG EXHIBITION LOBBY	10						20	11	0.0	0.0	12	20	10						ELEV MACH & PIT
HOT WTR CRC PUMP #1	10						20	13	0.0	0.0	14	20	10						SPRINKLER VALVE, HEAT TP
HOT WTR CRC PUMP #2	10						20	15	0.0	0.0	16	20	10						FIRST AID UNIT
CUH 1/12 HP	10						20	17	0.0	0.0	18	20	10						LTG STAIR 1
PEF 2 1/2 HP DAMPER	10						20	19	0.0	0.0	20	20	10						PUH-1, 2, 3
PEF 3 1/6 HP DAMPER	10						20	21	0.0	0.0	22	20	10						LTG STAIR #3
BOILER #2 BURNER PUMP	10						20	23	0.0	0.0	24	20	10						RECEPT LOBBY
BOILER #1	10						20	25	0.0	0.0	26								SPACE
SPACE/TEMP FEED TO EX PNL LPD	10						27	0.0	0.0	28									SPACE
SPACE							29	0.0	0.0	30									SPACE
SPACE							31	0.0	0.0	32									SPACE
SPACE							33	0.0	0.0	34									SPACE
SPACE							35	0.0	0.0	36									SPACE
SPACE							37	0.0	0.0	38									SPACE
SPACE							39	0.0	0.0	40									SPACE
SPACE							41	0.0	0.0	42									SPACE
LOAD SUMMARY PANEL																			
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES										
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS										
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC										
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS										
A-PHASE KVA	0.0	PANEL SIZNG = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR				0.0		0.0	A-PHASE AMPS										
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR:	1.25		0.0	KVA		0.0	B-PHASE AMPS										
C-PHASE KVA	0.0	FUTURE LOAD FACTOR:	1.25		0.0	AMPS		0.0	C-PHASE AMPS										

NEW PANEL PPA																			
MOUNTING:	SURFACE:	VOLTAGE:	480/277		PH-GRD VOLTAGE:	277	ACCESSORIES:	DOOR-IN-DOOR											
MCB OR MLO:	MLO	PHASE:	3		PH-PH VOLTAGE:	480	ACCESSORIES:	-											
MCB FRAME SIZE:	-	BUS MATERIAL:	CU		SOURCE EQUIPMENT:	PNL MDB	ACCESSORIES:	-											
MCB TRIP AMPS:	-	BUS RATING:	225		SOURCE LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
MCB MAX KVA RATING:	-	KAIC:	35		PANEL LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
SPARE KVA:	187	SPARE PERCENT:	83%																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
EUH-2	35						15	1	0.0	0.0	2	15	35						AHU-1
CHILL WTR PUMP P-1A	35						15	9	0.0	0.0	10	30	35						DUPLEX COMPRESSOR
CHILL WTR PUMP P-1B	35						15	11	0.0	0.0	12								OVERHEAD DOOR
HOT WTR PUMP P-2A	35						15	13	0.0	0.0	14	15	35						P-3, OAU-1 PUMP
HOT WTR PUMP P-2B	35						15	15	0.0	0.0	16	15	35						PUMP P-4
OAU-2 INDOOR RM 115	35						25	17	0.0	0.0	18								PUMP P-5
OAU-1 MECH RM	35						20	19	0.0	0.0	20	15	35						INLINE FAN F-3
AIR COOLED CHILLER	35						150	21	0.0	0.0	22	20	35						SPACE
EXISTING CIRCUIT	35						15	23	0.0	0.0	24								SPACE
LOAD SUMMARY PANEL																			
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES										
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS										
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC										
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS										
A-PHASE KVA	0.0	PANEL SIZNG = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR				0.0		0.0	A-PHASE AMPS										
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR:	1.25		0.0	KVA		0.0	B-PHASE AMPS										
C-PHASE KVA	0.0	FUTURE LOAD FACTOR:	1.25		0.0	AMPS		0.0	C-PHASE AMPS										

NEW PANEL LPA SECTION 2																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120		PH-GRD VOLTAGE:	120	ACCESSORIES:	DOOR-IN-DOOR											
MCB OR MLO:	MLO	PHASE:	3		PH-PH VOLTAGE:	208	ACCESSORIES:	-											
MCB FRAME SIZE:	-	BUS MATERIAL:	CU		SOURCE EQUIPMENT:	PANEL LPA-1	ACCESSORIES:	-											
MCB TRIP AMPS:	-	BUS RATING:	225		SOURCE LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
MCB MAX KVA RATING:	-	KAIC:	10		PANEL LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
SPARE KVA:	81	SPARE PERCENT:	36%																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
BOILER 2	10						15	1	0.0	0.0	2	15	10						RECEPT LOBBY
ERV-1	10						15	3	0.0	0.0	4	15	10						DOD PROPERTY
DOD PROPERTY	10						15	5	0.0	0.0	6	15	10						RECEPT MECH, ELEC RM
HEATER TOILETS	10						20	7	0.0	0.0	8	15	10						RECEPT MECH, ELEC RM
PEF-1 1/50 HP DAMPER	10						20	9	0.0	0.0	10	20	10						CUH-4, 6
CUH-2 & 3	10						20	11	0.0	0.0	12	20	10						CUH-5
EXIT LTG	10						20	13	0.0	0.0	14	20	10						DRINKING FOUNTAIN, LF-4
PARKING LOT LTG	10						15	15	0.0	0.0	16								EUH-1
PEF 4 & DAMPER	10						20	17	0.0	0.0	18	20	10						30A PLUG
BOILER RM RECEPT	10						20	21	0.0	0.0	22								WASHER & DRYER MACHINE
AIR BOILER RM	10						20	23	0.0	0.0	24	40	10						SPACE
SPACE							25	0.0	0.0	26									SPACE
SPACE							27	0.0	0.0	28									SPACE
SPACE							29	0.0	0.0	30									SPACE
SPACE							31	0.0	0.0	32									SPACE
SPACE							33	0.0	0.0	34									SPACE
SPACE							35	0.0	0.0	36									SPACE
SPACE							37	0.0	0.0	38									SPACE
SPACE							39	0.0	0.0	40									SPACE
SPACE							41	0.0	0.0	42									SPACE
LOAD SUMMARY PANEL																			
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES										
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS										
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC										
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS										
A-PHASE KVA	0.0	PANEL SIZNG = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR				0.0		0.0	A-PHASE AMPS										
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR:	1.25		0.0	KVA		0.0	B-PHASE AMPS										
C-PHASE KVA	0.0	FUTURE LOAD FACTOR:	1.25		0.0	AMPS		0.0	C-PHASE AMPS										

NEW PANEL LPE																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120		PH-GRD VOLTAGE:	120	ACCESSORIES:	DOOR-IN-DOOR											
MCB OR MLO:	MLO	PHASE:	3		PH-PH VOLTAGE:	208	ACCESSORIES:	-											
MCB FRAME SIZE:	-	BUS MATERIAL:	CU		SOURCE EQUIPMENT:	PANEL DB	ACCESSORIES:	-											
MCB TRIP AMPS:	-	BUS RATING:	100		SOURCE LOCATION:	ELEC RMRM 216	ACCESSORIES:	-											
MCB MAX KVA RATING:	-	KAIC:	18		PANEL LOCATION:	ELEC RMRM 117	ACCESSORIES:	-											
SPARE KVA:	36	SPARE PERCENT:	36%																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
ANNUNCIATION CTRL 204	18						20	1	0.0	0.0	2	20	18						LTG COL D&F











Seal



Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

CHIEF ENGINEERING BUREAU \_\_\_\_\_

CHIEF WATER, SEWER STREETS BUREAU \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_

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Filename: 90258015-E15.dwg

Path: N:\90258-015\CADD\90258015-E15.DWG

Plotted: Aug 07, 2023

Plotted by: cwolfe

Scale: NTS

Date: AUGUST 7, 2023

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EX PANEL LPX																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120	PH-GRD VOLTAGE:	120	ACCESSORIES:	-												
MCB OR MLO:	MLO	PHASE:	3	PH-PH VOLTAGE:	208	ACCESSORIES:	-												
MCB FRAME SIZE:	-	BUS MATERIAL:	CU	SOURCE EQUIPMENT:	30 KVA XFMR	ACCESSORIES:	-												
MCB TRIP AMPS:	-	BUS RATING:	125	SOURCE LOCATION:	CONTROL RM	ACCESSORIES:	-												
MCB MAX KVA RATING:	-	AVAILABLE KAIC:	10	PANEL LOCATION:	CONTROL RM	ACCESSORIES:	-												
SPARE KVA:		45		SPARE PERCENT:		36%													
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
1ST FLR LIGHTING						10	20	1	0.0	0.0	2	20	10						1ST FLR RECEPTACLES
1ST FLR LIGHTING						10	20	3	0.0	0.0	4	20	10						1ST FLR RECEPTACLES
2ND FLR LIGHTING						10	20	5	0.0	0.0	6	20	10						1ST FLR RECEPTACLES
2ND FLR LIGHTING						10	20	7	0.0	0.0	8	20	10						1ST FLR RECEPTACLES
2ND FLR RECEPTACLES						10	20	9	0.0	0.0	10	20	10						RECEPTACLE TELEMETRY
2ND FLR RECEPTACLES						10	20	11	0.0	0.0	12	20	10						BENTLEY NEVADA PNL
2ND FLR RECEPTACLES						10	20	13	0.0	0.0	14	20	10						EXHAUST FAN
JUNCTION BOX 2ND FLR						10	20	15	0.0	0.0	16	20	10						FM 200 PNL ATC PNL
JUNCTION BOX 2ND FLR						10	20	17	0.0	0.0	18	20	10						SPARE UNDER FLR JBOX
HEAT TRACE						10	20	19	0.0	0.0	20	20	10						FACP
TEMP POWER						10	20	21	0.0	0.0	22	20	10						NEW UPS
SPARE 120V OUTLET						10	20	23	0.0	0.0	24	20	10						NEW NET CABINET NC-4
CONTROL RM LIGHTING						10	20	25	0.0	0.0	26	20	10						CONTROL RM LIGHTING
LTG RM 206 NETWORK						10	20	27	0.0	0.0	28	20	10						RECEPT RM 206
						10	20	29	0.0	0.0	30	20	10						NETWORK RM PNL SCP
LOAD SUMMARY PANEL:																			
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES										
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	80%	0.0	MOTOR LOADS										
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC										
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS										
A-PHASE KVA	0.0	PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR										0.0	A-PHASE AMPS						
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR: 1.25										0.0	B-PHASE AMPS						
C-PHASE KVA	0.0	FUTURE LOAD FACTOR: 1.25										0.0	C-PHASE AMPS						

NEW PANEL LPC																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120	PH-GRD VOLTAGE:	120	ACCESSORIES:	DOOR-IN-DOOR												
MCB OR MLO:	MLO	PHASE:	3	PH-PH VOLTAGE:	208	ACCESSORIES:	-												
MCB FRAME SIZE:	-	BUS MATERIAL:	CU	SOURCE EQUIPMENT:	PANEL DB	ACCESSORIES:	-												
MCB TRIP AMPS:	-	BUS RATING:	225	SOURCE LOCATION:	ELEC RM 216	ACCESSORIES:	-												
MCB MAX KVA RATING:	-	KAIC:	10	PANEL LOCATION:	ELEC RM 321	ACCESSORIES:	-												
SPARE KVA:		80		SPARE PERCENT:		36%													
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
LTG SHIFT SUPERVISOR						10	20	1	0.0	0.0	2	20	10						LTG CORRIDOR
RECEPTS - GEN OFF 312						10	20	3	3.2	0.0	4	20	10						LTG GEN OFFICE
LTG PROCESS CTRL ENG						10	20	5	0.0	0.0	6	20	10						LTG GEN OFFICE
LTG LIBRARY						10	20	7	0.0	0.0	8	20	10						LTG CHEMISTRY ASSIT OFF
LTG GEN LABORATORY						10	20	9	0.0	0.0	10	20	10						LTG INSTRUMENT RM
LTG GEN LABORATORY						10	20	11	0.0	0.0	12	20	10						LTG WPCD CHIEF OFFICE
LTG GEN LABORATORY						10	20	13	0.0	0.0	14	20	10						LTG OPERATOR RM
RECEPT ELEC RM AIR COMP						10	20	15	0.0	0.0	16	20	10						EXIT LTG
RECEPT CLEANING						10	20	17	0.0	0.0	18	20	10						ROOF FAN #3
FLOOR RECEPT OFFICE						10	20	19	0.0	0.0	20	20	10						ROOF FAN #1
FLOOR RECEPT OFFICE						10	20	21	0.0	0.0	22	20	10						ROOF FAN #2
FLOOR RECEPT OFFICE						10	20	23	0.0	0.0	24	20	10						FLOOR RECEPTS
FLOOR RECEPT OFFICE						10	20	25	0.0	0.0	26	20	10						FLOOR RECEPTS
DRINKING FOUNTAIN						10	20	27	0.0	0.0	28	20	10						FLOOR RECEPTS
DRINKING FOUNTAIN						10	20	29	0.0	0.0	30	20	10						RECEPT CLEANING
ROOF FAN #7						10	20	31	0.0	0.0	32	20	10						RECEPT LIBRARY
LTG ELEC. TOILET, STORAGE						10	20	33	0.0	0.0	34	20	10						LTG WAITING AREA
FURNACE						10	40	35	0.0	0.0	36	20	10						LTG CORRIDOR
								37	0.0	4.9	38	20	10						RECEPTS - GEN OFF 312
								39	0.0	0.0	40								
KITCHEN UNIT B						10	40	41	0.0	0.0	42	40	10						SPARE
LOAD SUMMARY PANEL:																			
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES										
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	80%	0.0	MOTOR LOADS										
RECEPTACLES (1ST 10KVA)	1.0	100%	1.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC										
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS										
A-PHASE KVA	0.6	PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR										4.9	A-PHASE AMPS						
B-PHASE KVA	0.4	CONTINUOUS LOAD FACTOR: 1.25										1.5	B-PHASE AMPS						
C-PHASE KVA	0.0	FUTURE LOAD FACTOR: 1.25										4.2	C-PHASE AMPS						

NEW PANEL PPC SECTION 1																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120	PH-GRD VOLTAGE:	120	ACCESSORIES:	DOOR-IN-DOOR												
MCB OR MLO:	MCB	PHASE:	3	PH-PH VOLTAGE:	208	ACCESSORIES:	SHUNT TRIP MCB												
MCB FRAME SIZE:	225	BUS MATERIAL:	CU	SOURCE EQUIPMENT:	PANEL DB	ACCESSORIES:	FEED THRU LUGS												
MCB TRIP AMPS:	225	BUS RATING:	225	SOURCE LOCATION:	ELEC RM RM 216	ACCESSORIES:	-												
MCB MAX KVA RATING:	65	KAIC:	10	PANEL LOCATION:	ELEC RM RM 323	ACCESSORIES:	-												
SPARE KVA:		64		SPARE PERCENT:		99%													
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO. WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO. WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
B&D INCUBATOR RECEPT						10	20	1	0.0	0.0	2	20	10						RECEPT LAB BENCHES
RECEPT LAB BENCHES						10	20	3	0.0	0.0	4	20	10						RECEPT LAB BENCHES
REFRIGERATOR RECEPT						10	20	5	0.0	0.0	6	20	10						RECEPT LAB BENCHES
RECEPT LAB BENCHES						10	20	7	0.0	0.0	8	20	10						RECEPT LAB BENCHES
RECEPT LAB BENCHES						10	20	9	0.0	0.0	10	20	10						RECEPT LAB BENCHES
RECEPT LAB BENCHES						10	20	11	0.0	0.0	12	20	10						RECEPT LAB BENCHES
RECEPT INST RM						10	20	13	0.0	0.0	14	20	10						RECEPT INST RM
RECEPT INST RM						10	20	15	0.0	0.0	16	20	10						RECEPT INST RM
RECEPT BACTERIOLOGY RM						10	20	17	0.0	0.0	18	20	10						RECEPT BACTERIOLOGY
RECEPT ASSIST CHEM RM						10	20	19	0.0	0.0	20	20	10						RECEPT BACTERIOLOGY
RECEPT ASSIST CHEM RM						10	20	21	0.0	0.0	22	20	10						RECEPT BACTERIOLOGY
RECEPT ASSIST CHEM RM						10	20	23	0.0	0.0	24	20	10						RECEPT CHEMIST RM
RECEPT WASHUP RM						10	20	25	0.0	0.0	26	20	10						NEW ATOMIC ABSORPTION
IN LINE EXHAUST FAN #2						10	20	27	0.0	0.0	28	20	10						NEW ATOMIC ABSORPTION
RECEPT INST RM 328						10	20	29	0.0	0.0	30	20	10						RECEPT GEN LAB
SUPPLY/EXHAUST FANS #1						10	20	31	0.0	0.0	32	20	10						RECEPT LAB
EXHAUST FAN #4						10	20	33	0.0	0.0	34	20	10						LAB LIGHTING
SUPPLY/EXHAUST FANS #3, 4						10	20	35	0.0	0.0	36	20	10						SUPPLY/EXHAUST FAN #2
RECEPT - 329, 330	3/4"	EMT	#12	#12	THWN	10	20	37	3.0	0.0	38	20	10						SPARE
SPARE						10	20	39	0.0	0.0	40	20	10						SPARE
SPARE						10	20	41	0.0	0.0	42	20	10						SPARE
LOAD SUMMARY PANEL:																			
LOAD CATEGORIES	CONNECTED																		



Seal



Approvals \_\_\_\_\_ Date \_\_\_\_\_

DESIGN TEAM SUPERVISOR \_\_\_\_\_

CHIEF ENGINEERING BUREAU \_\_\_\_\_

CHIEF WATER, SEWER STREETS BUREAU \_\_\_\_\_

DEPARTMENT OF TRANSPORTATION \_\_\_\_\_

Revisions \_\_\_\_\_ Date \_\_\_\_\_

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Project Name and Location  
**ELECTRICAL PANEL REPLACEMENT AT OPERATIONS AND CONTROL BUILDING (OCB)**

Designed: IHK  
 Drawn: AGT  
 Checked: IHK  
 Miss Utility Transmittal #:

Filename: 90258015-E16.dwg  
 Path: N:\90258-015\CADD\90258015-E16.DWG  
 Plotted: Aug 07, 2023  
 Plotted by: cwolfe

Scale: NTS

Date: AUGUST 7, 2023

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EX PANEL PPJ																			
MOUNTING:	SURFACE:	VOLTAGE:	208/120	PH-GRD VOLTAGE:	120	ACCESSORIES:	-												
MCB OR MLO:	MLO	PHASE:	3	PH-PH VOLTAGE:	208	ACCESSORIES:	-												
MCB FRAME SIZE:	-	BUS MATERIAL:	CU	SOURCE EQUIPMENT:	PANEL DB	ACCESSORIES:	-												
MCB TRIP AMPS:	-	BUS RATING:	-	SOURCE LOCATION:	ELEC RM 216	ACCESSORIES:	-												
MCB MAX KVA RATING:	-	KAIC:	10	PANEL LOCATION:	ELEC RM 323	ACCESSORIES:	-												
SPARE KVA:	#####	SPARE PERCENT:	#####																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
FCU							15	1	0.0	0.0	2	15							TV, KITCHEN RECEIPT
								3	0.0	0.0	4	20							ILF-2
FCU							15	5	0.0	0.0	6	20							SIDE ROOF RECEIPTS
								7	0.0	0.0	8	20							HVAC CONTROLS
FCU							15	9	0.0	0.0	10	20							RECEIPTS 300,301,302,304
								11	0.0	0.0	12	20							MAIN ROOF RECEIPTS
SPARE KVA							20	13	0.0	0.0	14								CU-1A
NEW OFFICE RECEIPTS							20	15	0.0	0.0	16	30							
RF-3							20	17	0.0	0.0	18								CU-1B
OPS MANAGER OUTLET							20	19	0.0	0.0	20	30							
SPACE							21	0.0	0.0	0.0	22								SPACE
SPACE							23	0.0	0.0	0.0	24								SPACE
SPACE							25	0.0	0.0	0.0	26								SPACE
SPACE							27	0.0	0.0	0.0	28								SPACE
SPACE							29	0.0	0.0	0.0	30								SPACE
SPACE							31	0.0	0.0	0.0	32								SPACE
SPACE							33	0.0	0.0	0.0	34								SPACE
SPACE							35	0.0	0.0	0.0	36								SPACE
SPACE							37	0.0	0.0	0.0	38								SPACE
SPACE							39	0.0	0.0	0.0	40								SPACE
SPACE							41	0.0	0.0	0.0	42								SPACE

LOAD SUMMARY PANEL									
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS
A-PHASE KVA	0.0	PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR				0.0	A-PHASE AMPS		
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR:	1.25		0.0	KVA		0.0	B-PHASE AMPS
C-PHASE KVA	0.0	FUTURE LOAD FACTOR:	1.25		0.0	AMPS		0.0	C-PHASE AMPS

EX PANEL PPK																			
MOUNTING:	SURFACE:	VOLTAGE:	480/277	PH-GRD VOLTAGE:	277	ACCESSORIES:	-												
MCB OR MLO:	MCB	PHASE:	3	PH-PH VOLTAGE:	480	ACCESSORIES:	-												
MCB FRAME SIZE:	225	BUS MATERIAL:	CU	SOURCE EQUIPMENT:	-	ACCESSORIES:	-												
MCB TRIP AMPS:	225	BUS RATING:	225	SOURCE LOCATION:	-	ACCESSORIES:	-												
MCB MAX KVA RATING:	150	KAIC:	25	PANEL LOCATION:	ROOF	ACCESSORIES:	-												
SPARE KVA:	150	SPARE PERCENT:	100%																
LOAD DESCRIPTION	CONDUIT SIZE (INCHES)	COND TYPE	(NO WIRE) SIZE	EGC SIZE	WIRE INSUL TYPE	KAIC	CB AMPS/POL ES	POLE #	LOAD AMPS	LOAD AMPS	POLE #	CB AMPS/POL ES	KAIC	WIRE INSUL TYPE	EGC SIZE	(NO WIRE) SIZE	COND TYPE	CONDUIT SIZE (INCHES)	LOAD DESCRIPTION
EX HRU-1 MODULE A							15	1	0.0	0.0	2	20							HRU-3 MODULE A
								3	0.0	0.0	4								
								5	0.0	0.0	6								
EX HRU-1 MODULE B							20	7	0.0	0.0	8	20							HRU-3 MODULE B
								9	0.0	0.0	10								
								11	0.0	0.0	12								
EX HRU-2 MODULE A							25	13	0.0	0.0	14	20							HRU-4 MODULE A
								15	0.0	0.0	16								
								17	0.0	0.0	18								
EX HRU-2 MODULE B							25	19	0.0	0.0	20	20							HRU-4 MODULE B
								21	0.0	0.0	22								
								23	0.0	0.0	24								
								25	0.0	0.0	26								
SPACE								27	0.0	0.0	28	25							HRU-5 MODULE A
								29	0.0	0.0	30								
								31	0.0	0.0	32								
SPACE								33	0.0	0.0	34	25							HRU-5 MODULE B
								35	0.0	0.0	36								
								37	0.0	0.0	38								
								39	0.0	0.0	40								
SPACE								41	0.0	0.0	42								SPACE

LOAD SUMMARY PANEL									
LOAD CATEGORIES	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA	TOTAL CONNECTED KVA	TOTAL CONNECTED AMPS	DEMAND KVA	DEMAND FACTOR	CONNECTED KVA	LOAD CATEGORIES
LIGHTING	0.0	100%	0.0	0.0	0.0	0.0	90%	0.0	MOTOR LOADS
RECEPTACLES (1ST 10KVA)	0.0	100%	0.0	TOTAL DEMAND KVA	TOTAL DEMAND AMPS	0.0	80%	0.0	HVAC
RECEPTACLES (BALANCE)	0.0	50%	0.0	0.0	0.0	0.0	70%	0.0	MISCELLANEOUS
A-PHASE KVA	0.0	PANEL SIZING = TOTAL DEMAND KVA X CONTINUOUS LOAD FACTOR X FUTURE LOAD FACTOR				0.0	A-PHASE AMPS		
B-PHASE KVA	0.0	CONTINUOUS LOAD FACTOR:	1.25		0.0	KVA		0.0	B-PHASE AMPS
C-PHASE KVA	0.0	FUTURE LOAD FACTOR:	1.25		0.0	AMPS		0.0	C-PHASE AMPS



GENERAL NOTES

- CONTRACTOR SHALL TRACE OUT AND CONFIRM EXISTING BRANCH CIRCUITS FOR PANELBOARDS WHERE EXISTING BRANCH CIRCUITS ARE RELOCATED TO A NEW PANELBOARD.