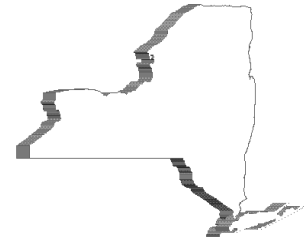




STATE OF NEW YORK
OFFICE OF GENERAL SERVICES
DESIGN AND CONSTRUCTION GROUP
THE GOVERNOR NELSON A. ROCKEFELLER
EMPIRE STATE PLAZA
ALBANY, NY 12242



ADDENDUM NO. 2 TO PROJECT 43585

**CONSTRUCTION WORK AND ELECTRIC WORK
REPLACE SWITCHGEAR
BUILDING NO. 22
STATE OFFICE BUILDING CAMPUS
1220 WASHINGTON AVENUE
ALBANY, NY**

February 15, 2012

NOTE: This Addendum forms a part of the Contract Documents. Insert it in the Project Manual.
Acknowledge receipt of this Addendum in the space provided on the Bid Form.

SPECIFICATIONS

3. Page 011000-3, 1.10 A Subparagraph 2: Change 3 working days to 10 working days.
4. Page 011000-3, 1.10 A Add the following subparagraph:
“3. Outages and connections to existing equipment will be done between the hours of 6PM on Friday and 6 AM on Monday.”
5. SECTION 260526 SERVICE GROUNDING AND BONDING: Add the attached Section (pages 260526-1 and 260526-2) to the Project Manual.
6. SECTION 262413 SWITCHBOARDS: Discard the Section bound in the Project Manual and substitute the attached Section (pages 262413-1 through 262413-10) noted “Revised 2/15/12”.
7. Page 262416-2, 2.01 A: Change Square D Co.’s I-Line to Square D Co.’s QMB.

DRAWINGS

8. Revised Drawings:
Drawing No.s E-001, E-101, E-102, E-103, E-501, E-602, noted “2/15/2012 Revised Drawing” accompany this addendum and supersede the same numbered originally issued drawings.

END OF ADDENDUM

James Dirolf, P.E.
Director of Design

SECTION 260526

SERVICE GROUNDING AND BONDING

PART 1 GENERAL

1.01 SUBMITTALS

- A. Product Data: Catalog sheets, specifications and installation instructions.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Ground Clamps (Cable to Pipe): Blackburn/T&B Corp.'s GUV, Framatome Connectors/Burndy Corp.'s GAR, GD, GP, GK, or OZ/Gedney Co.'s ABG, CG.
- B. Ground Clamps (Cable to Rod): Blackburn/T&B Corp.'s GG, GGH, JAB, JABH, GUV, Dossert Corp.'s GN, GPC, Framatome Connectors/Burndy Corp.'s GP, GX, GRC, or OZ/Gedney Co.'s ABG.
- C. Ground Lugs: Copper, one or 2 hole style (to suit conditions), long barrel; Anderson/Hubbell's VERSAtile VHCL, Blackburn/T&B Corp.'s Color-Coded CTL, LCN, Framatome Connectors/Burndy's Hylug YA, Electrical Products Div./3M Scotchlok 31036 or 31145 Series, Ideal Industries Inc.'s CCB or CCBL, or Thomas & Betts Corp.'s 54930BE or 54850BE Series.
- D. Exothermic Type Weld: Erico Inc.'s Cadweld Process, or Furseweld/T&B Corp.'s Exothermic Welding System.
- E. Compression Connectors: Burndy Corp.'s Hyground System.
- F. Rod Electrodes: Copper clad (minimum .010 jacket) ground rods minimum 5/8 inches diameter by 8'-0" long.
- G. Plate Electrodes: Copper plates minimum 0.06 inches thick by 2'-0" square feet of surface area.
- H. Grounding Electrode Conductors and Bonding Conductors: Copper conductors, bare or insulated with THW, THW-2, XHHW, XHHW-2, THWN, THWN-2 or THHN insulation.
- I. Hardware: Silicon-bronze bolts, nuts, flat and lock washers etc. as manufactured by Dossert Corp., Framatome Connectors/Burndy Corp., or OZ/Gedney Co.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Connections:
1. Make grounding and bonding connections, except buried connections, with silicon-bronze hardware and ground clamps, ground lugs or compression connectors, to suit job conditions.
 2. For buried connections use exothermic type weld or compression connectors.

END OF SECTION

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SECTION 262413
SWITCHBOARDS

PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. Modifications to Web-Enabled Advanced Monitoring System: Section 261332.

1.02 REFERENCES

- A. NEMA, and UL.
- B. ANSI C37.010, C37.13, C37.5.
- C. IEEE-141, 399, 1584
- D. NFPA-70E, 2009

1.03 SUBMITTALS

- A. Waiver of Submittals: The "Waiver of Certain Submittal Requirements" in Section 013300 does not apply to this Section.
- B. Submittals Package: Submit the Submittals Package for Specifications Sections 255224, 261332 and 262413, including shop drawings, product data, and quality control submittals at the same time as a package. No action will be taken on incomplete packages.
 - 1. Company Field Advisor Letter: With the submittals package include a letter from the Company Field Advisor stating that he/she has reviewed the Submittals Package for accuracy and completeness, and approves all materials and installation methods included in the Submittals Package.
- C. Shop Drawings; include the following for each switchboard:
 - 1. Front and plan view with overall dimensions.
 - 2. Floor plan of the Switchboard Room in Bldg. No. 22, drawn to scale, showing the switchboard, the working spaces and dedicated equipment spaces adjacent to the switchboard as described in NEC Article 110.
 - 3. Details showing type of construction and available conduit space.
 - 4. Voltage rating, and continuous current rating of the through bus and distribution sections.
 - 5. Short-circuit current rating.
 - 6. Enumeration of each circuit breaker including frame size, ATE, number of poles, and interrupting capacity.
 - 7. Wiring and schematic diagrams.
 - 8. A statement for each switchboard indicating if it will, or will not, bear a UL label. If a section cannot bear a UL label, state the specific reasons why it is not qualified to bear the UL label.

- D. Product Data:
1. Catalog sheets, specifications and installation instructions.
 - a. For devices equipped with ground fault protection, include information sheets describing system testing instructions and test form which comply with UL 891 requirements entitled "45. Field Testing of Ground Fault Protection of Equipment."
 2. Bill of materials.
 3. Name, address and telephone number of nearest fully equipped service organization.
- E. Protective Device Calibration Study and Reports Building 22:
1. System Protective Device Settings Calibration and Testing of System Protective Devices: Perform a complete and thorough coordination study of the completed electrical system for the purpose of determining all proper system protective relay settings and to implement these settings. This includes the settings for the existing protective relays protecting Primary Distribution Feeders 5A and 2C, the resizing of existing fuses protecting existing transformers, existing circuit breakers and the downstream circuit breakers provided under this Contract. The completed study shall be submitted for review and approval by the State prior to the implementation of any relay settings.
 2. Obtain all pertinent data from the circuit breaker and protective relaying manufacturers, contract documents, previous studies, previous reports and site inspections in order to assure that all recommended relay setting values are properly determined and implemented.
 3. Conduct the calibration study under the applicable standards of the American National Standards Institute (ANSI) and the National Electrical Code (NEC) which shall include, but is not limited to:
 - a. The preparation of a single-line diagram showing:
 - 1) The identification of all components taken into consideration.
 - 2) Complete ratings of all power devices (transformer, circuit breakers, relays, fuses, busses, and cables).
 - 3) ANSI device function numbers of all protective relays.
 - 4) Phasing of existing transformers and existing generators.
 - b. A short circuit study incorporating:
 - 1) Utility data.
 - 2) Momentary and interrupting fault duties on each bus.
 - 3) Calculations on all three-phase faults.
 - 4) Bus-to-Bus impedance values reduced to a common MVA base.
 - 5) All data referenced to the single-line diagram.
 - c. A coordination study providing:
 - 1) Comprehensive analysis covering all devices identified on the single line diagram.
 - 2) Settings for all adjustable protective devices that will insure adequate protection of system components.
 - 3) Complete time/current coordination curves that illustrate the protection and coordination achieved with the recommended settings of the protective devices. These curves shall incorporate the following:

- a) Appropriate NEC protection points.
 - b) Appropriate ANSI protection points.
 - c) Magnetizing inrush point of all transformers.
 - d) Short circuit current levels used for coordination.
 - e) Diagram of the system identifying the device plotted.
- d. Report containing the following information:
- 1) Executive summary identifying all work performed, along with any future design considerations.
 - 2) A complete tabulation of all overcurrent protective devices (existing and provided under this contract) identified on the single line diagram with their ratings compared with respective fault duty as calculated in the study.
 - 3) A complete tabulation of the settings (for existing overcurrent protective devices and overcurrent protective devices provided under this contract) on all adjustable overcurrent protective devices with references to the single line diagram and coordination curves.
 - 4) A coordinated selective scheme between the main overcurrent protective devices, generator devices and feeder devices so that under fault conditions the feeder device clears the fault while the main device remains closed.
 - 5) Copies of all time/current coordination curves (for existing overcurrent protective devices and overcurrent protective devices provided under this contract).
 - 6) The analysis that was utilized in order to arrive at specified recommendations included in the executive summary.
 - 7) The single line diagram complete, showing existing controls and controls provided under this Contract.
 - 8) Copies of all calculations and computer analysis results referenced to the single line diagram.
 - 9) Complete documentation of all testing results.

F. Arc Flash Hazard Report:

1. Provide an Arc Flash Hazard Report regarding the following equipment. The existing primary switches, 1500 kVA cast coil transformers, switchboard SB-1, and panels MDP-A, B. Provide the following:
 - a. One-line diagram showing all equipment mentioned above.
 - b. Arc flash analysis on all equipment mentioned above.
 - c. Update and modify the existing database data base as required on the "Arc Flash Evaluation IEEE 1584" for the Harriman State Office Building Campus.
 - d. Arc flash labels for the electrical equipment installed under this Contract and the existing cast coil transformers.
 - e. 4 hours of training to Facility personnel on the use of the SKM System Analysis, Inc.'s "ArcCalc" or "PTW Arc Flash" arc flash calculation and analysis programs.

2. Provide the study in hardcopy and digital form to go with the existing Arc Flash Study for the Harriman Campus.
- G. Protective Device Calibration Study and Reports Building 24:
1. System Protective Device Settings Calibration and Testing of System Protective Devices: Perform a complete and thorough coordination study of the completed electrical system for the purpose of determining all proper system protective relay settings and to implement these settings. This includes the settings for the existing protective relays protecting Primary Distribution Feeders 5A and 2C. The completed study shall be submitted for review and approval by the State prior to the implementation of any relay settings. (The existing HMT Study will be provided.)
 2. Obtain all pertinent data from the circuit breaker and protective relaying manufacturers, contract documents, previous studies, previous reports and site inspections in order to assure that all recommended relay setting values are properly determined and implemented.
 3. Conduct the calibration study under the applicable standards of the American National Standards Institute (ANSI) and the National Electrical Code (NEC) which shall include, but is not limited to:
 - a. The preparation of a single-line diagram showing:
 - 1) The identification of all components taken into consideration.
 - 2) Complete ratings of all power devices (transformer, circuit breakers, relays, fuses, busses, and cables).
 - 5) ANSI device function numbers of all protective relays.
 - 6) Phasing of existing transformers and existing generators.
 - b. A short circuit study incorporating:
 - 1) Utility data.
 - 2) Momentary and interrupting fault duties on each bus.
 - 3) Calculations on all three-phase faults.
 - 4) Bus-to-Bus impedance values reduced to a common MVA base.
 - 5) All data referenced to the single-line diagram.
 - c. A coordination study providing:
 - 1) Comprehensive analysis covering all devices identified on the single line diagram.
 - 2) Settings for all adjustable protective devices that will insure adequate protection of system components.
 - 3) Complete time/current coordination curves that illustrate the protection and coordination achieved with the recommended settings of the protective devices. These curves shall incorporate the following:
 - a) Appropriate NEC protection points.
 - b) Appropriate ANSI protection points.
 - c) Magnetizing inrush point of all transformers.
 - d) Short circuit current levels used for coordination.
 - e) Diagram of the system identifying the device plotted.
 - d. Report containing the following information:

- 1) Executive summary identifying all work performed, along with any future design considerations.
- 2) A complete tabulation of all overcurrent protective devices (existing and provided under this contract) identified on the single line diagram with their ratings compared with respective fault duty as calculated in the study.
- 3) A complete tabulation of the settings (for existing overcurrent protective devices and overcurrent protective devices provided under this contract) on all adjustable overcurrent protective devices with references to the single line diagram and coordination curves.
- 4) A coordinated selective scheme between the main overcurrent protective devices, generator devices and feeder devices so that under fault conditions the feeder device clears the fault while the main device remains closed.
- 5) Copies of all time/current coordination curves (for existing overcurrent protective devices and overcurrent protective devices provided under this contract).
- 6) The analysis that was utilized in order to arrive at specified recommendations included in the executive summary.
- 7) The single line diagram complete, showing existing controls and controls provided under this Contract.
- 8) Copies of all calculations and computer analysis results referenced to the single line diagram.
- 9) Complete documentation of all testing results.

H. Arc Flash Hazard Report:

1. Provide an Arc Flash Hazard Report regarding the following equipment. The existing primary switches, 500kVA liquid filled transformer, and switchboard provided under OGS Design and Construction Project 43355 (Drawings will be provided). The Provide the following:
 - a. One-line diagram showing all equipment mentioned above.
 - b. Arc flash analysis on all equipment mentioned above.
 - c. Tabular data base as shown on the “Arc Flash Evaluation IEEE 1584” for the Harriman State Office Building.
 - d. Arc flash labels for the electrical equipment installed under this Contract.
 - e. 4 hours of training to Facility personnel on the use of the SKM System Analysis, Inc.’s “ArcCalc” or “PTW Arc Flash” arc flash calculation and analysis programs.

I. Quality Control Submittals:

1. Company Field Advisor Data (Switchboards): Include:
 - a. Name, business address and telephone number of Company Field Advisor secured for the required services.
 - b. Certified statement from the Company listing the qualifications of the Company Field Advisor.

- c. Services and each product for which authorization is given by the Company listed specifically for this project.
 2. Certified Engineering, Instrumentation, Testing and Service Firm Data:
 - a. Name, business address, and telephone number of firm representative.
 - b. Certified statement from the firm listing qualifications of the firm.
 - c. Resume of all engineers and technicians secured for the required services.
- J. Contract Closeout Submittals:
 1. System acceptance test report.
 2. Protective Device Calibration Study and Reports.
 3. Updated Arc Flash Hazard evaluation for Building No. 22 that includes the electrical equipment installed under this Contract.
 3. Certificate: Affidavit, signed by the Company Field Advisor and notarized, certifying that the system meets the contract requirements and is operating properly.
 4. Operation and Maintenance Data: Deliver 2 copies, covering the installed products, to the Director's Representative.

1.04 QUALITY ASSURANCE

- A. Equipment Qualifications For Products Other Than Those Specified:
 1. At the time of submission provide written notice to the Director of the intent to propose an "or equal" for products other than those specified. Make the "or equal" submission in a timely manner to allow the Director sufficient time to review the proposed product, perform inspections and witness test demonstrations.
 2. If products other than those specified are proposed for use furnish the name, address, and telephone numbers of at least 5 comparable installations that can prove the proposed products have performed satisfactorily for 3 years. Certify in writing that the owners of the 5 comparable installations will allow inspection of their installation by the Director's Representative and the Company Field Advisor.
 - a. Make arrangements with the owners of 2 installations (selected by the Director) for inspection of the installations by the Director's Representative. Also obtain the services of the Company Field Advisor for the proposed products to be present. Notify the Director a minimum of 3 weeks prior to the availability of the installations for the inspection, and provide at least one alternative date for each inspection.
 - b. Only references from the actual owner or owner's representative (Security Supervisor, Maintenance Supervisor, etc.) will be accepted. References from dealers, system installers or others, who are not the actual owners of the proposed products, are not acceptable.
 - 1) Verify the accuracy of all references submitted prior to submission and certify in writing that the accuracy of the information has been confirmed.
 3. The product manufacturer shall have test facilities available that can demonstrate that the proposed products meet the contract requirements.

- a. Make arrangements with the test facility for the Director's Representative to witness test demonstrations. Also obtain the services of the Company Field Advisor for the proposed product to be present at the test facility. Notify the Director a minimum of 3 weeks prior to the availability of the test facility, and provide at least one alternative date for the testing.
 4. Provide written certification from the manufacturer that the proposed products are compatible for use with all other equipment proposed for use for this system and meet all contract requirements.
- B. Company Field Advisor (Switchboards): Secure the services of a Company Field Advisor for a minimum of 24 working hours for the following:
1. Render advice regarding switchboard installation, and final adjustment and testing of the switchboard devices.
 2. Witness final system test and then certify with an affidavit that the switchboard is installed in accordance with the contract documents and is operating properly.
 3. Train facility personnel on the operation and maintenance of the switchboard devices (minimum of two 1 hour sessions).
 4. Explain available service programs to facility supervisory personnel for their consideration.
- C. Certified Engineering, Instrumentation, Testing and Repair Service Firm:
1. NETA Level 3 Classification Certified.
 2. Minimum five years experience in performing Protective Device Calibration and Test Reports.
 3. Minimum five years experience in engineering, testing, maintenance and repair of medium voltage switchgear and low voltage switchboards.
 4. Minimum two years experience with the use of SKM System Analysis, Inc.'s "ArcCalc" and "PTW Arc Flash" arc flash calculation and analysis programs.
 5. Acceptable firms:
 - a. Advanced Testing Systems, Inc.
15 Trowbridge Drive
Bethel, CT 06801
 - b. High Voltage Electric Service, Inc.
6 Seward Street
Albany, NY 12203
Telephone: (518) 869-4961
 - c. HMT, Inc.
P.O. Box 206
North Syracuse, NY 13212
Telephone: (315) 699-5563
 - d. Upstate Testing & Control Systems, Inc.
606 Pierce Road
Clifton Park, NY 12065
Telephone: (518) 877-0102
- D. Service Availability: A fully equipped service organization shall be available to service the completed Work.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Protection: Provide supplemental heating devices, such as incandescent lamps or low wattage heaters within the enclosure or under a protective cover to control dampness. Maintain this protection from the time equipment is delivered to the site until it is energized.

PART 2 PRODUCTS

2.01 SWITCHBOARD

- A. Square D Co.'s Power-Zone 4, with:
 - 1. Ratings as indicated on drawings.
 - 2. UL label "SUITABLE FOR USE AS SERVICE EQUIPMENT".
 - 3. Rear (and front) accessibility.
 - 4. Sections flush at front and rear.
 - 5. Main and Tie Devices: Draw-out circuit breaker (see circuit breaker paragraph).
 - 6. Instrumentation on main device sections:
 - 1 - Voltmeter, switchboard type + 1 percent accuracy, scale 0-600 volts.
 - 1 - Voltmeter transfer switch (phase to phase, phase to neutral, and off).
 - 1 - Ammeter, switchboard type + 1 percent accuracy scale as required for 125 percent of full load transformer current.
 - 1 - Ammeter transfer switch (each phase, and off).WEAMS Power Meter and Test Switch. (See Specifications Section 261332.)
 - 7. Fully rated silver plated copper bus bars.
 - a. Ampere rating of through bus not less than frame size of main device.
 - 8. Full length copper ground bus.
 - 9. Full capacity copper neutral bus.
 - 10. Insulating/isolating barriers for feeder devices, so that:
 - a. Bus is not exposed in feeder compartment (only exposed lugs for feeder connection).
 - b. Bus is not exposed when branch devices are removed from the front.
 - c. Individual devices are isolated from each other (horizontal insulating barriers).
 - d. Vertical sections are isolated (vertical barriers).
 - 11. Sections that are designated "space" or "provision for future breaker" equipped with all accessories required to accept a future circuit breaker.
 - 12. Circuit Breakers:
 - a. Mounting: Draw-out circuit breaker.
 - b. Style: Molded case, or power circuit breakers, as required to accommodate the circuit breaker components.
 - c. Trip Device: Micrologic, Harmonics, electronic trip.
 - d. Interrupting Capacity: Equal to, or greater than, the short circuit rating required for the switchboard.

- e. Component Description: In addition to the specific components, equip each circuit breaker with additional components as required to achieve a coordinated selective scheme between the main device, the feeder devices, and the downstream devices.
- f. Backfeed capability and rating.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install switchboards in accordance with NEMA Publication No. PB2.1 "Instructions for Proper Handling, Installation, Operation and Maintenance of Deadfront Distribution Switchboards".
 - 1. Set and program the switchboard devices in accordance with the approved coordinated selective scheme.
- B. Install foundation channels for anchoring and leveling of each switchboard.
- C. Install arc flash labels on the electrical equipment installed under this Contract.
- D. Identification:
 - 1. Install on the front of each circuit breaker, a phenolic nameplate indicating load served by circuit breaker.
 - 2. Stencil on front of each switchboard with white paint in 1/2 inch lettering "SB-1, etc." corresponding to switchboard designations on the drawings, and electrical parameters (phase, wire, voltage).

3.02 FIELD QUALITY CONTROL

- A. Preliminary System Test:
 - 1. Preparation: Have the Company Field Advisor adjust the completed switchboard devices and then operate them long enough to assure that they are performing properly.
 - 2. Run a preliminary test for the purpose of:
 - a. Determining whether the switchboard is in a suitable condition to conduct an acceptance test.
 - b. Checking instruments and equipment.
 - c. Training facility personnel.
- B. System Acceptance Test:
 - 1. Preparation: Notify the Director's Representative at least 3 working days prior to the test so arrangements can be made prior to the test to have a Facility Representative witness the test.
 - 2. Make the following tests:
 - a. Test devices which have ground fault protection in accordance with the approved information sheets and test form.
 - b. Test programmable solid state trip devices in accordance with the manufacturer's recommendations.

3. Adjust the main, tie, generator and feeder circuit breakers settings as recommended in the Protective Device Calibration Study and Reports.
4. Supply all equipment necessary for system adjustment and testing.
5. Submit written report of test results signed by the Company Field Advisor and the Director's Representative. Mount a copy of the final report in a plexiglass enclosed frame assembly in a conspicuous location on the switchboard.

END OF SECTION

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SYMBOLS AND ABBREVIATIONS
(ALL DRAWINGS)

- EUP — EXISTING PRIMARY CABLES (3-350KCM) IN EXISTING UNDERGROUND CONDUIT (TO REMAIN UON)
- EUC — EXISTING UNDERGROUND CONDUIT (TO REMAIN)
- EP — EXISTING PRIMARY CABLES (3-350KCM) IN EXISTING CONDUIT (TO REMAIN UON)
- TP — EXISTING TEMPORARY FEEDER CABLES (5 SETS OF 4-4/0 TYPE W CABLES)
- EX — EXISTING CONDUCTORS IN EXISTING EXPOSED CONDUIT
- EUG — EXISTING CONDUCTORS IN EXISTING UNDERGROUND CONDUIT
- EC — EXISTING EXPOSED CONDUIT TO REMAIN

SYMBOLS AND ABBREVIATIONS
(ALL DRAWINGS)

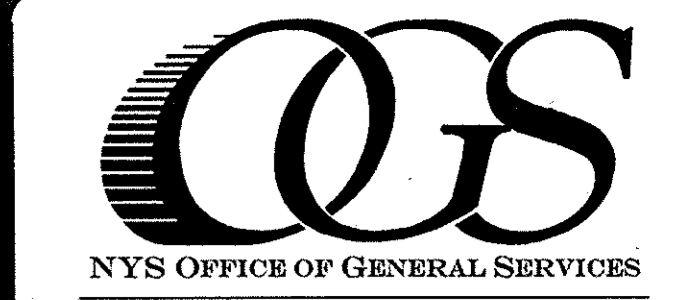
- NC — CONDUCTORS IN EXISTING EMPTY EXPOSED CONDUIT
- NE — CONDUCTORS IN EXISTING EXPOSED CONDUIT - REMOVE EXISTING CONDUCTORS
- NCU — CONDUCTORS IN EXISTING EMPTY UNDERGROUND CONDUIT
- — — — — CONDUCTORS IN EXPOSED RACEWAY
- E — EXISTING CONDUCTORS IN EXPOSED RACEWAY
- e — EXISTING BRANCH CONDUCTORS IN EXPOSED RACEWAY
- EP — EXISTING 15KV UNDERGROUND CONDUCTORS AND CONDUIT TO REMAIN
- ES — EXISTING UNDERGROUND SIGNAL CONDUCTORS AND CONDUIT TO REMAIN
- R — REMOVE EXISTING CONDUIT AND CONDUCTORS
- EU — EXISTING UNDERGROUND CONDUIT AND CONDUCTORS TO REMAIN
- NSO — SIGNAL CONDUCTORS IN EXISTING OCCUPIED UNDERGROUND CONDUIT
- NSU — SIGNAL CONDUCTORS IN EXISTING EMPTY UNDERGROUND CONDUIT
- NS — SIGNAL CONDUCTORS IN EXISTING EMPTY EXPOSED CONDUIT
- CO — EXISTING SPARE EMPTY CONDUITS (CONDUIT ONLY) TO REMAIN
- NS — SIGNAL WIRING IN UNDERGROUND CONDUIT
- RP — REMOVE EXISTING UNDERGROUND 15KV PRIMARY FEEDER CONDUCTORS
- RX — REMOVE EXISTING CONDUCTORS (EXISTING CONDUIT SHALL REMAIN AND BE REUSED)
- RE — REMOVE EXISTING FEEDERS
- e — EXISTING TO REMAIN

— HOMERUN TO PANELBOARD (NUMBER OF ARROWS INDICATES NUMBER OF CIRCUITS)

- ▣ POWER PANELBOARD
- I/O INPUT/OUTPUT CABINET AND ENCLOSURE FOR PROGRAMMABLE LOGIC CONTROL SYSTEM (SEE SPECIFICATIONS SECTION 275224)
- S EX EXISTING SIGNAL MANHOLE
- P EX EXISTING POWER MANHOLE
- EMH EX EXISTING POWER AND SIGNAL MANHOLE
- ▣ PULLBOX (INTERIOR)
- ▣ EX EXISTING PULLBOX - TO REMAIN
- J JUNCTION BOX
- IC-1A TYPE IC-1A (UNLESS OTHERWISE INDICATED) FLUORESCENT LIGHTING FIXTURE AND OUTLET BOX
- EX EXISTING FLUORESCENT LIGHTING FIXTURE AND OUTLET BOX
- A AMPERES
- AFF ABOVE FINISHED FLOOR
- CT CURRENT TRANSFORMER
- C CONDUIT
- ECB ENCLOSED CIRCUIT BREAKER
- EGC EQUIPMENT GROUND CONDUCTOR
- HP HORSE POWER
- P POLE
- PT POTENTIAL TRANSFORMER
- RE REMOVE EXISTING EXPOSED CABLE
- SOBC STATE OFFICE BUILDING CAMPUS
- UON UNLESS OTHERWISE NOTED
- V VOLTS

GENERAL NOTES:
(ALL DRAWINGS)

- A. REMOVE THE EXISTING DOUBLE ENDED SUBSTATION THAT DISTRIBUTES POWER TO THE SUPERSTRUCTURE INCLUDING EXISTING PRIMARY SWITCHES, LIQUID FILLED TRANSFORMERS, SWITCHBOARDS, DRAW-OUT CIRCUIT BREAKERS, TRANSITION SECTIONS AND WEAMS METERING EQUIPMENT SUPERCEDED BY THE WORK OF THIS PROJECT. TURN OVER DESIGNATED SWITCHBOARD COMPONENTS TO THE FACILITY AS DESCRIBED IN THE APPROPRIATE SPECIFICATIONS. SEE GENERAL NOTES B, C, AND D.
- B. THE EXISTING PRIMARY SWITCHES WERE MANUFACTURED WITH ARC SHIELDS CONSTRUCTED OF ASBESTOS CONTAINING MATERIALS (ACM). SHRINK WRAP THE EXISTING PRIMARY SWITCHES IN PLASTIC BEFORE TURNING OVER TO THE FACILITY.
- C. THE EXISTING DRAW-OUT CIRCUIT BREAKERS WERE MANUFACTURED WITH ARC SHIELDS CONSTRUCTED OF ASBESTOS CONTAINING MATERIALS (ACM). SHRINK WRAP THE EXISTING CIRCUIT BREAKERS IN PLASTIC BEFORE TURNING OVER TO THE FACILITY.
- D. THE EXISTING FEEDER CONDUCTORS OF OVER 15 FEET IN LENGTH ARE INSULATED WITH A VARNISHED CLOTH MATERIAL THAT MAY CONTAIN ASBESTOS CONTAINING MATERIALS (ACM). ABATE THE EXISTING FEEDER CONDUCTORS AS THEY ARE REMOVED. SEE DWG. NO. E-103.
- E. PROVIDE DOUBLE ENDED SWITCHBOARD (SB-1) AND BUSWAY TO POWER THE SUPERSTRUCTURE. SEE DWG. NO. E-103.
- F. PROVIDE TRANSFORMER TR-G, MDP-A & B. MODIFY EXISTING 1500 KVA CAST COIL TRANSFORMERS AS REQUIRED TO ACCEPT BUSWAY.
- G. MAINTAIN WORKING SPACES ADJACENT TO ALL ELECTRICAL EQUIPMENT AS REQUIRED BY THE APPROPRIATE ARTICLE IN THE NATIONAL ELECTRIC CODE.
- H. THE ROUTE THRU THE BUILDING FOR REMOVING THE EXISTING DOUBLE ENDED SUBSTATION CONTAINS EXISTING OVERHEAD HVAC PIPING SUPPORTED FROM THE DECK BY TRAPEZE HANGERS. THE CONTRACTOR IS RESPONSIBLE FOR FIELD MEASUREMENTS OF EXISTING FACILITIES, FOR THE MEANS OF REMOVING EXISTING EQUIPMENT AND PROVIDING EQUIPMENT UNDER THIS CONTRACT, AND ALTERATIONS TO THE EXISTING PHYSICAL LOCATIONS NECESSARY FOR ACCESS TO THE WORK AREAS.
- I. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD MEASUREMENTS ON EXISTING FACILITIES, FOR THE MEANS OF REMOVING EXISTING EQUIPMENT AND PROVIDING EQUIPMENT UNDER THIS CONTRACT, AND ALTERATIONS TO EXISTING PHYSICAL LOCATIONS NECESSARY FOR ACCESS TO THE WORK AREAS.



Serving New York
ANDREW M. CUOMO
Governor
ROANN M. DESTITO
Commissioner
JAMES M. DA VIES, A.I.A.
Deputy Commissioner, Design and Construction

CONSULTANT

WARNING:
THE ALTERATION OF THIS MATERIAL IN ANY WAY, UNLESS DONE UNDER THE DIRECTION OF A COMPARABLE PROFESSIONAL, I.E. ARCHITECT FOR AN ARCHITECT, ENGINEER FOR AN ENGINEER OR LANDSCAPE ARCHITECT FOR A LANDSCAPE ARCHITECT, IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW AND/OR REGULATIONS AND IS A CLASS 'A' MISDEMEANOR.



CONTRACT: **ELECTRICAL**
TITLE: **REPLACE SWITCHGEAR BUILDING NO. 22**
LOCATION: **STATE OFFICE BUILDING CAMPUS BUILDING NO. 22 ALBANY, NY 12226**
CLIENT: **NYS OFFICE OF GENERAL SERVICES**

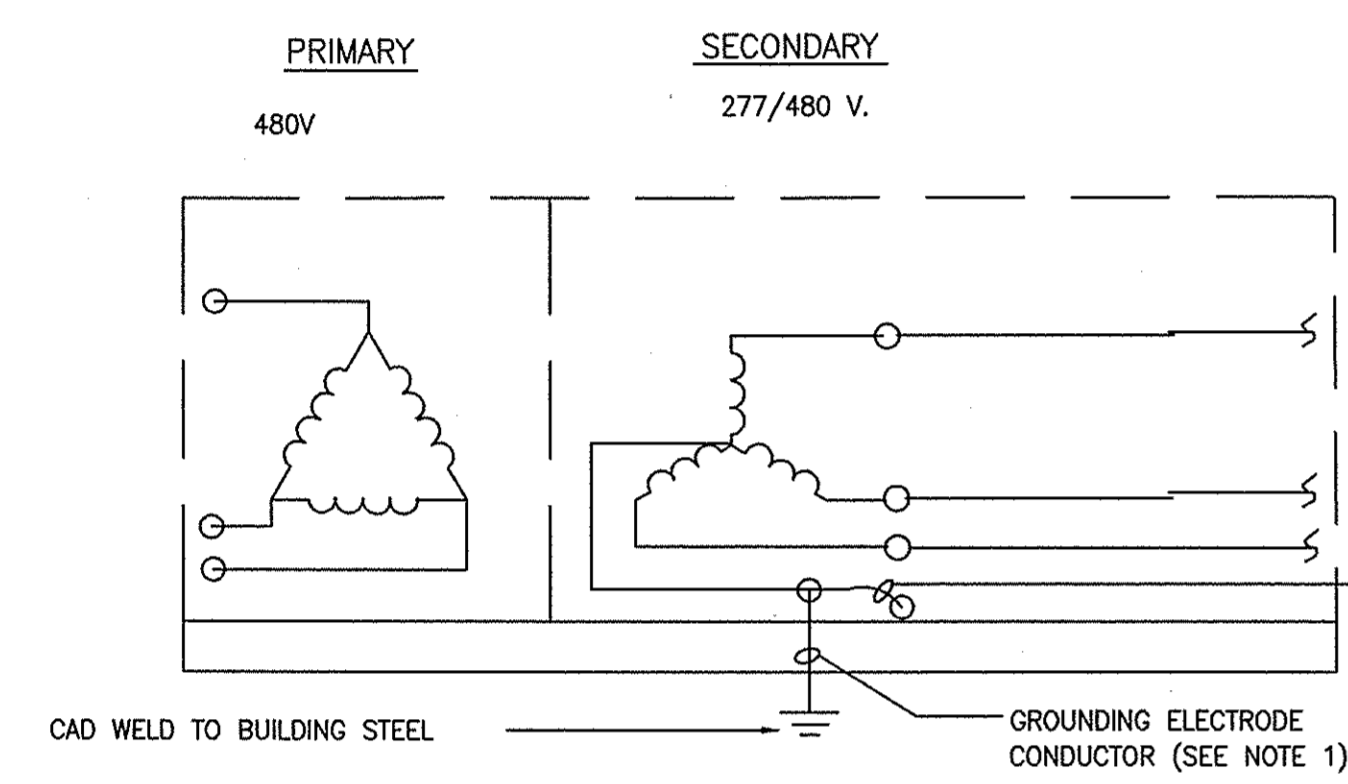
MARK	DATE	DESCRIPTION
	2/15/2012	REVISED DRAWING
	09/8/2011	BID DOCUMENT
	06/28/2011	100% SUBMISSION
PROJECT NUMBER:		43585 - E
DESIGNED BY:		J. SOWLE
DRAWN BY:		J. SOWLE
FIELD CHECK:		
APPROVED:		

SHEET TITLE:
KEY PLAN, NOTES & ABBREVIATIONS
DRAWING NUMBER:
E-001
SHEET 1 of 7

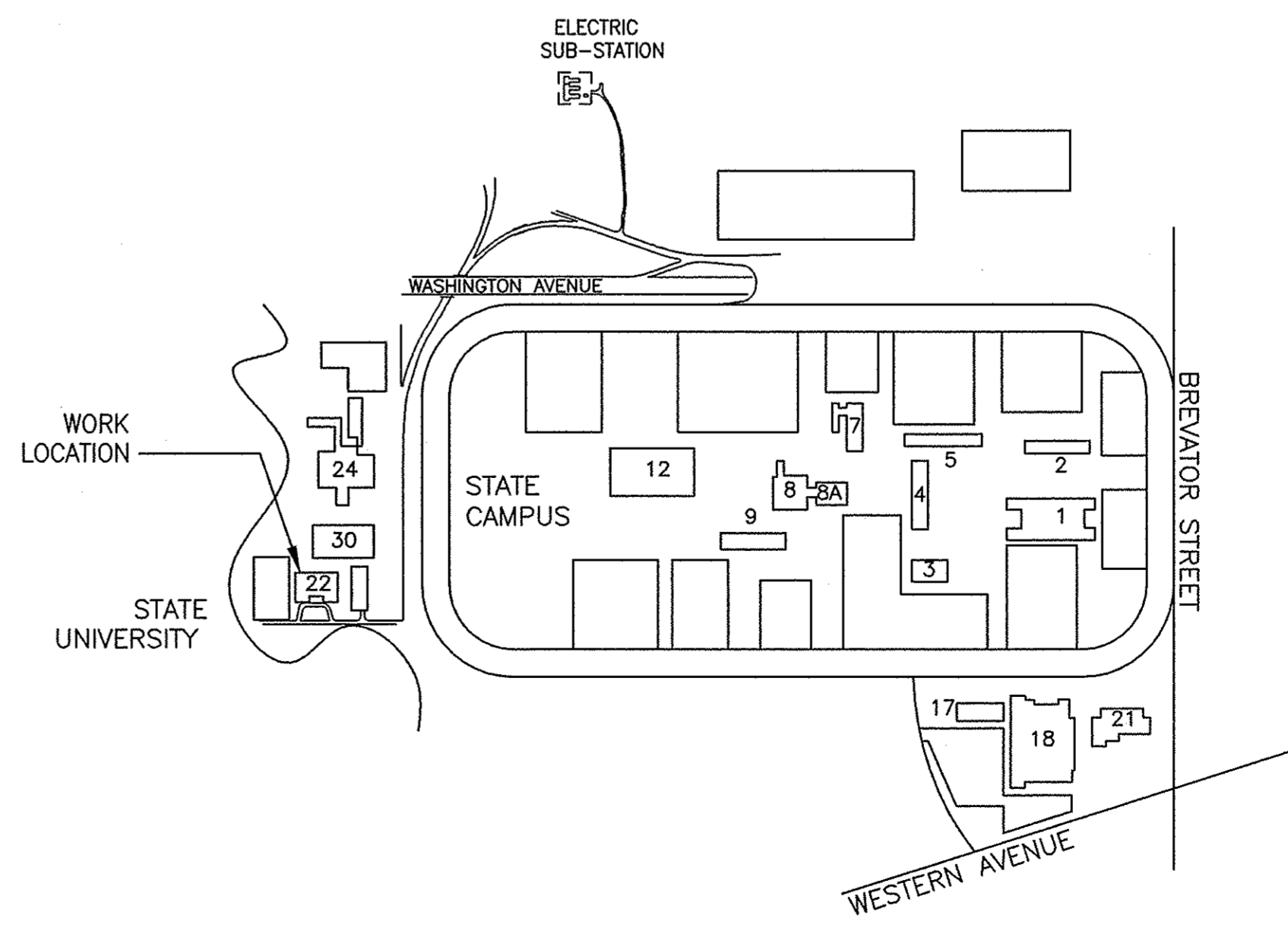
SPECIFIC NOTES:

- (THIS DRAWING ONLY)
1. GROUNDING CONDUCTORS ARE SIZED ACCORDING TO TRANSFORMER RATING AS FOLLOWS:

TRANSF	GEC	BOND
1500 KVA	#3/0	500KCMIL
 2. BOND EQUIPMENT GROUNDING CONDUCTOR, GROUNDED CONDUCTOR (NEUTRAL), AND TRANSFORMER CASE. CONNECT COMPONENTS TO BUILDING STEEL WITH #6 THHN.

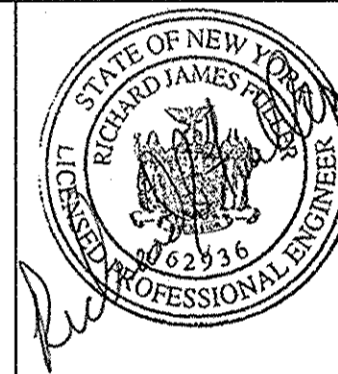


TRANSFORMER GROUNDING TR-G CONNECTIONS
NOT TO SCALE



KEY PLAN
SCALE: NTS

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CONTRACT:

ELECTRICAL

TITLE:
REPLACE SWITCHGEAR
BUILDING NO. 22

LOCATION:
STATE OFFICE BUILDING CAMPUS
BUILDING NO. 22
ALBANY, NY 12226

CLIENT:
NYS OFFICE OF
GENERAL SERVICES

PROJECT NUMBER:

43585 - E

DESIGNED BY:

J. SOWLE

DRAWN BY:

J. SOWLE

FIELD CHECK:

APPROVED:

SHEET TITLE:

SUPERSTRUCTURE
SWITCHGEAR
ROOM - REMOVALS

DRAWING NUMBER:

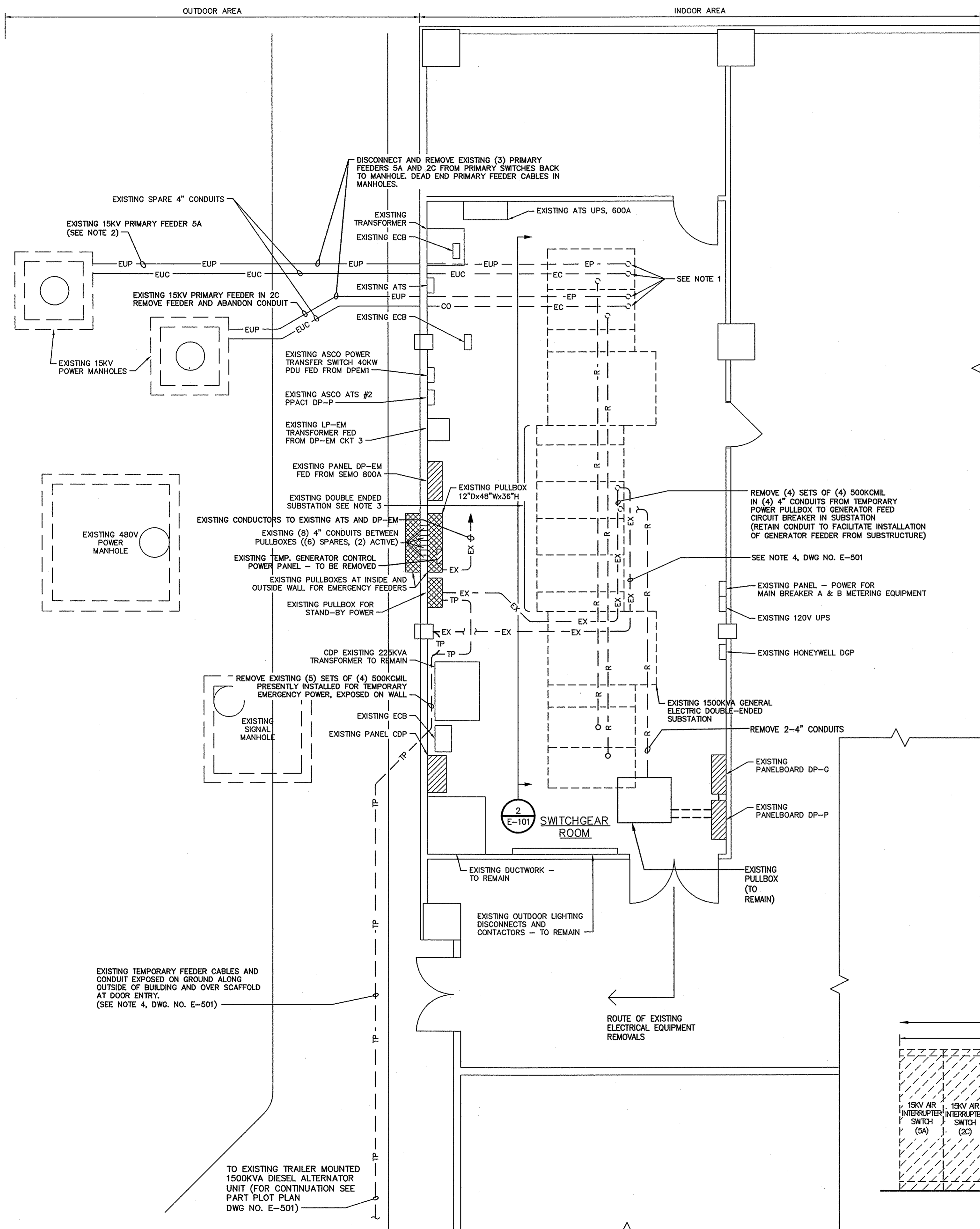
E-101

SHEET 2 OF 7

SPECIFIC NOTES:

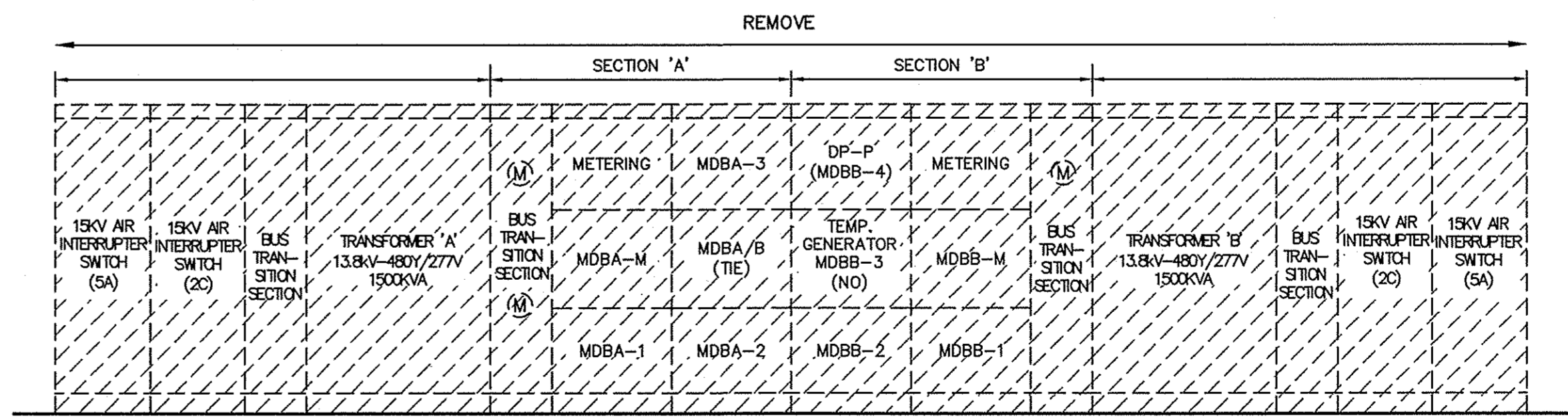
(THIS DRAWING ONLY)

- CUT CONDUIT STUBS-UPS AT FLOOR AND FLASH PATCH
- DISCONNECT EXISTING PRIMARY CABLES FROM EXISTING PRIMARY SWITCHES. REMOVE EXISTING PRIMARY CABLES BACK TO EXISTING POWER MANHOLES AND DEAD END AT EXISTING POWER MANHOLE.
- EXISTING GE DOUBLE ENDED SUBSTATION. PERFORM REMOVAL WORK AS INDICATED AND AS SPECIFIED. TURN OVER EXISTING CIRCUIT BREAKERS TO CAMPUS UTILITIES GROUP.
- CLEARANCE TO CEILING MOUNTED EXPOSED RACEWAY, HVAC PIPING AND DUCTWORK IS 6"-6". EXISTING TRANSFORMERS ARE 72"H X 60" W X 38" D. MANIPULATE EXISTING SUBSTATION COMPONENTS TO ALLOW REMOVAL THROUGH THE CORRIDOR.



EXISTING CIRCUIT BREAKER CUBICLE DATA

CKT BRK NO.	SERVES
MDBA-M	NORMAL POWER MAIN CIRCUIT BREAKER - SECTION 'A'
MDBA-1	SPARE
MDBA-2	LIGHTING RISER 'A'
MDBA-3	MOTOR CONTROL CENTER - PENTHOUSE
MDBA/B	TIE CIRCUIT BREAKER - NORMALLY OPEN
MDBB-M	NORMAL POWER MAIN CIRCUIT BREAKER - SECTION 'B'
MDBB-1	SPARE
MDBB-2	LIGHTING RISER 'B'
MDBB-3	EMERGENCY POWER FROM SUBSTRUCTURE
MDBB-4	PANEL DP-P

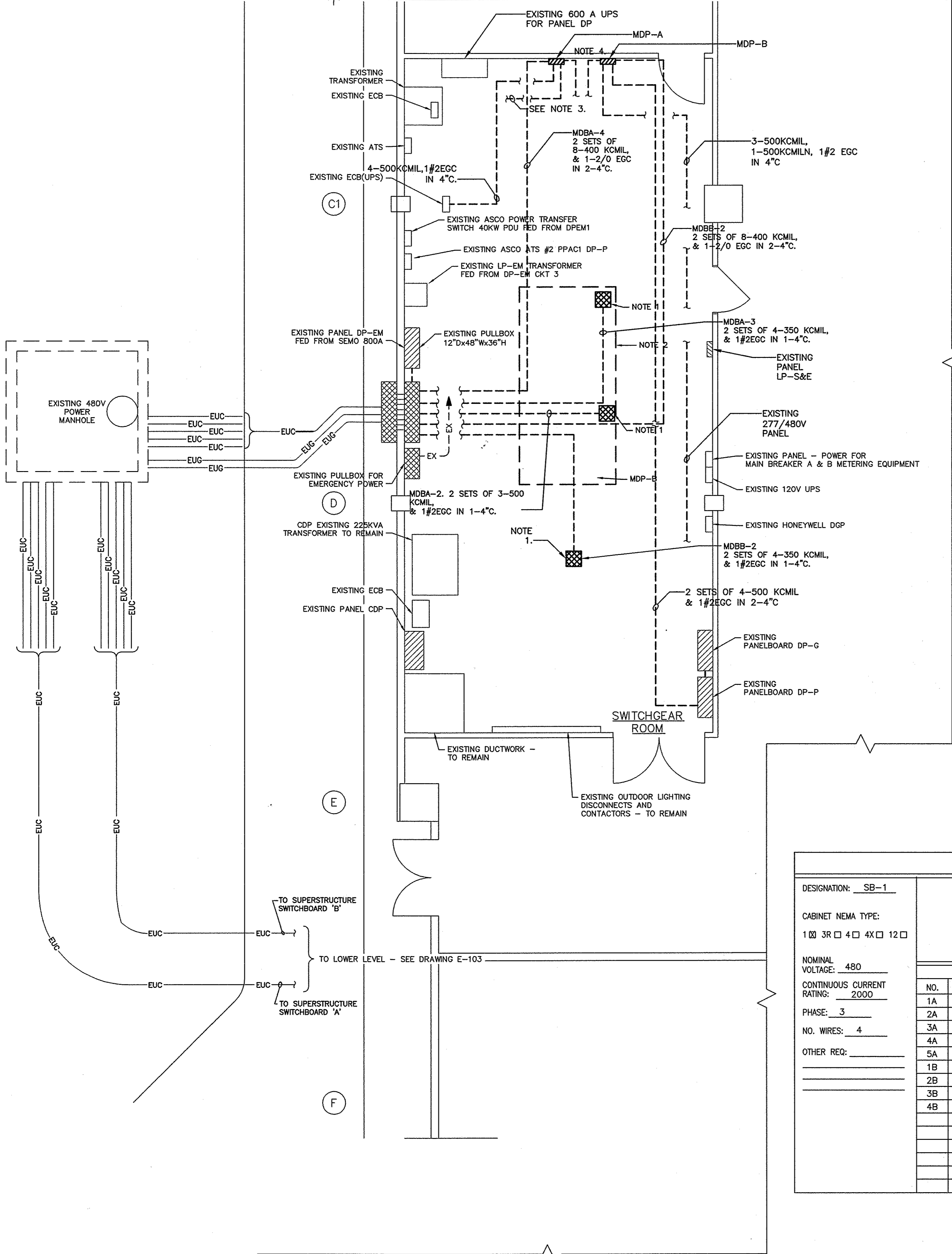


PART GROUND FLOOR PLAN - SUPERSTRUCTURE SWITCHGEAR ROOM - EXISTING DOUBLE ENDED SUBSTATION - REMOVALS
SCALE: 1/4"=1'-0"

ELEVATION - EXISTING DOUBLE ENDED SUBSTATION - REMOVALS
SCALE: NTS

OUTDOOR AREA

INDOOR AREA



SPECIFIC NOTES:

(THIS DRAWING ONLY)

1. EXTEND FEEDERS AND PROVIDE 36"x24"x24" FLOOR-MOUNTED PULLBOX FOR CONNECTION TO EXISTING FEEDERS. LOCATE FEEDERS CORRESPONDING TO LOADS SHOW ON POWER ONELINE/RISER DIAGRAM, DRAWING NO. E-602.
2. FOOTPRINT OF EXISTING SWITCHBOARD.
3. 3-500KCMIL, 1#2EGG IN 4". CONNECT TO EXISTING 225A CIRCUIT BREAKER FEEDING EXISTING 225 KVA TRANSFORMER.
4. 4 #4/0, 1#8 EGG TO ATS FEEDING EXISTING PANEL LP-S&E

PANELBOARD SCHEDULE

DESIGNATION: <u>MDP-A</u>	<input checked="" type="checkbox"/> FULLY RATED EQUIPMENT RATING IS REQUIRED FOR THIS PANELBOARD	PANELBOARD SHORT CIRCUIT RATING 100,000 RMS SYMMETRICAL AMPERES
CABINET NEMA TYPE: 1 <input checked="" type="checkbox"/> 3R <input type="checkbox"/> 4 <input type="checkbox"/> 4X <input type="checkbox"/> 12 <input type="checkbox"/>	<input type="checkbox"/> UL LISTED INTEGRATED EQUIPMENT SHORT CIRCUIT RATING IS ACCEPTABLE FOR THIS PANELBOARD	MAIN LUG ONLY <input checked="" type="checkbox"/>
MOUNTING: <u>SURFACE</u>	<input type="checkbox"/> UL LABEL 'SUITABLE FOR USE AS SERVICE EQUIPMENT'	MAIN CIRCUIT BREAKER <input type="checkbox"/>
MAIN: <u>1200 A</u>	BRANCH/FEEDER CIRCUIT BREAKERS	
VOLTAGE: <u>480/277</u>	DESCRIPTION	ATE NO. A B C NO. ATE DESCRIPTION
PHASE: <u>3</u>	SPARE	400 1 2 70 LPS&E
NO. WIRES: <u>4</u>		3 4
OTHER REQ: <u>NOTE 1</u>		5 6
	UPS EDP	400 7 8 225 EXISTING 225KVA TRANSFORMER
		9 10
		11 12
	SPACE	200 13 14 200 SPACE
		15 16
		17 18
FULL CAPACITY NEUTRAL BUS <input checked="" type="checkbox"/>		19 20
EQUIPMENT GROUNDING BUS <input checked="" type="checkbox"/>		21 22
SECONDARY SURGE ARRESTORS CATEGORY C <input type="checkbox"/>		23 24
		25 26
		27 28
		29 30

PANELBOARD SCHEDULE

DESIGNATION: <u>MDP-B</u>	<input checked="" type="checkbox"/> FULLY RATED EQUIPMENT RATING IS REQUIRED FOR THIS PANELBOARD	PANELBOARD SHORT CIRCUIT RATING 100,000 RMS SYMMETRICAL AMPERES
CABINET NEMA TYPE: 1 <input checked="" type="checkbox"/> 3R <input type="checkbox"/> 4 <input type="checkbox"/> 4X <input type="checkbox"/> 12 <input type="checkbox"/>	<input type="checkbox"/> UL LISTED INTEGRATED EQUIPMENT SHORT CIRCUIT RATING IS ACCEPTABLE FOR THIS PANELBOARD	MAIN LUG ONLY <input checked="" type="checkbox"/>
MOUNTING: <u>SURFACE</u>	<input type="checkbox"/> UL LABEL 'SUITABLE FOR USE AS SERVICE EQUIPMENT'	MAIN CIRCUIT BREAKER <input type="checkbox"/>
MAIN: <u>1200 A</u>	BRANCH/FEEDER CIRCUIT BREAKERS	
VOLTAGE: <u>480/277</u>	DESCRIPTION	ATE NO. A B C NO. ATE DESCRIPTION
PHASE: <u>3</u>	EX DISTRIBUTION PANEL DP-P	800 1 2 70 LPS&E
NO. WIRES: <u>4</u>		3 4
OTHER REQ: <u>NOTE 1</u>		5 6
	SPARE	400 7 8 400 EXISTING 277/480V PANEL
		9 10
		11 12
	SPACE	400 13 14 400 SPACE
		15 16
		17 18
FULL CAPACITY NEUTRAL BUS <input checked="" type="checkbox"/>		19 20
EQUIPMENT GROUNDING BUS <input checked="" type="checkbox"/>		21 22
SECONDARY SURGE ARRESTORS CATEGORY C <input type="checkbox"/>		23 24
		25 26
		27 28
		29 30

SUPERSTRUCTURE SWITCHBOARD (SB-1)

DESIGNATION: <u>SB-1</u>	PANELBOARD SHORT CIRCUIT RATING 200,000 RMS SYMMETRICAL AMPERES	MAIN POWER CIRCUIT BREAKER A	TIE POWER CIRCUIT BREAKERS	MAIN POWER CIRCUIT BREAKER B					
CABINET NEMA TYPE: 1 <input checked="" type="checkbox"/> 3R <input type="checkbox"/> 4 <input type="checkbox"/> 4X <input type="checkbox"/> 12 <input type="checkbox"/>		FRAME POLES ATE COMPONENTS (SEE BELOW)	FRAME POLES ATE COMPONENTS (SEE BELOW)	FRAME POLES ATE COMPONENTS (SEE BELOW)					
NOMINAL VOLTAGE: <u>480</u>		2000 3 2000 XXX	2000 3 2000 XXX	2000 3 2000 XXX					
CONTINUOUS CURRENT RATING: <u>2000</u>									
PHASE: <u>3</u>									
NO. WIRES: <u>4</u>									
OTHER REQ: _____									
FEEDER POWER CIRCUIT BREAKERS									
NO.	MIN. FRAME	POLES	ATE	FEEDER SERVED	SUPPLIES	FEEDER SIZE	EGG	CONDUIT	REMARKS
1A	2000	3	1200	1	MDBA-1	SPARE			
2A	2000	3	600	1	MDBA-3	PENTHOUSE MCC	2	3-500 KCMIL #2	1-4"
3A	2000	3	500	1	MDBA-2	277/480V LIGHTING RISER	2	4-350 KCMIL #2	1-4"
4A	2000	3	1000	1	MDBA-4	MDP-A	4	4-400 KCMIL	2-2/0 2-4"
5A	2000	3	500	1	MDBA-5	SPARE			
1B	2000	3	500	1	MDBB-1	SPARE			
2B	2000	3	500	1	MDBB-2	277/480V LIGHTING RISER	2	4-350 KCMIL #2	1-4"
3B	2000	3	1000	1	MDBB-3	MDP-B	4	4-400 KCMIL	2-2/0 2-4"
4B	2000	3	1500	1	MDBB-4	GENERATOR SUPPLY CONDUCTORS	3	3-500 KCMIL	3-4/0 3-4"

PANELBOARD & SWITCHBOARD NOTES

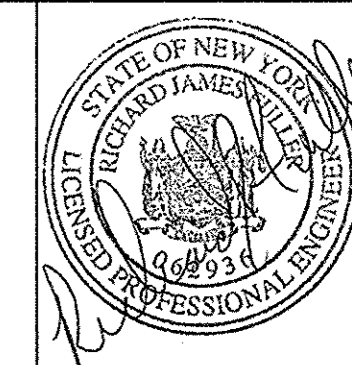
1. PROGRAMMABLE SOLID STATE TRIP DEVICE WHICH PERFORMS:
 A. OVERLOAD PROTECTION UTILIZING ADJUSTABLE OR NON-ADJUSTABLE LONG-TIME TRIP FUNCTION, IN CONJUNCTION WITH AN ADJUSTABLE CONTINUOUS CURRENT SETTING FEATURE.
 B. SHORT CIRCUIT PROTECTION UTILIZING AN ADJUSTABLE SHORT-TIME DELAY, AND A FIXED INSTANTANEOUS OVERRIDE.
 C. GROUND FAULT PROTECTION UTILIZING ADJUSTABLE GROUND FAULT CURRENT PICKUP, AND GROUND FAULT TIME DELAY.



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ELECTRICAL

TITLE: REPLACE SWITCHGEAR BUILDING NO. 22

LOCATION: STATE OFFICE BUILDING CAMPUS BUILDING NO. 22 ALBANY, NY 12226

CLIENT: NYS OFFICE OF GENERAL SERVICES

DATE	DESCRIPTION
2/15/2012	REVISED DRAWING
09/8/2011	BID DOCUMENT
06/28/2011	100% SUBMISSION

PROJECT NUMBER: 43585-E
 DESIGNED BY: J. SOWLE
 DRAWN BY: J. SOWLE
 FIELD CHECK:
 APPROVED:

SHEET TITLE:

PART SUPERSTRUCTURE GROUND FLOOR PLAN AND SCHEDULES

DRAWING NUMBER: E-102

SHEET 3 of 7

PART GROUND FLOOR PLAN - SUPERSTRUCTURE SWITCHGEAR ROOM

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

1
E-101

MATCHLINE A-A

MATCHLINE A-A

SPECIFIC NOTES:

(THIS DRAWING ONLY)

1. LOCATE SWITCHBOARD MINIMUM 72" FROM EXISTING CONCRETE PAN TO INSURE ACCESS FOR ROLLING CRANE FOR MAINTENANCE OF EXISTING CIRCUIT BREAKERS AND CIRCUIT BREAKERS PROVIDED UNDER THIS CONTRACT.
2. LOCATE PULLBOX TO ALLOW ACCESS TO CABLE COMPARTMENTS.
3. REMOVE 2 EXISTING SETS OF 3-500KCM & 1-500KCM FROM EXISTING CONDUITS. 3 EXISTING SETS OF 3-500KCM & 1-500KCM EGC TO REMAIN FOR CONNECTION TO TRANSFORMER TR-G.
4. CONNECT TO EXISTING FEEDER IN PULLBOX 'A'.
5. RELOCATE EXISTING DUPLEX RECEPTACLE AS DIRECTED.



NYS OFFICE OF GENERAL SERVICES

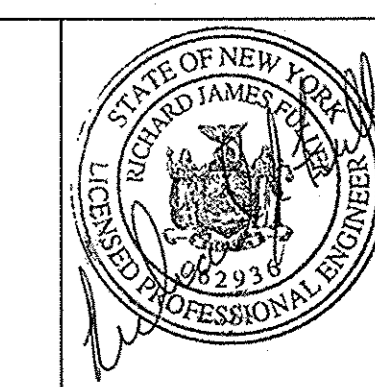
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Commissioner
JAMES M. DAVIES, A.I.A.
Deputy Commissioner, Design and Construction

CONSULTANT

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CONTRACT:

ELECTRICAL

TITLE:
REPLACE SWITCHGEAR
BUILDING NO. 22

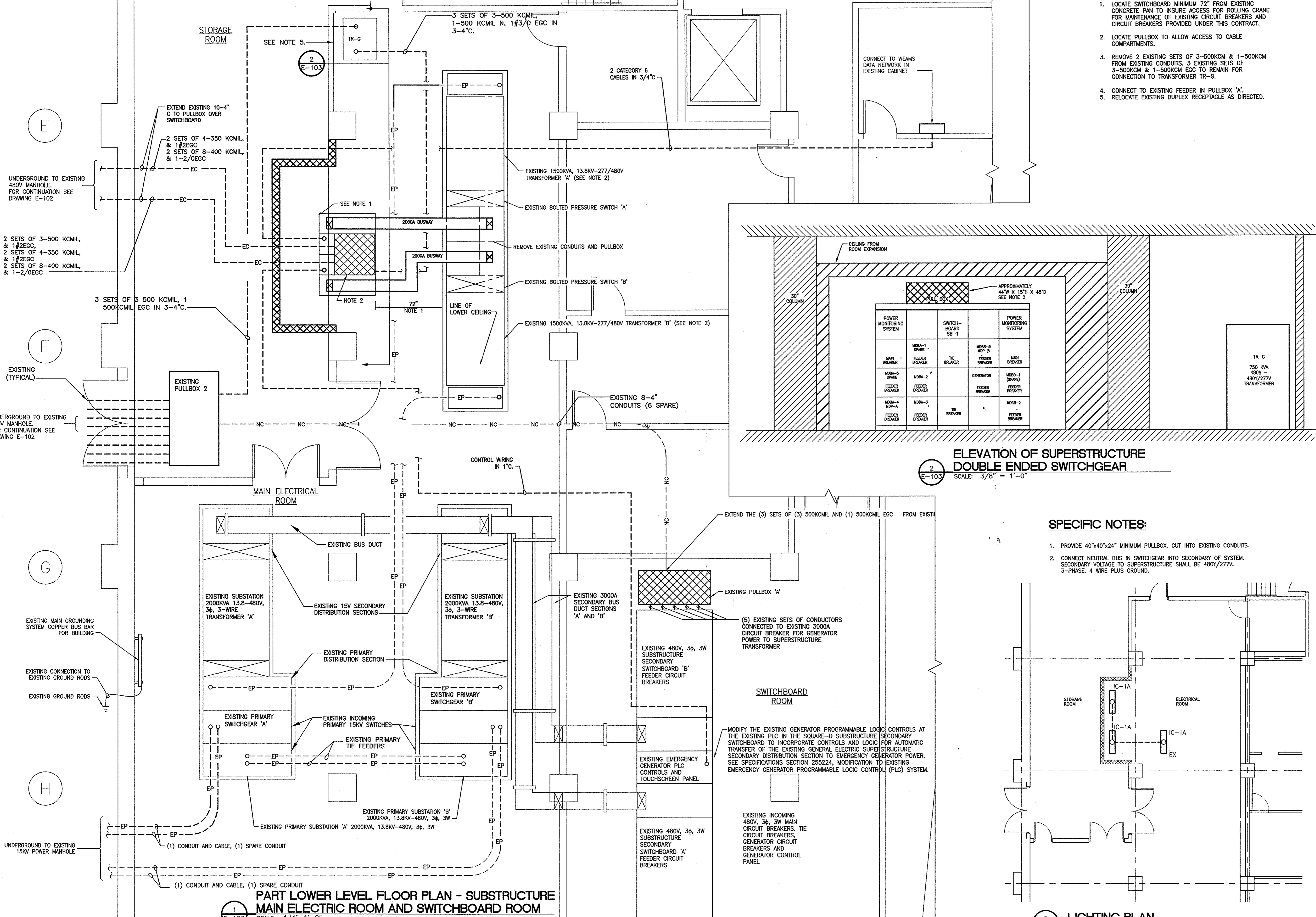
LOCATION:
STATE OFFICE BUILDING CAMPUS
BUILDING NO. 22
ALBANY, NY 12226

CLIENT:
NYS OFFICE OF
GENERAL SERVICES

MARK	DATE	DESCRIPTION
	2/15/2012	REVISED DRAWING
	09/8/2011	BID DOCUMENT
	06/28/2011	100% SUBMISSION

PROJECT NUMBER:	43585 -E
DESIGNED BY:	J. SOWLE
DRAWN BY:	J. SOWLE
FIELD CHECK:	
APPROVED:	
SHEET TITLE:	PART SUBSTRUCTURE PLAN LOWER LEVEL
DRAWING NUMBER:	E-103

SHEET 4 OF 7

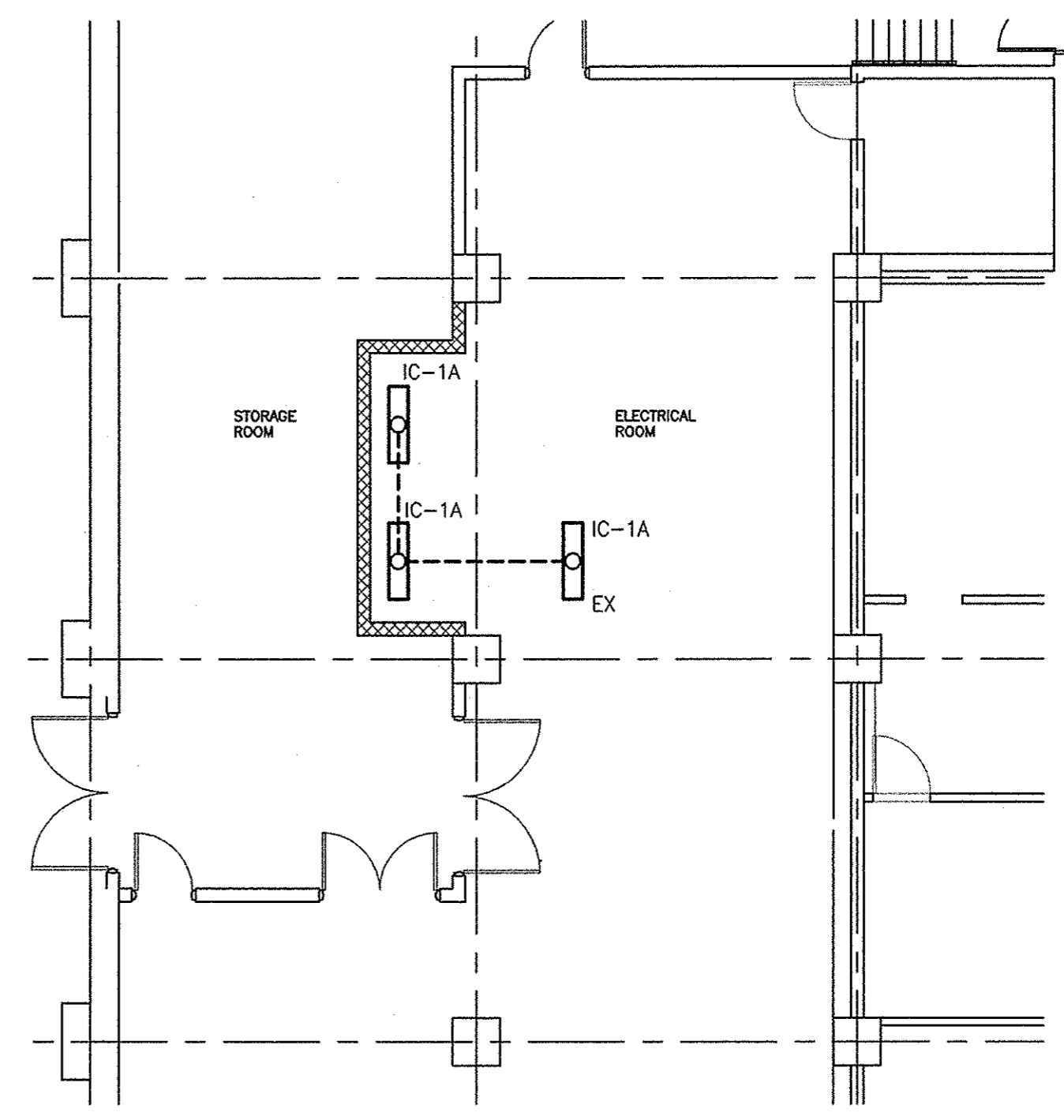


ELEVATION OF SUPERSTRUCTURE DOUBLE ENDED SWITCHGEAR

SCALE: 3/8" = 1'-0"

SPECIFIC NOTES:

1. PROVIDE 40"x40"x24" MINIMUM PULLBOX. CUT INTO EXISTING CONDUITS.
2. CONNECT NEUTRAL BUS IN SWITCHGEAR INTO SECONDARY OF SYSTEM. SECONDARY VOLTAGE TO SUPERSTRUCTURE SHALL BE 480Y/277V, 3-PHASE, 4 WIRE PLUS GROUND.



3 LIGHTING PLAN

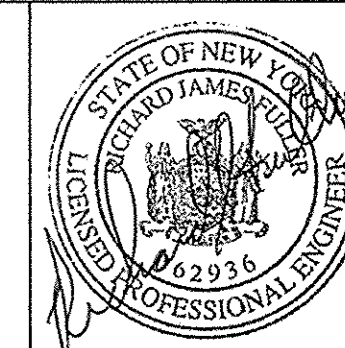
SCALE: 1/8" = 1'-0"

1 PART LOWER LEVEL FLOOR PLAN - SUBSTRUCTURE MAIN ELECTRICAL ROOM AND SWITCHBOARD ROOM

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

Feb 15, 2012 - 8:00am
N:\Design\Construct\43585\43585-CorElec\Final\Medium\E-103.dwg
36x24 PLOT SHEET

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DESIGNED BY:
J. SOWLE

DRAWN BY:
J. SOWLE

FIELD CHECK:

APPROVED:

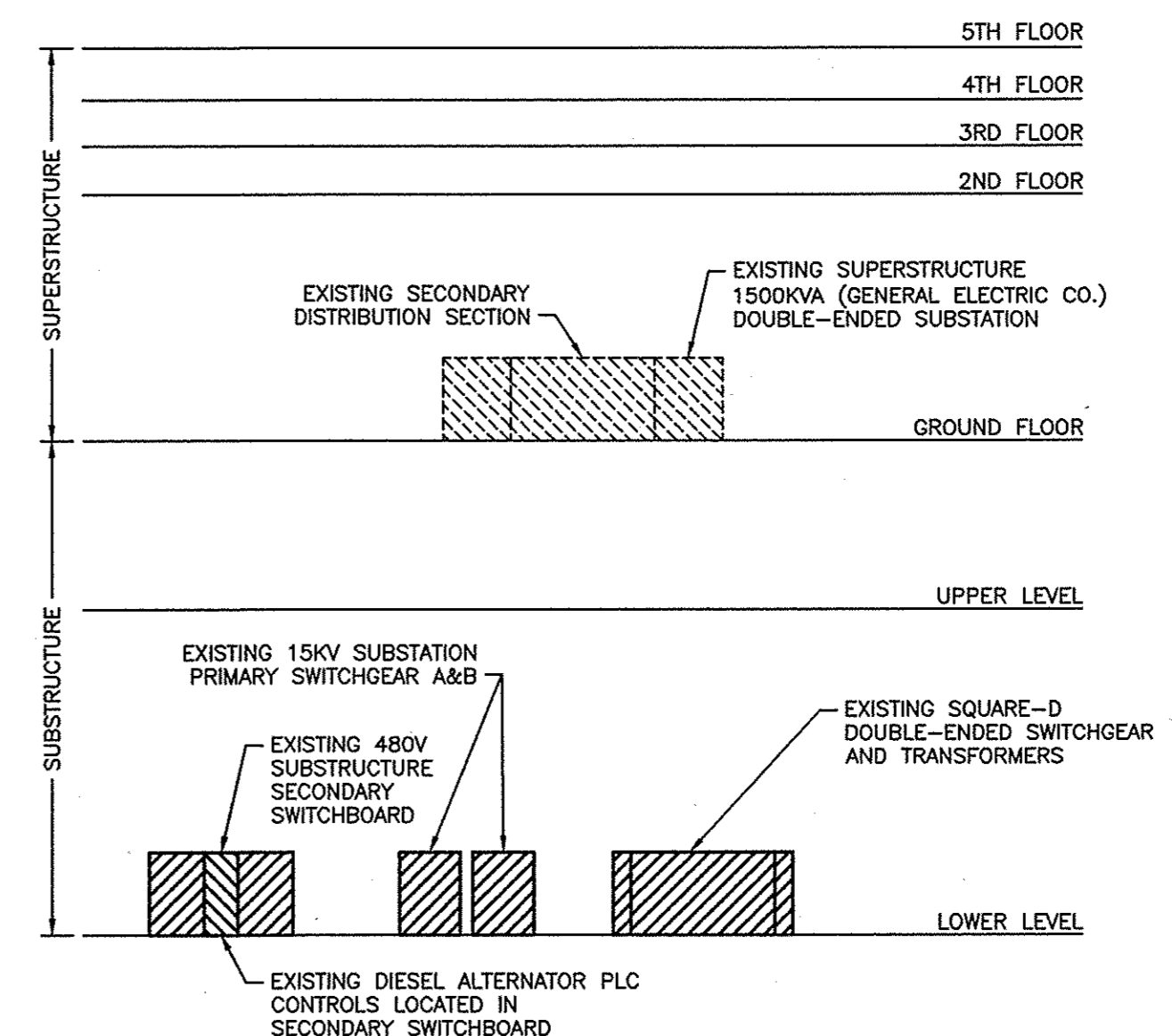
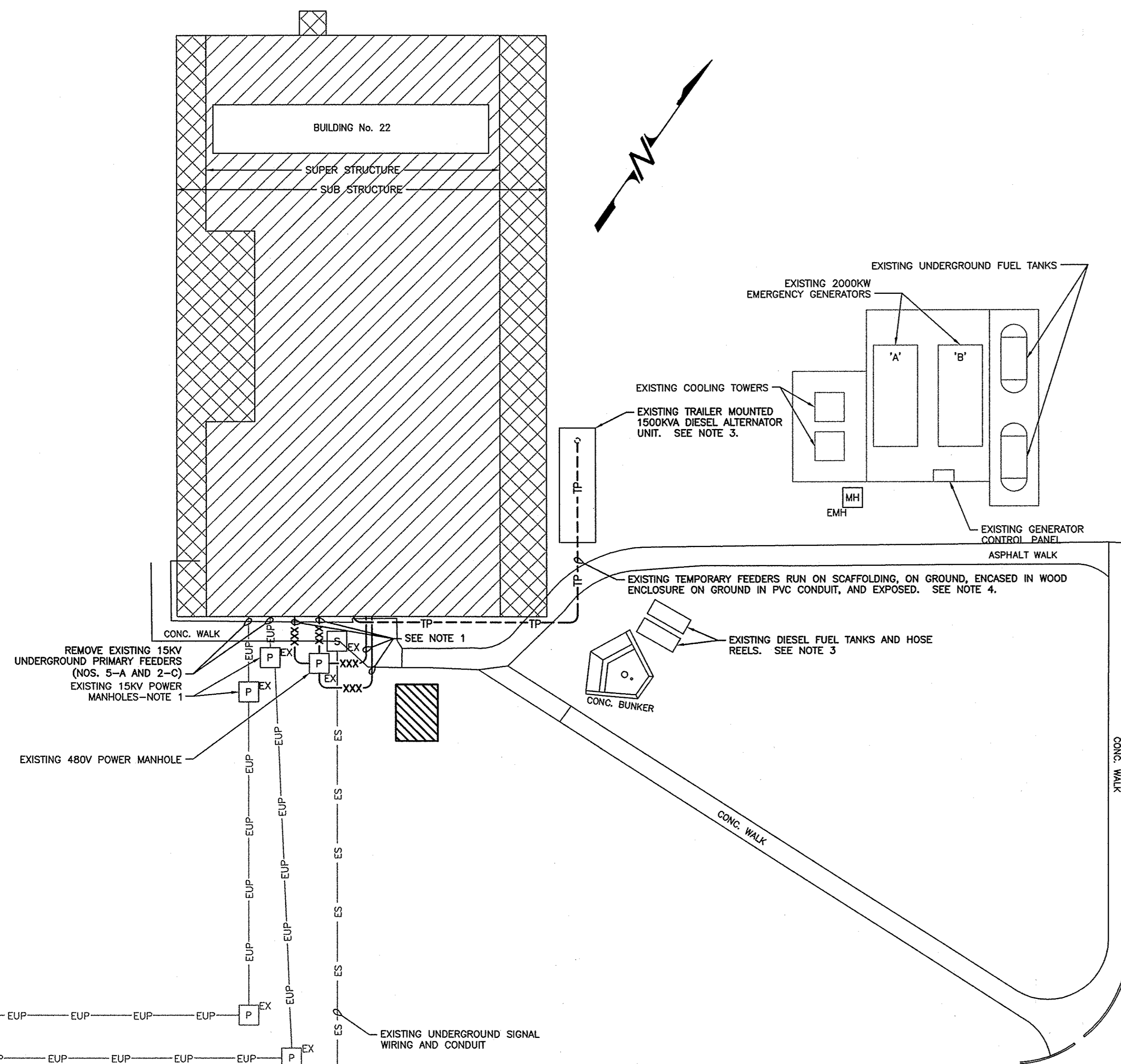
SHEET TITLE:

**SITE PLAN
AND DETAILS**

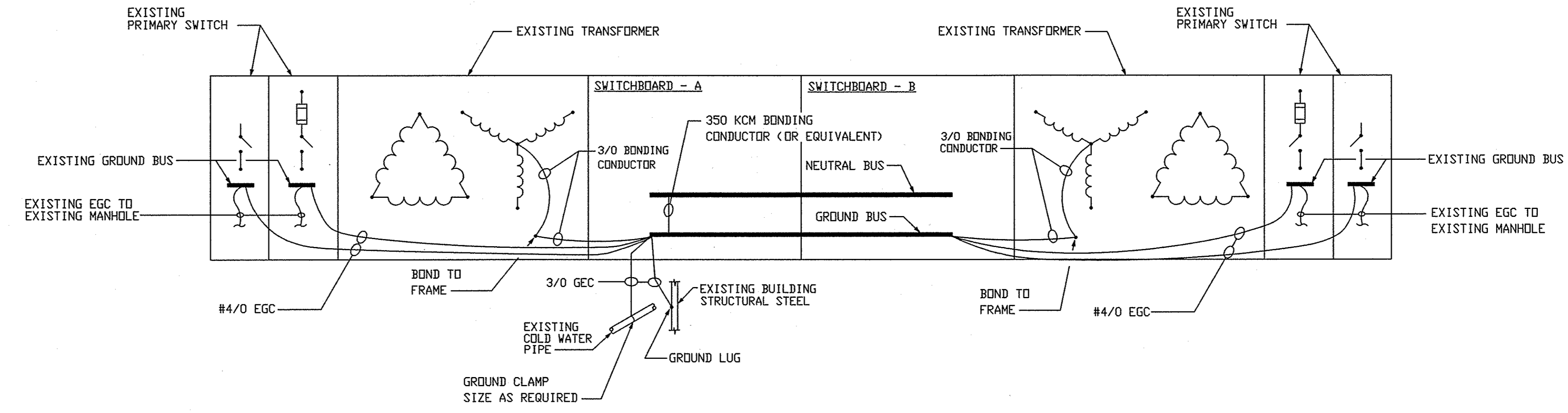
DRAWING NUMBER:
E-501

SPECIFIC NOTES:
(THIS DRAWING ONLY)

- SEE DETAIL 1/E-101.
- PROVIDE FEEDERS IN EXISTING UNDERGROUND CONDUITS. SEE FLOOR PLANS FOR NUMBER AND SIZES.
- REMOVE AND RELOCATE THE EXISTING 1500KVA DIESEL ALTERNATOR UNIT, FUEL TANKS AND HOSE REELS TO THE CAMPUS SUBSTATION.
- DISCONNECT EXISTING TEMPORARY FEEDER CABLES & CONDUIT FROM SUPERSTRUCTURE SWITCHBOARD AND EXISTING TRAILER MOUNTED 1500KVA DIESEL ALTERNATOR UNIT. SPOOL CABLE ON REELS. RELOCATE SPOOLED CABLES TO CAMPUS SUBSTATION. REMOVE EXISTING SCAFFOLDING, WOOD ENCLOSURES AND PVC CONDUIT.



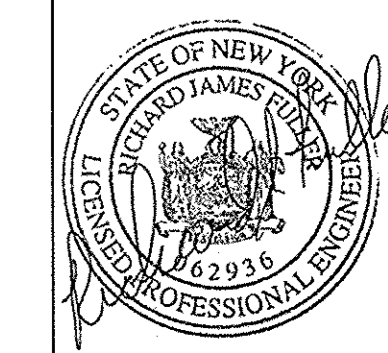
**EXISTING BUILDING AND FLOOR
ORIENTATION PLAN - EXISTING
DISTRIBUTION EQUIPMENT LOCATIONS**
SCALE: NTS



SERVICE GROUNDING DETAIL
NO SCALE

**SITE PLAN - BLDG NO. 22
ELECTRIC SERVICE CONNECTIONS AND MODIFICATIONS**
SCALE: 1/32"=1'-0"

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CONTRACT:
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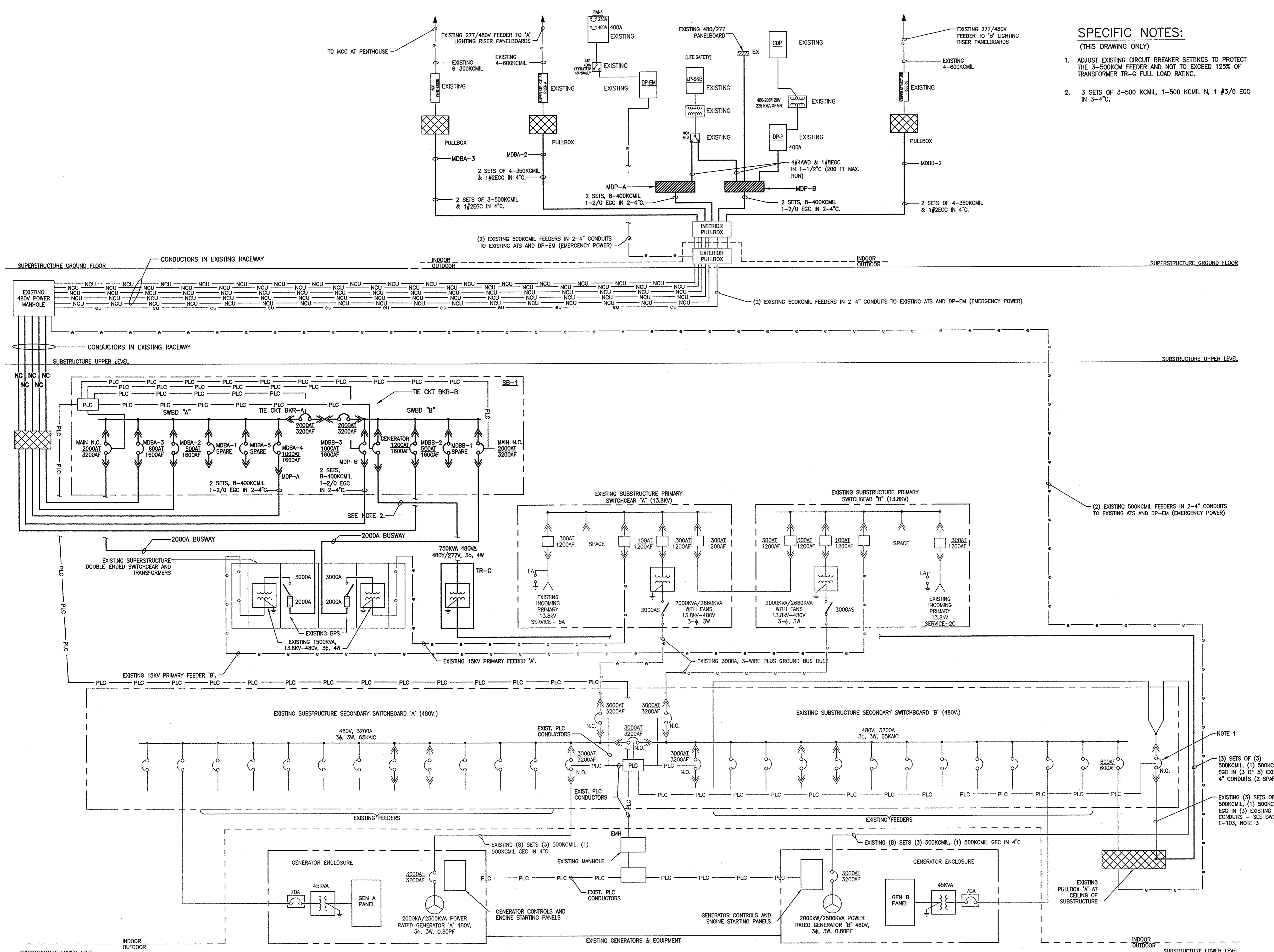
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PROJECT NUMBER:	43585 - E	
DESIGNED BY:	J. SOWLE	
DRAWN BY:	J. SOWLE	
FIELD CHECK:		
APPROVED:		
SHEET TITLE:	POWER ONE-LINE DIAGRAM	

DRAWING NUMBER:
E-602
SHEET 7 OF 7



- SPECIFIC NOTES:**
(THIS DRAWING ONLY)
- ADJUST EXISTING CIRCUIT BREAKER SETTINGS TO PROTECT THE 3-500KCM FEEDER AND NOT TO EXCEED 125% OF TRANSFORMER TR-G FULL LOAD RATING.
 - 3 SETS OF 3-500 KCMIL, 1-500 KCMIL N, 1 #3/0 EGC IN 3-4".

POWER ONE LINE/RISER DIAGRAM
SUBSTRUCTURE AND SUPERSTRUCTURE - ADDITIONS AND MODIFICATIONS
SCALE: NTS

Feb 15, 2012 - 8:07 am
 V:\Design\Conserv\43585\CodeElec\FOR FINAL\Addendum\E-602A.dwg
 36x24 PLOT SHEET