

PROJECT TITLE

50 STATE ROUTE 120
EAST RUTHERFORD COMPLEX, NEW JERSEY 07073

NEW 26KV TRANSFORMER REPLACEMENT CN-273

- NOTES:**
- A. DEENERGIZE TRANSFORMER T1 BY OPENING PRIMARY AND SECONDARY BREAKERS LOCATED AT MAIN 26KV AND 13.8KV SWITCHGEAR RESPECTIVELY. COORDINATE ALL SHUTDOWNS WITH OWNER.
 - B. DISCONNECT AND SAFE OFF PRIMARY AND SECONDARY CABLES AT TRANSFORMER. TEMPORARILY TIE BACK OVERHEAD PRIMARY CABLES TO EXISTING STALE ABOVE.
 - C. DISCONNECT AND REMOVE EXISTING SECONDARY CONDUIT STUBUPS BETWEEN COUPLING AT GRADE AND AIR TERMINAL CHAMBER. IF ANY CONDUIT REMAINS, DISCONNECT AT 13.8KV MAIN SECONDARY BREAKER AND PULL BACK CABLES TO GRADE.
 - D. DISCONNECT AND TAG EXISTING METER CT AND FAN POWER TO JUIT BOX AT GRADE. PULL BACK WIRING AND SAFE OFF FOR LATER RECONNECTION, (EXTEND AS REQUIRED TO NEW CONTROL TERMINAL BOX).
 - E. CONTRACTOR SHALL COORDINATE ALL RIGGING REQUIREMENTS TO REMOVE THE EXISTING TRANSFORMER AND INSTALL THE NEW TRANSFORMER ON THE EXISTING CONCRETE PAD. WELL AS ALIGN SECONDARY AIR TERMINAL CHAMBER OVER EXISTING CONDUIT STUBUPS.
 - F. CONTRACTOR SHALL PROVIDE AND INSTALL NECESSARY BUS DETAILS ON PRIMARY AND SECONDARY TO MEET EXISTING CABLE TERMINATIONS. CONTRACTOR SHALL PHASE ALL CONDUCTORS TO MATCH EXISTING. GROUND TRANSFORMER TO EXISTING GROUND GRID.
 - G. AFTER TRANSFORMER INSTALLATION AND TERMINATION OF CABLES AND WIRING, CONTRACTOR SHALL COORDINATE WITH TRANSFORMER TESTING, PRIMARY/SECONDARY CABLE TESTING, GROUND TESTING AS WELL AS VERIFY 400A METER CT WIRING/OPERATION AND FAN OPERATION.
 - H. CONTRACTOR SHALL PROVIDE CLOSEOUT DOCUMENTATION INCLUDING BUT NOT LIMITED TO TEST REPORTS, AS-BUILT TRANSFORMER DOCUMENTATION, OPERATION AND MAINTENANCE MANUALS IN PDF FORMAT AND HARD COPIES.



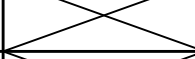
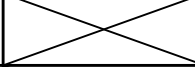
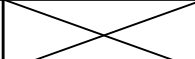
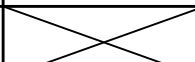
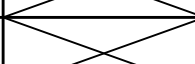
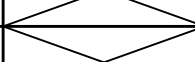
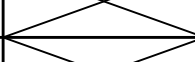
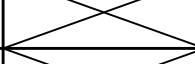
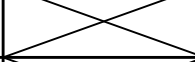

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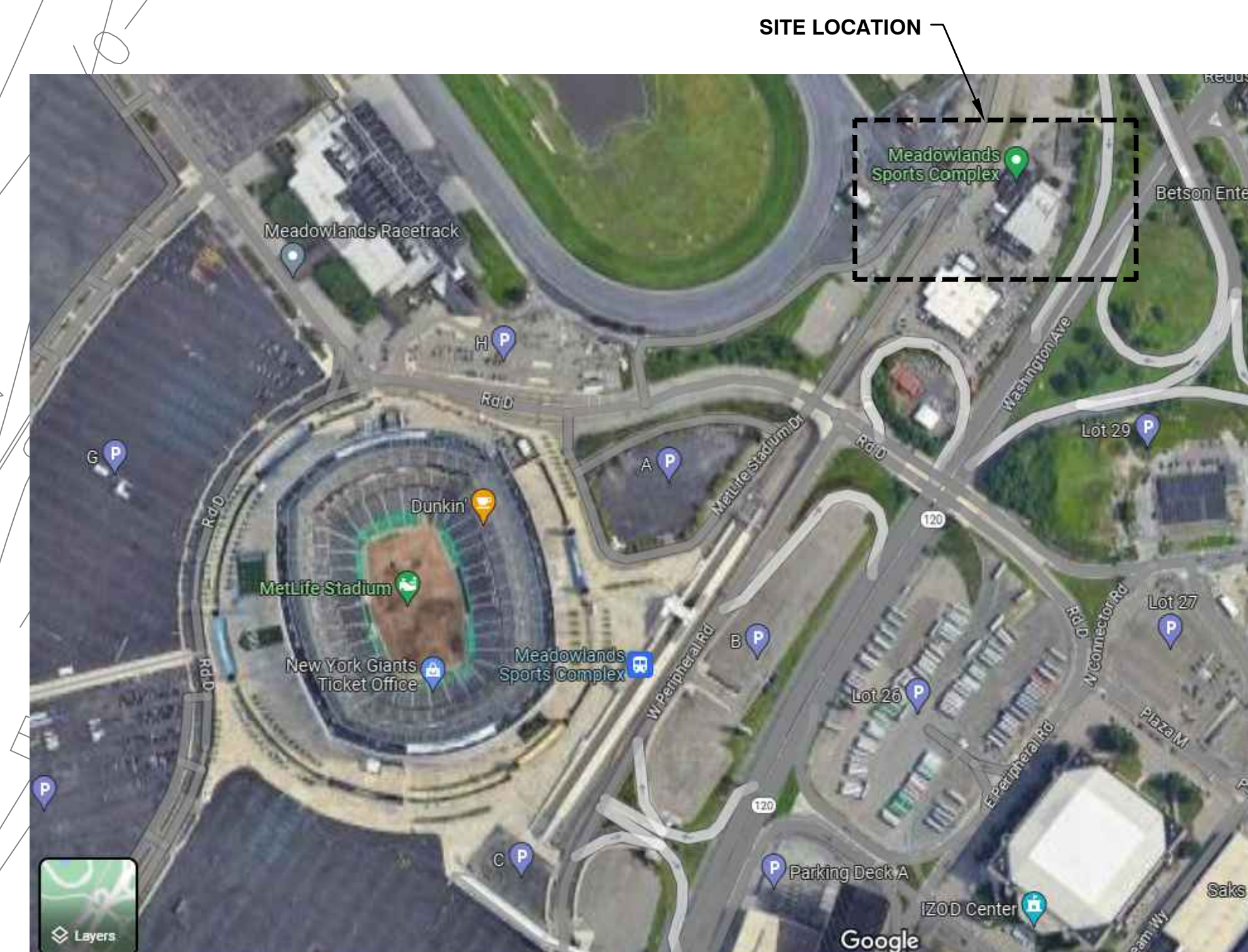
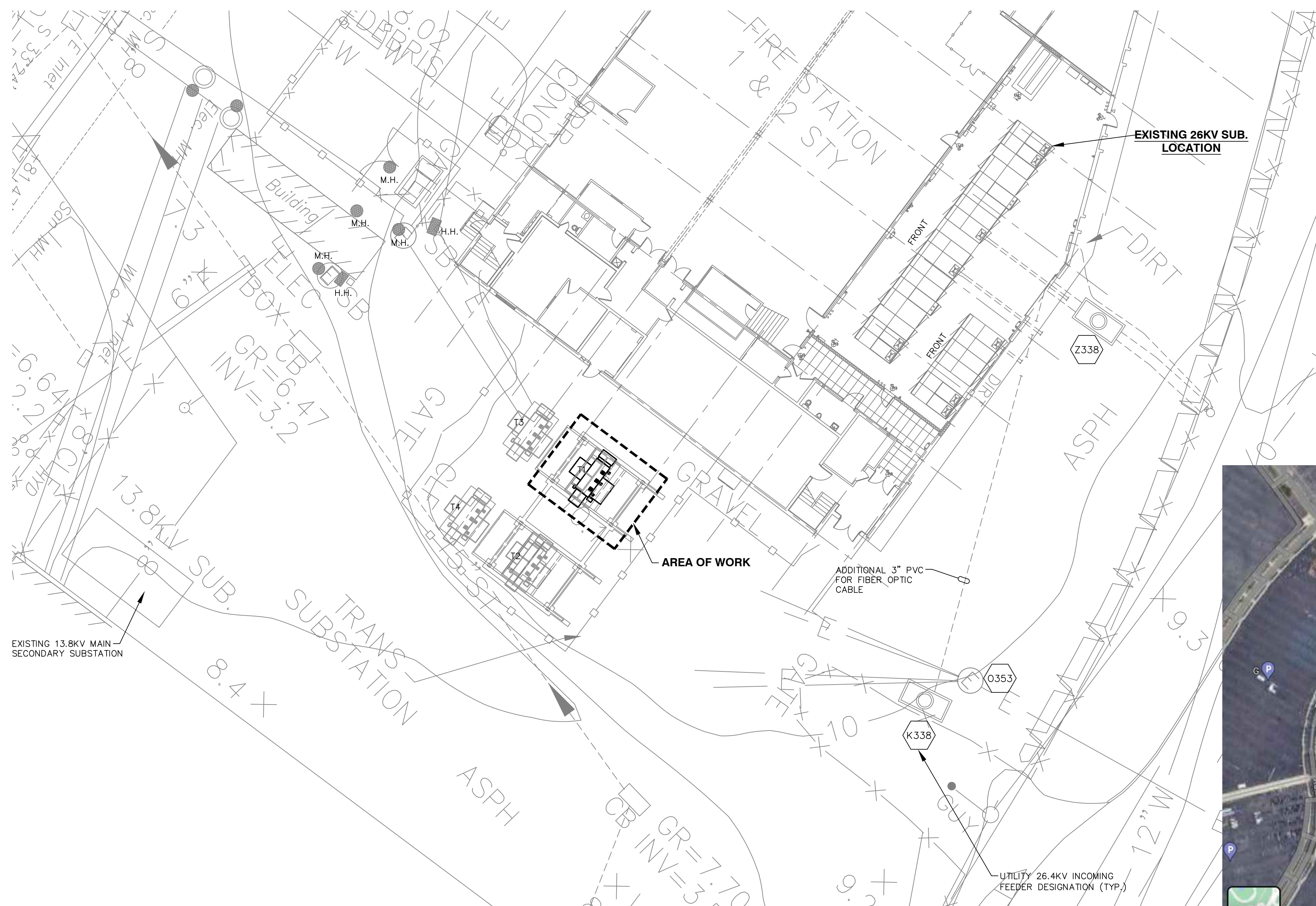


We Bring the World to New Jersey

NJ SPORTS & EXPOSITION
AUTHORITY
NEW 26KV TRANSFORMER
REPLACEMENT CN-273

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

ELECTRICAL DRAWINGS			ISSUED IN THIS PACKAGE
DWG #	TITLE	REV.	
E-001	COVER SHEET	0	
E-002	ELECTRICAL - GENERAL NOTES	0	
E-003	ELECTRICAL - GENERAL NOTES	0	
E-100	ELECTRICAL - DEMOLITION PART PLAN AND ELEVATIONS	0	
E-101	ELECTRICAL - NEW WORK PART PLAN AND ELEVATIONS	0	
E-200	ELECTRICAL - SINGLE LINE DIAGRAM - DEMOLITION	0	
E-201	ELECTRICAL - SINGLE LINE DIAGRAM - NEW WORK	0	
E-300	ELECTRICAL - BLOCK DIAGRAM & OUTDOOR BREAKER RELAY PANEL	0	
E-400	ELECTRICAL - GROUNDING PART PLAN	0	
E-500	ELECTRICAL - GROUNDING DETAILS	0	



06-28-23	PROGRESS ISSUE - 75%
07-28-23	ISSUED FOR DCA REVIEW
07-28-23	ISSUED FOR BID

Date	Issued	Revision No.
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Drawing Title:
COVER SHEET

Scale AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG

AMA Project No.:
FC-23-054

E-001

SCOPE OF WORK (GENERAL)

1. THE PURPOSE OF THE PROJECT IS TO REPLACE EXISTING TRANSFORMER T1 (26.4/13.8KV, 10/14MVA – SEE PURCHASE SPECIFICATION)
2. EXTEND CT WIRING FROM EXISTING RELAY PANEL IN EXISTING 13.8 KW SUBSTATION TO NEW TRANSFORMER T1.
3. EXTEND EXISTING FAN POWER TO NEW TRANSFORMER T1.
4. CONTRACTOR SHALL CONFIRM ALL MEASUREMENTS IN THE FIELD WITH REGARD TO, BUT NOT LIMITED TO, ALL RIGGING OF EXISTING AND NEW TRANSFORMER, PLACEMENT AND ALIGNMENT OF NEW TRANSFORMER ON EXISTING PAD WITH RESPECT TO EXISTING PRIMARY AND SECONDARY FEEDERS.
5. THE ENGINEER HAS DESIGNED THE PROPOSED WORK IN ACCORDANCE WITH APPLICABLE CODES AND CURRENT STANDARDS. THE CONTRACTOR HOWEVER SHALL BE RESPONSIBLE TO INSURE THAT ALL INSTALLATIONS MEET ALL REQUIREMENTS AND NOT MEET ALL APPLICABLE CODES. CONTRACTOR SHALL REMEDY AT HIS EXPENSE ANY ITEMS FAILING INSPECTION BY LOCAL OFFICIALS.

GENERAL NOTES AND CONDITIONS

1. ALL WORK SHALL BE CONSIDERED THE PRIME CONTRACTOR'S RESPONSIBILITY. ALL TRADE SUBCONTRACTORS SUCH AS BUT NOT LIMITED TO ELECTRICAL, MECHANICAL, CIVIL, LANDSCAPING AND TESTING SHALL BE THE RESPONSIBILITY OF THE PRIME CONTRACTOR. ANY SUCH REFERENCE TO SUBCONTRACTORS SUCH AS ELECTRICAL, MECHANICAL, ETC. SHALL BE THE LEGAL AND FOREMOST RESPONSIBILITY OF THE PRIME CONTRACTOR TO INSURE THAT SUCH WORK IS PERFORMED PROPERLY AND IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND DRAWINGS. THE PRIME CONTRACTOR SHALL ENSURE THAT ALL SUB-CONTRACTORS AND VENDORS FULLY INVESTIGATE THE JOBSITE TO COMPARE THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS RELATING TO CONSTRUCTION OF NEW WORK AND LABOR. THE PRIME CONTRACTOR SHALL INCLUDE ALL COSTS FOR ALL WORK DESCRIBED IN THE CONTRACT DOCUMENTS AND REQUIRED OR IMPLIED BY EXISTING CONDITIONS, UNLESS NOTED OTHERWISE. FOR THE BALANCE OF THESE NOTES AND CONDITIONS THE TERM CONTRACTOR SHALL MEAN THE PRIME CONTRACTOR AND HIS SUBCONTRACTORS OR VENDORS FOR THIS PURPOSE.
2. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY CONFLICTS BETWEEN THE CONSTRUCTION PLANS AND EXISTING CONDITIONS. THE CONTRACTOR SHALL ALSO NOTIFY THE OWNER'S REPRESENTATIVE OF ANY OMISSION OR CONFLICT IN THE DRAWINGS AND ANY RESTRICTIONS RELATED TO THE EXECUTION OF THE WORK. ALL CONFLICTS SHALL BE RESOLVED PRIOR TO THE INSTALLATION OF ANY WORK.
3. THE CONTRACTOR SHALL THOROUGHLY REVIEW THE EXISTING CONDITIONS TO IDENTIFY THE IMPACT ON ANY EXISTING FUNCTION AND SHALL COORDINATE HIS WORK SCHEDULES PRIOR TO COMMENCEMENT OF NEW WORK
4. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR AND HAVE CONTROL OVER, ALL CONSTRUCTION MEANS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK REQUIRED BY THE CONTRACT DOCUMENTS.
5. UNLESS SPECIFICALLY NOTED TO THE CONTRARY, ALL NEW WORK IS IN CONTRACT. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETE THE PROJECT OUTLINED ON THIS SET OF PLANS OR REASONABLY INFERABLE FROM THEM.
6. THE CONTRACTOR SHALL EXERCISE CARE AND CAUTION IN REMOVING ALL EXISTING ITEMS NOTED TO BE REMOVED. REMOVED ITEMS SHALL BE PROPERLY RECYCLED OR DISPOSED.
7. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL BUILDING CODES AND REQUIREMENTS.
8. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY THE LOCAL AUTHORITIES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY VARIANCE WITH CODES IN FORCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ORDERS OF ANY PUBLIC AUTHORITY BEARING ON THE PERFORMANCE OF THE WORK.
9. THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DRAWINGS ON THE PROJECT SITE AT ALL TIMES, AND SHALL CLEARLY AND IMMEDIATELY RECORD AND LOG ANY CHANGES OR DEVIATIONS IN THE ORIGINAL SPECIFICATIONS WORK. UPON COMPLETION OF THE PROJECT, THE CONTRACTORS SHALL FORWARD A COMPLETE SET OF MARKED-UP PRINTS TO THE OWNER FOR PREPARATION OF FINAL AS-BUILT DRAWINGS.
10. ALL CONTRACTOR AND SUBCONTRACTOR SHALL PROVIDE AND MAINTAIN PROPER AND SAFE WORKING CONDITIONS AT ALL TIMES, INCLUDING BUT NOT LIMITED TO APPROPRIATE TOOLS, EQUIPMENT, SCAFFOLDING, SHORING, ETC.
11. NO SUBSTITUTION OF MATERIALS AND OR CONSTRUCTION ITEMS SPECIFIED WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER. ALL MAJOR EQUIPMENT SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
12. THE OWNER'S WRITTEN AUTHORIZATION MUST BE OBTAINED PRIOR TO THE ORDERING OF ANY MATERIALS, CONTRACTS, OR THE EXECUTION OF ANY WORK IN EXCESS OF ORIGINAL CONTRACT.
13. SUBMIT FOR OWNER'S REVIEW PRIOR TO FABRICATION OR PURCHASE, SHOP DRAWINGS FOR ALL ASSEMBLIES, AND ALL OTHER ITEMS AS REQUIRED IN THE CONTRACT DOCUMENTS.
14. ALL ADJACENT WORK SHALL BE PROTECTED FROM DAMAGE CAUSED BY THIS WORK. ANY RESULTANT DAMAGE SHALL BE THE FINANCIAL RESPONSIBILITY OF THE CONTRACTOR.
15. THE CONTRACTOR SHALL SCHEDULE AND PERFORM ALL WORK SO AS NOT TO REASONABLY DISTURB ANY ACTIVITIES OF THE FACILITY AND SHALL BE RESPONSIBLE FOR ANY OWNER-RELATED COSTS INCURRED THEREBY. CONTRACTOR SHALL COORDINATE WORK WITH OWNER'S REPRESENTATIVE.
16. THE CONTRACTOR SHALL KEEP THE PROJECT SITE REASONABLY CLEAN AND FREE FROM HAZARDS AT ALL TIMES. ALL EXISTING EGRESS REQUIREMENTS ARE TO BE MAINTAINED. THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS, BROOM CLEAN THE ENTIRE PROJECT AREA AND LEAVE THE SITE IN A REASONABLE CLEAN CONDITION DAILY.
17. WITHIN TWO (2) WEEKS AFTER COMPLETION, THE CONTRACTOR SHALL NOTIFY THE OWNER TO COMPLETE A PUNCH LIST OF CORRECTIONS.
18. ALL WORK SHALL COMPLY WITH GOOD TRADE PRACTICE AND REGULATIONS OF THE CITY, STATE AND FEDERAL GOVERNMENT AGENCIES HAVING JURISDICTION.
19. CONTRACTOR SHALL INCLUDE IN BID THE REMOVAL OF DEBRIS AND CLEANING AFTER PROJECT COMPLETION.
20. ALL ITEMS SPECIFIED FOR REUSE ARE ASSUMED TO BE IN GOOD CONDITION. CONTRACTOR TO VERIFY THIS AND ADVISE OWNER OF DISCREPANCIES PRIOR TO BIDDING.
21. VERIFY ALL DIMENSIONS IN THE FIELD. DO NOT SCALE DRAWINGS. LARGE SCALE DETAILS GOVERN OVER SMALL SCALE IN THE PROJECT DRAWINGS.
22. CONTRACTOR SHALL DO ALL CUTTING, FITTING AND PATCHING WORK THAT MAY BE REQUIRED TO MAKE ALL PARTS OF THE PROJECT COME TOGETHER PROPERLY.
23. THE SUBMISSION OF A PROPOSAL SHALL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS FOR LABOR, EQUIPMENT, OR MATERIAL REQUIRED OR FOR DIFFICULTIES ENCOUNTERED, WHICH WOULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE, WILL NOT BE FORFEEN.

GENERAL CONDITIONS AND SERVICES PROVIDED BY CONTRACTOR

- PROVIDE ALL UTILITIES REQUIRED FOR HIS WORK NOT PROVIDED BY THE OWNER.
2. THE CONTRACTOR SHALL CONFINE THE STORAGE OF HIS MATERIAL AND EQUIPMENT TO HIS DESIGNATED AREA, AND PROVIDE FOR HIS OWN FIELD OFFICE, GANG BOXES AND STORAGE AREA. THE CONTRACTOR SHALL BE PREPARED AT ALL TIMES TO RECEIVE, UNLOAD, AND HANDLE ITEMS AND ANY OTHER MATERIALS, AS MAY BE REQUIRED BY THE INSTRUCTION DOCUMENTS WITHOUT INTERFERENCE TO OTHER CONTRACTORS OR OWNER. CONTRACTOR WILL BE RESPONSIBLE FOR RECEIVING, UNLOADING, TRANSFERRING, UNPACKING AND INSTALLING MAJOR EQUIPMENT PROVIDED BY OWNER.
3. THE CONTRACTOR SHALL ADVISE THE OWNER'S PROJECT REPRESENTATIVE IMMEDIATELY OF ANY LABOR DISPUTE BEING EXHIBITED OR ANTICIPATED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE CONDUCT OF HIS EMPLOYEES AND THOSE OF CONTRACTOR'S SUBCONTRACTORS WHILE SUCH EMPLOYEES ARE ON OWNER'S PROPERTY.
4. CONTRACTOR'S PERSONNEL SHALL MAINTAIN THE SCHEDULE OF STARTING, QUITTING, BREAKS AND LUNCH AS DIRECTED BY THE OWNER AND IN AREAS AS DESIGNATED BY THE OWNER AND WORK IN HARMONY WITH OTHER CONTRACTORS, AND/OR OWNER'S OWN FORCES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR LAYOUT AND ALIGNMENT OF HIS WORK SUBJECT TO REVIEW BY THE OWNER, INCLUDING ALL SOLAR EQUIPMENT, CHECKS OF CONDUITS, DUCT BANKS AND EQUIPMENT AND PROVIDING PULL BOXES, FITTINGS, ETC.
6. CONTRACTOR SHALL HAVE A FULL-TIME COMPETENT SUPERINTENDENT ON THE SITE WHO SHALL BE FULLY AUTHORIZED TO ACT FOR THE CONTRACTOR AND TO REMOVE SUCH ROLES AS MAY BE GIVEN BY THE OWNER FOR THE PROPER CONTINUANCE OF THE WORK. CONTRACTOR SHALL SUBMIT WITH HIS PROPOSAL THE NAME AND RESUME OF HIS SUPERINTENDENT.
7. OWNER'S ENGINEERS OR REPRESENTATIVES SHALL HAVE ACCESS AT ALL TIMES TO THE WORK AT THE SITE. IF WORK IS UNSATISFACTORY IMMEDIATE STEPS SHALL BE TAKEN TO REVISE THE WORK TO CONFORM TO THE SPECIFICATIONS WHEN INFORMED BY OWNER'S ENGINEERS OR REPRESENTATIVE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A CLEAN JOBSITE AS REQUIRED BY OWNER, OSHA AND ANY OTHER GOVERNING LEGISLATION. THE PROMPT COLLECTION AND DISPOSAL OF ALL WASTES AND/OR SCRAP (NOT INCLUDING OLD CABLE) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. OWNER MAY DESIRE TO DESIGNATE A SCRAP AREA FOR WASTE RESULTING FROM OWNER SUPPLIED MATERIALS. THE CONTRACTOR SHALL MAINTAIN EQUIPMENT SYSTEMS OVER TO THE OWNER FREE OF TRASH AND CONSTRUCTION DEBRIS.
9. ALL MODIFICATIONS SHALL BE CARRIED OUT WITH DUE REGARD TO OWNER'S OPERATIONS AND SHALL NOT CAUSE LOSS OF TIME TO OWNER'S PERSONNEL BY BLOCKAGE OF HALLWAYS, OR ACCESS WAYS. ALL TEMPORARY CONDITIONS MENTIONED ABOVE SHALL BE SUBMITTED TO OWNER'S REPRESENTATIVE BEFORE IMPLEMENTATION TO AVOID SUCH PROBLEMS.
10. CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR PROTECTING FROM DAMAGE, ALL EXISTING FACILITIES. HE SHALL BE RESPONSIBLE FOR THE COST OF REPAIRING OR RESTORING ANY DAMAGE TO THE OWNER'S PROPERTY CAUSED AS A RESULT OF HIS WORK, TO THE SATISFACTION OF THE OWNER, OWNERS ENGINEER OR REPRESENTATIVE.
11. CONTRACTOR SHALL SUPPLY TOOLS (CAPITAL AND SMALL) AND CONSUMABLE MATERIALS AND SHALL BE RESPONSIBLE FOR THE SECURITY OF SAME.
12. SMOKING SHALL BE PERMITTED ONLY IN AREAS INDICATED BY OWNER AND THIS PRIVILEGE MAY BE TERMINATED AT ANY TIME.
13. MATERIALS FURNISHED BY CONTRACTOR SHALL BE NEW AND OF FIRST QUALITY. SUBSTITUTION SHALL NOT BE MADE IN EITHER MATERIALS OR MANUFACTURER FROM THOSE SPECIFIED UNLESS PRIOR WRITTEN APPROVAL HAS BEEN OBTAINED FROM THE OWNER OR OWNER'S ENGINEER.
14. CONTRACTOR SHALL PROVIDE IDENTIFICATION BADGES FOR HIS EMPLOYEES TO BE WORN AT ALL TIMES IN PLAIN VIEW ON OUTER GARMENTS DURING THE WORK PERIOD.
15. CONTRACTOR SHALL PROVIDE ADEQUATE EMERGENCY MEDICAL FACILITIES AS REQUIRED BY LAW FOR THE EXECUTION OF HIS PORTION OF THE WORK.
16. UNDER NO CIRCUMSTANCES WILL DRUGS, ALCOHOLIC BEVERAGES, FIREARMS OR WEAPONS OF ANY TYPE BE PERMITTED ON THE JOBSITE. POSSESSION OF THE ABOVE ITEMS ON JOBSITE ARE CONSIDERED GROUNDS FOR IMMEDIATE EXPULSION AND DISCHARGE.
17. CONTRACTOR SHALL PROVIDE ALL MATERIAL REQUIRED FOR HIS WORK NOT SPECIFICALLY IDENTIFIED AS BEING FURNISHED BY OTHERS.
18. CONTRACTOR SHALL:

- A. INCLUDE THE ASSISTANCE OF THE MANUFACTURER OR VENDOR WHEN NECESSARY TO MAKE A SATISFACTORY INSTALLATION. CAREFULLY REVIEW ALL INSTALLATION MANUALS AND DATA PROVIDED AND ASSURE THAT HE UNDERSTANDS ALL THE REQUIREMENTS FOR SUCH AN INSTALLATION AND THAT HE HAS THE MANPOWER AND TOOLS TO INSTALL EQUIPMENT SAFELY AND CORRECTLY.
- B. REMOVE ALL RUST PREVENTATIVES AND OILS USED TO PROTECT THE EQUIPMENT DURING SHIPMENT AND/OR THE CONSTRUCTION PERIOD. WHENEVER SUCH PROTECTIVE MATERIALS WILL BE DETRIMENTAL TO OPERATION.
- C. REMOVE ALL TEMPORARY SUPPORTS, BRACING OR OTHER FOREIGN OBJECTS THAT WERE INSTALLED IN EQUIPMENT TO PREVENT DAMAGE DURING SHIPPING, STORAGE AND/OR ERECTION.
- D. PROVIDE ALL MATERIALS NOT FURNISHED BY OWNER REQUIRED FOR THE COMPLETE INSTALLATION SUCH AS BOLTS, NUTS, NAILS, LUMBER, ANCHOR BOLTS, MARKERS, TOUCH UP PAINTS, WARNING SIGNS AS MAYBE REQUIRED BY APPLICABLE CODES HAVING JURISDICTION AND MISCELLANEOUS HARDWARE.
- E. PROVIDE ON ALL WIRE AND CABLE ENDS PHASE CODING USING 1/2 IN. WIDE COLOR TAPE SPIRALED FOR 12 IN. OF WIRE LENGTH.
- F. PROVIDE ENGRAVED PLASTIC NAMEPLATES IDENTIFYING INDIVIDUAL CIRCUIT BREAKERS, PANELS, BOXES AND PARTS NOT PROVIDED BY OTHERS.
- G. PROVIDE MANUFACTURED PLUGS TO SEAL BOX AND CONDUIT OPENINGS THAT RESULTED FROM ALTERATIONS.
- H. PROVIDE NECESSARY CUTTING, PATCHING, EXCAVATION AND BACKFILL AS REQUIRED FOR THE ELECTRICAL INSTALLATION.
- I. INSTALL AND DELIVER TO THE OWNER A COMPLETE WORKING SYSTEM AS DESCRIBED HEREIN. THE SYSTEM MUST BE A. INSTALLED AND TESTED TO THE OWNER'S SATISFACTION FINAL CUT OVER AND SHUTDOWNS WILL BE ON AN OVERTIME BASIS AND SCHEDULED BY THE OWNER. CONTRACTOR TO INCLUDE OVERTIME COSTS IN QUOTATION.
- J. BE RESPONSIBLE FOR CORRECTING ALL CODE VIOLATIONS OF ANY APPLICABLE CODES DIRECTIONS GIVEN BY ANY AUTHORITY HAVING JURISDICTION.
- K. THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES FOR PERMITS AND APPROVALS FROM AUTHORITIES HAVING JURISDICTION COSTS OF PERMITS AND FEES ARE TO BE INCLUDED IN CONTRACTORS QUOTATION.

- L. CONDUCT POST-CONSTRUCTION INSPECTION AND TESTING OF FACILITY SERVICES. CONTRACTOR TO PROVIDE ALL REQUIRED TEST EQUIPMENT AS PART OF THEIR CONTRACT.
- M. CONDUCT FINAL INSPECTION OF THE PROJECT
- N. FREIGHT, HANDLING, AND RECEIVING OF COMPONENTS, DELIVERY TO JOB SITE, AND RIGGING OF EQUIPMENT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- O. ALL MATERIAL AND LABOR WILL BE SUPPLIED BY THE CONTRACTOR.
- P. GUARANTEE ALL MATERIALS AND LABOR FOR ONE YEAR FROM THE FINAL ACCEPTANCE DATE OF THE OWNER.

COORDINATION OF SCOPE CHANGES

FIELD CHANGES:

1. ALL CHANGES ISSUED BY THE OWNER SHALL BE IN WRITING. THIS AUTHORIZATION MAY TAKE THREE FORMS:
 - A. DRAWING REVISION WITH A TRANSMITTAL LETTER AUTHORIZING THE CONTRACTOR TO PROCEED PENDING SUBMISSION OF A REQUEST FOR CHANGE.
 - B. FIELD ORDER FOR MINOR WORK
 - C. REQUEST FOR CHANGE BY OWNER TO CONTRACTOR WITH AUTHORIZATION TO PROCEED UPON APPROVAL OF COSTS.
 2. SHOULD THE CONTRACTOR BELIEVE THAT A SITUATION HAS DEVELOPED THAT MAY BE CONSTRUED AS A CHANGE, HE SHALL NOTIFY THE OWNER BY ISSUANCE OF A PROPERLY EXECUTED REQUEST FOR CHANGE FORM WITH APPROPRIATE BACK-UP OF ALL COSTS INVOLVED.
 3. THE CONTRACTOR SHALL MAINTAIN A LIST OF SCOPE CHANGES. THE ITEMS ON THE LIST WILL BE DISCUSSED AT THE WEEKLY PROGRESS MEETING OR AT THE END OF SHIFT MEETING WITH OWNER.
- CHANGES MAY BE APPROVED IN ONE OF THE FOLLOWING FORMS:
- A. NEGOTIATED LUMP SUM
 - B. UNIT PRICE
 - C. TIME AND MATERIAL W/10% OVERHEAD AND 5% PROFIT
 - D. COST PLUS FEE

OWNER RESERVES THE RIGHT TO SELECT THE FORM.

- #### 4. PROCEDURE FOR CHANGE ORDER REQUEST

THE REQUESTS FOR CHANGE SHALL BE SUBMITTED TO OWNER'S REPRESENTATIVE AND PROCESSED IN ACCORDANCE WITH ONE OF THE FOLLOWING CATEGORIES:

- A. LUMP SUM:
- THE CONTRACTOR SHALL SUBMIT LUMP SUM ESTIMATE OF THE COST AND TIME REQUIRED TO PERFORM THE WORK AS SPECIFIED ON THE WORK ORDER. BACKUPS SHALL BE AS STATED IN THE PURCHASE ORDER. THE CONTRACTOR SHALL NUMBER THE ESTIMATE LETTERS FOR REFERENCE.
- B. TIME AND MATERIAL:
- THE CONTRACTOR'S ORIGINAL COPY OF EACH TIME AND MATERIAL (T&M) SHEET SHALL ACCOMPANY THE CHANGE ORDER REQUEST AND SHALL LEGIBLY INCLUDE:
- THE CONTRACTOR'S COMPANY NAME PREPRINTED
 - DATE OF WORK
 - OWNER'S PURCHASE ORDER NUMBER
 - SIGNATURE OF OWNER'S REPRESENTATIVE
 - SIGNATURE OF CONTRACTOR'S REPRESENTATIVE
 - OWNER'S COST CODE
 - OWNER'S AUTHORIZED SIGNATURE (IF REQUIRED)
 - NAME OF CONTRACTOR'S PERSONNEL INVOLVED, INCLUDING BADGE PAYROLL NUMBER

INTERFERENCES

1. THE CONTRACTOR SHALL OBTAIN CLEARANCE FROM THE OWNER'S PROJECT REPRESENTATIVE PRIOR TO INSTALLING EQUIPMENT OR MATERIAL AT ANY LOCATION WHERE INTERFERENCES MIGHT DEVELOP. SHOULD THE CONTRACTOR PROCEED WITHOUT OBTAINING SUCH CLEARANCES AND INTERFERENCES DO DEVELOP, THE CONTRACTOR MUST COMPLETE HIS RELOCATION, ETC., AND SUCH RELOCATION SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.
2. THE PLANS ARE GENERALLY DIAGRAMMATIC AND THE CONTRACTOR SHALL COORDINATE HIS WORK SO THAT INTERFERENCES BETWEEN NEW CONDUIT AND EXISTING CONDUIT OR UNDERGROUND SERVICES SHALL BE AVOIDED. CONTRACTOR SHALL NOTIFY OWNER 10 DAYS PRIOR TO ANY POSSIBLE INTERRUPTION.
3. IN NO CASE SHALL THE CONTRACTOR WELD, CUT, BURN OR DRILL ANY STRUCTURAL MEMBER OR MOUNT ELECTRICAL EQUIPMENT OR FACILITATE CONDUIT INSTALLATION WITHOUT HAVING PREVIOUSLY RECEIVED APPROVAL IN WRITING FROM THE OWNER'S REPRESENTATIVE.
4. IN THE EVENT OF DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS, THE PRICE QUOTED BY THE CONTRACTOR SHALL BE BASED ON THE MOST COMPLETE DRAWINGS AND/OR SPECIFICATION REQUIREMENTS AND/OR HIGHEST COST.

EXCAVATION NOTES:

1. WHEN A GRADUAL SLOPE CANNOT BE MAINTAINED IN ANY EXCAVATION (e.g., DUE TO THE PRESENCE OF ADJACENT STRUCTURE), THE SITE SHALL BE PROTECTED AGAINST CAVING AND MOVEMENT OF SOIL AT ALL TIMES. THIS SHALL BE ACCOMPLISHED BY USE OF H-PILES AND BREAST-BOARDS, INTERLOCKING STEEL SHEETING OR OTHER APPROPRIATE METHODS AND MATERIALS.
2. THE CONTRACTOR WILL BE REQUIRED TO SAFELY SUPPORT AND MAINTAIN ADJACENT AND ABUTTING PROPERTY AND STRUCTURES.
3. THE CONTRACTOR SHALL PROTECT ANY UNDERPINNING FROM HEAVING DUE TO FROST AND BEARING WASHOUT.
4. DRAWINGS ARE OF A DIAGRAMMATIC NATURE. CONTRACTOR SHALL EXCAVATE CAREFULLY, HAND DIGGING AS NECESSARY, TO PREVENT DAMAGE TO EXISTING UNDERGROUND FACILITIES.
5. CONTRACTOR SHALL VERIFY AND LOCATE ALL UNDERGROUND UTILITIES, STORM DRAINS, SEWER LINES, ETC., PRIOR TO STARTING WORK.
6. CONTRACTOR SHALL COORDINATE ALL REQUIRED UTILITY INSPECTIONS, TOWNSHIP INSPECTIONS, SREC OR STATE INSPECTIONS OR MEETINGS.

ELECTRICAL NOTES

1. REFER TO PROJECT ENGINEERING DRAWINGS AND SPECIFICATIONS.
2. ALL WORK TO BE PERFORMED BY ELECTRICAL CONTRACTOR SHALL BE IN STRICT ACCORDANCE WITH LOCAL AND BUILDING ELECTRICAL CODES AND SPECIFICATIONS AND SHALL BE PERFORMED BY DULY LICENSED ELECTRICIANS. WORK SHALL BE GOVERNED BY PREVAILING WAGE REQUIREMENTS.
3. THE FOLLOWING NOTES APPLY TO THE ELECTRICAL SYSTEM INSTALLATION AND ARE LIMITED ONLY BY THE REQUIREMENTS SET FORTH IN THE LATEST ADOPTED COPY OF THE NATIONAL ELECTRICAL CODE, STATE AND LOCAL CODES.
4. THE ELECTRICAL SYSTEM SHOWN ON DRAWINGS INCLUDE PLANS, ELEVATIONS, DETAILS AND DIAGRAMS. ANY DEVIATION FROM THE DRAWINGS OR SPECIFICATIONS MUST HAVE THE APPROVAL OF THE OWNER'S ENGINEER.
5. ALL UNUSED OPENINGS IN FITTINGS, BOXES, ETC., SHALL BE PLUGGED. DURING CONSTRUCTION, ALL OPENINGS SHALL BE KEPT CLOSED TO PREVENT MOISTURE AND FOREIGN MATERIAL, SUCH AS DIRT AND DEBRIS, FROM ENTERING THE CONDUIT SYSTEM.
6. ALL FIELD DRILLED HOLES, CUT EDGES, AND WELDED AREAS OF GALVANIZED STEEL SHALL BE DEBURRED AND TOUCHED UP WITH GALVO-WELD PAINT. STEEL NOT FURNISHED GALVANIZED SHALL BE PAINTED.
7. ALL ITEMS NOT FURNISHED BY OTHERS AND REQUIRED TO COMPLETE THE INSTALLATION IN A GOOD, WORKMAN-LIKE MANNER SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR. THESE ITEMS MAY CONSIST OF MISCELLANEOUS STEEL SUPPORTS, CONDUIT STRAPS, CONDUIT CLAMPS, WIRE CONNECTORS, CONDUIT UNIONS, INSULATING TAPES, SEALING COMPOUNDS, MASONRY ANCHORS, NUTS AND BOLTS, ETC.
8. THE ELECTRICAL CONTRACTOR SHALL PERFORM ALL CUTTING AND DRILLING NECESSARY FOR THE PROPER INSTALLATION OF ALL ELECTRICAL WORK.
9. CONTRACTOR TO PROVIDE ALL TEMPORARY POWER AS REQUIRED FOR HIS WORK AND ALL SUBCONTRACTORS.
10. WIRE SPLICES SHALL BE KEPT TO A MINIMUM, AND MADE IN PROPER FITTINGS. SPLICES SHALL BE MADE WITH SUITABLE INSULATED WIRE CONNECTORS.
11. FREIGHT, HANDLING AND RECEIVING OF ALL COMPONENTS EITHER OWNER OR CONTRACTOR SUPPLIED, DELIVERY TO JOB SITE, AND RIGGING OF EQUIPMENT AND MATERIAL WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. CONTRACTOR SHALL COORDINATE WITH OWNER REGARDING SCHEDULING AND DELIVERY OF ANY OWNER SUPPLIED EQUIPMENT.

GROUNDING NOTES

1. CONTRACTOR TO FURNISH AND INSTALL ALL BUS AND HARDWARE AND TO ESTABLISH GROUND CONNECTIONS BETWEEN NEW EQUIPMENT AND THE EXISTING GROUND NETWORK. ANY GROUNDING REQUIRED WHICH IS INDICATED ON DRAWINGS OR NOT SHALL BE THE RESPONSIBILITY OF CONTRACTOR TO SUPPLY AND INSTALL TO MEET ANY CODE OR AHJ REQUIREMENT.
2. GROUNDING AND BONDING FOR PROTECTION OF THE ELECTRICAL SYSTEM AND EQUIPMENT SHALL BE INSTALLED TO MINIMIZE DAMAGE IN CASE OF GROUND FAULTS BY PROVIDING LOW FAULT IMPEDANCE, THEREBY LIMITING THE VOLTAGE TO GROUND AND FACILITATING THE OPERATION OF OVER-CURRENT DEVICES.
3. CONTRACTOR TO FURNISH AND INSTALL ALL FITTINGS, RODS, CLAMPS AND WIRE, TO ESTABLISH GROUND CONNECTIONS BETWEEN NEW EQUIPMENT AND THE EXISTING GROUND NETWORK.
4. A GROUND CONDUCTOR SHALL BE RUN IN ALL CONDUITS AND RACEWAYS TO BOND ELECTRICAL EQUIPMENT TO GROUND SYSTEM UNLESS OTHERWISE NOTED.
5. GROUNDING SHALL BE PROVIDED BY A GROUNDING CABLE CONNECTION FROM THE EQUIPMENT TO THE LOCAL GROUND NETWORK, AT POINTS INDICATED ON THIS DRAWING OR OTHER SUITABLE GROUND POINTS AS REQUIRED BY THE NEC.
6. GROUNDING AND BONDING FOR PROTECTION OF THE ELECTRICAL SYSTEM AND EQUIPMENT SHALL BE INSTALLED TO MINIMIZE DAMAGE IN CASE OF GROUND FAULTS BY PROVIDING LOW FAULT IMPEDANCE, THEREBY LIMITING THE VOLTAGE TO GROUND AND FACILITATING THE OPERATION OF OVER- CURRENT DEVICES.
7. ALL EQUIPMENT COVERED UNDER THIS STANDARD SHALL HAVE GROUND LUGS SIZED TO ACCEPT ONE SIZE SMALLER WIRE THAN ITS FEEDER.
8. FOR ABOVEGROUND WORK, GROUND CONDUCTORS SHALL BE SOLDERLESS, PRESSURE TYPE (BOLT ON) AS MANUFACTURED BY BURNDY OR ANDERSON.

CLEANING

1. GENERAL: EXECUTE CLEANING, DURING PROGRESS OF THE WORK, AND AT COMPLETION OF THE WORK, AS REQUIRED BY GENERAL CONDITIONS.
2. DISPOSAL REQUIREMENTS: CONDUCT CLEANING AND DISPOSAL OPERATIONS TO COMPLY WITH CODES, ORDINANCES, REGULATIONS, AND ANTI-POLLUTION LAWS AND IN FULL COMPLIANCE WITH ALL NJDEP REGULATIONS.
3. PRODUCTS: USE ONLY THOSE CLEANING MATERIALS WHICH WILL NOT CREATE HAZARDS TO HEALTH OR PROPERTY, NOR DAMAGE SURFACES.
4. USE ONLY THOSE CLEANING MATERIALS AND METHODS RECOMMENDED BY THE MANUFACTURER OF THE SURFACE MATERIAL TO BE CLEANED.
5. EXECUTION: EXECUTE PERIODIC CLEANING TO KEEP THE WORK, THE SITE, AND ADJACENT PROPERTIES FREE FROM ACCUMULATIONS OF WASTE MATERIALS, RUBBISH, AND WINDBLOWN DEBRIS, RESULTING FROM CONSTRUCTION OPERATIONS. PROVIDE ON-SITE CONTAINERS FOR THE COLLECTION OF WASTE MATERIALS, DEBRIS AND RUBBISH. REMOVE WASTE MATERIALS, DEBRIS AND RUBBISH FROM THE SITE PERIODICALLY AND DISPOSE OF AT LEGAL DISPOSAL AREAS AWAY FROM THE SITE.
6. DUST CONTROL: CLEAN EXTERIOR SPACES PRIOR TO THE START OF FINISH PAINTING AND CONTINUE CLEANING ON AN AS-NEEDED BASIS UNTIL PAINTING IS FINISHED.
7. SCHEDULE OPERATIONS SO THAT DUST AND OTHER CONTAMINATES RESULTING FROM CLEANING PROCESS WILL NOT FALL ON WET, NEWLY-COATED SURFACES.

FINAL CLEANING

1. UPON COMPLETION OF WORK, CONTRACTOR WILL PROVIDE A BROOM CLEAN SPACE.
2. REMOVE GREASE, MASTIC, ADHESIVES, DUST STAINS, FINGERPRINTS, LABELS AND OTHER FOREIGN MATERIALS FROM SITE EXPOSED INTERIOR AND EXTERIOR SURFACES.
3. WASH AND SHINE GLAZING AND MIRRORS. POLISH GLOSSY SURFACES TO A CLEAR SHINE.
4. PRIOR TO FINAL COMPLETION OR OWNER OCCUPANCY, CONTRACTOR SHALL CONDUCT AN INSPECTION OF SIGHT EXPOSED INTERIOR AND EXTERIOR SURFACES AND ALL WORK AREAS, TO VERIFY THAT THE ENTIRE WORK IS CLEAN.

DEMOLITION

1. THE GENERAL CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS AS REQUIRED TO COMPLETE DEMOLITION AND REMOVAL OF ALL ITEMS AS INDICATED OR AS OTHERWISE DIRECTED BY OWNER INCLUDING TEMPORARY PROTECTION AS INDICATED BELOW:
 - A. PROVIDE TEMPORARY PROTECTIONS AS REQUIRED TO PRESERVE EXISTING ITEMS INDICATED TO REMAIN AND RESTORE DAMAGED WORK TO THE CONDITION EXISTING PRIOR TO THE START OF WORK, UNLESS OTHERWISE DIRECTED.
 - B. CONTROL DUST AND DIRT CAUSED BY DEMOLITION OPERATIONS. AREA OUTSIDE THE AREA OF WORK SHALL BE KEPT CLEAN FROM DIRT AND DUST.
 - C. ALL ACTIVE MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS TO REMAIN SHALL BE FULLY PROTECTED FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.
2. TEMPORARY BRACING, SHORING, CENTERING, AND SIMILAR WORK SHALL BE PROVIDED AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING CONSTRUCTION AND FINISHES.
3. THE GENERAL CONTRACTOR SHALL EXECUTE ALL WORK WITHIN THE REGULATIONS OF THE OWNER FOR DEMOLITION AND REMOVAL OF DEBRIS, INCLUDING OVERTIME WORK REQUIRED.
4. ALL WORK DEMOLISHED SHALL BE REMOVED FROM THE PREMISES EXCEPT ITEMS TO BE REUSED OR RETURNED TO OWNER OR AS OTHERWISE DIRECTED.
5. THE GENERAL CONTRACTOR SHALL AT ALL TIMES PROTECT THE PROPERTY OF THE OWNER, INCLUDING BUT NOT LIMITED TO, WINDOWS, FLOOR AND CEILING TILE, PUBLIC TOILETS, ELEVATORS, DOORS, BUCKS, ELECTRICAL AND AIR CONDITIONING EQUIPMENT, CONVECTOR ENCLOSURES, ETC.
6. UPON COMPLETION OF THE DEMOLITION WORK, THE GENERAL CONTRACTOR SHALL PROVIDE THAT ALL AREAS BE LEFT BROOM CLEAN.
7. ALL EQUIPMENT SHOWN ON DRAWINGS TO BE DEMOLISHED SHALL BE COORDINATED WITH OWNER. OWNER TO INSTRUCT CONTRACTOR AS TO DISPOSAL OF ALL EQUIPMENT.

PRE-PURCHASED EQUIPMENT

<u>QTY</u>	<u>ITEM</u>
NONE	

EQUIPMENT BY CONTRACTOR NOT LIMITED TO:

QTY	ITEM
LOT	HARDWARE, SWITCHES, CONDUIT, WIRE, STEEL SUPPORTS, ETC.
1	10/14MVA TRANSFORMER AND ACCESSORIES
LOT	ALL OTHER MATERIAL AND EQUIPMENT NOT PROVIDED BY OWNER OR AS NECESSARY TO COMPLETE THE WORK.

PROJECT PHASING PLAN

1. CONTRACTOR SHALL PROVIDE OWNER WITH A DETAILED SCHEDULE OF WORK TO BE PERFORMED AS WELL AS ALL REQUIRED SHUTDOWNS AND DURATION OF SHUTDOWNS TO COMPLETE THE WORK. CONTRACTOR MAY WORK FROM 7AM TO 5PM DAILY MON-FRI. ANY WORK BEYOND THESE HOURS OR SATURDAY OR SUNDAY MUST BE APPROVED BY THE OWNER.
2. SHUTDOWN PERIOD SHALL BE KEPT TO THE MINIMUM TIME REQUIRED TO PERFORM WORK. THE FACILITY SHALL BE PUT BACK ON LINE AND OPERATIONS VERIFIED AT COMPLETION OF EACH SHUTDOWN.
3. CONTRACTOR TO PROVIDE ANY "LAY DOWN AREA" REQUEST FOR EQUIPMENT AT SITE. CONTRACTOR SHALL INCLUDE COSTS FOR TEMPORARY FENCING OF THE SITE AND ANY NECESSARY SECURITY GUARDS REQUIRED TO PROTECT DELIVERED, NOT YET INSTALLED, EQUIPMENT.
4. AS THIS PROJECT HAS A DRIVEN POST, GROUND MOUNTED RACKING SYSTEM, THE CONTRACTOR SHALL SECURE THE SERVICES OF A LICENSED RIG TO REQUIRE ALL REQUIRED SOILS AND PULL OUT TESTS TO DETERMINE REQUIRED DRIVEN POST LENGTHS, THIS DATA MUST BE PROVIDED TO OWNER'S ENGINEER FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION. SUCH DATA MUST BE SUPPLIED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF NJ.
5. ANY NECESSARY SITE WORK SHOULD BE WORKED JOINTLY WITH THE LANDSCAPE PLAN TO MINIMIZE SOIL MOVEMENT.
6. AS SOON AS PRACTICAL, CONTRACTOR SHALL INSTALL PERMANENT FENCING TO PROTECT EQUIPMENT AND PERSONNEL.
7. SITE LIGHTING SHOULD BE MINIMIZED. CONTRACTOR TO OBTAIN APPROVAL FROM OWNER FOR ANY TEMPORARY SITE LIGHTING FOR SECURITY.
8. ALL CIVIL WORKS, AS MUCH AS PRACTICAL, SHALL BE INSTALLED PRIOR TO RECEIPT OF EQUIPMENT.

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NEW 26KV TRANSFORMER
REPLACEMENT CN-273

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

06-28-23	PROGRESS ISSUE - 75%
07-28-23	ISSUED FOR DCA REVIEW
07-28-23	ISSUED FOR BID

[illegible]

Date	Issued	Revision No.
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Drawing Title: ELECTRICAL GENERAL NOTES	
Scale: AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG
AMA Project No.: FC-23-054	

UNDERGROUND GENERAL NOTES

1. ALL ELECTRICAL UNDERGROUND INSTALLATIONS INCLUDING GROUNDING SYSTEM SHALL COMPLY WITH OSHA (OCCUPATIONAL SAFETY HEALTH ACT), THE LATEST EDITIONS OF THE NATIONAL ELECTRICAL CODE APPLICABLE, STATE AND LOCAL CODES AND REGULATIONS AND ELECTRICAL JOB SPECIFICATION.
2. THE EQUIPMENT AND MATERIALS FURNISHED SHALL BE LABELED, CERTIFIED AND LISTED. ACCEPTED OR OTHERWISE DETERMINED TO BE SAFE FOR THEIR USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY, SUCH AS ONE OF THE FOLLOWING, WHERE APPLICABLE UNDERWRITER'S LABORATORIES INC. (U.L.) FACTORY MUTUAL ENGINEERING CORP. (F.M.).
3. CONDUIT BANK AND GROUNDING SYSTEM SHALL BE INSTALLED PER UNDERGROUND INSTALLATION DRAWINGS AND CONSTRUCTION DETAILS.
4. ALL UNDERGROUND CONDUITS & ELBOWS SHALL BE PVC SCHED 40 UNLESS NOTED OTHERWISE. MINIMUM CONDUIT SIZE SHALL BE 1".
5. ALL UNDERGROUND HORIZONTAL BENDS AND OFFSETS WILL BE MADE IN FIELD AND SHALL HAVE A MINIMUM BENDING RADIUS OF 48". ALL STUB-UPS UNLESS OTHERWISE SPECIFIED WILL BE FIELD MADE CONDUIT BENDS HAVING A MINIMUM BENDING RADIUS OF 24" FOR 2" CONDUIT AND SMALLER AND 36" RADIUS FOR 3" CONDUIT, 48" FOR 5" CONDUIT AND LARGER.
6. DUCT BANKS SHALL BE ENCASED IN RED COLORED CONCRETE ENVELOPES HAVING A MINIMUM STRENGTH OF 2500 PSI. DUCT BANK SHALL BE FREE OF VOIDS AND SHALL HAVE A MINIMUM COVER OF 3" ENCASING THE PERIPHERAL CONDUITS OR REBARS IN BANK.
7. CONCRETE SHALL BE IN ACCORDANCE WITH JOB SPEC. EXCEPT THAT THE AGGREGATE SIZE SHALL NOT EXCEED 1/2 " TO ACHIEVE COLORING. 15 TO 20 LB. OF RED OXIDE SHALL BE ADDED PER CUBIC YARD OF CONCRETE.
8. CONDUIT STUB-UPS FROM UNDERGROUND BANKS SHALL BE PLUMB AND ACCURATELY LOCATED AS DIMENSIONED ON THE INSTALLATION PLAN DRAWING.
9. THE TOP OF CONCRETE ENCASEMENT OF DUCT BANKS AND CONDUIT RUNS SHALL BE A MINIMUM OF 18 INCHES BELOW GRADE FOR STEEL CONDUITS AND 24 INCHES FOR PVC CONDUITS IN NON-TRAFFIC AREAS. THE TOP OF THE ENCASEMENT SHALL BE A MINIMUM 30 INCHES BELOW THE ROAD SURFACE OR RAIL BASE AND SHALL BE REINFORCED PER UNDERGROUND DETAILS.
10. WHERE CONDUITS RISE ABOVE GRADE THE CONCRETE ENCASEMENT SHALL EXTEND 4" ABOVE GRADE AS PER UNDERGROUND CONDUIT STUB-UP DETAILS.
11. ALL SPARE CONDUITS SHALL BE STUBBED-UP FROM UNDERGROUND BANKS AND SEALED UTILIZING A COUPLING AND SQUARE HEAD PLUG.
12. CONTRACTOR SHALL PULL PROPER SIZE PLUG THRU ALL U/G CONDUITS TO INSURE OF NO OBLIGATIONS, CLEAN OUT AND INSTALL PULL WIRE OF PROPER SIZE IN ALL U/G CONDUITS, WITH 18" FREE LENGTH EACH END. WHEN CONDUITS ARE CAPPED OR PLUGGED, PULL WIRES WILL BE LOOPED INSIDE CONDUIT AT EACH END FOR FUTURE USE.
13. COPPER GROUND CONDUCTORS SHALL BE LAID DIRECTLY IN THE GROUND WITH SLACK, WITHOUT BREAKS OR JOINTS AND SHALL HAVE 12" MINIMUM COVER. GROUND CONDUCTORS RUN UNDER ROADWAYS OR OTHER HEAVY TRAFFIC AREAS, SHALL HAVE 24" MINIMUM COVER AND SHALL BE RUN IN RIGID METAL CONDUIT OR PIPE SLEEVES AS SPECIFIED IN UNDERGROUND DETAILS.

ABOVE GROUND POWER GENERAL NOTES

1. ALL ELECTRICAL INSTALLATIONS SHALL BE COMPLETED IN A WORKMANLIKE MANNER IN CONFORMANCE WITH ELECTRICAL SPECIFICATIONS FOR THIS CONTRACT, THE NATIONAL ELECTRICAL CODE, ALL LOCAL CODES AND REGULATIONS. (AND ALL APPLICABLE DRAWINGS AND DETAILS)
2. ALL EQUIPMENT AND MATERIALS FURNISHED TO COMPLETE INSTALLATIONS SHALL BE TESTED, LABELED OR OTHERWISE DETERMINED TO BE SUITABLE FOR THEIR INTENDED USE BY A RECOGNIZED INDEPENDENT TESTING LABORATORY, SUCH AS UNDERWRITERS LABORATORIES INC., OR FACTORY MUTUAL ENGINEERING CORP. (U.L. OR F.M.)
3. BEFORE INSTALLING ELECTRICAL RACEWAY SYSTEM, A CAREFUL CHECK SHALL BE MADE TO AVOID INTERFERENCES WITH EQUIPMENT, PIPING AND STRUCTURES. THE RACEWAY SYSTEM IS SHOWN DIAGRAMMATICALLY AND EXACT ROUTING MUST BE DETERMINED IN FIELD, WHERE SPECIFIC DIMENSIONS ARE NOT GIVEN. PARALLEL RUNS WITH HOT SURFACES MUST MAINTAIN A MINIMUM CLEARANCE OF 12" A MINIMUM CLEARANCE OF 6" MUST BE MAINTAINED WHEN CROSSING A HOT PIPE.
4. RACEWAY SYSTEM SHALL BE PROPERLY SUPPORTED. SUPPORTS SHALL NOT BE MORE THAN 10'-0" APART AND WITHIN 3'-0 OF A BOX, FITTING OR CABINET. RACEWAY SYSTEM SHALL BE GROUNDED.
5. ALL MV/HV POWER WIRING CONDUITS, COUPLINGS AND ELBOWS INSTALLED INDOORS SHALL BE RIGID STEEL OR INTERMEDIATE METAL CONDUIT WITH A HOT DIPPED GALVANIZED COATING INSIDE AND OUTSIDE. THREADS SHALL HAVE A PROTECTIVE ZINC COATING. UNLESS OTHERWISE NOTED.
6. FOR RIGID GALVANIZED STEEL CONDUIT, THE THREADED JOINTS SHALL BE MADE UP USING A METAL OXIDE PAINT ON THE THREADS. ALL JOINTS IN METALLIC CONDUIT SHALL BE THREADED, FASTENED WRENCH THREADED, FASTENED WRENCH TIGHT WITH NO LESS THAN 5 THREADS ENGAGED.
7. ALL MV/HV CONDUITS, COUPLINGS, ELBOWS INSTALLED ABOVE GROUND OUTDOORS SHALL BE RIGID ALUMINUM. THREADS SHALL HAVE ANTI-GALLING PROTECTIVE COATING (BURNDY PENTRAX A13)
8. MINIMUM CONDUIT SIZE FOR ABOVE GROUND INSTALLATION SHALL BE 3/4.
9. ALL LOW POINTS OF CONDUIT SYSTEMS AND ENCLOSURES THAT MAY TRAP CONDENSATE SHALL BE SUITABLY DRAINED, WHERE PRACTICAL ENCLOSURES SHALL ALSO HAVE A BREATHER FITTING INSTALLED IN TOP OR A UNIVERSAL BREATHER DRAIN FITTING SHALL BE INSTALLED IN BOTTOM.
10. ALL UNUSED OPENINGS IN FITTINGS, BOXES, ETC., SHALL BE PLUGGED WITH A CONDUIT PLUG. DURING CONSTRUCTION, ALL OPENINGS SHALL BE KEPT CLOSED TO PREVENT MOISTURE AND FOREIGN MATERIAL, SUCH AS DIRT AND DEBRIS, FROM ENTERING THE CONDUIT SYSTEM.
11. ALL FIELD DRILLED HOLES, CUT EDGES AND WELDED AREAS OF GALVANIZED STEEL SHALL BE DEBURRED AND TOUCHED UP WITH GALVO-WELD PAINT. STEEL NOT FURNISHED GALVANIZED SHALL BE PAINTED IN ACCORDANCE WITH SPECIFICATIONS.
12. CONTRACTOR SHALL PHASE OUT ALL TRANSFORMER, SWITCHGEAR AND MOTOR CONTROL CENTERS SO THAT LIKE BUSES ARE THE SAME PHASE.
13. CONNECTIONS IN MOTOR TERMINAL BOXES AND ALL OTHER SPICES, WHERE NECESSARY, SHALL BE MADE WITH SOLDERLESS CONNECTORS PER MANUFACTURES INSTRUCTIONS.
14. JOINTS BETWEEN ALUMINUM AND STEEL COMPONENTS SHALL BE MADE BY COATING THE THREADS WITH ZINC PETROLEUM JELLY COMPOUND OR ZINC CHROMATE. RED LEAD SHALL NOT BE USED.
15. STANDARD RADIUS FACTORY MADE CONDUIT ELBOWS ARE ACCEPTABLE IN ABOVEGROUND INSTALLATIONS. FIELD BEND CONDUITS SHALL HAVE A MINIMUM OF 6 TIMES INTERNAL CONDUIT DIAMETER. CONDUIT BENDS SHALL NEVER BE SO SHARP AS TO ROUGHEN THE INSIDE SURFACE OF THE CONDUIT OR FLATTEN OR REDUCE THE INSIDE CROSS SECTIONAL AREA.
16. CONDUIT FITTINGS SHALL BE STANDARD THREADED WITH COVERS AND GASKETS, TYPE FORM B FERALOY OR APPROVED EQUAL, FOR UNCLASSIFIED & CLASS 1, DIV. 2 AREAS.
17. DRAIN SEALS SHALL BE INSTALLED WHERE CONDUITS ENTER ENCLOSURES FROM ABOVE IN OUTDOOR AREAS AND WHEREVER SHOWN ON PLAN AND DETAIL DRAWINGS.
18. COMMERCIAL PULLING COMPOUND, "POLYEAS" FOR POLYETHYLENE INSULATION. PULLING DISTANCE SHALL NOT EXCEED THE EQUIVALENT OF 300 FEET STRAIGHT RUN OR A PULL SHALL CONTAIN NOT MORE THAN THE EQUIVALENT OF THREE (3) 90° BENDS.

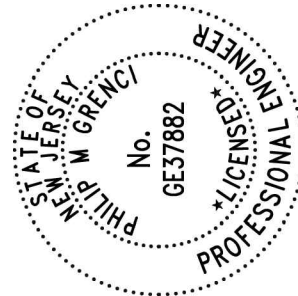
ABOVE GROUND POWER CABLE AND WIRE NOTES

1. THE SMALLEST WIRE SIZE FOR POWER CIRCUITS 600 VOLTS AND BELOW SHALL BE #12 AWG, EXCEPT THAT #14 AWG SHALL BE USED FOR CONTROL.
2. WHERE WIRES IN CONDUIT ARE USED. WIRES FOR POWER & CONTROL LEADS TO MOTORS 600 VOLTS AND BELOW SHALL BE INSTALLED IN THE SAME CONDUIT WHEN THE POWER WIRE IS #2 AWG. OR SMALLER. FOR POWER WIRES LARGER THAN #2 AWG., POWER AND CONTROL WIRES SHALL BE INSTALLED IN SEPARATE CONDUITS.
3. POWER AND CONTROL WIRES SHALL BE LABELED WITH A WIRE NUMBER AS SHOWN IN ELEMENTARY AND INTERCONNECTION WIRING DIAGRAMS. MULTICONDUCTOR CABLES SHALL BE LABELED WITH A UNIQUE CABLE NUMBER. SEE CONDUIT AND CABLE SCHEDULE FOR DESCRIPTION.
4. THE COLOR CODING FOR SINGLE CONDUCTOR WIRES SHALL BE AS FOLLOWS:
 - A. POWER PHASE LEADS SHALL BE BLACK.
 - B. ALL CONTROL LEADS INCLUDING THOSE FOR CONTROL STATIONS, INTERLOCK CIRCUITS, CURRENT TRANSFORMERS ETC. SHALL BE RED.
 - C. ALL GROUNDING SHALL BE EITHER BARE OR HAVE A GREEN COVERING.
 - D. POWER SUPPLY FOR INSTRUMENTS SHALL BE YELLOW (LIVE LINE) AND WHITE FOR NEUTRAL.
 - E. TWO WIRE 120VAC BRANCH CIRCUITS SHALL BE AS FOLLOWS:
 - a. THE GROUNDED CONDUCTOR SHALL BE WHITE
 - b. THE UNGROUNDED CONDUCTOR SHALL BE BLACK
 - c. ALL BRANCH CIRCUIT WIRES SHALL BE IDENTIFIED AND LABELED TO MATCH PANEL CIRCUIT DIRECTORIES.
5. MULTICONDUCTOR 600 VOLT POWER AND CONTROL CABLES, CONDUCTORS SHALL BE BLACK WITH NUMERICAL IDENTIFICATION.
6. WIRES INSTALLED IN CONDUIT:
 - A. FOR SERVICES 600 VOLT & BELOW WIRE #14 AWG & LARGER SHALL BE 600 VOLT SINGLE CONDUCTOR, STRANDED COPPER HEAT AND MOISTURE RESISTANT THERMOPLASTIC INSULATION 75°C TYPE THHN/THWN.
 - B. FOR 4.16KV SERVICE, WIRE SHALL BE 5KV, SINGLE CONDUCTOR, STRANDED COPPER, SHIELDED, WITH ETHYLENE PROPYLENE RUBBER (EPR) INSULATION AND AN OVERALL PVC JACKET.
 - C. FOR 26.4KV SERVICE, WIRE SHALL BE 35KV, SINGLE CONDUCTOR, STRANDED COPPER, SHIELDED, WITH ETHYLENE PROPYLENE RUBBER (EPR) INSULATION & AN OVERALL PVC JACKET.
7. ALL CABLES FURNISHED WITH SHIELDING SHALL BE TERMINATED WITH STRESS CONES AND GROUNDED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION
8. CONTROL WIRING SHALL BE IDENTIFIED USING A SLEEVE TYPE WIRE MARKERS WITH IDENTIFICATION CORRESPONDING TO THAT ON WIRING DIAGRAMS. WIRE MARKERS SHALL BE INSTALLED AT ALL TERMINAL AND JUNCTION POINTS. WIRE MARKER SHALL BE RAYCHEM "TMS" HEAT SHRINKABLE SLEEVES.

RIGGING HANDLING REQUIREMENTS

- CONTRACTOR IS RESPONSIBLE FOR THE PLANNING, APPROVAL PROCESS AND EXECUTION OF RIGGING AND REMOVING EXISTING TRANSFORMER T-1 FROM ITS CURRENT LOCATION AND RIGGING THE NEW TRANSFORMER INTO THE SAME LOCATION.
- SCOPE OF WORK INCLUDES BUT NOT LIMITED TO THE FOLLOWING:
1. THE EXISTING TRANSFORMERS HAVE BEEN RETRO FILLED WITH NON-PCB DIELECTRIC FLUID; HOWEVER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL AND HANDLING OF THIS FLUID THAT MAY CONTAIN RESIDUAL PCB'S.
 2. DEVELOPING A RIGGING PLAN FOR REMOVAL AND INSTALLATION OF THE TRANSFORMERS SIGNED AND SEALED BY A NJ PE THAT HAS FIVE (5) YEARS RIGGING EXPERIENCE.
 3. THE CONTRACTOR IS RESPONSIBLE FOR TRANSPORTING THE NEW AND EXISTING TRANSFORMERS TO AND FROM THE SITE (INCLUDING RIGGER'S YARD).
 4. DISPOSAL OF EXISTING TRANSFORMER AND DIELECTRIC FLUID IN A RESPONSIBLE MANNER WITH DOCUMENTED PROOF OF PROPER DISPOSAL TO BE SUBMITTED TO THE OWNER.
 5. CONTRACTOR IS RESPONSIBLE FOR ANY NECESSARY CHANGES TO THE FOUNDATION AND/OR GRADE BEAMS.
 6. CONTRACTOR SHALL RECEIVE, HANDLE, TRANSPORT, INSPECT, INSTALL AND COMMISSION TRANSFORMER AND ALL ASSOCIATED ACCESSORIES AS SHOWN ON THESE PLANS AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
 7. CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL MANUFACTURERS RECOMMENDED INSTALLATION MANUALS AND FOLLOW ALL REQUIREMENTS.
 8. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH ASSEMBLY OF TRANSFORMER AS PROVIDED BY MANUFACTURER, INCLUDING BUT NOT LIMITED TO UNPACKING, POWER AND CONTROL WIRING, SHIPPING BRACING REMOVAL, INSTALLATION, ETC.
 9. COMMISSION AND STARTUP WILL COMMENCE IN A SEQUENCE OF WORK THAT WILL MINIMIZE IMPACT TO OWNER AND UTILITY OPERATIONS. CONTRACTOR SHALL REFER TO SPECIFICATIONS FOR PHASING REQUIREMENTS AND COORDINATION OF TIE-INS WITH OWNER. ALL DEMOLITION AND CONSTRUCTION PROCEDURES WILL BE PHASED TO MEET THESE OPERATIONAL REQUIREMENTS.

ADD/ALTERNATE:
CONTRACTOR SHALL PROVIDE COST AND LEAD TIME FOR A THIRD PARTY TRANSFORMER VENDOR TO FULLY REBUILD/REMANUFACTURE THE EXISTING T1 TRANSFORMER AFTER REMOVAL TO BE USED AS AN ONSITE SPARE. COST SHOULD INCLUDE SHIPPING TO THE FACTORY AND DELIVERY TO NJSEA AND RIGGING INTO DESIGNATED STORAGE LOCATION. THE REMANUFACTURED TRANSFORMER SHALL BE PREPARED AND DELIVERED TO THE SITE; PREPARED AND WEATHER SEALED FOR LONG-TERM STORAGE OUTDOORS. SEE SPECIFICATION PART 1, SECTION 1 – GENERAL SCOPE FOR ADDITIONAL DETAILS.



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NEW 26KV TRANSFORMER
REPLACEMENT CN-273

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

06-28-23	PROGRESS ISSUE - 75%
07-28-23	ISSUED FOR DCA REVIEW
07-28-23	ISSUED FOR BID

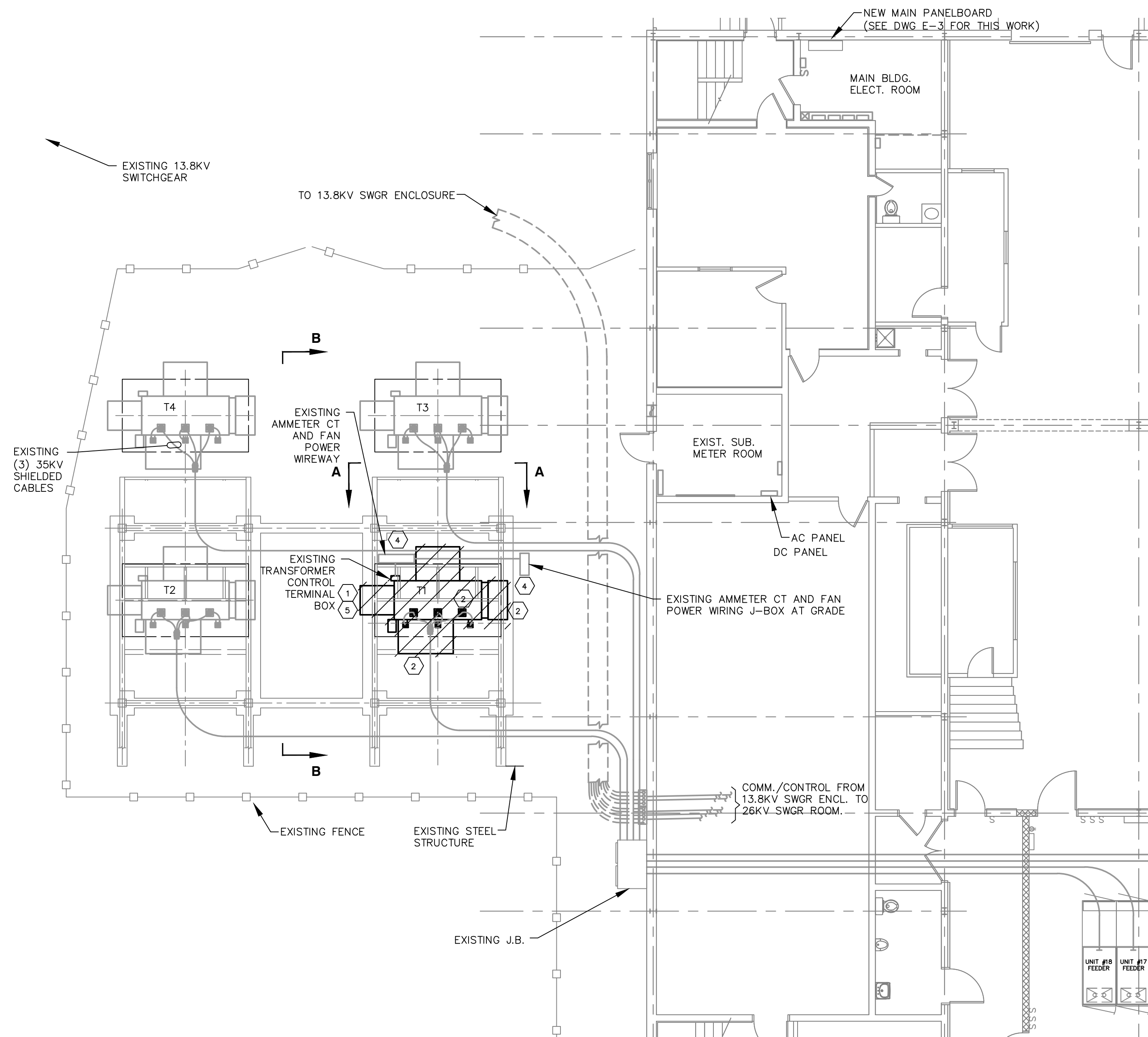
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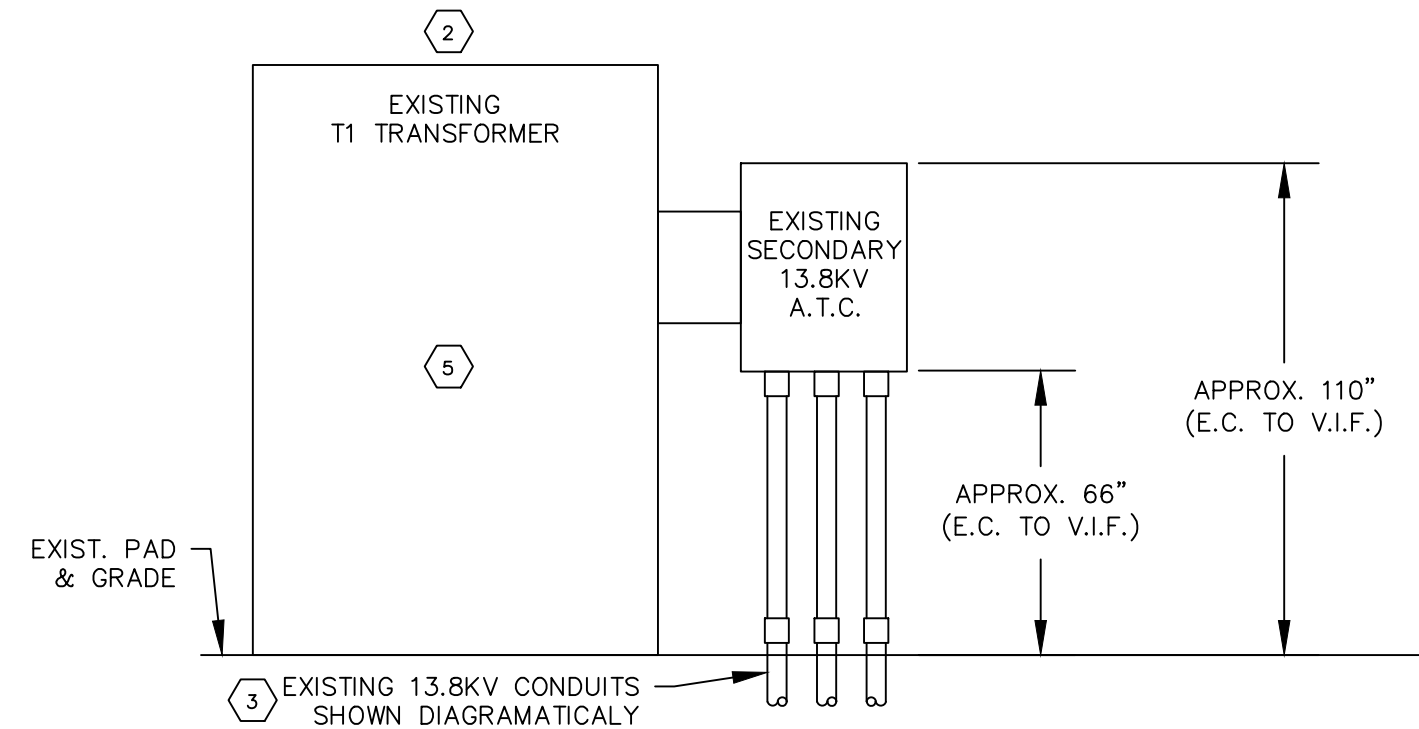
Drawing Title:
ELECTRICAL
GENERAL NOTES

Scale: AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG

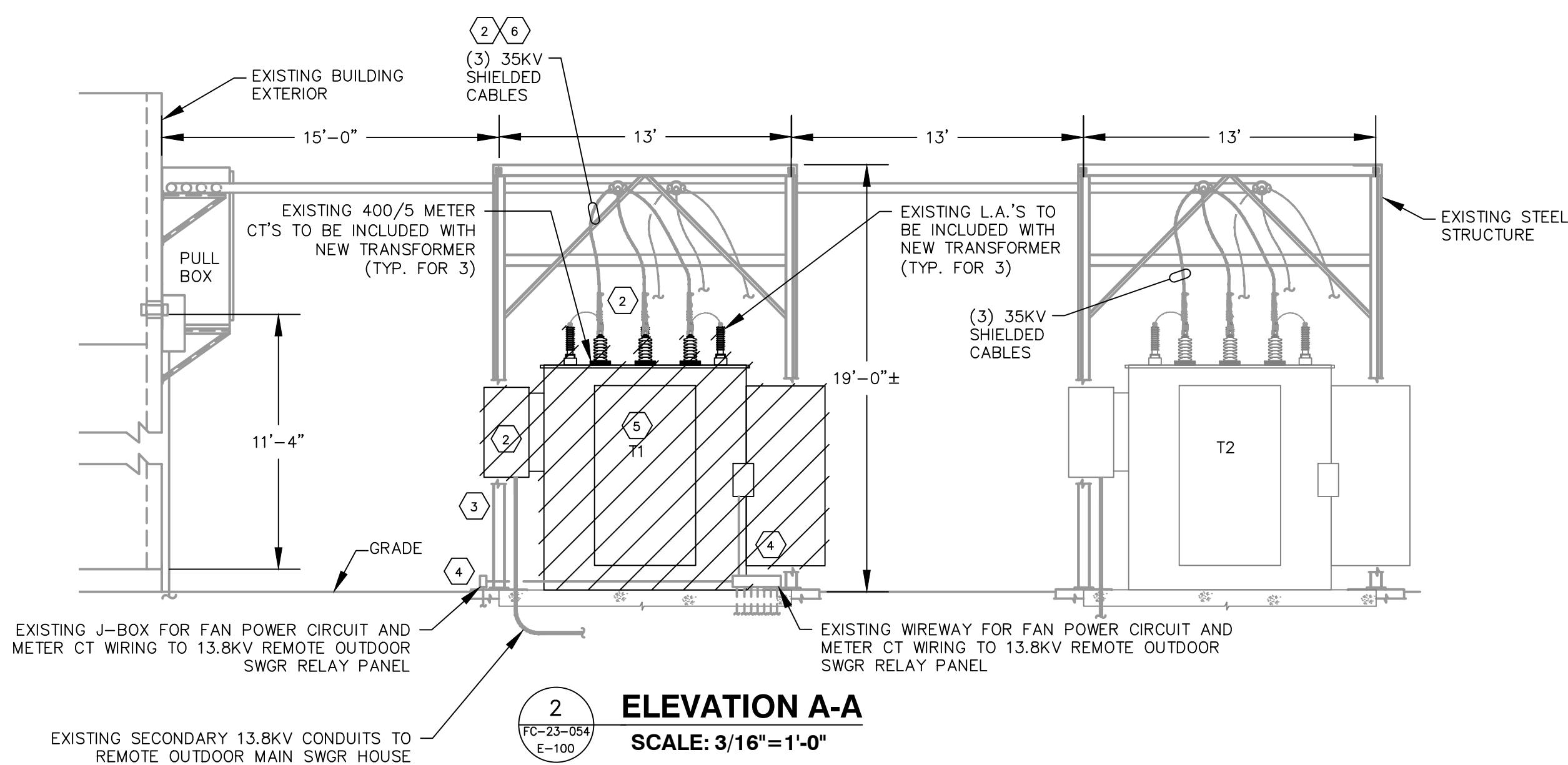
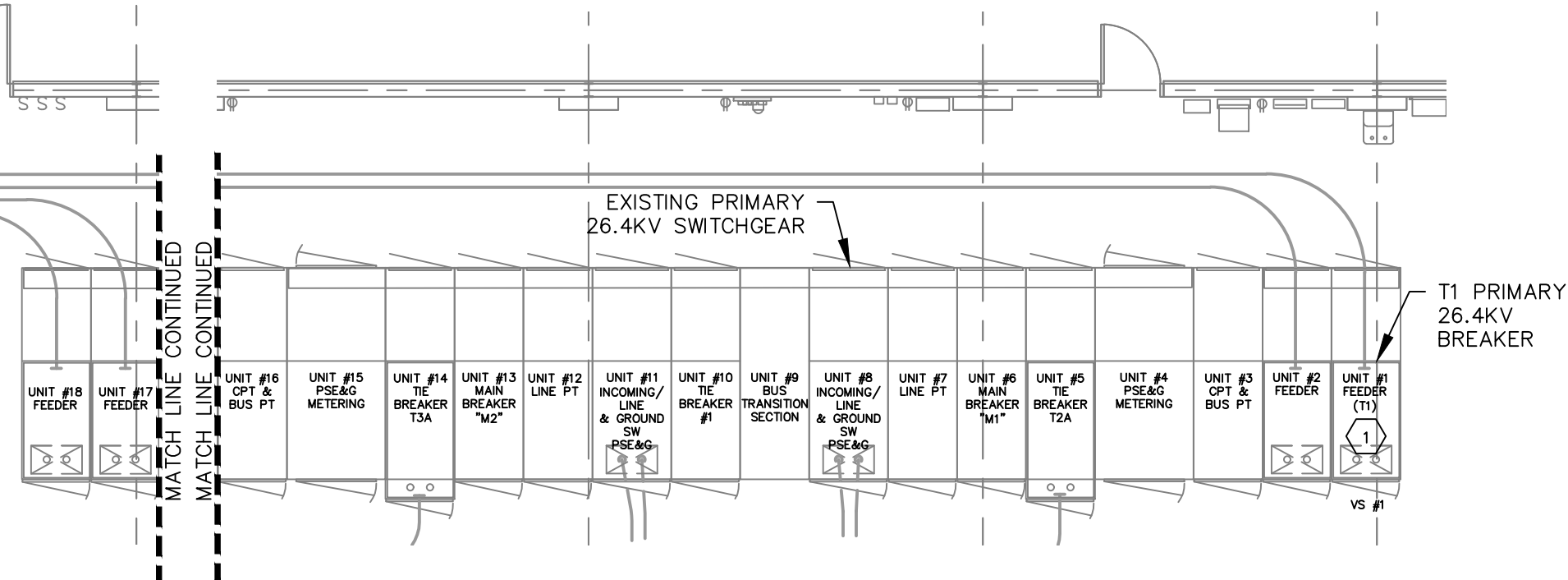
AMA Project No:
FC-23-054



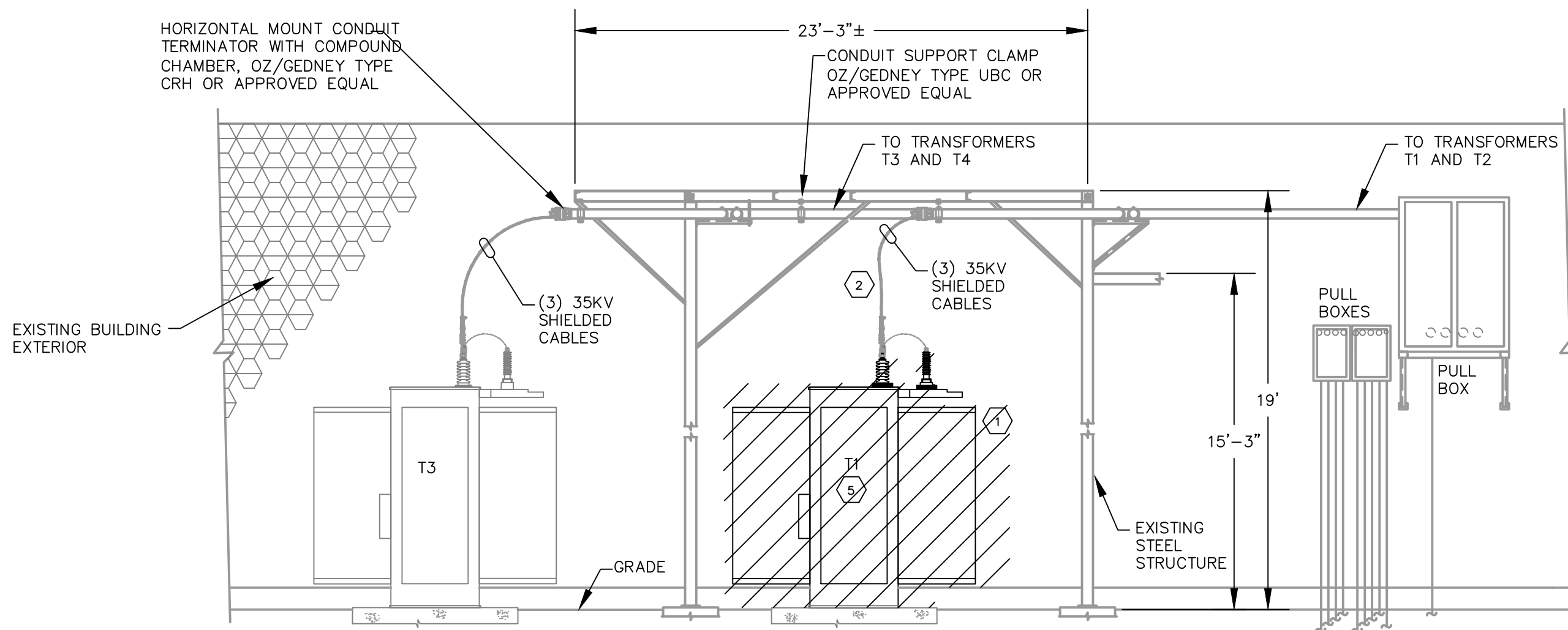
1 26KV TRANSFORMER T1 DEMOLITION PART PLAN
 FC-23-054
 E-100
 SCALE: 1/8"=1'-0"



EXISTING TRANSFORMER DETAIL
 SCALE: N.T.S.



2 ELEVATION A-A
 FC-23-054
 E-100
 SCALE: 3/16"=1'-0"



3 ELEVATION B-B
 FC-23-054
 E-100
 SCALE: 3/16"=1'-0"

KEY NOTES:

- DE-ENERGIZE TRANSFORMER T1 BY OPENING PRIMARY AND SECONDARY BREAKERS LOCATED AT THE MAIN 26KV AND 13.8KV SWITCHGEAR RESPECTIVELY. COORDINATE ALL SHUTDOWNS WITH OWNER.
- DISCONNECT AND SAFE OFF PRIMARY AND SECONDARY CABLES AT TRANSFORMER. TEMPORARILY TIE BACK OVERHEAD PRIMARY CABLES TO EXISTING STEEL ABOVE.
- DISCONNECT AND REMOVE EXISTING SECONDARY CONDUIT STUBUPS BETWEEN COUPLING AT GRADE AND AIR TERMINAL CHAMBER. IF NECESSARY TO SAFE OFF CABLES, DISCONNECT AT 13.8KV MAIN SECONDARY BREAKER AND PULL BACK CABLES TO GRADE.
- DISCONNECT AND TAG EXISTING METER CT AND FAN POWER TO PULL BOX AT GRADE. PULL BACK WIRING AND SAFE OFF FOR LATER RECONNECTION (EXTEND AS REQUIRED TO NEW CONTROL TERMINAL BOX).
- CONTRACTOR SHALL COORDINATE ALL RIGGING REQUIREMENTS TO REMOVE EXISTING TRANSFORMER AND INSTALL THE NEW TRANSFORMER ON THE EXISTING PAD AS WELL AS ALIGN SECONDARY AIR TERMINAL CHAMBER OVER EXISTING CONDUIT STUBUPS.

ELECTRICAL DEMOLITION NOTES:

THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS AS REQUIRED TO COMPLETE DEMOLITION AND REMOVAL OF ALL ITEMS AS INDICATED OR AS OTHERWISE DIRECTED BY OWNER INCLUDING TEMPORARY PROTECTION AS INDICATED BELOW:

- PROVIDE TEMPORARY PROTECTIONS AS REQUIRED TO PRESERVE EXISTING ITEMS INDICATED TO REMAIN AND RESTORE DAMAGED WORK TO THE CONDITION EXISTING PRIOR TO THE START OF WORK, UNLESS OTHERWISE DIRECTED.
- CONTROL DUST AND DIRT CAUSED BY DEMOLITION OPERATIONS. AREA OUTSIDE THE AREA OF WORK SHALL BE KEPT CLEAN FROM DIRT AND DUST.
- ALL ACTIVE MECHANICAL, ELECTRICAL AND PLUMBING SYSTEMS TO REMAIN SHALL BE FULLY PROTECTED FROM DAMAGE DURING DEMOLITION AND CONSTRUCTION.

TEMPORARY BRACING, SHORING, CENTERING, AND SIMILAR WORK SHALL BE PROVIDED AS REQUIRED TO PREVENT DAMAGE TO THE EXISTING CONSTRUCTION AND FINISHES.

THE CONTRACTOR SHALL EXECUTE ALL WORK WITHIN THE REGULATIONS OF THE OWNER FOR DEMOLITION AND REMOVAL OF DEBRIS, INCLUDING OVERTIME WORK REQUIRED.

ALL WORK DEMOLISHED SHALL BE REMOVED FROM THE PREMISES EXCEPT ITEMS TO BE REUSED OR RETURNED TO OWNER OR AS OTHERWISE DIRECTED.

THE CONTRACTOR SHALL ERECT ALL NECESSARY PLASTIC DROP CLOTH PARTITIONS AND/OR TEMPORARY PARTITIONS TO PROJECT ADJACENT BUILDING PROPERTY AND EQUIPMENT WHILE DEMOLITION AND CONSTRUCTION ARE IN PROGRESS.

THE CONTRACTOR SHALL AT ALL TIMES PROTECT THE PROPERTY OF THE OWNER, INCLUDING BUT NOT LIMITED TO, WINDOWS, FLOOR AND CEILING TILE, PUBLIC TOILETS, ELEVATORS, DOORS, BUCKS, ELECTRICAL AND AIR CONDITIONING EQUIPMENT, CONVECTOR ENCLOSURES, ETC.

UPON COMPLETION OF THE DEMOLITION WORK, THE CONTRACTOR SHALL PROVIDE THAT ALL AREAS BE LEFT BROOM CLEAN.

THIS CONTRACTOR SHALL INCLUDE DEMOLITION, REMOVAL OR RELOCATION OF EXISTING EQUIPMENT, MATERIALS, APPURTENANCES, ETC. AS INDICATED ON THE DRAWINGS OR AS HEREIN SPECIFIED OR REQUIRED. THIS CONTRACTOR SHALL FIELD VERIFY DEMOLITION WORK REQUIRED WITH THE OWNER'S REPRESENTATIVE PRIOR TO PERFORMING ANY REMOVALS.

WHERE OUTLETS, LIGHTING FIXTURES, EQUIPMENT, ETC., ARE REMOVED OR CIRCUITS INTERRUPTED OR BROKEN, PROVIDE THE REQUIRED RELOCATION, RECONNECTION OR REARRANGEMENT TO RESTORE TO SERVICE ALL ITEMS, OUTLETS, DEVICES, ETC. NOT MADE OBSOLETE BY THIS WORK.

THERE SHALL BE NO INTERRUPTIONS OF SERVICE TO EXISTING ELECTRICAL SYSTEMS WITHOUT WRITTEN CONSENT OF OWNER. SUCH INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL BE SCHEDULED WITH THE OWNER. ANY COST FOR THE WORK THAT MUST BE SCHEDULED ON AN OVERTIME BASIS TO ACCOMMODATE THE OWNER'S REQUIREMENTS FOR INTERRUPTION SHALL BE INCLUDED IN THE BID PRICE.

REFER TO ARCHITECTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION CONCERNING DEMOLITION AND NEW WORK.

ALL EXISTING LIGHTING FIXTURES, EXIT LIGHTING FIXTURES, SWITCHES, RECEPTACLES, DEVICES, EQUIPMENT, ETC., ARE EXISTING TO REMAIN, UNLESS OTHERWISE NOTED.

WHERE NOTED:

- ER - EXISTING TO BE RELOCATED
- DR - DISCONNECT & REMOVE
- E - EXISTING TO REMAIN
- N - NEW
- R - RELOCATED

THE CONTRACTOR IS TO PROVIDE ALL ITEMS REQUIRED & NECESSARY TO COMPLETE THE WORK AS SHOWN ON ALL DRAWINGS WITH THE EXCEPTION OF THOSE ITEMS INDICATED "BY OTHER". IN ALL CASES THE CONTRACTOR IS TO COORDINATE HIS WORK WITH OTHER CONTRACTORS UNLESS SPECIFICALLY INSTRUCTED OTHERWISE IN WRITING BY THE CONSTRUCTION MANAGER.

ALL CONTRACTORS SHALL VISIT THE PREMISES BEFORE SUBMITTING A PROPOSAL TO FAMILIARIZE THEMSELVES AS TO THE NATURE AND SCOPE OF THEIR WORK AND THE DIFFICULTIES ATTENDING ITS EXECUTION.

THE OWNER SHALL PAY ALL FEES FOR PERMITS. CONTRACTOR SHALL OBTAIN ALL APPROVALS FROM ALL AUTHORITIES HAVING JURISDICTION.



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**NJ SPORTS & EXPOSITION
 AUTHORITY
 NEW 26KV TRANSFORMER
 REPLACEMENT CN-273**

50 STATE ROUTE 120
 EAST RUTHERFORD, NEW JERSEY
 07073

06-28-23	PROGRESS ISSUE - 75%
07-28-23	ISSUED FOR DCA REVIEW
07-28-23	ISSUED FOR BID

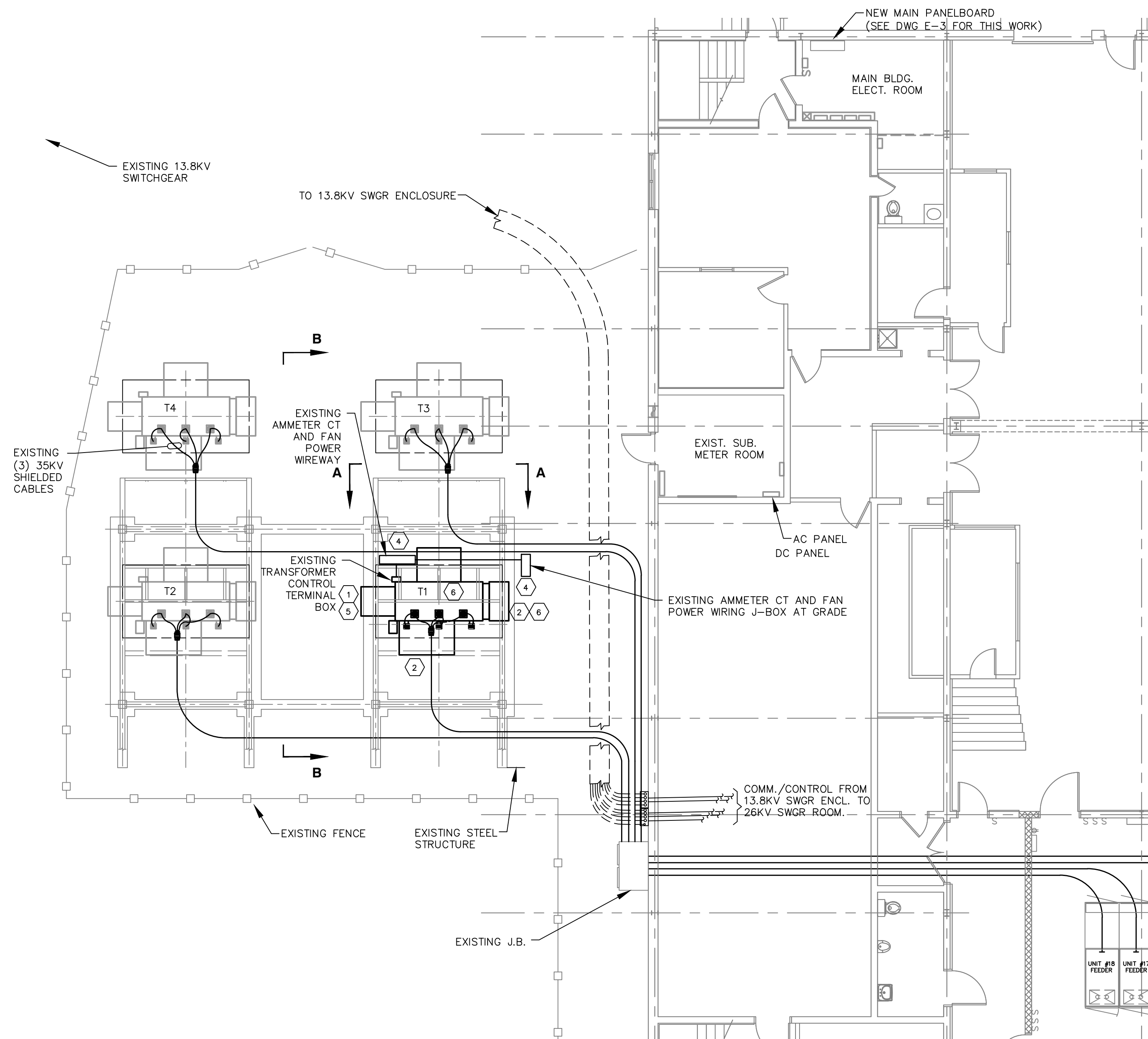
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Drawing Title:
**ELECTRICAL
 DEMOLITION PART PLAN
 AND ELEVATIONS**

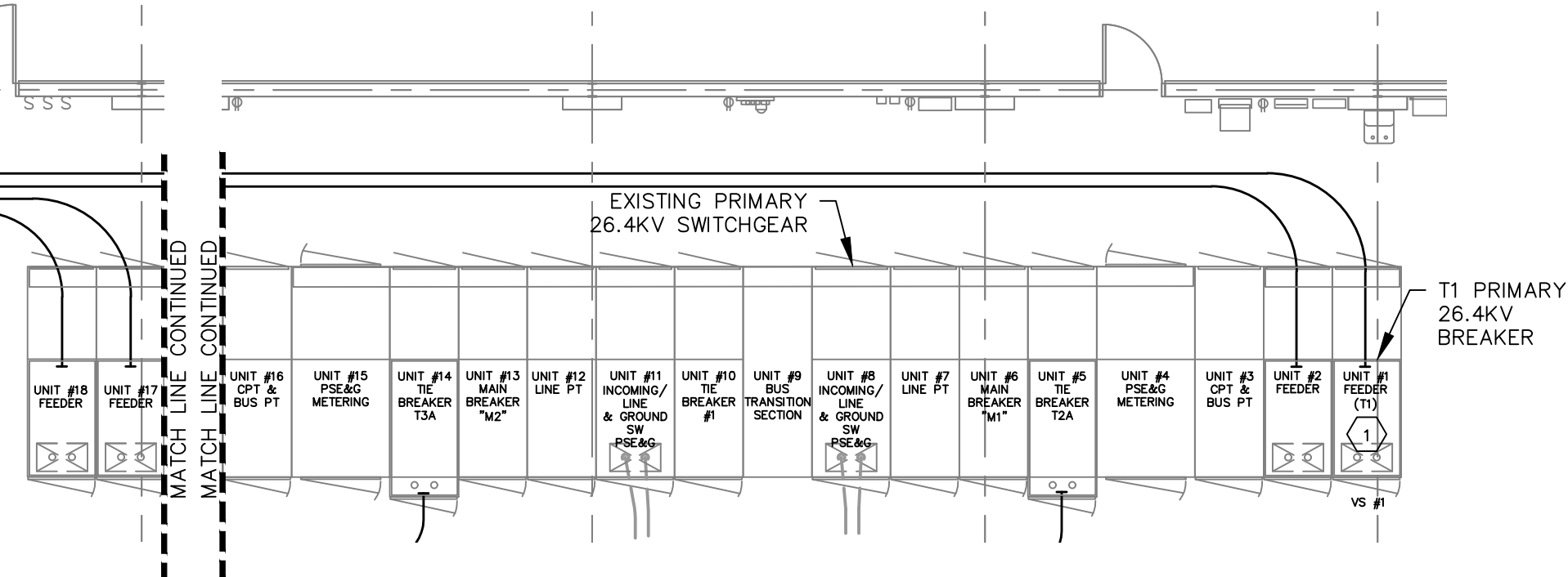
Scale: AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG

AMA Project No:
 FC-23-054



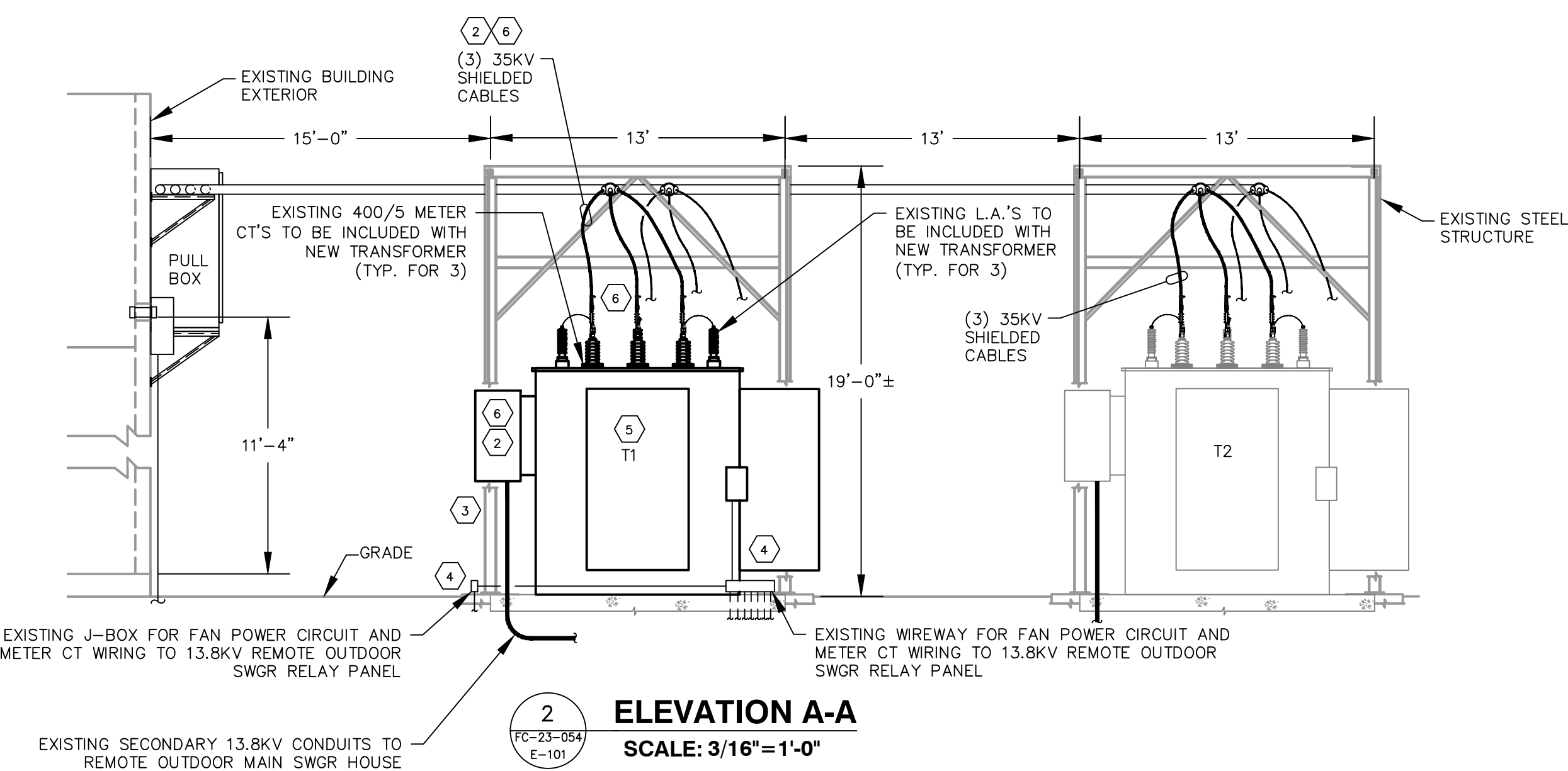
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FC-23-054
E-101

26KV TRANSFORMER T1 NEW WORK PART PLAN
SCALE: 1/8"=1'-0"



3
FC-23-054
E-101

ELEVATION B-B
SCALE: 3/16"=1'-0"



2
FC-23-054
E-101

ELEVATION A-A
SCALE: 3/16"=1'-0"

KEY NOTES:

1. INSTALL NEW TRANSFORMER ON EXISTING CONCRETE PAD. ALIGN SECONDARY AIR TERMINAL CHAMBER OVER EXISTING 13.8KV CONDUIT SUB-UPS AND OVERHEAD 26.4KV CABLE DROPS.
2. RECONNECT PRIMARY CABLES AND TERMINATE (SEE KEY NOTE 6). TERMINATE NEW TRANSFORMER MOUNTED L.A.'S AS REQUIRED.
3. EXTEND AND RECONNECT EXISTING SECONDARY CONDUIT SUB-UPS BETWEEN COUPLING AT GRADE UP TO NEW AIR TERMINAL CHAMBER. PULL IN EXISTING SECONDARY CABLES AND TERMINATE. (SEE KEY NOTE 6).
4. RECONNECT EXISTING METER CT AND FAN POWER WIRING FROM PULL BOX AT GRADE TO NEW TRANSFORMER CONTROL TERMINAL BOX.
5. CONTRACTOR SHALL COORDINATE ALL RIGGING REQUIREMENTS TO REMOVE EXISTING TRANSFORMER AND INSTALL THE NEW TRANSFORMER ON THE EXISTING PAD AS WELL AS ALIGN SECONDARY AIR TERMINAL CHAMBER OVER EXISTING CONDUIT STUBUPS.
6. CONTRACTOR SHALL PROVIDE AND INSTALL NECESSARY BUS DETAILS ON PRIMARY AND SECONDARY TO MEET EXISTING CABLE TERMINATIONS. CONTRACTOR SHALL PHASE ALL CONDUCTORS TO MATCH EXISTING. GROUND TRANSFORMER TO EXISTING GROUND GRID.

ELECTRICAL INSTALLATION NOTES:

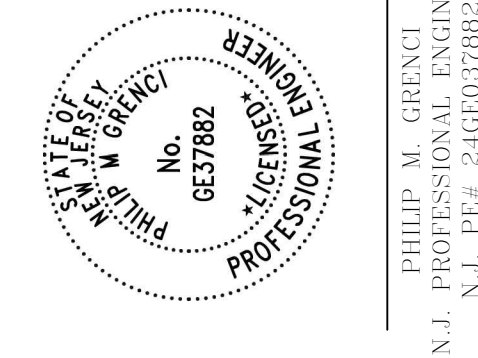
AFTER TRANSFORMER INSTALLATION AND TERMINATION OF CABLES AND WIRING, CONTRACTOR SHALL COORDINATE TRANSFORMER TESTING, PRIMARY/SECONDARY CABLE TESTING, GROUND TESTING AS WELL AS VERIFY 400A METER CT WIRING/OPERATION AND FAN OPERATION.

CONTRACTOR SHALL PROVIDE CLOSEOUT DOCUMENTATION INCLUDING BUT NOT LIMITED TO: TEST REPORTS, AS-BUILT MARKUPS, DOCUMENTATION, OPERATION AND MAINTENANCE MANUALS IN PDF FORMAT AND HARD COPIES.

THE CONTRACTOR IS TO PROVIDE ALL ITEMS REQUIRED & NECESSARY TO COMPLETE THE WORK AS SHOWN ON ALL DRAWINGS WITH THE EXCEPTION OF THOSE ITEMS INDICATED "BY OTHER". IN ALL CASES THE CONTRACTOR IS TO COORDINATE HIS WORK WITH OTHER CONTRACTORS UNLESS SPECIFICALLY INSTRUCTED OTHERWISE IN WRITING BY THE CONSTRUCTION MANAGER.

ALL CONTRACTORS SHALL VISIT THE PREMISES BEFORE SUBMITTING A PROPOSAL TO FAMILIARIZE THEMSELVES AS TO THE NATURE AND SCOPE OF THEIR WORK AND THE DIFFICULTIES ATTENDING ITS EXECUTION.

THE OWNER SHALL PAY ALL FEES FOR PERMITS. CONTRACTOR SHALL OBTAIN ALL APPROVALS FROM ALL AUTHORITIES HAVING JURISDICTION.



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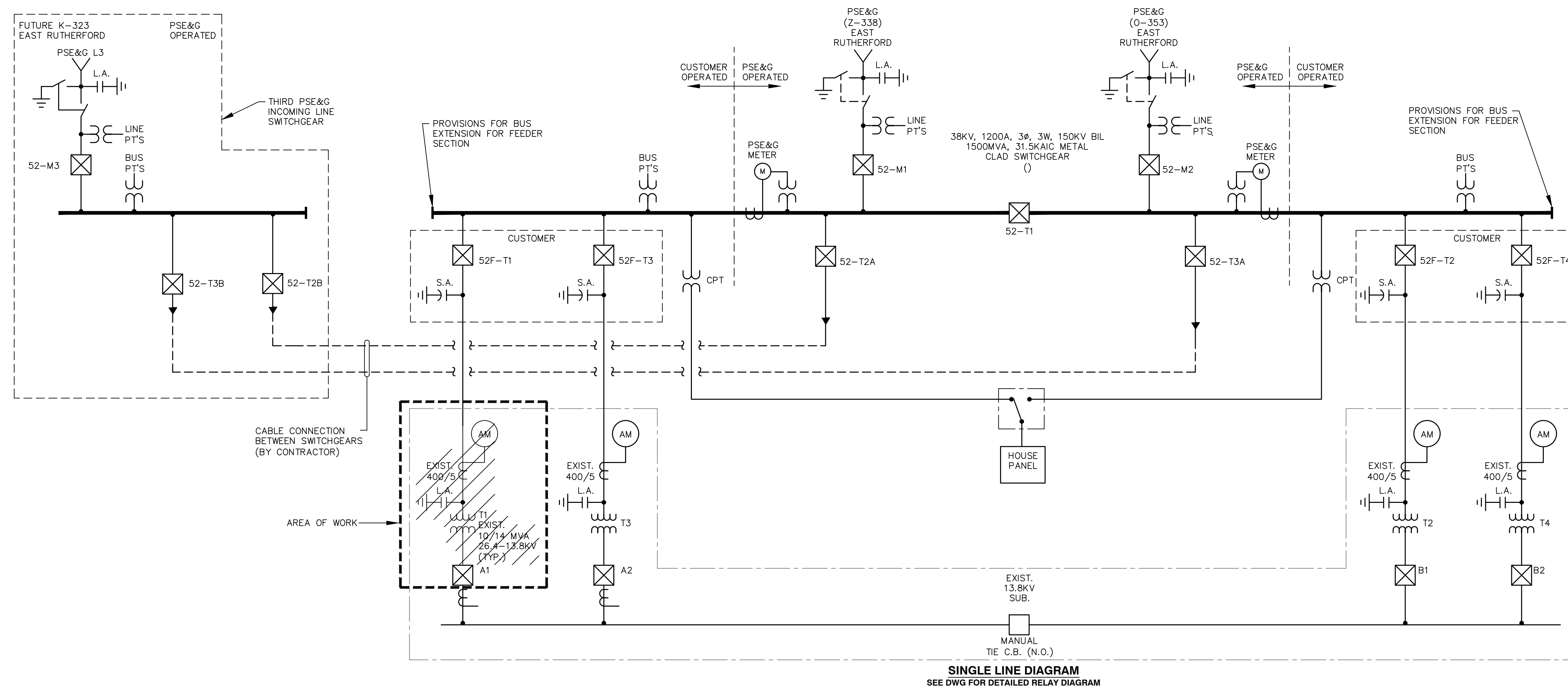
Date	Issued	Revision No.
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











Drawing Title:
ELECTRICAL
NEW WORK PART PLAN
AND ELEVATIONS

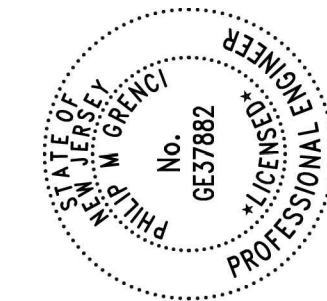
Scale: AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG

AMA Project No:
FC-23-054



- NOTES:**
- A. DEENERGIZE TRANSFORMER T1 BY OPENING PRIMARY AND SECONDARY BREAKERS LOCATED AT MAIN 26KV AND 13.8KV SWITCHGEAR RESPECTIVELY. COORDINATE ALL SHUTDOWNS WITH OWNER.
 - B. DISCONNECT AND SAFE OFF PRIMARY AND SECONDARY CABLES A TRANSFORMER. TEMPORARILY Tie BACK OVERHEAD PRIMARY CABLES TO EXISTING STEEL ABOVE.
 - C. DISCONNECT AND REMOVE EXISTING SECONDARY CONDUIT STUBUPS BETWEEN COUPLING AT GRADE AND AIR TERMINAL CHAMBER. IF NECESSARY TO SAFE OFF CABLES, DISCONNECT AT 13.8KV MAIN SECONDARY BREAKER AND PULL BACK CABLES TO GRADE.
 - D. DISCONNECT AND TAG EXISTING METER CT AND FAN POWER TO PULL BOX AT GRADE. PULL BACK WIRING AND SAFE OFF FOR LATER RECONNECTION, (EXTEND AS REQUIRED TO NEW CONTROL TERMINAL BOX).
 - E. CONTRACTOR SHALL COORDINATE ALL RIGGING REQUIREMENTS TO REMOVE THE EXISTING TRANSFORMER AND INSTALL THE NEW TRANSFORMER ON THE EXISTING CONCRETE PAD AS WELL AS ALIGN SECONDARY AIR TERMINAL CHAMBER OVER EXISTING CONDUIT STUBUPS.
 - F. CONTRACTOR SHALL PROVIDE AND INSTALL NECESSARY BUS DETAILS ON PRIMARY AND SECONDARY TO MEET EXISTING CABLE TERMINATIONS. CONTRACTOR SHALL PHASE ALL CONDUCTORS TO MATCH EXISTING. GROUND TRANSFORMER TO EXISTING GROUND GRID.
 - G. AFTER TRANSFORMER INSTALLATION AND TERMINATION OF CABLES AND WIRING, CONTRACTOR SHALL COORDINATE TRANSFORMER TESTING, PRIMARY/SECONDARY CABLE TESTING, GROUND TESTING AS WELL AS VERIFY 400A METER CT WIRING/OPERATION AND FAN OPERATION.
 - H. CONTRACTOR SHALL PROVIDE CLOSEOUT DOCUMENTATION INCLUDING BUT NOT LIMITED TO: TEST REPORTS, AS-BUILT MARKUPS, DOCUMENTATION, OPERATION AND MAINTENANCE MANUALS IN PDF FORMAT AND HARD COPIES.

- LEGEND:**
- | | |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------|
|  | ALTERNATE C.B. (DRAWOUT) |
|  | N.C. C.B. (DRAWOUT) |
|  | N.O. C.B. (DRAWOUT) |
|  | CURRENT TRANSF. (CT) |
|  | FUSE (DRAWOUT) |
|  | GROUND |
|  | POWER TRANSFORMER |
|  | H.V. SWITCH |
|  | GROUND SWITCH |
|  | L.A. |
|  | LIGHTNING ARRESTOR |
|  | S.A. |
|  | SURGE ARRESTOR-RC SNUBBER IN
PARALLEL WITH SURGE ARRESTOR |
|  | POTENTIAL TRANSF. (P.T.)
OR (C.P.T.) |



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NJ SPORTS & EXPOSITION AUTHORITY NEW 26KV TRANSFORMER REPLACEMENT CN-273

50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
07073

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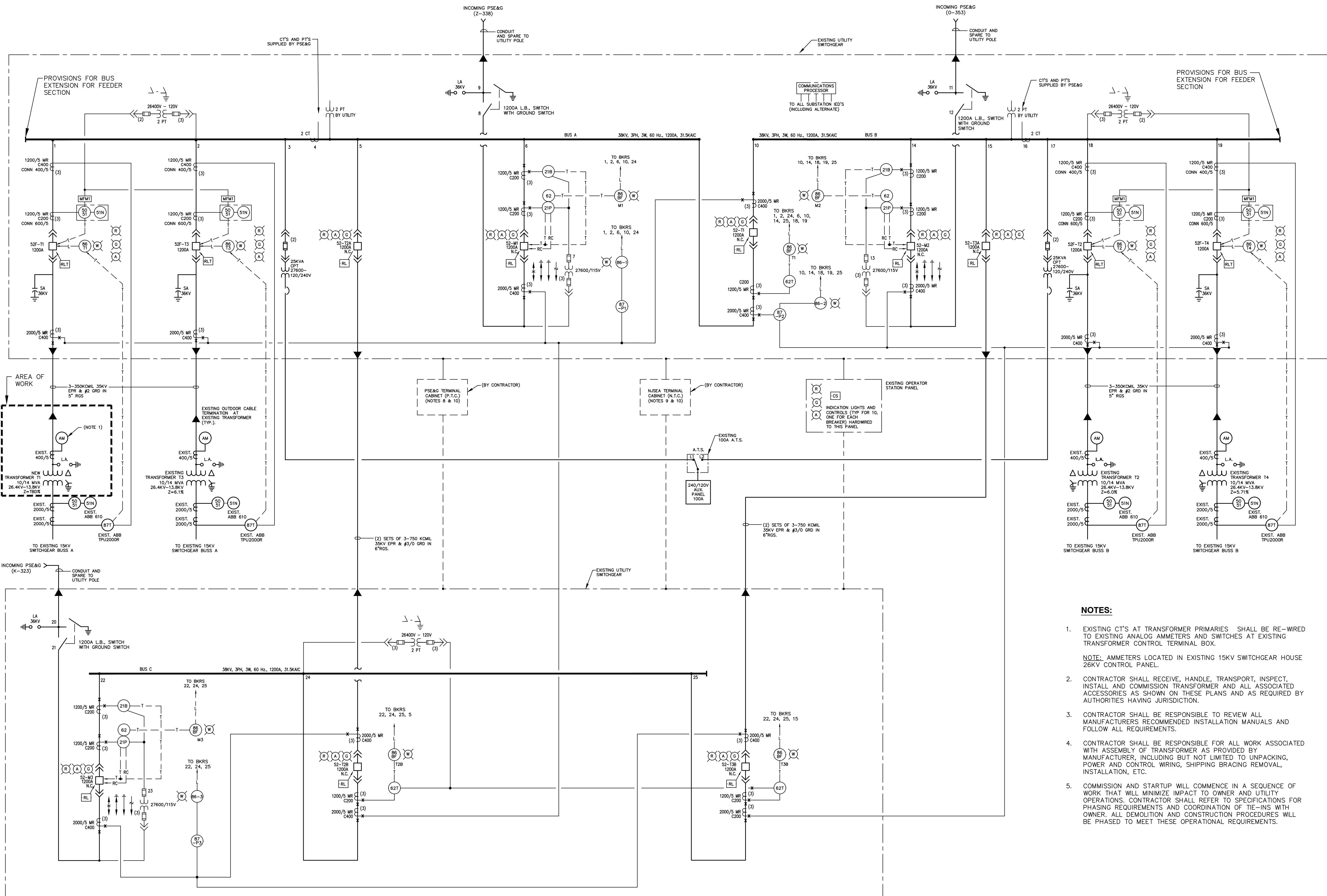
Date	Issued	Revision No.
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Drawing Title:
ELECTRICAL
SINGLE LINE DIAGRAM
DEMOLITION

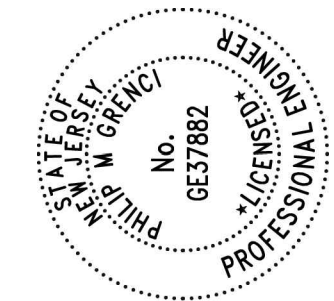
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AMA Project No.:
FC-23-054



NOTES:

- EXISTING CT'S AT TRANSFORMER PRIMARIES SHALL BE RE-WIRED TO EXISTING ANALOG AMMETERS AND SWITCHES AT EXISTING TRANSFORMER CONTROL TERMINAL BOX.
NOTE: AMMETERS LOCATED IN EXISTING 15KV SWITCHGEAR HOUSE 26KV CONTROL PANEL.
- CONTRACTOR SHALL RECEIVE, HANDLE, TRANSPORT, INSPECT, INSTALL AND COMMISSION TRANSFORMER AND ALL ASSOCIATED ACCESSORIES AS SHOWN ON THESE PLANS AND AS REQUIRED BY AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW ALL MANUFACTURERS RECOMMENDED INSTALLATION MANUALS AND FOLLOW ALL REQUIREMENTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK ASSOCIATED WITH ASSEMBLY OF TRANSFORMER AS PROVIDED BY MANUFACTURER, INCLUDING BUT NOT LIMITED TO UNPACKING, POWER AND CONTROL WIRING, SHIPPING BRACING REMOVAL, INSTALLATION, ETC.
- COMMISSION AND STARTUP WILL COMMENCE IN A SEQUENCE OF WORK THAT WILL MINIMIZE IMPACT TO OWNER AND UTILITY OPERATIONS. CONTRACTOR SHALL REFER TO SPECIFICATIONS FOR PHASING REQUIREMENTS AND COORDINATION OF TIE-INS WITH OWNER. ALL DEMOLITION AND CONSTRUCTION PROCEDURES WILL BE PHASED TO MEET THESE OPERATIONAL REQUIREMENTS.



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07073

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07-28-23 ISSUED FOR DCA REVIEW

07-28-23 ISSUED FOR BID

Date Issued Revision No.



Drawing Title:
**ELECTRICAL
SINGLE LINE DIAGRAM
NEW WORK**

Scale:

AS NOTED

Issue Date:

06-09-23

Proj. Manager:

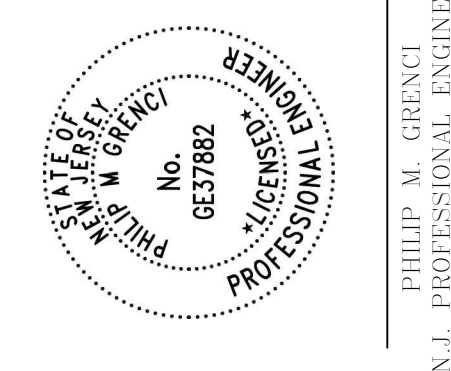
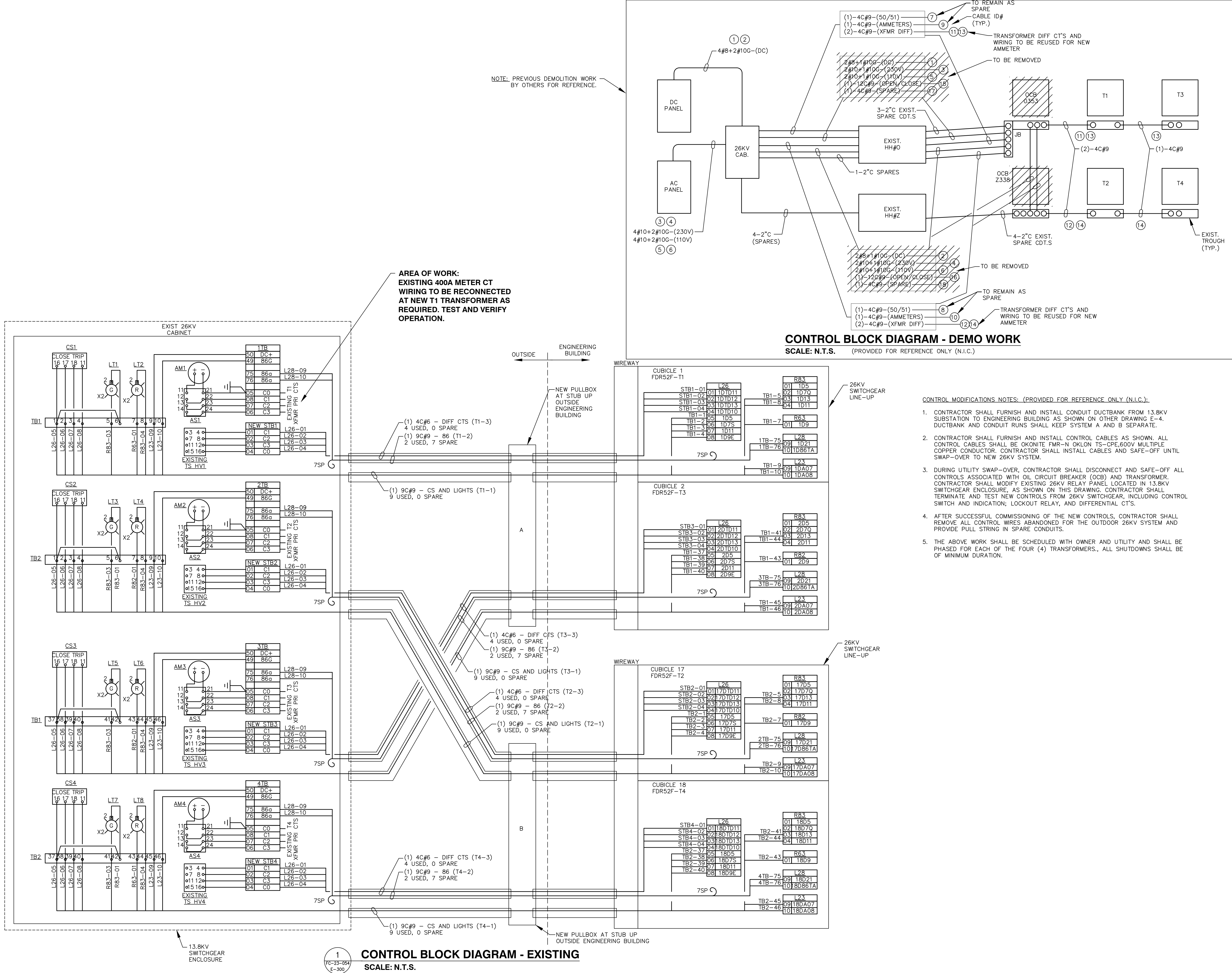
RCC

Proj. Engineer:

PMG

AMA Project No.:

FC-23-054



NJ SPORTS & EXPOSITION
AUTHORITY
NEW 26KV TRANSFORMER
REPLACEMENT CN-273
50 STATE ROUTE 120
EAST RUTHERFORD, NEW JERSEY
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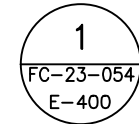
06-28-23	PROGRESS ISSUE - 75%
07-28-23	ISSUED FOR DCA REVIEW
07-28-23	ISSUED FOR BID

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FAUST
CONSULTING ENGINEERS

Drawing Title:
**ELECTRICAL
BLOCK DIAGRAM & OUTDOOR
BREAKER RELAY PANEL**

Scale: AS NOTED	Issue Date: 06-09-23
Proj. Manager: RCC	Proj. Engineer: PMG
AMA Project No.: FC-23-054	



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

50 STATE ROUTE 120
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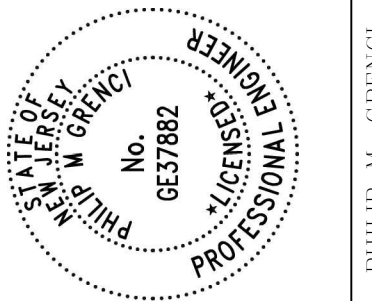
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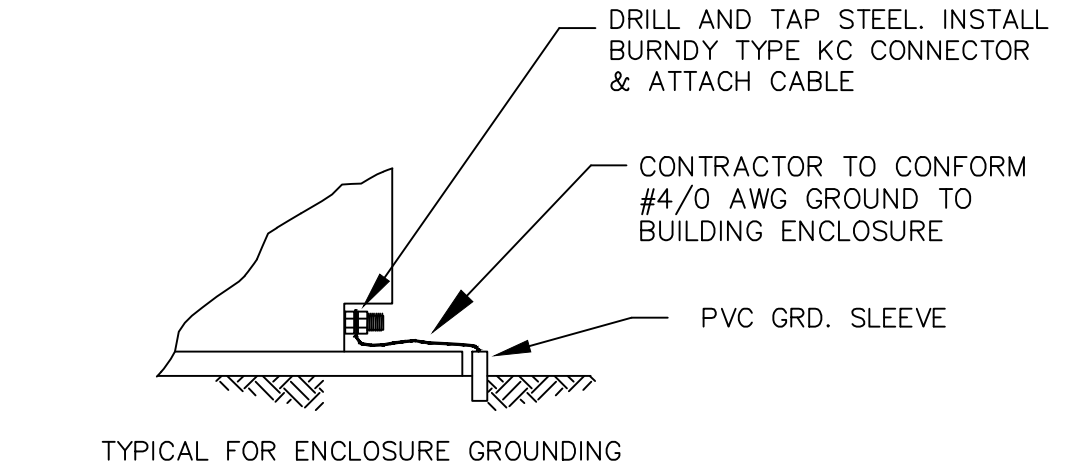


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AMA Project No.: FC-23-054	

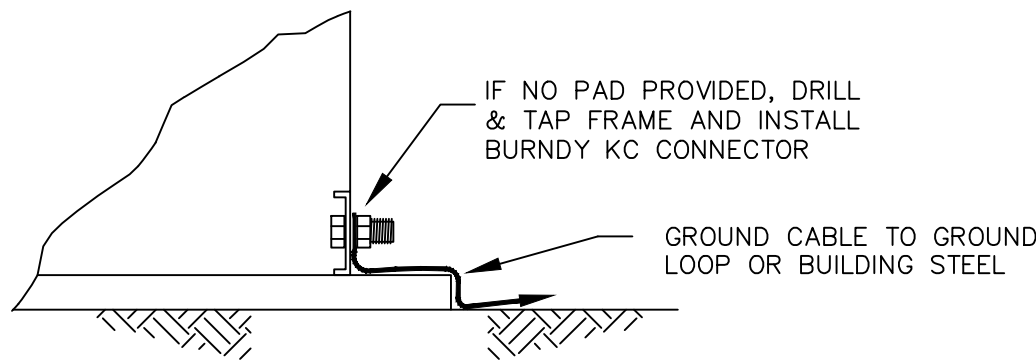
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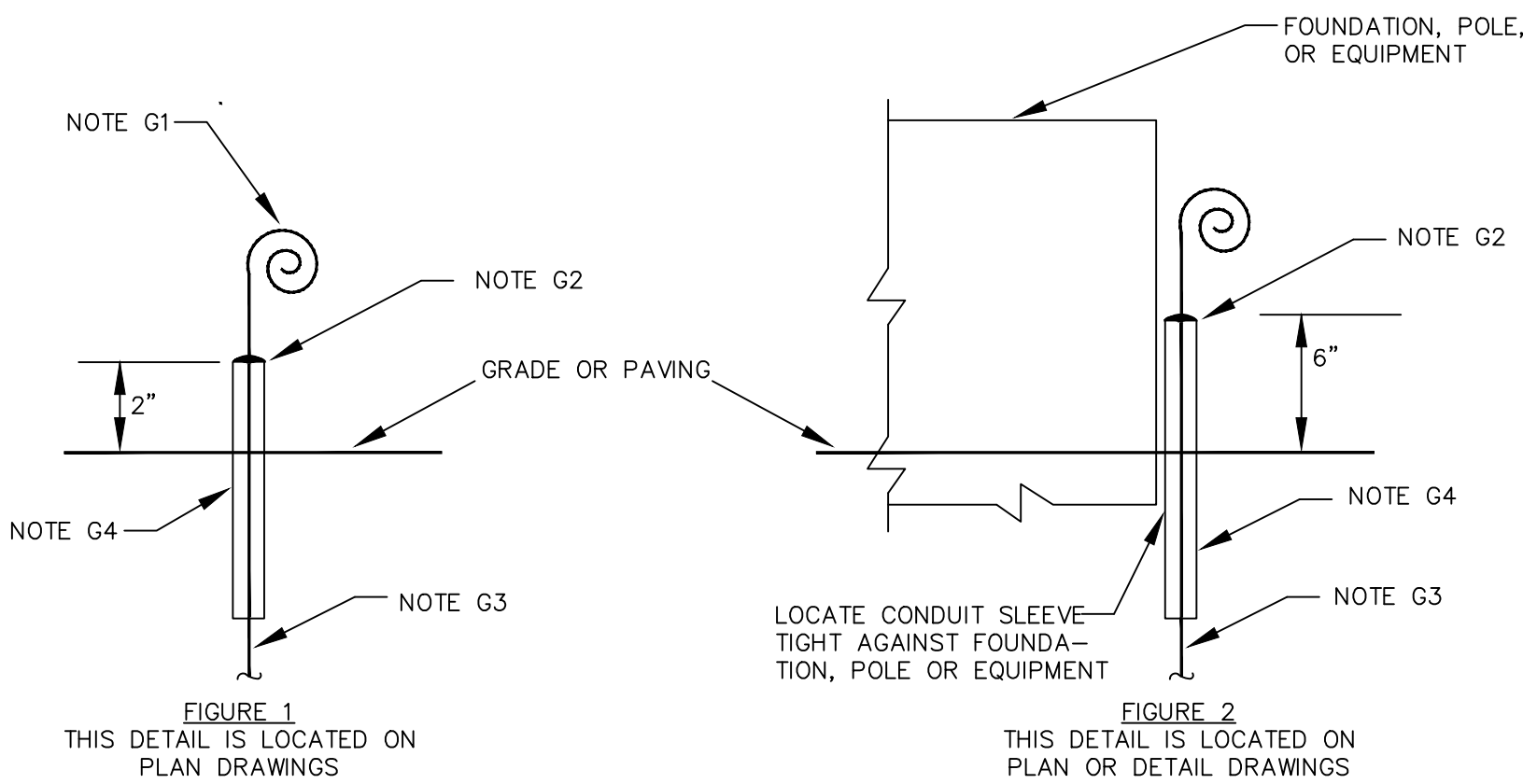
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EQUIPMENT GROUNDING DETAIL
SCALE: N.T.S.



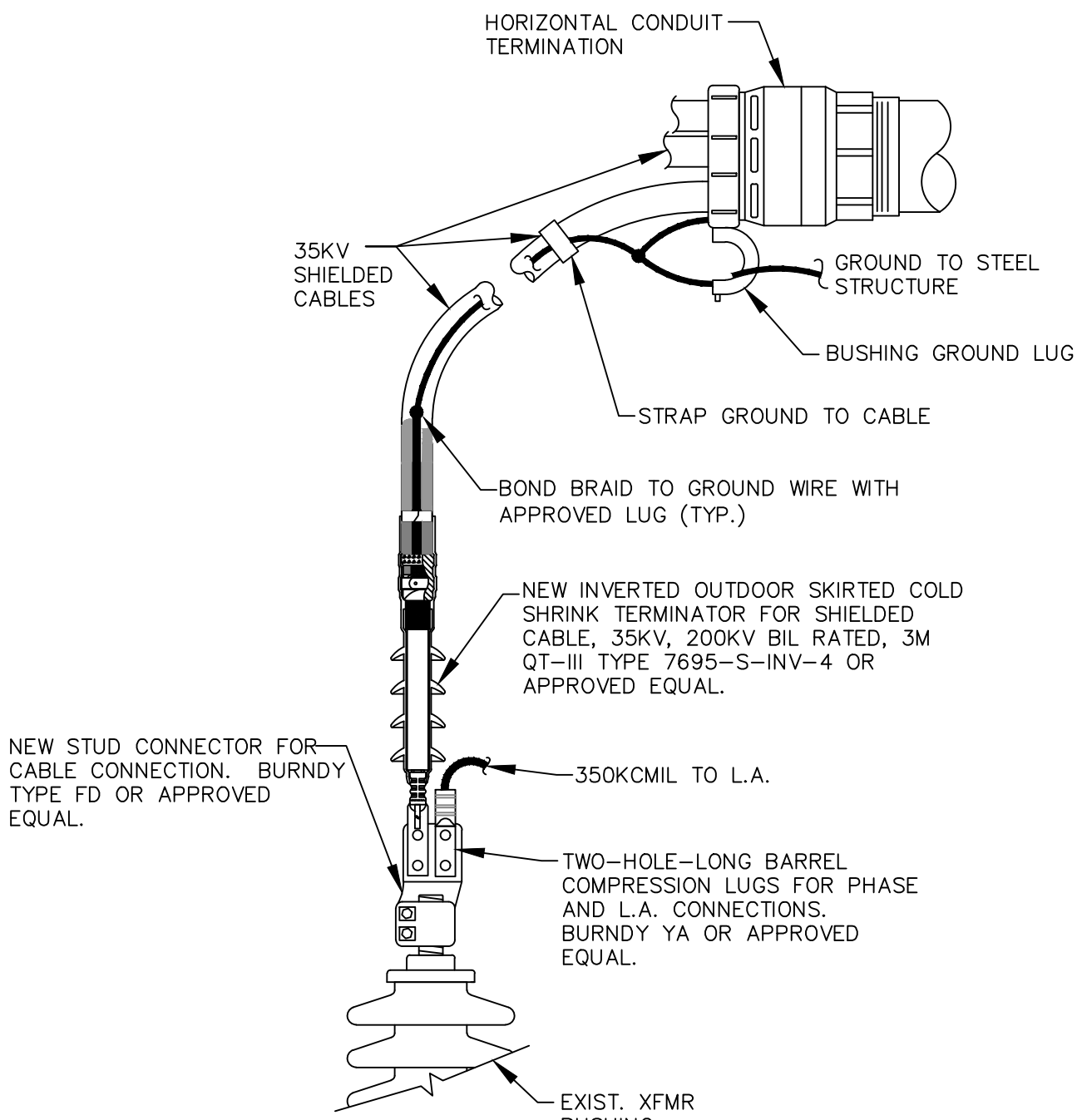
EQUIPMENT GROUNDING DETAIL
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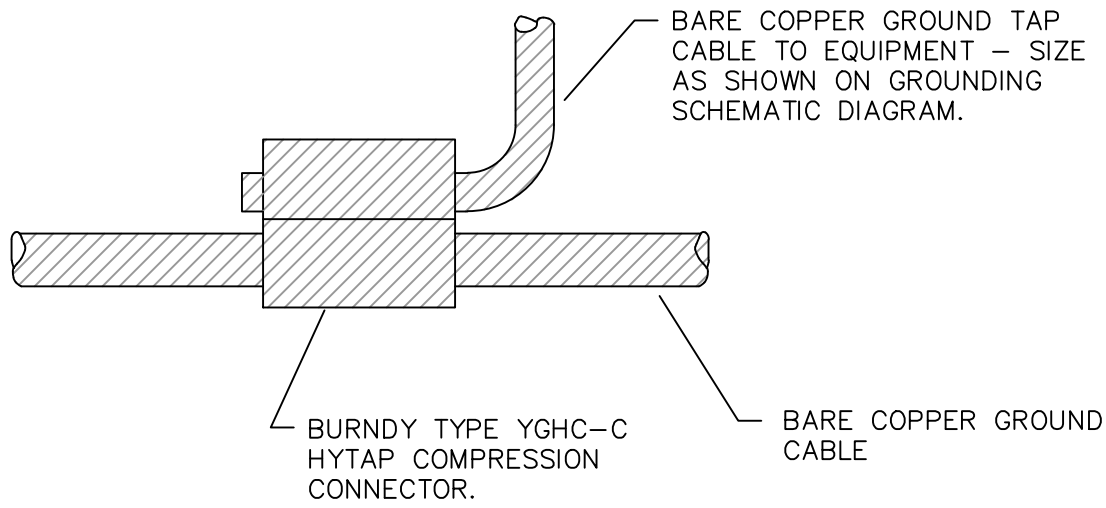
- NOTES:
- G1. LEAVE 5 FEET OF CABLE COILED FOR LATER TERMINATION.
 - G2. SEAL GROUND CABLE TO SLEEVE WITH ACRYLIC CAULKING COMPOUND.
 - G3. GROUND CABLE SIZE IS SHOWN ON GROUNDING DRAWINGS, SEE LEGEND.
 - G4. CONDUIT SLEEVE (HEAVY WALL PVC-SCHED. 40) APPROX. 15" LONG. REAM BOTH ENDS. SLEEVE SIZE AS SHOWN IN FOLLOWING TABLE.

CONDUIT SLEEVE SIZE TABLE	
INSTALLATION	SLEEVE SIZE
ONE GROUND CABLE	3/4"
TWO GROUND CABLES	1"
AT GROUND BUS	2"

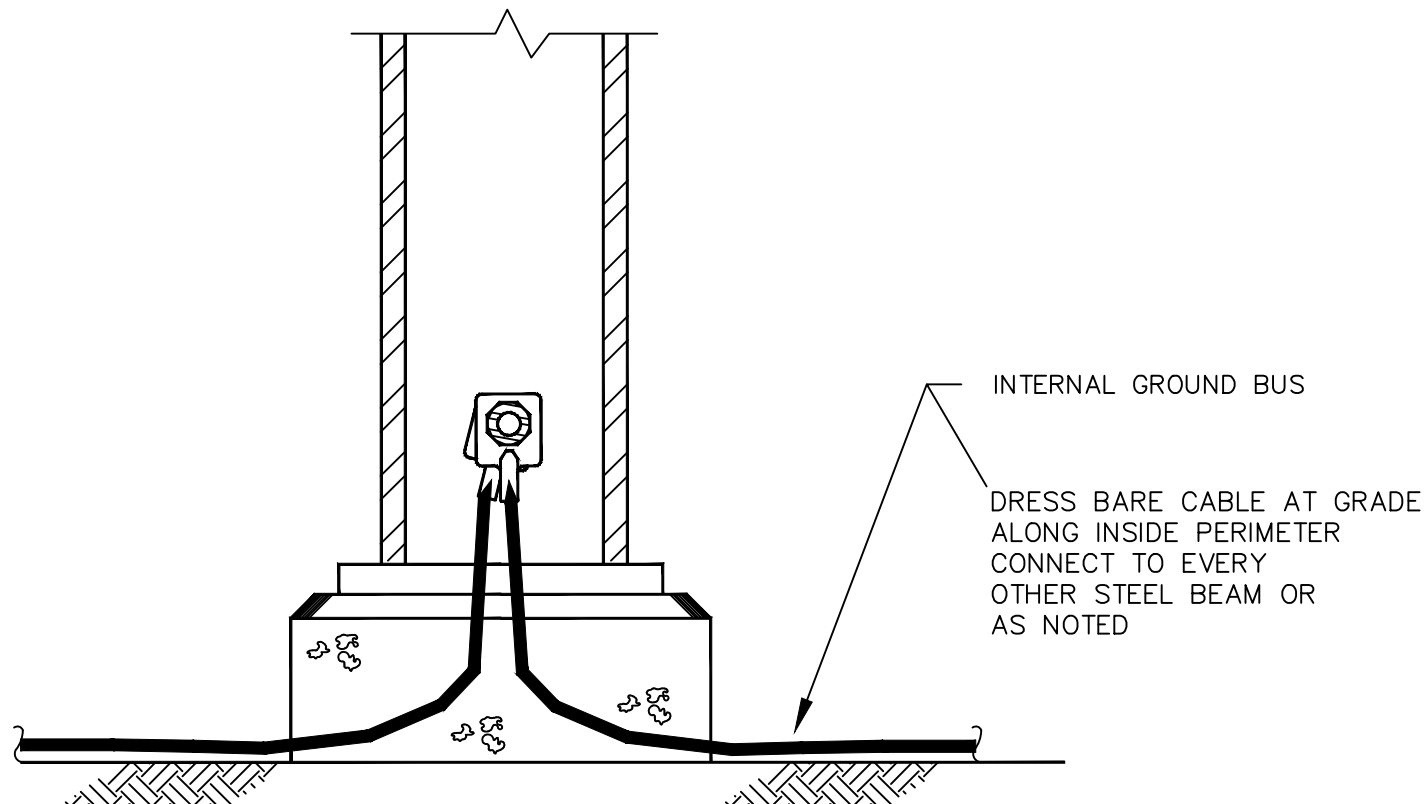
TYPICAL GROUND CABLE STUB-UP DETAIL
SCALE: N.T.S.



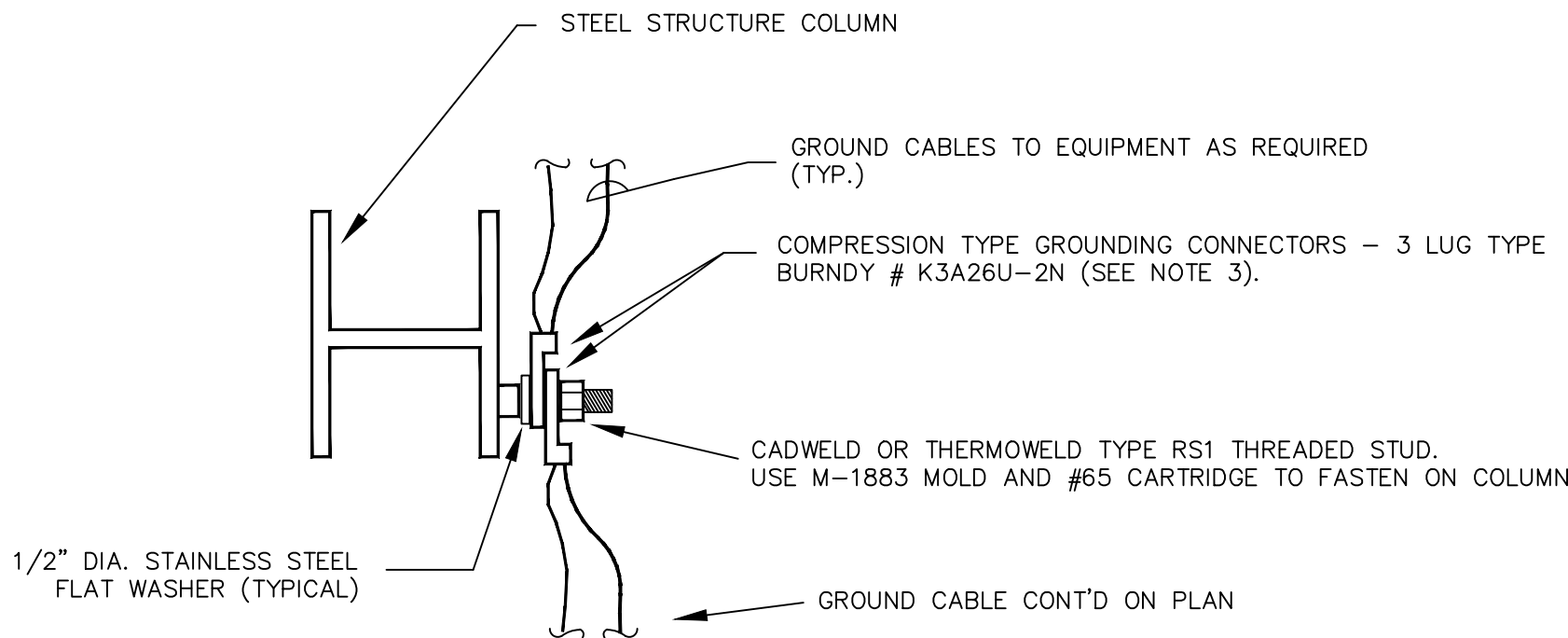
TYPICAL GROUND CABLE CONNECTION TO TRANSFORMERS DETAIL
SCALE: N.T.S.



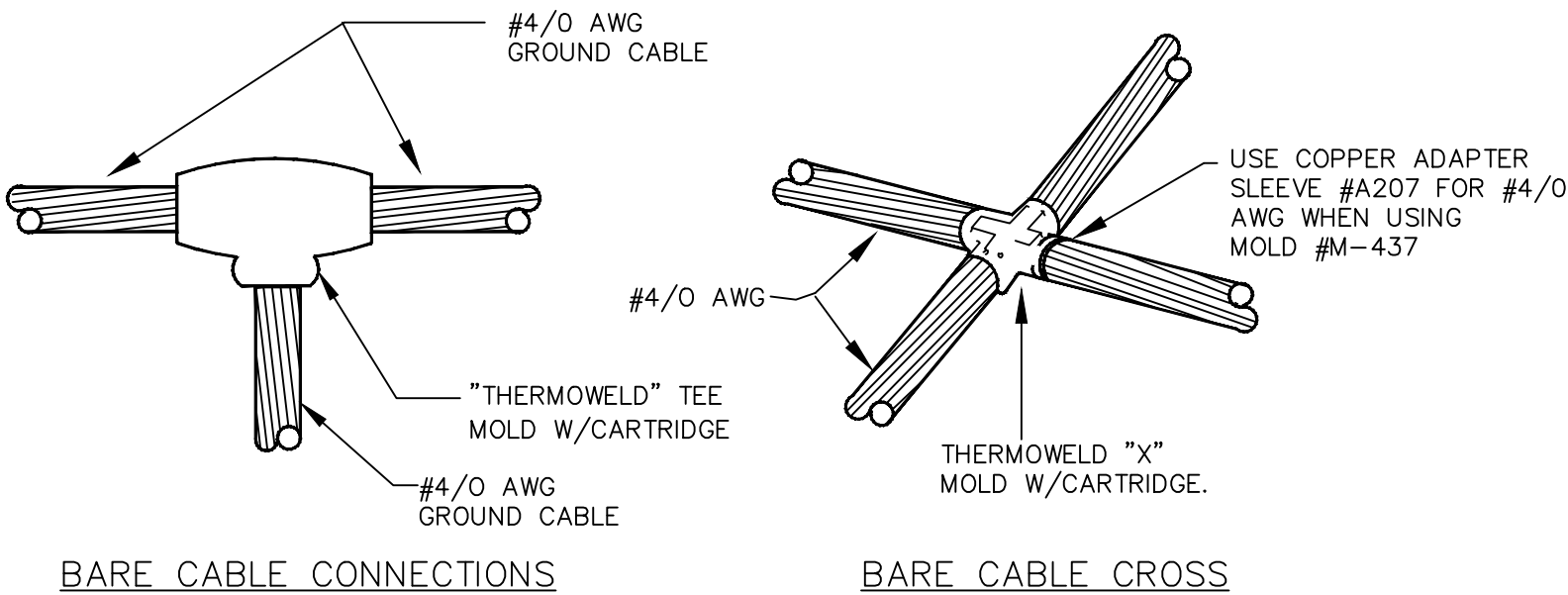
TYPICAL GROUND LOOP TAP CONNECTION
SCALE: N.T.S.



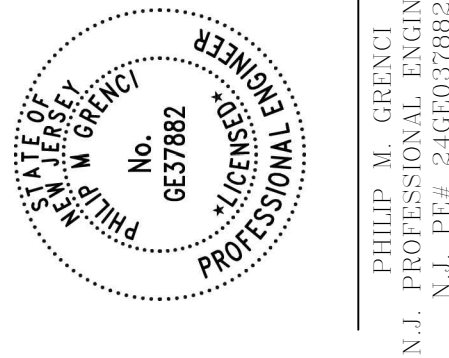
INTERNAL GROUND BUS CONNECTIONS TO BUILDING STEEL
SCALE: N.T.S.



GROUND BUS CONNECTION AT COLUMN-PLAN
SCALE: N.T.S.



TYPICAL GROUNDING DETAILS
SCALE: N.T.S.



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Drawing Title:
ELECTRICAL
GROUNDING DETAILS

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