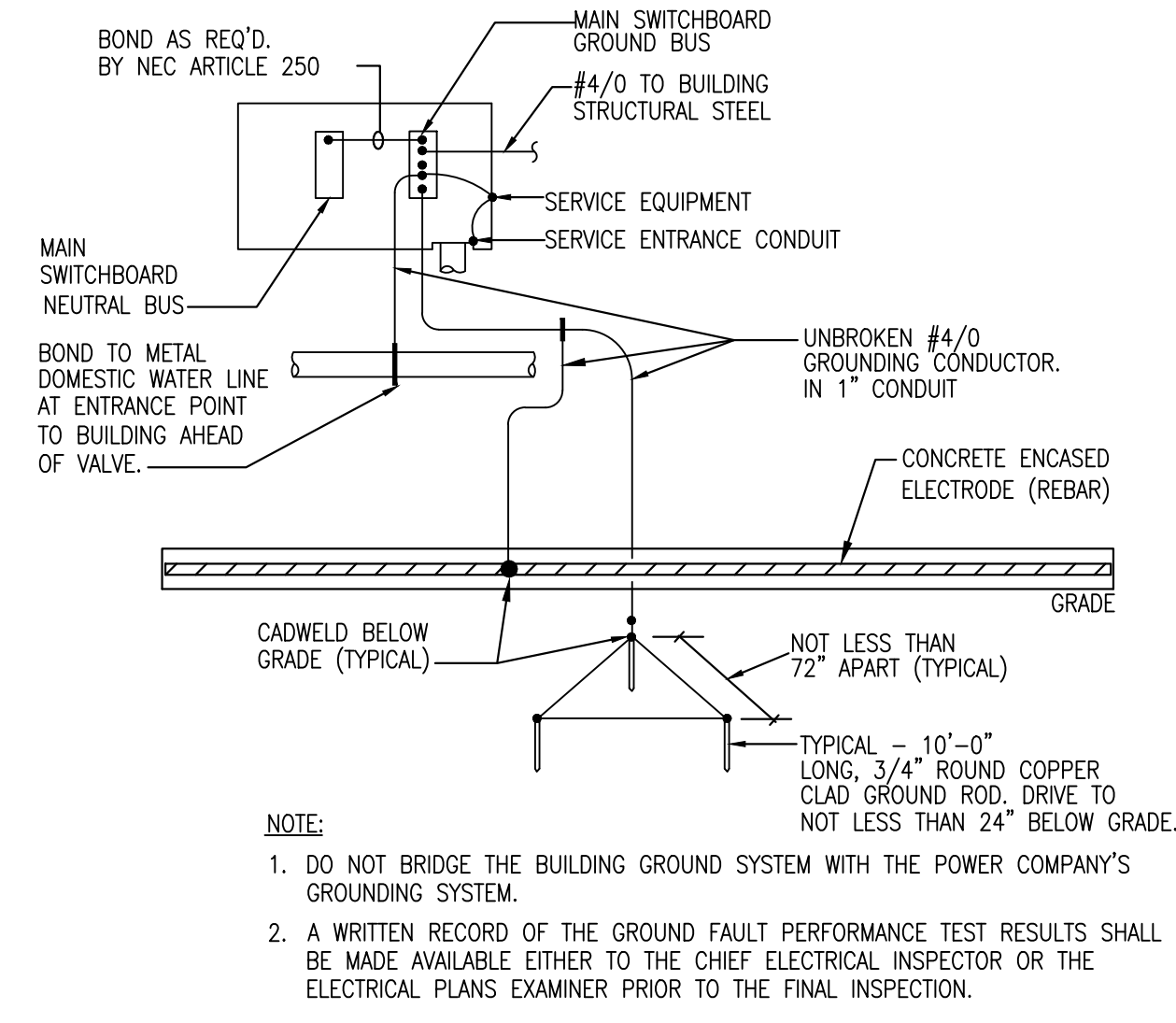


- ELECTRICAL RISER DIAGRAM GENERAL NOTES**
- COORDINATE WITH POWER COMPANY FOR REQUIREMENTS NECESSARY FOR INSTALLATION OF SERVICE LATERAL CONDUIT/WIRING, UTILITY TRANSFORMER, METERING EQUIPMENT AND GROUNDING REQUIREMENTS. DETERMINE CONTRACTOR'S RESPONSIBILITIES AND PROVIDE ALL LABOR, COMPONENTS, AND MATERIALS ACCORDINGLY.
 - WIRE SIZES SHOWN ARE FOR COPPER CONDUCTORS UNLESS NOTED OTHERWISE. AA-8000 ALUMINUM CONDUCTORS MAY SUBSTITUTE COPPER FEEDERS WITH AMPACITIES GREATER THAN 100AMPS (>#1AWG) FEEDERS AND SERVICE LATERALS WHERE THE TOTAL AMPACITY OF THE ALUMINUM WIRING IS EQUAL TO OR GREATER THAN THAT FOR THE COPPER WIRING SHOWN AS DETERMINED BY NEC TABLE 310.16 FOR CONDUCTORS WITH A 75°C TEMPERATURE RATING. CONDUIT AND WIREWAYS SHALL BE UP-SIZED AS REQUIRED TO MEET NEC REQUIREMENTS TO ACCOUNT FOR THE LARGER SIZE OR QUANTITY OF THE ALUMINUM CONDUCTORS. PROVIDE UL LISTED HIGH COMPRESSION LUGS SUITABLE FOR CONDUIT MATERIAL.
 - PROVIDE ARC-FLASH RATINGS ON ALL PANELS AND SWITCHBOARDS.
 - PROVIDE ENGRAVED NAME PLATES FOR SWITCHBOARDS, DISTRIBUTION BREAKERS, PANELBOARDS, TRANSFORMERS, AND DISCONNECTS.
 - PROVIDE 4" 3000 PSI CONCRETE HOUSEKEEPING PAD FOR ALL FLOOR MOUNTED EQUIPMENT. COORDINATE DIMENSIONS WITH CONCRETE CONTRACTOR.
 - LIGHTING SHALL BE CONTAINED IN CUT-OFF TYPE LUMINAIRES AND SHALL BE DIRECTED IN TOWARD THE PROPERTY SO AS NOT TO REFLECT INTO ADJACENT PROPERTIES.
 - PROVIDE AND INSTALL A PERMANENT PLAQUE OR DIRECTORY AT EACH SERVICE DISCONNECT LOCATION DENOTING ALL OTHER SERVICES, FEEDERS, AND BRANCH CIRCUITS SUPPLYING THIS BUILDING AND THE AREA SERVED BY EACH PER NEC 2014 230.2(E).
 - PROVIDE PULLSTRING FOR ALL EMPTY CONDUIT. PROVIDE ENDCAPS FOR ALL EMPTY CONDUIT.
 - COORDINATE ROUTING OF ALL CONDUIT WITH CIVIL ENGINEER AND APPROPRIATE UTILITIES PRIOR TO INSTALLATION.
 - PROVIDE GROUND CONDUCTORS FOR ALL CIRCUITS ROUTED IN PVC CONDUIT.
 - COORDINATE THE EXACT REQUIREMENTS OF THE CONCRETE PAD FOR THE PAD MOUNTED ELECTRICAL UTILITIES EQUIPMENT WITH THE UTILITY COMPANY AND THE CIVIL ENGINEER PRIOR TO INSTALLATION.
 - ALL EXTERIOR LIGHTING SHALL BE ROUTED THRU A LIGHTING CONTROL DEVICE/PANEL.
 - COORDINATE THE EXACT REQUIREMENTS, LOCATIONS, ETC. OF REQUIRED PULLBOXES, IF ANY, WITH THE POWER COMPANY, UTILITY COMPANY, IF REPRESENTATIVE AND PHONE COMPANY PRIOR TO INSTALLATION.
 - PROVIDE AND INSTALL THE ELECTRICAL SERVICE CONDUIT AND CABLING REQUIRED BY THE ELECTRICAL COMPANY. PROVIDE AND INSTALL ALL CONDUIT AND WIRE AS SPECIFIED FOR THE SECONDARY TERMINALS OF THE TRANSFORMER TO THE MAIN SWITCHBOARD. PROVIDE AND INSTALL A 1-1/2" CONDUIT FROM THE TRANSFORMER TO THE METER CABINET.
 - SCHEDULE 40 PVC USED FOR UNDERGROUND FEEDERS, SERVICE ENTRANCE CONDUCTORS SHALL BE ENCASED IN 4" CONCRETE ON ALL SIDES. ALL CONDUIT INSTALLED IN GROUND OUTSIDE THE BUILDING EXTERIOR LINE, EXCEPT EXTERIOR LIGHTING CIRCUITS, SHALL BE ENCASED IN 4" CONCRETE ON ALL SIDES.
 - COORDINATE THE GENERATOR AND ATS REQUIREMENTS WITH THE POWER COMPANY. AUTOMATIC TRANSFER SYSTEMS MUST BE APPROVED BY THE POWER COMPANY.

- ELECTRICAL RISER DIAGRAM LEGEND NOTES**
- PROVIDE TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS) FACTORY INSTALLED WITH DISCONNECT FACTORY INSTALLED IN SWITCHBOARD. PROVIDE MINIMUM 10 YEAR WARRANTY. TVSS SHALL BE RATED FOR A MINIMUM OF 300KA PER PHASE AND 150KA PER MODE, MEETING UL 1449 2nd EDITION FEB. 2007 REVISION.
 - PROVIDE SERVICE-RATED MAIN CIRCUIT BREAKER WITH ADJUSTABLE LONG TIME, SHORT TIME, INSTANTANEOUS, AND GROUND FAULT PROTECTION PER NEC 215.10 & 230.95. PROVIDE CIRCUIT BREAKER WITH MAINTENANCE SETTINGS TO OVERRIDE ANY INTENTIONAL DELAY OF THE INSTANTANEOUS SETTING OR OTHER METHOD OF ARC ENERGY REDUCTION INDICATED IN 2014 NEC 240.87. CIRCUIT BREAKER AND SWITCHBOARD SHALL BE LISTED FOR OPERATION AT 100% OF RATINGS. PROVIDE ENCLOSURE, VENTILATION, AND BISSING REQUIRED FOR MAIN CIRCUIT BREAKER TO CONTINUOUSLY CARRY FULL LOAD FOR MORE THAN 3-HOURS. EQUIP CIRCUIT BREAKER WITH AN ADDITIONAL SHUNT-TRIP FOR EPO SWITCH. PROVIDE EPO SWITCH AND COORDINATE THE LOCATION WITH THE POWER COMPANY AND AUTHORITY HAVING JURISDICTION.
 - PROVIDE POWER AND ENERGY MONITORING/METERING SYSTEM FACTORY INSTALLED INTO SWITCHBOARD, GE POM II OR APPROVED EQUAL. PROVIDE METER WITH LCD DISPLAY AND ETHERNET PORT WITH ONBOARD DATA AND EVENT LOGGING EQUIPPED WITH OPEN MODBUS PROTOCOL. METER SHALL BE CAPABLE OF TRUE RMS 3-PHASE MEASUREMENTS: VOLTAGE (LINE-TO-NEUTRAL PER PHASE, MIN./MAX.), CURRENT (PER PHASE, NEUT., MIN./MAX., DEMAND), POWER (PER-PHASE, TOTAL REAL, REACTIVE, APPARENT, DEMAND), ENERGY (KWH, KVARH, KVAH, BI-DIRECTIONAL), POWER FACTOR, AND FREQUENCY. PROVIDE WITH POWER QUALITY FEATURES (HARMONIC DATA). INTERFACE WITH BUILDING AUTOMATION SYSTEM.
 - PROVIDE 60 AMP RATED, 3-POLE CONTACTOR INTERNAL TO PANEL WITH AUXILIARY CONTROL RELAY TO BE CONTROLLED BY BUILDING EMS. (GE CR160 REMOTE CONTROL SWITCH OR EQUAL). PROVIDE ALL ACCESSORIES REQUIRED TO INTERFACE WITH BUILDING EMS.
 - COORDINATE METER LOCATION WITH UTILITY COMPANY. COORDINATE ALL COMPONENTS REQUIRED FROM THE POWER COMPANY. DETERMINE CONTRACTOR RESPONSIBILITY. PROVIDE 1-1/2" CONDUIT FROM METER TO CT CABINET.
 - COORDINATE FIRE PUMP METER LOCATION WITH UTILITY COMPANY. COORDINATE ALL COMPONENTS REQUIRED FROM THE POWER COMPANY. DETERMINE CONTRACTOR RESPONSIBILITY. METERBOARD TO BE INSTALLED ON UNISTRUT MOUNTED BETWEEN TWO RIGID METAL 1-7/8" (MIN) OD STEEL PIPES ENCASED IN CONCRETE IN A LOCATION AWAY FROM VEHICLES AND PEDESTRIAN TRAFFIC. CENTER OF METER TO BE BETWEEN 3-5 FEET A.F.G., 4 FEET PREFERRED. COORDINATE CURRENT TRANSFORMERS AND POTENTIAL TRANSFORMERS LOCATION, PROVIDE NEMA 3R CABINET IF REQUIRED.
 - PROVIDE SHUNT TRIP CAPABILITY FOR REFRIGERATION RACK A & B.

STUDIES

A. As a requirement for the project documents to be delivered by the contractor, provide a complete short circuit study, selective coordination study, and arc-flash analysis from the service entrance to all end devices. The study shall be provided by the switchgear manufacturer or their vendor and shall utilize time current curves that are developed by the gear manufacturer selected for use in the building. The study shall be made available for review by the engineer and local code enforcement authorities no later than 45 days after the time they deem necessary for certificates of occupancy to be issued. Obtain critical dates from the inspections department of the local code enforcement department during the inspection process to determine when presentation of the selective coordination study to the inspections department is necessary for timely issuance of the certificate of occupancy.



2 BUILDING GROUNDING DETAIL
E5.01 N.T.S.



KLS ARCHITECT

Restaurant Depot / BREWSTER, NY

DANBURY ROAD (LOT 48) BLOCK 0002

BREWSTER, NY 10509

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REVISIONS									
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RISER DIAGRAM - ELECTRICAL

DATE: 9/10/2020

JOB NO. 19230

E5.01

SHEET NO.