

LANDRUM ACADEMIC CENTER - BLDG #0300
ELECTRICAL SWITCHGEAR REPLACEMENT

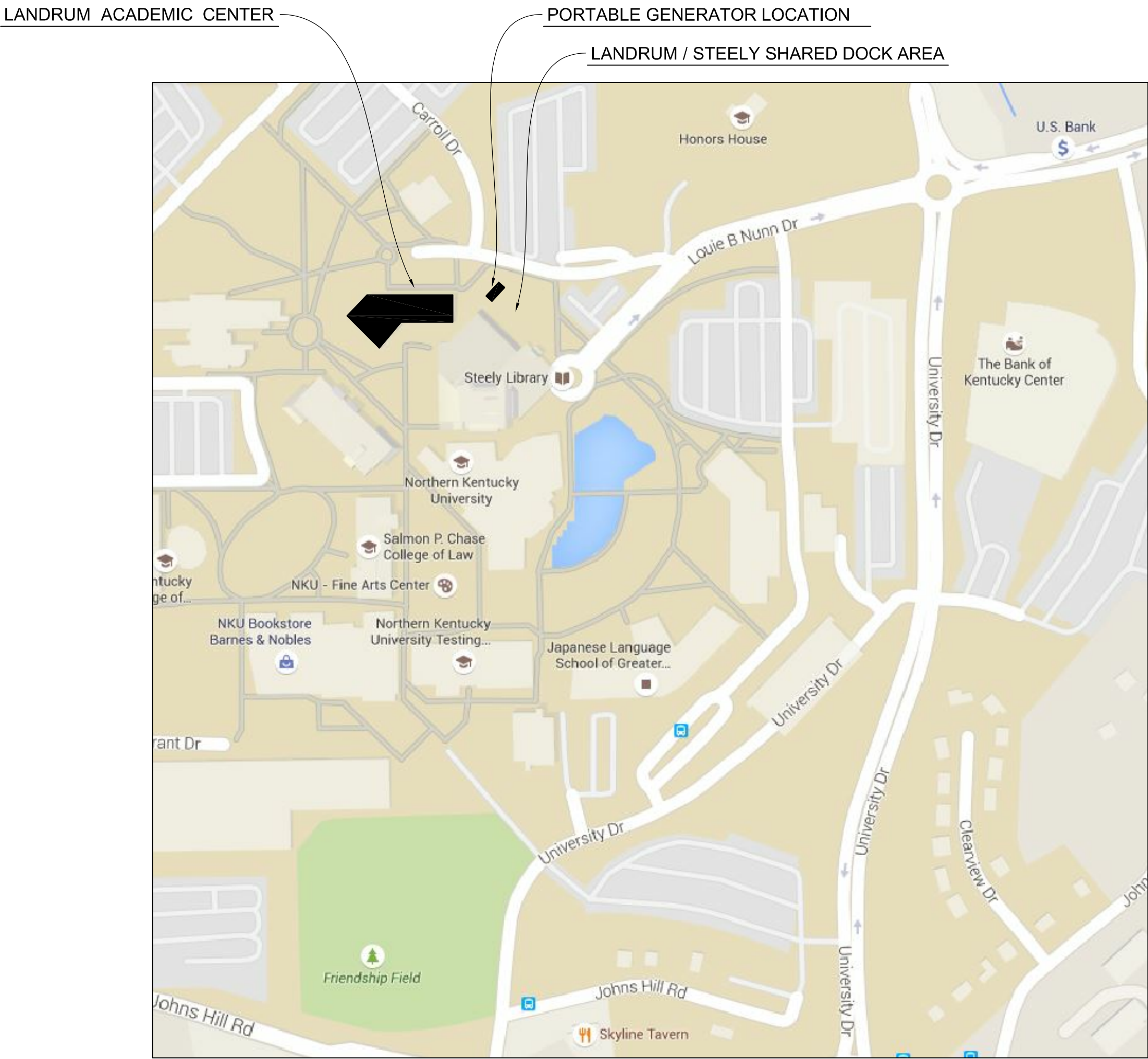
NORTHERN KENTUCKY UNIVERSITY

Louie B. Nunn Drive
Highland Heights, Kentucky

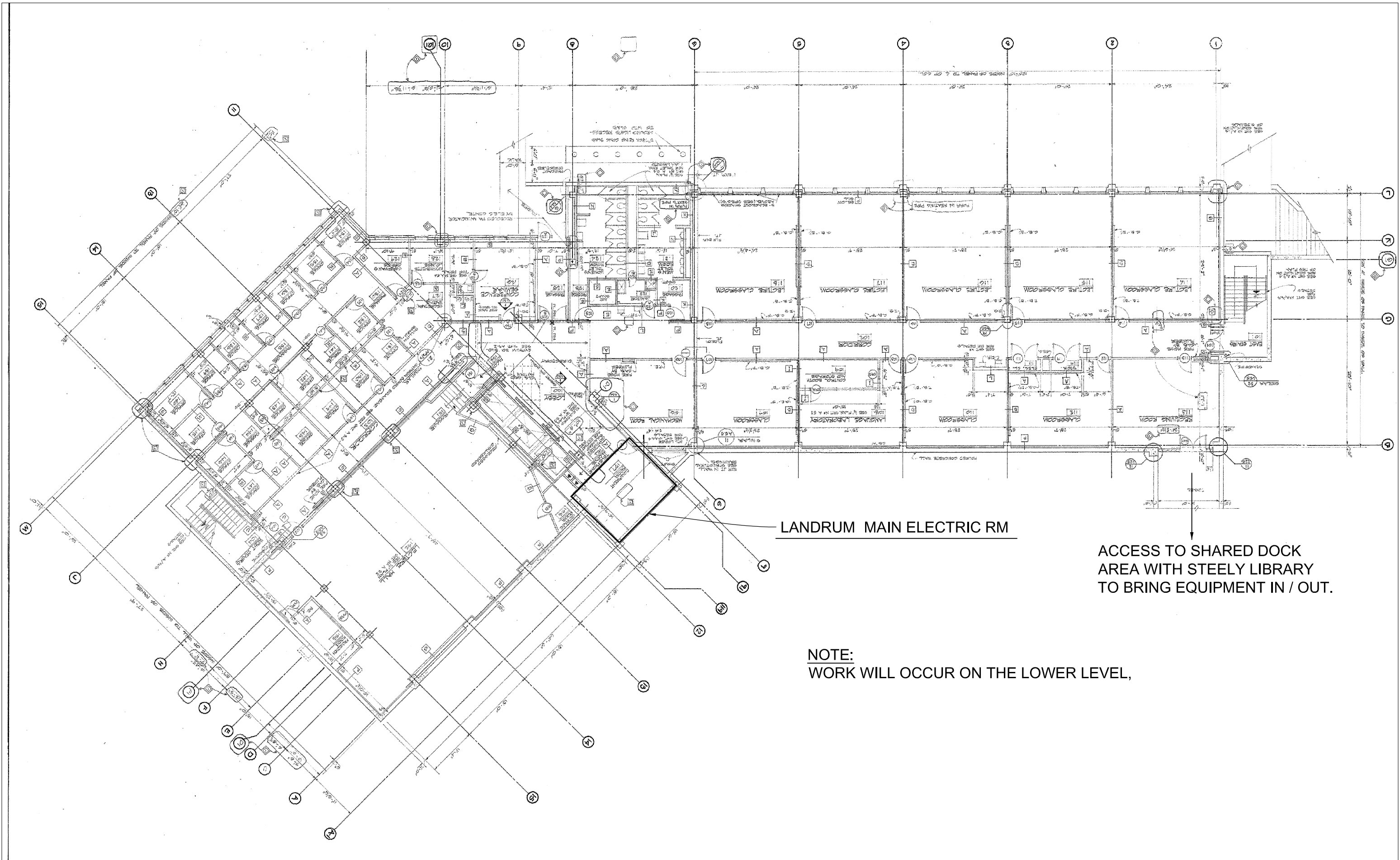


BID #NKCC-XX-XX

KZF Design, Inc.
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Key Site Plan - Not to Scale



Landrum Center Key Plan - Not to Scale



General

G-001 Cover Sheet & Index to Drawings

Electrical

E-001 Electrical Legend & Notes
E-101 Electrical First Floor Plan
E-401 Electrical Room Enlarged Plan
E-801 Electrical One-Line Diagram

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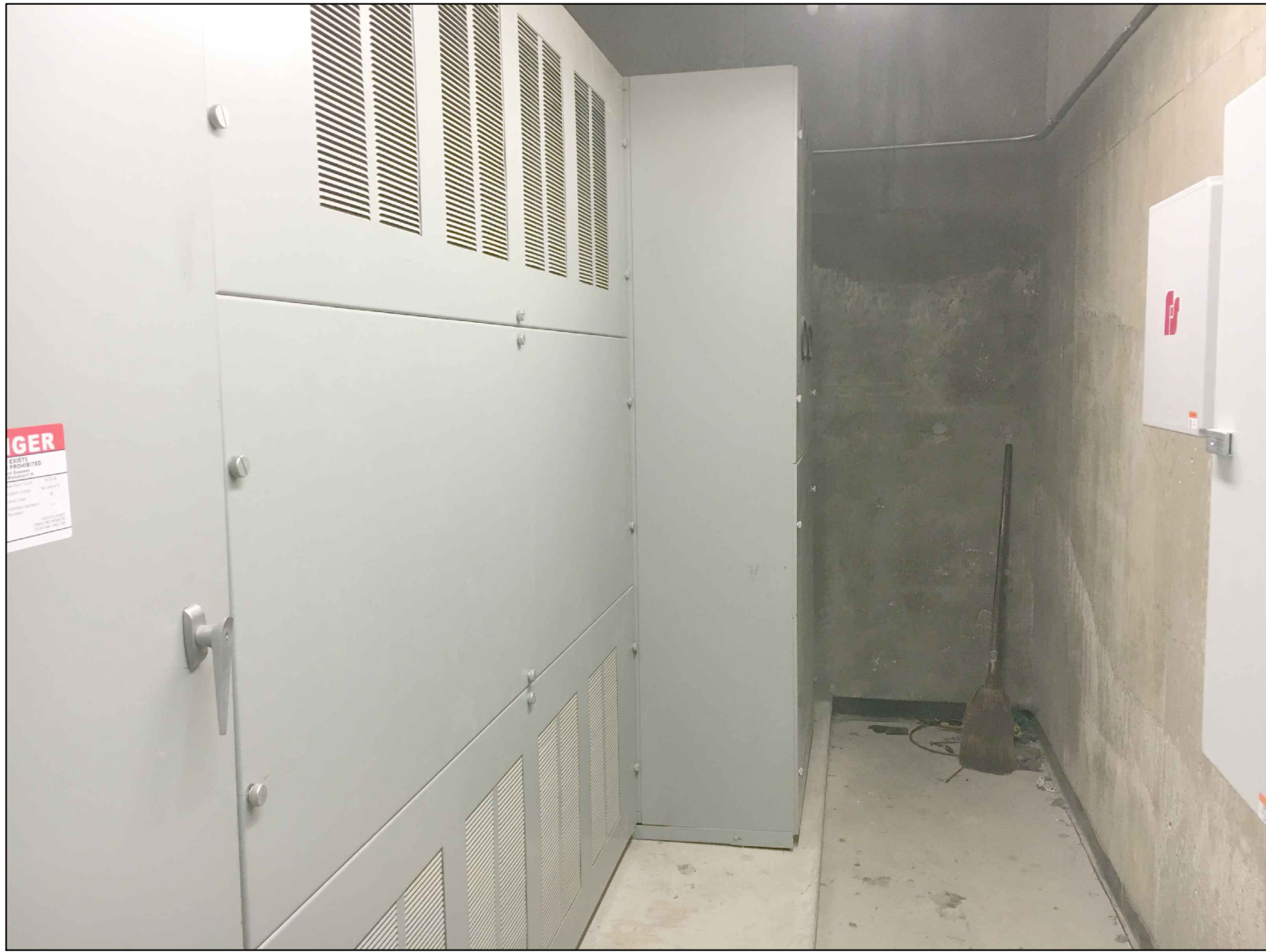
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NADER

COVER SHEET
& INDEX TO
DRAWINGS

DRAWING NUMBER ISSUE
G-001 1



01
E-001
EXISTING SUB-STATION - FRONT VIEW
NO SCALE



02
E-001
EXISTING SUB-STATION - BACK VIEW
NO SCALE



03
E-001
EXISTING SUB-STATION - PRIMARY SERVICE - BOTTOM VIEW
NO SCALE



FEEDER LPH1-1
AND LPH2-1

FEEDER LPH1-2

METERING CTs

04
E-001
EXISTING SUB-STATION - SECONDARY FEEDER - TOP VIEW
NO SCALE



FEEDER LPH4-1

EMERGENCY
FEEDER

FEEDER LPDH1-1

SPARE

05
E-001
EXISTING SUB-STATION - SECONDARY FEEDER - BOTTOM VIEW
NO SCALE

LIGHTING

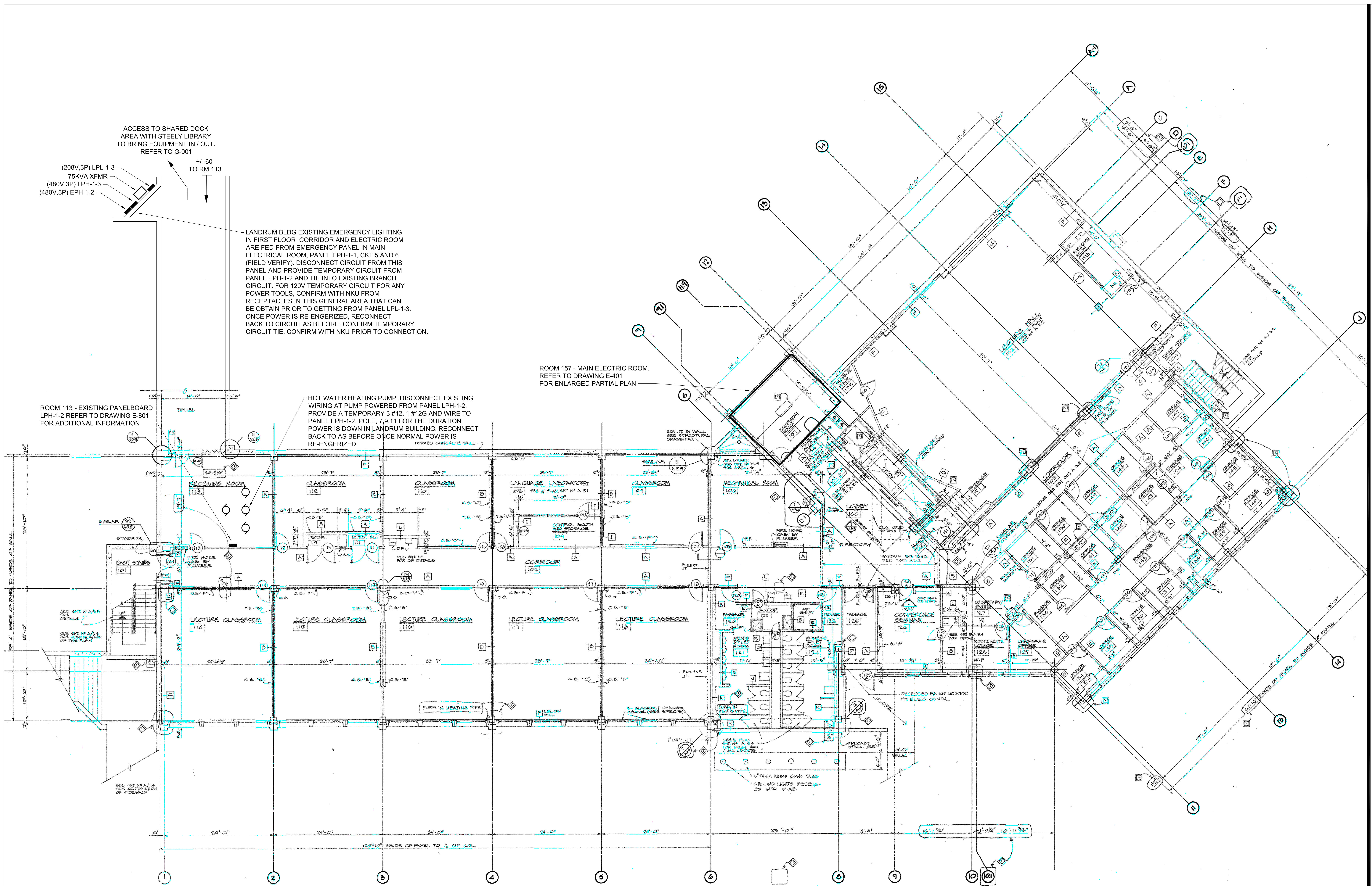
- INDUSTRIAL STRIP FIXTURE
- SWITCH (a = SWITCH LEG)

POWER

- PANELBOARD, BRANCH CIRCUIT, FLUSH OR SURFACE MOUNTED
- SAFETY SWITCH, NOT FUSED UNLESS OTHERWISE SHOWN
F - INDICATES FUSED, CB - INDICATED CIRCUIT BREAKER
(SIZE AS REQUIRED BY NEC)

GENERAL NOTES - ELECTRICAL

- A ALL EXISTING CONDUIT AND WIRING TO REMAIN UNLESS NOTED OTHERWISE. DURING NEW WORK INSTALLATION CONTRACTOR TO REPLACE ALL EXISTING WORK THAT WAS DAMAGED DURING DEMOLITION OR NEW WORK.
- B PERFORM ALL WORK IN ACCORDANCE WITH NKU FACILITY STANDARDS.
- C ALL WORK AND EQUIPMENT SHALL CONFORM WITH THE REQUIREMENTS OF THE KENTUCKY BUILDING CODE, NATIONAL ELECTRICAL CODE (NEC), AND ALL LOCAL CODES. ALL WORK SHALL BE PERFORMED BY LICENSED ELECTRICIANS.
- D CT METERING CABLING WIRING REQUIRED SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- E ALL ELECTRICAL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- G CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL ELECTRICAL EQUIPMENT, TO FIT WITHIN THE SPACE ALLOWED BY THE STRUCTURAL CONDITIONS. CUTTING OR OTHERWISE ALTERING ANY STRUCTURAL MEMBERS SHALL NOT BE PERMITTED WITHOUT WRITTEN PERMISSION FROM NKU.
- H FOR PURPOSES OF CLEARNESS AND LEGIBILITY, DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC ALTHOUGH SIZE AND LOCATION OF EQUIPMENT ARE SHOWN TO SCALE WHEREVER POSSIBLE.
- I PACK SLEEVES FULL AROUND CONDUIT PASSING THRU FLOORS AND FIRE-RATED WALLS AND PARTITIONS TO MAINTAIN THE FIRE OR SMOKE RATING OF THAT CONSTRUCTION.
- J ALL OF THE AREAS SURROUNDING THE WORK AREAS ARE OCCUPIED AND WILL REMAIN OCCUPIED DURING THE CONSTRUCTION PERIOD. COORDINATE WORK SCHEDULE WITH NKU FACILITY MANAGEMENT.
- K ALL EQUIPMENT SHALL BE INSTALLED TO MAINTAIN ALL CODE, NATIONAL ELECTRICAL CODE (NEC), MANUFACTURER, AND MAINTENANCE CLEARANCES. VERIFY SPECIFIC LOCATION AND ORIENTATION OF EQUIPMENT WITH THE OWNER/DESIGN TEAM PRIOR TO INSTALLATION.
- L WHERE SHUTDOWN OF EXISTING SYSTEMS ARE REQUIRED DURING NEW WORK, COORDINATE SHUTDOWN TIME AND DURATION WITH THE OWNER TO MINIMIZE DOWNTIME. NOTIFY OWNER PRIOR TO INTERRUPTION OF SERVICE AS STATED ELSE WHERE IS THESE DOCUMENTS.
- M DURING INSTALLATION OF NEW WORK, AVOID DAMAGING EXISTING SURFACES AND EQUIPMENT TO REMAIN. REPAIR DAMAGE CAUSED DURING CONSTRUCTION AT NO EXTRA COST TO THE OWNER.
- N CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED PERMITS AND INSPECTIONS.
- O NKU HAS A CAMPUS WIDE "NO SMOKING - ZERO TOLERANCE" POLICY. ALL CONTRACTORS ARE REQUIRED TO STRICTLY ADHERE TO THE POLICY.
- P THE NEW WORK DRAWINGS (BACKGROUNDS) HAVE BEEN CREATED FROM EXISTING RECORD DRAWINGS FURNISHED TO KZF BY NKU. THE ORIGINAL NOTATIONS INDICATED ON THE DRAWINGS ARE MEANT TO BE FOR INFORMATION ONLY AND NOT FOR SCOPE OF NEW WORK. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AFFECTING THIS SCOPE OF WORK PRIOR TO PERFORMING WORK. EXISTING CONDITIONS WERE TAKEN FROM RECORD DRAWINGS DATED 02/75 SITE VISITS AND MAY NOT REFLECT "AS BUILT" CONDITIONS. THESE EXISTING DRAWINGS ARE AVAILABLE FROM NKU.
- Q EQUIPMENT SUPPLIERS SHALL COMPARE THE ELECTRICAL POWER REQUIREMENTS OF THE INTENDED EQUIPMENT WITH POWER FEEDERS TO THE EQUIPMENT SHOWN ON THE ELECTRICAL DRAWINGS. VERIFY ADEQUACY AND COMPATIBILITY OF VOLTAGE, PHASE, WIRING CAPACITY, NUMBER AND SIZE OF CONDUCTORS (VERSUS EQUIPMENT CONNECTION POINTS).
- R ALL CONDUIT SHALL BE APPROPRIATELY LABELED PER NKU STANDARDS AND SHALL MATCH EXISTING LABELING SYSTEMS.
- S ANY CHANGES FROM THE BASIS OF DESIGN EQUIPMENT SELECTIONS WILL REQUIRE THE CONTRACTOR TO MAKE ALL ADJUSTMENTS NECESSARY FOR SELECTED EQUIPMENT AT NO COST TO THE PROJECT OR NKU.
- T ALL WIRING SHALL BE IN METALLIC RACEWAYS. MINIMUM SIZE CONDUIT SHALL BE 3/4".
- U ALL WIRING SHALL BE COPPER. MINIMUM WIRE SIZE SHALL BE #12 AWG., THHN/THWN INSULATED.
- V ALL CIRCUITS SHALL HAVE A DEDICATED NEUTRAL, AND A GREEN INSULATED GROUNDING CONDUCTOR.
- W CIRCUITS SHALL NOT BE COMBINED WITHOUT PERMISSION FROM DESIGN ENGINEER.
- X ALL ELECTRICAL EQUIPMENT DEVICES SHALL BE GROUNDED AS PER NEC, ARTICLE 250.
- Y VOLTAGE DROP IN BRANCH CIRCUITS SHALL NOT EXCEED 3%. TOTAL VOLTAGE DROP INCLUDING FEEDER AND BRANCH CIRCUIT SHALL NOT EXCEED 5%. USE NEC TABLE 9 TO CALCULATE VOLTAGE DROP.
- Z CONTACT NKU 15 DAYS PRIOR TO ANY WORK WITHIN THE BUILDING AT THAT IS RELATED TO DE-ENERGIZING AND POWER, GENERATOR AND FIRE ALARM.



ACCESS TO SHARED DOCK
AREA WITH STEELY LIBRARY
TO BRING EQUIPMENT IN / OUT.
REFER TO G-001

(208V,3P) LPL-1-3
75KVA XFMR
(480V,3P) LPH-1-3
(480V,3P) EPH-1-2

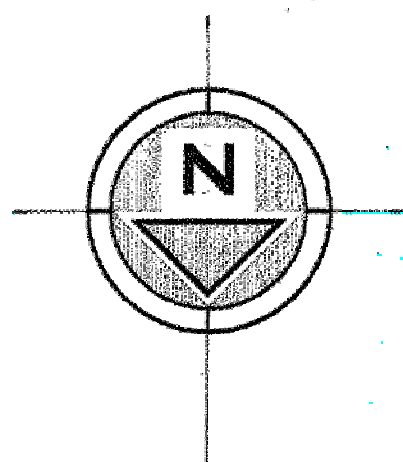
LANDRUM BLDG EXISTING EMERGENCY LIGHTING
IN FIRST FLOOR CORRIDOR AND ELECTRIC ROOM
ARE FED FROM EMERGENCY PANEL IN MAIN
ELECTRICAL ROOM, PANEL EPH-1-1, CKT 5 AND 6
(FIELD VERIFY). DISCONNECT CIRCUIT FROM THIS
PANEL AND PROVIDE TEMPORARY CIRCUIT FROM
PANEL EPH-1-2 AND TIE INTO EXISTING BRANCH
CIRCUIT. FOR 120V TEMPORARY CIRCUIT FOR ANY
POWER TOOLS, CONFIRM WITH NKU FROM
RECEPTACLES IN THIS GENERAL AREA THAT CAN
BE OBTAIN PRIOR TO GETTING FROM PANEL LPL-1-3.
ONCE POWER IS RE-ENERGIZED, RECONNECT
BACK TO CIRCUIT AS BEFORE. CONFIRM TEMPORARY
CIRCUIT TIE, CONFIRM WITH NKU PRIOR TO CONNECTION.

ROOM 113 - EXISTING PANELBOARD
LPH-1-2 REFER TO DRAWING E-801
FOR ADDITIONAL INFORMATION

HOT WATER HEATING PUMP. DISCONNECT EXISTING
WIRING AT PUMP POWERED FROM PANEL LPH-1-2.
PROVIDE A TEMPORARY 3 #12, 1 #12G AND WIRE TO
PANEL EPH-1-2, POLE, 7,9,11 FOR THE DURATION
POWER IS DOWN IN LANDRUM BUILDING. RECONNECT
BACK TO AS BEFORE ONCE NORMAL POWER IS
RE-ENERGIZED

ROOM 157 - MAIN ELECTRIC ROOM.
REFER TO DRAWING E-401
FOR ENLARGED PARTIAL PLAN

01 FIRST FLOOR PLAN
E-101 1/8"=1'-0"



NO. DATE DESCRIPTION
1 09-09-2019 FOR BIDDING

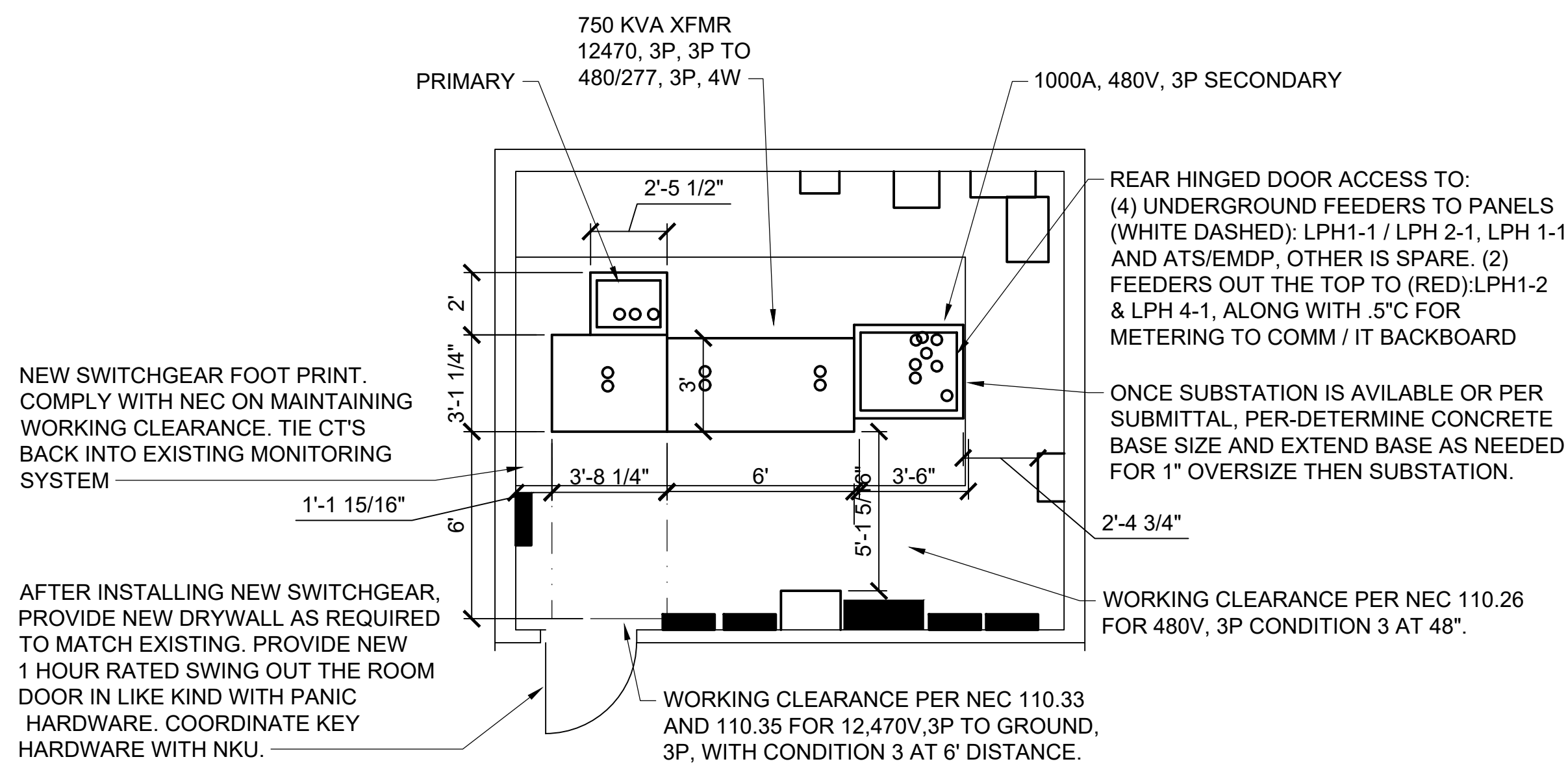
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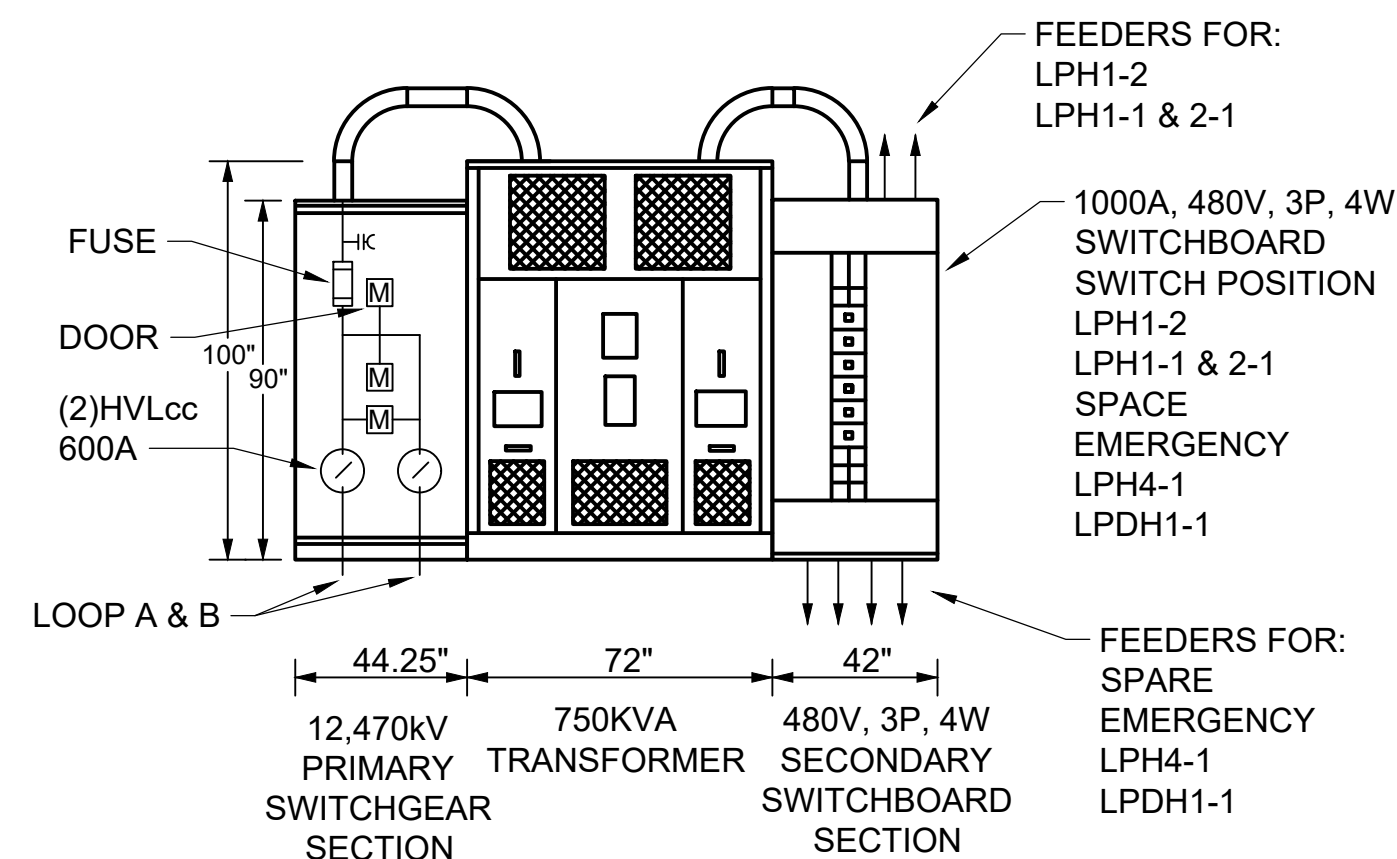
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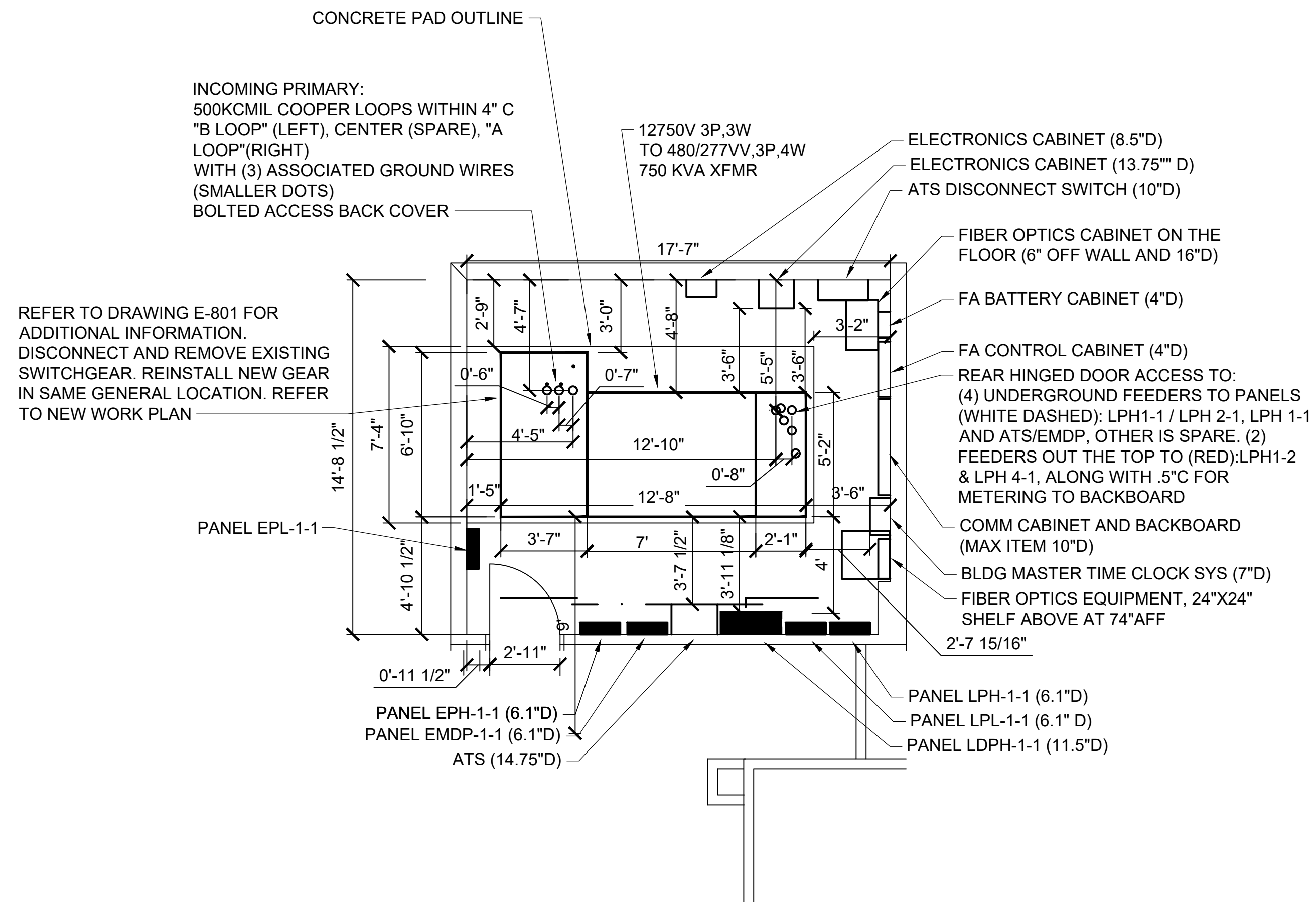


02
E-401
1/4\"=1'-0\"
ELECTRICAL ROOM ENLARGED PLAN - NEW SWITCHGEAR



03
E-401
NOT TO SCALE
NEW SWITCHGEAR - FRONT ELEVATION

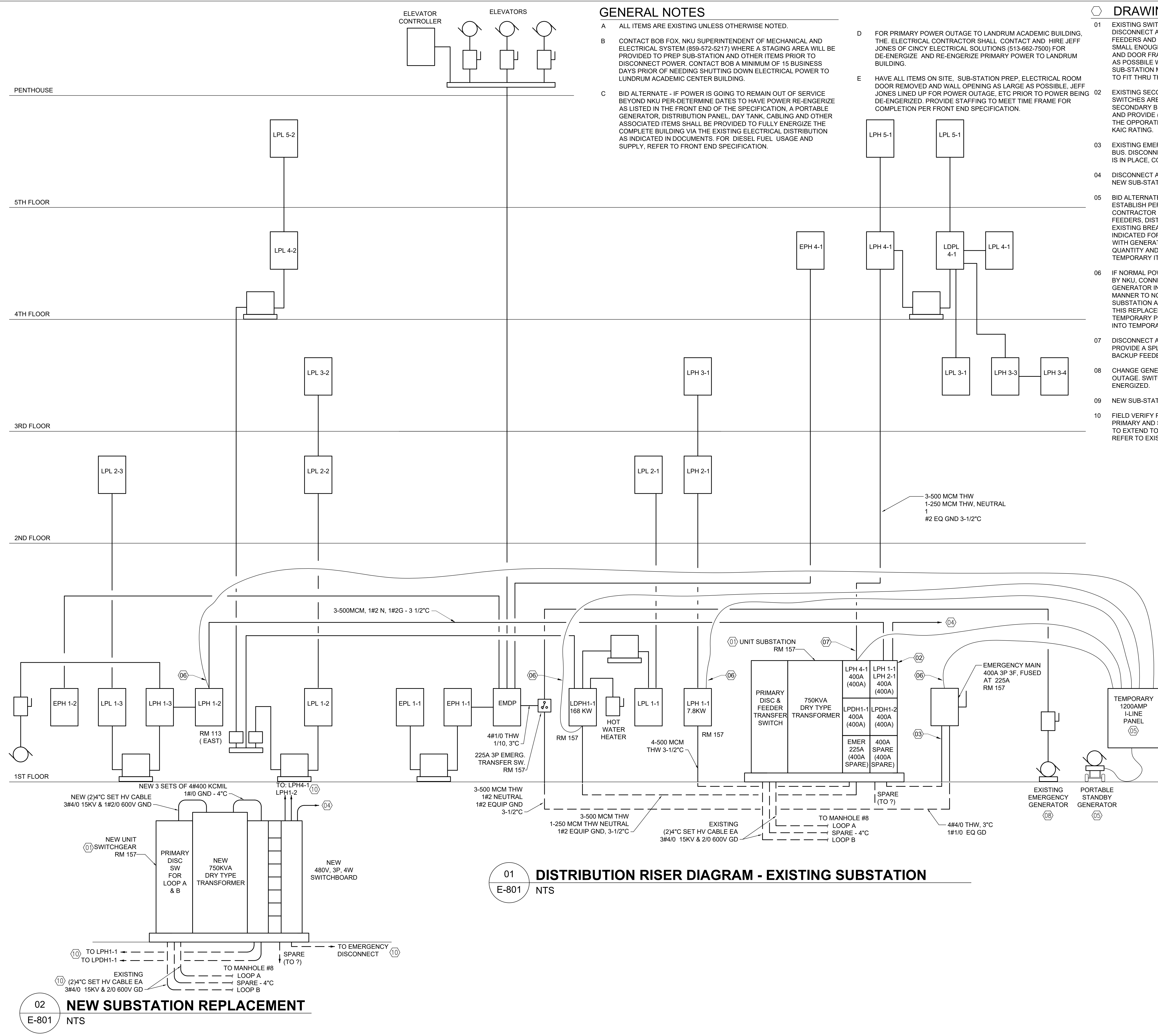
ROUTE FEEDERS EXTERNAL BETWEEN EACH SECTION. DO NOT BOLT SECTIONS TOGETHER. PREP SWITCHGEAR AS MUCH AS POSSIBLE PRIOR TO POWER BEING DE-ENERGIZED. RELOCATE EXISTING CT'S FROM EXISTING SUBSTATION TO NEW AND LOCATE AT SECONDARY SECTION AND WIRE BACK TO EXISTING METER CABLE. REFER TO RISER DIAGRAM FOR ADDITION INFORMATION ON THE EXISTING PANELBOARD FEEDER CONDUITS EXITING OUT THE TOP OF THE SECONDARY TO RECONNECT. PHYSICAL SIZE OF THE NEW SUBSTATION SHALL BE MAINTAIN TO MEET NEC WORKING CLEARANCES. ALIGN THE FACE OF EACH SECTION WITH EACH OTHER WHERE POSSIBLE DUE TO GETTING FEEDER STUBUPS ALIGN WITH BASE OPENINGS. SPLICE FEEDERS WHERE NEEDED TO MAKE CONNECTIONS.



01
E-401
1/4\"=1'-0\"
ELECTRICAL ROOM ENLARGED PLAN - EXISTING SWITCHGEAR

GENERAL NOTES

- ALL ITEMS ARE EXISTING UNLESS OTHERWISE NOTED.
- CONTACT BOB FOX, NKU SUPERINTENDENT OF MECHANICAL AND ELECTRICAL SYSTEM (859-572-5217) WHERE A STAGING AREA WILL BE PROVIDED TO PREP SUB-STATION AND OTHER ITEMS PRIOR TO DISCONNECT POWER. CONTACT BOB A MINIMUM OF 15 BUSINESS DAYS PRIOR OF NEEDING SHUTTING DOWN ELECTRICAL POWER TO LUNDRUM ACADEMIC CENTER BUILDING.
- ELECTRICAL CONTRACTOR MUST HIRE JEFF JONES OF CINCY ELECTRICAL SOLUTIONS (513-662-7500) TO PROVIDE DE-ENERGIZING AND RE-ENERGIZING THE CAMPUS PRIMARY POWER TO LANDRUM ACADEMIC BUILDING.
- NEW SWITCHGEAR MUST NOT EXCEED DIMENSION INDICATED. NEW SWITCHGEAR MUST FIT OVER EXISTING PRIMARY AND SECONDARY FEEDERS ENTERING THRU THE FLOOR SLAB. OVER HEAD FEEDERS WILL HAVE TO BE REWORKED AND RECONNECTED. MUST MAINTAIN NEC WORKING CLEARANCE PER 110.30.
- BASIS OF DESIGN IS PER SQD / SCHNEIDER ELECTRICAL. CONTACT EITHER DAVE LOVITZ (513-668-1236) OR JEFF BOWEN (317-469-1125) FOR ASSIST ON THE SWITCHGEAR EQUIPMENT.



GENERAL NOTES

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- B CONTACT BOB FOX, NKU SUPERINTENDENT OF MECHANICAL AND ELECTRICAL SYSTEM (859-572-5217) WHERE A STAGING AREA WILL BE PROVIDED TO PREP SUB-STATION AND OTHER ITEMS PRIOR TO DISCONNECT POWER. CONTACT BOB A MINIMUM OF 15 BUSINESS DAYS PRIOR OF NEEDING SHUTTING DOWN ELECTRICAL POWER TO LUNDRUM ACADEMIC CENTER BUILDING.
- C BID ALTERNATE - IF POWER IS GOING TO REMAIN OUT OF SERVICE BEYOND NKU PER-DETERMINE DATES TO HAVE POWER RE-ENERGIZE AS LISTED IN THE FRONT END OF THE SPECIFICATION, A PORTABLE GENERATOR, DISTRIBUTION PANEL, DAY TANK, CABLING AND OTHER ASSOCIATED ITEMS SHALL BE PROVIDED TO FULLY ENERGIZE THE COMPLETE BUILDING VIA THE EXISTING ELECTRICAL DISTRIBUTION AS INDICATED IN DOCUMENTS. FOR DIESEL FUEL USAGE AND SUPPLY, REFER TO FRONT END SPECIFICATION.
- D FOR PRIMARY POWER OUTAGE TO LANDRUM ACADEMIC BUILDING, THE ELECTRICAL CONTRACTOR SHALL CONTACT AND HIRE JEFF JONES OF CINCY ELECTRICAL SOLUTIONS (513-662-7500) FOR DE-ENERGIZE AND RE-ENERGIZE PRIMARY POWER TO LANDRUM BUILDING.
- E HAVE ALL ITEMS ON SITE, SUB-STATION PREP, ELECTRICAL ROOM DOOR REMOVED AND WALL OPENING AS LARGE AS POSSIBLE, JEFF JONES LINED UP FOR POWER OUTAGE, ETC PRIOR TO POWER BEING DE-ENERGIZED. PROVIDE STAFFING TO MEET TIME FRAME FOR COMPLETION PER FRONT END SPECIFICATION.

DRAWING NOTES

- 01 EXISTING SWITCHGEAR TO BE REMOVE AND REPLACED WITH NEW. DISCONNECT ALL INCOMING PRIMARY AND SECONDARY FEEDERS AND METERING WIRING. DISASSEMBLY CABINET INTO SMALL ENOUGH SECTIONS TO BE REMOVED THRU EXISTING DOOR AND DOOR FRAME AND DRYWALL THAT WILL BE REMOVED AS WIDE AS POSSIBLE WITHOUT REMOVING OTHER ITEMS. NEW SUB-STATION MAYBE REQUIRED TO DISASSEMBLY OUTER CABINET TO FIT THRU THIS OPENING.
- 02 EXISTING SECONDARY CABINET CONTAINS (6) 400AMP SWITCHES. (4) SWITCHES ARE IN USE. THE EMERGENCY FEEDER IS TAP ON SECONDARY BUS. PROVIDE (4) 400AMP SWITCHES FOR PANEL FEEDS AND PROVIDE (1) 225 SWITCH FOR EMERGENCY FEEDER. PROVIDE THE APPROPRIATE KAIC RATING SWITCHES PER THE TRANSFORMER KAIC RATING.
- 03 EXISTING EMERGENCY FEEDER IS TAP FROM THE SWITCHBOARD BUS. DISCONNECT WIRING FROM BUS TAP. ONCE NEW SUB-STATION IS IN PLACE, CONNECT WIRING TO NEW SECONDARY 225A SWITCH.
- 04 DISCONNECT AND REMOVE EXISTING CT'S TO BE REINSTALLED IN NEW SUB-STATION AND RECONNECT TO METERING LEADS.
- 05 BID ALTERNATE: IF POWER IS OUT BEYOND THE DATE NKU ESTABLISH PER FRONT END SPECIFICATION, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A TEMPORARY GENERATOR, FLEXIBLE FEEDERS, DISTRIBUTION PANEL WITH SIZE BREAKERS TO MATCH EXISTING BREAKERS AND ROUTE FEEDERS TO EXISTING PANELS AS INDICATED FOR THE DURATION THE POWER IS OUT. COORDINATE WITH GENERATOR VENDOR FOR WIRE SIZES PER VOLTAGE DROP, QUANTITY AND DISTANCE TO TIE INTO THESE PANEL. EASY TEMPORARY ITEMS ARE AVAILABLE VIA BUCKEYE POWER.
- 06 IF NORMAL POWER IS NOT RESTORED PER THE TIME LINE ESTABLISH BY NKU, CONNECT TEMPORARY FEEDERS FROM TEMPORARY GENERATOR INTO EXISTING PANEL. ROUTE PORTABLE CABLES IN A MANNER TO NOT INTERFERE WITH REMOVING AND INSTALLING SUBSTATION AND OTHER BUILDING ACTIVATES NOT INVOLVED IN THIS REPLACEMENT. COORDINATE WITH TEMPORARY GENERATOR, TEMPORARY PANEL CABLES WITH VENDOR TO TIE THIS PANEL TIE INTO TEMPORARY GENERATOR
- 07 DISCONNECT AND REMOVE CONDUIT FROM TOP OF EXISTING GEAR. PROVIDE A SPLICE POINT TO TIE-IN TEMPORARY GENERATOR BACKUP FEEDER.
- 08 CHANGE GENERATOR SWITCH SETTING TO MANUAL DURING POWER OUTAGE. SWITCH BACK TO AUTOMATIC ONCE SUB-STATION IS FULLY ENERGIZED.
- 09 NEW SUB-STATION SHALL BE RATED AT 22,000 KAIC
- 10 FIELD VERIFY PRIOR TO DE-ENERGIZING POWER OF EXISTING PRIMARY AND SECONDARY PANEL FEEDERS LENGTHS THAT NEED TO EXTEND TO TERMINATE ON BUSHING AND SWITCHES. REFER TO EXISTING RISER FOR WIRE SIZES

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ELECTRICAL
ONE-LINE
DIAGRAM

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E-801	1